The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: Ifremer, France.

GRANT N°: 871153
PROJECT ACRONYME : JERICO-S3
PROJECT NAME : Joint European Research Infrastructure for Coastal Observatories - Science, services, sustainability
COORDINATOR : Laurent DELAUNEY - Ifremer, France - jerico-s3@ifremer.fr

JERICO-S3 MILESTONE

Joint European Research Infrastructure network for Coastal Observatory
Science, Services, Sustainability

MS#, WP# and full title	JERICO-S3 MS70 - WP13 - Intermediate GA
5 Key words	
Lead beneficiary	IFREMER
Lead Author	Léa Godiveau
Co-authors	Laurent Delauney
Contributors	
Submission date	31/07/2024

→ **Please specify the type of milestone:**

- ☑ ~~Report after a workshop or a meeting (TEMPLATE A)~~
- ❑ Report after a specific action (TEMPLATE B) (test, diagnostic, implementation,…)
- ❑ Document (TEMPLATE B) (guidelines,...)
- ❑ Other (TEMPLATE B) (to specify) …….

Diffusion list			
Consortium beneficiaries	Third parties	Associated Partners	other

PROPRIETARY RIGHTS STATEMENT

TABLE OF CONTENT

A) TEMPLATE A - report after a workshop or a meeting

1.A - Attendees

Cf List of attendees for each session in Annex.

2.A - Statement of Decisions

Cf Decisions taken for each session in Annex.

3.A - Agenda A - Main report

The JERICO-S3 ARW#3 took place between the 15th and the 18th of March 2022 as an online event. Agendas, details of sessions and minutes of meetings are available in Annex.

4.A - Conclusions

The JERICO-S3 ARW#3 reached its objectives.

5.A - Annexes and references

JERICO RI

SCIENCE - SERVICES - SUSTAINABILITY

JERICO-Week 2022

15-18 MARCH 2022
(Online event)

FINAL REPORT

ZOOM MAIN ROOM : https://zoom.us/j/4633526762

JERICO S3 SCIENCE - SERVICES - SUSTAINABILITY

JERICO DS SCIENCE - SERVICES - SUSTAINABILITY

STRATEGY DAY SESSION

-STRATEGY DAY-

Tuesday, March 15

10:30 - 12:00	**JERICO-RI Science Strategy Meeting - STRATEGIC VISION (1H)** Science strategy as defined since JNEXT, ESFRI etc. **JS3 WP1, JS3 WP9 + JDS WP1** **JERICO-RI Science Strategy Meeting- From Strategy to Implementation (30')** Review of D1.1 main outcomes – Recommendation for REGIONAL and CENTRAL Implementation **JS3 WP1**
	LUNCH BREAK 12:00-13:00
13:00-13:30	**JERICO-RI Science Strategy Meeting -IMPLEMENTATION AT REGIONAL LEVEL (0.5H)** - Addressing first periodic report comments on coordination between IRS and PSS - Present approach for IRS/PSS participation in RI technical design, primer to Thurs AM J-DS WP2 session **JS3 WP3-WP4**
14:00-15:30	**JERICO-RI Science Strategy Meeting - IMPLEMENTATION AT CENTRAL LEVEL (1.5H)** i Update of Research Axes (open list) with ongoing activities **==> from network to RI (WP1, 20')** ii- Development of central actions (JS3 WP1 and JDS WP1, 50') iii- First elements towards the long-term strategic vision (JS3 WP1, 20') **JS3 WP1 + JDS WP1 / JS3 WP3-WP4**
16:00-16:20	Addressing ESFRI REVIEW and sustainability - Business case (20 mn) **JDS WP4**
16:40-17.00	JERICO-Label (20mn) **JS3 WP5**

Expected outcomes:

- STRATEGIC VISION: To build a common view on the main Strategic elements for JERICO-RI
- JERICO-RI Science Strategy Meeting- From Strategy to Implementation : To remind the main outcomes of D1.1 as guidelines for the Implementation of the JERICO-RI Strategy at regional and central levels in JERICO-S3
- IMPLEMENTATION AT REGIONAL LEVEL: Continued participation and input from IRS/PSSs to the JERICO-RI science strategy and technical design
- IMPLEMENTATION AT CENTRAL LEVEL: To discuss on three main topics:
    - The need of having updated the list of Research Axis and how these are tackled by the regions

    - Pursue the discussion on the Central Actions (starting from the last discussions in the JERICO DS GA)
- Launch of T1.3, and links between T1.3.1 and JERICO-DS WP2Addressing ESFRI REVIEW and sustainability - Business case (20 mn) JDS WP4: to update on the work being done to address the ESFRI review comments.
- **JERICO – Label:** Update the assembly on the work done in defining the JERICO Label Committee (JLC) WP5 T5.4. Promote discussion and collect ideas and contributions.
-

Targeted audience:

- STRATEGIC VISION: whole consortium
- JERICO-RI Science Strategy Meeting- From Strategy to Implementation: whole consortium
- IMPLEMENTATION AT REGIONAL LEVEL: WP3 and WP4 IRS/PSS leads and participants, WP1
- IMPLEMENTATION AT CENTRAL LEVEL: Whole consortium
- Addressing ESFRI review and sustainability - Business case: Nations Committee, Business Development Group, Funding Working Group, all interested partners
- JERICO Label, all interested partners

Type of session: ***Plenary session (P) // Breakout rooms (BR)***

- All the sessions on Science Strategy will be Plenary sessions
- Addressing ESFRI review and sustainability - Business case: Plenary
- JERICO Label: Plenary

Main reference persons: *(Organisers/leaders)*

- STRATEGIC VISION: Laurend Delauney / Antoine Grémare
- JERICO-RI Science Strategy Meeting- From Strategy to Implementation: Antoine Grémare
- IMPLEMENTATION AT REGIONAL LEVEL: Jukka/Andrew
- IMPLEMENTATION AT CENTRAL LEVEL: Anna Rubio / Antoine Grémare/ Marcello Magaldi / Dominique Durand/ Laurent Coppola
- Addressing ESFRI review and sustainability - Business case: Paul Gaughan and Kieran Reilly
- JERICO Label: Fabio Brunetti OGS)

SHORT AGENDA

#	Description	Leading person	Link
10:30 - 12:00	Common view on the strategy and on the Implementation at regional and central levels	Laurent Delauney/ Antoine Grémare	Laurent slies: https://docs.google.com/presentation/d/12SR-7ClGQAZeO15vpkm0tSpPCjm-Sn9YR8DLLuMUEwg/edit#slide=id.g8644323fb7_0_35 Antoine slides: https://docs.google.com/presentation/d/1Gevekmr1AUMPP5LtEQpmEJOhyD55KkSM/edit?usp=sharing&ouid=100432153205415126046&rtpof=true&sd=true
13:00-13:30	Addressing first periodic report comments on coordination between IRS and PSS, and present approach for IRS/PSS	Andrew/ Jukka	Link to presentation

	participation in RI technical design		
14:00-15:10	Addressing key aspects towards Implementation at central level	Anna Rubio / Antoine Grémare/ Marcello Magaldi / Laurent Coppola	Update of Research axes: https://docs.google.com/presentation/d/1pfC6o7mwS0JruOMMD7L-x1fPiVkZmjf9YPB_rkOkfQM/edit?usp=sharing Towards Central Actions implementation: https://docs.google.com/presentation/d/1zMX1TJ4IPsYBOcl958t2U61-TdmqL9ZX0h4N2dtpCac/edit?usp=sharing
15:10-15:30	Long-term vision for the JERICO-RI	Dominique Durand	JERICO-Week 2022_Day1- long-term vision.pptx
16:00-16:20	**Addressing ESFRI review and sustainability - Business case**: The aim of this session is to review the financial, business case and sustainability issues identified in the ESFRI application for improvement and to assess the measures that are currently being taken to address the issues	Paul Gaughan and Kieran Reilly	https://docs.google.com/presentation/d/1LCYjaNkTdBoV9UDs4QaAXgsR_hMwV_ks/edit#slide=id.p1
16:40 - 17.00	**JERICO – Label:** Update the assembly on the work done in defining the JERICO Label Committee (JLC) WP5 T5.4. Promote discussion and collect ideas and contributions.	Fabio Brunetti	JERICO-Week 2022_DAY1_JERICO LABEL V1.pptx

NOTES AND MINUTES

JERICO-RI Science Strategy Meeting - STRATEGIC VISION (1H)

Science strategy as defined since JNEXT, ESFRI etc.

JERICO-RI Science Strategy Meeting- From Strategy to Implementation (30')

Review of D1.1 main outcomes – Recommendation for REGIONAL and CENTRAL Implementation

Jukka S. : Some notes for this very good overview:

Scientific challenges: PSS work was specified in 2018-19 while making a J-S3 proposal, while Key/Specific Scientific Challenges were structured in 2020-21. Thus, it is clear that there may be some SSC omitted by the PSS study plan, and we need to make sure to collect required input by other means, where relevant.

Besides societal and scientific challenges, organisational challenges are central in PSSs studies. What are the organisational obstacles preventing us to achieve the best possible solution for coastal observations, and how to go around them.
Regional technology developments are important in PSS, though not explicitly highlighted in study plans. These are topics which best highlight the transfer of knowledge between PSS partners and between PSSs.
PSSs are not heterogenic, but a gradient from limited regions to larger regions and from few participants to large numbers. There exist no definition or ready-made concept for a coastal supersite, so we need to study such gradients as well, what are the constraints. To reflect PSS and IRS heterogeneity and their potentially different maturation, I need to emphasise the relatively short period of PSS and limited funds (maybe between 10-80k€ per partner), this will not create major leaps but allow us to make experimenting at limiting amount of sites. We need to secure that results and lessons learned are appropriately distributed within community
Reflecting the pyramid (Standard, Advanced and Supersite observatories), it aims to describe various levels of observations within a certain region. It also contains non-JERICO components which JERICO collaborates with.

Joaquín Tintoré 11:21 AM
I have the following comments on the very nice presentation from Antoine and the Science Strategy team… : 4 comments:
1) On the 5 pillars of JERICO RI: I would suggest Pillar 2 to be reworded… if possible… monitoring should be observing … to include observation & modelling (when referring to ocean observing, we refer to the whole value chain, including the modelling part – FOO, Framework for Ocean Obs; also Pearlman (2019).
2) PSS capacities / singularities should be better emphasized: back to the origin when we prepared the proposal, PSS are key science and operational "focus" that provide the location/capacities/know how, etc… to address science and societal topics, at different spatial and temporal scales, including data, etc… that could not be done otherwise. The difference with IRSs was clear in the JERICO-S3 proposal and should be clear now also in my view.
3) The JERICO RI capacities for multi-platform integrated coastal ocean observing (this includes observation and forecasting) should be better emphasized, linked to all Scientific Challenges that WE AT JERICO (and not single scientists, and/or other single platform projects or infrastructures…) can address…
On Specific Challenges…
In general, I would like to suggest to enhance the link all with global problems/challenges…More specifically, "water masses pathways", I suggest to rewrite, since it is not really water masses that matter I suggest to rewrite to: Coastal to open ocean and vertical circulation & materials exchanges

Léa_JERICO-S3 Coord. 11:22 AM
Comments from Zoom chat :

fabien lombard (Sorbonne university, LOV) to Everyone (11:01)
biodiversity trend in NWM is existing (through imaging methods) in jerico S3 (and all present through EModnet biology)
but will be presented on Thursday
Laurent Coppola (CNRS - LOV) to Everyone (11:04)
@Fabien lombard: the table list here the actions of the PSS for the duration of J-s3 project. It does not include all existing observations. Same remark could be done for carbon
fabien lombard (Sorbonne university, LOV) to Everyone (11:05)
ok better understand now: it is present (but not in pSS) and the data are channelled (within Jerico activities)
Ian Salter to Everyone (11:14)
I think further emphasis on centralized actions orientated around technology and knowledge transfer would be a valuable and effective initiative.
Luis Felipe Artigas to Everyone (11:17)
Definitely! Totally agree with you Ian!
Carolina Cantoni - CNR to Everyone (11:18)
You have also to consider the other RIs. i.e. the land-sea continuum is mostly a DANUBIUS topic, where this RI is present, and a JERICO topic in other areas
Luis Felipe Artigas to Everyone (11:19)
And the connexions with them that are quite obvious in some PSS and IRSs!
Interactions with external partners are essential no matter what we decide and who we include in the JERICO frame...
George Petihakis (HCMR / GR) to Everyone (11:22)
We are organising / reorganising the landscape because we are seeking a significant +impact. The crucial balance is how much +impact we want vs costs (all sort of costs).

Joaquín Tintoré 11:39 AM
ESFRI…. Very relevant that FR supports re-submission of JERICO-RI… Great news Laurent… Good work of the French team!!!! Thanks!!!
👍3🌱1

11:41
Transnational Access and Virtual Access are the 2 key actions that distinguish RI from other EU initiatives, and they are great outcomes of JERICO-RI that we need to present better and enhance their visibility !!!
👍1
Joaquín Tintoré 11:53 AM
Very clear and very useful presentation & recommendations Laurent and all the ESFRI TEAM. It provides a clear roadmap….

What I believe we need is to establish is an internal system to assure the advancements on the different elements, with follow up, and revision every 3 months for example…

Laurent Coppola 11:56 AM

Agree Joaquim we need regular internal meeting to progress on these points described by LD for the next 2 years

Antoine G. : we should define goals, need to progress towards targets (**Anna R**. agrees)

JERICO-RI Science Strategy Meeting - IMPLEMENTATION AT REGIONAL LEVEL (45mn) - Addressing first periodic report comments on coordination between IRS and PSS - Present regions' viewpoint on RI technical design, collect regions' inputs on the design of the RI with 2 years perspective **JS3 WP3-WP4**
JERICO-RI Science Strategy Meeting - IMPLEMENTATION AT CENTRAL LEVEL (1.5H) i Update of Research Axes (open list) with ongoing activities ==> from network to RI (WP1, 20') ii- Development of central actions (WP1 JS3 and JDS, 50') iii- First elements towards the long-term strategic vision (WP1, 20') **JS3 WP1 + JDS WP1 / JS3 WP3-WP4**

Jay Pearlman to Everyone (14:02)

Are there one or more cross cutting use cases to coordinate/merge the IRS and PSS efforts/outcomes?

Luis Felipe Artigas to Everyone (14:06)

Definitely!

Jay Pearlman to Everyone (14:19)

Should societal impact be an additional column?

Luis Felipe Artigas to Everyone (14:21)

I think it should, as well as the link to environmental managing and support to public policies...

Dominique Denis F. Durand to Everyone (14:21)

Please put your camera on when contributing to the discussions.. I am missing social interaction 😉

arubio to Everyone (14:22)

https://docs.google.com/spreadsheets/d/1rR7rsxvVXfdtS3RHJTb0iVPHepIz2x05CvESbTY0DcE/edit#gid=0

Miguel Charcos (SOCIB) to Everyone (14:31)

I also think societal impact should be added.

Joaquín Tintoré 2:35 PM

I have several comments: (1) I am not terribly excited by having to fill in another table… and we have to be sure that the answers are going to help us to advance towards an ESFRI-RI which is our goal… (2) The Research Axes are not really RA but variables/parameters… . and (3) linked to (1) what is important is not what we do, each one of us, but how strong and needed and fruitful is the collaboration in science, technology, society, data, etc… the added value…!!!

Jay Pearlman to Everyone (14:41)

For the third key scientific challenge "Unravelling and predicting the impacts of natural and anthropogenic changes", the research axes appear all to be anthropogenic?

Should tsunamis, coastal landslides and other natural events be also considered

Luis Felipe Artigas to Everyone (14:57)

Research axis could be biological plankton diversity/abundance/biomass (EOVs and EBVs) and benthic diversity/abundance/biomass (and then we connect to compartments, and meausurements and techniques associated)...and links to pressures and hydrodynalmical biogeochemical cycles...

Jay Pearlman to Everyone (14:59)

@Antoine, can a question on the chart be - what information do you need from other RI or PSS to address the challenge?

Antoine Grémare to Everyone (15:04)

@ Jay As mentioned by Anna we will work on the file and keep your comment in mind

Eric Delory to Everyone (15:04)

Is there a document that can be viewed (and commented?) where to see the nested scientific themes that have been presented. I was not able to find it on the central repository sorry

Antoine Grémare to Everyone (15:08)

It is in D1.1 together with the process of its elaboration. But I do not know whether D1.1 is in the central repository...

arubio to Everyone (15:18)

D1.1 is in the central repository - since it is "consortium only" you hace to be logged in to Access the document

Jay Pearlman to Everyone (15:25)

@Anna, the DTO project is ILIAD see https://www.ocean-twin.eu

arubio to Everyone (15:26)

Thanks!

Joaquín Tintoré 2:48 PM
I think we are confusing the word Transnational… In my view, there is (1) TA which is a EU funded activity by which JERICO-RI is showing the potential for providing external access to many different platforms… and (2) the need to show that our international (more than transnational…) partnership is real, and that we are more than a Network,,, The whole greater than the parts…

Jay Pearlman 2:50 PM
What is the ultimate table we need to sell the RI and how does this table support the information needed for the ultimate table?

Joaquín Tintoré 2:50 PM
good point Jay!

Ian Salter 2:52 PM

It appears critical to be able to demonstrate the utility of a JERICO-RI in achieving scientific goals that the absence of such an RI cannot. Trying to take a step back the question can be framed as what scientific challenges cannot be adequately addressed at present, and how can the implentation strategy of JERICO-RI contribute to these scientific challenges. I agree with Antoine that we should make a clear distinction between EOVs and research axes and what we mean with specific terminologies. The massive body of work behind EOVs was also performed with scientific challenges in mind. For me one major contribution of a JERICO-RI and IRS and PSS is a question of scale, both spatial and temporal. What scientific challenges require EOVs to be measured at larger regional scales, and what technologies are required to address processes at relevant temporal scales. It is perhaps here where we may make a clear demonstration of JERICO in addressing these challenges and how integration between observatories and knowledge transfer can make a tangible difference.

Juanga to Everyone (15:41)

I'm missing here the link with Data Management Best Practices (as close as possible to data acquisition). Also, and more broadly the FAIR principles for provide real integration and interoperability

Dominique Durand (COVARTEC) to Everyone (15:51)

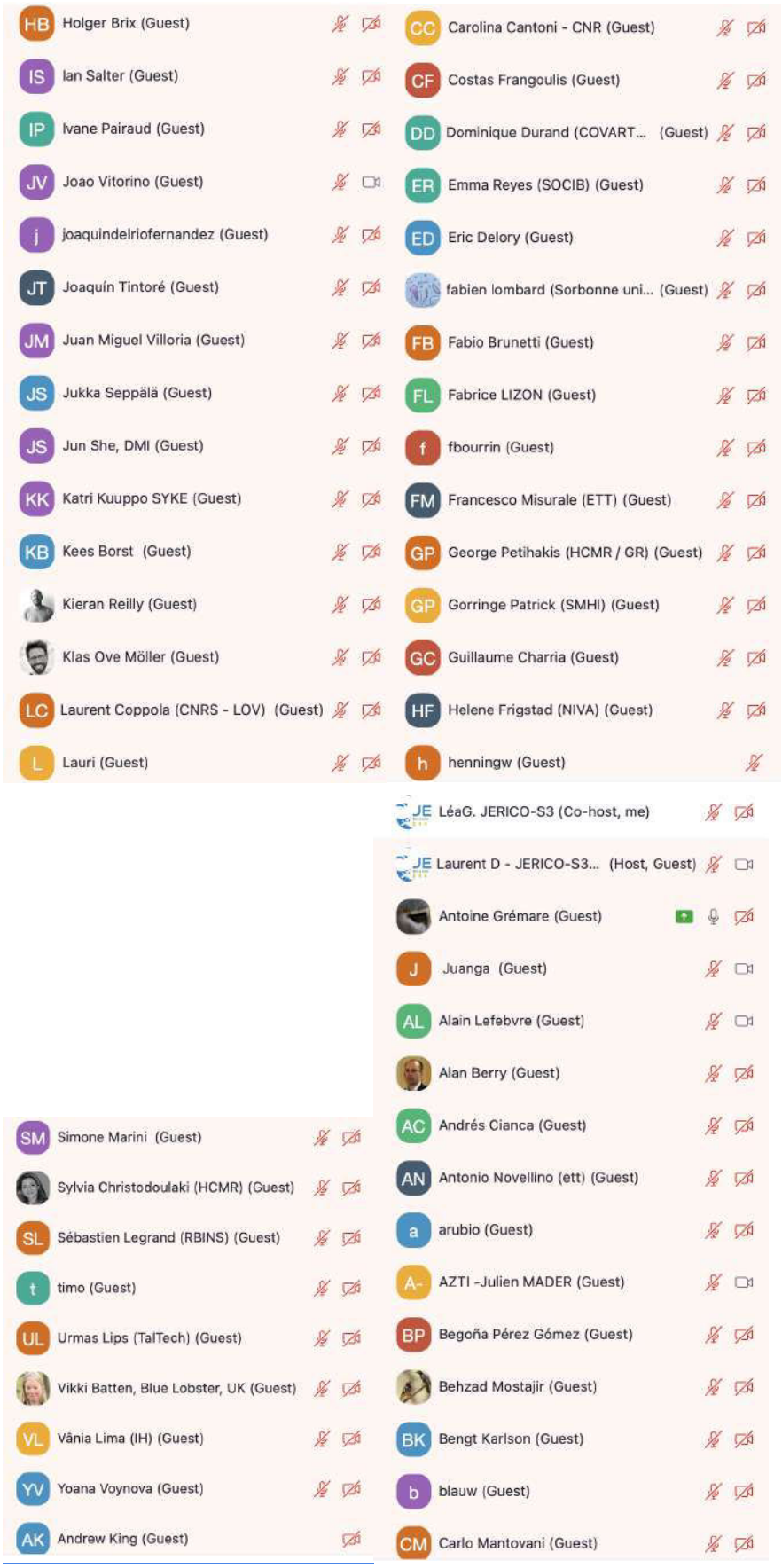
@Juanga: Thanks for your comment. I will include Data management best practices. I did not mention FAIR because , for me, it is not prospective but a current and mandatory expectation. But imagining the best practices for data management and FAIR 2.0 in 10-20 years could be part of the foresight, definitely.

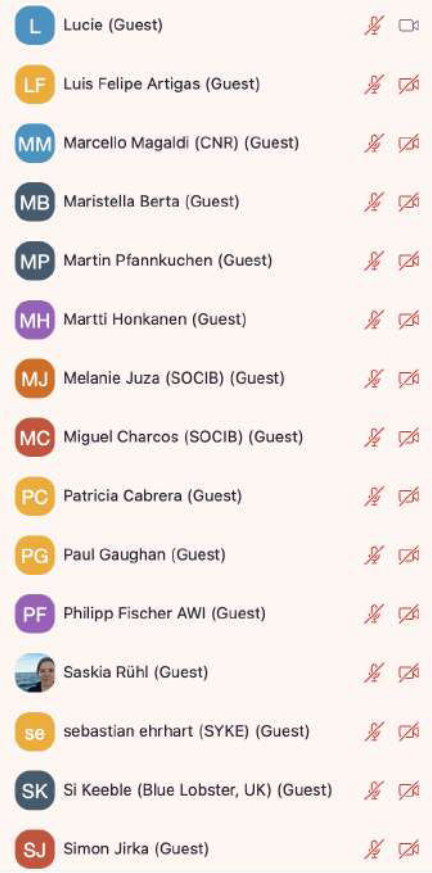
Addressing ESFRI REVIEW and sustainability - Business case **JDS WP4**

George Petihakis (HCMR / GR) to Everyone (16:20)

The proposed structure has to be simplified and possibly separated into 2 segments: the first that we will implement at the first stages and the second after some years of operations

JERICO-Label **JS3 WP5**


Holger Brix (Guest)
Ian Salter (Guest)
Ivane Pairaud (Guest)
Joao Vitorino (Guest)
joaquindelriofernandez (Guest)
Joaquín Tintoré (Guest)
Juan Miguel Villoria (Guest)
Jukka Seppälä (Guest)
Jun She, DMI (Guest)
Katri Kuuppo SYKE (Guest)
Kees Borst (Guest)
Kieran Reilly (Guest)
Klas Ove Möller (Guest)
Laurent Coppola (CNRS - LOV) (Guest)
Lauri (Guest)
Carolina Cantoni - CNR (Guest)
Costas Frangoulis (Guest)
Dominique Durand (COVART... (Guest)
Emma Reyes (SOCIB) (Guest)
Eric Delory (Guest)
fabien lombard (Sorbonne uni... (Guest)
Fabio Brunetti (Guest)
Fabrice LIZON (Guest)
fbourrin (Guest)
Francesco Misurale (ETT) (Guest)
George Petihakis (HCMR / GR) (Guest)
Gorringe Patrick (SMHI) (Guest)
Guillaume Charria (Guest)
Helene Frigstad (NIVA) (Guest)
henningw (Guest)
LéaG. JERICO-S3 (Co-host, me)
Laurent D - JERICO-S3... (Host, Guest)
Antoine Grémare (Guest)
Juanga (Guest)
Alain Lefebvre (Guest)
Alan Berry (Guest)
Andrés Cianca (Guest)
Antonio Novellino (ett) (Guest)
arubio (Guest)
AZTI -Julien MADER (Guest)
Begoña Pérez Gómez (Guest)
Behzad Mostajir (Guest)
Bengt Karlson (Guest)
blauw (Guest)
Carlo Mantovani (Guest)
Simone Marini (Guest)
Sylvia Christodoulaki (HCMR) (Guest)
Sébastien Legrand (RBINS) (Guest)
timo (Guest)
Urmas Lips (TalTech) (Guest)
Vikki Batten, Blue Lobster, UK (Guest)
Vânia Lima (IH) (Guest)
Yoana Voynova (Guest)
Andrew King (Guest)


L Lucie (Guest)
LF Luis Felipe Artigas (Guest)
MM Marcello Magaldi (CNR) (Guest)
MB Maristella Berta (Guest)
MP Martin Pfannkuchen (Guest)
MH Martti Honkanen (Guest)
MJ Melanie Juza (SOCIB) (Guest)
MC Miguel Charcos (SOCIB) (Guest)
PC Patricia Cabrera (Guest)
PG Paul Gaughan (Guest)
PF Philipp Fischer AWI (Guest)
Saskia Rühl (Guest)
se sebastian ehrhart (SYKE) (Guest)
SK Si Keeble (Blue Lobster, UK) (Guest)
SJ Simon Jirka (Guest)

STRATEGY DAY

- LABEL-

Tuesday, March 15

		COFFEE BREAK 15:30-16:00
16:40	**17:00**	JERICO-Label (20mn) **JS3 WP5**

Expected outcomes:

- **JERICO – Label:** Update the assembly on the work done in defining the JERICO Label Committee (JLC) WP5 T5.4. Promote discussion and collect ideas and contributions on JERICO - Label

Type of session: ***Plenary session (P)***

Main reference persons: *(Organisers/leaders)*

Fabio Brunetti (OGS)

SHORT AGENDA

#	Description	Leading person	Link
16:40-17:00	Update the assembly on the work done in defining the JERICO Label Committee (JLC) WP5 T5.4. Promote discussion and collect ideas and contributions.	Fabio Brunetti (OGS)	

WORKSHOP ON TECHNOLOGY GAP ANALYSIS

-PRODUCTS AND SERVICES DAY-

Thursday, March 17

WORKSHOP ON TECHNOLOGY GAP ANALYSIS
Workshop with NRs and J-S3 for technology gap analysis and roadmap (feeding J-DS D2.2).
JDS WP2

Scope of the session:

Progress update on JDS WP2 Technology Outlook and Gap Analysis. We present preliminary results from the questionnaire filled out by nation representatives and input from J-S3 regions. We outline how these results will be incorporated in the technology outlook and gap analysis reports and request feedback on our approach.

Expected outcomes:

- Feedback of community on WP2 work in progress
- Alignment of technology needs by different stakeholders (national, regional, European level)

Targeted audience:

National representatives, J-S3 (PSS and IRS) regions, JDS all WPs

Type of session: Plenary session (P)

Main reference persons: *(Organisers/leaders)*

Anouk Blauw, Jukka Seppala, Helene Frigstad, Lorinc Meszaros, Andrew King, Katri Kuuppo

WHAT IS EXPECTED FROM PARTICIPANTS (if relevant) :

WP2 questionnaire filled out by nation representatives

SHORT AGENDA

#	Description	Leading person	Link
10	Strategy for WP2 'Technical Design' JERICO-RI	Anouk	link
10	Progress and preliminary results questionnaire	Helene	
5	Gaps identified by Jerico-S3 PSSs	Jukka/ Costas	link
5	Gaps identified by Jerico-S3 IRS-s	Andrew/ Martin	
10	Gaps identified at European level (EOOS/ Eurogoos)	Laurent/Inga	link
20	Next steps & Feedback	Anouk	link

NOTES and MINUTES

Strategy for WP2 'Technical Design' JERICO-RI by Anouk

- WP2: Technology outlook → Gap analysis -> Roadmap
- Input from WP1, Questionnaire for the NR´s, JERICO S3 PSS and IRS, European initiatives
- Scope: systems, structure, strategy, skills & staff
- Approach (task 2.1) regional priorities of KSC´s, resolution, methods available → optimised multi-platform approach
- Gap analysis (task 2.2) inventory of current observations, comparison tech outlook to current monitoring efforts, quantification of gaps between present and 10yr desired state, identify regional priority gaps
- presentable results from only nations so far

Discussion, Q&A:

- Felipe A: is this a result of the official monitoring/observation system, or balance of all observations carried out?
- Anouk: yes, this needs to be taken into account
- Antoine G: Use of KSC, in WP1 is used as key scientific challenges, the abbreviations and terminology have to be consistent

Progress and preliminary results questionnaire by Helene

- Questions were formulated already in the proposal → developed in workshops
- Draft out in May for comments
- Answers from six nations still missing from KSC tables, online version will be closed on Friday 18.3.
- Large variations in national funding and coordination
- Additional technical coordination is needed

- Most important KSC difficult to answer

Discussion, Q&A:

- Laurent D: is there coordination on European level?
- Helene: We ask the national coordination within each country, try to cover also the pan-European scope
- Sebastien Legrand: Mentioning Belgium? Difficult to organise a meeting there. Needs to assess what is relevant for JERICO.
- Helene: The national inputs are different, which is shown also by this questionnaire. If more time is needed, let the wp know.

Gaps identified by Jerico-S3 PSSs by Jukka

- Observational gaps due to priorities, traditions and inconsistent methodologies, of knowledge and finding
- Technological difficulties, lack of harmonisation
- Low level sensor systems, TRL etc…
- Noted gaps by the PSS:
- 1) Harmonisation existing observations is slow
- 2) Adopting new technologies has various bottlenecks: TRL not high enough, value chains, valley-of-death in applying new instruments and technologies, critical mass of experts
- 3) merging transnational multinational data is complex (shared priorities, practices and working cultures)
- Noted gaps y the PSS
- 1) modelling vs ocean colour
- 2) sharing forces with other RI´s
- 3) adopting new products by stakeholders is slow for various reasons

Gaps identified by Jerico-S3 IRS-s by Andrew

- Biggest common gaps: lack of
- 1) formalisation of national commitment to regional strategies
- 2) convergence of multidisciplinary data flows
- 3) formal framework
- 4) Multidisciplinary interoperability
- → Further specific questions related to technology gaps
- The IRS technology gaps could be retrieved by compiling the national responses to questionnaires?

Jukka: additional input from PSS/IRS is needed to the gap analyses: when and how?

Gaps identified at European level (EOOS/ Eurogoos) by Laurent

- Regions - Working groups - task teams
- Things are going slow, as normal, in EOOS activities started only 1-1,5 years ago
- Task teams: ferry box, tide gauges, gliders, HFR, argo floats, fixed platforms → best practices, white papers, scientific publications
- Main gap in capability to perform biological analyses (e.g., ferrybox WG)

- EOOS expert working groups: Biological observation WG, Coastal WG, Data mgmt exchange and Quality WG, Science advisory WG, Technology plan WG, Ocean literacy WG
- ROOS: 5 ROOS areas (= regional operational oceanographic systems)
- EOOS Technology Forum, dedicated to tech gap analysis; 1st Tech forum in 2020 outcomes, **2nd Tech Forum 2022 , 22-24 March 2022** on the technology we will need for the ocean we want, big data, AI, current landscape, sensors & technology,...
- Integration of biological obs networks in the focus
- European oceanOBS Task Team
- OC advancing key priorities identification.. Into the coast, support new emerging obs networks

Discussion, Q&A

- Laurent C: Gliders WG best practices is going well, also the fixed platforms WG, god progress
- George P. EuroGoos is very successful, because it is fighting regional challenges. The task teams are technological hubs, splitting the integration of original ideas of EOOS; has to be seen as an example; EOOS is about observing, more general, while Eurogoos is more operational working on the whole value chain (?)

Next steps & Feedback by Anouk

- Schedule:

Time	Activity
ASAP!	Completed questionnaires by all nations
Now – May 2022	Compile input from PSSs and IRSs (through deliverables and personal comm.)
Now – May 2022	Collect information from European initiatives such as EUROGOOS and EOOS
May 2022	Draft Technology Outlook report ready for review (nations, regions, WP1)
June 2022	Present & discuss final Technology Outlook report in Tallinn workshop
September 2022	Draft Gap Analysis Report ready for review (nations, regions, WP1...)
JDS week autumn 2022	Present & discuss Gap Analysis Report
JDS week autumn 2022	Discussion on Roadmap development
April 2023	Draft Technology roadmap report ready for review
May 2023	Technology Roadmap report delivered

Further questions:

- How to keep the stakeholders involved during the JDS project?
- How to link interests and stakeholders from water management and research?

Closing → Coffee break at 10:11

JERICO-CORE

-PRODUCTS AND SERVICES DAY-

Thursday, March 17

JERICO's ACCESS AND SERVICES TODAY

JERICO-CORE presentation (1.5H) (P)

A plenary follows by a Q&A section, based on the following 4 topics:

- JERICO-CORE program perspective - [scientific case: D2PTS and Blue Cloud (Iberian Margin) use cases, coordination with EPOS and continuation under WP11].
- Current status technical development and deployment at IFREMER's Datarmor.
- JERICO-DS current outcomes: requirement compilation, draft access policy, technical design roadmap.
- Heritage of JERICO - JERICO-CORE in Europe and at global level.

JS3 WP11-WP7 / JDS WP3

Scope of the session:

The Session will review the objectives, design and implementation of JERICO-CORE. It will address the longer term design and planning for support of the JERICO RI and the evolution of J-CORE to a global capability.

Expected outcomes:

- Understanding of the capabilities and directions of JERICO-CORE
- Improved coordination of program elements that interact with JERICO-CORE
- Opportunities for applications across Europe and more broadly

Targeted audience: JERICO partners

Type of session: ***Plenary session (P)***

Main reference persons: *(Organisers/leaders)*

Jay Pearlman, Miguel Charcos, Sebastien Legrand

WHAT IS EXPECTED FROM PARTICIPANTS (if relevant) :

Questions and discussion

SHORT AGENDA

#	Description	Leading person	Link
1 15 min include 3 min Q&A	JERICO-CORE program perspective - [scientific case: D2PTS and Blue Cloud (Iberian Margin) use cases, coordination with EPOS and continuation under WP11]	Jay Pearlman	tbd
2 20 min include 5 min Q&A	Current status technical development and deployment at IFREMER's Datarmor.	Miguel Charcos	Presentation
3 7 min	Measuring Virtual Access	Damià Rita	tbd
4 20min include 5 min Q&A	JERICO-DS current outcomes: requirement compilation, draft access policy, technical design roadmap.	Sebastien Legrand	Presentation
5 15 min	Heritage of JERICO - JERICO-CORE in Europe and at global level.	Jay Pearlman	tbd
6 20 min	Discussion	Team	na

NOTES AND MINUTES

NOTES and MINUTES

- **General comment:** Actually 5 presentations
- **Martin Pfannkuchen:** The Interreg project AdriaClim is establishing an ERDDAP network for the Adriatic
- **Joaquín Tintoré:** Thanks @Sebastian and all team for a very clear presentation on a complex & multiple dimensions topic where JERICO Team is leading developments around JERICO-CORE, from RI Platforms, to data, resources, catalogues, thematic centres & services, access policy, accesses and metrics, … that is and are all,… essential for progressing on the ESFRI Roadmap…
- **Anouk:** Question: how can countries further contribute (beyond the initial interviews) to the developments in JDS-WP3? Are there any documents that we can comment on?
- **Emilie:** Anouk, There is nothing in place at the moment to collect those further contributions, but we will take it at our next WP3 telcon, decide on the way forward and inform you. :-)
- **E. Delory:** RT services and sensor metadata services are work in progress. Are there any standards?

- **S. Legrend**
- **J. Pearlman:** pending exercise with WP7 (demonstrator). Link to Joao's work for the use case to be included in JERICO-CORE
- **D. Durand:** question about prioritisation and feedback mechanism.
- **J. Pearlman:**
- **M. Charcos:** feedback users and feedback mechanisms
- **S. Legrand:** nations committee to gather nations feedback
- **L. Coquempot:** @WP3 team : we should discuss tomorrow during the « Status on users session » how the Jerico User Committee could contribute to the design/implementation of the J-CORE ..
- **J. Tintoré:** In response also to Dominique… : we are convinced this is a 2 way street and progress should be iterative… The problem is that the funding is very limited and that we are all overloaded, but please all partners interested in contributing, ideas, etc… contact us and we will do our best…

JERICO Demonstrators

JERICO Smart Integrated observation platform

C-EGIM and BEYOND

-PRODUCTS AND SERVICES DAY-

Thursday, March 17

JERICO Demonstrators **JERICO Smart Integrated observation platform** JS3 WP7, WP1, WP5 + SMILE Demo site representative(s) cEGIM **1. Status and plans** - inform on status of the development - inform on plans for demonstration **JS3 WP7**
COFFEE BREAK 15:30-16:00
JERICO Demonstrators **JERICO Smart Integrated observation platform** JS3 WP7, WP1, WP5 + SMILE Demo site representative(s) cEGIM **2. INVOLVEMENT OF OTHER WPs and BEYOND** - firm up requirements and commitments - Involve partners from other tasks and WPs **JS3 WP7**

Scope of the session:

Expected outcomes:

The session is aimed at providing information on:

- the current status of the cEGIM design and development;
- the demonstration site, the scientific background of the demonstration, the involved sensors and the intelligent services being developed

The session will end with a discussion on possible synergies with other WPs, suggestions and decisions for the next project period.

Targeted audience:

General

Type of session: Plenary

Main reference persons: *(Organisers/leaders)*

Eric Delory / Simone Marini

SHORT AGENDA

#	Description	Leading person	Link
1. 5’ 14:30	Introduction to the session	Eric Delory/Simone Marini	Link
2. 10’ 14:35	Science case questionnaires outcome and the JERICO strategy that guided the planned demo activity (5 min + Q&A)	Anna Rubio	Link
3. 10’ 14:45	Description and development status of the cEGIM (5 min + Q&A)	Jerome Blandin	Link
4. 10’ 14:55	Description of the process that guided the demo site selection (5 min + Q&A)	Andrés Cianca	Link
5. 10’ 15:05	Introduction of the PSS English Channel SMILE site (5 min + Q&A)	Alain Lefebvre/Pascal Claquin	
6. 10’ 16:00	Sensors involved in the demo activity (5 min + Q&A)	Alain Lefebvre/Dominique Durand	Link
7. 10’ 16:10	Intelligent services for cEGIM (5 min + Q&A)	Simone Marini	Link
8. 10’ 16:20	Status of the Innovative sensor package development (5 min + Q&A)	Catherine Boccadoro/Dominique Durand	Link
9. 30’ 16:30	Involvement of other partners, tasks, WPs: opening up for synergies in other activities in J-S3, discussion, decisions.	Eric Delory/Simone Marini	Link

JERICO DATA MANAGEMENT

-PRODUCTS AND SERVICES DAY-

Thursday, March 17

JERICO DATA MANAGEMENT (1H30) (P)

A session dedicated to biological data management. This will show the flow of data from the sensor all the way to EMODnet biology (Imagery).
Audience: WP5/6 groups + relevant WP3/4 experts.

JS3 WP6-5

Scope of the session: To present the best practices to be published and workflow established under the work carried during the last 2 years in the framework of JERICO-S3 to establish best practices ensuring effective data flow towards the European data infrastructures-EurOBIS and EMODnet Biology.

Expected outcomes:

- To inform imaging instrument users on how to make their data publicly available
- To establish actions for those to applying these dataflows in their pipelines
- To identify long-term actions

Targeted audience: Plankton imaging instrument users/data managers

Type of session: ***Plenary session (P) // Breakout rooms (BR)***

Main reference persons: *(Organisers/leaders) Patricia Cabrera, VLIZ*

Jean Olivier I.,and Fabien L, LOV.

WHAT IS EXPECTED FROM PARTICIPANTS (if relevant) :

- Interactions and feedback from potential users of the workflow presented
  - For example IFCB users (SMHI and SYKE)
  - Establish next actions for those to use the workflow.
- Feedback of best practices presented: is it easy to apply the Imagery data format suggested by users?

SHORT AGENDA

#	Description	Leading person	Link
15 min	Summary of the best practices for imagery data management. Q&A	Patricia Cabrera	
15 min	ECOTAXA workflow: Zooscan dataset submission to EurOBIS. Q&A	Jean Olivier Irisson	
15min	Longer-term plans on imagery best practices beyond data and synergies with other projects Q&A	Fabien Lombard	
5-15min	Discussion and feedback	Patricia Cabrera	

NOTES AND MINUTES

NOTES and MINUTES

→ **SECRETARY.IES (responsible for notes and minutes)** :

Attendees: 43 attendees

Patricia Cabrera, Lennert Scheppers, Lea G.,Fabien Lombard,Jean Olivier Irrision,Laurent D.
Alain Lefebvre
Andres Cianca
Antoine Gremare
Athanasia Papapostolou
Begona Perez Gomez
Behzad Mostajir
Carolina Cantoni
Costas Frangoulis
Fabio Brunetti
Francesco Misurale
George Petihakis
Gerasimi Anastasapoulou
Ivan Vlasiciek
Jay Pearlman
Joao Vitorino
Joaquin Tintore
Jukka Seppala
Kaisa Kraft
Kees Borst
Klas Ove Moller
Lana Grizancic
Luari
Luis Felipe
Lumi
Maristella
Marta de Alfonso
Martin Pfannkuchen
Melanie Juza
Miguel Charcos
Nelli Runk
Patrick Gorringe
Peter Thijse

Pauline Simpson
Saskia Ruhl
Sebastian Ehrhart
Sebastian
Veronique Creach

Q&A

- Jay Pearlman: Should the manuals be in the ocean best practices system?
    - Fabian L.: YES, Ideally. But now we are looking into using: Protocols.io is more interactive (kinda github for protocols), get doi, get comments from the community. It is REUSABLE!
    - Jay: No need to hurry for the paper: Deadline for the publication in Frontiers is not static. It gets renewed every year

- Behzad Mostajir: Are there any experts to classify very small ciliates (from FlowCam)?
    - JO: Yes, but not at species level

- Martin Pfannkuchen: Did I get it right that the data path towards OBIS requires 2 or 3 human interactions?
    - JO: Yes; classification and checking has to be done by a human. Some steps currently marked with a human can be automated through the API.

    - JO: What was the rationale behind: 1) having 2 classes of information in the sampling event column (e.g. sampling event and sample). 2) having mixed taxonomic levels, including summary values in the species name column, while this is resolved through the darwin core?
    - JO: Long explanation for the case with detailed taxo but not enough confidence vs coarse taxo and confidence enough to provide concentrations.

    - At what stage is the phytoplankton part in ECOTAXA? Are there plans?
        - JO: It is already. Yes phytoplankton is part of ecotaxa (e.g. using Imaging flowcytobot/flowcam/planktoscope)

Jukka Seppala:

- Can ECOTAXA be part of the JERICO Core? So the image classified can be part of it for users to re-use

- JO: The initial plan was to do that. But at the moment it follows the flow to emodnet and it is also grabbed in BLUE CLOUD

- Ian Salter:
    - Is it interesting to aggregate taxonomy and traits ?
    - Patricia: WoRMS do have a lot of traits linked to all species, but I'm not sure how much there are for plankton: https://www.marinespecies.org/aphia.php?p=taxdetails&id=104466#attributes

- Alain Lefebvre: FYI within the EC PSS, we are working on Transfer Learning to optimise the automatic recognition of taxa therefore limiting the errors due to automatic classification and consequently we try to reduce the "human" sorting step which is time consuming (but important, to rationalise)

- OBPS Workshop in November? To present something there.
    - Conversations with Jay Pearlman already started to organise this with Fabien and Patricia

JERICO IN RIs NETWORK

-INTERCONNECTION DAY-

Wednesday March 16, 10:30

DISCUSSION - WORKSHOP (1.5H) (P)
How will JERICO integrate within the infrastructure network, how will the ERICs and RIs work together and what can be JERICO's place
With JS3 **WP5-6**, **WP3-4, WP1**
JS3 WP2

Scope of the session:

This JERICO in RIs network session will gather input from the JERICO community regarding the further strategy to collaborate with other RIs. This will, to a large part, depend on the outcome of day one of this JERICO week and also to a lesser degree on the Identity session. In particular, we would like to work towards a list of contacts in the particular regions (IRSs and PSSs, but also contacts outside those regions) and discuss if it would be a productive approach to use these existing connections to prioritize which other RIs to involve into more in depth discussions and to define the level of integration with those RIs and to better define boundaries. The session will start with a short overview of our activities and suggestions for the way forward, followed by gathering updates from the individual regions. The last part of the session will aim to discuss how to use our existing connections to maximize JERICOs visibility and secure our positioning in the international research landscape.

Expected outcomes:

- Update participants on the status quo
- Update on existing collaborations
- Feedback from the JERICO community regarding issues and ways to handle them
- Strategy/plan for further interaction with RIs

Targeted audience: *JERICO partners*

Type of session: ***Plenary session (P)***

Main reference persons: *(Organisers/leaders)*

Holger Brix, WP2 Task Leads

SHORT AGENDA

#	Description	Leading person	Link
5 min	Introduction	Holger	JERICO in RIs NETWORK
10 min	Summary of previous activities	Holger	
30 min	Updates from the regions	Regional leaders	
40 min	Discussion	Holger	
5 min	Wrap UP	Holger	

NOTES AND MINUTES

Eric Delory to Everyone (10:52) : http://www.marinerg-i.eu // https://aquaexcel.eu

DISCUSSION

Sebastien Legrand : What about the BEERI, ENVRI ?

Laurent Delauney : ENVRI is good but is all environmental RIs, it is a good place to share. But bilateral agreements are maybe more efficient for a start

Dominique Durand : advocating for bilateral dialogue with RIs. Many places to discuss with other RIs, all forums are good. How do RIs see us ? Go from speculation to information → progress on understanding their strategies, what are the interactions. Better achieved in bilateral talk. **Coordination must be leading the discussions**, present in all bilateral meetings.

Martin Pfannkuchen : Taking **aims** for these discussions → importantly, the ESFRI application. Looking for arguments that 1) consolidate the JERICO-RI, and 2) how JERICO fits in RIs landscape. One way : have in advance a recognition from other RIs, MoU that result from other RIs. What is JERICO's added value in their view ?

Marcello Magaldi : we have the coastal space that is recognised by the reviewers and other RIs. Coordinate with them, when JERICO starts, what do they need. The boundaries (geographical and scientific) could be different with different RIs. → Need a MoU with Danubius for the North for example, could be different from in the Med etc.

George Petihakis : We don't need to show what our differences are. We need to show what we can do together, what JERICO and DANUBIUS can do together and increase the capacity. Change to more positivity. It's a competitive environment, but we need to get out of this competition mindset and show cooperation instead.

Joao Vitorino to Everyone (11:17) : Agree with the comment of Georges. focus in complementarity and add value of RIs cooperation

Laurent D (JERICO-S3 Coord) to Everyone (11:18) : +1 with George… in the ESFRI application, we have presented the COLLABORATIVE aspect with other RIs… in a too much simple and synthetic way (time was missing)… we should carry on in this direction…

Dominique Durand to Everyone (11:18) : +1 George - ESFRI is focusing on filling gaps in the landscape and EC on added-value by joining effort between RIs. This is our context

Alain Lefebvre (11:18) : See Lucie Cocquempot's presentation from yesterday about collaboration and cooperation

Begoña Pérez Gómez (Puertos del Estado) (11:20) : It would be nice to know details about existing MoU's already available with EPOS ERIC (relevant for example for sea level rise and tsunamis) and BlueCloud, in order to understand the cooperation lines with these two initiatives

Antoine Mangin : missing key messages. What is JERICO, sustainability ? How will this improve their life ? (example of the Space Agency).

Paul Gaughan (11:23) : Could space agencies be approached about involvement in Jerico TA call ?.....they could access multiplatforms for ground truthing of satellite data ? (+1 from Dominique D.)

Antoine Grémare (11:23) : Full agree with Antoine. The two components of the MoU could correspond to the central (top) and regional levels mentioned yesterday. Also basically agree with Georges. we have to be positive, things we could do with other RIs couls be based on both levels as well (may be with an empasis on the regional one)

Ian Salter : we need to be specific in the MoUs what the collaboration is and what is the added value

Dominique Durand : MoUs are planned in the DoA. But first we should initiate dialogue, and the MoU will come naturally.

Antoine Mangin : remember that MoUs are not engaging, maybe discuss some more binding contracts ?

George Petihakis : at this stage we don't have legal status so we can't have a legal binding contract. An MoU is good at this stage, demonstrates our will to cooperate

Laurent Delauney : an MoU is a lot of work already. It is the opportunity to discuss with high level people in RIs, steer the discussion in a direction that we need

Laurent D (JERICO-S3 Coord) (11:25): The MoU with EPOS is quite technical and designed for JERICO-S3 to be able to use the computing code developed by EPOS for their VRE. (**+1 from Joaquin**)

The one for bluecloud is as well designed to arrange the integration of the JERICO VRE in to the blue cloud VRE. This one is still in progress

Joaquín Tintoré (11:26) : MoU are not binding contracts,… but they can be very useful to establish clear tracks for cooperation… (**+1 from Laurent D**.)

Marcello Magaldi : proposing priority on e-LTER, Danubius, Lifewatch ?

Holger Brix : MoUs have no formal frame, so you can choose the level of details (case of DANUBIUS, we have examples, can expand the existing collaboration).

George Petihakis : Good to collaborate with RIs that are close, but we need to collaborate with RIs far away (EMSO, offshore ? Even out of the marine domain) → start thinking out of the box

Veronique Creach (11:34) : what about EMBRC-ERIC?

Holger Brix : how many can we reasonably achieve in the next 2 years ?

Laurent Delauney : initiate contact with every RI we want to cooperate with, ASAP. Maybe not establish MoUs with all of them. After this first round of bilateral discussion, we'll have an idea of strategies and priorities

Fabien Lombard : discussions on-going with EMBRC-ERIC and Blue Cloud (phytoplankton → activity at the frontier of the 3 RIs). Do not ignore existing points of contact

Sébastien Legrand (RBINS) (11:38) : Nicolas Pade (EMBRC) is ready to discuss with JERICO and I'm quite sure he will be pleased to engage for a MoU (**+1 from Veronique C**.)

Joaquín Tintoré (11:39) : I believe we have to be selective and clear to identify where the added value of real collaborations is maximised and how we can achieve them. Having 10 MoUs is not the objective but the formal tool… I would say… 2 or 3 really good ones, reinforcing US, JERICO-RI, would be ok…

Antoine Grémare (11:40): At the French national level there is a project in evaluation calles FUTURE -OBS (augmented observation) with both EMBRC and JERICO partners. We will see how it goes...

Veronique Creach (11:40) : yes but there is no MOU. but good ground to do one

Fabien Lombard (LOV, Sorbonne University) (11:41) : yes of course…. but the discussions are ongoing and if it needs to go thought a MOU we don't start from scratch

Timo Tamminen (11:41) : to fulfil our mission statement as a junction of coastal seas, terrestrial and atmospheric spheres, we should place in top3(5?) EMBRC, DANUBIUS and LTER. Others are easier (marine, AQUACOSM...).

Dominique Durand : talking in the frame of our ESFRI objective. On the techno side, we can approach RIs is a concrete manner other that just strategic. **ACTION : create a table with the RIs and priorities on how and what we want to talk about with them** (depending on their status, existing interactions etc.) (+1 from **George P.**)

Behzad Mostajir : we should have an objective for each region, what we are missing

Eric Delory to Everyone (11:45) : The EPOS MoU came indeed from a very practical need in WP7 task 7.5 to build on existing development that could then be reused and sustained for Jerico RI e-infrastructure (JERICO-CORE)

Dominique Durand : e-LTER and Danubius are funded for a Preparatory Phase. We have to understand their strategy, their ambition, where they should be in 2024 in order to find the right added value. e-LTER and Danubius are developing now, interesting for us. Then a dialogue with ICOS and EMBRC, because they are further, and talking together.

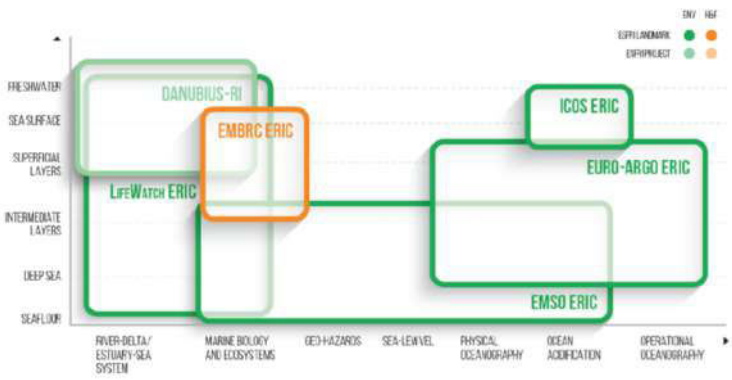
Antoine Gremare : priority on Danubius and EMBRC. But we do not negotiate on the question of the coastal domain.

Fabien lombard (LOV, Sorbonne University) (11:52) and LTER have already some marine ones (California/ Napoli as examples) (+1 from **Carolina C.**)

George Petihakis (HCMR / GR) to Everyone (11:55) : At a more general level we are already collaborating with the other RIs both at the level of BEERi as well as on EOOS Operations Committee which is chaired by Laurent. Regarding DANUBIUS and LTER they are very localised with a small spatial coverage in relation to the coastal zone

Lauri to Everyone (11:56) : Dominique: Very much true. Such discussions (ICOS, ELTER), on marine domain dimension going on in Finland. It is well possible that they try to play us "out" from the ESFRI roadmap.

Timo Tamminen to Everyone (11:58) : Agree with the comment of George reg. spatial restrictions, but conceptually they are important for interfaces when you look from the Commission/ESFRI point of view.



Joaquín Tintoré to Everyone (11:59) : Very good points and figure from Marcello! on the Marine.. ESFRI Roadmap 2018 (+1 from Joao V.)

Holger Brix : collaboration with the satellite community. What do we want to do ?

Antoine Mangin : MoU is not indicated. But we can propose JERICO as an additional tool

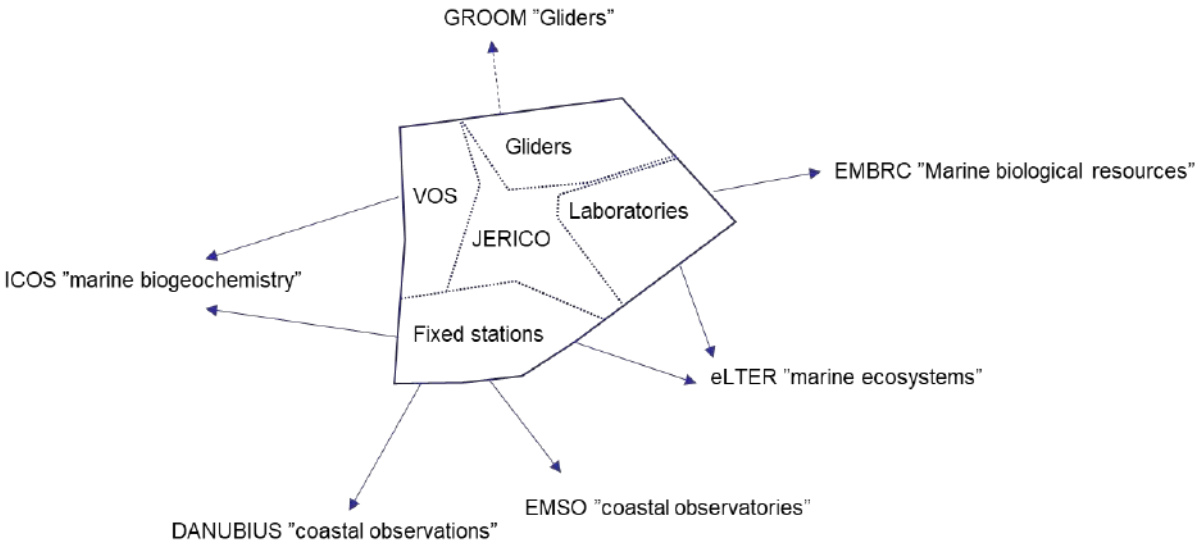
(in the next 6 months) → JERICO made a support letter

Sébastien Legrand (RBINS) to Everyone (12:02) : Satellite imagery / ELTER . In Belgium, the in-situ network for ocean colour image validation has found an umbrella under LTER..

Lauri to Everyone (12:03) : https://elter-projects.org/national-lter-networks

"The LTER Finland network was established in 2006 and consists presently of 11 highly instrumented sites/research platforms, representing the main ecosystems (marine, terrestrial, lake, subarctic, urban) in Finland."

- Existing ESFRI's currently re-defining their domains to include coastal seas
- Most of the JERICO facilities are already part of existing ESFRIs listed below and described in listings to cover "coastal seas"
- If all components are already part of existing ESFRI's, there is no need for JERICO



Laurent D (JERICO-S3 Coord) to Everyone (16:17)

Lauri, you are looking at JERICO as a platform RI only… as your diagram si showing, JERICO in here to facilitate integration of these platforms in order to make coastal science progressing

Lauri to Everyone (16:27)

Laurent:

If that logics sells to EU. I don't think there are currently such coordinating ERIC's, all existing are based on platforms.

And (at least some of the) current infras are more than happy not to have such integrating infra but prefer to include new component in their domain and rather coordinate marine domain components themselves.

I'm very much pro co-operation with infras, working together with several all the time. But fight over power and resources will be (is already) hard and we have "predators" around.'

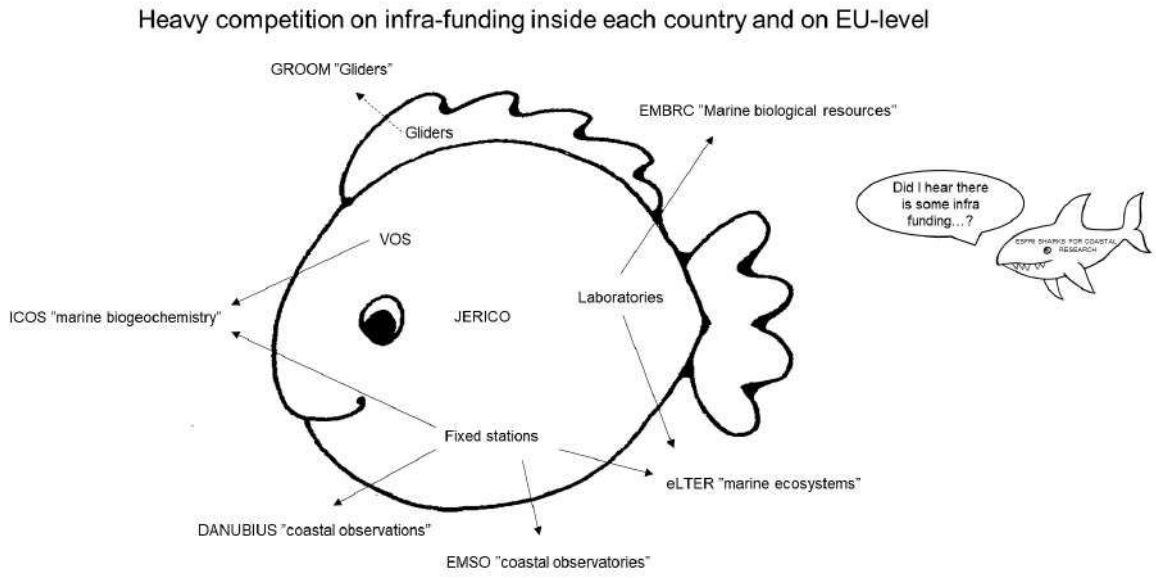
If there is time, in stead of focusing ourself and our own needs and internal feelings, would be also good to look the competition situation.

Each country have more or less fixed funding for research infras and there is heavy competition on this funding. What is the situation in each country, and how do we win these local, national competitions?

The existing infras do not necessarily want new infras to share the resources and many are also interested in expanding their current domains.

Those already on ESFRI roadmap have big competitional advantage.

The competition in Finland is hard and I assume there is a same situation in other countries.



REGIONS IN JERICO

-INTERCONNECTION DAY-

Date and time

REGIONS WORKSHOP : PSS progress meeting (2H)

(Plenary)

- highlights of PSS Actions during the first year of implementation to be presented to WPs .

--> Discussing Scientific objectives:

How are the scientific objectives defined in WP1 followed by PSS and IRS?

JS3 REGIONS (WP3-WP4)

COFFEE BREAK 15:00-15:30

Scope of the session:

Workshop will provide an update of recent developments in Pilot Supersites. It will highlight the examples of transnational and trans-institutional integration of observations and related activities during the first year of PSS implementation. Workshop will also reveal the observed key challenges in the integration and collaborations. Workshop continues in facilitating between PSS and between WP connections, and also connection to JERICO-DS. PSS experiences in connecting with ERICs and other communities will be presented and discussed.

PSS and IRS experiences will be discussed with an aim to build sustainable coastal observing systems using the integrated multi-platform approach and transnational cooperation (as a trademark of JERICO-RI).

Expected outcomes:

- Update the JERICO-RI partnership what are the developments in PSSs
- List of actions to improve between PSS integration, and to facilitate links to other WPs
- Communication of the different levels of connections to ERICs and other communities
- Identification issues where other JERICO-S3 and JERICO-DS WPs require input from PSSs

Targeted audience:

PSS leads and partners
JERICO-S3 and JERICO-DS WP and Task leads

Type of session: ***Plenary session (P)***

Main reference persons: *(Organisers/leaders)*

Jukka Seppälä (SYKE), Costas Frangoulis (HCMR)

WHAT IS EXPECTED FROM PARTICIPANTS (if relevant) :

SHORT AGENDA - PSS

#	Description	Leading person	Link
1. 10’ 13:00	Introduction to the session, including short summaries for D4.2 and D4.3	Jukka Seppälä / Costas Frangoulis	Link to all-in-one presentation
2. 40’ 13:10	Integration within PSSs, 10 min per PSS - Recent highlights of PSS activities - Examples of integration within PSSs - Challenges in the integration within PSSs	PSS leads	
3. 10’ 13:50	Discussions		
4. 20’ 14:00	Connecting between PSS, between WPs and other initiative, including discussions - Thematic meetings to be arranged - WP contributions to be discussed - Streamlining activities	PSS leads, WP leads	
5. 20’ 14:20	Partnership building, interfacing with other RI’s and communities, including discussions - PSSs current connections to ERICs etc. presented, regional vs. strategic - Commentary from WP2 asked		
6. 20’ 14:40	OTHER ISSUES, like Where WPs need PSSs input -		

Joaquín Tintoré to Everyone (16:28)
It seems to me that we are rewriting the history from PSS and IRs… I am not sure it is the right time… PSS were very clearly defined from the beginning. Its where later included as networks (following @Martin comments)
Andrew King to Everyone (16:31)

https://docs.google.com/presentation/d/1fxTdkt4ZVn0UgRdEla7qSCXRuOMGJb_JI8AVNIEJgYI/edit?usp=sharing

Me to Everyone (16:32)
Just say the word and poof, I send everyone to the rooms 🙂
Joaquín Tintoré to Everyone (16:32)
In relation to the Integration of IRS and PSS … of the next session, I would like to share with all a recent work we have done under EuroSea, that is I believe relevant to set the scene… just a 1st step…https://www.frontiersin.org/articles/10.3389/fmars.2021.737671/full

Laurent D (JERICO-S3 Coord) to Everyone (16:34)
Good doc Joaquin… thanks a lot

COFFEE BREAK 15:00-15:30
REGIONS WORKSHOP : IRS progress meeting (1H) (**Plenary** and/or **Breakout**) - finalising the roadmap, presentation of IRS status **POSSIBLE BREAKOUT SESSIONS (TBC)** Followed by general discussion, feedback (30min) **JS3 REGIONS (WP3-WP4)**

Scope of the session:

This workshop will provide a forum for IRS leads to present updates related to ongoing and future work with relation to the roadmap plans for each IRS that include: integration (within each IRS and connecting IRSs to other PSSs and communities), interoperability/harmonisation, business/user cases, and organisation/structure. Breakout sessions will follow to promote IRS-PSS interaction and cooperation - explore commonalities with relation to operational/technical aspects as well as scientific (e.g., KSCs).

Expected outcomes:

- Updates from each IRS to finalise Deliverable 3.2
- Identification of how each IRS can improve/learn from other IRS plans
- Steps forward for cooperation and actions between WP3-WP2 with relation to integration with other communities, WP3-WP5 with relation to harmonisation, and WP3-WP9 with relation to business cases/structure
- Starting point for IRS-PSS cooperation (WP3-WP4) to be followed up at workshop in Tallinn in June 2022

Targeted audience:

IRS leads and partners (all of WP3)
PSS leads
WP2, 5, 9 leads

Type of session: ***Plenary session (P) // Breakout rooms (BR)***

Plenary and breakout

Main reference persons: *(Organisers/leaders)*

Andrew King
Martin Pfannkuchen

WHAT IS EXPECTED FROM PARTICIPANTS (if relevant) :

SHORT AGENDA - IRS

#	Description	Leading person	Link
1) 15:30-16:30	IRS updates x5 (8 minutes presentation + 4 minutes questions/discussion)	Andrew King	
2) 16:30-17:00	Breakout discussion: 1) Norwegian Sea IRS + KASKEN IRS + Baltic PSS + North Sea PSS (lead: Jukka) 2) Bay of Biscay IRS + Iberian Atlantic Margin IRS + English Channel PSS (lead: Andrew) 3) Northern Adriatic Sea IRS + NW Med PSS + Cretan Sea PSS (lead: Martin)	Andrew King, Jukka Seppala, Martin Pfannkucken	JERICO-Week 2022_IRS_PSS_breakouts_Wed1630

JERICO IDENTITY

-INTERCONNECTION DAY-

Wednesday, March 16, 9:00

MISSION / VISION / COMMON MESSAGE (45min)
Where we are today
What we need to work on
What do we agree on / disagree and why, and what can we do to move further

COMMUNICATION TOOLS (15min)
What we have so far; is it enough, what do we need ?

JS3 WP1-WP10 + JDS WP6

Scope of the session:

The JERICO Identity session is aimed to provide the opportunity for a broad discussion with the partners about key aspects of JERICO communication, identifying the main challenges and ways to move forward. The session will start with an overview of the main developments in communication that were conducted during the second year of the project followed by the presentation of near future activities and development that are specifically directed to community engagement (both internal as well as external communities). The session will then continue with a discussion about JERICO key messages, recalling the existent key messages and discussing how the JERICO community identifies with these messages and the eventual need (or not) to update them. The last part of the session will be aimed to discuss how the community can work together to maximise the impacts of JERICO-RI, by getting partners feedback on the achievements and challenges in the implementation of the Dissemination and Exploitation Plan and the ways we can improve in the following months.

Expected outcomes:

- Partners to be informed of new achievements, tools and activities in project communication
- Feedback from partners on key messages
- Feedback from partners about the success and challenges in implementation of the Dissemination and Exploitations Plan and ways to move forward
- Improve strategy for monitoring of implementation of DEP based on partners feedback

Targeted audience: *All partners*

Type of session: ***Plenary session (P)***

Main reference persons: *(Organisers/leaders)*

JOAO VITORINO, SIMON KEEBLE, DOMINIQUE DURAND

SHORT AGENDA

#	Description	Leading person	Link
5min	Introduction	Joao	
10 min	Communication Plan Today	Simon	
10min	Strengthening the Community	Joao	
10 min	Key messages	Dominique	
15 min	Maximising Impacts Together (DEP)	Dominique/Joao	
10 min	Discussion	Joao	

NOTES AND MINUTES

Marcello Magaldi 9:38 AM

Hello everybody. I was wondering for the brochure and communication material if we could just update/edit the one that was put forth in the past using the same graphical identity, fonts etc...

9:39

just to be clear the one we can find here --> https://fr.calameo.com/read/0056612681ffac969f2d3

Joao Vitorino 11:13 AM

Hi Marcello. Thanks for the comment. Yes we know this brochure and yes we can update and use it as one of the key communication materials to reach some of our users and stakeholders communities. We would also like to evaluate the interest of introducing another version of brochure with a different graphic design and a more developed content that could be usefull/work better for some stakeholder communities. This is what we were proposing to be evaluated in the next months.

EUROGOOS FP TT meeting
EOOS operation committee
Technology Forum

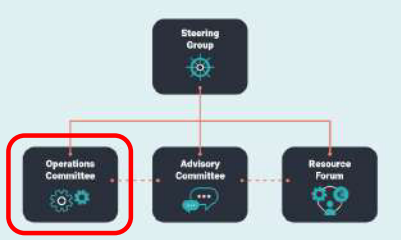
6th March 2022
(Remote)

Laurent Delauney
Laurent.delauney@ifremer.fr

Operations Committee

EOOS Technology Forum
Building bridges and creating opportunities.

EOOS OC — Operations Committee



EOOS OC — Operations Committee

The **EOOS Operations Committee** (OC) represents **ocean observing implementers at national, regional and pan-European levels** to help with the long-term sustainability of the ocean observing efforts in Europe and to implement EOOS progressively.

EOOS OC — Operations Committee

Established in 2020, the committee builds on the experience provided by (55 persons)

- **EuroGOOS**,
- relevant **European Research Infrastructures**
- **earth observation agencies**
- **research vessel operators**
- **network of marine stations**,
- **EuroGOOS Regional Operational Oceanographic Systems (ROOS)**,
- **task teams**
- **working groups**.

It also builds on and supports the **Global Ocean Observing System (GOOS)**, through the **GOOS National Focal Points for Europe**
=> principal liaison point to each nation **to establish a two-way dialogue** between the national implementers of ocean observing, EOOS and GOOS.

EOOS OC — Operations Committee

The EOOS Operations Committee key responsibilities are to:

- Provide **information about relevant opportunities for EOOS**;
- Support the flow of **information on ocean observing** activities **across scales**;
- Identify **system requirements** to meet **user needs** for sustainable ocean observing;
- Support and enable the **EOOS implementation plan**;
- Provide **advice to the EOOS Steering Group** about **changes** in the ocean observing landscape and **identify actions** for EOOS to further its goals and objectives;
- **Advocate** for coordinated and integrated sustained ocean observing system;
- **Contribute to the mapping** of infrastructure, technology and human capacity;
- **Identify shared priorities** through the development of a work plan;
- Provide **advice on EOOS added value.**

Operations Committee

- **Integration of biological observing networks**
- **European OceanOPS Task Team**
- **OC Advancing key priorities identification**

Biological observing networks

Activity 3. Implementation of EOOS observing system elements

Task 3.4 Technologies mapping

Support **technological innovation** to implement *in situ* biological observing systems and develop **smart technologies** for cost-effective automated monitoring of biological variables.

Biological observing networks

Improving and integrating Europe's capability in biological ocean observations

- To develop and streamline the **implementation** of biological essential ocean variables (**EOVs**) and marine Essential Biodiversity Variables (**EBVs**) and to increase the number of monitoring programmes that include these variables
- Support efforts of '**Mapping** existing ocean observing **infrastructures and capabilities**' related to biological observing networks
- **Marine Macroalgae workshop** will aim to reach an agreement on observation strategies, data sharing practices, and best practices and standards for Europe.

European OceanOPS Task Team

EOOS Concept note on MAPPING

https://www.eoos-ocean.eu/materials/

LINK to the Mapping concept note

- Integrated perspective of platforms
- Diagnostics of observing network
- Better planning
- Link different scales
- Improve visibility of different networks
- Allow better engagement with stakeholders

Actions

ACTION 2.4: Interested members to form a task team to work with OceanOPS to explore the feasibility of having a European regional node/dashboard.

ACTION 2.5: Identifying the observing network elements in Europe that are currently outside OceanOPS remit but are a priority for Europe.

Intersessional meeting 2nd July 202: "Monitoring ocean observing capability in Europe"

ACTION: EOOS OC Chair to send a call to members to nominate for this task team

OC Advancing key priorities identification

A survey of the EOOS OC members was conducted to identify 3 key priorities for the EOOS OC to focus efforts.

The three top priorities identified from the survey are:

1) Improve ocean observing system implementation into the coast
2) Supporting emerging (new) observing networks
3) Support nations to develop National Committees to improve national coordination
4) Develop mechanisms for information and knowledge exchanges

OC Advancing key priorities identification

A survey of the EOOS OC members was conducted to identify 3 key priorities for the EOOS OC to focus efforts.

Technology Forum 2022

EOOS Technology Forum
Building bridges and creating opportunities.

The EOOS Technology Forum

The EOOS instrument, envisioned by EuroGOOS, to respond to the need for marine observing activity to **keep up** with a constantly evolving technology landscape.

A cross-cutting platform to help **define and prioritize** needs, **disseminate** knowhow and experience, and **foster partnerships** to develop the right tools to meet requirements.

Technology Forum 2022

EOOS Technology Forum
Building bridges and creating opportunities.

Our main objectives are to:

- **Break down barriers** by building a sharing community of individuals, groups and organizations
- **Map and assess the technologies employed** in operational oceanography
- **Identify the main gaps** in operational areas
- Encourage users to **share their expertise** and **help manufacturers** and **service providers** meet user requirements
- Establish **what technologies are needed** to systematically measure the Essential Ocean Variables (EOV) defined by GOOS
- **Foster partnerships** to promote developing instrumentation to meet observing requirements
- **Identify concrete themes** and propose **future workshops** and events

Technology Forum 2022

EOOS Technology Forum
Building bridges and creating opportunities.

1st EOOS Tech FORUM (2020) outcomes:

- **Identify current and future trends in technology**, that will allow compliance with present and future ocean observational needs and requirements;
- **Facilitate synergies between science and industry sectors in the field of marine observing in Europe** by promoting adequate instruments, e.g. an online tool enabling
- stakeholders to exchange information and identify matchmaking opportunities;
- **Foster continuous dialogue and exchange** between different stakeholders in the public and private sectors within the framework of a regularly held event; **Develop shared strategies to jointly promote the value of ocean observing activities and technologies** to policymakers, industry, and broader society.

Technology Forum 2022

EOOS Technology Forum
Building bridges and creating opportunities.

2nd EOOS Tech FORUM (22-24 March 2022 - Virtual)

Thinking Ahead: The Technology of the Science We Will Need for the Ocean We Want

- Setting the scene technology for the UN Ocean Decade
- The technology we need and role of technology to achieve UN Ocean Decade goals
- Sensors and technology
- Keynote "current technological landscape"
- Panel discussion "how do we achieve a distributed, embedded, multi-parameter ocean network"
- Instrument platforms and integration (e.g. IoT)
- Keynote "new developments in big data approaches"
- cyber-infrastructure, AI and applications
- Panel discussion: Recommendations, what can we do within this decade and the role of EOOS Tech Forum

WRAP-UP

JERICO-WEEK 2022
START AT 10am CET

Sorry for the wrong info

We do not manage to send the erratum
(Ifremer mailing system failure)

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

JERICO-WEEK 2022

15th - 18th March 2022
(Remote)

Laurent Delauney, Lea Godiveau, Simon Keeble

jerico-S3@ifremer.fr
design.jerico@ifremer.fr

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

JERICO-WEEK 2022 - General introduction

JOIN THE SLACK ! https://join.slack.com/t/jerico-ri-collab/shared_invite/zt-p0r7t752-YiHoMfipY2WQOrv12QUiqw

A few other useful links :

- JERICO-Week#2 CENTRAL DOC with Agenda-at-a-glance
- ZOOM Main Room (same link for the entire week) : https://zoom.us/j/4633526762
- MIRO Account, to be used as needed (guest account : jerico@ifremer.fr // Jerico2024
- COMMUNICATION TOOLS
- JERICO-RI WEBSITE (new version !)

#	Description (duration in min)	Leading person	Link
1	JERICO Week at a glance (10')	Laurent Delauney	
2	Technical Organisation (5')	Lea Godiveau	
3	Dissemination during the J-Week (5')	Simon Keeble	LINK
4	Questions and discussion (5')	Coord and attendees	

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JERICO-WEEK 2022 - Introduction

JERICO-RI is a marine research infrastructure

that addresses the challenge of **observing the highly complex and variable coastal seas**
at a **Pan-European** level within the context of the **EU policy drivers**
to support **excellence in marine coastal research in Europe**.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

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to support **excellence in marine coastal research in Europe**.

JERICO-S3 project objectives:

- to provide a **state-of-the-art**, **fit-for-purpose** and **visionary** observational Research Infrastructure (RI)
- to provide **expertise** and **high-quality data** on European **coastal** and **shelf seas**.
- to support **world-class research**, **high-impact innovation** and a window of **European excellence worldwide**.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

JERICO-WEEK 2022 - Introduction

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at a **Pan-European** level within the context of the **EU policy drivers**
to support **excellence in marine coastal research in Europe**.

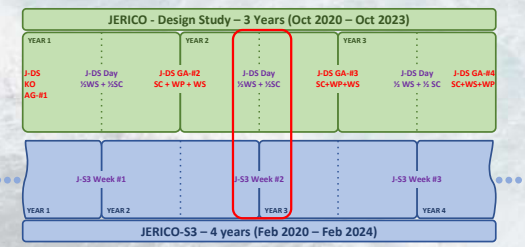
JERICO-Design Study project objectives:

- **to build on nations' will and involvement** to co-construct the JERICO RI,
- from the **scientific and technical design** to **the business plan** and **governance strategy**, supporting future engagement during the ESFRI process.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

JERICO-WEEK 2022 - Introduction

J-S3/JDS Meetings timeline



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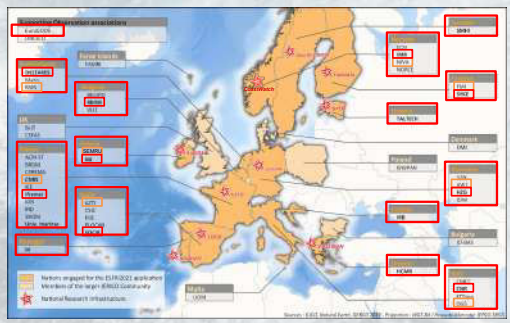
JERICO-WEEK 2022 - General introduction

J-S3 characteristics:

44 partners

48 months (feb 2020 - Feb 2024),

~9.9 M€



J-DS characteristics:

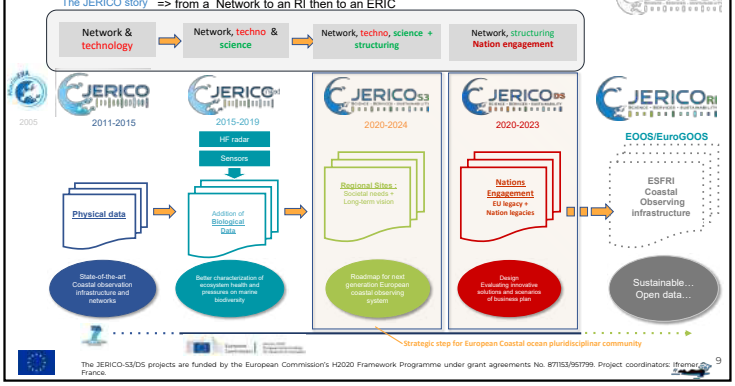
15 contractors + 8 third parties,

36 months (oct 2020 - Oct 2023),

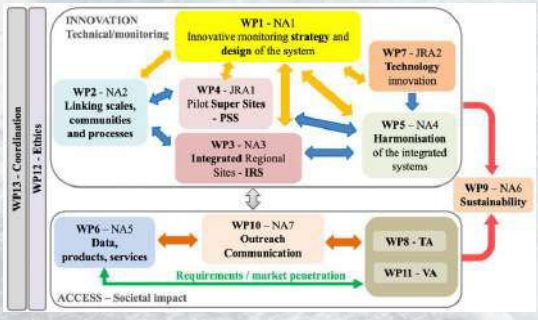
~2.5 M€

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

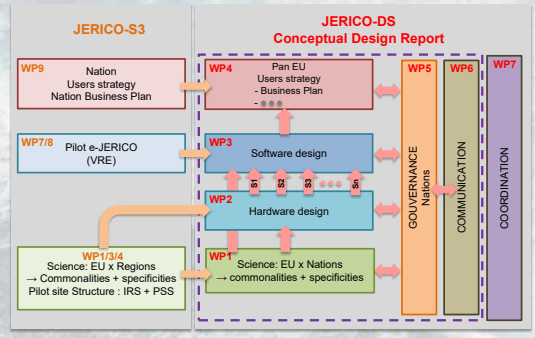
The JERICO story => from a Network to an RI then to an ERIC



JS3 description of WPs



JERICO-S3 / JERICO-DS connections



Technical Organisation - JERICO-Week (5')

SLACK, JERICO-RI Collab: please join ! We will use it to convey import information about the sessions, we can have side-discussions, ask for your opinion etc.
https://join.slack.com/t/jerico-ri-collab/shared_invite/zt-p0r7t752-YiHoMfipY2WQOrv12QUiqw

AGENDA.s

- AGENDA : global agenda available at all times in the JERICO-Week2022 Central Doc (save link in your web browser !)
- DETAILED AGENDAS per SESSION : active link in each cell in the global agenda (below each session block)

NOTES and Minutes

- Will be taken within each DETAILED AGENDA per SESSION (in GoogleDocs, links in the global agenda above)
- Sessions leaders need to appoint one or several "secretaries" for their session (or one for each sub-part) → **the Coordination team will only be there to supplement the notes-taking effort but may not be reliable at all times (but everyone can help taking notes or adding their thoughts)**

Zoom and roundtables etc. : same link for the entire week, and breakout rooms will be designed from that same room
→ *https://zoom.us/j/4633526762*

COFFEE & LUNCH Breaks will happen here : https://www.wonder.me/r?id=1da9d9ce-3fa2-4066-af29-ee8697c3cb03

Communication
2 Things to do this week

1) Communicate via Twitter, Facebook etc

2) Send a tweet / photo about something in your presentation or workshop to:

simon@bluelobster.co.uk

Use social media

Here is a list of Twitter Hashtags and Mentions/Handles that could be used when communicating during the JERICO week - there will be others but these can be used for ideas - the most important of which is: #JERICORI.

Hashtags

#JERICORI #H2020 #ResearchInfrastructures #Innovation #MarineScience #OceanScience #OceanObservation #CoastalObservation #WaterMonitoring #OpenData #Ocean #Marine #Science #ResearchImpactEU #Oceanography #EarthObservation #BlueGrowth #Assessment #openaccess #FAIR

Mentions/Handles

@JERICORI
@EU_H2020
@EU_MARE
+ partners

Note from the EC:

European Commission social media channels

The social media platforms the Commission and its agencies use can help you expand your audience by sharing your posts.

Try the following:

• Add #H2020 to your tweets. Be part of the online conversation about Horizon 2020 and your tweets become searchable.

• Tag @EU_H2020 in your tweets. Relevant posts are sometimes shared on EU social media accounts.

What to post:

☐ ~~Screenshots of people on zoom~~

Look at the introduction of sessions for text ideas

Use appropriate screenshots of images or diagrams

#Hashtags and mentions

Mention colleagues

Engage...

Send a tweet / photo about something in your presentation or workshop to:

simon@bluelobster.co.uk

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-Week 2022_virtual, March 15-18

1) Communicate via Twitter, Facebook etc

COMMUNICATION TOOLS (Hashtag, logos and others)

1) Send a tweet / photo about something in your presentation or workshop to:

simon@bluelobster.co.uk

JERICO-Week#2_19-23 April 2021

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-Week 2022_virtual, March 15-18

This work was supported by the JERICO-S3 and JERICO-DS project. These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153 / 951799.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-Week 2022_virtual, March 15-18

Development of central actions (WP1 JS3 and JDS, 50')

JERICO-RI Science Strategy Meeting - IMPLEMENTATION AT CENTRAL LEVEL
TUESDAY 15h

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-Week 2022_virtual, March 15-18

Development of CENTRAL ACTIONS - OVERVIEW

Two main work sessions:

1- JERICO-S3 Week#2 Session Science Strategy: Laying down the bases of the development of future **Central Actions or "Thematic Centres"** for the integrated approach to #JERICORI Science Challenges - *April 2021*

First ideas - Need for Central actions

2- J-DS GENERAL ASSEMBLY : Joint JDS WP1 / JS3 WP1 Science strategy WORKSHOP - *November 2021*

Concept

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-Week 2022_virtual, March 15-18

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First ideas - Need for Central actions

2- J-DS GENERAL ASSEMBLY : Joint JDS WP1 / JS3 WP1 Science strategy WORKSHOP - *November 2021*

Concept

3- Our session today

Review of the concept and why we need central actions

Towards a list of CAs

Next steps towards the development of a CA Implementation Plan

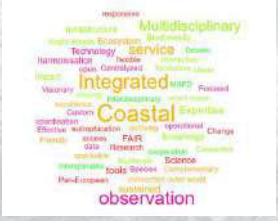
The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-Week 2022_virtual, March 15-18

Development of CENTRAL ACTIONS - OVERVIEW

JERICO-S3 Week#2 Session Science Strategy: Laying down the bases of the development of future **Central Actions or "Thematic Centres"** for the integrated approach to #JERICORI Science Challenges

What three words should be part of the definition of a Thematic Center ?



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JERICO-Week 2022_virtual, March 15-18

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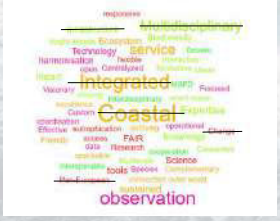

JERICO-RI : integrated pan-European multidisciplinary multi-platform research infrastructure holistic appraisal coastal marine system changes

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Development of CENTRAL ACTIONS - CONCEPT

J-DS GENERAL ASSEMBLY : Joint JDS WP1 / JS3 WP1 Science strategy WORKSHOP

- ✓ Need to develop Central Actions, following D1.1 recommendations
- ✓ Both internal/external needs for the development of Central Services. Mentimeter
- ✓ Alignment with ongoing JERICO-S3 tasks is needed
- ✓ Also to consider what is happening in other RIs or initiatives at European and/or global levels. Mentimeter

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Development of CENTRAL ACTIONS - BUILDING THE CA PORTFOLIO

- ✓ Need to develop Central Actions, following D1.1 recommendations

Central ACTIONS can make the difference between being seen as a RI and not an addition of Coastal Observatories (ESFRI)

Need to arrive at the next ESFRI application with a portfolio of CA, taking into account the alignment with ongoing JERICO-S3 tasks

Clear added value to progress towards a European RI

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Development of CENTRAL ACTIONS - BUILDING THE CA PORTFOLIO

- ✓ Both internal/external needs for the development of Central Services.

Different nature of Central Actions: Technology, products (modelling and others), transfer of expertise (both in and out of JERICO-RI)

Need to elaborate a list aligned ongoing JERICO Activities and needs

- e-JERICO porfolio
- TA
- Tacking of KSCs (insuring coordination in Science)
- Technology
- Products/indicators
- Modelling
- Transfer of expertise
- Coordination with other RIs

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Last mentimeter - Open discussion

For a Central Action in the field of SERVICES, can you provide some specific ideas, identify existing or future needs? Mentimeter

J-DS GENERAL ASSEMBLY

- Aquaculture-related services like better place to host cages, provide better dispersion processes, etc…// **'Digital twin of the ocean'-connected services**
- Support for setting up Coastal RI
- Common procurement
- Policy briefs
- **RI Strategy/ Implementation**
- **Science, technology and R&D**
- **SERVICES**
- Access to expertise and experience in monitoring
- European calibration/metrology services
- Modification of observations for specific needs, specific technical servic
- **Communication** hub (both internal or external) for any initiative connected to coastal observation
- **Relations with SMEs** & stakeholders & private sector
- Provide harmonized quality controlled data for portals such as EMODNET and COPERNICUS // JERICO-RI data for DTO
- **DATA / DATA PRODUCTS**
- **TECHNOLOGY / EXPERTISE**
- Creation products from data, JERICO climatology
- Innovation survey (enabling implementi… high-value technological innovation broadly)
- **Communication/ networks**

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Last mentimeter - Open discussion

In view of collecting EXTERNAL needs for the development of central services, which communities/initiatives should we consider? Mentimeter

J-DS GENERAL ASSEMBLY

- Regional sea conventions (OSPAR, HELCOM etc.)
- Institutes
- Modelling communities
- Others RIs
- Holistic observation of the coastal ocean: linking observations from science, industry and national monitoring
- Third sector of research (actors linking scientists and society)
- Private sector, Stakeholders
- Nations (WP1 survey)
- Countries outside the European Union ?

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Next steps

- DATA / DATA PRODUCTS
- SERVICES
- TECHNOLOGY / EXPERTISE

- Other RIs or initiatives at European and global levels
- Nations though JERICO-DS
- Private sector Stakeholders

JERICO-RI boundaries in the landscape of RIs

Clear definition of JERICO-RI products and services

List of CAs

Plan for Implementation of CAs

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JERICO DS — JERICO S3

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JERICO-WEEK 2022
Coordination strategy recommendation

15th - 18th March 2022
(Remote)

JERICO S3 — JERICO DS

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JERICO-WEEK 2022 - Coordination Introduction

- ESFRI APPLICATION FEEDBACK
- PERIODIC REPORT FEEDBACK
- KEY RECOMMENDATIONS

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ESFRI Application and next steps

Overall results

	Low	Medium	High	Very high
Scientific case				
Scientific excellence				
Pan-European relevance				
Socio-Economic Impact				
User strategy / Access policy				
E-needs				
Implementation				
Stakeholder commitment				
Preparatory work & Planning				
Governance, management, human resources				
Finances				
Risks				
Overall findings				

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ESFRI Application and next steps

Analysis of the evaluation of the ESFRI committee

=> Positive aspects

- JERICO-RI is a **STRONG** proposal…
- The system **reached a certain level of maturity**…
- The RI **underpins many spheres of human activity** and is **able** to contribute to investigations **across the range of scientific disciplines in the coastal oceans**.
- It has an **explicit** and **clear** multidisciplinary focus.
- **Europe needs such initiative and coordinated long term marine observation system.**
- The group has a track record and **credibility** and, **importantly has excellent linkages to user networks.**
- It covers **all aspects** of coastal seas environment with **up-to date approach.**

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ESFRI Application and next steps

Analysis of the evaluation of the ESFRI committee

- **Topic to improve**
  - The **preparation phase** should be clarified.
  - The preparatory work and planning need to be further developed and **agreed by the member states.**
  - The **business case** needs to be largely improved, important weaknesses in the financial aspects.
  - **Financial commitments** as a RI si provided **only by the lead country.**
  - The project should better highlight **the commitment given by Member States** in order to show the **sustainability of JERICO RI as a research infrastructure that can operate independently of EU support.**
  - How much of these **national activities will become part of the new JERICO-RI.**
  - Requested documentation is just outlined, **not yet approved by the member countries.**
  - The **governance** shows some weaknesses.
  - it would be good to analyse in more in-depth the **users' needs** to optimise the e-infrastructure.
  - We should demonstrate how the RI will contribute to meeting current **grand challenges.**
  - **Overlap** with already **existing RIs** should be better managed.
  - Demonstrate how it intends to make the **step-up** from being **an observational network to becoming a RI.**

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ESFRI Application and next steps

Analysis of the evaluation of the ESFRI committee

- **General feedback**

  The proposal did **not clearly demonstrate:**
  How the initiative will go **beyond a network concept** to establish a common RI.
  How it will **fit into the current landscape**.
  Weaknesses on the financial dimensions beyond the EU funding.

- **General conclusions**

  On the basis mainly of **weaknesses in implementation issues** *(preparatory work, governance and finances)*,
  JERICO is not recommended at this stage to enter the ESFRI Roadmap.

  After finalisation of the design study and better developed and supported plans for the infrastructure,
  it is likely to be in a good position to apply for the next ESFRI Roadmap.

- **ESFRI Roadmap Application planned in 2024**
- **France support a re-submission**

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Periodic report feedback

- **Transnational Access was commented many times by the reviewer:** *Number of projects funded, variety of countries in projects, call duration, gender balance, dissemination*
- **Extension of partners (actors) in IRS and PSS was mentioned many times in various themes.**
- **Need of a Concrete plan to create frameworks across nations (transational coordination) (linked to IRS and PSS) was mentioned many times.**
- **maturity level of the PSSs and IRSs may actually widen through the course of the project => the sites will work independently rather than in a collaborative fashion was mentioned many times.**
- **Extension to Black Sea and North Africa was mentioned.**

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Key recommendations for the next 2 years (JS3 and JDS)

Summary of key GUIDELINES

- *We must show the added value of a pan-European RI.*
- *We must engage nations in the consolidation of JERICO-RI.*
- *We must interact with other RIs.*
- *We must engage new non JERICO-RI institutions.*
- *We must consolidate and define JERICO-RI products.*

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Key recommendations for the next 2 years (JS3 and JDS)

ESFRI application review + 1st periodic report review =>

- **JERICO-RI is dedicated to provide services (TA and other types).**
- **JERICO-RI is dedicated to be inclusive => gathering new actors, regionally (e.g. non JERICO-RI institutions) and nationally (e.g. Black Sea).**
- **JERICO-RI should well fit into the current landscape.**
- **Nation engagement should be reinforced.**
- **JERICO-RI is dedicated to have a pan european dimension => "Transnational" should be reinforced.**
- **JERICO-RI should go beyond a network concept to establish a common RI.**

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Key recommendations for the next 2 years (JS3 and JDS)

- **All regions and sites are included in JERICO-RI and therefore in a further ESFRI application, this, regardless of their level of maturity.** There will be probably no differentiation done in the ESFRI application.
- **IRS to Interact with PSS to benefit from the experience gained within JERICO-S3.**
- **Nation engagement, Region engagement => Interaction btw JS3 and JDS**
- **We must show the added value of a pan-European RI, thus transversal collaboration/coordination is mandatory to :**
  - **Demonstrate Trans-Site, Trans-Region, Trans-National, Trans-RIs, etc, collaboration.**
  - **Defining centralised actions (thematic centers ?) => Technology, products (modelling and others), transfer of expertise (both in and out of JERICO-RI), etc.**

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Key recommendations for the next 2 years (JS3 and JDS) (continued)

- *We must show the added value of a pan-European RI, thus transversal collaboration/coordination is mandatory to :*
  - **IRS/PSS should practically interacts with « regional » components of other Research Infrastructures.**
  - **coordinate the tackling of KSC and insuring that all SSCs and RAs are addressed).**
  - **Identify most relevant scientific objectives + their contribution to societal challenges (to be taken from JERICO lists).**
    - **SSCs**
    - **RAs**
  - **Develop an implementation strategy to address these challenges more effectively (from data acquisition to exploitation).**

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Key recommendations for the next 2 years (JS3 and JDS) (Continued…)

Summary of key GUIDELINES (reminder)

- *We must show the added value of a pan-European RI.*
- *We must engage nations in the consolidation of JERICO-RI.*
- *We must interact with other RIs.*
- *We must engage new non JERICO-RI institutions.*
- *We must consolidate and define JERICO-RI products.*

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Addressing ESFRI REVIEW and sustainability - Governance

Lucie Cocquempot on behalf of
JS3 WP9 + JDS WP5

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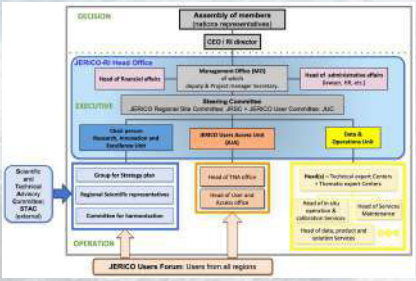
Governance : Starting point

Governance scheme from the JERICO-RI Application



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Governance : Starting point

ESFRI Application Overall results :

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Risks				
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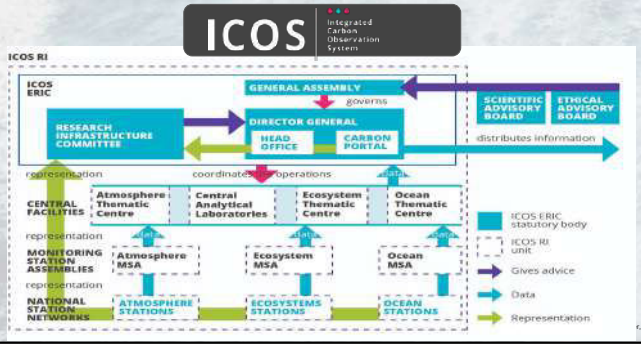
Other examples :

Distributed RIs consists of a Central Hub and interlinked National Nodes



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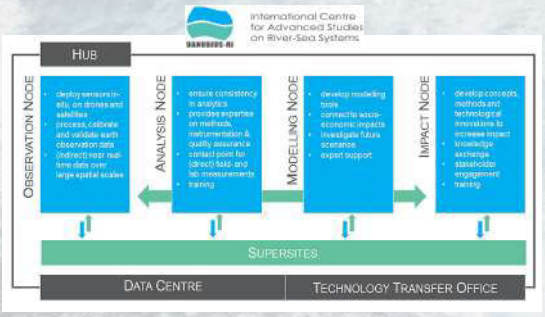

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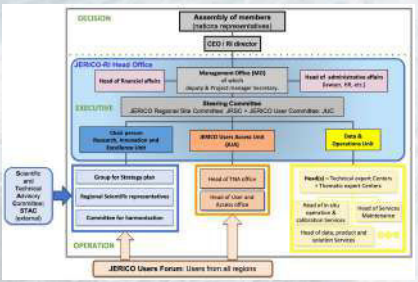
Governance : Starting point

Governance scheme from the JERICO-RI Application



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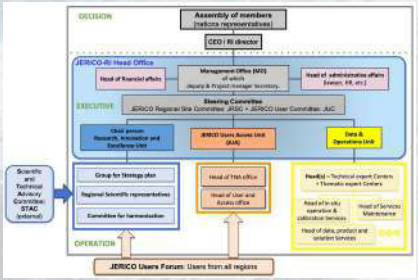
Governance : ~~Starting point~~

Governance scheme from the JERICO-RI Application



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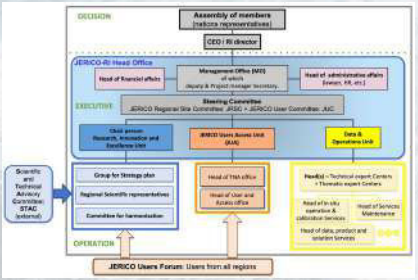
Governance : Ending point

Governance scheme from the JERICO-RI Application



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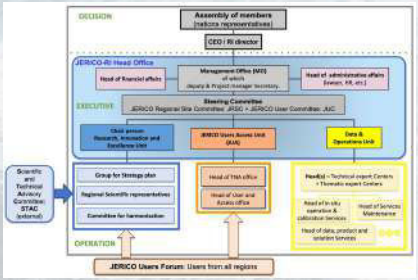
Governance : Ending point -> Target

Governance scheme from the JERICO-RI Application



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From theory to reality .. 2022-2024 The experimentation phase

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From theory to reality .. 2022-2024 The experimentation phase

Mathematics (Kurt Gödel, 1931) has shown us that a **system cannot be both** :
- Complete
- Complex
- Coherent

Kurt Gödel, 1925

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From theory to reality .. 2022-2004 The experimentation phase

Mathematics (Kurt Gödel, 1931) has shown us that a system cannot be both :
- Complete
- Complex
- Coherent

Kurt Gödel, 1925

We have an image of what our governance will be like (target)

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From theory to reality .. 2022-2024 The experimentation phase

Mathematics (Kurt Gödel, 1931) has shown us that a system cannot be both :
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- Complex
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Kurt Gödel, 1925

We have an image of what our governance will be like

Because **the coastal environment is complex…**

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From theory to reality .. 2022-2004 The experimentation phase

Mathematics (Kurt Gödel, 1931) has shown us that a system cannot be both :
- Complete
- Complex
- Coherent


Kurt Gödel, 1925

We have an image of what our governance will be like

Because **the coastal environment is complex**

we need to have a pragmatic approach and start moving forward on a coherent governance that will eventually evolve into something more complete and complex.

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From theory to reality .. 2022-2004 The experimentation phase

Mathematics (Kurt Gödel, 1931) has shown us that a system cannot be both :
- Complete
- Complex
- Coherent


Kurt Gödel, 1925

We have an image of what our governance will be like

Because **the coastal environment is complex**

we need to have a pragmatic approach and start moving forward on a coherent governance that will eventually evolve into something more complete and complex.

To learn by making
We need to start implementing a governance V.0

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From theory to reality .. The experimentation phase

In the context of the ESFRI Proposal not accepted…

The challenge :

The opportunity :

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From theory to reality .. The experimentation phase

In the context of the ESFRI Proposal not accepted…

The challenge :

JERICO needs to have :
- an open, dynamic, creative, innovative community

Central HUB

Decentralized actions
(Regional/local components)

The opportunity :

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From theory to reality .. The experimentation phase

In the context of the ESFRI Proposal not accepted…

The challenge :

JERICO needs **to find the right balance between**:
- a tightened governance, focused on efficiency

Central HUB

- an open, dynamic, creative, innovative community

Decentralized actions
(Regional/local components)

The opportunity :

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From theory to reality .. The experimentation phase

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From theory to reality .. The experimentation phase

In the context of the ESFRI Proposal not accepted…

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JERICO needs **to be :**
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Decentralized actions
(Regional/local components)

The opportunity :
- to strengthen our motivation : our community exists and structures itself without the support of funding

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From theory to reality .. The experimentation phase

In the context of the ESFRI Proposal not accepted…

The challenge :

JERICO needs **to be :**

- a tightened governance, focused on efficiency
  Central HUB
- an open, dynamic, creative, innovative community
  Decentralized actions
  (Regional/local components)

The opportunity :

- to strengthen our motivation : our community exists and structures itself without the support of funding → Engagement

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From theory to reality .. The experimentation phase

In the context of the ESFRI Proposal not accepted…

The challenge :

JERICO needs **to be :**

- a tightened governance, focused on efficiency
  Central HUB
- an open, dynamic, creative, innovative community
  Decentralized actions
  (Regional/local components)

The opportunity :

- to strengthen our motivation : our community exists and structures itself without the support of funding → Engagement
- to be rigourous : this is requirement to be effective and to meet our (users) needs

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From theory to reality .. The experimentation phase

In the context of the ESFRI Proposal not accepted…

The challenge :

JERICO needs **to be :**

- a tightened governance, focused on efficiency
  Central HUB
- an open, dynamic, creative, innovative community
  Decentralized actions
  (Regional/local components)

The opportunity :

- to strengthen our motivation : our community exists and structures itself without the support of funding → Engagement
- to be rigourous : this is requirement to be effective and to meet our (users- needs → Services

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From theory to reality .. The experimentation phase

- an open, dynamic, creative, innovative community
  Decentralized actions

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From theory to reality .. The experimentation phase

- an open, dynamic, creative, innovative community
  Decentralized actions

Ecosystem approach

Explore, co-construct, investigate

Shared vision and values

interdependant

Collaboration

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From theory to reality .. The experimentation phase

- an open, dynamic, creative, innovative community
  Decentralized actions

- What are the tools to keep the community informed /involved /interactive at european level ?
- What are the means to integrate external actors (new potential JERICO partners)?
- What are the means to remain open to new technologies?
- How we deal with unfinished lists of Scientific and Societal Challenges ?

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From theory to reality .. The experimentation phase

- an open, dynamic, creative, innovative community
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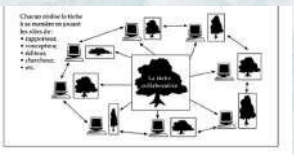

THINK TANK

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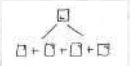
From theory to reality .. The experimentation phase

- a tightened governance, focused on efficiency
  Central HUB
  Functional body



Decides on the orientations

Share Objectives

independant et dependant

Cooperation

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From theory to reality .. The experimentation phase

- a tightened governance, focused on efficiency

Central HUB

.This is an opportunity to focus on added value to meet the needs of users and funders and for this to engage nations is strategic.
In this context, it is important :

- To establish a dialogue with funders and users,
- To identify RI efforts to be shared at the European
- To identify the people who can commit to this collective project on national resources
- To be visible as a community at the European level: Participations 'On behalf of JERICO' to projects and international committees… towards a legal structure

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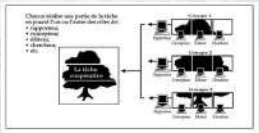
From theory to reality .. The experimentation phase

- a tightened governance, focused on efficiency

Central HUB



A streamlined and pragmatic approach

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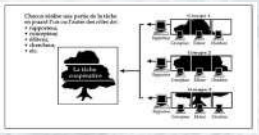
From theory to reality .. The experimentation phase

- a tightened governance, focused on efficiency

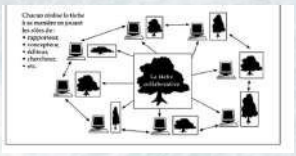
Central HUB



A streamlined and pragmatic approach

- an open, dynamic, creative, innovative community

Decentralized actions



THINK TANK

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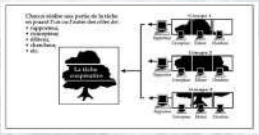
From theory to reality .. The experimentation phase

- a tightened governance, focused on efficiency

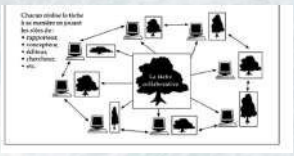
Central HUB



A streamlined and pragmatic approach

- an open, dynamic, creative, innovative community

Decentralized actions



THINK TANK

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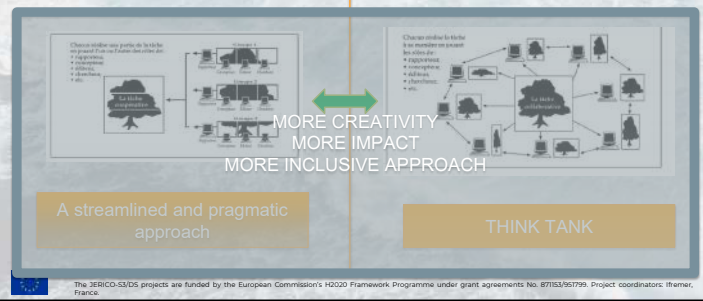

A streamlined and pragmatic approach

THINK TANK

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From theory to reality .. Next step

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From theory to reality .. Next step

CREATION OF JERICO USER COMMITTEE :

- TO MAXIMIZE THE RETURN ON INVESTMENT (IMPACT VS COST)
- TO TEST THE WAY WE MAKE DECISIONS (INCLUDING CHOOSING THE PRIORITIES TO BE ADDRESSED)
- TO CONSOLIDATE OUR IDENTITY

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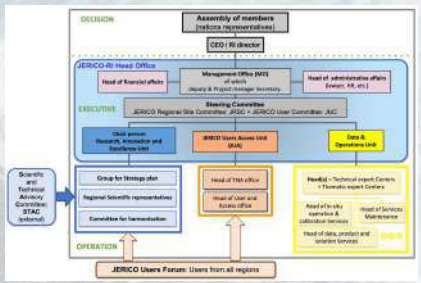
From theory to reality .. Next step



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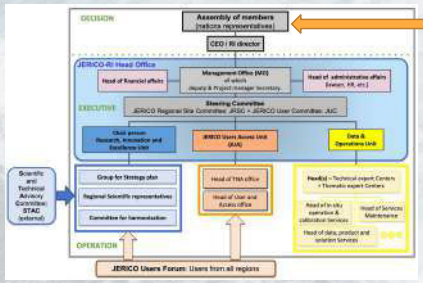
From theory to reality .. Next step



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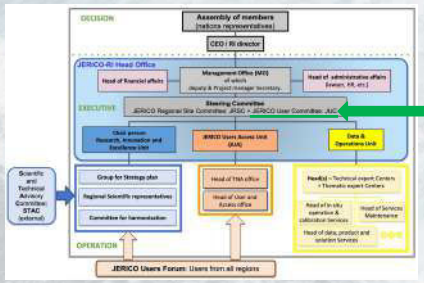
From theory to reality .. Next step



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JERICO - LABEL

Developement of the JERICO Label Committee (JLC) to sustain the scientific research excellence

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Role and mission of the JERICO Label Committee

The aim of the JLC is to support the JERICO-RI framework of scientific research excellence, to ensure that JERICO-RI keeps pace with scientific and technological development and attracts the best research groups.

Starting point was the work done in Task 2.6 of the previous project JERICO-NEXT and detailed in the JERICO-NEXT deliverable D2.7 "Overview of the outcomes of the work carried out on the JERICO Label in task 2.6 ("The JERICO Label Technical Committee")" of JERICO-NEXT WP2.

In the JERICO-NEXT D2.7 the competences and the composition of the label Committee are defined. It is composed by 16 persons/institutions, all partners of the project and are called to express on three areas of evaluation for the assignment of the JERICO Label:

- **Sustainability,**
- **Operationally,**
- **Fit for purpose/observing.**

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Implementation of the JERICO Label Committee

To the members of the JERICO Label Committee of JERICO-NEXT were asked to be part of this JLC, although JLC is open to anyone who wants to contribute.

A questionnaire was sent to the members to collect ideas and suggestions on what should be the role and mission of the JLC and then a meeting was organized.

Regarding the composition of the JLC, at this stage of JERICO-DS it was proposed to prioritize the scientific expertise of the members without limiting their number for example to one or two for project partner or country rappresentatives .

The goal is to create an advisory working group that be keeping up with scientific and technological development and is able to setup the concept of JERICO Label and propose the concept to the JERICO community.

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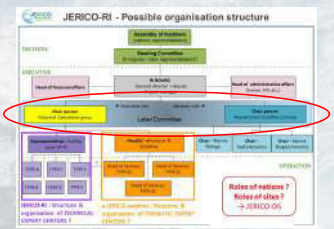
Implementation of the JERICO Label Committee

In accordance with what is proposed in JERICO-DS another task of this JLC will be to define a long-term vision of the Label in the perspective of a JERICO-RI.



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Purpose of the Jerico Label Committee

According to JERICO-NEXT, from a technological point of view, the JLC had to accomplish the following:

- **acknowledge the consensus on guidelines for best practices in the design, implementation, maintenance, data policy and valorization of the coastal observing elements of the JERICO RI;**
- **allow fair recognition of the quality of the managed observatories within the JERICO RI;**
- **help stakeholders to become aware of the European interest in the development of high quality coastal observatories;**
- **foster a wider market for industry in the fields of sensor technology and platforms based on agreed recommendations.**

In addition to the technological part, it is necessary that the JLC also addresses the scientific issues of research to direct the decision-making processes of JERICO-RI, addressing them to excellence.

In this case the recommendations and directives to be developed by the JLC should not be thought of as rigidly constraining rules, but rather as guides to enable observational systems to conform to the requirements necessary to become part of the JERICO-RI community.

In this regard it has been proposed that in a future JERICO-RI the JLC will be divided into two subgroups:

- **Data and Operation Group,**
- **Research and Excellence Group**

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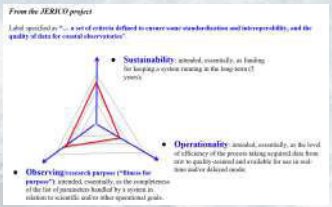
Jerico Label Criteria

Regarding the JERICO Label Criteria some guidelines have been defined in JERICO-NEXT relative to the Data and Operation topics.



It has been proposed to add Fairness to the criteria. FAIR principle is intent on data and not on facilities and requested to observatory that has reached the full level of integration in the JERICO-RI.

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Jerico Label Variables

In JERICO-NEXT a list of variables, physical, biological and biogeochemical has been defined for JERICO Label assignment.

The idea that has emerged, after discussion, is to have a dynamic approach.

Two aspects are emphasized:

- the list can be updated periodically (e.g., every three years) by the JLC to incorporate technological or scientific developments.

- the list is not unique for all observatories, but it is customized on the basis of the scientific responses for which that observatory was created.

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Jerico Label Observatory Evaluation

A topic posed in JERICO-NEXT but not addressed is the definition of a criterion for evaluating the final status of an observatory and thus its eligibility. Just three level of integration were proposed.

It has been suggested that the Label should be awarded to a facility only and only if all eligible criteria are met. The Committee should issue a final report with all the scores and judgments for each of the criteria to show how far or close a facility is for reaching the Label status. JERICO-S3 WP5 will provide indicators on performance and integration for mature platforms.

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Thank you for your attention

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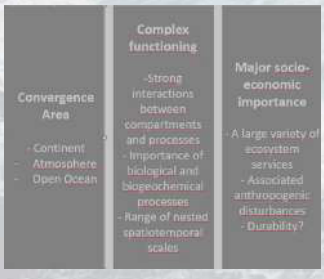
JERICO-RI science strategy regional implementation: main outcomes from JERICO-S3 D1.1

Antoine Grémare, Anna Rubio, Dominique Durand, Laurent Coppola

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

The three main specificities of the coastal ocean



Necessity of defining a scientific strategy specially designed for the observation of coastal marine systems.

- Long-term monitoring observations aiming at **describing changes** in coastal marine systems;
- Observations specifically designed to gain insights on their structuration and functioning in view of **predicting future changes.**

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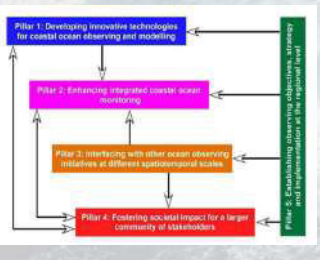
The five pillars of the JERICO RI strategy



Pillar 1: Developing innovative technologies because of: (1) between discipline differences in Technology Readiness Levels (TRL), and (2) the need/interest of developing multidisciplinary platforms;

Pillar 2: Enhancing integrated coastal ocean monitoring to account for the strong interactions between marine coastal compartments and processes;

Pillar 3: Interfacing with other ocean observing initiatives because of the necessity of monitoring potential controlling factors;

Pillar 4: Fostering societal impact for a larger community of stakeholders because of the necessity of taking into account the diversity of the concerns of users so that derived products better suit their expectations;

Pillar 5: Establishing observing objectives, strategy and implementation at the regional level for both: (1) defining sets of functionally linked subsystems, and (2) constituting the individual units of a future coordinated pan-European Research Infrastructure.

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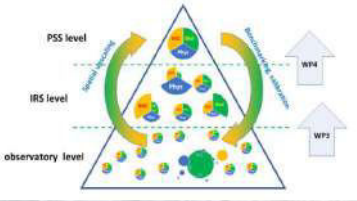
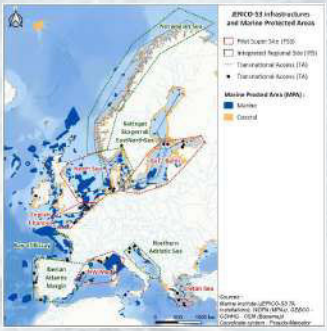
Implementation of the regional structuration within JERICO-S3





10 regions, two levels of maturity (targets for regions)

- 5 (toward) **Pilote Super Sites (PSSs)**: Experimentation
- 5 (toward) **Integrated Regional Sites (IRSs)**: Maturation

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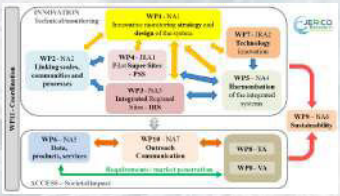
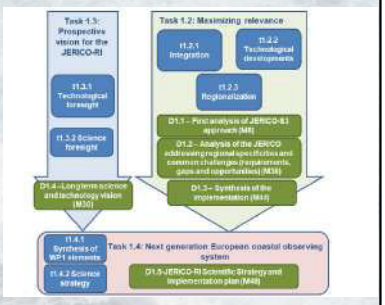
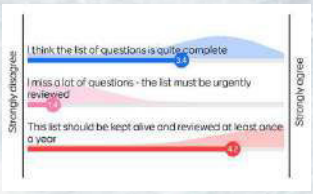
Positioning and aims of D1.1 in JERICO-S3





- **Identifying common Scientific Challenges**;
- Providing **preliminary analyses on the way they are currently addressed through PSSs and IRSs**;
- Formulating recommendations on the demonstrative action regarding innovative technologies (cf. D. Durand's talk)

Identifying common scientific challenges



- **Backbone for the implementation of the JERICO science stategy**
- **Iterative process** (JW1 + JW2 + ongoing)
- 3 levels:
  - **Key Scientific Challenges** (3)
  - **Specific Scientific Challenges** (10)
  - **Research Axes** (living list; cf. A. Rubio's talk)

6

Regional implementation

Specific Scientific Challenges	CS	NWM	EC	NS	GF-BS		NAS	AM	BB	RS-ENS	N/S
Land Sea Ocean continuum. Impacts of land-derived discharges and exchanges with open ocean											
Sea-atmosphere interface. Quantification of inputs											
Connectivity and transport. Pathways of water masses and materials											
Biodiversity trends											
Ecosystem biogeochemical processes and interactions											
Carbon budget and carbonate system											
Impacts of rare and extreme events											
Resolving climate change impacts											
Resolving anthropogenic impacts											
Disentangling impacts/scales											
Answering societal Demand											

- **Clearly a major step forward !!!**
- **Spatial delimitation** (region/PSSs/IRSs)
- **Addressed Scientific Challenges** (mostly RAs, 2 SSCs lacking)
- **Societal Challenges** (Listing cf. scientific challenges ?)
- **Technological developments** (Regional/Central ?)
- **Potential heterogeneity in the dynamics of PSSs and IRSs**

7

Main recommendations (1): Clarifying the basis of the structuration of the future RI (cf. L. Delauney's talk)

- **Is the whole triangle a region or the whole RI?**
- **If the whole RI: is a RI with two categorized regions suitable?**
- **If a region: this raises the question of the interactions with non-current members of the JERICO-consortium**
- **An answer is clearly required to optimize the work still to be achieved within JERICO-S3 and to limit potential divergence between PSSs and IRSs.**

8

Main recommandations (2): Developing "centralized actions" (cf. L. Delauney's and A. Rubio's talks)

A balance between the central and regional components of JERICO-RI is essential in demonstrating the added values of: (i) a pan European organization, and (ii) a Research infrastructure versus an observation network

- **Trans National Access**
- **e-infrastructure**
- **Insuring the coordination of the whole consortium**
  - Coordinating the tacklings of KSCs
  - Insuring that all SSCs and RAs are addressed
  - Enhancing the interactions between regions (especially if functionally connected)
- **Conducting « specific actions » (service oriented? thematic centers?)**
  - Technology (cf ACT in US)?
  - Products/indicators ?
  - Modelling (cf US aborted)?
  - Transfer of expertise (both in and out JERICO-RI)
- **Interacting/coordinating with other research infrastructures** (top level)

9

Thank you for your attention !!!

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JERICO-RI Science Strategy Meeting - IMPLEMENTATION AT CENTRAL LEVEL (1.5H)

Update of Research Axes (open list) with ongoing activities ==> from network to RI (WP1, 20')

A. Rubio, A. Gremare, D. Durand, L. Coppola (WP1)

1

Introduction

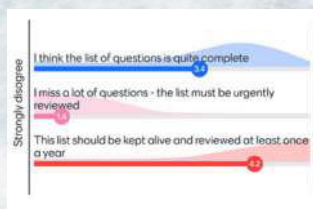

***Table IV:** Current status after the JERICO week #2 of: (1) the formulations of JERICO-RI Key Scientific Challenges, and (2) their subdivisions in Specific Scientific Challenges and Research Axes*

JERICO-S3 D1.1 = WP1 - First analysis of the JERICO-S3 scientific monitoring and regional approaches. Early inputs toward sustainability.

2

Research Axis list - REVIEW

We propose a 3 step process:

1- Excel template to be completed by regions (end of APRIL 2022)

2- Analysis of inputs by WP1 (in collaboration with WP3 and WP4)

3- JERICO-Days (JUNE 2022): Workshop to present the results, and complete the exercise by:

- Analysing synergies between regions
- Analysing the contribution of RAs and SCs to societal challenges

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JERICO-RI Science Strategy Meeting - STRATEGIC VISION_2

Perspectives from IRS/PSSs

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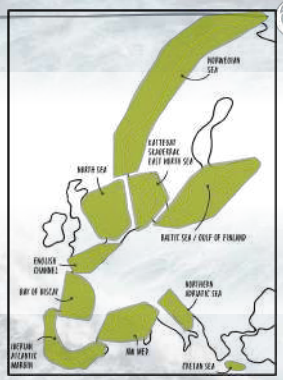
Brief recap of IRSs and PSSs

WP3 Integrated Regional Sites: *"...organize, harmonize, and integrate existing coastal observing activities and initiatives within regions and between regions..."*

5 regions - Norwegian Sea, Kattegat-Skagerrak-Eastern North Sea, Bay of Biscay, Iberian Atlantic Margin, and Northern Adriatic Sea

WP4 Pilot Supersites: *"...provide a proof of concept and feasibility for JERICO-RI Supersites designed for European coastal seas..."*

4 sites - Gulf of Finland, North Sea/English Channel, NW Mediterranean Sea, Cretan Sea



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First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Recommendations concerning the period covered by the report:

- D3.1 was not particularly well-organized – the information was included but was confusing to read, and some information was repeated.

- D3.1 is planned as a working document that gives an insight into the initial state of the analysis and summary of region specific and region wide monitoring strategies and regional sustainability plans.
- The document reflects that in this initial phase of the analysis the IRS documentation of their respective monitoring strategies and sustainability plans are not yet harmonised, nor completed to the full extent of their possible integration.
- The analysis and summary of region-specific and region-wide monitoring strategies and regional sustainability plans will be improved, further structurized, harmonised and integrated through the further work of WP3 and will be presented in its final form through the delivery of D3.2, which will reflect the progress achieved through JERICO-S3.
- The harmonisation and in particular the formalisation of regional integration at various levels is the overall aim and goal of WP3

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First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Recommendations concerning future work,

- Concentrate ...on making connections with other potential partners in the IRSs and PSSs... At the moment, it seems like these connections are developing, but need to be transformed into formal collaborations and more open access.
- Bring in RIs and other observatories and platforms who are not partners in JERICO but are involved in PSS and IRS regions should also be a focus, as a user base, as partners, as a way to make national connections, etc.

- WP3 : This is in the roadmap plan for each IRS - to identify and reach out to non-JERICO-RI coastal observing actors and RIs. "Integration" is one of the primary objectives of WP3.
- WP4: Regional connections within PSSs and each PSS Action are described both "Users of results" and "Other data sources and external partners for implementation" in their implementation plan (D4.1).
- What is clearly and arguably missing is strategic overall planning on how these connections should be developed and optimised.
- We consider that coordinated action to connect to other partners is not only a task for JERICO-S3 WP3&4
- Activities in WP2 will support identifying potential partners

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First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Recommendations concerning future work,

- Focus on a concrete plan to create frameworks across nations that will be in place before the project ends and can be implemented/followed for years to come (such as the formal organization and funding noted in D3.1 for all IRSs). There should be sustained focus on connections between the PSSs. D3.1 and D4.1 discuss the need for these connections at length, but because they are so critical, that is the aspect that needs progress. Progress at the institutional or even regional level, while valuable, is unlikely to make the needed leaps forward.

- WP3: Each IRS has, for the most part, in their roadmap document the plan to develop frameworks (at least in the form of an MoU) across nations/institutes, but depending on the outcome of WP9, these frameworks have the possibility to become more formal.
- WP4: This "plan to create framework" is very much what we do in JERICO-DS, bringing the experiences gained during networking phase (JERICO-S3) further and making actual plans how the whole "JERICO-RI framework" should be constructed
- The need for sustained connections between PSSs has been noted. It was not given explicitly a large emphasis in DoA, but sharing both general and very specific details important. Some of such integrative work is done within other WPs, by harvesting PSS experiences and opinions. During the review of the work of PSSs (D4.2 and D4.3) improving the between PSS connections has been noted as one of major development points in WP4. The needs for connections have been identified at the level of individual PSS actions, at the level of some thematic topics and at the whole PSS concept level. As PSS implementation is at the moment mid-way, these between PSS connections are emphasised in the remaining period.

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First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Is the progress reported in line with objectives and work plan as specified in the DoA?

WP 1:

- D1.1 recognizes that IRSs require additional transnational coordination.
- It also notes the risk that the maturity level of the PSSs and IRSs may actually widen through the course of the project, and that the sites will work independently rather than in a collaborative fashion

- WP1: both PSS and IRS should serve as proofs of concept for regional integration, transnational governance, and collaboration. In order to mitigate the risk that PSS and IRS work too independently from one another, specific attention will be made during the second half of the project to increase communication between regions and to promote the implementation of centralised actions to ensure they efficiently address both specific and key Scientific Challenges, in coherence with the JERICO-RI Scientific strategy.
- WP3: Transnational coordination in IRSs is already in place and will hopefully strengthen through the activities in the coming years. Ideally the sites should work independently AND collaboratively with other sites.
- WP4: there may be a slight misinterpretation of IRSs and PSSs, as the latter do not necessarily represent a whole region, but experiment the transnational and multiplatform observatories within some pre-selected regions. IRSs in turn study regional integration from a more conceptual point of view. We expect that jointly these studies will provide JERICO-Ri information on how observation strategies need to be improved. But certainly we need to improve communication between PSSs and IRSs a lot during the second half of the project.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Is the progress reported in line with objectives and work plan as specified in the DoA?

WP 3: Integrated Regional Sites

- The progress in this work package is in line with the objectives.
- Progress on the IRS sites is good, leveraging previous monitoring infrastructures. More progress can be made on integrating additional monitoring capacity.
- Progress thus far has been informal collaboration; not been formal collaborations created among governments, which may hinder transnational collaboration and access
- How groups are planning to work with other groups beyond their initial partners, especially in areas where other groups have significant infrastructure that could add value to the project
- There were no mitigating factors or corrective actions listed.

- ...
- ...

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First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Is the progress reported in line with objectives and work plan as specified in the DoA?

WP 4: Pilot Supersites for innovative coastal monitoring

- The progress in this work package is in line with the objectives.
- WP4.1 was very detailed and thorough, with good explanations of how this part of the project plans to accomplish its goals.
- The description of the regional role of the PSS is well thought out, with a thorough analysis of the key scientific challenges for each site.
- One concern is the transnational and transinstitutional organization at each site, which will need to be advanced in order to be successful.
- There were no mitigating factors or corrective actions listed.

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First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Are the critical implementation risks and mitigation actions described in the DoA still relevant?

- There is a risk that the PSS and IRS sites will work independently rather than in a collaborative fashion. This risk should be noted in the critical risks section and mitigated to ensure the success of the project.

- WP4:
- PSSs purpose is partly to study and experiment some transnational and multiplatform issues regionally first, prior their implementation in all regions. Thus, the intergrative work comes later
- Of course we may say that YES, isolation is a risk, we have mitigated it by having joint WSs within PSSs and presenting our work to other WPs for review. And identified needs to include more between PSS activities.

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Proposed way forward for IRS/PSS

- IRS/PSS breakouts to discuss collaborative topics (Wednesday afternoon, followed by JERICO-Days workshop in Tallinn (summer 2022)
- WP4 propose several thematic sessions jointly with PSS, IRS and other WPs (to be discussed and defined on Wed afternoon)
- PSS and IRS are not permanent structures, but rather short term studies to be conducted within JERICO-S3. Especially WP1 and WP9, but as well other WPs and JERICO-DS are expected to harvest from PSS and IRS experiences. How to best achieve this?

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IRS/PSS contribution to JERICO-DS WP2 - Technical Design

- JERICO-S3 WP1 has task for long term vision for JERICO-RI incl. Technological foresight
- JERICO-DS WP2 builds a technical design for an operational JERICO-RI

Both need to harvest from PSS and IRS

These collaboration have been initiated, but not yet realised.

In J-DS WP2, we have a WS on technology Gap Analysis on Thursday, also having first input from PSSs and IRSs .

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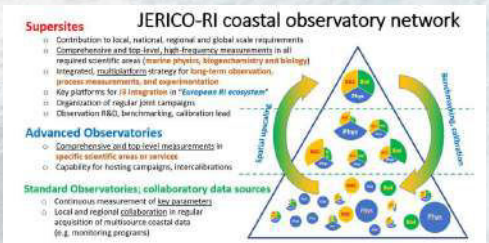
IRS/PSS contribution to JERICO-DS WP2 - Technical Design

- how PSSs provide support for long-term technology planning of JERICO-RI.

After PSS period, we need to (re)evaluate coastal Supersite criteria and analyse if this will provide benefits for JERICO-RI



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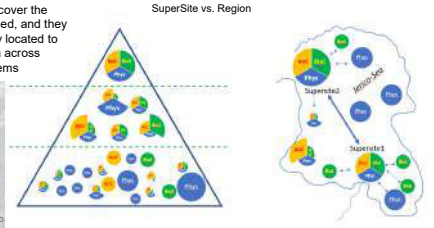
All PSSs provide a bit different view how Supersite may look like.

The spatio-temporal scale of Supersites must cover the phenomena studied, and they must be optimally located to allow comparison across different ecosystems

SuperSite vs. Region



Supersites: holistic and top-level high-frequency measurements in all required scientific areas, using integrated multiplatform strategy for long-term observations
Advanced observatories: comprehensive and top-level measurements in specific scientific areas or services.
Standard observatories: continuous measurements of some key parameters, often for local or regional needs.
All observational levels are needed, they have complementary roles and their differences are not always obvious.

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What are the elements required? [KSC, variables, platforms, supporting structures]
How managed? [requirements, capacities, practicalities]
How linked? [between sites/regions, other RI, local and regional connections]

Partly analysed in J-DS WP2.

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JERICO-WEEK 2022

First elements towards the long-term strategic vision

Day 1 – Tuesday 15th March, 2022

Task 1.3: Long-Term Vision for JERICO-RI

Objectives
A long-term vision for JERICO-RI, with the goal of anticipating the **coastal observation system of the future**

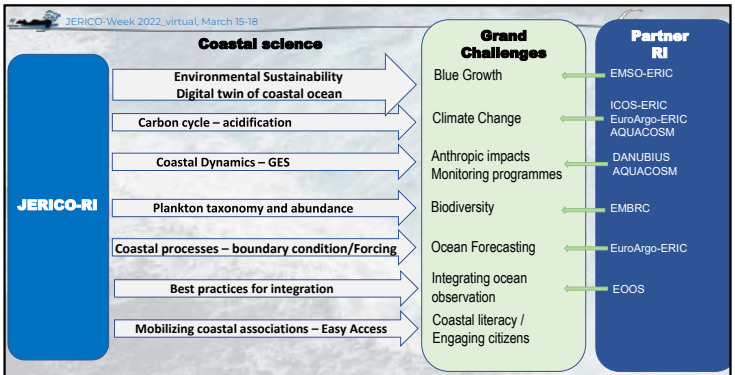
Duration: M6-M36 – not systematically started

Contributors: Lead: COV, Partners: IFREMER, CNRS, PLOCAN, NORCE

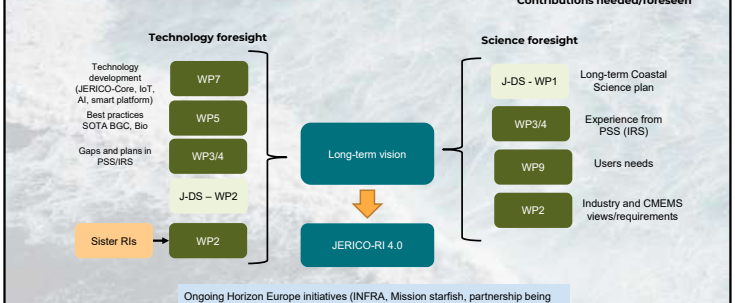
Tasks

- **Technology foresight**
  - Review the potential of **emerging technologies** for coastal observations.
    - investigate how **disruptive innovations** and cross-disciplines endeavours is likely to give appropriate responses to current and long-lasting coastal environmental challenges in Europe
    - Review the latest progress and services provided by the H2020-FET-Open
    - Identifying innovations of high relevance for:
      - ✔ measuring variables of high importance but not currently addressed at the appropriate spatial and temporal scales because of technological limitations
      - ✔ significantly improving the present capability for integrative observation of complex coastal processes
- **Science foresight** and long-term opportunities for better addressing pan-European scientific and societal challenges
  1. Review the present observing system to tackle key and long-term coastal environment challenges (e.g., phytoplankton dynamics/HAB; contaminants transport and distribution, benthic-pelagic coupling, ocean acidification, monitoring MPAs);
  2. Propose new and optimal ways of answering to these challenges in the future, thanks to enabling emerging technologies (Technology foresight)

JERICO-RI: the coastal component of the European Ocean Observing System (EOOS)



Contributions needed/foreseen



Ongoing Horizon Europe initiatives (INFRA, Mission starfish, partnership being strong drivers of science needs and technologic innovation

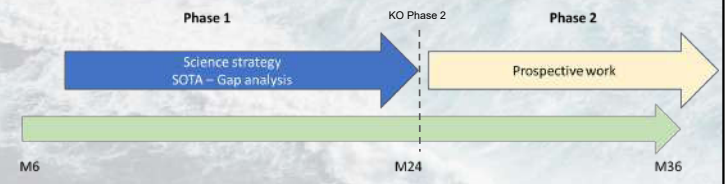
Implementation technology foresight

Co-creation: Towards the coastal observatories of the future (10-20 yrs prospection)

- **J-DS - WP2 workshop on Technology gap analysis - Thursday morning**

- **A series of brainstorming thematic workshops:**
  - ✔ Smart observatories (IoT/AI, automation, low energy, …)
  - ✔ Low-cost observatories
  - ✔ Emerging technologies (e.g., photonics, autonomous platforms, …)
  - ✔ The biotechnology revolution (genetics/omics, molecular tools, biosensors)
  - ✔ Other
- **A core group (task contributors)**
  - ✔ Ifremer, CNRS (BGC, Biology), PLOCAN (WP7, technology), NORCE (emerging technologies, ICOS-OTC) COVARTEC
  - ✔ Organising, populating and summing-up the workshops
  - ✔ SYKE/NIVA (J-S3 WP3 and4 lead / J-DS WP2 lead/co-lead)
- **An expert and prospective group**
  - ✔ Workshops open to everyone visionary and who has relevant expertise and/or intelligence on emerging technologies
  - ✔ Call for experts/contributors to be issued before the end of the month - Or just, tell me asap
  - ✔ External experts

Timeline



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Defining Identity

Wednesday 16 March 09:00-10:00

Joao Vitorino, Simon Keeble, Dominique Durand

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INTRODUCTION

National Research Infrastructure Communications Group (NRIC)

1st MEETING (Virtual) – 08 JUNE 2021

31 Participants , 2 keynote speakers giving us complementary views about communicating science

Magdalena Brus (Chief Communication ICOS ERIC, ENVRI)

Hugo Verlome (writer and journalist)

2nd MEETING date to be announced soon

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INTRODUCTION

JERICO Achievements and Results are worthless if we don't communicate them and bring them available to the broad community of partners, users and stakeholders.

It is by doing so that we can:
Unlock their full potential
Maximize their impacts in the society
Benefit from them

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INTRODUCTION

Our strategy to meet these goals was clearly defined in the Dissemination and Exploitation Plan (DEP)

Project Review Report:
"*The plan to cooperate with other RIs, industry, etc seems ambitious, but if completed will provide significant results*"

The successful implementation of the DEP is dependent on close collaboration with all JERICO-S3 work packages and involved partners

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D10.2 COMMUNICATION PLAN V1.0

- D10.2 set out the key aims, communication activities and a schedule for implementation for M1-18
  - Aims:
    - Continue to build the JERICO-RI community network
    - Promote the day to day project activities through a range of communication channels
    - Support the DEP by communicating dissemination and exploitation activities and products through the communication channels
  - Activities:
    - Establish and maintain project website
    - Establish the project identity
    - Gather and promote project news and events
    - Maintain and enhance the JERICO-RI social media channels
    - Promote internal and external meetings and events
    - Design of infographics, newsletters (internal and external), digital materials and graphic (e.g. posters, flyers etc)
    - Establish internal communication channels

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Key communication activities M1-24

- The JERICO-RI website has been redesigned to be a product focussed RI website
- The website remains a key platform for all project information relating to both JERICO-S3 and JERICO-DS
- All graphics, logos, deliverable reports, work packages, milestones etc are available on the website for the JERICO-RI, JERICO-S3 and JERICO-DS as appropriate.
- A specific section of the Pilot SuperSites is available on the website (WP4)
- In collaboration with partners, a series of high profile news posts have been run relating to TA and PSSs as key outputs so far
- All communications posted via the JERICO-RI Social Media channels.
- The first external newsletter will be publish in March 2022
- CWG and NRIC groups have been established to coordinate and maximise the impact of communication activities

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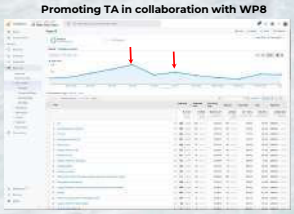
Promoting TA in collaboration with WP8

- The 2nd TA call was promoted through call announcements (March 2021),
- A series of news post featured a Facility of the week for a period of 4 weeks prior to the call closing in May 2021.
- A follow up news post announcing the TA call results was published in July 2021.
- Google Analytics shows that pages containing "TA" in the URL were visited almost 10,000 times during 2021. There is a clear increase in traffic beginning in March 2021 when the call was announced and peaking in May 2021 when the call closed. This coincides with the communication efforts to reach potential applicants. There is another peak in July 2021 coinciding with the results of news posts.



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Promoting Pilot SuperSites in collaboration with WP4

- Series of high-quality news posts and materials from the PSSs

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JERICO-S3 First External Newsletter

Drafted and will be distributed in March 2022 just after the JERICO week to further promote the 3rd TA call, which opened in March. It is an opportunity to re-engage with the NRIC group (National Research Infrastructure Communications Group), promote the revised key messages and highlight some of the key project activities so far and services available.

The outline of the proposed content is as follows:

- Page 1: Front page
- Page 2. Table of contents and a short text entitled "What is the JERICO-RI?"
- Page 3: Editorial
- Page 4: The JERICO-RI Vision
- Page 5: Pilot Supersites for Innovative Coastal Monitoring
- Page 6: Spotlight on the Cretan Sea Pilot SuperSite : First Annual pH cycle in the Cretan Sea
- Page 7: Using Plankton Imagery to Study Ecosystem Dynamics at the North Sea and English Channel Pilot SuperSite
- Page 8: Coastal Ocean Services - JERICO-S3 Transnational Access, 3rd Call Opens
- Page 9: JERICO-CORE: Linking Virtual and Physical Resources of the JERICO-RI
- Page 10: Coastal Ocean Services - JERICO-S3 Virtual Access
- Page 11: JERICO-S3 TA Program Supports Strong RI-RI Collaboration through its Transnational Access Program
- Page: 12 Back cover

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D10.2 COMMUNICATION PLAN V2.0

D10.2 is currently under review. A new schedule for implementation for M24-48 will feature. Key activities will include:

- Publish and distribute the first external newsletter, which will focus on key outputs so far (PSSs, TA and VAs) as well as promote JERICO-CORE and the third TA call and the JERICO-RI key messages.
- Re-engage with the NRIC group to maximise impact and support RI - National activities (and vice versa)
- Establish multi-lingual channels of communication to facilitate local communication activities, including on the project website
- To work with WPs 3, 4, 7, 8, 11 in line with the DEP to promote key outputs from IRSs, PSSs, TA, VA, JERICO-CORE through a variety of communication channels i.e. website, social media, graphics, newsletters, events.

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ENGAGING THE COMMUNITY

TRAINING WORKSHOPS – Internal workshops on best practices to train existing JERICO-RI operators (also open to external participants)

1st Workshop: Fall 2022, Italy (CNR, WP5 also WP6)
Mature Platforms (specifically HF radars, Gliders) Best Practices, Data Processing/QC, Data Management, Use of Virtual Research Environment

WEBINARS – outreach of JERICO-RI to the general public.

1st Webinar: 23 March 2022, Finland (FMI)
JERICO-session during Finnish Marine Reseach RI FINMARI-days

https://www.finmari-infrastructure.fi/researcher-day-2022-program/

ESFRI TRAINING (JDS)– Internal communication to maintain alignment towards ESFRI roadmap

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COMMUNICATION TOOLS

ENGAGING THE COMMUNITY

BUILD COMMON MESSAGE AND ENGAGE STAKEHOLDERS GROUPS

JERICO-RI Brochure - Publicize JERICO-RI identity, overall capacities and areas of interv

Proposed Sections
•Jerico-Ri
•Why a Research Infrastructure for the Coastal Ocean?
•A multiplatform view …. over the Pan-European coastal ocean
•Vision, Mission and Values
•Contributing to excellence in marine research
•Supporting Marine Policies
•A partner in Blue Economy
•Providing Access to Services and Products
•Boosting the new generation of technology for the coastal ocean
•Opening the infrastructure to a broad community (TA)

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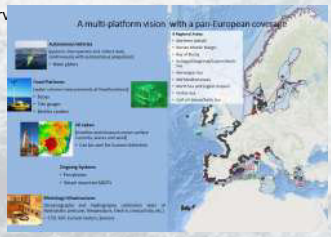

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COMMUNICATION TOOLS

ENGAGING THE COMMUNITY

BUILD COMMON MESSAGE AND ENGAGE STAKEHOLDERS GROUPS

JERICO-RI Leaflets - Synthesized information publicising JERICO-RI and directed to selected communities of stakeholders.

Proposed Versions

- JERICO-RI the gateway to coastal ocean observations in Europe
- Supporting Marine Policies for the coastal ocean domain
- Monitoring a Changing Marine Environment (Long-term variability and Climate Change, Extreme Events)
- A Partner in the Blue Economy Sector
- Opening the infrastructure to a broad community (TA)

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JERICO-Week 2022_virtual, March 15-18

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COMMUNICATION TOOLS

ENGAGING THE COMMUNITY

BUILD COMMON MESSAGE AND ENGAGE STAKEHOLDERS GROUPS

Timeline 2022

March/April: Content and graphical design discussed inside the Communication Working Group.

April/May: Feedback from selected Users in articulation with WP9
Hardcopy tests evaluation and selection of material

June: Hardcopy versions of Brochure + 2 versions of Leaflets distributed to
partners at the JERICO Days

September: Final adjustments and broad dissemination

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JERICO-Week 2022_virtual, March 15-18

KEY MESSAGES

JERICO-RI
Marine coastal observatories, facilities, data and expertise for Europe

Present goals: Building trust and dependency

- Re-insure our stakeholders about the status and the future of JERICO-RI
- Build up our profile about our acknowledged, undisputed and needed expertise
- From strategy to implementation
  - Make that one considers us as a sustainable RI (as an "ERIC")
  - Be invited in joint initiatives with other RIs, and in CL6 (CL5?) calls
- Co-design products and services with our stakeholders

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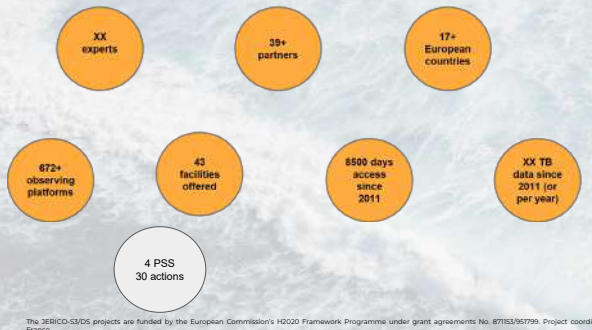
JERICO-Week 2022_virtual, March 15-18

Facts about JERICO-RI



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JERICO-Week 2022_virtual, March 15-18

JERICO-RI fills a gap in the landscape

JERICO-RI as actor in the European landscape

JERICO-RI is **unique** through:

- Coastal focus
- Integrated Multi-platform approach

JERICO-RI operates at the interface adjacent with RIs

from the marine, river and terrestrial and atmospheric communities

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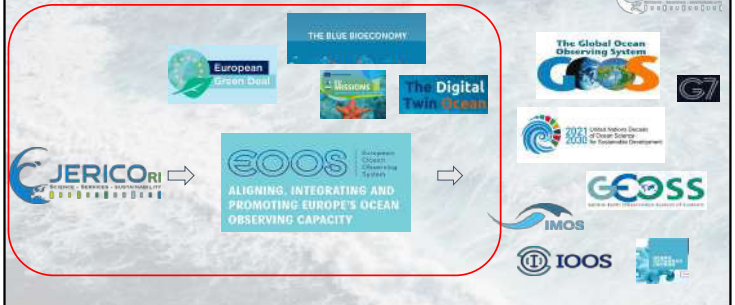

JERICO-RI: the coastal component of the European Ocean Observing System (EOOS)

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JERICO-Week 2022_virtual, March 15-18

Our stakeholders

1. **Our immediate landscape:**
   - COPERNICUS - CMEMS
   - EuroGOOS
   - European Marine Board / JPI-OCEANS
   - EU marine RIs and related initiatives
   - EU technology and science projects (ILIAD, EuroSea, GROOM-2, ...)
   - International endeavours: GOOS, Un Decade, US-IOOS, IMOS, Network Canada
2. **The EC MS and AM (nations)**
3. **Marine research community**
4. **Technology providers**
5. **Service providers / downstream services**
6. **Marine-based industries**
7. **Environmental agencies and regulatory bodies**
8. **Education**

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JERICO-RI
Marine coastal observatories, facilities, data and expertise for Europe

End-user group	Key messages
Marine Research	JERICO-RI investigates how innovative technologies can investigate the complexity of coastal processes by making simultaneous observations of physical, chemical and biological parameters
Immediate Landscape (e.g. EuroGOOS, CMEMS, EMODnet) New: DTO	Coastal regions have the strongest potential for growth and employment. JERICO-RI is the European multiplatform coastal observing system of systems. We support science and sustainable blue growth in the European coastal and shelf seas by providing high-quality and scientifically sound multidisciplinary data, products and services
Environment Agencies / Policy Makers / Environmental managers	The JERICO-RI is an established provider of quality controlled data and information for Europe's coastal shelf seas. These products are freely available to increase the evidence base for assessments of the health and status of marine ecosystems.
Marine-based Industry	Providing a sustainable framework of facilities, expertise and data to support marine industry growth, development and innovation. The JERICO-RI forms partnerships with industries contributing to marine observations by developing joint activities and promoting mutual benefit.
Downstream Service Providers	Providing a long-term, sustainable framework for the provision of high-quality, continuous, multidisciplinary, marine environmental data to support the development of products and services by SMEs.
Technology Providers	A long-term pan European coastal infrastructure is available for proof of concept, verification and demonstration of technologies in a variety of natural environments and with the support of a network of experts.
Sister RIs	
Nations	

Key message 2019

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MAXIMIZING IMPACTS TOGETHER

- Key document
  - D10.1 - The JERICO-S3 Dissemination & Exploitation Plan - DEP
    - Co-designed at an early stage in the project - available since December 2020
    - Owned by every one
    - Concrete responsibility on actions, with contributions and deadlines

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JERICO-S3 - DEP

MAXIMIZING IMPACTS TOGETHER

Dissemination Targets (Key Project Outcomes)

KPO#1: Strengthening JERICO-RI position in EU
KPO#2: Reinforcing European Competitiveness
KPO#3: Scientific Strategy & Innovative Monitoring Strategies
KPO#4: Best practices
KPO#5: High Quality coastal Datasets
KPO# 6: Technological Innovations
KPO# 7: Virtual Access (VA)
KPO# 8: Access to infrastructure (TA)

Exploitation structure (Key Exploitable Results)

KER#1 Technological innovations
KER#2 Services
KER#3 Best practices
KER#4 Cooperation Agreements

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KPO#3 Scientific strategy & innovative monitoring strategies

MAXIMIZING IMPACTS TOGETHER

Project Outcome identification name	WP	Related Del.	Lead partner	Objective for dissemination	Dissemination - Targeted groups	Priority (from 1 to 3)	Kick-off of the action
Result 3.1 - Long-term European vision & strategy (incl. science strategy)	WP1, WP3, WP4	D1.5	CNRS	To share knowledge with authorities in charge of national and European ocean monitoring.	Policymakers, authorities, Environmental stakeholders, End users from research EEA, OSPAR, HELCOM, Other RIs (AQUACOSM, DANUBIUS, ICOS, EMSO)	1	M6 based on the JERICO-NEXT science strategy
Result 3.2 - Regionalization & observation strategies	WP1/WP3 /WP4	D1.1 /D1.2 D1.4/D3.1 /D3.4/D4. 3/D4.2	AZTI, CNRS, SYKE; NIVA	To share knowledge with authorities in charge of national and European ocean monitoring, and other interest groups.	Policymakers, authorities, Environmental stakeholders, End users from research EEA, OSPAR, HELCOM, , UNEP-MAP, ROOSs, national authorities, ministries Other RIs (AQUACOSM, DANUBIUS, ICOS, EMSO)	2	M12 based on the result from the 2nd All-Region Workshop

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KPO#2: Reinforcing European competitiveness thanks to JERICO-RI

MAXIMIZING IMPACTS TOGETHER

Project Outcome identification name	WP	Related Del.	Lead partner	Objective for dissemination	Dissemination - Targeted groups	Priority (from 1 to 3)	Kick-off of the action
Result 2.1 - Joint international activities - USA/Canada - best practices	WP2/WP5	D2.4	HZG/ IFREMER	Making JERICO's expertise and know-how available (Cooperation with IOOS, Neptune)	IOOS, Network Canada	1	M24
Result 2.2 - Joint international activities - Black Sea - Best practices - joint observation/monitoring	WP2/WP5	D2.4	HZG/ IFREMER	Making JERICO's expertise and know-how available (Eastern European countries, DANUBIUS)	Coastal research communities bordering The Black Sea	3	M24
Result 2.3 - Joint international activities - North Africa - Best practices - joint observation/monitoring	WP2	D2.4	HZG/ IFREMER	Making JERICO's expertise and know-how available (Med Sea)	Coastal research communities and environment protection agencies on the south coast of the Med Sea	3	M18
Result 2.4 - Information to policies	WP2	D2.5	RWS/ EuroGOOS	Making JERICO's expertise and know-how available to policymakers	EMB, DG-MARE, Regional/local policy makers	1	Continuously from M12
Result 2.5 - Citizen science (incl. Report of coastal citizen science adoption options and harmonisation)	WP2/WP5	D6.11	MARIS	Making citizen science associations aware of JERICO and interested in collaboration	Citizen science Associations	2	M9 (M531)

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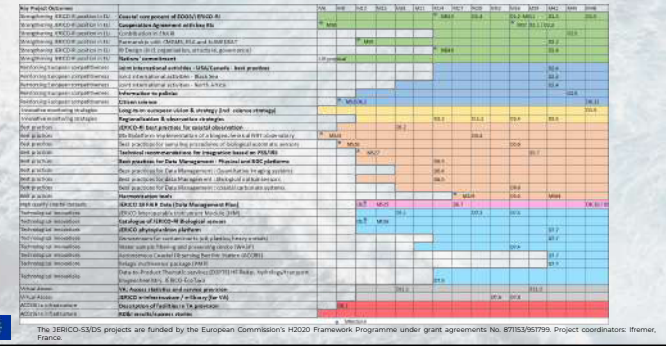
Gantt chart for Dissemination

MAXIMIZING IMPACTS TOGETHER



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Dissemination actions

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Example of information provided for each KER

MAXIMIZING IMPACTS TOGETHER

KER #3.2	Best practices for Data Management
Description	Best Practices in data management and related software from multiplatform perspective, covering the whole data lifecycle from data acquisition, processing and analysis, storage and preservation to publishing in the EU aggregators CMEMS, SeaDataNet and EMODNet regarding: Physical and BGC platforms Quantitative imaging systems Biological optical sensors Strategy for coastal carbonate systems
Partner involved	MARIS, CEFAS, 5OCIB, HCMR, IEEE
Specific objectives	Maximizing impact of JERICO-RI in the European landscape
Targeted users and scales Scale (regional, national, European, abroad)	European scientific community. Coastal Platform operators, Blue Cloud, CMEMS, EMODnet, nations, bodies in charge of regional coordination of monitoring (E.g., Helcom, OSPAR)
Calendar (kick-off, TRL within the project, beyond the project)	M25

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MAXIMIZING IMPACTS TOGETHER

The successful implementation of the DEP depends essentially on sharing responsibility and
CLOSE COLLABORATION WITH ALL JERICO-S3 WORK PACKAGES AND INVOLVED PARTNERS

It is then of key importance to get your feedback on:

- The actions carried out and **success** in DEP implementation
- The **challenges** you are facing
- The needs for improvement/support and **update**
- So that we can monitor the DEP implementation

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

This work was supported by the JERICO-S3 and JERICO-DS project. These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153 / 951799.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

WP3 IRS progress update

Wednesday 16 March 15:30-16:30

Northern Adriatic Sea: Fabio Brunetti
Iberian Atlantic Margin: Joao Vitorino
Bay of Biscay: Anna Rubio
Kattegat-Skagerrak-Eastern North Sea: Bengt Karlson
Norwegian Sea: Henning Wehde

8 minutes per IRS + 4 minutes questions/discussion

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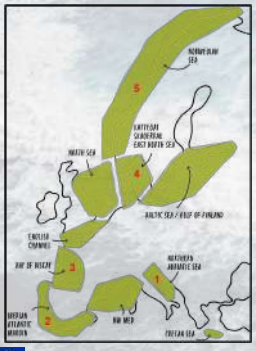
Introduction



About the IRS

1) Northern Adriatic Sea
2) Iberian Atlantic Margin
3) Bay of Biscay
4) Kattegat-Skagerrak-Eastern North Sea
5) Norwegian Sea

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Introduction (cont'd)

What has been done?

-IRSs contributed to D3.1: Initial analysis and summary of region-specific and region-wide monitoring strategies, and regional sustainability plans
-IRSs have established road maps for Integration, Interoperability/harmonisation, business case/financial sustainability, and organisational/structure
-IRSs have held meetings to plan development and for IRS-specific focus topics
-Work has begun on D3.2: Report on integration progress within and between IRSs

What needs to be done in the future?

-Complete D3.2: Report on integration progress
-Work towards road map objectives and revise/add as needed
-Collaborate with WP1, WP2, WP4, WP5, WP6, and WP9 where needed
-Begin work on D3.3: Recommendations based on regional data handling and accessibility (month 32)
-Begin IRS-PSS interactions and define next steps

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Northern Adriatic Sea IRS

Integration updates (IRS/PSS, institutes, RIs, etc.)

- **Regional Level**: Collaboration with DANUBIUS-RI. Po river delta and N. Adriatic lagoons are a DANUBIUS supersite. Collaboration within the "JIVE" JERICO-S3 TA project on S1-GB facility off the Po river delta on seawater optical properties and evaluation of sensors.
- **Regional Level**: Informal contact with the Slovenian National Institute of Marine Biology, operating in the Adriatic Sea, to evaluate the possibility of starting common activities in the JERICO-S3 framework. The aim is to extend the transnationality of the JERICO NA-IRS. This first contact will be followed soon by a meeting where we will structure in detail the activities and how to proceed formally.

Interoperability/harmonisation updates (technical, best practices, data flow, etc.)

- **Regional Level**: Harmonization of the observations of regional (deep water) oxygen. A discussion has been started with partners involved in the NA-IRS
- **Regional Level**: Collaboration with DANUBIUS-RI. Future joined workshops on best practices / protocols will be planned in 2022.

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Northern Adriatic Sea IRS

Business case updates (user/stakeholder involvement/interaction, financial sustainability)

- **Regional Level**: Strengthened collaboration with the Regional Civil Protection (stakeholder), through better harmonization and sharing of data provided by coastal platforms.
- **National level**: A challenging plan for integration with other National Research Infrastructures, expansion of observational capabilities and overcoming the current gaps has been submitted for NA-IRS, in the framework of the Italian component of JERICO-S3, as a contribution to the Recovery Plan. The plan has been submitted and is awaiting for approval.

Organisational/structural updates (regional organisation, MoUs, etc.)

- **Regional Level**: There is nothing new to report, partners are collaborating with existing MoUs and agreements.
- **Regional Level**: The first contact with the Slovenian National Institute of Marine Biology will be followed soon by a meeting where we will structure in detail the possibly common activities and how to proceed formally.

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Iberian Atlantic Margin IRS

Integration updates (IRS/PSS, institutes, RIs, etc.)

- At regional level: IAM Pilot Study bringing together selected observations from IH, PdE, PLOCAN; joint processing and exploration of data sets; contribution to BlueCloud.
- At national level:
  Portugal: Manifestation of interest for inclusion of an expanded MONIZEE infrastructure (IH infrastructure contributing to JERICO-RI and IAM IRS) in the National Roadmap of RIs submitted in January 2022 and gathering 12 institutions from Mainland and Azores and Madeira Archipelagos, , covering Physical Oceanography, Marine Biology, Marine Chemistry, Marine Geology and Technological Development, rom the mainland and the Azores and Madeira Archipelagos. Proposed specific articulation with EMSO-PT.
  Spain: Collaboration and data exchange between Puertos del Estado and the National Geographic Institute (sea level and GNSS data, for tsunami warning and datum definitions) and the Hydrographic Institute for tidal prediction and definition of a new unique altimetric reference along the Spanish coast. We have MoUs signed with both institutions

Interoperability/harmonisation updates (technical, best practices, data flow, etc.)

- The IAM Pilot Study is providing a framework to discuss interoperability/harmonisation between IH, PdE and PLOCAN
- Further development planned as part of possible participations in meetings 2022
- Know-how is being transferred from PLOCAN to IH in the operation of gliders. This work is being developed as part of a cooperation agreement existent between the 2 institutions and can be further extended in 2022/2023 as part of a TNA project proposed by IH in the 2nd JERICO-S3 TNA call.

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Iberian Atlantic Margin IRS

Business case updates (user/stakeholder involvement/interaction, financial sustainability)

- At national level
  Portugal: the process initiated in January 2022 with the submission of a manifestation of interest for inclusion of MONIZEE infrastructure in the National Roadmap, if succede, will open new funding mechanism with a longer timeframe

Organisational/structural updates (regional organisation, MoUs, etc.)

- At regional level: No new developments to be mentioned, the 3 partners are collaborating with existent MoUs or collaborations agreements indicated in Roadmap Table
- At national level:
  Portugal:The process initiated in January 2022 for inclusion of MONIZEE in the National Roadmap, if succeded, will lead to the establishment of a consortium of the 12 Portuguese institutions involved in observation of the Portuguese coastal ocean and insular shelves
  Spain: MoUs signed between Puertos del Estado and the National Geographic Institute and the Hydrographic Institute

Potential opportunities for interaction in 2022

- IBIROOS meeting (IH, Lisbon, May 2022)
- 7as Jornadas de Engenharia Hidrografica/2as Jornadas Luso-Espanholas de Hidrografia (IH, Lisbon, June2022)

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Bay of Biscay IRS

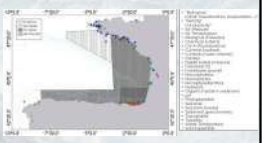
Integration updates (IRS/PSS, institutes, RIs, etc.)

- Workshop Bay of Biscay December 2021. Observation inventory :
  - 155 entries (Spain and France Institutions). Lacking important contributions from key actors (e.g. IEO, SHOM, RECOPESCA, ECOSCOPA, REMI, PELGAS, EVHOE) and genomics data (e.g. ROME).
  - Need to complete the view on who are the users of the data.
  - In terms of variables observed, observations on Physics > BGC variables >> biology and geology..

FUTURE ACTIONS

- Contact further actors to complete the inventory - March 2022
- Follow on meeting for a second version of the inventory - Spring 2022
- Contact identified infrastructures, inform about JERICO-RI and develop a strategy for possible integration – Second half of 2022
- Enhanced interactions with other JERICO-S3 WP9, IRS and PSS
- Planning a second workshop for the Bay of Biscay with users

- Connection with adjacent systems and communities out of JERICO-S3:
  - Land-sea, open ocean, atmosphere: continental inputs
  - Observing communities: Lack of presence of DANUBIUS-RI. Other RIs : ICOS, Euro-Argo, EMSO.
  - Modelling and satellite observations (IBIROOS, Copernicus Marine Services, CNES and ESA)
    Future action : link with WP2, next IBIROOS annual meeting
- Connection with adjacent systems and communities inside of JERICO-S3:
  - Exchange on main science topics and availability of observations
  - The possible collaboration during 2022-2023 in the development of a trans-region activity on slope current monitoring led by IRS - Atlantic Margin has been identified.



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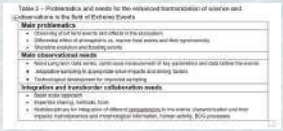
Bay of Biscay IRS

Interoperability/harmonisation updates (technical, best practices, data flow, etc.)

- Collaborative session : main problematics, observational, integration and transborder collaboration needs on research/observations for **Fisheries, Extreme events and Ocean transport and Health**.
- **Other KEY thematics**:
  - Contaminants (observation, fluxes)
  - MSFD 11 descriptors (not all monitored today but will need to be in the future)
  - Marine litter (floating and beached, quantities and characteristics, macro and microplastics)
  - Biological connectivity

FUTURE ACTIONS

- Analyse further the need for harmonization in these other thematics.
- Open list to be updated regularly



Business case updates (user/stakeholder involvement/interaction, financial sustainability)

- First objective - to **characterize differences in the national structuration and governance** of the efforts on coastal observations
  - Spanish: strong connection with societal demands, high diversity of stakeholders, no national research infrastructure, no consolidated structure but recent coordination initiatives
  - French: a national research infrastructure (ILICO), challenges to achieve a transition from network based approach to integrated JERICO approach, consider a consolidated financial sustainability

FUTURE ACTIONS

- Identify key regional actors not currently involved in JERICO-S3
- Identify the most relevant Specific Scientific Challenges/Research Axes
- Establish a model of interactions between JERICO consortium and external partners
- To a model for long-term sustainability of the observation

Organisational/structural updates (regional organisation, MoUs, etc.)

- Build on national involvement and support in JERICO-RI
- No added regional agreement (French partners to the IRS mostly correspond to the regional components of National Observation Services – do not hold the authority to engage in MoUs) - This holds also for Spain.
- Enlargement of the partnership

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Kattegat-Skagerrak-Eastern North Sea - high frequency ocean observing systems

FerryBoxes
Stationary FerryBoxes
Gliders
AUVs
Instrumented Buoys
Monthly cruises with research vessels
Ocean model operation and development

Notes

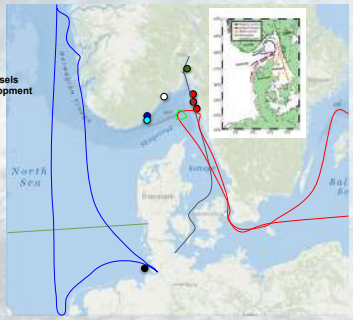
Note: positions and routes are approximate

Programs not on the map include:

National and regional monitoring of salinity, temperature, phytoplankton, nutrients, oxygen, chlorophyll etc.

Monitoring of harmful algae and phycotoxins in bivalve molluscs

Sea level gauges are not included on the map



- Instrumented buoy, SMHI and Swedish partners
- Instrumented buoys, Ministry of Def., Denmark
- Wave buoy, KDI, Denmark
- Helgoland Underwater Observatory, Hereon/AWI
- Solbergstrand ocean observatory, NIVA
- Flødevigen ocean observatory, IMR
- Torungen ocean observatory, IMR
- HF radar, Jomfruland, MetNo
- Ferrybox Oslo-Kiel, NIVA
- R/V Svea with Ferrybox, SMHI
- Ferrybox Lysbris Seaways, Hereon
- Ferrybox Magnolia Seaways, Hereon
- Glider deployments, VOTO, Sweden
- AUV deployments, IMR

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Kattegat-Skagerrak-Eastern North Sea IRS

JERICO partners

- Sweden: SMHI (lead)
- Norway: IMR and NIVA
- Denmark: DMI
- Germany: AWI and Hereon


ColorFantasy NIVA


G.M Dannevig IMR


Lysbris Hereon


R/V Svea SMHI

Integration updates (IRS/PSS, institutes, RIs, etc.)

- Cooperation with EMBRC, Lifewatch,the University of Gothenburg, Voice of the Ocean foundation

Interoperability/harmonisation updates (technical, best practices, data flow, etc.)

- Joint phytoplankton sampling using FerryBox SMHI/NIVA
- Joint development of automated plankton observing systems using imaging flow cytometers
- Discussions about joint presentation systems for harmful algae through development of presentation systems of IFCB-results and of Algae Status http://algestatus.hi.no
- Mini workshop SMHI-NIVA Automated plankton analysis in Solbergsstrand/Drøbak, Norway 6-8 October 2021
- Reference image libraries for automated plankton analysis in Nordic Microalgae web site http://nordicmicroalgae.org (in development)
- Carbonate system - planned and past intercomparison of instruments (ex. TNA in Norway), collaboration with ICOS community, data reporting in SOCAT database


IFCB Solbergsstrand NIVA


FerryBox system on IFCB R/V Svea with carbonate system sensors. SMHI

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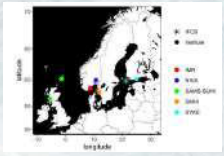
Kattegat-Skagerrak-Eastern North Sea IRS

Business case updates (user/stakeholder involvement/interaction, financial sustainability)

- Stakeholders include
  - Ministry of the environment, Sweden
    - Swedish Agency for Marine and Water Management
  - Ministry of the Environment, Denmark - Miljøstyrelsen
  - Norwegian Ministry of Climate and Environment
  - Bundesländer: Schleswig-Holstein and Niedersachsen
  - National Food Agencies
- Potential regional stakeholders include
  - Water Quality Association of the Bohus coast
  - County administration boards

Organisational/structural updates (regional organisation, MoUs, etc.)

- Establishment of European IFCB network
- Initiated discussion about MoU SMHI-NIVA etc.
- Cooperation through EuroGOOS
  - Biological Observations Working Group BIOWG
  - FerryBox Task Team



Upcoming workshops

- Automated plankton analysis 22-26 August 2022 + JERICO day 27 August
- Joint North Sea, Kattegat-Skagerrak-Eastern North Sea, Baltic Sea, Hamburg/Geesthacht, September 2022

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Norwegian Sea IRS

Integration updates (IRS/PSS, institutes, RIs, etc.)

- The Norwegian partners of Jerico and additional national collaborators developed the Coastwatch approach delivering the Norwegian contribution to the Jerico RI. This is under progress, and include in the national roadmap, but only partly implemented
- The ship of opportunity program called NORSOOP is funded integrating the Ferrybox activities in Norway
- A new RV (Jakup Sverri) is now established leading to the increased capacity of basic parameters underway and so has become part of the integrated coastal observation strategy.
- Some development of the partners contribution to ERICs (NIVA now part of ICOS)

Interoperability/harmonisation updates (technical, best practices, data flow, etc.)

- Techgnical collaboration mostly on the NORSOOP programme, still low collaboration outside
- Concerning the data flow, the Jerico activities are closely connected to the CMEMS service where IMR is leading the Arctic INSTAC activity where the data from the Norwegian Sea IRS is allocated to
- In addition data flow is established via the NorSOOP programme for the ships of Opportunity data

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Norwegian Sea IRS

Business case updates (user/stakeholder involvement/interaction, financial sustainability)

- The funded ships of Opportunity programme NORSOOP is actually the solely part that is funded on a long -term external basis.
- The Coastwatch funding proposal sent to the Research Council unfortunately was turned down from the infrastructure funds, but a plan for sustainable development from initially institutional funding is under development

Organisational/structural updates (regional organisation, MoUs, etc.)

- The Coastwatch approach forms the organisational structure of the Norwegian part of the IRS. Still no formal MOUs are in place
- Faroese Islands are connected to a Nordic consortium aiming for the standardisation of eDNA methodologies.

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This work was supported by the JERICO-S3 and JERICO-DS project. These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153 / 951799.

IRS-PSS breakout discussions

Wednesday 16 March 16:30-17:00

Breakout discussion

Objectives

- Begin dialogue between IRS-PSS to foster collaboration, synergies, and overall strengthening of JERICO-RI observations
- Identify key topics/thematics/questions that can be addressed within the current breakout group, or with other IRS/PSS that are not in the existing breakout group
- Consider what modes or structures of collaboration are needed (e.g., discussion email lists/forums, regular meetings, etc.)
- This short 30 minute breakout will for the basis for future meetings/discussions at JERICO-Days in Tallinn (summer 2022) and beyond

Breakout 1 (lead: Jukka)
- Norwegian Sea IRS
- KASKEN IRS
- Baltic PSS
- North Sea PSS

Breakout 2 (lead: Andrew)
- Bay of Biscay IRS
- Iberian Atlantic Margin IRS
- English Channel PSS

Breakout 3 (lead: Martin)
- Northern Adriatic Sea IRS
- NW Med PSS
- Cretan Sea PSS

Breakout 1: Norwegian Sea, KASKEN, Baltic, North Sea
Lead: Jukka

Starting discussion points
- Key topics/thematics/questions that can be addressed
- What modes or structures of collaboration are needed (e.g., discussion email lists/forums, regular meetings, etc.)
- zooplankton/phytoplankton species/distribution/abundances
- Climate change influences: ex. length of growing season
- Carbonate system: coastal ocean acidification for example, changes and variability in carbonate system
- Currents / physical oceanography - interregional connectivity
- MoU? With JERICO or between partners?
- How regional services can contribute to scientific themes/questions on a basin-wide scale
- Stardardise approaches for novel techniques / technology: demonstrate coordination; what types of questions can we try to answer: settle on common approaches, ex: sufficient sampling frequency
- Compare similar marine ecosystems through different PSS and IRS : estuarine plumes, well mixed vs. stratified shelf systems, continental margins, highly anthropogenic systems, etc.
- What to learn from PSS of relevance to IRS
- How observations in an IRS (between 2 PSS) can address the connectivity (filling gaps) between PSSs
- Involve regional partners outside of JERICO and interested stakeholders: perhaps hold frequent workshops

Breakout notes, next steps (with Tallinn meeting (and Ferrybox workshop) in mind)
- IRS vs PSS roles and how to integrate?
- …
- …

Starting discussion points
- Key topics/thematics/questions that can be addressed

Breakout 2: Bay of Biscay, English Channel, Iberian Atlantic Margin
Lead: Andrew

- **Suggestion from IRS - BOB : Exchange on main science topics and availability of observations**
- **Suggestion from IRS - BOB : The possible collaboration during 2022-2023 in the development of a trans-region activity on slope current monitoring led by IRS - Atlantic Margin has been identified.**
- **Suggestion from IRS - BOB: Latitudinal migrations, biological/ecological connectivity (also with NW Med PSS - for Tuna migration)**
- **Suggestion from PSS - EC : trans-region integration of phyto- and zooplankton observations at different scales (abundance, biomass, diversity) through EC PSS & BOB & IAM IRS through target studies on comparable sites of important estuarine inputs (ROFIs), coastal-shelf-margin transects, long-term evolution (sites combining traditional and novel approaches) from the strait of Dover to SW Iberian Margin**
- **PSSs to identify key points challenging operations at a regional level, transmit info to consortium and IRS; IRS to identify key challenging organisation/structural issues at a regional level**

- What modes or structures of collaboration are needed (e.g., discussion email lists/forums, regular meetings, etc.)
  - Continue virtual meetings and certainly in-person meeting at JERICO summer meeting in PT
- …

Breakout notes, next steps (with Tallinn meeting in mind)
- …
- …
- …

Breakout 3: Northern Adriatic, NW Med, Cretan Sea
Lead: Martin

Starting discussion points
- Key topics/thematics/questions that can be addressed
- What modes or structures of collaboration are needed (e.g., discussion email lists/forums, regular meetings, etc.)
- …

Breakout notes, next steps (with Tallinn meeting in mind)
- …Plankton imaging as a possible technology to integrate across regions, basins, Europe.
- …Best practices for fluorescence, primary production and flow cytometry observations, so they can be integrated with other phytoplankton observations
- …Biological observation might showcase the possibilities of Jerico core and multiparameter integration
- … FAIR data might be essential to show integration
- Extreme events might be good to demonstrate integration
- A common workgroup could gather data on heatwaves and extreme storms and make a common analysis
- Integration still is naturally part of oceanography.

This work was supported by the JERICO-S3 and JERICO-DS project. These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153 / 951799.

REGIONS WORKSHOP : PSS progress meeting
Wed 16 March, 13:00-15:00

- highlights of PSS Actions during the first year of implementation to be presented to WPs .

Agenda

1. 10' 13:00	**Introduction to the session, including short summaries for D4.2 and D4.3**
2. 40' 13:10	Integration within PSSs, 10 min per PSS •Recent highlights of PSS activities •Examples of integration within PSSs •Challenges in the integration within PSSs
3. 10' 13:50	Discussions
4. 20' 14:00	Connecting between PSS, between WPs and other initiative, including discussions •Thematic meetings to be arranged •WP contributions to be discussed •Streamlining activities
5. 20' 14:20	Partnership building, interfacing with other RI's and communities, including discussions •PSSs current connections to ERICs etc. presented, regional vs. strategic •Commentary from WP2 asked
6. 20' 14:40	OTHER ISSUES, like Where WPs need PSSs input -

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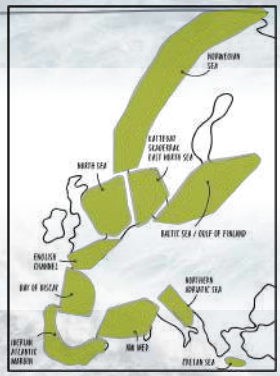
Brief recap of IRSs and PSSs

WP3 Integrated Regional Sites: "*…organize, harmonize, and integrate existing coastal observing activities and initiatives within regions and between regions…*"

5 regions - Norwegian Sea, Kattegat-Skagerrak-Eastern North Sea, Bay of Biscay, Iberian Atlantic Margin, and Northern Adriatic Sea

WP4 Pilot Supersites: "*…provide a proof of concept and feasibility for JERICO-RI Supersites designed for European coastal seas…*"

4 sites - Gulf of Finland, North Sea/English Channel, NW Mediterranean Sea, Cretan Sea



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Brief recap of PSSs

WP4 Pilot Supersites:

- to provide a proof of concept for coastal Supersites, to study how the coastal observations are best integrated, for provision of sustained multidisciplinary observations
- actions to be piloted include new institutional and organisational collaboration schemes
- interface with regional user communities, demonstrating the added value of integrated actions
- provide new knowledge on the requirements for integrated coastal data and products
- iterate how the linkages between Supersites and other observatories should be optimally built-up for various coastal regions, and how communication between Supersites need to be structured, to meet pan-European requirements for high impact coastal observations

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Short summaries for D4.2 and D4.3
D4.2 – "Refined PSS monitoring strategies".

Assessment of JERICO-S3 Pilot Supersite (PSS) implementation during the first year of PSS period, and refinements needed

4 PSSs - 30 Actions

- Overall developments in PSSs
- Analysis of implementation for each Action
- Refinements of Actions
- Refinement of Links

Under review by coordination

Table 4 (update from D4.1 table 12): Synthesis of links between PSSs implementation actions and JERICO S3 WPs

	GoF PSS Actions	NW-MED PSS Actions	NSEA & CHANNEL PSS Actions	Cretan PSS Actions
WP1	All	All	All	All
WP2	1, 2, 5, 6, 7, 8, 9, 10	1, 2, 3, 4, 5, 6	1, 2, 3, 5, 6, 7, 8, 9	1, 2, 3, 4, 6
WP3 (With IRS)	2, 10	2, 6	1, 3, 4, 6, 8, 9	6
WP4 (Between PSS)	2, 3, 6, 8	2, 3, 6	1, 2, 3, 4, 6, 7, 8, 9	1, 2, 3, 6
WP 5	3, 4, 5	3, 4, 5	1, 3	2, 3
WP 6	3, 4, 6	3, 4	1, 2, 3	2, 3
WP 7	1, 3, 4, 7, 8	1	3	5
WP8	3, 8	3	3	5
WP9	10	3	3, 6, 7, 8	6
WP10	All, especially 9	All, especially 5, 6	All, especially 8, 9	All, especially 6
WP11	3, 4	3	1, 3	3

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Short summaries for D4.2 and D4.3
D.4.3 – "Progress report on PSS implementation"

A detailed report of JERICO-S3 Pilot Supersite (PSS) implementation during the first year of PSS period:

4 PSSs - 30 Actions

- Key Message from the Action
- Main achievements
- Regional and pan-European integration
- Explain rationale for changes in plan for 2022
- Refined implementation plan to PSS Actions.

Under review by coordination
PSS Actions are active until Nov 2022

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Agenda

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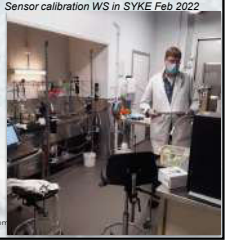
Integration within PSSs: Recent highlights of GoF PSS activities

PSS joint activities to improve quality and connectivity of observations within PSS and beyond
- WSs for optical sensor calibration, sharing workload in sensor calibration and testing
- WSs for technical and QC harmonisation of observations
- meetings in planning joint multiplatform missions
- meetings to share experiences in use of platforms

including
- other regional actors (from Sweden, Finland and Estonia)
- national RI (FINMARI partners from Finland)
- other PSS (Cretan PSS)
- connections to other RIs

TBD
- creating/sharing new BPs & SOPs
- improve between PSS exchange

Sensor calibration WS in SYKE Feb 2022



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Integration within PSSs: Recent highlights of GoF PSS activities

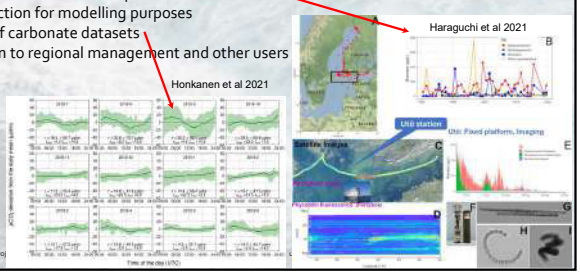
PSS joint activities to progress data use and creation of joint products

Demonstrated as
- Dataflows/visualisations for multiplatform HAB detection
- BGC data collection for modelling purposes
- Joint analysis of carbonate datasets
- Communication to regional management and other users

TBD
Improving in
- modelling
- Ocean colour
- joint products
- dissemination

Haraguchi et al 2021

Honkanen et al 2021



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Integration within PSSs: Examples of integration within GoF PSS

Although the partners already collaborated prior to GoF PSS, the PSS provides a more structured and focused framework in building future collaborations.

- Transfer of knowledge in sensors, platforms, BPs, SOPs
- Sharing resources by using same platforms, agreeing on maintenance/calibration
- Sharing data (esp. some platforms not functional due to Covid) and analysing data jointly
- Combining competences to improve processes and products
- Planning dissemination and communication jointly, creating impact.

Strengths in the partnership
- complementary
- areas of specialisation
- common aims

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Integration within PSSs: Examples of integration within GoF PSS

GoF PSS has well established connections to several other environmental RIs active within the region and various collaborative activities have been identified.

To be detailed later in WS, but including especially ICOS ERIC and AQUACOSM

https://ta.aquacosm.eu/
Call closing Mar 31

https://www.jerico-ri.eu/ta/call-program/third-call/
Call closing 3 May

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Integration within PSSs: Challenges in the integration within GoF PSS

(and many valid to all others too)

- Covid preventing use/maintenance of some platforms, affecting joint data collection and preventing in-person WSs and missions
  - ➢ Need to focus and adapt
- Short study period, very limited funding -> how to alter business-as-usual
  - ➢ instead of making the permanent transformation in coastal observing, rather collecting information how-to (to structure JERICO-RI)
- Many Actions but only a few people involved, relying on other projects/initiatives
  - ➢ very essence, JERICO-RI need to grow bigger than the funded projects. Need to improve the involvement and commitment of institutes and nations.
- Delays in merging transnational multiplatform data, slow uptake of technologies, BPs & SOPs, issues in data flows; all leading to lower than desired impact of joint products (despite some good examples presented above)
  - ➢ I guess, this is why we have a Pilot, to reveal as many as possible real-life challenges

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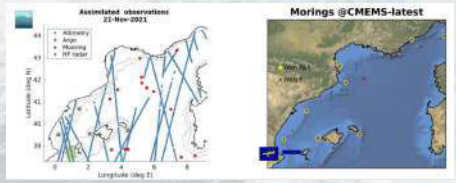
Integration within PSSs: Recent highlights of NW MED PSS activities

- Integration of multiplatform observations into high resolution model WMOP (altimetry, SST, Argo, radars, moorings and gliders) for North Current transport and particles dispersion (action#1)



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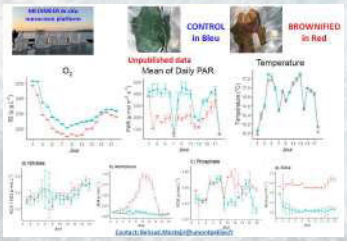
Integration within PSSs: Recent highlights of NW MED PSS activities

- Experiment connected to observation: large mesocosm experimentation in order to highlight "Marine plankton community responses to terrestrial dissolved organic matter input". Impact of terrestrial OC on BGC and phytoplankton species. First collaboration AQUACOSM-plus & JERICO-s3 (action#2)



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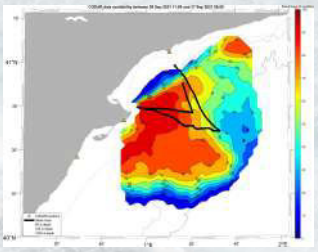
Integration within PSSs: Recent highlights of NW MED PSS activities

- Joint cruise in September 2021 in front of the Ebro delta between CNRS France, CSIC, PdE (action#3)

Demonstration action of glider deployment in front the Ebro delta a challenging area with a lot of traffic!

Comparison / Validation of surface current from HF Radar (PdE) and Glider-ADCP (CNRS)

Impact of river inputs to the coastal area (link biogeochemical glider data and satellite data)



Masson et al., in prep.

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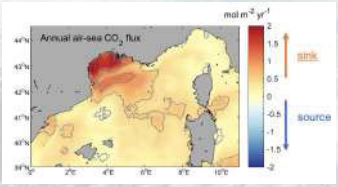
Integration within PSSs: Recent highlights of NW MED PSS activities

- Development of air-sea CO2 flux module in SYMPHONIE-ECO3MS (C.Ulses, LEGOS) using in situ observations and carbonates variables predictions from a regional neural network CANYON-MED (Fourrier al., 2021) action#4



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Integration within PSSs: Examples of integration within NW MED PSS

- Data assimilation through operational model (Spain-France-Italy)
- Joint cruise with CSIC, CNRS, PdE… in September 2021 in front of the Ebro River for river inputs study using multiplatforms approach
- BGC regional model and AI integrate several platforms operated by differents national networks and RI (EMSO, EURO-ARGO, ICOS, ILICO, SOCIB…) to deliver products useful for scientists and to build climate/ocean health indicators (impacts on society)

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Integration within PSSs: Challenges in the integration within NW MED PSS

- What is the goal at the end ? Is the PSS model will be retained in the future RI ?
- National networks are not supported in the same way (sustainability). Not the same level of operations
- BGC and biological observations are not provided everywhere BUT it is progressing (sharing expertises between institutes, capacity building with gliders in Italy…)
- Contact with DANUBIUS…
- Impacts of COVID for face-to-face meetings (synergy,...)

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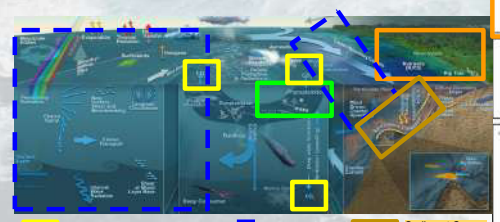
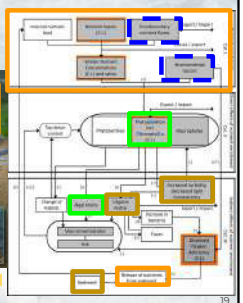
Integration within PSSs: Recent highlights of NSEA and CHANNEL PSS activities

Overview of the main compartments and variables addressed within the EC & NSea PSS





*Generic conceptual framework to assess **eutrophication** (source: OSPAR Commission)*

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Integration within PSSs: Recent highlights of NSEA and CHANNEL PSS activities

- Towards a **real multiplatform in situ** approach, coupled with **modelling** and **EO** products, from the sensors/raw data to the results, through harmonized/optimized tools and products.
- Beyond our capacity to answer **Key Scientific Challenges**, real possibility of **contribution to EU Directive and Regional Sea Convention** needs, from the design of the monitoring programmes to the assessment (Eutrophication, Pelagic Habitats, Food Webs).
- Extensive **quality control procedure** applied to:
  - the SOOP Lysbris Seaways and Hafnia Seaways **pCO_2** dataset (Hereon), including data corrections and careful comparison to available SOCAT data
  - the **nutrient** concentrations and associated **river flow** datasets (needed for the calculation of nutrient fluxes) and comparison to OSPAR RID, NIOZ databases.

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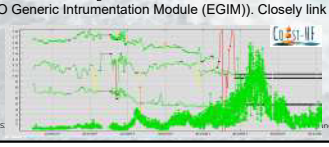
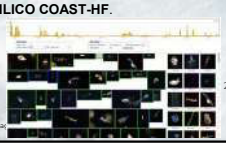
Integration within PSSs: Recent highlights of NSEA and CHANNEL PSS activities

- The Helgoland Underwater Observatory (**HUWO**) equipped with a CPICS plankton and particle imager as well as CTD, oxygen sensor and ADCP, is now fully operational.

- **Specific cruises** into Norwegian Fjords, the English Channel with implementation of different **in-situ and benchtop imaging instruments** (CPICS, UVP5, UVP6-LP, UVP6-HF, LOKI, PELAGIOS, LISST-Holo, ISST 200, Cytosense, FlowCam) and **optical sensors** (Fluoroprobe, AOA, FRRF, Wiz) **:** comparisons of results, harmonization of data outputs, self-developed imaging systems (based on Machine Learning).
- Beginning of the **integration of new sensors** on the instrumented station MAREL Carnot (flow cytometer, AOA, WIZ, pCO_2) using the smart multisensor marine observation platform **Costof2** (core of the EMSO Generic Intrumentation Module (EGIM)). Closely link to **IR ILICO COAST-HF**.

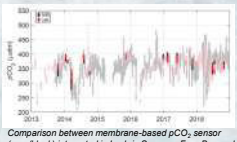




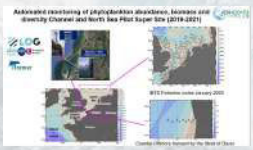
The JERICO-S France.

Integration within PSSs: Examples of integration within NSEA and CHANNEL PSS

- Improvement of the coherence of current **carbonate system parameters** (comparison of available operational data to data from the ICOS community,from the SOCAT database) [Action#1]
- Improvement, harmonization of **riverine nutrient input** assessments to the NSea and EC area (OSPAR Region II, MSFD NSea & EC area) [Action#2]
- **Data Integration** for multiplatform / multiparameter environmental assessment and to resolve the spatio-temporal variability of phytoplankton, carbon and SPM dynamics [Actions#4,5] => North Sea, Wadden Sea Data Management (**NWDM**) + Fr Système d'information pour le Milieu Marin (**SIMM**) + **ICES** + **EU Data Portals**



Comparison between membrane-based pCO_2 sensor (gray/black) integrated in Lysbris Seaways FerryBox and a shower-head traditional equilibrator system (SOCAT) (pink/red), Macovei et al. 2021a



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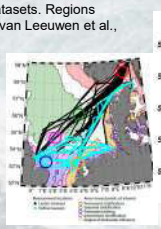
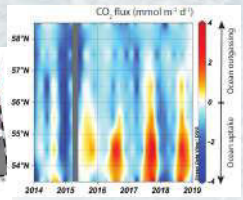
Integration within PSSs: Examples of integration within NSEA and CHANNEL PSS

- Air-sea CO_2 fluxes in NSea PSS waters have been calculated over time, with regional variability, based on Lysbris Seaways and Hafnia Seaways datasets. Regions based on stratification regions defined in van Leeuwen et al., 2015.





Air-sea CO_2 flux for one section in North Sea from the Skagerrak to the southern North Sea, 2014-2019 Macovei et al. 2021b, GRL

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Integration within PSSs: Challenges in the integration within NSEA and CHANNEL PSS

- Need for optimized and harmonized protocols for **regular data retrieval** from different (types of) sources [link to WP6]
- New aggregation and numerical methods for **gap filling and data analysis** (including **Machine Learning**) [link to WP6, WP11]
- Improve **cross-regional communication**: possibility of transfer/share for platforms, methodologies, tools and knowledge
- Identification of **observational gaps** at the whole EC & NSea PSS scale + recommendation on how to address these gaps
- Improve our capacity to face **unexpected events** (e.g., sanitary restrictions affecting data availability for SOOP lines & long-term records), **unstable funding and human resource issues**
- Strengthen the link between **JERICO-S3/RI/DS** and **RI ILICO** + **RI COSYNA** (i.e., improve national and EU strategy)

Challenges beyond our PSS that we were involved with:

- Development of a SOP for underway pCO_2 measurements with membrane-based sensors including data correction

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Integration within PSSs: Recent highlights of CRETAN PSS activities

Joint activities to provide in situ open access *carbonate system* data, in an area with scarcity of data

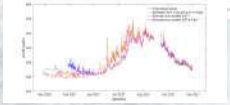
- Meetings between partners, for practices for carbonate system sensors, data processing, data QC, carbonate data submission

Demonstrated as

- Dataset submission to SOCAT,
- Participation in ICOS WS 2021
- Presentation to the SOLAS community (Ocean Carbon from Space)
- Announcement from JS3 and POSEIDON website

Include also

- Interaction with scientists outside JS3 working on pH and CO_2
- Industry manufacturers
- interaction with SOCAT, ICOS, SOLAS, ACTRIS



TBD

- more realistic simulations of air-sea CO_2 fluxes using a 3D hydrodynamic/BGC/Carbonate ecosystem model
- submission of carbonate data to additional databases
- New/improved regional algorithms for carbonate variables estimation, shown in conferences

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Integration within PSSs: Recent highlights of CRETAN PSS activities

Joint activities to to improve *primary productivity* estimates in oligotrophic waters and improve ways to analyse effects of *extreme events* on *phytoplankton*

- •Meetings for practices for phyto sensors
- •Exchange of sensors between partners for calibration and tests in field, lab, mesocosm
- •Meetings for preparation of participation in mesocosm experiment (AQUACOSM-JERICOS3)
- •participation in WSs for optical sensor calibration

Demonstrated as

- • participation in GoF PSS Algaline fluorometer sensor harmonization workshop in 2021 and 2022.
- •WS during TA for transfer of knowledge on new PP technology tools between PSS partners (TA, LabSTAF, Chelsea Technologies)
- •TA post in JS3 and POSEIDON website

Include also

- •Industry manufacturers

TBD

- •Mesocosm experiment testing multiple sensors/methods for phyto composition/ biomass/PP in oligotrophic conditions

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Integration within PSSs: Examples of integration within CRETAN PSS *transnational/transinstitutional*

Integration obtained
from transfer of knowledge between PSS partners on

- practices for sensors, data processing, data QC, data submission
- new technology tools for measuring PP, phyto biomass/composition in oligotrophic waters
- regional algorithms
- meetings in planning setup of mesocosm experiment for comparison of various phyto biomass and PP sensors with conventional methods

under preparation : Improved model for PP and carbonate variables

Pros of partnership : covers multiple disciplines : phytoplankton, carbonate chemistry, optics
Cons of partnership : most partners not directly involved in field operations

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Integration within PSSs: Examples of integration within CRETAN PSS *with RIs*

Contact established, actions done/planned (jointly with PSS partners)

- •AQUACOSM-plus: planning done for joint activity in 2022
- •ICOS-ERIC: Participation in ICOS intercomparison workshop in June 2021, preparation of joint paper together with other PSSs partners
- •EMBRC-ERIC: Since September 2021 providing additional EBV data of common benefit
- •SOLAS: participation to the Ocean Carbon from Space Workshop 2022

Contact existing/established, action to be planned

- •EURO-ARGO ERIC: contact with HCMR colleagues participating in Euro-Argo ERIC to find activities of common interest (e.g. provision of CTD casts in NRT)
- •EuroGOOS: contacts with EuroGOOS groups established (coastal group, biology group, Ferrybox task team)

Contact established, no action planned

LifeWatch-ERIC: Contacts made, interest in pH data obtained at Cretan Sea was expressed, but no common activity planned yet.

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Integration within PSSs: Challenges in the integration within CRETAN PSS (½)

***General* challenges, spotted prior to implementation period (common with other PSSs)**
Many partly tackled during implementation <= Positive impact of JERICOS3

- •Sharing knowledge between PSS regions (e.g. Best Practices)
- •Connecting with other users in the region
- •Connecting other RIs in the region
- •Promoting the use of coastal observation data and results in society
- •Connecting to other actors in the region (data collection, modelling, satellite communities)
- •Sharing knowledge between RIs inside PSS region (e.g. Best Practices)
- •Sharing of knowledge inside PSS region (e.g. Best Practices)
- •Transnational/-institutional sharing and operating platforms, equipment and use data

but...

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Integration within PSSs: Challenges in the integration within CRETAN PSS (2/2)

…other challenges remain

***Regional* challenges, spotted prior to implementation period remain**

- •How to maintain the operation (i.e.maintenance funding) of existing infrastructures
- •How to strengthen the trans-institutional collaboration via National RI (HIMIOFOTS)
- •How to establish platforms with endurance in neighbouring countries
- •How to expand spatio-temporal coverage

+New challenges <= 1st year implementation period

- •Even without covid, difficult to keep all platforms active simultaneously, especially due to limited personnel to support all actions
- •Demo of what can be done, of the various capacities, but
  not able to keep all these capacities later and at long term,
  neither an active participation to additional RIs (e.g. ICOS) under current funding schemes

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DISCUSSIONS 10'

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Connecting between PSS, between WPs and other initiative

- **Thematic meetings/WSs to be arranged by PSSs and others**
- **WP contributions to those meetings to be discussed**
- **Streamlining activities to minimize efforts and maximize outputs**

PSSs have identified several thematics where between PSS interactions would be useful.

- Aim is to organise these in collaboration with other WPs and IRSs, if possible
- Use already existing meetings as platforms
- Expect each PSS to host at least one such joint event (e.g. 2-4 hour session, being in charge alone, with another PSS(s), with IRS(s) or with another WP(s))
- To support also JERICO-DS WPs and Tasks, and eventually ESFRI process
- New ideas welcome!!!

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Connecting between PSS, between WPs and other initiative

- **Data mining exercise**

18 Oct. (virtual, theoretical approach) + 8-9 Dec. 2021 (training)

Coord.: Lefebvre A. (Ifremer), Poisson-Caillault E. (ULCO/LISIC).

Who: EC & NSea PSSs but Covid-restriction => French / Belgium Workshop only!
Virtual session open to other PSSs and IRSs but message lost???

Tools: See https://mawenzi.univ-littoral.fr/

- uHMM : Unsupervised Hidden Markov Model, **automatic segmentation** of time series.
- DTWBI : **Univariate** signal - Dynamic Time Warping based Imputation, **filling large gaps** within time series.
- DTWUMI : **Multivariate** signals - Dynamic Time Warping based Imputation, **filling large gaps** within time series.
- sClust : Spectral clustering, **direct and multi level segmentation** for time series or points.

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Connecting between PSS, between WPs and other initiative

- **Data mining exercise**

Data sets used during the training session:
MAREL Carnot (**HF instrumented station**) : 2004 - present day ; sampling frequency: 20 min.
RV « Thalassa » - **Ferry Box** : 2018 - present day; sampling frequency: 1 min.
DYPHYRAD **cruises** 2013-2020 : sampling frequency: 30 sec.
FRRF data set 2017: Jerico Next campaign between the Baltic Sea and the Skagerrak; sampling frequency: 10 sec.
Flow Cytometer coupled to the MAREL Carnot instrumented station : duration: 50 days ; sampling frequency: 2 hours.

Links to be improved with **WP5** Harm. of the integrated systems, **WP6** Data, products, service, **WP7** Technology Innovation, **WP11** Virtual Access : need to anticipate the data format and data flow, def. of the list of EOV/EBV to be processed (sensors and expert value ranges, QA/QC, ...) => Impact on pre-processing and processing steps.

Is there a need for a **second workshop**?

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Connecting between PSS, between WPs and other initiative

- **Workshop on Best practices strategy for coastal carbonate systems data management**
  - Will be organized in Tallinn in June 2022
  - Presentations of all PSSs related actions + WP6 related tasks
  - Each presenter* will give a short presentation on one or several of the following :
    a) in situ data collection
    b) estimates from remote sensing (e.g. algorithms used to estimate carbonate variables)
    c) modelling carbonate system
  - including results, method, practices, data QC, carbonate system specific issues, metadata, gaps, challenges, interaction with ICOS, databases used
  - Examples of topics for discussion (focus on joint PSSs actions and WP4<->WP6 !) :
    -connection to ICOS: e.g. joint post on outcome from participation of PSSs in ICOS WS 2021
    - best practices exchanges
    - interaction with WP6

**actions+presenters to be confirmed : GoF#1 (Laakso, Rehder), GoF#6 (Rehder, Laakso) ; NWMed#4(Coppola); NSea#1 (Voynova, Frigstad), NSea&EC#5 (Blauw, Artigas); Cretan #1 (Frangoulis), Cretan#4(Tsiaras), Cretan #5(Stamataki)*

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Connecting between PSS, between WPs and other initiative

- **Hosting a NS PSS / English Channel PSS / KASKEN IRS workshop together with a 2022 FerryBox Workshop (3.5-4 days)**
  - **week of September 26, 2022**
  - **hosted by Hereon at Hamburg / Geesthacht, organized by Hereon with NIVA and SMHI help**
  - **links to BIOWG at EuroGOOS & DANUBIUS**

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Connecting between PSS, between WPs and other initiative

River monitoring networks and impact in the coastal area:

- From multi-national to PSS scale: network almost done, meeting still need to organise
- NWMed PSS and adjacent IRS (Adriatic, Greece) still need to harmonise
- Link to DANUBIUS (done for Ebro, first steps done for Po)
- Link with all PSSs in J3? Meeting in 2023 to share practices, experiences … ?

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Connecting between PSS, between WPs and other initiative

- **Transnational operations and harmonisation (biological observations)**

Each PSS has been working a bit in isolation for harmonising their observations. This may be detrimental especially for emerging technologies, where networks are not so well established and we need to share within the partnership the most recent advances.

GoF suggest to contribute in this thematics by organising/contributing between PSS/IRS/WP interactions.

In practice, to plan a specific WS where PSSs (not only) can present their recent advances in use, harmonisation, and transnational operations for biology related (no only) observations.

links to WP5, 6, 7; others?
Any suggestions when/where? (Likely Sep-Dec 2022)

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Connecting between PSS, between WPs and other initiative

- **Other suggestions?**

- GlobalHAB symposium on automated in situ observations of plankton

For anyone who likes to propose, we are happy to collect ideas!

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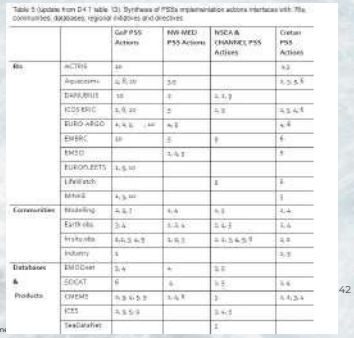
Partnership building, interfacing with other RI's and communities

PSSs connect within regions to various other RIs and communities.
Mostly (if not always) these connections are informal, based on personnel/institutional connections.

Connections include
- data provision
- BP & SOP sharing
- practical work with some limited thematics/platforms/sensors
- joint missions/experiments

But also very pragmatic sharing of resources in regional/institutional level.



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Partnership building, interfacing with other RI's and communities

AQUACOSM

JERICO-S3 and AQUACOSM-plus will study how to connect transnational observations and experiments, to provide better answers to some pending scientific questions.

How extreme climatic events affect phytoplankton communities.

NW Mediterranean Sea – Spring 2021, maybe also 2022
Cretan Sea – Spring 2022
Gulf of Finland – Summer 2022

TA Calls open!!!

Observations (providing relevant scales and frequencies of the events)
Experiments (studying causalities after manipulation of environmental conditions).

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Partnership building, interfacing with other RI's and communities

AQUACOSM

JERICO-S3 and AQUACOSM-plus are collaborating

- in plankton imaging
  - AQUACOSM WS in imaging 21st Dec 2021, with some JERICO participation
  - JERICO TA projects, where AQUACOSM partners visit SYKE & FMI, transfer of knowledge one key issue besides scientific work
  - strategic freshwater partner in imaging
- in sensor technologies
  - all planned mesocosm experiments include transfer of knowledge between communities in sensor systems and specific technologies

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Partnership building, interfacing with other RI's and communities

ICOS and ACTRIS

GoF -PSS
ICOS OTC Calibration WS participation by GoF PSS / FMI in 2021
GoF PSS VOS line Silja Serenade proposed to become part of ICOS-OTC Finland
GoF PSS Utö becoming ACTRIS site, already part of ICOS, HELCOM and GAW

Cretan Sea -PSS
ICOS OTC Calibration WS participation by CS PSS / HCMR in 2021
Contact with ACTRIS initiated for use of atmospheric CO_2 station

North Sea -PSS
ICOS-OTC pCO_2 intercomparison participation, June-July 2021 at VLIZ Oostende, Belgium
Contact with ICOS OTC for integration of Cuxhaven FerryBox station

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Partnership building, interfacing with other RI's and communities

ICOS

NW MedSea (interactions with ICOS)

- Participate to ATL2MED demo mission (Saildrone-OTC) in 2020 with several MedSea institutes (SOCIB, CNRS, OGS, CNR…): produce a technical report and a scientific paper in preparation
- Participate to the joint common sensor inter-comparison exercise in Aug. 2021
- Implementation of pCO_2-pH sensors in Marseille and Villefranche coastal buoys
- Demonstrate interest to use neural network (CANYON-MED) to predict carbonate variables (Fourrier et al., 2020). This tool is already used by the Argo community. See figure for coastal applications !
- Presently working together on Infra-Tech01 call (ICOS, EMSO, EURO-ARGO). The NW MedSea is proposed as a key demo mission for carbonate system …

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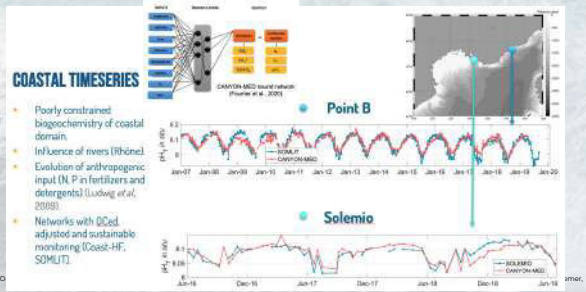
Partnership building, interfacing with other RI's and communities

Application of neural network in PSS to predict pH measurements in coastal waters : useful to validate autonomous measurements and fill the gaps (M.Fourrier, phD thesis Sorbonne Univ. 2021)



The JERICO... France.

Partnership building, interfacing with other RI's and communities

DANUBIUS

- NW MED PSS: Ebro system inside DANUBIUS, provided river data in real time during joint actions in the coastal area
- IRS Adriatic: Po river delta and N. Adriatic lagoons are a DANUBIUS supersite. Collaboration within the "JIVE" JERICO-S3 TA project on S1-GB facility off the Po river delta on seawater optical properties and evaluation of sensors. Future joined workshops on best practices / protocols etc can be an important subject to improve collaborations.
- NSEA PSS: Cuxhaven FerryBox data stream information has been communicated in DANUBIUS. New Elbe River research station at Tesperhude, with a FerryBox and a suite of additional sensors is designed and implemented at Hereon (PI J. Friedrich)

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Partnership building, interfacing with other RI's and communities

EMSO

EMSO - NW MedSea interactions

OBSEA cabled coastal site (UPC) is part of EMSO

EMSO - Cretan Sea interactions

E1-M3A is part of EMSO

EMSO - GoF interactions

EMSO approached FINMARI / Laakso to discuss possible co-operation in the Nordic Countries (2022)

EMSO - JERICO interfaces

- Sharing Best Practices for Fixed Platforms maintenance
- EMSO facilities used as reference sites for data quality control during gliders deployments (T, S, O_2)
- Extension of EMSO into coastal waters ?
- Places of the gliders inside the EMSO ERIC : discussion in progress …
- TNAs on common platforms are benefit for Jerico and EMSO

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Partnership building, interfacing with other RI's and communities

EUROSEA & EURO-ARGO interactions in NW MedSea PSS

- EUROSEA WP3 will produce Best Practices for all marine platforms and reinforce the multiplatforms integration (eg. gliders, fixed platforms,...)
- EUROSEA T7.1 aims to produce carbon audit of the European relevant deep convection regions as the NW Med Sea PSS (S.Thomsen, P.Testor,J.Karstensen)
- EA-RISE/EURO-ARGO focus on the deployment of BGC-Argo floats in NW MedSea
- EURO-ARGO will plan to deploy coastal ARVOR floats into coastal waters. Could be useful for different JERICO regions (eg. Baltic Sea, NW MedSea)

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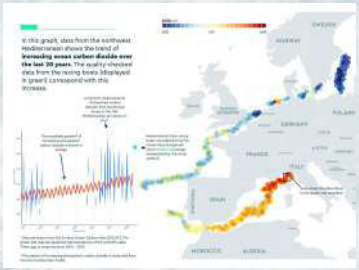
Partnership building, interfacing with other RI's and communities

How a sailing race is helping to explain the effect of the climate crisis on the oceans

Race of sailboats equipped with pCO_2 sensors in 2021 connected to the MOOSE cruise and measurements of the carbonate system in the NW MedSea PSS to validate the pCO_2 measurements (collaboration with EUROSEA project)



https://racetozero.unfccc.int/how-a-sailing-race-is-helping-to-explain-the-effect-of-the-climate-crisis-on-the-oceans/

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Partnership building, interfacing with other RI's and communities

- **GROOM**
  - GROOM is now in charge of the perpetuation and the extension of the data service through CORIOLIS
  - J3 PI integrated the advisory board of GROOM
- **Others?**

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Partnership building, interfacing with other RI's and communities, including discussions

- **WP2 comments asked: how to capitalize the regional experiences on RI-RI interactions**

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Where JERICO-S3 and JERICO-DS WPs need PSSs input

- **comments and questions from WP leads**
- **Discussing Scientific objectives:**
  How are the scientific objectives defined in WP1 followed by PSS and IRS?
- **other comments and questions**

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Part of this work was supported by the JERICO-DS project. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153/951799.

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Science case questionnaires outcome and the JERICO strategy that led to focus the demo on phytoplankton dynamics (5 min + Q&A)

Anna Rubio, A. Gremare, D. Durand, L. Coppola (WP1)
E. Delory , J. Blandin(WP7), L. Delauney, Regions leaders

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Definition and framework

Sensor package: set of sensors (generic + specific sub-packages) that are required to fulfill the needs of a coastal site and application or domain.

From a technological perspective, the sensors may be connected to a common control, power and communication system and form an instrumentation **module**.

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Main topic and Science Case Questionnaire

After JERICO-NEXT plankton dynamics (e.g. algal blooms) seen as one the key topics for the integrated observation of the coastal area

"Pelagic Sensor Package for the integrated observation of plankton dynamics"

JERICO-S3 QUESTIONNAIRE (NOV 2020) - ALL JERICO REGIONS

The **main rationale for a demonstration according to the problematics and scientific stakes of the region**, including abstracts on up to three Scientific Actions (related to the JERICO-S3 KSCs)

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Questionnaire for Sensor Packages: MAIN OBJECTIVES

- The **main rationale for a demonstration** according to the problematics and scientific stakes of the region, including abstracts on up to three Scientific Actions conducted within RA scientific challenges (hereinafter **Scientific Actions, SA**) and how their relate to the *JERICO-S3* KSC.
- The **observations needs driven by each SA,** including operational aspects (remote connectivity, type of device, Frequency / type of access to information, Minimum duration of the deployment) and the specification of the Variables be measured concerning the Physical, Chemical, biochemical and biological environments and the main pelagic and benthic processes. The observations needed for the SC and already available are also listed, along with the needed accuracy, temporal resolution, depth range and preferred method/sensor.
- The **need of other associated technologies** (e.g. antifouling systems).
- The **interest of the regions for hosting a technological & innovation in-situ demonstration**.
- The **availability of sensors** that could contribute (as in-kind) to the list of needed sensors to the SA and required to be co-located with or integrated in the sensor module.

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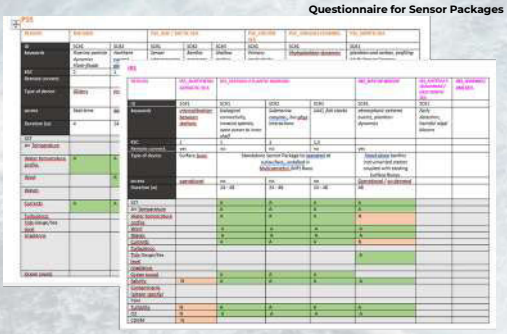
Questionnaire for Sensor Packages

5/5 PSS and 3/5 IRSs and gathered 13 SC with their associated list of observational and technological requirements



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Questionnaire for Sensor Packages - Synthesis of collected inputs

- The **SA collected** for the different areas were diverse and included:
  - riverine particle dynamics under extreme events
  - biological connectivity/transport of plankton
  - pollutants and invasive species
  - benthic processes under continuous and episodic loads of nutrients
  - monitoring of estuarine and coastal systems under the effect of various events, like algae blooms, or dispersion of riverine impact
  - intercalibration exercises with existing observing systems.
- The **requirements in terms of variables, accuracy, coverage** etc. where collected in the form of specific tables and transferred to **WP7**, along with an overall analysis of the variables that were the most frequently required:
  - variables already measured with an appropriate accuracy and coverage
  - variables that needed to be better resolved and
  - variables not currently observed.
- We also quantified **the number of regions in which each variable was required**, in order to evaluate the transferability of the specific requirement to other areas.

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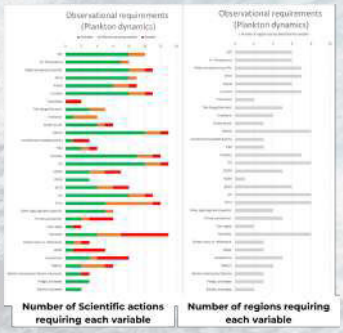

Questionnaire for Sensor Packages- Synthesis of collected inputs

Nutrients is the most cited required variable, followed by Chl-*a*, CDOM, PCO_2, Zooplankton, e-DNA (the last being only identified as requirement 3 of the 8 regions).

Left panel: *Times that a variable has been considered as a requisite for a "scientific challenge"; The observational needs for each of the variables is coded in colors: green, the number of times where this variable is required and marked as "Available" (i.e. the variable is measured as needed); orange, the number of times where this variable is required and marked as "Different sampling needed" (i.e. variable is measured but the "scientific challenge" requires further resolution or complementary measurements); red, the number of times where this variable is required and marked as "needed" (i.e. the variable is not measured).*

Right panel: *number of regions considering a given variable as a requirement for conducting the "scientific challenge(s)" listed, and regardless of the observational needs.*

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Questionnaire for Sensor Packages- transfert to WP7

Design (science & technology)

Analysis of outputs → ***D1.1***

WP1 - Task 1.2.1
WP7 - Task 7.2
Regions (WP3 + WP4)

Complete lists of variables and requirements
https://drive.google.com/drive/folders/129stw_pwYoq8eS9i26O3wHz7IYM6Ypdd?usp=sharing

WP7 - Task 7.3
build, test demonstrate
Regions (WP3 + WP4)

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This work was supported by the JERICO-S3 and JERICO-DS project. These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153 / 951799.

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JERICO-DS WP3
Designing JERICO-CORE future

Juan Gabriel Fernandez, Miguel Charcos Llorens, **Sébastien Legrand**, Emilie Brevière, Patrick Gorringe, Lauri Laakso, Julien Mader, Juan Miguel Villoria

ROADMAP **2021**

Public Guide

ESFRI

ANNEX II: LIST OF MINIMAL KEY REQUIREMENTS FOR SCIENTIFIC CASE

The following table contains the **minimal key requirements** to a phase in the lifecycle of RI on the five dimensions of the SCIENTIFIC CASE:

	PHASE				
	DESIGN	PREPARATION*	IMPLEMENTATION**	OPERATION	TERMINATION
E-NEEDS	– vision on e-infrastructure requirements, including access policy and security measures ready – interfacing with communication networks or distributed calculation as HPC/HTC	– conceptual design of e-infrastructure ready – contributions of e-infrastructure resources at all levels (institutional, regional, national, international) described – access policy and Data Management Plan (DMP) outlined – compliance with FAIR principles	– technical design of e-infrastructure ready and approved – draft operational planning for e-infrastructure service delivery – agreements with parties delivering core e-infrastructure services (Central Hub) drafted – access policy and DMP approved, including plan for sustainability of data – security policy defined and approved – implementing FAIR	– operational plan ready and approved – agreements with service provisioning parties signed – DMP implemented and security policy deployed – operational application of FAIR	– deployed sustainability of data beyond decommissioning

WP3 - tasks articulation

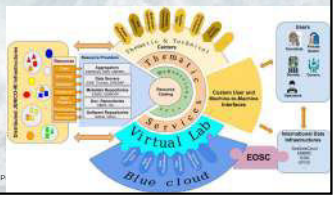
T3.1 - Requirements and expectations (lead by SMHI)

Methodology

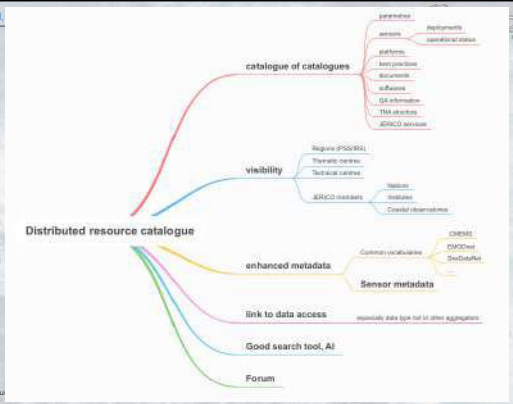
18 interviews of 1 hour
- 11 nations (FI, SW, NL, IT, NO, FR, PT, DE, IR, GR, BE)
- 9 stakeholders (SeaDataNet, EOSC, CMEMS INSTAC, EuroARGO, EuroGOOS, EMODnet physics, HELCOM, OSPAR, EMBRC)

3 open questions
1. What would you want to get out of the JERICO e-infrastructure?
2. What would make it unique and that does not exist somewhere else?
3. What info would you want to see in this service?

Extremely diverse replies, often with accurate examples
- Distributed resources catalogue
- Thematic & technical centres
- Thematic services
- Machine-to-machine interfaces
- Virtual labs
- Others

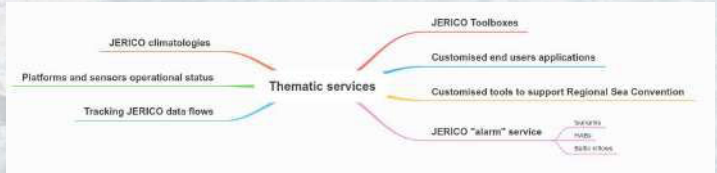


Requirements for the distributed resource catalogue



Requirements for thematic and technical centres

Requirements for thematic services



Requirements for machine-to-machine interface

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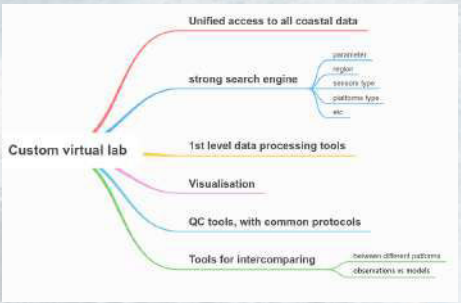
Requirements for the VRE



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General expectations from JERICO

- Provide assistance for near- real time presentations of data
- JERICO act as a test bed for new sensors
- Be clear with what JERICO delivers regarding systems and data i.e. define JERICO platforms/data
- FAIR
- Seek synergies with other RIs
- More focus on Biology
- Set EU standards for biological data
- Take lead for biological Best Practices
- Identify JERICO users
- Link research to operational oceanographic needs
- Identify area covered i.e. "coastal"
- Data and metadata reaching certain quality level to receive a JERICO label as a quality stamp/assurance to users
- Leverage on what's done elsewhere avoid duplication of efforts
- Ensure standards, etc. set in other RIs go through the full value chain and ensure interoperability
- Provide statistics to data providers on use of data
- Not another data portal, avoid duplication with EU data aggregators
- Assist in developing assessments for the regional sea conventions
- JERICO adjust to the needs of regional assessments
- JERICO needs to identify and show what it can deliver
- Promote JERICO within the regional sea conventions
- Act as a new technology forum

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Take home message for the requirements compilation

- MS13 presents the requirements compilation
- Very diverse replies
  - Sometimes contradictory expectations in interviewees replies
  - Not exhaustive
    - No clear expectations on added value products from thematic centres
    - Does not include BlueCloud

> Snapshot of interviewee expectations of future JERICO-CORE and not a definitive list of requirements

- An extremely valuable starting point for all WP3 tasks
- MS13 outcomes should be discussed in a ad-hoc committee with experts from JDS WP1, 2, 3, 5 and with the Business Development Group

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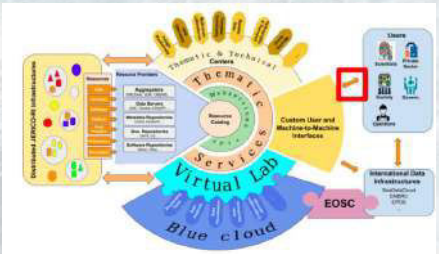
T3.2a - Outlining JERICO-CORE access policy (lead by RBINS)

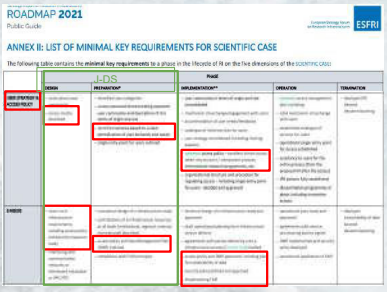
An access policy is a reference document that states the conditions and modalities for different user categories to access the services provided by a research infrastructure (RI).



The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

In the ESFRI lifecycle framework, access policy is a natural outcome of the user strategy and is a important building block to the RI business plan

-> Need to have tighter link with the Business Development Group



The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

In the ESFRI lifecycle framework, an RI access policy covers all the RI services (not only e-needs)

-> Need to have tighter link with Business Development Group

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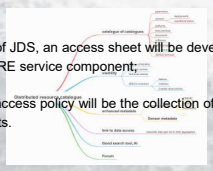
MS14 : How to outline JERICO-CORE access policy?

A service component access sheet template has been developed, compliant the 9 principles and the 12 guidelines of the "European Charter of access for research infrastructures".

The access sheet has been tested on the "Distributed resource catalogue" presented as the "Discovering JERICO assets" service component

By the end of JDS, an access sheet will be developed for each JERICO-CORE service component;

JERICO-RI access policy will be the collection of all the service access sheets.



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T3.2b - Outlining JERICO-CORE security policy (lead by RBINS)

A security policy is a reference document that explains

1. how the RI secures the e-services provision,
2. which measures are taken to identify and prevent security risks and vulnerabilities
3. how security-related incidents must be managed and solved

MS15 : Does ISO/IEC 27001 provide a suitable framework to draft JERICO-CORE security policy?

Due date : 31 March. The framework is a bit overwhelming but possibilities to simplify it!

T3.5 - Drafting Data Management Plan for added-value products from thematic services (aka D2PTS) (lead by SMHI)

This task is being carried out in close cooperation with JS3 WP6 and is complementary to JS3 D6.1 "Draft data management plan"

MS18 under preparation (31 March)
An ad hoc DMP template is under preparation and will be illustrated on the HF-Radar D2PTS (MS18 - due date 31 march)

DMP table of content

1. Description of the data product
   a. Name
   b. Format and size
   c. Application
2. Generation and management of the data product
   a. Input data
   b. Data processing
   c. Data product quality and standards
   d. Management
3. Data sharing and access - FAIR data product
   a. Making data findable, including provision of metadata
   b. Making data openly accessible
   c. Making data interoperable
   d. Increasing data re-use
   e. Regulation of users responsibilities
   f. Ethical aspects
3. Data security
3. Allocation of resources

Conclusions

JDS WP3 prepares the long term design of JERICO-CORE

1. 18 interviews have been conducted with nation delegates and JERICO stakeholders to collate a first series of JERICO-CORE requirements and expectations:
   a. Valuable input consolidating the design of the JERICO-CORE prototype (JS3)
   b. JERICO-CORE could be the main gateway to JERICO data, products and services but does not replace a service desk
   c. Interviewees often came with very detailed expectations, except maybe for the added value products from thematic centres
   d. Could be interesting to review the requirements with the Business Development Group
2. Access policy is a key building block of JERICO Business Plan.
   a. A proposal to outline JERICO-CORE access policy has been exposed
   b. Need to harmonise this approach for all the JERICO-RI services to produce a unique access policy
3. Security policy is envisaged following an integrated approach based on a lighter version of ISO/IEC 27001
4. An new DMP template for added value product has been produced

All these results shapes constraints for the future development of JERICO-CORE technical design and the outline of the daily operation

Part of this work was supported by the JERICO-DS project. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153/951799.

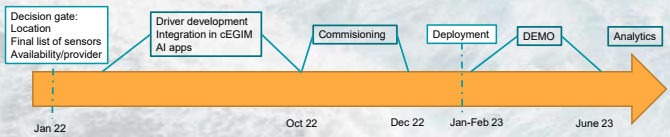
JERICO-WEEK Day#3

Demonstrator-2: progress on sensor packages and WASP

NORCE, IFREMER, NIVA, COVARTEC, CNRS, PLOCAN, CNR

1. Pelagic sensor package
2. Benthic sensor package
3. Water sampling and processing WASP

1. PSPD – Pelagic sensor package for plankton dynamics



2. ACOBS – Autonomous Coastal Observing Benthic Station

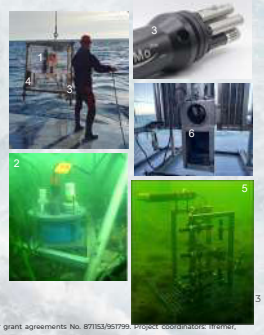
Objective

Integrating emerging and recent technologies in an Autonomous Coastal Observation Benthic Station to monitor and quantify the biogeochemical and ecological changes of benthic habitats under a changing world.

Multi-sensor package with :

1. a microelectrode profiler (O_2, pH, sulfides, resistivity)
2. a benthic chamber (O_2)
3. Autonomous multiparameter loggers (T, S, pressure, O_2, pH, turbidity, PAR)
4. a video camera
5. a new BEATRISS tool for Benthic Exchanges by Autonomous Time-series Recording In-Situ System
6. a sediment profile imager (SPI)

Main challenging steps :
- Simultaneous measurements
- Longer deployments
- Real time control



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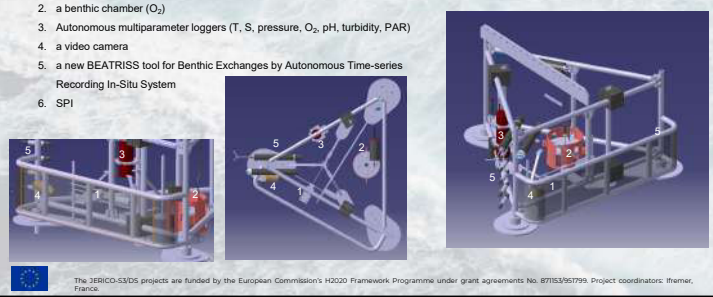


2. ACOBS – Autonomous Coastal Observing Benthic Station

First deployment of tools : July 2021 - Prevost lagoon, Mediterranean

- Microelectrode profiler (O_2, pH, sulfides, resistivity): 2 + 3.5 days
- Sediment profile imager : 4 days + 7 days
- BEATRISS: 4 days + 7 days

Positive background :

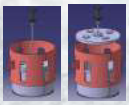
- Simultaneous measurements of various tools
- Deployments between 3 et 11 days

Concerns :

- Changing broken microelectrodes
- Alteration of image sharpness over time
- Benthic chamber (O_2) not suitable for autonomous use → urgent need to re-design it for autonomous application(in progress)

Next deployment (SPI, microelectrode profiler & autonomous multiparameter logger): June-July 2022 - WGMP, Bay of Biscay

Ability to repeat 12 incubations with O_2 monitoring by optode (Pyroscience)



First test deployment of the benthic chamber (Sept 2022 - Arcachon)

ACOBS deployment (Spring 2023 - Arcachon)

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

3. WASP – Water sampling, filtering & preservation device

→ Water sampling

NIVA - Ferrybox

Refrigerated autosampler (24x1 L, GPS/time/sensor-linked)

FLUIDION / IFREMER

Sampling possibilities:

- Self sampling triggering (clock)
- External sampling triggering (e.g. COSTOF II)
- High turbid water : max 4000 NTU/ 500mg/L
- Sampling volume per bottle: 200 mL minimum
- Number of sampling bottles : 10 to 15

Deployment conditions:

- Under the sea-surface, 1 to 3 meters deep, attached to a fix monitoring platform.
- On the seafloor, 50m deep, mounted on a seafloor observatory.
- 3 knots current.
- Temperature: 0°C to 25°C.
- Salinity: 0 to 38 PSU.
- Handled by divers.
- System must withstand the presence of sand.

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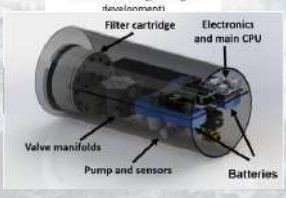
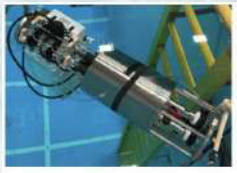
3. WASP – Water sampling, filtering & preservation device

→ eDNA

CIIMAR and NIVA

CIIMAR/INESC-TEC/NIVA eDNA sampler and sensor (Sterivex filters, fluidics for rinsing/eluting in development)





The Robotic Cartridge Sampling Instrument (RoCSI, image courtesy NOC)

The NOC eDNA sampler –Robotic Cartridge Sampling Instrument (RoCSI) – is an autonomous sampling device for filtering predetermined volumes of water and preserving the filters in situ.
Deployed on Fixed platform and AUV

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

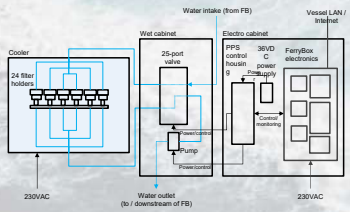
Development of Mclane PPS for use on observing platforms

- Designed for deployment on moorings for weeks/months
- Multiport valve allows sample water to be filtered through one of 24 filter holders; 47 mm Ø (but filter holders can be switched out)
- Pump that measures volume filtered at a rate of ~50-125 ml/min (~10 psi = ~0.7 bar pressure)
- Triggered by date/time or by events/external signal
- Can use different types of filters (e.g., GF/F, polycarbonate membrane, etc.)
- Can take samples for chl a, POC/N/P, DNA/RNA, etc.
- Reagent bag/solenoid valve enables rinsing and storing samples temporarily in preservation or buffer solutions
- Antifouling rinsing feature

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Testing and restructuring the PPS for FerryBox implementation

NIVA – H2020-NautiIOS and NFR-NORSOOP



- Tested with 0.7 µm GF/F filters and 0.45 µm Isopore (polycarbonate) filters for volume filtered and recovery versus traditional benchtop vacuum filtration setup
- New external power cable installed to enable direct power supply instead of battery power
- PPS will be dismounted and reassembled in a less "vertical" setup and also placing the filter holders in a cooler (i.e., ~0 deg C) to help preserve samples until collection (under development)
- Hardware and software link will be made with a FerryBox system for water intake and sending signals for initiating sampling (e.g., geolocation or when high chl-a is measured by the FerryBox system)

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Way forward for the WASP – Water sampling, filtering & preservation device:

To be discussed and defined

1. Water sampling integrated to the Ferrybox to be demonstrated through Jerico with possible integration of some intelligence aspects from the cEGIM

2. Possible integration of Mclane PPS and Fluidion sample collection

Deliverables	Description	Delivery date	Actual month & year
D7.4	Prototype sensor packages and WASP	M36	Jan 2023
D7.7	Report on the technological specifications and benchmarking of the technological innovations (from task 7.2), in terms of new biological sensors, science-question targeted sensor packages and WASP	M44	September 2023

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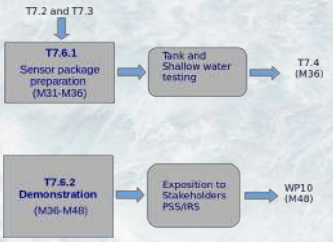
Jerico-S3 WP7 – Task 7.6
In situ demonstration of sensor packages

- Task lead: PLOCAN
- Contributors / team members:
- IFREMER, UPC, 52North, NORCE, CNR

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Task objectives and team

- Perform in-situ tests of the costal EGIM.
- Perform a validation at one Pilot Super Site (PSS) or Integrated Research Site (IRS)
- Team: PLOCAN, IFREMER, UPC, 52North, NORCE, CNR
- + sensor providers, Site operators



Progress towards milestones and deliverables

January 2023

MS41	Sensor packages and deployment sites prepared for demonstration mission	29 - PLOCAN	36	ST 7.6.1

D7.9 : Technological innovation demonstration report [46]
Report on demonstrations of sensor packages on JERICO infrastructure sites. The report will cover the preparation phase (pre-demo) and results from the demonstration.

SCIENCE CASES QUESTIONNAIRES_Central Page_[JERICO-S3 WP1]

JERICO-S3_SCIENCE CASES QUESTIONNAIRE PER J-S3 REGION

PSS REGIONS	NW-MED	PSS-GOF/ Baltic Sea	CRETAN Sea	ENGLISH CHANNEL	NORTH SEA
TYPE OF DEVICE	Glider / mooring	ICOS SOOP line / benthic lander	surface buoy	Stand-alone benthic lander and surface buoys	Profiling lander system
Access	Delayed	Operational / on demand	Operational	Operational / on demand	All
Atmospheric Variables			Yes	Yes	Yes- external
Sea surface variables (SST)			Yes		
Water col. Variables profiler	Yes	Yes		Yes	Yes
Biological variables	Yes	Yes		Yes	Yes
Chemical variables		Yes		Yes	Yes
INTEREST	5	4- 5	3	5	3
AVAILABLE SENSORS	UVP6 and GUARD cameras. Integrated	T, S (SBE 45), O2 optode, pCO2, pCH4, pH, Chla and C-DOM. Co-located or integrated	None	COSTOF 2 system, Multispectral fluorometer benchtop (2), Multispectral fluorometer profiler (2), in situ imaging profiler (1), Automated Flow Cytometer – submersible (2), Automated Nutrient analyser (2), Fluorometer (2) and spectrophotometer (2)	None

IRS REGIONS	NORWEGIAN SEA	ADRIATIC SEA	IBERIAN MARGIN	BAY OF BISCAY	NORTH SEA
TYPE OF DEVICE		surface buoy	surface buoy and mooring(water column)	Benthic station and surface buoy	
Access		Operational	Operational/ standalone	Operational	
Atmospheric Variables			Yes	Yes	
Sea surface variables (SST)			Yes	Yes	
Water col. Variables profiler			Yes	surface and bottom	
Biological variables			Yes		
Chemical variables			Yes	Yes	
INTEREST		3	5	nothing included	
AVAILABLE SENSORS		None	YSI-EXO PROBE (1)	COSTOF2 system, Automated Flow Cytometer – submersible (1)	

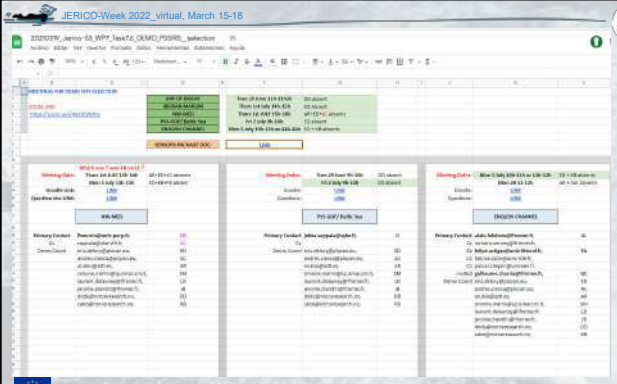
THREE PSS AND TWO IRS SELECTED BY SENSOR AVAILABILITY AND INTEREST:

- **GOF- BALTIC SEA**
- **NW MEDITERRANEAN SEA**
- **ENGLISH CHANNEL**
- **IBERIAN MARGIN**
- **BAY OF BISCAY**

From first survey 5 sites preselected from expressed interest, 4-5/5

Site new questionnaires/ meetings to collect more information on

- Scientific Challenges
- Available sensors for CEGIM
  - Collocated
  - Connected
- Deployment type
- Logistics
- Timing
- Artificial Intelligence requirements



Criteria used – potential ones

- Ease of access for sampling and maintenance
- Number sensor availability to be connected
- Number of co-located sensors for
  - complementarity
  - intercomparison
- Impact on science + society
- Replicability

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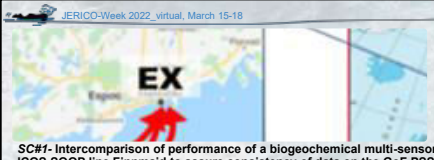

PSS-GoF

***SC#1-* Intercomparison of performance of a biogeochemical multi-sensor package with high quality measurements on the ICOS SOOP line Finnmaid to assure consistency of data on the GoF PSS.**

SC#2- Benthic processes in the Gulf of Finland

SC#3- Shallow water reference station.

Relatively easy for maintenance

A large number of BCG sensors can be provided to connect to the EGIM in the ferryboat

- **Trios nano fluorometers** (Chl, PC, CDOM), **Chelsea Unilux (CHL, PE), Chelsea Vlux (CDOM/PAH)**, Aanderaa (O2), Wetlabs (CHL, turb), Contros (pCO2, methane), **Wetlabs (PO4)**
- **Iisst 200x, Iisst holo**, **Chelsea FRRF, Guard1 camera**
- Most interesting option (benthic) now more difficult as new logger already installed.

Interest in AI: HAB prognosis, high power sensors (methane, CO2) triggered base on O2 level, ferryboat based on coordinates, detection of thresholds and notify, intelligent triggering of a water sample on Ferrybox.

https://docs.google.com/document/d/1DMrKjdW8dfjuF2v5EGYBs7Rhf9BM4lQ-CRjO__OWnnc/edit

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PSS NW Med

- ***SC#1- Riverine particle dynamics and behavior in the coastal area under extreme events***
- ***SC#2-* Northern current effects on plankton dynamics and transport**
- cEGIM at 3m depth (not midwater, not benthic) on EOL buoy in 80m water depth
- not clear if supported sensors are to be connected or co-located, probably both
- AI to turn on-off UVP6, they have questions on data transmission to be clarified with us. Interest also in river-sea continuum.

https://docs.google.com/document/d/1p76aZG1xgdleL6vhVSqLU75CUIxMHOW5gM1i2aSMxko/edit

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PSS English Channel

SC- Phytoplankton dynamics in two contrasted ecosystems of the English Channel: focus on eutrophication, incl. Harmful Algal Blooms causes and consequences.

- Spring (2023) - 5 months. Two options:

Two sites possible, SMILE buoy or pier (MAREL CARNOT with on-line connectivity), lots of BGC and biological sensors:

Multiparameter probe (Temp, salinity, fluorescence, turbidity, DO, pH) from NKE, PAR, ADCP.

Multispectral fluorometer, In situ imaging profiler, automated Flow Cytometer

Fast Repetition Rate fluorometer

AI includes IRS demo Bay of Biscay + adaptive sampling for longer periods, early warning for maintenance and preventing shellfish closure, connectivity is important if no embedded processing, also need preprocessing and enhanced visualisation, need more info to answer on IA question.

This is the only site that also proposes a practical application (aquaculture alerting) besides science.

https://docs.google.com/document/d/1xbw2Tl6agzUNPiKDdLptCYr-osTx-f_kWAn4Pwq-rvo/edit

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IRS Iberian Margin

- ***SC#1-* From Open Ocean to Inner Shelf - Fast routes for biological connectivity/transport of invasive species from open ocean to inner shelf.**
- ***SC#2-* Canyon Boost - Processes promoting a rapid development of the trophic chain in the vicinity of submarine canyons.**
- ***SC#3-* NAO Impacts - Impacts of North Atlantic regimes on the fate and regional shift of fish stocks**

10 months period. 16-20 m depth covers three SCs on mooring. Several ships available for maintenance

Sensors : some anderaa and maybe a UVP sensor could be available - not confirmed.

AI: if UVP available, automatic classification and adaptive sampling would be interesting for specific events surveying with small boats.

Connectivity is limited (satellite) but not impossible, to be discussed.

https://docs.google.com/document/d/1eNavU2gouLlywW4BoEKD_xdhX_ot124Sl4h9XGMyLL8/edit

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IRS Bay of Biscay

- ***SC#1-* Impacts of atmospheric extreme events on coastal environment: hydrodynamics and plankton dynamics.**
- Morbihan gulf - MOLIT station - shallow water (15m-20m) benthic deployment - buoy to be equipped with costof2 in 2021
- Sensors: multi parameter probe(NKE) + PAR and maybe ADPC (TBC) - flow cytometer co-located
- AI: higher sampling rate during strong events (atmosphere or bloom) - transmission through mobile network. Adaptive config is interesting.
- Connectivity: remote rebooting of costof2 is essential today.

https://docs.google.com/document/d/1z1JcPkCmJpYgGgvOe8fwgz6AnrCO33N_KuTTDD2ECTE/edit

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Selected site: **SMILE Buoy at EC**

Sensors:

Multiparameter probe (Temp, salinity, fluorescence, turbidity, DO, pH) from NKE, PAR, ADCP.
Multispectral fluorometer, **In situ imaging profiler**, **automated Flow Cytometer**
Fast Repetition Rate fluorometer

Suggested AI services:
extraction of biomass, abundance and diversity of phytoplankton, short term forecasting of HAB, switch on and off the sensors, sensor configuration change.
Good Costof2 experience on-site.
Impact on science+society: both science and societal (mariculture activities in the region)

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THANKS FOR YOUR ATTENTION

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JERICO-WEEK 2022
Technological Gap Analysis Perspectives from EOOS/Eurogoos

15th - 18th March 2022
(Remote)

Laurent Delauney
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design.jerico@ifremer.fr

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Technological Gap Analysis Perspectives from EOOS/Eurogoos

EuroGOOS European Global Ocean Observing System

Regions | Working groups | Task Teams

EOOS European Ocean Observing System

Building bridges and creating opportunities.

Operations Committee

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EuroGOOS European Global Ocean Observing System

Task Teams

EuroGOOS Task Teams are networks of ocean observing platforms. Task Teams promote scientific and technological synergies among European ocean observing infrastructures. Task Team members collaborate in the areas of shared priorities, exchange best practices, and host data in the EurOGOOS ROOS regional portals, EMODnet, and Copernicus Marine Service.

The following Task Teams are currently coordinated by EuroGOOS:

BEST PRACTICES

SCIENTIFIC PUBLICATIONS

WHITE PAPER

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The following Task Teams are currently coordinated by EuroGOOS:

WHITE PAPER (2017) (LINK)

- to further extend the capabilities to perform biological measurements.
- strong need for a standardized type of connection so that in principle every ship would be available for a FB system
- quality control, evaluation and processing of these data need to be highly automated, robust and reliable
- New FB lines must be developed, especially in the Mediterranean and Black Sea;

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COINS Report (2021) (LINK)

- Gap analysis available… not specifically on Technology.

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The following Task Teams are currently coordinated by EuroGOOS:

- **Task team newly restarted…**
- **Gliders are part of Eurosea project and GrooM II Design study project**

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The following Task Teams are currently coordinated by EuroGOOS:

- **Many scientific publications and BPs using the HF Radar (LINK)**

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The following Task Teams are currently coordinated by EuroGOOS:

- **1st TT meeting held on March 2021 (LINK) => Overview, Expectations, Gaps**

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EuroGOOS
European Global Ocean Observing System

A publication on : **Operational Modeling Capacity in European Seas** (LINK)

Created in May 2021
TOR : BP and **Recommendations for new sensor and autonomous platform development** and integration with existing approaches

Working Groups

EuroGOOS coordinates expert working groups in areas underpinning its objectives, to identify strategies, cooperate, co-produce and promote the operational oceanography value for society.

The following working groups are currently active in EuroGOOS:

EOOS Technology Forum (LINK)

- Biological Observations Working Group
- Coastal Working Group
- Data Management, Exchange and Quality Working Group
- Science Advisory Working Group
- Technology Plan Working Group
- Ocean Literacy Working Group

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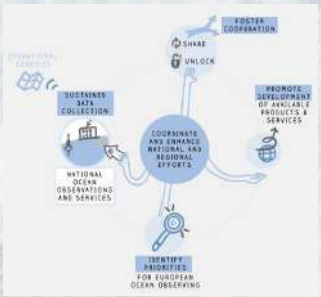
EuroGOOS
European Global Ocean Observing System

Regional Operational Oceanographic Systems (ROOS)

Five ROOS work within EuroGOOS: in the Arctic (Arctic ROOS), the Baltic (BOOS), the North-West Shelf (NOOS), the Ireland-Biscay-Iberian area (IBI-ROOS), and the Mediterranean (MONGOOS). EuroGOOS also fosters cooperation in the Black Sea region with Black Sea GOOS.



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EOOS Technology Forum

Building bridges and creating opportunities.

Our main objectives are to:

- Break down barriers by building a sharing community of individuals, groups and organizations
- Map and assess the technologies employed in operational oceanography
- **Identify the main gaps in operational areas**
- Encourage users to share their expertise and help manufacturers and service providers meet user requirements
- Establish what technologies are needed to systematically measure the Essential Ocean Variables (EOV) defined by GOOS
- Foster partnerships to promote developing instrumentation to meet observing requirements
- Identify concrete themes and propose future workshops and events

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EOOS Technology Forum

Building bridges and creating opportunities.

1st EOOS Tech FORUM (2020) outcomes:

- Identify current and future trends in technology, that will allow compliance with present and future ocean observational needs and requirements;
- Facilitate synergies between science and industry sectors **in the field of marine observing in Europe** by promoting adequate instruments, e.g. an online tool enabling
- stakeholders to exchange information and identify matchmaking opportunities;
- Foster continuous dialogue and exchange between different stakeholders in the public and private sectors within the framework of a regularly held event; Develop shared strategies to jointly promote the value of ocean observing activities and technologies to policymakers, industry, and broader society.

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EOOS Technology Forum

Building bridges and creating opportunities.

2nd EOOS Tech FORUM (22-24 March 2022 - Virtual) - Info and Registration

Thinking Ahead: The Technology of the Science We Will Need for the Ocean We Want

- Setting the scene technology for the UN Ocean Decade
- The technology we need and role of technology to achieve UN Ocean Decade goals
- Sensors and technology
- Keynote "current technological landscape"
- Panel discussion "how do we achieve a distributed, embedded, multi-parameter ocean network"
- Instrument platforms and integration (e.g. IoT)
- Keynote "new developments in big data approaches"
- cyber-infrastructure, AI and applications
- Panel discussion: Recommendations, what can we do within this decade and the role of EOOS Tech Forum

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EOOS European Ocean Observing System

Operations Committee

- **Integration of biological observing networks**
- **European OceanOPS Task Team**
- **OC Advancing key priorities identification**

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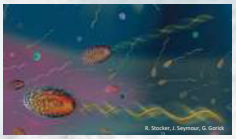
EuroGOOS

Biological observing networks



Activity 3. Implementation of EOOS observing system elements

Task 3.4 Technologies mapping

Support technological innovation to implement *in situ* biological observing systems and develop **smart technologies** for cost-effective automated monitoring of biological variables.

EuroGOOS

Biological observing networks

Improving and integrating Europe's capability in biological ocean observations

- To develop and streamline the **implementation** of biological essential ocean variables (**EOVs**) and marine Essential Biodiversity Variables (**EBVs**) and to increase the number of monitoring programmes that include these variables
- Support efforts of '**Mapping** existing ocean observing **infrastructures and capabilities**' related to biological observing networks
- **Marine Macroalgae workshop** will aim to reach an agreement on observation strategies, data sharing practices, and best practices and standards for Europe.

European OceanOPS Task Team

EOOS Concept note on MAPPING

https://www.eoos-ocean.eu/materials/

LINK to the Mapping concept note

- Integrated perspective of platforms
- Diagnostics of observing network
- Better planning
- Link different scales
- Improve visibility of different networks
- Allow better engagement with stakeholders

Actions

ACTION 2.4: Interested members to form a task team to work with OceanOPS to explore the feasibility of having a European regional node/dashboard.

ACTION 2.5: Identifying the observing network elements in Europe that are currently outside OceanOPS remit but are a priority for Europe.

Intersessional meeting 2nd July 202: "Monitoring ocean observing capability in Europe"

ACTION: EOOS OC Chair to send a call to members to nominate for this task team

OC Advancing key priorities identification

A survey of the EOOS OC members was conducted to identify 3 key priorities for the EOOS OC to focus efforts.

The three top priorities identified from the survey are:

1) Improve ocean observing system implementation into the coast

2) Supporting emerging (new) observing networks

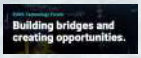
3) Support nations to develop National Committees to improve national coordination

OC Advancing key priorities identification

A survey of the EOOS OC members was conducted to identify 3 key priorities for the EOOS OC to focus efforts.

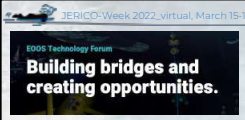
So in terms of technological gap analysis in the context of EOOS and EuroGOOS :

- EOOS Technology Forum



- Eurogoos Technological plan WG in relation with Working groups and Task Teams
- ROOS as well in relation with the TPWG

WORK IS IN PROGRESS… STEP BY STEP… It takes time due to the "In Kind" mechanism of EOOS/EuroGOOS And real PROGRESS WILL HAPPEN WITH FUNDING (e.g. : EuroSea, JERICO, MINKE, ERICs, etc.)



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21

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JERICO-DS — JERICO-S3

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JERICO Workshop on Technology Gap Analysis

Progress update and feedback

1

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Workshop programme

SHORT AGENDA

#	Description	Leading person
10	Strategy for WP2 'Technical Design' Jericho-RI	Anouk
10	Progress and preliminary results questionnaire	Helene
5	Gaps identified by Jerico-S3 PSSs	Jukka/ Costas
5	Gaps identified by Jerico-S3 IRS-s	Andrew/ Martin
10	Gaps identified at European level (EOOS/ Eurogoos)	Laurent/Inga
20	Next steps & Feedback	Anouk

2

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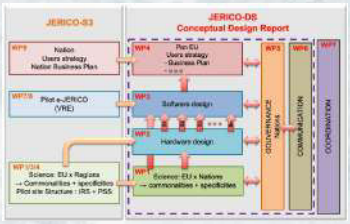
Approach for Technical Design Jerico-RI

- WP2 of Jerico Design Study
- 3 steps:

1. Technology outlook (task 2.1, due: June 2022)
2. Gap Analysis (task 2.2, due: September 2022)
3. Roadmap (task 2.3, due: May 2023)



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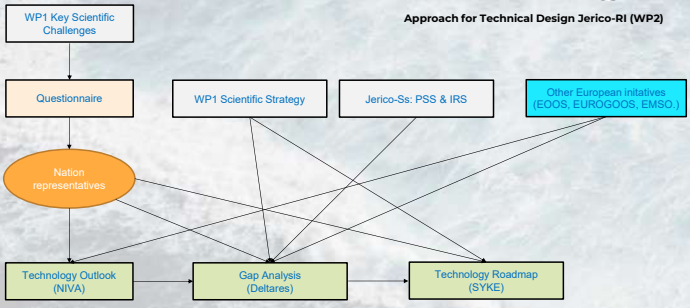
Approach for Technical Design Jerico-RI (WP2)



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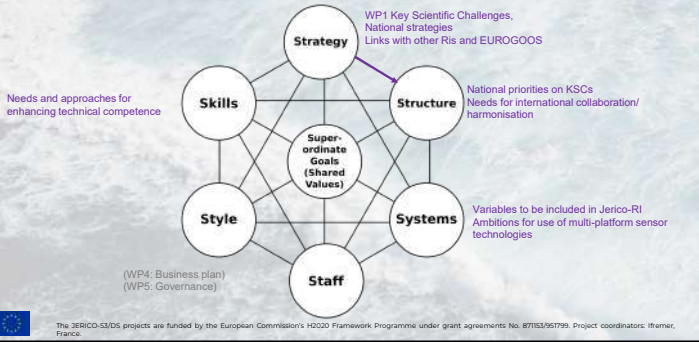
Scope of Technical Design and questionnaire



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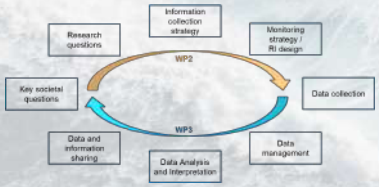
Stepwise approach for technology outlook (taks 2.1)

1. Compile and scope regional priorities on KSC's
2. What variables need to be observed at what resolution to address these questions?
3. What methods are available for observation of these variables? (both platforms and sensors)
4. Outline optimized multi-platform approach



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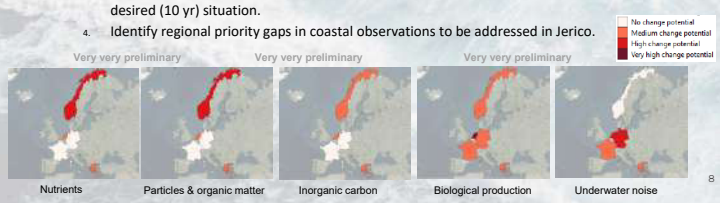
Stepwise approach for Gap Analysis (task 2.2)

1. Inventory of current coastal observations: both within jerico (ESFRI proposal) and outside of Jerico (other ERICs & monitoring for water management)
2. Compare Technology Outlook (task 2.1) to current monitoring efforts
3. Use KSC table results from questionnaire to quantify gaps between present and desired (10 yr) situation.
4. Identify regional priority gaps in coastal observations to be addressed in Jerico.



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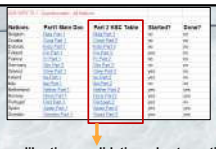
Process



Q4: To what degree are intercalibrations, validations, best practices and audits are used to improve the excellence in system maintenance and operations relative to each KSC?

0-not relevant
1-low
2-med
3-high
4-don't know

Transformed values:
0, 1, 2, 3, NA

Change potential
=
Calculate difference in relevance between *in 10 years* – *at present*

No change potential
Medium change potential
High change potential
Very high change potential

Change potential per KSC indicator per country

Note, so far only 5 countries have presentable results!

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Presentations on input from different sources

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Next steps & Feedback

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Planning of next steps

Time	Activity
ASAP!	Completed questionnaires by all nations
Now – May 2022	Compile input from PSSs and IRSs (through deliverables and personal comm.)
Now – May 2022	Collect information from European initiatives such as EUROGOOS and EOOS
May 2022	Draft Technology Outlook report ready for review (nations, regions, WP1)
June 2022	Present & discuss final Technology Outlook report in Tallinn workshop
September 2022	Draft Gap Analysis Report ready for review (nations, regions, WP1…)
JDS week autumn 2022	Present & discuss Gap Analysis Report
JDS week spring 2023	Discussion on Roadmap development
April 2023	Draft Technology roadmap report ready for review
May 2023	Technology Roadmap report delivered

Please share relevant documents with us

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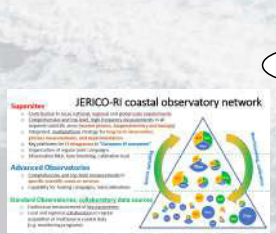
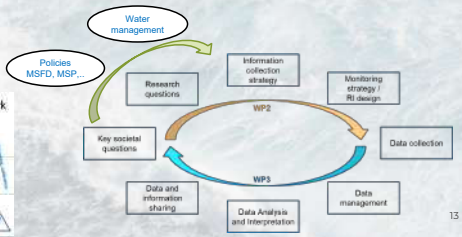
Discussion points

- How to keep stakeholders involved during JDS project (iterative process)?
- How to link interests and stakeholders from water management and research?





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Feedback?

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Status on Users

Lucie Cocquempot on behalf of JS3-WP9

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

SHORT RECAP OF PREVIOUS (Significant) WORK :

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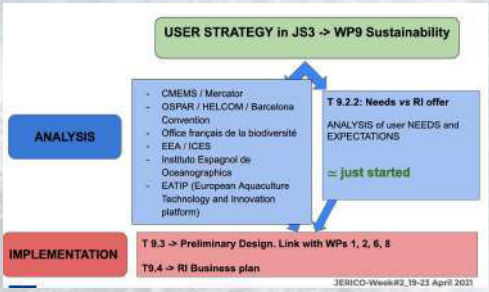

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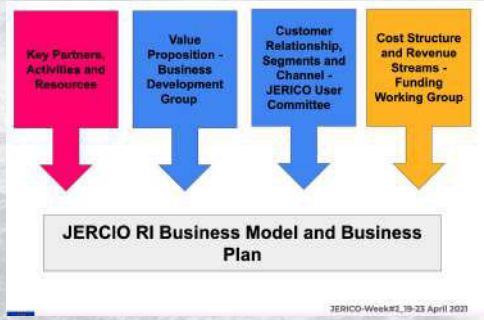

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SHORT RECAP OF PREVIOUS (Significant) WORK :

	Low	Medium	High	Very high
Scientific case				
Scientific excellence				
Pan-European relevance				
Socio-Economic Impact				
User strategy / Access policy				
E-needs				
Implementation				
Stakeholder commitment				
Preparatory work & Planning				
Governance, management, human resources				
Finances				
Risks				
Overall findings				

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TODAY'S PERSPECTIVE

ANALYSIS OF USERS AND NEEDS

Previous project : JERICO-NEXT User panel, TNA Analysis, Final deliverable of J-NEXT

Previous work on JERICO-S3 :

JERICO Table of Users initiated during JERICO Week #1

JERICO Table of Users comments during JERICO Week #2

Significant amount of material but difficult to handle

Are the Current users of regional nodes, the potential users for JERICO-RI ?

Are the list exhaustive ? are NGO, insurance companies, small businesses fully represented?
How to introduce a weighting according to: current importance (according to financing or time spent)? according to the development strategy?

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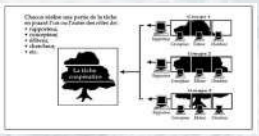
TODAY'S PERSPECTIVE

- a tightened governance, focused on efficiency

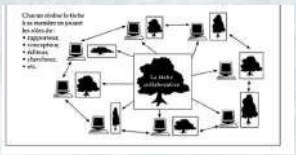
Central HUB



A streamlined and pragmatic approach

- an open, dynamic, creative, innovative community

Decentralized actions



THINK TANK

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TODAY'S PERSPECTIVE

CREATION OF JERICO USER COMMITTEE :

- TO MAXIMIZE THE RETURN ON INVESTMENT (IMPACT VS COST)
- TO TEST THE WAY WE MAKE DECISIONS (INCLUDING CHOOSING THE PRIORITIES TO BE ADDRESSED)
- TO CONSOLIDATE OUR IDENTITY

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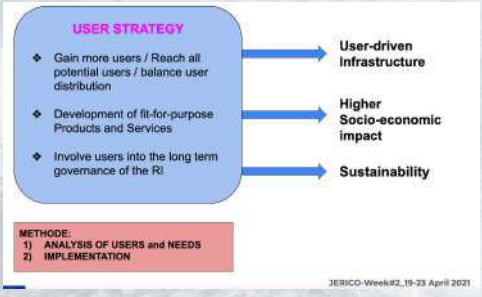
TODAY'S PERSPECTIVE



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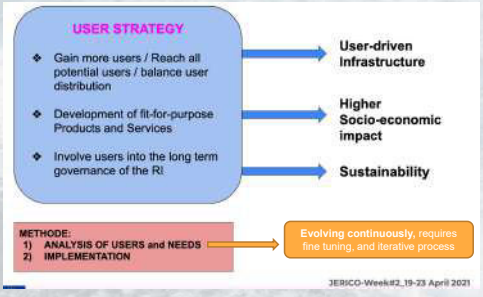

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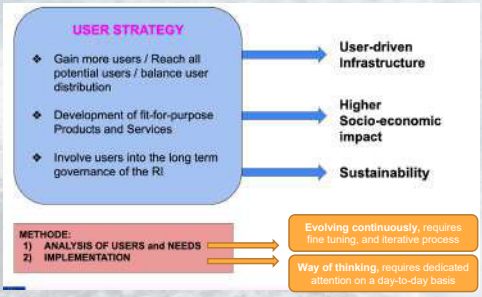
TODAY'S PERSPECTIVE



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TODAY'S PERSPECTIVE

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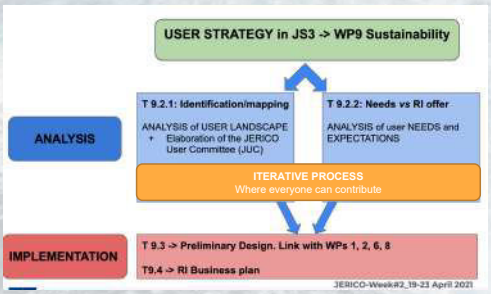

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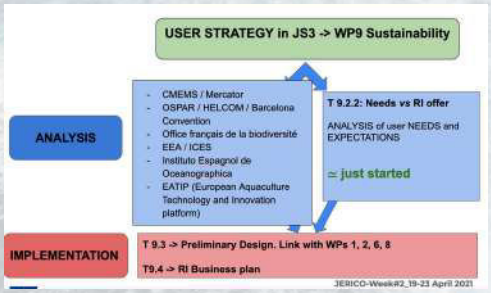
TODAY'S PERSPECTIVE



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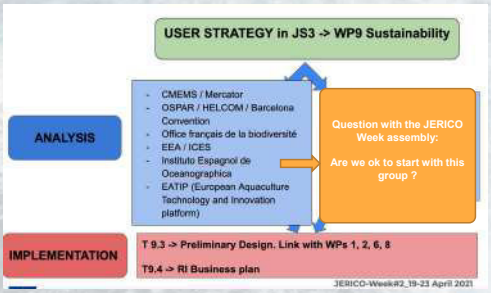

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TODAY'S PERSPECTIVE

Note: Draft Version 10 Nov. 2020 dedicated, as a 1st step, to mean the scope of the JUC to users. This document will be further revised with voluntarily enrolled users representatives for endorsement of its purpose and modalities of actions with a signature of the finally agreed version.

AGREEMENT on the JERICO USER COMMITTEE

Preamble

This agreement endorses the establishment of the JERICO USER COMMITTEE (JUC). The JUC is acting as the advisory committee for the elaboration of Services and Products to be delivered to end-users within the JERICO-S3 and the JERICO-DS EU-funded projects.

For pure management purpose this agreement falls under the coordination of the JERICO-S3 project and its consortium. However in parallel to the JERICO-S3 project, the twin project JERICO-DS is running to achieve the design of JERICO-RI which also considers the importance of involving users and stakeholder.

The purpose of the JUC is to structure a formal interaction between the Users of the JERICO Products and Services and the Consortium of Institutes operating those Products and Services.

This interaction will enable the JERICO Project partners and institutes to access direct return after experiences from relevant Users in order to improve the Products and Services provided by the Research Infrastructure.

The JERICO-S3/DS proje /951799. Project coordinators: Ifremer, France.

THE METHOD – IMPLEMENTATION

USER STRATEGY, as a way of thinking

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

THE METHOD – IMPLEMENTATION

We, the JERICO Community are the Prime User of JERICO RI

USER STRATEGY, as a way of thinking

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THE METHOD – IMPLEMENTATION

We, the JERICO Community are the Prime User of JERICO RI

Do we have the instinct to think each time about the potential external uses of our productions?

- How do we measure customer satisfaction within our project?
- What process can we use to suggest improvements?

USER STRATEGY, as a way of thinking

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- What process can we use to suggest improvements?

USER STRATEGY, as a way of thinking

- WP1 / WP2 questionnaires
They cost us a lot of time
What is their value outside JERICO ?

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THE METHOD – IMPLEMENTATION

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Do we have the instinct to think each time about the potential external uses of our productions?

- How do we measure customer satisfaction within our project?
- What process can we use to suggest improvements?

USER STRATEGY, as a way of thinking

- WP1 / WP2 questionnaires
They costed us a lot of time
What is there value outside JERICO ?

User oriented approach is challenging:
✔ need to question ourselves
✔ need to take (endorse) collective strategies

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NEXT STEPS

WP9 meeting dedicated to JUC - Open to all

Invitation to JUC Members to a First JUC Meeting (to be held during the last J-DAY)

Preparation of the JUC Meeting in link other WPS + fine tuning during first J-Days

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JERICO-Week 2022

Wrap-up and next steps

Friday, March 18

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WRAP-UP : DAY 1 - STRATEGY DAY

JERICO-RI Science Strategy : Anna R., Antoine G.

STRATEGIC VISION

Key GUIDELINES for JERICO-RI Strategy

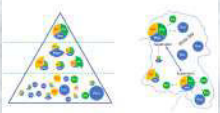
ESFRI almost successful but… time is passing by and landscape is changing. Making and showing progress:
- *Comprehensive demonstrative actions*
- *Added value of a new pan-European RI.*
- *Improving implementation*

JERICO-RI science strategy regional implementation: main outcomes from JERICO-S3 D1.1
- *Aligning implementation with science strategy*
- *Equilibrium: central and regional levels*
- *Best possible use of PSS and IRS*
- *Clarifying the structuration of the future RI*

REGIONAL LEVELS

Use PSS/IRS experiences when iterating structuration of JERICO-RI
- *Improving transfer of knowledge between PSS/IRS and connecting them more with J-S3/J-DS WPs*
- *Connecting with other partners*
- *Dissemination*

Regional and between region integration and structuration requires dialogue, coordination and commitment.
- *PSS and IRS study some elements in this integration and structuration*



CENTRAL LEVEL

Added value towards a European RI
- **Enhancing internal coherency and both internal and external interactions**
- **Existing actions**
  - *Trans National Access, Virtual Access*
  - *JERICO-core*
- **Possible other actions:**
  - Technology, products/indicators, modelling, transfer of expertise, best practices/interoperability…

But !!!

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JERICO-RI Science Strategy : 5min discussion + JERICO-Days

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

Yes
- Focusing on long term sustainability and relevance. What can JERICO do that the world would miss if JERICO does not exist?-
- Interactions between JERICO-S3 and JERICO-DS in establishing the overall strategy
- Establishing the ground basis for the (nested) implementation of JERICO-RI

- Elaborating on interactions between PSSs and IRSs (following breakout sessions)
- …

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JERICO-RI Science Strategy : addressing the ESFRI review

BUSINESS CASE
2min - Kieran R. and Paul G.

- Highlighted the issues identified in the ESFRI evaluation in relation to the business case:
  - Weak business case, national financial commitments, in-kind contribution i, sustainability and reliance on project funding, funding for governance
- Use of groups to address these issues – Nations Committee, Business Development Group, Funding Working Group.
- Training course provided by the University of Milan on the JERICO RI Business Model development
  - In particular Webinar 5 on funding model and financial sustainability of JERICO RI
- Points discussed:
  - The proposed governance structure should be simplified and possibly separated into two segments
  - The cost of the proposed governance structure(s) should be estimated.

GOVERNANCE
Lucie C. - 2 min

The fact that JERICO eshl proposal was not accepted leaves us with a Challenge and an Opportunity :

The Challenge :
JERICI needs to find the right balance beween a :
- A tightened governance, focused on efficiency (Central HUB
- A open, dynamic creative, innovative community (Decentralized action

The opportunity :
- To strenghten our motivation : our community exists and structures itself without the support of funding -> ENGAGEMENT
- To be rigourous : we need to be efficient and to meet our (users) needs - > SERVICES

In order to gain sustainability, we need to start implementing a first version of the governance of the central hub.

The creation of a Jerico User Committee will be a stong help to :
- maximize the return on investment.
- test the way we make decisions
- consolidate our identity

LABEL
Fabio B. - 2 min

Composition and mission of the JERICO Label Committee (JLC) needs to be consolidated.

Composition of the JLC => to prioritize the **scientific expertise** of the members.

JLC is open to anyone who wants to contribute.

The goal is to create an advisory working group able to setup the concept of JERICO Label. and propose the concept to the JERICO community.

The idea that emerged is that the JERICO Label has not to be a set of rigidly constraining rules, but rather an easy-to-use tool to monitor the maturity of an observational system, to have a plan for including new components and progressing toward higher levels of quality.

- Further meetings will be organized to develop the JERICO Label concept.

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JERICO-RI Science Strategy : addressing the ESFRI review

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

- JERICO Label: Yes, focused on JERICO Label Concept and a first draft of TOR document.

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JERICO-IDENTITY : 3min - Joao V., Vikki B.

- **Key messages to be revised** to present the new facts from JERICO-RI, to reinforce the statement of our unique DNA and of our singular position in the European RIs landscape, to include DTO, Sister RIs, Nations. (ESFRI proposal)

Next Steps:
- WP1 and WP2 to be approached by task to revise key messages
- Nations (JDS) to be approached to revise key messages

- Dissemination and Exploitation relies on sharing responsibility and close collaboration
- We have an ambitious DEP able to provide significant results if completed
- The **DEP** (D10.1) is available since Dec-2020 and presents Concrete Responsibility on Actions, with Contributions and Deadlines; **See how you are expected to contribute**

Next Steps:
- **WP2 community to be asked for inputs** about DEP implementation (started in session "JERICO and Other Ris"). Agreements with EPOS, BlueCloud and EMSO (use of EGIM) + collaborations with best practice systems already in place. **To be defined how partners developments will be disseminated and how material will be regularly updated**.
- **WP7** is a key source of JERICO KER (Key exploitable results). **Specific actions are to be taken to progress on KER (Exploitation plan)** together with this WP. But also with WP5 (+ WP3/4) on Best practices, which is another KER area.

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JERICO-IDENTITY : 3min - Joao V., Vikki B.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

- Communication materials (update existing material vs increase option with new material)
- Articulation training workshops with other similar initiatives
-

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JERICO and other RIs : 3min - Holger B. / G. Petihakis

- **Need to adjust our communication / interaction strategy with other RIs** due to outcome of the ESFRI application
- Basis is our place in the RI landscape - overlaps, synergies, boundaries, communalities
- Concentration on **bilateral contacts**
- We need to become active and **establish contact this year (within the next six months?**), use existing contacts
- We need to **determine what we want from interaction** individually for each RI - need to prepare accordingly
  - What is their added value for us?
  - What added value provides JERICO for them?
  - Not competition: **Cooperation**
- **Learn from regional experiences of interaction** - what works, where are problems?
- In conversation with RIs concentrate on **how we can profit each other, define overlaps, explore synergies** (science and infrastructure)
- **Work towards MoUs** with RIs - added value towards an ESFRI
  - Demonstrate our willingness to cooperate
  - Should address both regional and central components
- **Prioritization of contacts**:
  - **Danubius** has highest priority
  - Differing opinion with regard to whom to contact (first/soon): Everyone vs. ICOS, EMSO, EMBRC, e-LTER, Lifewatch, AQUACOSM
- Pick up / intensify collaboration with the **satellite community**

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JERICO and other RIs : 3min - Holger B. / G. Petihakis

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

Mostly an update on progress of our efforts. Not necessarily the need for a dedicated session.

From Carlo / Julien:
Look at collaborations that reach beyond science information - consider those that support our infrastructure needs. This include FAIR (of course), but much more.-
-Expand JERICO as the leader in coastal best practices as part of our long term branding
→ Expected contribution from WP5: Presentation of the handbook (D5.2)
→ WP5 Plan for reinforcing the link between the Technical Steering Groups of JERICO-S3 and the EuroGOOS Task Teams

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ALL REGIONS WORKSHOP, PSS and IRS : 2min each - Jukka S., Andrew K.

WP4 PSS updates

- D4.2 (**refined strategies**) and D4.3 (**1st year implementation progress**) are **under review** by coordination
- D4.2 and D4.3 offer info of **PSSs linking with other WPs and partnership building with RIs and other communities**
- Integration within PSSs show progress, but also **challenges found** (which is also progress!), many common to all PSSs
- For integration between PSSs, with IRSs, other WPs and initiatives, **thematic WSs suggested**, with active participation throughout partnership
- **Collaboration with J-S3/J-DS WPs** to be intensified.

WP3 IRS updates

- **Road maps have been made** for each IRS
- IRSs will work towards **road map objectives and revise as needed**
- **Collaborate (bilaterally) with other WPs** where needed
- **Begin IRS-PSS integration** starting with breakout discussions with IRS-PSSs arranged roughly by adjacent regions; **pick up further in JERICO-DAYS.**
- Breakouts primarily began to address **common scientific themes** that are common between IRS-PSSs
- Some **discussion related to what PSSs can learn from IRSs**, and vice versa. I.e., challenges related to operations and challenges related to structure/organization, respectively

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ALL REGIONS WORKSHOP, PSS and IRS : 2min each - Jukka S., Andrew K.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

IRS-PSS integration - this is like putting a flag on the territory to wave off others. The map with all of theme shown is powerful and we should make it real.
Thematic session to be planned, for carbonate with WP6
-

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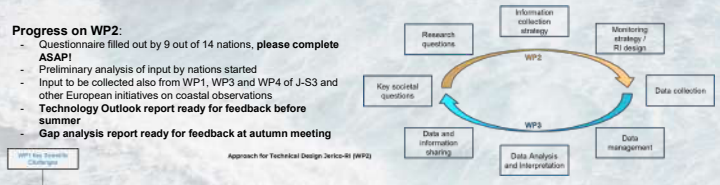
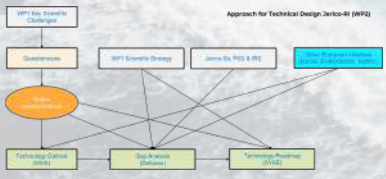
WORKSHOP ON TECHNOLOGY GAP ANALYSIS : 2min, Anouk B.

Progress on WP2:
- Questionnaire filled out by 9 out of 14 nations, **please complete ASAP!**
- Preliminary analysis of input by nations started
- Input to be collected also from WP1, WP3 and WP4 of J-S3 and other European initiatives on coastal observations
- **Technology Outlook report ready for feedback before summer**
- **Gap analysis report ready for feedback at autumn meeting**





Stepwise approach
- towards Technology Outlook follows information cycle (figure above)
- Gap analysis takes into account what Jerico should add on top of existing monitoring from other initiatives (other ERICs, policy oriented monitoring) to reach infrastructure described in Technology Outlook.

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WORKSHOP ON TECHNOLOGY GAP ANALYSIS : 2min, Anouk B.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

- Yes, to present and discuss the outcome of task 2.1: the Technology Outlook
-
-

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JERICO-CORE : 2min, Jay P, Miguel C.

Current and Near-Term JERICO-CORE
- Major advances in bringing together diverse resources into a coherent and accessible CORE
- Transition to Initial operating capability and WP11 will be soon. The next step is beta testing and refining capabilities. *JERICO partners are asked to volunteer as testers..*
- Data to Products Thematic Services cover four areas: HF radar, gliders/water mass transport, BGC in the Gulf of Finland and plankton/ECOTAXA.
- Integrated Services for transboundary flows, extreme weather events and climate will involve multiple IRS/PSS is being led by IH Portugal. *Further collaboration would be highly beneficial.*
- Blue Cloud provides the J-CORE VRE. It is working. *JERICO needs to use it more broadly. Suggestions welcome*
- Metrics for J-CORE use are developing through WP11 and will be applied as J-CORE traditions to WP11.
- *JERICO-CORE is part of the foundation for the RI, offering key capabilities and branding for the RI*

JERICO-CORE Evolution
- Survey from J-DS on J-CORE requirements gives new insights for evolution of the current development and IOC.
- Key areas are real time data/information access, security, access policy, metrics, distributed resources catalogue, thematic & technical centres, thematic services, virtual labs and more.
- Proposal to Ocean Decade (for CoastPredict) for broader impact globally; teaming with major information resources. *Resources for this need to be defined (outside of JERICO).*

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JERICO-Core : 2 min, Jay P, Miguel C.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

Yes!
- Demonstration and lessons learned based on testers
- Define methods and procedures to collect feedback
- Discussion on next steps with J-CORE

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DATA MANAGEMENT : 3min Patricia M-C.

The tasks performed under WP6- Subtask 6.3.1 are presented:

- The goal of this task was to deliver Best Practices for Imaging Data D6.4. A summary of these and the methods to get there were presented. That includes the creation of vocabularies, the adoption of the DwC format for imaging data with an example on how to fill in the tables.
- For this work, we developed a data flow, from Instrument to OBIS, classifying the images in EcoTaxa. A practical example on how to follow this workflow (image on the right) is presented by Jean-Olivier Irisson (LOV)
- A summary of the current scape in data management practices for imagery is presented by Fabien Lombard (LOV). Future actions and long term plans are discussed. A call is made to write a communal paper (in a special edition of Frontiers in Marine Science) that is general for imagery and includes the whole flow from sample acquisition to data published in international repositories.

IMAGERY DATA FLOW

This workflow from instrument to EMODnet Biology and OBIS involves several steps to classify the images in EcoTaxa, to export this data in DwC format to be uploaded in IPT, quality checked in BioCheck and harvested in EurOBIS database, where data automatically flow to european and international biodiversity data portals (EMODnet and OBIS)

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DATA MANAGEMENT : 3min Patricia M-C.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

- There was an interest in using the workflow presented. For this several questions raised about the automatization of some parts of this flow or the reason of aggregating the data to a higher taxon to report concentrations
- Discussion about how to use this workflow for flowcam with groups (ciliates) -> There is already lots of data from FlowCam in EcoTaxa
- Discussion about how to include traits in this dataflow -> There are already traits in WoRMS taxonomic database, this can be included with the use of the eMoF table.
- Some attendants contacted Patricia with the interest to review the best practices with the intention of apply this workflows in their pipelines.

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

We don't know at this moment. The work of this task is concluded at this point.

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JERICO DEMONSTRATORS, C-EGIM and beyond : 3min - Eric D., Simone M.

- Demo site has been selected, (EC PSS - SMILE buoy) - 2 costof2
- acoustic and 4G communication for real-time communication planned from underwater module
- Available sensors have been shortlisted covering physics, BGC, biology
- Tests and pre-demo to take place in Brittany
- Demo missions task team to be consolidated
- Self-awareness under definition according to sensor and data availability (training)

Urgent matters:
- Resolve AI services definition
- Confirm mobilisation of sensors for the test, pre-demo and demo period

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WRAP-UP : DAY 3 - PRODUCTS AND SERVICES DAY

JERICO DEMONSTRATORS, C-EGIM and beyond : 3min - Eric D., Simone M.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

- Interest in the production of a S&T paper based on demo preparation and results
- ACOBS future connection (post-Jerico-S3)
- WASP (Ferrybox, maybe also at demo site, test of different preservatives)
- Objectives to be adapted vs available resources in the project

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

Yes, tentative action items/agenda:
- Discuss real-time sensor observation service for J-CORE
- Demo team mobilisation
- Test, Pre-demo, and Demo mission planning
- Paper writing team, paper outline, assignments
- AOB, e.g. KERs

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WRAP-UP : (half)DAY 4 - USERS AND ACCESS

TRANSNATIONAL ACCESS
2min - Paul G., Alan B.

Action: to consider options for remaining TA budget after 3rd TA call is completed.

Option 1: 4th TA call open Oct/Nov 2022

Option 2: Open call until Spring 2023 - see aquacosm approach https://ta.aquacosm.eu/
Need to ensure Evaluation Panels are available.

Note : All TA Projects must be completed by September 2023

Other comments:

Consider TA for Training & Capacity Development ?

Expand 'Facility of the Week' to include webinar or dedicated outreach platform for a Facility to showcase its capabilities.

STATUS ON USERS
2min - Lucie C., Inga L.

A user-oriented approach is a way of thinking

It requires to question ourselves and to take (endorse) collective strategies

as the analyses of users and needs will evolve continuously
As JERICO community is the first internal user of the RI

Next steps :

- Early April - WP3 meeting dedicated to JUC - Open to all
- Mid april - invitation to JUC Members to a First JUC Meeting (to be held during the last J-DAY)
- J-DAYS : Preparation of the JUC Meeting in link other WPS + fine tuning during first J-Days

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WRAP-UP : (half)DAY 4 - USERS AND ACCESS

TRANSNATIONAL ACCESS
2min - Paul G., Alan B.

STATUS ON USERS
2min - Lucie C., Inga L.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

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WRAP-UP : CONCLUSIONS, NEXT STEPS

FINAL WORD ON THIS JERICO-WEEK 2022 : Laurent D., Coordination

WHAT'S NEXT ? JERICO-DAYS END OF JUNE, WHAT DO WE NEED ? + see next slide for agenda ideas

COORDINATION and COMMITTEES
- Steering Committee meeting ("full" SC planned in June, good coincidence) // STAC meeting // JERICO User Committee meeting

STRATEGY
- Focusing on long term sustainability and relevance. What can JERICO do that the world would miss if JERICO does not exist?
- Establishing ground basis for the (nested) implementation of JERICO-RI
- Elaborating on interactions between PSSs and IRSs (following breakout sessions)
- JERICO Label: Yes, focused on JERICO Label Concept and a first draft of TOR document.

COMMUNICATION
- Communication materials (update existing material vs increase option with new material)
- Articulation training workshops with other similar initiatives

OTHER RIs
- Look at collaborations that reach beyond science information - consider those that support our infrastructure needs. This include FAIR (of course), but much more.-
- Expand JERICO as the leader in coastal best practices as part of our long term branding

REGIONS
- IRS-PSS integration - this is like putting a flag on the territory to wave off others. The map with all of theme shown is powerful and we should make it real.

JERICO-Core, Demo
- JERICO-CORE session
- DEMO
  - Discuss real-time sensor observation service for J-CORE
  - Demo team mobilisation
  - Test, Pre-demo, and Demo mission planning
  - Paper writing team, paper outline, assignments

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SC meeting → half-day before the J-Days ? Monday June 27th, morning ? Restricted STAC meeting in the afternoon ?	Monday June 27
JERICO-DAYS : 28-29-30 JUNE 2022 (location to be confirmed later)	3 FULL DAYS
JERICO outreach, interactions, access to the RI	Full day : 8h total
→ Presentation of Communication **material** in real time → Expand JERICO as the leader in coastal best practices as part of our long term **branding**	2-4 hours
Other RIs ; Look at **collaborations that reach beyond science information** → Expected contribution from WP5: Presentation of the handbook (D5.2) → WP5 Plan for reinforcing the link between the Technical Steering Groups of JERICO-S3 and the EuroGOOS Task Teams	2 hours
JERICO-Core session : Demonstration and lessons learned based on testers // Define methods and procedures to collect feedback // Next steps	2h ?
Addressing possible IPR aspects/issue related to KER (exploitation plan). I am thinking, to start with, about PSPD, ACOBS, WASP, JERICO-CORE and more is needed. possibly part to a special session in June (WP10, WP7, WP67)	
Strategy sessions : one day total, 8h to be shared between thematics	Full day : 8h total
→ **Strategy 1 :** Focusing on long term sustainability and relevance. What can JERICO do that the world would miss if JERICO does not exist? → **Strategy 2 :** Establishing ground basis for the (nested) implementation of JERICO-RI **+ 2 OTHER SESSIONS ? Is that needed, relevant ?**	2h x4
REGIONS : PSS-IRS integration and common thematic discussions	Half day : 4h
Regions-specific workshop to continue discussions from breakout during JWeek (that were too short !) → define common thematics ? **Planting the flag** !	2 hours ?
Thematic discussions: → Carbonate system WS involving WP6, 3, 4 → PSS / IRS Data FAIRness → Theme 3 ?	2 hours
Parallel smaller meetings to fit specific tasks needs ?	Half-day : 4h
DEMO workshop : Discuss real-time sensor observation service for J-CORE // Demo team mobilisation // Test, Pre-demo, and Demo mission planning // Paper writing team, paper outline, assignments	
Technology design, results from questionnaire, advancing technology gap analysis → present and discuss with JERICO-Consortium	2 hours
Others ? → STAC restitution after the J-Days : 1 hour ? (including a plenary discussion ?) → Conclusion from Coordination ?	1h +
JERICO-User Committee meeting on Friday July 1, morning ?	Half day ?

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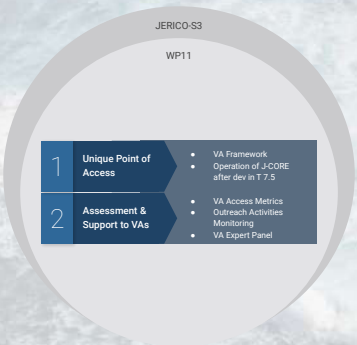
Measuring Virtual Access

JERICO-WEEK2022
Thursday, 17 Mar 2022 10:30-12:00 (CEST)
Damià Rita (drita@socib.es) on behalf of the WP11 Team

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Introduction



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Context

Need for Access Metrics

RIs need to **assess** their data access impact and **justify** to EC the investment

Open Science

Changes to each step in the scientific process: accessing data, establishing scientific reputation.

VAMS

Virtual Access Metrics System. Assess the user access to **VA services** from JERICO-S3 RI in a centralized place.

Open Access

Provides RIs new ways to enhance scientific impact. H2020 projects fund RIs under **Virtual Access (VA)**.

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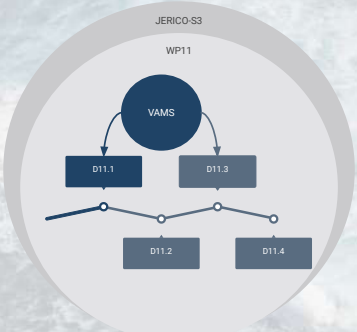
WP Deliverables & VAMS



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VAMS: Example Dashboard THREDDS Portus

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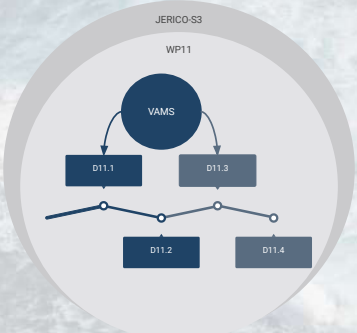
WP Deliverables & VAMS



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Status and technical view of the development of JERICO-CORE

(COASTAL OCEAN RESOURCE ENVIRONMENT)

JERICO-S3 WP7
March 17th, 2022

Miguel Charcos, Jay Pearlman, Sebastien Legrand and Damià Rita
on behalf of the JERICO-DS and JERICO-S3 partners contributing to the ongoing e-infrastructure development and evaluation efforts

IEEE, SOCIB, RBINS, SMHI, AZTI, SYKE, FMI, MARIS, IFREMER, ETT, BLIT, IODE, CNRS-LOV, CNR, TALTECH

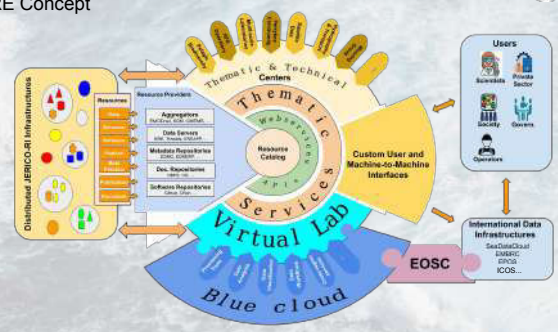
The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Outline

- J-CORE concept
- J-CORE JS3 prototype
- J-CORE JS3 services
- J-CORE JS3 deployment in DATARMOR

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

J-CORE Concept



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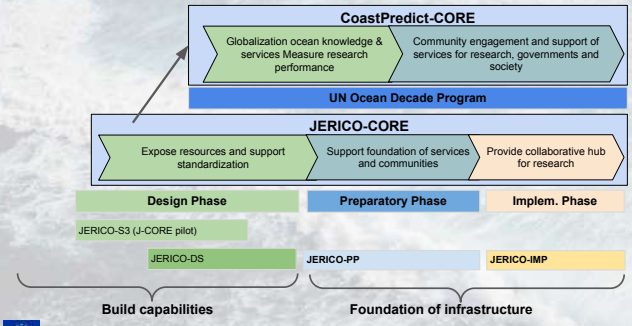
J-CORE Concept - Road Map



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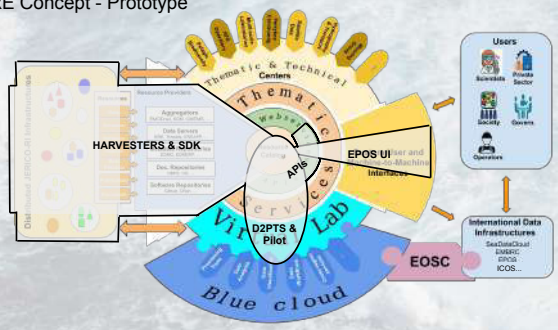
J-CORE Concept - Prototype



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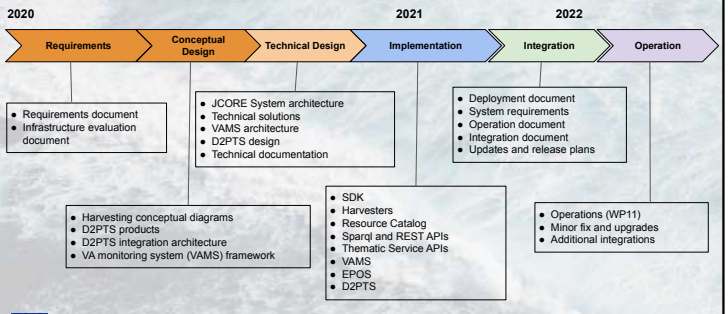
J-CORE JS3 Prototype - Development Status



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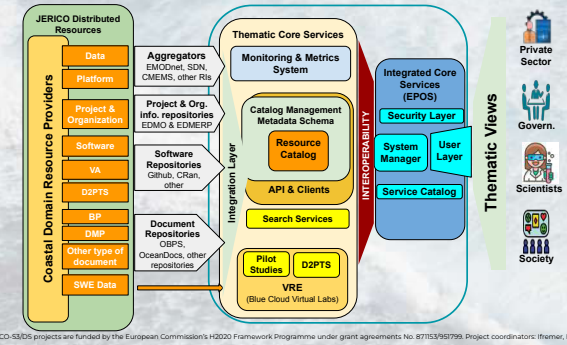
J-CORE JS3 Prototype - Design



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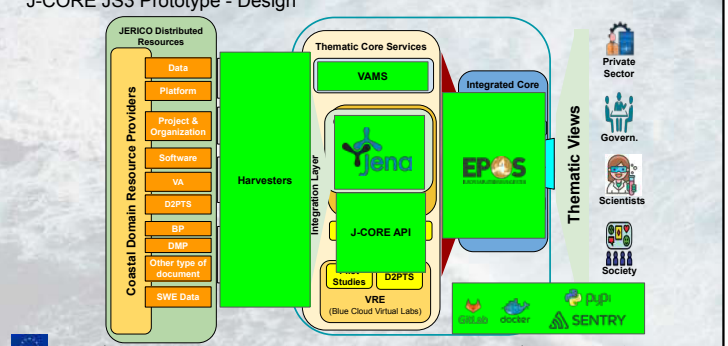
J-CORE JS3 Prototype - Design



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J-CORE JS3 Services

IRS Pilot Study in Iberian Atlantic Margin

- Transboundary processes
- Extreme events
- Long term variability and climate change

Data To Product Thematic Services (D2PTS)

- **HFR** Gap filled surface current fields
- **Gliders** Water mass transport
- **BGC** Advanced Data Products
- **Biology** Virtual Access to ECOTAXA services

Searching Capabilities

- Resource information
- Filtered and linked searches
- Advanced searching capabilities (e.g. What existing advanced data products are relevant for the policies written to date?

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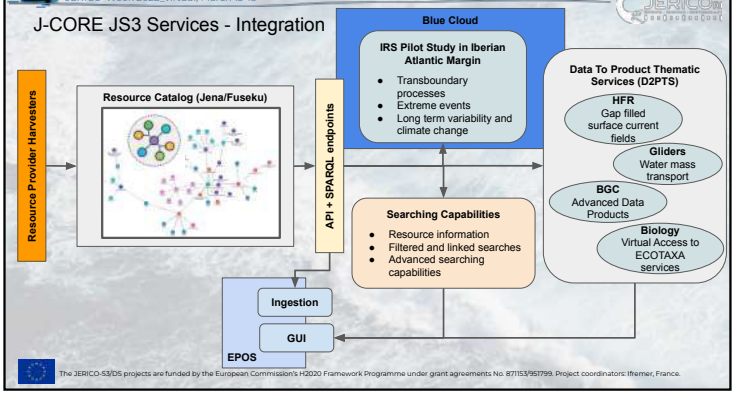
J-CORE JS3 Services - Integration



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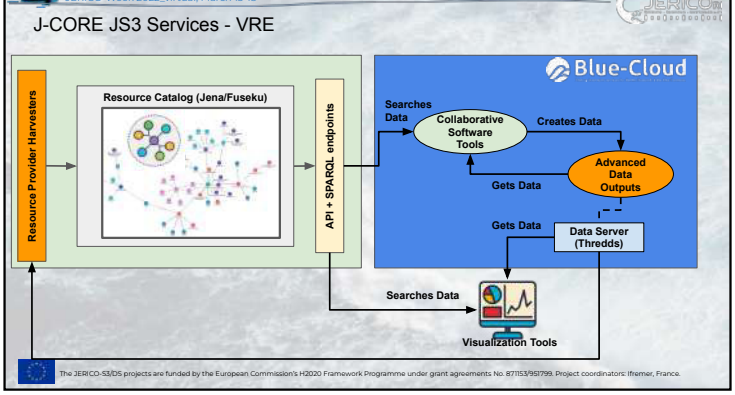
J-CORE JS3 Services - VRE



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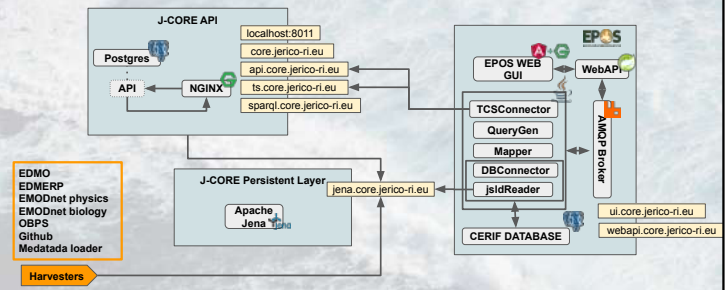
J-CORE JS3 Deployment in DATARMOR - Technical Details



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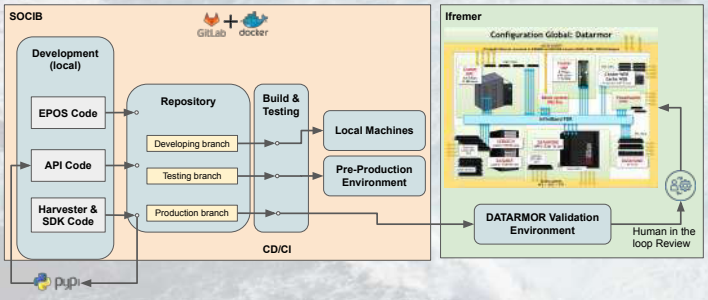
J-CORE JS3 Deployment in DATARMOR - Procedures



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Thanks

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Additional material

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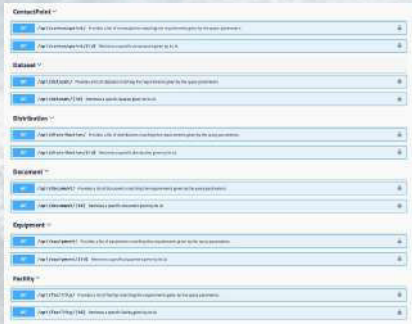
JERICO-CORE in action



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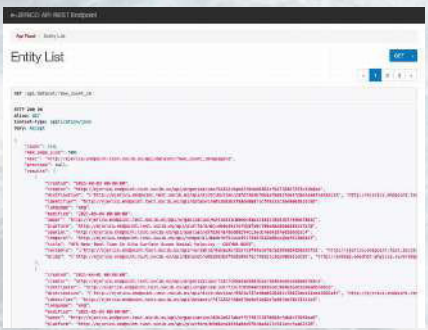
JERICO-CORE in action



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JERICO-CORE in action

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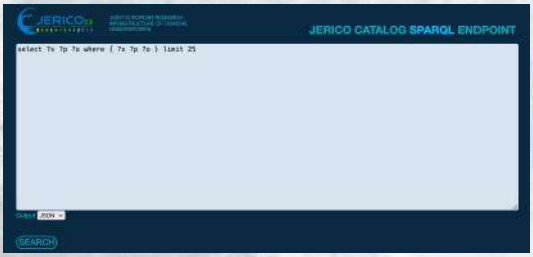
JERICO-CORE in action



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JERICO-RI Users and Partners

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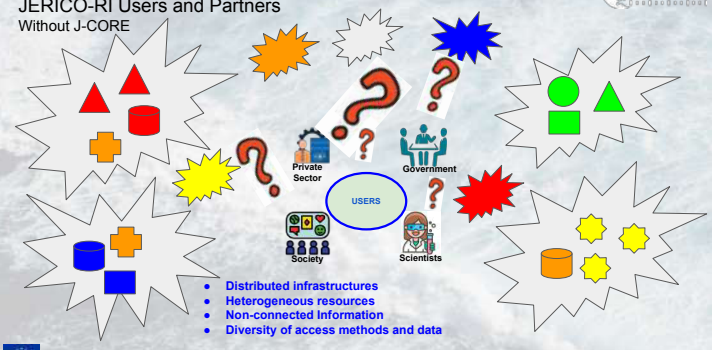
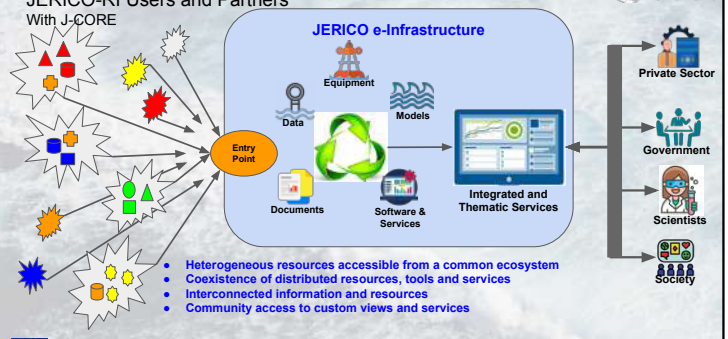
JERICO-RI Users and Partners
Without J-CORE



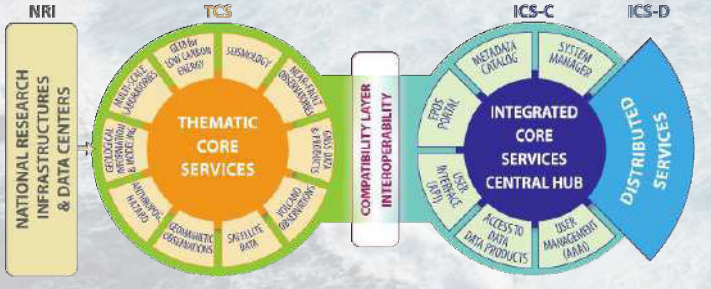
The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-RI Users and Partners
With J-CORE



The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

EPOS Thematic Centers and Structure



The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Jerico-S3, Task 7.2

Description and development status of the cEGIM

Task lead: Jérôme Blandin Ifremer

Contributors / team members:

Alan Bocher, Tanguy Bescond, IFREMER
Joaquin del Rio, UPC
Christian Autermann, 52°North GmbH
Eric Delory, PLOCAN
Simone Marini, CNR
Fabio Brunetti, OGS

Ifremer

17th March 2022

JERICOS3

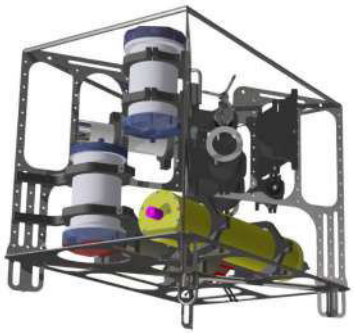
Introduction - Recall

- The cEGIM was initially thought as a transcription of an open ocean **generic** instrument module concept into the coastal world
- It was soon acknowledged that the diversity of coastal environment would seriously hamper the generic nature of the cEGIM
- It was decided to focus the cEGIM prototype design on the particular needs and constraints of a given demo site,
- the demo site was eventually selected in autumn 2021 (was it October?)
- in spite of significant progress recorded in early 2022, the list of sensors actually available for the demo is still pending

C-EGIM ports	Parameters	Sensors	Manufacturer	Sensor name	Energy	Provider (sub)system ON BUOY	Provider cEGIM BOTTOM	Driver availability	
Standard + Physics									
	1: conductivity/salinity, temp., depth	CTD	NKE MPT	Tobacon Sensor (MTW)		NKE MPT (Coast HF)	NKE MPS (Coast HF)	yes	OK
	3: current speed and direction	ADCP		Nortek AWAC / Teledyne		NORTEK (Coast HF)	NKE MPS (Coast HF)	yes	?
	2: dissolved O2	optical sensor	Aanderaa, PX 4060			NKE MPT (Coast HF)	NKE MPS (Coast HF)	yes	OK
	4: Chl a	fluorescence	SeaBird, Trios, Aanderaa, ***	CYCLOPS-6 K Turner Designs		NKE MPT (Coast HF)	NKE MPS (Coast HF)	yes	OK
	5: turbidity	optical sensor	SeaBird, Trios, Aanderaa, ***	Seapoint, turbidity meter		NKE MPT (Coast HF)	NKE MPS (Coast HF)	yes	OK
	6: light			Mikrotrils Sensors (PAR)		ATLANTIC (Coast HF)	NKE MPS (Coast HF) probably not (Pascal?)	yes	?
BGC									
	N, C, O biogeochemistry 8: (nitrate, nitrite, BOD, COD, DOC/TOC, TSS	optical sensor UV	TRIOS / SYSTEA (WIZ)	OPUS / WIZ		WIZ (not connected)	yes - WIZ - who can provide	yes (à revoir)	?
	7: pCO2		CONTROS / SUNBURST Provasica	SAMI-CO2 / Carioca		SAMI CO2? (ed. felipe/Alain in 2022 / mise à disposition in 2024)	no	yes	No
	9: pH	Optode	OOT SENSEOCEAN	Seabird SeaphOx		NKE MPT	NO	yes	No
Biology									
	10: pigments (Chlors, Fucoxanthin, PhycoCyanin, PhycoErythrin) and CDOM	Spectrofluorometer	NKE Microalgae	FluoroProbe	Battery	planned at SMILE (to be checked with Pascal Lazure) O. Felipe)	Yes (verifier le modul du capteur)	Yes (certified be modul du capteur?)	?
	11: PhytoPP - primary production (and Phytoplankton pigments)	PAM? Fast repetition rate fluorometry	Chelsea Technologies	FastDown APO Act 2		FastDown APO Act 2 non connecté	to be checked with Pascal	Driver to be developed	?
	12: Phyto cell size (micro, nano, picoplankton)	Automated pulse shape and images flow cytometer, fluorescence	CytoSub	CytoSub	Battery ok WIZ 2 watts	Provider LOV	no	Driver to be developed	No
	13: Zooplankton and large particles	Underwater Vision profiler		Self triggered particle sensor - UVP 6			UVP6 - LOV (L.Coppola)	Driver to be developed	OK

Development status of the cEGIM prototype

Mechanical design (1/2):



First sketch derived from the knowledge of the demo site

Generic sensor payload by default

Development status of the cEGIM prototype

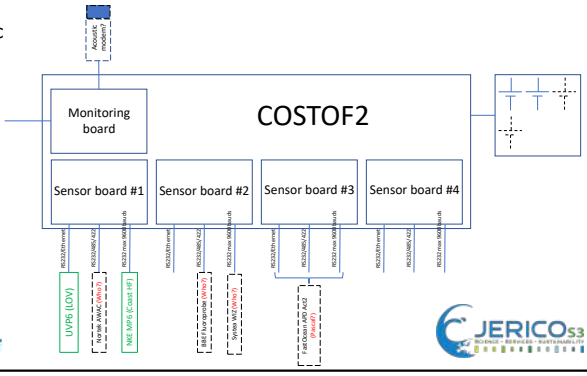
Mechanical design (2/2)

Detailed design will be launched from the knowledge of the actual sensor list (dimensions, installation constraints, weight and power consumption are important mechanical design drivers)

17th March 2022

Development status of the cEGIM prototype

Electr.on.ic design:



Development status of the cEGIM prototype

Electr.on.ic design

HW COSTOF2 received ✅
design battery pack (number of cells)

SW at least one sensor driver to write (UVP6)
implement acoustic modem communication

17th March 2022

Planning

- Detailed planning (design, manufacture, assembling, tests) to be studied after actual sensor list is issued
- Tentative demo macro-planning (objective)
  - Lab tests — December 2022
  - Tests in Sainte-Anne du Portzic — Jan 2023
  - Implementation on the Smile buoy site — Feb 2023

17th March 2022

JERICO-Week 2022_virtual, March 15-18

Pelagic Sensor Package for the integrated observation of plankton dynamics

Sensors involved in the demo activity

Luis Felipe Artigas, Alain Lefebvre, Simone Marini, Eric Delory, Dominique Durand, Catherine Boccadoro & colleagues from JERICO S3 WP4-WP5-WP7

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France

Rationale of the Pelagic Sensor Package (PSP)

- The aim of the *Pelagic Sensor Package (PSP) for the integrated observation of plankton dynamics* is to address plankton dynamics at High Frequency in a coastal system (the Bay of Seine, Eastern Channel) showing important sources of variability : megatidal semidiurnal regime, important nutrient and suspended particle loads, high hydrodynamics and anthropogenic pressure.
- We will combine already existing platform (SMILE coast-HF buoy) at surface and the coastal EGIM that will be placed at the bottom
- The demonstration activity within WP7 aims to show that the sensors installed onboard the cEGIM can be dynamically adapted through the intelligent services.
- We've relied on past and current JERICO-NEXT and JERICO-S3 experience on the implementation of plankton sensors in different platforms, raw data analytical tools and services (including A.I.)

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

PSP demo system at the SMILE Buoy (Bay of Seine English Channel)

Temperature
Conductivity
Oxygen
Turbidity
Chla (Fluorescence)
PAR

Pre-conception of the cEGIM
(source: IFREMER, A. Bocher, J. Blandin)

COSTOF-2 System

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

PSP demo system : list of variables & sensors

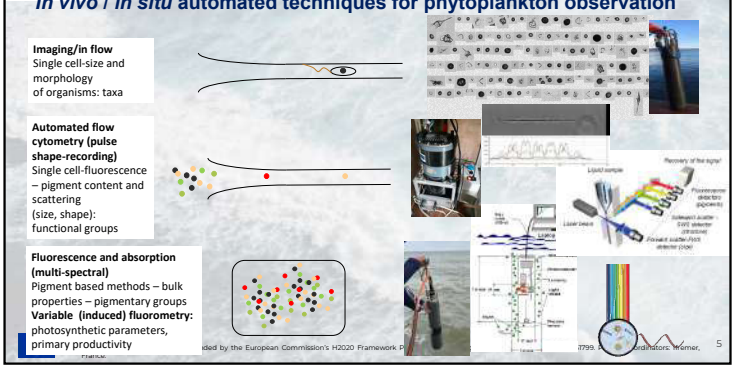
C-EGIM ports	Parameters	Sensors	Manufacturer	Sensor name	Provider (sub)surface ON BUOY	Provider cEGIM BOTTOM	Driver availability
Standard + Physics							
1	Conductivity/salinity, temp, depth	CTD	NKE MP7	Tetracon Sensor (WTW)	NKE MP7 (Coast HF)	NKE MP6 (Coast HF)	yes
3	Current speed and direction	ADCP		Nortek AWAC / Teledyne	NORTEK (Coast HF)	NKE MP6 (Coast HF)	yes
2	Dissolved O2	optical sensor	Aanderaa, JFE RINKO		NKE MP7 (Coast HF)	NKE MP6 (Coast HF)	yes
4	In vivo Chl a fluorescence	Fluorometer	Turner Designs	CYCLOPS 6 K Turner Designs	NKE MP7 (Coast HF)	NKE MP6 (Coast HF)	yes
5	Turbidity	optical sensor	SeaBird	Seapoint, turbidity meter	NKE MP7 (Coast HF)	NKE MP6 (Coast HF)	yes
6	Light		SAtlantic	SAtlantic Sensors (PAR)	SATLANTIC (Coast HF)	probably not (Pascal?)	yes
Biogeochemistry							
6	N, C, O biogeochemistry (nitrate, nitrite, BOD, COD, DOC/TOC, TSS	optical sensor UV	TRIOS / SYSTEA (WIZ)	OPUS / WIZ	WIZ (non connected)	yes - WIZ- who can provide?	yes (to be checked)
7	pCO2	Stable colorimetric reagent method	SUNBURST	SAMI-CO2 / Carioca	SAMI-CO2 (CNRS LOG? other provider?)	NO	yes
8	pH	Optode	OOT SENSEOCEAN	Seabird SeapHox	NKE-MP7	NO	yes
Biology							
9	Phytoplankton spectral groups and CDOM	Multispectral Fluorometer	BBE Moldaenke	FluoroProbe	Planned (CNRS LOG)	To be hired from bbe	Yes to adapt to the sensor type
10	PhytoPP – photophysiology & primary production (and spectral groups)	FRRF Fast repetition rate fluorometer	Chelsea Technologies	FastOcean APD Act 2	Already installed in SMILE FastOcean APD Act 2 –non connected		Driver to be developed
11	Phyto cell size (micro, nano, picoplankton) and optical groups	Automated pulse shape and imaging flow cytometer	Cytobuoy	CytoSub	Planned (CNRS LOG)	no	Driver to be developed
12	Zooplankton and large particles	Underwater vision profiler	Hydroptic	Self triggered particle sensor - UVP 6	no	CNRS LOV (L.Coppola)	Driver to be developed
12 bis	Particles, plankton, microplankton (< 200 µm)	imaging flow for particles, nano and microplankton	McLane	IFCB (Imaging Flow Cytobot) - Diatom, dinoflagellate	SMILE (CNRS-LOG/LOV, NIVA?)	no	Driver to be developed

In vivo / *in situ* automated techniques for phytoplankton observation

Imaging/in flow
Single cell-size and morphology of organisms: taxa

Automated flow cytometry (pulse shape-recording)
Single cell-fluorescence – pigment content and scattering
(size, shape): functional groups

Fluorescence and absorption (multi-spectral)
Pigment based methods – bulk properties – pigmentary groups
Variable (induced) fluorometry: photosynthetic parameters, primary productivity



The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

Biological sensors planned to be deployed at the Demo PSP

A Fast Repetition Rate Fluorometer
Fast ACT2
Chelsea (U.K.)

Automated Flow Cytometer
CytoSub
CytoBuoy b.v. (NL)

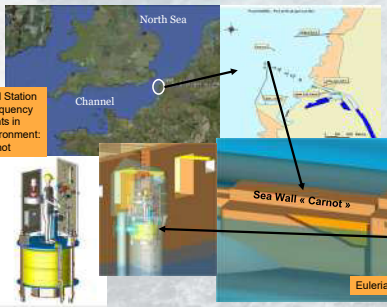
Multispectral Fluorometer
Fluoroprobe
bbe Moldaenke (DE)

Underwater Vision Profiler
UVP6
Hydroptic (FR)

Imaging inflow *in situ* sensor
Imaging FlowCytobot
McLane Research Laboratories

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

Towards high resolution monitoring of water quality in the eastern Channel …tests carried out at the MAREL Carnot instrumented station



Instrumented Station For High Frequency Measurements in Coastal Environment: MAREL Carnot

Demo site to implement nutrient and biological sensors
- Nutrient analyzer (WIZ)
- Multispectral fluorometer (AOA)
- Automated Flow Cytometer (CytoSub)

Link to **Smile Buoy** within the COAST-HF network

16 parameters
Seawater and Air temperature
Conductivity
Dissolved oxygen
Oxygen saturation
Turbidity
pH
P.A.R.
Fluorescence
Atmospheric pressure
Relative humidity
Wind speed & direction
Sea level
Nitrate
Phosphate
Silicate

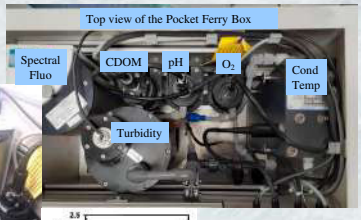
The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

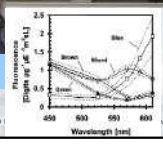
Towards high resolution monitoring of water quality in the eastern Channel …the « Pocket Ferry Box »

Portable device (<27 kg)
Easy power supply
Continuous measurements
Total time constant < 2 min
GPS

Algae Online Analyzer (AOA, bbe©)

Top view of the Pocket Ferry Box

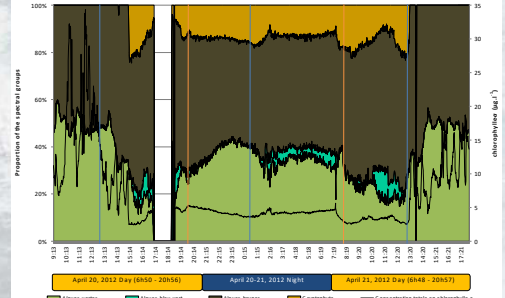




Mean fluorescence-excitation probabilities for 4 spectral algal groups (norm spectra) (Source : Beutler et al., 2002)

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

Multispectral fluorometry measurements Algae Online Analyzer (AOA, bbe Moldaenke)

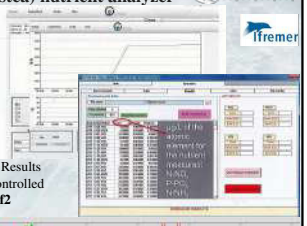


Detection of high spatial temporal changes in phytoplankton which could hardly be detected by employing discrete sampling strategies. Within a given environment, HFM highlight **changes in the 4 spectral phytoplankton groups**.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/957799. Project coordinators: Ifremer, France.

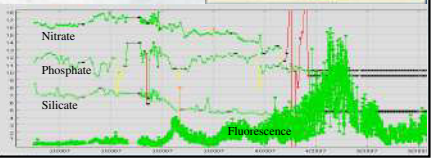
Example of results from the WIZ (Systea) nutrient analyzer

Tests and Calibration of the WIZ analyzer (Ifremer, Univ. Caen)



Control Panel and Results Main steps to be controlled by the **Costof2**

⇒ Expected results:
nutrient dynamics (Nitrate, Phosphate, Silicate)
sampling frequency: 12 h

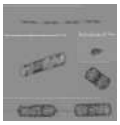


The JERICO-S3/DS projects are funded by the European Com France.

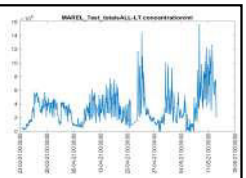
Automated monitoring of phytoplankton abundance, biomass and diversity by the strait of Dover (English Channel)

MAREL CARNOT AUTOMATED STATION

- High frequency data (every two hours)
- Automated station
- Parternship between the French State, FEDER, the regional council of Nord-Pas-de-Calais, IFREMER, ULCO and CNRS INSU
- CytoSub (Cytobuoy) automated flow cytometer phytoplankton monitoring (March26 – May 10, 2021)
- Visualisation of several phases of the spring bloom



Phytoplankton images acquired by the CytoSub flow cytometer (Cytobuoy©)

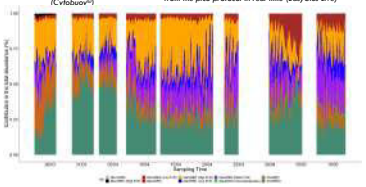


Real-time visualisation of phytoplankton total abundance from the pico protocol in real time (EasyClus Live)

Satellite image of Boulogne-sur-Mer (Google Earth)

Preparing the CytoSub in the Marel Carnot station (C. Gallot & A. Epinoux)

CytoSub deployed in a cage built by J.V. Facq (IFREMER) feeded by the MAREL Carnot pumping system



Contribution (%) of different groups to phytoplankton abundance –(CytoClus manual analysis) (K. Robache, M.Sc. Thesis, 2021)

Activities to come on Demo PSP

- Some biological sensors will be installed both at sea surface and at seabed so we can switch it on/off or change their configuration and frequency of acquisition at the seabed and, if needed at the sea surface too.
- Other sensors on the seabed (e.g. salinity, temp, dissolved O2, *in vivo* chl-a) might be adjusted depending on some environmental conditions occurring at the sea surface or a the seabed.
- For the next step we will have to define which variables should be considered for detecting relevant differences (and/or threshold exceed/falls and/or regime changes) between the sea surface and the seabed and then which sensors have to be adjusted as function of the detected changes.
- Link to modeling and remote sensing products and services (i.e. EuroHAB)
- Last but not least, we need to consolidate the consortium of sensor providers/experts and to move forward with the connectivity and data transfer/visualization from land during the deployment process

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Thanks for your attention!

This work was supported by the JERICO-S3 and JERICO-DS project. These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153 / 951799.

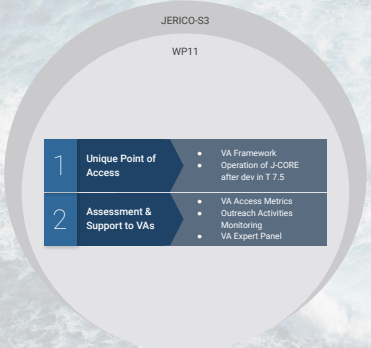
The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Measuring Virtual Access

JERICO-WEEK2022
Thursday, 17 Mar 2022 10:30-12:00 (CEST)
Damià Rita (drita@socib.es) on behalf of the WP11 Team

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Introduction



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Context

Need for Access Metrics

RIs need to **assess** their data access impact and **justify** to EC the investment

Open Science

Changes to each step in the scientific process: accessing data, establishing scientific reputation.

VAMS

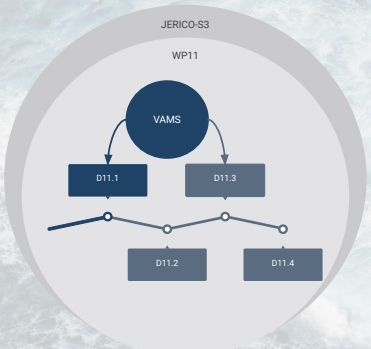
Virtual Access Metrics System. Assess the user access to **VA services** from JERICO-S3 RI in a centralized place.

Open Access

Provides RIs new ways to enhance scientific impact. H2020 projects fund RIs under **Virtual Access (VA)**.

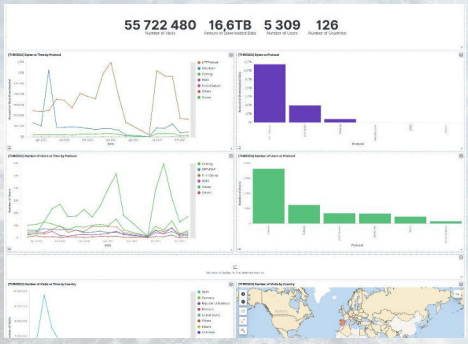
The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

WP Deliverables & VAMS



The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

VAMS: Example Dashboard THREDDS Portus



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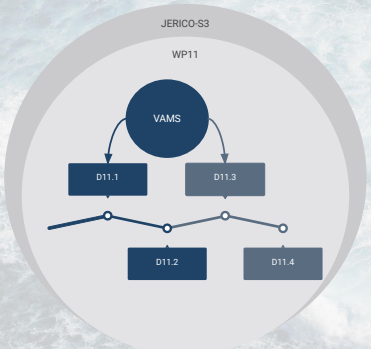
WP Deliverables & VAMS



The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Part of this work was supported by the JERICO-DS project. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153/951799.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-WEEK 2022
START AT 10am CET

Sorry for the wrong info

We do not manage to send the erratum
(Ifremer mailing system failure)

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-WEEK 2022

15th - 18th March 2022
(Remote)

Laurent Delauney, Lea Godiveau, Simon Keeble

jerico-S3@ifremer.fr
design.jerico@ifremer.fr

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-WEEK 2022 - General introduction

JOIN THE SLACK ! https://join.slack.com/t/jerico-ri-collab/shared_invite/zt-p0r7t752-YiHoMfipY2WQOrv12QUiqw

A few other useful links :

- JERICO-Week#2 CENTRAL DOC with Agenda-at-a-glance
- ZOOM Main Room (same link for the entire week) : https://zoom.us/j/4633526762
- MIRO Account, to be used as needed (guest account : jerico@ifremer.fr // Jerico2024
- COMMUNICATION TOOLS
- JERICO-RI WEBSITE (new version !)

#	Description (duration in min)	Leading person	Link
1	JERICO Week at a glance (10')	Laurent Delauney	
2	Technical Organisation (5')	Lea Godiveau	
3	Dissemination during the J-Week (5')	Simon Keeble	LINK
4	Questions and discussion (5')	Coord and attendees	

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-WEEK 2022 - Introduction

JERICO-RI is a marine research infrastructure

that addresses the challenge of **observing the highly complex and variable coastal seas**

at a **Pan-European** level within the context of the **EU policy drivers**

to support **excellence in marine coastal research in Europe**.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-WEEK 2022 - Introduction

JERICO-RI is a marine research infrastructure

that addresses the challenge of **observing the highly complex and variable coastal seas**

at a **Pan-European** level within the context of the **EU policy drivers**

to support **excellence in marine coastal research in Europe**.

JERICO-S3 project objectives:

- to provide a **state-of-the-art**, **fit-for-purpose** and **visionary** observational Research Infrastructure (RI)
- to provide **expertise** and **high-quality data** on European **coastal** and **shelf seas**.
- to support **world-class research**, **high-impact innovation** and a window of **European excellence worldwide**.

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JERICO-WEEK 2022 - Introduction

JERICO-RI is a marine research infrastructure

that addresses the challenge of **observing the highly complex and variable coastal seas**

at a **Pan-European** level within the context of the **EU policy drivers**

to support **excellence in marine coastal research in Europe**.

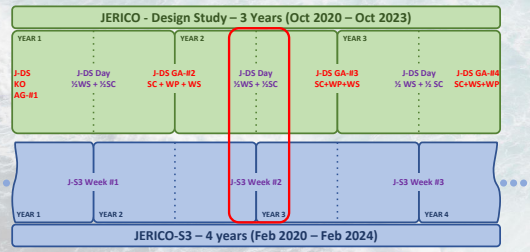
JERICO-Design Study project objectives:

- **to build on nations' will and involvement** to co-construct the JERICO RI,
- from the **scientific and technical design** to **the business plan** and **governance strategy**, supporting future engagement during the ESFRI process.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-WEEK 2022 - Introduction

J-S3/JDS Meetings timeline



The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

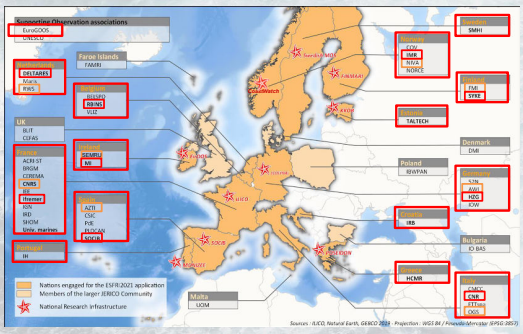
JERICO-WEEK 2022 - General introduction

J-S3 characteristics:

44 partners

48 months (feb 2020 - Feb 2024),

~9.9 M€



J-DS characteristics:

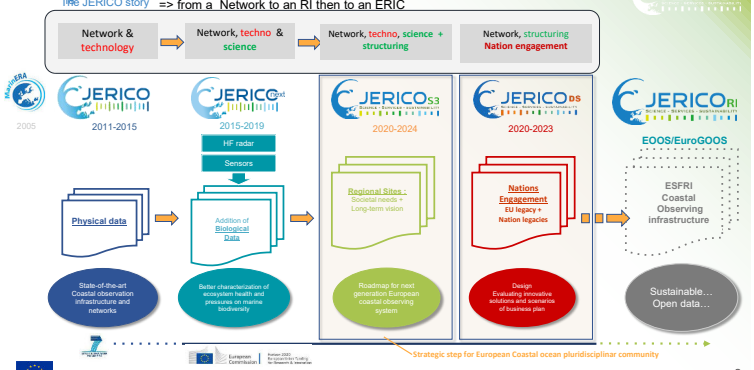
15 contractors + 8 third parties,

36 months (oct 2020 - Oct 2023),

~2.5 M€

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

The JERICO story => from a Network to an RI then to an ERIC



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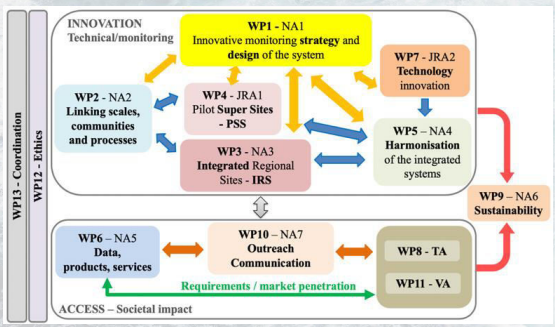
JS3 description of WPs



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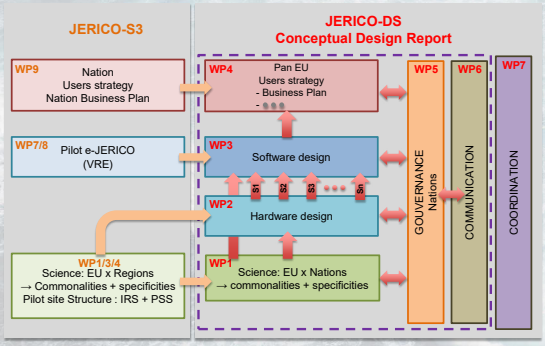
JERICO-S3 vs JERICO-DS



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Technical Organisation - JERICO-Week (5')

SLACK, JERICO-RI Collab: please join ! We will use it to convey import information about the sessions, we can have side-discussions, ask for your opinion etc.
https://join.slack.com/t/jerico-ri-collab/shared_invite/zt-p0r7t752-YiHoMfipY2WQOrv12QUiqw

AGENDA.s

- AGENDA : global agenda available at all times in the JERICO-Week2022 Central Doc (save link in your web browser !)
- DETAILED AGENDAS per SESSION : active link in each cell in the global agenda (below each session block)

NOTES and Minutes

- Will be taken within each DETAILED AGENDA per SESSION (in GoogleDocs, links in the global agenda above)
- Sessions leaders need to appoint one or several "secretaries" for their session (or one for each sub-part) → **the Coordination team will only be there to supplement the notes-taking effort but may not be reliable at all times (but everyone can help taking notes or adding their thoughts)**

Zoom and roundtables etc. : same link for the entire week, and breakout rooms will be designed from that same room
→ *https://zoom.us/j/4633526762*

COFFEE & LUNCH Breaks will happen here : https://www.wonder.me/r?id=1da9d0ce-3fa2-4066-af29-ee8697c3cb03

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Communication

2 Things to do this week

1) Communicate via Twitter, Facebook etc

2) Send a tweet / photo about something in your presentation or workshop to:

simon@bluelobster.co.uk

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Use social media

Here is a list of Twitter Hashtags and Mentions/Handles that could be used when communicating during the JERICO week - there will be others but these can be used for ideas - the most important of which is: #JERICORI.

Hashtags

#JERICORI #H2020
#ResearchInfrastructures #Innovation #MarineScience
#OceanScience
#OceanObservation #CoastalObservation #WaterMonitoring #OpenData
#Ocean #Marine
#Science #ResearchImpactEU #Oceanography
#EarthObservation #BlueGrowth #Assessment
#openaccess #FAIR

Mentions/Handles

@JERICORI
@EU_H2020
@EU_MARE
+ partners

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Note from the EC:

European Commission social media channels

The social media platforms the Commission and its agencies use can help you expand your audience by sharing your posts.

Try the following:

• Add #H2020 to your tweets. Be part of the online conversation about Horizon 2020 and your tweets become searchable.

• Tag @EU_H2020 in your tweets. Relevant posts are sometimes shared on EU social media accounts.

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What to post:

☐ ~~Screenshots of people on zoom~~

Look at the introduction of sessions for text ideas

Use appropriate screenshots of images or diagrams

#☐ Hashtags and mentions

Mention colleagues

Engage...

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1) Communicate via Twitter, Facebook etc

COMMUNICATION TOOLS (Hashtag, logos and others)

1) Send a tweet / photo about something in your presentation or workshop to:

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This work was supported by the JERICO-S3 and JERICO-DS project. These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153 / 951799.

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Development of central actions (WP1 JS3 and JDS, 50')

JERICO-RI Science Strategy Meeting - IMPLEMENTATION AT CENTRAL LEVEL
TUESDAY 15h

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Development of CENTRAL ACTIONS - OVERVIEW

Two main work sessions:

1- JERICO-S3 Week#2 Session Science Strategy: Laying down the bases of the development of future **Central Actions or "Thematic Centres"** for the integrated approach to #JERICORI Science Challenges - *April 2021*

First ideas - Need for Central actions

2- J-DS GENERAL ASSEMBLY : Joint JDS WP1 / JS3 WP1 Science strategy WORKSHOP - *November 2021*

Concept

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

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Concept

3- Our session today

Review of the concept and why we need central actions

Towards a list of CAs

Next steps towards the development of a CA Implementation Plan

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Development of CENTRAL ACTIONS - OVERVIEW

JERICO-S3 Week#2 Session Science Strategy: Laying down the bases of the development of future **Central Actions or "Thematic Centres"** for the integrated approach to #JERICORI Science Challenges

What three words should be part of the definition of a Thematic Center ?

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Development of CENTRAL ACTIONS - OVERVIEW

JERICO-S3 Week#2 Session Science Strategy: Laying down the bases of the development of future **Central Actions** or **"Thematic Centres"** for the integrated approach to #JERICORI Science Challenges

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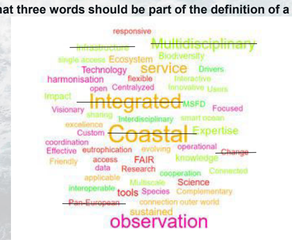

JERICO-RI : integrated pan-European multidisciplinary multi-platform research infrastructure holistic appraisal coastal marine system changes

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Development of CENTRAL ACTIONS - CONCEPT

J-DS GENERAL ASSEMBLY : Joint JDS WP1 / JS3 WP1 Science strategy WORKSHOP

- ✓ **Need to develop Central Actions, following D1.1 recommendations**
- ✓ **Both internal/external needs for the development of Central Services.** Mentimeter
- ✓ **Alignment with ongoing JERICO-S3 tasks is needed**
- ✓ **Also to consider what is happening in other RIs or initiatives at European and/or global levels.** Mentimeter

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Development of CENTRAL ACTIONS - BUILDING THE CA PORTFOLIO

✓ **Need to develop Central Actions, following D1.1 recommendations**

Central ACTIONS can make the difference between being seen as a RI and not an addition of Coastal Observatories (ESFRI)

Need to arrive at the next ESFRI application with a portfolio of CA, taking into account the alignment with ongoing JERICO-S3 tasks

Clear added value to progress towards a European RI

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Development of CENTRAL ACTIONS - BUILDING THE CA PORTFOLIO

✓ **Both internal/external needs for the development of Central Services.**

Different nature of Central Actions: Technology, products (modelling and others), transfer of expertise (both in and out of JERICO-RI)

Need to elaborate a list aligned ongoing JERICO Activities and needs

- **e-JERICO porfolio**
- **TA**
- **Tacking of KSCs (insuring coordination in Science)**
- **Technology**
- **Products/indicators**
- **Modelling**
- **Transfer of expertise**
- **Coordination with other RIs**

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Last mentimeter - Open discussion

For a Central Action in the field of SERVICES, can you provide some specific ideas, identify existing or future needs? Mentimeter

J-DS GENERAL ASSEMBLY

- Aquaculture-related services like better place to host cages, provide better dispersion processes, etc…// **'Digital twin of the ocean'-connected services** — **SERVICES**
- Support for setting up Coastal RI Common procurement Policy briefs — **RI Strategy/ Implementation**
- **Science, technology and R&D**
- Access to expertise and experience in monitoring; European calibration/metrology services; Modification of observations for specific needs, specific technical servic… — **TECHNOLOGY / EXPERTISE**
- **Communication** hub (both internal or external) for any initiative connected to coastal observation; **Relations with SMEs** & stakeholders & private sector — **Communication/ networks**
- Provide harmonized quality controlled data for portals such as EMODNET and COPERNICUS // JERICO-RI data for DTO — **DATA / DATA PRODUCTS**
- Creation products from data, JERICO climatology
- Innovation survey (enabling implementi… high-value technological innovation broadly)

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Last mentimeter - Open discussion

In view of collecting EXTERNAL needs for the development of central services, which communities/initiatives should we consider? Mentimeter

J-DS GENERAL ASSEMBLY

- Regional sea conventions (OSPAR, HELCOM etc.)
- Institutes
- Modelling communities
- Others RIs
- Holistic observation of the coastal ocean: linking observations from science, industry and national monitoring
- Third sector of research (actors linking scientists and society)
- **Private sector, Stakeholders**
- **Nations (WP1 survey)**
- Countries outside the European Union ?

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Next steps

DATA / DATA PRODUCTS
SERVICES
TECHNOLOGY / EXPERTISE

Other RIs or initiatives at European and global levels
Nations though JERICO-DS
Private sector Stakeholders

JERICO-RI boundaries in the landscape of RIs

Clear definition of JERICO-RI products and services

List of CAs

Plan for Implementation of CAs

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JERICO DS — SCIENCE · SERVICES · SUSTAINABILITY

JERICO S3 — SCIENCE · SERVICES · SUSTAINABILITY

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JERICO-RI Science Strategy Meeting - IMPLEMENTATION AT CENTRAL LEVEL (1.5H)

Update of Research Axes (open list) with ongoing activities ==> from network to RI (WP1, 20')

A. Rubio, A. Gremare, D. Durand, L. Coppola (WP1)

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Introduction

Keys Scientific Challenges	Specific Scientific Challenges	Research Axes
Assessing changes under the combined influence of global and local drivers	Land Sea Ocean continuum. Impacts of land-derived discharges and exchanges with open ocean	Nutrients, particles and organic matter, inorganic carbon, litter and contaminants
	Sea-atmosphere interface. Quantification of inputs	Particles, nutrients, contaminants
	Connectivity and transport. Pathways of water masses and materials	Water masses (including vertical mixing), nutrients, contaminants, particles, organisms (connectivity)
	Biodiversity trends	Phytoplankton, zooplankton, benthos
	Ecosystem biogeochemical processes and interactions	Biophysical interactions, Biogeochemical functioning, Pelagic, benthic, pelagic/benthic coupling
	Carbon budget and carbonate system	Carbon fluxes and budget, carbonate system trends, effects of acidification
Assessing the impacts of extreme events	Impacts of rare and extreme events	Floods, storms/large waves, heat/cold waves, landslides/sudden erosion, tsunamis, volcanic eruptions, harmful algae / jelly fish blooms, accidental pollution, Interactions between events
Unravelling and predicting the impacts of natural and anthropogenic changes	Resolving climate change impacts	Temperature, salinity, currents, sea level rise, waves, biological productions, species distribution ranges (biogeography), nutrients
	Resolving anthropogenic impacts	Eutrophication, habitat and biodiversity loss, contamination, coastal engineering, use of marine space (including windfarming), use of marine nonliving resources, use/cultivation of living resources, invasive species, maritime traffic, (micro) plastics, acoustic and electromagnetic noises
	Disentangling impacts/scales	Meta analysis , coupled modelling

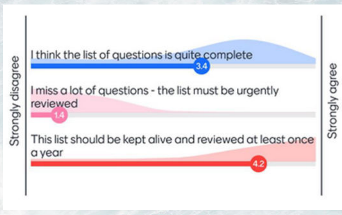

Table IV: Current status after the JERICO week #2 of: (1) the formulations of JERICO-RI Key Scientific Challenges, and (2) their subdivisions in Specific Scientific Challenges and Research Axes

JERICO-S3 D1.1 – WP1 - First analysis of the JERICO-S3 scientific monitoring and regional approaches. Early inputs toward sustainability.

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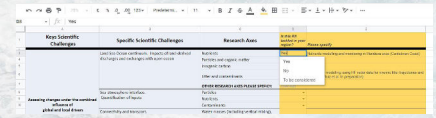
Research Axis list - REVIEW

We propose a 3 step process:

1- Excel template to be completed by regions (end of APRIL 2022)



2- Analysis of inputs by WP1 (in collaboration with WP3 and WP4)

3- JERICO-Days (JUNE 2022): Workshop to present the results, and complete the exercise by:

- Analysing synergies between regions
- Analysing the contribution of RAs and SCs to societal challenges

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JERICO-WEEK 2022 Coordination strategy recommendation

15th - 18th March 2022
(Remote)

Laurent Delauney
jerico@ifremer.fr
jerico-S3@ifremer.fr
design.jerico@ifremer.fr

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JERICO-WEEK 2022 - Coordination Introduction

- ESFRI APPLICATION FEEDBACK
- PERIODIC REPORT FEEDBACK
- KEY RECOMMENDATIONS

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ESFRI Application and next steps

Overall results

	Low	Medium	High	Very high
Scientific case				
Scientific excellence				
Pan-European relevance				
Socio-Economic Impact				
User strategy / Access policy				
E-needs				
Implementation				
Stakeholder commitment				
Preparatory work & Planning				
Governance, management, human resources				
Finances				
Risks				
Overall findings				

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ESFRI Application and next steps

Analysis of the evaluation of the ESFRI committee

=> Positive aspects

- JERICO-RI is a **STRONG** proposal...
- The system **reached a certain level of maturity**...
- The RI **underpins many spheres of human activity** and is **able** to contribute to investigations **across the range of scientific disciplines in the coastal oceans**.
- It has an **explicit** and **clear** multidisciplinary focus.
- **Europe needs such initiative and coordinated long term marine observation system.**
- The group has a track record and **credibility** and, **importantly has excellent linkages to user networks.**
- It covers **all aspects** of coastal seas environment with **up-to date approach.**

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ESFRI Application and next steps

Analysis of the evaluation of the ESFRI committee

- **Topic to improve**
  - The **preparation phase** should be clarified.
  - The preparatory work and planning need to be further developed and **agreed by the member states.**
  - The **business case** needs to be largely improved, important weaknesses in the financial aspects.
  - **Financial commitments** as a RI si provided **only by the lead country.**
  - The project should better highlight **the commitment given by Member States** in order to show the **sustainability of JERICO RI as a research infrastructure that can operate independently of EU support.**
  - How much of these **national activities will become part of the new JERICO-RI.**
  - Requested documentation is just outlined, **not yet approved by the member countries.**
  - The **governance** shows some weaknesses.
  - it would be good to analyse in more in-depth the **users' needs** to optimise the e-infrastructure.
  - We should demonstrate how the RI will contribute to meeting current **grand challenges.**
  - **Overlap** with already **existing RIs** should be better managed.
  - Demonstrate how it intends to make the **step-up** from being **an observational network to becoming a RI.**

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ESFRI Application and next steps

Analysis of the evaluation of the ESFRI committee

- **General feedback**
  The proposal did **not clearly demonstrate:**
  How the initiative will go **beyond a network concept** to establish a common RI.
  How it will **fit into the current landscape.**
  Weaknesses on the financial dimensions beyond the EU funding.

- **General conclusions**
  On the basis mainly of **weaknesses in implementation issues** *(preparatory work, governance and finances),*
  JERICO is not recommended at this stage to enter the ESFRI Roadmap.

  After finalisation of the design study and better developed and supported plans for the infrastructure,
  it is likely to be in a good position to apply for the next ESFRI Roadmap.

- **ESFRI Roadmap Application planned in 2024**
- **France support a re-submission**

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Periodic report feedback

- **Transnational Access was commented many times by the reviewer:** *Number of projects funded, variety of countries in projects, call duration, gender balance, dissemination*
- **Extension of partners (actors) in IRS and PSS was mentioned many times in various themes.**
- **Need of a Concrete plan to create frameworks across nations (transational coordination) (linked to IRS and PSS) was mentioned many times.**
- **maturity level of the PSSs and IRSs may actually widen through the course of the project => the sites will work independently rather than in a collaborative fashion was mentioned many times.**
- **Extension to Black Sea and North Africa was mentioned.**

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Key recommendations for the next 2 years (JS3 and JDS)

Summary of key GUIDELINES

- *We must show the added value of a pan-European RI.*
- *We must engage nations in the consolidation of JERICO-RI.*
- *We must interact with other RIs.*
- *We must engage new non JERICO-RI institutions.*
- *We must consolidate and define JERICO-RI products.*

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Key recommendations for the next 2 years (JS3 and JDS)

ESFRI application review + 1st periodic report review =>

- JERICO-RI is dedicated to provide services (TA and other types).
- JERICO-RI is dedicated to be inclusive => gathering new actors, regionally (e.g. non JERICO-RI institutions) and nationally (e.g. Black Sea).
- JERICO-RI should well fit into the current landscape.
- Nation engagement should be reinforced.
- JERICO-RI is dedicated to have a pan european dimension => "Transnational" should be reinforced.
- JERICO-RI should go beyond a network concept to establish a common RI.

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Key recommendations for the next 2 years (JS3 and JDS)

- All regions and sites are included in JERICO-RI and therefore in a further ESFRI application, this, regardless of their level of maturity. There will be probably no differentiation done in the ESFRI application.
- IRS to Interact with PSS to benefit from the experience gained within JERICO-S3.
- Nation engagement, Region engagement => Interaction btw JS3 and JDS
- We must show the added value of a pan-European RI, thus transversal collaboration/coordination is mandatory to :
  - Demonstrate Trans-Site, Trans-Region, Trans-National, Trans-RIs, etc, collaboration.
  - Defining centralised actions (thematic centers ?) => Technology, products (modelling and others), transfer of expertise (both in and out of JERICO-RI), etc.

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Key recommendations for the next 2 years (JS3 and JDS) (continued)

- *We must show the added value of a pan-European RI, thus transversal collaboration/coordination is mandatory to :*
  - IRS/PSS should practically interacts with « regional » components of other Research Infrastructures.
  - coordinate the tackling of KSC and insuring that all SSCs and RAs are addressed).
  - Identify most relevant scientific objectives + their contribution to societal challenges (to be taken from JERICO lists).
    - SSCs
    - RAs
  - Develop an implementation strategy to address these challenges more effectively (from data acquisition to exploitation).

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Key recommendations for the next 2 years (JS3 and JDS) (Continued…)

Summary of key GUIDELINES (reminder)

- *We must show the added value of a pan-European RI.*
- *We must engage nations in the consolidation of JERICO-RI.*
- *We must interact with other RIs.*
- *We must engage new non JERICO-RI institutions.*
- *We must consolidate and define JERICO-RI products.*

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JERICO - LABEL

Developement of the JERICO Label Committee (JLC) to sustain the scientific research excellence

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Role and mission of the JERICO Label Committee

The aim of the JLC is to support the JERICO-RI framework of scientific research excellence, to ensure that JERICO-RI keeps pace with scientific and technological development and attracts the best research groups.

Starting point was the work done in Task 2.6 of the previous project JERICO-NEXT and detailed in the JERICO-NEXT deliverable D2.7 "Overview of the outcomes of the work carried out on the JERICO Label in task 2.6 ("The JERICO Label Technical Committee")" of JERICO-NEXT WP2.

In the JERICO-NEXT D2.7 the competences and the composition of the label Committee are defined. It is composed by 16 persons/institutions, all partners of the project and are called to express on three areas of evaluation for the assignment of the JERICO Label:

- **Sustainability,**
- **Operationally,**
- **Fit for purpose/observing.**

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Implementation of the JERICO Label Committee

To the members of the JERICO Label Committee of JERICO-NEXT were asked to be part of this JLC, although JLC is open to anyone who wants to contribute.

A questionnaire was sent to the members to collect ideas and suggestions on what should be the role and mission of the JLC and then a meeting was organized.

Regarding the composition of the JLC, at this stage of JERICO-DS it was proposed to prioritize the scientific expertise of the members without limiting their number for example to one or two for project partner or country rappresentatives .

The goal is to create an advisory working group that be keeping up with scientific and technological development and is able to setup the concept of JERICO Label and propose the concept to the JERICO community.

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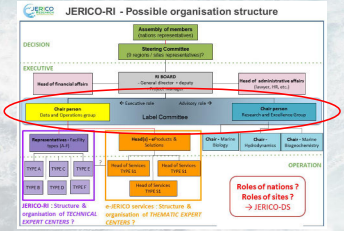
Implementation of the JERICO Label Committee

In accordance with what is proposed in JERICO-DS another task of this JLC will be to define a long-term vision of the Label in the perspective of a JERICO-RI.



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Purpose of the Jerico Label Committee

According to JERICO-NEXT, from a technological point of view, the JLC had to accomplish the following:

- **acknowledge the consensus on guidelines for best practices in the design, implementation, maintenance, data policy and valorization of the coastal observing elements of the JERICO RI;**
- **allow fair recognition of the quality of the managed observatories within the JERICO RI;**
- **help stakeholders to become aware of the European interest in the development of high quality coastal observatories;**
- **foster a wider market for industry in the fields of sensor technology and platforms based on agreed recommendations.**

In addition to the technological part, it is necessary that the JLC also addresses the scientific issues of research to direct the decision-making processes of JERICO-RI, addressing them to excellence.

In this case the recommendations and directives to be developed by the JLC should not be thought of as rigidly constraining rules, but rather as guides to enable observational systems to conform to the requirements necessary to become part of the JERICO-RI community.

In this regard it has been proposed that in a future JERICO-RI the JLC will be divided into two subgroups:

- **Data and Operation Group,**
- **Research and Excellence Group**

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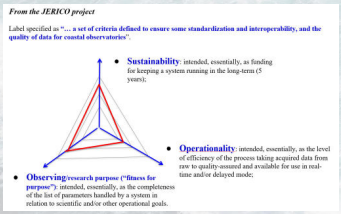
Jerico Label Criteria

Regarding the JERICO Label Criteria some guidelines have been defined in JERICO-NEXT relative to the Data and Operation topics.



It has been proposed to add Fairness to the criteria. FAIR principle is intent on data and not on facilities and requested to observatory that has reached the full level of integration in the JERICO-RI.

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Jerico Label Variables

In JERICO-NEXT a list of variables, physical, biological and biogeochemical has been defined for JERICO Label assignment.

The idea that has emerged, after discussion, is to have a dynamic approach.

Two aspects are emphasized:

- the list can be updated periodically (e.g., every three years) by the JLC to incorporate technological or scientific developments.

- the list is not unique for all observatories, but it is customized on the basis of the scientific responses for which that observatory was created.

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Jerico Label Observatory Evaluation

A topic posed in JERICO-NEXT but not addressed is the definition of a criterion for evaluating the final status of an observatory and thus its eligibility. Just three level of integration were proposed.

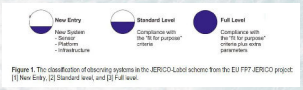

Figure 1. The classification of observing systems in the JERICO-Label scheme from the EU FP7 JERICO project: [1] New Entry, [2] Standard level, and [3] Full level.

It has been suggested that the Label should be awarded to a facility only and only if all eligible criteria are met. The Committee should issue a final report with all the scores and judgments for each of the criteria to show how far or close a facility is for reaching the Label status. JERICO-S3 WP5 will provide indicators on performance and integration for mature platforms.

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Thank you for your attention

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JERICO-RI science strategy regional implementation: main outcomes from JERICO-S3 D1.1

Antoine Grémare, Anna Rubio, Dominique Durand, Laurent Coppola

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

The three main specificities of the coastal ocean

Convergence Area	Complex functioning	Major socio-economic importance
- Continent - Atmosphere - Open Ocean	-Strong interactions between compartments and processes - Importance of biological and biogeochemical processes - Range of nested spatiotemporal scales	- A large variety of ecosystem services - Associated anthropogenic disturbances - Durability?

Necessity of defining a scientific strategy specially designed for the observation of coastal marine systems.

- Long-term monitoring observations aiming at **describing changes** in coastal marine systems;
- Observations specifically designed to gain insights on their structuration and functioning in view of **predicting future changes**.

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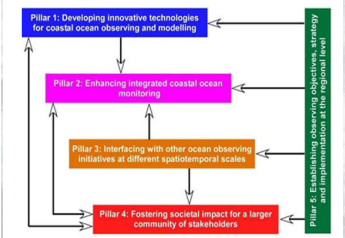
The five pillars of the JERICO RI strategy



Pillar 1: Developing innovative technologies because of: (1) between discipline differences in Technology Readiness Levels (TRL), and (2) the need/interest of developing multidisciplinary platforms;

Pillar 2: Enhancing integrated coastal ocean monitoring to account for the strong interactions between marine coastal compartments and processes;

Pillar 3: Interfacing with other ocean observing initiatives because of the necessity of monitoring potential controlling factors;

Pillar 4: Fostering societal impact for a larger community of stakeholders because of the necessity of taking into account the diversity of the concerns of users so that derived products better suit their expectations;

Pillar 5: Establishing observing objectives, strategy and implementation at the regional level for both: (1) defining sets of functionally linked subsystems, and (2) constituting the individual units of a future coordinated pan-European Research Infrastructure.

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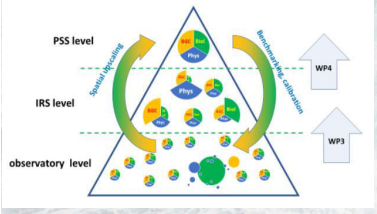
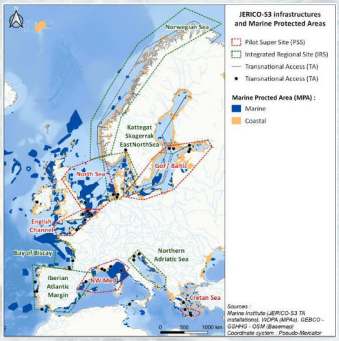
Implementation of the regional structuration within JERICO-S3





10 regions, two levels of maturity (targets for regions)

- 5 (toward) **Pilote Super Sites (PSSs)**: Experimentation
- 5 (toward) **Integrated Regional Sites (IRSs)**: Maturation

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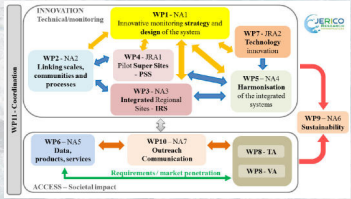
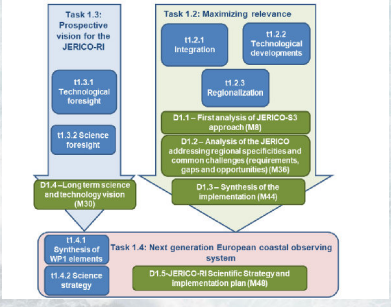
Positioning and aims of D1.1 in JERICO-S3





- **Identifying common Scientific Challenges**;
- Providing **preliminary analyses on the way they are currently addressed through PSSs and IRSs**;
- Formulating recommendations on the demonstrative action regarding innovative technologies (cf. D. Durand's talk)

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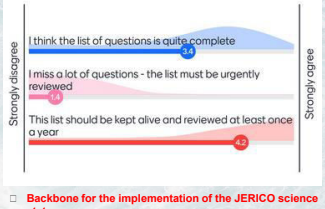
Identifying common scientific challenges

Keys Scientific Challenges	Specific Scientific Challenges	Research Axes
Assessing changes under the combined influence of global and local drivers	Land Sea Ocean continuum. Impacts of land-derived discharges and exchanges with open ocean Sea-atmosphere interface. Quantification of inputs Connectivity and transport. Pathways of water masses and materials Biodiversity trends Ecosystem biogeochemical processes and interactions Carbon budget and carbonate system	Nutrients, particles and organic matter, inorganic carbon, litter and contaminants Particles, nutrients, contaminants Water masses (including vertical mixing), nutrients, contaminants, particles, organisms (connectivity) Phytoplankton, zooplankton, benthos Biophysical interactions, Biogeochemical functioning, Pelagic, benthic, pelagic/benthic coupling Carbon fluxes and budget, carbonate system trends, effects of acidification
Assessing the impacts of extreme events	Impacts of rare and extreme events	Floods, storms/large waves, heat/cold waves, landslides/sudden erosion, tsunamis, volcanic eruptions, harmful algae / jelly fish blooms, accidental pollution, interactions between events Temperature, salinity, currents, sea level rise, waves, biological productions, species distribution ranges (biogeography), nutrients
Unravelling and predicting the impacts of natural and anthropogenic changes	Resolving climate change impacts Resolving anthropogenic impacts Disentangling impacts/scales	Eutrophication, habitat and biodiversity loss, contamination, coastal engineering, use of marine space (including windfarming), use of marine nonliving resources, use/cultivation of living resources, invasive species, maritime traffic, (micro) plastics, acoustic and electromagnetic noises Meta analysis , coupled modelling



- **Backbone for the implementation of the JERICO science stategy**
- **Iterative process** (JW1 + JW2 + ongoing)
- 3 levels:
  - **Key Scientific Challenges** (3)
  - **Specific Scientific Challenges** (10)
  - **Research Axes** (living list; cf. A. Rubio's talk)

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Regional implementation

Specific Scientific Challenges	CS	NWM	EC	NS	GF-BS	NAS	IAM	BB	KS-ENS	NoS
Land Sea Ocean continuum. Impacts of land-derived discharges and exchanges with open ocean										
Sea-atmosphere interface. Quantification of inputs										
Connectivity and transport. Pathways of water masses and materials										
Biodiversity trends										
Ecosystem biogeochemical processes and interactions										
Carbon budget and carbonate system										
Impacts of rare and extreme events										
Resolving climate change impacts										
Resolving anthropogenic impacts										
Disentangling impacts/scales										
Answering societal Demand										

- Clearly a major step forward !!!
- Spatial delimitation (region/PSSs/IRSs)
- Addressed Scientific Challenges (mostly RAs, 2 SSCs lacking)
- Societal Challenges (Listing cf. scientific challenges ?)
- Technological developments (Regional/Central ?)
- Potential heterogeneity in the dynamics of PSSs and IRSs

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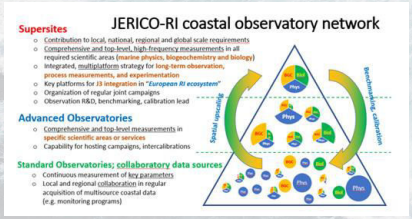
Main recommendations (1): Clarifying the basis of the structuration of the future RI (cf. L. Delauney's talk)



- Is the whole triangle a region or the whole RI?
- If the whole RI: is a RI with two categorized regions suitable?
- If a region: this raises the question of the interactions with non-current members of the JERICO-consortium
- An answer is clearly required to optimize the work still to be achieved within JERICO-S3 and to limit potential divergence between PSSs and IRSs.

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Main recommandations (2): Developing "centralized actions" (cf. L. Delauney's and A. Rubio's talks)

A balance between the central and regional components of JERICO-RI is essential in demonstrating the added values of: (i) a pan European organization, and (ii) a Research infrastructure versus an observation network

- **Trans National Access**
- **e-infrastructure**
- **Insuring the coordination of the whole consortium**
  - Coordinating the tacklings of KSCs
  - Insuring that all SSCs and RAs are addressed
  - Enhancing the interactions between regions (especially if functionally connected)
- **Conducting « specific actions » (service oriented? thematic centers?)**
  - Technology (cf ACT in US)?
  - Products/indicators ?
  - Modelling (cf US aborted)?
  - Transfer of expertise (both in and out JERICO-RI)
- **Interacting/coordinating with other research infrastructures** (top level)

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Thank you for your attention !!!

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JERICO-WEEK 2022

First elements towards the long-term strategic vision

Day 1 – Tuesday 15th March, 2022

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Task 1.3: Long-Term Vision for JERICO-RI

Objectives
A long-term vision for JERICO-RI, with the goal of anticipating the **coastal observation system of the future**

Duration: M6-M36 – not systematically started

Contributors: Lead: COV, Partners: IFREMER, CNRS, PLOCAN, NORCE

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Tasks

- **Technology foresight**
  - Review the potential of **emerging technologies** for coastal observations.
    - investigate how **disruptive innovations** and cross-disciplines endeavours is likely to give appropriate responses to current and long-lasting coastal environmental challenges in Europe
    - Review the latest progress and services provided by the H2020-FET-Open
    - Identifying innovations of high relevance for:
      - ✔ measuring variables of high importance but not currently addressed at the appropriate spatial and temporal scales because of technological limitations
      - ✔ significantly improving the present capability for integrative observation of complex coastal processes
- **Science foresight** and long-term opportunities for better addressing pan-European scientific and societal challenges
  1. Review the present observing system to tackle key and long-term coastal environment challenges (e.g., phytoplankton dynamics/HAB; contaminants transport and distribution, benthic-pelagic coupling, ocean acidification, monitoring MPAs);
  2. Propose new and optimal ways of answering to these challenges in the future, thanks to enabling emerging technologies (Technology foresight)

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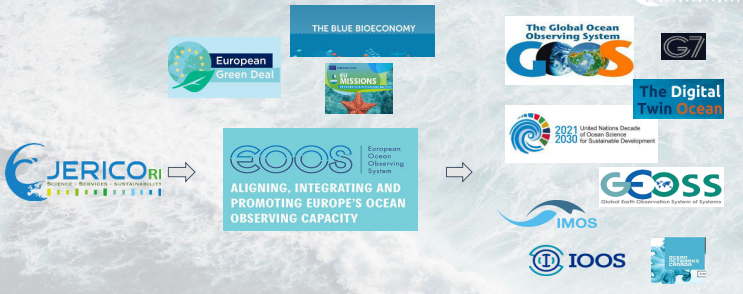

JERICO-RI: the coastal component of the European Ocean Observing System (EOOS)

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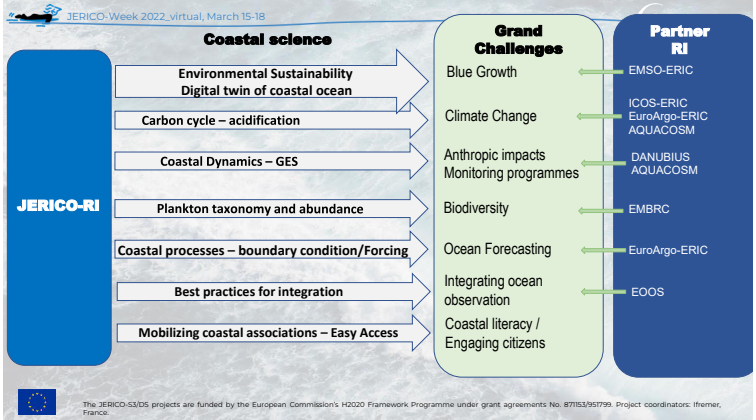

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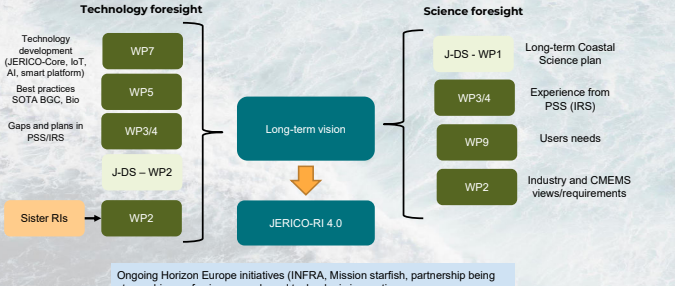
Contributions needed/foreseen



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Implementation technology foresight

Co-creation: Towards the coastal observatories of the future (10-20 yrs prospection)

- **J-DS - WP2 workshop on Technology gap analysis - Thursday morning**

- **A series of brainstorming thematic workshops:**
  - ✔ Smart observatories (IoT/AI, automation, low energy, …)
  - ✔ Low-cost observatories
  - ✔ Emerging technologies (e.g., photonics, autonomous platforms, …)
  - ✔ The biotechnology revolution (genetics/omics, molecular tools, biosensors)
  - ✔ Other

- **A core group (task contributors)**
  - ✔ Ifremer, CNRS (BGC, Biology), PLOCAN (WP7, technology), NORCE (emerging technologies, ICOS-OTC) COVARTEC
  - ✔ Organising, populating and summing-up the workshops
  - ✔ SYKE/NIVA (J-S3 WP3 and4 lead / J-DS WP2 lead/co-lead)
- **An expert and prospective group**
  - ✔ Workshops open to everyone visionary and who has relevant expertise and/or intelligence on emerging technologies
  - ✔ Call for experts/contributors to be issued before the end of the month - Or just, tell me asap
  - ✔ External experts

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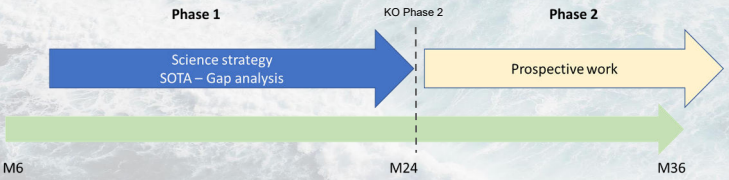
Timeline



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Status on Users

Lucie Cocquempot on behalf of JS3-WP9

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SHORT RECAP OF PREVIOUS (Significant) WORK :

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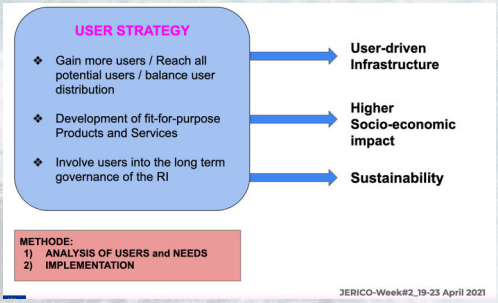

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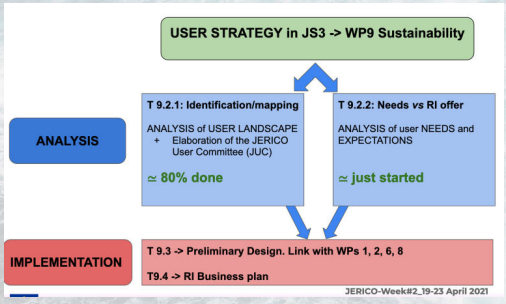

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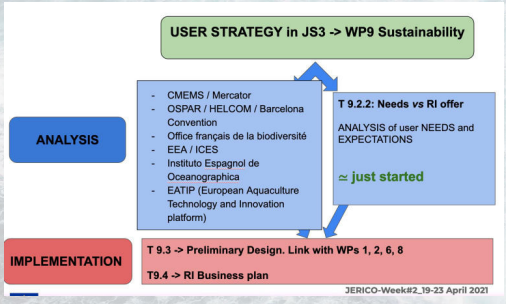

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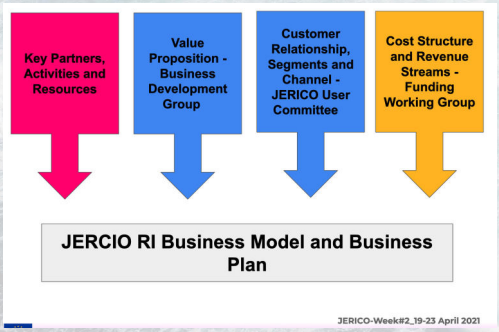

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

SHORT RECAP OF PREVIOUS (Significant) WORK :

	Low	Medium	High	Very high
Scientific case				
Scientific excellence				
Pan-European relevance				
Socio-Economic Impact				
User strategy / Access policy				
E-needs				
Implementation				
Stakeholder commitment				
Preparatory work & Planning				
Governance, management, human resources				
Finances				
Risks				
Overall findings				

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TODAY'S PERSPECTIVE

ANALYSIS OF USERS AND NEEDS

Previous project : JERICO-NEXT User panel, TNA Analysis, Final deliverable of J-NEXT

Previous work on JERICO-S3 :

JERICO Table of Users initiated during JERICO Week #1

JERICO Table of Users comments during JERICO Week #2

Significant amount of material but difficult to handle

Are the Current users of regional nodes, the potential users for JERICO-RI ?

Are the list exhaustive ? are NGO, insurrance companies, small businesses fully represented?
How to introduce a weighting according to: current importance (according to financing or time spent)? according to the development strategy?

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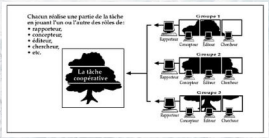
TODAY'S PERSPECTIVE

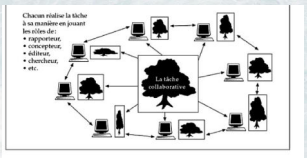
- a tightened governance, focused on efficiency

Central HUB



- an open, dynamic, creative, innovative community

Decentralized actions



A streamlined and pragmatic approach

THINK TANK

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TODAY'S PERSPECTIVE

CREATION OF JERICO USER COMMITTEE :

- TO MAXIMIZE THE RETURN ON INVESTMENT (IMPACT VS COST)
- TO TEST THE WAY WE MAKE DECISIONS (INCLUDING CHOOSING THE PRIORITIES TO BE ADDRESSED)
- TO CONSOLIDATE OUR IDENTITY

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TODAY'S PERSPECTIVE

USER STRATEGY

- Gain more users / Reach all potential users / balance user distribution
- Development of fit-for-purpose Products and Services
- Involve users into the long term governance of the RI

→ **User-driven Infrastructure**

→ **Higher Socio-economic impact**

→ **Sustainability**

METHODE:
1) **ANALYSIS OF USERS and NEEDS**
2) **IMPLEMENTATION**

JERICO-Week#2_19-23 April 2021

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METHODE:
1) **ANALYSIS OF USERS and NEEDS**
2) **IMPLEMENTATION**

→ **Evolving continuously,** requires fine tuning, and iterative processus

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- Involve users into the long term governance of the RI

→ **User-driven Infrastructure**

→ **Higher Socio-economic impact**

→ **Sustainability**

METHODE:
1) **ANALYSIS OF USERS and NEEDS**
2) **IMPLEMENTATION**

→ **Evolving continuously,** requires fine tuning, and iterative processus

→ **Way of thinking,** requires dedicated attention on an day-to-day basis

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TODAY'S PERSPECTIVE

USER STRATEGY in JS3 -> WP9 Sustainability

ANALYSIS

T 9.2.1: Identification/mapping
ANALYSIS of USER LANDSCAPE
+ Elaboration of the JERICO User Committee (JUC)
≃ 80% done

T 9.2.2: Needs *vs* RI offer
ANALYSIS of user NEEDS and EXPECTATIONS
≃ just started

IMPLEMENTATION

T 9.3 -> Preliminary Design. Link with WPs 1, 2, 6, 8

T9.4 -> RI Business plan

JERICO-Week#2_19-23 April 2021

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T 9.2.2: Needs *vs* RI offer
ANALYSIS of user NEEDS and EXPECTATIONS

ITERATIVE PROCESSUS
Where everyone can contribute

IMPLEMENTATION

T 9.3 -> Preliminary Design. Link with WPs 1, 2, 6, 8

T9.4 -> RI Business plan

JERICO-Week#2_19-23 April 2021

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TODAY'S PERSPECTIVE

USER STRATEGY in JS3 -> WP9 Sustainability

ANALYSIS

- CMEMS / Mercator
- OSPAR / HELCOM / Barcelona Convention
- Office français de la biodiversité
- EEA / ICES
- Instituto Espagnol de Oceanographica
- EATIP (European Aquaculture Technology and Innovation platform)

T 9.2.2: Needs *vs* RI offer
ANALYSIS of user NEEDS and EXPECTATIONS
≃ just started

IMPLEMENTATION

T 9.3 -> Preliminary Design. Link with WPs 1, 2, 6, 8

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Question with the JERICO Week assembly:

Are we ok to start with this group ?

IMPLEMENTATION

T 9.3 -> Preliminary Design. Link with WPs 1, 2, 6, 8

T9.4 -> RI Business plan

JERICO-Week#2_19-23 April 2021

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TODAY'S PERSPECTIVE

Note: Draft Version 10 Nov. 2020 dedicated, as a 1st step, to mean the scope of the JUC to users. This document will be further revised with voluntarily enrolled users representatives for endorsement of its purpose and modalities of actions with a signature of the finally agreed version.

AGREEMENT on the JERICO USER COMMITTEE

Preamble

This agreement endorses the establishment of the JERICO USER COMMITTEE (JUC). The JUC is acting as the **advisory committee for the elaboration of Services and Products to be delivered to end-users within the JERICO-S3 and the JERICO-DS EU-funded projects.**

For pure management purpose this agreement falls under the coordination of the JERICO-S3 project and its consortium. However in parallel to the JERICO-S3 project, the twin project JERICO-DS is running to achieve the design of JERICO-RI which also considers the importance of involving users and stakeholder.

The purpose of the JUC is to structure a formal interaction between the Users of the JERICO Products and Services and the Consortium of Institutes operating those Products and Services.

This interaction will enable the JERICO Project partners and institutes to access direct return after experience from relevant Users in order to improve the Products and Services provided by the Research Infrastructure.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

THE METHOD – IMPLEMENTATION

USER STRATEGY, as a way of thinking

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

THE METHOD – IMPLEMENTATION

We, the JERICO Community are the Prime User of JERICO RI

USER STRATEGY, as a way of thinking

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THE METHOD – IMPLEMENTATION

We, the JERICO Community are the Prime User of JERICO RI

Do we have the instinct to think each time about the potential external uses of our productions?

- How do we measure customer satisfaction within our project?
- What process can we use to suggest improvements?

USER STRATEGY, as a way of thinking

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USER STRATEGY, as a way of thinking

- WP1 / WP2 questionnaires They costed us a lot of time What is there value outside JERICO ?

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USER STRATEGY, as a way of thinking

- WP1 / WP2 questionnaires They costed us a lot of time What is there value outside JERICO ?

User oriented approach is challenging:
✔need to question ourselves
✔need to take (endorse) collective strategies

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NEXT STEPS

WP9 meeting dedicated to JUC - Open to all

Invitation to JUC Members to a First JUC Meeting (to be held during the last J-DAY)

Preparation of the JUC Meeting in link other WPS + fine tuning during first J-Days

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Part of this work was supported by the JERICO-DS project. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153/951799.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Defining Identity

Wednesday 16 March 09:00-10:00

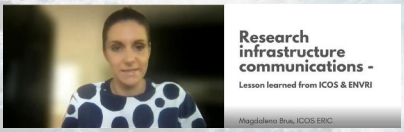
Joao Vitorino, Simon Keeble, Dominique Durand

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

National Research Infrastructure Communications Group (NRIC) **INTRODUCTION**

1st MEETING (Virtual) – 08 JUNE 2021

31 Participants , 2 keynote speakers giving us complementary views about communicating science



Magdalena Brus (Chief Communication ICOS ERIC, ENVRI)

Hugo Verlome (writer and journalist)

2nd MEETING date to be announced soon

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INTRODUCTION

JERICO Achievements and Results are worthless if we don't communicate them and bring them available to the broad community of partners, users and stakeholders.

It is by doing so that we can:
Unlock their full potential
Maximize their impacts in the society
Benefit from them

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INTRODUCTION

Our strategy to meet these goals was clearly defined in the Dissemination and Exploitation Plan (DEP)

Project Review Report:
"*The plan to cooperate with other RIs, industry, etc seems ambitious, but if completed will provide significant results*"

The successful implementation of the DEP is dependent on close collaboration with all JERICO-S3 work packages and involved partners

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

D10.2 COMMUNICATION PLAN V1.0

- D10.2 set out the key aims, communication activities and a schedule for implementation for M1-18
  - Aims:
    - Continue to build the JERICO-RI community network
    - Promote the day to day project activities through a range of communication channels
    - Support the DEP by communicating dissemination and exploitation activities and products through the communication channels
  - Activities:
    - Establish and maintain project website
    - Establish the project identity
    - Gather and promote project news and events
    - Maintain and enhance the JERICO-RI social media channels
    - Promote internal and external meetings and events
    - Design of infographics, newsletters (internal and external), digital materials and graphic (e.g. posters, flyers etc)
    - Establish internal communication channels

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Key communication activities M1-24

- The JERICO-RI website has been redesigned to be a product focussed RI website
- The website remains a key platform for all project information relating to both JERICO-S3 and JERICO-DS
- All graphics, logos, deliverable reports, work packages, milestones etc are available on the website for the JERICO-RI, JERICO-S3 and JERICO-DS as appropriate.
- A specific section of the Pilot SuperSites is available on the website (WP4)
- In collaboration with partners, a series of high profile news posts have been run relating to TA and PSSs as key outputs so far
- All communications posted via the JERICO-RI Social Media channels.
- The first external newsletter will be publish in March 2022
- CWG and NRIC groups have been established to coordinate and maximise the impact of communication activities

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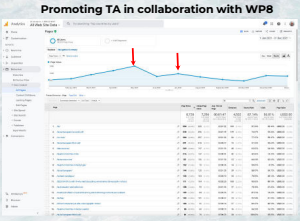
Promoting TA in collaboration with WP8

- The 2nd TA call was promoted through call announcements (March 2021).
- A series of news post featured a Facility of the week for a period of 4 weeks prior to the call closing in May 2021.
- A follow up news post announcing the TA call results was published in July 2021.
- Google Analytics shows that pages containing "TA" in the URL were visited almost 10,000 times during 2021. There is a clear increase in traffic beginning in March 2021 when the call was announced and peaking in May 2021 when the call closed. This coincides with the communication efforts to reach potential applicants. There is another peak in July 2021 coinciding with the results of news posts.



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Promoting Pilot SuperSites in collaboration with WP4

- Series of high-quality news posts and materials from the PSSs

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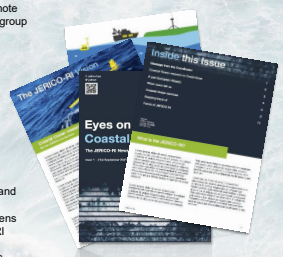
JERICO-S3 First External Newsletter

Drafted and will be distributed in March 2022 just after the JERICO week to further promote the 3rd TA call, which opened in March. It is an opportunity to re-engage with the NRIC group (National Research Infrastructure Communications Group), promote the revised key messages and highlight some of the key project activities so far and services available.

The outline of the proposed content is as follows:

- Page 1: Front page
- Page 2. Table of contents and a short text entitled "What is the JERICO-RI?"
- Page 3: Editorial
- Page 4: The JERICO-RI Vision
- Page 5: Pilot Supersites for Innovative Coastal Monitoring
- Page 6: Spotlight on the Cretan Sea Pilot SuperSite : First Annual pH cycle in the Cretan Sea
- Page 7: Using Plankton Imagery to Study Ecosystem Dynamics at the North Sea and English Channel Pilot SuperSite
- Page 8: Coastal Ocean Services - JERICO-S3 Transnational Access, 3rd Call Opens
- Page 9: JERICO-CORE: Linking Virtual and Physical Resources of the JERICO-RI
- Page 10: Coastal Ocean Services - JERICO-S3 Virtual Access
- Page 11: JERICO-S3 TA Program Supports Strong RI-RI Collaboration through its Transnational Access Program
- Page: 12 Back cover



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D10.2 COMMUNICATION PLAN V2.0

D10.2 is currently under review. A new schedule for implementation for M24-48 will feature. Key activities will include:

- Publish and distribute the first external newsletter, which will focus on key outputs so far (PSSs, TA and VAs) as well as promote JERICO-CORE and the third TA call and the JERICO-RI key messages.
- Re-engage with the NRIC group to maximise impact and support RI - National activities (and vice versa)
- Establish multi-lingual channels of communication to facilitate local communication activities, including on the project website
- To work with WPs 3, 4, 7, 8, 11 in line with the DEP to promote key outputs from IRSs, PSSs, TA, VA, JERICO-CORE through a variety of communication channels i.e. website, social media, graphics, newsletters, events.

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ENGAGING THE COMMUNITY

TRAINING WORKSHOPS – Internal workshops on best practices to train existing JERICO-RI operators (also open to external participants)

1st Workshop: Fall 2022, Italy (CNR, WP5 also WP6)
Mature Platforms (specifically HF radars, Gliders) Best Practices, Data Processing/QC, Data Management, Use of Virtual Research Environment

WEBINARS – outreach of JERICO-RI to the general public.

1st Webinar: 23 March 2022, Finland (FMI)
JERICO-session during Finnish Marine Reseach RI FINMARI-days

https://www.finmari-infrastructure.fi/researcher-day-2022-program/

ESFRI TRAINING (JDS)– Internal communication to maintain alignment towards ESFRI roadmap

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COMMUNICATION TOOLS

ENGAGING THE COMMUNITY

BUILD COMMON MESSAGE AND ENGAGE STAKEHOLDERS GROUPS

JERICO-RI Brochure - Publicize JERICO-RI identity, overall capacities and areas of interv

Proposed Sections
- Jerico-Ri
- Why a Research Infrastructure for the Coastal Ocean?
- A multiplatform view …. over the Pan-European coastal ocean
- Vision, Mission and Values
- Contributing to excellence in marine research
- Supporting Marine Policies
- A partner in Blue Economy
- Providing Access to Services and Products
- Boosting the new generation of technology for the coastal ocean
- Opening the infrastructure to a broad community (TA)

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JERICO-Week 2022_virtual, March 15-18

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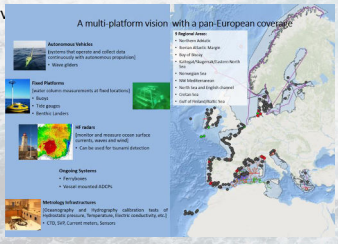

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JERICO-Week 2022_virtual, March 15-18

COMMUNICATION TOOLS

ENGAGING THE COMMUNITY

BUILD COMMON MESSAGE AND ENGAGE STAKEHOLDERS GROUPS

JERICO-RI Leaflets - Synthesized information publicising JERICO-RI and directed to selected communities of stakeholders.

Proposed Versions
- JERICO-RI the gateway to coastal ocean observations in Europe
- Supporting Marine Policies for the coastal ocean domain
- Monitoring a Changing Marine Environment (Long-term variability and Climate Change, Extreme Events)
- A Partner in the Blue Economy Sector
- Opening the infrastructure to a broad community (TA)

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JERICO-Week 2022_virtual, March 15-18

COMMUNICATION TOOLS

ENGAGING THE COMMUNITY

BUILD COMMON MESSAGE AND ENGAGE STAKEHOLDERS GROUPS

Timeline 2022

March/April: Content and graphical design discussed inside the Communication Working Group.

April/May: Feedback from selected Users in articulation with WP9
Hardcopy tests evaluation and selection of material

June: Hardcopy versions of Brochure + 2 versions of Leaflets distributed to
partners at the JERICO Days

September: Final adjustments and broad dissemination

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JERICO-Week 2022_virtual, March 15-18

KEY MESSAGES

JERICO-RI
Marine coastal observatories, facilities, data and expertise for Europe

Present goals: Building trust and dependency
- Re-insure our stakeholders about the status and the future of JERICO-RI
- Build up our profile about our acknowledged, undisputed and needed expertise
- From strategy to implementation
  - Make that one considers us as a sustainable RI (as an "ERIC")
  - Be invited in joint initiatives with other RIs, and in CL6 (CL5?) calls
- Co-design products and services with our stakeholders

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JERICO-Week 2022_virtual, March 15-18

Facts about JERICO-RI

XX experts

39+ partners

17+ European countries

672+ observing platforms

43 facilities offered

8500 days access since 2011

XX TB data since 2011 (or per year)

4 PSS
30 actions

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JERICO-Week 2022_virtual, March 15-18

JERICO-RI fills a gap in the landscape

JERICO-RI as actor in the European landscape

JERICO-RI is **unique** through:
- Coastal focus
- Integrated Multi-platform approach

JERICO-RI operates at the interface adjacent with RIs

from the marine, river and terrestrial and atmospheric communities

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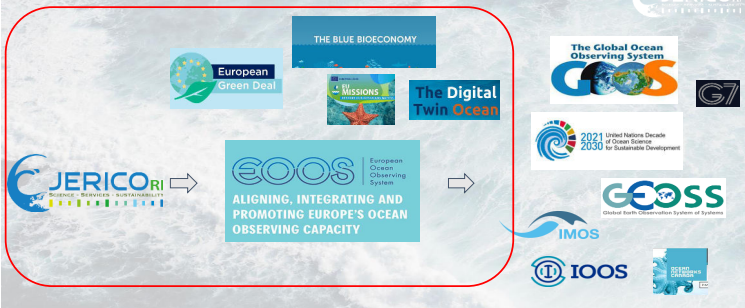
JERICO-Week 2022_virtual, March 15-18



JERICO-RI: the coastal component of the European Ocean Observing System (EOOS)

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Our stakeholders

1. **Our immediate landscape:**
   - COPERNICUS - CMEMS
   - EuroGOOS
   - European Marine Board / JPI-OCEANS
   - EU marine RIs and related initiatives
   - EU technology and science projects (ILIAD, EuroSea, GROOM-2, ...)
   - International endeavours: GOOS, Un Decade, US-IOOS, IMOS, Network Canada
2. **The EC MS and AM (nations)**
3. **Marine research community**
4. **Technology providers**
5. **Service providers / downstream services**
6. **Marine-based industries**
7. **Environmental agencies and regulatory bodies**
8. **Education**

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JERICO-RI
Marine coastal observatories, facilities, data and expertise for Europe

End-user group	Key messages
Marine Research	JERICO-RI investigates how innovative technologies can investigate the complexity of coastal processes by making simultaneous observations of physical, chemical and biological parameters
Immediate Landscape (e.g. EuroGOOS, CMEMS, EMODnet)	Coastal regions have the strongest potential for growth and employment. JERICO-RI is the European multiplatform coastal observing system of systems. We support science and sustainable blue growth in the European coastal and shelf seas by providing high-quality and scientifically sound multidisciplinary data, products and services.
New: DTO	
Environment Agencies / Policy Makers / Environmental managers	The JERICO-RI is an established provider of quality controlled data and information for Europe's coastal shelf seas. These products are freely available to increase the evidence base for assessments of the health and status of marine ecosystems.
Marine-based Industry	Providing a sustainable framework of facilities, expertise and data to support marine industry growth, development and innovation. The JERICO-RI forms partnerships with industries contributing to marine observations by developing joint activities and promoting mutual benefit.
Downstream Service Providers	Providing a long-term, sustainable framework for the provision of high-quality, continuous, multidisciplinary, marine environmental data to support the development of products and services by SMEs.
Technology Providers	A long-term pan European coastal infrastructure is available for proof of concept, verification and demonstration of technologies in a variety of natural environments and with the support of a network of experts.
Sister RIs	
Nations	

Key message 2019

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grar

MAXIMIZING IMPACTS TOGETHER

- Key document
  - D10.1 - The JERICO-S3 Dissemination & Exploitation Plan - DEP
    - Co-designed at an early stage in the project - available since December 2020
    - Owned by every one
    - Concrete responsibility on actions, with contributions and deadlines

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JERICO-S3 - DEP

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Dissemination Targets (Key Project Outcomes)

KPO#1: Strengthening JERICO-RI position in EU
KPO#2: Reinforcing European Competitiveness
KPO#3: Scientific Strategy & Innovative Monitoring Strategies
KPO#4: Best practices
KPO#5: High Quality coastal Datasets
KPO# 6: Technological Innovations
KPO# 7: Virtual Access (VA)
KPO# 8: Access to infrastructure (TA)

Exploitation structure (Key Exploitable Results)

KER#1 Technological innovations
KER#2 Services
KER#3 Best practices
KER#4 Cooperation Agreements

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KPO#3 Scientific strategy & innovative monitoring strategies

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Project Outcome identification name	WP	Related Del.	Lead partner	Objective for dissemination	Dissemination - Targeted groups	Priority (from 1 to 3)	Kick-off of the action
Result 3.1 - Long-term European vision & strategy (incl. science strategy)	WP1, WP3, WP4	D1.5	CNRS	To share knowledge with authorities in charge of national and European ocean monitoring.	Policymakers, authorities, Environmental stakeholders, End users from research EEA, OSPAR, HELCOM, Other RIs (AQUACOSM, DANUBIUS, ICOS, EMSO)	1	**M6** based on the JERICO-NEXT science strategy
Result 3.2 - Regionalization & observation strategies	WP1/WP3 /WP4	D1.1 /D1.2 D1.4/D3.1 /D3.4/D4. 1/D4.2	IAZTI, CNRS, SYKE; NIVA	To share knowledge with authorities in charge of national and European ocean monitoring, and other interest groups.	Policymakers, authorities, Environmental stakeholders, End users from research EEA, OSPAR, HELCOM, , UNEP-MAP, ROOSs, national authorities, ministries Other RIs (AQUACOSM, DANUBIUS, ICOS, EMSO)	2	**M12** based on the result from the 2nd All-Region Workshop

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KPO#2: Reinforcing European competitiveness thanks to JERICO-RI

MAXIMIZING IMPACTS TOGETHER

Project Outcome identification name	WP	Related Del.	Lead partner	Objective for dissemination	Dissemination - Targeted groups	Priority (from 1 to 3)	Kick-off of the action
Result 2.1 - Joint international activities - USA/Canada - best practices	WP2/WP5	D2.4	HZG/ IFREMER	Making JERICO's expertise and know-how available (Cooperation with iOOS, Neptune)	iOOS, Network Canada	1	**M24**
Result 2.2 - Joint international activities - Black Sea - Best practices - joint observation/monitoring	WP2/WP5	D2.4	HZG/ IFREMER	Making JERICO's expertise and know-how available (Eastern European countries, DANUBIUS)	Coastal research communities bordering the Black Sea	3	**M24**
Result 2.3 - Joint international activities - North Africa - Best practices - joint observation/monitoring	WP2	D2.4	HZG/ IFREMER	Making JERICO's expertise and know-how available (Med Sea)	Coastal research communities and environment protection agencies on the south coast of the Med Sea	3	**M18**
Result 2.4 - Information to policies	WP2	D2.5	RWS/ EuroGOOS	Making JERICO's expertise and know-how available to policymakers	EMB, DG-MARE, Regional/local policy makers	1	**Continuously from M12**
Result 2.5 - Citizen science (incl. Report of coastal citizen science adoption options and harmonisation)	WP2/WP6	D6.11	MARIS	Making citizen science associations aware of JERICO and interested in collaboration	Citizen science Associations	2	**M9 (MS31)**

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Gantt chart for Dissemination

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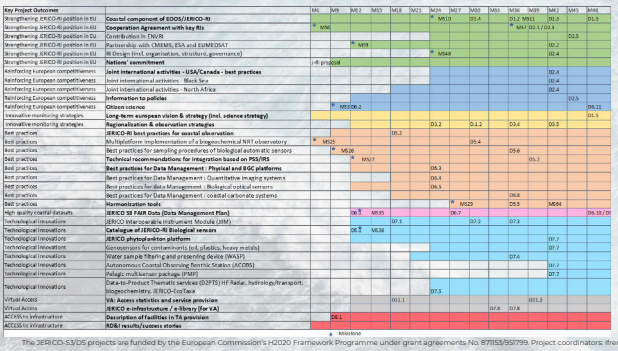

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Dissemination actions

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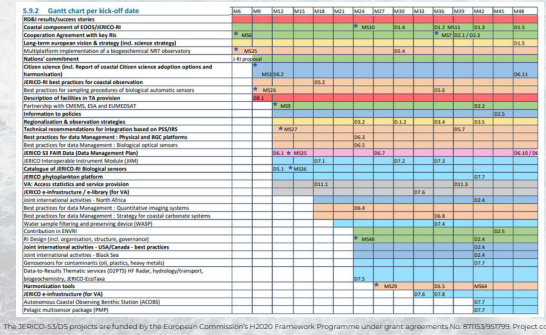

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Example of information provided for each KER

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KER #3.2	Best practices for Data Management
Description	Best Practices in data management and related software from multiplatform perspective, covering the whole data lifecycle from data acquisition, processing and analysis, storage and preservation to publishing in the EU aggregators CMEMS, SeaDataNet and EMODNet regarding: Physical and BGC platforms Quantitative imaging systems Biological optical sensors Strategy for coastal carbonate systems
Partner involved	MARIS, CEFAS, SOCIB, HCMR, IEEE
Specific objectives	Maximizing impact of JERICO-RI in the European landscape
Targeted users and scales Scale (regional, national, European, abroad)	European scientific community, Coastal Platform operators, Blue Cloud, CMEMS, EMODnet, nations, bodies in charge of regional coordination of monitoring (E.g., Helcom, OSPAR)
Calendar (kick-off, TRL within the project, beyond the project)	M25

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The successful implementation of the DEP depends essentially on sharing responsibility and
CLOSE COLLABORATION WITH ALL JERICO-S3 WORK PACKAGES AND INVOLVED PARTNERS

It is then of key importance to get your feedback on:

- The actions carried out and **success** in DEP implementation
- The **challenges** you are facing
- The needs for improvement/support and **update**
- So that we can monitor the DEP implementation

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

This work was supported by the JERICO-S3 and JERICO-DS project. These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153 / 951799.

REGIONS WORKSHOP : PSS progress meeting
Wed 16 March, 13:00-15:00

- highlights of PSS Actions during the first year of implementation to be presented to WPs .

Agenda

1. 10' 13:00	**Introduction to the session, including short summaries for D4.2 and D4.3**
2. 40' 13:10	Integration within PSSs, 10 min per PSS •Recent highlights of PSS activities •Examples of integration within PSSs •Challenges in the integration within PSSs
3. 10' 13:50	Discussions
4. 20' 14:00	Connecting between PSS, between WPs and other initiative, including discussions •Thematic meetings to be arranged •WP contributions to be discussed •Streamlining activities
5. 20' 14:20	Partnership building, interfacing with other RI's and communities, including discussions •PSSs current connections to ERICs etc. presented, regional vs. strategic •Commentary from WP2 asked
6. 20' 14:40	OTHER ISSUES, like Where WPs need PSSs input -

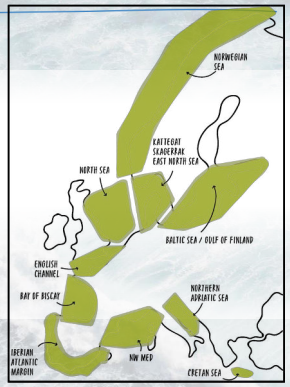
Brief recap of IRSs and PSSs

WP3 Integrated Regional Sites: "*…organize, harmonize, and integrate existing coastal observing activities and initiatives within regions and between regions…*"

5 regions - Norwegian Sea, Kattegat-Skagerrak-Eastern North Sea, Bay of Biscay, Iberian Atlantic Margin, and Northern Adriatic Sea

WP4 Pilot Supersites: "*…provide a proof of concept and feasibility for JERICO-RI Supersites designed for European coastal seas…*"

4 sites - Gulf of Finland, North Sea/English Channel, NW Mediterranean Sea, Cretan Sea



Brief recap of PSSs

WP4 Pilot Supersites:

- to provide a proof of concept for coastal Supersites, to study how the coastal observations are best integrated, for provision of sustained multidisciplinary observations
- actions to be piloted include new institutional and organisational collaboration schemes
- interface with regional user communities, demonstrating the added value of integrated actions
- provide new knowledge on the requirements for integrated coastal data and products
- iterate how the linkages between Supersites and other observatories should be optimally built-up for various coastal regions, and how communication between Supersites need to be structured, to meet pan-European requirements for high impact coastal observations

Short summaries for D4.2 and D4.3
D4.2 – "Refined PSS monitoring strategies".

Assessment of JERICO-S3 Pilot Supersite (PSS) implementation during the first year of PSS period, and refinements needed

4 PSSs - 30 Actions

- Overall developments in PSSs
- Analysis of implementation for each Action
- Refinements of Actions
- Refinement of Links

Under review by coordination

Table 4 (update from D4.1 table 12). Synthesis of links between PSSs implementation actions and JERICO S3 WPs

	GoF PSS Actions	NW-MED PSS Actions	NSEA & CHANNEL PSS Actions	Cretan PSS Actions
WP1	All	All	All	All
WP2	2, 3, 5, 6, 7, 8, 9, 10	1, 2, 3, 4, 5, 6	1, 2, 3, 5, 6, 7, 8, 9	1, 2, 3, 4, 6
WP3 (With IRS)	1, 10	2, 6	1, 3, 4, 6, 8, 9	6
WP4 (Between PSS)	1, 3, 4, 6, 8	2, 3, 6	1, 2, 3, 4, 6, 7, 8, 9	1, 2, 3, 6
WP 5	1, 4, 5	1, 4, 5	1, 3	2, 5
WP 6	1, 4, 6	1, 4	1, 2, 3	1, 2
WP 7	1, 2, 3, 4, 7, 8	1	3	5
WP8	1, 8	3	3	5
WP9	10	1	3, 6, 7, 8	6
WP10	All, especially 9	All, especially 5, 6	All, especially 8, 9	All, especially 6
WP11	3, 4	1	1, 3	1

Short summaries for D4.2 and D4.3
D.4.3 – "Progress report on PSS implementation"

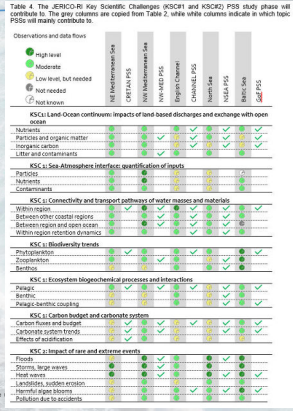
A detailed report of JERICO-S3 Pilot Supersite (PSS) implementation during the first year of PSS period:

4 PSSs - 30 Actions

- Key Message from the Action
- Main achievements
- Regional and pan-European integration
- Explain rationale for changes in plan for 2022
- Refined implementation plan to PSS Actions.

Under review by coordination
PSS Actions are active until Nov 2022

Table 4. The JERICO-RI Key Scientific Challenges (KSC#1 and KSC#2) PSS study phase will contribute to. The grey columns are copied from Table 2, while white columns indicate in which topic PSSs will mainly contribute to.



Agenda

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Integration within PSSs: Recent highlights of GoF PSS activities

PSS joint activities to improve quality and connectivity of observations within PSS and beyond
- WSs for optical sensor calibration, sharing workload in sensor calibration and testing
- WSs for technical and QC harmonisation of observations
- meetings in planning joint multiplatform missions
- meetings to share experiences in use of platforms

including
- other regional actors (from Sweden, Finland and Estonia)
- national RI (FINMARI partners from Finland)
- other PSS (Cretan PSS)
- connections to other RIs

TBD
- creating/sharing new BPs & SOPs
- improve between PSS exchange

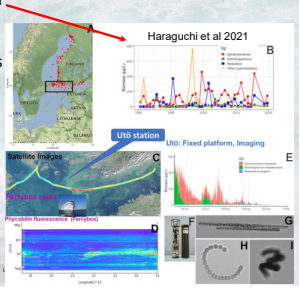
Sensor calibration WS in SYKE Feb 2022

Integration within PSSs: Recent highlights of GoF PSS activities

PSS joint activities to progress data use and creation of joint products

Demonstrated as
- Dataflows/visualisations for multiplatform HAB detection
- BGC data collection for modelling purposes
- Joint analysis of carbonate datasets
- Communication to regional management and other users

TBD
Improving in
- modelling
- Ocean colour
- joint products
- dissemination



Integration within PSSs: Examples of integration within GoF PSS

Although the partners already collaborated prior to GoF PSS, the PSS provides a more structured and focused framework in building future collaborations.

- Transfer of knowledge in sensors, platforms, BPs, SOPs
- Sharing resources by using same platforms, agreeing on maintenance/calibration
- Sharing data (esp. some platforms not functional due to Covid) and analysing data jointly
- Combining competences to improve processes and products
- Planning dissemination and communication jointly, creating impact.

Strengths in the partnership
- complementary
- areas of specialisation
- common aims

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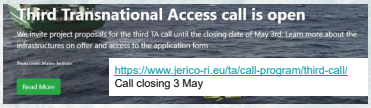
Integration within PSSs: Examples of integration within GoF PSS

GoF PSS has well established connections to several other environmental RIs active within the region and various collaborative activities have been identified.

To be detailed later in WS, but including especially ICOS ERIC and AQUACOSM



Integration within PSSs: Challenges in the integration within GoF PSS

(and many valid to all others too)

- ❖ Covid preventing use/maintenance of some platforms, affecting joint data collection and preventing in-person WSs and missions
  - ➢ Need to focus and adapt
- ❖ Short study period, very limited funding -> how to alter business-as-usual
  - ➢ instead of making the permanent transformation in coastal observing, rather collecting information how-to (to structure JERICO-RI)
- ❖ Many Actions but only a few people involved, relying on other projects/initiatives
  - ➢ very essence, JERICO-RI need to grow bigger than the funded projects. Need to improve the involvement and commitment of institutes and nations.
- ❖ Delays in merging transnational multiplatform data, slow uptake of technologies, BPs & SOPs, issues in data flows; all leading to lower than desired impact of joint products (despite some good examples presented above)
  - ➢ I guess, this is why we have a Pilot, to reveal as many as possible real-life challenges

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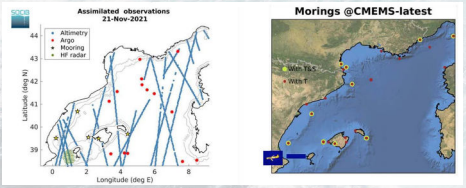
Integration within PSSs: Recent highlights of NW MED PSS activities

- Integration of multiplatform observations into high resolution model WMOP (altimetry, SST, Argo, radars, moorings and gliders) for North Current transport and particles dispersion (action#1)



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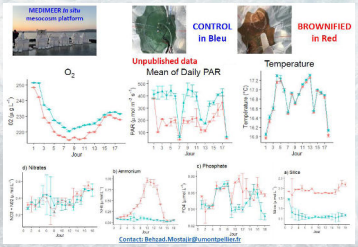
Integration within PSSs: Recent highlights of NW MED PSS activities

- Experiment connected to observation: large mesocosm experimentation in order to highlight "Marine plankton community responses to terrestrial dissolved organic matter input". Impact of terrestrial OC on BGC and phytoplankton species. First collaboration AQUACOSM-plus & JERICO-s3 (action#2)



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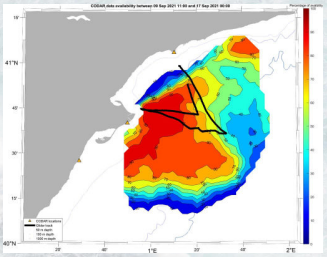
Integration within PSSs: Recent highlights of NW MED PSS activities

- Joint cruise in September 2021 in front of the Ebro delta between CNRS France, CSIC, PdE (action#3)

Demonstration action of glider deployment in front the Ebro delta a challenging area with a lot of traffic!

Comparison / Validation of surface current from HF Radar (PdE) and Glider-ADCP (CNRS)

Impact of river inputs to the coastal area (link biogeochemical glider data and satellite data)



Masson et al., in prep.

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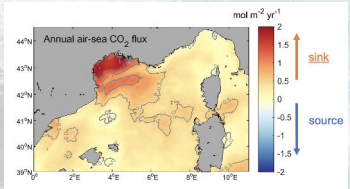
Integration within PSSs: Recent highlights of NW MED PSS activities

- Development of air-sea CO2 flux module in SYMPHONIE-ECO3MS (C.Ulses, LEGOS) using in situ observations and carbonates variables predictions from a regional neural network CANYON-MED (Fourrier al., 2021) action#4



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Integration within PSSs: Examples of integration within NW MED PSS

- Data assimilation through operational model (Spain-France-Italy)
- Joint cruise with CSIC, CNRS, PdE… in September 2021 in front of the Ebro River for river inputs study using multiplatforms approach
- BGC regional model and AI integrate several platforms operated by differents national networks and RI (EMSO, EURO-ARGO, ICOS, ILICO, SOCIB…) to deliver products useful for scientists and to build climate/ocean health indicators (impacts on society)

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Integration within PSSs: Challenges in the integration within NW MED PSS

- What is the goal at the end ? Is the PSS model will be retained in the future RI ?
- National networks are not supported in the same way (sustainability). Not the same level of operations
- BGC and biological observations are not provided everywhere BUT it is progressing (sharing expertises between institutes, capacity building with gliders in Italy…)
- Contact with DANUBIUS…
- Impacts of COVID for face-to-face meetings (synergy,...)

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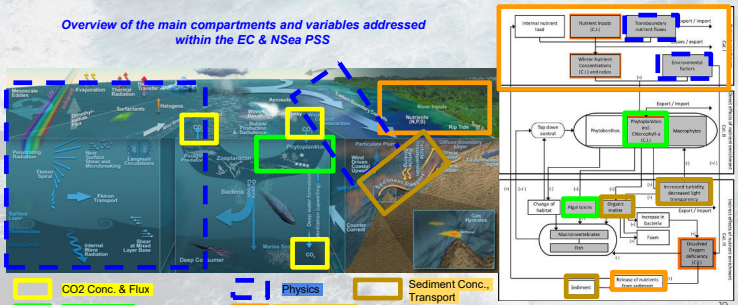
Integration within PSSs: Recent highlights of NSEA and CHANNEL PSS activities

Overview of the main compartments and variables addressed within the EC & NSea PSS



Generic conceptual framework to assess ***eutrophication*** *(source: OSPAR Commission)*

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Integration within PSSs: Recent highlights of NSEA and CHANNEL PSS activities

- Towards a **real multiplatform in situ** approach, coupled with **modelling** and **EO** products, from the sensors/raw data to the results, through harmonized/optimized tools and products.
- Beyond our capacity to answer **Key Scientific Challenges**, real possibility of **contribution to EU Directive and Regional Sea Convention** needs, from the design of the monitoring programmes to the assessment (Eutrophication, Pelagic Habitats, Food Webs).
- Extensive **quality control procedure** applied to:
  - the SOOP Lysbris Seaways and Hafnia Seaways **pCO_2** dataset (Hereon), including data corrections and careful comparison to available SOCAT data
  - the **nutrient** concentrations and associated **river flow** datasets (needed for the calculation of nutrient fluxes) and comparison to OSPAR RID, NIOZ databases.

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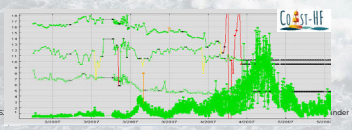
Integration within PSSs: Recent highlights of NSEA and CHANNEL PSS activities

- The Helgoland Underwater Observatory (**HUWO**) equipped with a CPICS plankton and particle imager as well as CTD, oxygen sensor and ADCP, is now fully operational.
- **Specific cruises** into Norwegian Fjords, the English Channel with implementation of different **in-situ and benchtop imaging instruments** (CPICS, UVP5, UVP6-LP, UVP6-HF, LOKI, PELAGIOS, LISST-Holo, ISST 200, Cytosense, FlowCam) and **optical sensors** (Fluoroprobe, AOA, FRRF, Wiz) **:** comparisons of results, harmonization of data outputs, self-developed imaging systems (based on Machine Learning).
- Beginning of the **integration of new sensors** on the instrumented station MAREL Carnot (flow cytometer, AOA, WIZ, pCO_2) using the smart multisensor marine observation platform **Costof2** (core of the EMSO Generic Intrumentation Module (EGIM)). Closely link to **IR ILICO COAST-HF**.



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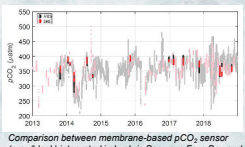
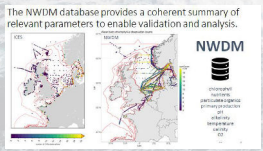
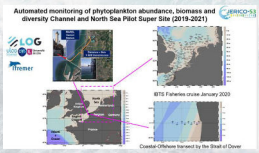
Integration within PSSs: Examples of integration within NSEA and CHANNEL PSS

- Improvement of the coherence of current **carbonate system parameters** (comparison of available operational data to data from the ICOS community,from the SOCAT database) [Action#1]
- Improvement, harmonization of **riverine nutrient input** assessments to the NSea and EC area (OSPAR Region II, MSFD NSea & EC area) [Action#2]
- **Data Integration** for multiplatform / multiparameter environmental assessment and to resolve the spatio-temporal variability of phytoplankton, carbon and SPM dynamics [Actions#4,5] => North Sea, Wadden Sea Data Management (**NWDM**) + Fr Système d'information pour le Milieu Marin (**SIMM**) + **ICES** + **EU Data Portals**



Comparison between membrane-based pCO_2 sensor (gray/black) integrated in Lysbris Seaways FerryBox and a shower-head traditional equilibrator system (SOCAT) (pink/red), Macovei et al. 2021a





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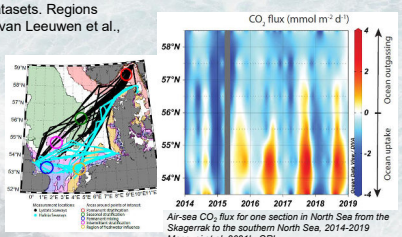
Integration within PSSs: Examples of integration within NSEA and CHANNEL PSS

- Air-sea CO_2 fluxes in NSea PSS waters have been calculated over time, with regional variability, based on Lysbris Seaways and Hafnia Seaways datasets. Regions based on stratification regions defined in van Leeuwen et al., 2015.



Air-sea CO_2 flux for one section in North Sea from the Skagerrak to the southern North Sea, 2014-2019 Macovei et al. 2021b, GRL

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Integration within PSSs: Challenges in the integration within NSEA and CHANNEL PSS

- Need for optimized and harmonized protocols for **regular data retrieval** from different (types of) sources [link to WP6]
- New aggregation and numerical methods for **gap filling and data analysis** (including **Machine Learning**) [link to WP6, WP11]
- Improve **cross-regional communication**: possibility of transfer/share for platforms, methodologies, tools and knowledge
- Identification of **observational gaps** at the whole EC & NSea PSS scale + recommendation on how to address these gaps
- Improve our capacity to face **unexpected events** (e.g., sanitary restrictions affecting data availability for SOOP lines & long-term records), **unstable funding and human resource issues**
- Strengthen the link between **JERICO-S3/RI/DS** and **RI ILICO** + **RI COSYNA** (i.e., improve national and EU strategy)

Challenges beyond our PSS that we were involved with:

- Development of a SOP for underway pCO_2 measurements with membrane-based sensors including data correction

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Integration within PSSs: Recent highlights of CRETAN PSS activities

Joint activities to provide in situ open access *carbonate system* data, in an area with scarcity of data

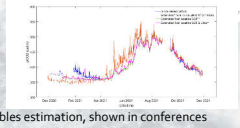
- Meetings between partners, for practices for carbonate system sensors, data processing, data QC, carbonate data submission

Demonstrated as

- Dataset submission to SOCAT,
- Participation in ICOS WS 2021
- Presentation to the SOLAS community (Ocean Carbon from Space)
- Announcement from JS3 and POSEIDON website

Include also

- Interaction with scientists outside JS3 working on pH and CO_2
- Industry manufacturers
- interaction with SOCAT, ICOS, SOLAS, ACTRIS



TBD

- more realistic simulations of air-sea CO_2 fluxes using a 3D hydrodynamic/BGC/Carbonate ecosystem model
- submission of carbonate data to additional databases
- New/improved regional algorithms for carbonate variables estimation, shown in conferences

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Integration within PSSs: Recent highlights of CRETAN PSS activities

Joint activities to to improve *primary productivity* estimates in oligotrophic waters and improve ways to analyse effects of *extreme events* on *phytoplankton*

- Meetings for practices for phyto sensors
- Exchange of sensors between partners for calibration and tests in field, lab, mesocosm
- Meetings for preparation of participation in mesocosm experiment (AQUACOSM-JERICOS3)
- participation in WSs for optical sensor calibration

Demonstrated as

- participation in GoF PSS Algaline fluorometer sensor harmonization workshop in 2021 and 2022.
- WS during TA for transfer of knowledge on new PP technology tools between PSS partners (TA, LabSTAF, Chelsea Technologies)
- TA post in JS3 and POSEIDON website

Include also

- Industry manufacturers

TBD

- Mesocosm experiment testing multiple sensors/methods for phyto composition/ biomass/PP in oligotrophic conditions

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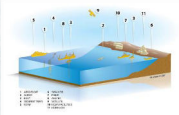
Integration within PSSs: Examples of integration within CRETAN PSS *transnational/transinstitutional*



Integration obtained
from transfer of knowledge between PSS partners on

- practices for sensors, data processing, data QC, data submission
- new technology tools for measuring PP, phyto biomass/composition in oligotrophic waters
- regional algorithms
- meetings in planning setup of mesocosm experiment for comparison of various phyto biomass and PP sensors with conventional methods

under preparation : Improved model for PP and carbonate variables

Pros of partnership : covers multiple disciplines : phytoplankton, carbonate chemistry, optics
Cons of partnership : most partners not directly involved in field operations

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Integration within PSSs: Examples of integration within CRETAN PSS *with RIs*

Contact established, actions done/planned (jointly with PSS partners)

- AQUACOSM-plus: planning done for joint activity in 2022
- ICOS-ERIC: Participation in ICOS intercomparison workshop in June 2021, preparation of joint paper together with other PSSs partners
- EMBRC-ERIC: Since September 2021 providing additional EBV data of common benefit
- SOLAS: participation to the Ocean Carbon from Space Workshop 2022

Contact existing/established, action to be planned

- EURO-ARGO ERIC: contact with HCMR colleagues participating in Euro-Argo ERIC to find activities of common interest (e.g. provision of CTD casts in NRT)
- EuroGOOS: contacts with EuroGOOS groups established (coastal group, biology group, Ferrybox task team)

Contact established, no action planned

LifeWatch-ERIC: Contacts made, interest in pH data obtained at Cretan Sea was expressed, but no common activity planned yet.

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Integration within PSSs: Challenges in the integration within CRETAN PSS (½)

***General* challenges, spotted prior to implementation period (common with other PSSs)**
Many partly tackled during implementation <= Positive impact of JERICOS3

- Sharing knowledge between PSS regions (e.g. Best Practices)
- Connecting with other users in the region
- Connecting other RIs in the region
- Promoting the use of coastal observation data and results in society
- Connecting to other actors in the region (data collection, modelling, satellite communities)
- Sharing knowledge between RIs inside PSS region (e.g. Best Practices)
- Sharing of knowledge inside PSS region (e.g. Best Practices)
- Transnational/-institutional sharing and operating platforms, equipment and use data

but...

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Integration within PSSs: Challenges in the integration within CRETAN PSS (2/2)

…other challenges remain

***Regional* challenges, spotted prior to implementation period remain**

- How to maintain the operation (i.e.maintenance funding) of existing infrastructures
- How to strengthen the trans-institutional collaboration via National RI (HIMIOFOTS)
- How to establish platforms with endurance in neighbouring countries
- How to expand spatio-temporal coverage

+New challenges <= 1st year implementation period

- Even without covid, difficult to keep all platforms active simultaneously, especially due to limited personnel to support all actions
- Demo of what can be done, of the various capacities, but

not able to keep all these capacities later and at long term,
neither an active participation to additional RIs (e.g. ICOS) under current funding schemes

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DISCUSSIONS 10′

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Agenda

1. 10′ 13:00	Introduction to the session, including short summaries for D4.2 and D4.3
2. 40′ 13:10	Integration within PSSs, 10 min per PSS •Recent highlights of PSS activities •Examples of integration within PSSs •Challenges in the integration within PSSs
3. 10′ 13:50	Discussions
4. 20′ 14:00	**Connecting between PSS, between WPs and other initiative, including discussions** **•Thematic meetings to be arranged** **•WP contributions to be discussed** **•Streamlining activities**
5. 20′ 14:20	Partnership building, interfacing with other RI's and communities, including discussions •PSSs current connections to ERICs etc. presented, regional vs. strategic •Commentary from WP2 asked
6. 20′ 14:40	OTHER ISSUES, like Where WPs need PSSs input -

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Connecting between PSS, between WPs and other initiative

- **Thematic meetings/WSs to be arranged by PSSs and others**
- **WP contributions to those meetings to be discussed**
- **Streamlining activities to minimize efforts and maximize outputs**

PSSs have identified several thematics where between PSS interactions would be useful.

- Aim is to organise these in collaboration with other WPs and IRSs, if possible
- Use already existing meetings as platforms
- Expect each PSS to host at least one such joint event (e.g. 2-4 hour session, being in charge alone, with another PSS(s), with IRS(s) or with another WP(s))
- To support also JERICO-DS WPs and Tasks, and eventually ESFRI process
- New ideas welcome!!!

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Connecting between PSS, between WPs and other initiative

Data mining exercise

18 Oct. (virtual, theoretical approach) + 8-9 Dec. 2021 (training)

Coord.: Lefebvre A. (Ifremer), Poisson-Caillault E. (ULCO/LISIC).

Who: EC & NSea PSSs but Covid-restriction => French / Belgium Workshop only!
Virtual session open to other PSSs and IRSs but message lost???

Tools: See https://mawenzi.univ-littoral.fr/

- uHMM : Unsupervised Hidden Markov Model, **automatic segmentation** of time series.
- DTWBI : **Univariate** signal - Dynamic Time Warping based Imputation, **filling large gaps** within time series.
- DTWUMI : **Multivariate** signals - Dynamic Time Warping based Imputation, **filling large gaps** within time series.
- sClust : Spectral clustering, **direct and multi level segmentation** for time series or points.

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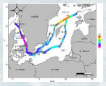
Connecting between PSS, between WPs and other initiative

Data mining exercise

Data sets used during the training session:
MAREL Carnot (**HF instrumented station**) : 2004 - present day ; sampling frequency: 20 min.
RV « Thalassa » - **Ferry Box** : 2018 - present day; sampling frequency: 1 min.
DYPHYRAD **cruises** 2013-2020 : sampling frequency: 30 sec.
FRRF data set 2017: Jerico Next campaign between the Baltic Sea and the Skagerrak; sampling frequency: 10 sec.
Flow Cytometer coupled to the MAREL Carnot instrumented station : duration: 50 days ; sampling frequency: 2 hours.



Links to be improved with **WP5** Harm. of the integrated systems, **WP6** Data, products, service, **WP7** Technology Innovation, **WP11** Virtual Access : need to anticipate the data format and data flow, def. of the list of EOV/EBV to be processed (sensors and expert value ranges, QA/QC, ...) => Impact on pre-processing and processing steps.

Is there a need for a **second workshop**?

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Connecting between PSS, between WPs and other initiative

- **Workshop on Best practices strategy for coastal carbonate systems data management**
  - Will be organized in Tallinn in June 2022
  - Presentations of all PSSs related actions + WP6 related tasks
  - Each presenter* will give a short presentation on one or several of the following :
    a) in situ data collection
    b) estimates from remote sensing (e.g. algorithms used to estimate carbonate variables)
    c) modelling carbonate system
  - including results, method, practices, data QC, carbonate system specific issues, metadata, gaps, challenges, interaction with ICOS, databases used
  - Examples of topics for discussion (focus on joint PSSs actions and WP4<->WP6 !) :
    -connection to ICOS: e.g. joint post on outcome from participation of PSSs in ICOS WS 2021
    - best practices exchanges
    - interaction with WP6

**actions+presenters to be confirmed : GoF#1 (Laakso, Rehder), GoF#6 (Rehder, Laakso) ; NWMed#4(Coppola); NSea#1 (Voynova, Frigstad), NSea&EC#5 (Blauw, Artigas); Cretan #1 (Frangoulis), Cretan#4(Tsiaras), Cretan #5(Stamataki)*

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Connecting between PSS, between WPs and other initiative

- **Hosting a NS PSS / English Channel PSS / KASKEN IRS workshop together with a 2022 FerryBox Workshop (3.5-4 days)**
  - **week of September 26, 2022**
  - **hosted by Hereon at Hamburg / Geesthacht, organized by Hereon with NIVA and SMHI help**
  - **links to BIOWG at EuroGOOS & DANUBIUS**

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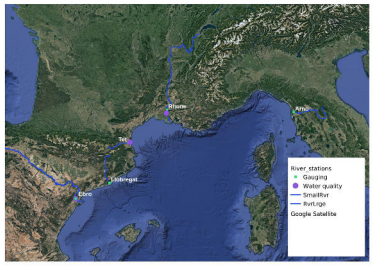
Connecting between PSS, between WPs and other initiative

River monitoring networks and impact in the coastal area:

- From multi-national to PSS scale: network almost done, meeting still need to organise
- NWMed PSS and adjacent IRS (Adriatic, Greece) still need to harmonise
- Link to DANUBIUS (done for Ebro, first steps done for Po)
- Link with all PSSs in J3? Meeting in 2023 to share practices, experiences … ?



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Connecting between PSS, between WPs and other initiative

- **Transnational operations and harmonisation (biological observations)**

Each PSS has been working a bit in isolation for harmonising their observations. This may be detrimental especially for emerging technologies, where networks are not so well established and we need to share within the partnership the most recent advances.

GoF suggest to contribute in this thematics by organising/contributing between PSS/IRS/WP interactions.

In practice, to plan a specific WS where PSSs (not only) can present their recent advances in use, harmonisation, and transnational operations for biology related (no only) observations.

links to WP5, 6, 7; others?
Any suggestions when/where? (Likely Sep-Dec 2022)

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Connecting between PSS, between WPs and other initiative

- Other suggestions?

- GlobalHAB symposium on automated in situ observations of plankton

For anyone who likes to propose, we are happy to collect ideas!

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Partnership building, interfacing with other RI's and communities

PSSs connect within regions to various other RIs and communities.
Mostly (if not always) these connections are informal, based on personnel/institutional connections.

Connections include
- data provision
- BP & SOP sharing
- practical work with some limited thematics/platforms/sensors
- joint missions/experiments

But also very pragmatic sharing of resources in regional/institutional level.

Table 5 (update from D4.1 table 13). Synthesis of PSSs implementation actions interfaces with: RIs, communities, databases, regional initiatives and directives

		GoF PSS Actions	NW-MED PSS Actions	NSEA & CHANNEL PSS Actions	Cretan PSS Actions
RIs	ACTRIS	10			1,3
	Aquacosm+	4, 8, 10	3,5		2, 3, 5, 6
	DANUBIUS	10	2	1, 2, 9	
	ICOS ERIC	1, 6, 10	5	1, 9	1, 3, 4, 6
	EURO-ARGO	1, 2, 5, , 10	4, 5		4, 6
	EMBRC	10	5	9	6
	EMSO		1, 4, 5		6
	EUROFLEETS	1, 5, 10			
	LifeWatch			9	6
	MINKE	1, 3, 10			5
Communities	Modelling	2, 5, 7	1, 4	1, 5	2, 4
	Earth obs	3, 4	1, 2, 4	1, 4, 5	2, 4
	In situ obs	1,2, 3, 4, 5	1, 2, 3	1, 2, 3, 4, 5, 6	1, 2
	Industry	1			2, 5
Databases & Products	EMODnet	3, 4	4	3, 5	
	SOCAT	6	4	1, 5	1, 4
	CMEMS	2, 3, 4, 5, 9	1, 4, 6	3	1, 2, 3, 4
	ICES	2, 3, 5, 9		3, 4, 5	
	SeaDataNet			3	

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Partnership building, interfacing with other RI's and communities

- AQUACOSM

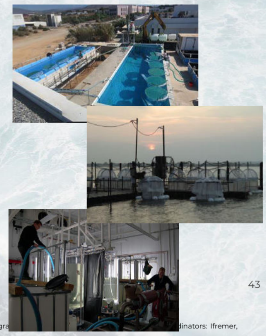
JERICO-S3 and AQUACOSM-plus will study how to connect transnational observations and experiments, to provide better answers to some pending scientific questions.

How extreme climatic events affect phytoplankton communities.

NW Mediterranean Sea – Spring 2021, maybe also 2022
Cretan Sea – Spring 2022
Gulf of Finland – Summer 2022

TA Calls open!!!

Observations (providing relevant scales and frequencies of the events)
Experiments (studying causalities after manipulation of environmental conditions).



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Partnership building, interfacing with other RI's and communities

- AQUACOSM

JERICO-S3 and AQUACOSM-plus are collaborating

- in plankton imaging
  - AQUACOSM WS in imaging 21st Dec 2021, with some JERICO participation
  - JERICO TA projects, where AQUACOSM partners visit SYKE & FMI, transfer of knowledge one key issue besides scientific work
  - strategic freshwater partner in imaging
- in sensor technologies
  - all planned mesocosm experiments include transfer of knowledge between communities in sensor systems and specific technologies

AQUACOSM plus
SYKE IGB Plankton imaging workshop
9th of December 2021

Presenter	Title	Time CET
Maiju Lehtiniemi SYKE & Jens Nejstgaard IGB	Opening & objectives	9:00
Session 1. Phytoplankton imaging and AI-based image recognition		
Kaisa Kraft SYKE	Imaging Flow CytoBot IFCB and image recognition	9:15
Tuomas Eerola LUT University	Similarity learning for plankton recognition	9:30
Stella Berger & Uszko Wojciech IGB	Different types of FlowCams and AMNISFlowStream	9:45
Hans Henrik Jakobsen Århus University	Phytoplankton imaging	10:00
Lumi Haraguchi SYKE	FlowCam and CytoSense	10:15
Discussion		10:30
Coffee (early lunch) break		11:00
Session 2. Zooplankton imaging		
Felipe Artigas ULCO-CNRS	CytoSense and FlowCAM imaging	11:30
Klas Ove Möller Hemholz-Zentrum Hereon	Plankton and particle imaging	11:45
Bronwyn Lira Dyson IGB	The low-cost PlanktoScope	12:00
Rainer Kiko Laboratoire d'Océanographie de Villefranche-sur-mer	The Underwater Vision Profiler, MorphoCluster and EcoTaxa	12:15
Maiju Lehtiniemi SYKE	Status of LISST Holo2 and ZooScan	12:30
Tim Walles & Jens Nejstgaard IGB	In situ MDPI profiler & dElfi laboratory scanner	12:45
Discussion		13:00
Coffee break		13:15
Special discussion:	What is today the best option for rapid routine analyses of zooplankton samples in the lab	13:30
Maiju Lehtiniemi & Jens Nejstgaard	Closing	14:00

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Partnership building, interfacing with other RI's and communities

- ICOS and ACTRIS

GoF -PSS
ICOS OTC Calibration WS participation by GoF PSS / FMI in 2021
GoF PSS VOS line Silja Serenade proposed to become part of ICOS-OTC Finland
GoF PSS Utö becoming ACTRIS site, already part of ICOS, HELCOM and GAW

Cretan Sea -PSS
ICOS OTC Calibration WS participation by CS PSS / HCMR in 2021
Contact with ACTRIS initiated for use of atmospheric CO2 station

North Sea -PSS
ICOS-OTC pCO2 intercomparison participation, June-July 2021 at VLIZ Oostende, Belgium
Contact with ICOS OTC for integration of Cuxhaven FerryBox station

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Partnership building, interfacing with other RI's and communities

- ICOS

NW MedSea (interactions with ICOS)
- Participate to ATL2MED demo mission (Saildrone-OTC) in 2020 with several MedSea institutes (SOCIB, CNRS, OGS, CNR…): produce a technical report and a scientific paper in preparation
- Participate to the joint common sensor inter-comparison exercise in Aug. 2021
- Implementation of pCO2-pH sensors in Marseille and Villefranche coastal buoys
- Demonstrate interest to use neural network (CANYON-MED) to predict carbonate variables (Fourrier et al., 2020). This tool is already used by the Argo community. See figure for coastal applications !
- Presently working together on Infra-Techo1 call (ICOS, EMSO, EURO-ARGO). The NW MedSea is proposed as a key demo mission for carbonate system …

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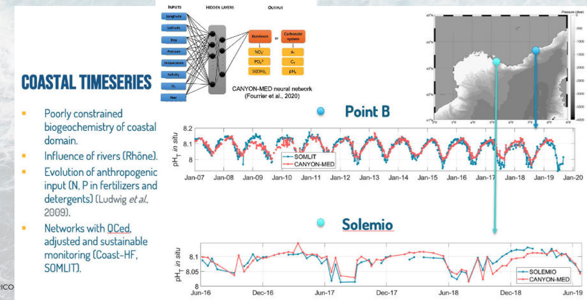
Partnership building, interfacing with other RI's and communities

Application of neural network in PSS to predict pH measurements in coastal waters : useful to validate autonomous measurements and fill the gaps (M.Fourrier, phD thesis Sorbonne Univ. 2021)



The JERICO ... France.

Partnership building, interfacing with other RI's and communities

- DANUBIUS

- NW MED PSS: Ebro system inside DANUBIUS, provided river data in real time during joint actions in the coastal area
- IRS Adriatic: Po river delta and N. Adriatic lagoons are a DANUBIUS supersite. Collaboration within the "JIVE" JERICO-S3 TA project on S1-GB facility off the Po river delta on seawater optical properties and evaluation of sensors. Future joined workshops on best practices / protocols etc can be an important subject to improve collaborations.
- NSEA PSS: Cuxhaven FerryBox data stream information has been communicated in DANUBIUS. New Elbe River research station at Tesperhude, with a FerryBox and a suite of additional sensors is designed and implemented at Hereon (PI J. Friedrich)

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Partnership building, interfacing with other RI's and communities

- EMSO
- EMSO - NW MedSea interactions
  OBSEA cabled coastal site (UPC) is part of EMSO
- EMSO - Cretan Sea interactions
  E1-M3A is part of EMSO
- EMSO - GoF interactions
  EMSO approached FINMARI / Laakso to discuss possible co-operation in the Nordic Countries (2022)
- EMSO - JERICO interfaces
  - Sharing Best Practices for Fixed Platforms maintenance
  - EMSO facilities used as reference sites for data quality control during gliders deployments (T, S, O2)
  - Extension of EMSO into coastal waters ?
  - Places of the gliders inside the EMSO ERIC : discussion in progress …
  - TNAs on common platforms are benefit for Jerico and EMSO

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Partnership building, interfacing with other RI's and communities

EUROSEA & EURO-ARGO interactions in NW MedSea PSS

- EUROSEA WP3 will produce Best Practices for all marine platforms and reinforce the multiplatforms integration (eg. gliders, fixed platforms,...)
- EUROSEA T7.1 aims to produce carbon audit of the European relevant deep convection regions as the NW Med Sea PSS (S.Thomsen, P.Testor,J.Karstensen)
- EA-RISE/EURO-ARGO focus on the deployment of BGC-Argo floats in NW MedSea
- EURO-ARGO will plan to deploy coastal ARVOR floats into coastal waters. Could be useful for different JERICO regions (eg. Baltic Sea, NW MedSea)

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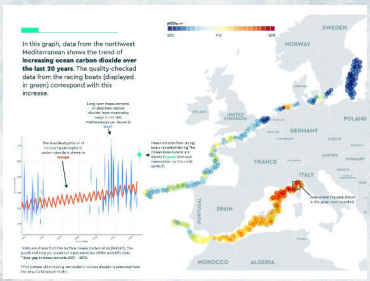
Partnership building, interfacing with other RI's and communities

How a sailing race is helping to explain the effect of the climate crisis on the oceans

Race of sailboats equipped with pCO_2 sensors in 2021 connected to the MOOSE cruise and measurements of the carbonate system in the NW MedSea PSS to validate the pCO_2 measurements (collaboration with EUROSEA project)



https://racetozero.unfccc.int/how-a-sailing-race-is-helping-to-explain-the-effect-of-the-climate-crisis-on-the-oceans/

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Partnership building, interfacing with other RI's and communities

- **GROOM**
  - GROOM is now in charge of the perpetuation and the extension of the data service through CORIOLIS
  - J3 PI integrated the advisory board of GROOM
- **Others?**

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Partnership building, interfacing with other RI's and communities, including discussions

- **WP2 comments asked: how to capitalize the regional experiences on RI-RI interactions**

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Agenda

1. 10' 13:00	Introduction to the session, including short summaries for D4.2 and D4.3
2. 40' 13:10	Integration within PSSs, 10 min per PSS •Recent highlights of PSS activities •Examples of integration within PSSs •Challenges in the integration within PSSs
3. 10' 13:50	Discussions
4. 20' 14:00	Connecting between PSS, between WPs and other initiative, including discussions •Thematic meetings to be arranged •WP contributions to be discussed •Streamlining activities
5. 20' 14:20	Partnership building, interfacing with other RI's and communities, including discussions •PSSs current connections to ERICs etc. presented, regional vs. strategic •Commentary from WP2 asked
6. 20' 14:40	**OTHER ISSUES, like Where WPs need PSSs input -**

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Where JERICO-S3 and JERICO-DS WPs need PSSs input

- **comments and questions from WP leads**
- **Discussing Scientific objectives:**
  How are the scientific objectives defined in WP1 followed by PSS and IRS?
- **other comments and questions**

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Part of this work was supported by the JERICO-DS project. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153/951799.

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WP3 IRS progress update

Wednesday 16 March 15:30-16:30

Northern Adriatic Sea: Fabio Brunetti
Iberian Atlantic Margin: Joao Vitorino
Bay of Biscay: Anna Rubio
Kattegat-Skagerrak-Eastern North Sea: Bengt Karlson
Norwegian Sea: Henning Wehde

8 minutes per IRS + 4 minutes questions/discussion

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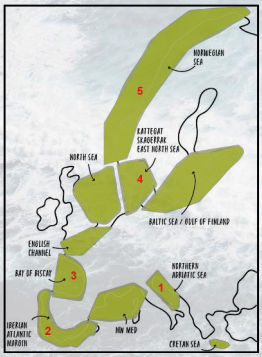
Introduction



About the IRS

1) Northern Adriatic Sea
2) Iberian Atlantic Margin
3) Bay of Biscay
4) Kattegat-Skagerrak-Eastern North Sea
5) Norwegian Sea

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Introduction (cont'd)

What has been done?

-IRSs contributed to D3.1: Initial analysis and summary of region-specific and region-wide monitoring strategies, and regional sustainability plans
-IRSs have established road maps for Integration, Interoperability/harmonisation, business case/financial sustainability, and organisational/structure
-IRSs have held meetings to plan development and for IRS-specific focus topics
-Work has begun on D3.2: Report on integration progress within and between IRSs

What needs to be done in the future?

-Complete D3.2: Report on integration progress
-Work towards road map objectives and revise/add as needed
-Collaborate with WP1, WP2, WP4, WP5, WP6, and WP9 where needed
-Begin work on D3.3: Recommendations based on regional data handling and accessibility (month 32)
-Begin IRS-PSS interactions and define next steps

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Northern Adriatic Sea IRS

Integration updates (IRS/PSS, institutes, RIs, etc.)

- **Regional Level**: Collaboration with DANUBIUS-RI. Po river delta and N. Adriatic lagoons are a DANUBIUS supersite. Collaboration within the "JIVE" JERICO-S3 TA project on S1-GB facility off the Po river delta on seawater optical properties and evaluation of sensors.
- **Regional Level**: Informal contact with the Slovenian National Institute of Marine Biology, operating in the Adriatic Sea, to evaluate the possibility of starting common activities in the JERICO-S3 framework. The aim is to extend the transnationality of the JERICO NA-IRS. This first contact will be followed soon by a meeting where we will structure in detail the activities and how to proceed formally.

Interoperability/harmonisation updates (technical, best practices, data flow, etc.)

- **Regional Level**: Harmonization of the observations of regional (deep water) oxygen. A discussion has been started with partners involved in the NA-IRS
- **Regional Level**: Collaboration with DANUBIUS-RI. Future joined workshops on best practices / protocols will be planned in 2022.

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Northern Adriatic Sea IRS

Business case updates (user/stakeholder involvement/interaction, financial sustainability)

- **Regional Level**: Strengthened collaboration with the Regional Civil Protection (stakeholder), through better harmonization and sharing of data provided by coastal platforms.
- **National level**: A challenging plan for integration with other National Research Infrastructures, expansion of observational capabilities and overcoming the current gaps has been submitted for NA-IRS, in the framework of the Italian component of JERICO-S3, as a contribution to the Recovery Plan. The plan has been submitted and is awaiting for approval.

Organisational/structural updates (regional organisation, MoUs, etc.)

- **Regional Level**: There is nothing new to report, partners are collaborating with existing MoUs and agreements.
- **Regional Level**: The first contact with the Slovenian National Institute of Marine Biology will be followed soon by a meeting where we will structure in detail the possibly common activities and how to proceed formally.

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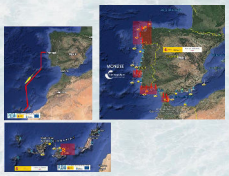
Iberian Atlantic Margin IRS

Integration updates (IRS/PSS, institutes, RIs, etc.)

- At regional level: IAM Pilot Study bringing together selected observations from IH, PdE, PLOCAN; joint processing and exploration of data sets; contribution to BlueCloud.
- At national level:
  Portugal: Manifestation of interest for inclusion of an expanded MONIZEE infrastructure (IH infrastructure contributing to JERICO-RI and IAM IRS) in the National Roadmap of RIs submitted in January 2022 and gathering 12 institutions from Mainland and Azores and Madeira Archipelagos, , covering Physical Oceanography, Marine Biology, Marine Chemistry, Marine Geology and Technological Development, rom the mainland and the Azores and Madeira Archipelagos. Proposed specific articulation with EMSO-PT.
  Spain: Collaboration and data exchange between Puertos del Estado and the National Geographic Institute (sea level and GNSS data, for tsunami warning and datum definitions) and the Hydrographic Institute for tidal prediction and definition of a new unique altimetric reference along the Spanish coast. We have MoUs signed with both institutions



Interoperability/harmonisation updates (technical, best practices, data flow, etc.)

- The IAM Pilot Study is providing a framework to discuss interoperability/harmonisation between IH, PdE and PLOCAN
- Further development planned as part of possible participations in meetings 2022
- Know-how is being transferred from PLOCAN to IH in the operation of gliders. This work is being developed as part of a cooperation agreement existent between the 2 institutions and can be further extended in 2022/2023 as part of a TNA project proposed by IH in the 2nd JERICO-S3 TNA call.

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Iberian Atlantic Margin IRS

Business case updates (user/stakeholder involvement/interaction, financial sustainability)

- At national level
  Portugal: the process initiated in January 2022 with the submission of a manifestation of interest for inclusion of MONIZEE infrastructure in the National Roadmap, if succede, will open new funding mechanism with a longer timeframe

Organisational/structural updates (regional organisation, MoUs, etc.)

- At regional level: No new developments to be mentioned, the 3 partners are collaborating with existent MoUs or collaborations agreements indicated in Roadmap Table
- At national level:
  Portugal:The process initiated in January 2022 for inclusion of MONIZEE in the National Roadmap, if succeded, will lead to the establishment of a consortium of the 12 Portuguese institutions involved in observation of the Portuguese coastal ocean and insular shelves
  Spain: MoUs signed between Puertos del Estado and the National Geographic Institute and the Hydrographic Institute

Potential opportunities for interaction in 2022

- IBIROOS meeting (IH, Lisbon, May 2022)
- 7as Jornadas de Engenharia Hidrografica/2as Jornadas Luso-Espanholas de Hidrografia (IH, Lisbon, June2022)

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Bay of Biscay IRS

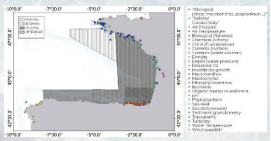
Integration updates (IRS/PSS, institutes, RIs, etc.)

- Workshop Bay of Biscay December 2021. Observation inventory :
  - 155 entries (Spain and France Institutions). Lacking important contributions from key actors (e.g. IEO, SHOM, RECOPESCA, ECOSCOPA, REMI, PELGAS, EVHOE) and genomics data (e.g. ROME).
  - Need to complete the view on who are the users of the data.
  - In terms of variables observed, observations on Physics > BGC variables >> biology and geology..

FUTURE ACTIONS

- Contact further actors to complete the inventory - March 2022
- Follow on meeting for a second version of the inventory - Spring 2022
- Contact identified infrastructures, inform about JERICO-RI and develop a strategy for possible integration – Second half of 2022
- Enhanced interactions with other JERICO-S3 WP9, IRS and PSS
- Planning a second workshop for the Bay of Biscay with users

- Connection with adjacent systems and communities out of JERICO-S3:
  - Land-sea, open ocean, atmosphere: continental inputs
  - Observing communities: Lack of presence of DANUBIUS-RI. Other RIs : ICOS, Euro-Argo, EMSO.
  - Modelling and satellite observations (IBIROOS, Copernicus Marine Services, CNES and ESA)
    - Future action : link with WP2, next IBIROOS annual meeting
- Connection with adjacent systems and communities inside of JERICO-S3:
  - Exchange on main science topics and availability of observations
  - The possible collaboration during 2022-2023 in the development of a trans-region activity on slope current monitoring led by IRS - Atlantic Margin has been identified.



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Bay of Biscay IRS

Interoperability/harmonisation updates (technical, best practices, data flow, etc.)

- Collaborative session : main problematics, observational, integration and transborder collaboration needs on research/observations for **Fisheries, Extreme events and Ocean transport and Health**.
- **Other KEY thematics**:
  - Contaminants (observation, fluxes)
  - MSFD 11 descriptors (not all monitored today but will need to be in the future)
  - Marine litter (floating and beached, quantities and characteristics, macro and microplastics)
  - Biological connectivity

FUTURE ACTIONS

- Analyse further the need for harmonization in these other thematics.
- Open list to be updated regularly

Table 2 – Problematics and needs for the enhanced harmonization of science and observations in the field of Extreme Events

Main problematics
• Observing short term events and effects in the ecosystem
• Differential effect of atmospheric vs. marine heat waves and their synchronicity
• Shoreline evolution and flooding events
Main observational needs
• Need Long term data series, continuous measurement of key parameters and data before the events
• Adaptative sampling to appropriate some impacts and driving factors
• Technological development for improved sampling
Integration and transborder collaboration needs
• Basin scale approach
• Expertise sharing, methods, tools
• Multidisciplinary for integration of different compartments in the events characterization and their impacts: hydrodynamics and morphological information, human activity, BCG processes

Business case updates (user/stakeholder involvement/interaction, financial sustainability)

- First objective - to **characterize differences in the national structuration and governance** of the efforts on coastal observations
  - Spanish: strong connection with societal demands, high diversity of stakeholders, no national research infrastructure, no consolidated structure but recent coordination initiatives
  - French: a national research infrastructure (ILICO), challenges to achieve a transition from network based approach to integrated JERICO approach, consider a consolidated financial sustainability

FUTURE ACTIONS

- Identify key regional actors not currently involved in JERICO-S3
- Identify the most relevant Specific Scientific Challenges/Research Axes
- Establish a model of interactions between JERICO consortium and external partners
- To a model for long-term sustainability of the observation

Organisational/structural updates (regional organisation, MoUs, etc.)

- Build on national involvement and support in JERICO-RI
- No added regional agreement (French partners to the IRS mostly correspond to the regional components of National Observation Services – do not hold the authority to engage in MoUs) - This holds also for Spain.
- Enlargement of the partnership

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Kattegat-Skagerrak-Eastern North Sea - high frequency ocean observing systems

FerryBoxes
Stationary FerryBoxes
Gliders
AUVs
Instrumented Buoys
Monthly cruises with research vessels
Ocean model operation and development

Notes

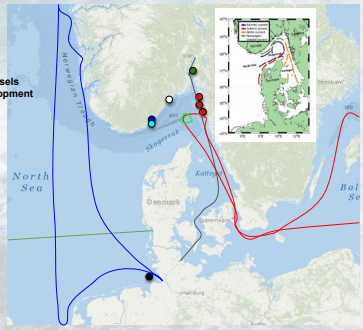
Note: positions and routes are approximate

Programs not on the map include:

National and regional monitoring of salinity, temperature, phytoplankton, nutrients, oxygen, chlorophyll etc.

Monitoring of harmful algae and phycotoxins in bivalve molluscs

Sea level gauges are not included on the map



- Instrumented buoy, SMHI and Swedish partners
- Instrumented buoys, Ministry of Def., Denmark
- Wave buoy, KDI, Denmark
- Helgoland Underwater Observatory, Hereon/AWI
- Solbergstrand ocean observatory, NIVA
- Flødevigen ocean observatory, IMR
- Torungen ocean observatory, IMR
- HF radar, Jomfruland, MetNo
- Ferrybox Oslo-Kiel, NIVA
- R/V Svea with Ferrybox, SMHI
- Ferrybox Lysbris Seaways, Hereon
- Ferrybox Magnolia Seaways, Hereon
- Glider deployments, VOTO, Sweden
- AUV deployments, IMR

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Kattegat-Skagerrak-Eastern North Sea IRS

JERICO partners

- Sweden: SMHI (lead)
- Norway: IMR and NIVA
- Denmark: DMI
- Germany: AWI and Hereon

ColorFantasy NIVA

G.M Dannevig IMR

Lysbris Hereon

R/V Svea SMHI

Integration updates (IRS/PSS, institutes, RIs, etc.)

- Cooperation with EMBRC, Lifewatch,the University of Gothenburg, Voice of the Ocean foundation

Interoperability/harmonisation updates (technical, best practices, data flow, etc.)

- Joint phytoplankton sampling using FerryBox SMHI/NIVA
- Joint development of automated plankton observing systems using imaging flow cytometers
- Discussions about joint presentation systems for harmful algae through development of presentation systems of IFCB-results and of Algae Status http://algaestatus.hi.no
- Mini workshop SMHI-NIVA Automated plankton analysis in Solbergsstrand/Drøbak, Norway 6-8 October 2021
- Reference image libraries for automated plankton analysis in Nordic Microalgae web site http://nordicmicroalgae.org (in development)
- Carbonate system - planned and past intercomparison of instruments (ex. TNA in Norway), collaboration with ICOS community, data reporting in SOCAT database

IFCB Solbergsstrand NIVA

FerryBox system on IFCB R/V Svea with carbonate system sensors. SMHI

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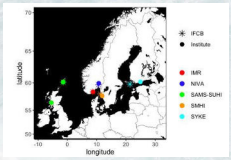
Kattegat-Skagerrak-Eastern North Sea IRS

Business case updates (user/stakeholder involvement/interaction, financial sustainability)

- Stakeholders include
  - Ministry of the environment, Sweden
    - Swedish Agency for Marine and Water Management
  - Ministry of the Environment, Denmark - Miljøstyrelsen
  - Norwegian Ministry of Climate and Environment
  - Bundesländer: Schleswig-Holstein and Niedersachsen
  - National Food Agencies
- Potential regional stakeholders include
  - Water Quality Association of the Bohus coast
  - County administration boards

Organisational/structural updates (regional organisation, MoUs, etc.)

- Establishment of European IFCB network
- Initiated discussion about MoU SMHI-NIVA etc.
- Cooperation through EuroGOOS
  - Biological Observations Working Group BIOWG
  - FerryBox Task Team



HARMFUL ALGAE NEWS NO. 68 / 2021

Upcoming workshops

- Automated plankton analysis 22-26 August 2022 + JERICO day 27 August
- Joint North Sea, Kattegat-Skagerrak-Eastern North Sea, Baltic Sea, Hamburg/Geesthacht, September 2022

EuroGOOS European Global Ocean Observing System

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Norwegian Sea IRS

Integration updates (IRS/PSS, institutes, RIs, etc.)

- The Norwegian partners of Jerico and additional national collaborators developed the Coastwatch approach delivering the Norwegian contribution to the Jerico RI. This is under progress, and include in the national roadmap, but only partly implemented
- The ship of opportunity program called NORSOOP is funded integrating the Ferrybox activities in Norway
- A new RV (Jakup Sverri) is now established leading to the increased capacity of basic parameters underway and so has become part of the integrated coastal observation strategy.
- Some development of the partners contribution to ERICs (NIVA now part of ICOS)

Interoperability/harmonisation updates (technical, best practices, data flow, etc.)

- Techgnical collaboration mostly on the NORSOOP programme, still low collaboration outside
- Concerning the data flow, the Jerico activities are closely connected to the CMEMS service where IMR is leading the Arctic INSTAC activity where the data from the Norwegian Sea IRS is allocated to
- In addition data flow is established via the NorSOOP programme for the ships of Opportunity data

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Norwegian Sea IRS

Business case updates (user/stakeholder involvement/interaction, financial sustainability)

- The funded ships of Opportunity programme NORSOOP is actually the solely part that is funded on a long -term external basis.
- The Coastwatch funding proposal sent to the Research Council unfortunately was turned down from the infrastructure funds, but a plan for sustainable development from initially institutional funding is under development

Organisational/structural updates (regional organisation, MoUs, etc.)

- The Coastwatch approach forms the organisational structure of the Norwegian part of the IRS. Still no formal MOUs are in place
- Faroese Islands are connected to a Nordic consortium aiming for the standardisation of eDNA methodologies.

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This work was supported by the JERICO-S3 and JERICO-DS project. These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153 / 951799.

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IRS-PSS breakout discussions

Wednesday 16 March 16:30-17:00

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Breakout discussion

Objectives

- Begin dialogue between IRS-PSS to foster collaboration, synergies, and overall strengthening of JERICO-RI observations
- Identify key topics/thematics/questions that can be addressed within the current breakout group, or with other IRS/PSS that are not in the existing breakout group
- Consider what modes or structures of collaboration are needed (e.g., discussion email lists/forums, regular meetings, etc.)
- This short 30 minute breakout will for the basis for future meetings/discussions at JERICO-Days in Tallinn (summer 2022) and beyond

Breakout 1 (lead: Jukka)
- Norwegian Sea IRS
- KASKEN IRS
- Baltic PSS
- North Sea PSS

Breakout 2 (lead: Andrew)
- Bay of Biscay IRS
- Iberian Atlantic Margin IRS
- English Channel PSS

Breakout 3 (lead: Martin)
- Northern Adriatic Sea IRS
- NW Med PSS
- Cretan Sea PSS

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Breakout 1: Norwegian Sea, KASKEN, Baltic, North Sea
Lead: Jukka

Starting discussion points

- Key topics/thematics/questions that can be addressed
- What modes or structures of collaboration are needed (e.g., discussion email lists/forums, regular meetings, etc.)
- zooplankton/phytoplankton species/distribution/abundances
- Climate change influences: ex. length of growing season
- Carbonate system: coastal ocean acidification for example, changes and variability in carbonate system
- Currents / physical oceanography - interregional connectivity
- MoU? With JERICO or between partners?
- How regional services can contribute to scientific themes/questions on a basin-wide scale
- Stardardise approaches for novel techniques / technology: demonstrate coordination; what types of questions can we try to answer: settle on common approaches, ex: sufficient sampling frequency
- Compare similar marine ecosystems through different PSS and IRS : estuarine plumes, well mixed vs. stratified shelf systems, continental margins, highly anthropogenic systems, etc.
- What to learn from PSS of relevance to IRS
- How observations in an IRS (between 2 PSS) can address the connectivity (filling gaps) between PSSs
- Involve regional partners outside of JERICO and interested stakeholders: perhaps hold frequent workshops

Breakout notes, next steps (with Tallinn meeting (and Ferrybox workshop) in mind)

- IRS vs PSS roles and how to integrate?
- …
- …

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Starting discussion points

- Key topics/thematics/questions that can be addressed

Breakout 2: Bay of Biscay, English Channel, Iberian Atlantic Margin
Lead: Andrew

- **Suggestion from IRS - BOB : Exchange on main science topics and availability of observations**
- **Suggestion from IRS - BOB : The possible collaboration during 2022-2023 in the development of a trans-region activity on slope current monitoring led by IRS - Atlantic Margin has been identified.**
- **Suggestion from IRS - BOB: Latitudinal migrations, biological/ecological connectivity (also with NW Med PSS - for Tuna migration)**
- **Suggestion from PSS - EC : trans-region integration of phyto- and zooplankton observations at different scales (abundance, biomass, diversity) through EC PSS & BOB & IAM IRS through target studies on comparable sites of important estuarine inputs (ROFIs), coastal-shelf-margin transects, long-term evolution (sites combining traditional and novel approaches) from the strait of Dover to SW Iberian Margin**
- **PSSs to identify key points challenging operations at a regional level, transmit info to consortium and IRS; IRS to identify key challenging organisation/structural issues at a regional level**

- What modes or structures of collaboration are needed (e.g., discussion email lists/forums, regular meetings, etc.)
  - Continue virtual meetings and certainly in-person meeting at JERICO summer meeting in PT
- …

Breakout notes, next steps (with Tallinn meeting in mind)

- …
- …
- …

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Breakout 3: Northern Adriatic, NW Med, Cretan Sea
Lead: Martin

Starting discussion points

- Key topics/thematics/questions that can be addressed
- What modes or structures of collaboration are needed (e.g., discussion email lists/forums, regular meetings, etc.)
- …

Breakout notes, next steps (with Tallinn meeting in mind)

- …Plankton imaging as a possible technology to integrate across regions, basins, Europe.
- …Best practices for fluorescence, primary production and flow cytometry observations, so they can be integrated with other phytoplankton observations
- …Biological observation might showcase the possibilities of Jerico core and multiparameter integration
- … FAIR data might be essential to show integration
- Extreme events might be good to demonstrate integration
- A common workgroup could gather data on heatwaves and extreme storms and make a common analysis
- Integration still is naturally part of oceanography.

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This work was supported by the JERICO-S3 and JERICO-DS project. These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153 / 951799.

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Science case questionnaires outcome and the JERICO strategy that led to focus the demo on phytoplankton dynamics (5 min + Q&A)

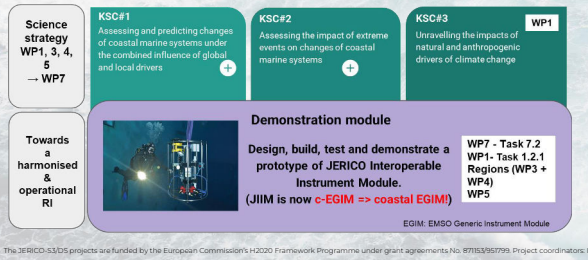
Anna Rubio, A. Gremare, D. Durand, L. Coppola (WP1)
E. Delory , J. Blandin(WP7), L. Delauney, Regions leaders

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Definition and framework

Sensor package: set of sensors (generic + specific sub-packages) that are required to fulfill the needs of a coastal site and application or domain.

From a technological perspective, the sensors may be connected to a common control, power and communication system and form an instrumentation **module**.



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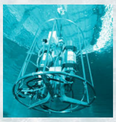
Main topic and Science Case Questionnaire

After JERICO-NEXT plankton dynamics (e.g. algal blooms) seen as one the key topics for the integrated observation of the coastal area

"Pelagic Sensor Package for the integrated observation of plankton dynamics"



JERICO-S3 QUESTIONNAIRE (NOV 2020) - ALL JERICO REGIONS

The **main rationale for a demonstration according to the problematics and scientific stakes of the region**, including abstracts on up to three Scientific Actions (related to the JERICO-S3 KSCs)

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Questionnaire for Sensor Packages: MAIN OBJECTIVES

- The **main rationale for a demonstration** according to the problematics and scientific stakes of the region, including abstracts on up to three Scientific Actions conducted within RA scientific challenges (hereinafter **Scientific Actions, SA**) and how their relate to the *JERICO-S3* KSC.
- The o**bservations needs driven by each SA,** including operational aspects (remote connectivity, type of device, Frequency / type of access to information, Minimum duration of the deployment) and the specification of the Variables be measured concerning the Physical, Chemical, biochemical and biological environments and the main pelagic and benthic processes. The observations needed for the SC and already available are also listed, along with the needed accuracy, temporal resolution, depth range and preferred method/sensor.
- The **need of other associated technologies** (e.g. antifouling systems).
- The **interest of the regions for hosting a technological & innovation in-situ demonstration**.
- The **availability of sensors** that could contribute (as in-kind) to the list of needed sensors to the SA and required to be co-located with or integrated in the sensor module.

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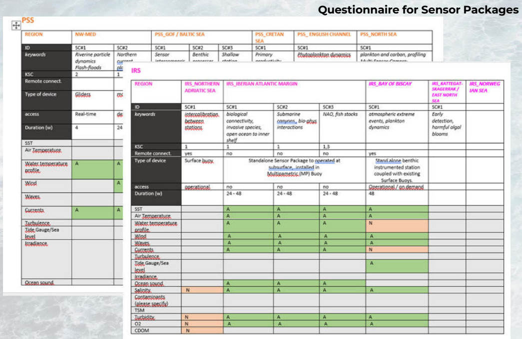
Questionnaire for Sensor Packages

5/5 PSS and 3/5 IRSs and gathered 13 SC with their associated list of observational and technological requirements



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Questionnaire for Sensor Packages - Synthesis of collected inputs

- The **SA collected** for the different areas were diverse and included:
  - riverine particle dynamics under extreme events
  - biological connectivity/transport of plankton
  - pollutants and invasive species
  - benthic processes under continuous and episodic loads of nutrients
  - monitoring of estuarine and coastal systems under the effect of various events, like algae blooms, or dispersion of riverine impact
  - intercalibration exercises with existing observing systems.
- The **requirements in terms of variables, accuracy, coverage** etc. where collected in the form of specific tables and transferred to **WP7**, along with an overall analysis of the variables that were the most frequently required:
  - variables already measured with an appropriate accuracy and coverage
  - variables that needed to be better resolved and
  - variables not currently observed.
- We also quantified **the number of regions in which each variable was required**, in order to evaluate the transferability of the specific requirement to other areas.

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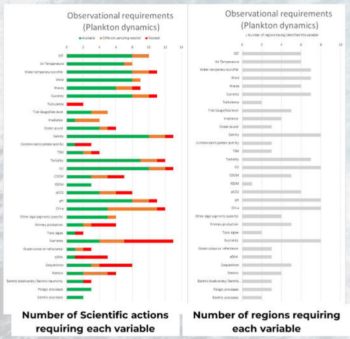

Questionnaire for Sensor Packages- Synthesis of collected inputs

Nutrients is the most cited required variable, followed by Chl-*a*, CDOM, PCO_2, Zooplankton, e-DNA (the last being only identified as requirement 3 of the 8 regions).

Left panel: *Times that a variable has been considered as a requisite for a "scientific challenge"; The observational needs for each of the variables is coded in colors:* ***green****, the number of times where this variable is required and marked as "Available" (i.e. the variable is measured as needed);* ***orange****, the number of times where this variable is required and marked as "Different sampling needed" (i.e. variable is measured but the "scientific challenge" requires further resolution or complementary measurements);* ***red****, the number of times where this variable is required and marked as "needed" (i.e. the variable is not measured).*

Right panel: *number of regions considering a given variable as a requirement for conducting the "scientific challenge(s)" listed, and regardless of the observational needs.*

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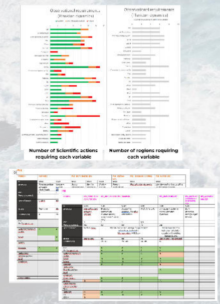
Questionnaire for Sensor Packages- transfert to WP7



Design (science & technology)

Analysis of outputs → ***D1.1***

WP1 - Task 1.2.1

WP7 - Task 7.2

Regions (WP3 + WP4)

Complete lists of variables and requirements → ***WP7 - Task 7.3***

https://drive.google.com/drive/folders/129stw_pwYoq8eS9i26O3wHz7iYM6Ypdd?usp=sharing

build, test demonstrate

Regions (WP3 + WP4)

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JERICO S3 SCIENCE - SERVICES - SUSTAINABILITY

JERICO DS SCIENCE - SERVICES - SUSTAINABILITY

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JERICO-WEEK Day#3

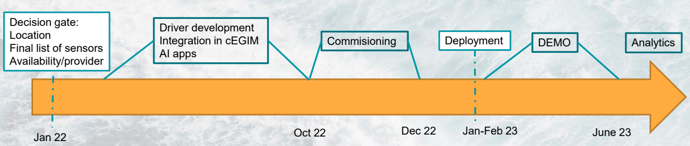
Demonstrator-2: progress on sensor packages and WASP

NORCE, IFREMER, NIVA, COVARTEC, CNRS, PLOCAN, CNR

1. Pelagic sensor package
2. Benthic sensor package
3. Water sampling and processing WASP

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

1. PSPD – Pelagic sensor package for plankton dynamics



The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

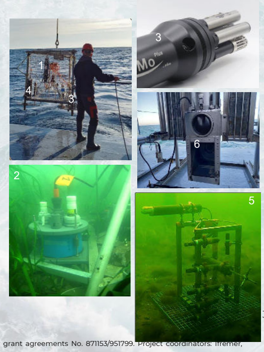
2. ACOBS – Autonomous Coastal Observing Benthic Station

Objective

Integrating emerging and recent technologies in an Autonomous Coastal Observation Benthic Station to monitor and quantify the biogeochemical and ecological changes of benthic habitats under a changing world.

Multi-sensor package with :

1. a microelectrode profiler (O_2, pH, sulfides, resistivity)
2. a benthic chamber (O_2)
3. Autonomous multiparameter loggers (T, S, pressure, O_2, pH, turbidity, PAR)
4. a video camera
5. a new BEATRISS tool for Benthic Exchanges by Autonomous Time-series Recording In-Situ System
6. a sediment profile imager (SPI)



Main challenging steps :
- Simultaneous measurements
- Longer deployments
- Real time control

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2. ACOBS – Autonomous Coastal Observing Benthic Station

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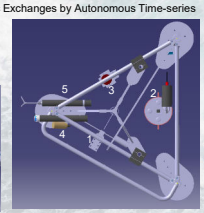
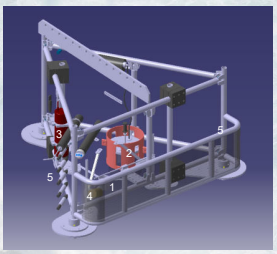
6. SPI





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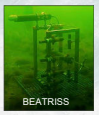
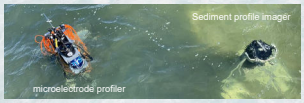
2. ACOBS – Autonomous Coastal Observing Benthic Station

First deployment of tools : July 2021 - Prevost lagoon, Mediterranean

- Microelectrode profiler (O_2, pH, sulfides, resistivity): 2 + 3.5 days
- Sediment profile imager : 4 days + 7 days
- BEATRISS: 4 days + 7 days





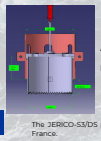
Positive background :

- Simultaneous measurements of various tools
- Deployments between 3 et 11 days

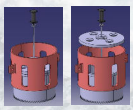
Concerns :

- Changing broken microelectrodes
- Alteration of image sharpness over time
- Benthic chamber (O_2) not suitable for autonomous use → urgent need to re-design it for autonomous application(in progress)

Next deployment (SPI, microelectrode profiler & autonomous multiparameter logger): June-July 2022 - WGMP, Bay of Biscay



Ability to repeat 12 incubations with O_2 monitoring by optode (Pyroscience)



First test deployment of the benthic chamber (Sept 2022 - Arcachon)

ACOBS deployment (Spring 2023 - Arcachon)

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3. WASP – Water sampling, filtering & preservation device

NIVA - Ferrybox

Refrigerated autosampler (24x1 L, GPS/time/sensor-linked)

FLUIDION / IFREMER

→ Water sampling

Sampling possibilities:

- Self sampling triggering (clock)
- External sampling triggering (e.g. COSTOF II)
- High turbid water : max 4000 NTU/ 500mg/L
- Sampling volume per bottle: 200 mL minimum
- Number of sampling bottles : 10 to 15

Deployment conditions:

- Under the sea-surface, 1 to 3 meters deep, attached to a fix monitoring platform.
- On the seafloor, 50m deep, mounted on a seafloor observatory.
- 3 knots current.
- Temperature: 0°C to 25°C.
- Salinity: 0 to 38 PSU.
- Handled by divers.
- System must withstand the presence of sand.

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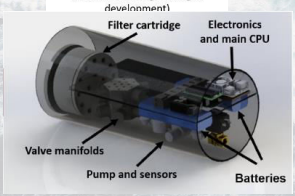
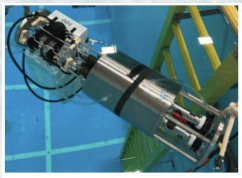
3. WASP – Water sampling, filtering & preservation device

→ eDNA

CIIMAR and NIVA

CIIMAR/INESC-TEC/NIVA eDNA sampler and sensor (Sterivex filters, fluidics for rinsing/eluting in development)





The Robotic Cartridge Sampling Instrument (RoCSI). Image courtesy NOC.

The NOC eDNA sampler –Robotic Cartridge Sampling Instrument (RoCSI) – is an autonomous sampling device for filtering predetermined volumes of water and preserving the filters in situ.
Deployed on Fixed platform and AUV

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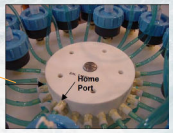
Development of Mclane PPS for use on observing platforms

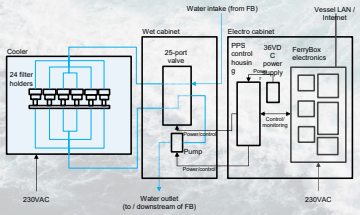


- Designed for deployment on moorings for weeks/months
- Multiport valve allows sample water to be filtered through one of 24 filter holders; 47 mm Ø (but filter holders can be switched out)
- Pump that measures volume filtered at a rate of ~50-125 ml/min (~10 psi = ~0.7 bar pressure)
- Triggered by date/time or by events/external signal
- Can use different types of filters (e.g., GF/F, polycarbonate membrane, etc.)
- Can take samples for chl a, POC/N/P, DNA/RNA, etc.
- Reagent bag/solenoid valve enables rinsing and storing samples temporarily in preservation or buffer solutions
- Antifouling rinsing feature

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Testing and restructuring the PPS for FerryBox implementation

NIVA – H2020-NautiIOS and NFR-NORSOOP



- Tested with 0.7 µm GF/F filters and 0.45 µm Isopore (polycarbonate) filters for volume filtered and recovery versus traditional benchtop vacuum filtration setup
- New external power cable installed to enable direct power supply instead of battery power
- PPS will be dismounted and reassembled in a less "vertical" setup and also placing the filter holders in a cooler (i.e., ~0 deg C) to help preserve samples until collection (under development)
- Hardware and software link will be made with a FerryBox system for water intake and sending signals for initiating sampling (e.g., geolocation or when high chl-a is measured by the FerryBox system)

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Way forward for the WASP – Water sampling, filtering & preservation device:

To be discussed and defined

1. Water sampling integrated to the Ferrybox to be demonstrated through Jerico with possible integration of some intelligence aspects from the cEGIM

2. Possible integration of Mclane PPS and Fluidion sample collection

Deliverables	Description	Delivery date	Actual month & year
D7.4	Prototype sensor packages and WASP	M36	Jan 2023
D7.7	Report on the technological specifications and benchmarking of the technological innovations (from task 7.2), in terms of new biological sensors, science-question targeted sensor packages and WASP	M44	September 2023

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Part of this work was supported by the JERICO-DS project. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153/951799.

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Pelagic Sensor Package for the integrated observation of plankton dynamics

Sensors involved in the demo activity

Luis Felipe Artigas, Alain Lefebvre, Simone Marini, Eric Delory, Dominique Durand, Catherine Boccadoro & colleagues from JERICO S3 WP4-WP5-WP7

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Rationale of the Pelagic Sensor Package (PSP)

- The aim of the *Pelagic Sensor Package (PSP) for the integrated observation of plankton dynamics* is to address plankton dynamics at High Frequency in a coastal system (the Bay of Seine, Eastern Channel) showing important sources of variability : megatidal semidiurnal regime, important nutrient and suspended particle loads, high hydrodynamics and anthropogenic pressure.

- We will combine already existing platform (SMILE coast-HF buoy) at surface and the coastal EGIM that will be placed at the bottom

- The demonstration activity within WP7 aims to show that the sensors installed onboard the cEGIM can be dynamically adapted through the intelligent services.

- We've relied on past and current JERICO-NEXT and JERICO-S3 experience on the implementation of plankton sensors in different platforms, raw data analytical tools and services (including A.I.)

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

PSP demo system at the SMILE Buoy (Bay of Seine English Channel)

Temperature
Conductivity
Oxygen
Turbidity
Chla (Fluorescence)
PAR

Pre-conception of the cEGIM
(source: IFREMER, A. Bocher, J. Blandin)

COSTOF-2 System

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

PSP demo system : list of variables & sensors

C-EGIM ports	Parameters	Sensors	Manufacturer	Sensor name	Provider (sub)surface ON BUOY	Provider cEGIM BOTTOM	Driver availability
Standard + Physics							
1	Conductivity/salinity, temp, depth	CTD	NKE MP7	Tetracon Sensor (WTW)	NKE MP7 (Coast HF)	NKE MP6 (Coast HF)	yes
3	Current speed and direction	ADCP		Nortek AWAC / Teledyne	NORTEK (Coast HF)	NKE MP6 (Coast HF)	yes
2	Dissolved O2	optical sensor	Aanderaa, JFE RINKO		NKE MP7 (Coast HF)	NKE MP6 (Coast HF)	yes
4	In vivo Chl a fluorescence	Fluorometer	Turner Designs	CYCLOPS 6 K Turner Designs	NKE MP7 (Coast HF)	NKE MP6 (Coast HF)	yes
5	Turbidity	optical sensor	SeaBird	Seapoint, turbidity meter	NKE MP7 (Coast HF)	NKE MP6 (Coast HF)	yes
6	Light		SAtlantic	SAtlantic Sensors (PAR)	SATLANTIC (Coast HF)	probably not (Pascal?)	yes
Biogeochemistry							
9	N, C, O biogeochemistry (nitrate, nitrite, BOD, COD, DOC/TOC, TSS	optical sensor UV	TRIOS / SYSTEA (WIZ)	OPUS / WIZ	WIZ (non connected)	yes - WIZ- who can provide?	yes (to be checked)
7	pCO2	Stable colorimetric reagent method	SUNBURST	SAMI-CO2 / Carioca	SAMI-CO2 (CNRS LOG? other provider?)	NO	yes
8	pH	Optode	OOT SENSEOCEAN	Seabird SeapHox	NKE-MP7	NO	yes
Biology							
9	Phytoplankton spectral groups and CDOM	Multispectral Fluorometer	BBE Moldaenke	FluoroProbe	Planned (CNRS LOG)	To be hired from bbe	Yes to adapt to the sensor type
10	PhytoPP – photophysiology & primary production (and spectral groups)	FRRF Fast repetition rate fluorometer	Chelsea Technologies	FastOcean APD Act 2	Already installed in SMILE FastOcean APD Act 2 –non connected		Driver to be developed
11	Phyto cell size (micro, nano, picoplankton) and optical groups	Automated pulse shape and imaging flow cytometer	Cytobuoy	CytoSub	Planned (CNRS LOG)	no	Driver to be developed
12	Zooplankton and large particles	Underwater vision profiler	Hydroptic	Self triggered particle sensor - UVP 6	no	CNRS LOV (L.Coppola)	Driver to be developed
12 bis	Particles, plankton, microplankton (< 200 µm)	imaging flow for particles, nano and microplankton	McLane	IFCB (Imaging Flow Cytobot) - Diatom, dinoflagellate	SMILE (CNRS-LOG/LOV, NIVA?)	no	Driver to be developed

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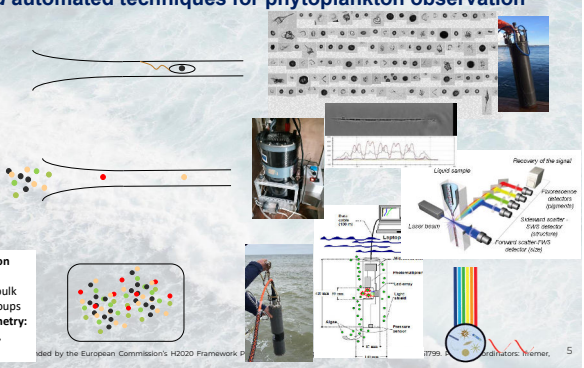
In vivo / in situ automated techniques for phytoplankton observation

Imaging/in flow
Single cell-size and morphology of organisms: taxa

Automated flow cytometry (pulse shape-recording)
Single cell-fluorescence – pigment content and scattering (size, shape): functional groups

Fluorescence and absorption (multi-spectral)
Pigment based methods – bulk properties – pigmentary groups
Variable (induced) fluorometry: photosynthetic parameters, primary productivity



The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework P… 871153/951799. Project coordinators: Ifremer, France.

Biological sensors planned to be deployed at the Demo PSP

A Fast Repetition Rate Fluorometer
Fast ACT2
Chelsea (U.K.)

Automated Flow Cytometer
CytoSub
CytoBuoy b.v. (NL)

Multispectral Fluorometer
Fluoroprobe
bbe Moldaenke (DE)

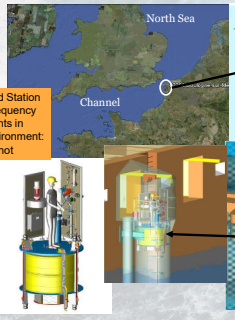
Underwater Vision Profiler
UVP6
Hydroptic (FR)

Imaging inflow *in situ* sensor
Imaging FlowCytobot
McLane Research Laboratories

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Towards high resolution monitoring of water quality in the eastern Channel …tests carried out at the MAREL Carnot instrumented station

Instrumented Station For High Frequency Measurements in Coastal Environment: MAREL Carnot



Demo site to implement nutrient and biological sensors
- Nutrient analyzer (WIZ)
- Multispectral fluorometer (AOA)
- Automated Flow Cytometer (CytoSub)

Link to **Smile Buoy** within the COAST-HF network

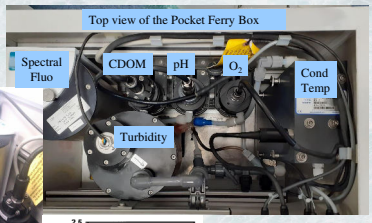
16 parameters
Seawater and Air temperature
Conductivity
Dissolved oxygen
Oxygen saturation
Turbidity
pH
P.A.R.
Fluorescence
Atmospheric pressure
Relative humidity
Wind speed & direction
Sea level
Nitrate
Phosphate
Silicate

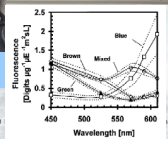
The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Towards high resolution monitoring of water quality in the eastern Channel …the « Pocket Ferry Box »

Portable device (<27 kg)
Easy power supply
Continuous measurements
Total time constant < 2 min
GPS

Algae Online Analyzer (AOA, bbe©)

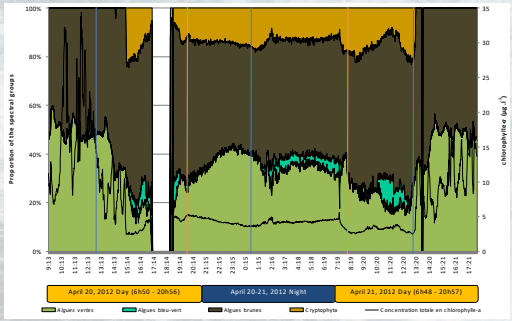




Mean fluorescence-excitation probabilities for 4 spectral algal groups (norm spectra) (Source : Beutler et al., 2002)

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

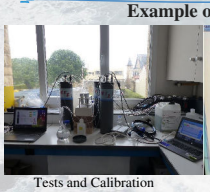
Multispectral fluorometry measurements Algae Online Analyzer (AOA, bbe Moldaenke)



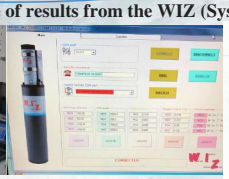
Detection of high spatial temporal changes in phytoplankton which could hardly be detected by employing discrete sampling strategies. Within a given environment, HFM highlight **changes in the 4 spectral phytoplankton groups**.

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

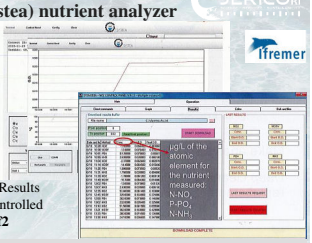
Example of results from the WIZ (Systea) nutrient analyzer



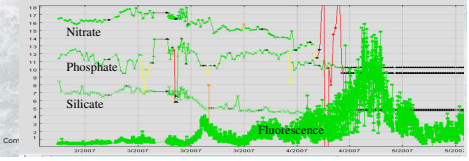
Tests and Calibration of the WIZ analyzer (Ifremer, Univ. Caen)



Control Panel and Results
Main steps to be controlled by the **Costof2**



⇒ Expected results:
nutrient dynamics (Nitrate, Phosphate, Silicate)
sampling frequency: 12 h



The JERICO-S3/DS projects are funded by the European Com… France.

Automated monitoring of phytoplankton abundance, biomass and diversity by the strait of Dover (English Channel)

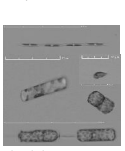
MAREL CARNOT AUTOMATED STATION

- High frequency data (every two hours)
- Automated station
- Parternship between the French State, FEDER, the regional council of Nord-Pas-de-Calais, IFREMER, ULCO and CNRS INSU
- CytoSub (Cytobuoy) automated flow cytometer phytoplankton monitoring (March26 – May 10, 2021)
- Visualisation of several phases of the spring bloom

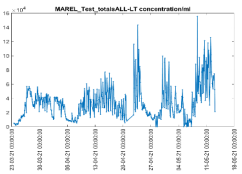
Satellite image of Boulogne-sur-Mer (Google Earth)

Preparing the CytoSub in the Marel Carnot station (C. Gallot & A. Epinoux)

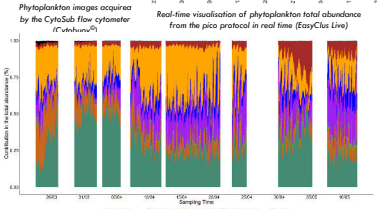
CytoSub deployed in a cage built by J.V. Facq (IFREMER) feeded by the MAREL Carnot pumping system



Phytoplankton images acquired by the CytoSub flow cytometer (Cytobuoy®)



Real-time visualisation of phytoplankton total abundance from the pico protocol in real time (EasyClus Live)



Contribution (%) of different groups to phytoplankton abundance –(CytoClus manual analysis) (K. Roboche, M.Sc. Thesis, 2021)

Activities to come on Demo PSP

- Some biological sensors will be installed both at sea surface and at seabed so we can switch it on/off or change their configuration and frequency of acquisition at the seabed and, if needed at the sea surface too.
- Other sensors on the seabed (e.g. salinity, temp, dissolved O2, *in vivo* chl-a) might be adjusted depending on some environmental conditions occurring at the sea surface or a the seabed.
- For the next step we will have to define which variables should be considered for detecting relevant differences (and/or threshold exceed/falls and/or regime changes) between the sea surface and the seabed and then which sensors have to be adjusted as function of the detected changes.
- Link to modeling and remote sensing products and services (i.e. EuroHAB)
- Last but not least, we need to consolidate the consortium of sensor providers/experts and to move forward with the connectivity and data transfer/visualization from land during the deployment process

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Thanks for your attention!

This work was supported by the JERICO-S3 and JERICO-DS project. These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153 / 951799.

Jerico-S3 WP7 – Task 7.6
In situ demonstration of sensor packages

- Task lead: PLOCAN
- Contributors / team members:
- IFREMER, UPC, 52North, NORCE, CNR

Task objectives and team

- Perform in-situ tests of the costal EGIM.
- Perform a validation at one Pilot Super Site (PSS) or Integrated Research Site (IRS)

- Team: PLOCAN, IFREMER, UPC, 52North, NORCE, CNR
- + sensor providers, Site operators

T7.2 and T7.3 → **T7.6.1** Sensor package preparation (M31-M36) → Tank and Shallow water testing → T7.4 (M36)

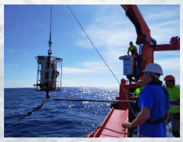
T7.6.2 Demonstration (M36-M48) → Exposition to Stakeholders PSS/IRS → WP10 (M48)

Progress towards milestones and deliverables

January 2023

MS41	Sensor packages and deployment sites prepared for demonstration mission	29 - PLOCAN	36	ST 7.6.1

D7.9 : Technological innovation demonstration report [46]
Report on demonstrations of sensor packages on JERICO infrastructure sites. The report will cover the preparation phase (pre-demo) and results from the demonstration.



SCIENCE CASES QUESTIONNAIRES_Central Page_[JERICO-S3 WP1]

Archivo Editar Ver Insertar Formato Datos Herramientas Extensiones Ayuda

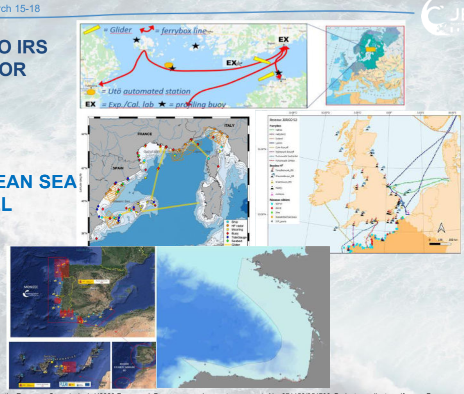
JERICO-S3_SCIENCE CASES QUESTIONNAIRE PER J-S3 REGION			
PSS North-West Mediterranean; NW-MED-PSS : CNRS	Laurent Coppola	coppola@obs-vlfr.fr	https://docs.google.com/document/d/1KcDYIE-2a07WeSEqk1Wf5AOIDQKJ7L78wLvOwJlvNQw/edit?usp=sharing
PSS Gulf of Finland, Baltic Sea; GoF-PSS : SYKE	Timo Tamminen Jukka Seppala	timo.tamminen@ymparisto.fi jukka.seppala@ymparisto.fi	https://docs.google.com/document/d/1n5jw7Vu4Ao6llafzy3W_rvDNpYJPnF7273cC0vNKEcU/edit?usp=sharing
PSS Cretan Sea; Cretan-PSS : HCMR	Constantin Frangoulis	cfrangoulis@hcmr.gr	https://docs.google.com/document/d/1Ql_rV0Y2hVy0K62HhW9D5r-cVETryx95p0Z-DoBfml8/edit?usp=sharing
PSS English Channel : IFREMER	Alain Lefebvre	Alain.Lefebvre@ifremer.fr	https://docs.google.com/document/d/1jQkkvq7xWqKs_lLoX25TSRh0Fy8Qikk3l6v8H6rNq0w/edit?usp=sharing
PSS North Sea-PSS : HZG	Holger Brix Klas Ove Moller	holger.brix@hzg.de klas.moeller@hzg.de	https://docs.google.com/document/d/1ROIGWtt2O75eiAhdZq6O4P3STe3FITla1ycrvGOMg1A/edit?usp=sharing
IRS Northern Adriatic Sea : OGS	Fabio Brunetti Rajesh Nair	fbrunetti@inogs.it rnair@inogs.it	https://docs.google.com/document/d/1okl9ZWEBe4XOBrX3lIFmVqZGiZEWBBkRa0xBMB4RKGY/edit?usp=sharing
IRS Iberian Atlantic Margin : IH	Joao Vitorino	joao.vitorino@hidrografico.pt	https://docs.google.com/document/d/1Sn7Ba4TUZ4j70O-Wh8pTV4lUkna21S1Ge1NvL1zDfu8/edit?usp=sharing
IRS Bay of Biscay : AZTI	Anna Rubio	arubio@azti.es	https://docs.google.com/document/d/17BVAv0vYNBDXUlxd5oUYdNMt-hR4O4gJ5ZoRglrq0pQ/edit?usp=sharing
IRS Kattegat-Skagerrak-Eastern North Sea : SMHI	Bengt Karlson	Bengt.Karlson@smhi.se	https://docs.google.com/document/d/1dS3bxnoGqbsStmSeHZ7qdUsOpLCla4Nn6lQF583nRig/edit?usp=sharing
IRS Norwegian Sea : IMR	Henning Wehde	henningw@hi.no	https://docs.google.com/document/d/1zoZRP-QtrdGvHWM5XbXWFTbxvc3XqoAGRFSMZJp4z4/edit?usp=sharing

PSS REGIONS	NW-MED	PSS-GOF/ Baltic Sea	CRETAN Sea	ENGLISH CHANNEL	NORTH SEA
TYPE of DEVICE	Glider / mooring	ICOS SOOP line / benthic lander	surface buoy	Stand-alone benthic lander and surface buoys	Profiling lander system
Access	Delayed	Operational / on demand	Operational	Operational / on demand	All
Atmospheric Variables			Yes	Yes	Yes- external
Sea surface variables (SST)			Yes		
Water col. Variables profiler	Yes	Yes		Yes	Yes
Biological variables	Yes	Yes		Yes	Yes
Chemical variables		Yes		Yes	Yes
INTEREST	5	4- 5	3	5	3
AVAILABLE SENSORS	UVP6 and GUARD cameras. Integrated	*T, S (SBE 45), O2 optode, pCO2, pCH4, pH, Chla and C-DOM. Co-located or Integrated*	None	COSTOF 2 system, Multispectral fluorometer benchtop (2), Multispectral fluorometer profiler (2), In situ imaging profiler (1), Automated Flow Cytometer – submersible (2), Automated Nutrient analyser (2), Fluorometer (2) and spectrophotometer (2)	None

IRS REGIONS	NORWEGIAN SEA	ADRIATIC SEA	IBERIAN MARGIN	BAY OF BISCAY	NORTH SEA
TYPE of DEVICE		surface buoy	surface buoy and mooring(water column)	Benthic station and surface buoy	
Access		Operational	Operational/ standalone	Operational	
Atmospheric Variables			Yes	Yes	
Sea surface variables (SST)			Yes	Yes	
Water col. Variables profiler			Yes	surface and bottom	
Biological variables			Yes		
Chemical variables			Yes	Yes	
INTEREST		3	5	nothing included	
AVAILABLE SENSORS		*None*	YSI-EXO PROBE (1)	COSTOF2 system, Automated Flow Cytometer – submersible (1)	

THREE PSS AND TWO IRS SELECTED BY SENSOR AVAILABILITY AND INTEREST:

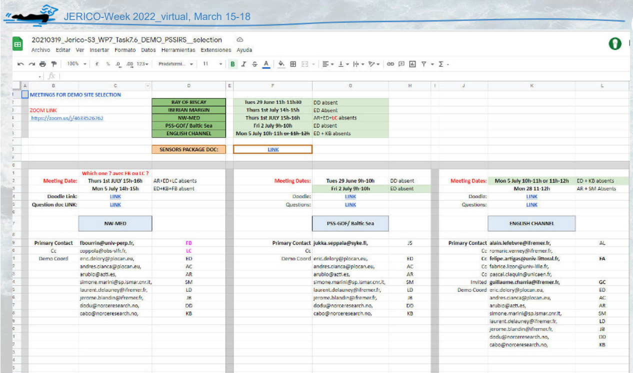
- GOF- BALTIC SEA
- NW MEDITERRANEAN SEA
- ENGLISH CHANNEL
- IBERIAN MARGIN
- BAY OF BISCAY



From first survey 5 sites preselected from expressed interest, 4-5/5

Site new questionnaires/ meetings to collect more information on

- Scientific Challenges
- Available sensors for CEGIM
  - Collocated
  - Connected
- Deployment type
- Logistics
- Timing
- Artificial Intelligence requirements



Criteria used – potential ones

- Ease of access for sampling and maintenance
- Number sensor availability to be connected
- Number of co-located sensors for
  - complementarity
  - intercomparison
- Impact on science + society
- Replicability

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PSS-GoF

***SC#1-* Intercomparison of performance of a biogeochemical multi-sensor package with high quality measurements on the ICOS SOOP line Finnmaid to assure consistency of data on the GoF PSS.**

SC#2- Benthic processes in the Gulf of Finland

SC#3- Shallow water reference station.

Relatively easy for maintenance

A large number of BCG sensors can be provided to connect to the EGIM in the ferryboat

- **Trios nano fluorometers** (Chl, PC, CDOM), **Chelsea Unilux (CHL, PE), Chelsea Vlux (CDOM/PAH)**, Aanderaa (O2), Wetlabs (CHL, turb), Contros (pCO2, methane), **Wetlabs (PO4)**
- **Iisst 200x, Iisst holo**, **Chelsea FRRF, Guard1 camera**
- Most interesting option (benthic) now more difficult as new logger already installed.

Interest in AI: HAB prognosis, high power sensors (methane, CO2) triggered base on O2 level, ferryboat based on coordinates, detection of thresholds and notify, intelligent triggering of a water sample on Ferrybox.

https://docs.google.com/document/d/1DMrKjdW8dfjuF2v5EGYBs7Rhf9BM4IQ-CRjO__OWnnc/edit

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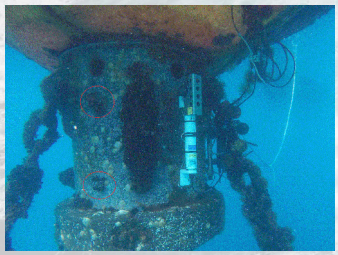
PSS NW Med



- ***SC#1- Riverine particle dynamics and behavior in the coastal area under extreme events***
- ***SC#2-* Northern current effects on plankton dynamics and transport**
- cEGIM at 3m depth (not midwater, not benthic) on EOL buoy in 80m water depth
- not clear if supported sensors are to be connected or co-located, probably both
- AI to turn on-off UVP6, they have questions on data transmission to be clarified with us. Interest also in river-sea continuum.

https://docs.google.com/document/d/1p76aZG1xgdleL6vhVSqLU75CUlxMHOW5gM1i2aSMxko/edit

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PSS English Channel

SC- Phytoplankton dynamics in two contrasted ecosystems of the English Channel: focus on eutrophication, incl. Harmful Algal Blooms causes and consequences.

- Spring (2023) - 5 months. Two options:

Two sites possible, SMILE buoy or pier (MAREL CARNOT with on-line connectivity), lots of BGC and biological sensors:

Multiparameter probe (Temp, salinity, fluorescence, turbidity, DO, pH) from NKE, PAR, ADCP.

Multispectral fluorometer, In situ imaging profiler, automated Flow Cytometer

Fast Repetition Rate fluorometer

AI includes IRS demo Bay of Biscay + adaptive sampling for longer periods, early warning for maintenance and preventing shellfish closure, connectivity is important if no embedded processing, also need preprocessing and enhanced visualisation, need more info to answer on IA question.

This is the only site that also proposes a practical application (aquaculture alerting) besides science.

https://docs.google.com/document/d/1xbw2TI6agzUNPiKDdLptCYr-osTx-f_kWAn4Pwq-rvo/edit

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IRS Iberian Margin

- ***SC#1-* From Open Ocean to Inner Shelf - Fast routes for biological connectivity/transport of invasive species from open ocean to inner shelf.**
- ***SC#2-* Canyon Boost - Processes promoting a rapid development of the trophic chain in the vicinity of submarine canyons.**
- ***SC#3-* NAO Impacts - Impacts of North Atlantic regimes on the fate and regional shift of fish stocks**

10 months period. 16-20 m depth covers three SCs on mooring.
Several ships available for maintenance

Sensors : some anderaa and maybe a UVP sensor could be available - not confirmed.

AI: if UVP available, automatic classification and adaptive sampling would be interesting for specific events surveying with small boats.

Connectivity is limited (satellite) but not impossible, to be discussed.

https://docs.google.com/document/d/1eNavU2gouLIywW4BoEKD_xdhX_ot124SI4h9XGMyLL8/edit

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IRS Bay of Biscay

- ***SC#1-* Impacts of atmospheric extreme events on coastal environment: hydrodynamics and plankton dynamics.**
- Morbihan gulf - MOLIT station - shallow water (15m-20m) benthic deployment - buoy to be equipped with costof2 in 2021
- Sensors: multi parameter probe(NKE) + PAR and maybe ADPC (TBC) - flow cytometer co-located
- AI: higher sampling rate during strong events (atmosphere or bloom) - transmission through mobile network. Adaptive config is interesting.
- Connectivity: remote rebooting of costof2 is essential today.

https://docs.google.com/document/d/1z1JcPkCmJpYgGgvOe8fwgz6AnrCO33N_KuTTDD2ECTE/edit

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

Selected site: **SMILE Buoy at EC**

Sensors:
Multiparameter probe (Temp, salinity, fluorescence, turbidity, DO, pH) from NKE, PAR, ADCP.
Multispectral fluorometer, **In situ imaging profiler**, **automated Flow Cytometer**
Fast Repetition Rate fluorometer

Suggested AI services:
extraction of biomass, abundance and diversity of phytoplankton, short term forecasting of HAB, switch on and off the sensors, sensor configuration change.
Good Costof2 experience on-site.
Impact on science+society: both science and societal (mariculture activities in the region)

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

THANKS FOR YOUR ATTENTION

Part of this work was supported by the JERICO-DS project. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153/951799.

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JERICO-Week 2022

Wrap-up and next steps

Friday, March 18

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

WRAP-UP : DAY 1 - STRATEGY DAY

JERICO-RI Science Strategy : Anna R., Antoine G.

STRATEGIC VISION

Key GUIDELINES for JERICO-RI Strategy

ESFRI almost successful but… time is passing by and landscape is changing.
Making and showing progress:
- *Comprehensive demonstrative actions*
- *Added value of a new pan-European RI.*
- *Improving implementation*

JERICO-RI science strategy regional implementation: main outcomes from JERICO-S3 D1.1

- *Aligning implementation with science strategy*
- *Equilibrium: central and regional levels*

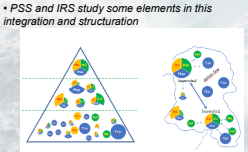
- *Best possible use of PSS and IRS*
- *Clarifying the structuration of the future RI*

REGIONAL LEVELS

Use PSS/IRS experiences when iterating structuration of JERICO-RI

- *Improving transfer of knowledge between PSS/IRS and connecting them more with J-S3/J-DS WPs*
- *Connecting with other partners*
- *Dissemination*

Regional and between region integration and structuration requires dialogue, coordination and commitment.
- *PSS and IRS study some elements in this integration and structuration*



CENTRAL LEVEL

Added value towards a European RI

- **Enhancing internal coherency and both internal and external interactions**
- **Existing actions**
  - *Trans National Access, Virtual Access*
  - *JERICO-core*
- **Possible other actions:**
  - Technology, products/indicators, modelling, transfer of expertise, best practices/interoperability…

But !!! **SHORT REALISTIC LIST!!!**

JERICO ACTIONS ONGOING

The JERICO-S3/DS projects are funded by the European Commission's H2020 Framework Programme under grant agreements No. 871153/951799. Project coordinators: Ifremer, France.

JERICO-RI Science Strategy : 5min discussion + JERICO-Days

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

Yes
- Focusing on long term sustainability and relevance. What can JERICO do that the world would miss if JERICO does not exist?-
- Interactions between JERICO-S3 and JERICO-DS in establishing the overall strategy
- Establishing the ground basis for the (nested) implementation of JERICO-RI

- Elaborating on interactions between PSSs and IRSs (following breakout sessions)
- …

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JERICO-RI Science Strategy : addressing the ESFRI review

BUSINESS CASE
2min - Kieran R. and Paul G.

- Highlighted the issues identified in the ESFRI evaluation in relation to the business case:
  - Weak business case, national financial commitments, in-kind contribution i, sustainability and reliance on project funding, funding for governance
- Use of groups to address these issues – Nations Committee, Business Development Group, Funding Working Group.
- Training course provided by the University of Milan on the JERICO RI Business Model development
  - In particular Webinar 5 on funding model and financial sustainability of JERICO RI
- Points discussed:
  - The proposed governance structure should be simplified and possibly separated into two segments
  - The cost of the proposed governance structure(s) should be estimated.

GOVERNANCE
Lucie C. - 2 min

The fact that JERICO esfri proposal was not accepted leaves us with a Challenge and an Opportunity :

The Challenge :
JERICI needs to find the right balance beween a :
- A tightened governance, focused on efficiency (Central HUB
- A open, dynamic creative, innovative community (Decentralized action

The opportunity :
- To strengthen our motivation : our community exists and structures itself without the support of funding -> ENGAGEMENT
- To be rigourous : we need to be efficient and to meet our (users) needs - > SERVICES

In order to gain sustainability, we need to start implementing a first version of the governance of the central hub.

The creation of a Jerico User Committee will be a stong help to :
- maximize the return on investment
- test the way we make decisions
- consolidate our identity

LABEL
Fabio B. - 2 min

Composition and mission of the JERICO Label Committee (JLC) needs to be consolidated.

Composition of the JLC => to prioritize the **scientific expertise** of the members.

JLC is open to anyone who wants to contribute.

The goal is to create an advisory working group able to setup the concept of JERICO Label. and propose the concept to the JERICO community.

The idea that emerged is that the JERICO Label has not to be a set of rigidly constraining rules, but rather an easy-to-use tool to monitor the maturity of an observational system, to have a plan for including new components and progressing toward higher levels of quality.

- Further meetings will be organized to develop the JERICO Label concept.

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JERICO-RI Science Strategy : addressing the ESFRI review

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

- JERICO Label: Yes, focused on JERICO Label Concept and a first draft of TOR document.

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JERICO-IDENTITY : 3min - Joao V., Vikki B.

- **Key messages to be revised** to present the new facts from JERICO-RI, to reinforce the statement of our unique DNA and of our singular position in the European RIs landscape, to include DTO, Sister RIs, Nations. (ESFRI proposal)

Next Steps:
- WP1 and WP2 to be approached by task to revise key messages
- Nations (JDS) to be approached to revise key messages

- Dissemination and Exploitation relies on sharing responsibility and close collaboration
- We have an ambitious DEP able to provide significant results if completed
- The **DEP** (D10.1) is available since Dec-2020 and presents Concrete Responsibility on Actions, with Contributions and Deadlines; **See how you are expected to contribute**

Next Steps:
- **WP2 community to be asked for inputs** about DEP implementation (started in session "JERICO and Other Ris"). Agreements with EPOS, BlueCloud and EMSO (use of EGIM) + collaborations with best practice systems already in place. **To be defined how partners developments will be disseminated and how material will be regularly updated**.
- **WP7** is a key source of JERICO KER (Key exploitable results). **Specific actions are to be taken to progress on KER's (Exploitation plan)** together with this WP. But also with WP5 (+ WP3/4) on Best practices, which is another KER area.

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JERICO-IDENTITY : 3min - Joao V., Vikki B.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

- Communication materials (update existing material vs increase option with new material)
- Articulation training workshops with other similar initiatives
-

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JERICO and other RIs : 3min - Holger B. / G. Petihakis

- **Need to adjust our communication / interaction strategy with other RIs** due to outcome of the ESFRI application
- Basis is our place in the RI landscape - overlaps, synergies, boundaries, communalities
- Concentration on **bilateral contacts**
- We need to become active and **establish contact this year (within the next six months?**), use existing contacts
- We need to **determine what we want from interaction** individually for each RI - need to prepare accordingly
  - What is their added value for us?
  - What added value provides JERICO for them?
  - Not competition: **Cooperation**
- **Learn from regional experiences of interaction** - what works, where are problems?
- In conversation with RIs concentrate on **how we can profit each other, define overlaps, explore synergies** (science and infrastructure)
- **Work towards MoUs** with RIs - added value towards an ESFRI
  - Demonstrate our willingness to cooperate
  - Should address both regional and central components
- **Prioritization of contacts**:
  - **Danubius** has highest priority
  - Differing opinion with regard to whom to contact (first/soon): Everyone vs. ICOS, EMSO, EMBRC, e-LTER, Lifewatch, AQUACOSM
- Pick up / intensify collaboration with the **satellite community**

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JERICO and other RIs : 3min - Holger B. / G. Petihakis

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

Mostly an update on progress of our efforts. Not necessarily the need for a dedicated session.

From Carlo / Julien:
Look at collaborations that reach beyond science information - consider those that support our infrastructure needs. This include FAIR (of course), but much more.-
-Expand JERICO as the leader in coastal best practices as part of our long term branding
→ Expected contribution from WP5: Presentation of the handbook (D5.2)
→ WP5 Plan for reinforcing the link between the Technical Steering Groups of JERICO-S3 and the EuroGOOS Task Teams

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ALL REGIONS WORKSHOP, PSS and IRS : 2min each - Jukka S., Andrew K.

WP4 PSS updates

- D4.2 (**refined strategies**) and D4.3 (**1st year implementation progress**) are **under review** by coordination
- D4.2 and D4.3 offer info of **PSSs linking with other WPs and partnership building with RIs and other communities**
- Integration within PSSs show progress, but also **challenges found** (which is also progress!), many common to all PSSs
- For integration between PSSs, with IRSs, other WPs and initiatives, **thematic WSs suggested**, with active participation throughout partnership
- **Collaboration with J-S3/J-DS WPs** to be intensified.

WP3 IRS updates

- **Road maps have been made** for each IRS
- IRSs will work towards **road map objectives and revise as needed**
- **Collaborate (bilaterally) with other WPs** where needed
- **Begin IRS-PSS integration** starting with breakout discussions with IRS-PSSs arranged roughly by adjacent regions; **pick up further in JERICO-DAYS.**
- Breakouts primarily began to address **common scientific themes** that are common between IRS-PSSs
- Some **discussion related to what PSSs can learn from IRSs**, and vice versa. I.e., challenges related to operations and challenges related to structure/organization, respectively

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ALL REGIONS WORKSHOP, PSS and IRS : 2min each - Jukka S., Andrew K.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

IRS-PSS integration - this is like putting a flag on the territory to wave off others. The map with all of theme shown is powerful and we should make it real.
Thematic session to be planned, for carbonate with WP6
-

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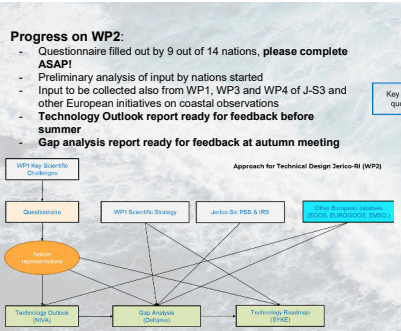
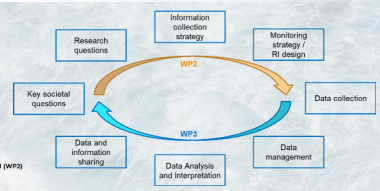
WORKSHOP ON TECHNOLOGY GAP ANALYSIS : 2min, Anouk B.

Progress on WP2:
- Questionnaire filled out by 9 out of 14 nations, **please complete ASAP!**
- Preliminary analysis of input by nations started
- Input to be collected also from WP1, WP3 and WP4 of J-S3 and other European initiatives on coastal observations
- **Technology Outlook report ready for feedback before summer**
- **Gap analysis report ready for feedback at autumn meeting**





Stepwise approach
- towards Technology Outlook follows information cycle (figure above)
- Gap analysis takes into account what Jerico should add on top of existing monitoring from other initiatives (other ERICs, policy oriented monitoring) to reach infrastructure described in Technology Outlook.

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WORKSHOP ON TECHNOLOGY GAP ANALYSIS : 2min, Anouk B.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

- Yes, to present and discuss the outcome of task 2.1: the Technology Outlook
-
-

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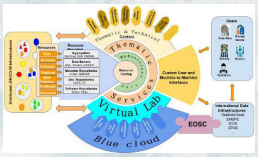
JERICO-CORE : 2min, Jay P, Miguel C.

Current and Near-Term JERICO-CORE

- Major advances in bringing together diverse resources into a coherent and accessible CORE
- Transition to Initial operating capability and WP11 will be soon. The next step is beta testing and refining capabilities. *JERICO partners are asked to volunteer as testers.*
- Data to Products Thematic Services cover four areas: HF radar, gliders/water mass transport, BGC in the Gulf of Finland and plankton/ECOTAXA.
- Integrated Services for transboundary flows, extreme weather events and climate will involve multiple IRS/PSS is being led by IH Portugal. *Further collaboration would be highly beneficial.*
- Blue Cloud provides the J-CORE VRE. It is working. *JERICO needs to use it more broadly. Suggestions welcome*
- Metrics for J-CORE use are developing through WP11 and will be applied as J-CORE traditions to WP11.
- *JERICO-CORE is part of the foundation for the RI, offering key capabilities and branding for the RI*



JERICO-CORE Evolution

- Survey from J-DS on J-CORE requirements gives new insights for evolution of the current development and IOC.
- Key areas are real time data/information access, security, access policy, metrics, distributed resources catalogue, thematic & technical centres, thematic services, virtual labs and more.
- Proposal to Ocean Decade (for CoastPredict) for broader impact globally; teaming with major information resources. *Resources for this need to be defined (outside of JERICO).*

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JERICO-Core : 2 min, Jay P, Miguel C.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

Yes!

- Demonstration and lessons learned based on testers
- Define methods and procedures to collect feedback
- Discussion on next steps with J-CORE

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DATA MANAGEMENT : 3min Patricia M-C.

The tasks performed under WP6- Subtask 6.3.1 are presented:

- The goal of this task was to deliver Best Practices for Imaging Data D6.4. A summary of these and the methods to get there were presented. That includes the creation of vocabularies, the adoption of the DwC format for imaging data with an example on how to fill in the tables.
- For this work, we developed a data flow, from Instrument to OBIS, classifying the images in EcoTaxa. A practical example on how to follow this workflow (image on the right) is presented by Jean-Olivier Irisson (LOV)
- A summary of the current scape in data management practices for imagery is presented by Fabien Lombard (LOV). Future actions and long term plans are discussed. A call is made to write a communal paper (in a special edition of Frontiers in Marine Science) that is general for imagery and includes the whole flow from sample acquisition to data published in international repositories.

IMAGERY DATA FLOW

This workflow from instrument to EMODnet Biology and OBIS involves several steps to classify the images in EcoTaxa, to export this data in DwC format to be uploaded in IPT, quality checked in BioCheck and harvested in EurOBIS database, where data automatically flow to european and international biodiversity data portals (EMODnet and OBIS)

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DATA MANAGEMENT : 3min Patricia M-C.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

- There was an interest in using the workflow presented. For this several questions raised about the automatization of some parts of this flow or the reason of aggregating the data to a higher taxon to report concentrations
- Discussion about how to use this workflow for flowcam with groups (ciliates) -> There is already lots of data from FlowCam in EcoTaxa
- Discussion about how to include traits in this dataflow -> There are already traits in WoRMS taxonomic database, this can be included with the use of the eMoF table.
- Some attendants contacted Patricia with the interest to review the best practices with the intention of apply this workflows in their pipelines.

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

We don't know at this moment. The work of this task is concluded at this point.

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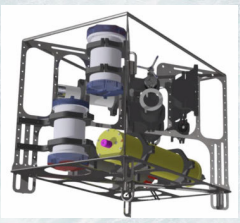
JERICO DEMONSTRATORS, C-EGIM and beyond : 3min - Eric D., Simone M.

- Demo site has been selected, (EC PSS - SMILE buoy) - 2 costof2
- acoustic and 4G communication for real-time communication planned from underwater module
- Available sensors have been shortlisted covering physics, BGC, biology
- Tests and pre-demo to take place in Brittany
- Demo missions task team to be consolidated
- Self-awareness under definition according to sensor and data availability (training)

Urgent matters:

- Resolve AI services definition
- Confirm mobilisation of sensors for the test, pre-demo and demo period



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JERICO DEMONSTRATORS, C-EGIM and beyond : 3min - Eric D., Simone M.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

- Interest in the production of a S&T paper based on demo preparation and results
- ACOBS future connection (post-Jerico-S3)
- WASP (Ferrybox, maybe also at demo site, test of different preservatives)
- Objectives to be adapted vs available resources in the project

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

Yes, tentative action items/agenda:

- Discuss real-time sensor observation service for J-CORE
- Demo team mobilisation
- Test, Pre-demo, and Demo mission planning
- Paper writing team, paper outline, assignments
- AOB, e.g. KERs

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TRANSNATIONAL ACCESS
2min - Paul G., Alan B.

Action: to consider options for remaining TA budget after 3rd TA call is completed.

Option 1: 4th TA call open Oct/Nov 2022

Option 2: Open call until Spring 2023 - see aquacosm approach https://ta.aquacosm.eu/
Need to ensure Evaluation Panels are available.

Note : All TA Projects must be completed by September 2023

Other comments:

Consider TA for Training & Capacity Development ?

Expand 'Facility of the Week' to include webinar or dedicated outreach platform for a Facility to showcase its capabilities.

STATUS ON USERS
2min - Lucie C., Inga L.

A user-oriented approach is a way of thinking

It requires to question ourselves and to take (endorse) collective strategies

as the analysis of users and needs will evolve continuously

As JERICO community is the first internal user of the RI

Next steps :

- ✓ Early April - WP9 meeting dedicated to JUC - Open to all
- ✓ Mid april - invitation to JUC Members to a First JUC Meeting (to be held during the last J-DAY)
- ✓ J-DAYS : Preparation of the JUC Meeting in link other WPS + fine tuning during first J-Days

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TRANSNATIONAL ACCESS
2min - Paul G., Alan B.

STATUS ON USERS
2min - Lucie C., Inga L.

1. GENERAL DISCUSSION, WHAT DID THE AUDIENCE THINK ABOUT THE SESSION ? ANY QUESTION OR COMMENT ?

2. WOULD YOU LIKE TO PLAN A FOLLOW-UP SESSION DURING THE JERICO-DAYS ?

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FINAL WORD ON THIS JERICO-WEEK 2022 : Laurent D., Coordination

WHAT'S NEXT ? JERICO-DAYS END OF JUNE, WHAT DO WE NEED ? » see next slide for agenda ideas

COORDINATION and COMMITTEES

- Steering Committee meeting ("full" SC planned in June, good coincidence) // STAC meeting // JERICO User Committee meeting

STRATEGY

- Focusing on long term sustainability and relevance. What can JERICO do that the world would miss if JERICO does not exist?
- Establishing ground basis for the (nested) implementation of JERICO-RI
- Elaborating on interactions between PSSs and IRSs (following breakout sessions)
- JERICO Label: Yes, focused on JERICO Label Concept and a first draft of TOR document.

COMMUNICATION

- Communication materials (update existing material vs increase option with new material)
- Articulation training workshops with other similar initiatives

OTHER RIs

- Look at collaborations that reach beyond science information - consider those that support our infrastructure needs. This include FAIR (of course), but much more.-
- Expand JERICO as the leader in coastal best practices as part of our long term branding

REGIONS

- IRS-PSS integration - this is like putting a flag on the territory to wave off others. The map with all of theme shown is powerful and we should make it real.

JERICO-Core, Demo

- JERICO-CORE session
- DEMO
  - Discuss real-time sensor observation service for J-CORE
  - Demo team mobilisation
  - Test, Pre-demo, and Demo mission planning
  - Paper writing team, paper outline, assignments

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SC meeting -- half-day before the J-Days ? Monday June 27th, morning ? Restricted STAC meeting in the afternoon ?	Monday June 27
JERICO-DAYS : 28-29-30 JUNE 2022 (location to be confirmed later)	**3 FULL DAYS**
JERICO outreach, interactions, access to the RI	**Full day : 8h total**
→ Presentation of Communication **material** in real time → Expand JERICO as the leader in coastal best practices as part of our long term **branding**	2-4 hours
Other RIs ; Look at **collaborations that reach beyond science information** → Expected contribution from WP5: Presentation of the handbook (D5.2) → WP5 Plan for reinforcing the link between the Technical Steering Groups of JERICO-S3 and the EuroGOOS Task Teams	2 hours
JERICO-Core session : Demonstration and lessons learned based on testers // Define methods and procedures to collect feedback // Next steps	2h ?
Addressing possible IPR aspects/issue related to KER (exploitation plan). I am thinking, to start with, about PSPD, ACOBS, WASP, JERICO-CORE and more is needed. possibly part to a special session in June (WP10, WP7, WP67)	
Strategy sessions : one day total, 8h to be shared between thematics	**Full day : 8h total**
→ **Strategy 1 :** Focusing on long term sustainability and relevance. What can JERICO do that the world would miss if JERICO does not exist? → **Strategy 2 :** Establishing ground basis for the (nested) implementation of JERICO-RI **+ 2 OTHER SESSIONS ? to that needed, relevant ?**	2h x4
REGIONS : PSS-IRS integration and common thematic discussions	**Half day : 4h**
Regions-specific workshop to continue discussions from breakout during JWeek (that were too short !) → define common thematics ? **Planting the flag** !	2 hours ?
Thematic discussions: → Carbonate system WS involving WP6, 3, 4 → PSS / IRS Data FAIRness → Theme 3 ?	2 hours
Parallel smaller meetings to fit specific tasks needs ?	**Half-day : 4h**
DEMO workshop : Discuss real-time sensor observation service for J-CORE // Demo team mobilisation // Test, Pre-demo, and Demo mission planning // Paper writing team, paper outline, assignments	
Technology design, results from questionnaire, advancing technology gap analysis → present and discuss with JERICO-Consortium	2 hours
Others ? → STAC restitution after the J-Days : 1 hour ? (including a plenary discussion ?) → Conclusion from Coordination ?	1h +
JERICO-User Committee meeting on Friday July 1, morning ?	Half day ?

This work was supported by the JERICO-S3 and JERICO-DS project. These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 871153 / 951799.

JERICO-RI Science Strategy Meeting - STRATEGIC VISION_2

Perspectives from IRS/PSSs

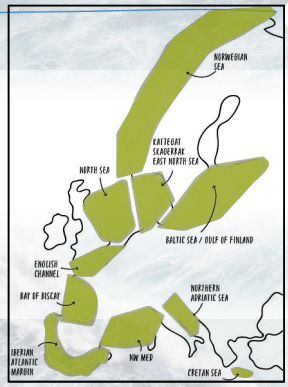
Brief recap of IRSs and PSSs

WP3 Integrated Regional Sites: *"...organize, harmonize, and integrate existing coastal observing activities and initiatives within regions and between regions..."*

5 regions - Norwegian Sea, Kattegat-Skagerrak-Eastern North Sea, Bay of Biscay, Iberian Atlantic Margin, and Northern Adriatic Sea

WP4 Pilot Supersites: *"...provide a proof of concept and feasibility for JERICO-RI Supersites designed for European coastal seas..."*

4 sites - Gulf of Finland, North Sea/English Channel, NW Mediterranean Sea, Cretan Sea



First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Recommendations concerning the period covered by the report:

- ➢ D3.1 was not particularly well-organized – the information was included but was confusing to read, and some information was repeated.

- D3.1 is planned as a working document that gives an insight into the initial state of the analysis and summary of region specific and region wide monitoring strategies and regional sustainability plans.
- The document reflects that in this initial phase of the analysis the IRS documentation of their respective monitoring strategies and sustainability plans are not yet harmonised, nor completed to the full extent of their possible integration.
- The analysis and summary of region-specific and region-wide monitoring strategies and regional sustainability plans will be improved, further structurized, harmonised and integrated through the further work of WP3 and will be presented in its final form through the delivery of D3.2, which will reflect the progress achieved through JERICO-S3.
- The harmonisation and in particular the formalisation of regional integration at various levels is the overall aim and goal of WP3

First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Recommendations concerning future work,

- ➢ Concentrate ...on making connections with other potential partners in the IRSs and PSSs....At the moment, it seems like these connections are developing, but need to be transformed into formal collaborations and more open access.
- ➢ Bring in RIs and other observatories and platforms who are not partners in JERICO but are involved in PSS and IRS regions should also be a focus, as a user base, as partners, as a way to make national connections, etc.

- WP3 : This is in the roadmap plan for each IRS - to identify and reach out to non-JERICO-RI coastal observing actors and RIs. "Integration" is one of the primary objectives of WP3.
- WP4: Regional connections within PSSs and each PSS Action are described both "Users of results" and "Other data sources and external partners for implementation" in their implementation plan (D4.1).
- What is clearly and arguably missing is strategic overall planning on how these connections should be developed and optimised.
- We consider that coordinated action to connect to other partners is not only a task for JERICO-S3 WP3&4
- Activities in WP2 will support identifying potential partners

First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Recommendations concerning future work,

- ➢ Focus on a concrete plan to create frameworks across nations that will be in place before the project ends and can be implemented/followed for years to come (such as the formal organization and funding noted in D3.1 for all IRSs). There should be sustained focus on connections between the PSSs. D3.1 and D4.1 discuss the need for these connections at length, but because they are so critical, that is the aspect that needs progress. Progress at the institutional or even regional level, while valuable, is unlikely to make the needed leaps forward.

- WP3: Each IRS has, for the most part, in their roadmap document the plan to develop frameworks (at least in the form of an MoU) across nations/institutes, but depending on the outcome of WP9, these frameworks have the possibility to become more formal.
- WP4: This "plan to create framework" is very much what we do in JERICO-DS, bringing the experiences gained during networking phase (JERICO-S3) further and making actual plans how the whole "JERICO-RI framework" should be constructed
- The need for sustained connections between PSSs has been noted. It was not given explicitly a large emphasis in DoA, but sharing both general and very specific details important. Some of such integrative work is done within other WPs, by harvesting PSS experiences and opinions. During the review of the work of PSSs (D4.2 and D4.3) improving the between PSS connections has been noted as one of major development points in WP4. The needs for connections have been identified at the level of individual PSS actions, at the level of some thematic topics and at the whole PSS concept level. As PSS implementation is at the moment mid-way, these between PSS connections are emphasised in the remaining period.

First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Is the progress reported in line with objectives and work plan as specified in the DoA?

WP 1:

- ➢ D1.1 recognizes that IRSs require additional transnational coordination.
- ➢ It also notes the risk that the maturity level of the PSSs and IRSs may actually widen through the course of the project, and that the sites will work independently rather than in a collaborative fashion

- WP1: both PSS and IRS should serve as proofs of concept for regional integration, transnational governance, and collaboration. In order to mitigate the risk that PSS and IRS work too independently from one another, specific attention will be made during the second half of the project to increase communication between regions and to promote the implementation of centralised actions to ensure they efficiently address both specific and key Scientific Challenges, in coherence with the JERICO-RI Scientific strategy.
- WP3: Transnational coordination in IRSs is already in place and will hopefully strengthen through the activities in the coming years. Ideally the sites should work independently AND collaboratively with other sites.
- WP4: there may be a slight misinterpretation of IRSs and PSSs, as the latter do not necessarily represent a whole region, but experiment the transnational and multiplatform observatories within some pre-selected regions. IRSs in turn study regional integration from a more conceptual point of view. We expect that jointly these studies will provide JERICO-Ri information on how observation strategies need to be improved. But certainly we need to improve communication between PSSs and IRSs a lot during the second half of the project.

First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Is the progress reported in line with objectives and work plan as specified in the DoA?

WP 3: Integrated Regional Sites

- ➢ The progress in this work package is in line with the objectives.
- ➢ Progress on the IRS sites is good, leveraging previous monitoring infrastructures. More progress can be made on integrating additional monitoring capacity.
- ➢ Progress thus far has been informal collaboration; not been formal collaborations created among governments, which may hinder transnational collaboration and access
- ➢ How groups are planning to work with other groups beyond their initial partners, especially in areas where other groups have significant infrastructure that could add value to the project
- ➢ There were no mitigating factors or corrective actions listed.

- ...
- ...

First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Is the progress reported in line with objectives and work plan as specified in the DoA?

WP 4: Pilot Supersites for innovative coastal monitoring

- ➢ The progress in this work package is in line with the objectives.
- ➢ WP4.1 was very detailed and thorough, with good explanations of how this part of the project plans to accomplish its goals.
- ➢ The description of the regional role of the PSS is well thought out, with a thorough analysis of the key scientific challenges for each site.
- ➢ One concern is the transnational and transinstitutional organization at each site, which will need to be advanced in order to be successful.
- ➢ There were no mitigating factors or corrective actions listed.

First periodic report - comments related to WP3 IRS & WP4 PSS

GENERAL PROJECT REVIEW CONSOLIDATED REPORT; Are the critical implementation risks and mitigation actions described in the DoA still relevant?

➢ There is a risk that the PSS and IRS sites will work independently rather than in a collaborative fashion. This risk should be noted in the critical risks section and mitigated to ensure the success of the project.

- WP4:
- PSSs purpose is partly to study and experiment some transnational and multiplatform issues regionally first, prior their implementation in all regions. Thus, the intergrative work comes later
- Of course we may say that YES, isolation is a risk, we have mitigated it by having joint WSs within PSSs and presenting our work to other WPs for review. And identified needs to include more between PSS activities.

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Proposed way forward for IRS/PSS

- IRS/PSS breakouts to discuss collaborative topics (Wednesday afternoon, followed by JERICO-Days workshop in Tallinn (summer 2022)
- WP4 propose several thematic sessions jointly with PSS, IRS and other WPs (to be discussed and defined on Wed afternoon)
- PSS and IRS are not permanent structures, but rather short term studies to be conducted within JERICO-S3. Especially WP1 and WP9, but as well other WPs and JERICO-DS are expected to harvest from PSS and IRS experiences. How to best achieve this?

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IRS/PSS contribution to JERICO-DS WP2 - Technical Design

- JERICO-S3 WP1 has task for long term vision for JERICO-RI incl. Technological foresight
- JERICO-DS WP2 builds a technical design for an operational JERICO-RI

Both need to harvest from PSS and IRS

These collaboration have been initiated, but not yet realised.

In J-DS WP2, we have a WS on technology Gap Analysis on Thursday, also having first input from PSSs and IRSs .

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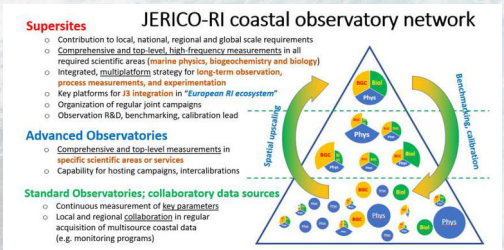
IRS/PSS contribution to JERICO-DS WP2 - Technical Design

- how PSSs provide support for long-term technology planning of JERICO-RI.

After PSS period, we need to (re)evaluate coastal Supersite criteria and analyse if this will provide benefits for JERICO-RI



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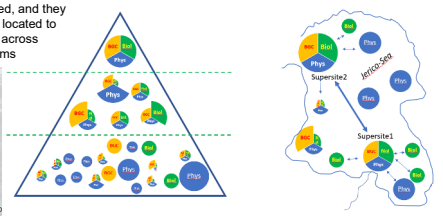
All PSSs provide a bit different view how Supersite may look like.

The spatio-temporal scale of Supersites must cover the phenomena studied, and they must be optimally located to allow comparison across different ecosystems

SuperSite vs. Region



Supersites: holistic and top-level high-frequency measurements in all required scientific areas, using integrated multiplatform strategy for long-term observations
Advanced observatories: comprehensive and top-level measurements in specific scientific areas or services.
Standard observatories: continuous measurements of some key parameters, often for local or regional needs.
All observational levels are needed, they have complementary roles and their differences are not always obvious.

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Table 1. Criteria for JERICO-RI Pilot Supersites and those for final JERICO-RI Supersites

Criterion	PILOT Supersite	Supersite
Specific environmental characteristics and/or society needs	Existing	Well defined and addressed
Multi-platform at high spatial density Multi-scale coverage up to mesoscale	Existing capacity	Coverage at required resolution
Multi-interface coverage (land-sea, air-sea, offshore-coastal, pelagic-seafloor)	Existing capacity	Full coverage via well-established links to other RIs
Multi-variable coverage (EOVs and EBVs)	EOVs at coverage higher than surrounding areas	EOVs and EBVs at required resolution
Multi-disciplinary and interdisciplinary activities with scientific excellence	Existing	Joint with other (sites, RIs etc) and enhanced via Supersite approach
Generic platforms with capacity to adopt new technology	Existing	Valid for all platforms
Shared, synoptic, interoperable, and openly available biological, biogeochemical, and physical data. Data delivery to International (EU) portals	Partly operational delivery for most variables	Operational delivery for all variables
Products	Existing and delivered to international portals	With a Supersite added value. Joint products with other Supersites, initiatives and RIs
Local, national, regional and global requirements	Capacity to apply at four levels	Common and well-established themes driven by science and society. Addressing all levels via links to other RIs
Centralised and harmonised management	Within PSS (optional)	Well established within and between Supersites
Sharing of platforms, equipment, knowledge, products, tools, services	Existing	Centralised management and well-defined conditions
Common mission design and implementation	Existing (optional)	Well established
Transnational and/or Transinstitutional character	Mandatory, if necessary, to obtain full spatial and variable coverage	
Procedures and practices	Existing within the PSS	Harmonised and fully documented and common with other Supersites
Dissemination	Existing plan at PSS level (optional)	Well established strategy among Supersites with joint products
Supersite is part of one or several National RIs	Established or under a National roadmap	Established National RI
Communication between Supersites	Existing (Optional)	Well established
Communication with Integrated Regional Sites (IRS)	Existing (Optional)	Fully established at least with geographically adjacent IRSs
Links with marine, river, terrestrial, atmospheric RIs	Existing (Optional)	Well established. Joint products
Links with Remote Sensing community	Existing	Well established. Joint products
Links with Operational Modelling community	Existing	Well established. Joint products
Trans-sectoral links (Coastal SMEs)	Existing (Optional)	Well established partnerships
Connections to Local and Regional monitoring programs	Existing (Optional)	Well established
Links to Services/Initiatives (CMEMS, EMODnet, WOOS, GEO, ...)	Existing	Well established. Joint products

IRS/PSS contribution to JERICO-DS WP2 - Technical Design

- how PSSs provide support for long-term technology planning of JERICO-RI.

After PSS period, we need to (re)evaluate coastal Supersite criteria and analyse if this will provide benefits for JERICO-RI.

What are the elements required? [KSC, variables, platforms, supporting structures]
How managed? [requirements, capacities, practicalities]
How linked? [between sites/regions, other RI, local and regional connections]

Partly analysed in J-DS WP2.

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