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JERICO-S3 D11.3 Second Report on VA JERICO Resources Access Statistics and Service Provision

DELIVERABLE NUMBER: **D11.3**

WORK PACKAGE N° and NAME: WP11 - VA: Virtual Access

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1. EXECUTIVE SUMMARY

This document presents the second report on **Virtual Access (VA) JERICO Resources Access Statistics and Service Provision**, within the framework of the JERICO-S3 project. VA plays a pivotal role in enabling remote access (i.e. Virtual Access) to computational resources, data, information and specialized software tools, thereby advancing coastal ocean research. Under the JERICO initiative, efforts have been made to standardize methods, collaborate, and develop platforms facilitating remote access to coastal observatories and research infrastructure.

JERICO-S3 Work Package 11 (WP11) serves as the financial instrument for reimbursing access provisioning costs and promoting the sharing of research infrastructures. The project has focused on expanding VA benefits for the coastal community, particularly through the development of the **JERICO Coastal Ocean Resource Environment (JERICO-CORE),** a pilot of e-JERICO, the JERICO e-infrastructure facilitating access to resources, data, and services.

This report evaluates the current status of VA services within WP11, assessing usage metrics, operational aspects of JERICO-CORE, advancements in the **Virtual Access Metrics System (VAMS),** and outreach activities. Notable improvements include, as well, the integration of new VA infrastructures. The report also outlines limitations and future plans for VA infrastructure, emphasizing the integration of the Resources Catalog into Blue-Cloud, statistical analysis, and collaboration with external projects.

Outreach activities have played a crucial role in promoting VA services, with workshops, social media engagement, and press releases being key strategies. These efforts have targeted diverse audiences, including the science community, the general public, industry, and civil sectors, fostering wider engagement and understanding of VA benefits.

Furthermore, the report recaps the contributions of the Expert Panel in 2022 in evaluating VA services (see D11.2[1]) and shaping the project's trajectory. Their first assessments have been instrumental in refining VA offerings and guiding future developments.

In conclusion, the second report on VA JERICO Resources Access Statistics and Service Provision underscores the project's commitment to continuous improvement and collaboration. Through evaluation, outreach, and expert insights, WP11 enhanced

[1] https://www.jerico-ri.eu/download/jerico-s3_deliverables/DL11.2-JERICO-S3-VA-Intermediate-Report-from-External-International-Board-FINAL.pdf

accessibility, utilization, and impact of VA resources, driving innovation and excellence in coastal ocean research.

2. INTRODUCTION

Virtual Access (VA), a key concept in research, enables remote access (i.e. Virtual Access) to computational resources, data, information and specialized software tools. It eliminates the need for researchers and JERICO users to be physically present at specific locations or set up their computing infrastructure.

JERICO-NEXT and JERICO-S3, projects under the Joint European Research Infrastructure for Coastal Observatories (JERICO), have significantly advanced VA capabilities in coastal ocean research. To standardize methods, align efforts, and collaborate, these projects have developed platforms and tools to facilitate remote access to coastal observatories, data, and specialized research infrastructure.

Furthermore, JERICO-S3 WP11 serves as the financial instrument for reimbursing access provisioning costs to access providers. A VA work package is provided by the European Commission as a tool to promote the sharing of research infrastructures and services that would otherwise be unavailable to international user groups.

Moreover, a list of already existing VA infrastructures capable of hosting a variety of VA services has been selected to receive financial support. These VA infrastructures must provide free and open access to researchers through communication networks, without any selection criteria imposed on the researchers granted access. Furthermore, the list of the VA Infrastractures from all partners can be viewed in **Annexe 1**.

In this context, access metrics play a crucial role in assessing user access to research resources, and providing quantitative assessments of their dissemination. These metrics enable providers to evaluate the fitness for use of their VA and make informed decisions to improve their dissemination strategies based on user needs.

Additionally, JERICO-S3 has focused on expanding the benefits of VA for the coastal community by enhancing different aspects explained in the next few paragraphs.

In particular, the JERICO-S3 project has undertaken a significant effort in the context of VA through Task 7.5 (T7.5) to create a pilot of the e-JERICO virtual e-infrastructure. This pilot e-infrastructure, named JERICO **C**oastal **O**cean **R**esource **E**nvironment (JERICO-**CORE**),

enables the unique point of access to all the resources such as data, products, services, best practices, VRE tools, platforms, and e-libraries.

The assessment of these VA infrastructures was conducted in two phases. The first phase happened during the first 19 months and resulted in deliverables D11.1 and D11.2 which included an assessment of the usage of VA services using respectively metrics of the access and the assessment of an evaluation panel. In this first phase, the **Virtual Access Metrics System (VAMS)** was designed and implemented to facilitate the evaluation of VA and explore solutions to integrate VA assessment to JERICO-CORE in the long term. D11.1 explains VAMS as well as the JERICO-CORE conceptual framework.

JERICO-S3 WP11 continues to ensure access to existing JERICO VAs and additionally operates JERICO-CORE to maximize the benefits of VA experience for researchers in the coastal ocean domain. By assessing the achievements and challenges encountered during the 47 months of the JERICO-S3 project (from February 2020 to December 2023), this report studies how the impact and interest of each VA service have evolved after the first evaluation in month 19 of JERICO-S3.

The second phase mirrors the initial approach. This document (D11.3) provides a comprehensive evaluation of the current status of the VA services in WP11 that will be followed by a second review of the expert panel that will be documented in D11.4.

Section 3.1 summarizes the outcomes of the first phase (D11.1 & D11.2), offering valuable insights derived from the initial evaluation process. It delves into the detailed analysis of WP11 metrics, panel assessments, and outreach activities.

Section 3.2 focuses on the main aspects of this evaluation phase by explaining the current state of the VA infrastructure, emphasizing the operational aspects of JERICO-CORE and the advancements made to VAMS since the initial evaluation of the expert panel. In particular, it examines the proactive measures undertaken by the VA partners to address the recommendations put forth in the D11.2 deliverable.

Section 3.3 presents a comprehensive report on the outreach activities undertaken in conjunction with the VA initiative. Finally, section 3.4 recapitulates the VA assessment process by the Expert Panel.

3. MAIN REPORT

The assessment of these VA infrastructures was conducted in two phases, with the first phase documented in deliverables D11.1 and D11.2:

- **D11.1**[2] explains the VA concept and introduces the VAMS, an automated system that collects access metrics of VA services and presents them in a centralized location. The VA Concept section describes the future role of JERICO-CORE in the VA, aligned with the long-term development of the JERICO virtual infrastructure and the vision of JERICO-DS activities. This framework supports the collection of the necessary information to evaluate all the VA services. D11.1 also highlights the outreach activities carried out by each VA infrastructure to promote their services.
- **D11.2**[3] shows the feedback provided by the aforementioned international experts. It presents the conclusions of an Expert Panel that assessed the performance of the proposed VA infrastructures and provides suggestions for improvement.

Building on the initial phase, this second phase adheres to the same evaluation process. The current document compiles and presents the VA service metrics that were collected by VAMS across 47 months, from February 2020 through December 2023 (see **Annexe 2**). Therefore, D11.3 summarizes the relevant information to allow the Expert Panel to reexamine the performance of the VA initiatives within the JERICO-S3 WP11.

The conclusions of the panel will be reported in deliverable D11.4. These four deliverables contribute to the ongoing efforts of JERICO-S3 to enhance VA capabilities and optimize the utilization of coastal ocean research resources.

3.1. Key Aspects of D11.1

In the context of evaluating VA services, D11.1 outlines the evolution from the JERICO-NEXT experience to the approach adopted by JERICO-S3. This alternative approach was driven by the recognition of the need to encompass a broader range of resources within the concept of VA, including platforms, software, e-training, and best practices documents.

To support this approach, VAMS was developed to automatically collect access metrics from various VA services, offering multiple analytical and presentation capabilities. This system eliminates the need for recurring manually data recollection for each report, as it can be

2 https://www.jerico-ri.eu/download/jerico-s3_deliverables/JERICO-S3-D11.1-First-report-on-VA-JERICO-Resources-access-statistics-and-service-provision-FINAL-V2-Compressed.pdf

3 https://www.jerico-ri.eu/download/jerico-s3_deliverables/DL11.2-JERICO-S3-VA-Intermediate-Report-from-External-International-Board-FINAL.pdf

leveraged for multiple deliveries. VAMS monitors VA access, providing insights into service usage and accessed resources.

To ensure accurate analysis, the system filters out irrelevant traffic, such as requests from robots or invalid URLs, while catering to the specific requirements of each service. The architecture of VAMS, as described in D11.1, predominantly relies on ETL principles[4], which Extract, Transform, Load metric's information into an ELK[5] instance hosted at SOCIB to manage and visualize metrics for each VA provider.

The ETL process is realized by VAMS mostly through the ELK Logstash component and a custom made python package called *watchdog* that retrieves the information from federated servers and refine the information before it is sent to Elasticsearch database via its API. See D11.1 for further details.

Furthermore, D11.1 highlights the significance of FAIRness (Findable, Accessible, Interoperable, Reusable) within the JERICO-S3 framework. Task 6.4.2 evaluates the FAIRness of data using GOFAIR[6] metrics, facilitating data flow to aggregators. The results of these metrics for each VA service are presented in the annexes section of D11.1, emphasizing the commitment to FAIR principles in the evaluation process.

Throughout the initial and subsequent phases of the VA activities, dedicated outreach initiatives were undertaken to promote the availability and utilization of these services. VA providers assumed the responsibility of actively engaging with new audiences to expand the user base. D11.1 assessed the outreach efforts conducted by each VA service revealed that websites, social media platforms, and participation in conferences emerged as the most effective mechanisms for promoting VA.

The outcomes of these promotional activities resulted in a predominantly science-oriented audience, with noteworthy representation from the general public, industry, and civil society. For further insights, Annexe 4 of D11.1 presents detailed information regarding the scope and impact of these outreach endeavors.

In the initial phase of WP11, the evaluation of VA services concluded with the assessment of the results by a panel of 6 members (see **3.5 Virtual Access Expert Panel**). The assessments encompassed an analysis of the access metrics outlined in D11.1, as well as

[4] ETL stands for Extract, transform, and load which is the process of combining data from multiple sources into a large, central repository called a data warehouse.
[5] ELK is an acronym for several open source tools which are Elasticsearch, Logstash, and Kibana.
[6] These metrics were evaluated in Deliverable 6.7 (FAIRness evaluation report of PSS and IRS related to data management policy) but are only available to the consortium for security principles.

an examination of the outreach activities documented in the same deliverable. Additionally, panel members directly interacted with the respective VA services to gather further insights. Each VA service underwent assessment by two panel members, ensuring a comprehensive evaluation.

3.2. Key Aspects of D11.2

To streamline the assessment process, D11.2 categorized the VA services into three groups, each requiring a similar level of evaluation effort. Subsequently, an internal expert and an external expert were randomly assigned to assess each group, thereby providing diverse perspectives on the VA services.

The results of this evaluation are reported in D11.2 which presents a concise description of each VA service, along with the assessments provided by the assigned panel members. Furthermore, the deliverable also includes clarifications from the VA infrastructure, offering additional context where necessary.

This deliverable provides a concise description of each VA service, accompanied by assessments from the assigned panel members. Additionally, clarifications from the VA infrastructure are included, offering additional context where necessary.

Furthermore, the expert panel, as described later in this document on **3.5 Virtual Access Expert Panel**, was tasked with evaluating the VA services across various dimensions. The list of services were divided into three groups, each assessed by a pair of experts, ensuring comprehensive coverage and diverse viewpoints. Detailed information on the composition of these groups is provided later in the document in section 3.5.

To gauge the effectiveness of the expert panel and the overall experience, a form was developed for all partners involved. The questions and answers related to this assessment can be found in **Annexe 3**.

Each panel member received a list of VA services assigned to them, along with instructions on how to perform the assessments. These instructions included the context of the task and suggested subjects to consider, such as scientific relevance, technical implementation, scientific usability/FAIRness, access metrics, and outreach activities. While these subjects were recommended, panel members had the flexibility to include additional criteria at their discretion.

3.3. Current Status of WP11

This section offers a detailed view of the evolving VA landscape within the project by highlighting the operational updates of the VA infrastructures and VAMS made between phases one and two. It also describes the operational aspects of the pilot of JERICO-CORE which will play a significant role in supporting VA activities in the long term future.

3.3.1. Advancements of VAMS

There were efforts in maintaining and operating VAMS to respond to changes from the servers of metrics providers such as SSH server changes and credential updates. In addition, there was a need to update VAMS and increase computational resources allocated to ETL to allow managing a higher amount of information. This need came from an increase in VA services and recovery of data during the period of server updates.

Moreover, in the second phase there were new operational VA services:

- **ID1.2** (Mawenzi): In addition to the three R packages (DTWBI, DTWUMI, and uHMMweb) offered during the first period, Mawenzi shared the **sClust** tools at the end of the first period. Metrics of this new service were incorporated into VAMS during the first period but little metrics were obtained from it. Metrics are relevant during this second period.

- **ID32.1** (SMHI): Initially, this VA infrastructure had two operational websites, the SMHI general website, and OpenData View. One new website (**SharkWeb**) and two APIs (**OpenData** and **SharkData**) are available in the second phase of the project. Three new dashboards were incorporated into VAMS for the visualization of these three new services.

- **ID1.1** (IFREMER) & **ID33.2** (SOCIB): The **JERICO-CORE** pilot is operational in the second phase of the JERICO-S3 project and incorporated into VAMS. This includes various VA services as described in the following section. Two new dashboards were incorporated into VAMS. Additionally, the Analytics Engine of Blue-Cloud was used to get information on access to Blue-Cloud.

3.3.2. The JERICO Coastal Ocean Resource Environment (JERICO-CORE)

JERICO-CORE in the context of JERICO-S3 is the pilot of the e-JERICO. This pilot of JERICO's virtual platform will help the JERICO community to shape their ideas into a final e-infrastructure that responds to the needs of coastal oceanography. This experience is

critical to performing the study of available technologies and their limitations in the context of JERICO-DS for an e-infrastructure that supports the work of JERICO-RI in the long term for the ESFRI roadmap.

JERICO-CORE pilot is a unified central hub work in progress of JERICO to support the following activities:

- Discover, access, manage, and interact with JERICO **resources** including services, datasets, software, tools, best practices, and similar assets.
- Design, develop, and deploy software and services in a **collaborative Virtual Research Environment (VRE)** available for the JERICO community.
- **Assess** existing JERICO resources, services, and activities and support decision-making processes.

The JERICO-CORE pilot was developed under task 7.5 and is operational as a new VA service in WP11. More details of the design and implementation of the JERICO-CORE pilot are available in the JERICO-S3 D7.6[7] deliverable.

As indicated in this document, the demonstration of the JERICO-CORE pilot (milestone MS38) during the Lisbon JERICO-Week showcased the current implementation and features of the JERICO digital platform. This milestone not only informed the community about the platform's status but also provided an opportunity to gather new requirements and capabilities to enhance JERICO-CORE.

Figure 1 summarizes the design described in D7.6 and illustrates the main components of the JERICO-CORE pilot. JERICO-CORE contains a catalog of resources that is populated with the information of the JERICO federated assets. A set of harvesters was developed to scan resource providers, extract the information, and transform it into a common metadata schema in the resource catalog.

A Software Development Kit (SDK in the image below) was developed to facilitate and homogenize the implementation of harvesters. The API interfaces with the resource catalog to extract resource information. It is used by the user interfaces or the software tools inside or outside the VRE. These tools can be for JERICO assessment, processing, or analysis. They can be the foundation for the creation of services available to the coastal community.

7 https://www.jerico-ri.eu/download/jerico-s3_deliverables/DL7.6_JERICO-S3_D7.6_Documentation-of-JERICO-RI-e-infrastructure-and-capabilities.pdf

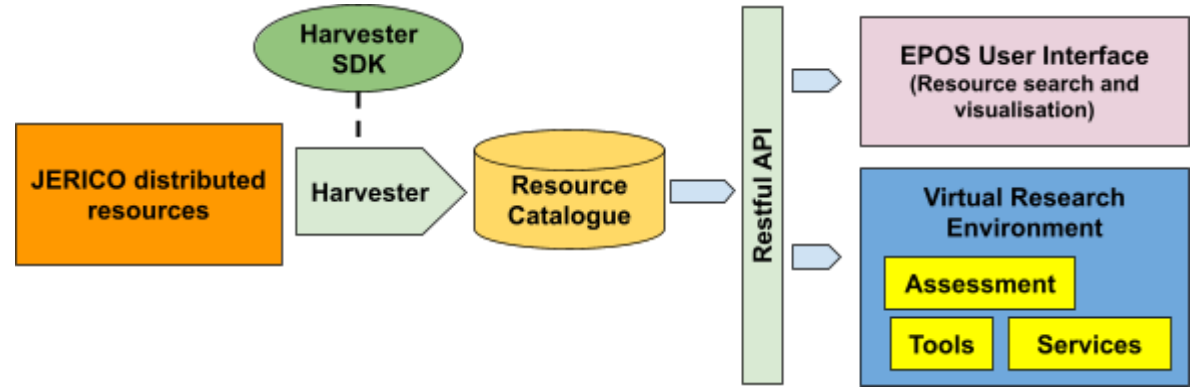


Figure 1: Overview of JERICO-CORE resource information collection and access.

The JERICO-CORE pilot operation concerns both the hardware and software aspects. The hardware aspect is managed partially by IFREMER under VA ID1.1 which includes the hosting in Datarmor of the resource catalogue, the RESTful API, and the User Interface (UI). The VRE is hosted by Blue-Cloud (BC) which provides a Virtual Lab for JERICO under the agreement in the form of a Memorandum of Understanding (MoU) between JERICO and BC.

This collaboration with Blue-Cloud was critical to assess in the context of JERICO-DS WP3 the ways Blue-Cloud can contribute to the design, implementation and operation of JERICO-CORE. The interaction with Blue-Cloud is coordinated by SOCIB in the context of VA ID33.2 to create new services and manage users and permissions. The collection of resources is also managed and hosted by SOCIB for practical reasons. The update and assessment of JERICO-CORE require tight collaboration between both teams.

It is important to acknowledge JERICO-CORE's limitations attributed to its initial design as a pilot. These limitations particularly affect the following key components:

- **Resource catalogue**: The resource catalogue cannot be updated in real-time. Due to technical reasons, human intervention is required in the harvesting process to address inconsistencies in collected metadata from providers. The pilot shed light on the potential for enhancing the harvesting process during the ESFRI roadmap by incorporating metadata evaluation tools at different stages.

  While the enhancement is beyond the JERICO-S3 project's scope, both the Blue-Cloud2026 and OSTrails projects will contribute to progress the harvesting process and establish a metadata schema that aligns with EOSC standards. These initiatives will form the groundwork for the future implementation of the sustained e-JERICO infrastructure, facilitating greater interoperability and efficiency.

- **User Interface**: To address the need for completing the JERICO-CORE pilot within the short timeframe of T7.5, studies were conducted to analyze existing available solutions. This process facilitated establishing synergies with EPOS ERIC, leading to the adoption of their user interface, backend and database. EPOS UI provides a single point of access to data and services for specific Earth Science communities. The related software project was tailored to meet the specific requirements and the user experience needs of the JERICO-CORE pilot.

  In future iterations of JERICO-CORE, developing customized solutions tailored to specific user requirements through API functionalities is ideal. This approach will allow for the creation of diverse visualization tools that specifically address user needs, leveraging insights gained from the EPOS experience and recognizing potential limitations in developing alternative solutions.

  For the pilot's evaluation, the user interface provided by EPOS's software should serve as a visual tool to effectively reveal the catalog's available resources, ensuring users can efficiently discover and utilize them.

3.3.3. ID1.1 & ID33.2 VA Assessments

As previously highlighted, JERICO-CORE is supported by two VA services: ID1.1 which handles the hardware, and ID33.2 responsible for the software and VRE maintenance. These two VAs are interdependent. As a consequence, the assessment within the context of WP11 encompasses both ID1.1 & ID33.2 VA together, comprising the complete list of JERICO-CORE services as follows:

- **RESTful API:** Access to the RESTful API is described following the OpenAPI specification. Metrics are collected by Datarmor and provided monthly to VAMS[8].

- **EPOS UI, backend and database:** All metrics are collected by Datarmor and provided monthly to VAMS[9].

- **VRE:** Registration on Blue-Cloud is required, and users must seek approval from the JERICO-CORE VLab administrator to include their username in the JERICO space.

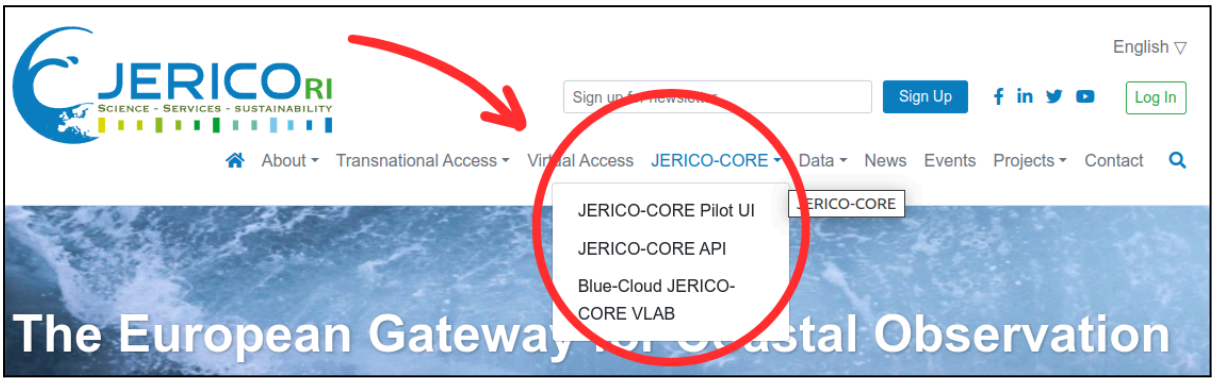
[8]Essential documentation for understanding the API's functionality is available at https://api.core.jerico-ri.eu/api/swagger, offering insights into the usability of various endpoints.
[9]Accessibility is granted through the link https://ui.core.jerico-ri.eu.

Deliverable D7.6 provides an overview of the Blue-Cloud interface, while additional documentation is accessible on the Blue-Cloud website[10].

The VA assessment involves accessing metrics provided by Blue-Cloud, with a focus on evaluating the user experience of the UI. Notably, services and assessment tools within the JERICO-CORE space, such as JupyterHub, are integral to this evaluation.

Specific assessments, such as the EMODnet-HFR-Provider, involve evaluating data availability in EMODnet from the HFR EU node, and the HFR_Quantitative_Framework assesses the status of EU HFR datasets held in Florence on November 21st-22nd, 2022[11].

The three resources described above can be reached through the main JERICO RI website and seen after clicking on the JERICO-CORE tab right below the search engine. The following screenshot helps visualize the accessibility to this VA.



3.3.4. Looking into the Future

This section explores the advancements achieved during the operations of WP11 and the developments shaping the future of these initiatives.

The first example consists of two graphs (see **Figure 2** below) that exemplify how Blue-Cloud can be utilized for general assessments. The graph on the left categorizes resources into documents, datasets, platforms, persons, projects, and organizations, with organizations comprising the largest category at 32.93%. The graph on the right shows the number of JERICO resources, where platforms constitute the largest category at 40.82%, followed by persons at 19.95%.

[10]To utilize this resource, it can be accessed through the following link: https://blue-cloud.d4science.org/group/jerico_core/home.
[11]It can be accessed through JupyterHub thanks to JERICO-CORE VLab in BlueCloud: https://blue-cloud.d4science.org/group/jerico_core/home.

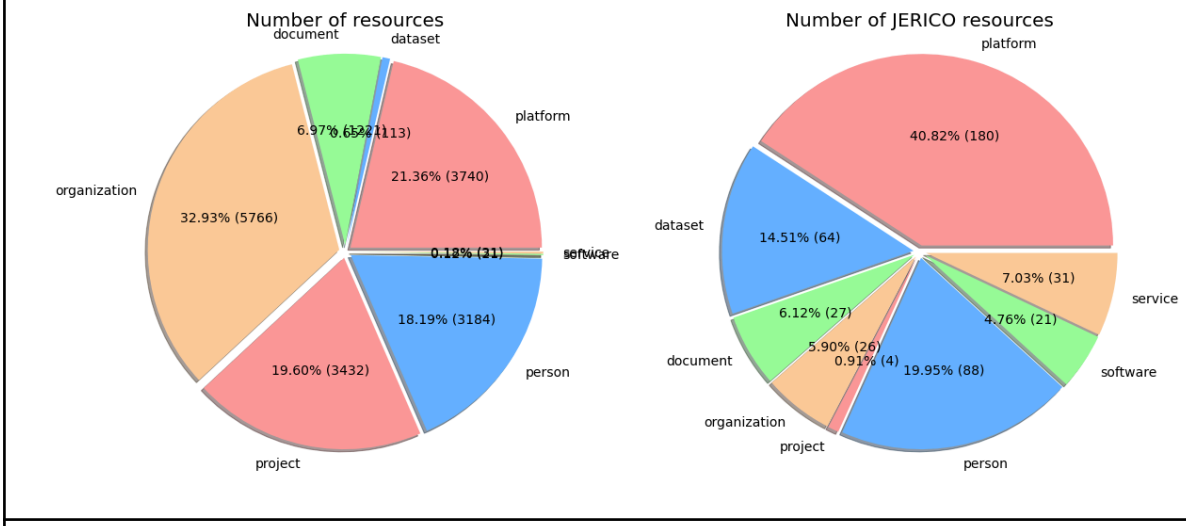


Figure 2: Overview of a general assessment through Blue-Cloud to categorize a different set of resources.

The second example is a detailed map (see **Figure 3** below) illustrating the geographical distribution of JERICO platforms. This map uses red dots to represent all the platforms identified through data harvesters, primarily sourced from EMODnet Physics. Additionally, green dots indicate the platforms specifically labeled as JERICO, which are associated with organizations that have previously been part of the JERICO network. This visual distinction provides a clear overview of the current and historical reach of JERICO-affiliated platforms.

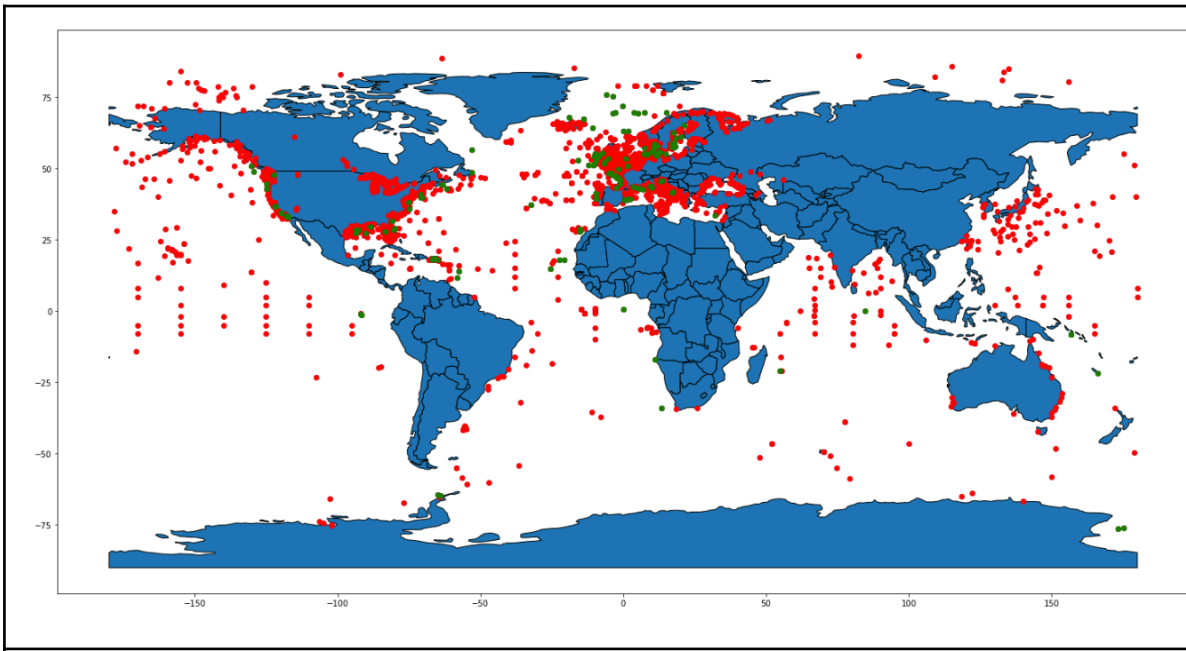


Figure 3: Geographical distribution of JERICO platforms.

Future JERICO-CORE plans encompass a diverse array of options, starting with the intent to update catalogue content. Therefore, exploring the integration of the resource catalog into Blue-Cloud and updating resources stands as a pivotal initiative. Moreover, statistical analysis of existing resources, along with the implementation of Key Performance and Key Impact Indicators, add a valuable layer to the strategic roadmap[12].

The HFR Quantitative Framework showcases progress with the creation of an automatic assessment tool by means of the HFR EU NODE API, contributing to the comprehensive evaluation of the HFR datasets. Furthermore, the tasks included in both Blue-Cloud2026 and OSTrails projects reflect a forward-looking approach. In particular, they will allow interoperability with EOSC and the support to Digital Twins of the Ocean (DTOs) by enhancing the discoverability, access, and assessment of coastal resources.

The OSTrails project will help improve the science knowledge graph, automate data flow, and assess the results of data management and the impact of the data. OSTrails will upgrade JERICO-CORE towards an e-JERICO sustained infrastructure by enhancing the discoverability, access, and assessment of coastal resources. It will also incorporate machine actionable Data Management Plans (maDMP) to facilitate data management and guaranteeing the compliance to the one defined in WP6 of JERICO-S3. Additional assessment services will allow monitoring of the quality of data management.

Blue-Cloud2026 will incorporate the outcomes of the OSTrails project as a service for all virtual labs, particularly for the JERICO lab. It will integrate the Virtual Research Environment (VRE) and the resource catalogue to facilitate assessment of activities and impact of the scientific outcomes and operations.

The roadmap for the JERICO-CORE project (exemplified in **Figure 4** below) illustrates the phased development and integration from the initial pilot to advanced stages[13], encompassing the integration and automation advancements planned for Blue-Cloud2026. This includes continuous improvements in resource assessment, metadata management, and the expansion of interoperable services.

[12]The explanation behind the KPPIs and KIPIs can be found in D5.3: https://www.jerico-ri.eu/download/jerico-s3_deliverables/DL5.3-JERICO-S3-D5.3_Report-on-KPPIs-and-KIPIs-developed-for-the-JERICO-RI_v3-FINAL.pdf.

[13] Outlined in the strategic plan for implementation of e-Jerico in D3.5 of JERICO-DS: https://www.jerico-ri.eu/download/filebase/jerico-ds-deliverables/JDS_D11_D3.5_Outlined-e-JERICO-Strategic-Plan-Final-V1_FINAL.pdf

These initiatives demonstrate a commitment to advancing marine data technologies and methodologies, ensuring that the HFR datasets are not only robust and reliable but also continuously improving to meet future scientific and operational needs.

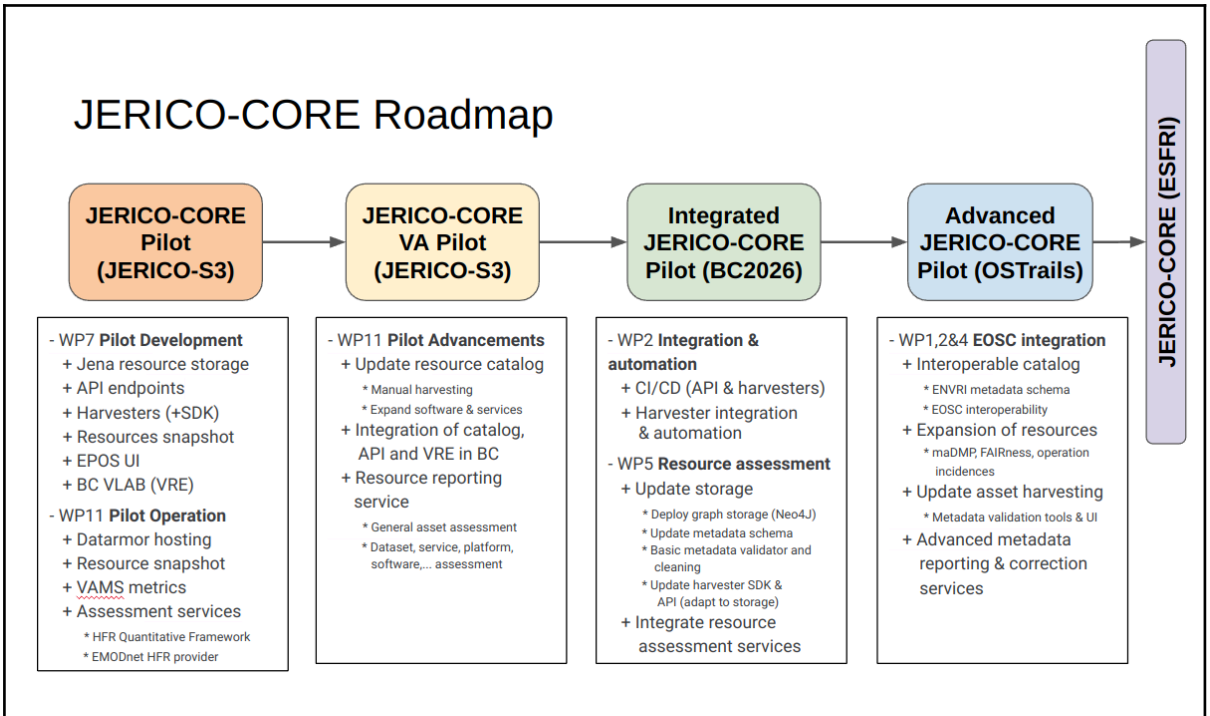


Figure 4: JERICO-CORE Roadmap.

Additionally, originating from JERICO-S3 T5.5 and EuroSea T3.6, the HOORT API extracts information from the HFR EU node database, contributing to a more comprehensive representation of incidents linked to the data life cycle.

Finally, integration between TA and VA has been explored. Advancements in the JERICO-CORE project have been enriched by synergies with the TransNational team. JERICO-S3 WP8 defined a draft version of the metadata schema that identifies essential resources for inclusion in the resource catalogue. This schema will facilitate the discovery of key resources, such as platforms and tools essential for Transnational Access (TA) proposals. Furthermore, it will enable the recording of outcomes and activities from the TA, providing a structured way to assess their impact.

These collaborative efforts are also reflected in the context of JERICO-DS, where the technical design described in D3.2 accounts for the link between TA and VA. The TA module

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will guarantee the discoverability of resources relevant to the TA proposal writing process and the outcomes for monitoring TA activities and assessing their impact.

3.4. VA Outreach

One tool to increase the access metrics to one's VA services is to engage in outreach activities that promote it. One of the responsibilities of VA providers is to regularly reach out to new audiences to increase the user base. Therefore, coordinated work between WP10 Team and WP11 Team has been extremely important throughout the whole project.

What follows is a brief analysis of these activities reported that constitute to the period between February 2019 and February 2024. All the activities have been divided into Type, Audience, and Institution. Furthermore, in **Annexe 4**, all the outreach activities carried out by partners of JERICO-S3 WP11 related to their VA services are reported in different tables and linked when necessary.

3.3.1. Outreach Activities by Type

The analysis of outreach activities by type (exemplified thanks to **Figure 5** below) reveals distinct patterns in the strategies employed to promote VA infrastructure. Notably, workshops emerge as the predominant approach, constituting 25.2% of all activities. The strategic organization of workshops facilitates direct engagement with stakeholders, fostering a deeper understanding of the JERICO community.

Following closely, social media platforms, including LinkedIn and Twitter, collectively contribute to 12.6% of outreach activities. This digital outreach enhances visibility and widens the reach of VA services. Furthermore, press releases play a pivotal role, accounting for 9.6% of activities. This dissemination strategy helps in communicating the significance and updates related to all infrastructure effectively.

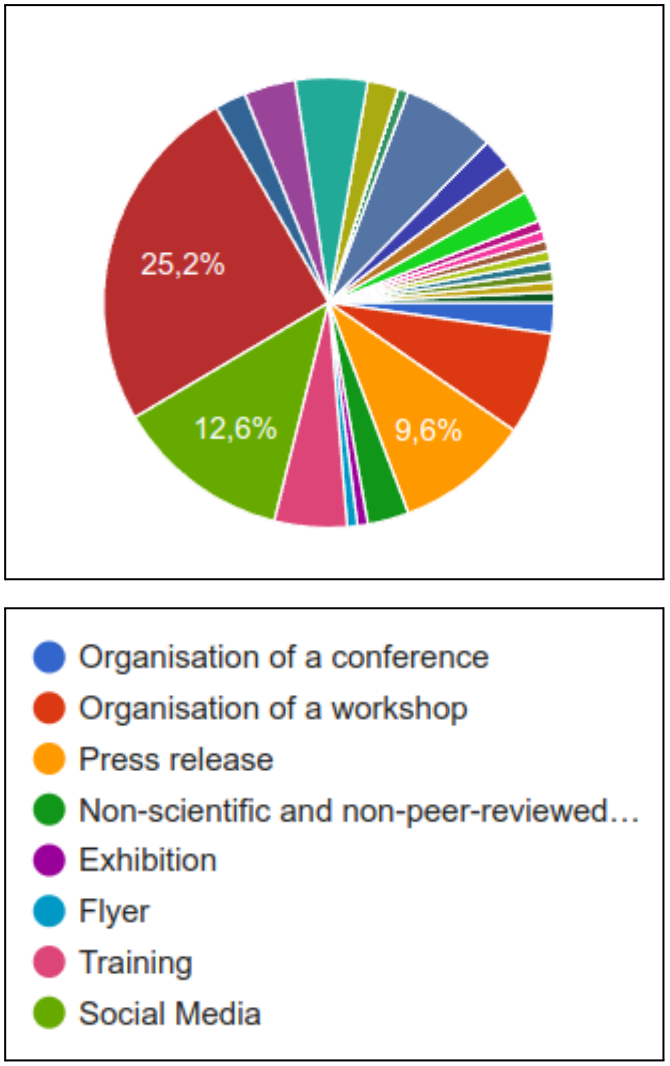

Figure 5: Outreach activities dividied by Type.

3.3.2. Outreach Activities by Audience

Examining outreach activities by audience sheds light on the diverse participation in these initiatives and it can be seen in **Figure 6** below. The science community emerges as the primary audience, with a significant 78.9% engagement rate. Surprisingly, the general public follows closely with a 45.9% participation rate, indicating a broader societal interest. The industry and civil community share the third spot, each contributing 31.6%.

It is important to note that individuals may belong to multiple audience categories, which could lead to overlap in the percentages, explaining why the total exceeds 100%. Notably,

the activities attract a multifaceted audience, emphasizing the inclusive nature of the outreach efforts.

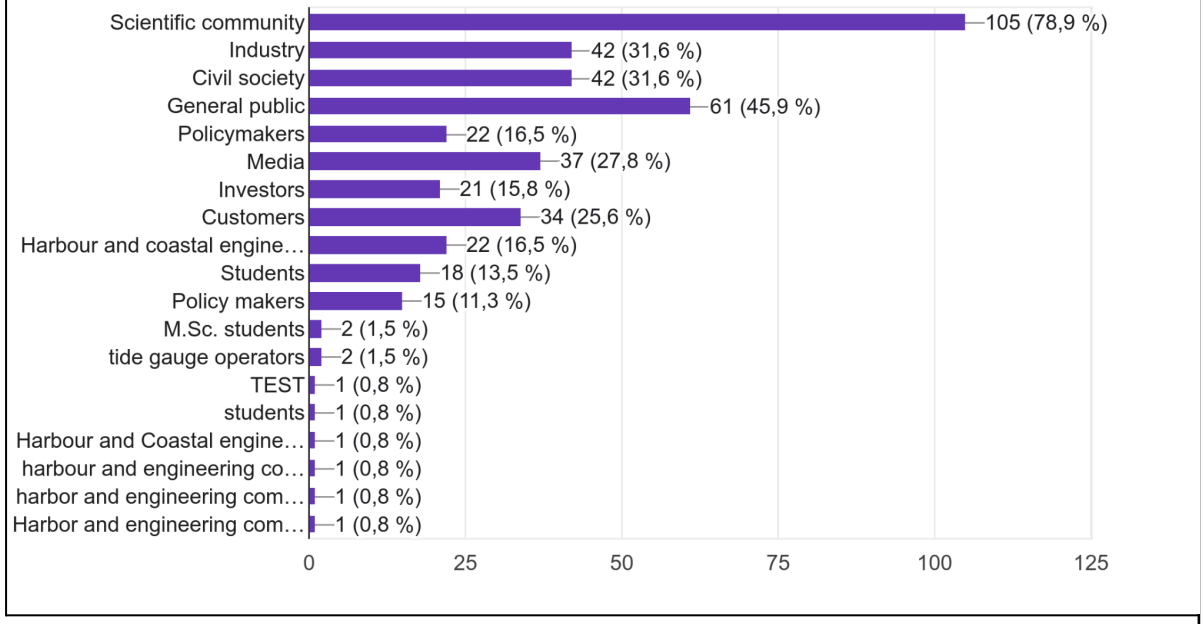

Figure 6: Outreach activities dividied by Audience.

3.3.3. Outreach Activities by Institution

The distribution of outreach activities by institution highlights the leading contributors of the whole JERICO community and Virtual Accesses' promotion as it can be seen in **Figure 7** below. PdE (ID 28.1) commands a noteworthy 9.9% of activities, showcasing its commitment to advancing VA infrastructure. IH (ID 19.1) closely follows with an 11.3% share, emphasizing its significant role in outreach initiatives.

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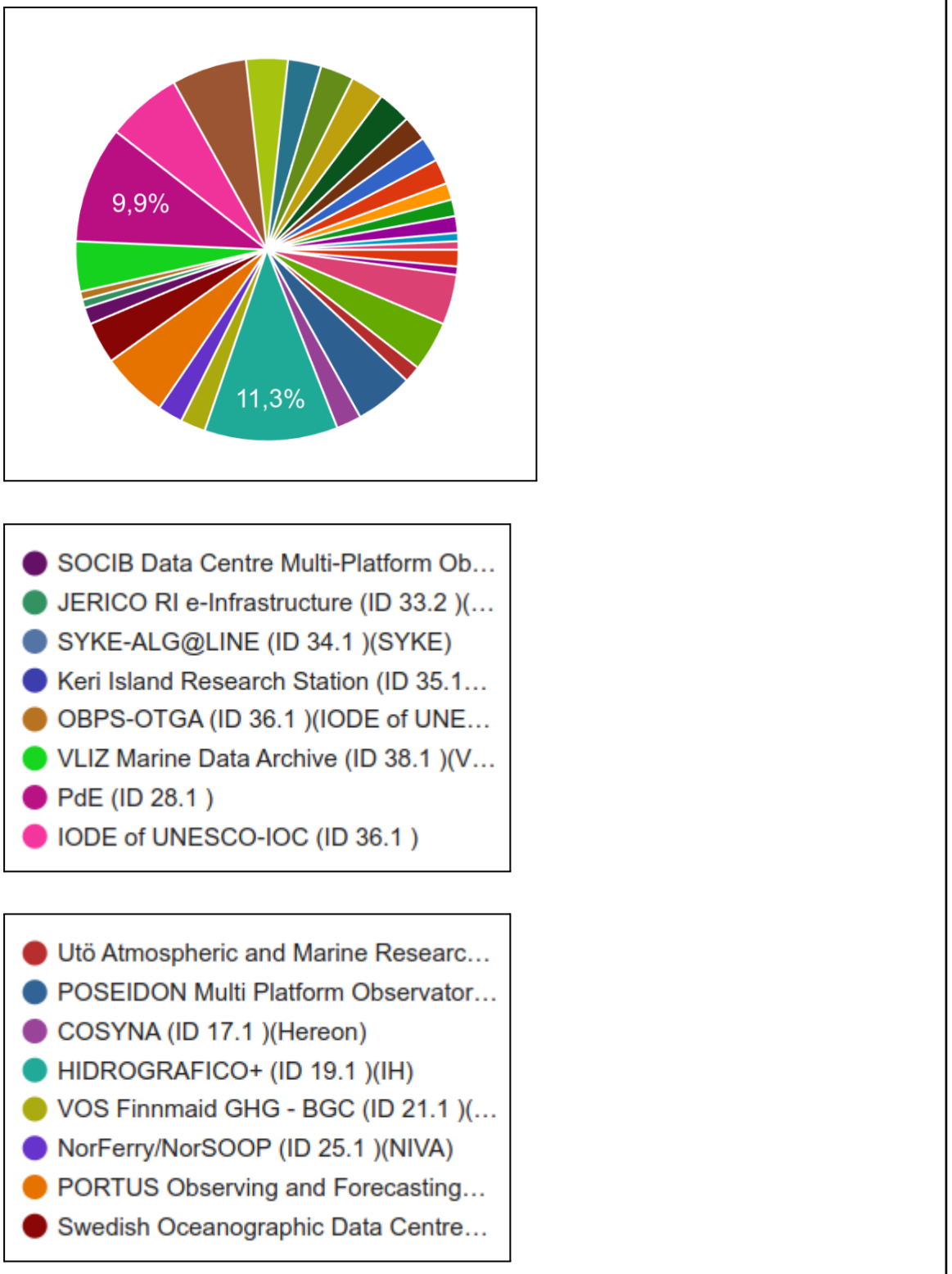

Figure 7: Outreach activities dividied by Institution.

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3.3.4. VA Service of the Week

In addition to the outreach efforts undertaken by our partners, the consortium initiated the "VA Service of the Week" campaign. Running from August 2023 to January 2024, this initiative involved partners showcasing their unique VA Service through dedicated weekly highlights on the consortium social media platforms.

Each week during the campaign, a different partner within the JERICO-S3 consortium took the spotlight to present their VA service in detail. A total of 12 posts shared insights into the specific tools, datasets, and expertise available through their VA service, highlighting its relevance and value to the coastal observation community. All of them followed the same format below:

1. Overview of the services.
2. Users and stakeholders the service is aimed at.
3. How your service is supporting the objectives of JERICO-RI and coastal observation in general.
4. What changes have been made during the JERICO-RI program (remembering that funding from JERICO-RI has been received).
5. What improvements or changes are you expecting over the coming weeks, months, years.

The campaign targeted researchers, scientists, educators, professionals, decision-makers, policymakers, and stakeholders engaged in coastal observation and related fields. By tailoring content to address the interests and needs of these diverse audiences, partners aimed to increase awareness and engagement with their respective VA services.

Through the "VA Service of the Week" campaign, partners actively supported the objectives of JERICO-RI by promoting collaboration, knowledge exchange, and capacity-building within the coastal observation community by showcasing the capabilities of their VA services.

3.3.1. Impact of Outreach Activities

In conclusion, the analysis of VA outreach activities provides valuable insights into the strategies employed by JERICO-S3 WP11 partners to enhance the accessibility and utilization of their VA infrastructure. The diverse array of outreach activities, as depicted in the graphs, demonstrates a proactive approach in engaging with various stakeholders. Workshops, social media engagement and campaigns, such as the VA Service of the Week,

and press releases emerge as key tools, each contributing significantly to the promotion of virtual access services.

Moreover, the broad spectrum of audiences reached, ranging from the science community to the general public, reflects the inclusive nature of these initiatives. The collaborative efforts to involve industry and civil communities signify a holistic approach toward expanding the user base and fostering a broader societal understanding of virtual access benefits.

The substantial participation of partner institutions both individually and as a community, especially in the VA Service of the Week initiative, underscores their commitment to driving the success of enhancing VA accessibility. It's imperative for VA providers to proactively engage in outreach activities to cultivate new audiences and bolster the user base.

By fostering connections with diverse stakeholders, VA providers can effectively promote and amplify the benefits of virtual access infrastructure. Moving forward, these insights will inform strategic efforts to optimize outreach strategies and maximize the utilization of VA services within the JERICO-S3 framework.

3.5. Virtual Access Expert Panel

The Expert Panel assembled to evaluate various Virtual Accesses will contribute valuable insights to the upcoming D11.4 report. The following expert pairs have been assigned specific Virtual Accesses for assessment:

Anca Hienola (FMI) & Antonio Novellino (EMODnet Physics, ETT)	7.1: CNR
	8.2: CNRS-LOV
	16.1: HCMR
	17.1: HEREON
	28.1: PdE
	35.1: TalTech
	1.1+33.2: IFREMER+SOCIB *This will be evaluated for the first time as a difference from the last expert panel, as it was not ready for evaluation previously.*

Thierry Carval (IFREMER) & Shaun Deyzel (SAEON)	4.1: AZTI
	6.1: CEFAS
	8.1: CNRS-LOG/ULCO
	15.1: FMI
	19.1: IH
	21.1: IOW
	34.1: SYKE
	36.1: IODE/UNESCO-IOC

Simon Keeble (Blue Lobster) & Sebastien Mancini (AODN-IMOS)	1.2: IFREMER/ULCO-LISIC
	7.2: CNR
	25.1: NIVA
	32.1: SMHI
	33.1: SOCIB
	38.1: VLIZ

Moreover, a form has been designed to assess the effectiveness of the Expert Panel in providing valuable insights into the evaluated Virtual Accesses. This feedback will be crucial for the compilation of the D11.4 report, ensuring a thorough understanding of the impact and improvements made since the last evaluation.

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4. OUTREACH, DISSEMINATION AND COMMUNICATION ACTIVITIES

As shown earlier in **3.4 VA Outreach**, throughout the period between February 2019 and February 2024, various outreach activities have been conducted to promote VA services from all partners within the JERICO. These efforts have successfully increased accessibility and utilization of VA infrastructure among stakeholders.Therefore, one recommendation to VA providers is to regularly reach out to new audiences to increase the user base.

Referring back to earlier findings from **3.4 VA Outreach**, the assessment of all the activities have been divided into Type, Audience, and Institution. Furthermore, all the outreach activities carried out by partners of JERICO-S3 WP11 related to their VA services are reported in different tables and linked when necessary in **Annexe 4**.

Workshops have been the primary method, facilitating direct engagement with stakeholders. Digital outreach through social media platforms and press releases has also significantly contributed to enhancing visibility and communicating updates effectively.

5. CONCLUSIONS

In conclusion, the Second Report on VA JERICO Resources Access Statistics and Service Provision represents a significant milestone for the JERICO-S3 project's VA objectives, particularly emphasizing the operations of JERICO-CORE pilot within WP11. JERICO-CORE pilot serves as one of the two project's central access points together with the JERICO website.

Through JERICO-CORE's unified access point work in progress, researchers will navigate the heterogeneous landscape of VA services more efficiently, enhancing usability and cohesion within the broader JERICO ecosystem. The coexistence of independent VA services alongside JERICO-CORE demonstrates the project's adaptability and inclusivity, catering to diverse user needs and preferences while maintaining a cohesive framework.

Aligned with the Virtual Access concept outlined in D11.1, the pilot allows testing to be carried out by centrally accessing heterogeneous resources owned or related to JERICO. Nevertheless and importantly, it demonstrates the challenges associated with effectively providing access to a collection of resources of different nature, and provided by several information/data providers. These challenges range from technical, operational and governance aspects, and have been considered as critical input for the technical design delivered by the JERICO Design Study project.

This deliverable also continues the work done in both D11.1 and D11.2. In this regard, this document encapsulates the contributions of each VA service and lays the groundwork for future enhancements and collaborations. Through transparent communication and precision, D11.3 reflects the project's dynamic framework, driven by a steadfast commitment to growth, collaboration, and improvement.

As this phase of evaluation concludes, D11.3 sets the stage for the project's ongoing journey, characterized by innovation, engagement, and the relentless pursuit of excellence. The continued evolution of VA resources within JERICO-S3 underscores the project's dedication to advancing coastal ocean research and fostering a vibrant and inclusive research community.

6. ANNEXES AND REFERENCES

Annexe 1: Description of JERICO-S3 VA Infrastructures

The following descriptions are the VA infrastructures that are active at the time of publishing this document. For each, a description of its integration with VAMS and the annexe that contains the actual metrics is included.

The structure of each annexe depends on the type of integration used by VAMS to receive access data. In some cases, since there was a better knowledge of the VA service, it has been possible to produce more metrics from the access data (i.e.: it has been possible to extract information about what was being accessed via the URL).

ID	1.1
Name	DATARMOR
Institution	IFREMER
Short Description	Datarmor is an IT Infrastructure dedicated to Marine Sciences and located in Brest-France and funded in the framework of the State-Region Plan by the European Commission (FEDER funds), the French Government, Britany Region and local authorities in association with IFREMER and SHOM. Datarmor will host the JERICO e-Infrastructure during the project, including the Virtual Research Environment and the associated data when High-Performance Computing and/or powerful access to data will be required.

Metrics	DATARMOR metrics can be found in Annexe 2.1.
Carried out tasks	Period 2: JERICO-CORE at DATARMOR available

ID	1.2
Name	Mawenzi
Institution	IFREMER, ULCO-LISIC
Short Description	Software packages written in R to help scientists, as well as stakeholders, in the modeling and interpretation of data (time series data from gliders/ferrybox or cytometry data), with some tutorials and user guidelines.
VA Services	The VA Infrastructure consists of the following R packages: DTWBI, DTWUMI, and uHMMweb.
Monitoring Method	To monitor the access to the packages, it was decided to monitor the number of downloads from the CRAN pages and the visits to the documentation webpages[14].
Metrics	Mawenzi metrics can be found in Annexe 2.2.
Carried out tasks	Period 1: Update, improvement and assessment of data importation/visualization in the RclusTool R-package.

ID	4.1
Name	EU HFR Node/AZTI
Institution	AZTI
Short Description	Open access to different software for processing and analyzing coastal data. The tools aim to support a sustainable management of the ocean and its resources.

[14] http://mawenzi.univ-littoral.fr/DTWBI/ , http://mawenzi.univ-littoral.fr/DTWUMI/ and http://mawenzi.univ-littoral.fr/uHMMweb/

VA Services	The VA Infrastructure consists of a GitHub repository[15].
Monitoring Method	The GitHub API has been used to monitor the number of visits to the GitHub repository.
Metrics	EU HFR Node/AZTI metrics can be found in Annexe 2.3.
Carried out tasks	Period 1: Interactions with end-users have been performed to improve the access to DelayMode analysis of historical HF Radar data. Update of the software has been performed with changes in the format standards. Period 2: The structure and graphs of the historical HF Radar datasets reports have been improved. The first reports with this new format have been generated and used for assessment of HF radar data quality and enhanced datasets homogenization.

ID	6.1
Name	CefMAT
Institution	Cefas
Short Description	Access to marine environmental assessments to address policy questions. Users can efficiently produce high-quality visualizations and summary statistics tailored to their queries. It also gives access to specific products created under CMEMS and visualization of aggregated DOI biological datasets from Cefas Data Hub.
VA Services	The VA Infrastructure consists of a website[16].
Monitoring Method	The website is monitored using Google Analytics. Data is sent to VAMS by monthly filling out a Google Form.
Metrics	CefMAT metrics can be found in Annexe 2.4.
Carried out tasks	Period 1: the work included to separate the access to the tools (e.g. split between CefMat and MOAT) on the website, update the r-shiny app

[15] https://github.com/Fundacion-AZTI/JRadar

[16] https://www.cefmat.org

	PHYTO-OPS created under JERICO-NEXT and available soon under MOAT. Period 2: updated the r-shiny app PHYTO-OPS with new results from surveys.

ID	7.1
Name	CNR TirLig
Institution	CNR
Short Description	Provide access and distribution of sea surface current data derived from High Frequency Radar acquisitions.
VA Services	The VA Infrastructure consists of a THREDDS data server[17] containing HF Radar data of the Ligurian coast near La Spezia and Cinque Terre and a website[18] with visualizations of that data and links to the mentioned THREDDS data server.
Monitoring Method	The THREDDS data server is monitored using the log files and the website is monitored with Google Analytics via API.
Metrics	CNR TirLig e-infrastructure metrics can be found in Annexe 2.5.
Carried out tasks	Period 1: support for the implementation of access monitoring tools by SOCIB. Period 2: support for the implementation of access monitoring tools by SOCIB; quality control of ADCP data.

ID	7.2
Name	EU HFR Node/CNR
Institution	CNR

[17] http://150.145.136.27:8080/thredds/HF_RADAR/TirLig/TirLig_catalog.html

[18] http://radarhf.ismar.cnr.it/

Short Description	The EU (European) HFR (High-Frequency Radar) Node/CNR is the contribution of CNR to the EU HFR Node Competence Center for HFradar data management.
VA Services	The VA Infrastructure consists of a software package written in MATLAB [19] and a remote processing service[20] that uses the software to process HF Radar files.
Monitoring Method	The software package is monitored using the views at the GitHub repository and the processing service is monitored using the event data stored in SQL.
Metrics	EU HFR Node/CNR metrics can be found in Annexe 2.6.
Carried out tasks	Period 1: Maintenance and upgrade of software tools and web applications for providing access and distribution in Near Real Time of sea surface current data derived from High Frequency Radar. Period 2: Maintenance and upgrade of software tools and web applications for providing access and distribution in Near Real Time of sea surface current data derived from High Frequency Radar.

ID	8.1
Name	CytoFluoTool
Institution	CNRS-LOG, ULCO
Short Description	Automated techniques, and complementary to automated image analysis, automated flow cytometry (FCM), and multispectral fluorometry (MSF).
VA Services	The VA Infrastructure consists of a software package written in R (RclusTool).

[19]https://github.com/LorenzoCorgnati/HFR_Node__Historical_Data_Processing

[20] http://150.145.136.36/

Monitoring Method	To monitor the access to the VA service, it has been decided to monitor the number of downloads from CRAN and the visits to their documentation webpage[21].
Metrics	CytoFluoTool metrics can be found in Annexe 2.7.
Carried out tasks	Period 1: CNRS-LOG, ULCO has interacted and tested the different upgrades and improvements carried out within the CytoFluoTool in collaboration with IFREMER. Period 2: CNRS-LOG, ULCO has continued to interact and test the different upgrades and improvements carried out within the CytoFluoTool in collaboration with IFREMER. Interaction with end users.

ID	8.2
Name	Ecotaxa
Institution	CNRS-LOV
Short Description	Web application that provides services for users to handle large image datasets and their associated metadata. System suited for imaging sensors such as UVP5, ZOOSCAN, ZOOCAM, FLOWCAM, IFCB, microscopic imaging, and confocal microscopy, that are used in marine sciences.
VA Services	The VA Infrastructure consists of a website[22].
Monitoring Method	EcoTaxa has its own metrics system that synchronizes to VAMS via a custom CSV file.
Metrics	EcoTaxa metrics can be found in Annexe 2.8.
Funders	• OCEANOMICS[23]

[21] http://mawenzi.univ-littoral.fr/RclusTool/

[22] https://ecotaxa.obs-vlfr.fr/

[23] http://www.oceanomics.eu/

	• Partner University Fund[24] • CNRS LEFE program[25] • Belmont Forum WWW.PIC project[26] • H2020 Blue-Cloud project[27] • JERICO-S3[28]

ID	15.1
Name	Utö Atmospheric and Marine Research Station
Institution	FMI
Short Description	Software for instrument-computer interfaces, automated warning message system, data transmission systems, basic QC processes, data visualization tools and a www-page open for public use.
VA Services	The VA Infrastructure consists of a website[29].
Monitoring Method	The website was monitored using Google Analytics up to September 2022. Since March 2024, it is monitored using Matomo Analytics.
Metrics	Utö metrics can be found in Annexe 2.9.
Carried out tasks	Period 1: Data QC software development and inclusion of new observations in QC/distribution/visualization software. Period 2: Data QC software development and inclusion of new observations in QC/distribution/visualization software.

[24] https://face-foundation.org/higher-education/partner-university-fund/

[25] https://programmes.insu.cnrs.fr/lefe/

[26] https://www.belmontforum.org/projects/world-wide-web-of-plankton-image-curation/

[27] https://www.blue-cloud.org

[28] https://www.jerico-ri.eu/

[29] http://swell.fmi.fi/Uto/

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ID	16.1
Name	POSEIDON Multi platform observatory Data Center
Institution	HCMR
Short Description	Integrated observatory located in the Eastern Mediterranean, which has adopted a multiplatform-multiparameter approach with the current system's status including open and coastal sea fixed platforms, deep-ocean observatories, a Ferrybox system, glider missions, and Argo profiling floats.
VA Services	The VA Infrastructure consists of a website[30] and an API[31].
Monitoring Method	The website is monitored via Google Analytics and VAMS gets the metrics via Google Analytics API. The API is monitored using the log files.
Metrics	POSEIDON metrics can be found in Annexe 2.10.
Carried out tasks	Period 2: Improvements of the data access system and upgrade of the visualization tools offering a new web environment to the users with an average of 1.2 million visits per month (max. 2.3 million visits).

ID	17.1
Name	COSYNA
Institution	HEREON
Short Description	Monitor real-time conditions and provide short-term forecasts, data, and data products to help assess the impact of anthropogenically induced change. It includes data from Hereon HF Radar, FerryBoxes, Underwater Nodes, and operational models (Circulation, Waves) as well as models with assimilated data.

[30] https://poseidon.hcmr.gr/

[31] https://api.poseidon.hcmr.gr/swagger/

VA Services	The VA Infrastructure consists of a website[32]
Monitoring Method	The website is monitored using a custom system described in the paper "Accessing Diverse Data Comprehensively – CODM the COSYNA Data Portal"[33]. The registration process of this system to get a login is automated. So, downloads from scrappers, which used to be very important, are not included in the access metrics. Metrics are sent to VAMS by filling out a Google Form.
Metrics	COSYNA metrics can be found in Annexe 2.11.
Carried out tasks	Period 1: Updating and maintenance of the portal website and setting up a new workflow for the user analysis and statistics. Start implementation plans for the JERICO all database. Period 2: Analyzing system logs and creating the monthly statistics. Implementation of new hardware. Continued work on database.

ID	19.1
Name	HIDROGRAFICO+
Institution	IH
Short Description	Access to data collected by the real-time monitoring infrastructure for the Portuguese waters (MONIZEE system) that is operated by Instituto Hidrografico.
VA Services	The VA Infrastructure consists of a website[34] that presents data provided by a web service.
Monitoring Method	The web service has its own metrics system that collects the data in its own ElasticSearch database. VAMS collects the new metrics daily from the ElasticSearch API. The website is monitored using Google Analytics API.

[32] https://www.hereon.de/institutes/coastal_ocean_dynamics/cosyna/index.php.en

[33] DOI: 10.5194/os-2016-6 (http://dx.doi.org/10.5194/os-2016-6)

[34]https://geomar.hidrografico.pt/

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Metrics	HIDROGRAFICO+ metrics can be found in Annexe 2.12.
Carried out tasks	Period 1: Assure the maintenance of MONIZEE real-time monitoring infrastructure feeding Hidrografico+ with real-time data: develop the articulation between Hidrografico+ and JERICO-S3 VA services. Period 2: Assure the maintenance of MONIZEE real-time monitoring infrastructure feeding Hidrografico+ with real-time data; develop the articulation between Hidrografico+ and JERICO-S3 VA services; mantaining the VA services provided by Hidrografico+.

ID	21.1
Name	VOS Finnmaid GHG - BGC
Institution	IOW
Short Description	Measurement of trace gasses on the ferry Travemünde/Germany to Helsinki/Finland.
VA Services	The data is distributed via ICOS (SOCAT[35] database)
Monitoring Method	Access metrics are obtained by VAMS via the API of the Carbon Portal's Statistics page[36] which ICOS' tech team gracefully upgraded to accommodate VAMS's needs.
Metrics	VOS Finnmaid GHG - BGC metrics can be found in Annexe 2.13.

ID	25.1
Name	NorFerry/NorSOOP
Institution	NIVA
Short Description	Coastal observing data from FerryBoxes, descriptions of data types, and ocean literacy educational stories are provided for public interaction in the form of 24-inch touchscreen display consoles on passenger vessels that are updated pseudo-real-time.

[35] https://www.socat.info/

[36] https://data.icos-cp.eu/stats/

VA Services	The VA Infrastructure consists of the application available on the touchscreens.
Monitoring Method	Each touchscreen collects access metrics and stores them on a server. Periodically, NIVA staff collects this data and transmits it to VAMS.
Metrics	NorFerry/NorSOOP metrics are partial due to COVID shutdowns of passenger vessels, but they can be found in Annexe 2.14.

ID	28.1
Name	PORTUS observing and forecasting system
Institution	PdE
Short Description	Oceano-meteorological network and forecasting system that integrates different observing platforms (buoys, tide gauges, and HF-radars) with numerical models along the Spanish coast. All data and derived products are distributed through the PORTUS early warning system and visualization tool. Additionally, data from the numerical models, the HF radars, and the tide gauges are presently available in the PORTUS OPeNDAPsystem.
VA Services	The VA Infrastructure consists of a website[37] and a THREDDS data server[38].
Monitoring Method	The THREDDS data server is monitored using log files.
Metrics	PORTUS metrics can be found in Annexe 2.15.
Carried out tasks	Period 1: Improvement of data access and visualization tools. Support the implementation of access monitoring tools by SOCIB.

ID	32.1

[37] http://portus.puertos.es

[38] http://opendap.puertos.es

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Name	Swedish Oceanographic Data Centre - Toolboxes in marine data management
Institution	SMHI
Short Description	Access to Swedish oceanographic data and with the use of toolboxes; handling, quality control, and analyses of such data.
VA Services	The VA Infrastructure consists of 3 websites (SMHI general website[39], OpenData View,[40] and Shark Web[41]) and 2 APIs (OpenData[42] and SharkData[43]).
Monitoring Method	Each has its own metrics system. But all metrics are sent to VAMS via a monthly Google Form submission.
Metrics	The relevant metrics can be found in Annexe 2.16.

ID	33.1
Name	SOCIB Data Centre Multi-Platform Observatory
Institution	SOCIB
Short Description	Access to the multi-platform observing system of the Balearic Islands in the western Mediterranean.

[39] https://www.smhi.se

[40] https://opendata-view.smhi.se

[41] https://sharkweb.smhi.se

[42] https://opendata.smhi.se

[43] https://sharkdata.smhi.se

VA Services	The VA Infrastructure consists of a THREDDS data server[44], a data API[45] and a data catalog[46].
Monitoring Method	The THREDDS data server and the API are monitored using log files, whereas the data catalog is monitored using Google Analytics and its AP.
Metrics	SOCIB metrics can be found in Annexe 2.17.
Carried out tasks	Period 1: Improvement of the SOCIB access metric system. Quality assessment and quality assurance of the RT data processing pipeline. Data Catalog web portal improvements. Period 2: a new Data Catalog will be released in 2023 with new features. New information web pages released to document the SOCIB Data Repository in the context of the CoreTrustSeal certification. Outreach activities to showcase the SOCIB VA services.

ID	33.2
Name	JERICO RI e-Infrastructure
Institution	SOCIB
Short Description	VA framework that provides access to the most important JERICO Resources (Catalogued) and Pilot Data-to-Products Thematic Services (D2PTS).
Metrics	Metrics of JERICO RI e-Infrastructure can be found in Annexe 2.18.
Carried out tasks	Period 2: Support for the transition to operations of JERICO-CORE. Maintenance and update of the system. Outreach activities and attendance to international meetings to showcase the JERICO-CORE platform.

ID	34.1

[44] https://thredds.socib.es

[45] http://api.socib.es

[46] http://apps.socib.es

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

Name	SYKE-ALG@LINE
Institution	SYKE
Short Description	Monitors the state of the Baltic Sea using ferrybox systems. Collected data includes simultaneous measurements of physics, biogeochemistry, and biology carried out in two ferrylines.
VA Services	The VA Infrastructure consists of a set of web pages [47] with information about Alg@line and its data.
Monitoring Method	They are monitored using Google Analytics and the metrics are sent to VAMS using Google Forms.
Metrics	Alg@line metrics can be found in Annexe 2.19.
Carried out tasks	Period 1: Updating visualization of ferrybox near real time data through the web page. Period 2: Updating visualization of ferrybox near real time data through the web page.

ID	35.1
Name	Keri Island research station
Institution	TALTECH
Short Description	Part of the Network of experimental research stations of the Estonian Observatory that measures high-frequency full-depth profiles of temperature, salinity, turbidity, oxygen content, chlorophyll-a and phycocyanin fluorescence in the Central Gulf of Finland.
VA Services	The VA Infrastructure consists of a webpage[48].
Monitoring Method	It is monitored using Google Analytics and the metrics are sent to VAMS using Google Forms.

[47] https://www.marinefinland.fi/en-US/The_Baltic_Sea_now/Automatic_observations_from_ships, https://www.marinefinland.fi/en-US/The_Baltic_Sea_now/Algal_bloom_observations, http://swell.fmi.fi/Algaline/ and https://www.finmari-infrastructure.fi/ferrybox/

[48] https://taltech.ee/meresusteemide-instituut/mereinfo

Metrics	Keri Island metrics can be found in Annexe 2.20.
Carried out tasks	Period 1: Updating the webpage, defining and delivery of user statistics. Period 2: No PM dedicated for the VA as this partner had issues with hardware.

ID	36.1
Name	OBPS-OTGA
Institution	IODE of UNESCO-IOC
Short Description	**Ocean Best Practices System** (OBPS): Open access, a permanent, digital repository of community best practices in ocean-related sciences maintained by the IODE of the UNESCO-IOC as an IOC coordinated activity. **The OceanTeacher Global Academy** (OTGA) Project aims at building equitable capacity related to ocean research, observations, and services in all IOC Member States. **AquaDocs**: Open access thematic document repository covering the natural marine, coastal, estuarine/brackish, and freshwater environments maintained by the UNESCO/IOC InternationaL Oceanographic Data and Information Exchange (IODE) and the International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC) with support from the FAO Aquatic Sciences and Fisheries Abstracts.
VA Services	The VA Infrastructure consists of three different websites: AquaDocs[49] (an oceanographic documentation open-access repository), OceanTeacher[50] (an oceanographic web-based training platform) and OceanBestPractices[51] (a best practices repository).
Monitoring Method	The websites are monitored via Google Analytics and VAMS is synchronized using Google Analytics API.
Metrics	The relevant metrics can be found in Annexe 2.21.

[49] https://aquadocs.org

[50] https://classroom.oceanteacher.org

[51] https://repository.oceanbestpractices.org

Carried out tasks	Period 1: Implement and provide access to Google Analytics; Recording and reporting publication and outreach activities including JERICO S3 information on OBPS Website; All Partners meeting; Management of access and Help desk provision for all targets; Contribution to WP10 User Story questionnaire design . Contribution to Deliverable 11.2/11.3; Contributed OBPS, AquaDos and OTGA profiles to https://www.jerico-ri.eu/virtual-access/. Period 2: No more time left in this WP11 after May 2022, but continue to monitor dissemination outputs for JERICO S3.

ID	38.1
Name	VLIZ Marine Data Archive
Institution	VLIZ
Short Description	The infrastructure is an archival platform that provides a Java-based interface with a connected MS SQL Server database for upload and documentation of data files.
VA Services	The VA Infrastructure consists of a website[52]
Monitoring Method	It has its own custom metrics system and VAMS is synchronized via a CSV file that VLIZ generates for this purpose.
Metrics	The relevant metrics can be found in Annexe 2.22.
Carried out tasks	Period 1: Defining user statistics, queries and public link to user stats. Preparation to transform user stats into a web service. Outreach activities. Period 2: Development of a future vision and new system architecture plan, based on a thorough user requirement analysis. Outreach activities.

Annexe 2: VAMS Dashboards from each Partner

Annex 2 comprises a comprehensive examination of the VAMS Dashboards emanating from every Partner within the framework of JERICO-S3 WP11. This section offers a detailed overview and analysis of the distinct dashboards associated with each VA Infrastructure

[52] https://marinedataarchive.org

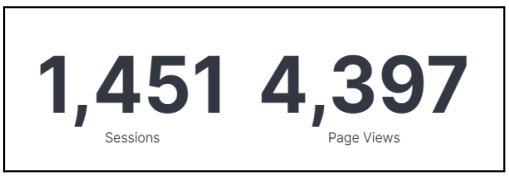
service within the project. Next, the dashboards of each VA service of JERICO-S3 WP11 are presented.

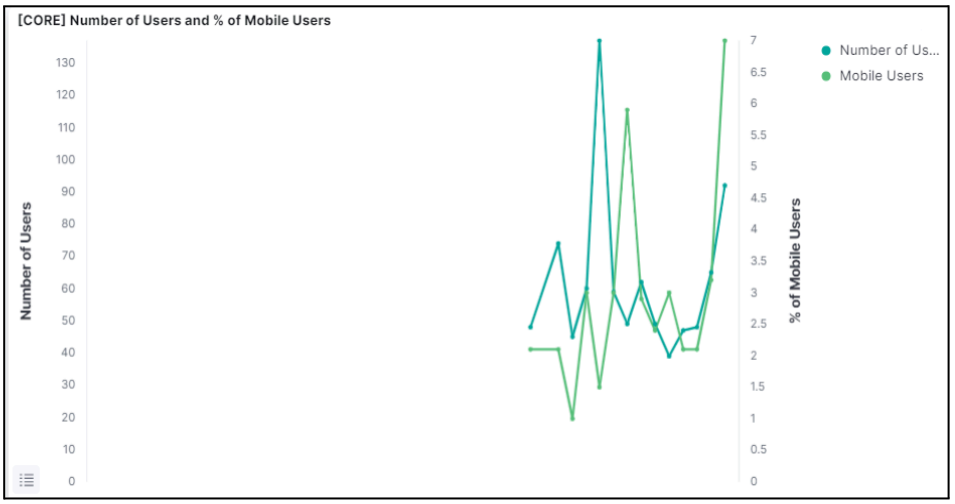
Annexe 2.1 JERICO-CORE (ID 1.1)

The first Access studied in this Deliverable is JERICO-CORE, which was developed in November 2022 and is monitored in two different ways: the JERICO-CORE UI at DATARMOR and the JERICO-CORE Catalog Resource API. The following presents the two alternatives.

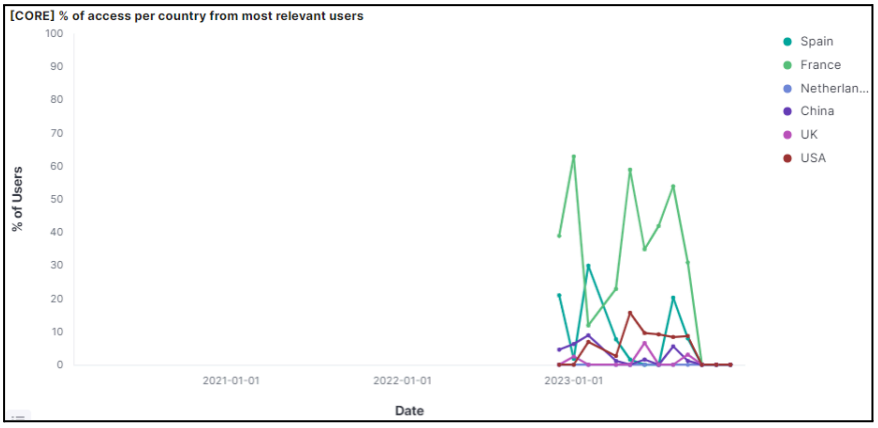
JERICO-CORE hosting at DATARMOR

First of all, the overall number of sessions is presented below, as well as the page views. Next, the temporal evolution of users and % of mobile users through time is analyzed.



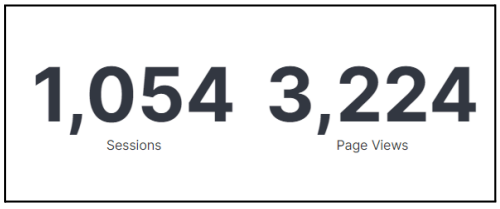


In the next pictures, the page views over time and the sessions are portrayed.



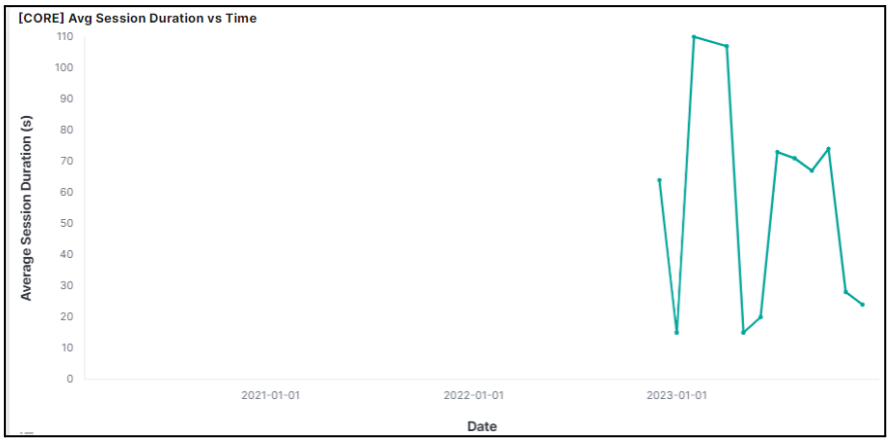
JERICO-CORE Catalog Resource API

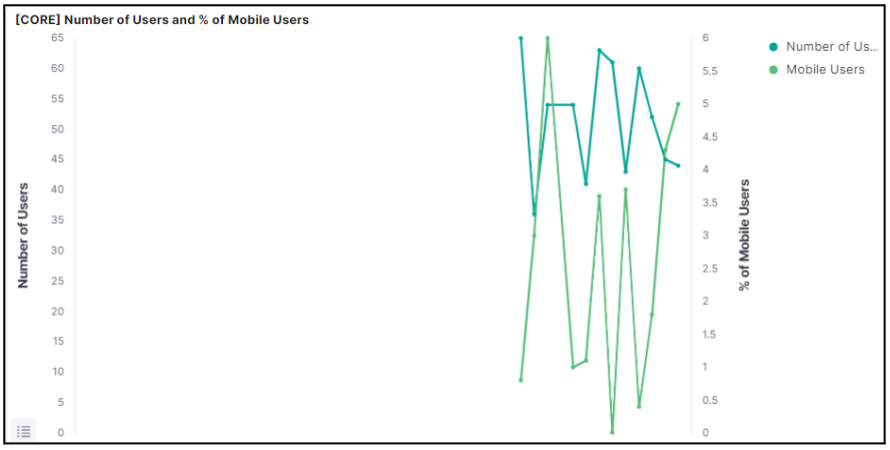
When it comes to JERICO-CORE Catalog Resource API, the overall number of sessions is presented below, as well as the page views. Moreover, the temporal evolution of users and % of mobile users through time is analyzed.



Moving forward, the next graphical representation insights into the percentage of access per country, with a specific focus on key partners such as Spain, France, and the Netherlands. This detailed breakdown allows for a nuanced understanding of the distribution of access

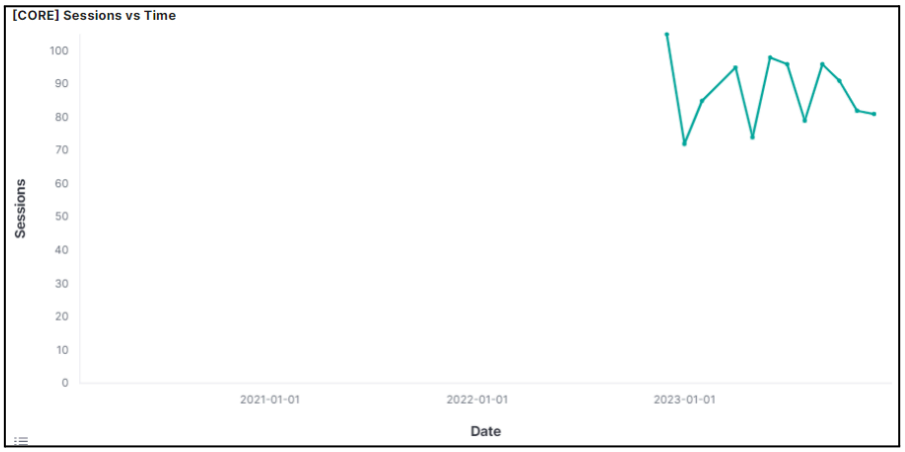
among these significant contributors. Additionally, the graph below the visual presentation delves into the temporal aspect, showcasing the average duration of sessions over time. This temporal analysis offers valuable insights into the evolving patterns and trends in session durations.





Proceeding further, the upcoming graph meticulously illustrates the dynamic trends in page views over time. This visual representation offers a detailed breakdown, allowing for a comprehensive understanding of the temporal evolution of page views associated with this particular resource.

Simultaneously, the following graph sheds light on the patterns and fluctuations in sessions over time, providing valuable insights into the usage and engagement dynamics related to the catalog resource.



Annexe 2.2 Mawenzi (ID 1.2)

The monitoring of access to Mawenzi software packages employs two distinct methods: the CRAN downloads API and analysis of log files from the documentation website. The CRAN downloads API provides quantitative insights into download frequency and geographic distribution, while the log files offer qualitative data on user interactions with documentation resources. Together, these approaches offer a comprehensive understanding of software usage and user engagement.

Downloads from CRAN

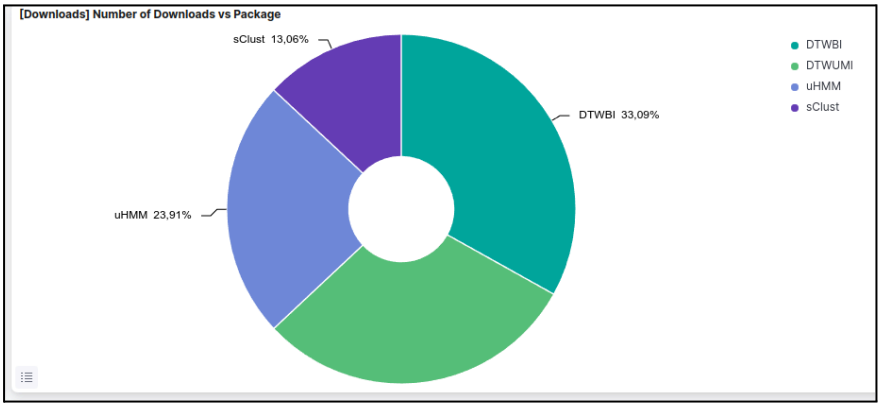
The foundational data supporting the visualizations presented in the following plots has been sourced from the CRAN downloads API, ensuring a reliable and comprehensive representation of the software's usage dynamics.

Commencing with an overview, the initial focus centers on the aggregate number of downloads, providing a macroscopic perspective on the software's overall reach and popularity. Subsequently, a nuanced examination of the temporal evolution of downloads unfolds, shedding light on how the software's usage patterns have evolved.

Furthermore, detailed scrutiny of the share attributed to each package within the overarching framework offers a granular understanding of the specific components contributing to the software's cumulative download metrics. Through this dual approach, not only the quantitative magnitude will be unravelled, but also the temporal and component-specific aspects of the software's dissemination and adoption.

17 760	16 067	12 835	7 009
DTWBI - Downloads	DTWUMI - Downloads	uHMM - Downloads	sClust - Downloads

In the following image, the total number of downloads of each package is shown.



In this image, the number of downloads of each package over time and the proportion of downloads of each package overall are shown.

There is a remarkable correlation between the number of downloads of DTWBI, uHMM, and DRWUMI, which suggests that these packages are being used together.

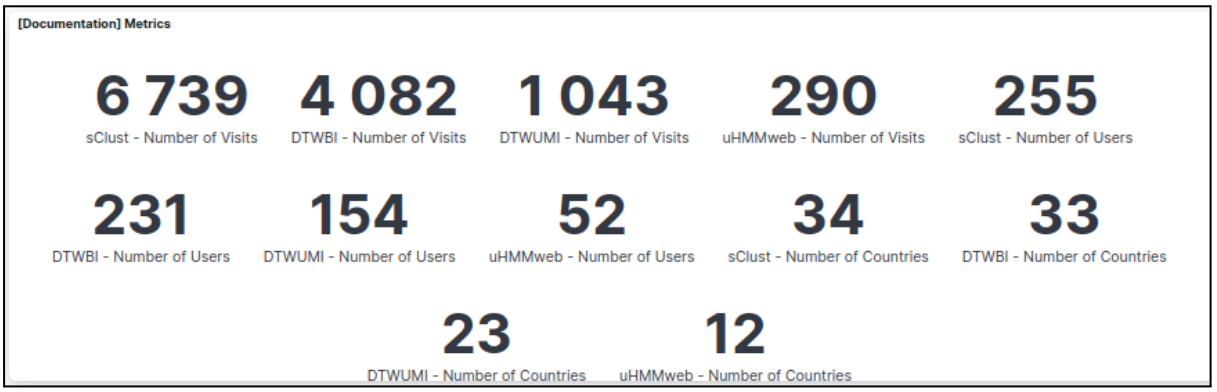
Visits to the Documentation Page

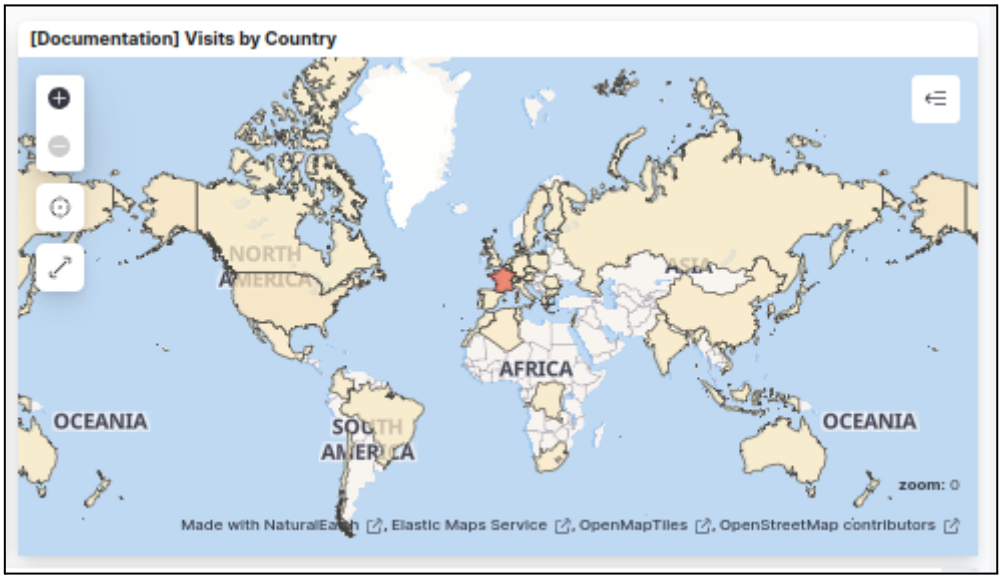
Software usage cannot only be measured by downloads, as a piece of software can be downloaded once and used many times. Therefore, It has been decided to measure access to the documentation pages too, to be able to estimate the trend in the usage of the software.

The data underlying the following plots have been obtained from the log files of the server of Mawenzi's website. Unfortunately, logs of the first months of JERICO-S3 had been lost. Only data from April 13, 2021, is available.

First, the general metrics and geographic analysis of the visits are presented. Then, the temporal evolution of the traffic is shown. Finally, the content visited and the origin of traffic is analyzed.

In the next images, the overall number of visits, users, and countries who accessed each package's documentation, and the geographic distribution of visits are presented.



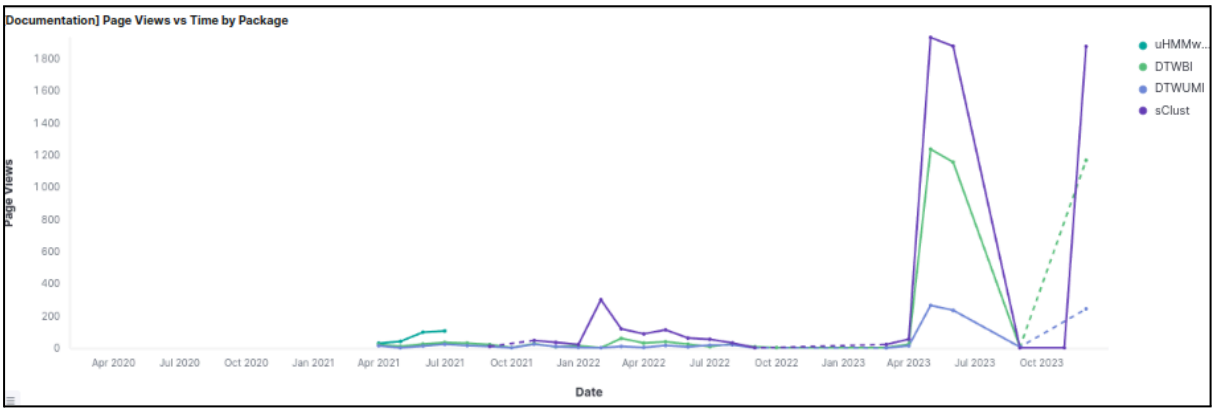


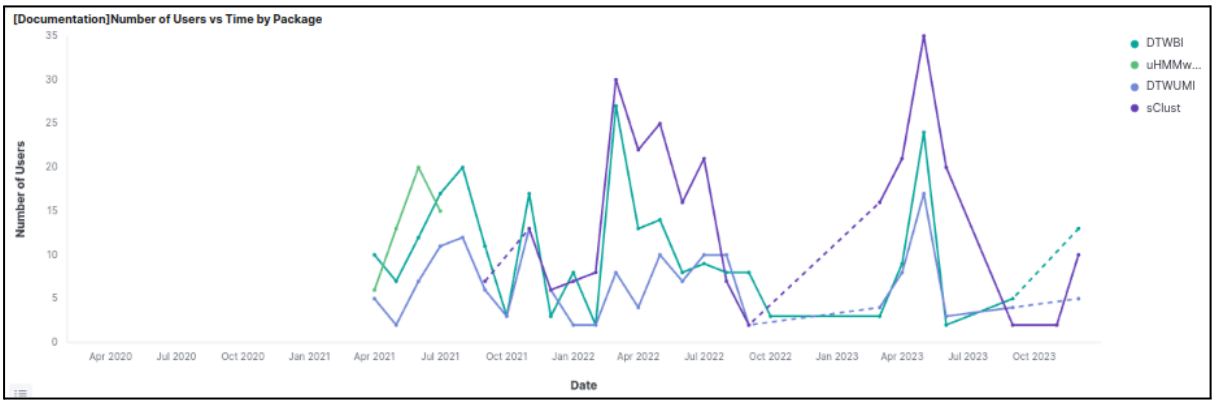
Moving forward, the exploration of temporal trends extends to two additional plots, each

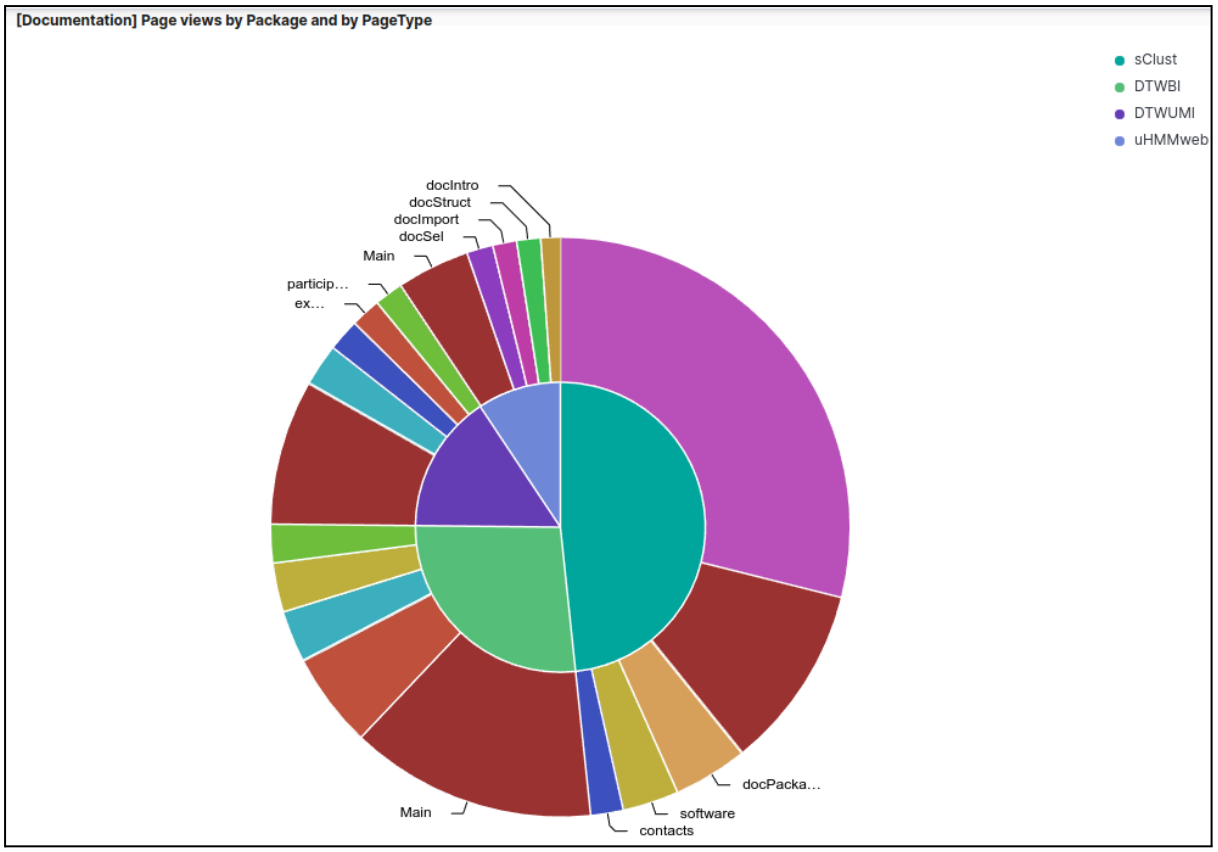
offering distinctive insights into the dynamics of pageviews and user engagement for individual packages.

In the subsequent visualizations, the temporal trends of both pageviews and users are meticulously presented, unraveling the nuanced patterns and fluctuations associated with each package. This dual perspective allows for a comprehensive understanding of not only the quantitative aspects of pageviews but also the dynamic engagement levels exhibited by users over time.

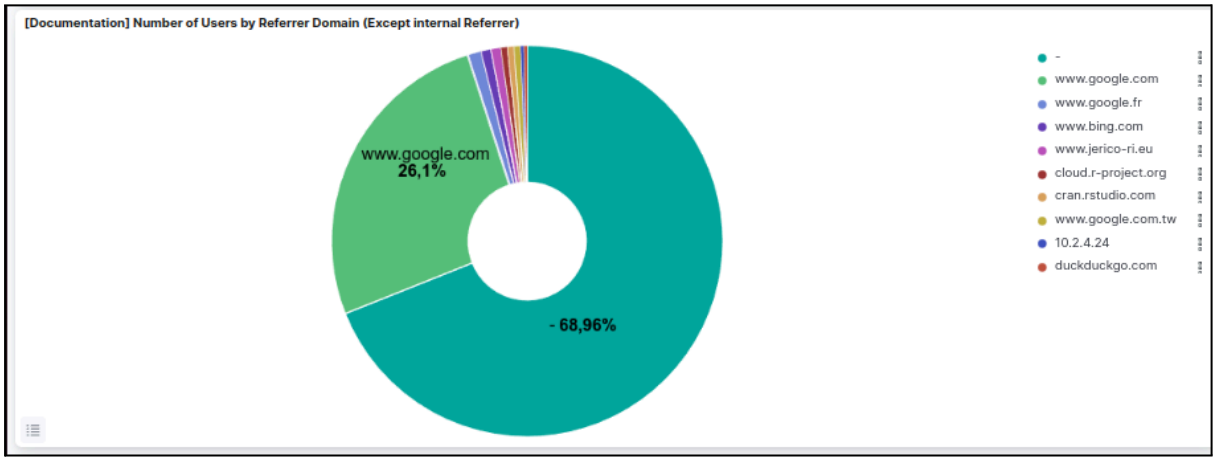
Furthermore, in the forthcoming images, a dedicated plot captures the intricate details of pageviews garnered by each page within every package. This detailed breakdown goes beyond the aggregate numbers, providing a fine-grained perspective on the popularity and relevance of specific pages within the broader context of each package. Through these visualizations, a holistic portrayal of the temporal dynamics is shown, offering valuable insights into the evolving trends of both pageviews and user interactions with the software packages.

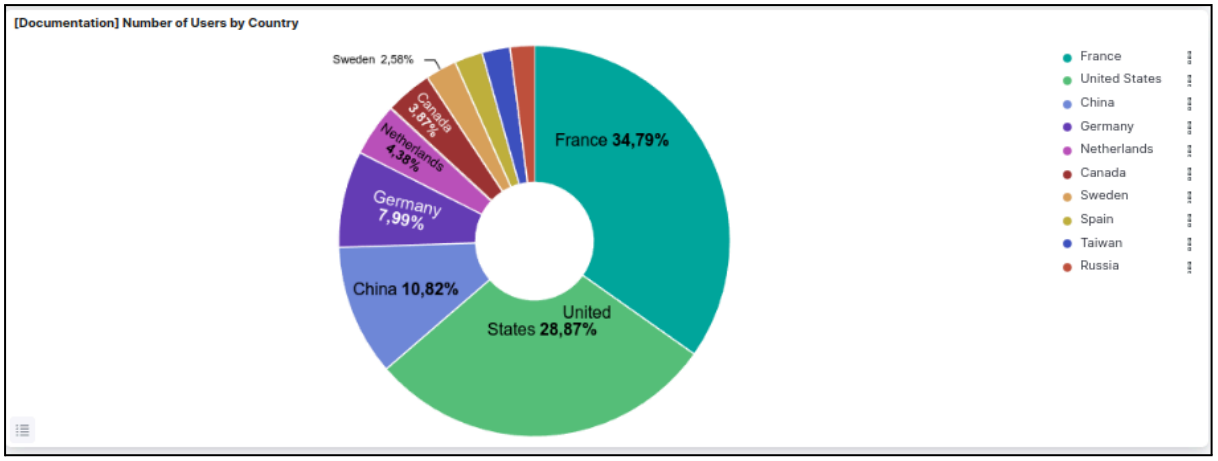






Finally, the traffic origin is analyzed: by both referrer ("-" means referrer is not informed, like a visit from a bookmarked link or direct access via software) and country.



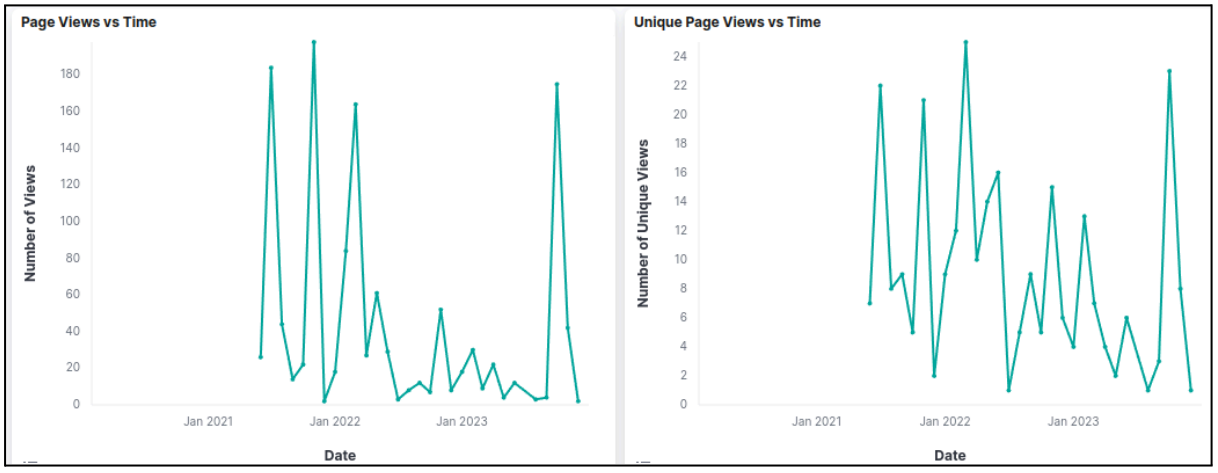


The same correlation between the uHMMweb and DTWUMI that was seen in the previous dashboards (analysis of the number of downloads of the software) can be observed. Also, the number of visitors that do not have a referrer domain is remarkable. This is interpreted as users who have bookmarked the links. Finally, the geographic distribution shows interest from Europe.

Annexe 2.3 EU HFR Node/AZTI (ID 4.1)

The data underlying the following plot have been obtained from GitHub API. Data is only available from June 18th, 2021 because GitHub only keeps access metrics for 15 days. Therefore, data regarding access 15 days before the development of VAMS was not kept.

The following plots show the number of Views and Unique Views the software package JRadar has had on GitHub.

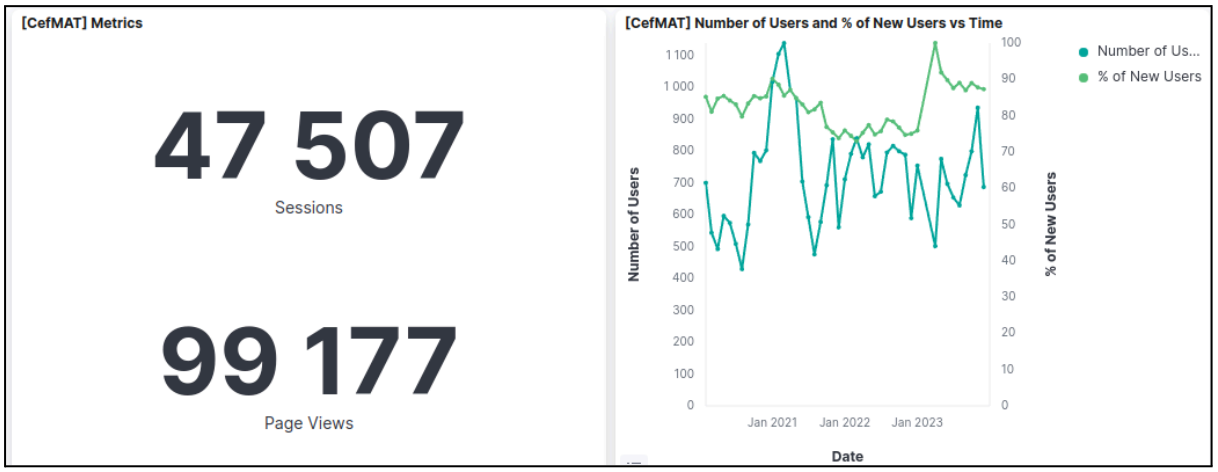


Annexe 2.4 CefMAT (ID 6.1)

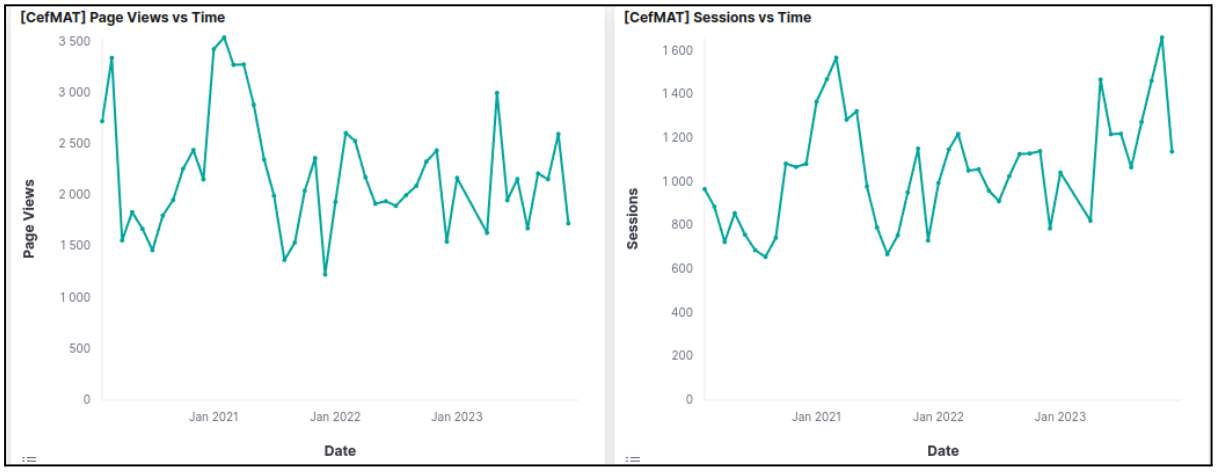
The following plots' data are obtained via a Google Form that CefMAT staff kindly fill out monthly based on their Google Analytics reports.

First, the volume of traffic will be analyzed. Then, metrics related to session quality (session duration and bounce rate) will be shown. Finally, the origin of traffic will be analyzed.

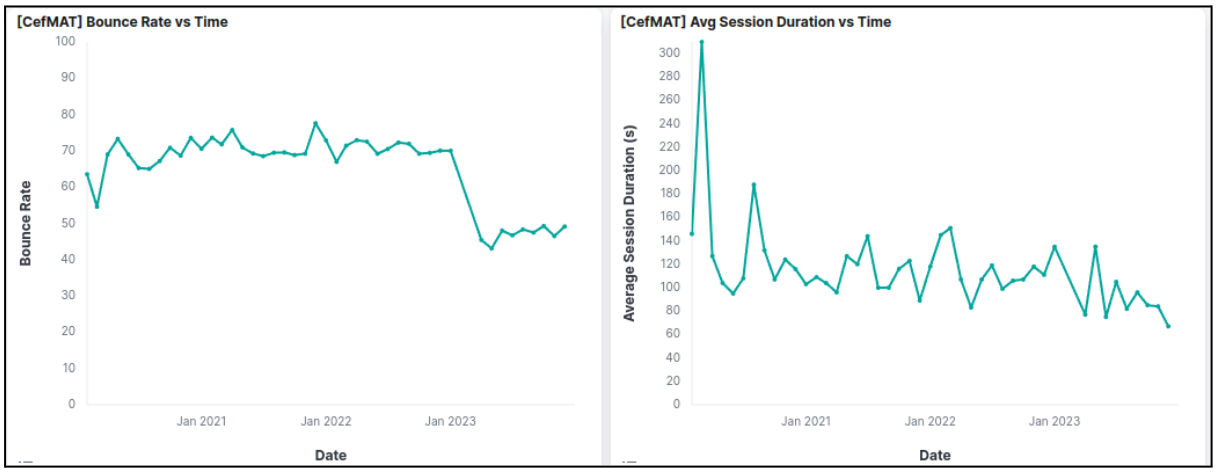
In the next image, a numeric representation of the access metrics and the users' analysis is presented.



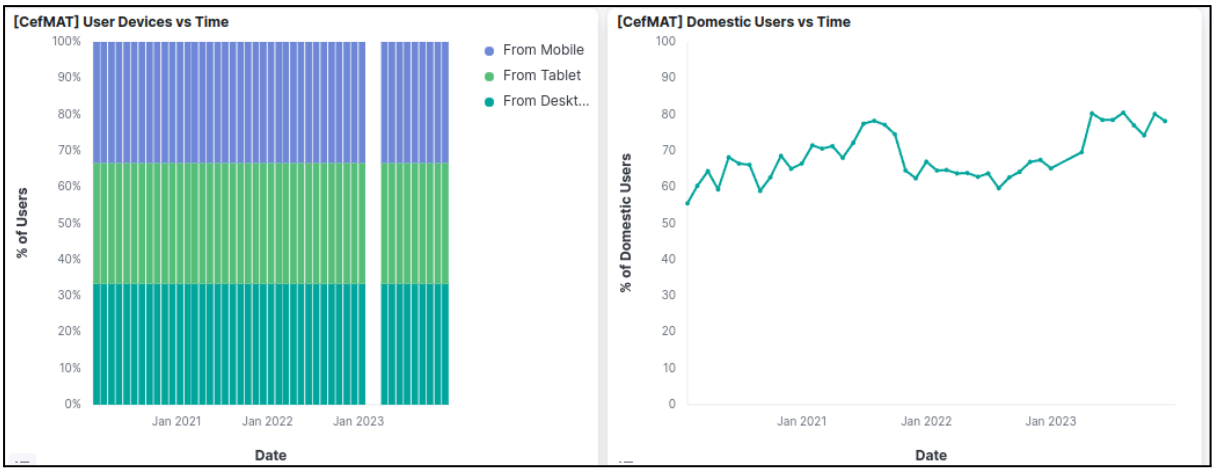
Next, a temporal analysis of the pageviews and sessions has been added.



In the following image, metrics related to the on-page user experience: bounce rate, and session duration are analyzed.



Finally, the user origin is analyzed: both by device and country of origin.



As expected by the VA infrastructure managers, some seasonality in the usage of the website is observed. Around spring, the number of users, sessions, and pageviews increases. The bounce rate and average session length, however, do not seem to change, suggesting that the way the site is used is not seasonal.

Annexe 2.5 CNR TirLig e-infrastructure (ID 7.1)

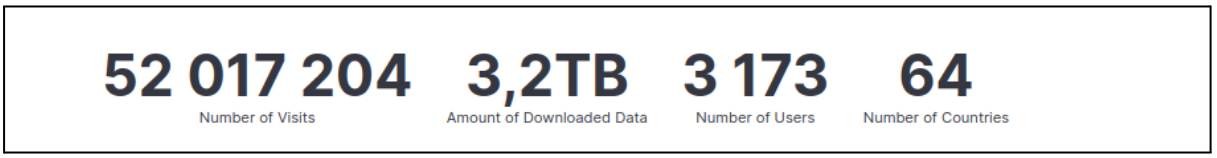
This VA infrastructure consists of two parts: a monitored THREDDS data server analyzed through its log files and a website monitored via Google Analytics. Next, the access metrics of each of these parts are presented.

THREDDS Data Server

The data underlying the following plots have been obtained from the log files of the THREDDS data server.

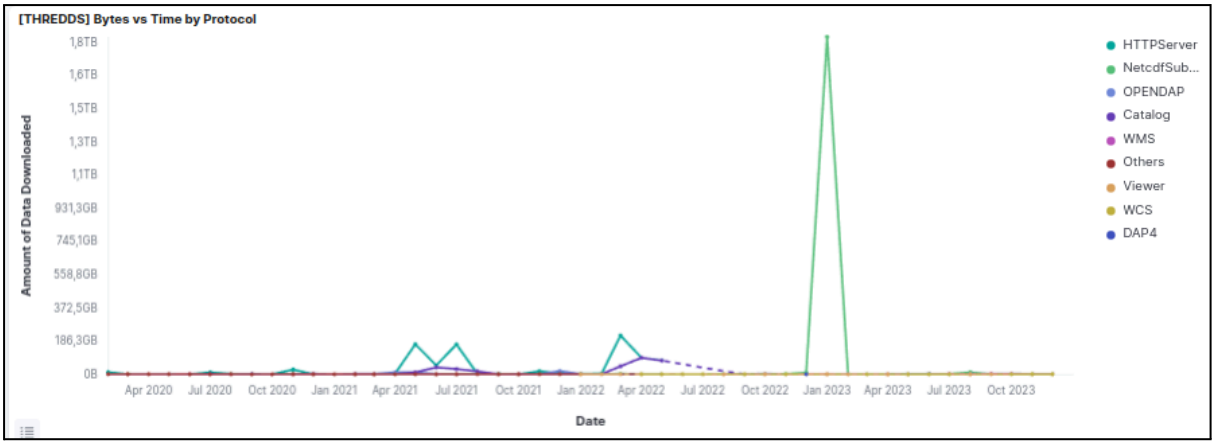
First, the overall access metrics will be presented. Then, traffic by THREDDS protocol, geographic origin, used client, referrer domain, and operating system will be analyzed.

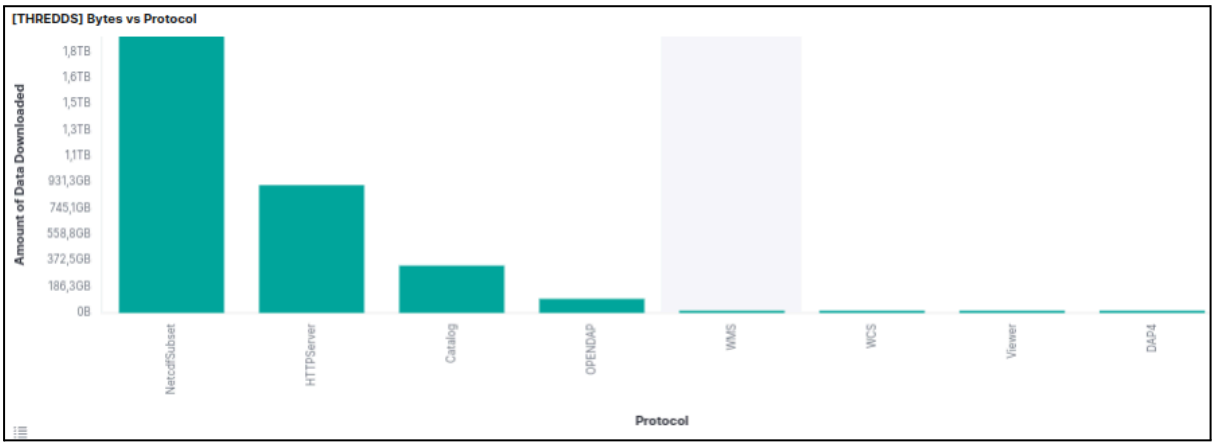
The next image presents the general access metrics in a numeric form.

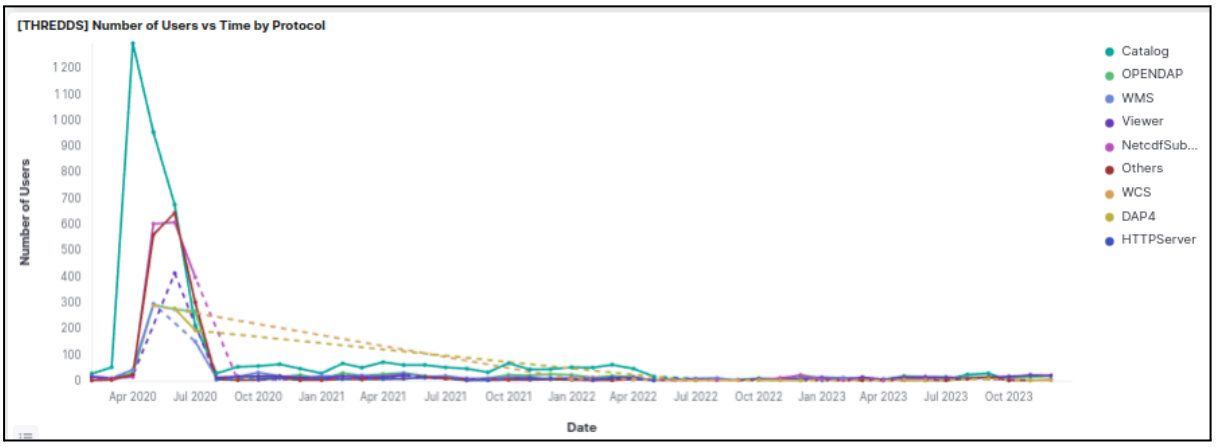


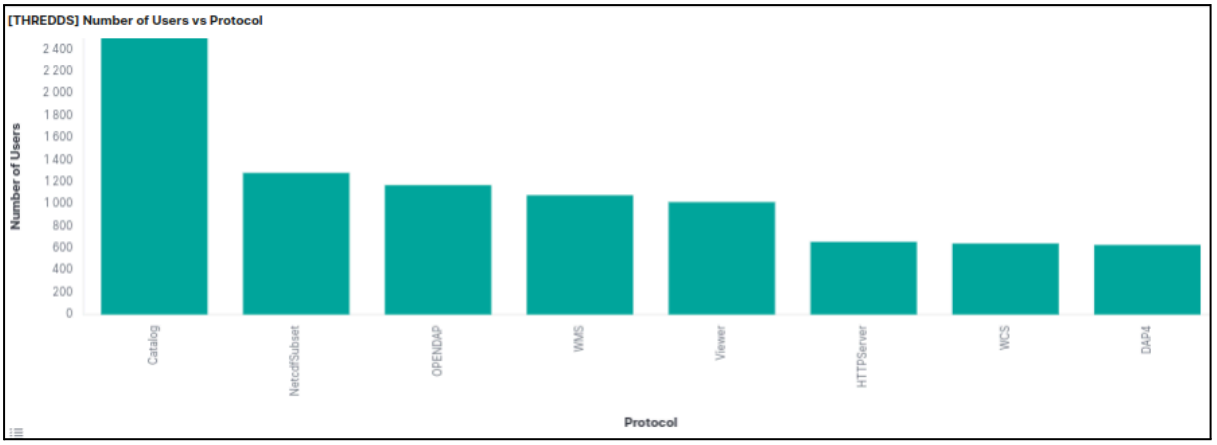
The following images contain the analysis of the traffic by THREDDS protocol. The traffic to the catalog HTML pages is assigned to protocol "Catalog" and traffic to the HTML pages of viewers is assigned to "Viewer" protocol, as seen in other graphs before presented in this report.

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

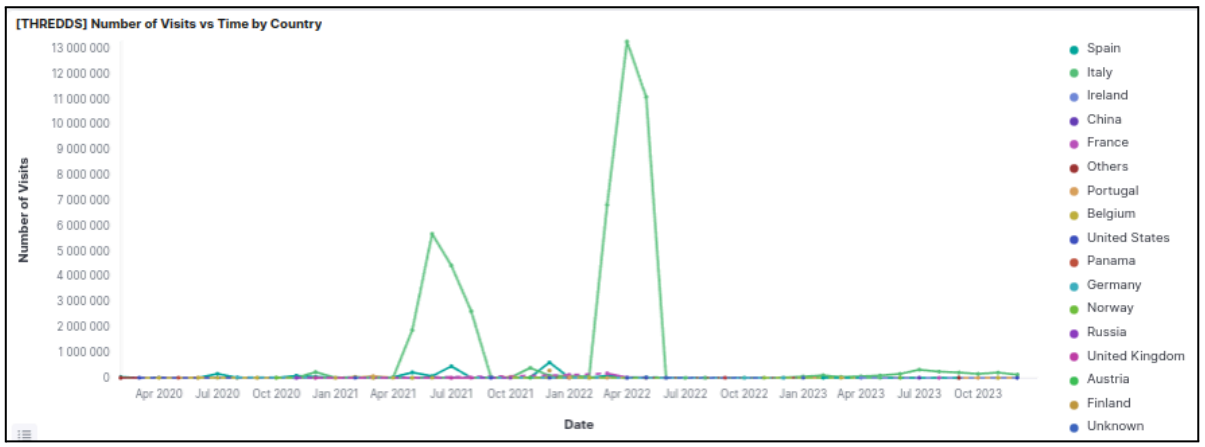


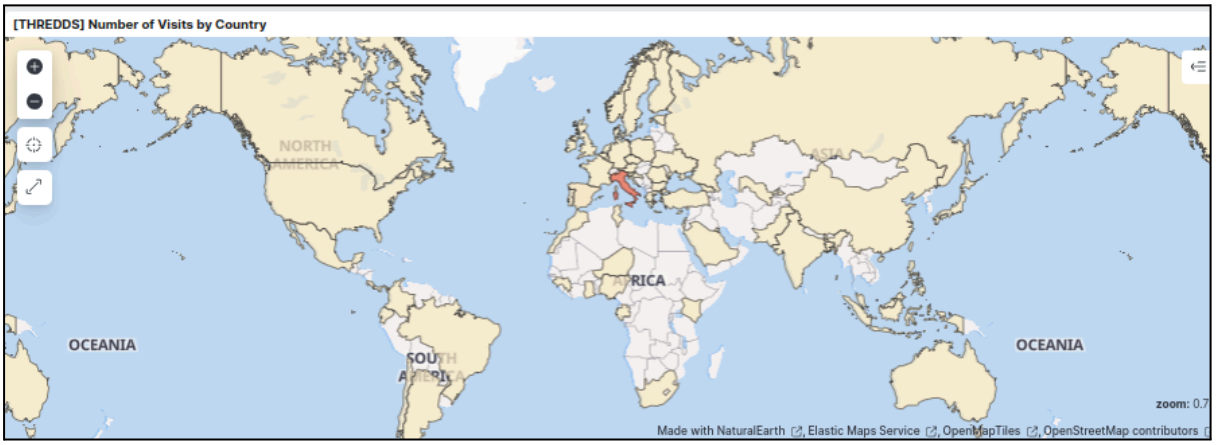


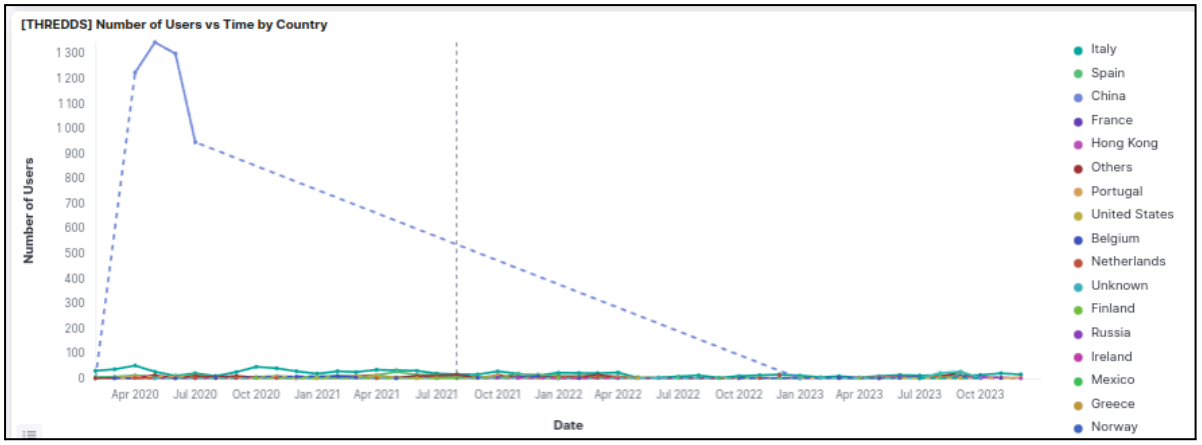


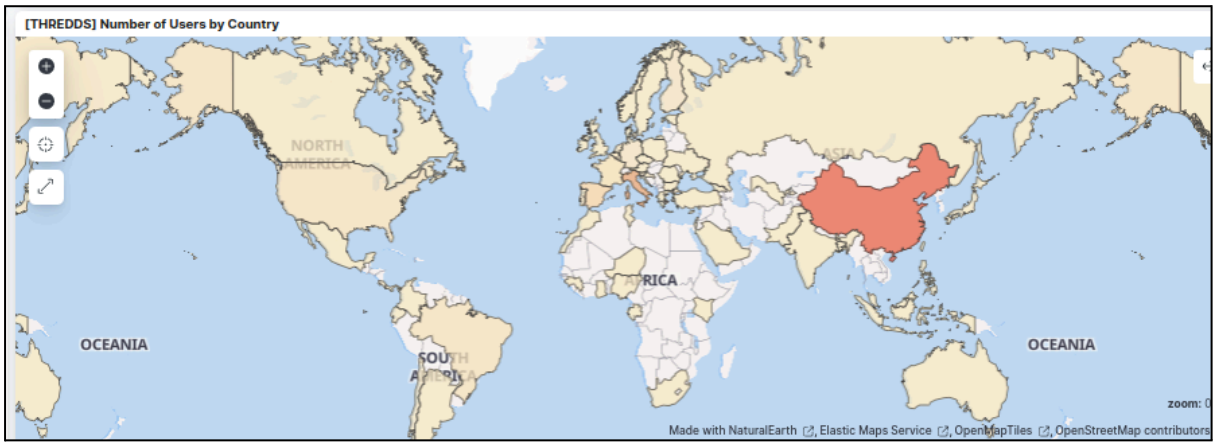


In the next four images, plots and maps with a geographic analysis of the traffic seen by the server are shown.

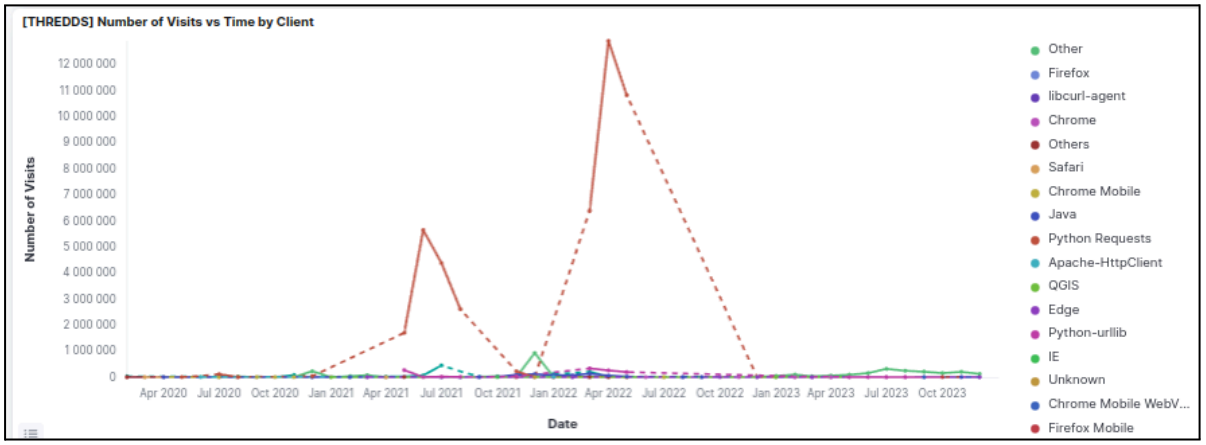








The last graphs show analyses of the traffic based on the software used by the user to perform the request (a browser or an HTTP library).



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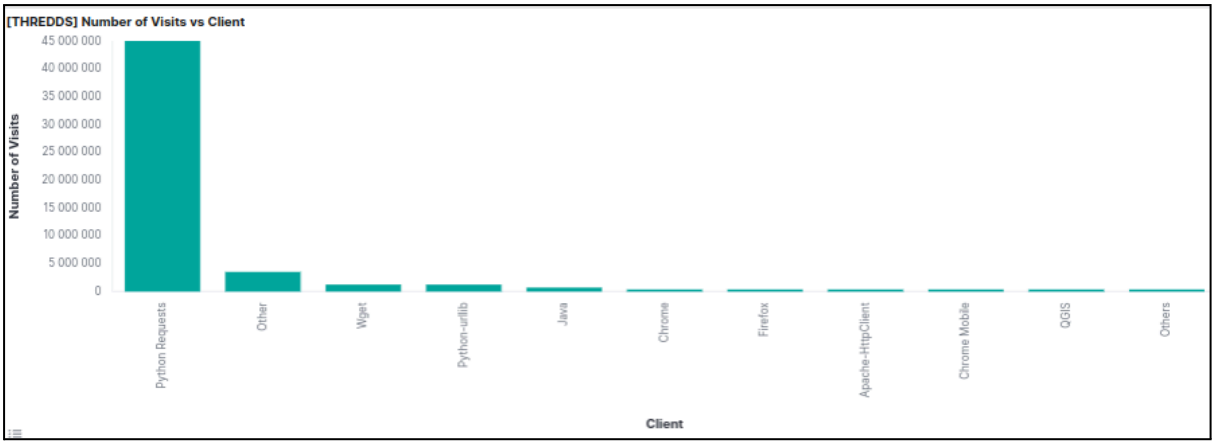
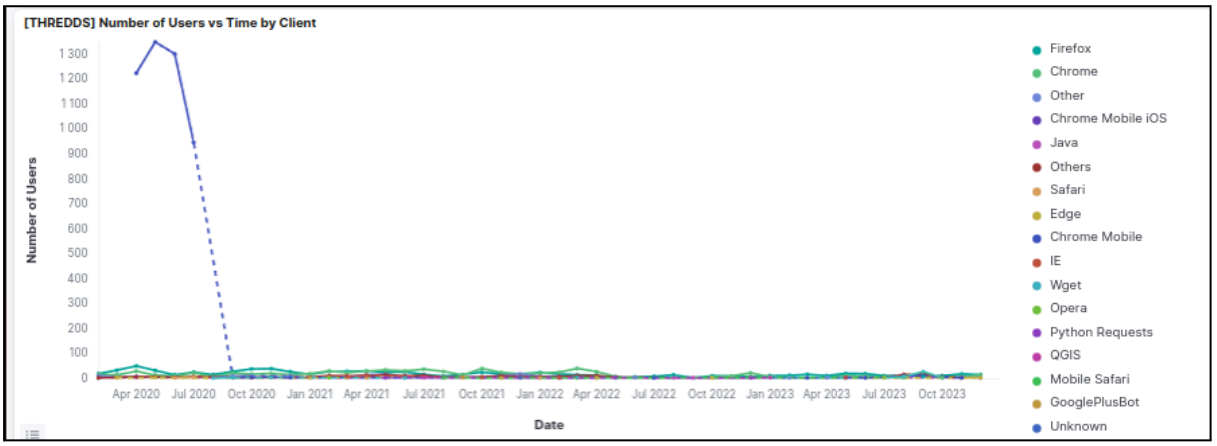
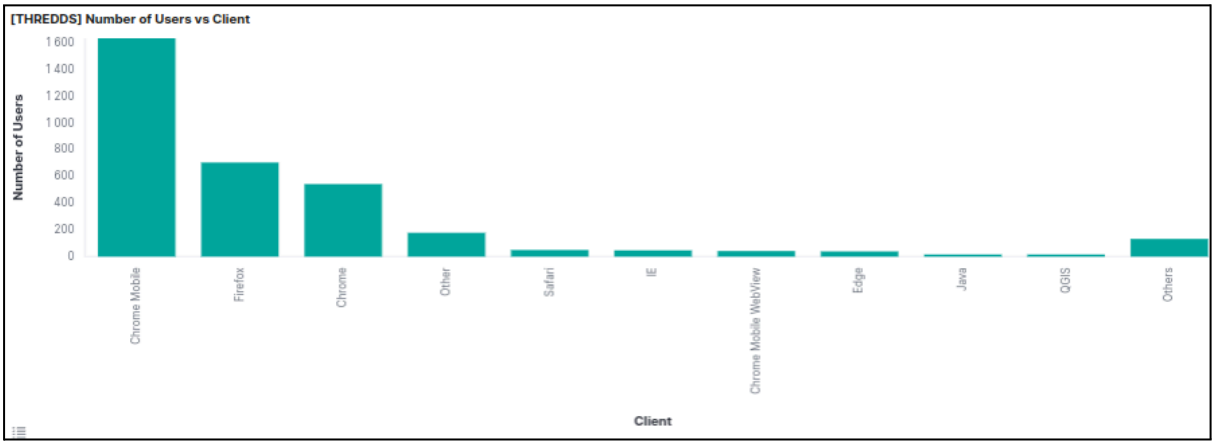
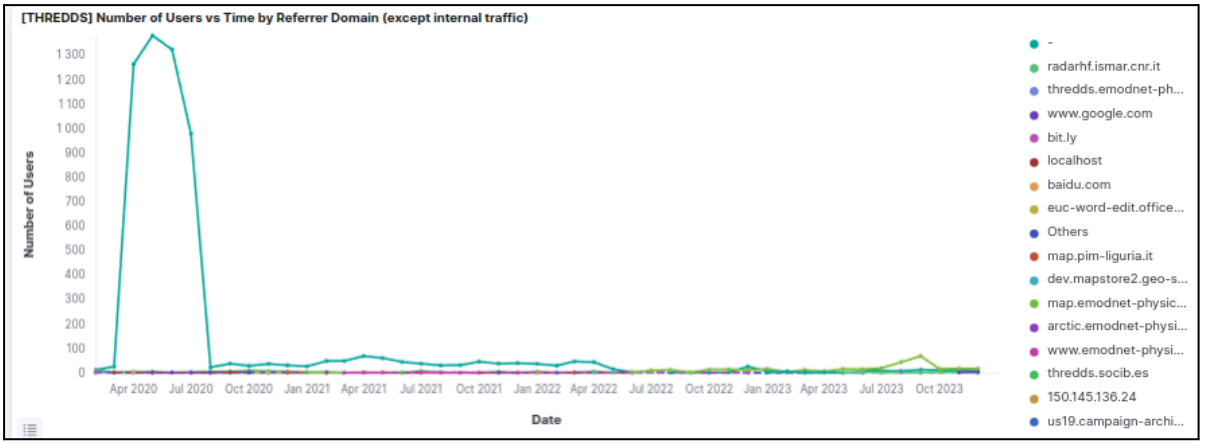
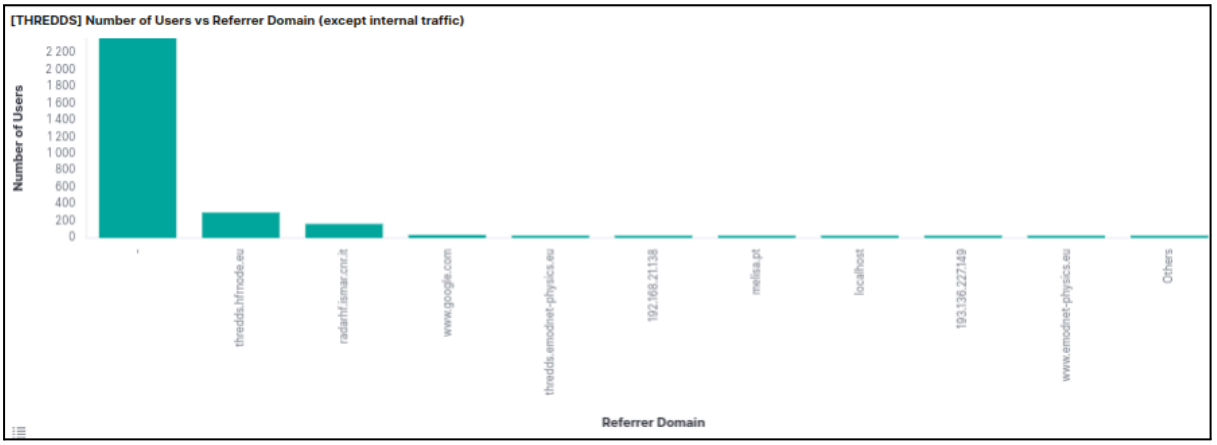




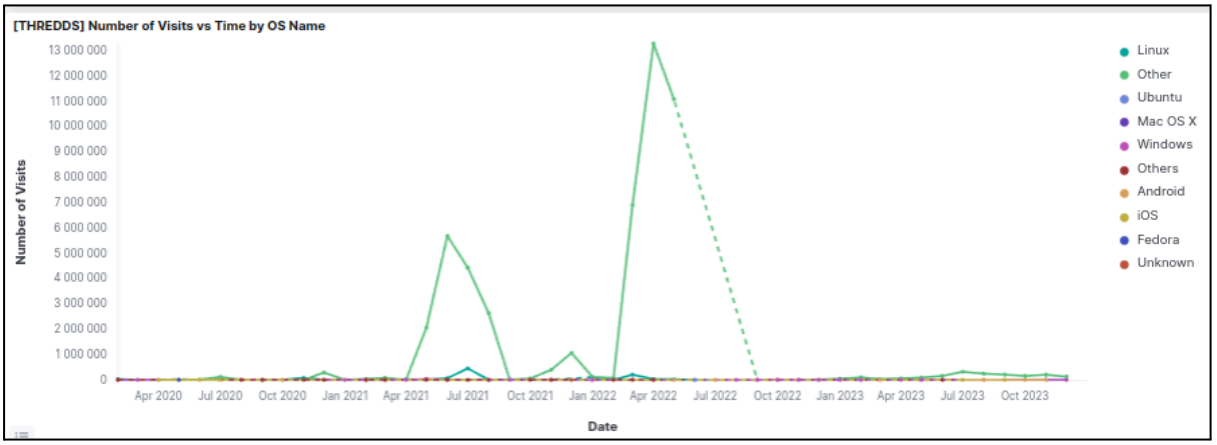


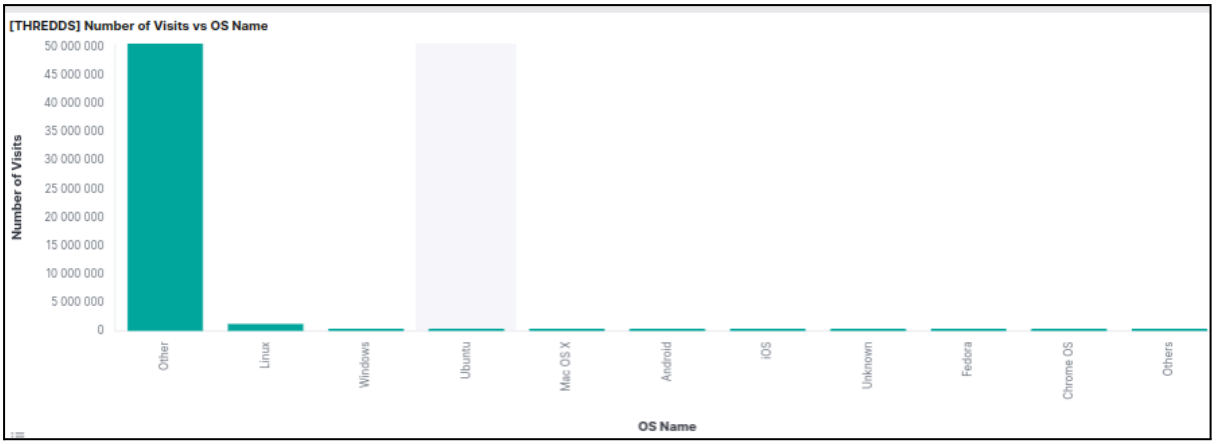
The two images below contain an analysis based on the referrer domain ("-" means referrer is not informed, like a visit from a bookmarked link or direct access via software).

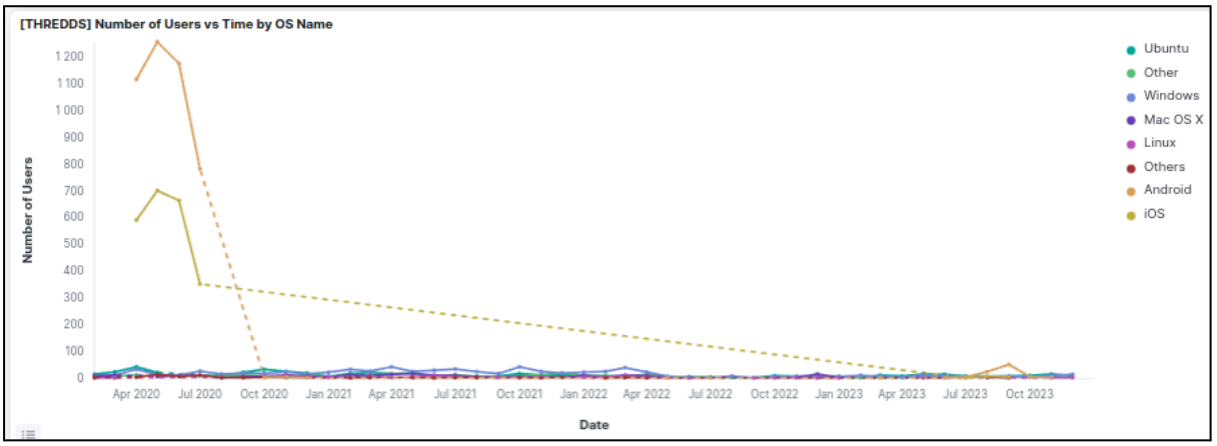


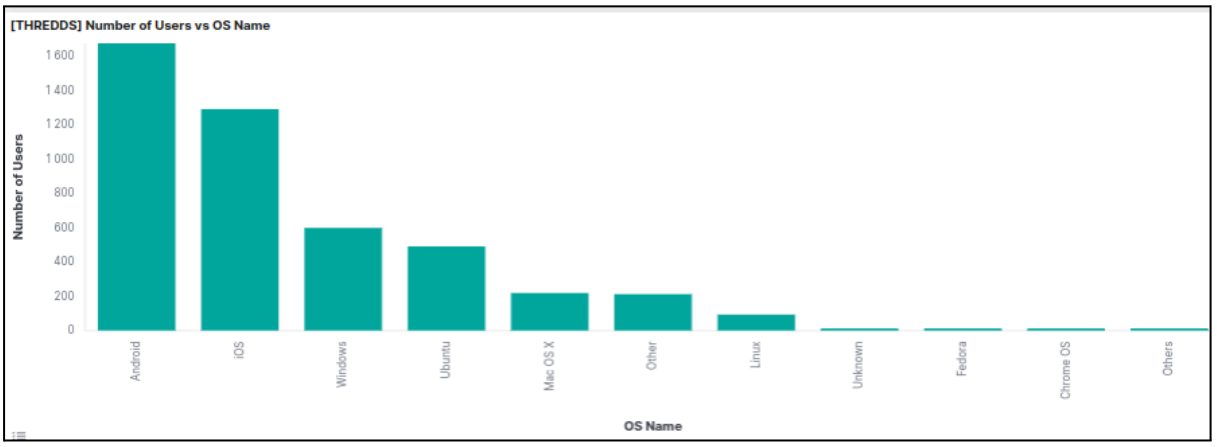


Finally, an analysis of traffic based on the operating system of the user is presented (that information is extracted from the browser version, for HTTP libraries, the information is not available and is contained in the "Other" category).









It can be observed that many of the plots are dominated by big, short peaks. One of the peaks is in the number of users around the summer of 2020. There are two other peaks in the amount of data in spring 2021.

To see the trend of the baseline activity, the same images are included next where traffic from China (responsible for the users' peak) and two IPs that are responsible for the peaks of the amount of data (one is Italian, the other one is Spanish and belongs to AZTI) have been filtered out. The traffic from China appears to be a robot that scrapped the catalog of the THREDDS data server using many different IPs (hence, creating a peak in users). The traffic from the excluded IPs seems to be legitimate scientific downloads.

Website

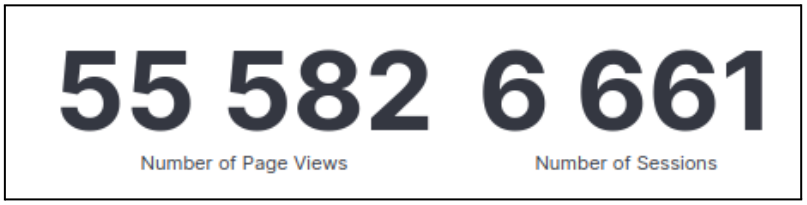
The data underlying the following plots have been obtained from the Google Analytics API.

The subsequent analyses unfold as follows: a thorough geographic analysis offers insights into the global distribution of access, providing a nuanced perspective on the software's international reach. Moreover, a detailed examination of user types, distinguishing between new and returning users, allows us to discern patterns in user acquisition and retention.

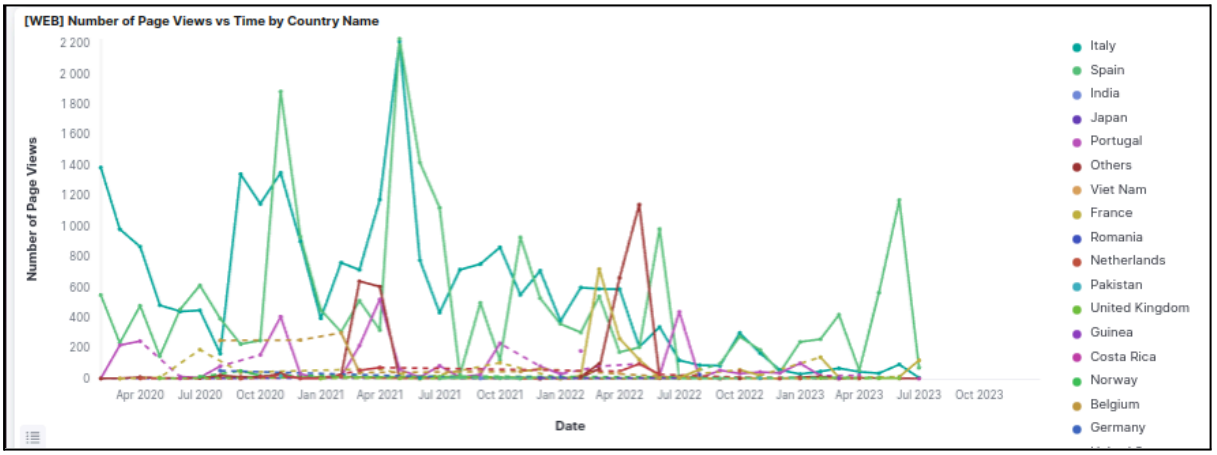
However, it is crucial to address a temporary data gap that spans the period from July 2023 to December 2023. This interruption is a consequence of Google deprecating the old Analytics API and transitioning to version 4, which proved incompatible with the existing metric system. Due to the efforts made to adapt and collect data using the new version, separate graphs will be shown for Users, News Users, Page Views, and Sessions for the timeframe comprising July 2023 to December 2023.

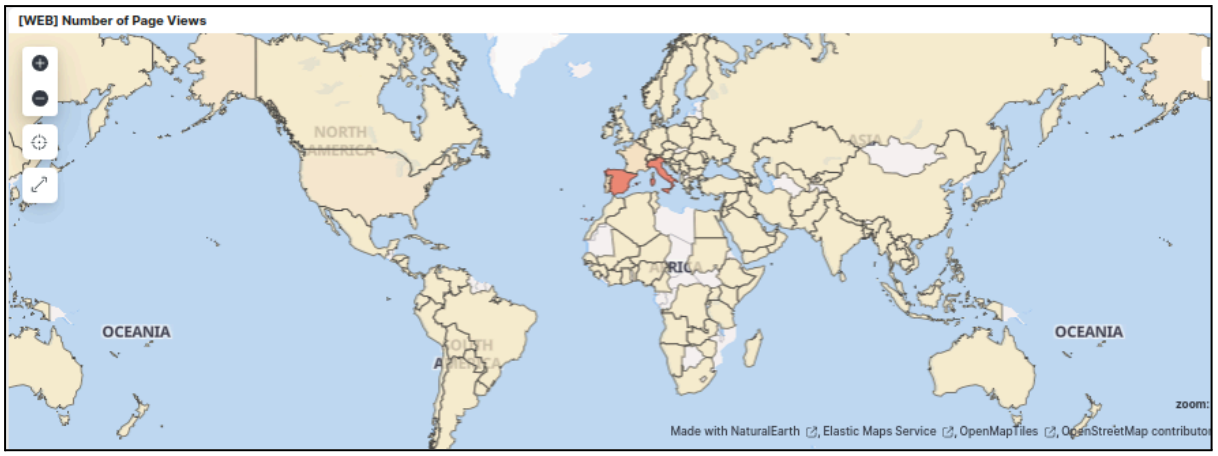
The analytical scrutiny extends further to encompass a bounce rate analysis, unraveling the dynamics of user engagement by evaluating the percentage of single-page sessions. Additionally, a meticulous investigation into user devices brings forth valuable insights into the diverse technological landscape through which users interact with the software.

The next image presents the general access metrics in a numeric form.

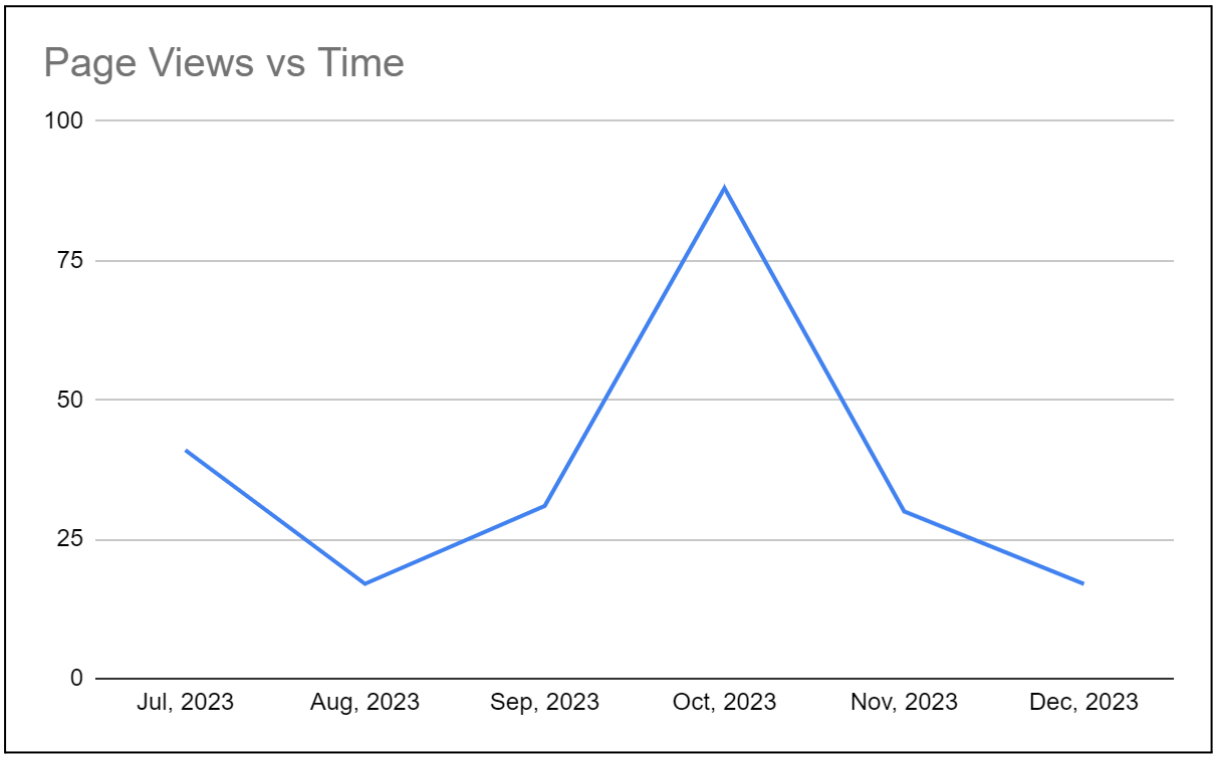


The following images contain the geographic analysis of the traffic.

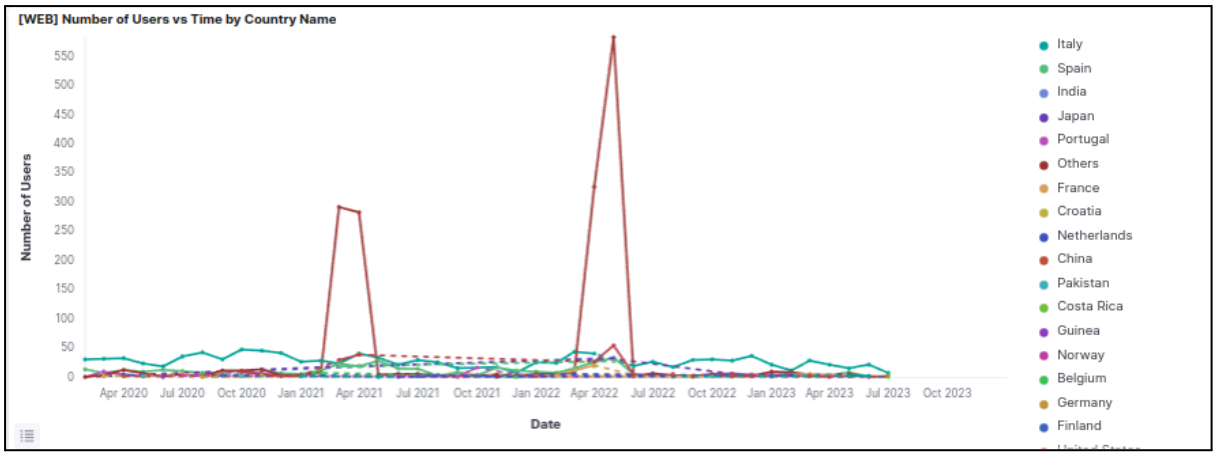


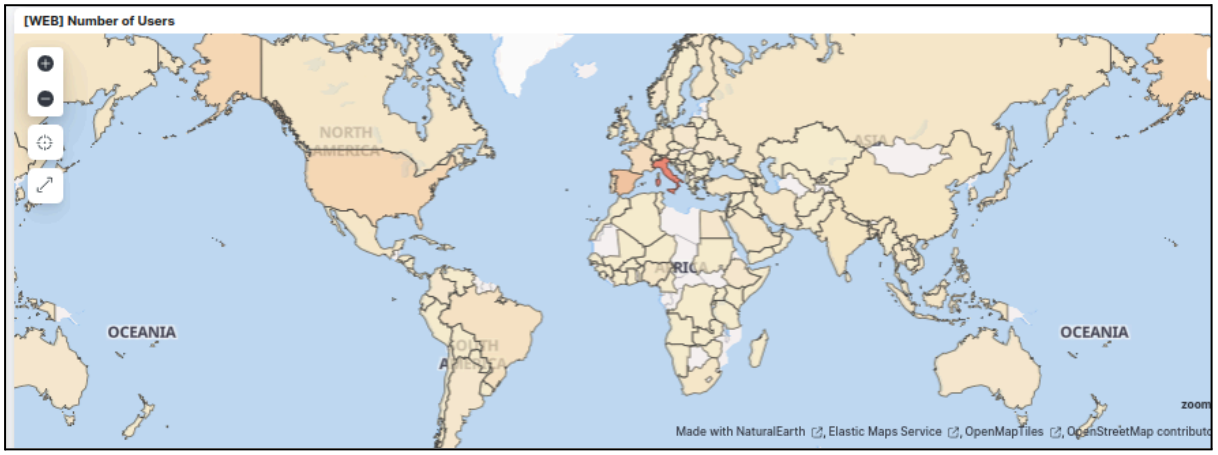


As commented earlier, the information for the months between July 2023 to December 2023 are shown in a separate graph below.

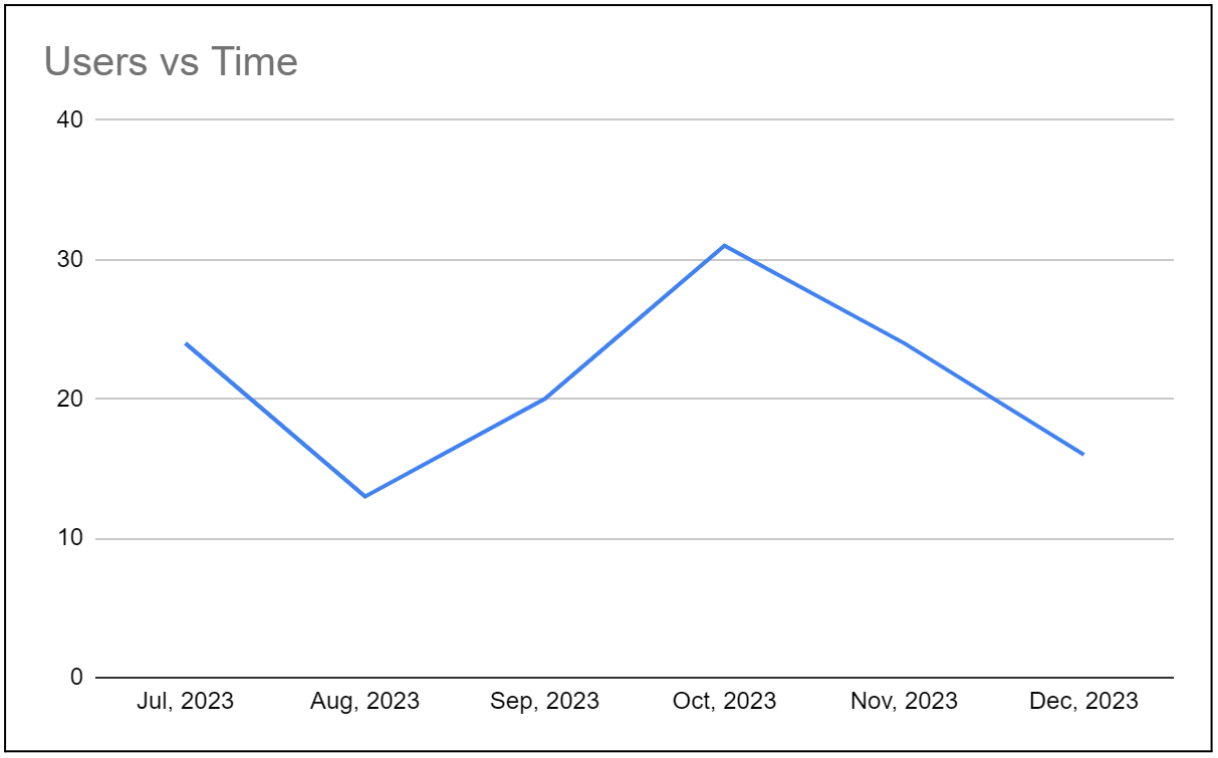


The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.

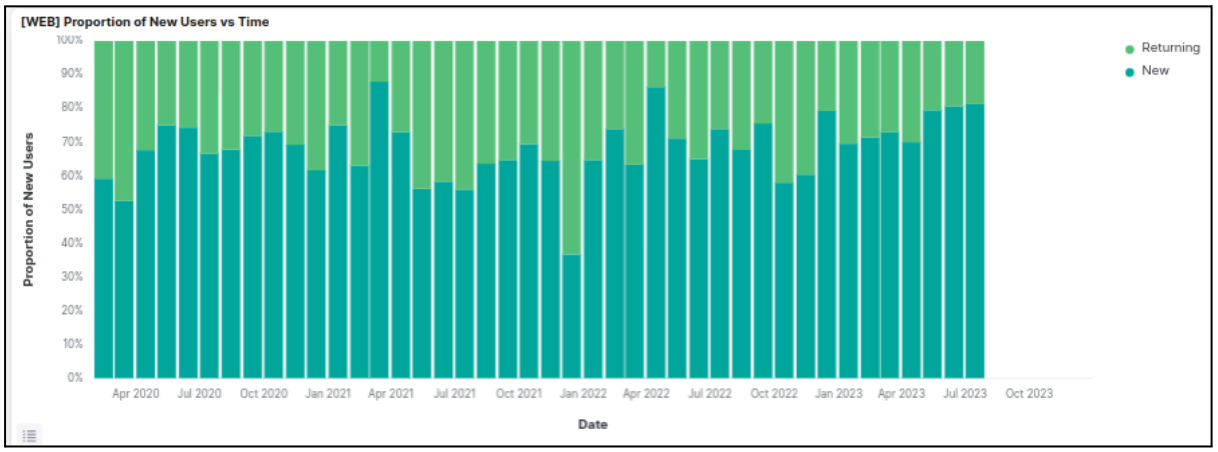


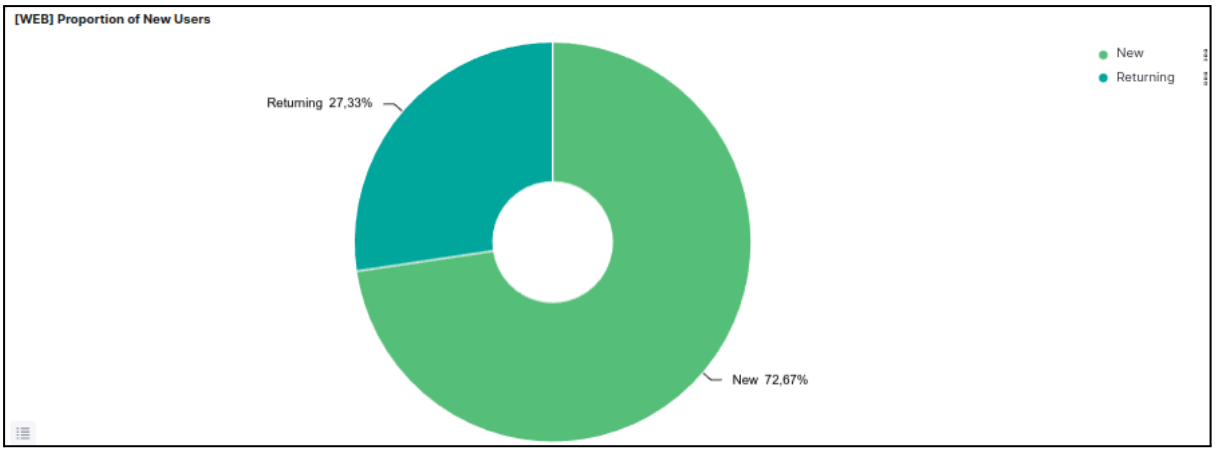


The following graph analyzes the number of users throughout July 2023 to December 2023.

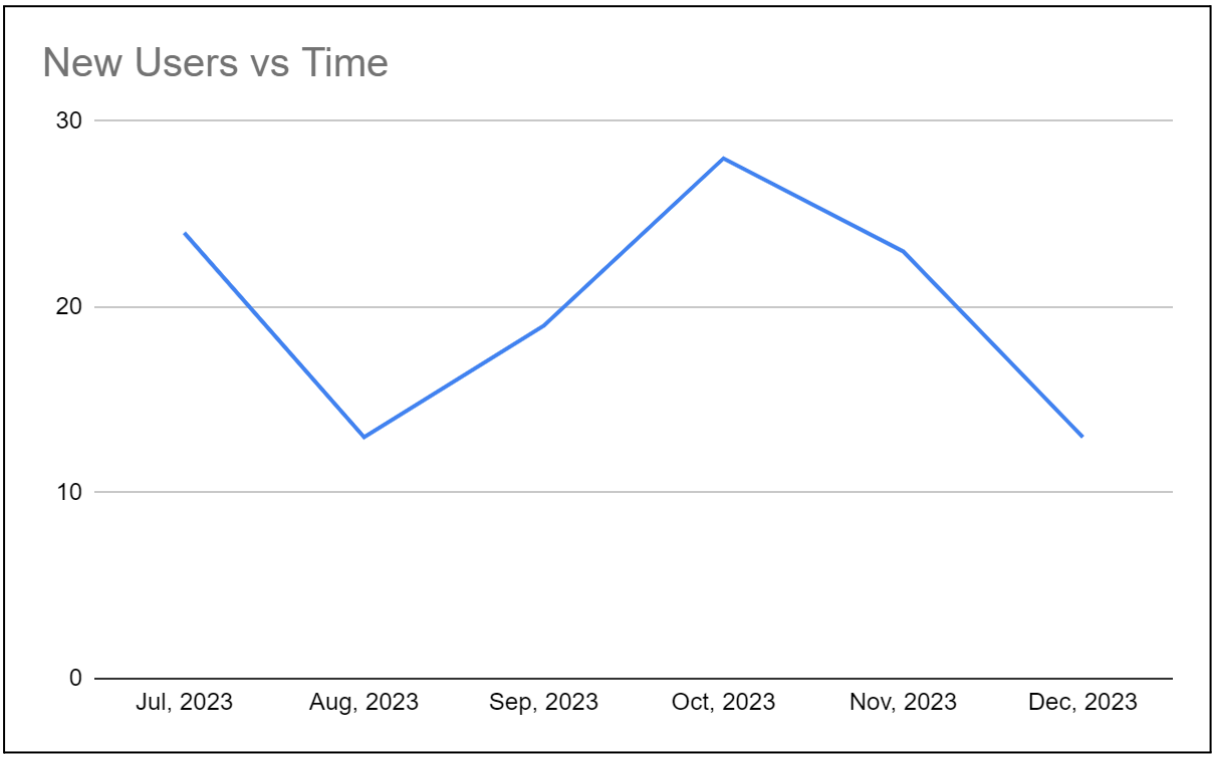


Next, plots analyzing the proportion of new users are shown.

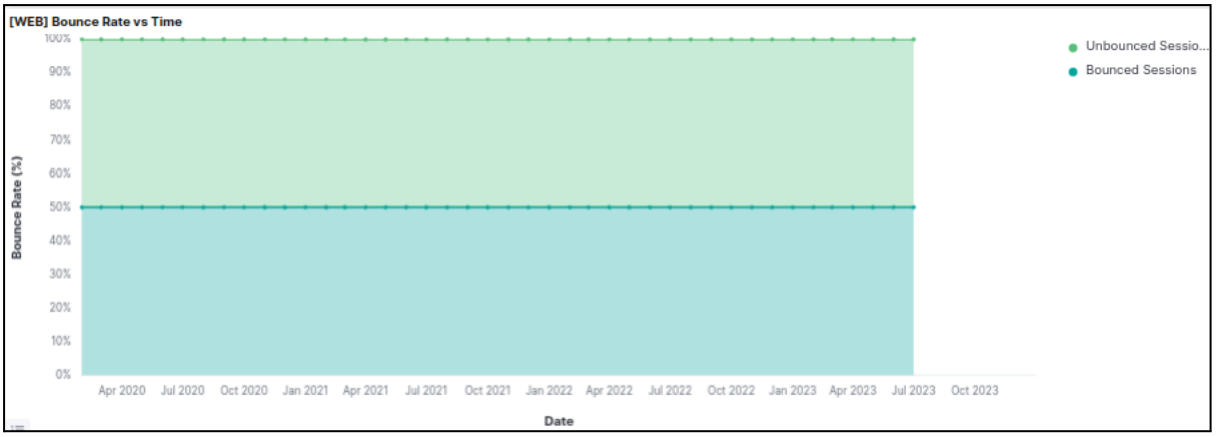




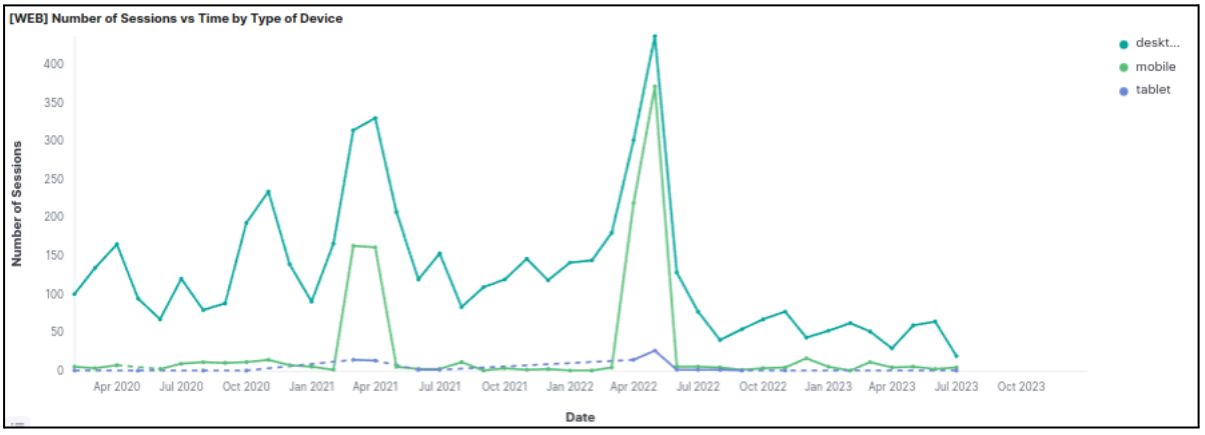
Before moving on to the next set of graphs, and as explained earlier, the data comprised between July 2023 to December 2023 is shown in a separate graph below.



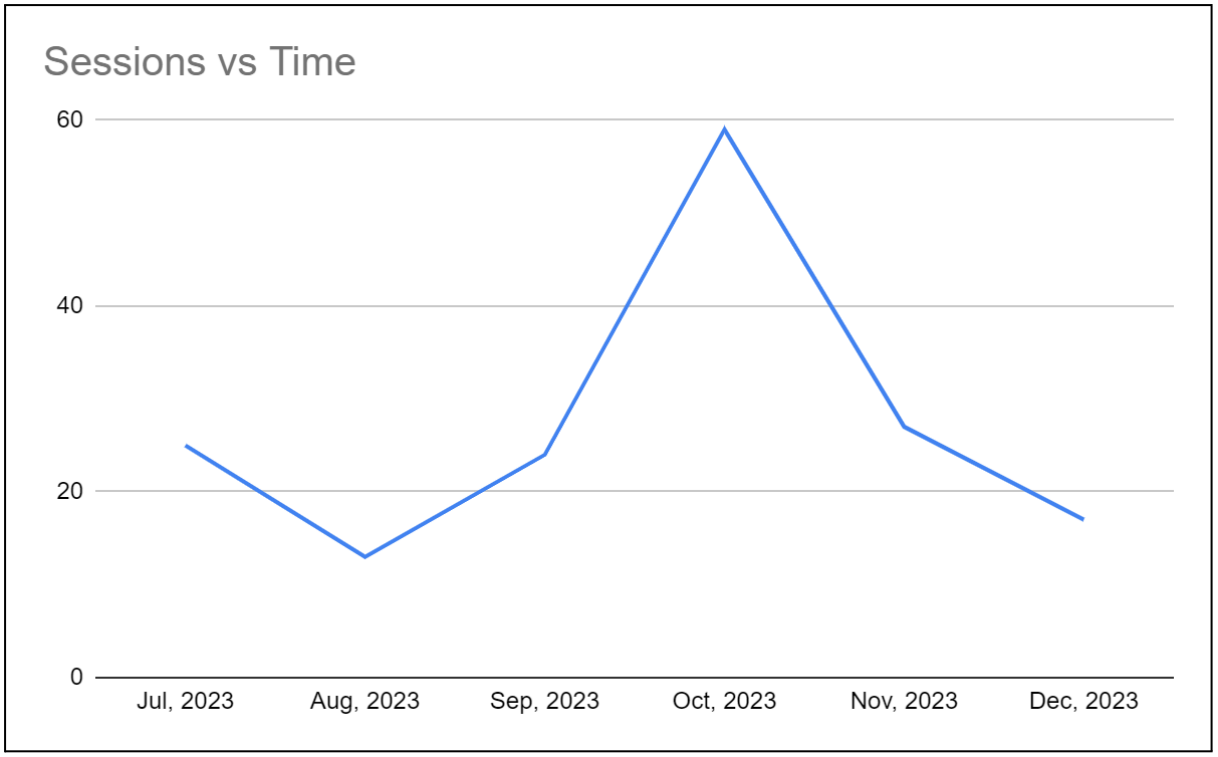
Moving forward, the bounce rate will be explained. This metric, which measures the percentage of single-page sessions, is a key indicator of user engagement. By delving into the bounce rate, the study gleans insights into user behavior, helping us refine content presentation and enhance overall user experience. This focused analysis contributes to a holistic understanding of how users interact with the software.



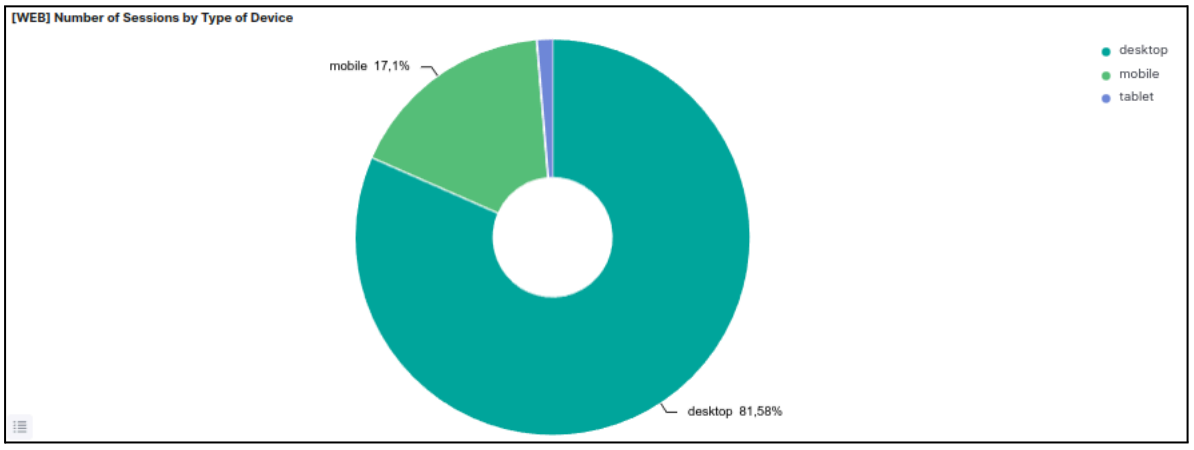
The images below show the proportion of sessions that come from each type of device and the influence of the type of device on the bounce rate.

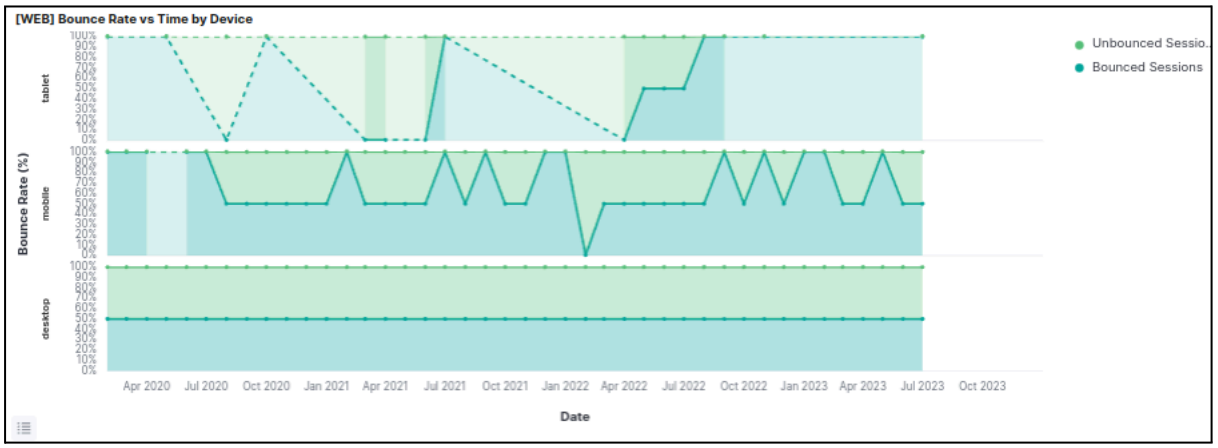


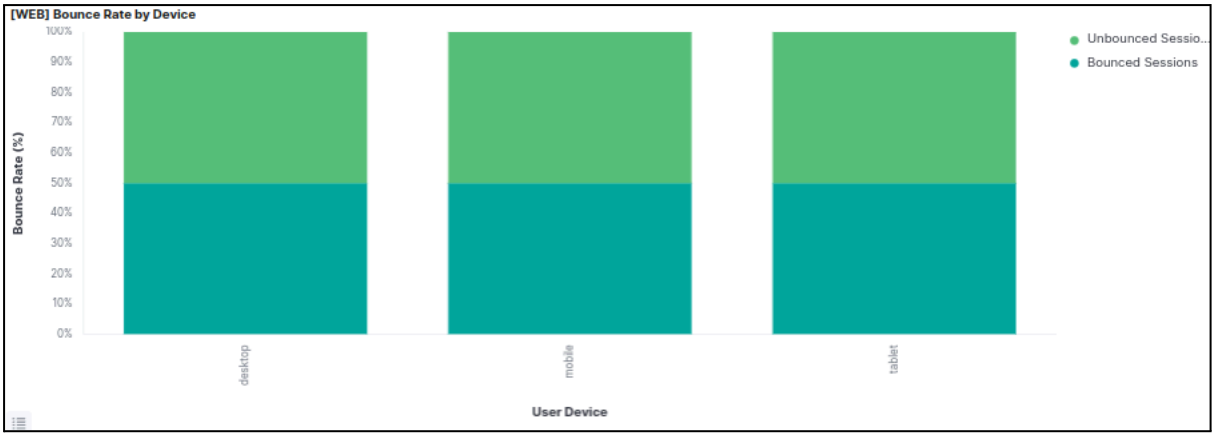
The number of sessions conducted between July 2023 to December 2023 are shown on a separate graph below.



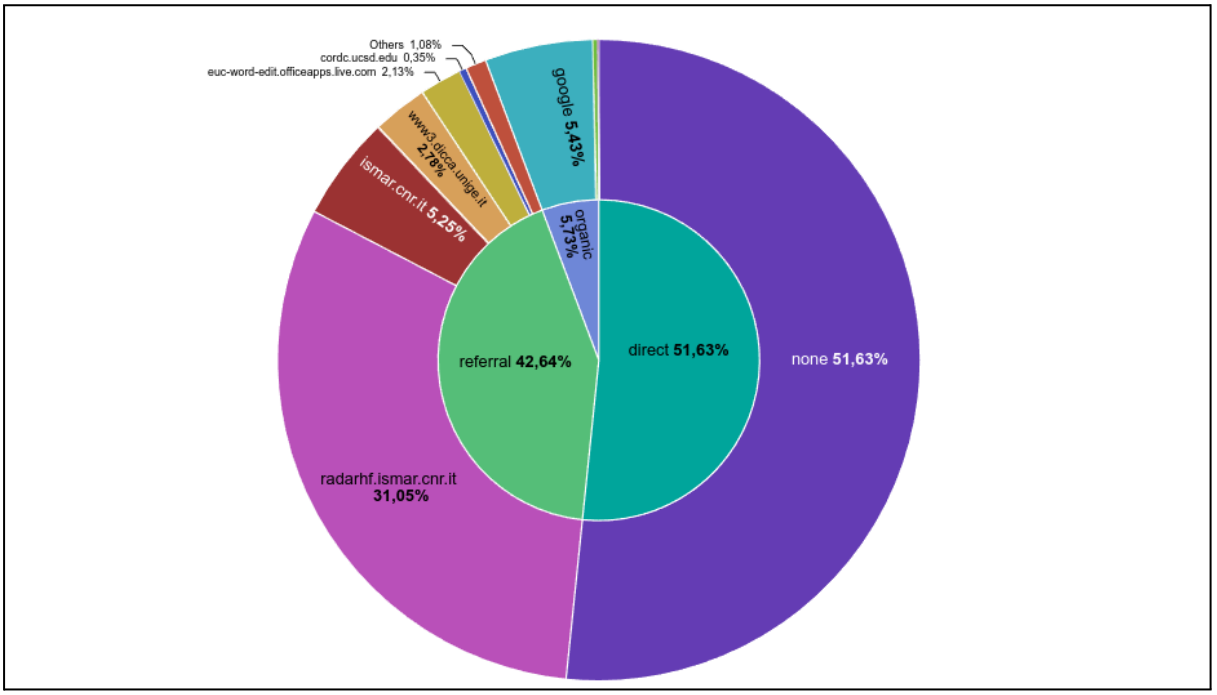
Moreover, and as a representation of the last information regarding sessions, it can be seen a graph explaining the difference between the tipe of device used.







Concluding this section, a comprehensive analysis of traffic is portrayed, focusing specifically on its source, providing a detailed examination of the diverse origins contributing to the overall virtual access engagement og CNR TirLig e-infrastructure's website.



Annexe 2.6 EU HFR Node/CNR (ID 7.2)

This VA infrastructure consists of two parts: an HF Radar file processing service and an HF Radar processing software. Next, the access metrics of each of these parts are presented.

Processing

The data underlying the following plots have been obtained from a database that contains the registry of each time a file is sent to the processing service and each time a file is output by the processing service. There are three cases:

- Both the input and output registry of a process are present. This is the most common

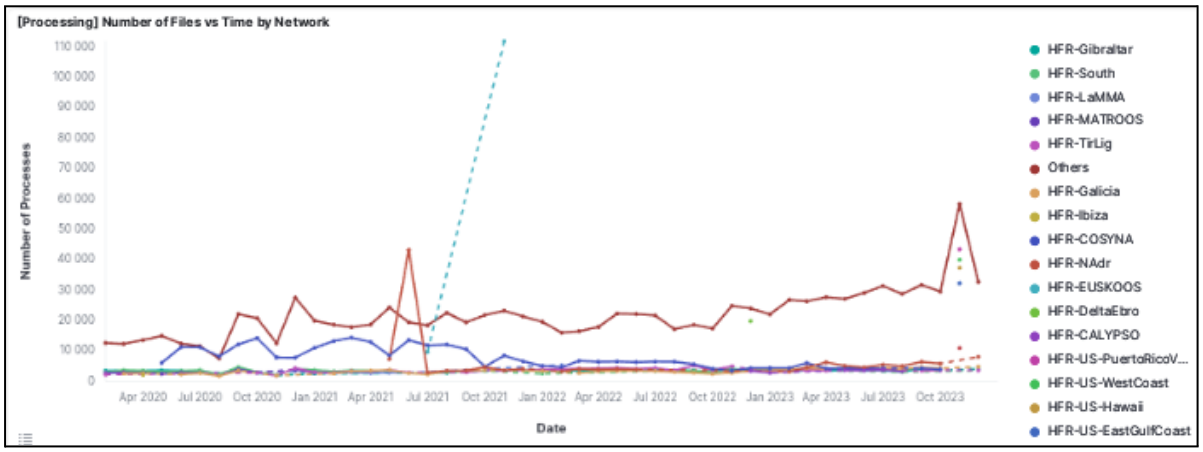
case and it allows us to calculate the amount of time a process took.

- Only the output registry is present: This happens when the processing service takes input files from a THREDDS data server. It is normal, but it does not allow us to calculate the amount of time a process took.
- Only the input registry is present: this means the process has not finished. It can be because it is still running or because the process crashed. This case does not allow us to calculate the time a process took.

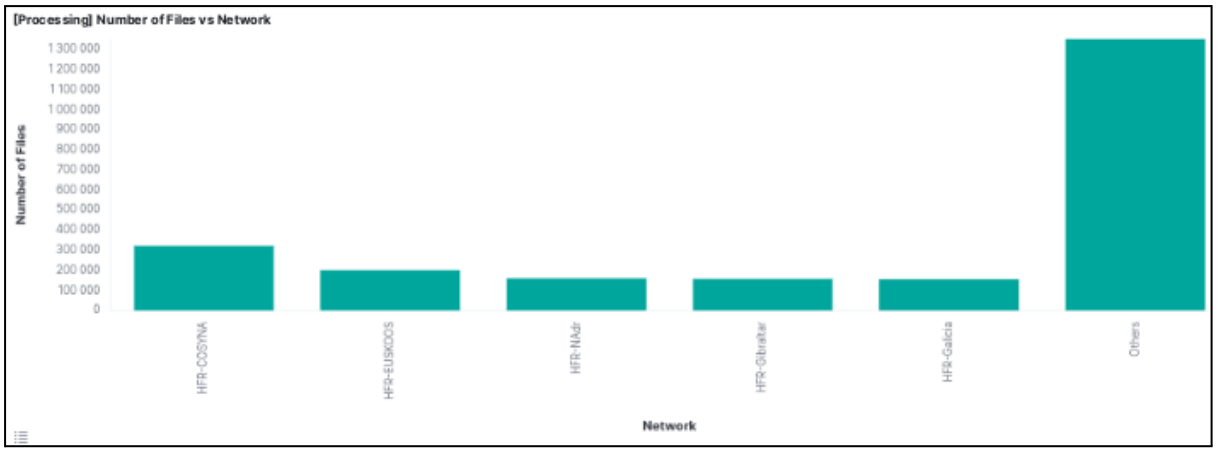
First, overall metrics will be presented. Later, the following will be presented: analysis by HFR network, analysis by process type and status, and analysis by file size.

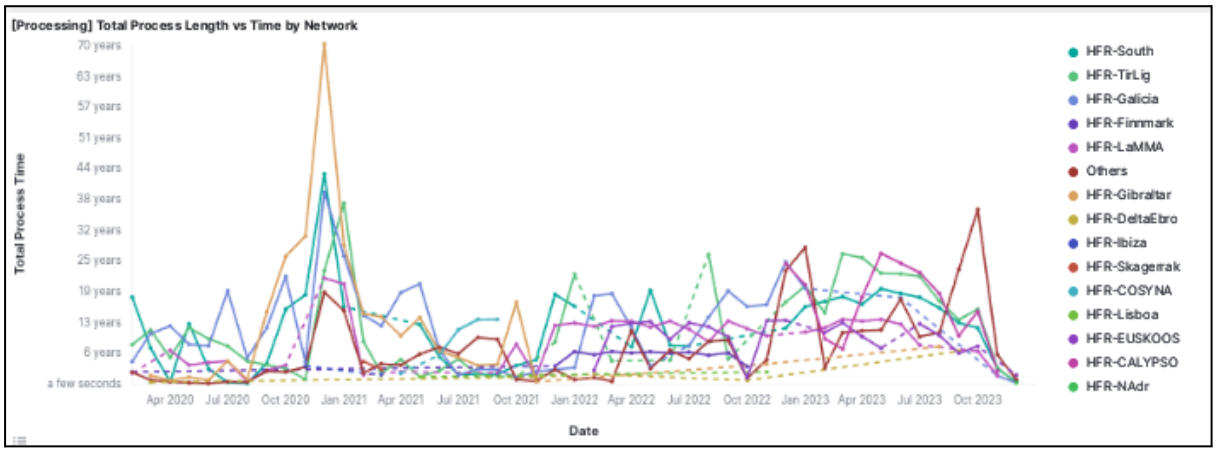
The next image presents the general access metrics in a numeric form.

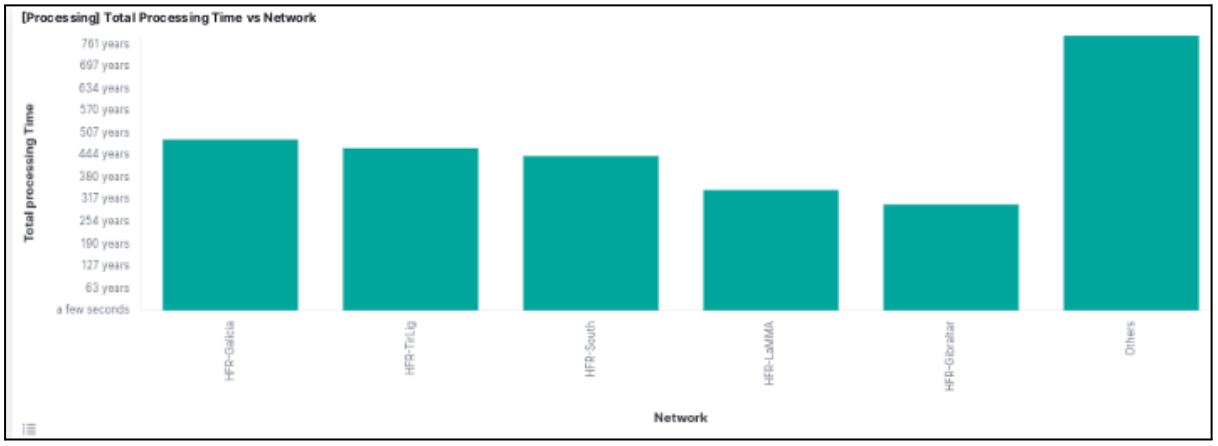
The following graphs contain the analysis of the processes by the network of HF Radar that generated the data.



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

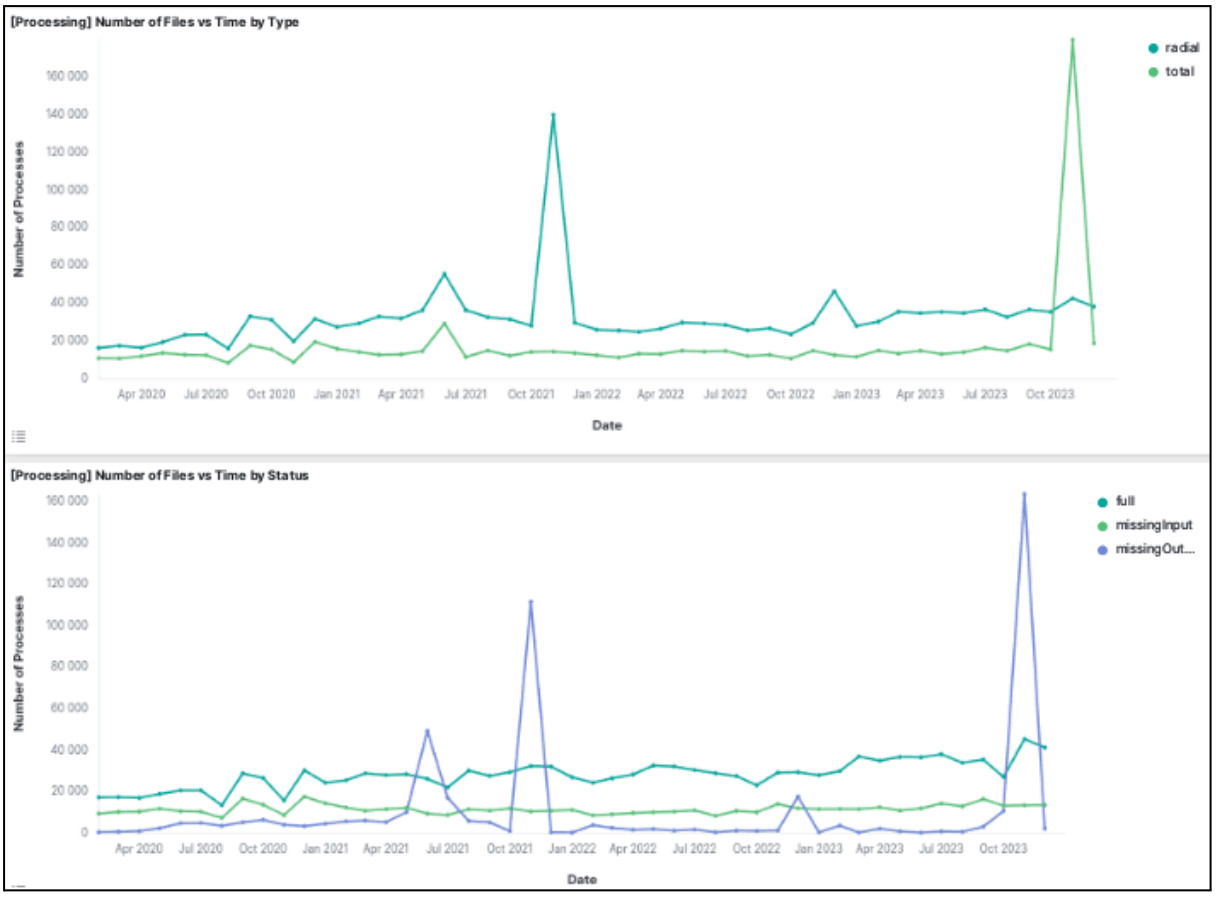


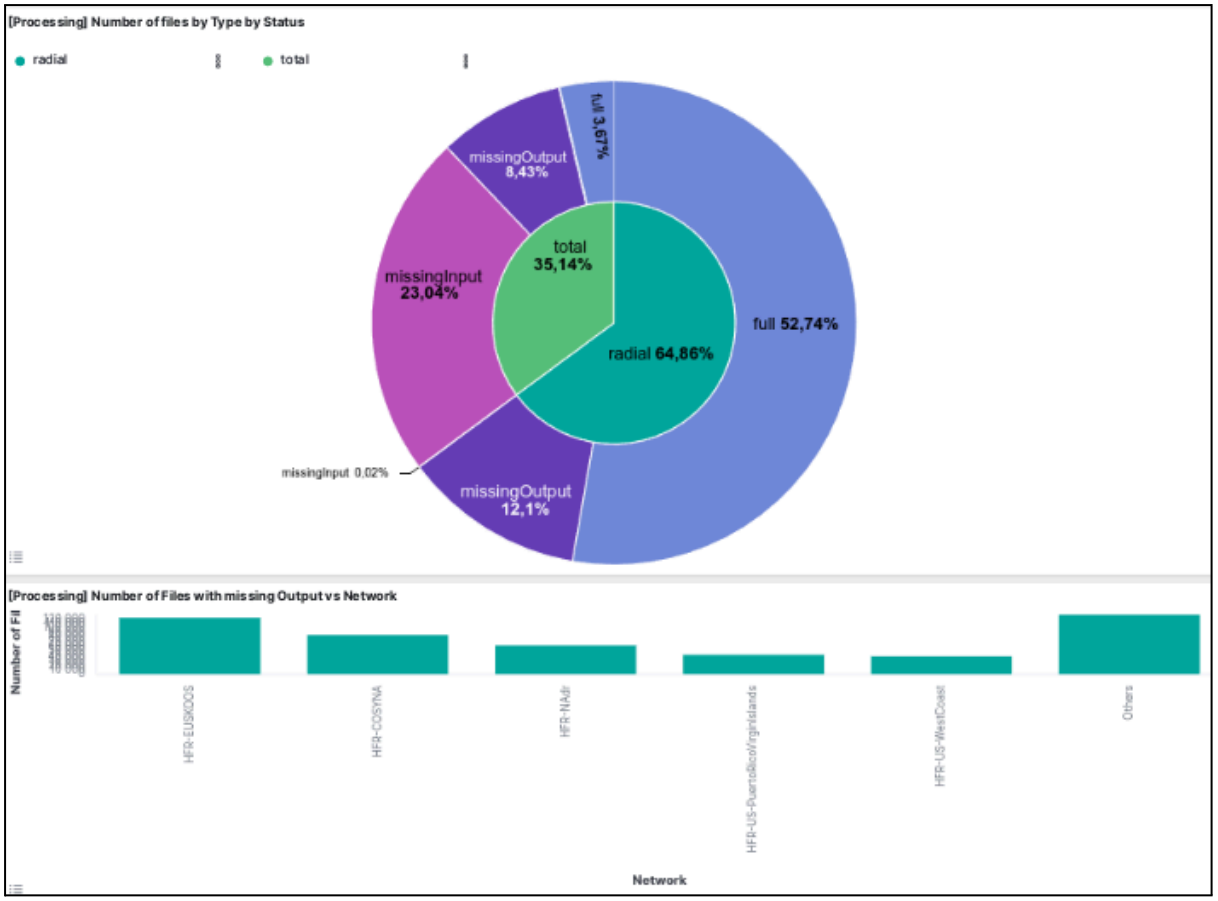




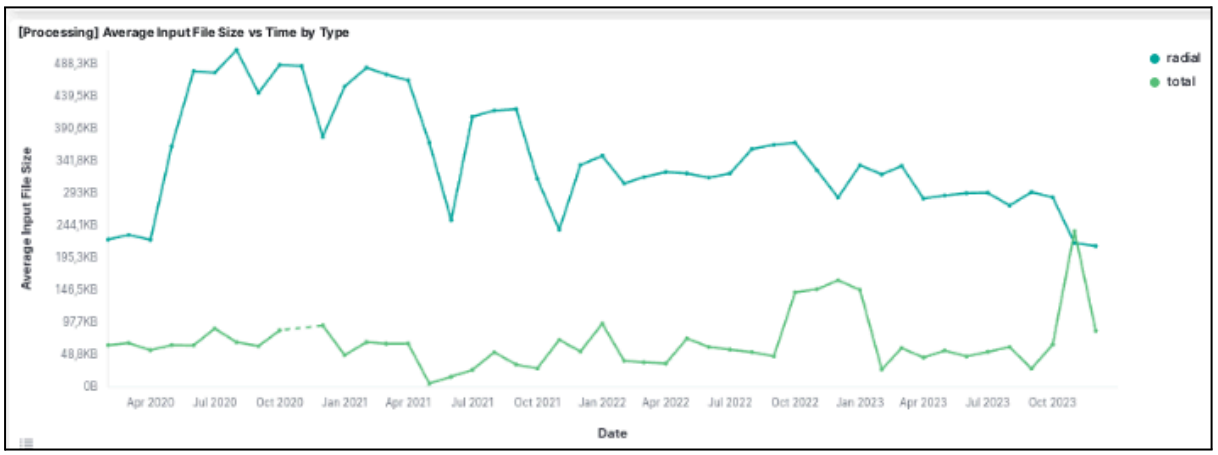
Next, plots analyzing the processes based on whether they are a "Radial" or "Total" analysis and on whether there is an input registry, output registry, or both are shown.

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

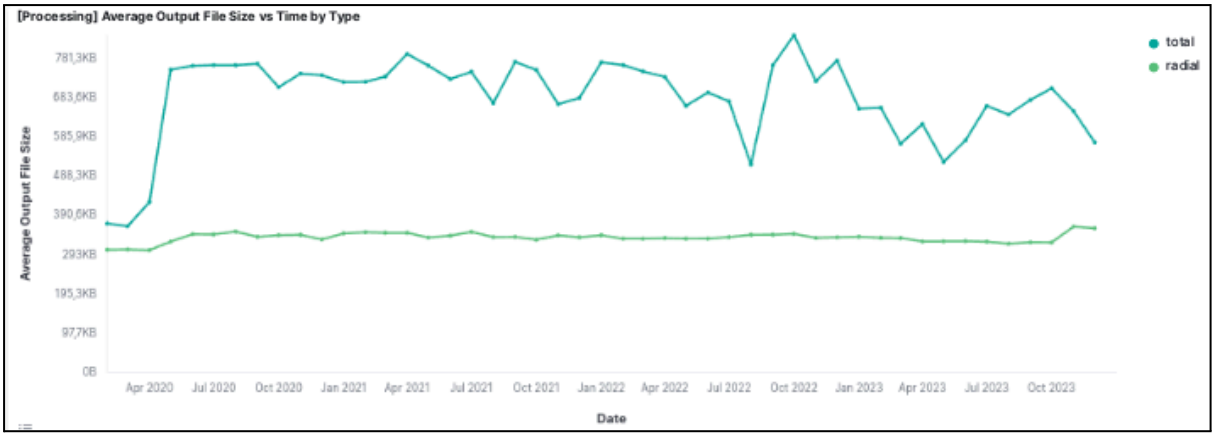


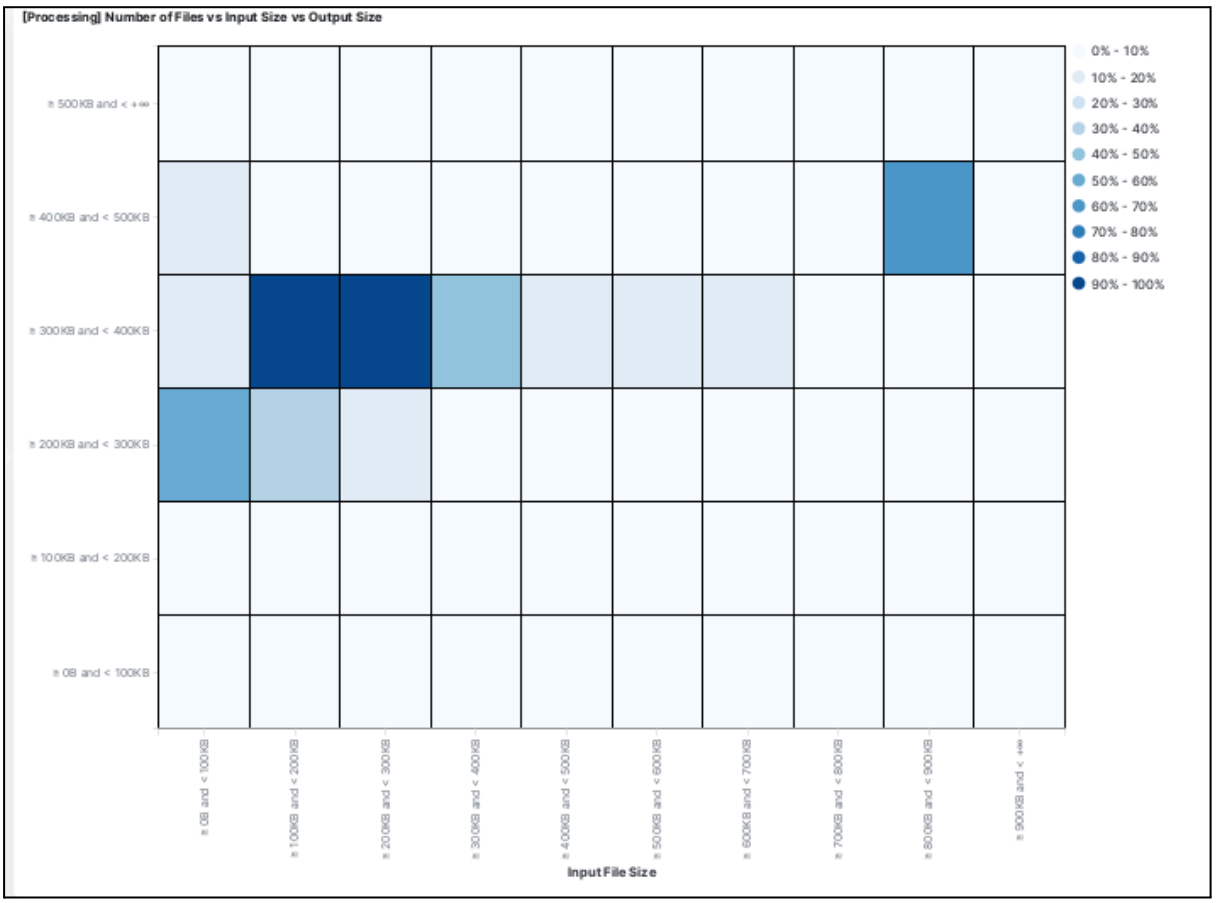


Following the above graphs, visual representations are presented, categorizing processes into either "Radial" or "Total" analysis, and further delineating based on whether each process involves an input registry, output registry, or encompasses both.



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



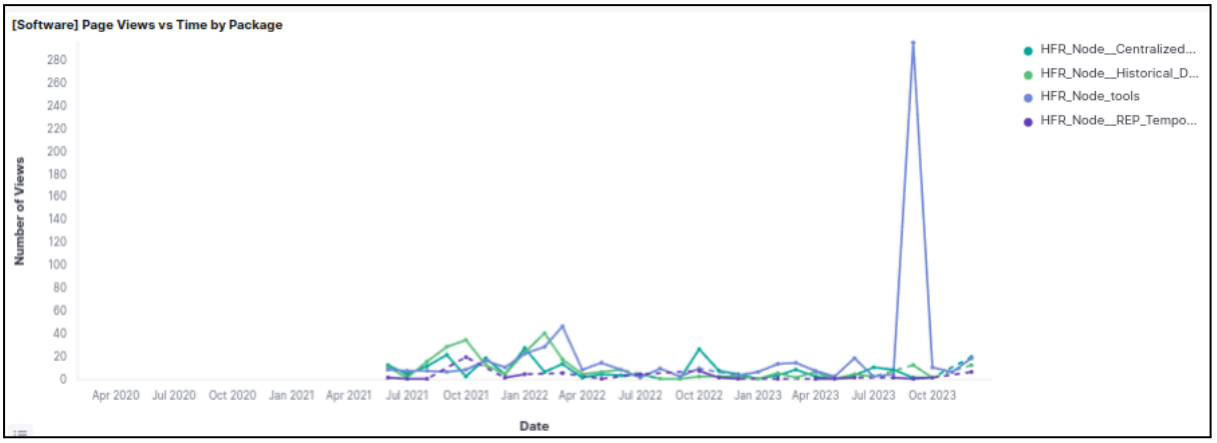


It can be noted that COSYNA represents an important HFR network by the number of files submitted. It might seem that this network needs very little process time. However, this is because many of the processes are missing the output registry. Additionally, an increase in the number of processes that miss the output registry is also worth noting.

Software

The data underlying the following plot has been obtained from GitHub API. Data is only available from June 18th, 2021 because GitHub only keeps access metrics for 15 days. Therefore, data regarding access 15 days before the development of VAMS was not kept.

The following plots show the number of Views and Unique Views that each software package receives on GitHub.

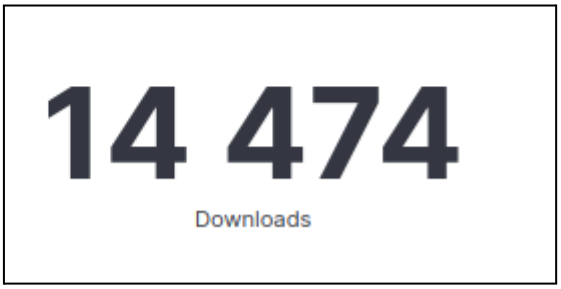


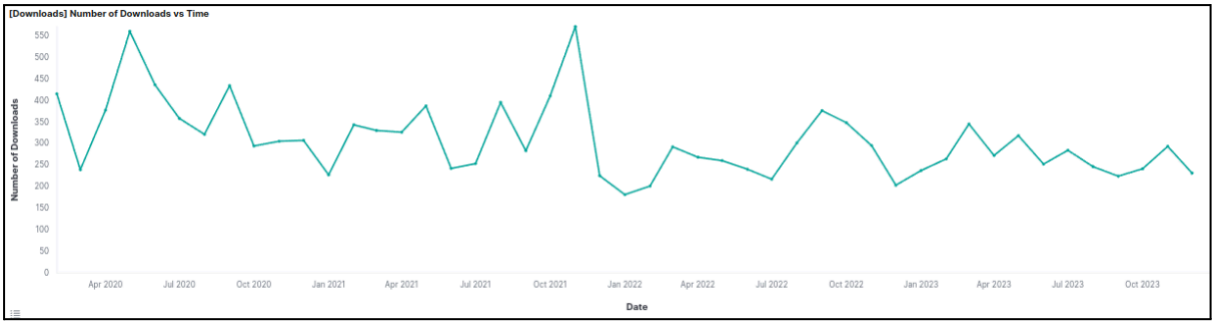
Annexe 2.7 CytoFluoTool (ID 8.1)

The access to the CytoFluoTool software package is monitored in two different ways: the CRAN downloads API and the log files of the documentation website. Next, metrics based on these two ways of monitoring will be presented.

Downloads from CRAN

The data underlying the following plots have been obtained from the CRAN downloads API. The next plot shows the total number of downloads and their temporary distribution.





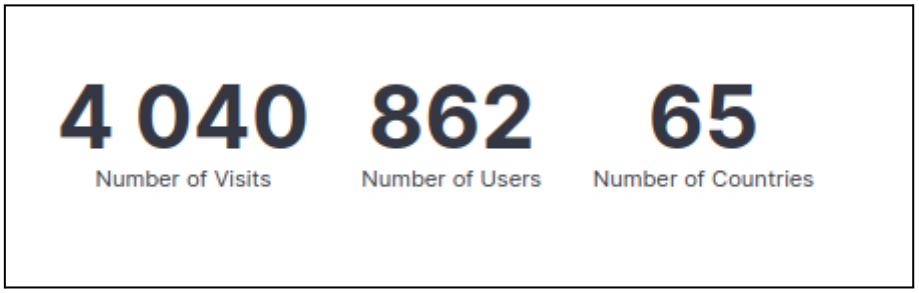
Visits to the Documentation Page

Software usage cannot only be measured by downloads, as a piece of software can be downloaded once and used many times. Therefore, It has been decided to measure access to the documentation pages too, to be able to estimate the trend in the usage of the software.

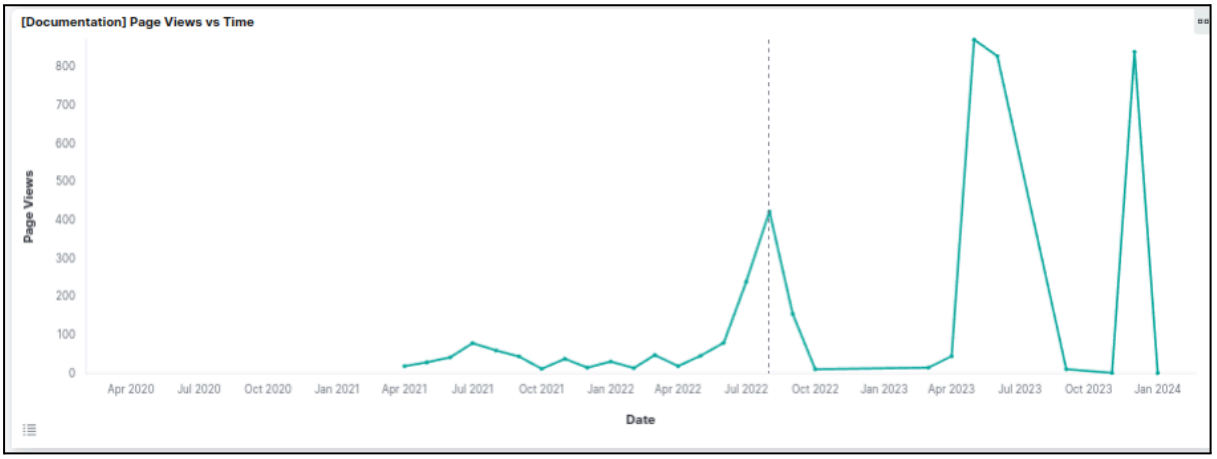
The data underlying the following plots have been obtained from the log files of the server of Mawenzi's website. Unfortunately, logs of the first months of JERICO-S3 had been lost. Only data from April 13, 2021 is available.

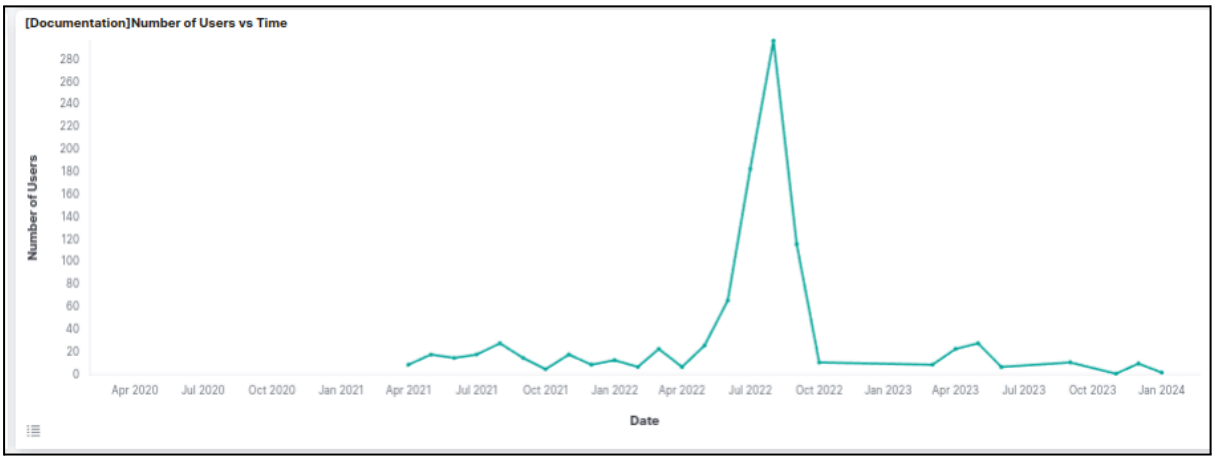
First, the general metrics and geographic analysis of the visits will be presented. Then, the temporal evolution of the traffic will be seen. Finally, the content visited and the origin of traffic will be analyzed.

In the next images, the overall number of visits, users, countries who accessed CytoFluoTool's documentation, and the geographic distribution of visits are presented.

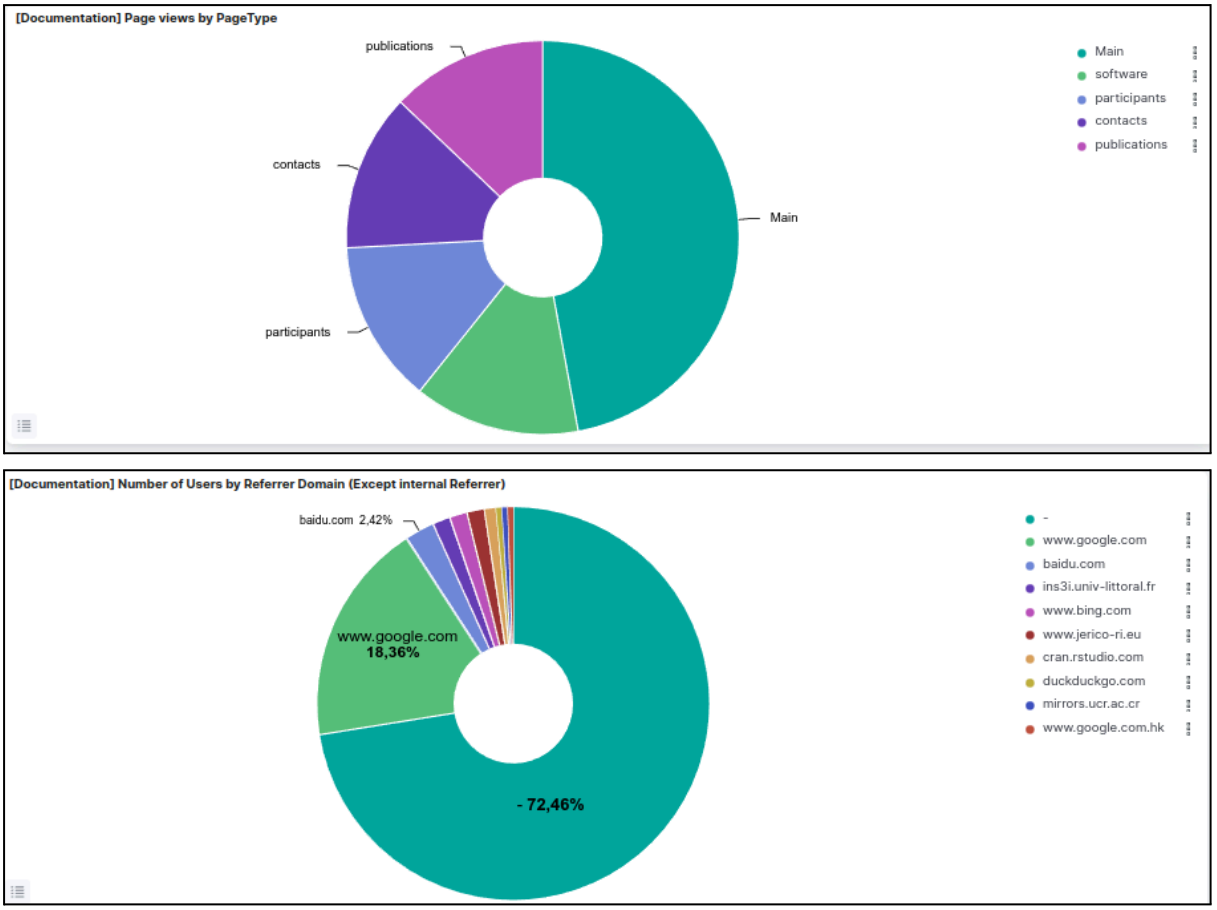


Next, two plots that show the temporal trend of pageviews and users respectively are shown.





Finally, the traffic origin is analyzed: by both referrer ("-" means referrer is not informed, like a visit from a bookmarked link or direct access via software) and country.



Annexe 2.8 JERICO-ECOTAXA (ID 8.2)

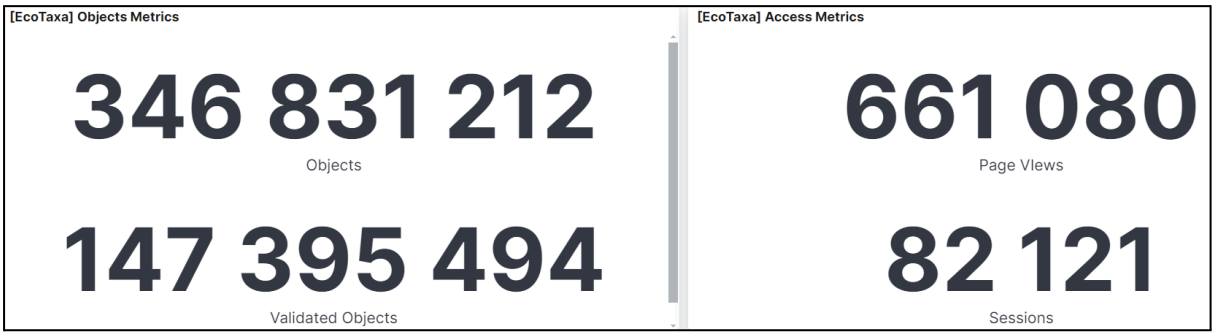
The data underlying the following plots are kindly generated by EcoTaxa's team and made available in a CSV file. There are two access modalities to EcoTaxa. One is uploading images for analysis (related images are container by the same "object" measured). The other one is browsing the website. Both of them are measured. The metrics regarding the number of objects are only available from May 13th, 2021.

The old Analytics API from Google has been deprecated. Despite the efforts made to transition to the new version 4 for data collection, it appears that the transition was not successful. Furthermore, the code responsible for generating statistics for JERICO was not appropriately updated.

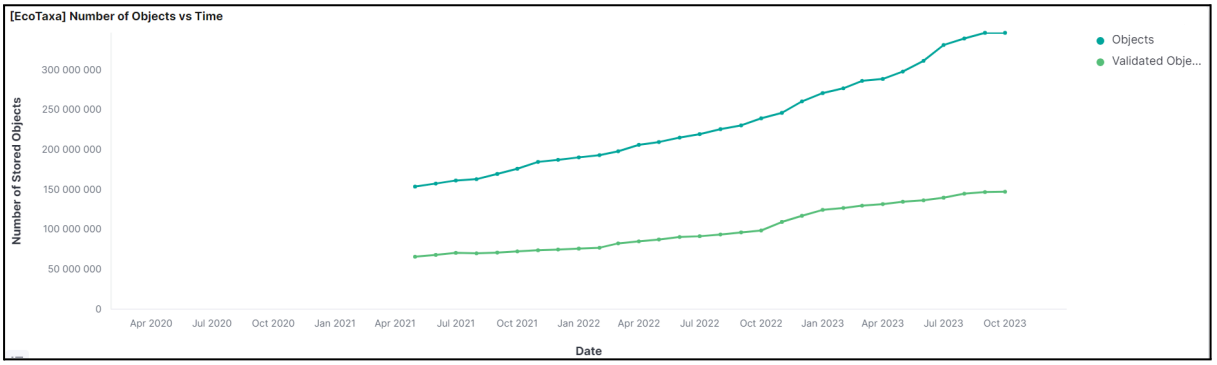
The necessary adjustments have now been made, albeit with a gap of approximately two months in the data. Unfortunately, there is no recourse to retrieve the missing data at this point. The current configuration will continue to function effectively after exhaustive study. Kindly inform us if any issues arise (a workaround was employed to obtain the statistics, and potential throttling issues from Google's end may be encountered).

First, some overall metrics are shown. Next, the analysis of objects over time, the geographic distribution of traffic, and the bounce rate analysis are presented.

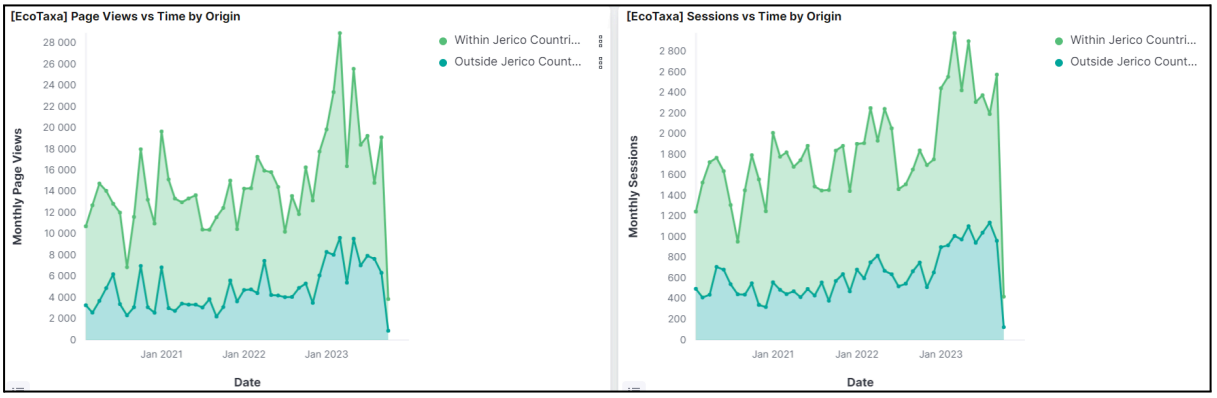
In the next image, a numeric representation of the access metrics is presented: insertion of objects on the left and web browsing on the right.



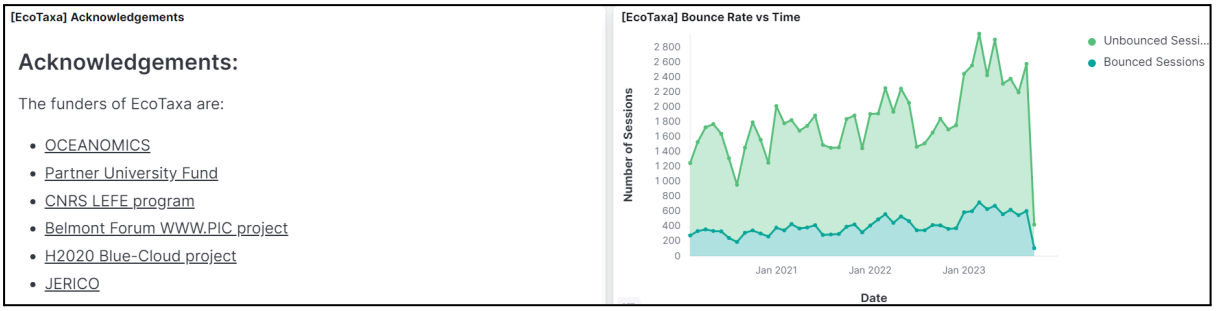
In the following image, a temporal analysis of the number of objects has been added.



The subsequent pair of graphs consider the temporal trends of page views categorized by their origin. Notably, the representation distinguishes countries within the JERICO community, depicted in light green, and countries outside the group, showcased in dark green.



Finally, acknowledgments to the main funders of EcoTaxa and bounce rate analysis are shown.



Annexe 2.9 Utö Atmospheric and Marine Research Station (ID 15.1)

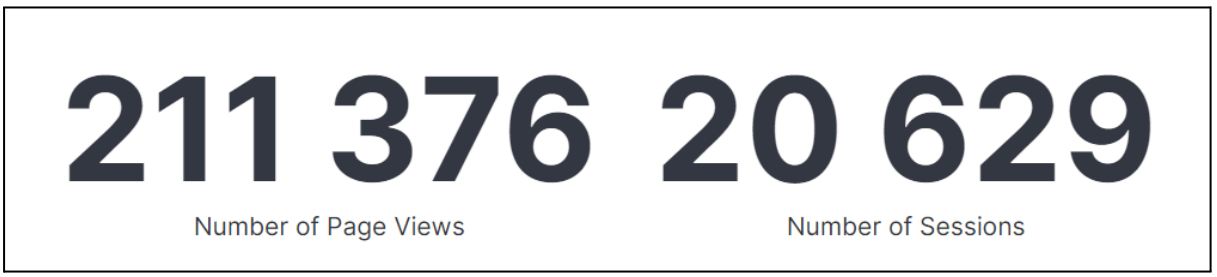
The data underlying the following plots have partially been obtained from the Google Analytics API.

Due to data security concerns, FMI has ceased the utilization of Google Analytics on the websites used to monitor data. Consequently, this document is precluded from employing GA on WP11 virtual access site and reporting it. Therefore, the data for the months between January 2022 to September 2022 will be shown in a separate graph fro the metrics of Users, New Users, Page Views, and Sessions.

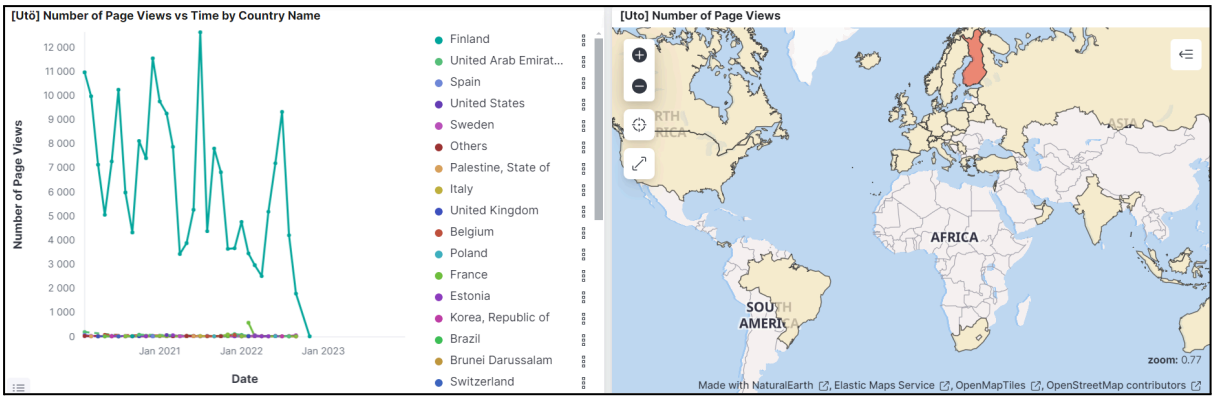
Regrettably, there is no available data for the months of October 2022 onward since FMI discontinued the use of Google Analytics in September 2022. FMI set up Matomo Analytics on the Utö Atmospheric and Marine research station website on March 2024.

First, the overall access metrics will be presented. Then, the following analyses are included: geographic analysis, analysis by user type (new vs returning), bounce rate analysis, user device analysis, and traffic source analysis.

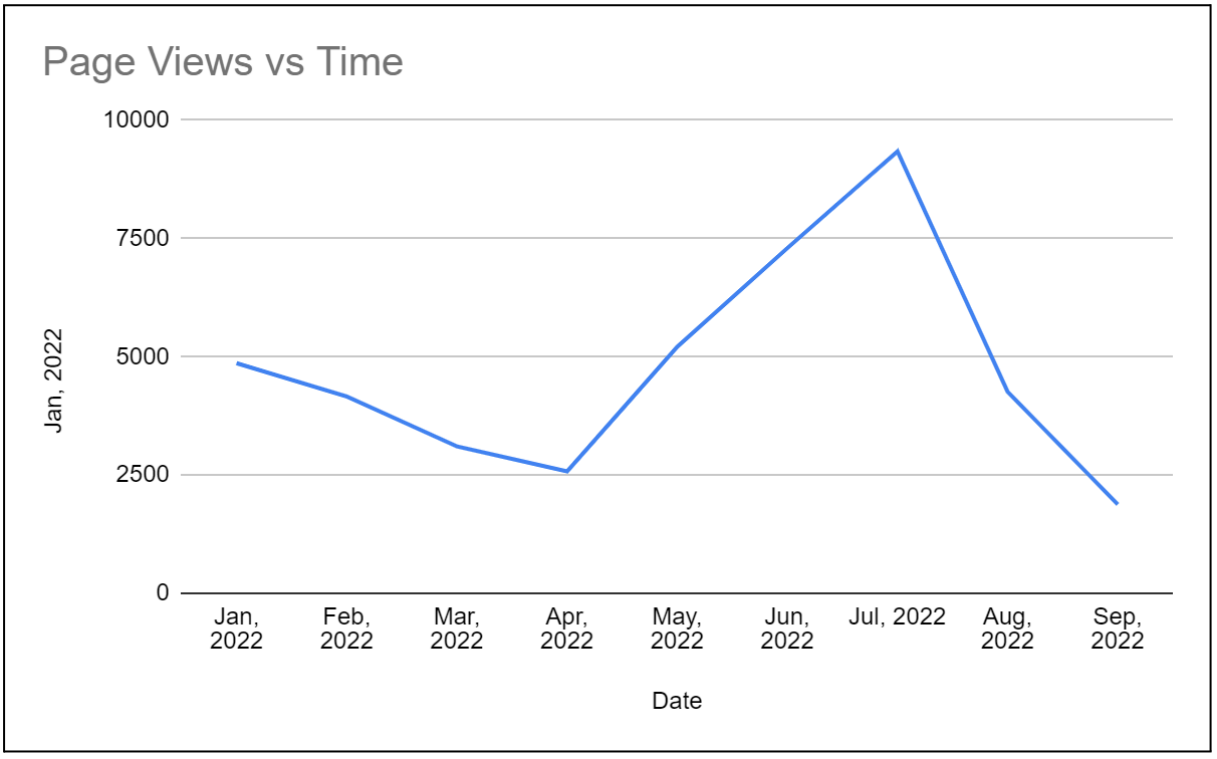
In the next image, the general access metrics in a numeric form are presented.

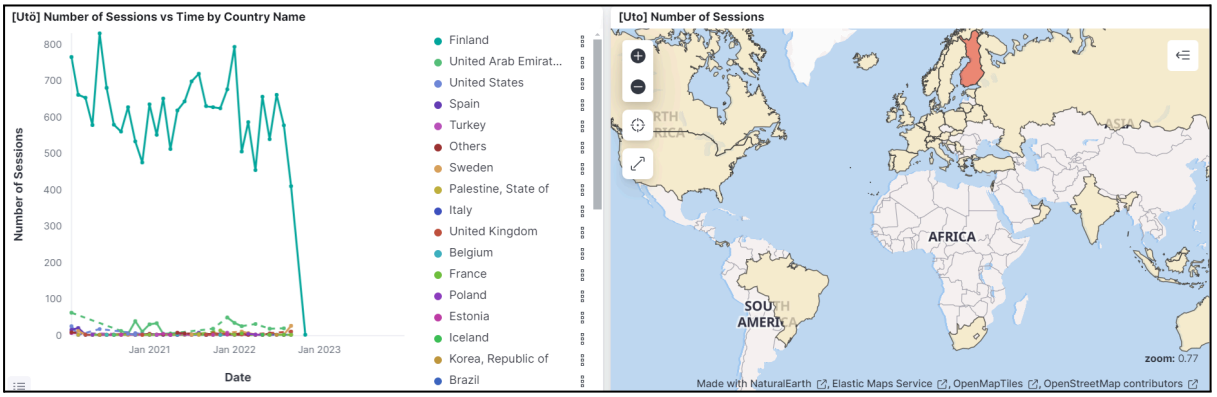


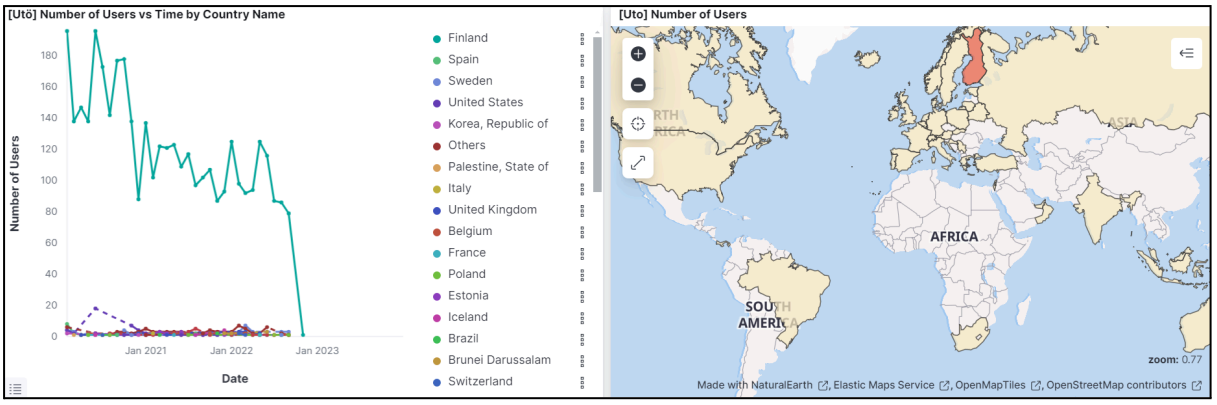
The following images contain the geographic analysis of the traffic.



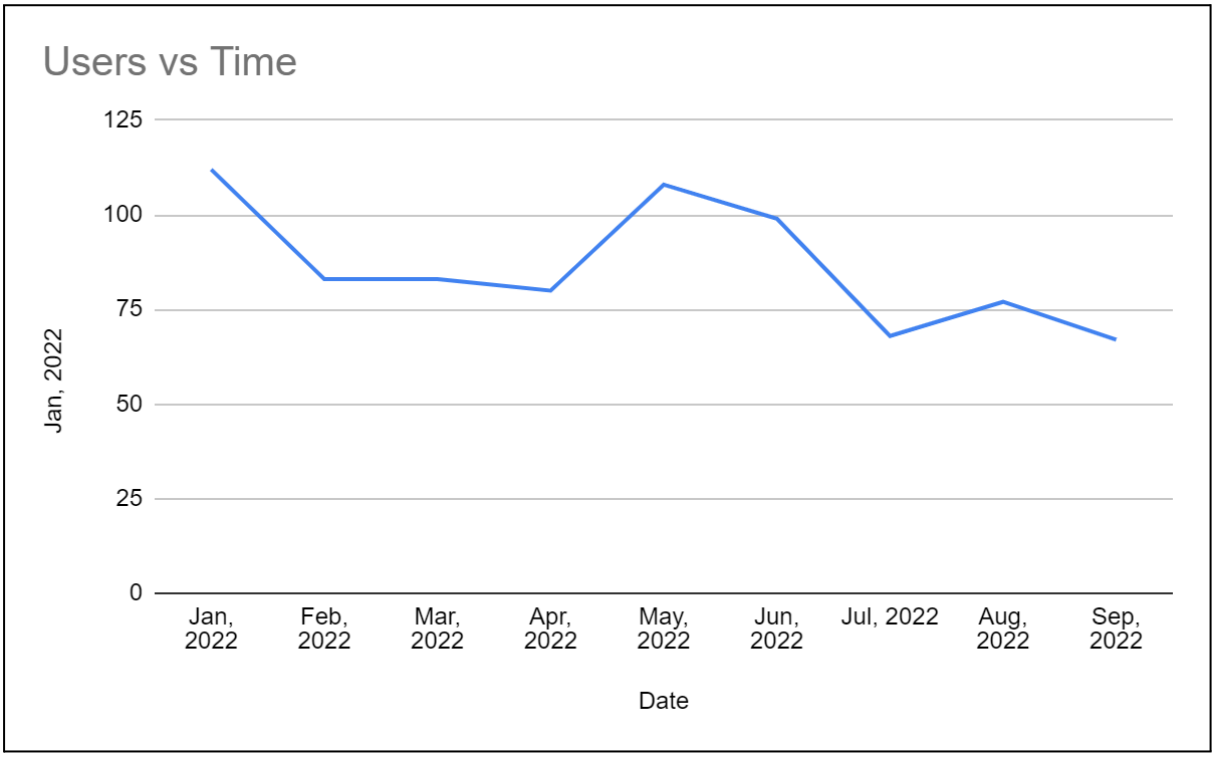
The page views collected between January 2022 and September 2022 are shown in separate graph below.



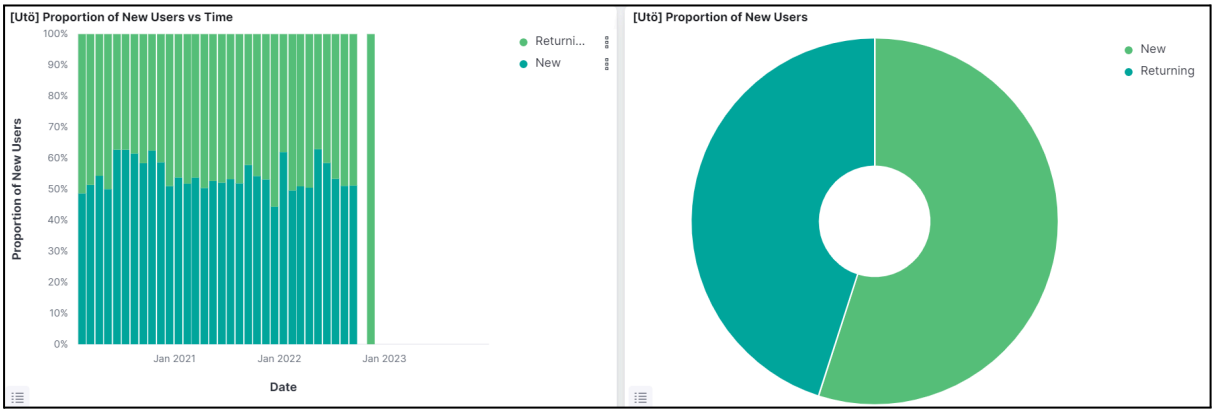




Following the explanation shared earlier, the data comprising January 2022 to September 2022 is shown on a separate graph below.

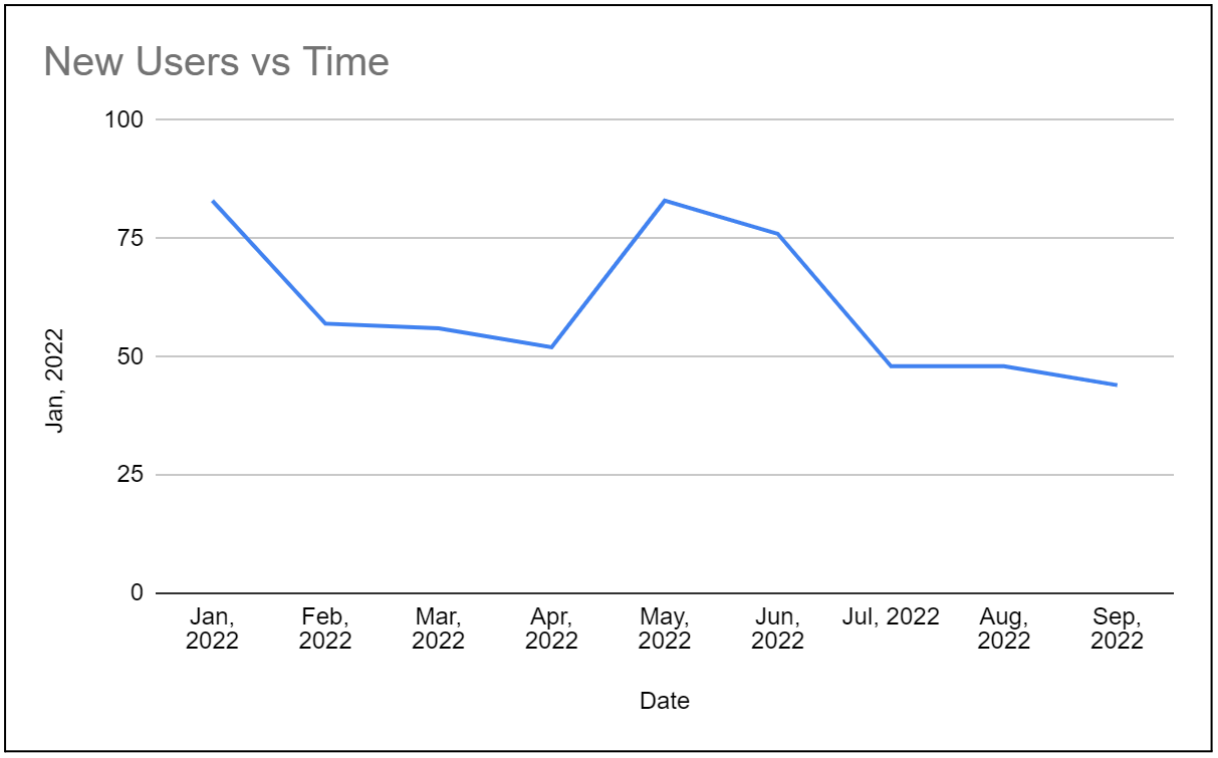


Next, plots analyzing the proportion of new users are shown.

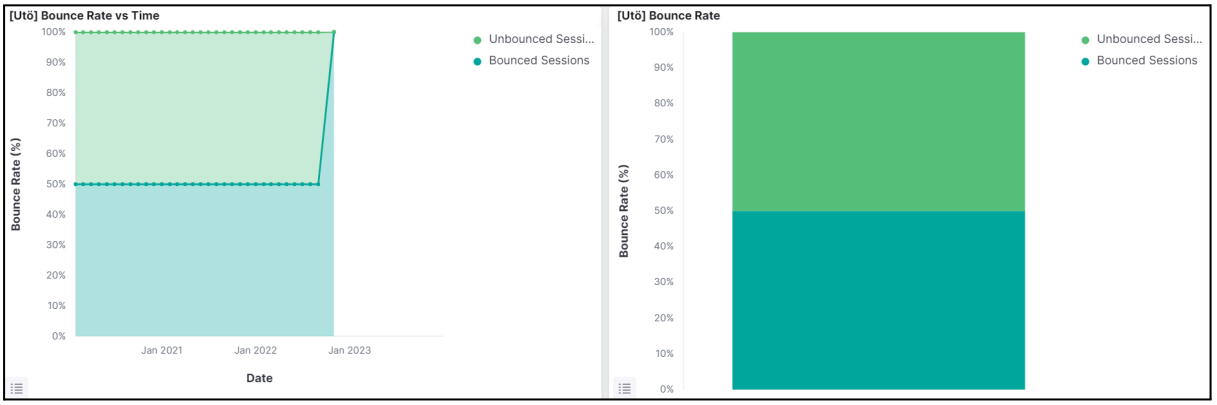


Moreover, the information collected for the months between January 2022 and September

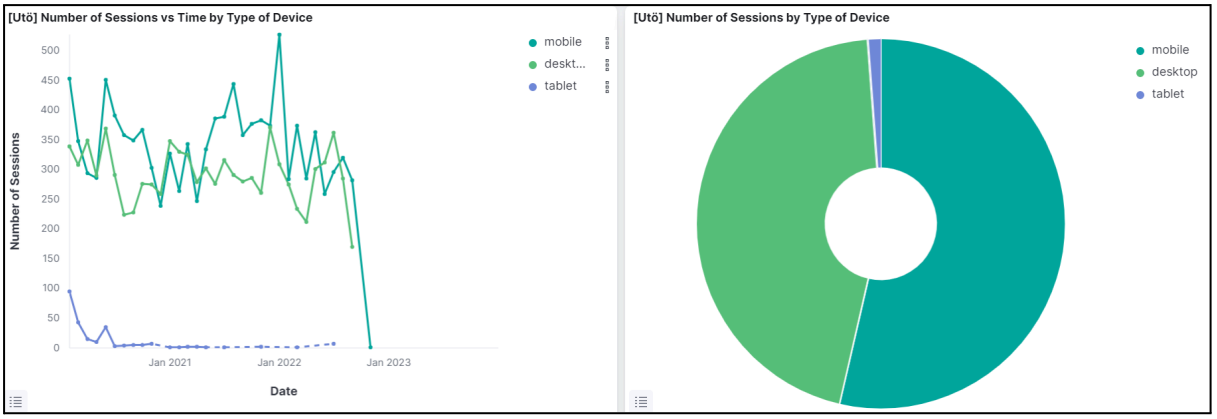
2022 is shown on a separate graph.



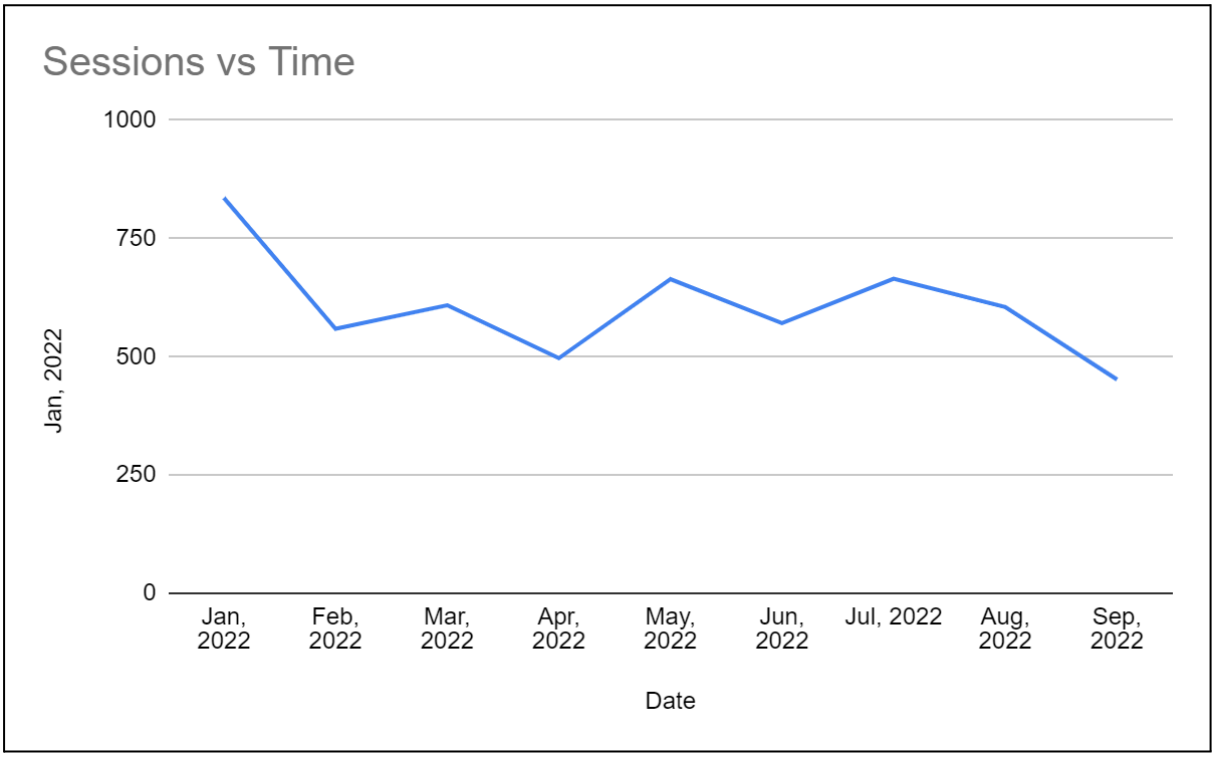
Next, the bounce rate is analyzed.

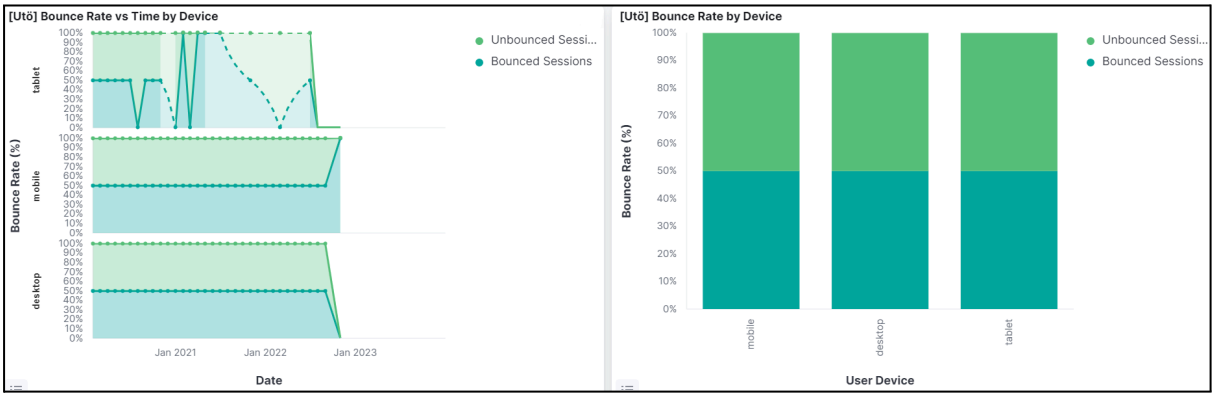


The images below show the proportion of sessions that come from each type of device and the influence of the type of device on the bounce rate.

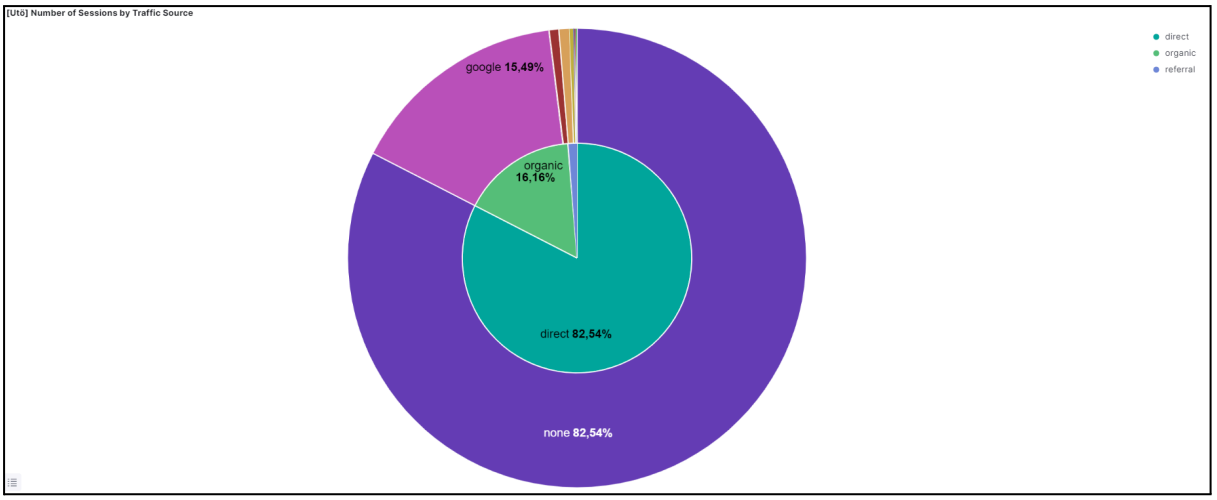


The following graph shows the information collected between the months of January 2022 and September 2022.





Finally, an analysis of traffic based on the source is presented.



Annexe 2.10 POSEIDON Multi Platform Observatory Data Center (ID 16.1)

This VA infrastructure consists of two parts: an API that is monitored by analyzing the server's log files and a website monitored via Google Analytics. Next, the access metrics of each of these parts are presented.

API

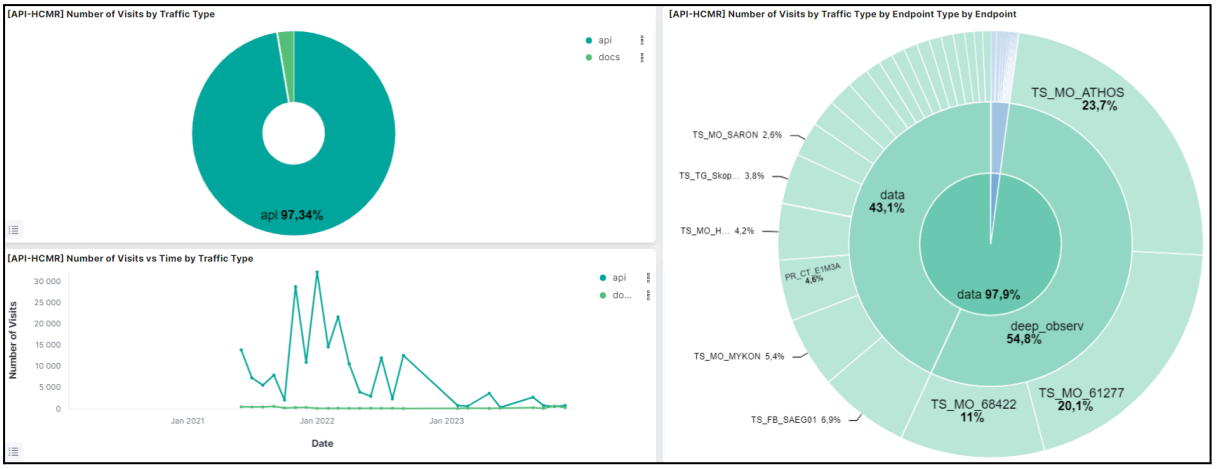
The data underlying the following plots have been obtained from the log files of the API server. This API was launched on June 6th, 2021. So, there is no data previous to that date.

First, the overall access metrics will be presented. Then, traffic will be analyzed by content, geographic origin, used client, referrer domain, and operating system.

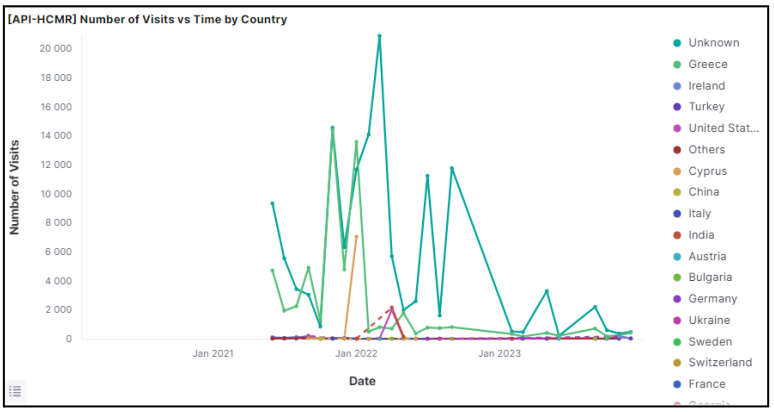
The next image presents the general access metrics in a numeric form.

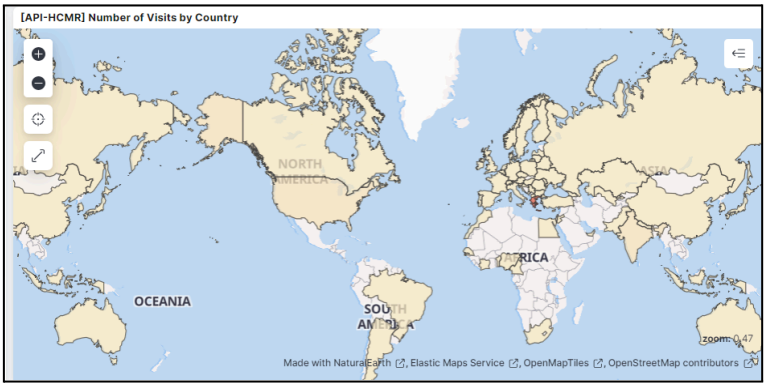
In the following images, the content is analyzed. The proportion of users and pageviews that go to documentation pages or API endpoints can be seen. It is also possible to see how the traffic to API endpoints is distributed among the three kinds of endpoints (data, services, or metadata), what specific endpoints are being visited, and for what platform (when the endpoint provides information from one specific platform).

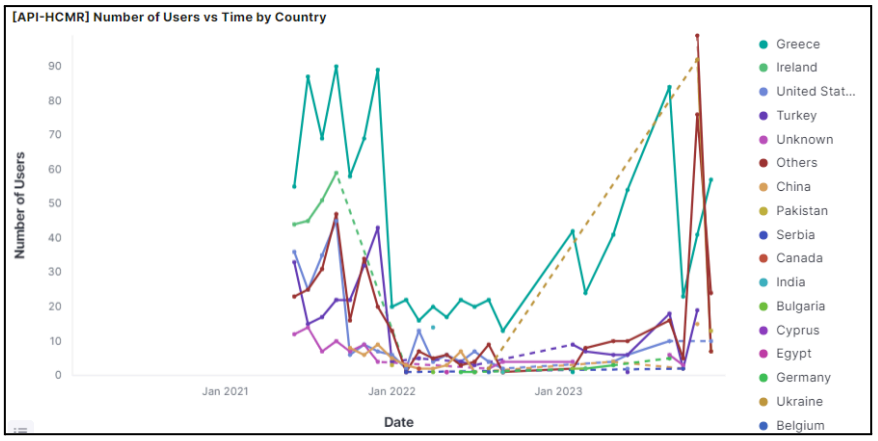
The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.

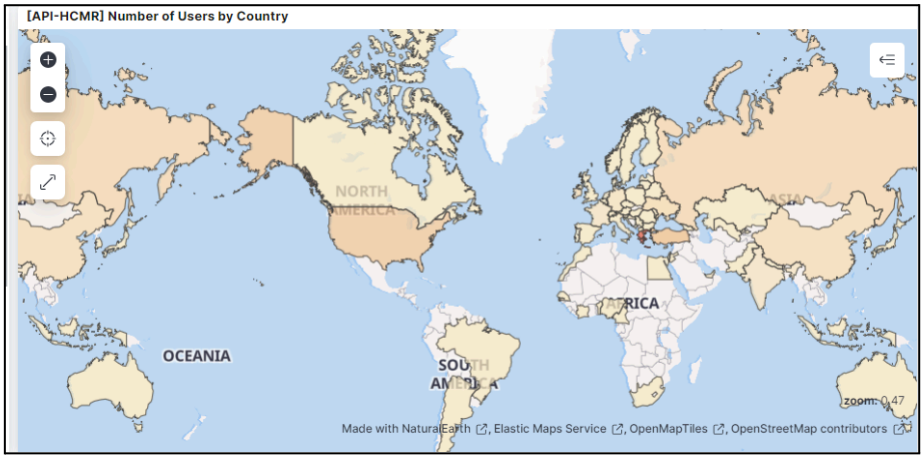


Next, plots and maps with a geographic analysis of the traffic seen by the server are shown.

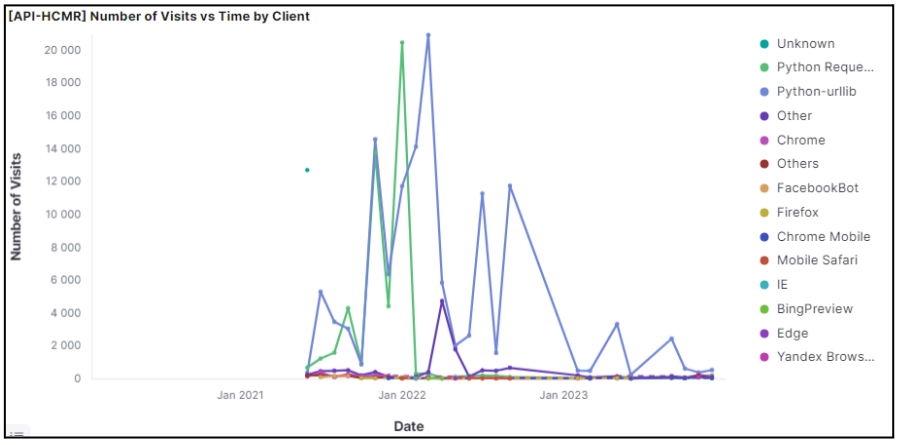




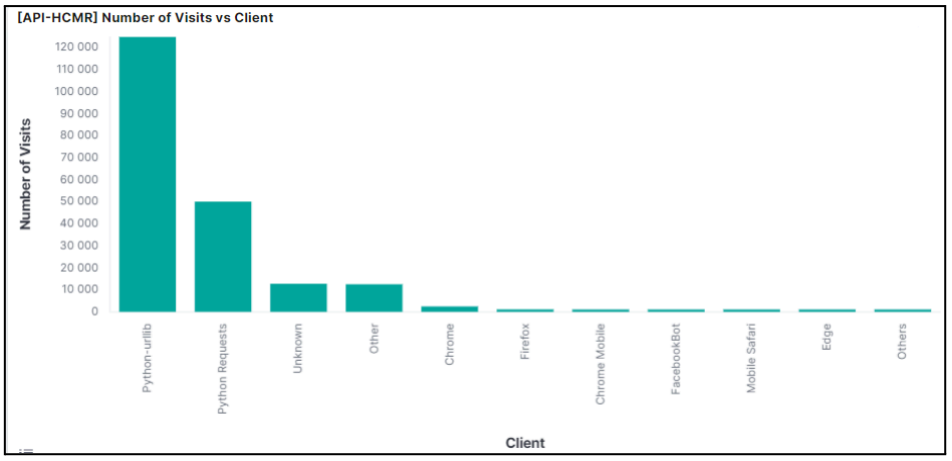


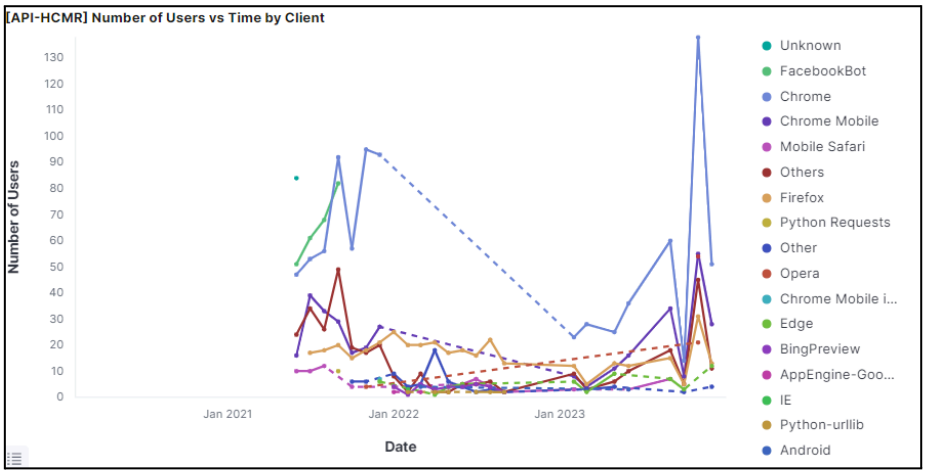


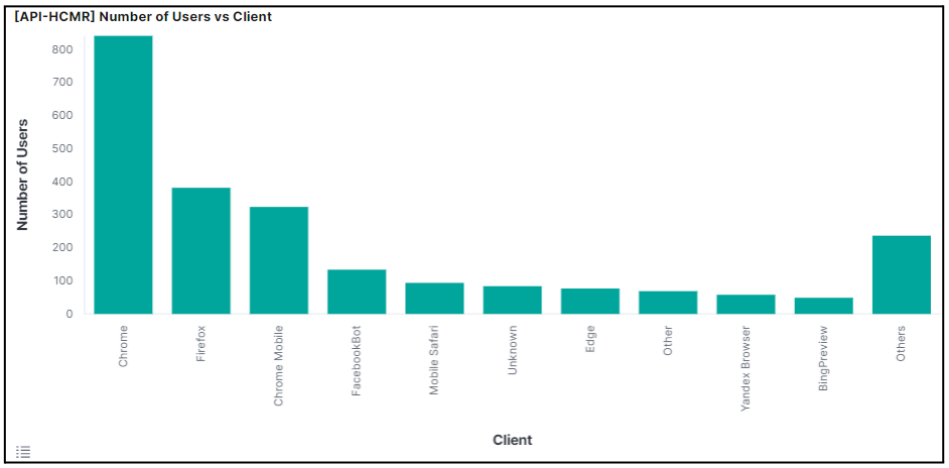
The following images show an analysis of the traffic based on the software used by the user to perform the request (a browser or an HTTP library).



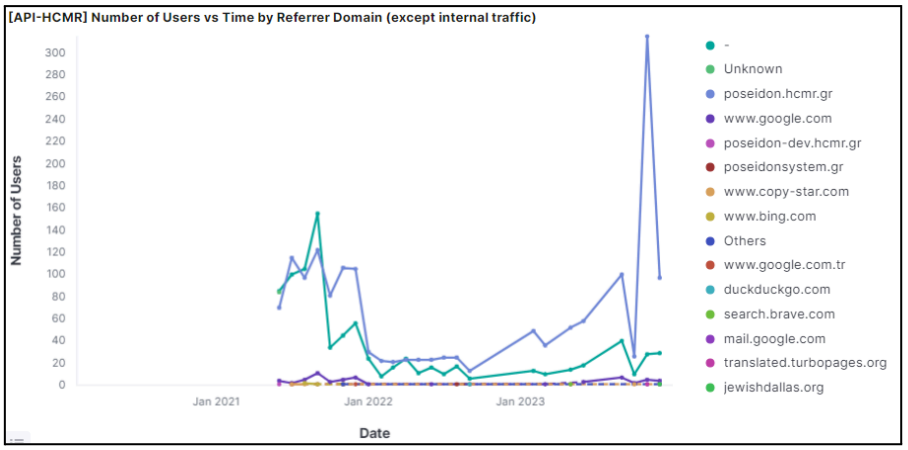
The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.

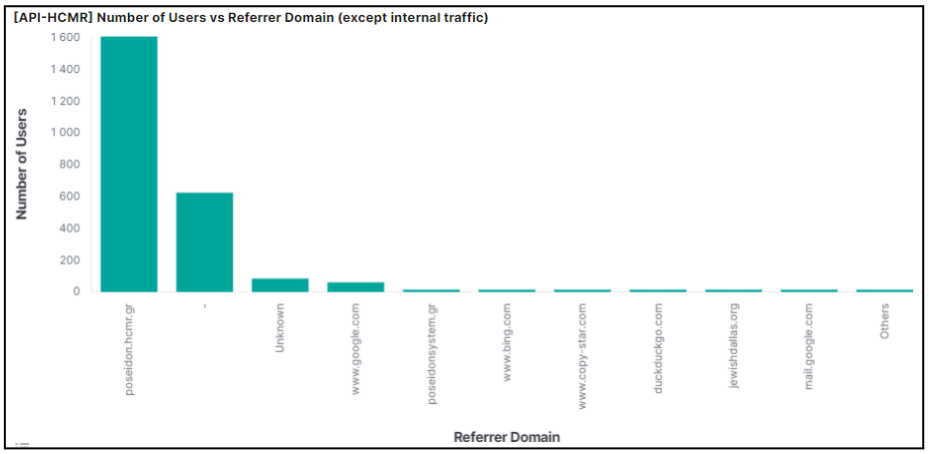




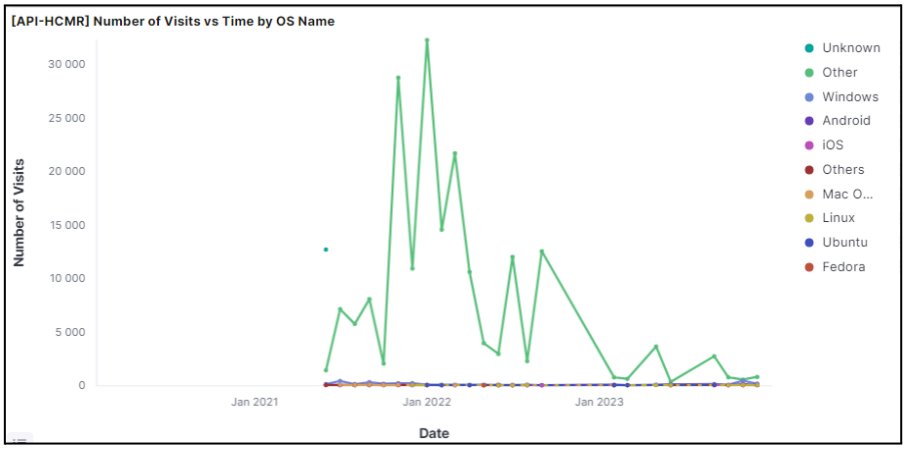


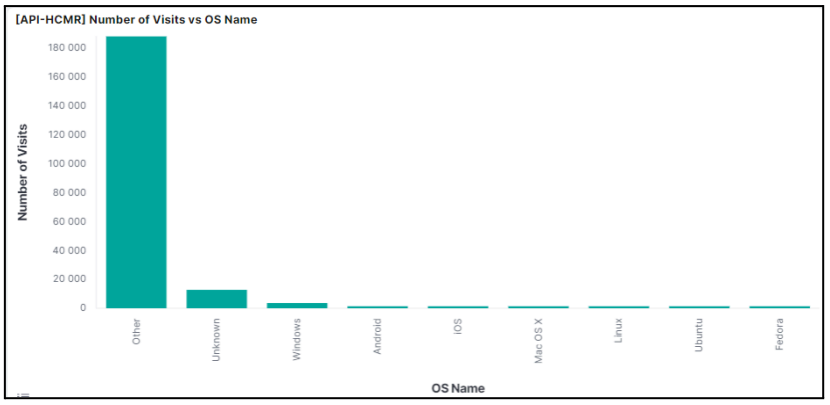
The image below contains an analysis based on the referrer domain ("-" means referrer is not informed, like a visit from a bookmarked link or direct access via software).

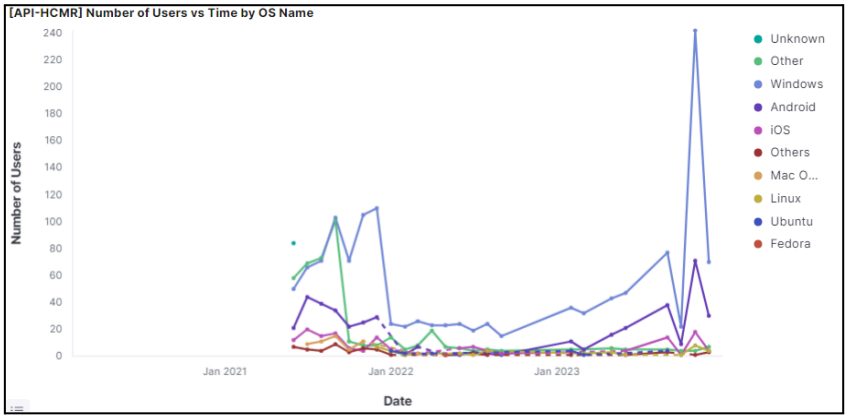


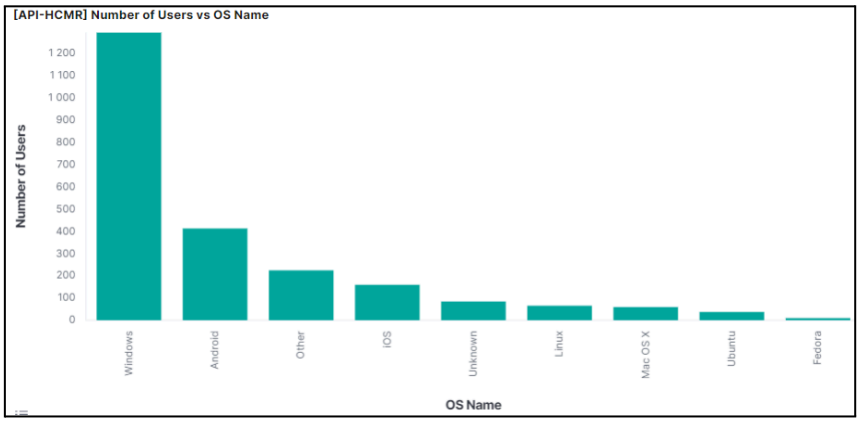


Finally, an analysis of traffic based on the operating system of the user is presented (that information is extracted from the browser version, for HTTP libraries, the information is not available and is contained in the "Other" category).









A difference in the number of visits between June 2021 and the rest of the months can be seen. This difference is concentrated in the API endpoints as opposed to the documentation pages and cannot be seen in the number of users. This means that one or more users made extensive use of the API endpoints in the first month of operation, which suggests an intense testing phase. Due to the short time series, it is not possible to see longer-term trends.

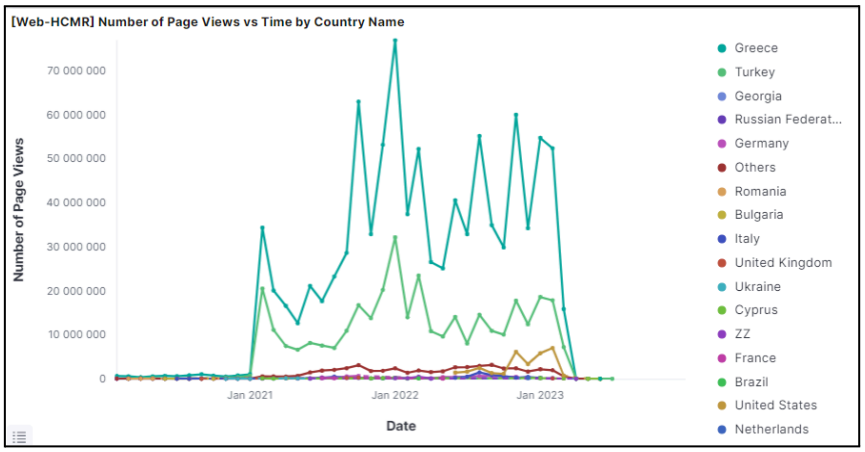
Website

The data underlying the following plots have been obtained from the Google Analytics API. The overall access metrics will be presented, and the following analyses are included: geographic analysis, analysis by user type (new vs returning), bounce rate analysis, user device analysis, and traffic source analysis.

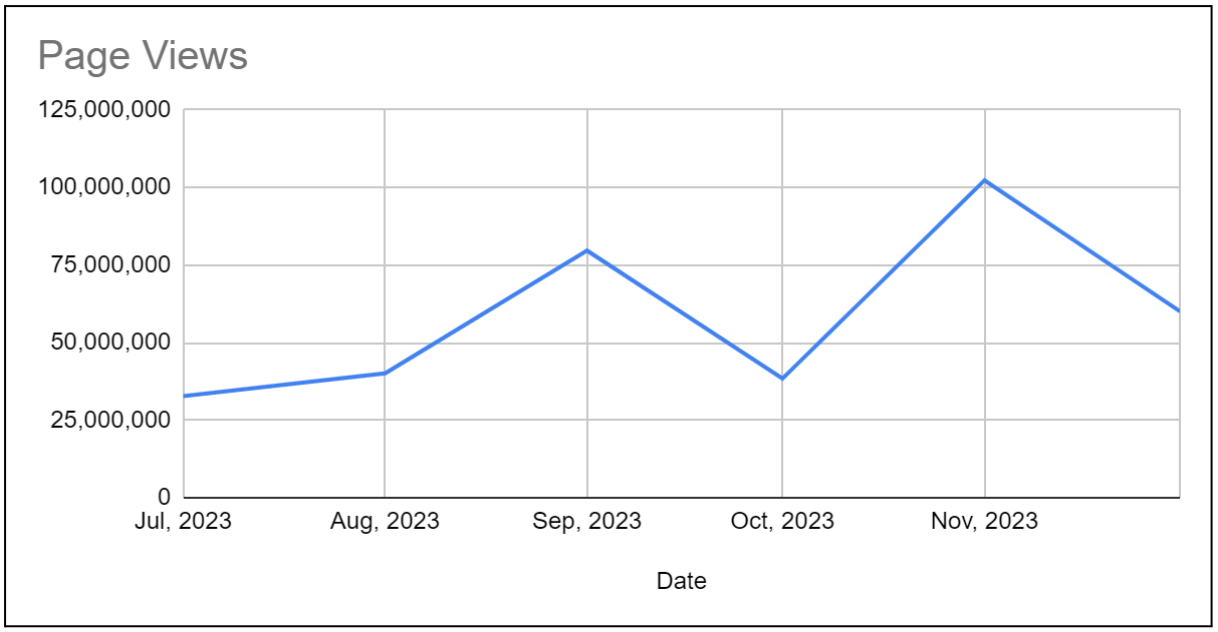
Nonetheless, it is essential to recognize a temporary data gap extending from August 2023 to December 2023. This interruption is a consequence of Google phasing out the old Analytics API and transitioning to version 4, making it incompatible with the established metric system. Because of that there has been a data collection process for that timeframe, including number of Users, New Users, Page Views, and Sessions, and this information will be depicted in separate graphs.

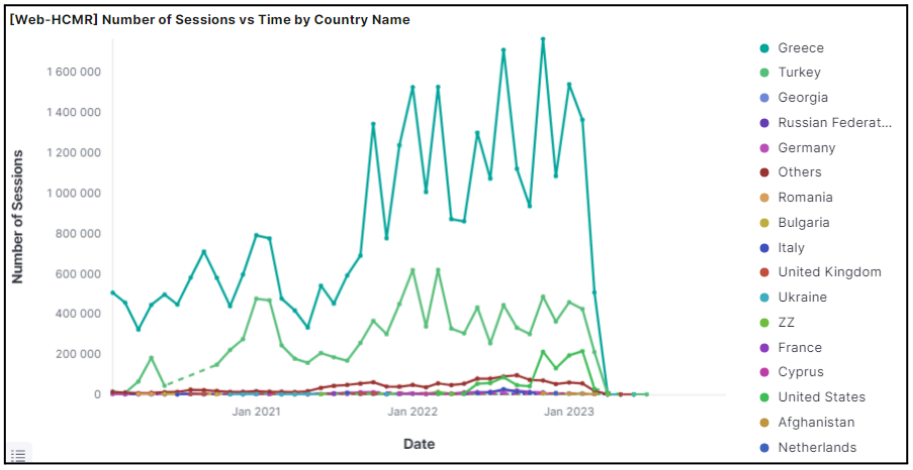
The next image presents the general access metrics in a numeric form.

The following set of images contains the geographic analysis of the traffic.

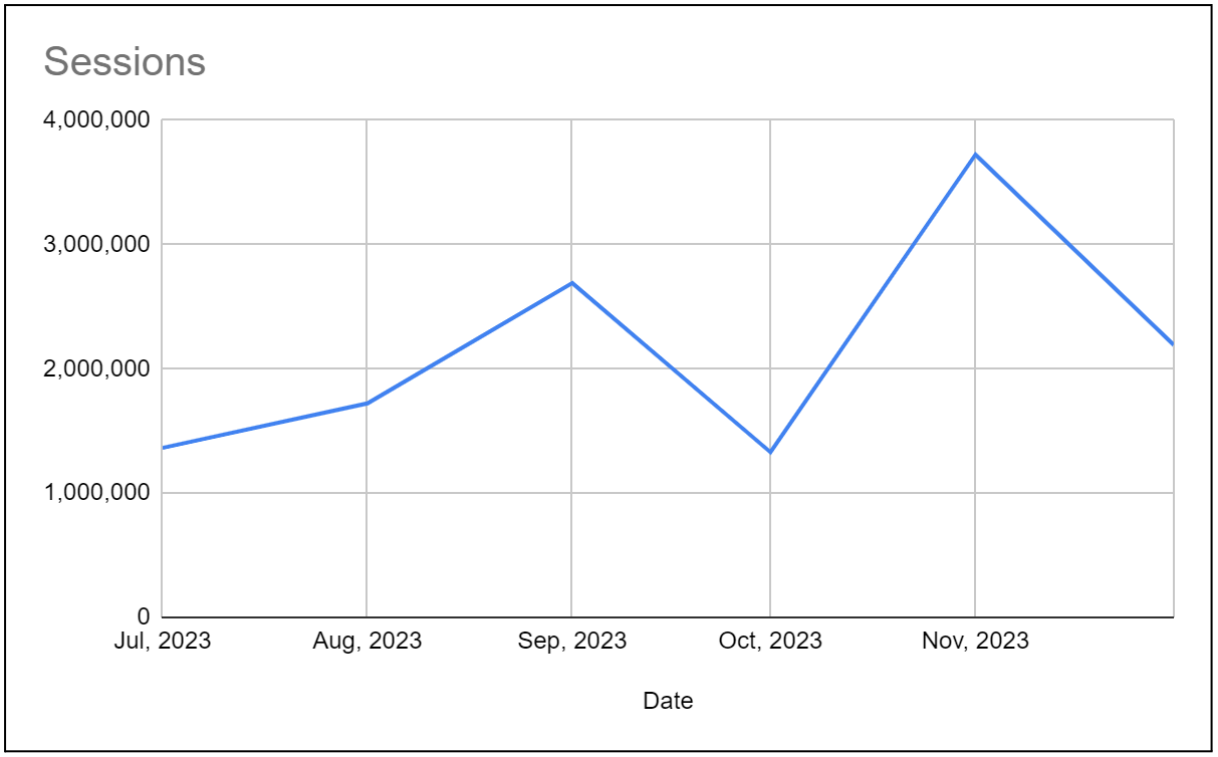


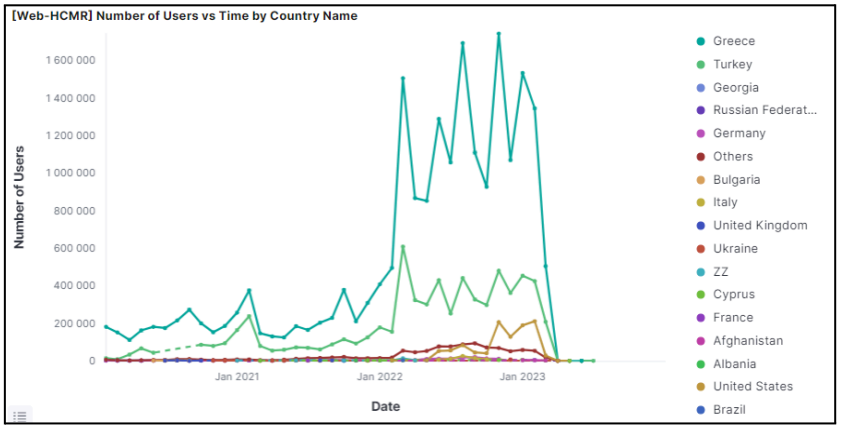
As shared before, the metrics from July 2023 to December 2023 are portrayed sepparately in the following graph.



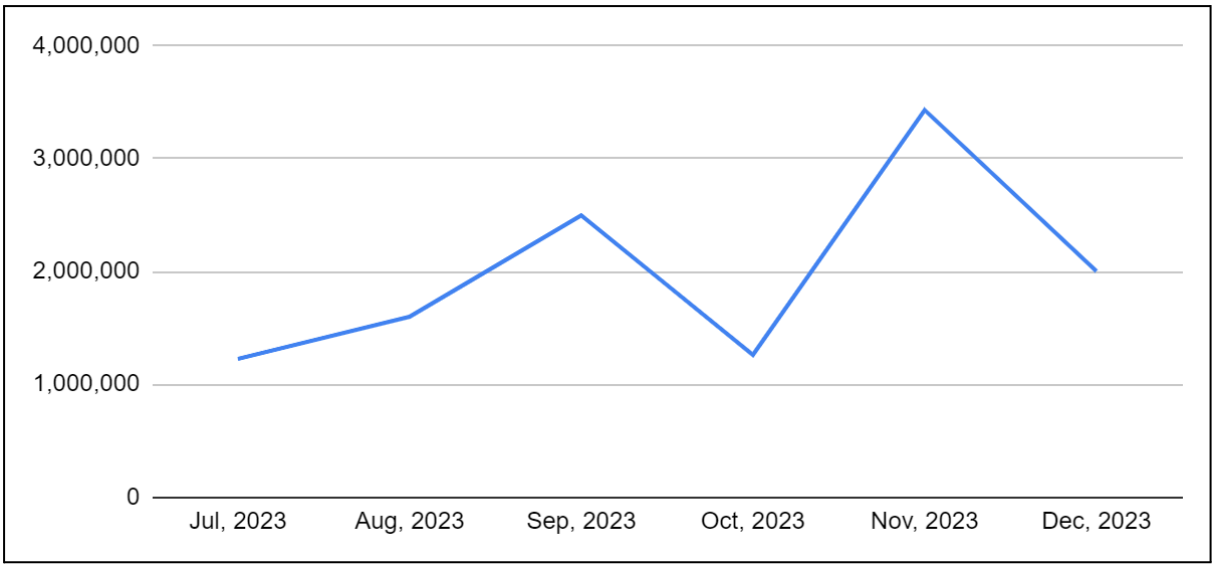


As commented earlier, the metrics from July 2023 to December 2023 are portrayed sepparately in the graph below.

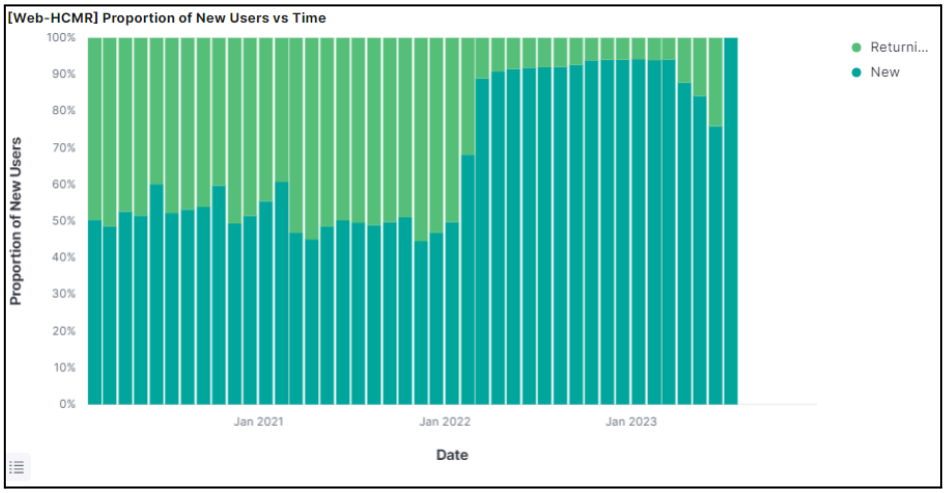


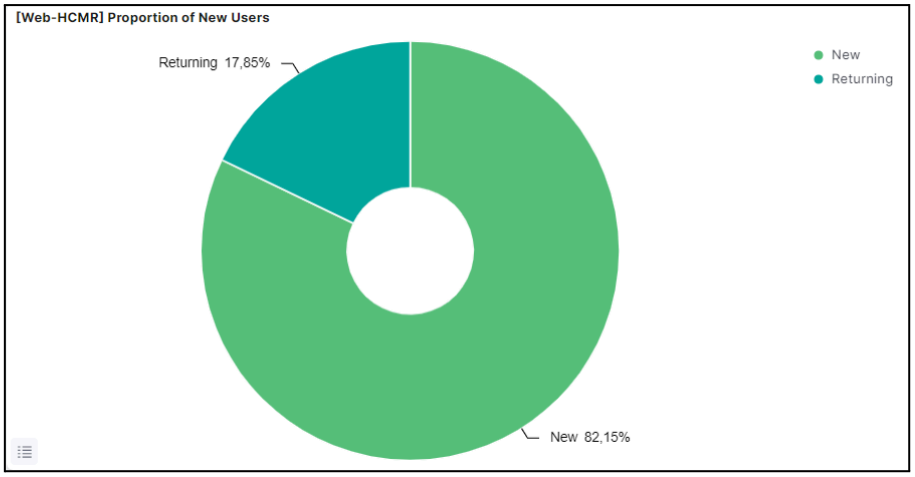


The metrics from July 2023 to December 2023 are portrayed separately in the following graph.

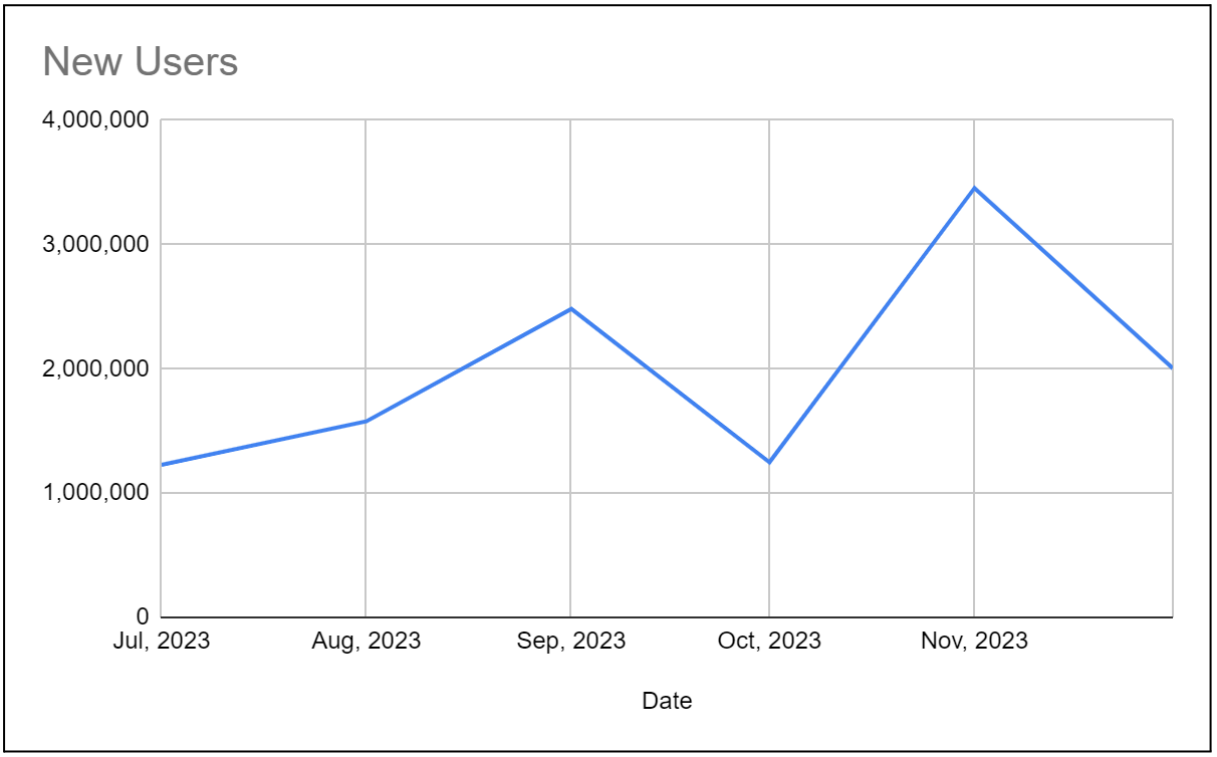


Next, plots analyzing the proportion of new users are shown.

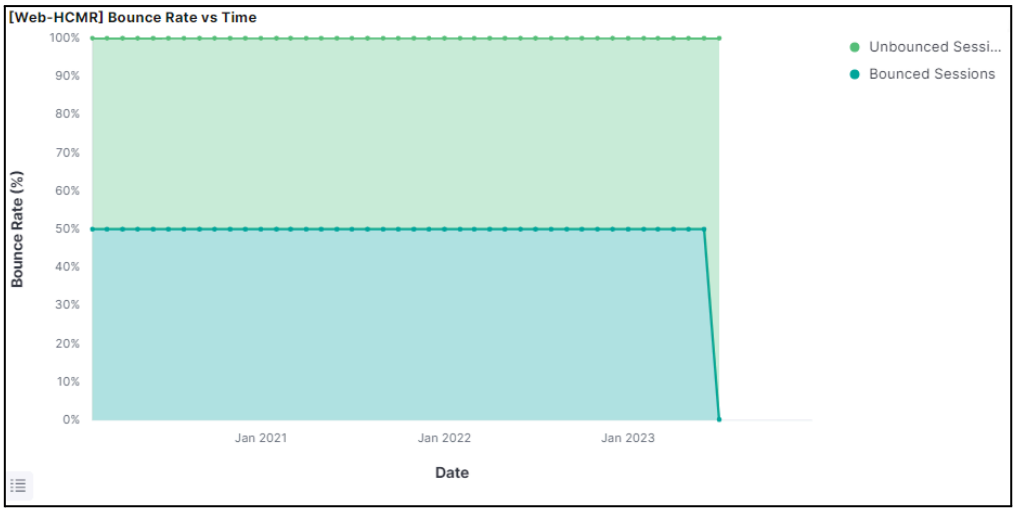




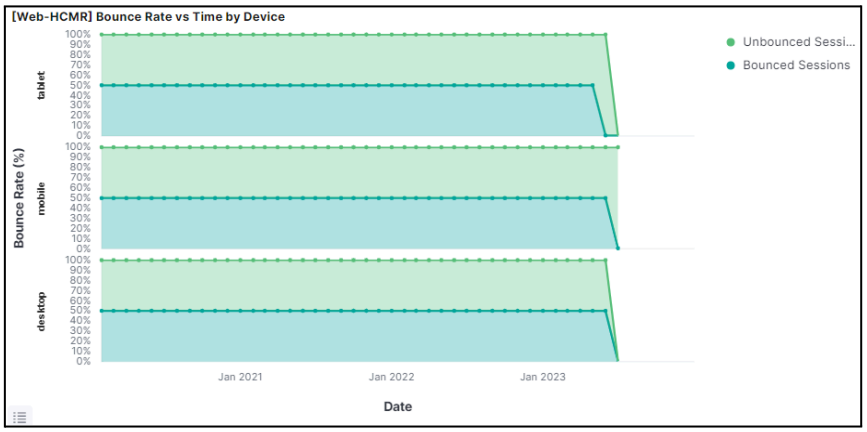
As commented earlier, and due to missing data from July 2023 up until December 2023, the information for this timeframe is depicted in the next graph.

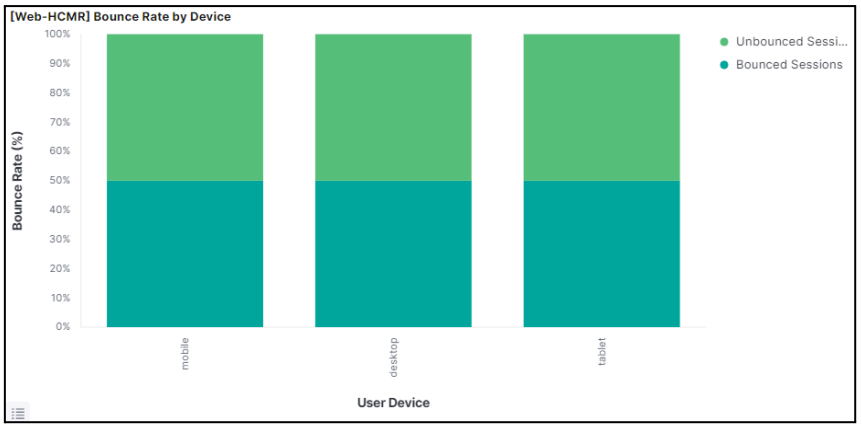


Next, the bounce rate is analyzed.

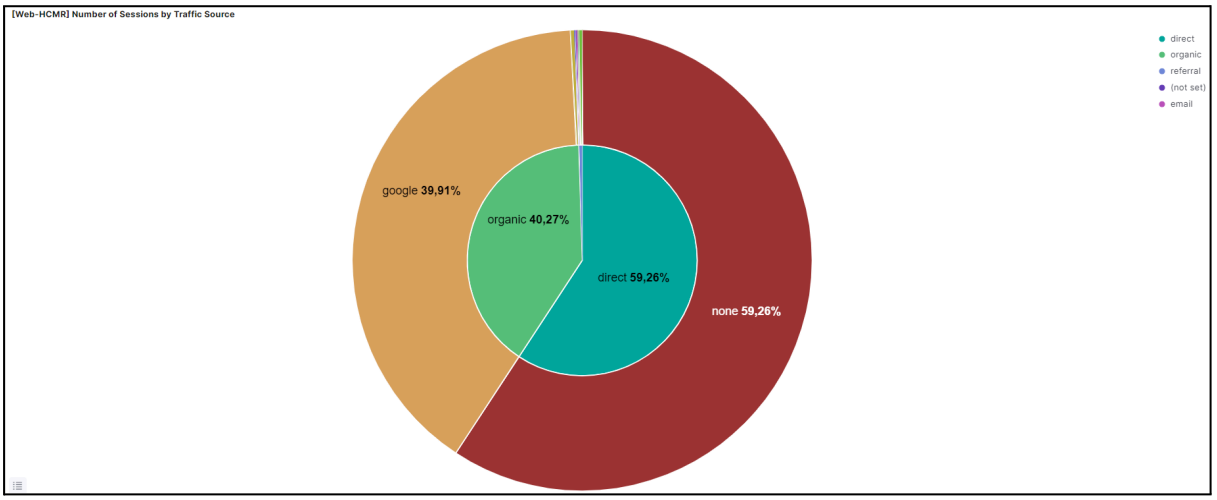


The next set of images show the proportion of sessions that come from each type of device and the influence of the type of device on the bounce rate.





Finally, an analysis of traffic based on the source is presented.



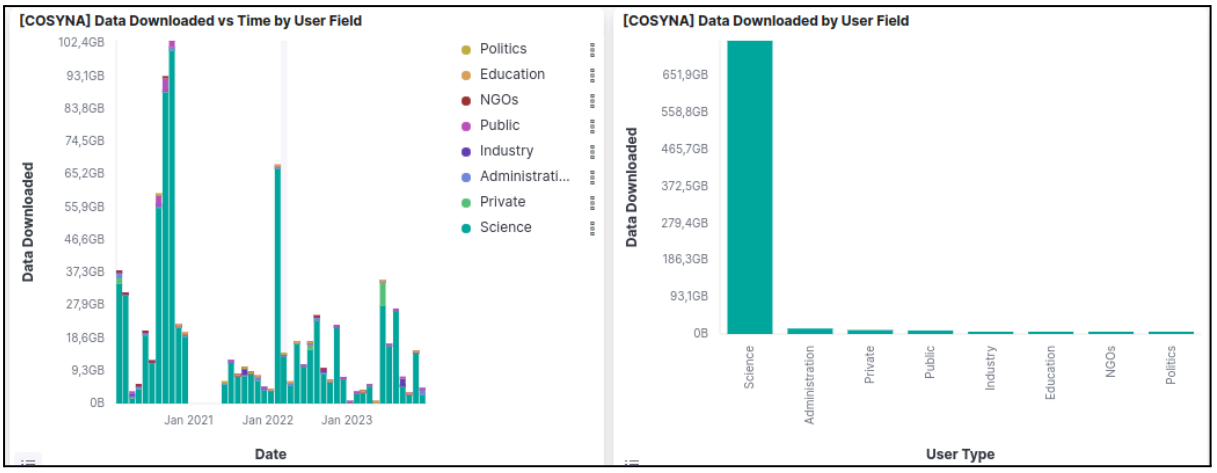
There is a clear change in user behavior after January 2021 which correlates with the release of the new Poseidon website.

Annexe 2.11 The Coastal Observing System for Northern and Arctic Seas (COSYNA) (ID 17.1)

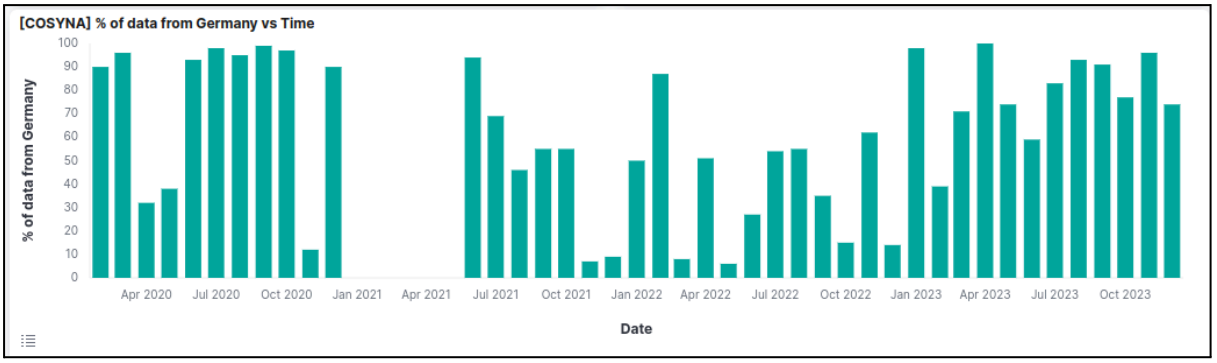
The following plots' data are obtained via a Google Form that COSYNA staff kindly fill out monthly based on their internal monitoring system. Due to a technical issue in that system, no data is available between January 2021 and May 2021 (June 2021 has partial data only).

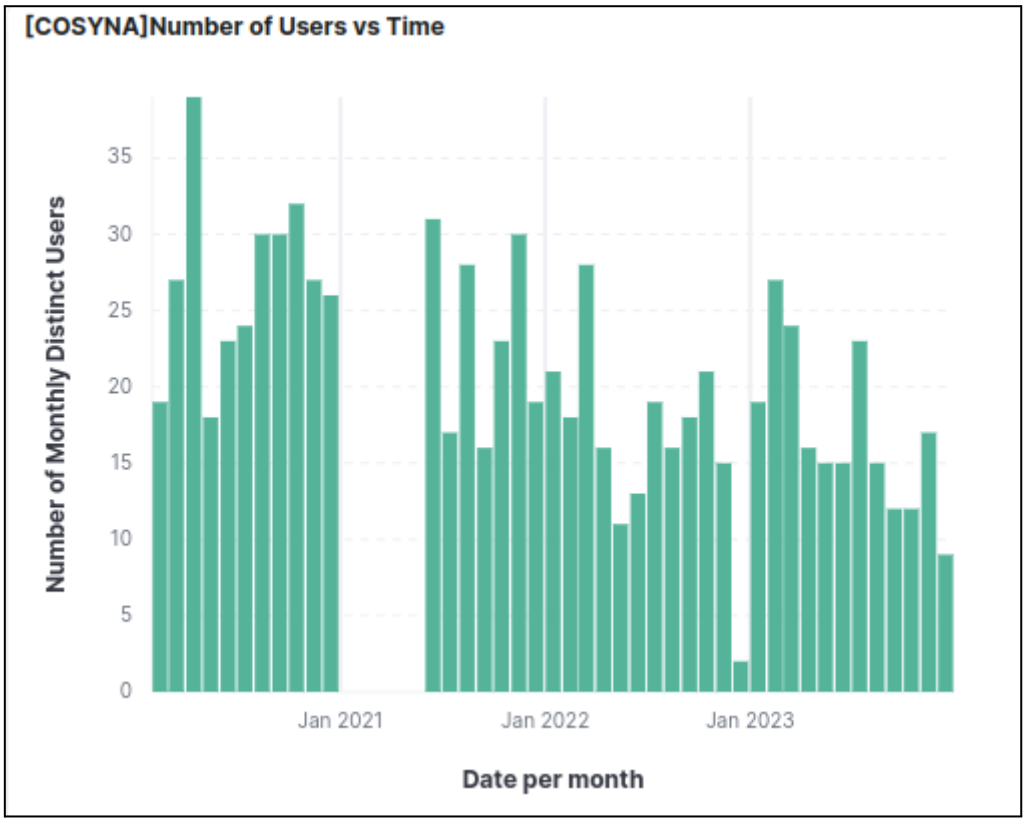
First, the traffic by the type of user will be analyzed. Then, the analyses will be done by origin country.

In the next image, it can be seen how the traffic is distributed among the types of users.



In the following images, the proportion of data that is used by users from COSYNA's country (Germany) can be seen.





Annexe 2.12 HIDROGRAFICO+ (ID 19.1)

This VA infrastructure consists of two parts: a web service that provides oceanographic data, which is monitored by an internal system, and a website that helps users visualize the data, which is monitored via Google Analytics. Next, the access metrics of each of these parts are presented.

Web Service

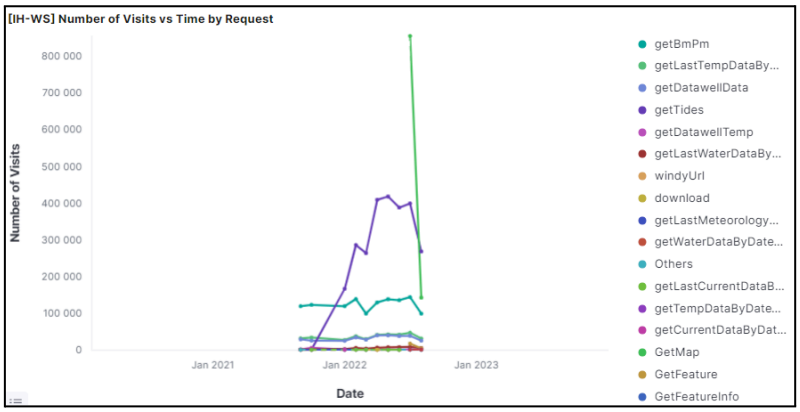
The data underlying the following plots have been obtained by synchronizing VAMS's ElasticSearch database with IH's ElasticSearch database which is fed by an internal

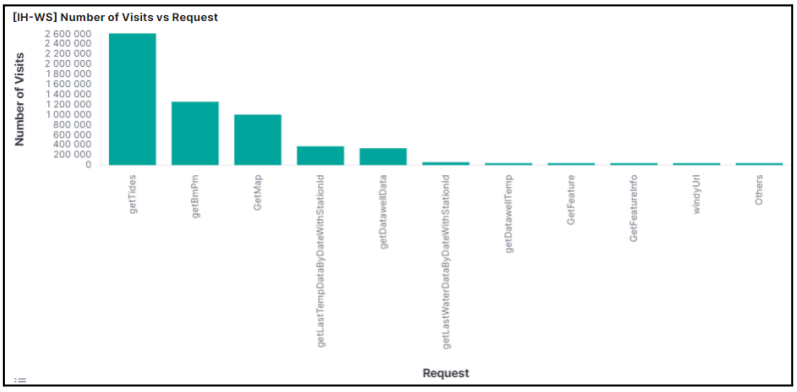
monitoring system. As experienced with other partners, there has been a data gap that spans the period from August 2022 to December 2023. This interruption is a consequence of Google deprecating the old Analytics API and transitioning to version 4, which proved incompatible with the existing metric system.

Due to the efforts made to adapt and collect data using the new version, separate graphs will be shown for Users, News Users, Page Views, and Sessions for the timeframe comprising August 2022 to December 2023.

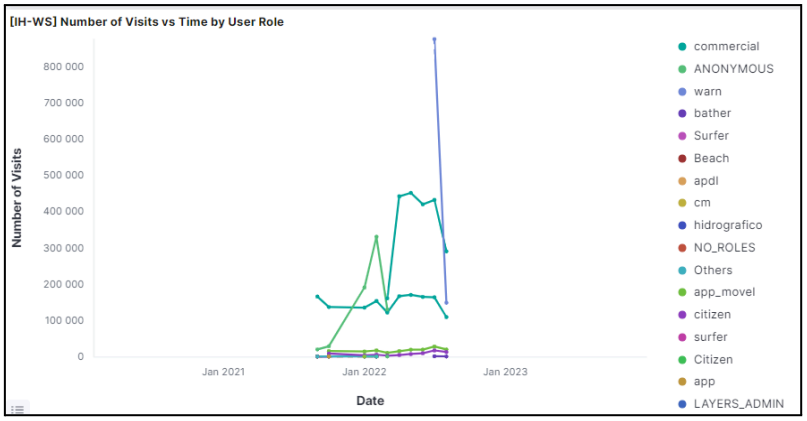
Images with pairs of plots that analyze the number of events over time and overall respectively are presented. Each image divides the events by request, user role, station id, and group respectively.

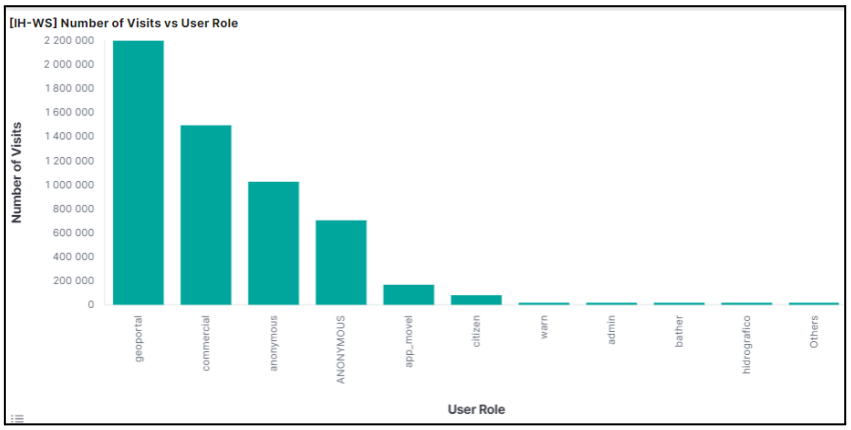
In the next two images, the number of visits by request is analyzed both over time and in absolute numbers.



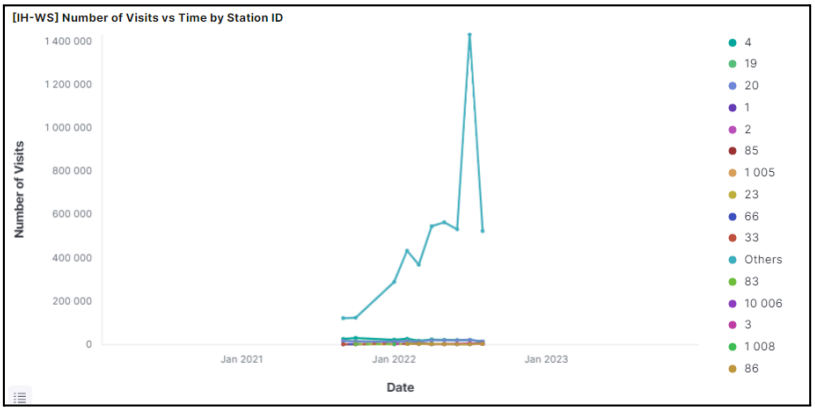


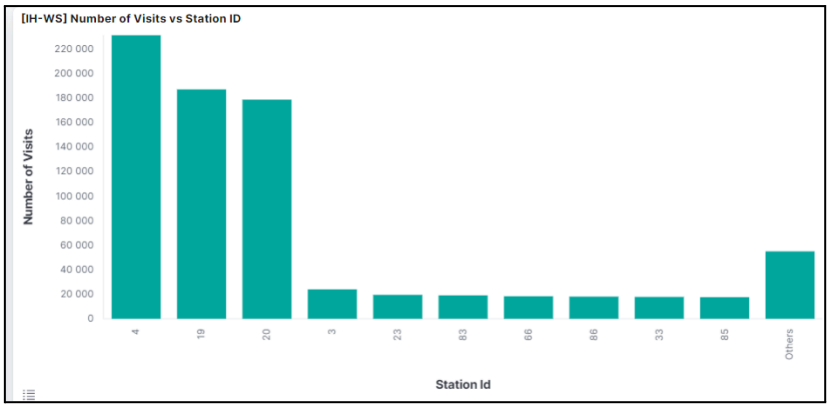
In the following image, the number of visits by user role is analyzed.



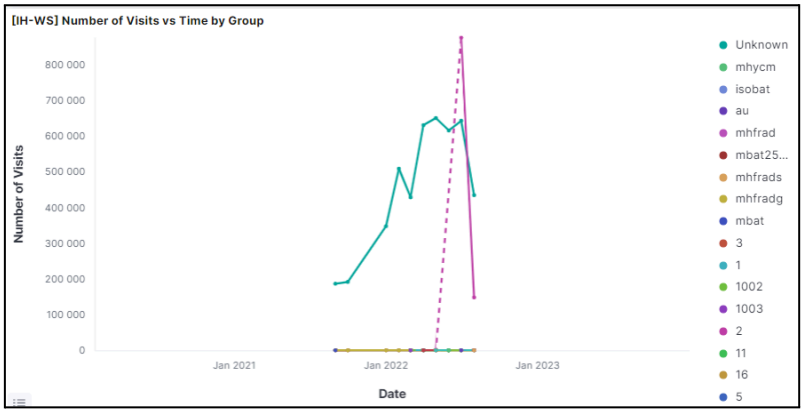


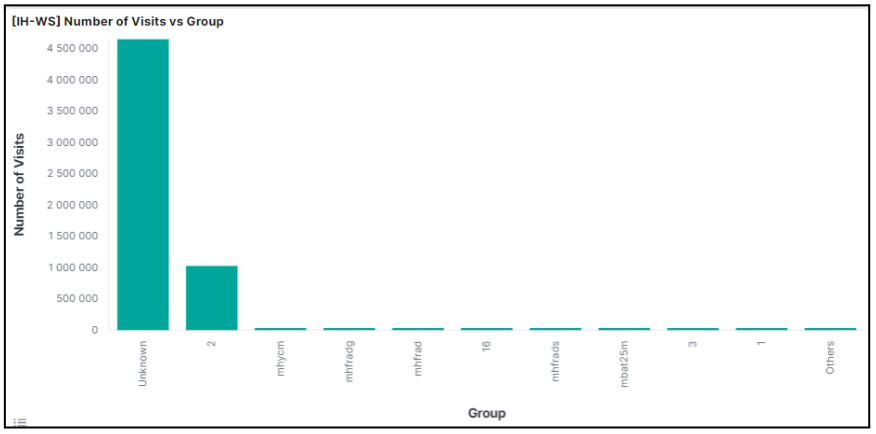
In the images below, the number of visits over time by station ID is analyzed, as well as the number of visits by station ID overall, not divided by time.

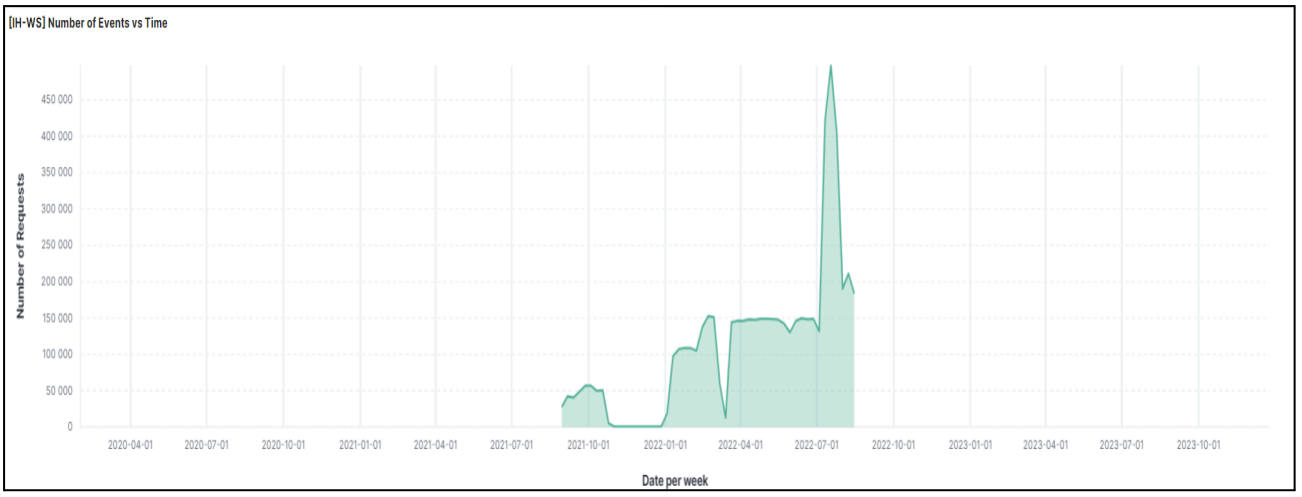




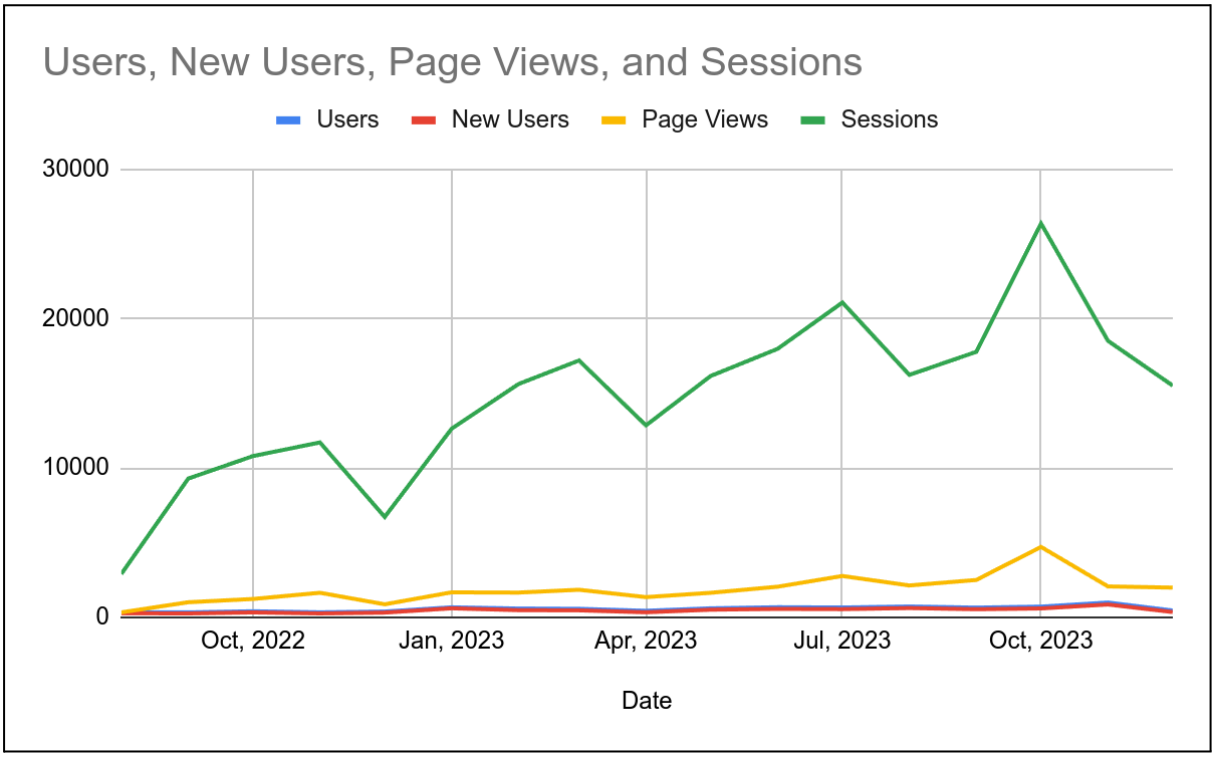
Finally, the number of visits by group is analyzed both over time and in absolute numbers, as well as the number of events over time.







Moreover, and as explained earlier, the following separate graph shows the evolution of Users, New Users, Page Views, and Sessions from August 2022 to December 2023.

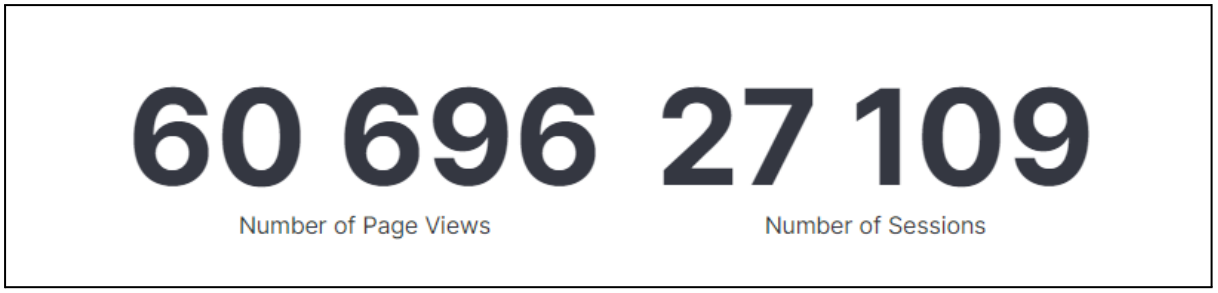


Website

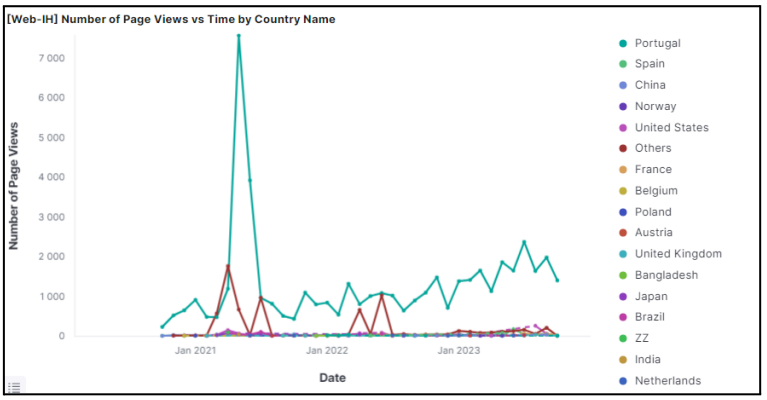
The data underlying the following plots have been obtained from the Google Analytics API.

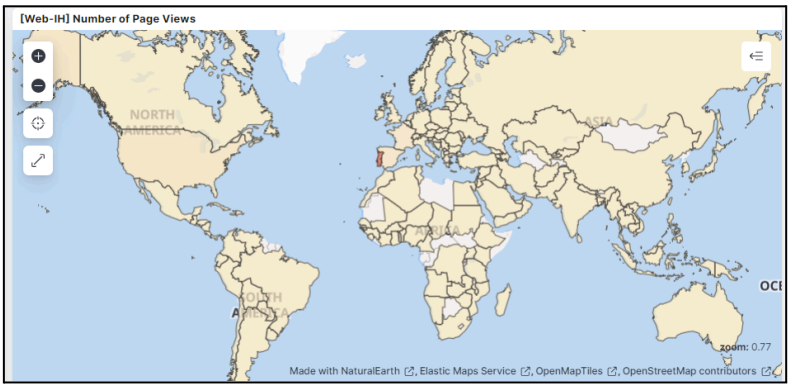
First, the overall access metrics will be presented. Then, the following analyses are included: geographic analysis, analysis by user type (new vs returning), bounce rate analysis, user device analysis, and traffic source analysis.

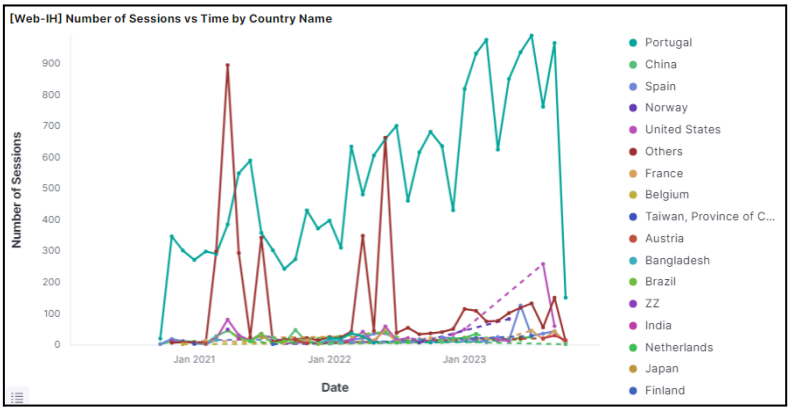
The next image presents the general access metrics in a numeric form.



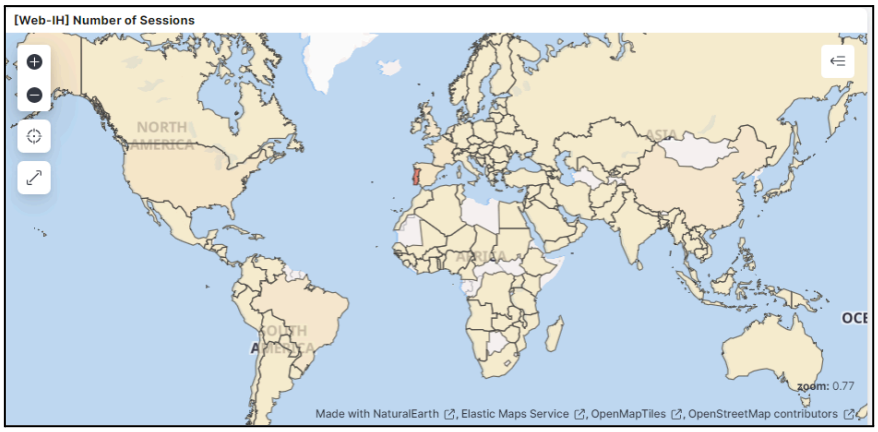
The following set of images contains the geographic analysis of the traffic.

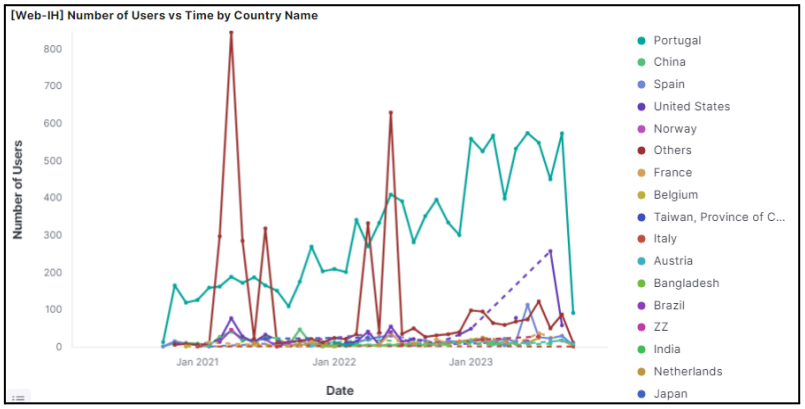


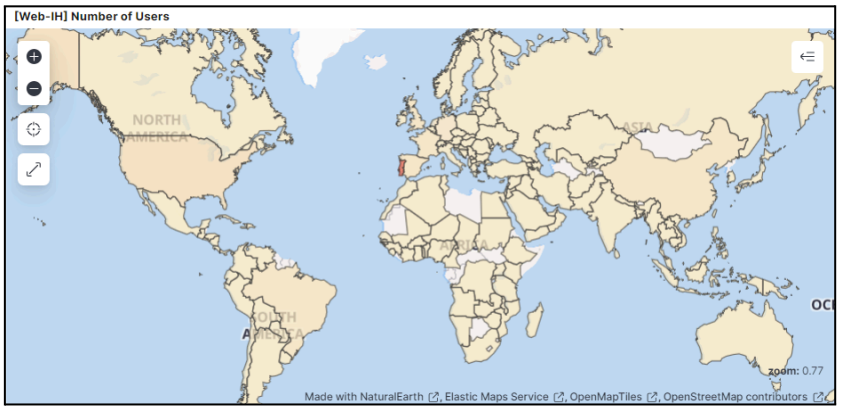




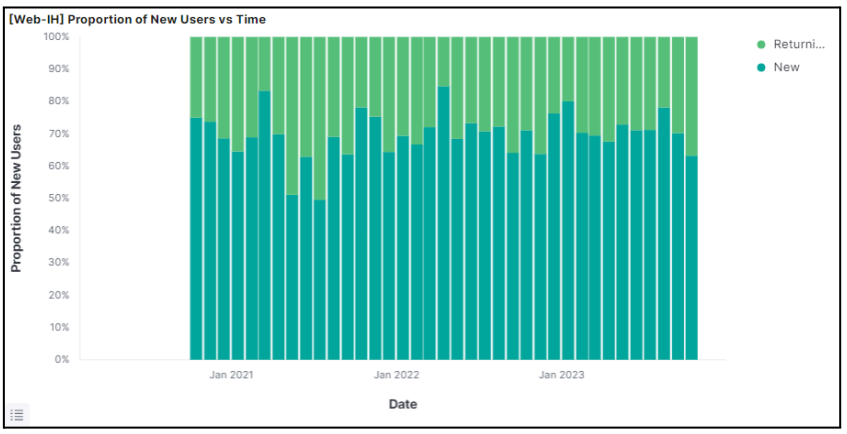
The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.



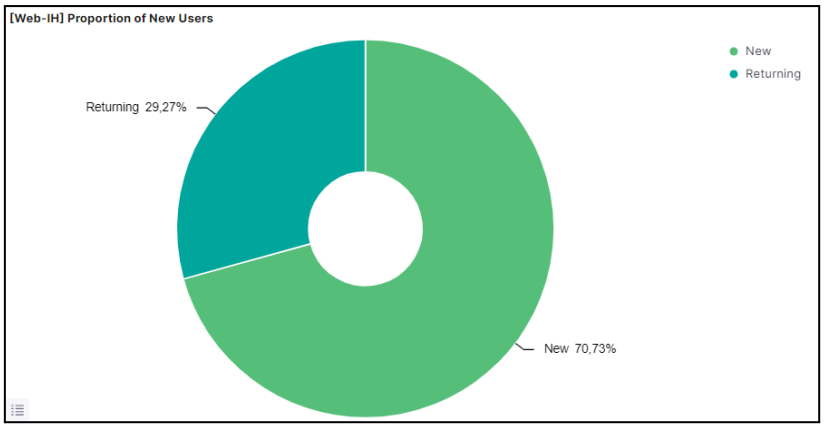


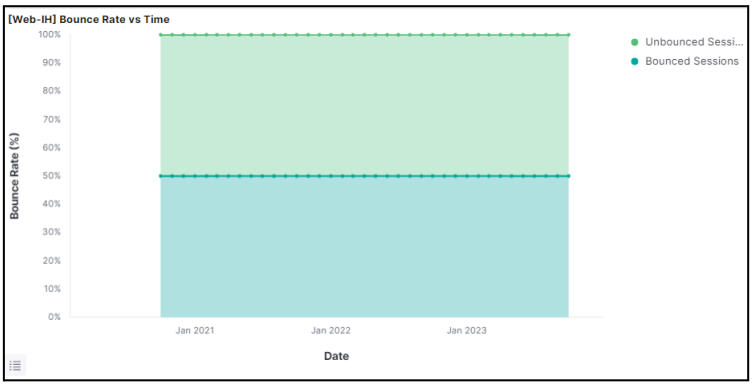


Next, plots analyzing the proportion of new users are shown.

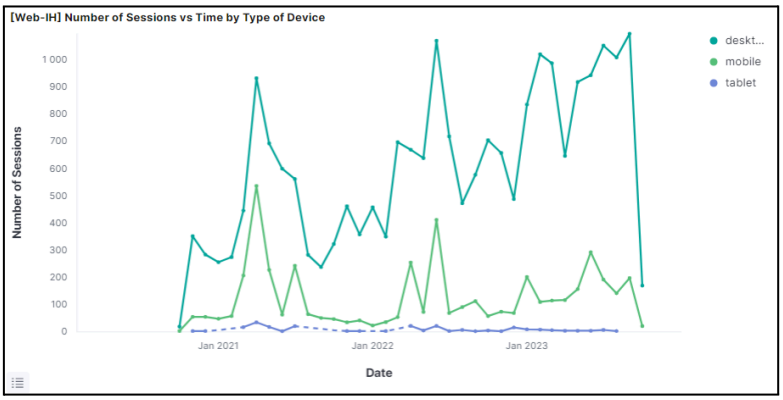


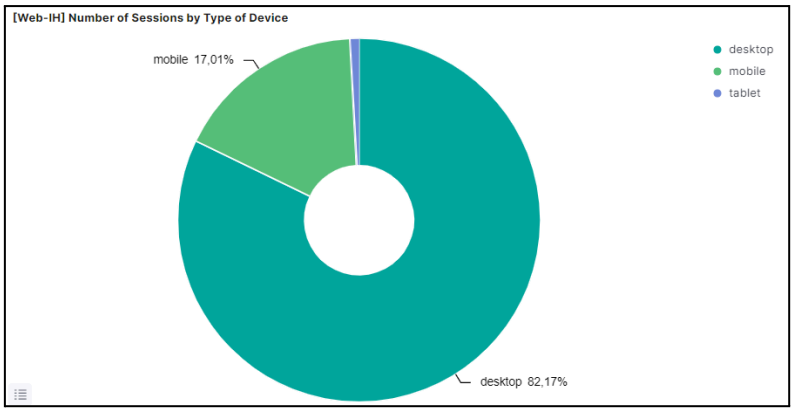
The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.



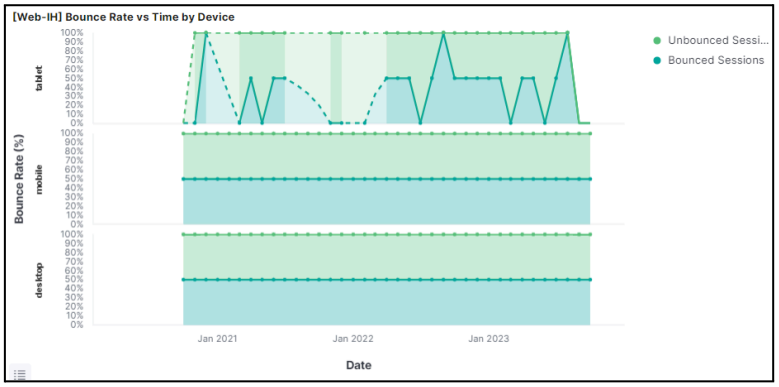


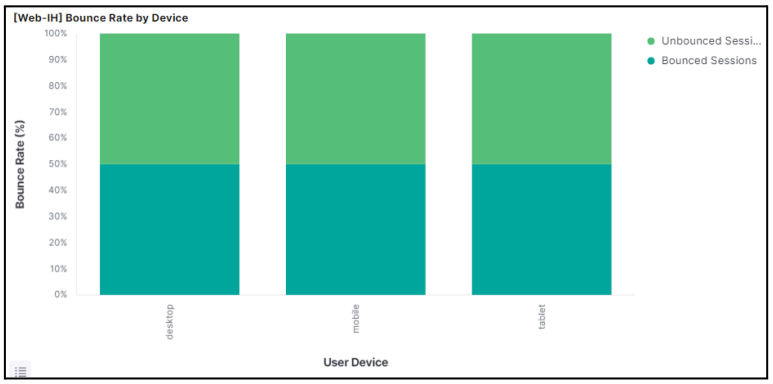
Next, the bounce rate is analyzed.





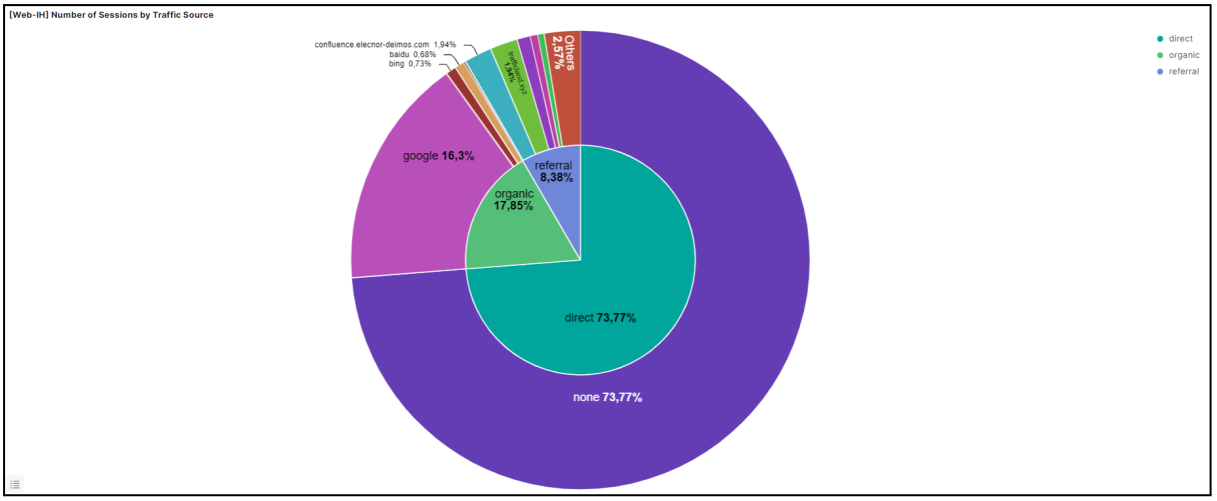
The images below show the proportion of sessions that come from each type of device and the influence of the type of device on the bounce rate.





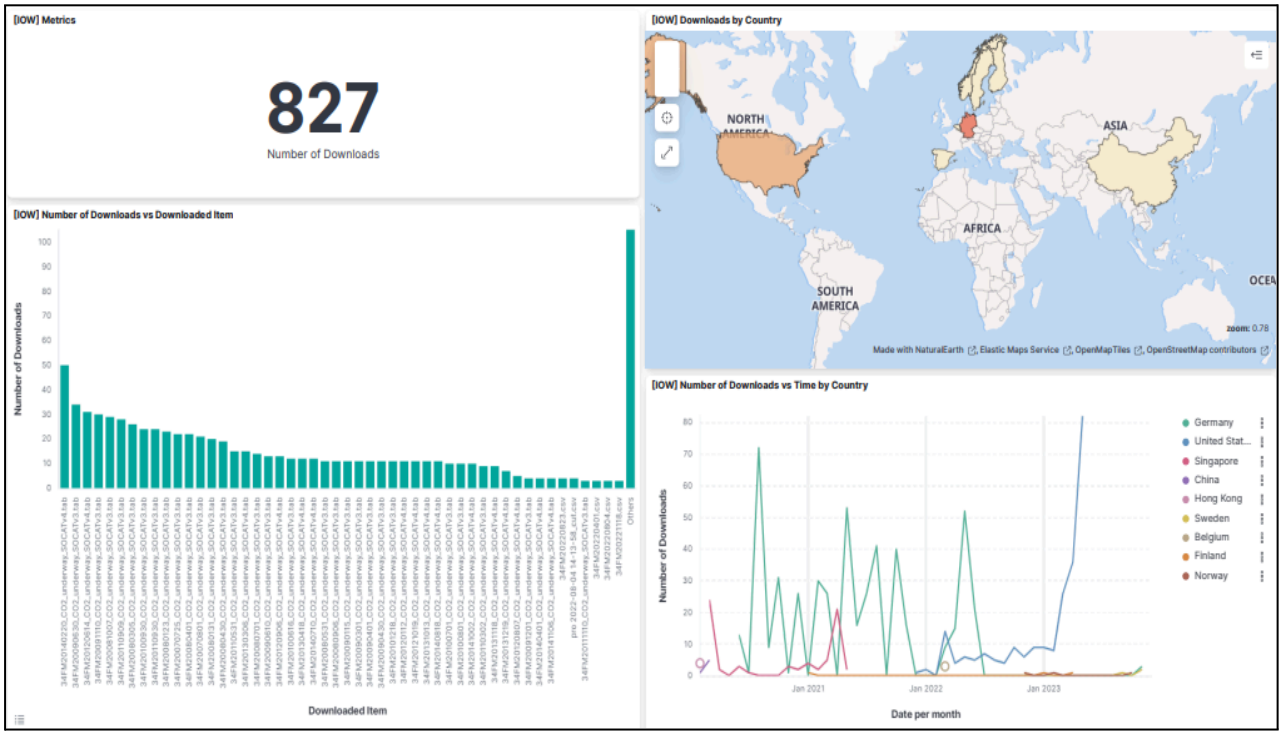
The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.

Finally, an analysis of traffic based on the source is presented.



Annexe 2.13 VOS Finnmaid GHG - BGC (ID 21.1)

The data underlying the following plots are obtained via SOCAT's Access Metrics API which SOCAT's team gracefully updated to accommodate VAMS. The following image includes the metrics of the downloads of the Finnmaid-generated files by country, file name, and date.

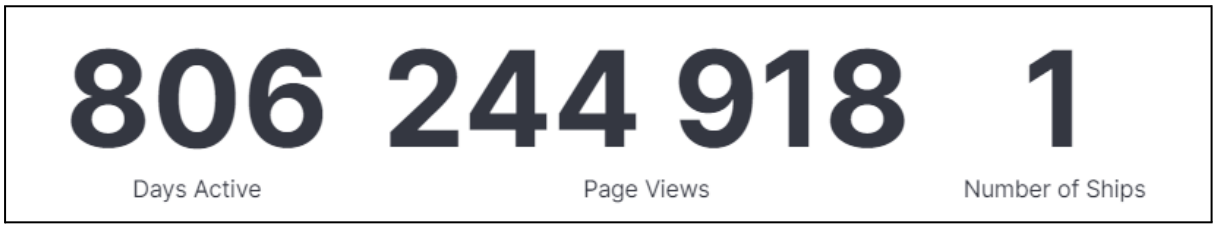


Annexe 2.14 NorFerry/NorSOOP (ID 25.1)

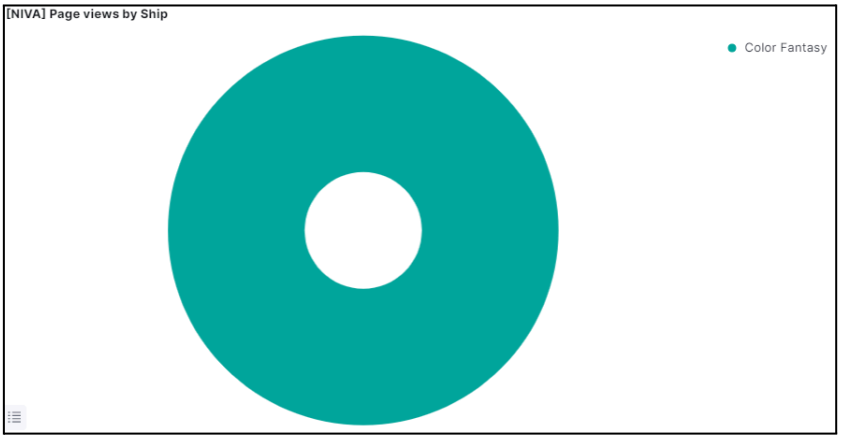
The data underlying the following plots are obtained via email in data files that NIVA's team sends. These files are obtained from the devices users access, which are installed on the ships. It is necessary to access a shore-based server to obtain these files due to the security policy aboard. Due to COVID, only one ship has been in operation with passengers at the time this document is published. Therefore, the data is incomplete and is added here only for completeness.

First, access metrics in a numeric form are presented. The rest of the images include plots that analyze the number of page views, the number of users, and the number of days the ship has had users respectively.

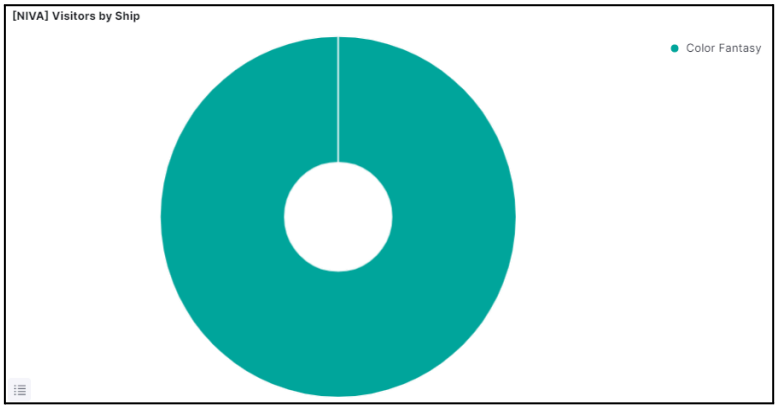
The access metrics are presented below in a numeric form.



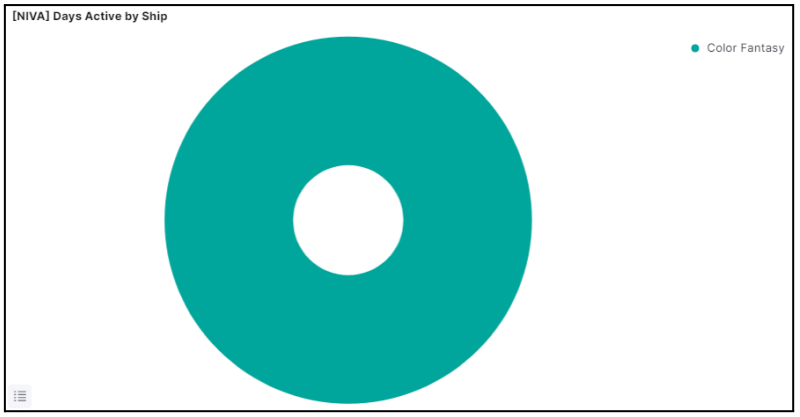
Next, the page views over time and overall by ship are presented.



In the following image, the number of visitors over time and overall by ship are presented.



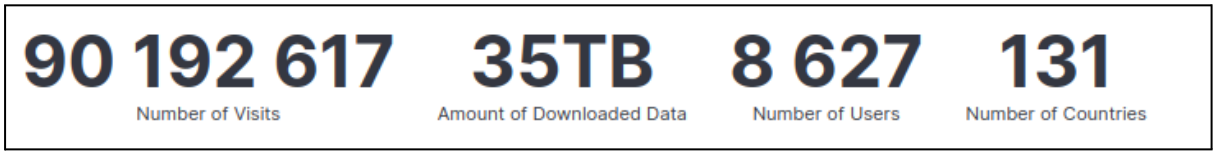
Next, the number of active days over time and overall by ship are presented.



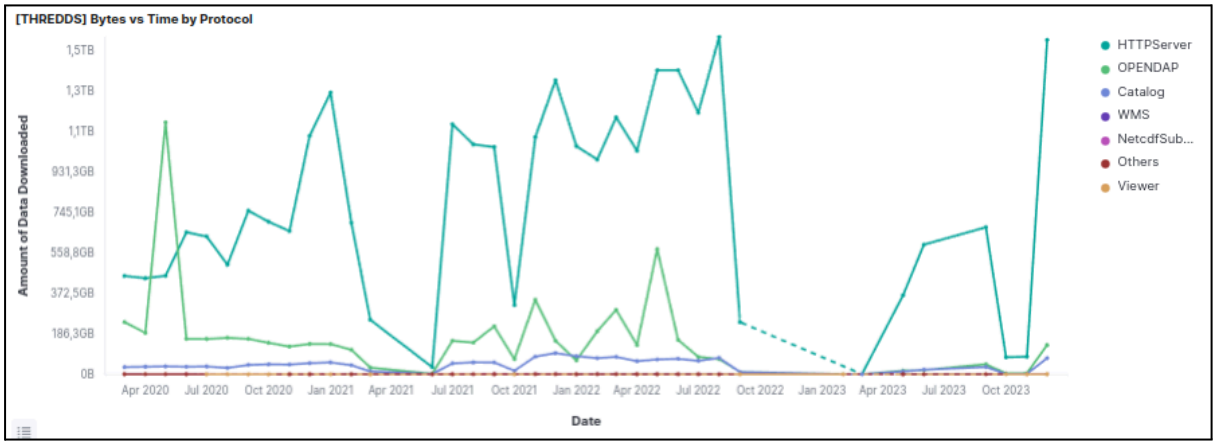
Annexe 2.15 PORTUS Observing and Forecasting System (ID 28.1)

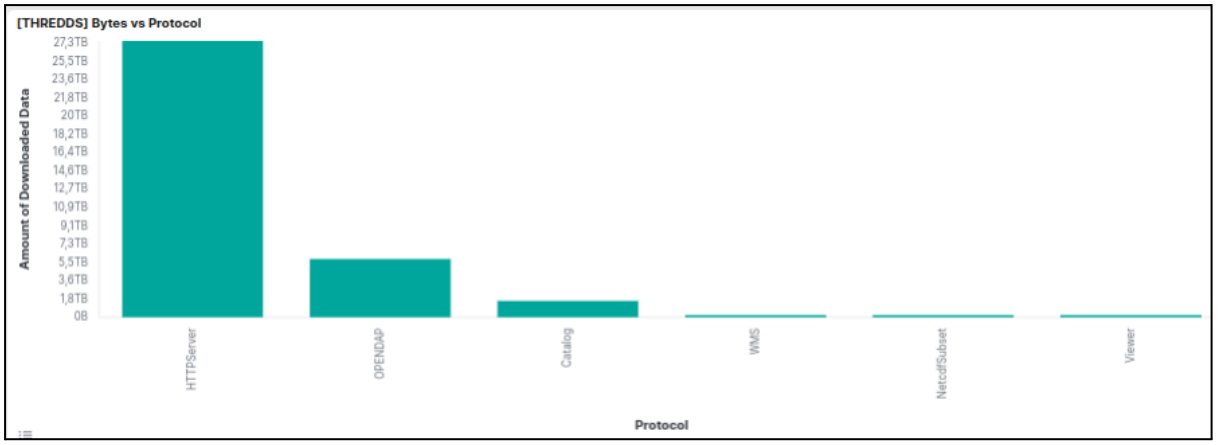
The data underlying the following plots have been obtained from the log files of the THREDDS data server. Therefore, the overall access metrics will be presented. Moreover, traffic by THREDDS protocol, geographic origin, used client, referrer domain, and operating system will be analyzed.

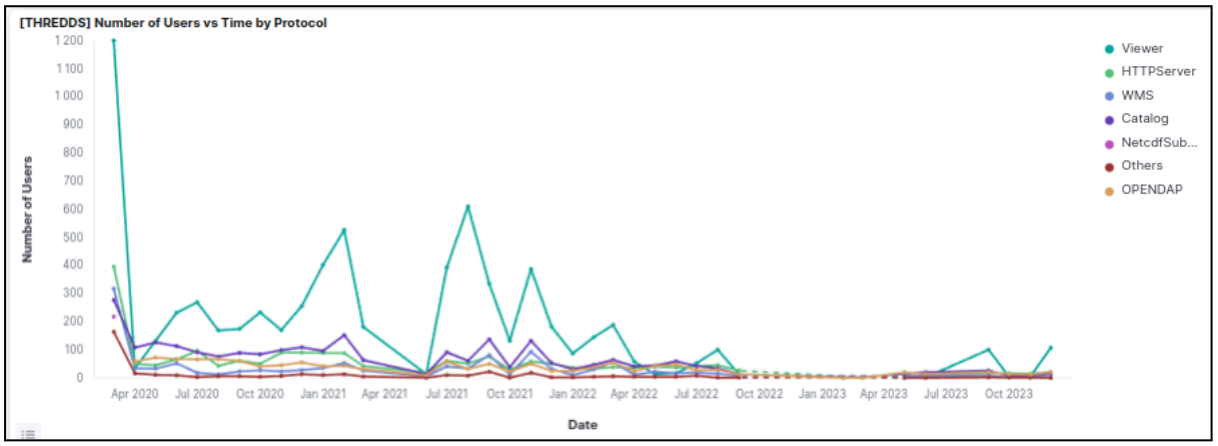
The next image presents the general access metrics in a numeric form.

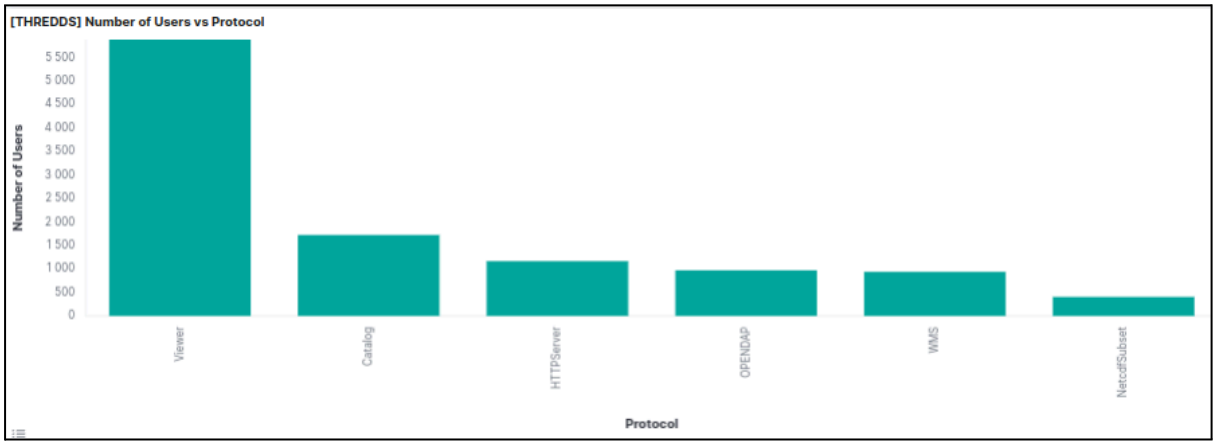


The following set of images contains the analysis of the traffic by THREDDS protocol (traffic to the catalog HTML pages is assigned to protocol "Catalog" and traffic to the HTML pages of viewers is assigned to "Viewer" protocol).

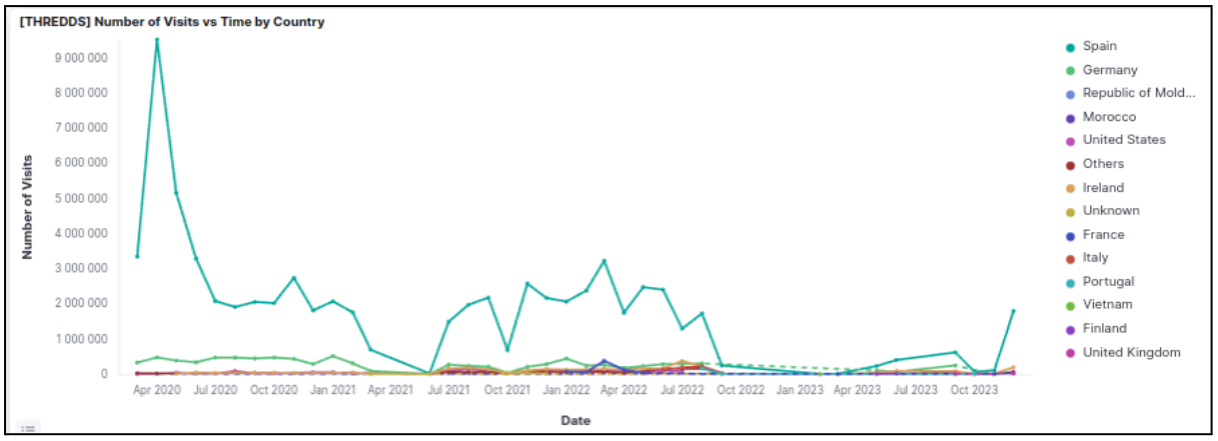




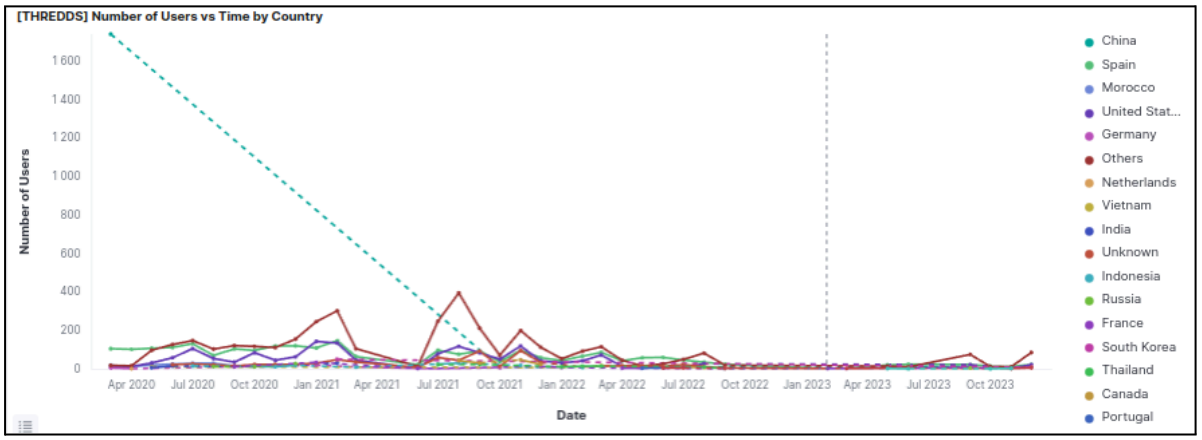


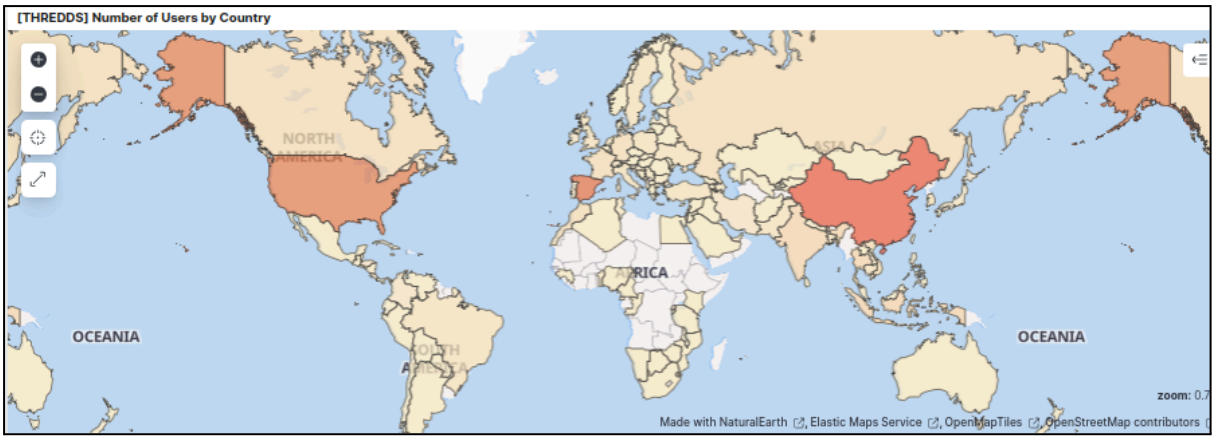


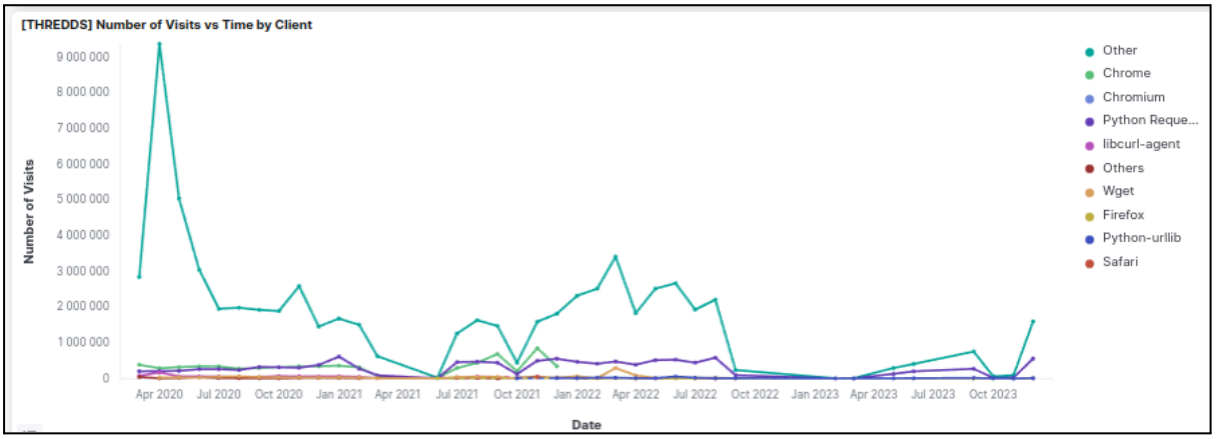
Next, plots and maps with a geographic analysis of the traffic seen by the server are shown.

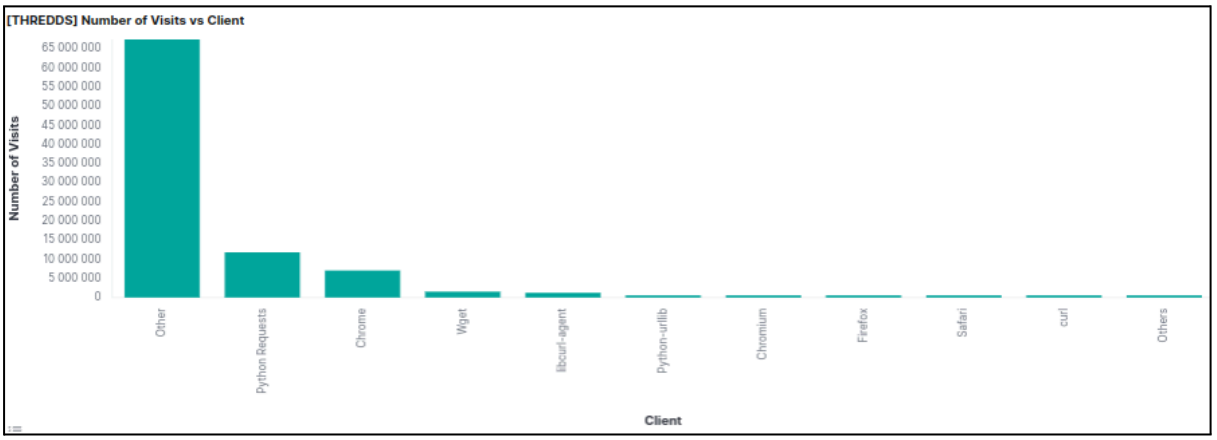


The next set of images shows an analysis of the traffic based on the software used by the user to perform the request (a browser or an HTTP library).

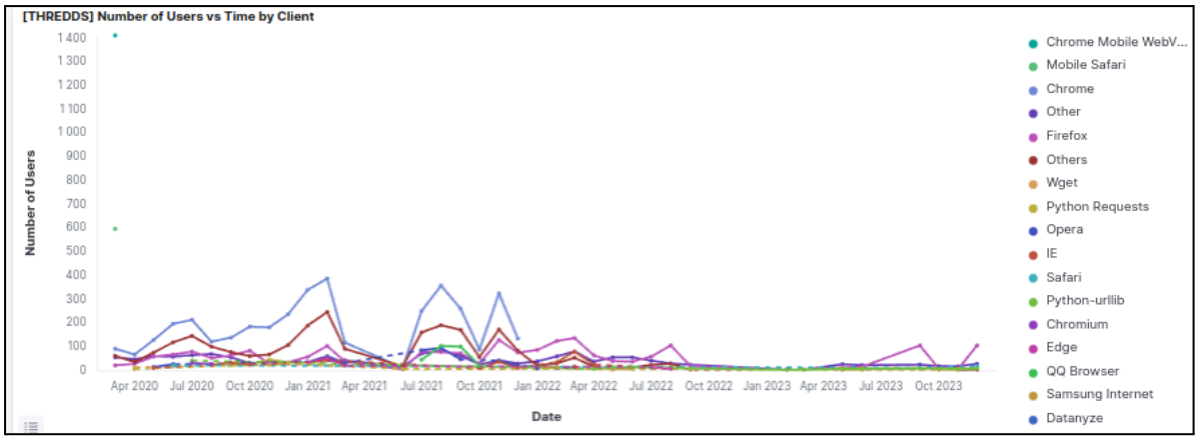


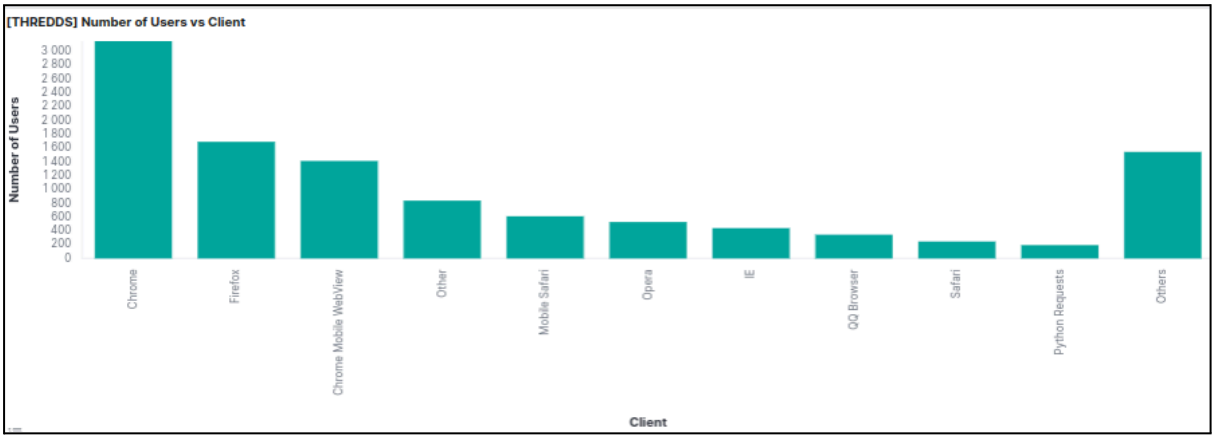




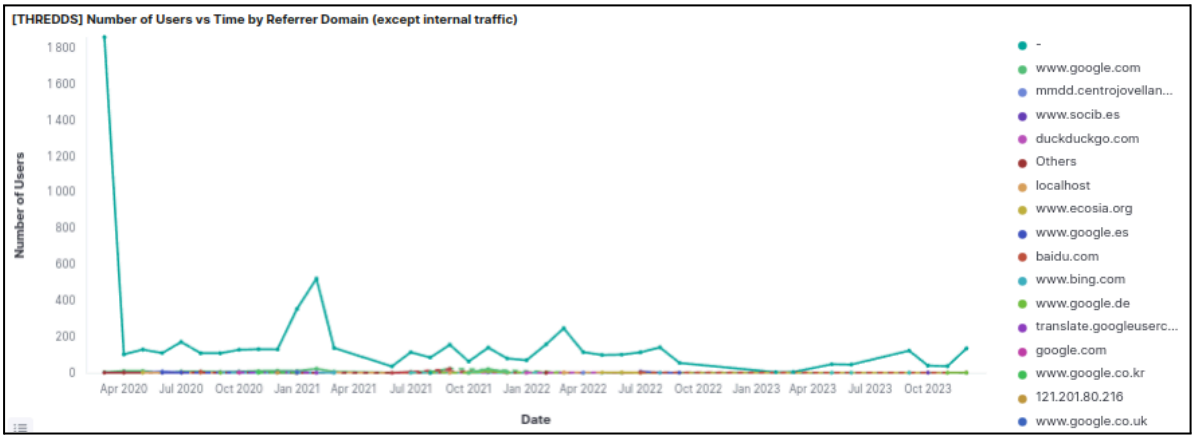


The images below contain an analysis based on the referrer domain ("-" means referrer is not informed, like a visit from a bookmarked link or direct access via software).





Finally, an analysis of traffic based on the operating system of the user is presented (that information is extracted from the browser version, for HTTP libraries, the information is not available and it is contained in the "Other" category).



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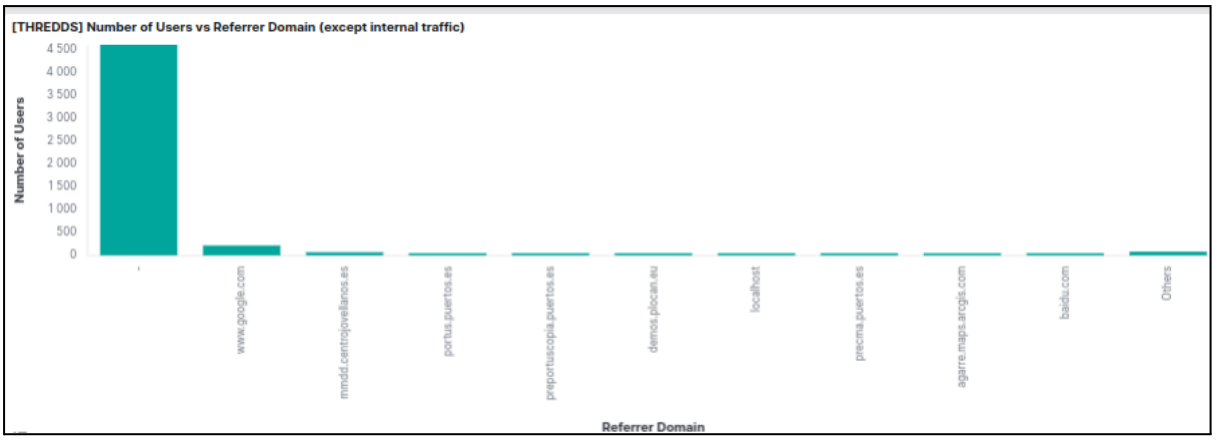
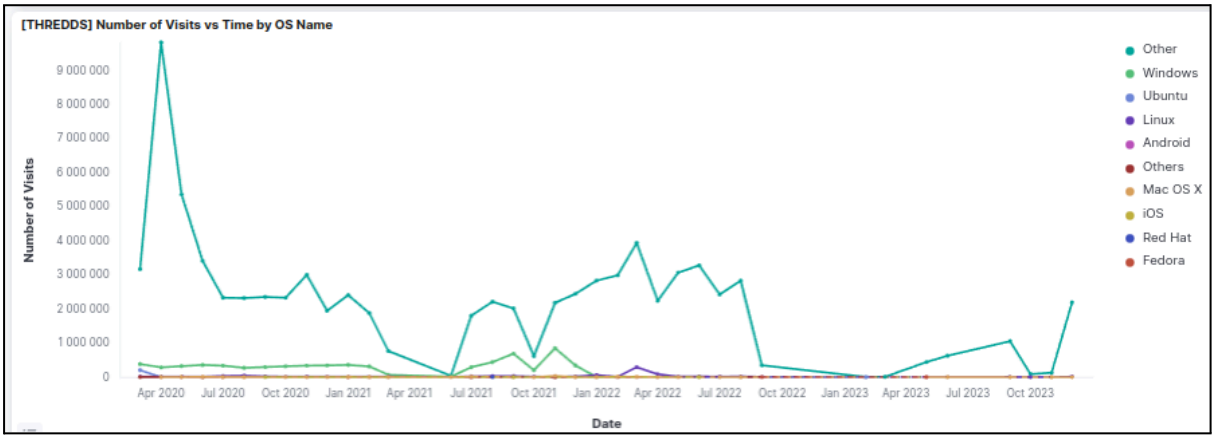
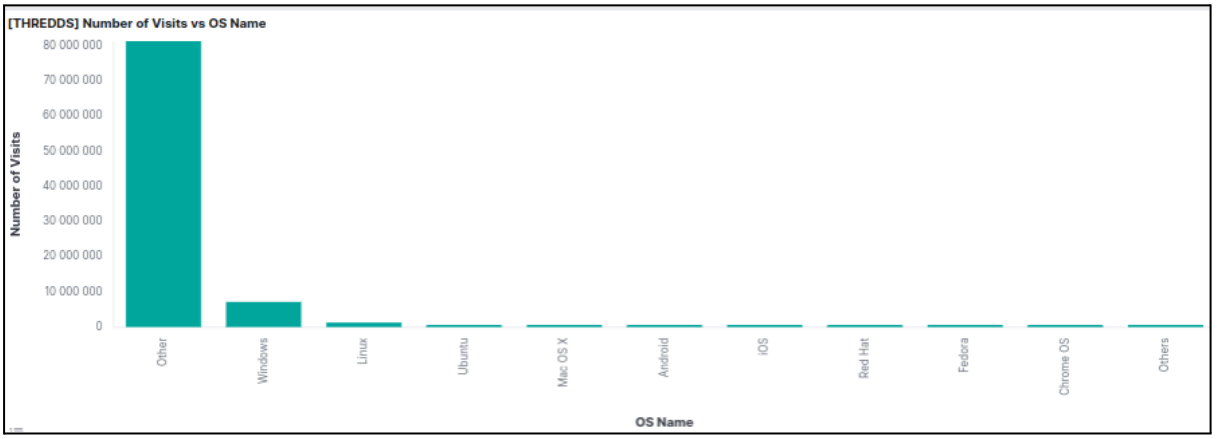
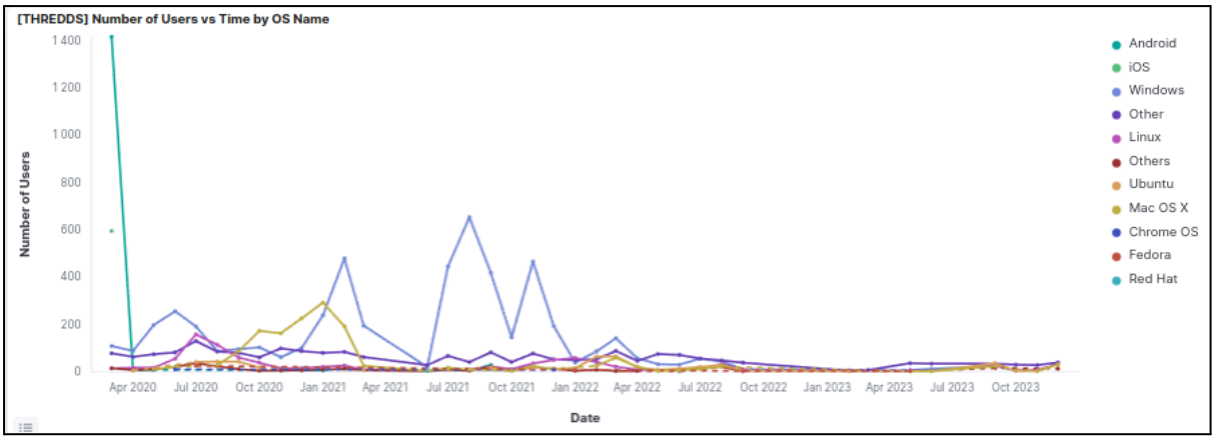








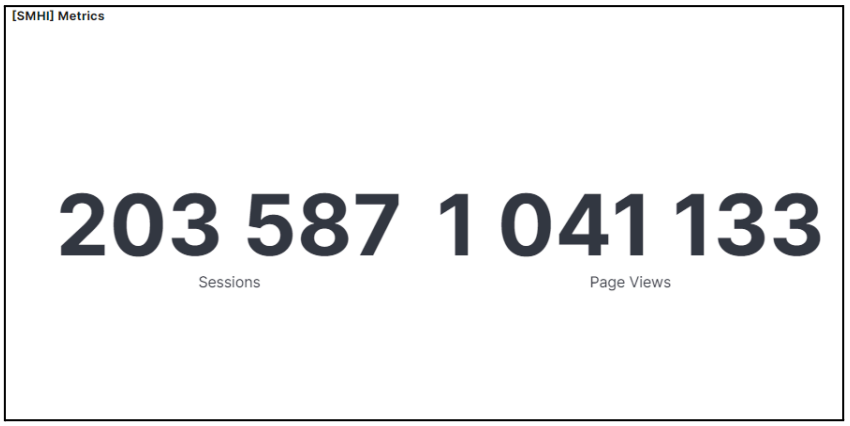
Annexe 2.16 Swedish Oceanographic Data Centre (ID 32.1)

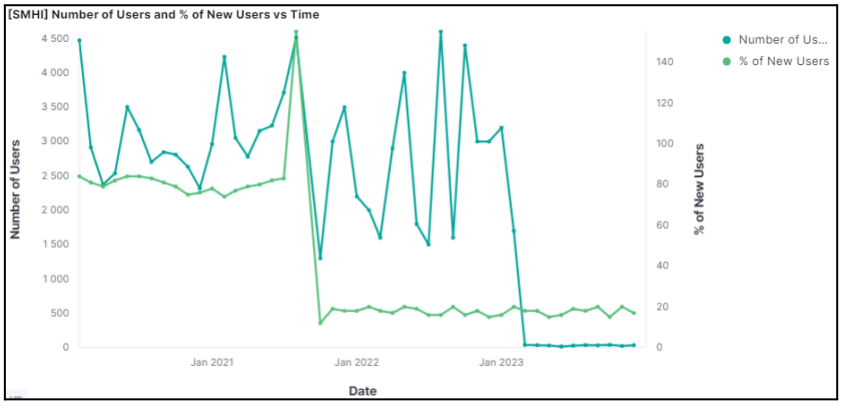
This VA infrastructure consists of two websites: the main SMHI website and OpenData View. The data underlying the plots of both websites are obtained via a Google Form that SMHI staff kindly fill out monthly based on their Google Analytics and Matomo reports.

SMHI's Website

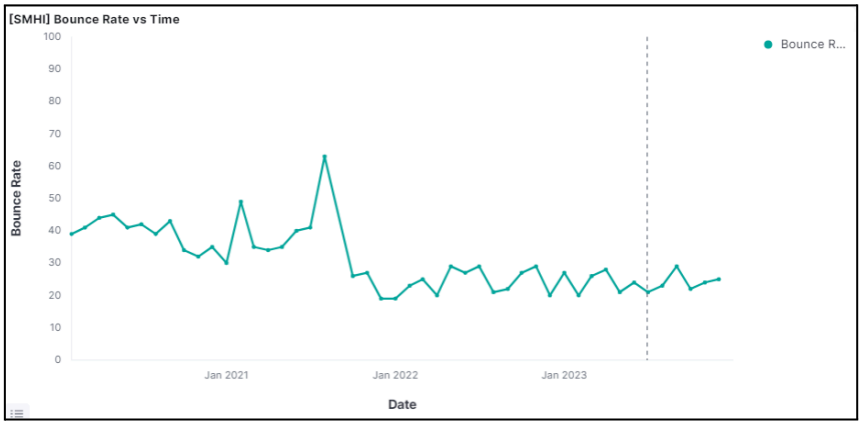
First, the volume of traffic will be analyzed. Then, metrics related to session quality (session duration and bounce rate) will be presented. Finally, the origin of traffic will be analyzed.

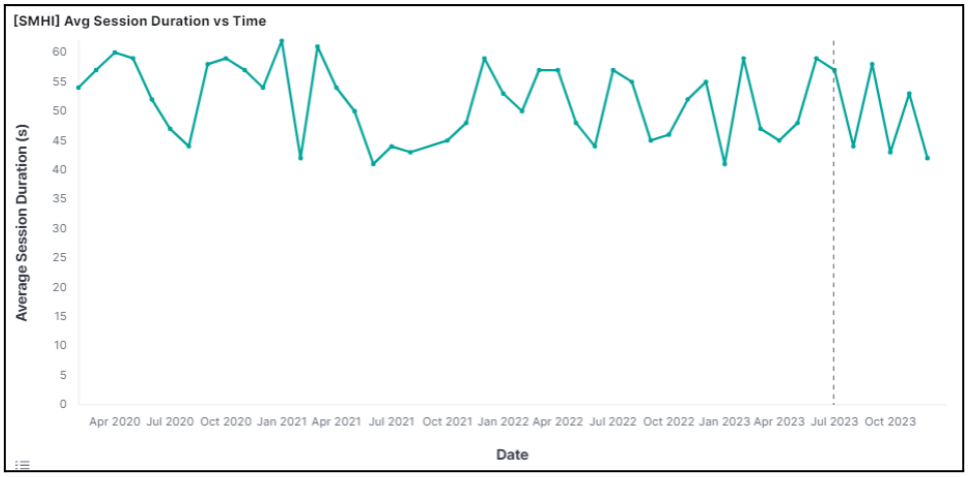
In the next image, a numeric representation of the access metrics and the users' analysis is presented.



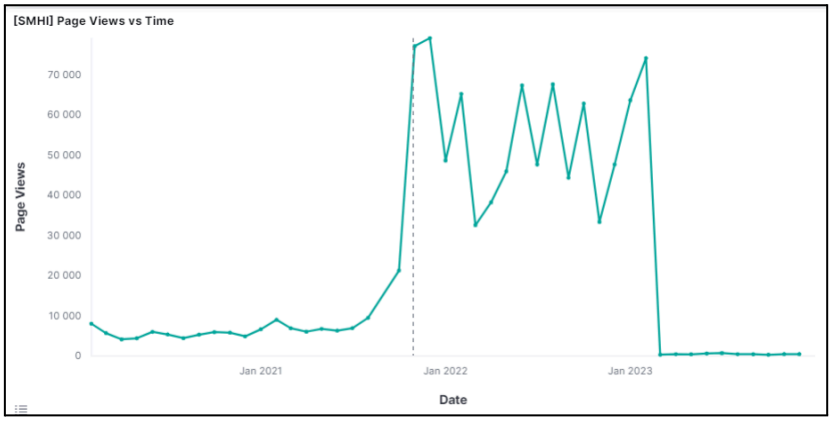


Next, a temporal analysis of the bounce rate over time and average duration sessions has been added.

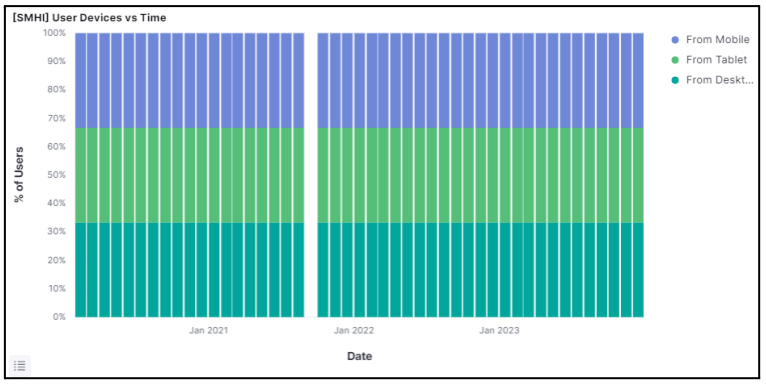


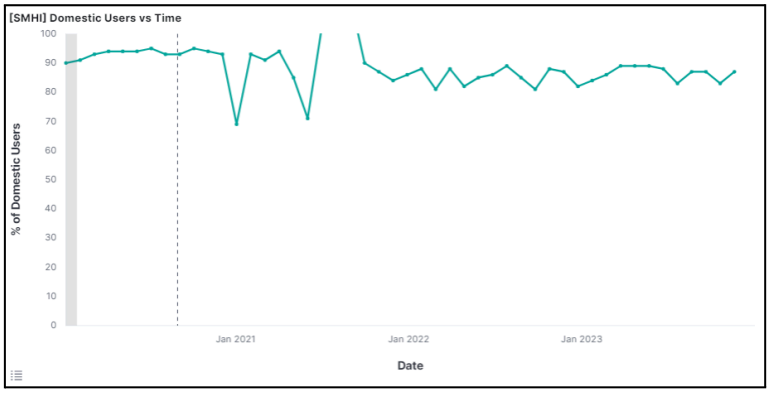


In the following images, metrics related to the on-page user experience: page views, and session duration are analyzed.



Finally, the user origin is analyzed: both by device and country of origin.

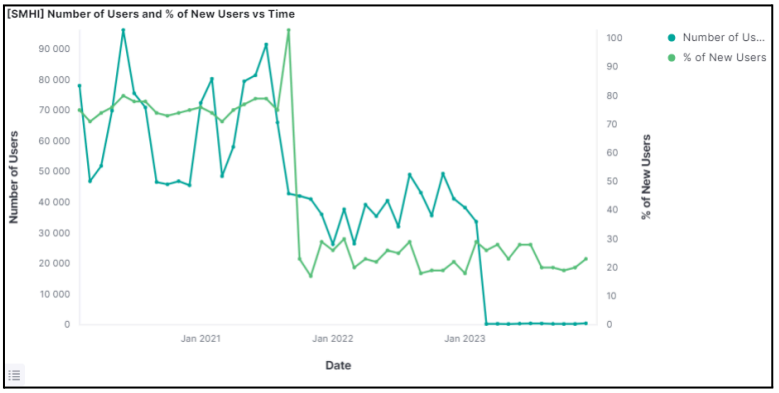




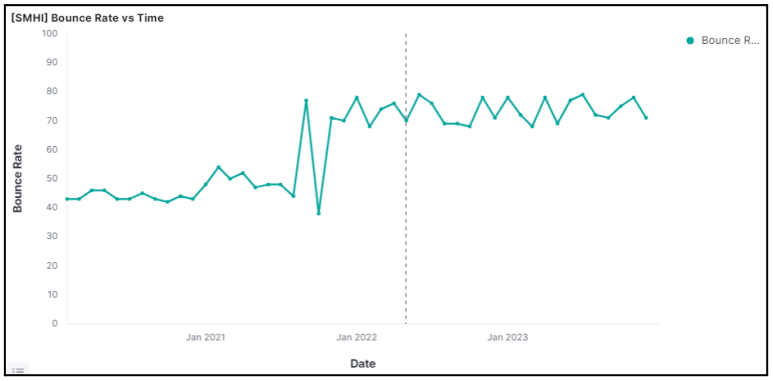
OpenData View Website

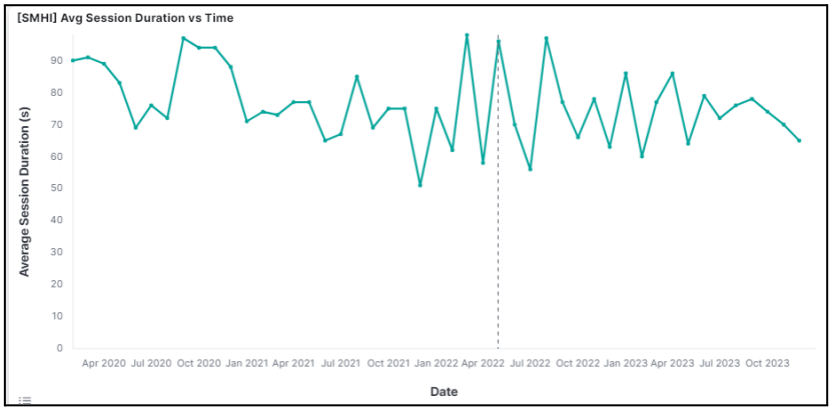
First, the volume of traffic will be analyzed. Then, metrics related to session quality (session duration and bounce rate) will be presented. Finally, the origin of traffic will be analyzed.

In the next images, a numeric representation of the access metrics and the users' analysis is presented.

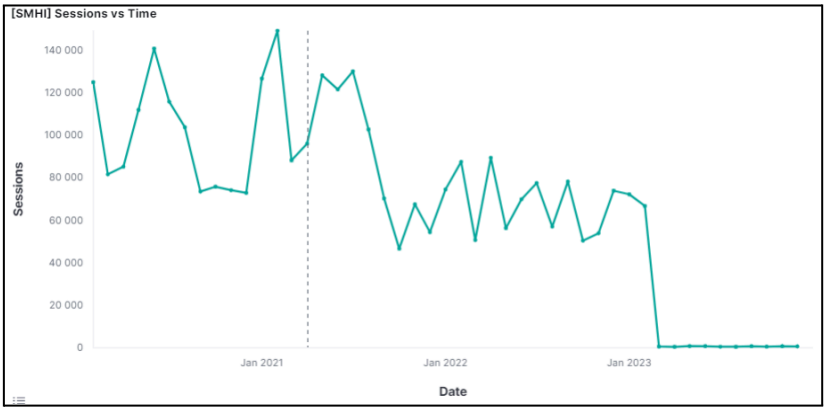


Next, a temporal analysis of the bounce rate and sessions has been added.

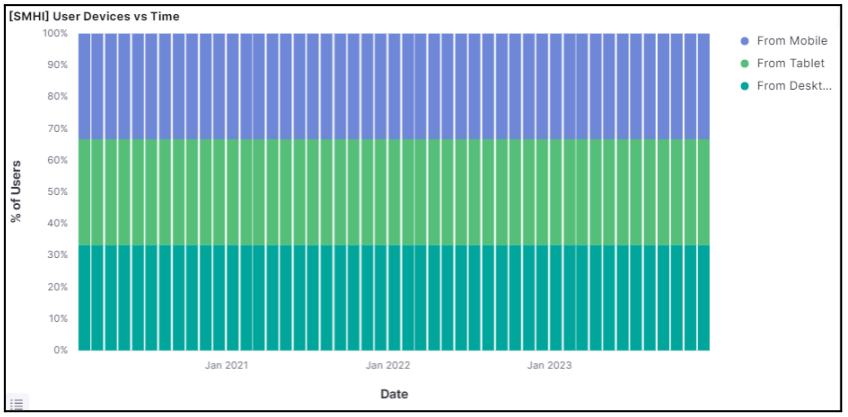




In the following image metrics related to page views over time, and session duration are analyzed.

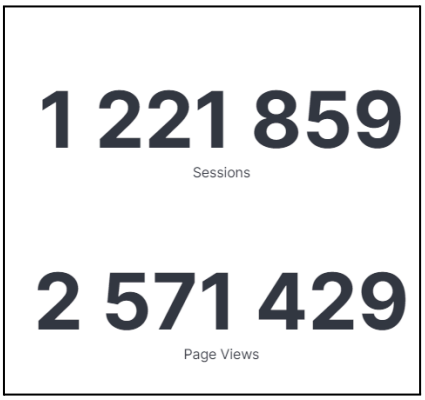


Finally, the user origin is analyzed: both by device and country of origin.



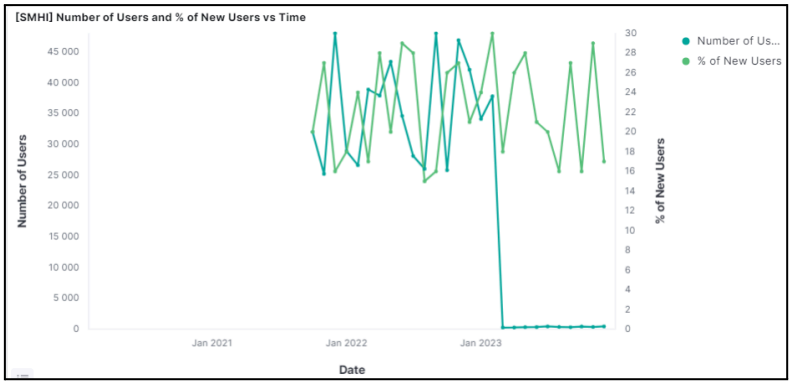
OpenData API

In the initial visual representation, a comprehensive display of both the session count and page views for the OpenData API is presented. This insightful depiction allows for a detailed examination of the usage metrics associated with this particular API, providing valuable insights into the frequency of sessions and the corresponding page views.

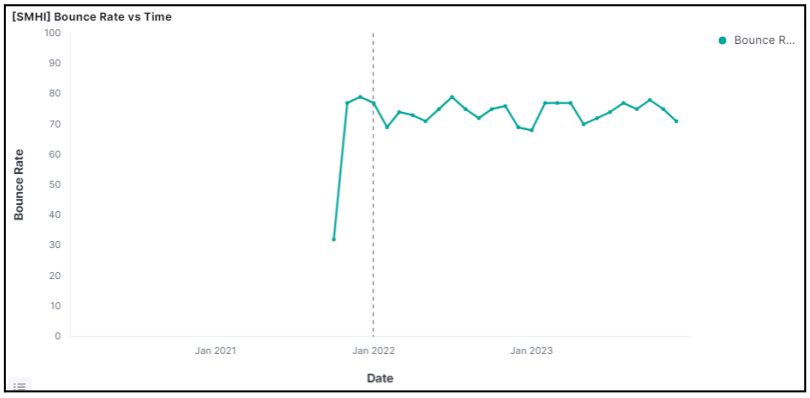


Simultaneously, the next image delves into the statistical landscape by showcasing the number of users alongside the percentage of new users over time. This dual perspective offers a nuanced understanding of user dynamics, shedding light not only on the overall user

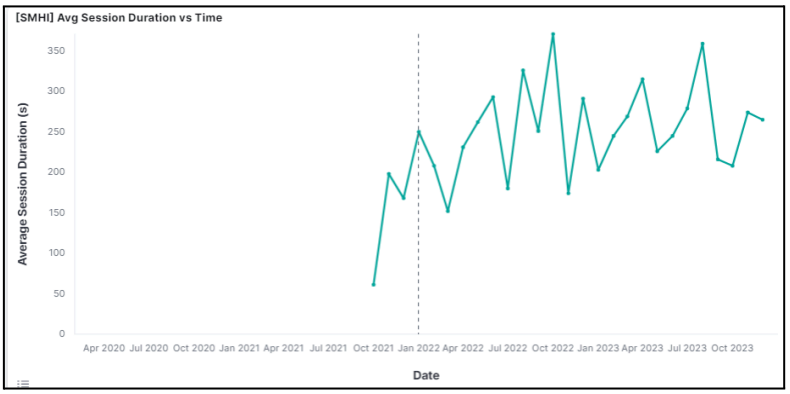
count but also on the influx of new users, contributing to a comprehensive overview of the API's user engagement trends.



On the next images, there is a line graph spanning from October 2021 to December 2023, illustrating the fluctuation of the bounce rate over time.

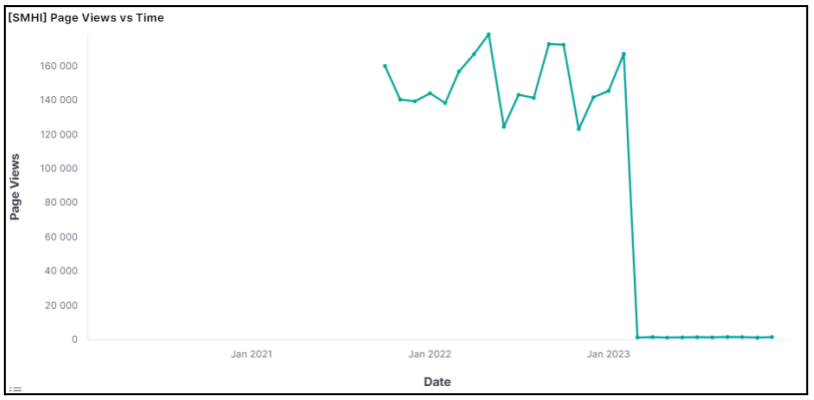


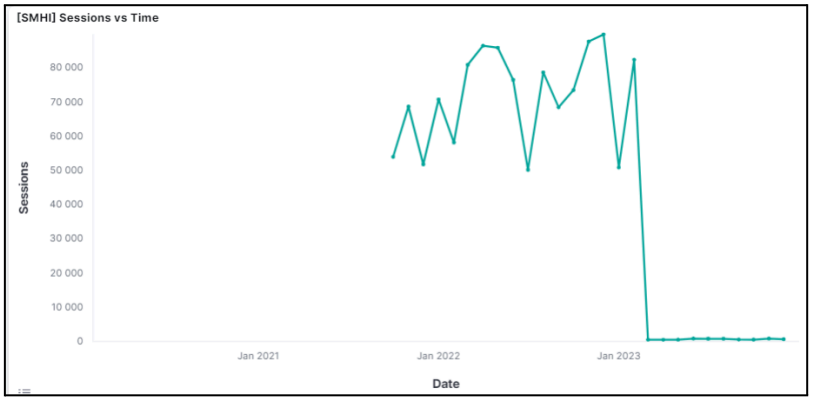
Concurrently, the next graph exhibits a line graph representing the average session duration over the same period. This provides a comprehensive view of user engagement dynamics on the platform during the specified timeframe.

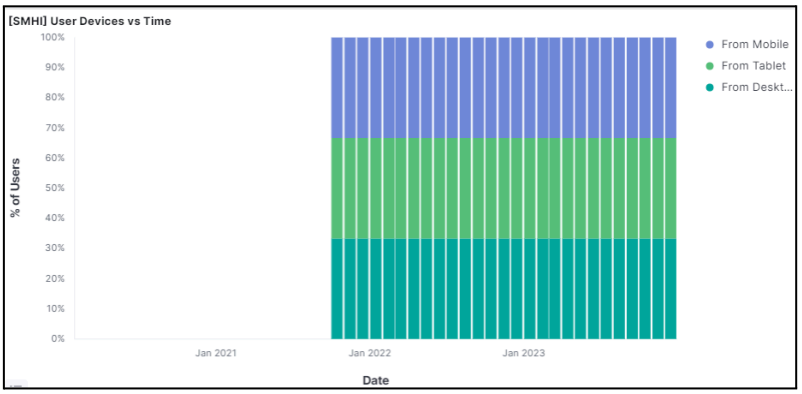


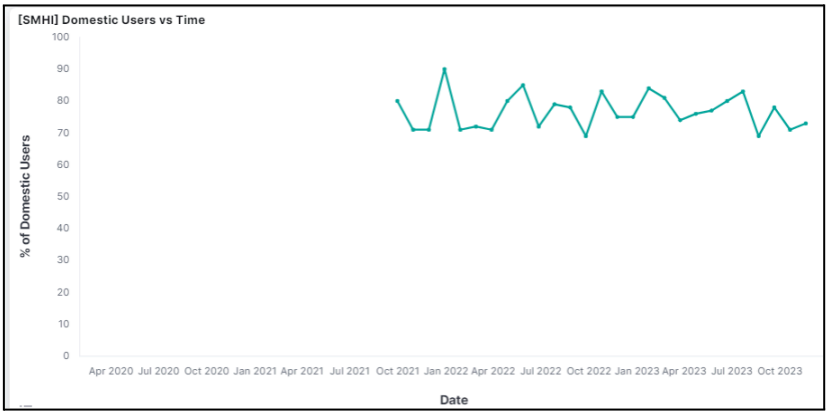
Next, the two images below delineate the progression of page views over time, the evolution of sessions over the given duration, a bar chart about the distribution of users across different devices over time, and a line graph that captures the temporal evolution of domestic users.

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





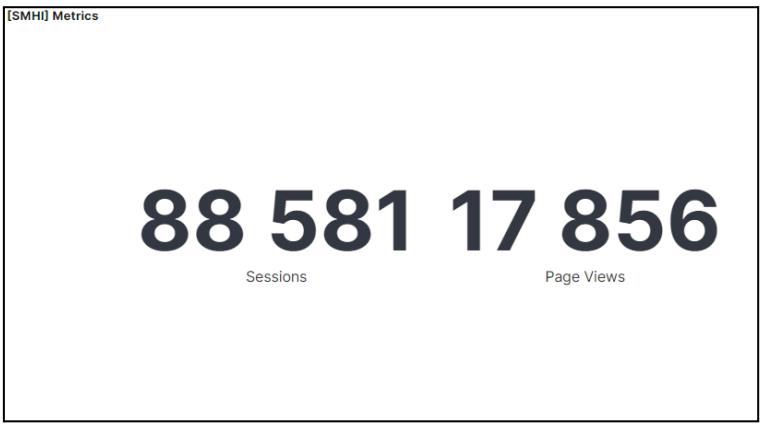




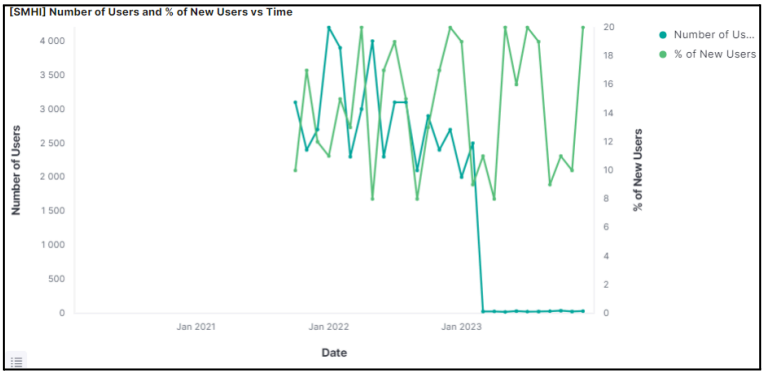
SharkData API

This report offers a comprehensive overview of SharkData API's performance metrics. We'll explore key indicators such as sessions, page views, user demographics, and engagement trends over time. The visual representations cover a range of insights, from user acquisition to bounce rates, providing a concise yet detailed analysis for strategic decision-making and improvement opportunities.

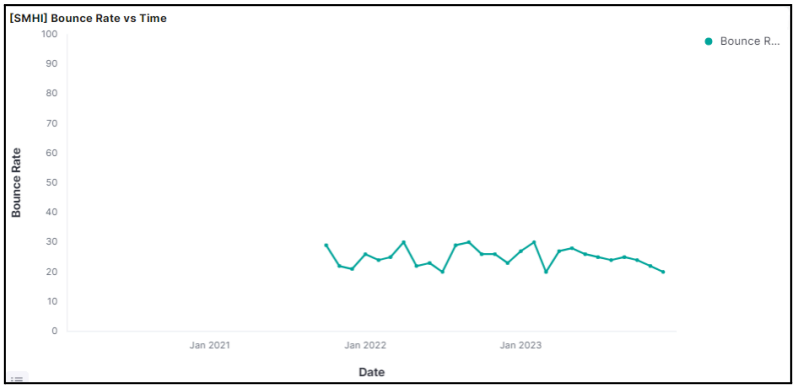
The first visual representation displays the dynamic trends of SharkData API metrics over time with a numeric form of sessions and page views.

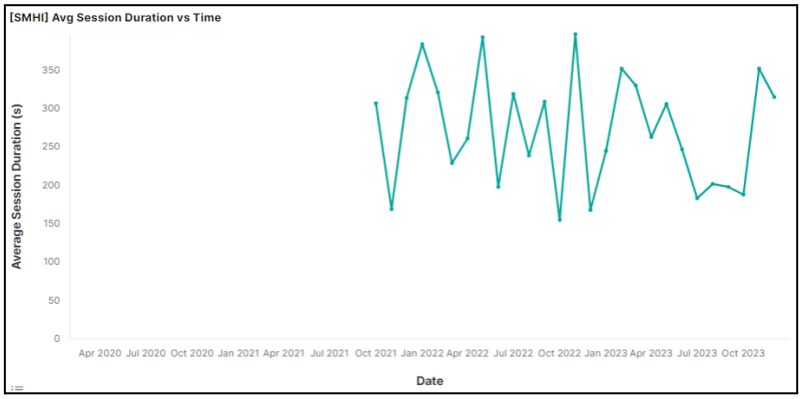


Moreover, there following line graph showcases the evolution of number of users and the percentage of new users over time.

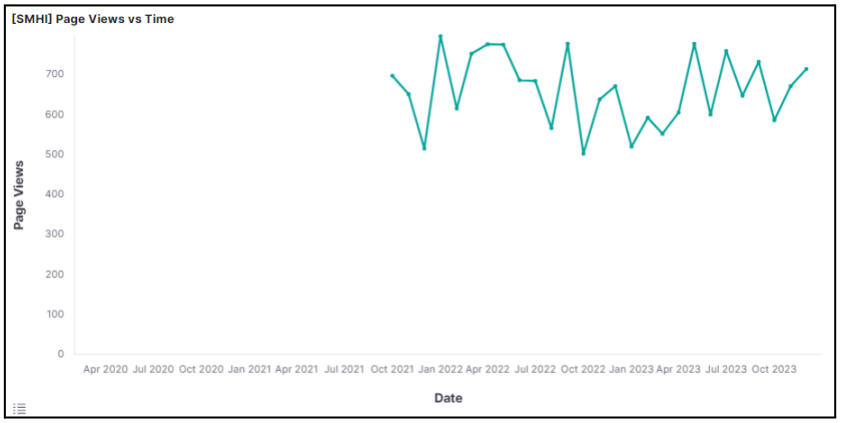


Moving on to the second set of visuals, there is the line graph illustrating the fluctuation of bounce rates over time, allowing for an understanding of user engagement quality. Meanwhile, the graph after showcases a line graph portraying the average session duration trends, indicating the level of user interaction and content consumption patterns.

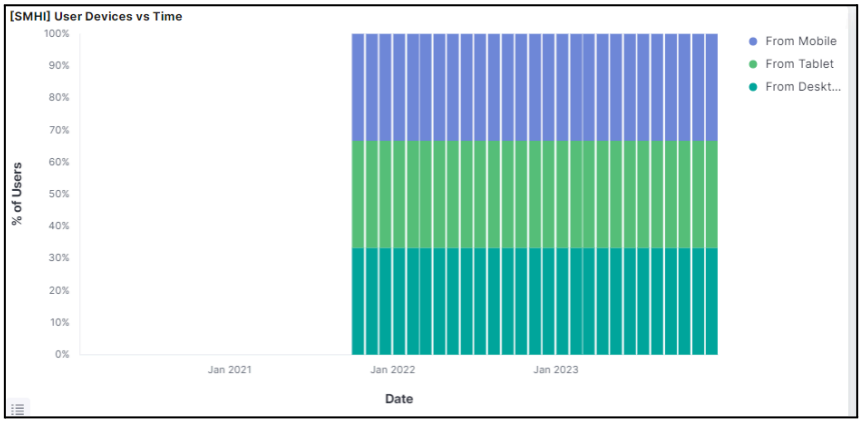


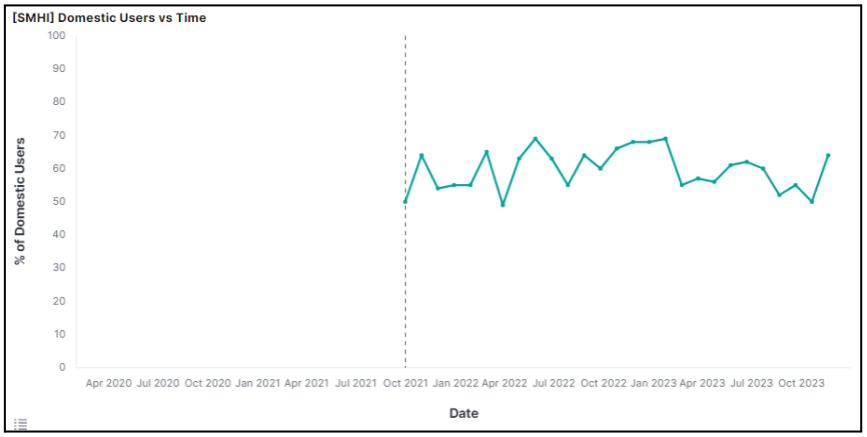


The third set of images focuse on key performance indicators - page views and sessions. The first graph presents a line graph representing page views over time, highlighting content consumption trends. Simultaneously, the second graph displays a line graph depicting the evolution of sessions, providing insights into user interaction patterns and platform utilization.



The final set of images provides a comprehensive view of user demographics and preferences. First, a bar graph illustrates the distribution of users across different devices over time, shedding light on platform accessibility trends. Second, a line graph captures the temporal evolution of domestic users, providing insights into the growth or stability of the local user base.



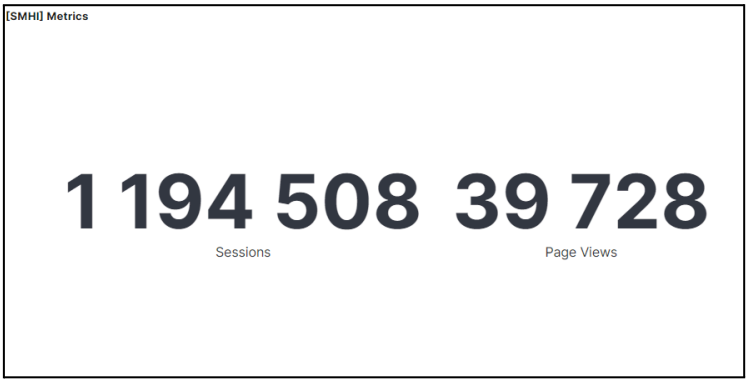


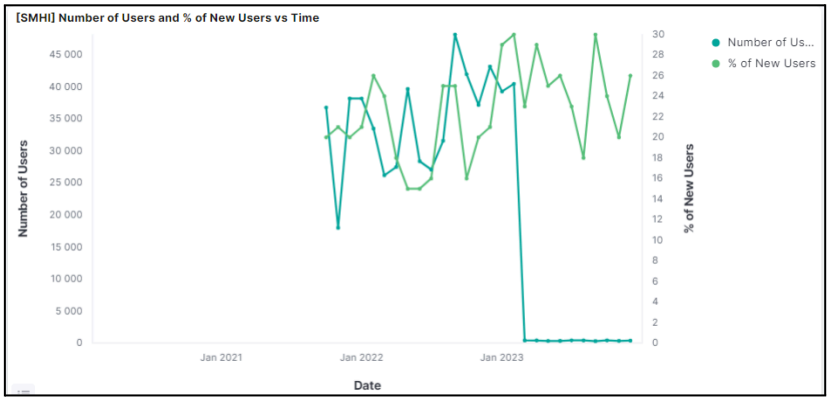
SharkWeb

In this segment, the performance metrics of SharkWeb is studied, offering a concise overview of key indicators that illuminate the platform's user engagement and growth dynamics. The visual representations presented here provide insights into sessions, page

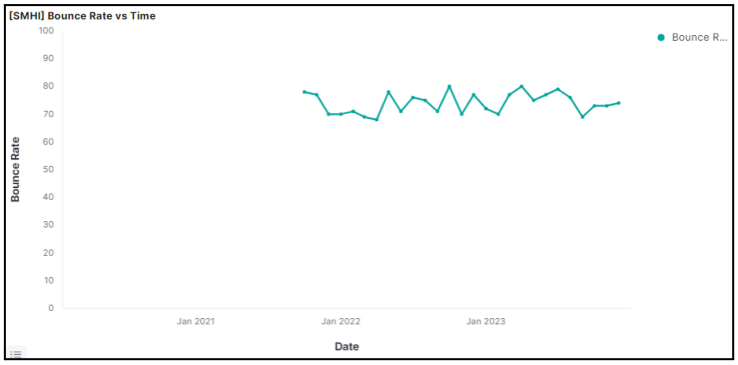
views, user numbers, and the percentage of new users over a specified timeframe, forming a foundational understanding of SharkWeb's audience interaction and acquisition strategies.

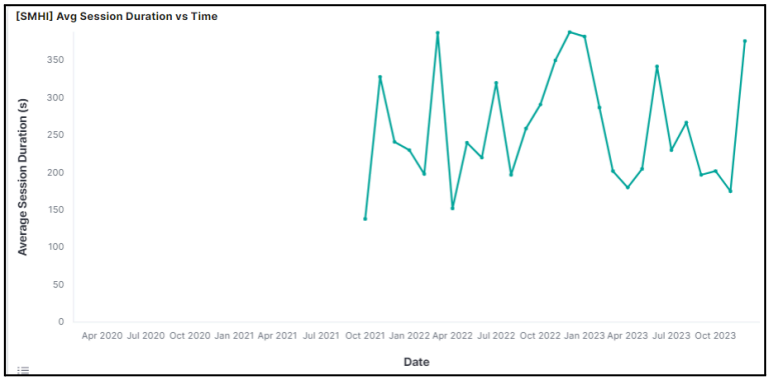
The initial set of visuals captures the core metrics driving SharkWeb's performance. On display are line graphs depicting the evolution of sessions and page views over time, offering insights into user engagement and content consumption. Simultaneously, the representation includes the number of users and the percentage of new users, outlining the growth and retention patterns on the platform. These images serve as a foundational reference for assessing SharkWeb's overall performance.



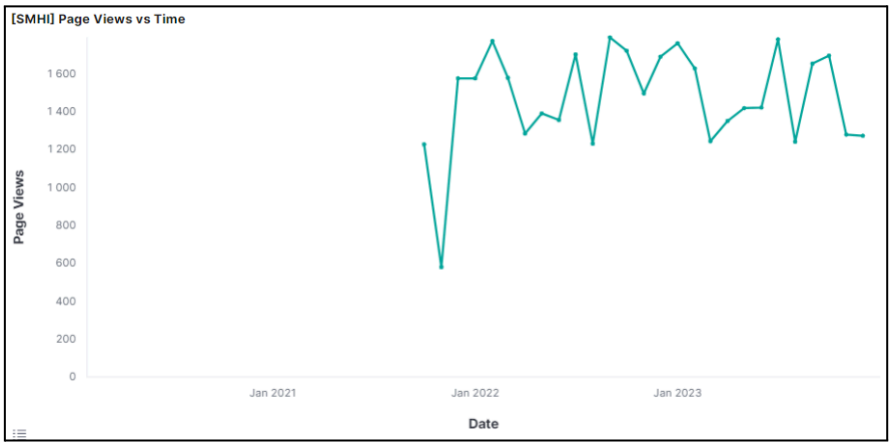


Transitioning to the second set of visuals, critical aspects of user interaction are shown. A dedicated focus on user experience is evident through the first graph's depiction of the bounce rate vs time, revealing insights into user engagement quality. Next, a line graph illustrates the average session duration over time, offering valuable information on user behavior and content consumption patterns.

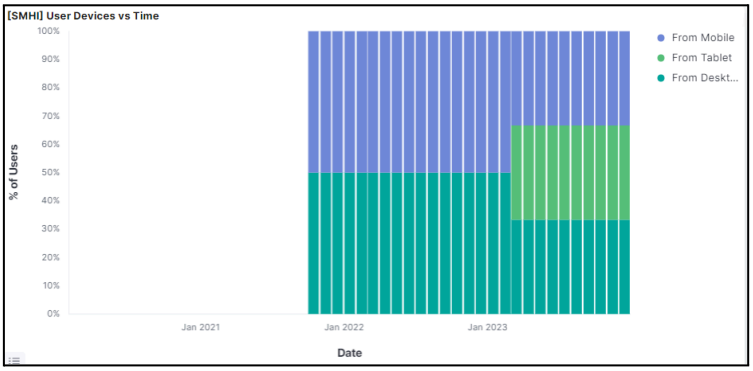


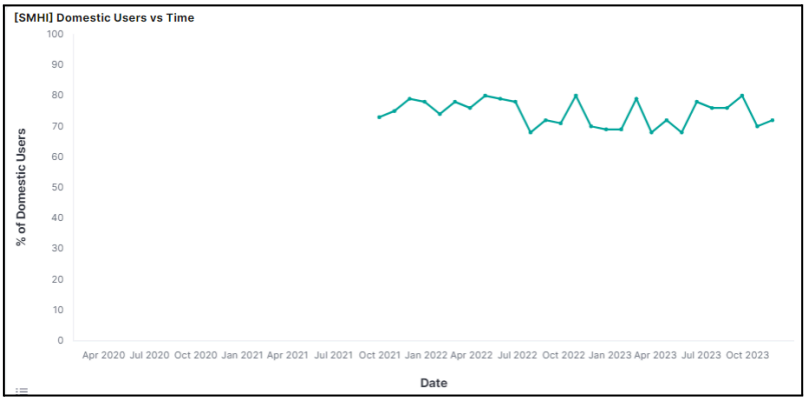


Moving forward, the third set of images provides an in-depth look into content consumption and user engagement trends. On the first shot, a line graph displays the evolution of page views over time, shedding light on the popularity and accessibility of SharkWeb's content. Simultaneously, the second shot features a line graph capturing the temporal dynamics of sessions, offering a comprehensive view of user interaction patterns.



Concluding this exploration, the final set of images offers a nuanced understanding of user demographics and regional engagement. The first image presents a bar graph showcasing the distribution of users across different devices over time, providing insights into platform accessibility trends. On the second image, a line graph highlights the temporal evolution of domestic users, offering valuable information on the platform's local user base dynamics. Together, these visuals empower a detailed assessment of SharkWeb's user engagement and demographic trends.





Annexe 2.17 SOCIB Data Centre Multi-Platform Observatory (ID 33.1)

This VA infrastructure consists of three parts: a THREDDS data server, a Data Catalog, and an API. The THREDDS data server is monitored by analyzing its log files and its Google

Analytics data. The Data Catalog is monitored using Google Analytics.

THREDDS Data Server (M2M)

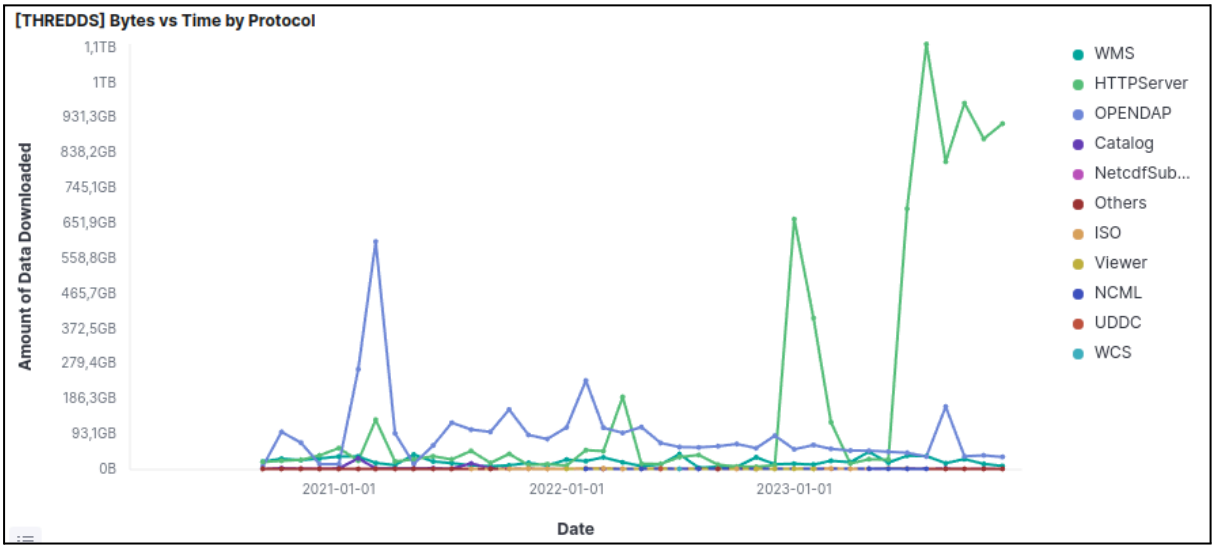
The data underlying the following plots have been obtained from the log files of the THREDDS data server targeting M2M accesses.

First, the overall access metrics will be presented. Then, traffic by THREDDS protocol, geographic origin, used client, referrer domain, and operating system will be analyzed. Thanks to the fact that URLs are formatted in a known way, additional categories can be added to each visit. This is done by parsing the URL and extracting additional information. Therefore, the next images present the analysis of page views and users over time and overall by Observing System, Platform Type, Platform Name, Instrument Name, Processing Level, and Aggregation Level.

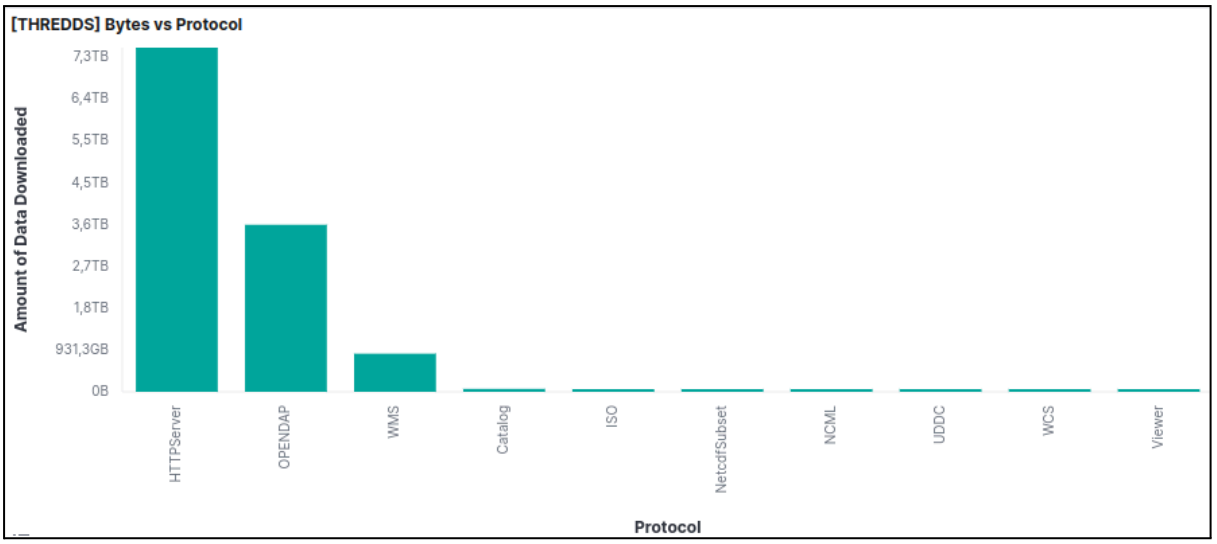
In the next image, the general access metrics in a numeric form are presented.

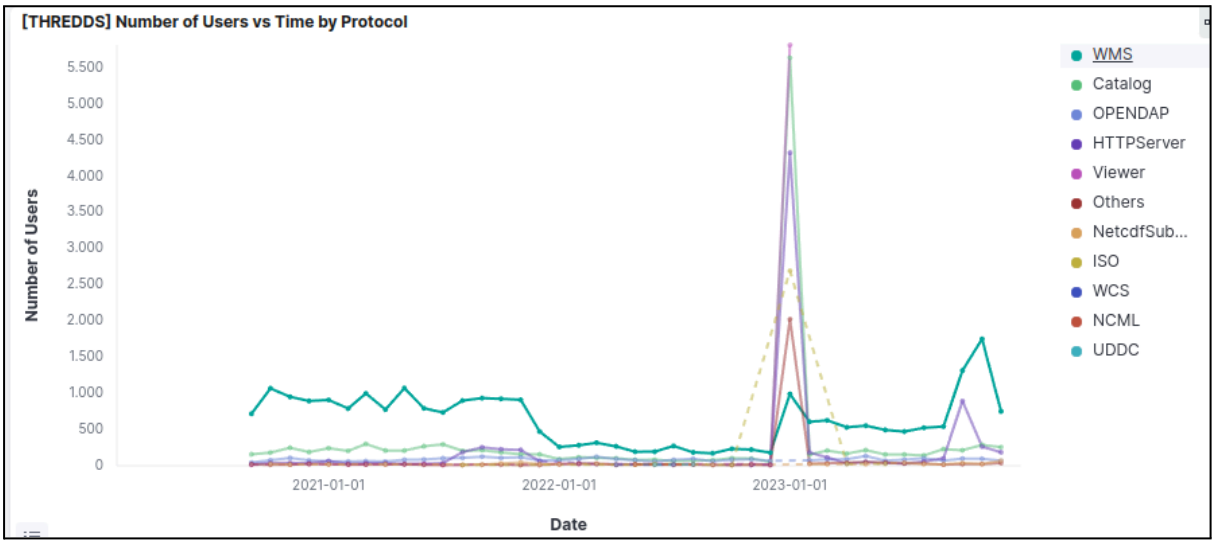
139.266.403	12TB	43.076	165	46
Number of Visits	Amount of Downloaded Data	Number of Users	Number of Countries	Number of Organizations

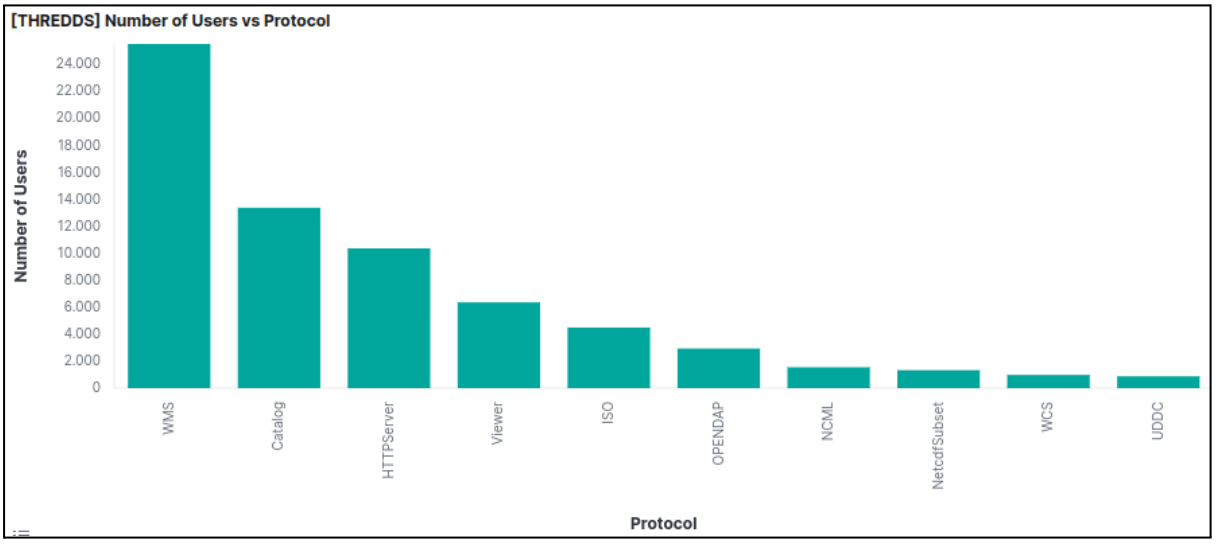
The following image contains the analysis of the traffic by THREDDS protocol (traffic to the catalog HTML pages is assigned to protocol "Catalog" and traffic to the HTML pages of viewers is assigned to "Viewer" protocol).



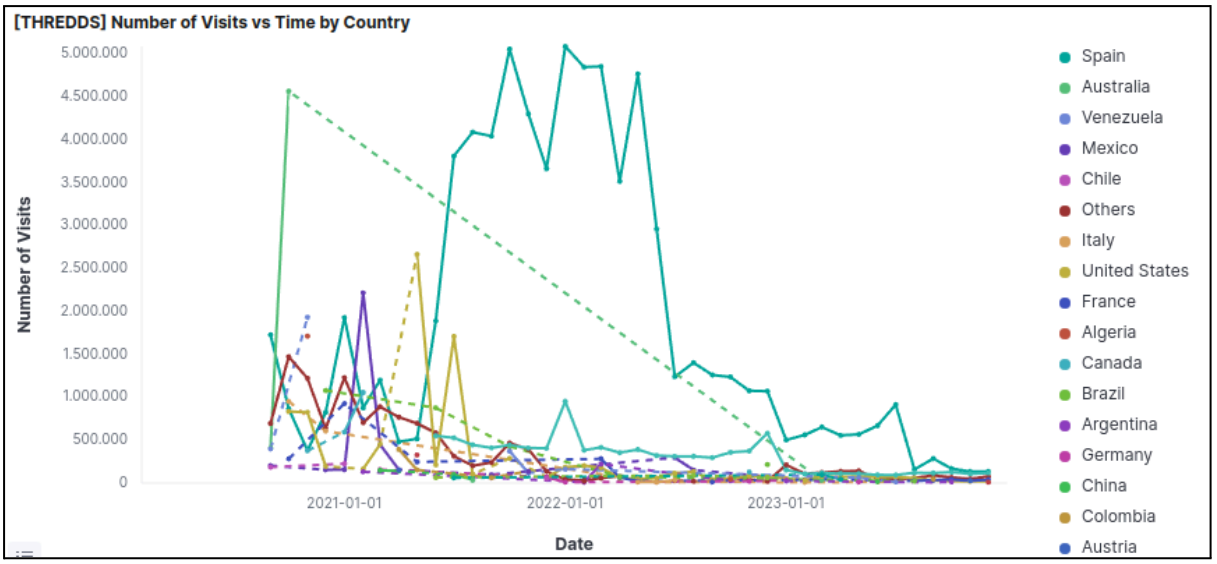
The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.

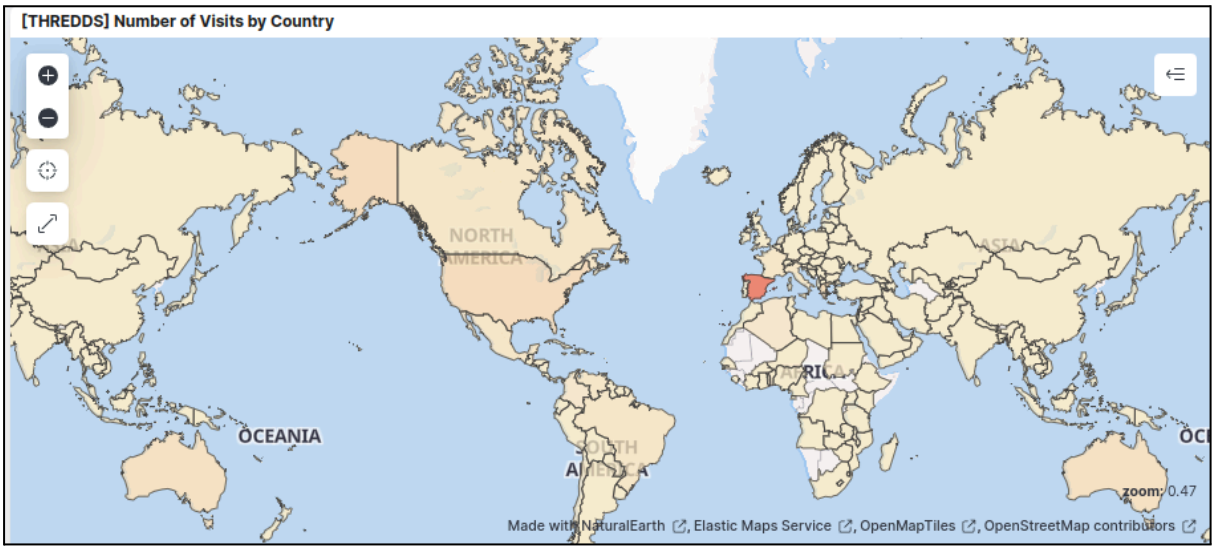


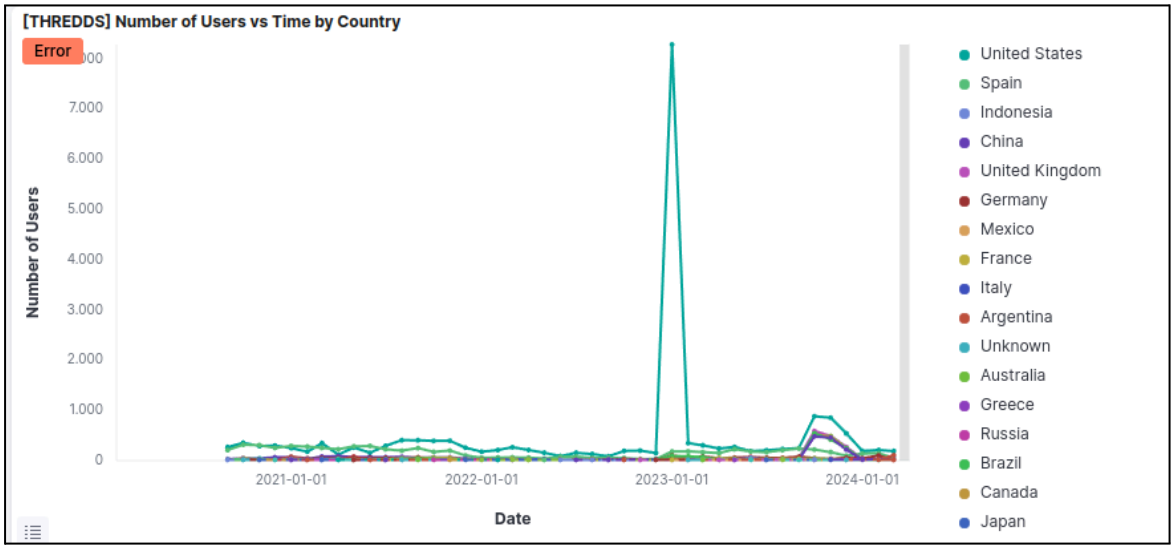


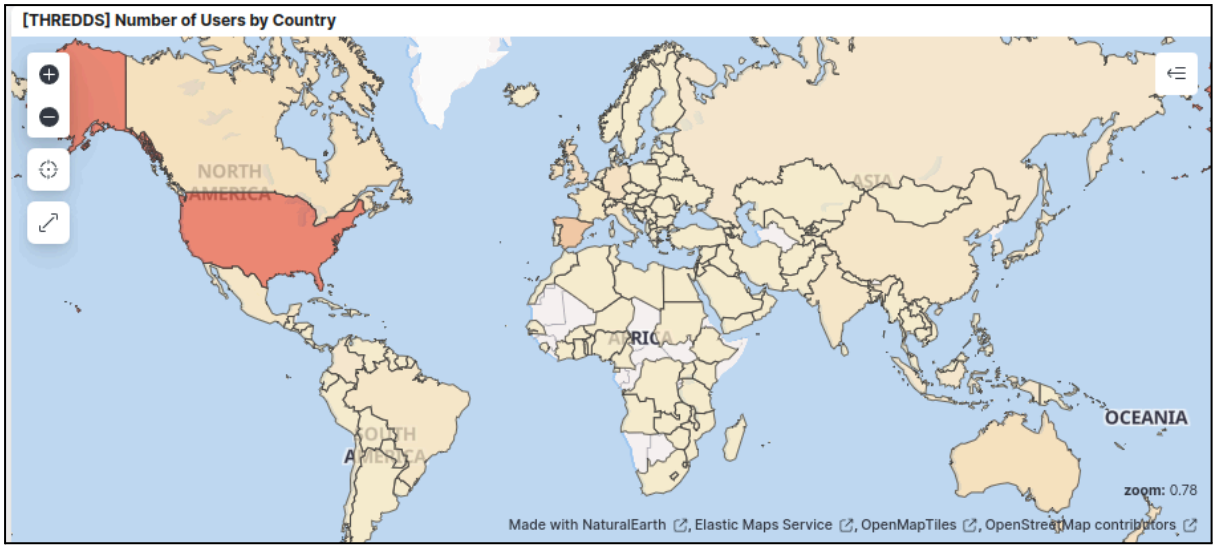


Next, plots and maps with a geographic analysis of the traffic seen by the server are shown.

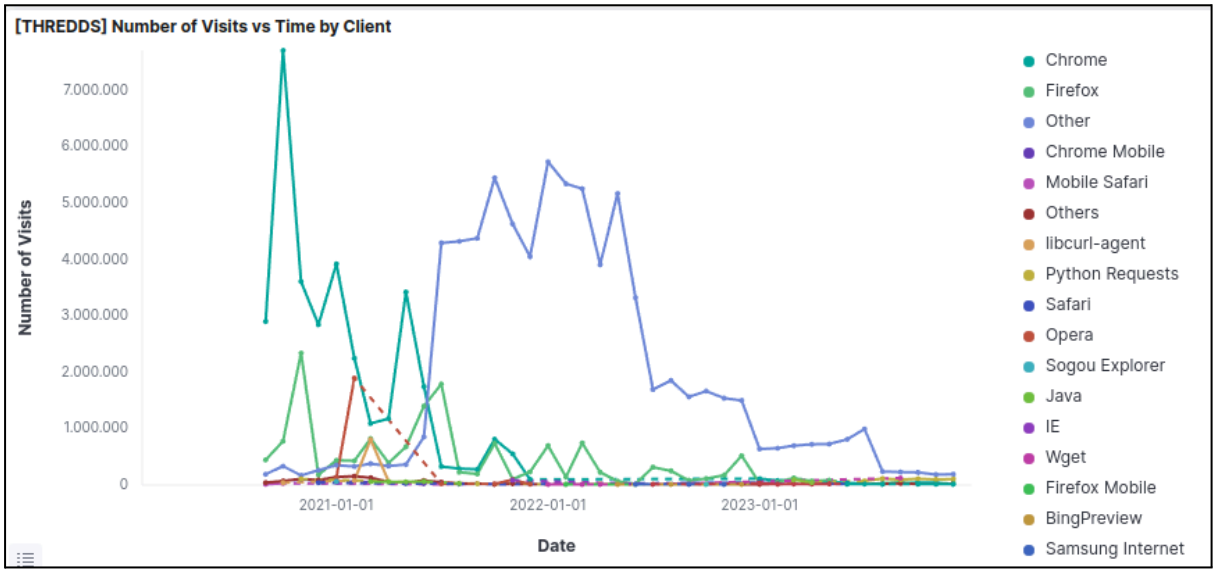


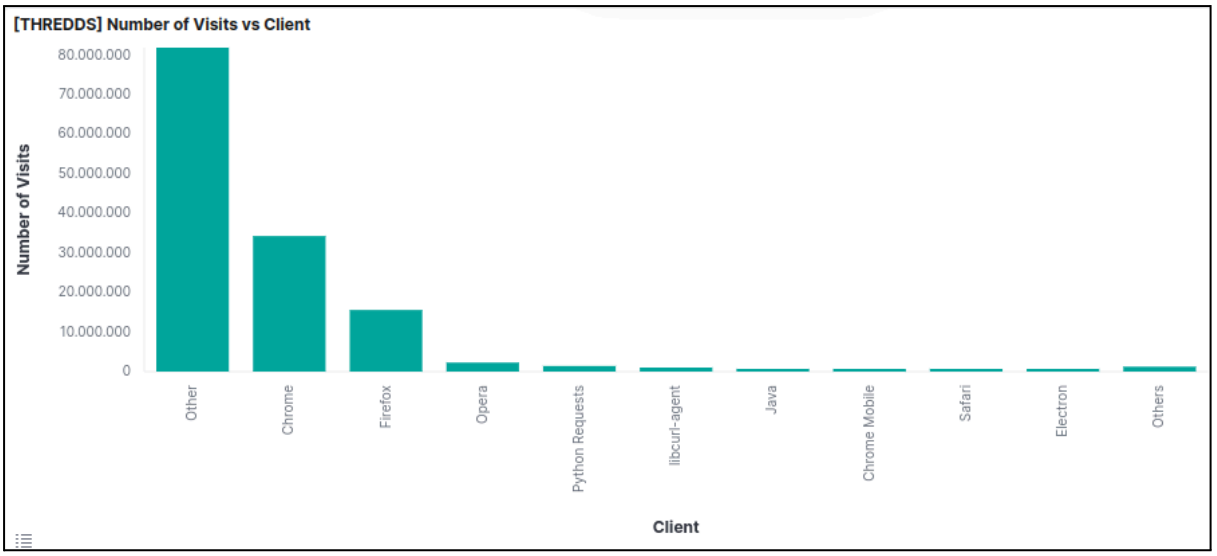


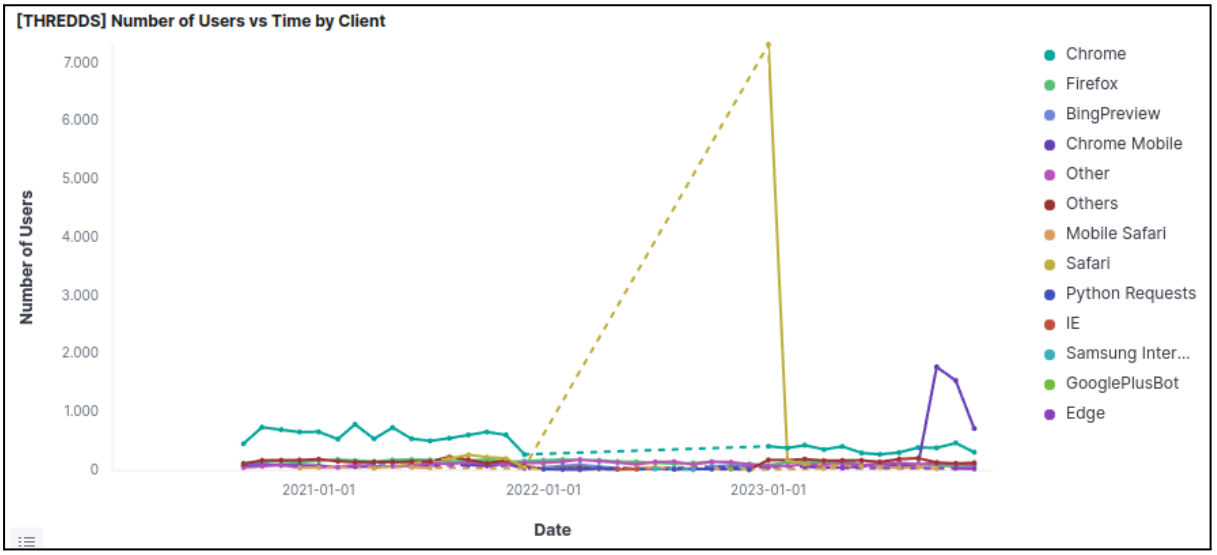


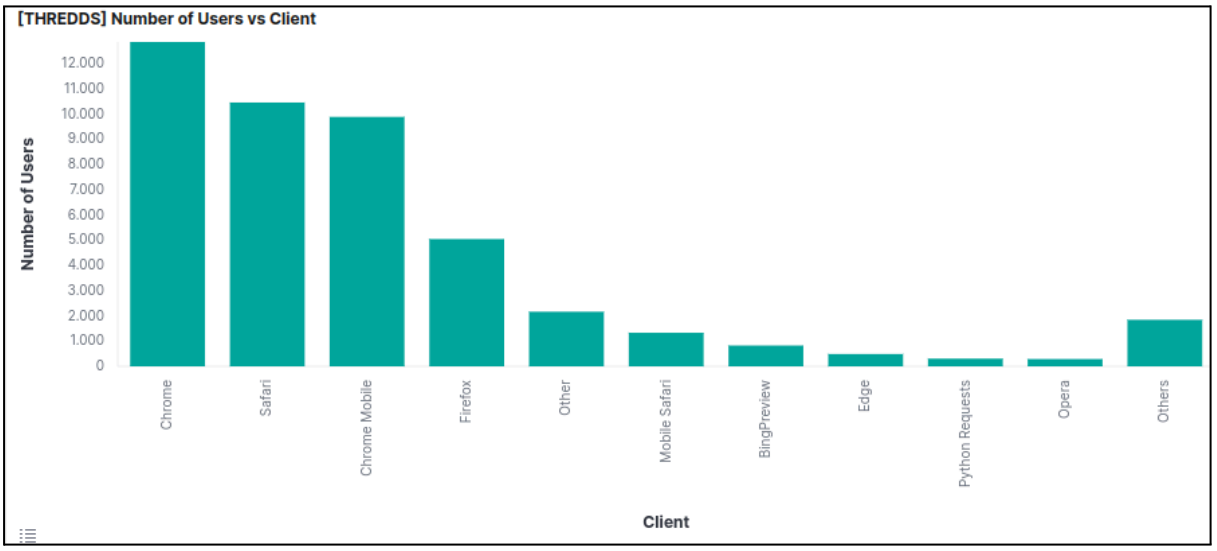


The fourth image shows an analysis of the traffic based on the software used by the user to perform the request (a browser or an HTTP library).



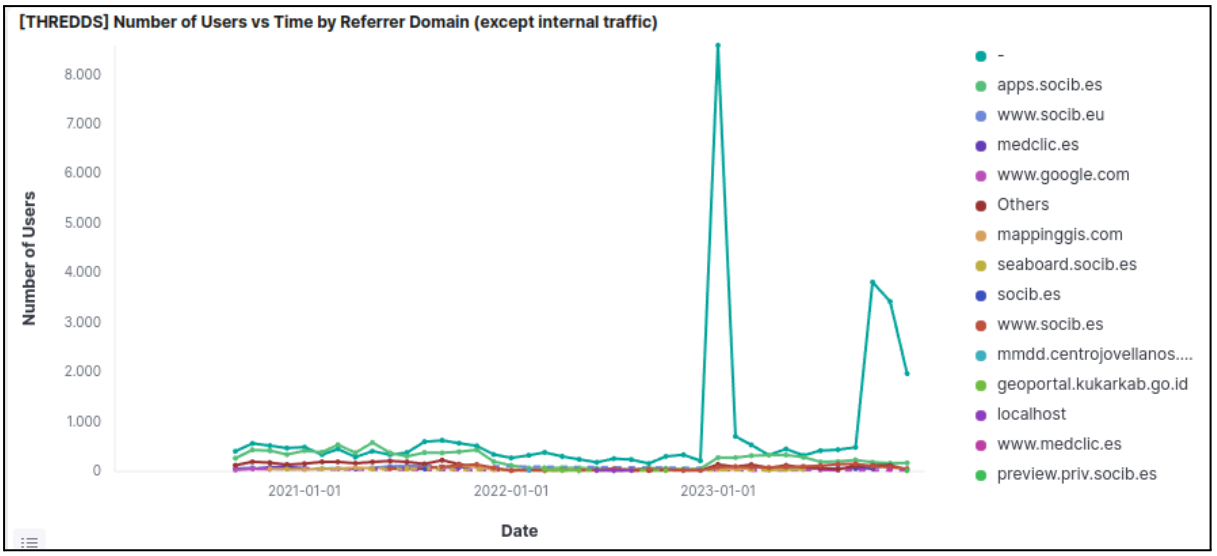


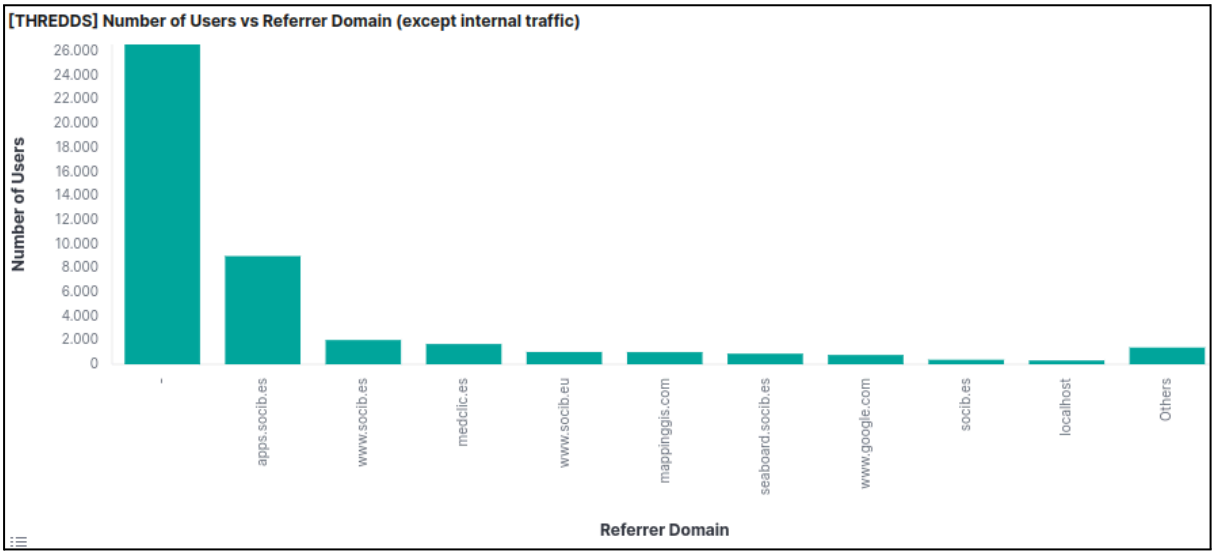




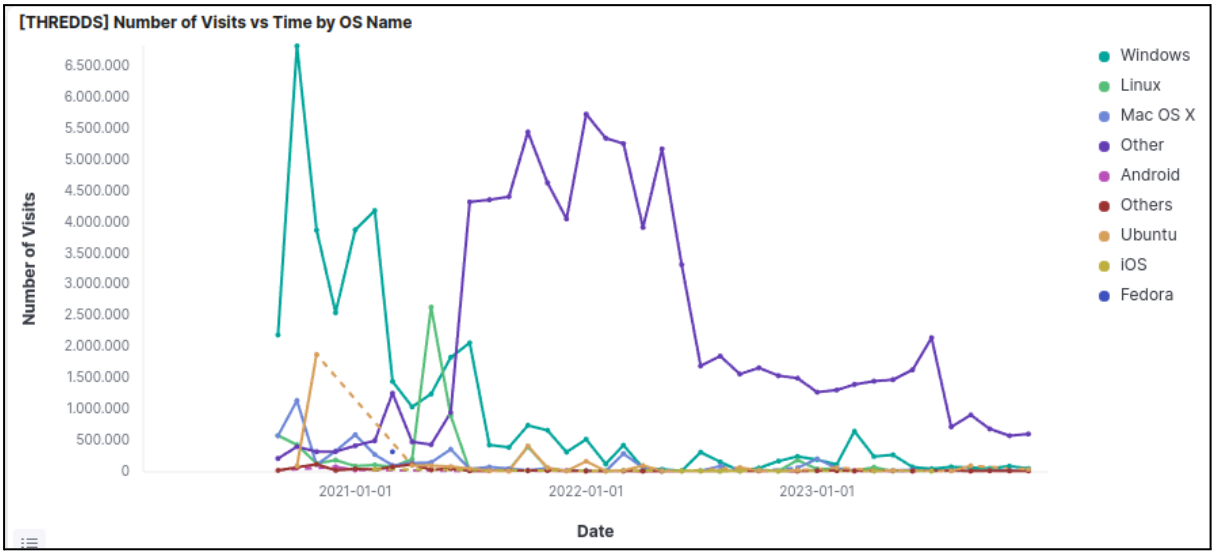
The image below contains an analysis based on the referrer domain ("-" means referrer is

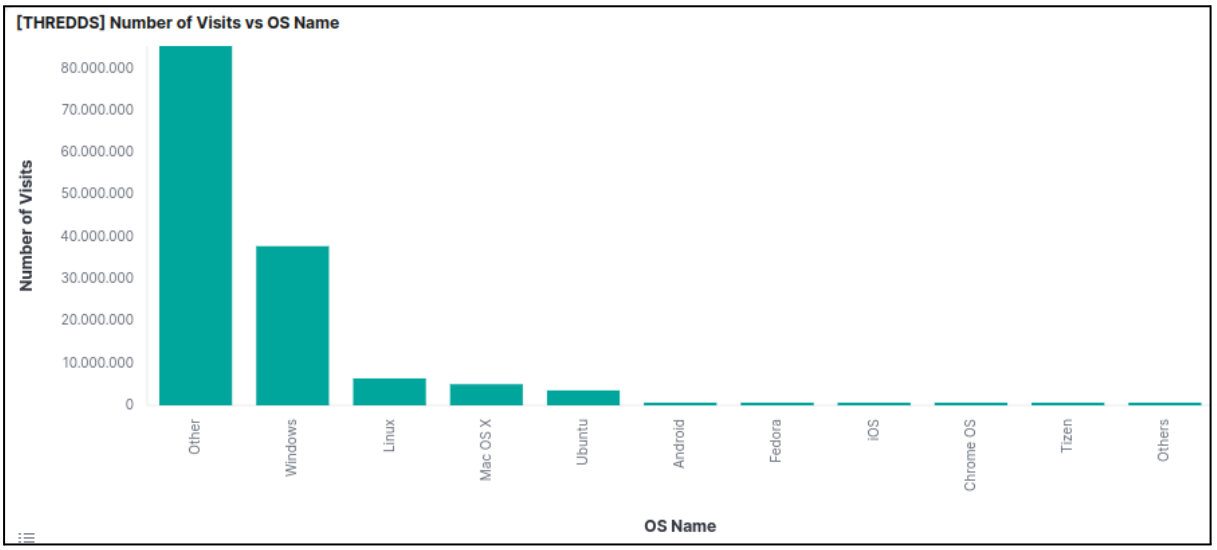
not informed, like a visit from a bookmarked link or direct access via software).



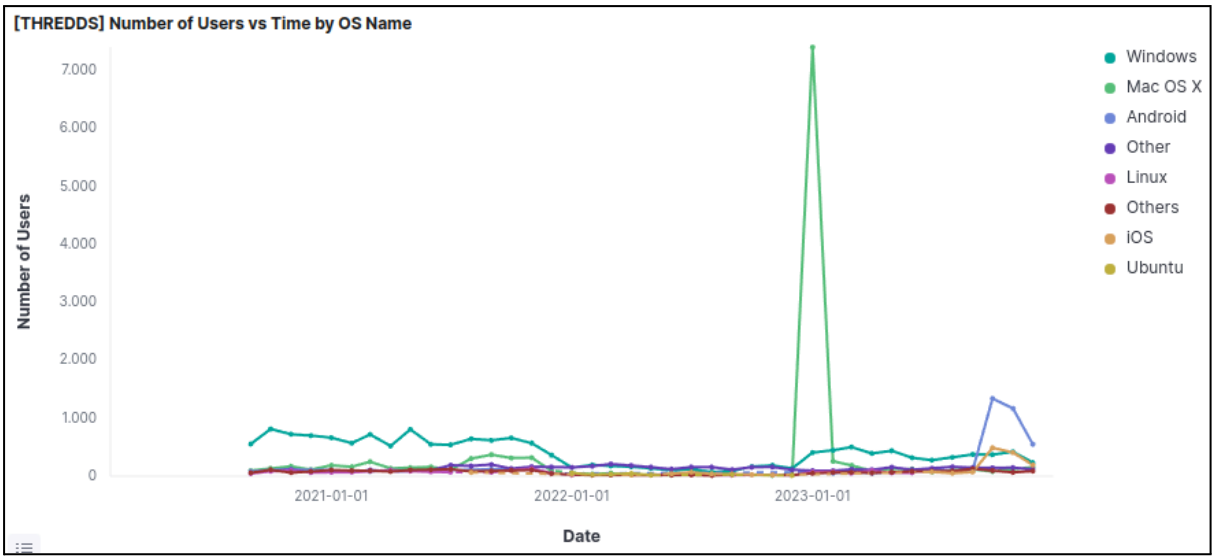


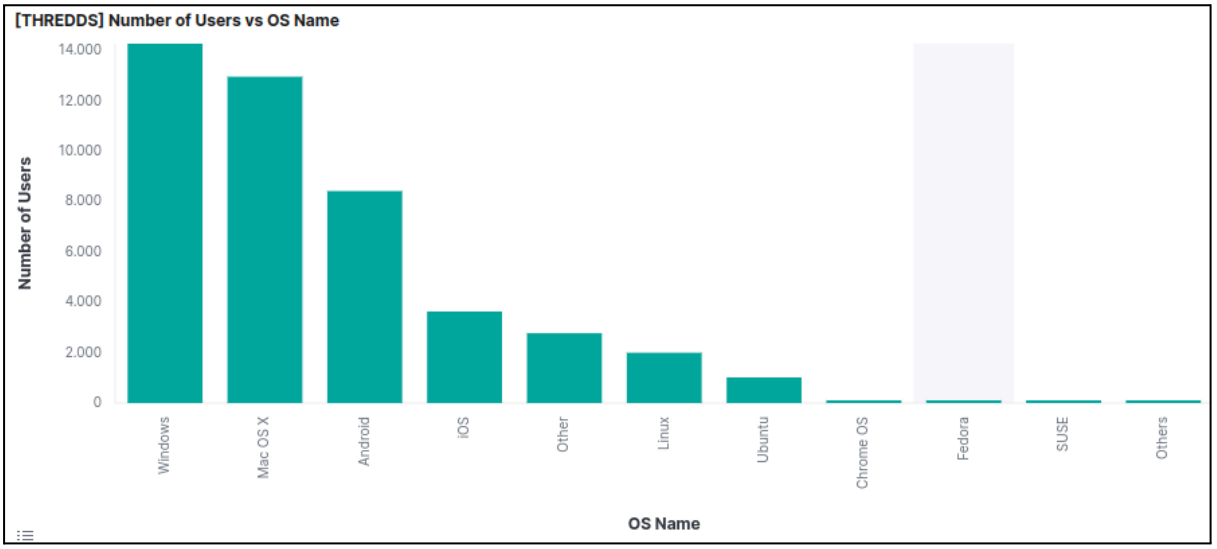
Next, an analysis of traffic based on the operating system of the user is presented (that information is extracted from the browser version, for HTTP libraries, the information is not available and is contained in the "Other" category).





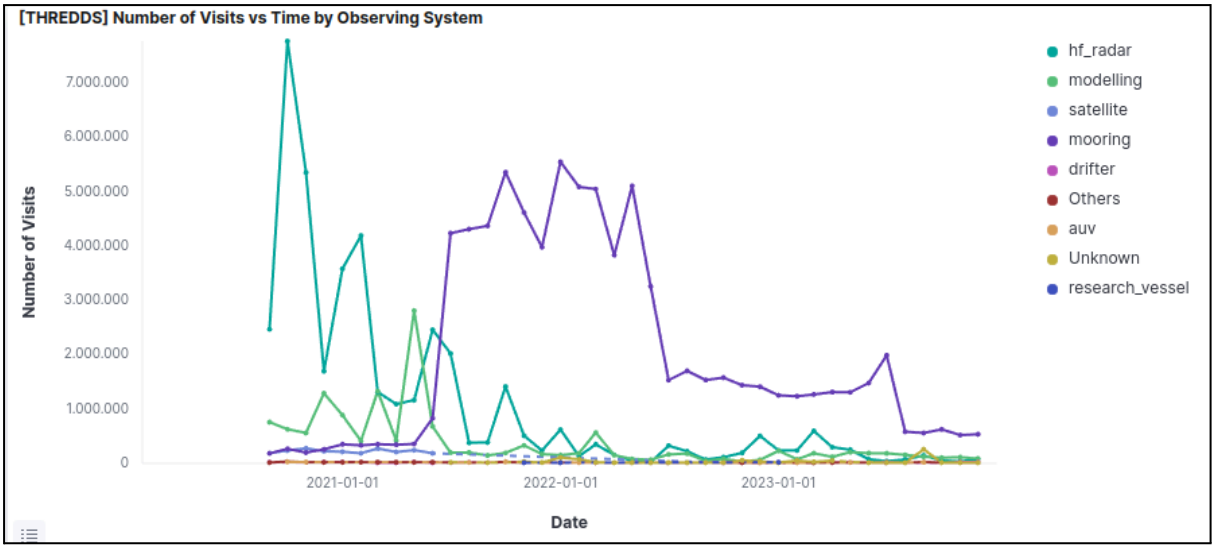
The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.

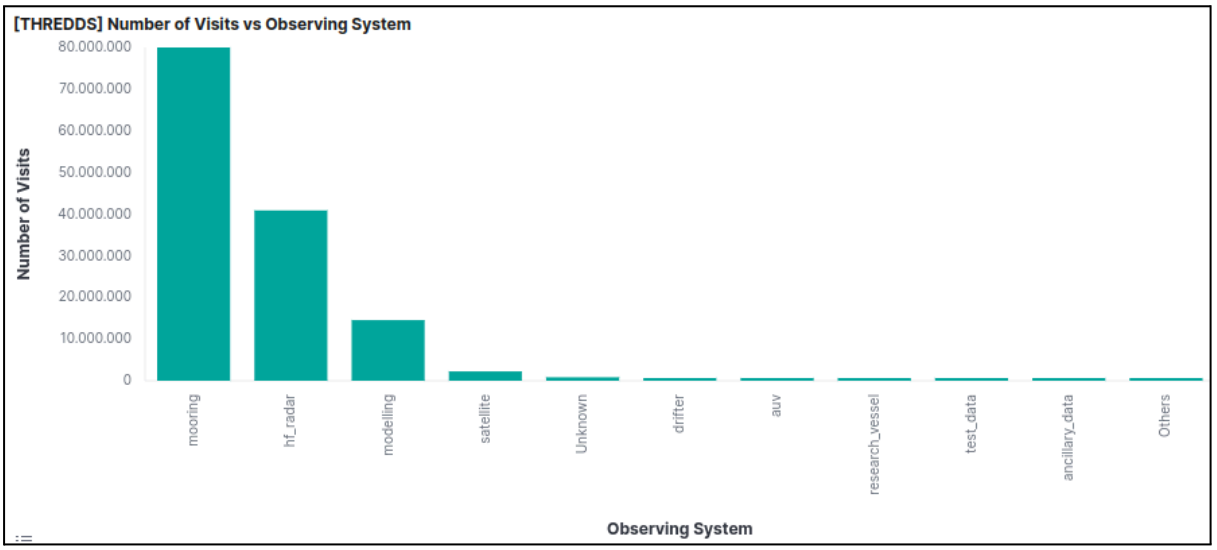


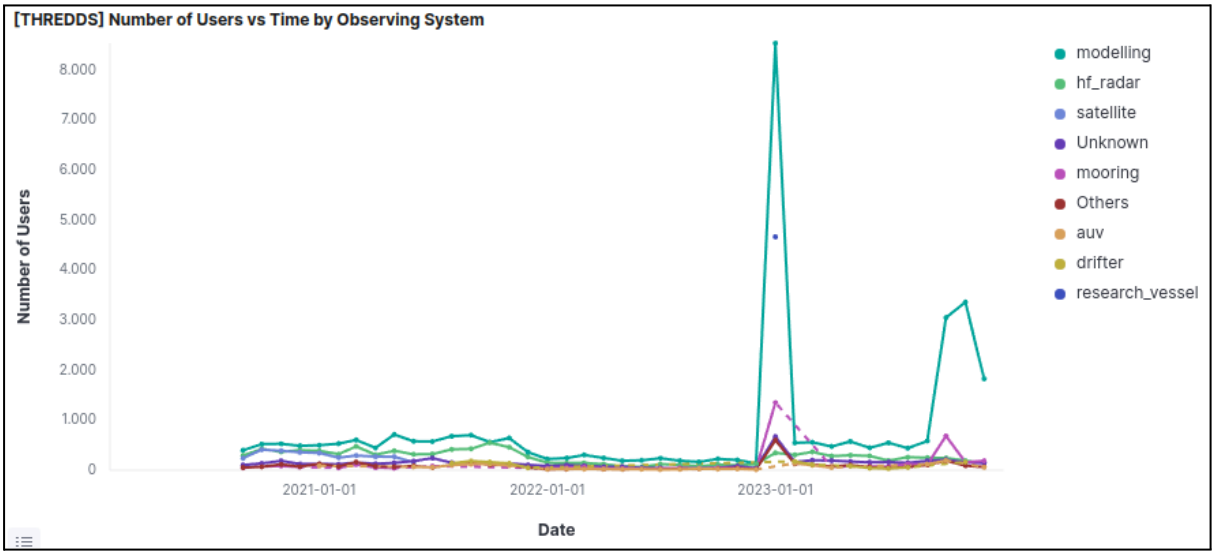


The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.

The following is an analysis of the traffic based on the observing system of SOCIB.







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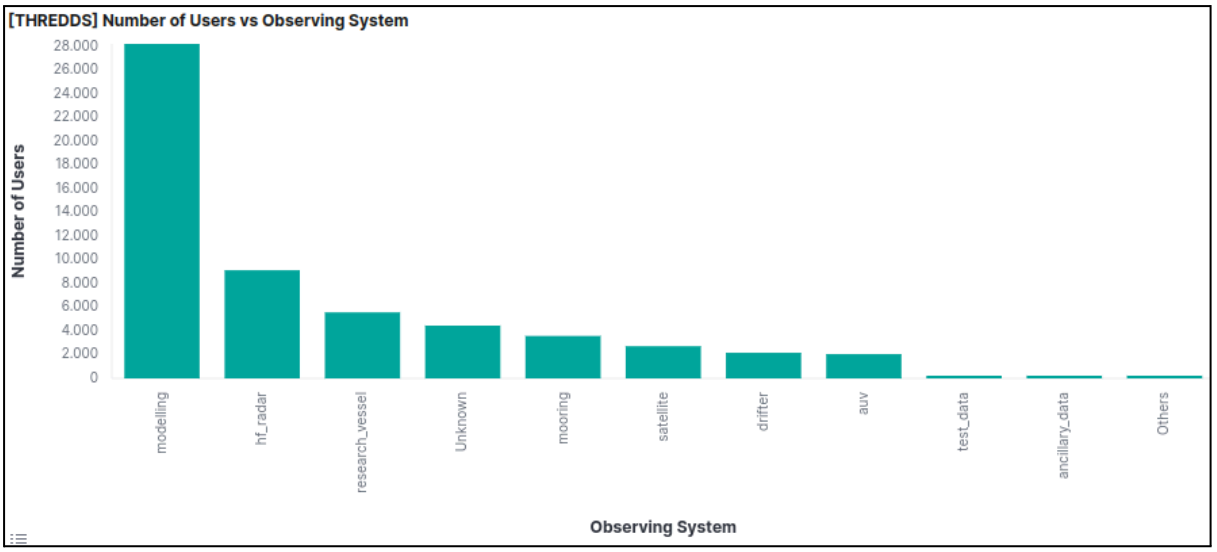
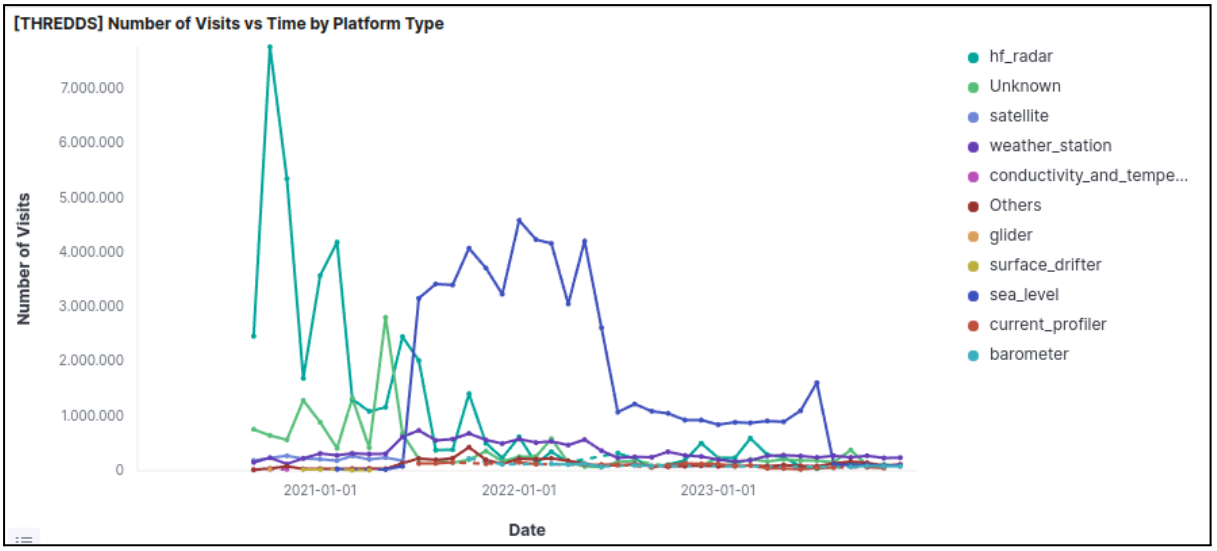
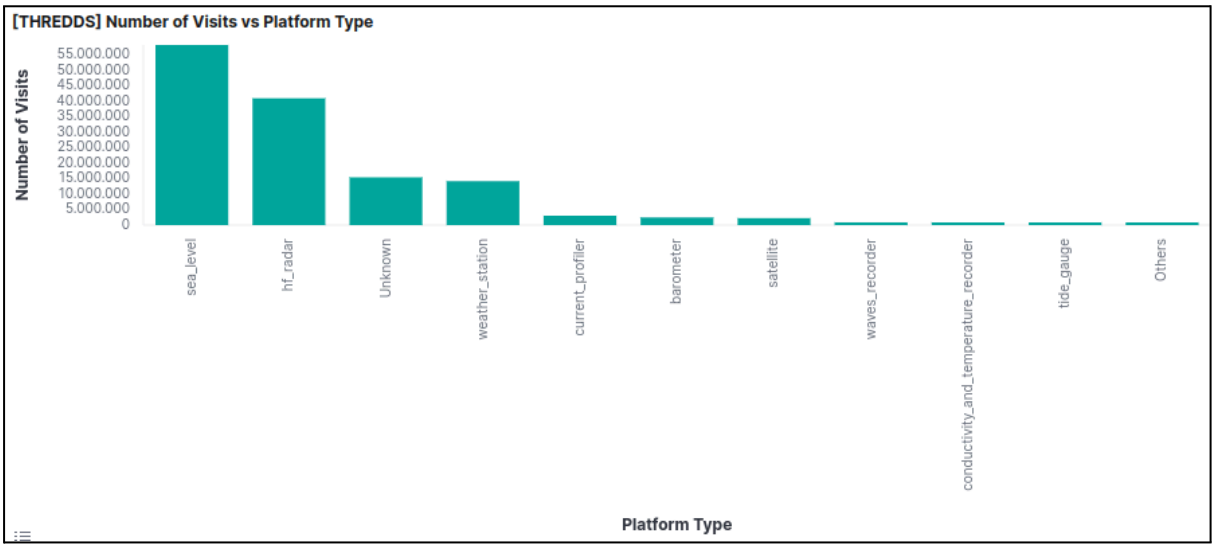
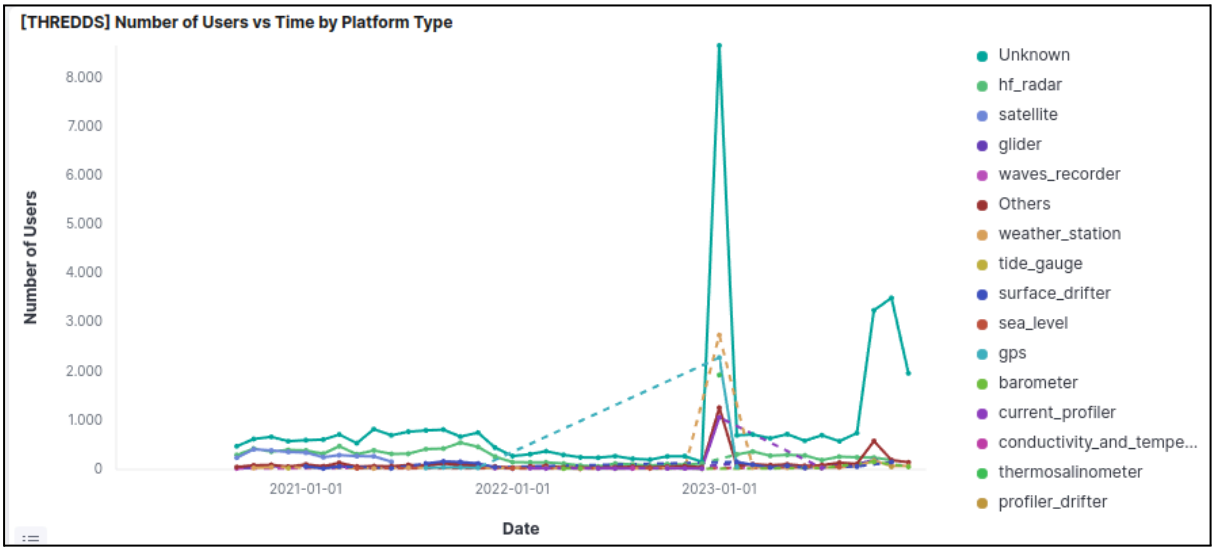


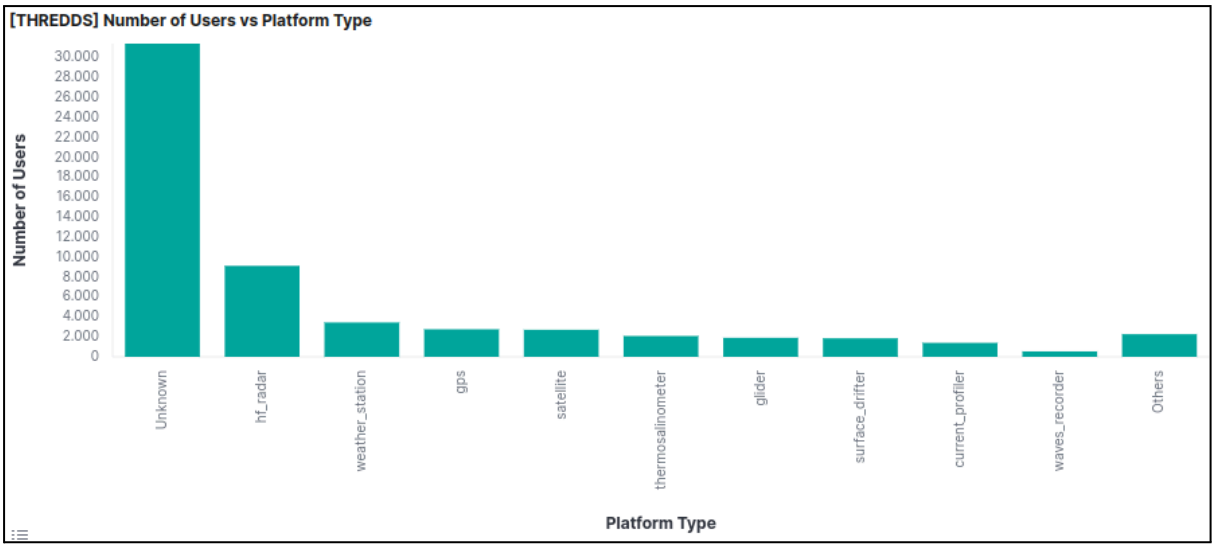
The image below contains an analysis of the traffic based on the type of platform that collected the served data.



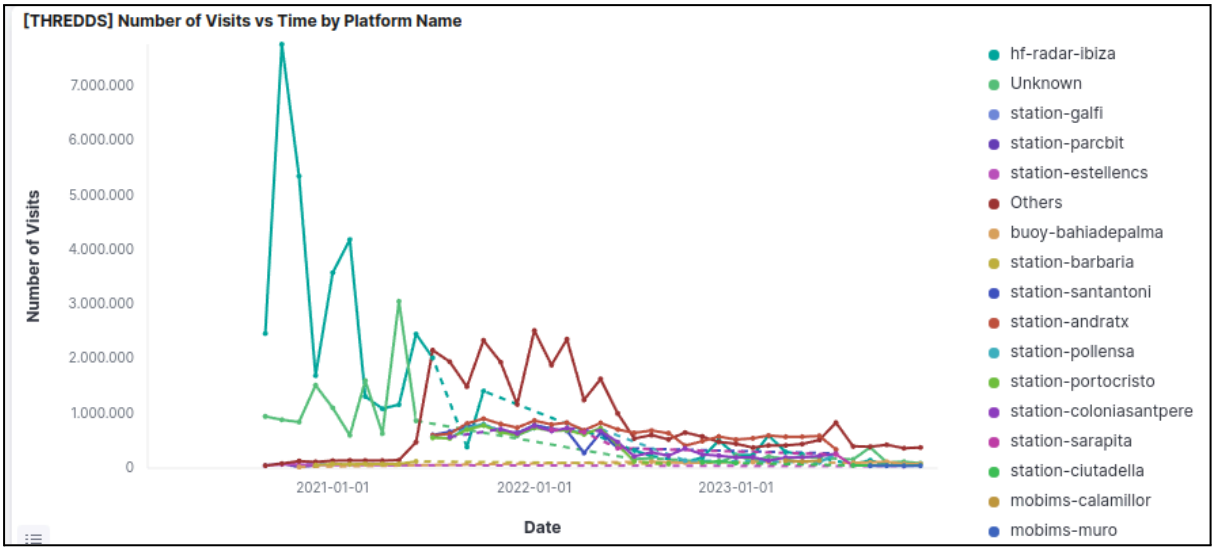


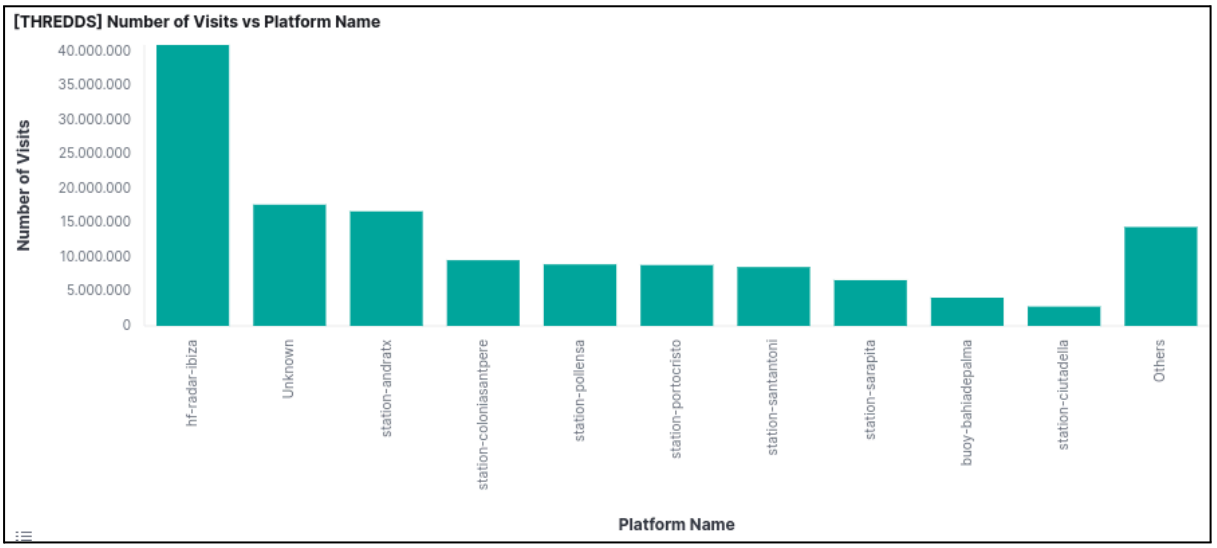


The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.



The next image presents an analysis of the traffic based on the name of the platform that collected the served data.





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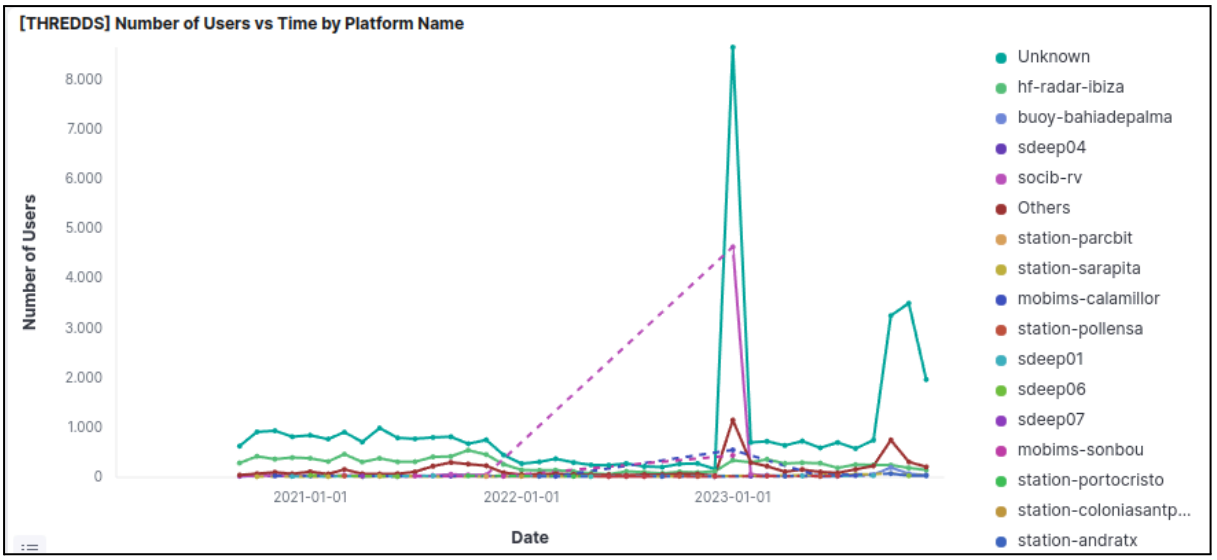
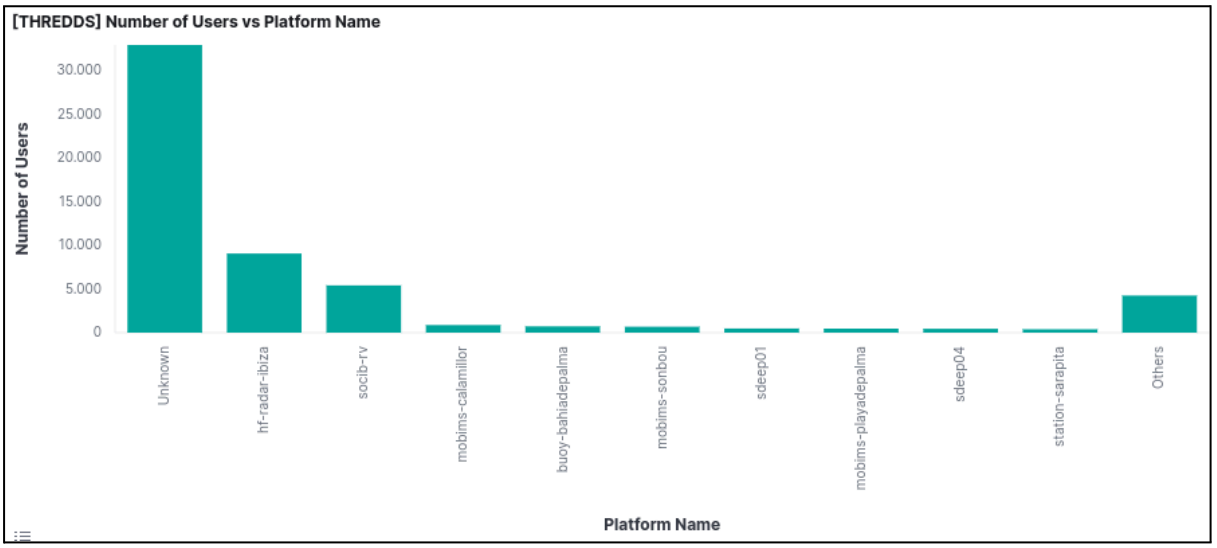
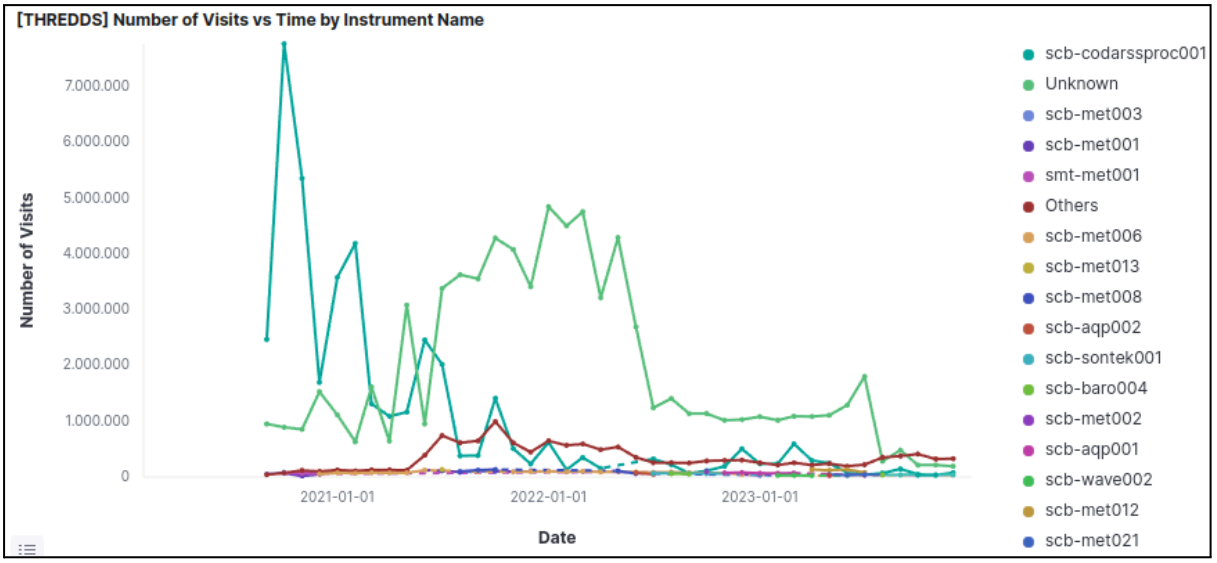
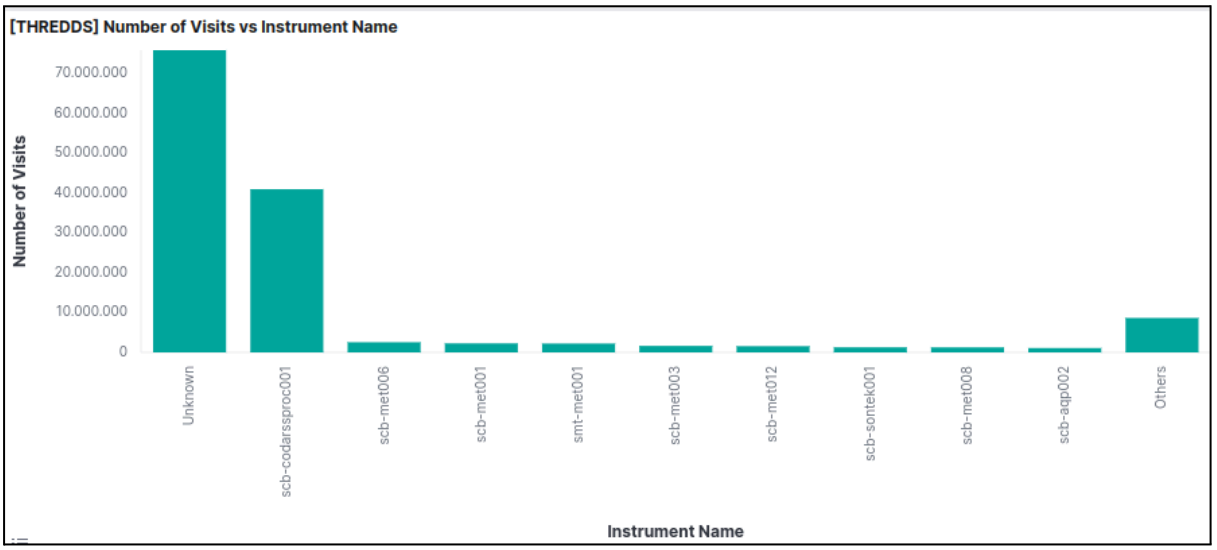
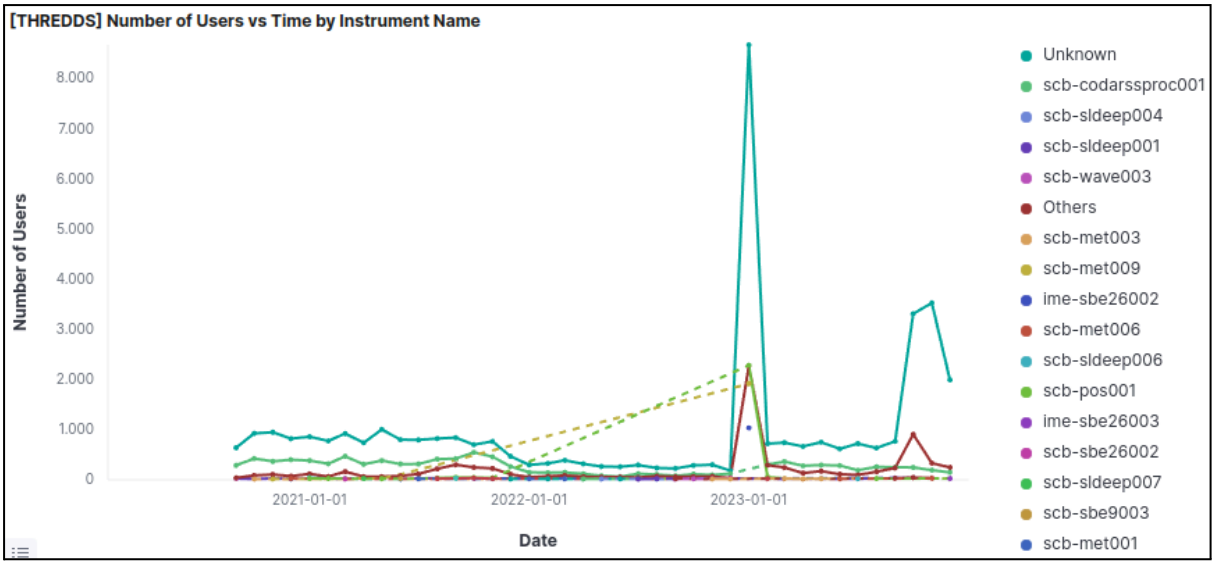


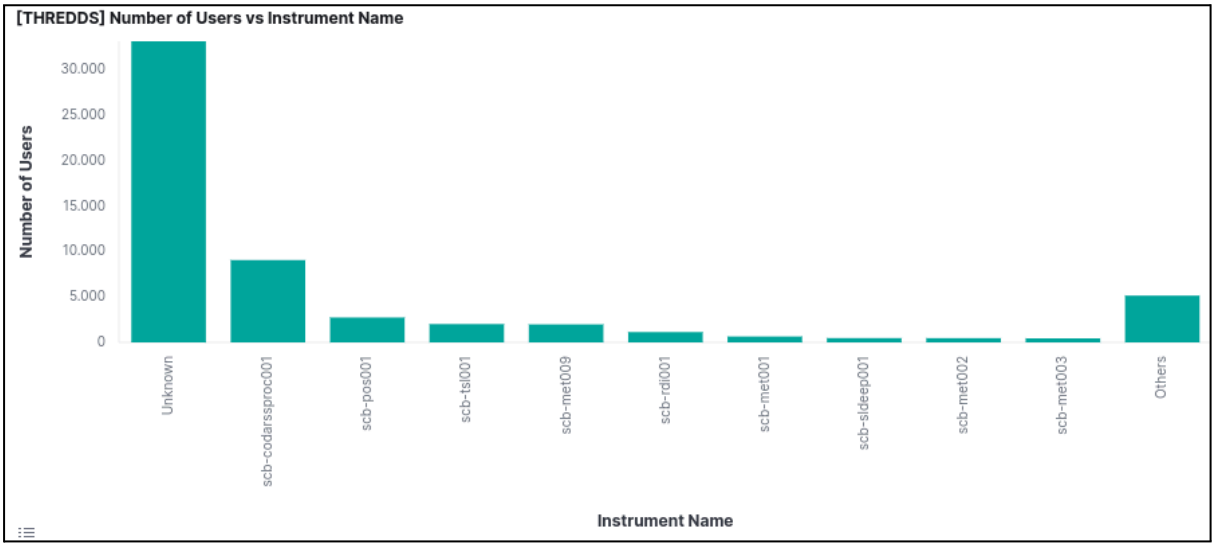


Next, an analysis of the traffic based on the name of the instrument that collected the served data is presented.

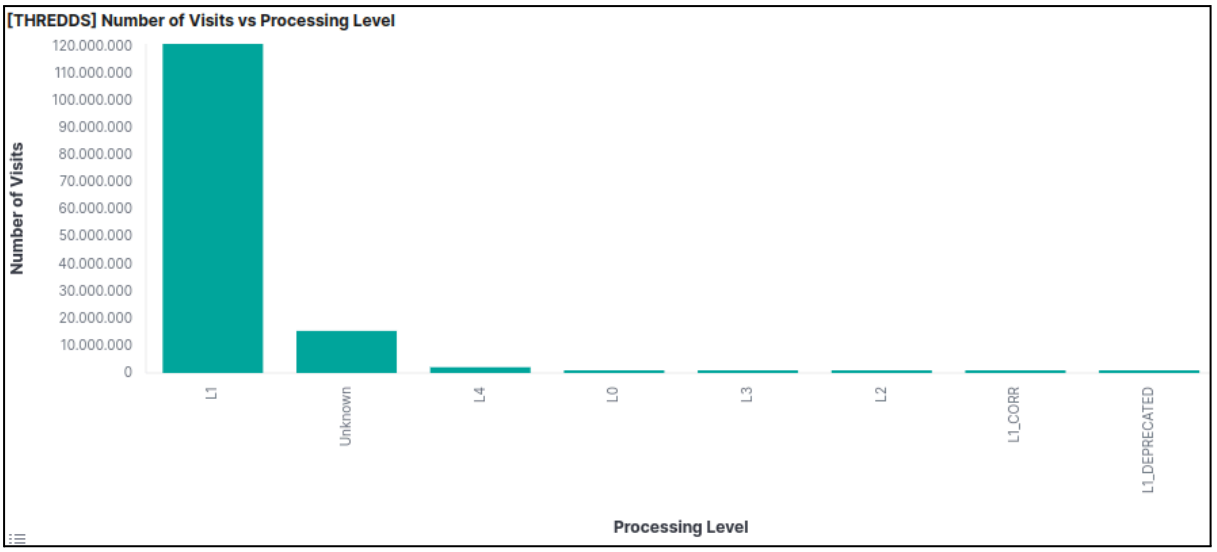


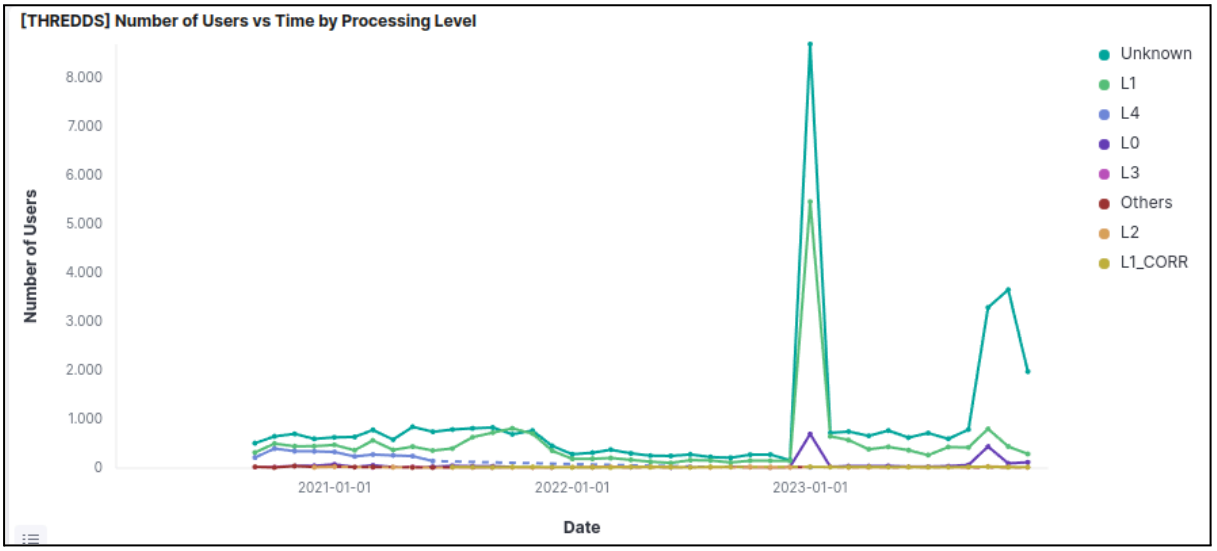


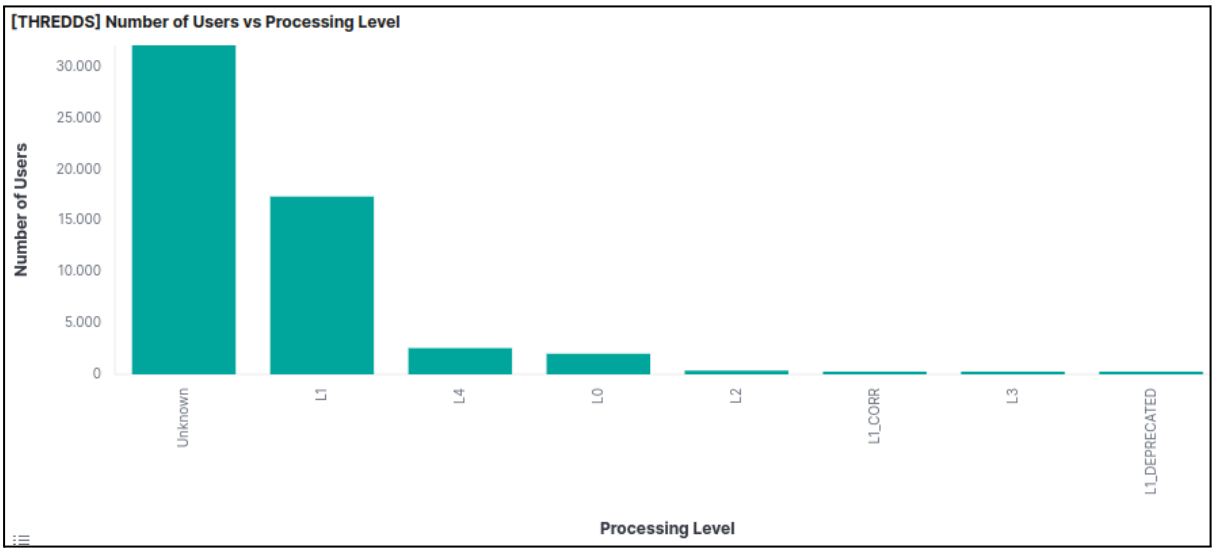




Below, an analysis of the traffic based on the processing level of the served data is presented.

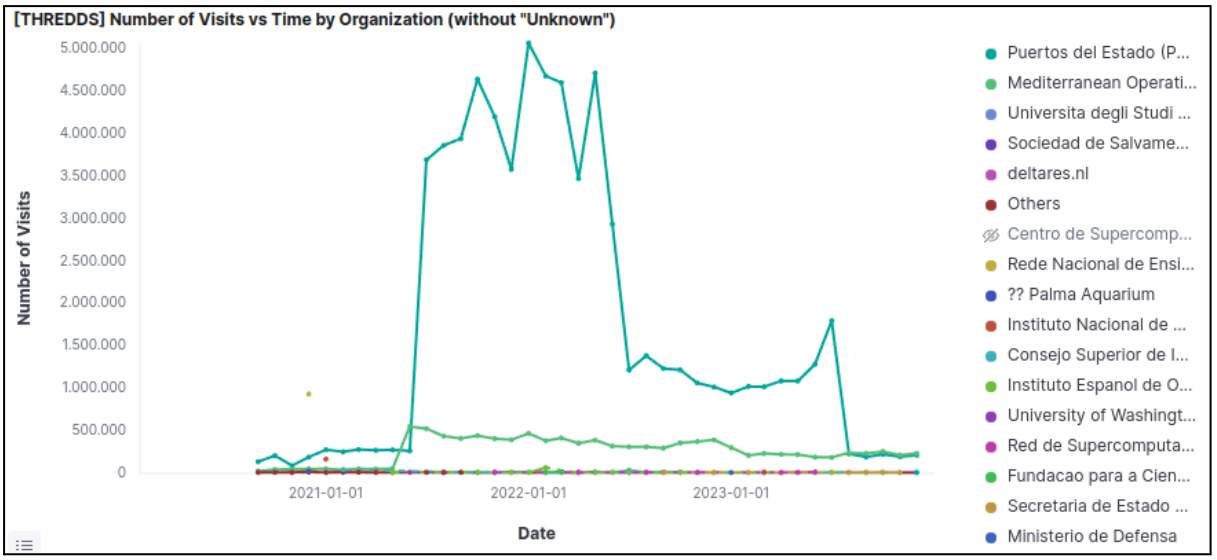


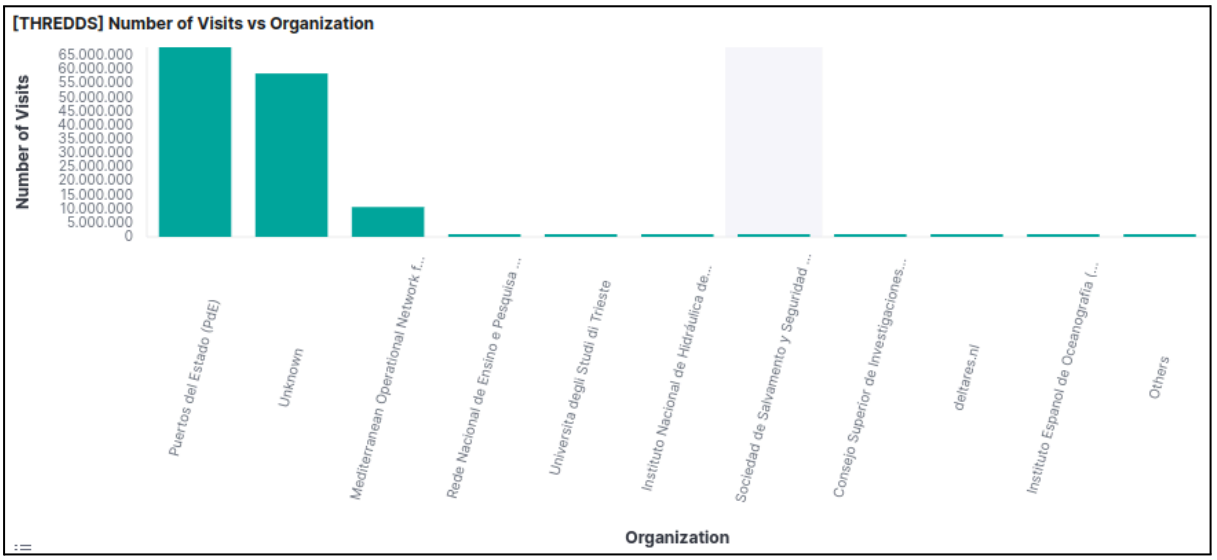


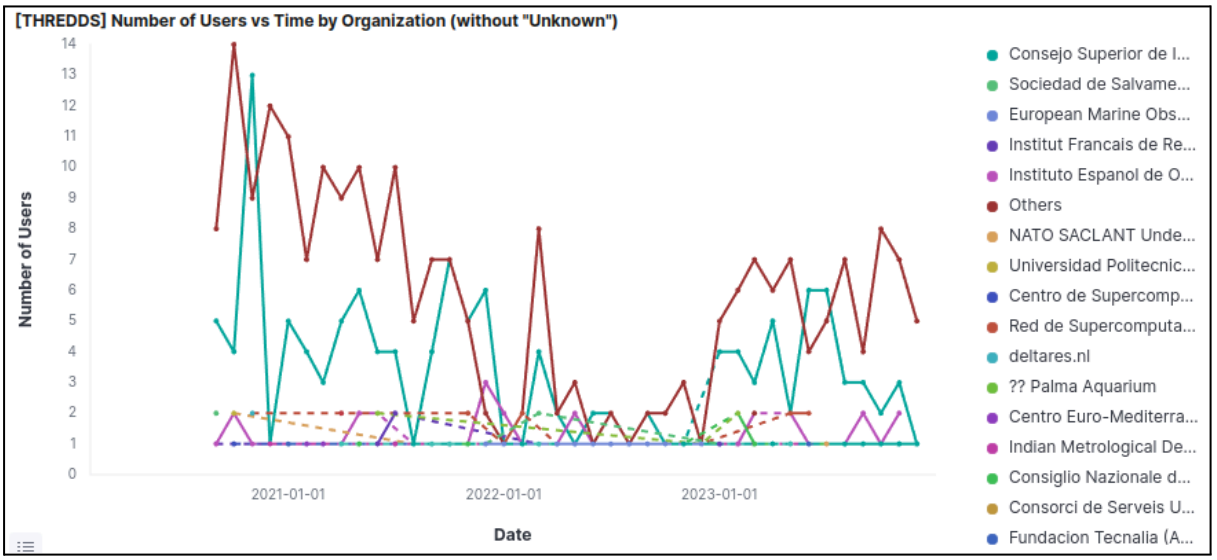


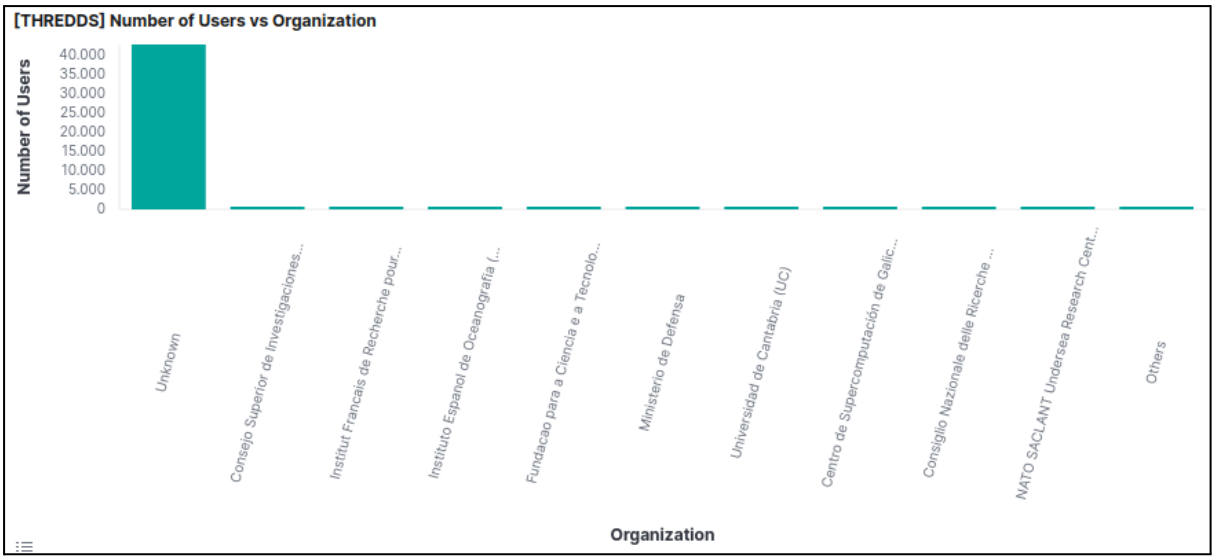
Moreover, the following graphs show the number of visits of each organization over time and

in absolute numbers.

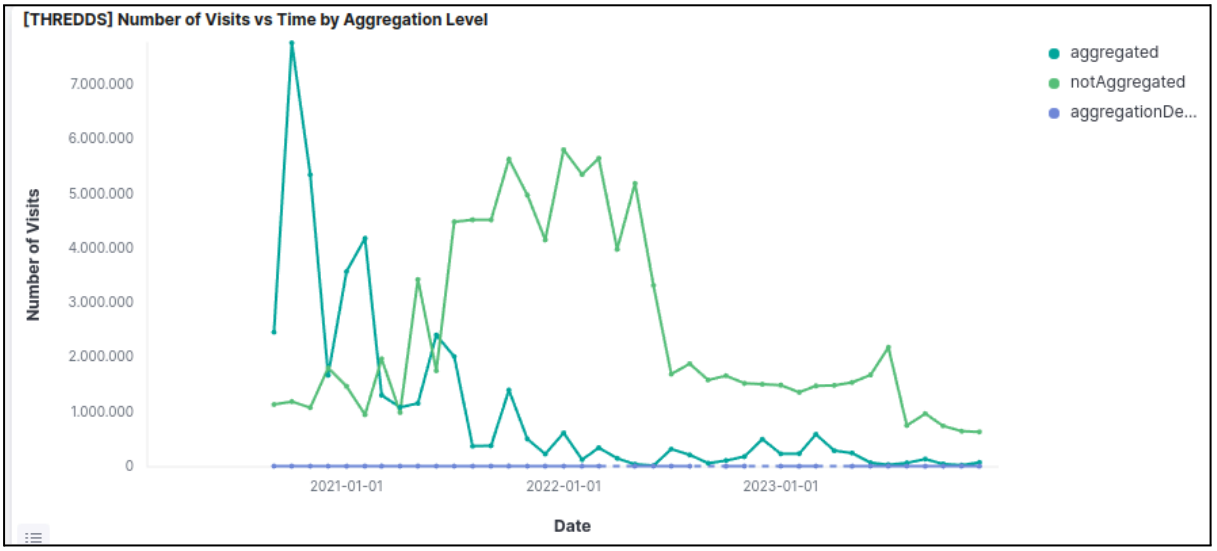


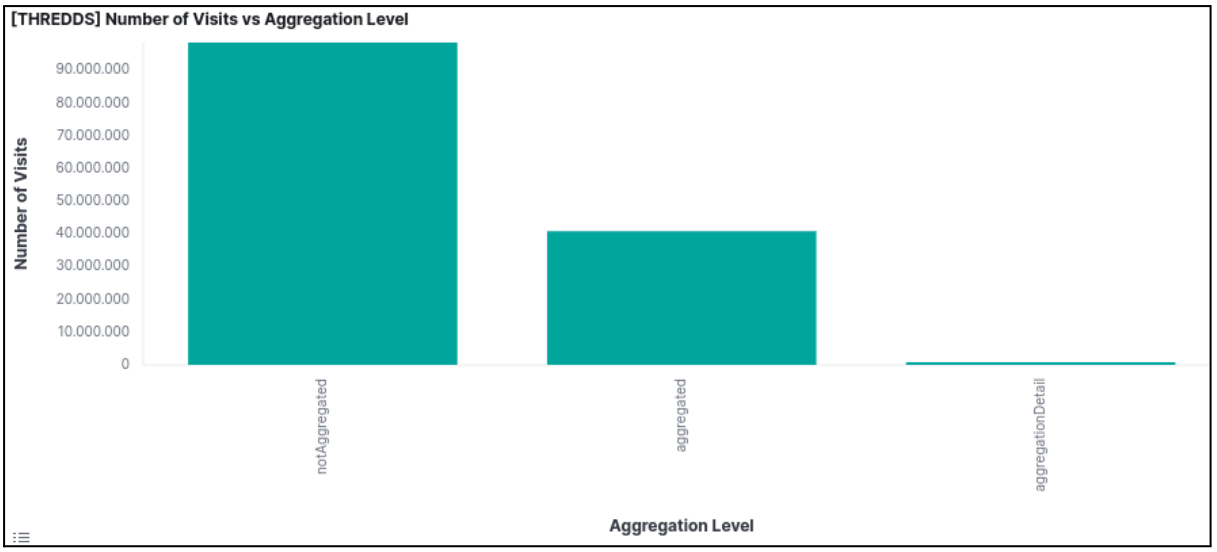


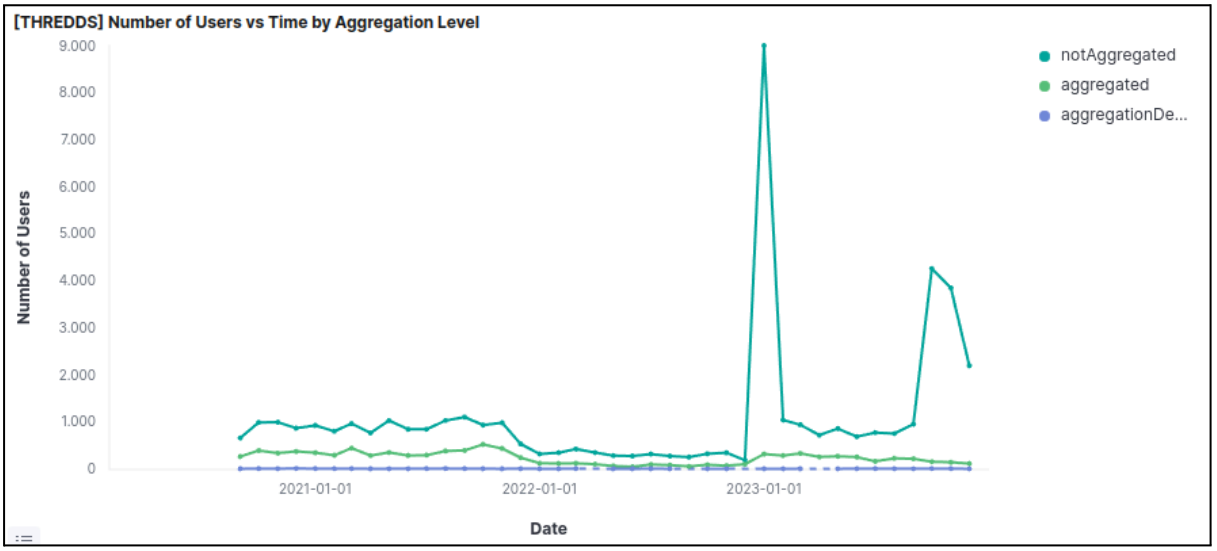


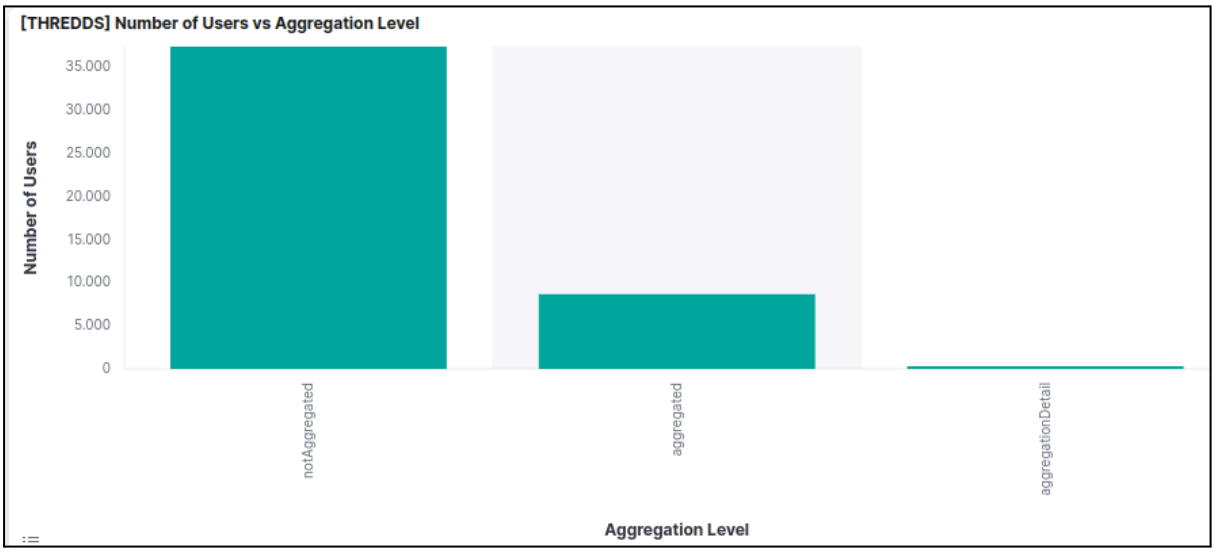


Finally, an analysis of the traffic based on the aggregation level of the served data is presented.




[THREDDS] Number of Visits vs Aggregation Level
Number of Visits
90.000.000
80.000.000
70.000.000
60.000.000
50.000.000
40.000.000
30.000.000
20.000.000
10.000.000
0
notAggregated
aggregated
aggregationDetail
Aggregation Level


[THREDDS] Number of Users vs Time by Aggregation Level
Number of Users
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0
2021-01-01
2022-01-01
2023-01-01
Date
notAggregated
aggregated
aggregationDe...


[THREDDS] Number of Users vs Aggregation Level
Number of Users
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0
notAggregated
aggregated
aggregationDetail
Aggregation Level

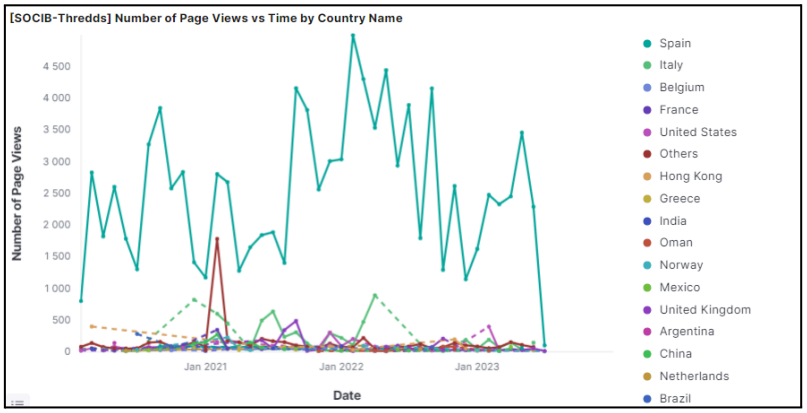
THREDDS (browser)

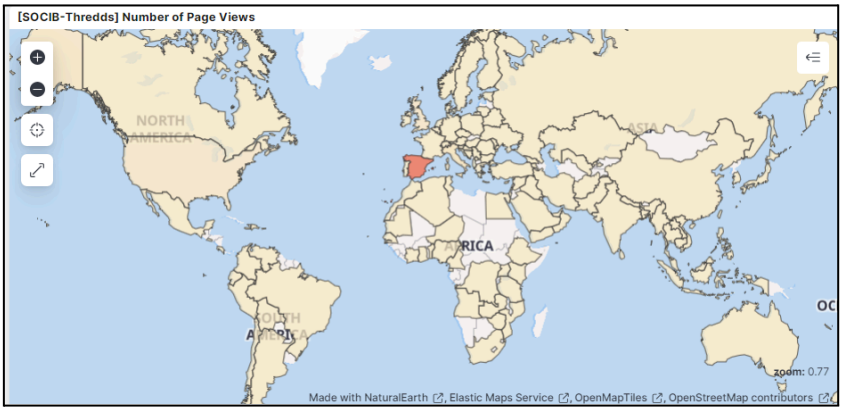
SOCIB's THREDDS data server is also monitored via Google Analytics. This tool gives a different perspective as it only detects the traffic of browsers (or other clients that execute Javascript) and it provides information that cannot be obtained from logs like the Sessions analysis.

First, the overall access metrics will be presented. Then, the following analyses are included: geographic analysis, analysis by user type (new vs returning), bounce rate analysis, user device analysis, and traffic source analysis.

The next image presents the general access metrics in a numeric form.

The following images contain the geographic analysis of the traffic.





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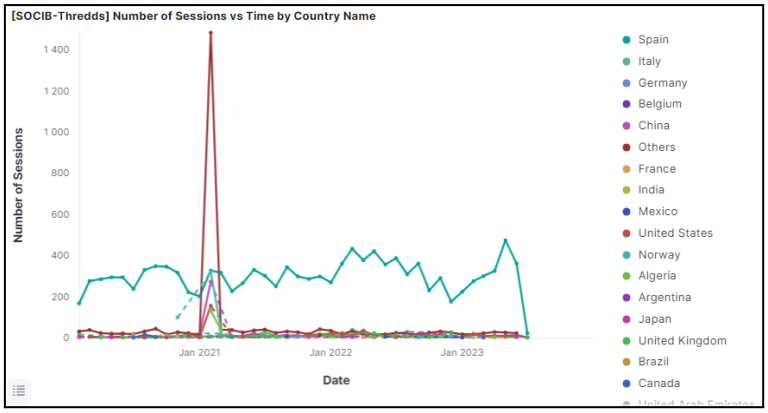
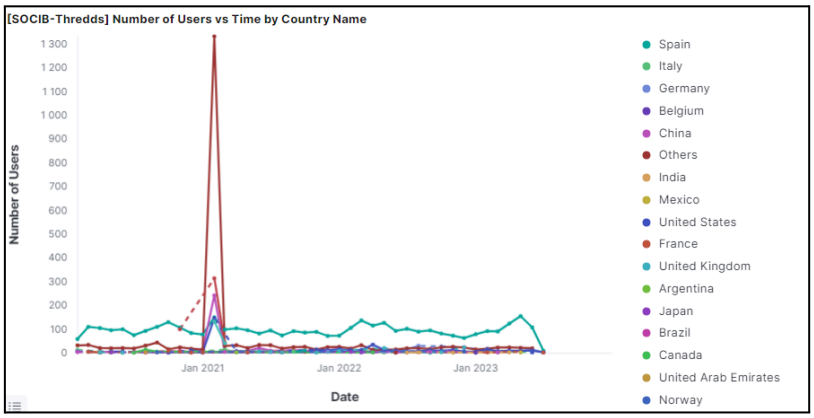
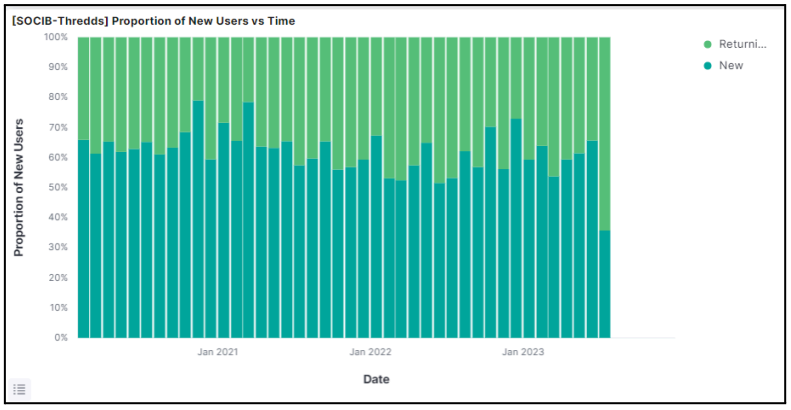
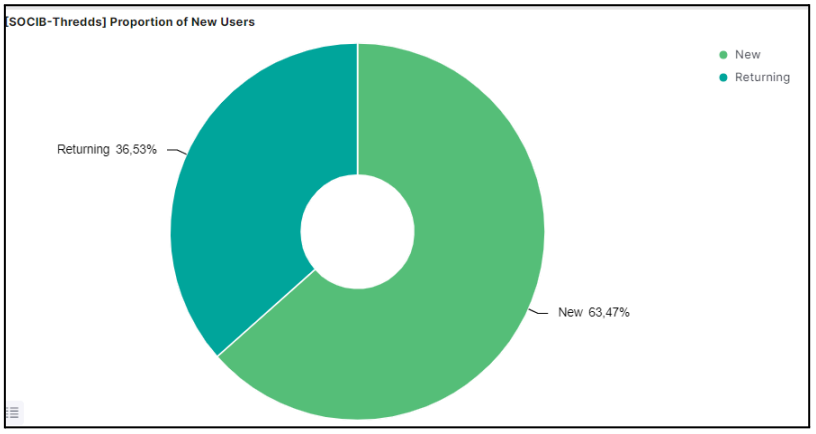


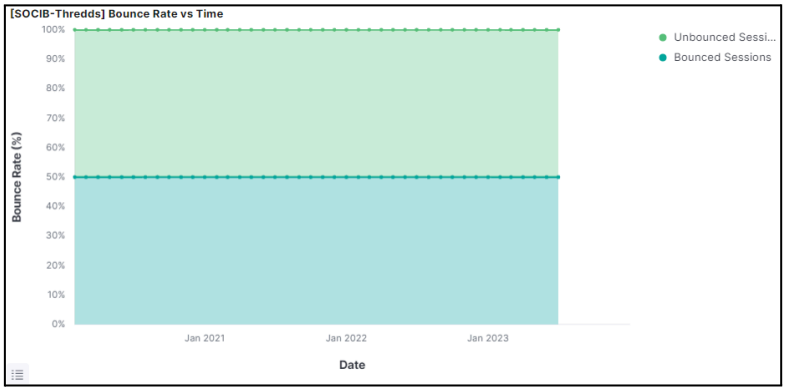


Next, plots analysing the proportion of new users are shown.

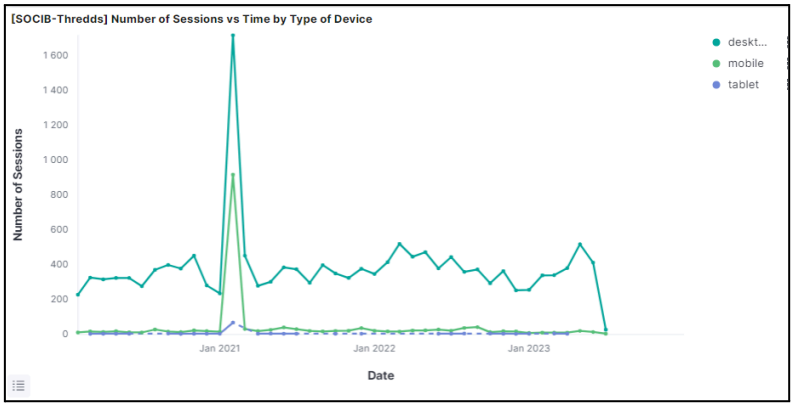


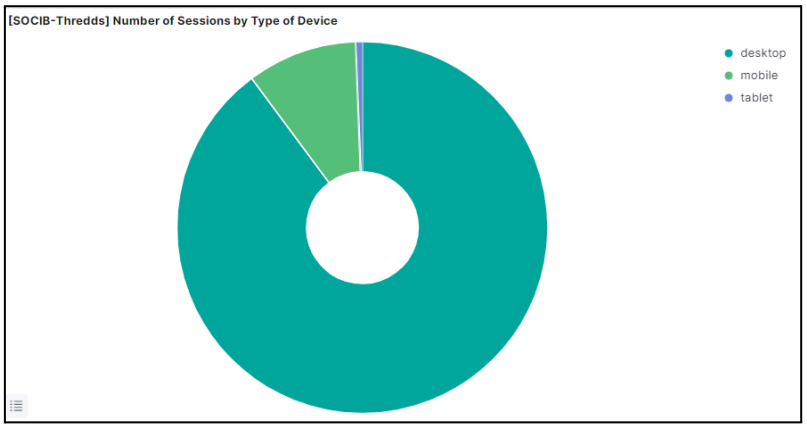


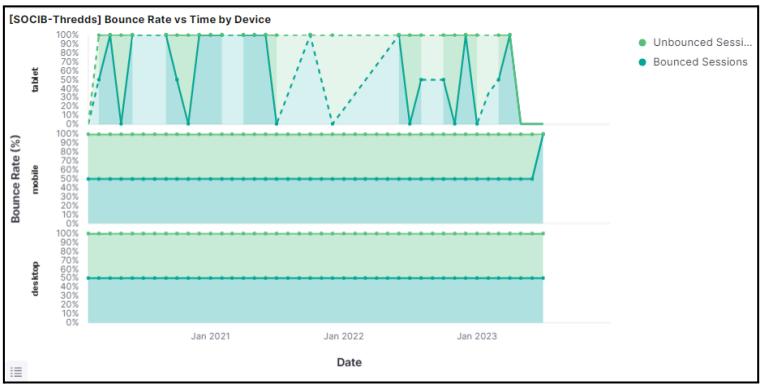
Next, the bounce rate is analyzed.

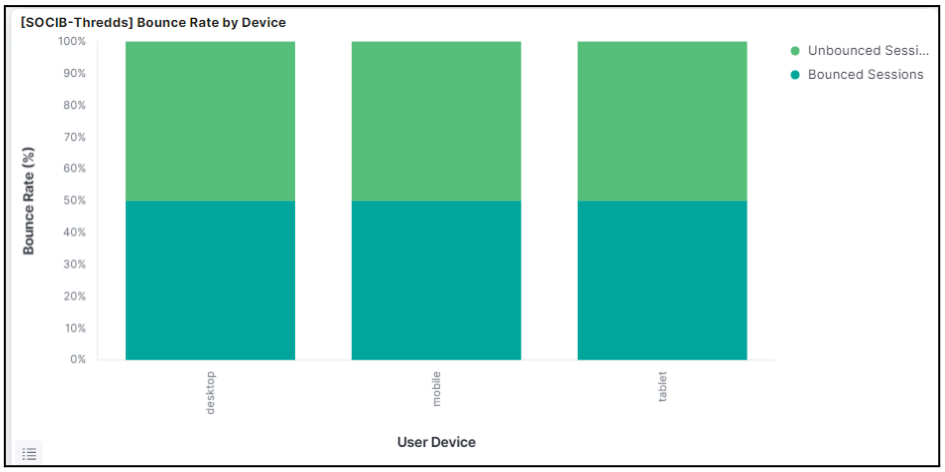


The images below show the proportion of sessions that come from each type of device and the influence of the type of device on the bounce rate.

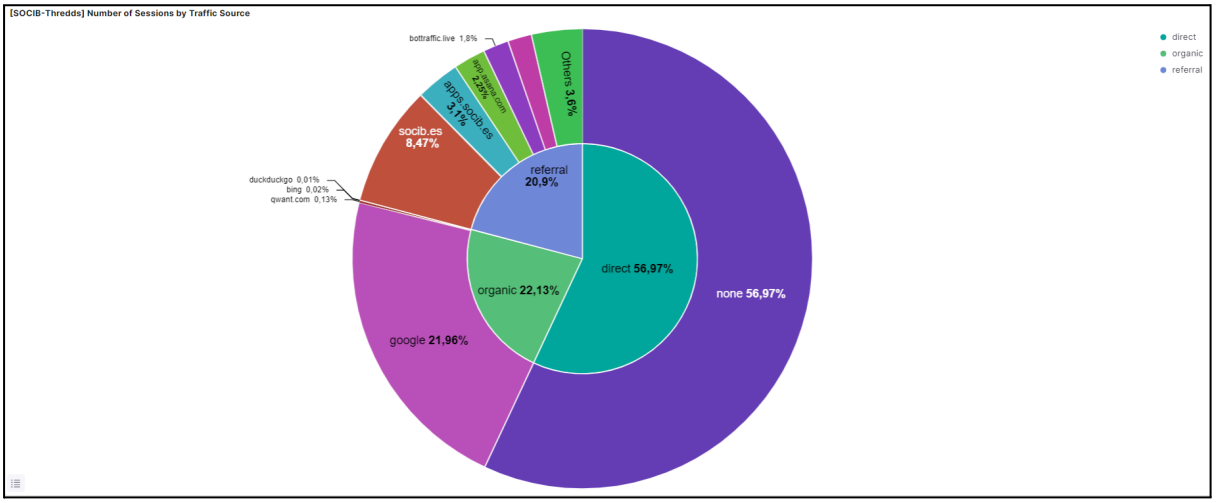








Finally, an analysis of traffic based on the source is presented.

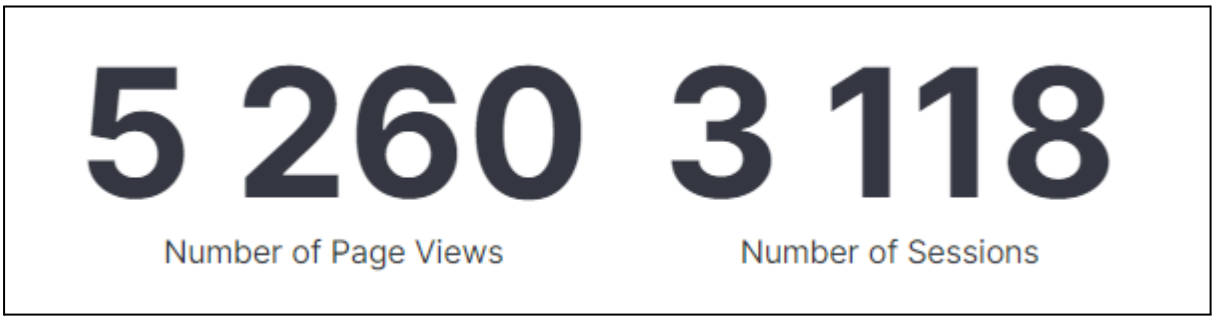


Data Catalog

The data underlying the following plots have been obtained from the Google Analytics API.

First, the overall access metrics will be presented. Then, the following analyses are included: geographic analysis, analysis by user type (new vs returning), bounce rate analysis, user device analysis, and traffic source analysis.

The next image presents the general access metrics in a numeric form.



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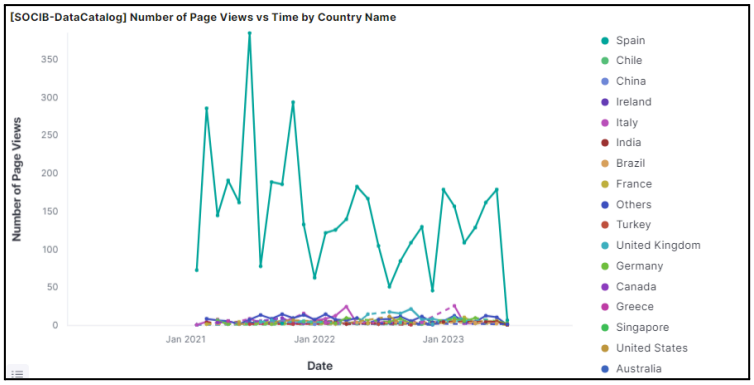
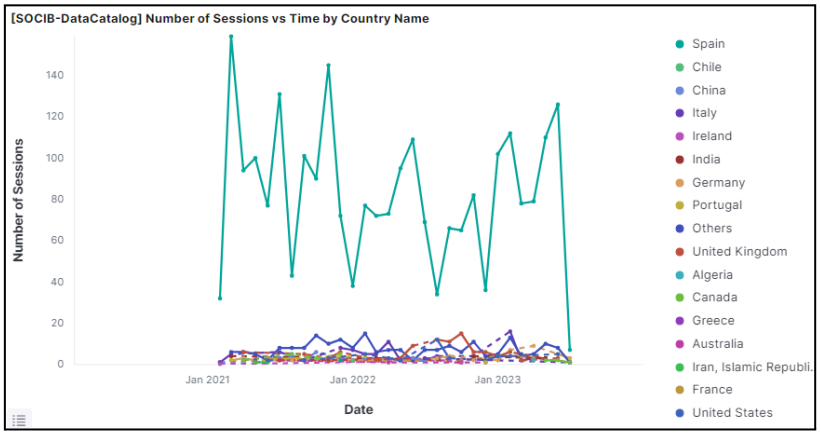
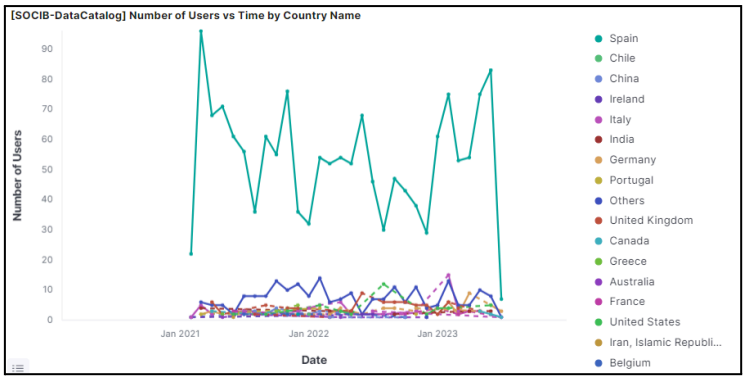
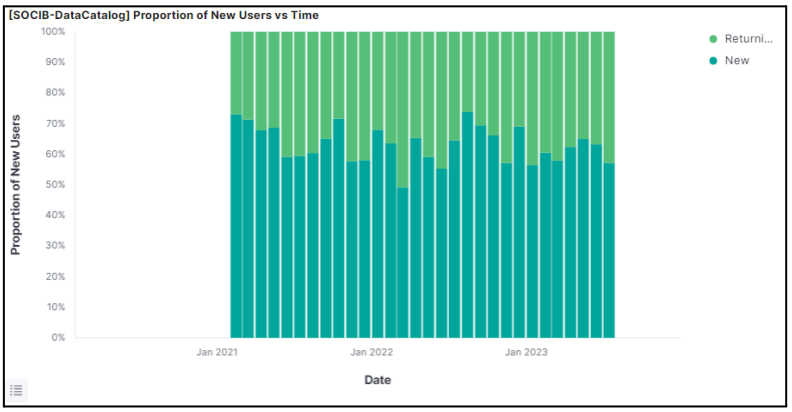
The following images contain the geographic analysis of the traffic.

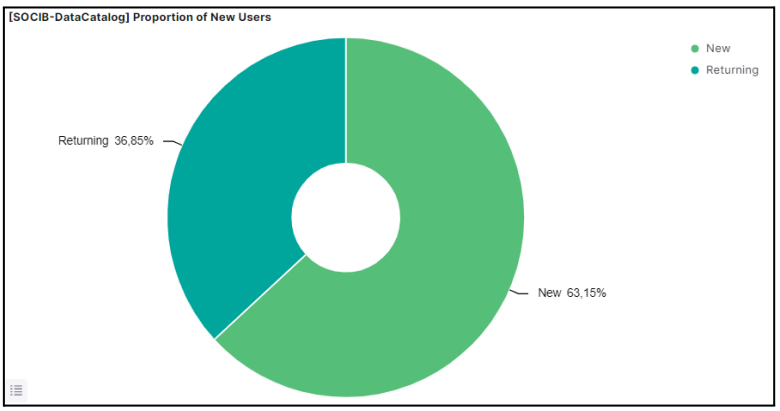




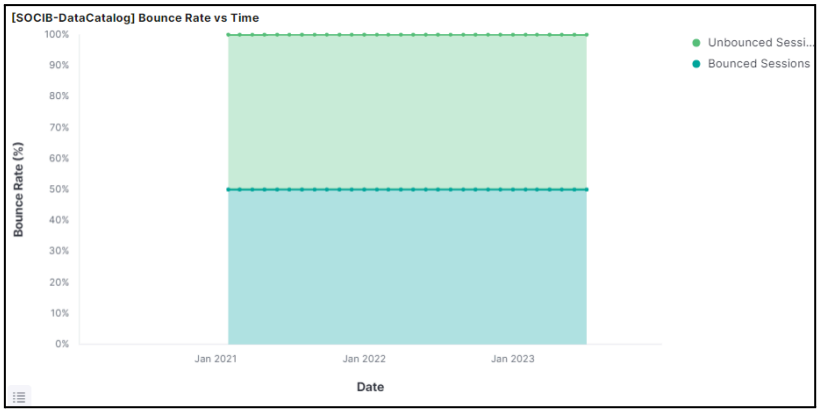


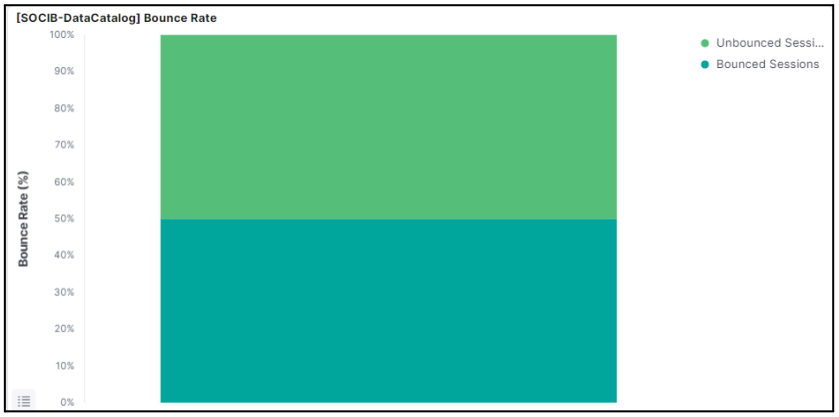
Next, plots analyzing the proportion of new users are shown.



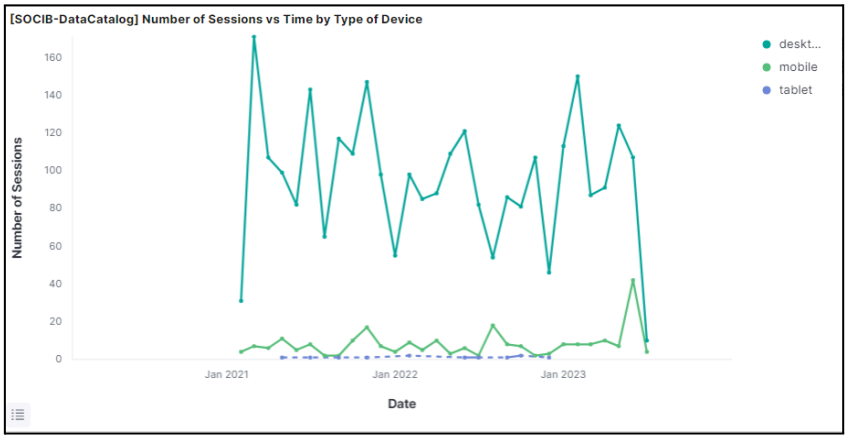


Next, the bounce rate is analyzed.





The images below show the proportion of sessions that come from each type of device and the influence of the type of device on the bounce rate.



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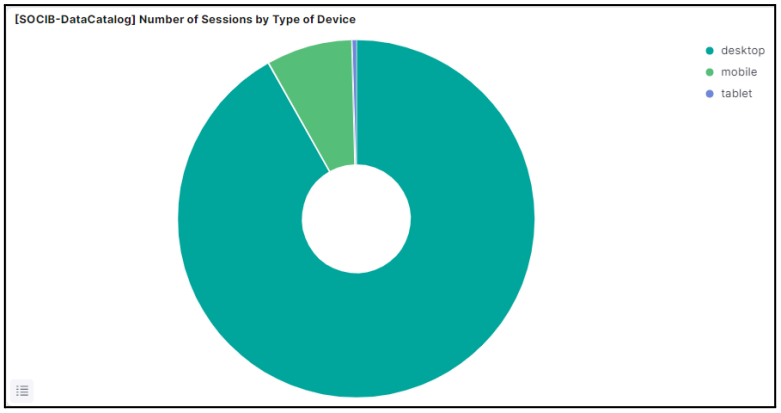
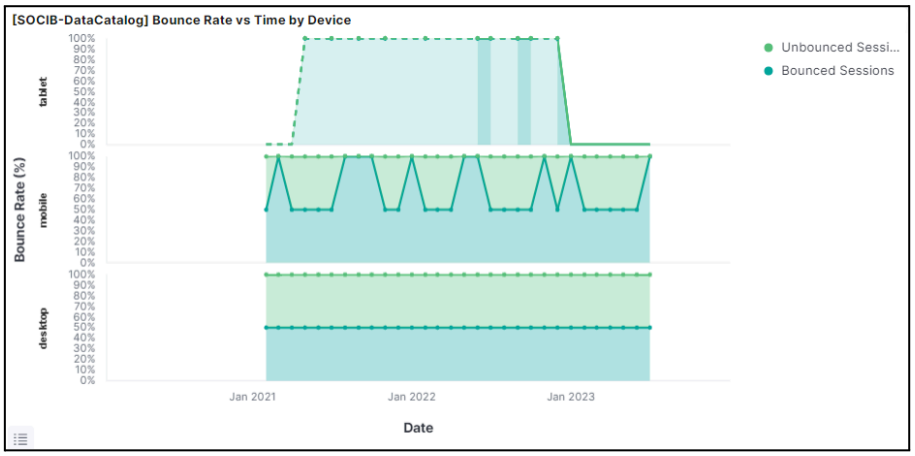
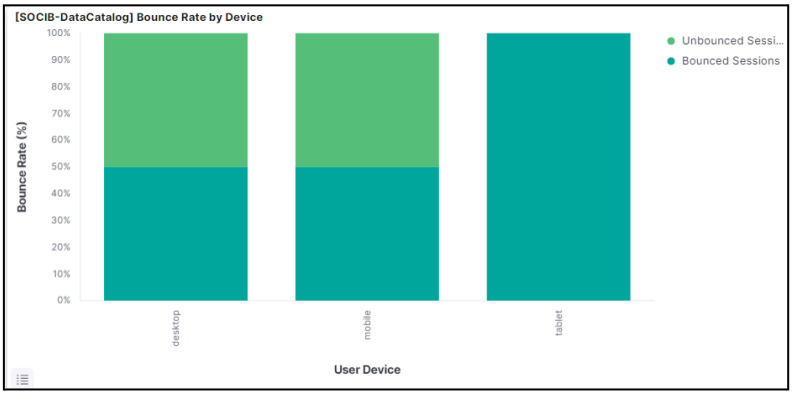
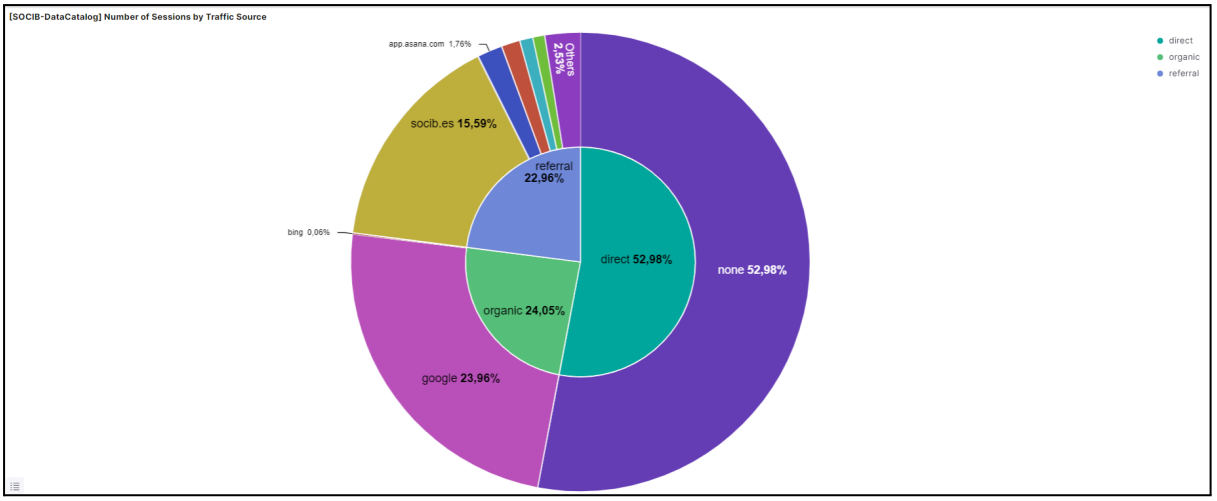






Finally, an analysis of traffic based on the source is presented.



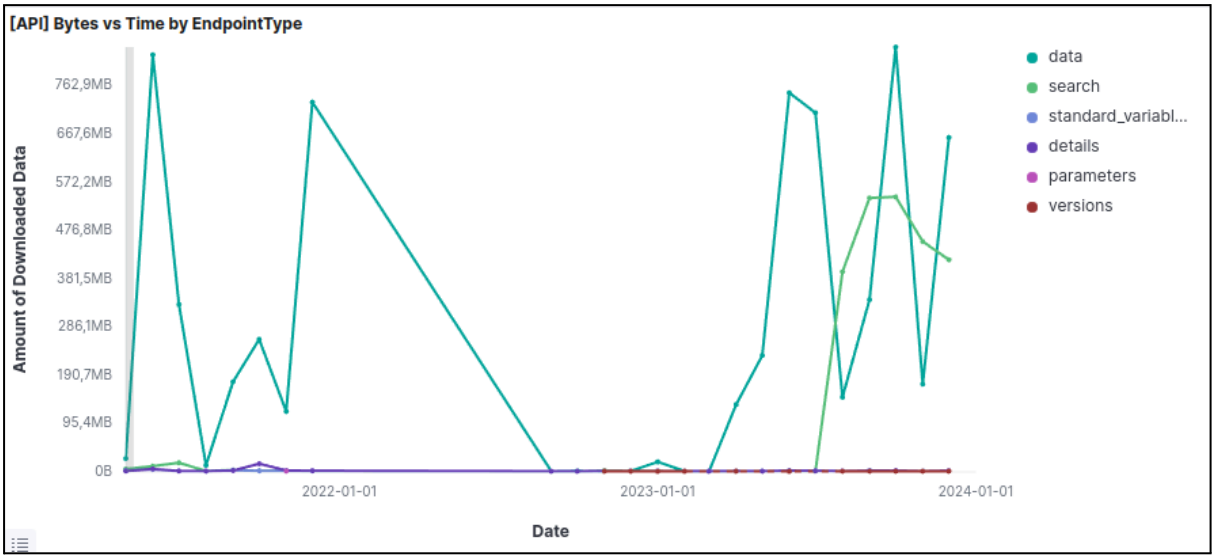
API

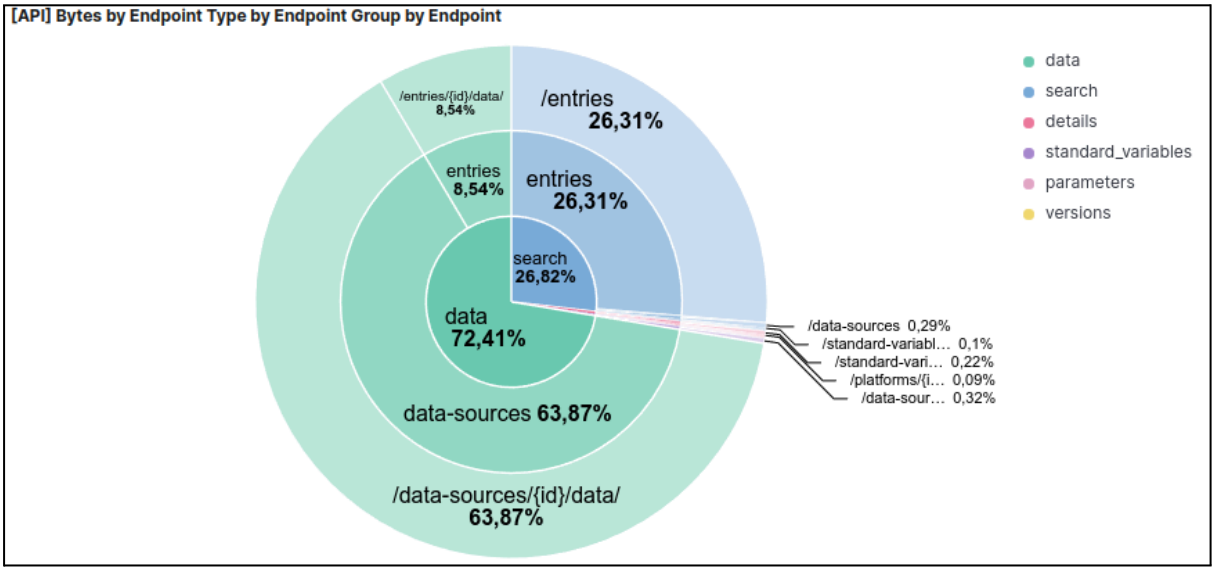
The data underlying the following plots have been obtained from the log files of the API server. Since the API requires authentication, distinct IPs are not used to estimate the number of users, the actual number of users that access the API is used. This API was launched on May 10th, 2021, hence the unavailable data at the beginning of JERICO-S3.

First, the overall access metrics will be presented. Then, traffic will be analyzed by content, geographic origin, used client, referrer domain, and operating system.

The next image presents the general access metrics in a numeric form.

In the following image, the content analysis is presented. It can be seen what proportion of data, pageviews, and users goes to each family of endpoints (data, search, details and standard_variables). It can also be seen how the traffic to API endpoints is distributed among the types of endpoints and what specific endpoints are being visited.





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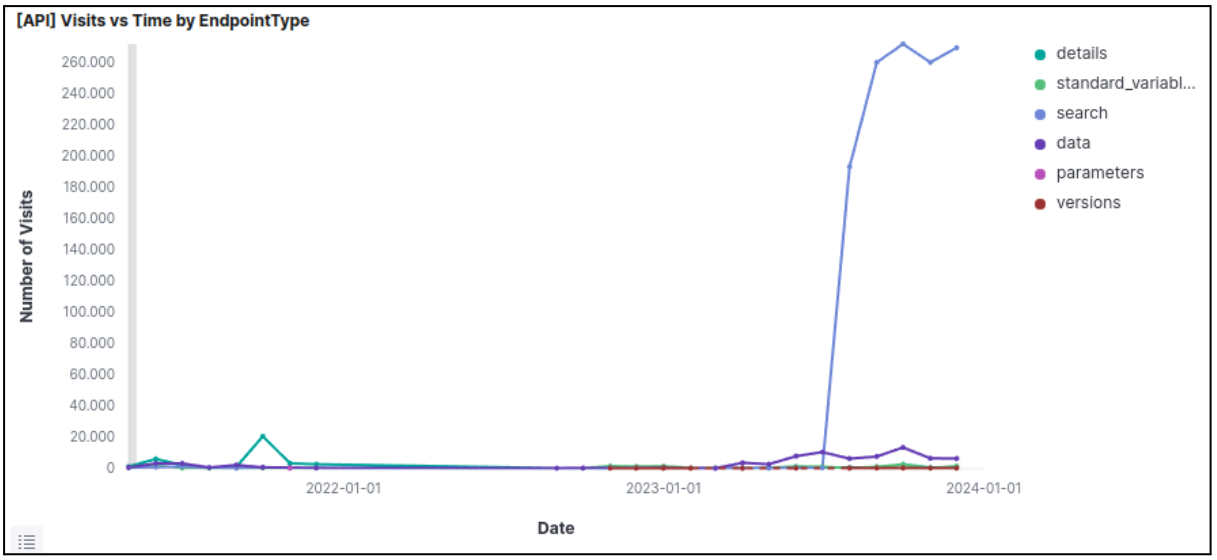

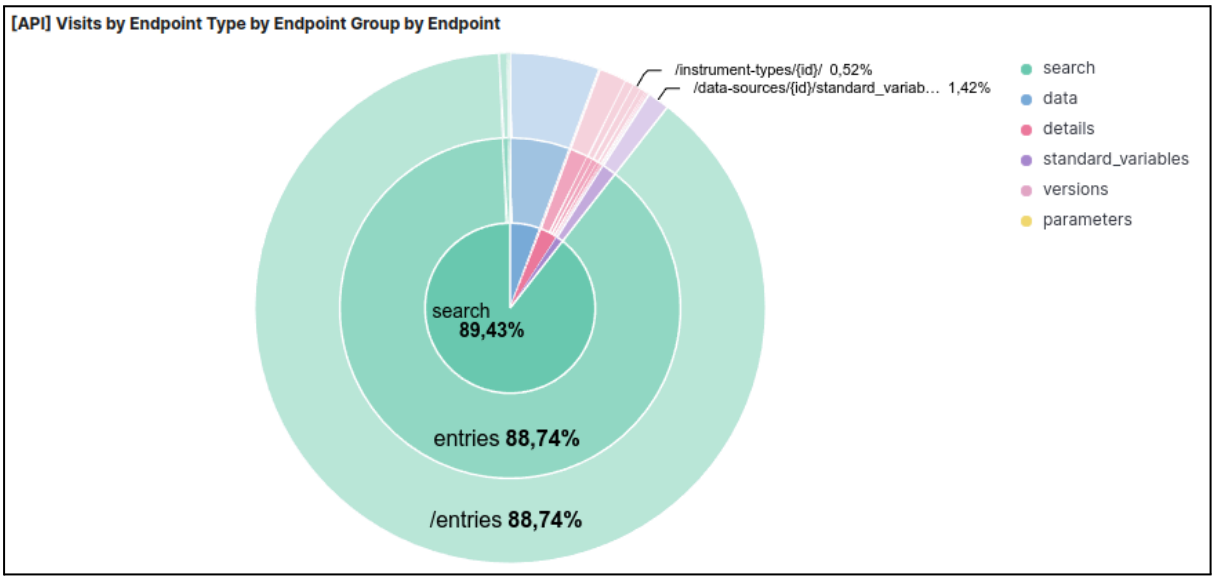

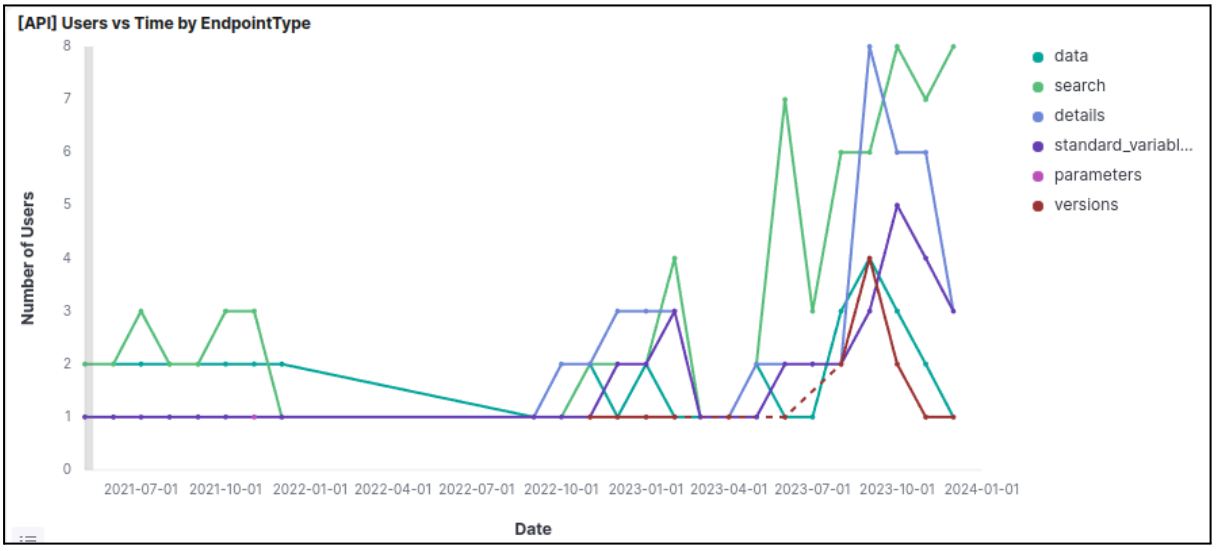

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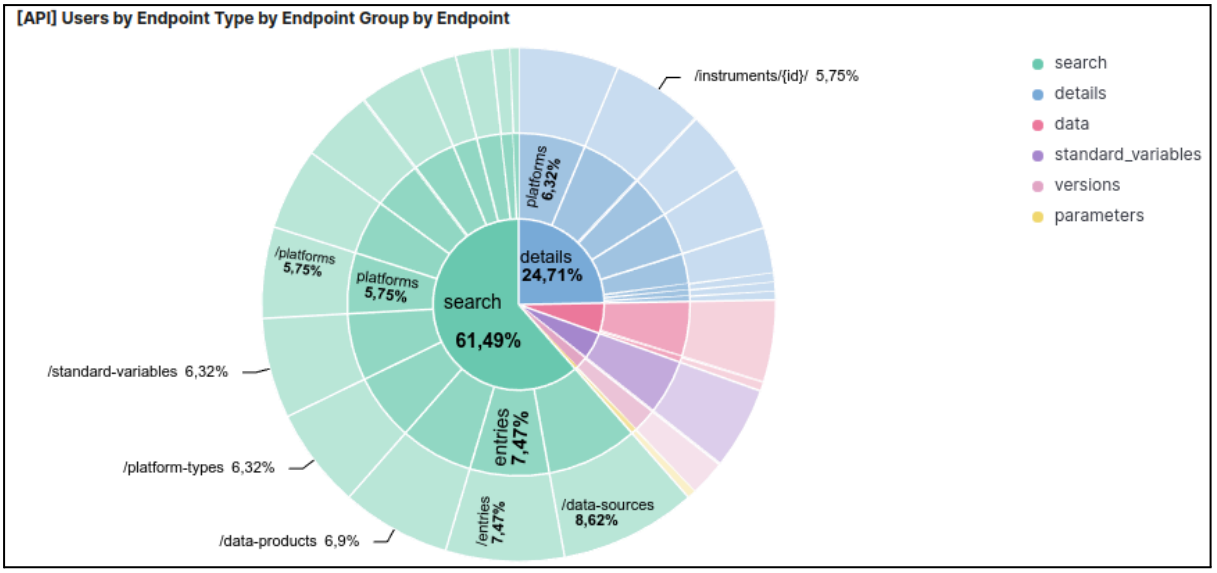
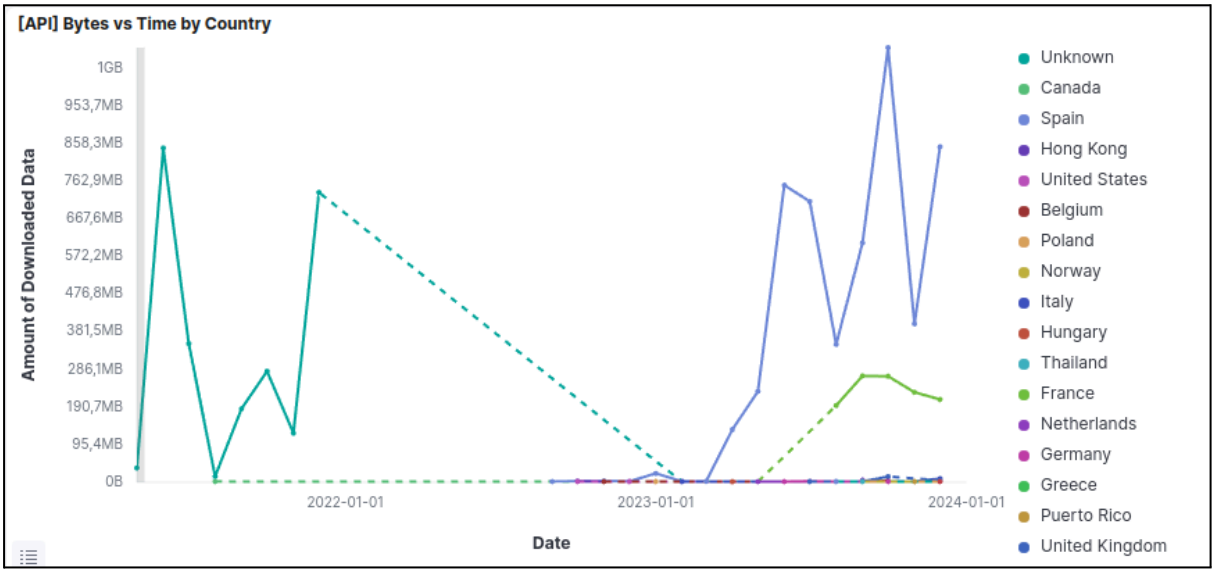


Next, plots and maps with a geographic analysis of the traffic seen by the server are shown.



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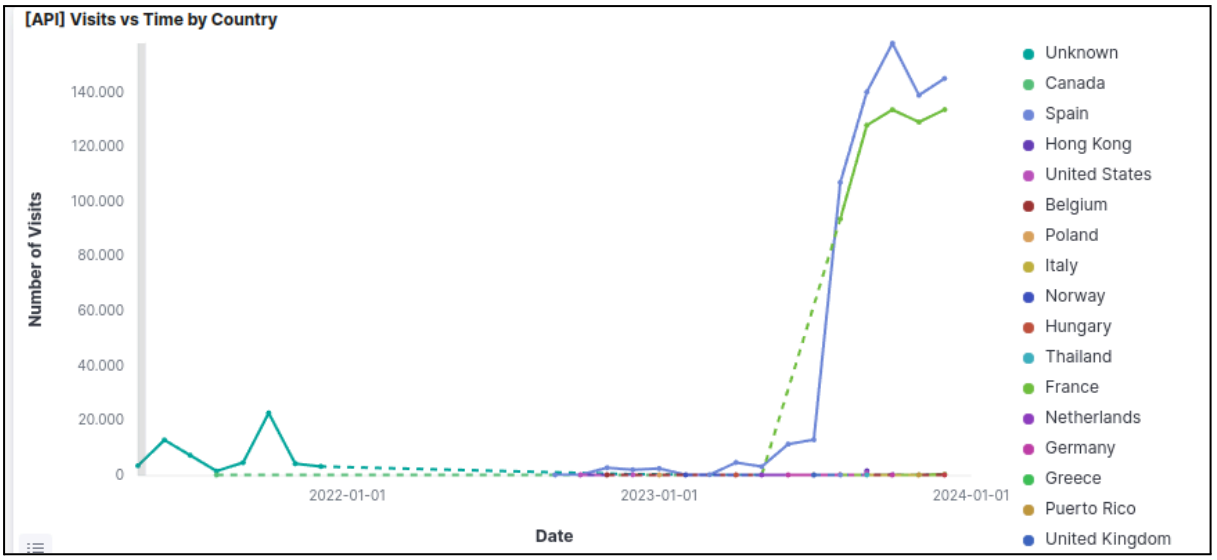
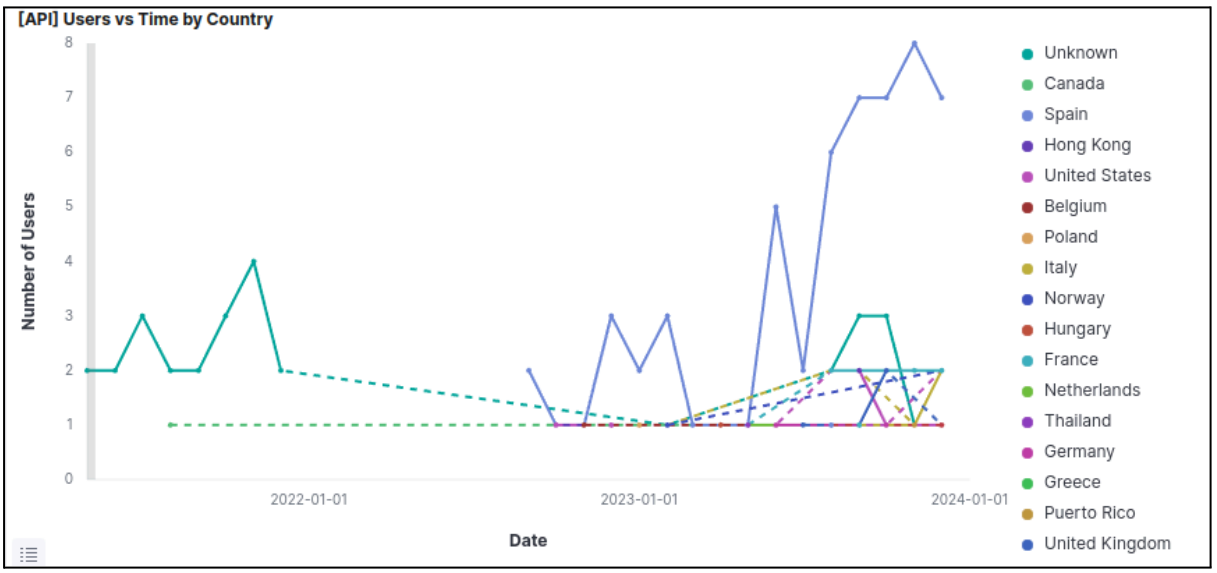
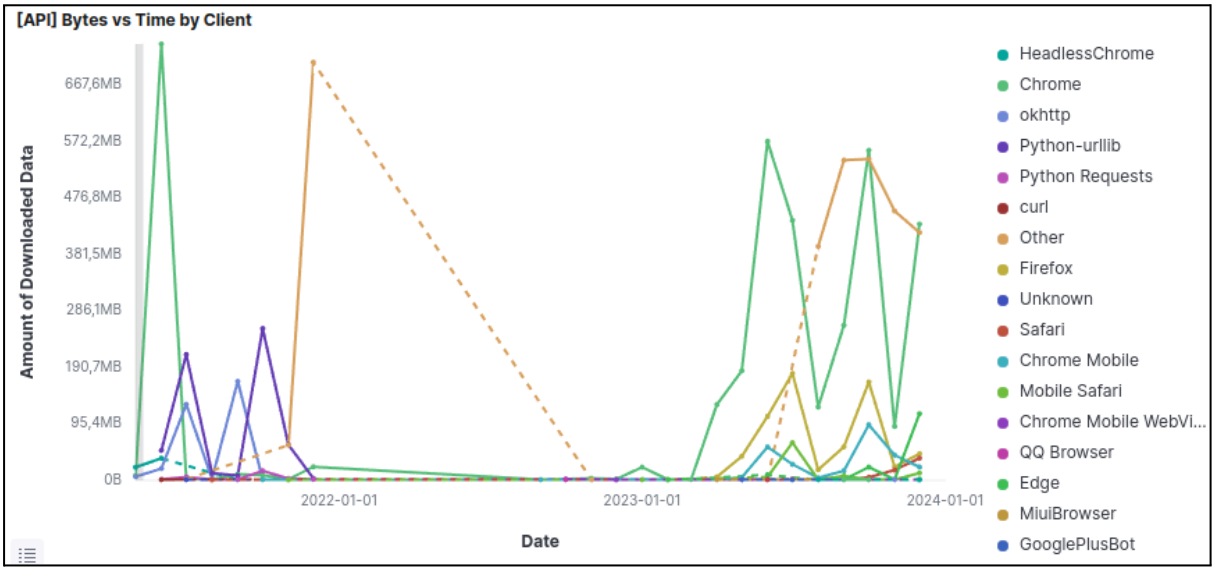
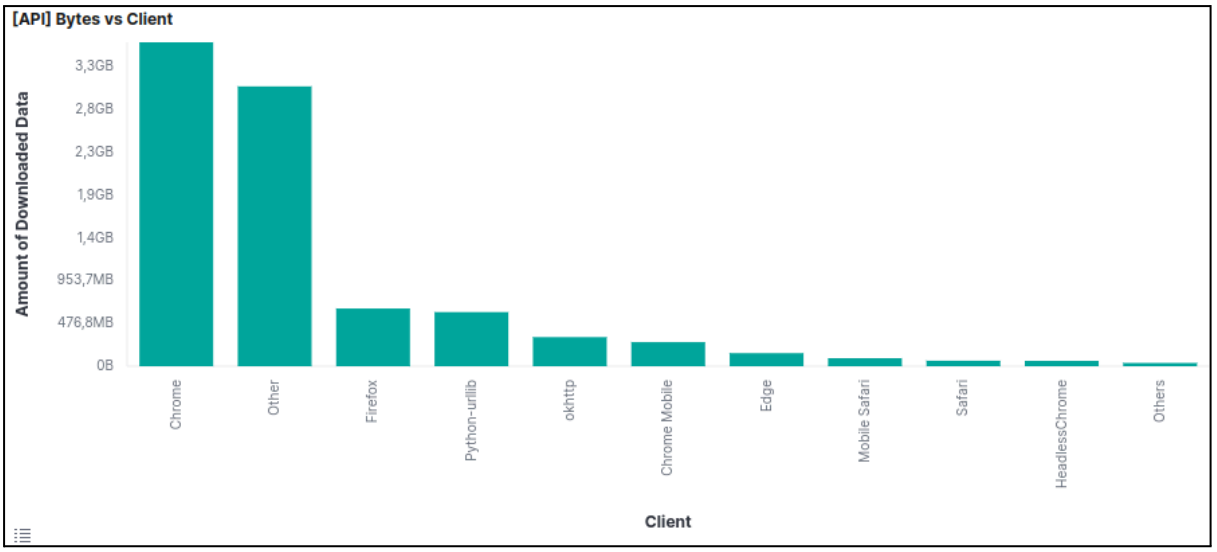


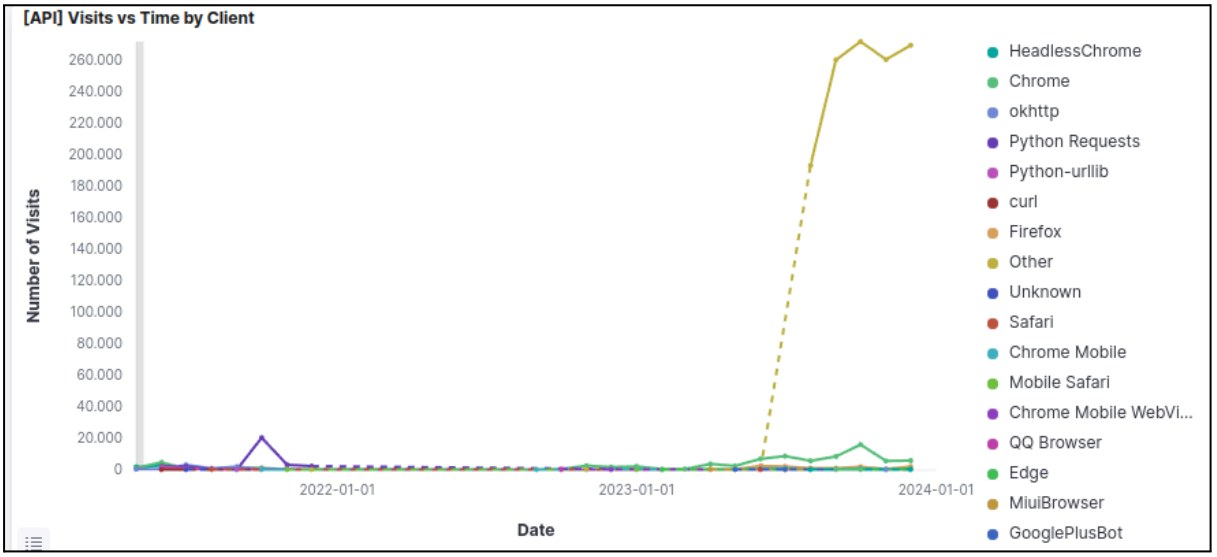


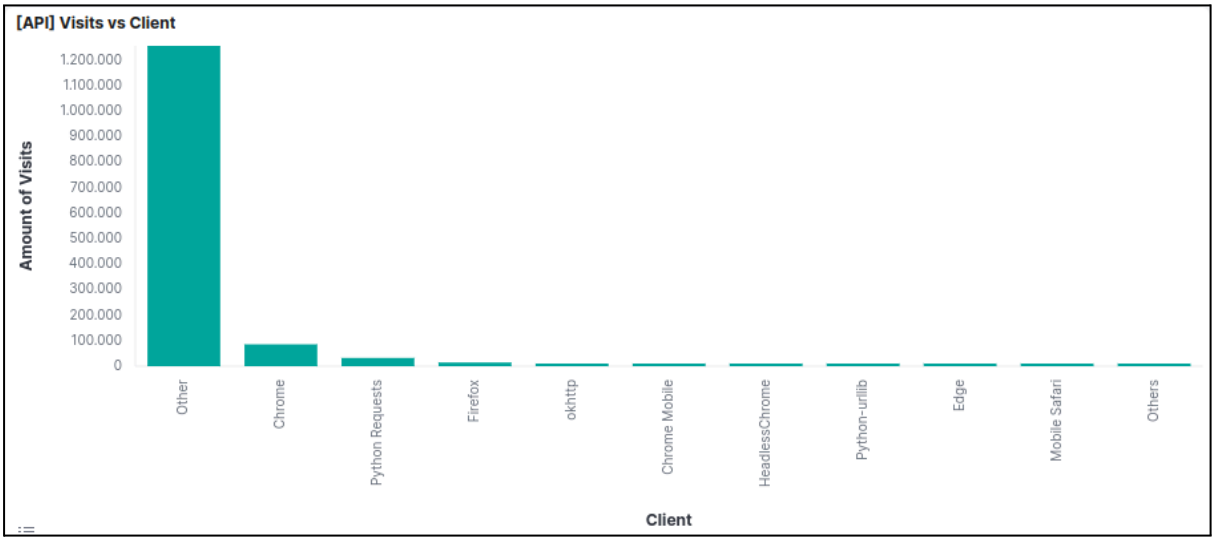
The fourth image shows an analysis of the traffic based on the software used by the user to perform the request (a browser or an HTTP library).



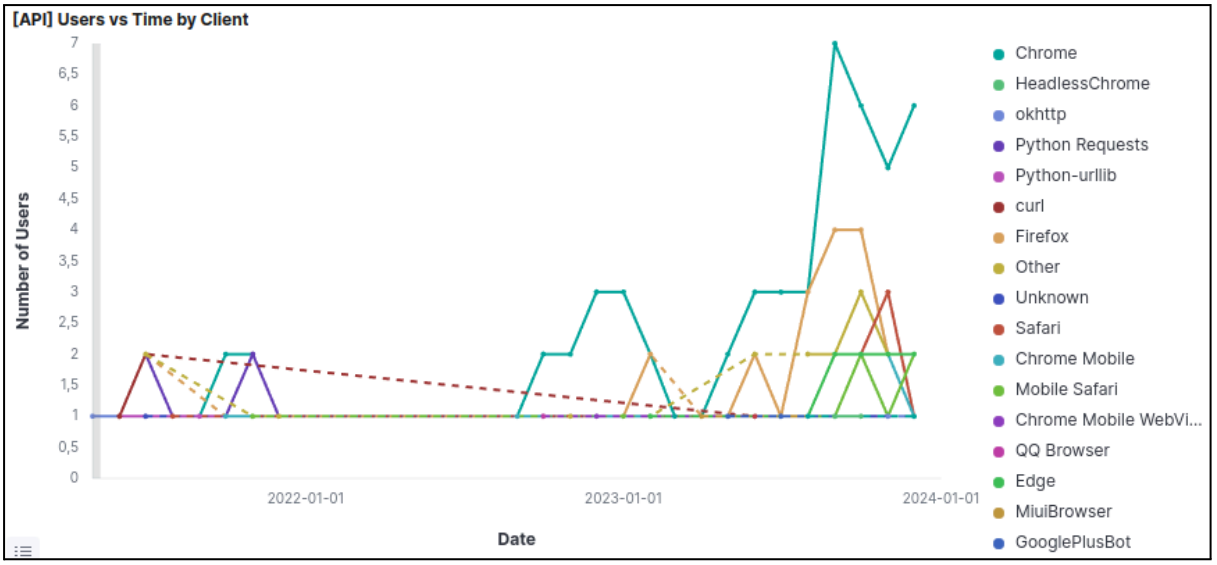
The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.

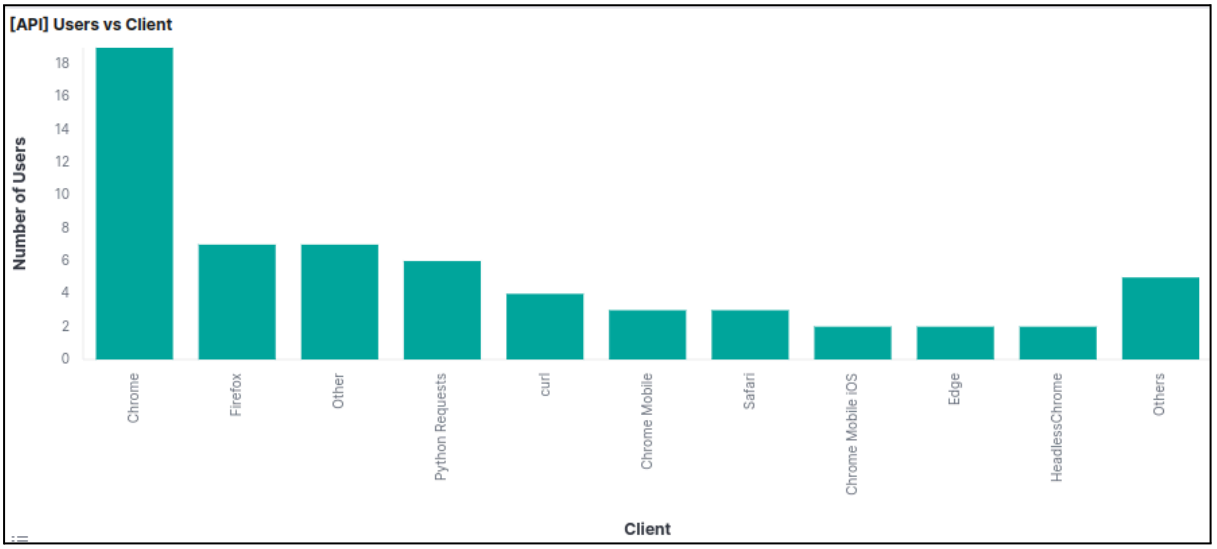




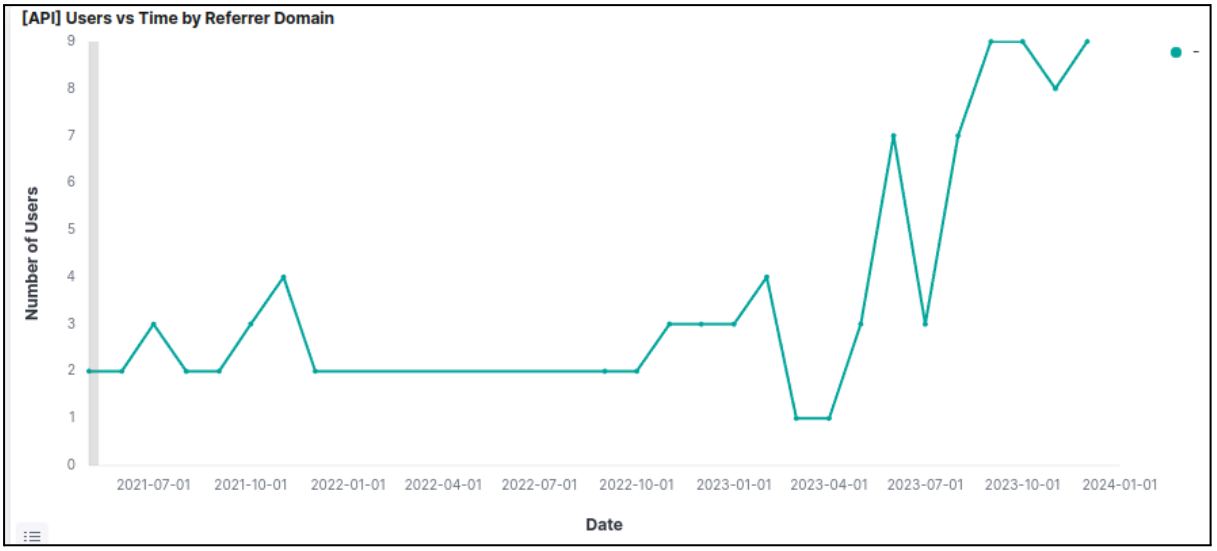


The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.

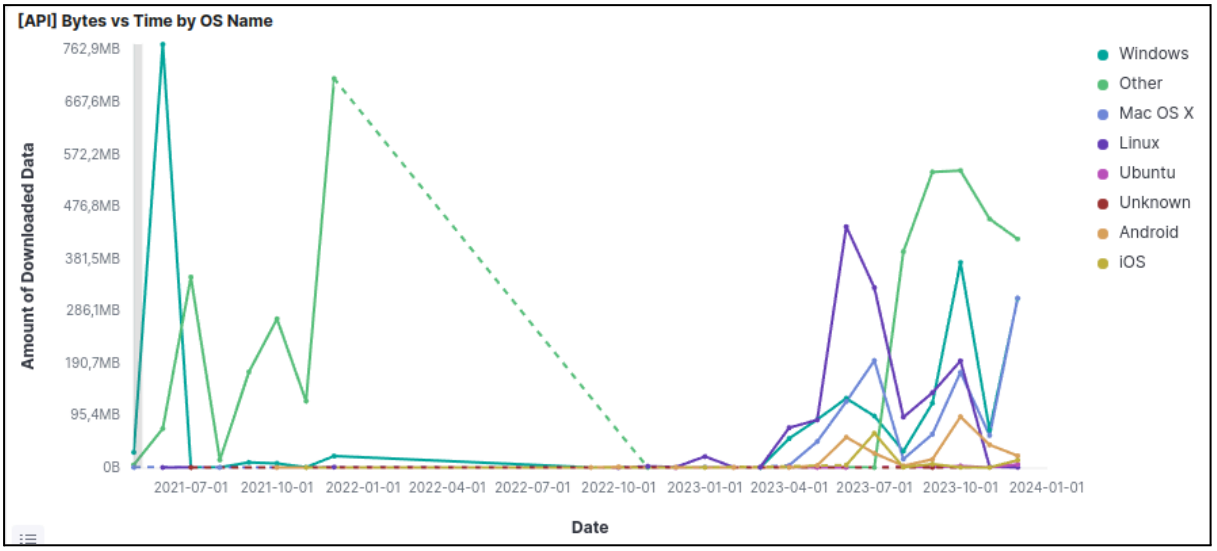


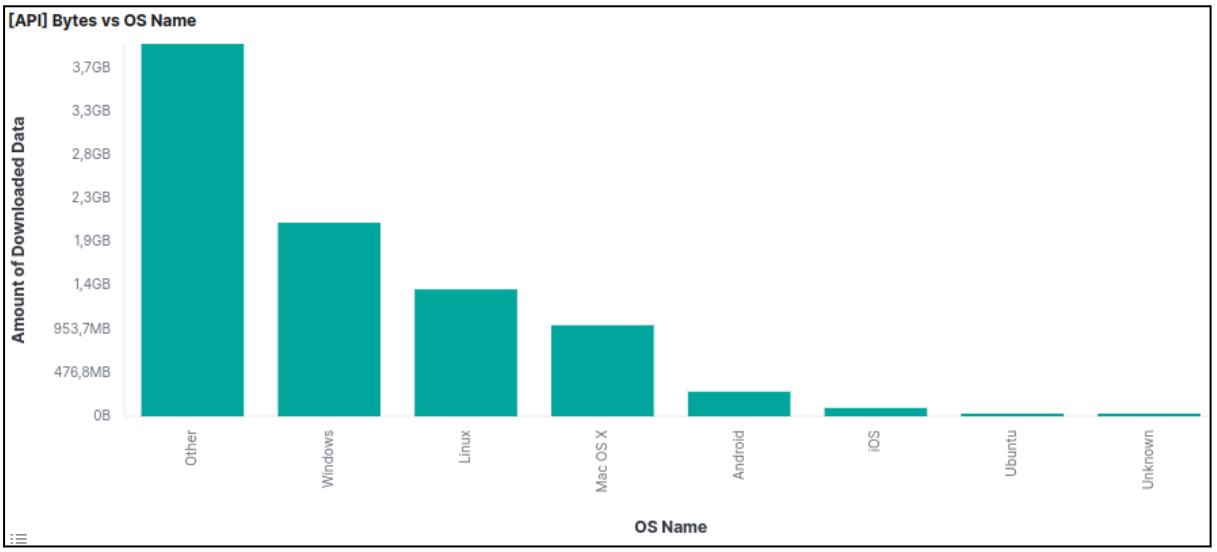


The image below contains an analysis based on the referrer domain ("-" means the referrer is not informed, like a visit from a bookmarked link or direct access via software).



Finally, an analysis of traffic based on the operating system of the user is presented (that information is extracted from the browser version, for HTTP libraries, the information is not available and is contained in the "Other" category).





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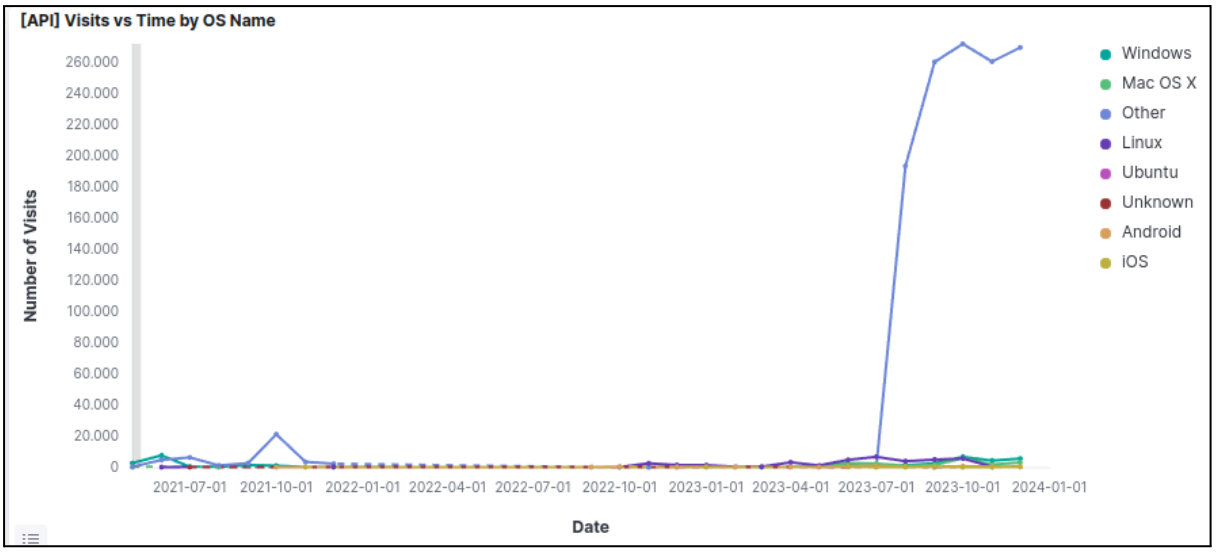

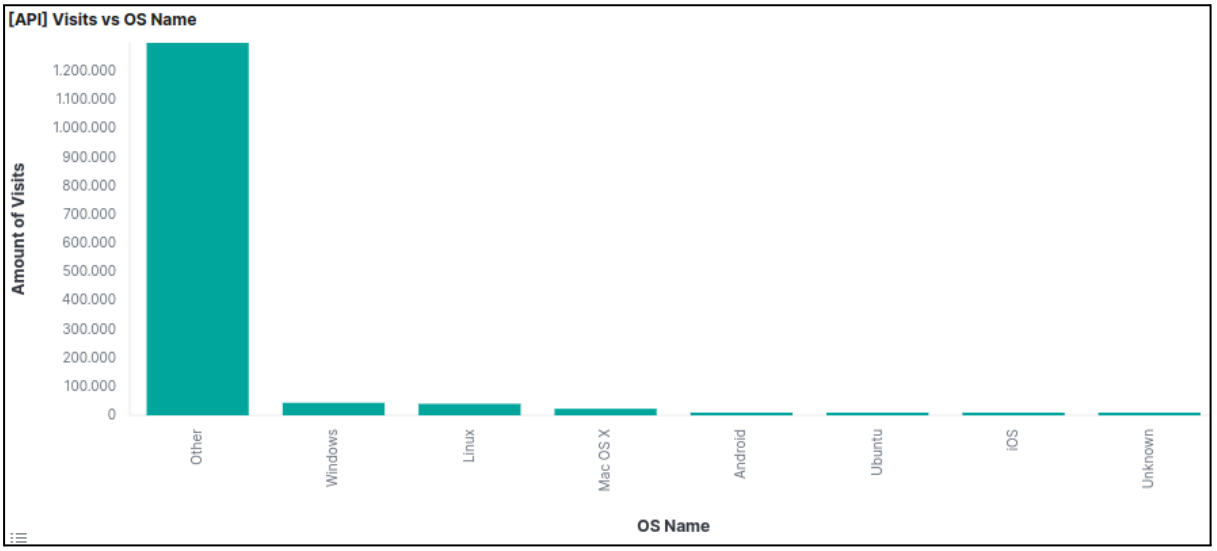

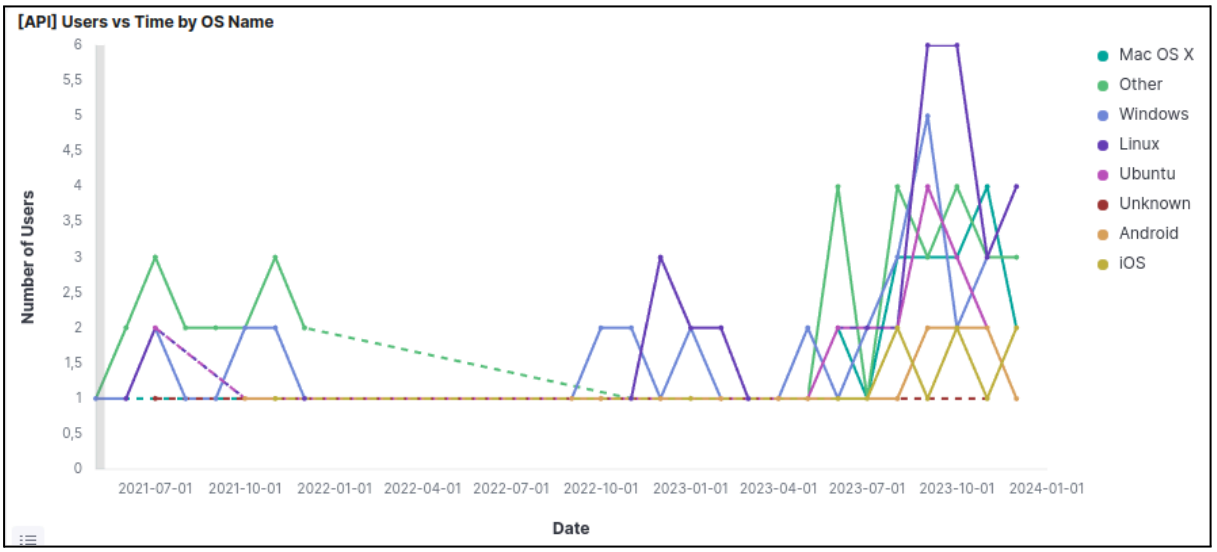

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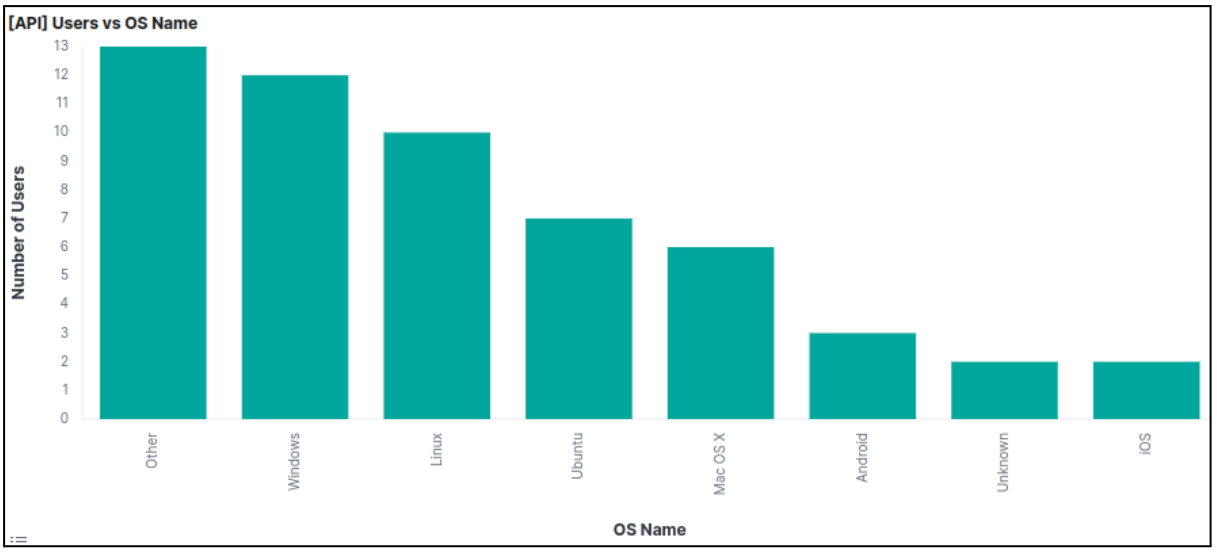
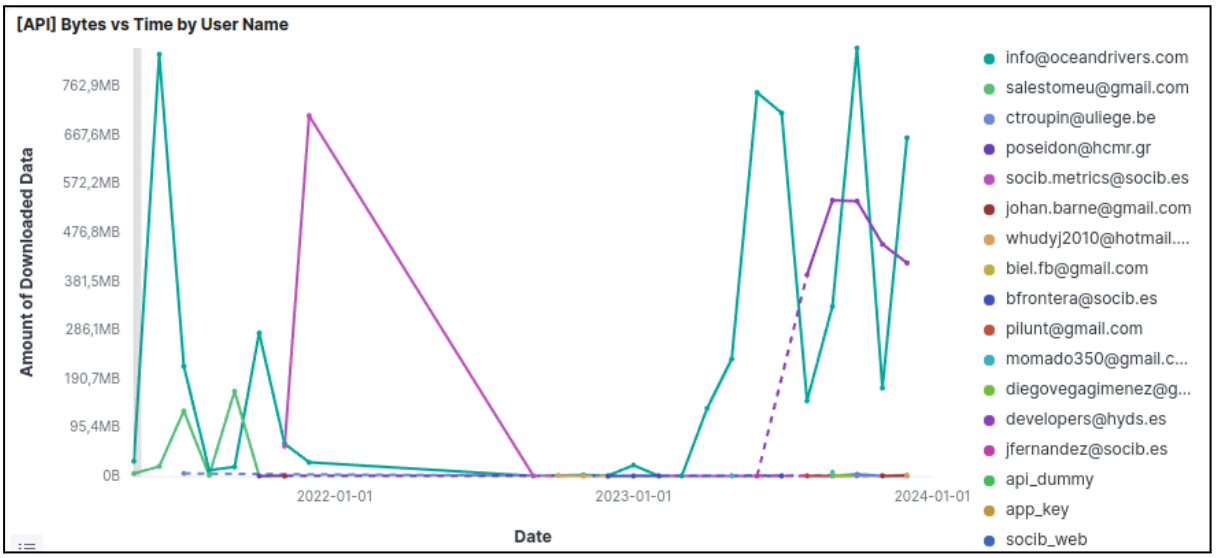
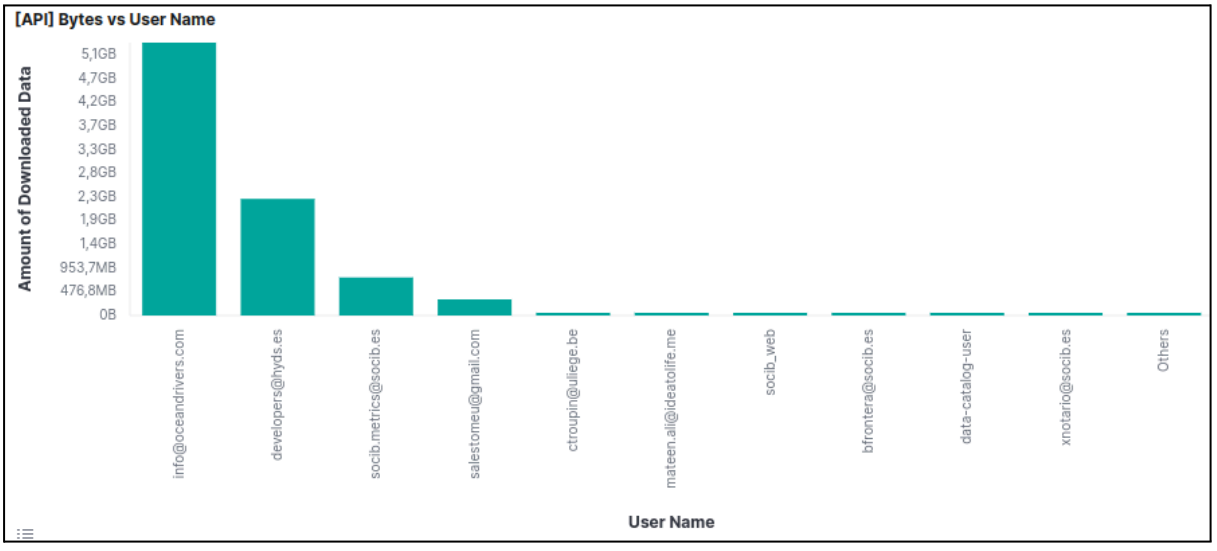
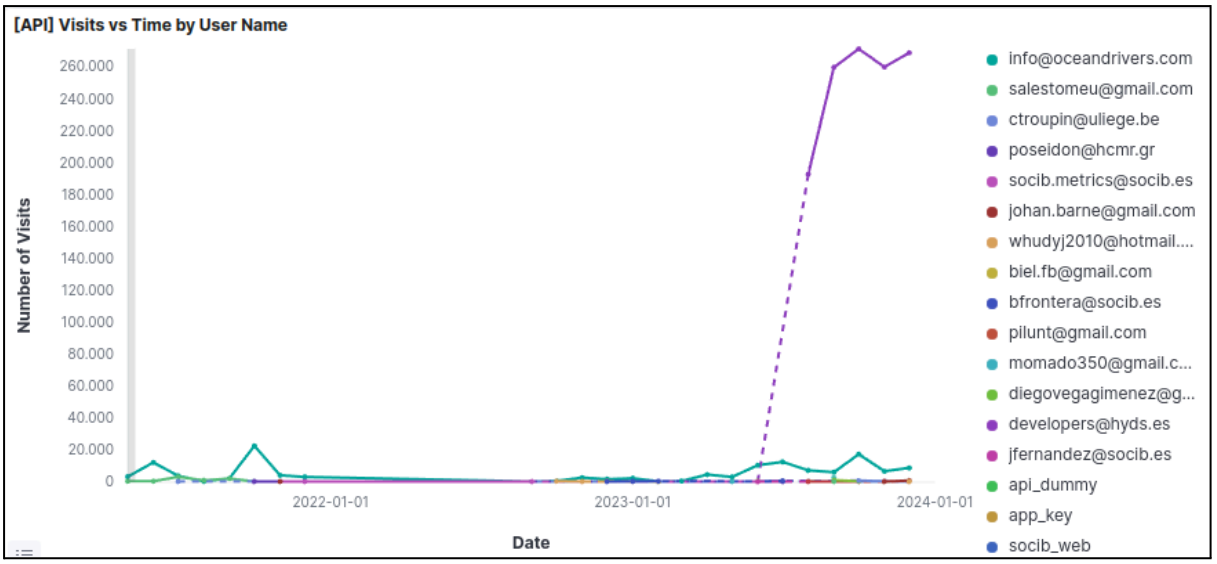
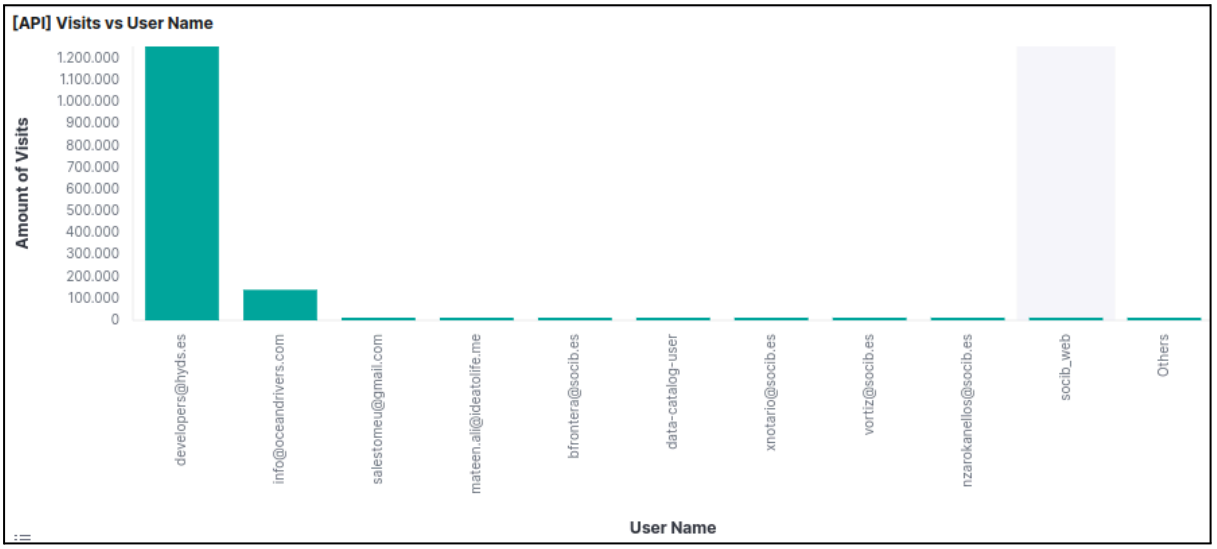










It can be seen how the "data" endpoints have a bigger proportion of downloaded data than visits. This makes sense, as responses from a "data" endpoint will contain, on average, more bytes than other endpoints. Some features of these metrics that are due to it being under testing can be seen:

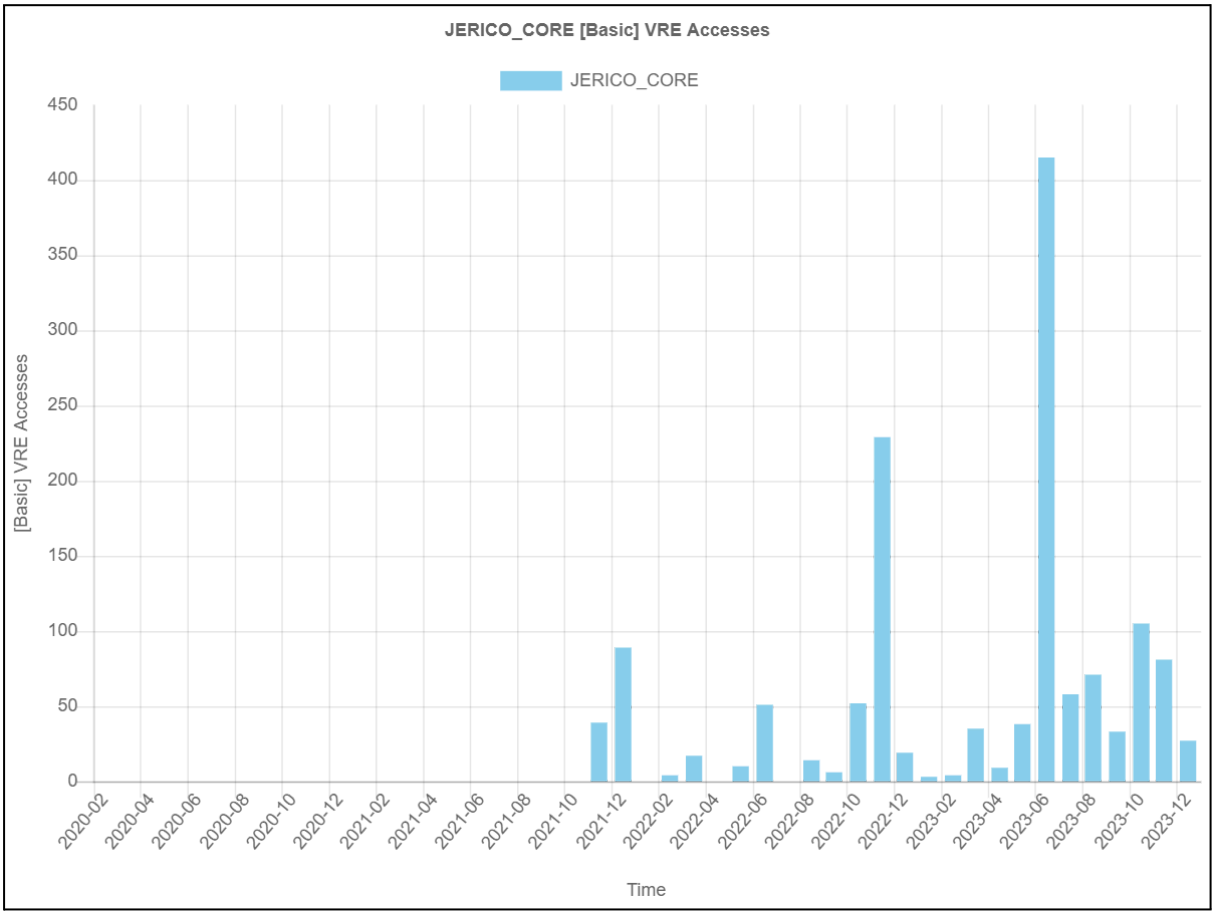
- For such a small number of users, there is a wide range of types of software.
- VAMS has not been able to assign a country to most of the IPs the server sees. This indicates that most of the traffic is coming from IPs of the internal SOCIB network.
- No user has ever arrived at the API endpoints via a referrer.

Annexe 2.18 JERICO-CORE (ID 33.2)

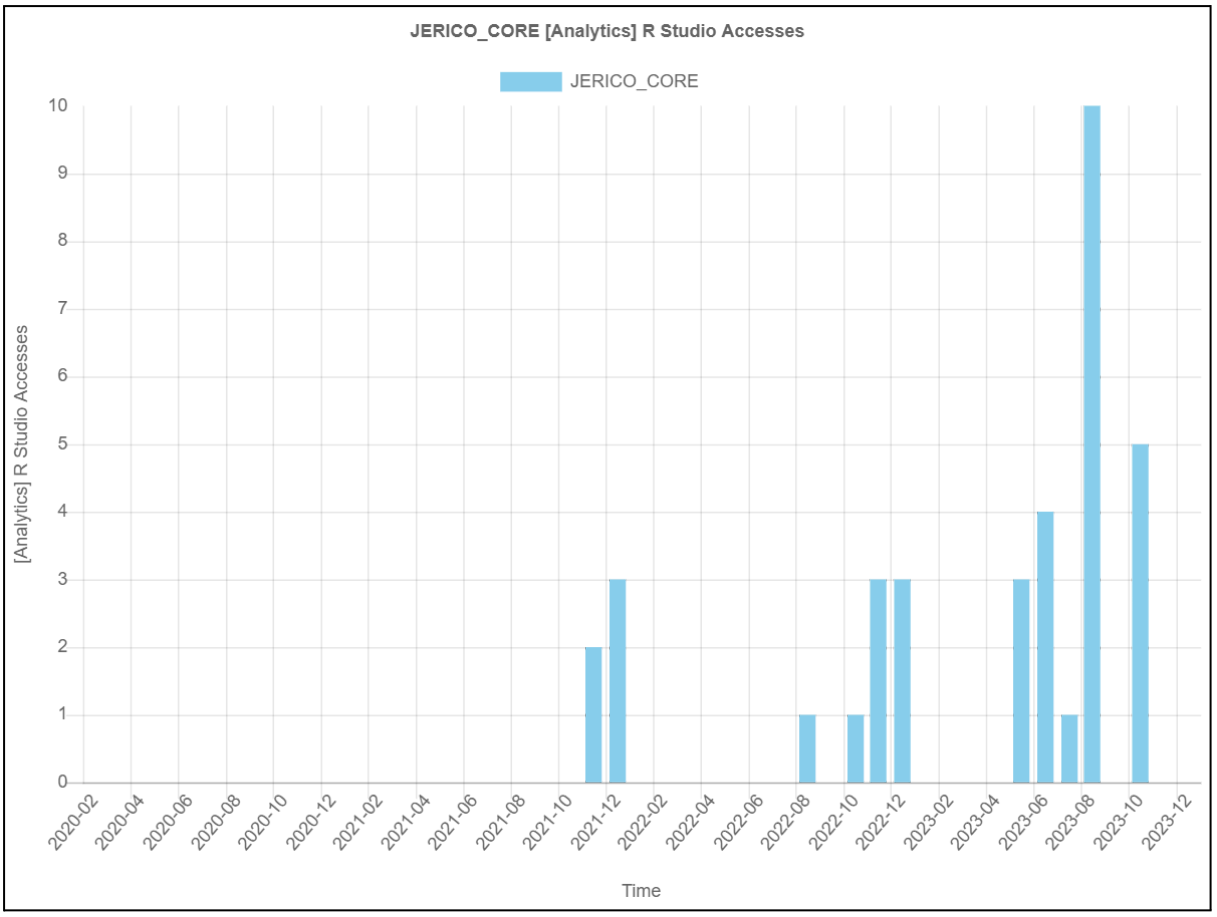
In this report, the inaugural metrics of the JERICO-CORE VRE is portrayed, marking its debut appearance in WP11 analysis. These metrics, sourced from https://blue-cloud.d4science.org/, provide a comprehensive view of the VRE's performance and user engagement since November 2021. The diverse range of visual representations

sheds light on access patterns, user growth, social interactions, and method invocations, guiding insights for strategic enhancements.

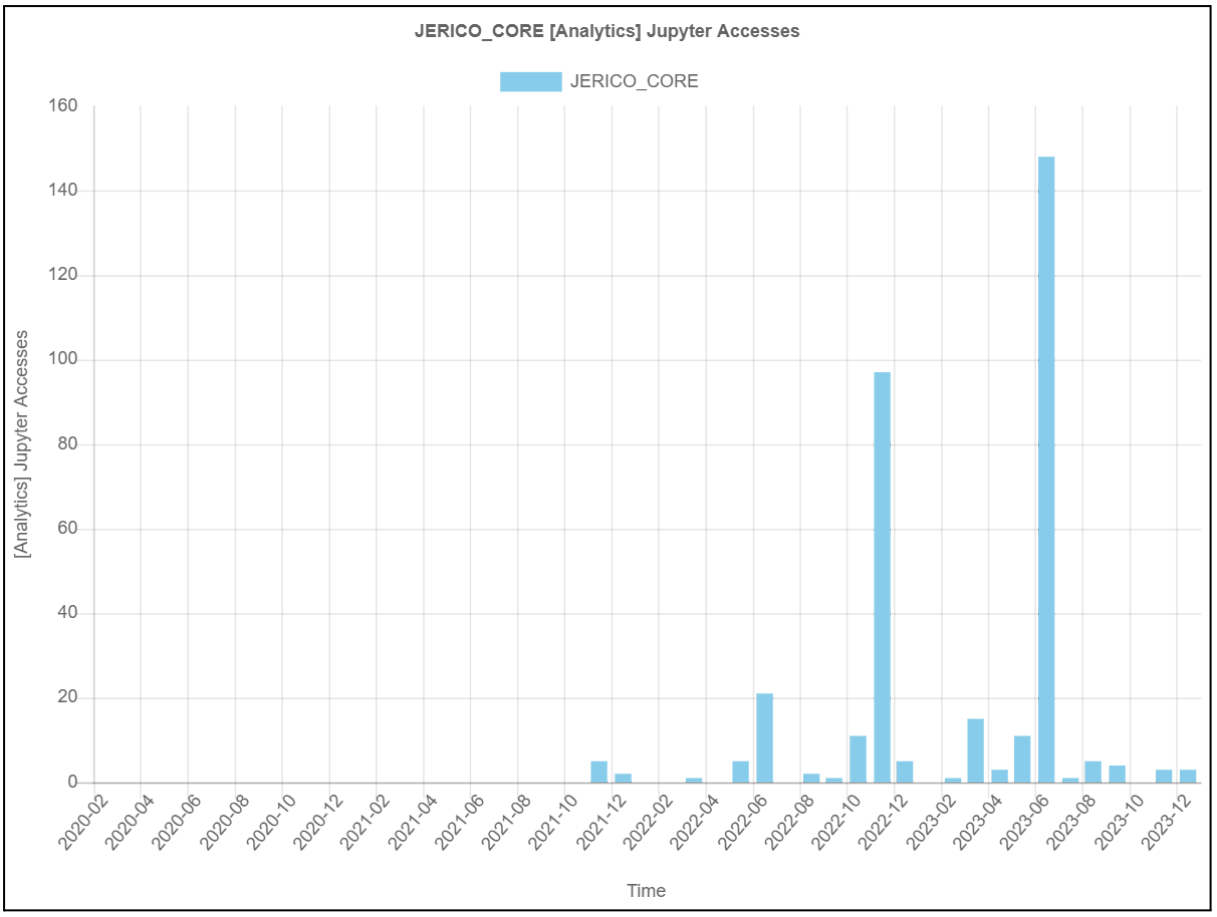
The initial bar graph showcases the JERICO-CORE Basic VRE Accesses per month, spanning from November 2021 to December 2023. This representation offers a concise overview of the VRE's accessibility trends, providing valuable insights into user engagement over time.



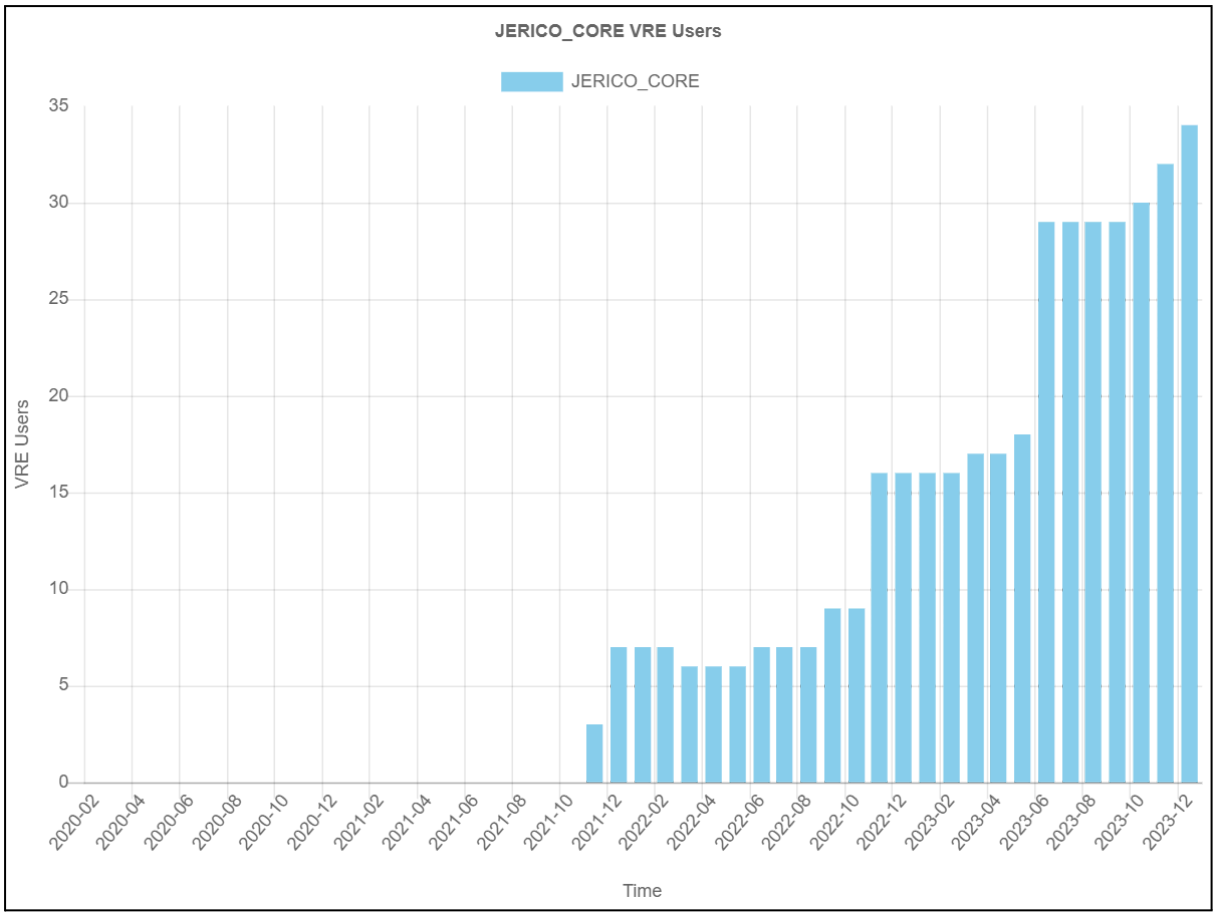
The second bar graph hones in on Analytics R Studio Accesses, presenting a visual representation of user interactions within this specific environment. This provides a focused analysis of the platform's utility for statistical computing and data analysis tasks.



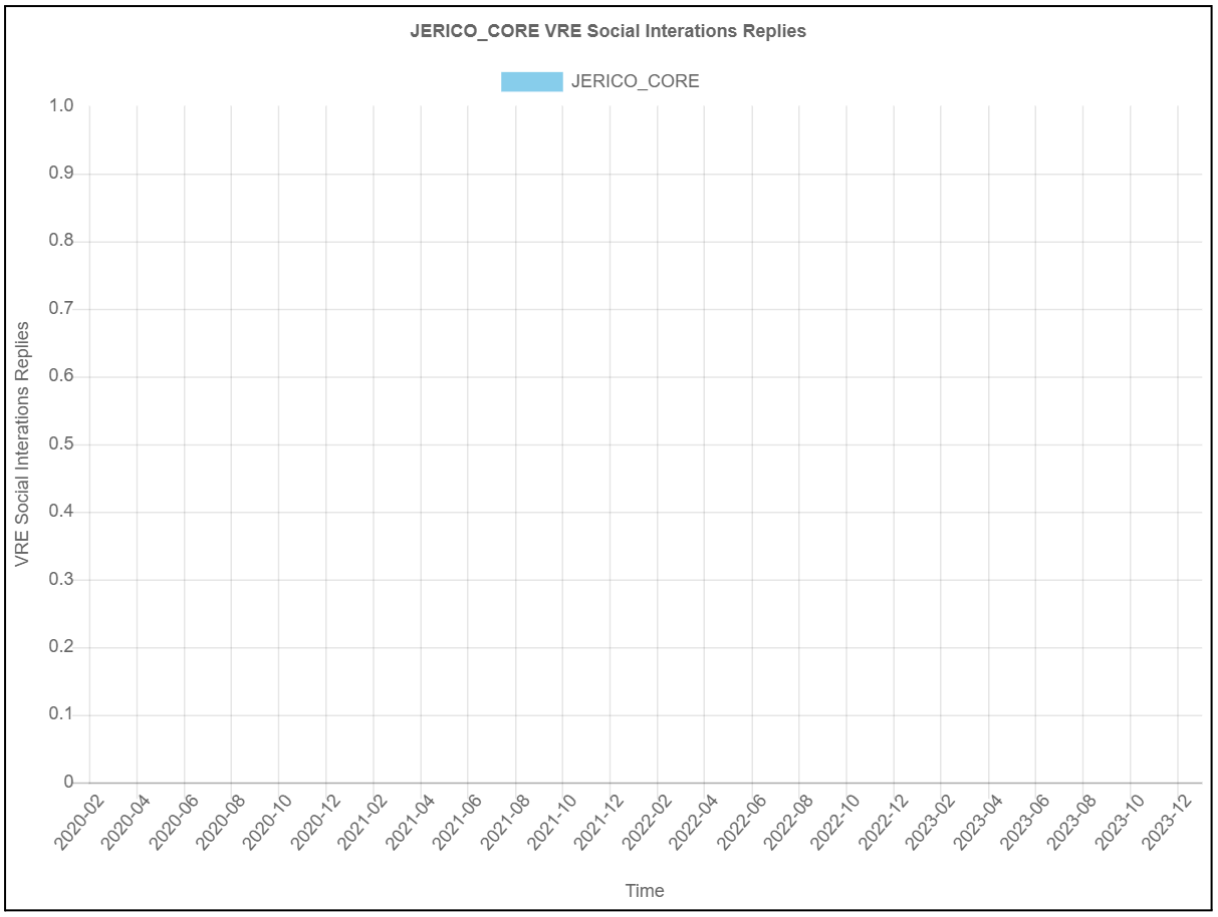
The third bar graph delves into Analytics Jupyter Accesses, offering insights into user engagement and preferences within the Jupyter environment. This visual aids in understanding the usage patterns of this versatile tool for interactive computing and data analysis.



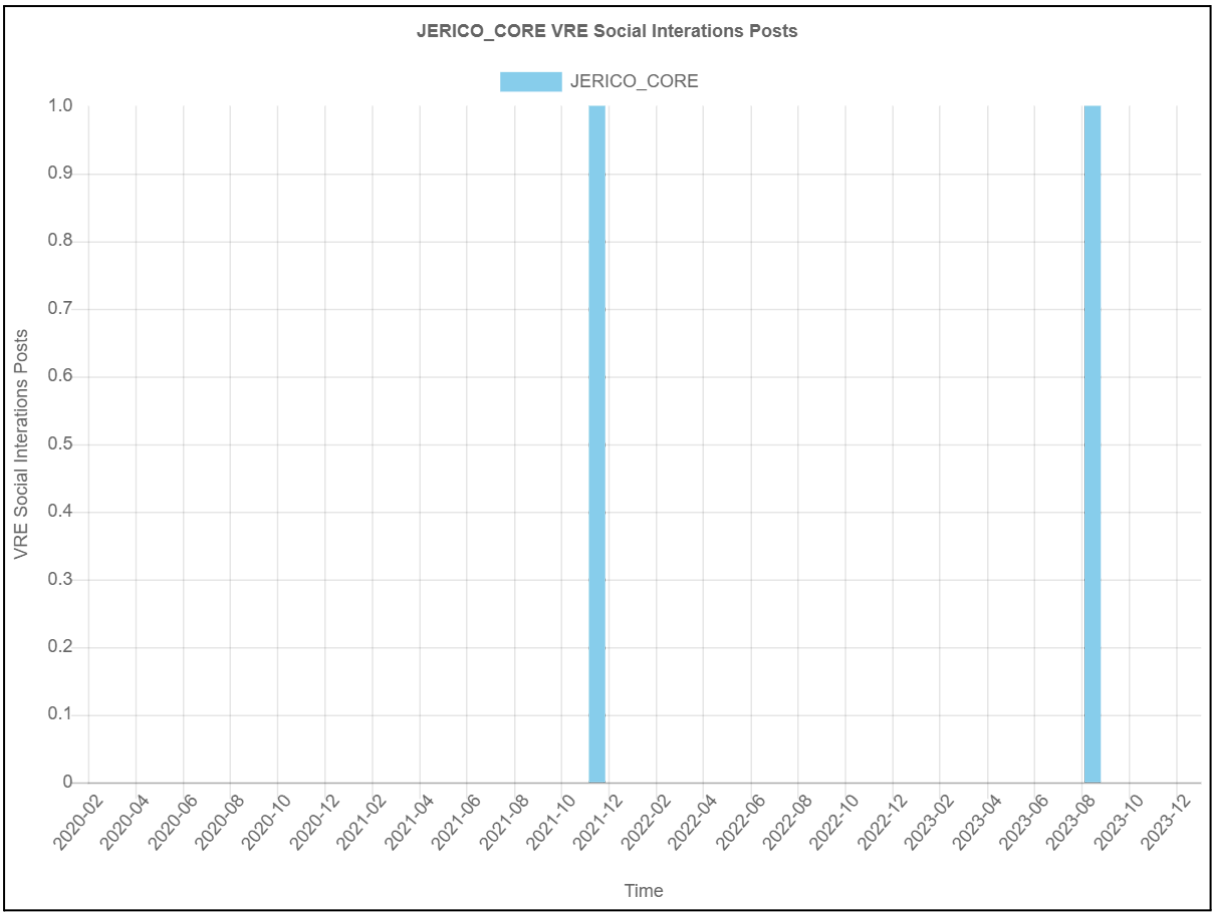
The fourth visual representation portrays the growth trajectory of VRE users over time, highlighting the increasing adoption and popularity of the JERICO-CORE VRE.



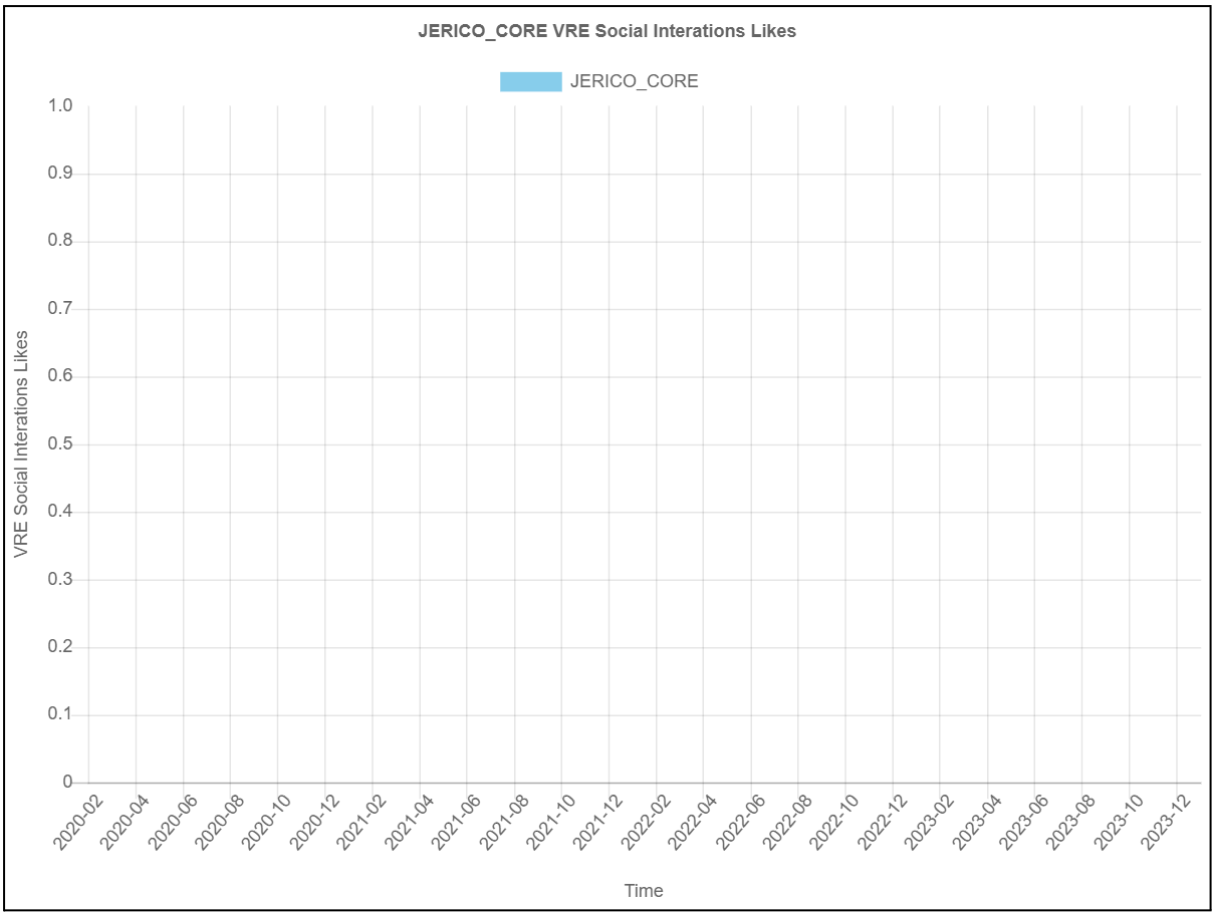
The fifth representation emphasizes the need for increased focus on social interactions by showcasing Social Interaction Replies. This graph serves as a strategic indicator, signaling potential areas for improvement and increased user engagement.



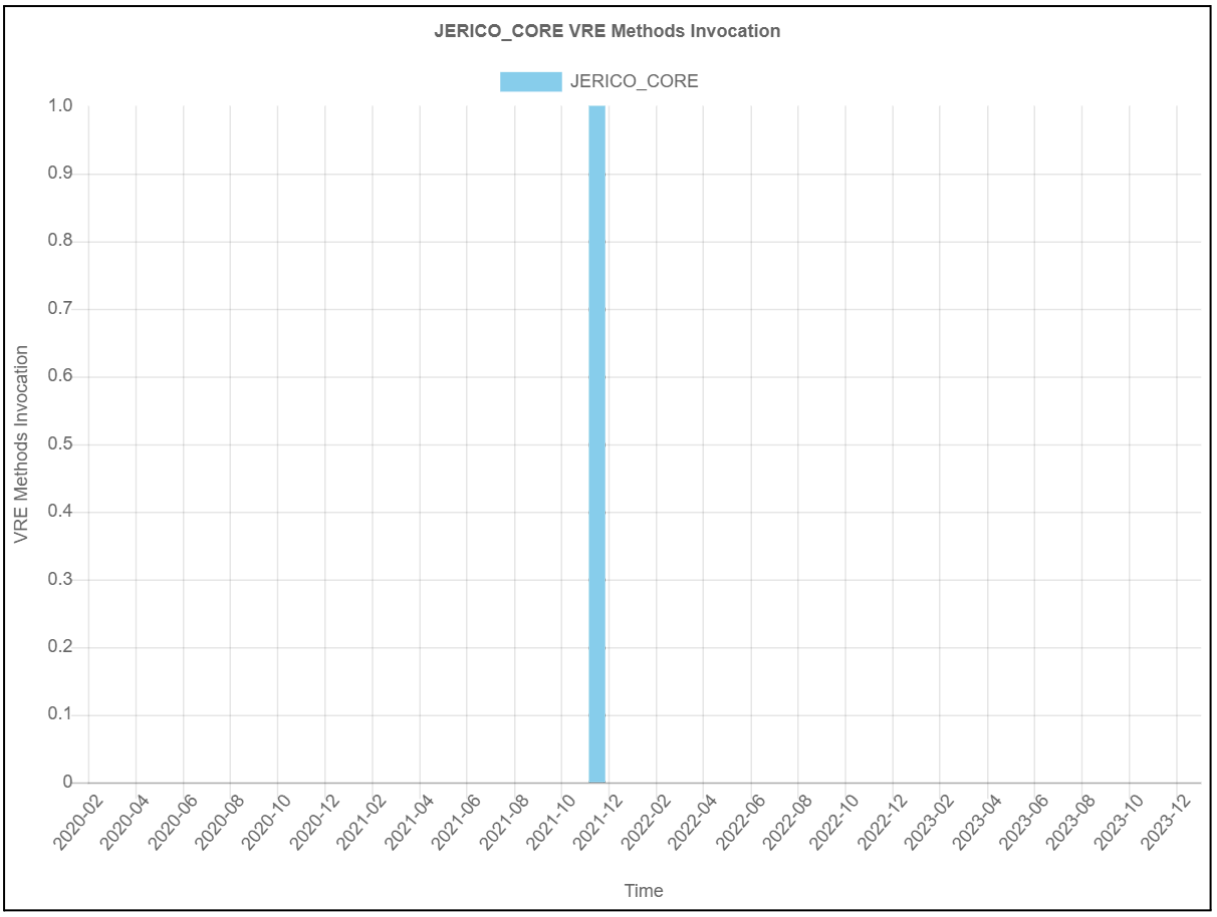
The sixth image presents instances of VRE Social Interaction Posts in November 2021 and August 2023, offering a snapshot of community engagement and communication milestones.



Contrastingly, the seventh image reveals the absence of VRE Social Interaction Likes, prompting considerations for strategies to foster user appreciation and acknowledgment within the platform, where activity can be seen in November 2021 and August 2023.



Concluding this analysis, the eighth graph displays the temporal evolution of VRE Methods Invocations, with a notable instance in November 2021. This visual provides insights into the usage patterns of specific functionalities within the JERICO-CORE VRE.



Together, these visual representations contribute to a comprehensive understanding of the JERICO-CORE VRE's performance and user engagement, guiding future strategies for enhancement and community-building.

Annexe 2.19 SYKE-ALG@LINE (ID 34.1)

The following plots' data are obtained via a Google Form that SYKE staff kindly fill out monthly based on their Google Analytics reports.

First, the volume of traffic is analyzed. Then, metrics related to session quality (session duration and bounce rate) are shown. Finally, the origin of traffic is analyzed.

In the next images, a numeric representation of the access metrics and the users' analysis are presented.

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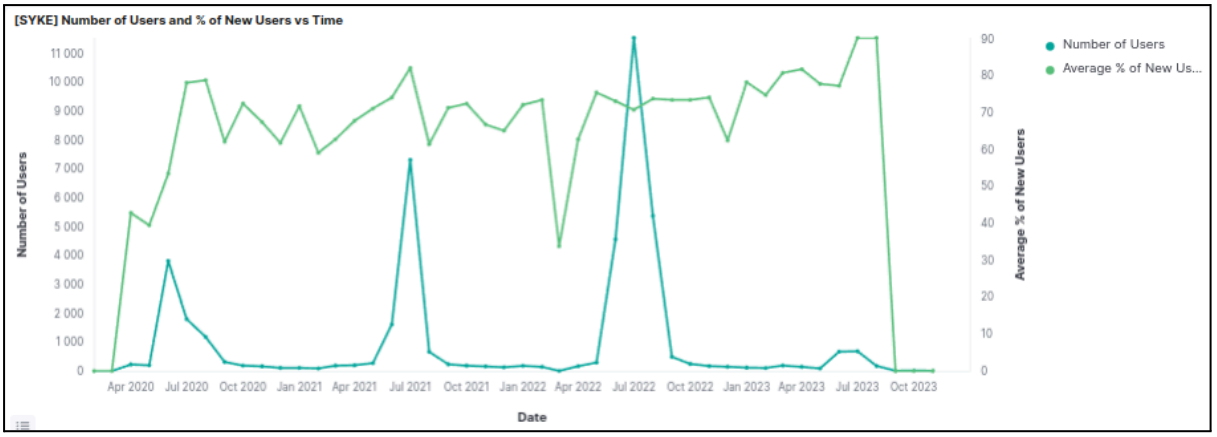
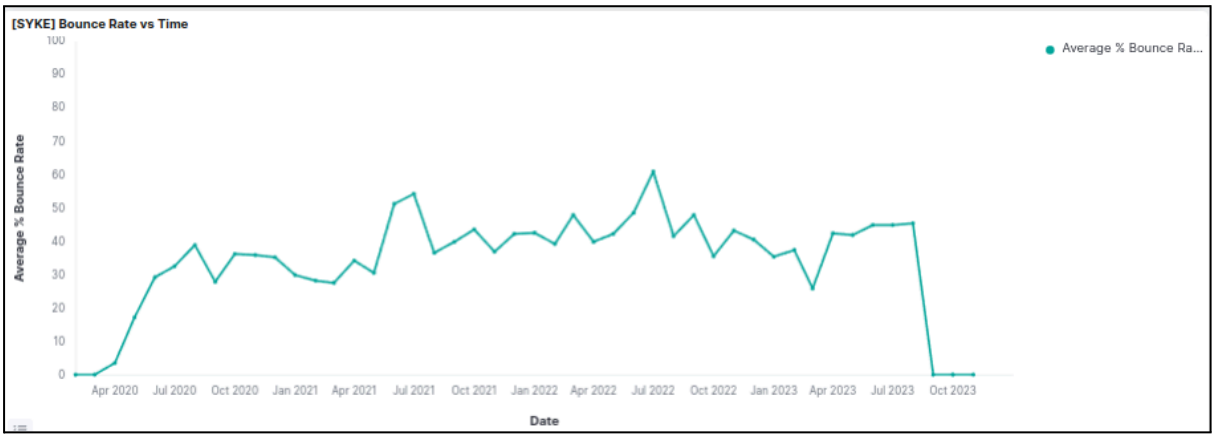
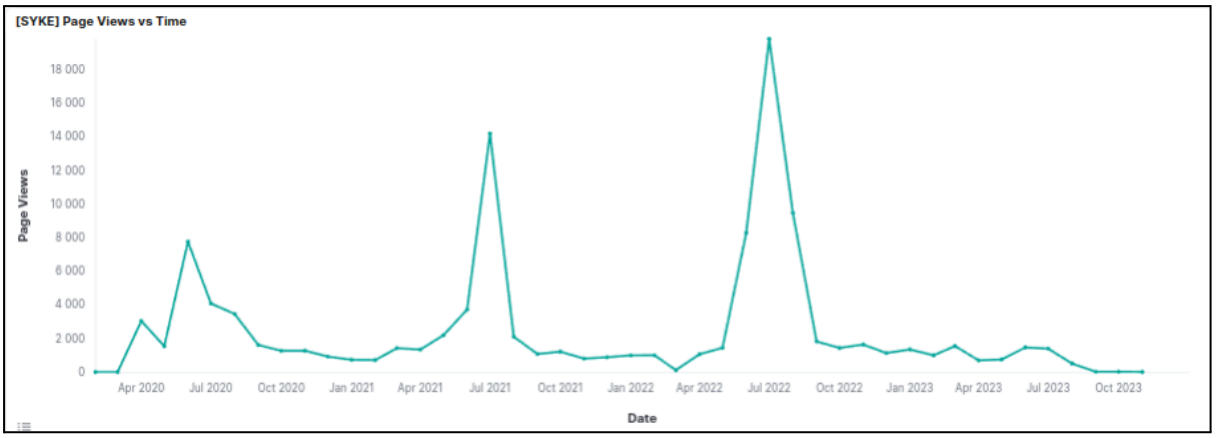
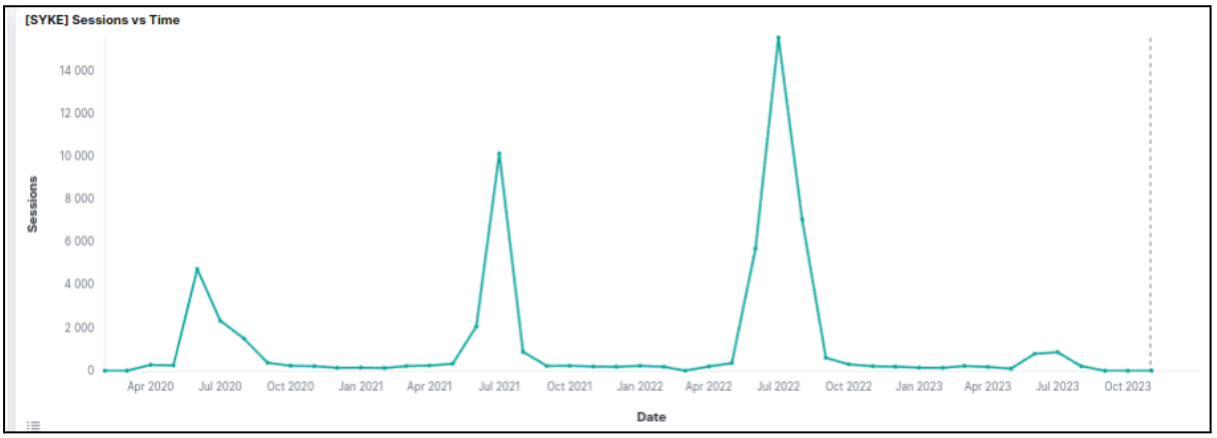


Next, a temporal analysis of the pageviews and sessions has been added.

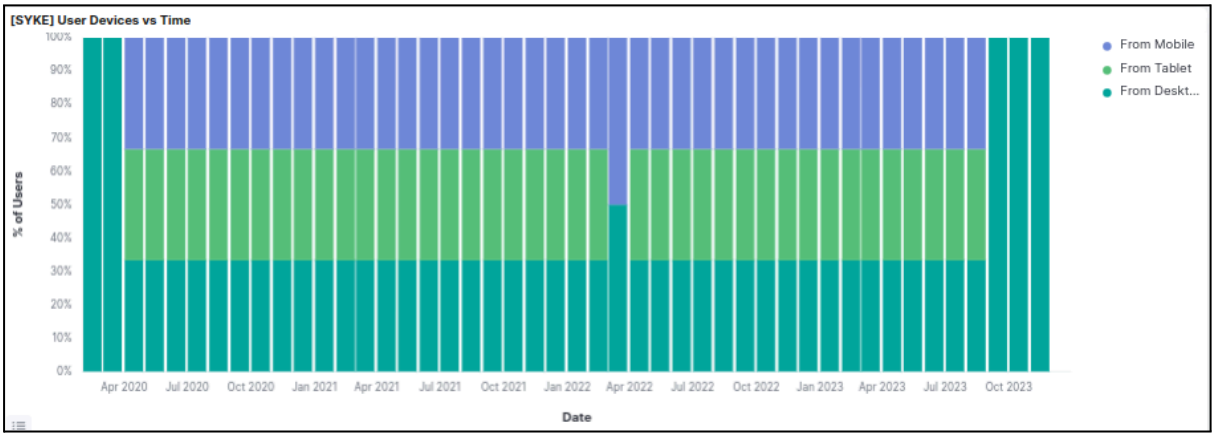


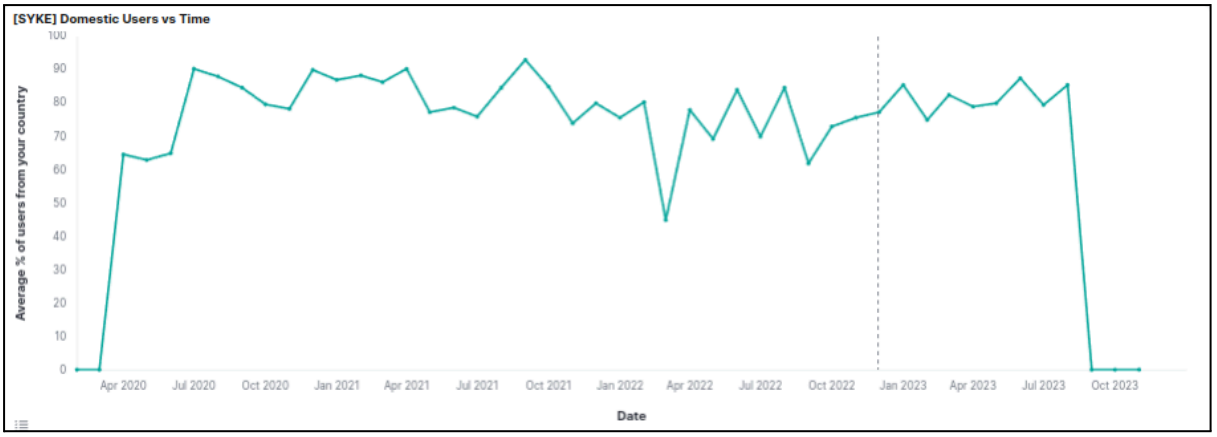
In the following images, metrics related to the on-page user experience: bounce rate, and session duration are analyzed.

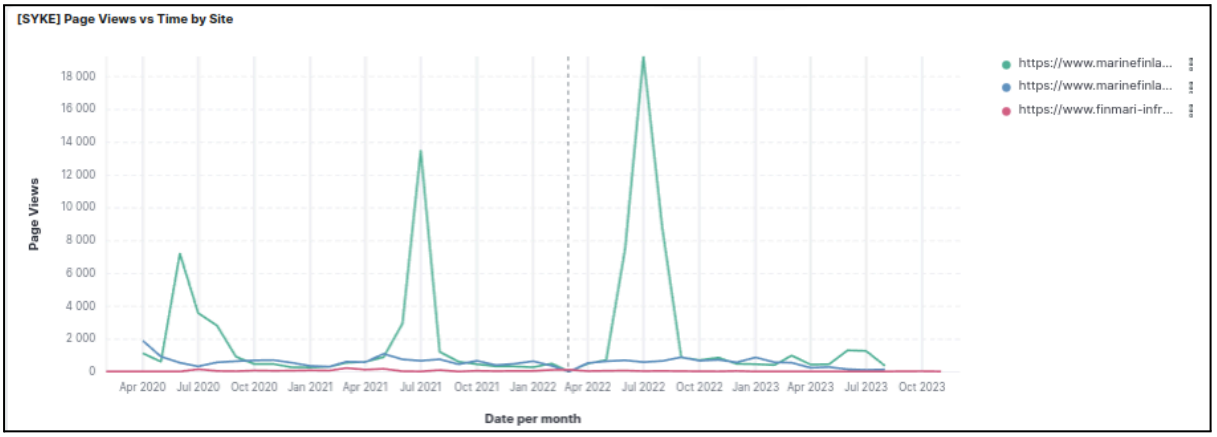


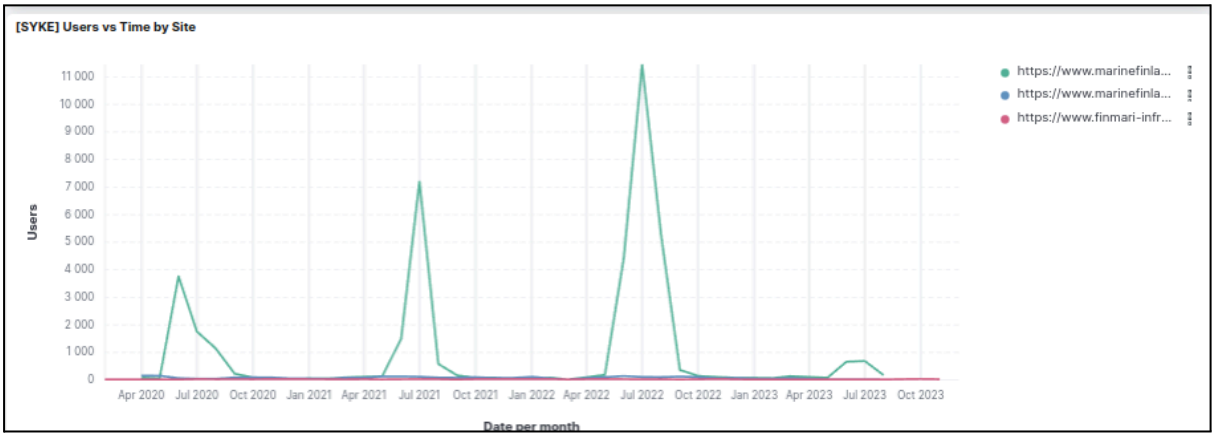


Finally, the user origin is analyzed: both by device and country of origin.









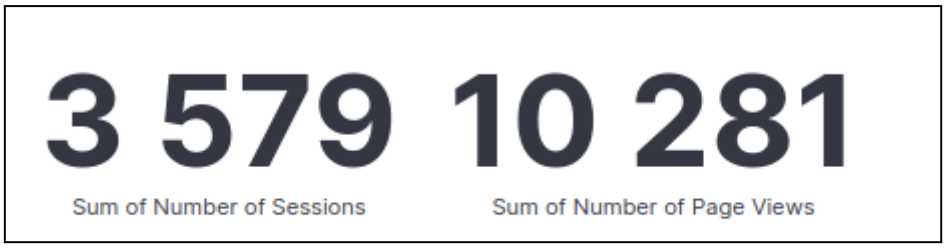
Annexe 2.20 Keri Island Research Station (ID 35.1)

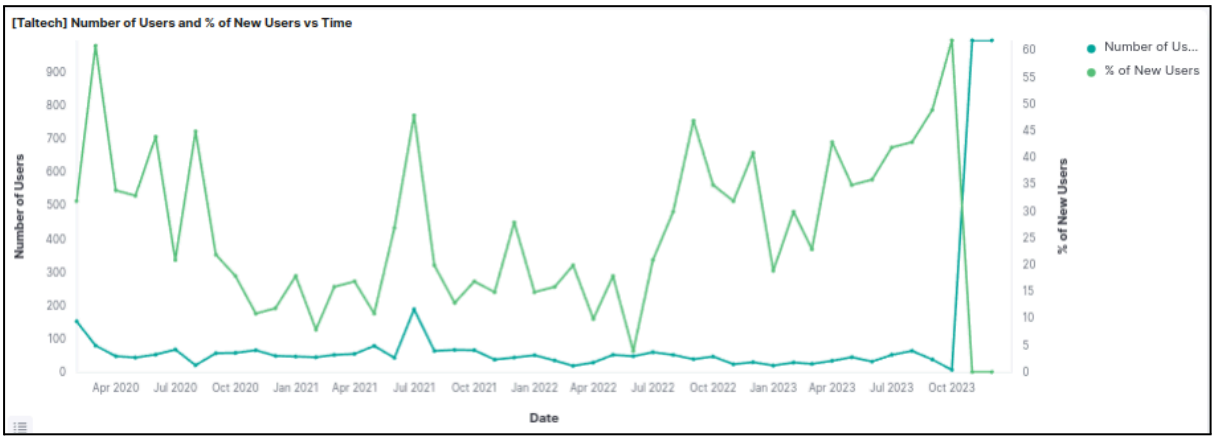
The data underlying the following plots are obtained via a Google Form that Taltech staff kindly fill out monthly based on their Google Analytics reports.

First, the volume of traffic is analyzed. Then, metrics related to session quality (session duration and bounce rate) are shown. Finally, the origin of traffic is analyzed.

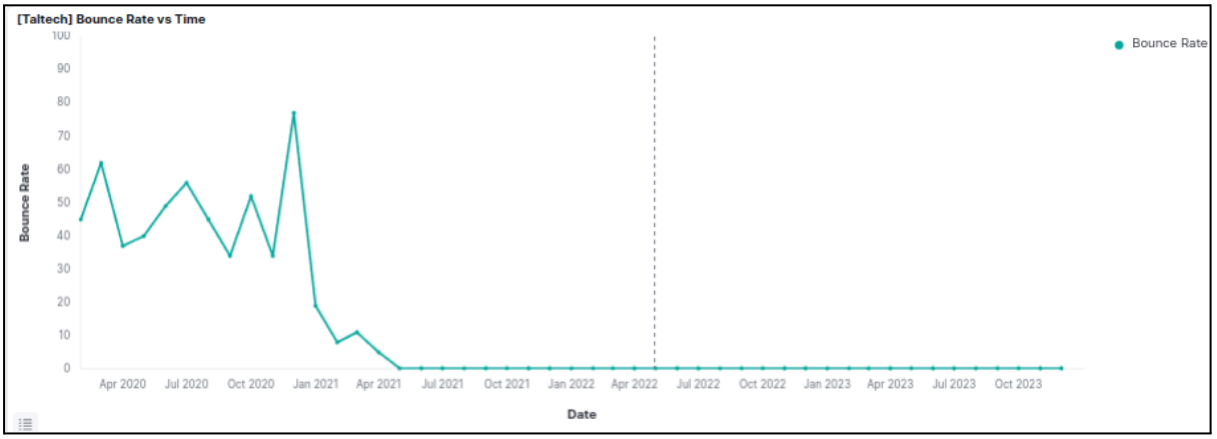
The next two images present a numeric representation of the access metrics and the user's

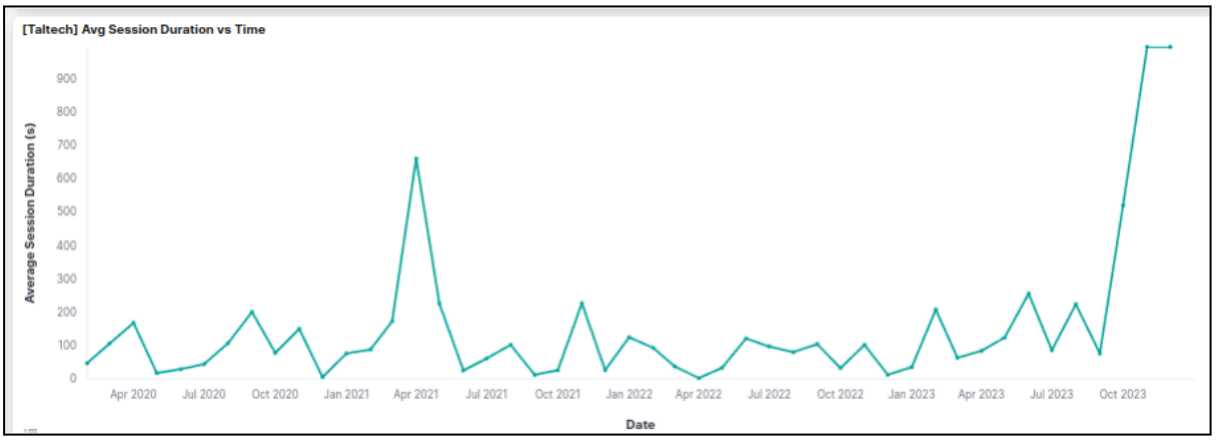
analysis.



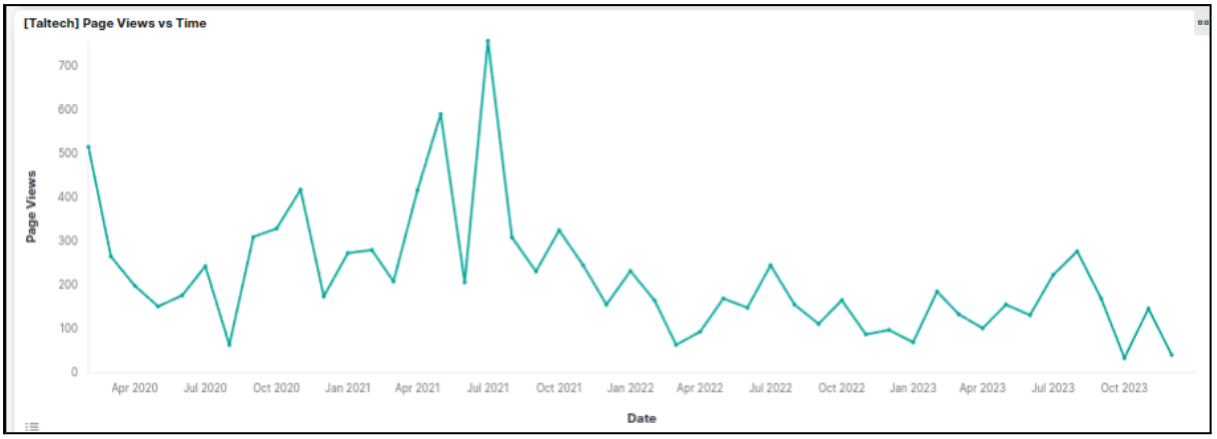


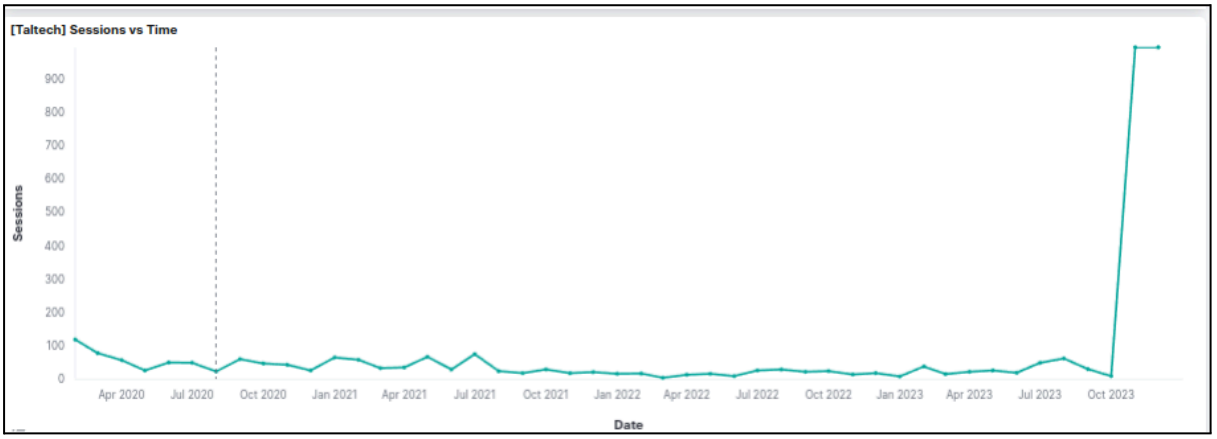
Next, a temporal analysis of the pageviews and sessions has been added.



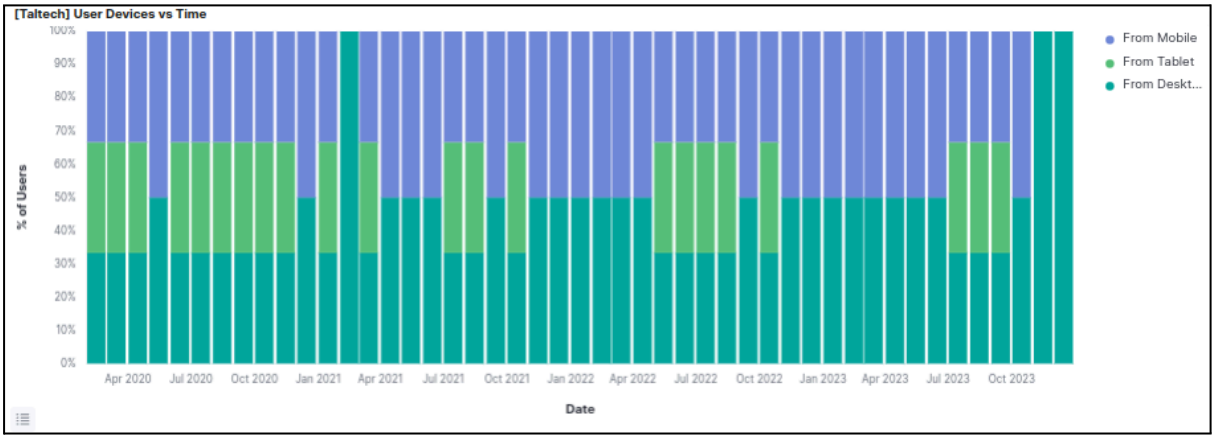


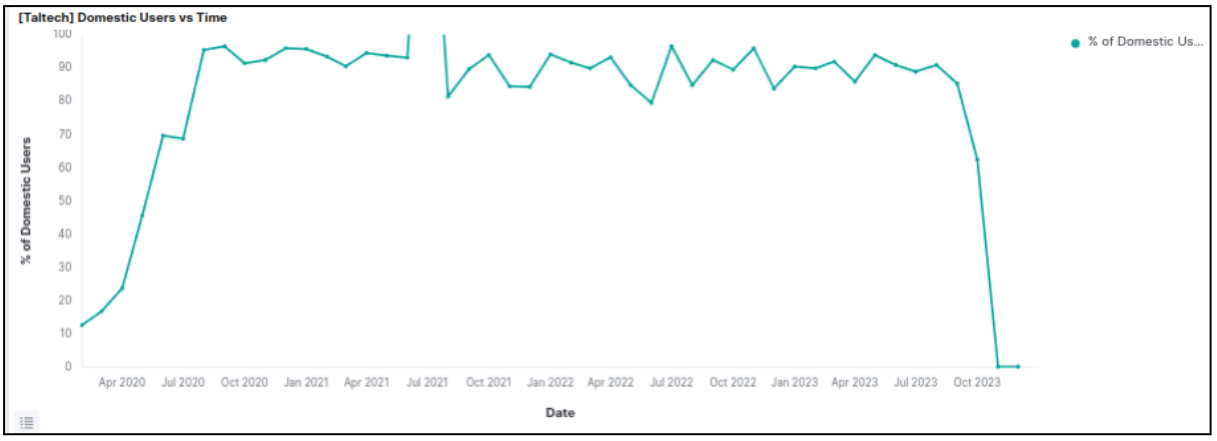
In the following image, metrics related to the on-page user experience: bounce rate, and session duration are analyzed.





Finally, the user origin is analyzed: both by device and country of origin.





Annexe 2.21 OBPS-OTGA (ID 36.1)

This VA infrastructure consists of three parts: AquaDocs, OceanTeacher, and OceanBestPractices. All of them are monitored with Google Analytics.

The data underlying all the plots in this annexe have been obtained from the Google Analytics API.

Nevertheless, it is imperative to acknowledge a temporary lapse in data coverage from July 2023 to December 2023. This disruption arises from the deprecation of the old Analytics API by Google, coupled with the transition to version 4, rendering it incompatible with the established metric system.

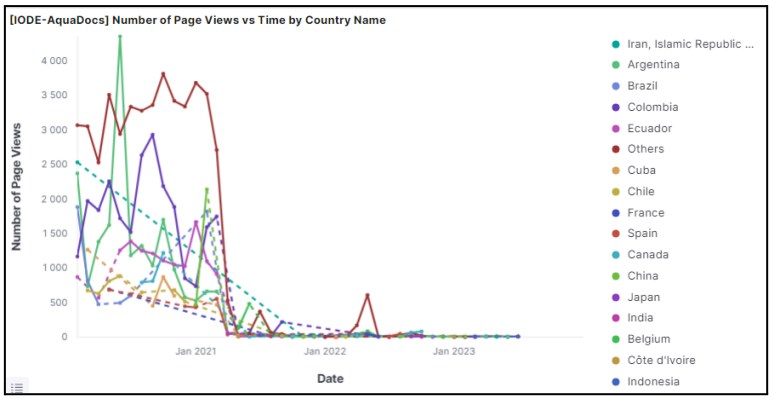
Therefore, and as conducted with other partners, separate graphs with data from July 2023 to December 2023 will be shown for OceanTeacher and OceanBestPractices.

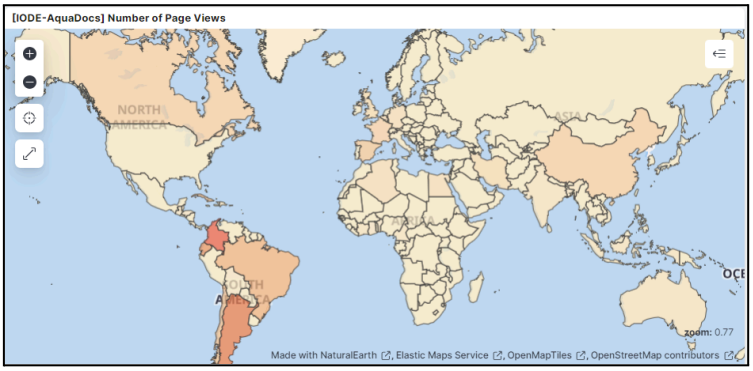
AquaDocs

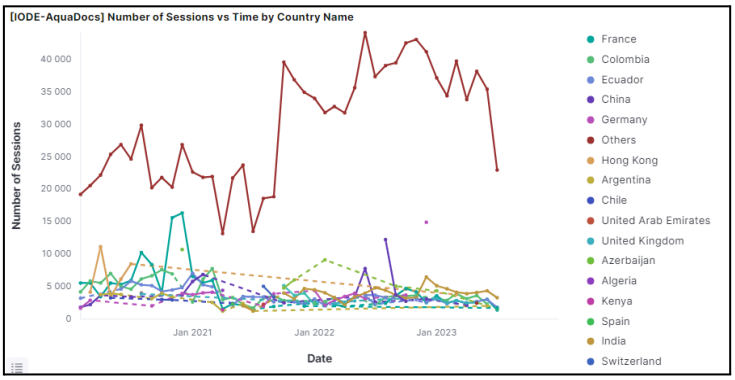
First, the overall access metrics will be presented. Then, the following analyses are included: geographic analysis, analysis by user type (new vs returning), bounce rate analysis, user device analysis, and traffic source analysis.

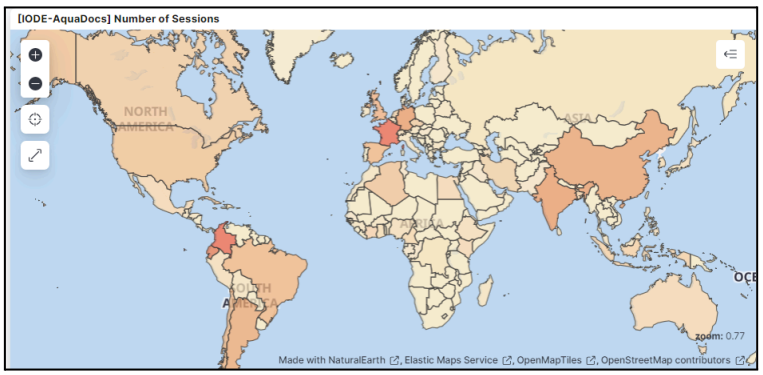
The next image presents the general access metrics in a numeric form.

The following images contain the geographic analysis of the traffic.









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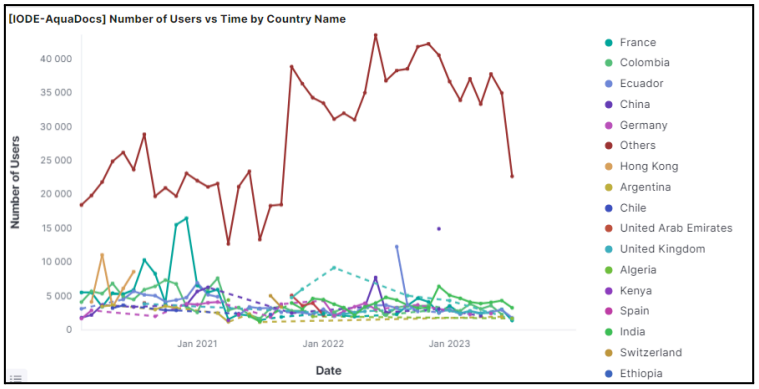
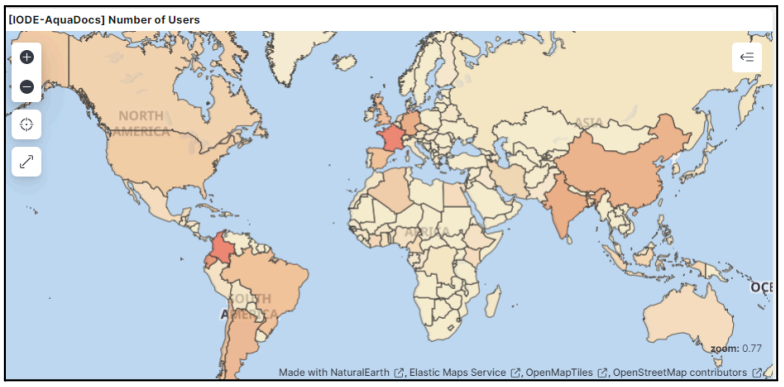
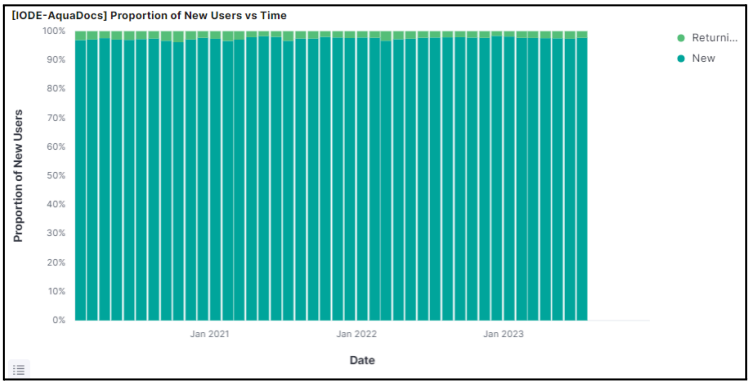
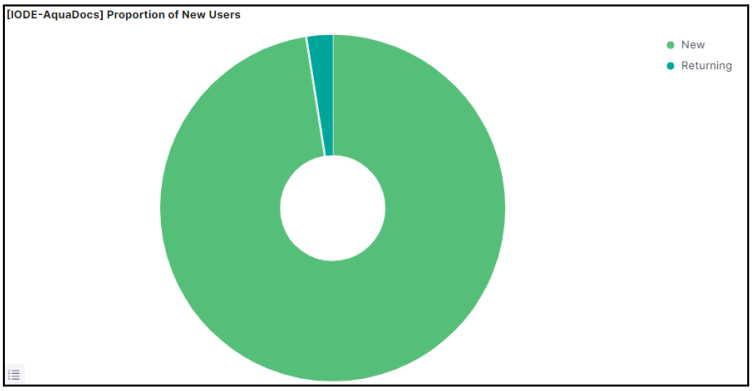


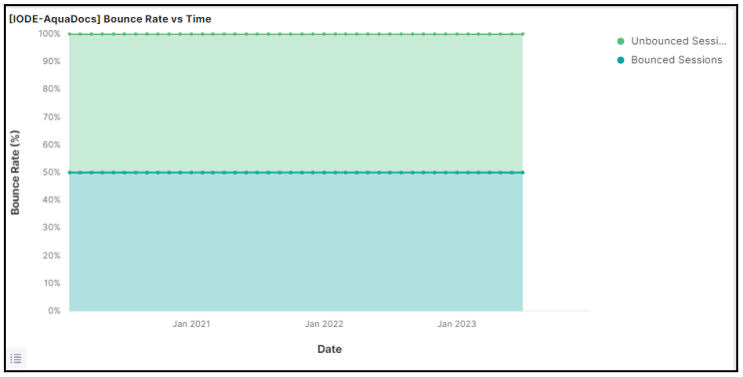


Next, plots analyzing the proportion of new users are shown.

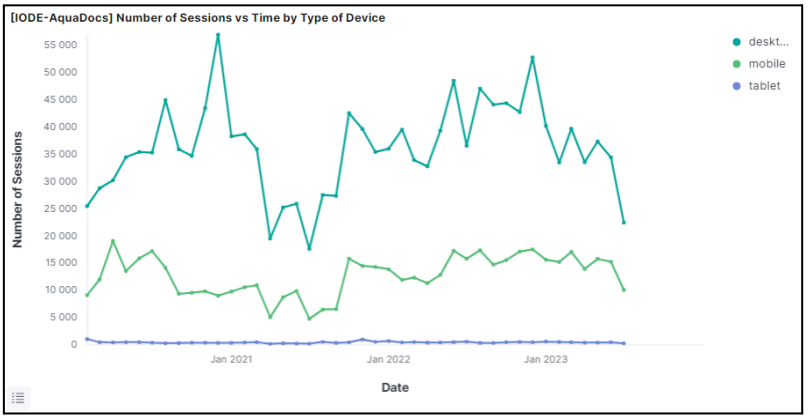


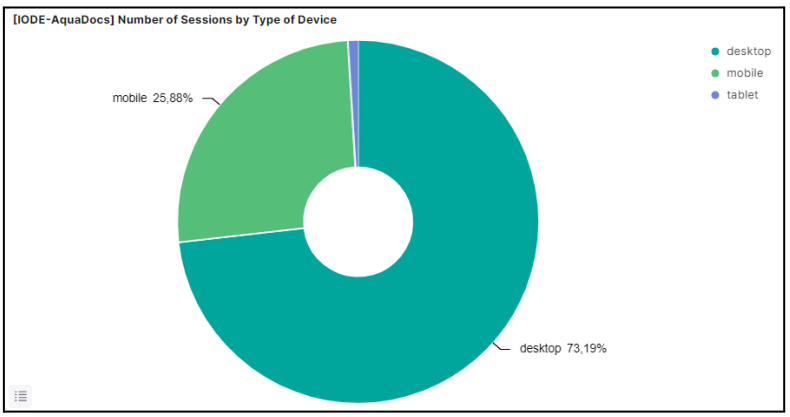


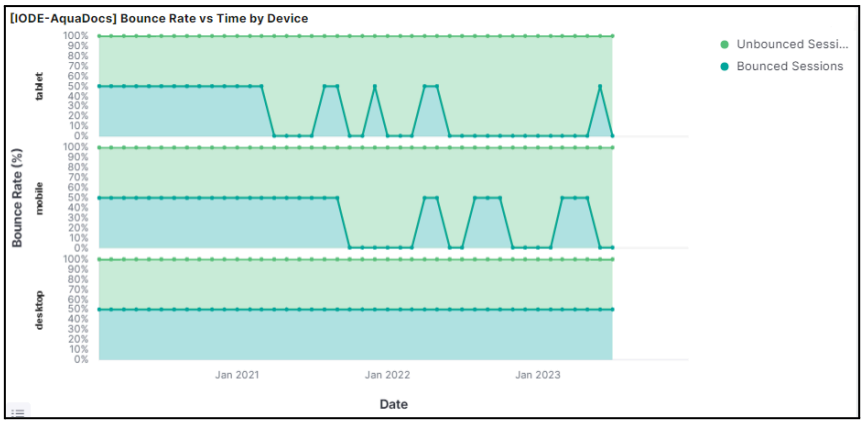
Next, the bounce rate is analyzed.

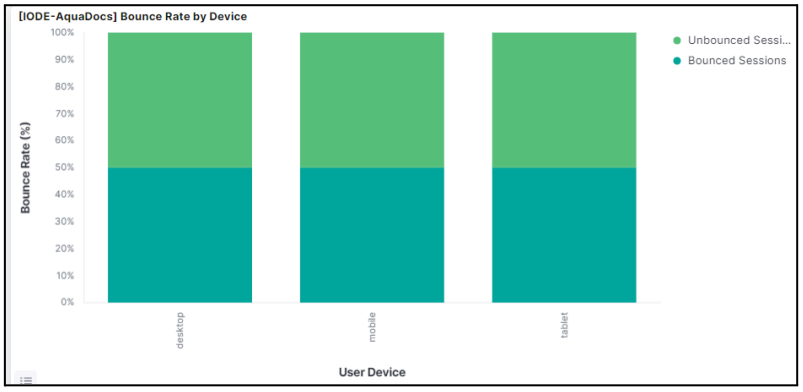


The images below show the proportion of sessions that come from each type of device and the influence of the type of device on the bounce rate.

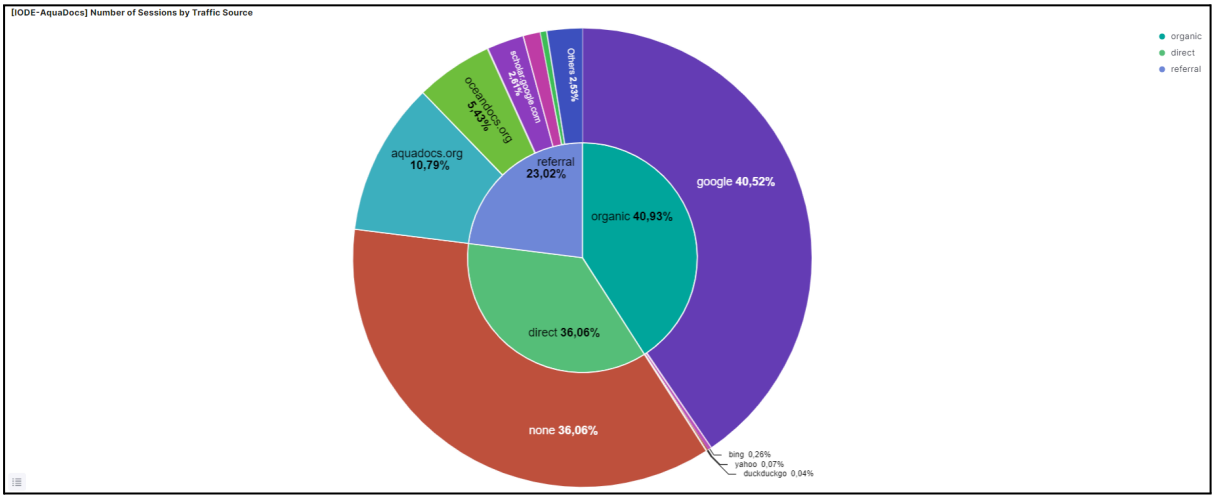








Finally, an analysis of traffic based on the source is presented.

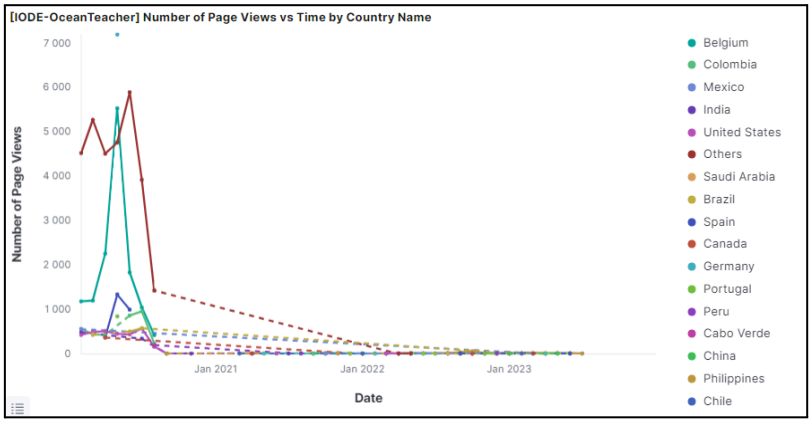


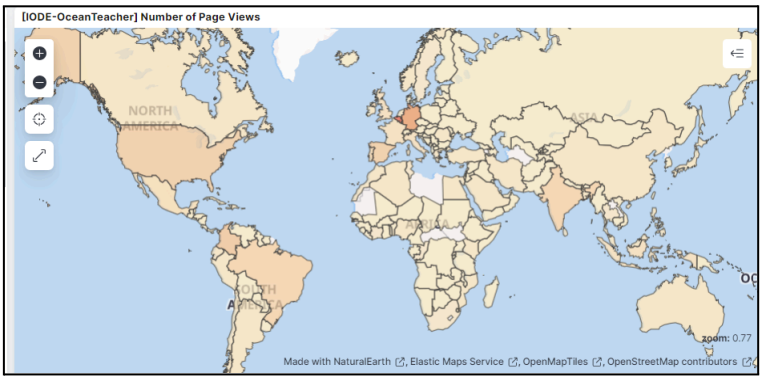
OceanTeacher

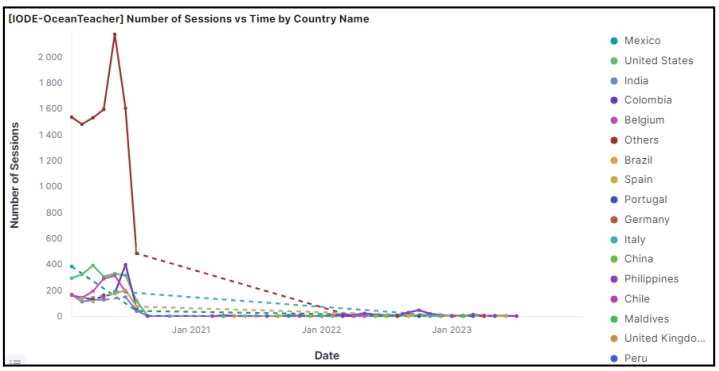
First, the overall access metrics will be presented. Then, the following analysis are included: geographic analysis, analysis by user type (new vs returning), bounce rate analysis, user device analysis, and traffic source analysis.

The next image presents the general access metrics in a numeric form.

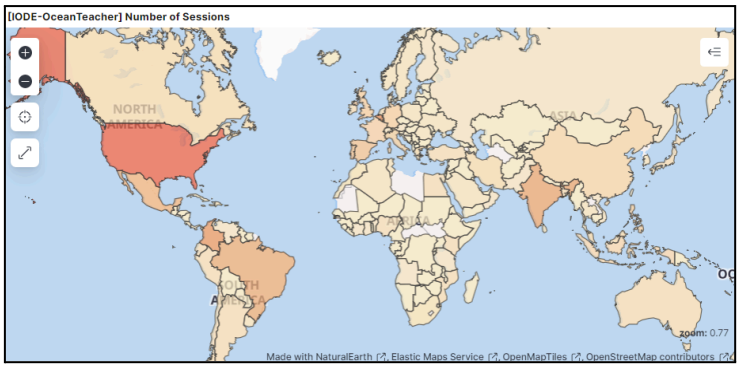
The following images contain the geographic analysis of the traffic.

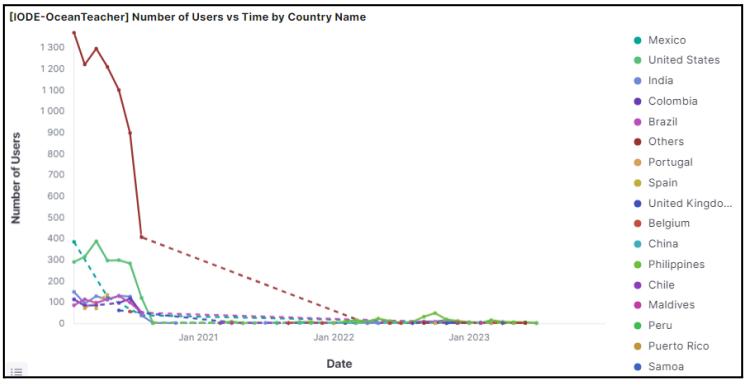


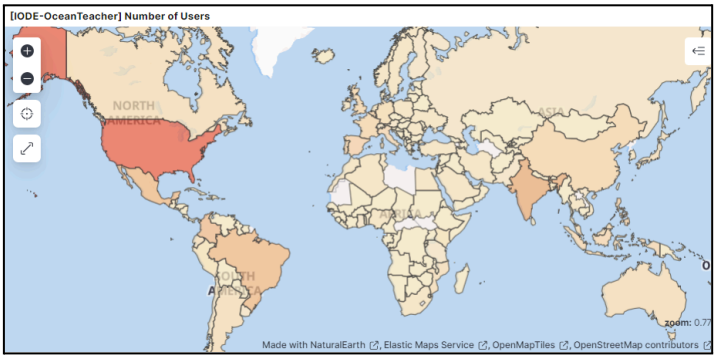




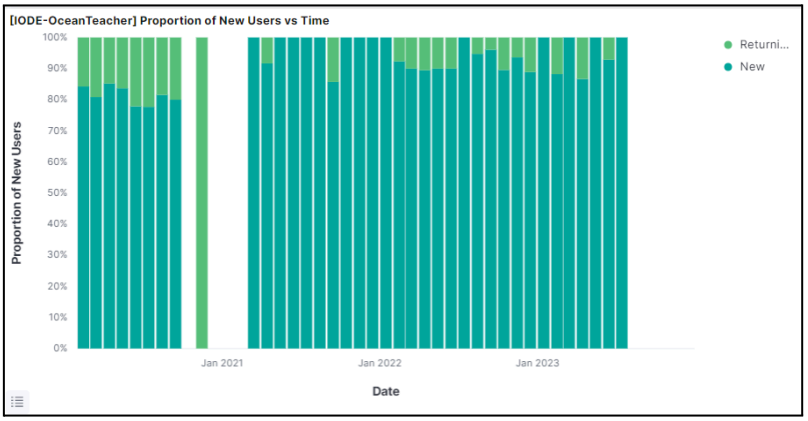
The JERICO-S3 project is funded by the European Commission's H2020 Framework Programme under grant agreement No. 871153. Project coordinator: IFREMER, France.

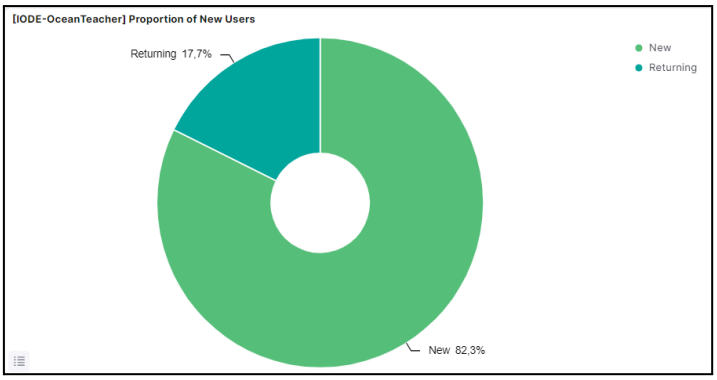




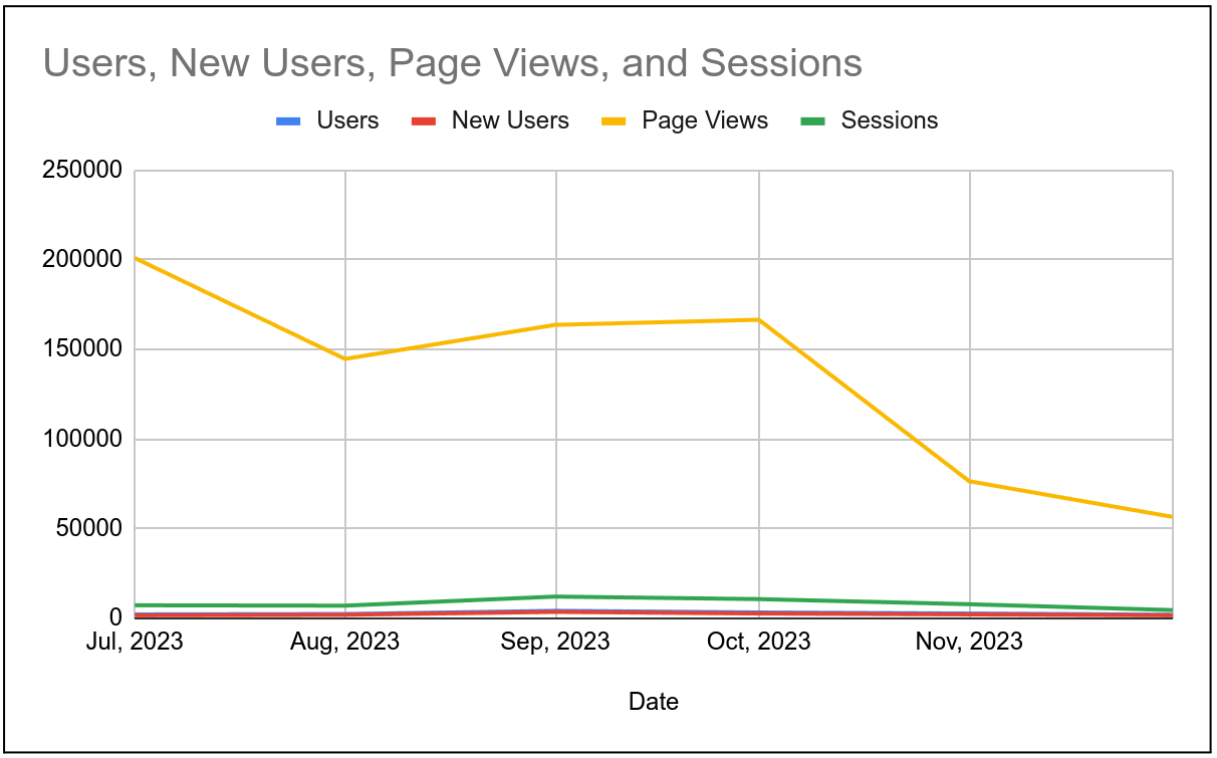


Next, plots analyzing the proportion of new users are shown.

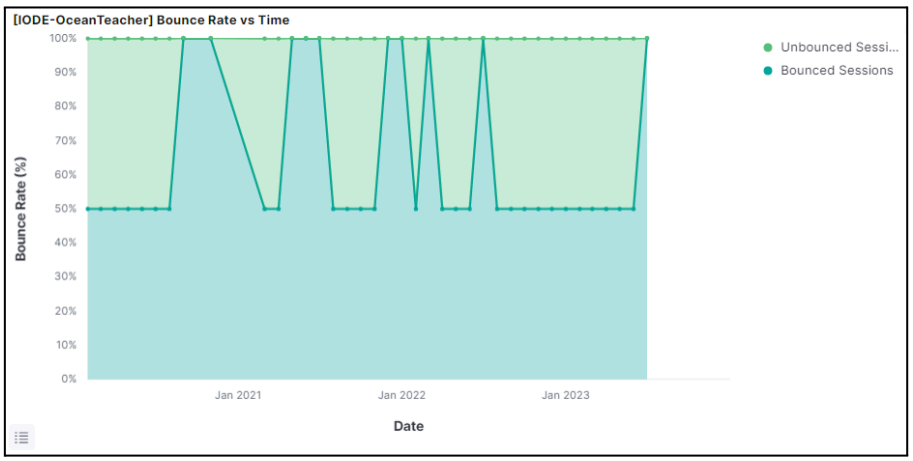


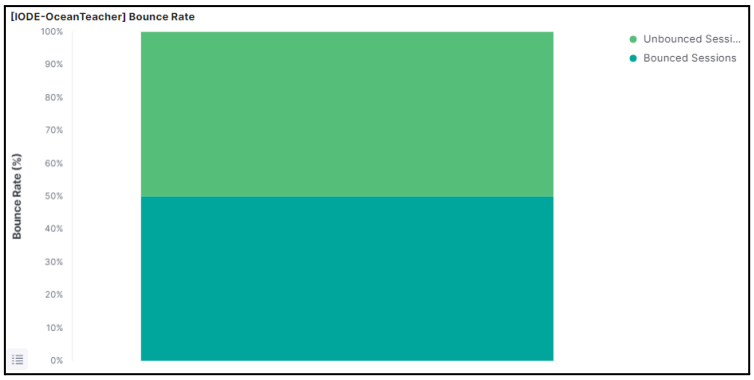


Moreover, and as addressed earlier, a separate graph is portrayed that includes the Users, New Users, Page Views, and Sessions occurred between July 2023 and December 2023.

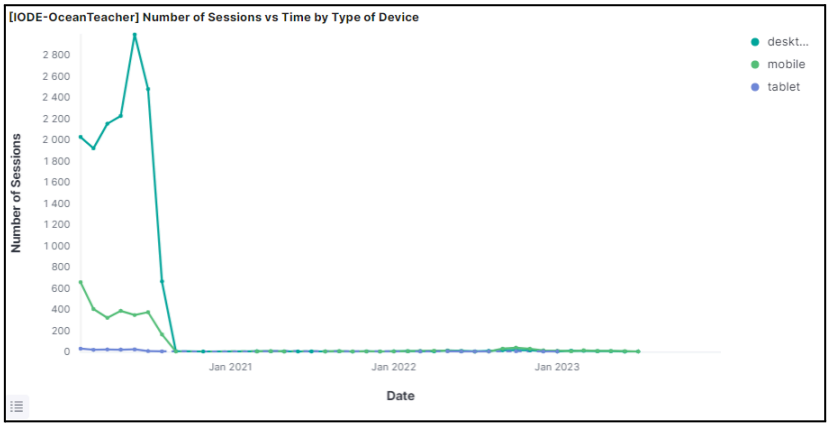


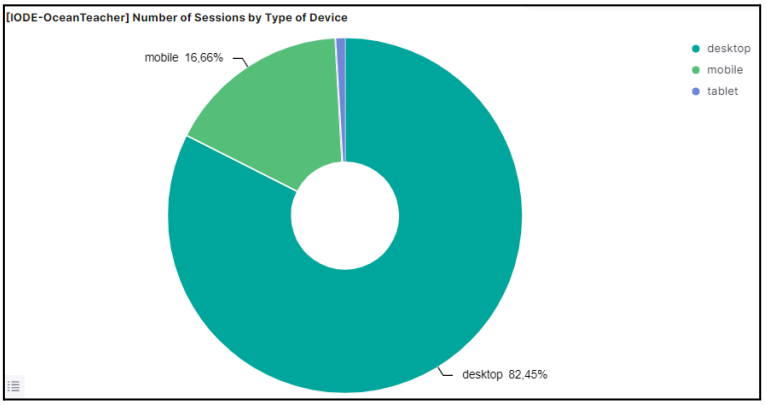
Next, the bounce rate is analyzed.

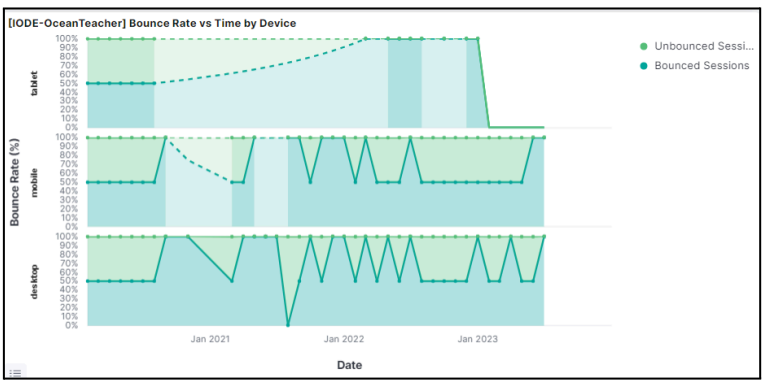


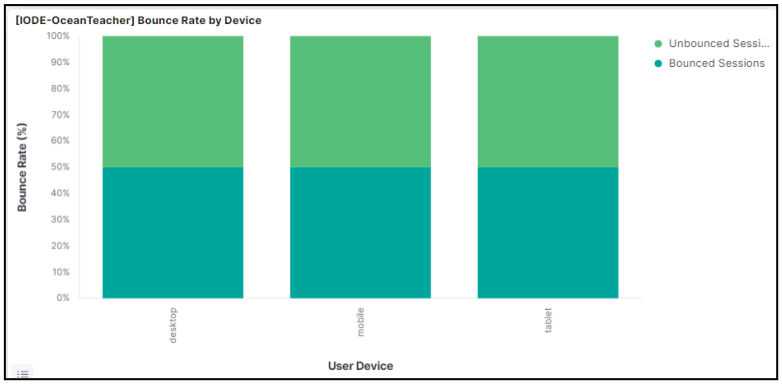


The images below show the proportion of sessions that come from each type of device and the influence of the type of device on the bounce rate.

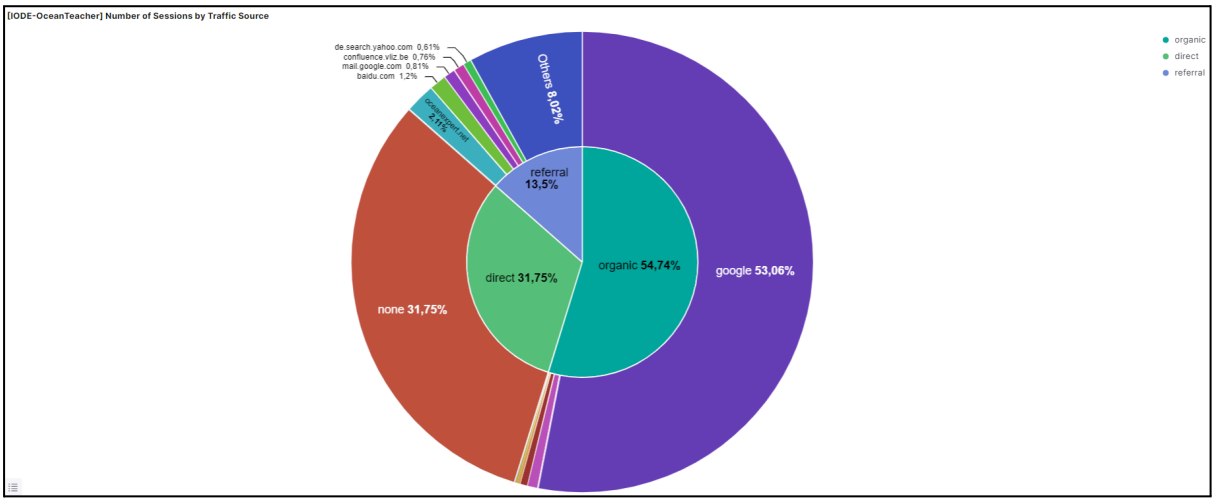








Finally, an analysis of traffic based on the source is presented.

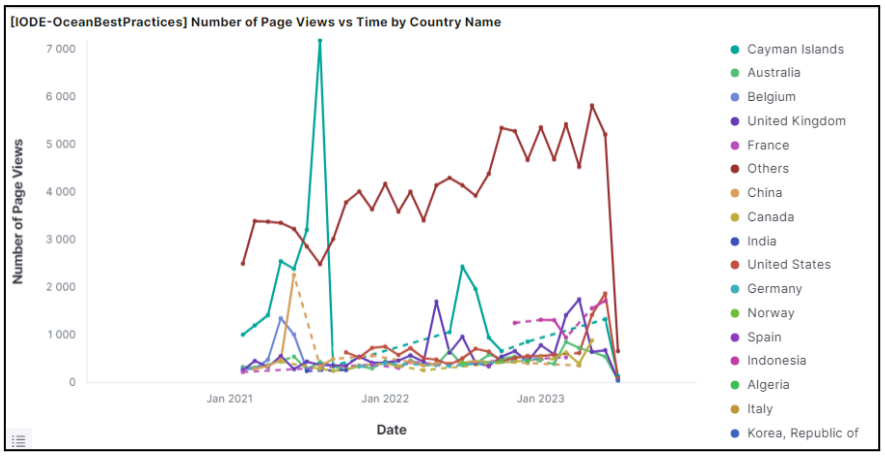


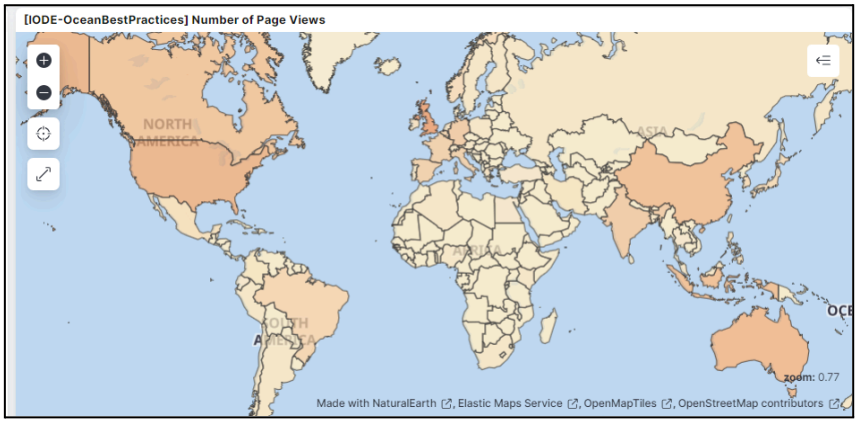
OceanBestPractices

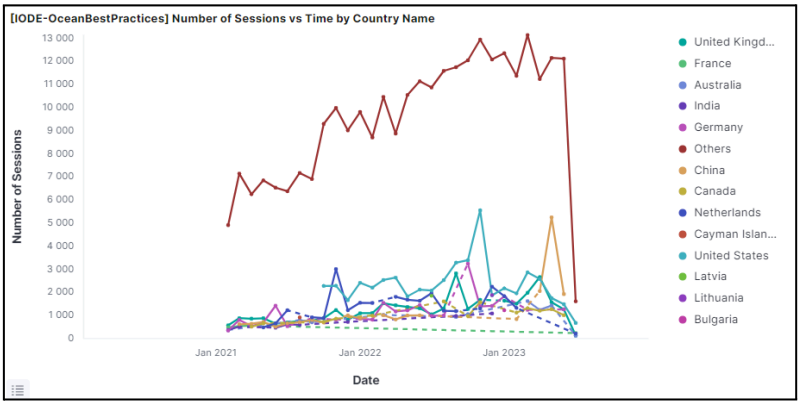
First, the overall access metrics will be presented. Then, the following analysis are included: geographic analysis, analysis by user type (new vs returning), bounce rate analysis, user device analysis, and traffic source analysis.

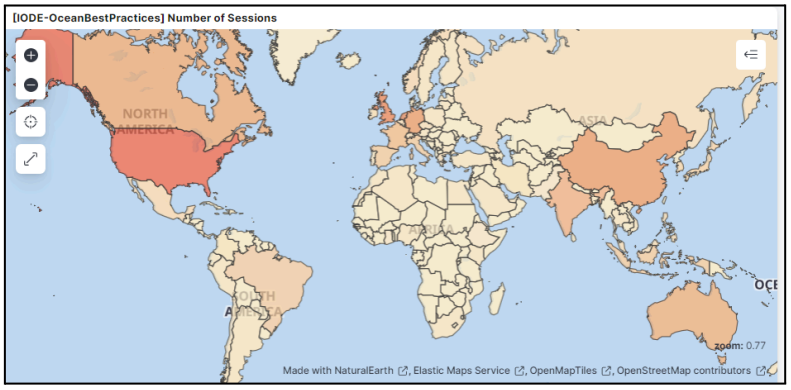
The next image presents the general access metrics in a numeric form.

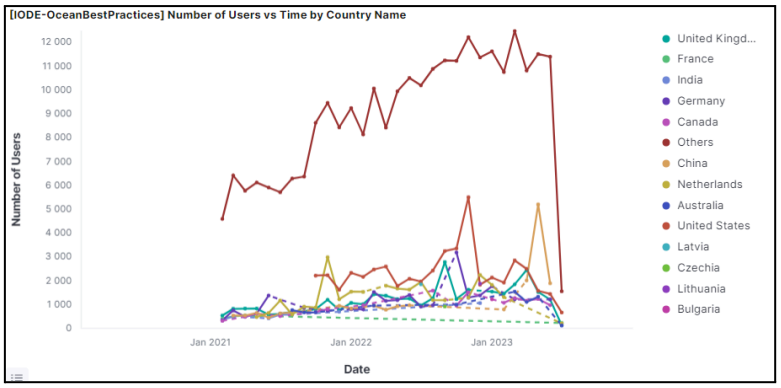
The following images contain the geographic analysis of the traffic.

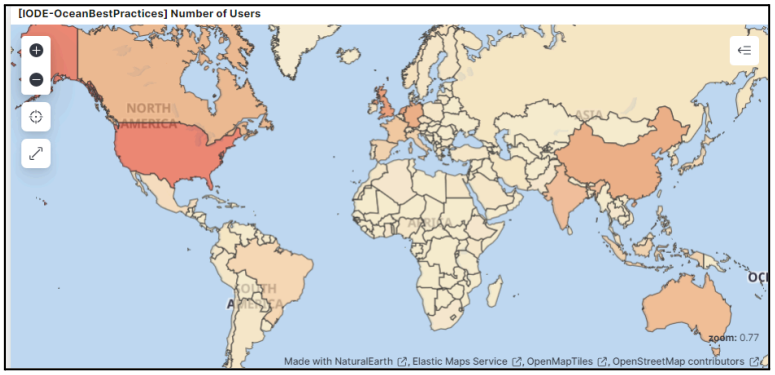




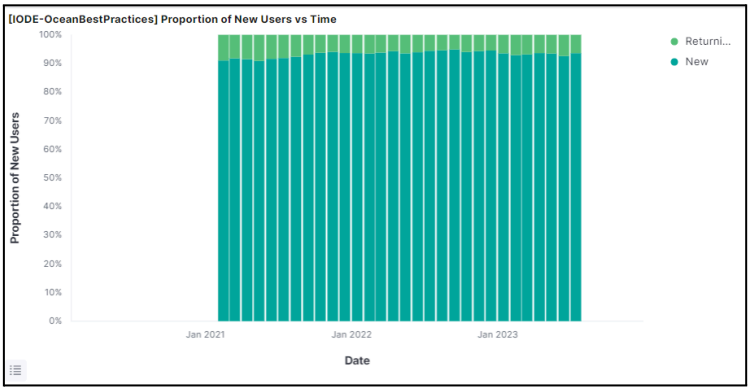


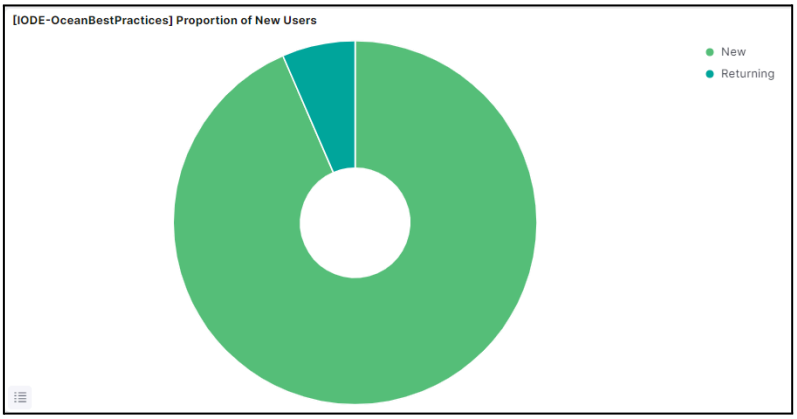




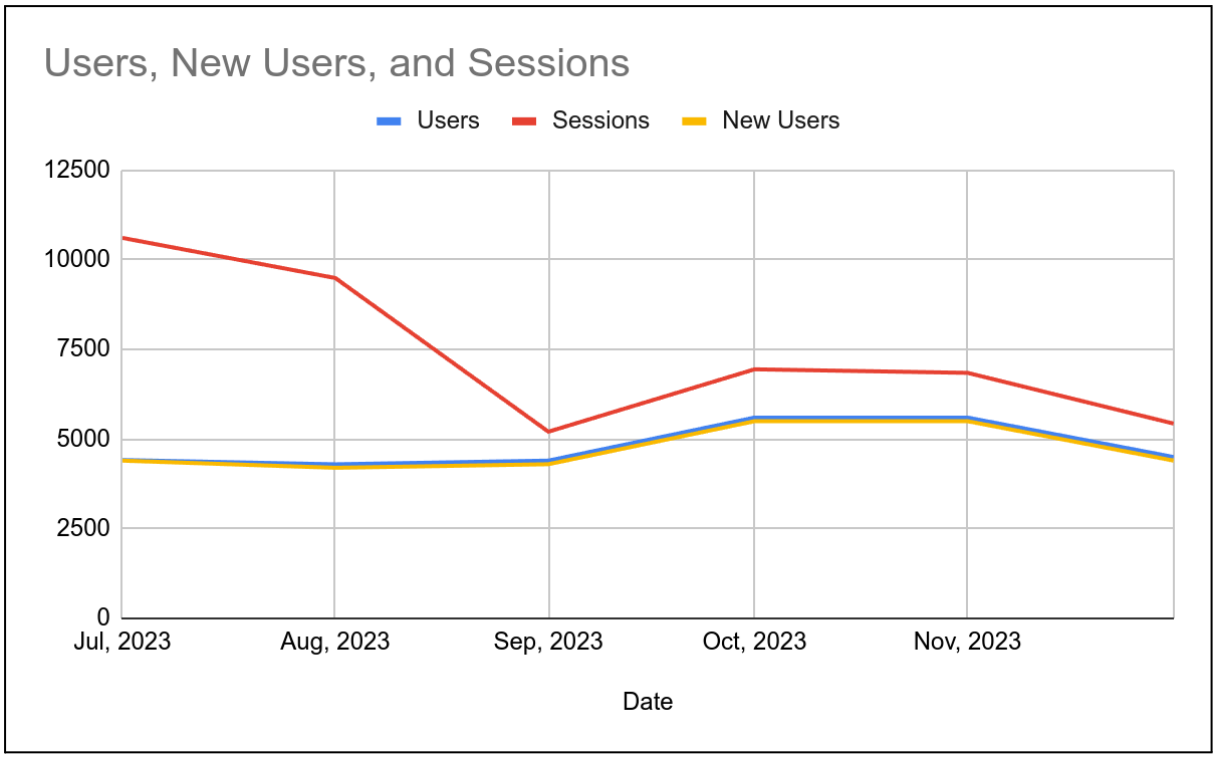


Next, plots analysing the proportion of new users are shown.

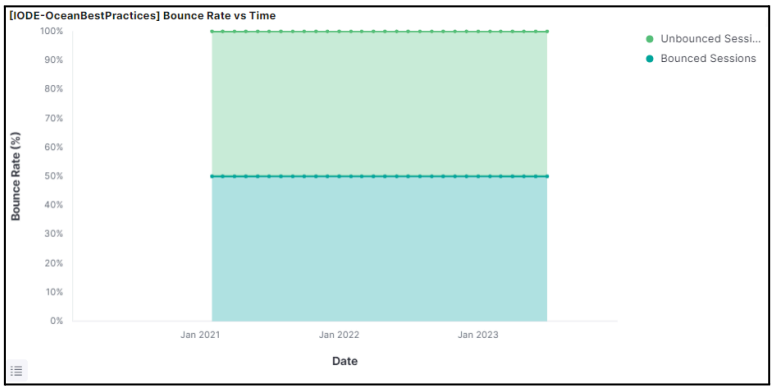


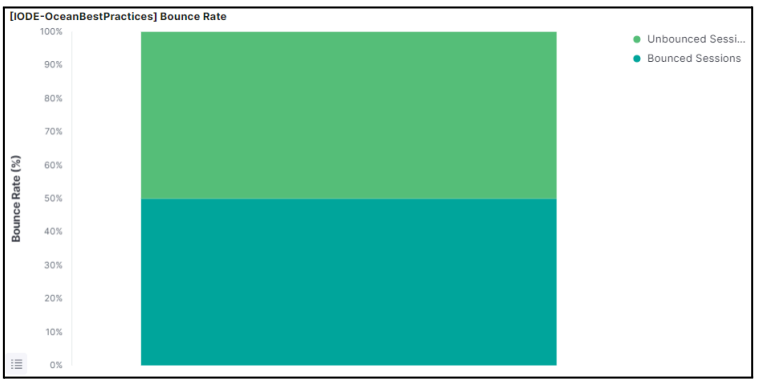


Moreover, and as addressed earlier, a separate graph is portrayed that includes the Users, New Users, and Sessions occurred between July 2023 and December 2023.

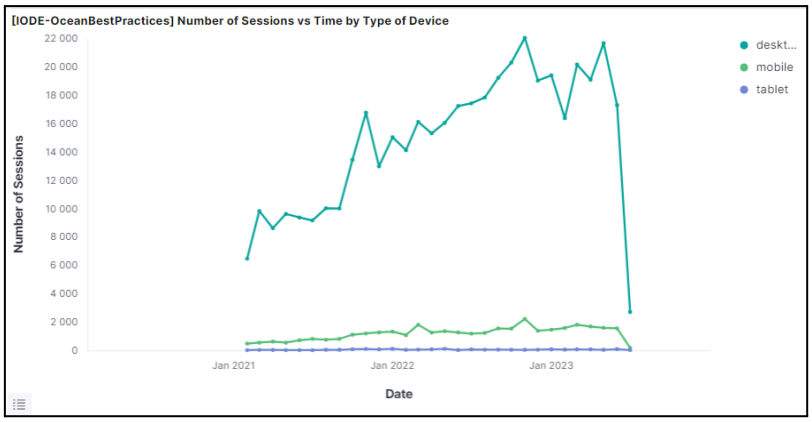


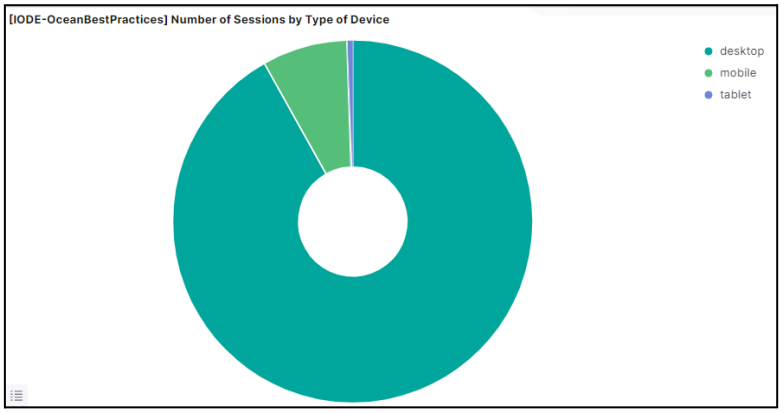
Next, the bounce rate is analyzed.

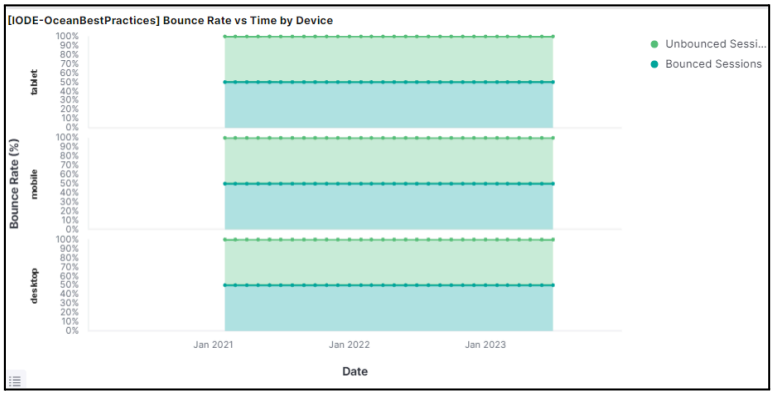


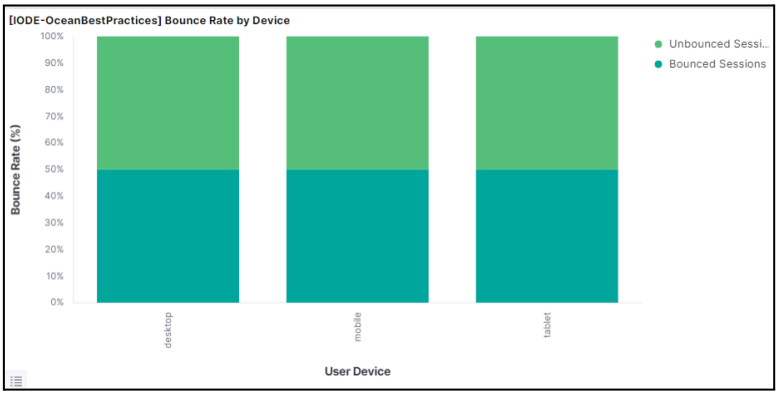


The images below show the proportion of sessions that come from each type of device and the influence of the type of device on the bounce rate.

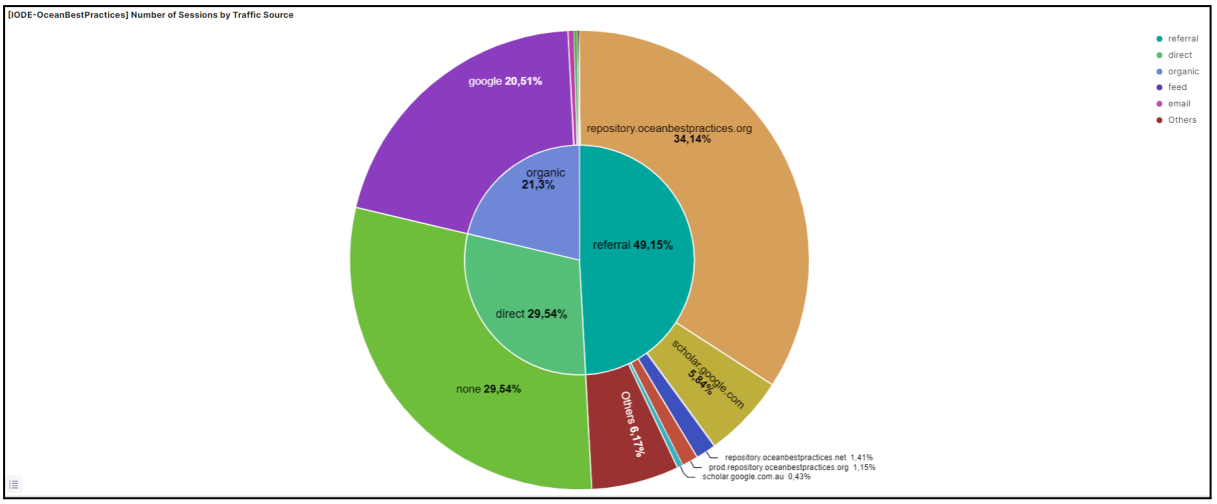








Finally, an analysis of traffic based on the source is presented.

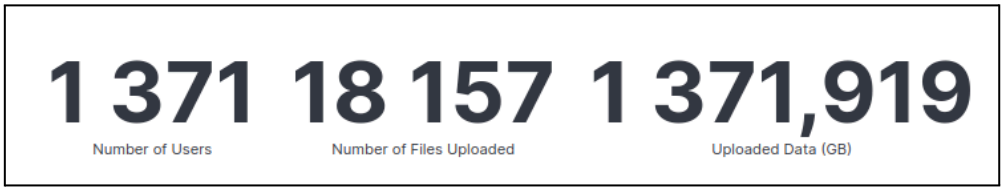


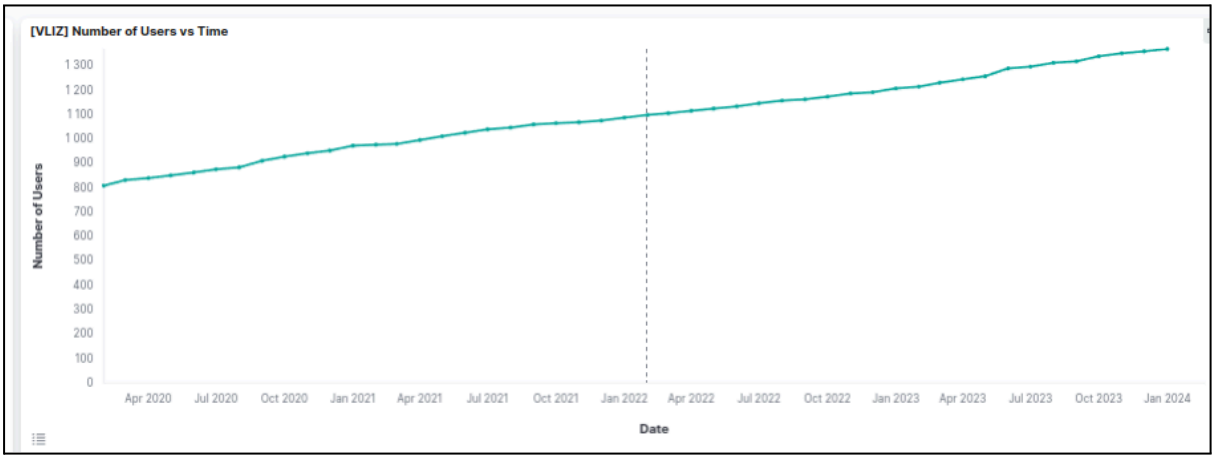
Annexe 2.22 VLIZ Marine Data Archive (ID 38.1)

The data underlying the following plots are kindly generated by VLIZ's team and made available in a CSV file.

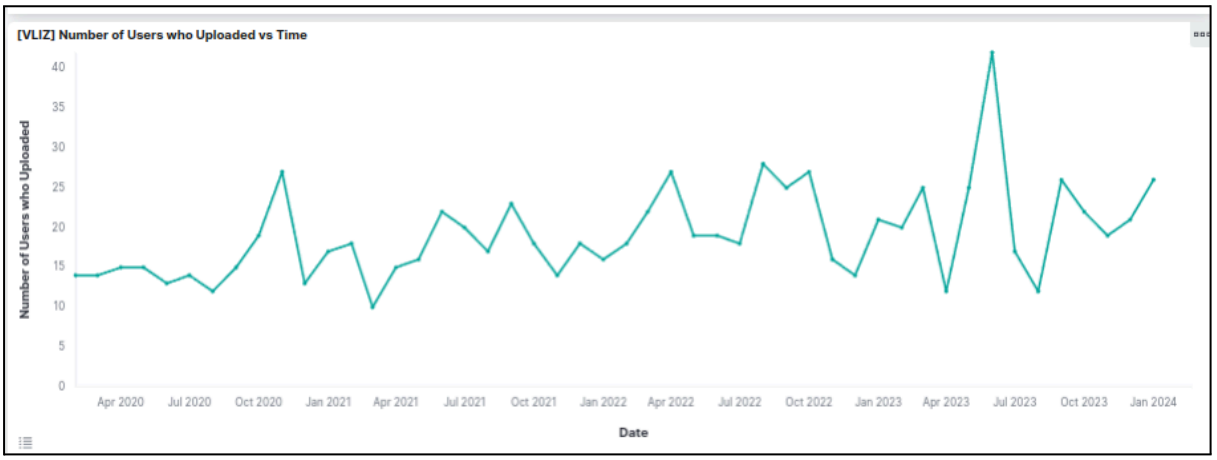
First, overall metrics and a temporal trend of the number of users will be presented. Next, the user activity analysis, the uploads analysis, and the download analysis will be analyzed.

In the next images, a numeric representation of the access metrics and the temporary trend of the number of users is presented.

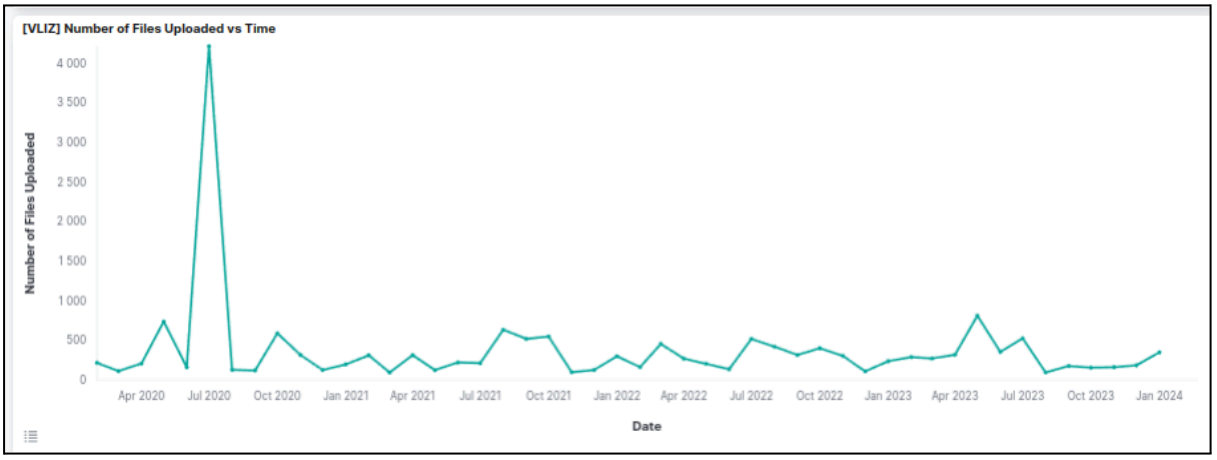




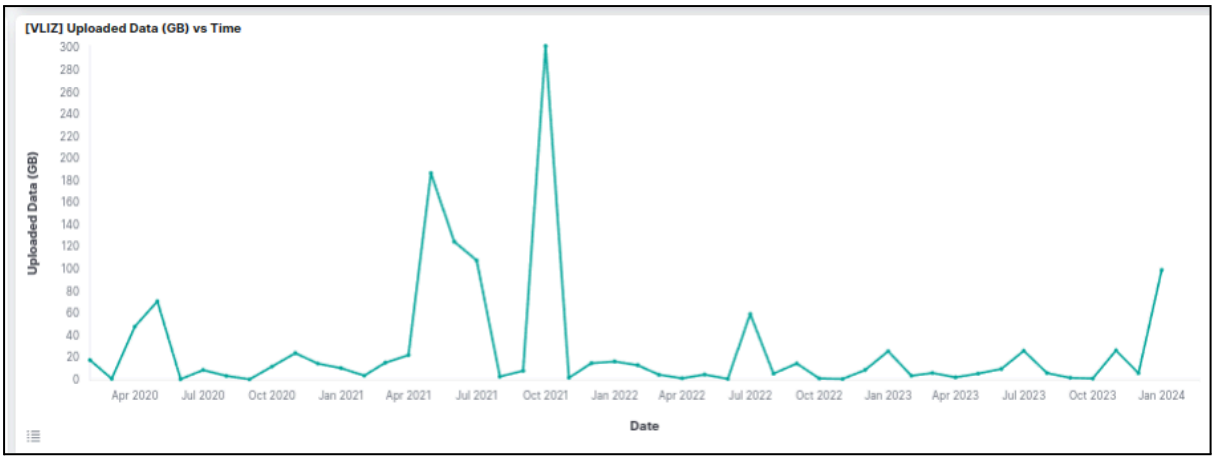
In the following images, a temporal analysis of the number of users who upload or download data has been added.



Next, the uploads both by number and by size are analyzed.



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



Finally, downloads by number are analyzed.

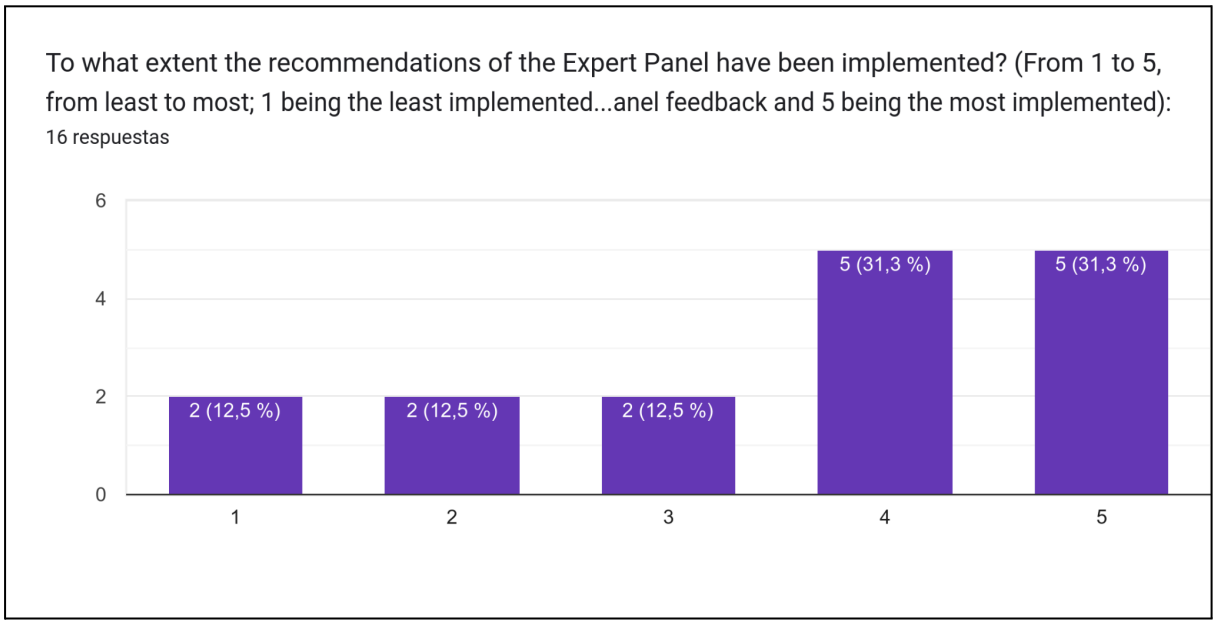
Annexe 3: Questions and answers Jerico-S3: Virtual Access Expert Panel form

The assessment of responses to the form's five questions provides valuable insights into the effectiveness and optimization of Virtual Access (VA) resources within the JERICO-S3 framework. This report presents an analysis of the responses received, focusing on key areas such as the implementation of Expert Panel recommendations, efforts made by Virtual Access Teams, the impact of Expert Panel recommendations on Virtual Access enhancement, sufficiency of allocated resources, and additional improvement suggestions.

The responses collected offer a glimpse into the consortium's dedication to continually improving Virtual Access services and addressing challenges in resource allocation. By examining the extent to which recommendations have been implemented and identifying areas for further enhancement, this report aims to inform strategic decision-making and guide future efforts in advancing Virtual Access within the JERICO-S3 framework.

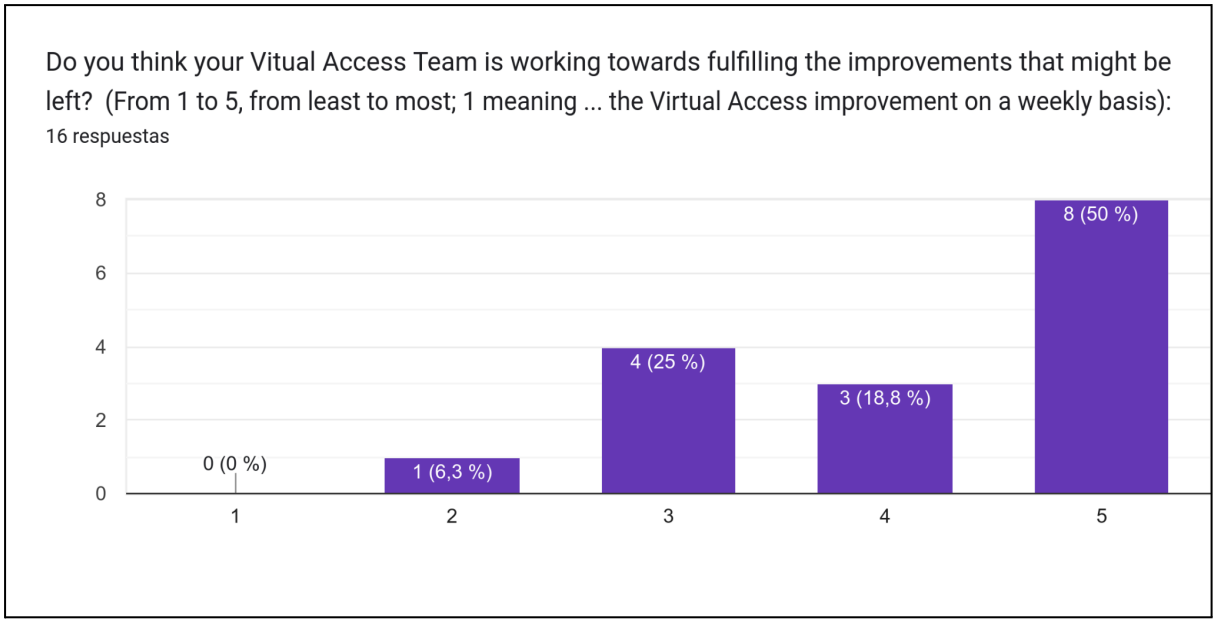
The following five questions are a set of four closed-ended ones and a final open-ended one. The first four questions rank their answers and a scale from 1 to 5, from least to most, the meaning of those numbers varying on each question.

Annexe 3.1 Question 1



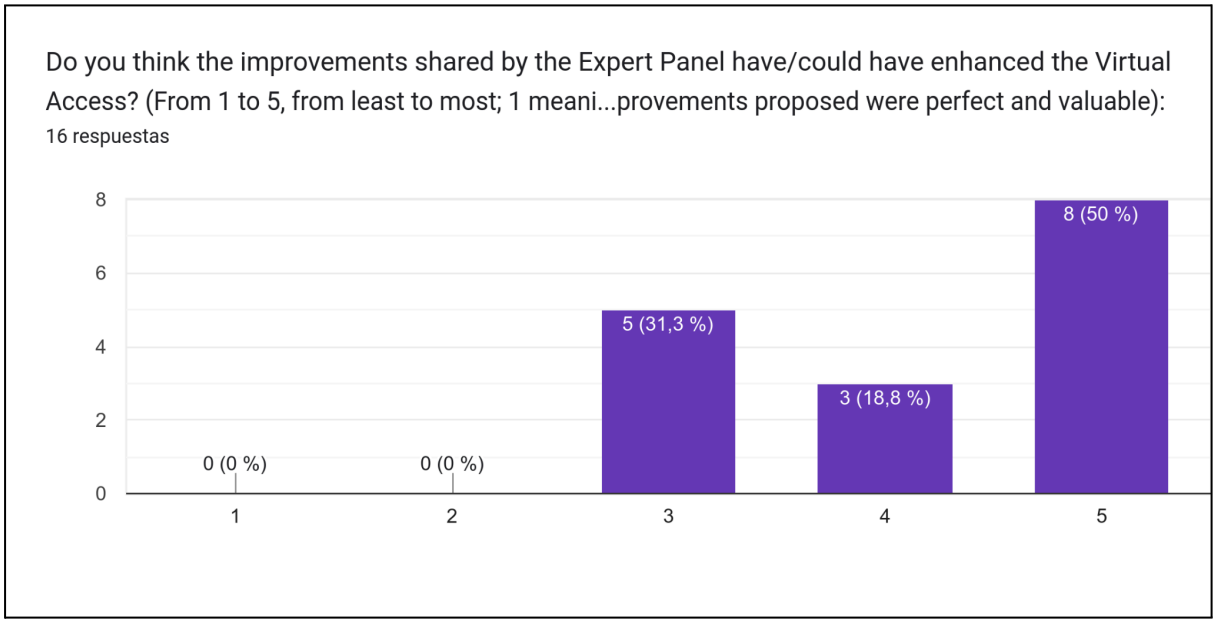
The responses to this question indicate a positive trend in the implementation of recommendations provided by the Expert Panel. Out of 16 responses, the majority rated the implementation efforts highly, with 4 and 5 being the most common ratings. This suggests that more than half of the respondents have implemented most, if not all, of the feedback provided by the Expert Panel. However, there were also a few responses indicating lower levels of implementation, with 2 answers rated at 1, 2 answers at 2, and 2 answers at 3.

Annexe 3.2 Question 2



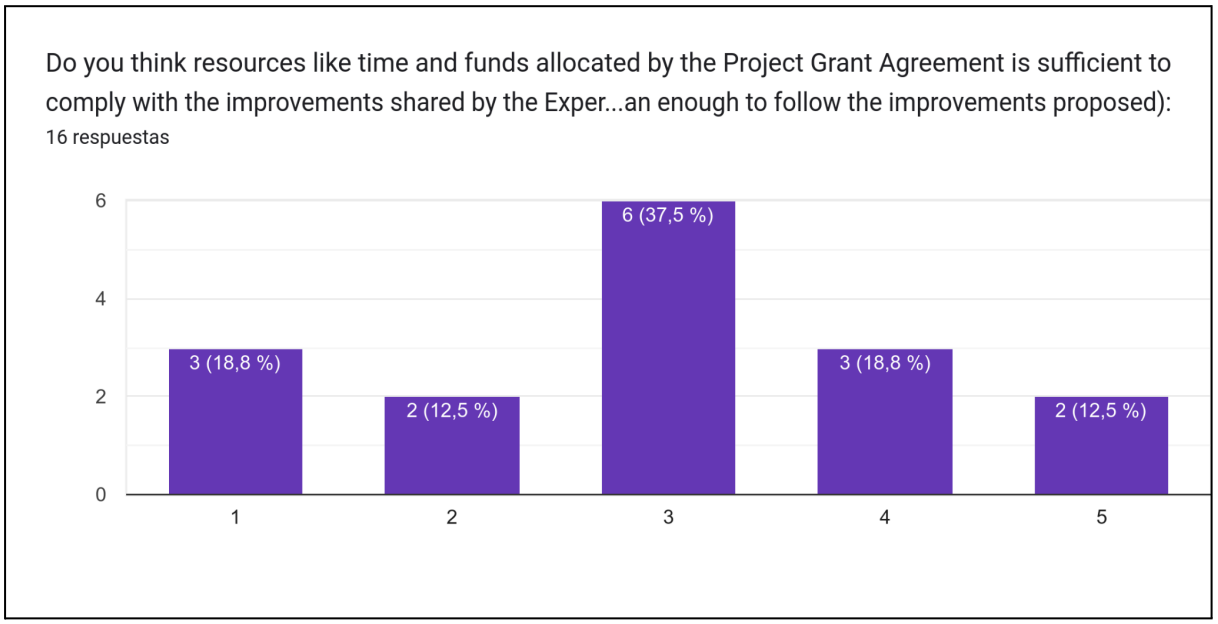
Half of the respondents indicated that their Virtual Access Team is actively working towards fulfilling any remaining improvements on a weekly basis, demonstrating a strong commitment to enhancing virtual access. Additionally, 3 respondents rated their efforts at 4 out of 5, indicating significant time allocation towards improvement activities. However, there were also responses indicating a middleground perspective, with 4 respondents rating their efforts at 3, and only one respondent rating their efforts at 2.

Annexe 3.3 Question 3



All responses to this question indicated a positive perception of the improvements shared by the Expert Panel. No respondents rated the improvements poorly, with all answers falling within the higher end of the scale. Half of the respondents rated the improvements as perfect and valuable (5), while 3 respondents rated them at 4, and 5 respondents at 3, suggesting a widespread acknowledgment of the enhancement potential of the Expert Panel's recommendations.

Annexe 3.4 Question 4



Responses to this question were more varied compared to previous questions. While 6 respondents rated the resources as sufficient (3), indicating that time and funds allocated by the Project Grant Agreement are adequate for complying with the improvements, there were also respondents who expressed concerns. 3 respondents rated the resources as insufficient, with ratings of 1 or 2, while 3 respondents rated them as more than sufficient, with ratings of 4 or 5.

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

Annexe 3.5 Question 5

What other improvements do you think could improve Virtual Accesses and were not shared by the Expert Panel?

16 respuestas

change of platforms

The panel was very critical and no more improvements are identified apart from those they pointed out. Thanks!

No additional comment

Expert Panel assesments were entirely accurate and appropriate.

NA

The proposed improvements seem to be enough.

No comments on this point.

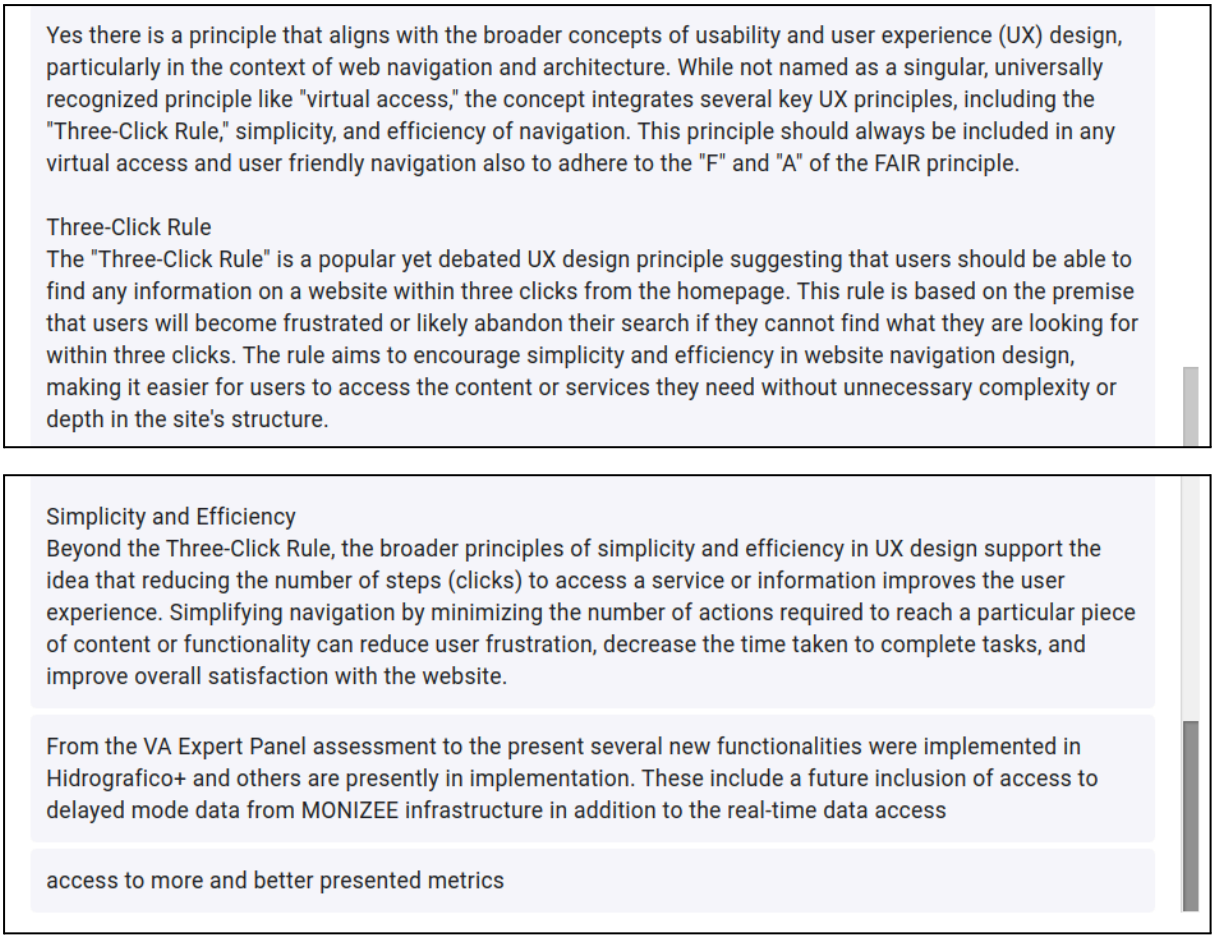
To be honest I am not so well informed about expert panel work.

for the VA on NorSOOP this was associated with the portals onboard ships. the VA could therefore not be assessed by the expert panel without actually being onboard the ships. this assessment therefore had very limited value in this specific case. However, there has been significant progress under JERICO and AquINFRA projects on sharing the NRT data from FerryBox ships to national databases (NMDC) and european data aggregators.

Nothing to add, the Expert Panel clearly recognized the most essential ways to improve our VA.

None, the virtual access is only accessed by the general public from touchscreen consoles.

Enhancing Visibility of the Platform FINMAID and its data product will be of high priority for us in the next future, but difficult to completely address within the next months, mainly as a main overhaul of the entire IOW website is planned, and it is difficult to do the 2nd step before the other. We still will work hard to include information, will link to Jerico S3 (currently not in place) and as mentioned earlier, try to provide near-real time data VIEW in the near future. Near real time data access is however not intended, as the data are running through the ICOS OTC QC system. In that regard, we did not understand the comment of the reviewers concerning lack of information on data QCing ..



The responses to this open-ended question provided valuable insights into additional improvements that could enhance Virtual Access. While more than half of the respondents couldn't identify any further improvements, 7 respondents offered specific suggestions. These included implementing new functionalities, enhancing data presentation and accessibility, improving platforms, and prioritizing visibility for certain data products. Additionally, some respondents highlighted the need for simplicity and efficiency in accessing virtual resources, suggesting strategies such as implementing the "three-click rule."

In conclusion, the analysis of responses to the form's five questions sheds light on the consortium's progress in enhancing Virtual Access resources and services. The majority of respondents expressed a positive perception of the implementation of Expert Panel recommendations, highlighting the commitment of Virtual Access Teams to continual improvement. Additionally, the unanimous acknowledgment of the enhancement potential of Expert Panel recommendations underscores their significance in optimizing Virtual Access.

While some concerns were raised regarding resource sufficiency, the varied responses reflect the complexity of resource allocation in research and innovation projects. Furthermore, the additional improvement suggestions provided valuable insights into areas

for further enhancement, ranging from the implementation of new functionalities to the prioritization of data visibility.

Moving forward, the findings from this assessment will serve as a valuable resource for guiding future initiatives and strategic decision-making aimed at further enhancing Virtual Access.

Annexe 4: Outreach Activities from each Partner

The outreach activities of JERICO-S3 WP11 are reported next.

Annexe 4.1 Mawenzi (ID 1.2)

The following is the list of outreach activities reported by Mawenzi, which belongs to IFREMER ULCO-LISIC.

Title	uHMM documentation in French and English
Date	4 May 2021
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community, Industry. Size: large
URL	http://mawenzi.univ-littoral.fr/uHMMweb/

Title	sClust tools: documentation, shiny app and R package - multi-level spectral Clustering algorithms
Date	19 July 2021
Activity	Type: Website. Channel: Website, gitlab
Audience	Type: Scientific community, Industry. Size: Large
URL	http://mawenzi.univ-littoral.fr/sClust/

Title	ULC0-LISIC poster seminar: presentation of 3 posters about LISIC contribution for JERICO project

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

Date	6 July 2021
Activity	Type: Participation in an event other than a conference or workshop. Channel: ULCO Lab audience
Audience	Type: Scientific community, Students. Size: 70

Title	LISIC workshop in July, in Longuenesse
Date	7 January 2023
Activity	Type: Organisation of a workshop Channel: Website
Audience	Type: Scientific community, Students. Size: 100

Title	The website (mawenzi.univ-littoral.fr) and its Rshiny interfaces has been made more secure this year, to deal with various intrusions
Date	9 October 2023
Activity	Type: Website Channel: Website
Audience	Type: Industry, Customers. Size: 100

Annexe 4.2 EU HFR Node/AZTI (ID 4.1)

The following is the list of outreach activities reported by EU HFR Node/AZTI, which belongs to AZTI.

Title	Emails to request data and offer EU HFR Node processing to data provider
Date	17 May 2021
Activity	Type: Data request from EU HFR Node. Channel: Email and newsletter
Audience	Type: Scientific community. Size: 1 data provider per email (4 emails sent)

Title	Oral presentation of the EU HFR Node Historical Data processing
Date	27 May 2021

Activity	Type: Training. Channel: Online HF Radar Summer School
Audience	Type: Scientific community. Size: 50
URL	https://sicomarschool.univ-tln.fr/en/homepage/

Title	EuroGOOS HFR Task Team's 3rd biannual newsletter.
Date	19 July 2021
Activity	Type: Communication Campaign (e.g. Radio or TV). Channel: Website, Email and newsletter
Audience	Type: Scientific community, Industry, Investors, Customers. Size: 100
URL	https://us19.campaign-archive.com/?e=__test_email__&u=e5fd08d8d94228eecb45183f9&id=1de066b71f

Annexe 4.3 CefMAT (ID 6.1)

The following is the list of outreach activities reported by CefMAT, which belongs to Cefas.

Date	Year 2020
Activity	Type: Website. Channel: Website
URL	https://www.ulsterwildlife.org/sustainable-fish-cities-ni

Date	Year 2020
Activity	Type: Website. Channel: Website
URL	https://data.catchmentbasedapproach.org/apps/theriverstrust::policy-legislation/explore

Date	Year 2020
Activity	Type: Website. Channel: Website
URL	https://www.daera-ni.gov.uk/articles/marine-strategy

Title	Department for Environment, Food and Rural Affairs.
Date	24 September 2020
Activity	Type: Organisation of a workshop. Channel: Public Debate

Title	Plastics: Pollution. Department for Environment, Food and Rural Affairs.
Date	12 November 2020
Activity	Type: Organisation of a workshop. Channel: Public Debate

Annexe 4.4 CNR (ID 7.1)

The following is the list of outreach activities reported by CNR.

Title	VA Service of the Week
Date	27 October 2023
Activity	Type: Post on Website. Channel: Website
Audience	Type: Scientific community, Industry, Civil society, Customers. Size: 100
URL	https://www.jerico-ri.eu/2023/10/27/advancing-coastal-observation-jerico-ri-provides-virtual-access-to-the-cnr-ismar-tirlig-high-frequency-radar-data/

Annexe 4.5 EU HFR Node/CNR (ID 7.2)

The following is the list of outreach activities reported by EU HFR Node/CNR, which belongs to CNR.

Title	Sicomar-Plus HF radars summer school
Date	27 May 2021
Activity	Type: Participation in an event other than a conference or workshop. Channel: Summer School
Audience	Type: Scientific community, Industry, Civil society, Customers. Size: 50
URL	https://sicomarschool.univ-tln.fr/en/summer-school-sicomar/

Title	VA Service of the Week
Date	2 November 2023
Activity	Type: Post on Website. Channel: Website
Audience	Type: Scientific community, Industry, Civil society, Customers. Size: 100
URL	https://www.jerico-ri.eu/2023/11/02/jerico-ri-offers-virtual-access-to-the-eu-hfr-node-cnr-einfrastructure/

Annexe 4.6 CytoFluoTool (ID 8.1)

The following is the list of outreach activities reported by CytoFluoTool, which belongs to CNRS-LOG, ULCO.

Title	ULC0-LISIC poster seminar: presentation of 3 posters about LISIC contribution for JERICO project
Date	6 July 2021
Activity	Type: Participation in an event other than a conference or workshop. Channel: ULCO Lab audience
Audience	Type: Scientific community, Students. Size: 70

Title	Automated approaches for phytoplankton monitoring, at high resolution, in coastal waters: advantages and challenges
Date	23 November 2020
Activity	Type: Participation in a workshop. Channel: Zoom
Audience	Type: Scientific community, Policymakers, Harbour and coastal engineering community. Size: 50 persons

Title	Phytoplankton in vivo/in situ observations by novel automated optical approaches in coastal and marine systems: towards a better integration into joint observatories
Date	5 May 2021

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

Activity	Type: Participation in a workshop. Channel: Zoom platform
Audience	Type: Scientific community, Policymakers, Harbour and coastal engineering community. Size: 100

Title	ASLO International Aquatic Sciences Meeting (ASM) 2021: Special Session 66 on Coastal Ocean Observing Systems to understand and predict changes of the coastal ocean
Date	27 June 2021
Activity	Type: Organisation of a conference. Channel: Zoom
Audience	Type: Scientific community. Size: 50

Title	ASLO International Aquatic Sciences Meeting (ASM) 2021: Special Session 28 on Aquatic microbial community structure and dynamics: new insights from non-destructive high throughput automated single-cell analysis
Date	23 June 2021
Activity	Type: Organisation of a conference. Channel: Zoom platform
Audience	Type: Scientific community. Size: 75

Title	ASLO International Aquatic Sciences Meeting (ASM) 2021: Special Session 28 on Aquatic microbial community structure and dynamics: new insights from non-destructive high throughput automated single-cell analysis
Date	19 March 2021
Activity	Type: Training. Channel: In person
Audience	Type: Students. Size: 20

Title	M.Sc. on Marine Sciences: Marine Ecology and Fisheries at University of Littoral: "Automated tools and approaches for marine observations"
Date	25 March 2021

Activity	Type: Training. Channel: In person
Audience	Type: Students. Size: 20

Annexe 4.7 JERICO-ECOTAXA (ID 8.2)

The following is the list of outreach activities reported by JERICO-ECOTAXA, which belongs to CNRS-LOV.

Title	Plankton and marine snow dynamics inferred from their morphological attributes : global context of the BCP, case study in the Arctic, perspectives Emilia Trudnowska, Lars Stemmann Seminar of JETZON - Joint Exploration of the Twilight Zone Ocean Network, 28/05/2021
Date	28 May 2021
Activity	Type: Participation in a conference. Channel: internet
Audience	Type: Scientific community. Size: 40

Title	Typologie globale des spectres de taille du zooplancton dans le premier kilometre des océans Looking for global relationships. Dodji Soviadan, Baye Cheickh Mbaye, Laetitia Drago, Lars Stemmann, Seminar of Third meeting of the ANR project CIGOEF 2 and 10 June 2021
Date	10 February 2021
Activity	Type: Participation in a conference. Channel: on internet visioconference
Audience	Type: Scientific community. Size: 30

Title	I/ITAPINA: Imagine/Imaging The Atlantic – A Pelagic Imaging Network Approach (I/ITAPINA) workshop to be held on the 28th and 29th June 2021. a AA-MARINET pilot action and supported by the All-Atlantic Ocean Research Alliance
Date	28 June 2021
Activity	Type: Participation in activities organized jointly with other H2020 projects. Channel: Website, Email and newsletter
Audience	Type: Scientific community. Size: 140

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

Title	Plankton in the high seas. Lars Stemmann - IUCN Marseille 3-11 septembre 2021
Date	3 September 2021
Activity	Type: Participation in a conference Channel: on site conference
Audience	Type: Scientific community, Industry, Policymakers. Size: 70

Title	Machine Learning for the Oceans. Xavier Fresquet - Jean-Olivier Irisson, Institut de l'océan. Symposium annuel de l'Institut de l'Océan les 26 et 27 octobre 2021
Date	26 October 2021
Activity	Type: Participation in a workshop. Channel: on internet visioworkshop
Audience	Type: Scientific community. Size: 30

Title	3ème Atelier ZOONET (observation et taxinomie du zooplancton) Arcachon (19-21/10/2021)
Date	21 October 2021
Activity	Type: Participation in a workshop Channel: Website, Email and newsletter, on site
Audience	Type: Scientific community. Size: 15

Title	VA Service of the Week
Date	17 January 2023
Activity	Type: Website Channel: Website
Audience	Type: Scientific community. Size: 100
URL	https://www.jerico-ri.eu/2024/01/17/jerico-ri-offers-virtual-access-to-ecotaxa

	-a-web-application-for-managing-and-classifying-images-of-plankton/

Annexe 4.8 Utö Atmospheric and Marine Research Station (ID 15.1)

The following is the list of outreach activities reported by Utö Atmospheric and Marine Research Station, which belongs to FMI.

Title	New data accumulation service
Date	2 April 2020
Activity	Type: Press release. Channel: Website, Email and newsletter
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors. Size: >100 000
URL	https://www.ilmatieteenlaitos.fi/ajankohtaista/1269839400

Title	Press release
Date	4 June 2020
Activity	Type: Press release. Channel: Website, Email and newsletter
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media. Size: > 100 000
URL	https://en.ilmatieteenlaitos.fi/news/4rbaC4TjrITEUFEHVngUzO

Title	Launch of "marinefinland.fi"
Date	4 June 2020
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers. Size: > 1 000 000
URL	https://www.marinefinland.fi/en-US

Title	HAB situation

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

Date	12 August 2021
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media. Size: not applicable

Title	Post on Linkedin for the Virtual Access of the week
Date	11 December 2023
Activity	Type: Social Media. Channel: LinkedIn
Audience	Type: Civil society, Media. Size: 100

Title	Post on Website the Virtual Access of the week
Date	11 December 2023
Activity	Type: Social Media. Channel: Website
Audience	Type: Civil society, Media. Size: 100
URL	https://www.jerico-ri.eu/2023/11/13/empowering-coastal-research-jerico-offers-virtual-access-to-the-uto-atmospheric-and-marine-research-station/

Annexe 4.9 POSEIDON Multi Platform Observatory Data Center (ID 16.1)

The following is the list of outreach activities reported by POSEIDON Multi Platform Observatory Data Center, which belongs to HCMR.

Title	News Announcement for the participation in JERICO-S3
Date	21 February 2020
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community, General public. Size: 500
URL	https://poseidon.hcmr.gr/news/jerico-s3-kick-meeting-san-sebastian-spain-february-2020

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

Title	Launch of new poseidon.hcmr.gr website
Date	1 February 2021
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community, General public. Size: > 1.000.000
URL	https://poseidon.hcmr.gr

Title	Presentation at 18th E-SURFMAR Expert Team Meeting
Date	27 May 2021
Activity	Type: Participation in a conference. Channel: Project Meeting
Audience	Type: Scientific community. Size: 100

Title	Marine Heat Wave in the Aegean Sea in June 2021
Date	6 July 2021
Activity	Type: Press release. Channel: Website
Audience	Type: Scientific community, General public. Size: 200
URL	https://poseidon.hcmr.gr/news/marine-heat-wave-aegean-sea-june-2021

Title	Short analysis of the wave field during the passage of IANOS medicane over the Ionian Sea
Date	5 October 2020
Activity	Type: Press release. Channel: Website
Audience	Type: Scientific community, Civil society. Size: 140
URL	https://poseidon.hcmr.gr/news/waves-medicane-ianos

Title	A Single Turnover Active Fluorometry sensor LabSTAF was tested successfully in the oligotrophic Cretan Sea
Date	19 November 2021

Activity	Type: Press release. Channel: Website
Audience	Type: Scientific community, General public. Size: 770
URL	https://poseidon.hcmr.gr/news/single-turnover-active-fluorometry-sensor-labstaf-was-tested-successfully-oligotrophic-cretan

Title	A first pH annual cycle in the Cretan Sea
Date	22 February 2023
Activity	Type: Scientific community, General public. Channel: Website
Audience	Type: Scientific community, Civil society. Size: 1115
URL	https://poseidon.hcmr.gr/news/first-ph-annual-cycle-cretan-sea

Title	VA of the week
Date	5 October 2020
Activity	Type: Non-scientific and non-peer-reviewed publication (popularised publication). Channel: Website
Audience	Type: General public. Size: 100
URL	https://www.jerico-ri.eu/2023/10/05/hcmr-offers-virtual-access-to-data-from-its-poseidon-system-as-part-of-the-jerico-s3-h2020-project/

Annexe 4.10 COSYNA (ID 17.1)

The following is the list of outreach activities reported by COSYNA, which belongs to Hereon.

Title	EuroGOOS FerryBox-HF Radar Joint Workshop
Date	17 March 2021
Activity	Type: Organisation of a workshop. Channel: Workshop
Audience	Type: Scientific community, Industry. Size: >100

Title	Information table at 2020 Ocean Sciences Meeting, San Diego, CA, USA
Date	16 February 2020
Activity	Type: Participation in a conference. Channel: Scientific Conference
Audience	Type: Scientific community. Size: 5000 participants
URL	https://www.agu.org/ocean-sciences-meeting

Title	Launch of the new version of visualizations for the European FerryBox database supported by COSYNA
Date	21 June 2021
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community, General public. Size: >1000
URL	ferrydata.hzg.de

Title	VA of the week
Date	12 October 2023
Activity	Type: Non-scientific and non-peer-reviewed publication (popularised publication). Channel: Website, Twitter, Facebook
Audience	Type: General public. Size: >1000
URL	https://www.jerico-ri.eu/2023/10/12/cosyna-revolutions-in-coastal-observation-jerico-ri-virtual-access/

Annexe 4.11 HIDROGRAFICO+ (ID 19.1)

The following is the list of outreach activities reported by HIDROGRAFICO+, which belongs to IH.

Date	7 October 2020
Description	New to be published on JERICO website

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

Title	Participation with communication in the Webinar do Eurogeographics Knowledge Exchange Network
Date	8 July 2021
Activity	Type: Participation in a conference. Channel: YouTube
Audience	Type: Scientific community. Size: 50 participants
URL	https://www.youtube.com/watch?v=ni7Tcq6qNeE

Title	Participation with communication to the 6 Hydrographic Engineering Conference / 1 Portuguese-Spanish Hydrography Conference
Date	5 November 2020
Activity	Type: Participation in a conference. Channel: Website
Audience	Type: Scientific community. Size: 50-100
URL	https://jornadas.hidrografico.pt/index/en

Title	Participation with oral communication at the commemorative session of the World Hydrographic Day2021
Date	21 June 2021
Activity	Type: Participation in a conference. Channel: Website
Audience	Type: Scientific community, Industry, Policymakers. Size: 50
URL	https://www.hidrografico.pt/noticia/801

Title	News: "Hydrographic Institute Registers Historic Peak during the Passage of Depression Domingos"
Date	6 November 2023
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students Size: 262

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

Title	News: "Multiparametric Buoys in Nazare ready for big waves"
Date	24 November 2023
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 134

Title	News: "Buoys from the Hydrographic Institute Record Strong Waves during the passage of Depressions Babet, Aline and Bernard"
Date	15 October 2023
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 159

Title	News: "Boias do Instituto Hidrografico registam temperaturas elevadas da água do mar"
Date	28 June 2023
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 443

Title	News: "Depressão FIEN - agravamento do estado do mar na costa oeste de Portugal continental"
Date	19 January 2023
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 68

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

Title	News: "Sea Surface Temperature above 23ºC on the Portuguese South Coast"
Date	15 July 2022
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 151

Title	News: "Instituto Hidrográfico presente nas JIIDE 2021"
Date	16 November 2021
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 141

Title	News: "Anchoring the CS88/1 buoy + BBC document footage"
Date	13 August 2021
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 221

Title	News: "IH is news in the press - Dinheiro Vivo publishes an articule on the study of the ocean"
Date	30 July 2021
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 151

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

Title	News: "NRP Almirante Gago Coutinho Finishes Scientifc Research Mission off the Portuguese Coast"
Date	30 April 2021
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 133

Title	News: "The hydro-oceanographic campaign of the NRP Almirante Gago Coutinho continues on the way to the replacement of the oceanic buoy of Faro"
Date	16 April 2021
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 119

Title	News: "The Hydrographic+ project took another step"
Date	18 June 2020
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 754

Title	News: "Minister of the sea visits the hydrographic institute"
Date	17 June 2020
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 204

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

Title	News: "Reativada boia multiparametrica costeira da Nazaré"
Date	28 May 2020
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 657

Title	News: "Anchored new multi-parametric buoy off Sines"
Date	3 May 2020
Activity	Type: Website. Channel: Website, Facebook, Instagram, LinkedIn
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community, Students. Size: 331

Annexe 4.12 VOS Finnmaid GHG - BGC (ID 21.1)

The following is the list of outreach activities reported by VOS Finnmaid GHG - BGC, which belongs to IOW.

Title	Daten des IOW belegen Rekord-Rückgang fossiler CO2 Emmissionen
Date	8 January 2021
Activity	Type: Press release. Channel: Newspaper
Audience	Type: Civil society, General public, Media. Size: circulation of 110000 copies

Title	Globale CO2 Bilanz 2020
Date	2 January 2021
Activity	Type: Press release. Channel: Email and newsletter, Newspaper
Audience	Type: Civil society, General public, Media, Customers. Size: 200 000 potential readers

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

Title	Kontinuierliche Messungen von Spuren- und Treibhausgasen auf der Fähre Finnmaid
Date	1 July 2021
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community, Civil society, General public, Media, Customers. Size: to be added

Title	Meeting Finnmaid
Date	9 August 2021
Activity	Type: Participation in an event other than a conference or workshop. Channel: Twitter
Audience	Type: Scientific community, Customers. Size: 8 members

Title	News article
Date	11 November 2021
Activity	Type: Press release. Channel: Newspaper
Audience	Type: Civil society, General public, Media. Size: 105000

Title	Press release
Date	4 November 2021
Activity	Type: Press release. Channel: Website, Email and newsletter, Newspaper
Audience	Type: Scientific community, Civil society, General public, Media. Size: 100 000

Title	Interview
Date	14 November 2021
Activity	Type: Communication Campaign (e.g. Radio or TV). Channel:Radio, TV
Audience	Type: Civil society, General public, Media. Size: 100 000

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

Annexe 4.13 NorFerry/NorSOOP (ID 25.1)

The following is the list of outreach activities reported by NorFerry/NorSOOP, which belongs to NIVA.

Title	UN Ocean Decade Laboratory - Scientists for Ocean Literacy
Date	8 July 2021
Activity	Type: Organization of a workshop and participation in a conference. Channel: Twitter, Presentation and panel discussion at workshop/conference
Audience	Type: Scientific community, General public, Policymakers. Size: 50
URL	https://eurogoos.eu/2021/07/01/scientists-for-ocean-literacy-eurogoos-activity-as-part-of-the-ocean-decade-inspiring-engaging-lab/

Title	VA service of the week
Date	21 September 2023
Activity	Type: Non-scientific and non-peer-reviewed publication (popularised publication). Channel: Website
Audience	Type: General public. Size: 100
URL	https://www.jerico-ri.eu/2023/09/21/niva-provides-passengers-access-to-ocean-data-via-touchscreen-consoles-as-part-of-the-jerico-ri-virtual-access-services/

Title	Social media activity of national monitoring on FerryBox
Date	9 January 2023
Activity	Type: Social Media. Channel: Website, Facebook, Instagram
Audience	Type: Scientific community, Civil society, General public, Policymakers, Students. Size: NA
URL	https://www.facebook.com/watch/?v=130165920171445&ref=sharing

Title	Exhibited touchscreen console VA content at FerryBox workshop

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

Date	28 September 2022
Activity	Type: Exhibition. Channel: In person
Audience	Type: Scientific community, Industry, General public. Size: 100

Annexe 4.14 PORTUS Observing and Forecasting System (ID 28.1)

The following is the list of outreach activities reported by PORTUS Observing and Forecasting System, which belongs to PdE.

Date	20 July 2020
Description	Publication: De Alfonso M, García-Valdecasas JM, Aznar R, Pérez-Gómez B, Rodríguez P, de los Santos FJ, Álvarez-Fanjul E. Record wave storm in the Gulf of Cadiz over the past 20 years and its impact on harbours. CMEMS OSR4, Chapter 4, Section 4.6., Journal of Operational Oceanography (In Press).

Date	1 July 2020
Description	New high-resolution models in PdE OpenDap for Gijón, Alicante, Cartagena, Avilés, Palma, Mahón, Ibiza

Title	Publication of UNESCO(IOC): update on sea level data QC/processing best practices, led by Puertos del Estado
Date	26 June 2020
Activity	Type: Press release. Channel: Website, Twitter
Audience	Type: General public. Size: General public, undetermined
URL	http://www.puertos.es/es-es/Paginas/Noticias/UNESCOPUERTOS26062020.aspx

Title	Keynote presentation EOF 2021: Harbour scale oceanographic processes and coastal feedbacks. By Enrique Álvarez Fanjul on behalf of Puertos del Estado team and collaborators

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

Date	5 May 2021
Activity	Type: Participation in a conference. Channel: Virtual conference: https://eof2020.es/, VI Expanding Ocean Frontiers conference (EOF 2021)
Audience	Type: Scientific community. Size: 100
URL	https://eof2020.es/the-meeting/programme

Title	Keynote presentation: "On the effect of sea level increases during the storm Gloria" (Pérez Gómez, B.)
Date	29 April 2021
Activity	Type: Participation in a conference. Channel: Virtual conference: https://eof2020.es/
Audience	Type: Scientific community. Size: 100
URL	https://meetingorganizer.copernicus.org/EGU21/session/39707#vPICO_presentations

Title	Twitter on news about PdE Cuadro de Mando Ambiental
Date	20 June 2021
Activity	Type: Social Media. Channel: Twitter
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Customers, Harbour and coastal engineering community. Size: 16000
URL	https://twitter.com/PuertosEstado/status/1406537153773965315

Title	Twitter on new PdE online service for historical data download
Date	25 May 2021
Activity	Type: Social Media. Channel: Twitter
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community. Size: 16000

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

URL	https://twitter.com/PuertosEstado/status/1397144238379438085?s=20

Title	Twitter on New Layer with animated particles for currents, wind and waves forecast maps
Date	13 March 2021
Activity	Type: Social Media. Channel: Twitter
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community. Size: 16000
URL	https://twitter.com/PuertosEstado/status/1370677282092777475

Title	Twitter on PdE iMar app for met-ocean information
Date	17 July 2021
Activity	Type: Social Media. Channel: Twitter
Audience	Type: Civil society, General public, Media, Customers. Size: 16000
URL	https://twitter.com/PuertosEstado/status/1416323048425279493

Title	Twitter and Linkedin post on PdE published articles about Gloria storm
Date	11 June 2021
Activity	Type: Social Media. Channel: Twitter, Linkedin
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Investors, Customers, Harbour and coastal engineering community. Size: 16000 (Twitter followers) and 10000 (LinkedIn followers)
URL	https://twitter.com/PuertosEstado/status/1403305622838382601

Title	Virtual Access of the week
Date	13 December 2023
Activity	Type: Social Media. Channel: Twitter, Linkedin

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

Audience	Type: General public. Size: NA
URL	https://www.jerico-ri.eu/2023/12/13/jerico-va-navigating-oceanographic-and-meteorological-data-with-puertos-del-estado-thredds-opendap-service-and-portuscopia/

Title	Social Media for VA of the week
Date	13 December 2023
Activity	Type: Social Media. Channel: Linkedin
Audience	Type: General public. Size: 800
URL	https://www.linkedin.com/posts/cramis_jerico-va-navigating-oceanographic-and-meteorological-activity-7140977428155318273-47Ba?utm_source=share&utm_medium=member_desktop

Title	Press release on water temperature measured by buoys
Date	19 September 2023
Activity	Type: Press release. Channel: Website, Twitter, Newspaper, Magazine, Radio, linkedin
Audience	Type: Civil society, General public, Policymakers, Media, Harbour and coastal engineering community. Size: 2000
URL	https://www.puertos.es/es-es/Paginas/Noticias/temperaturaaguaverano2023.aspx

Title	X (twitter) daily publications of maximum waves forecast
Date	18 May 2023
Activity	Type: Social Media. Channel: Twitter, Instagram
Audience	Type: General public, Harbour and coastal engineering community. Size: 332
URL	https://twitter.com/PuertosEstado/status/1659097712485122050

Title	Training on SAMOA Oilspill tool for Harbour environments
Date	3 May 2023

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Activity	Type: Organisation of a workshop. Channel: Email and newsletter, Teams
Audience	Type: Harbour and coastal engineering community. Size: 70

Title	Participation in the Ocean State Report 8, launched by the Copernicus Marine Service
Date	31 January 2023
Activity	Type: Participation in an event other than a conference or workshop. Channel: Twitter, Newspaper
Audience	Type: Scientific community, Civil society, General public, Policymakers, Media, Harbour and coastal engineering community. Size: 1000
URL	https://marine.copernicus.eu/access-data/ocean-state-report

Title	Second EuroSea Tide Gauge Workshop
Date	5 May 2023
Activity	Type: Organisation of a workshop. Channel: Website, Email and newsletter, Twitter, Instagram, Zoom
Audience	Type: Industry, Harbour and coastal engineering community, tide gauge operators. Size: 106
URL	https://eurosea.eu/new/eurosea-tide-gauge-workshop/

Title	Open Day on Sea Level Monitoring in Spanish State-Owned Ports Workshop
Date	14 February 2024
Activity	Type: Organisation of a workshop. Channel: Website, Email and newsletter, Twitter, Instagram, Zoom
Audience	Type: Scientific community, tide gauge operators. Size: 70
URL	https://www.puertos.es/es-es/Paginas/Noticias/Redmar2024.aspx

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

Annexe 4.15 Swedish Oceanographic Data Centre (ID 32.1)

The following is the list of outreach activities reported by Swedish Oceanographic Data Centre, which belongs to SMHI.

Title	Ferrybox Workshop
Date	17 March 2021
Activity	Type: Organisation of a workshop. Channel: Email and newsletter, Twitter
Audience	Type: Scientific community. Size: 40

Title	HFR Workshop
Date	17 March 2021
Activity	Type: Organisation of a workshop. Channel: Email and newsletter, Twitter
Audience	Type: Scientific community. Size: 40

Title	Swedish Ocean Decade Session
Date	9 June 2020
Activity	Type: Participation in a workshop. Channel: Email and newsletter, Twitter
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers. Size: 30

Title	Universeum
Date	21 May 2021
Activity	Type: Participation in an event other than a conference or workshop. Channel: Email and newsletter
Audience	Type: Scientific community, Civil society. Size: 15

Title	ERDDAP workshop
Date	19 January 2023

Activity	Type: Organisation of a workshop. Channel: Website, Email and newsletter
Audience	Type: Scientific community. Size: 30

Title	VA Service of the Week
Date	7 February 2024
Activity	Type: Social Media. Channel: Website
Audience	Type: Scientific community, Industry. Size: 100
URL	https://www.jerico-ri.eu/2024/02/07/empowering-coastal-observations-smhis-century-long-expertise-in-marine-environmental-monitoring/

Annexe 4.16 SOCIB Data Centre Multi-Platform Observatory (ID 33.1)

The following is the list of outreach activities reported by SOCIB Data Centre Multi-Platform Observatory, which belongs to SOCIB.

Title	Check it out 👇👇👇 #VirtualAccess #JERICOS3 #JERICORI
Date	10 December 2020
Activity	Type: Social Media. Channel: Twitter
Audience	Type: Scientific community. Size: 676
URL	https://twitter.com/socib_icts/status/1337001318624464896

Title	'Glider Toolbox': A toolbox for glider data management
Date	21 January 2021
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community, General public. Size: not applicable
URL	https://socib.es/index.php?seccion=detalle_noticia&id_noticia=449

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

Title	Use the #SOCIB #THREDDS #DataServer #free of charge
Date	9 July 2021
Activity	Type: Social Media. Channel: Twitter
Audience	Type: Scientific community, Industry. Size: 1961
URL	https://twitter.com/socib_icts/status/1413433145790173184

Title	Virtual Access to coastal ocean data enabled through the SOCIB Thredds Data Server
Date	13 July 2021
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community, Industry. Size: 557
URL	https://www.jerico-ri.eu/2021/07/13/virtual-access-to-coastal-ocean-data-enabled-through-the-socib-thredds-data-server/

Title	Get free machine-to-machine #access to #SOCIB #DataRepository
Date	10 December 2021
Activity	Type: Social Media. Channel: Twitter
Audience	Type: Scientific community, Industry. Size: 913
URL	https://twitter.com/socib_icts/status/1469259532434120708

Title	Machine-to-machine access to SOCIB Data Repository
Date	7 December 2021
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community, Industry. Size: NA
URL	https://www.jerico-ri.eu/2021/12/07/machine-to-machine-access-to-socib-data-repository/

Annexe 4.17 JERICO RI e-Infrastructure (ID 33.2)

The following is the list of outreach activities reported by JERICO RI e-Infrastructure, which belongs to SOCIB.

Title	📰 We have gone along to meet Juan Gabriel Fernández, head of #SOCIB Data Centre working on #JERICOS3 #virtualaccess improvement 👉He shares the advancements on the provision & facilitation of centralized access to @JERICORI resources https://cutt.ly/gheahvE #ICTSNews
Date	20 November 2020
Activity	Type: Social Media. Channel: Twitter, Facebook
Audience	Type: Scientific community, General public. Size: 1262
URL	https://twitter.com/socib_icts/status/1329758137646190594, https://www.facebook.com/ICTSSOCIB/

Title	A unique entry point to facilitate virtual access to coastal ocean resources within the JERICO-S3 project
Date	20 November 2020
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community, General public. Size: 92
URL	https://www.socib.es/index.php?seccion=detalle_noticia&id_noticia=441

Title	VA service of the week
Date	19 October 2023
Activity	Type: Website. Channel: Website
Audience	Type: General public. Size: 100
URL	https://www.jerico-ri.eu/2023/10/19/jerico-core-revolutionising-coastal-oceanography-through-the-jerico-e-infrastructure/

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

Annexe 4.18 SYKE-ALG@LINE (ID 34.1)

The following is the list of outreach activities reported by SYKE-ALG@LINE, which belongs to SYKE.

Date	27 August 2020
Description	Weekly algae reviews for summer 2020 are available at https://www.syke.fi/en-US/Current/Algal_reviews, and the whole summer period is summarised in the press release of "Algae bloom monitoring". Though JERICO-S3 is not explicitly mentioned, data is partly collected using Algaline ferries and Utö Station (part of VA of SYKE and FMI). https://www.syke.fi/en-US/Current/Press_releases/Summary_of_algal_bloom_monitoring_JuneAu(58270)

Date	4 June 2020
Description	Release of Finnish marine data portal, including Algaline data https://www.syke.fi/en-US/Current/MarineFinlandfi__The_treasure_trove_of_F(57547)

Title	Cyanobacteria information from the Gulf of Finland
Date	1 June 2021
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community. Size: 10
URL	https://swell.fmi.fi/hab-info/index.html

Title	Summary of algal bloom monitoring June-August 2021: The hot weather boosted the growth of cyanobacteria in the early summer – still the amount of cyanobacterial blooms was below average since mid-July
Date	30 August 2021
Activity	Type: Press release. Channel: Website
Audience	Type: Scientific community, Civil society, General public, Policymakers, Media. Size: 1000

URL	https://www.syke.fi/en-US/Current/Summary_of_algal_bloom_monitoring_JuneAu(61391)

Annexe 4.19 Keri Island Research Station (ID 35.1)

The following is the list of outreach activities reported by Keri Island Research Station, which belongs to TALTECH.

Title	Facebook post with video about Keri station
Date	19 January 2021
Activity	Type: Social Media. Channel: Facebook
Audience	Type: General public. Size: 100

Title	Social media post
Date	27 May 2021
Activity	Type: Social Media. Channel: Facebook
Audience	Type: Media. Size: 100

Annexe 4.20 OBPS-OTGA (ID 36.1)

The following is the list of outreach activities reported by OBPS-OTGA, which belongs to IODE of UNESCO-IOC.

Title	IODE-XXV_2019_PearlmanSimpson_Presentation Ocean Best Practices System: a global resource to facilitate harmonizing practices in ocean observation, data and information
Date	20 February 2019
Activity	Type: Participation in a conference. Channel: Website
Audience	Type: Scientific community, Customers. Size: 100
URL	https://www.iode.org/index.php?option=com_content&view=article&id=583&Itemid=100394

Title	Good, Better, Best: A Monthly Newsletter for Practices of Ocean Observing & Applications
Date	17 October 2019
Activity	Type: Non-scientific and non-peer-reviewed publication (popularised publication). Channel: Website, Email and newsletter
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Customers. Size: 500
URL	https://us13.campaign-archive.com/home/?u=ab89e583ff8a6a2e366e1fdcf&id=7c6ddfee90

Title	IOC Ocean Best Practices System: poster
Date	12 January 2020
Activity	Type: Flyer
Audience	Type: Scientific community, Industry, Civil society, General public, Policymakers, Media, Customers. Size: 1000

Date	1 June 2020
Activity	Type: Website content and blogging
URL	https://www.oceanbestpractices.org/projects/

Date	12 April 2021
Activity	Type: Conference and webinar
URL	https://imdis.seadatanet.org/

Title	Evolving and Sustaining Ocean Best Practices IV: OBPS Community Workshop
Date	18 September 2020
Activity	Type: Organisation of a conference. Channel: Website, Email and newsletter, Twitter, YouTube

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Audience	Type: Scientific community, Industry, Policymakers, Customers. Size: 500
URL	https://www.oceanbestpractices.org/community-engagement/workshops/workshop-iv-2020/

Title	Pearlman, J., Simpson, P., Karstensen, J., Buttigieg, P.L., Pearlman, F., Waldmann, C. and Hoerstmann, C. (2020) Improving Global and Regional Ocean Observing Through Best Practices and Standards. IEEE Oceanic Engineering Society Newsletter, June 2020, pp. 17-21.
Date	1 June 2020
Activity	Type: Non-scientific and non-peer-reviewed publication (popularised publication). Channel: Magazine
Audience	Type: Scientific community, Industry, Civil society, Customers. Size: 2000
URL	https://ieeeoes.org/publications/oes-beacon/

Title	EMODnet Open Conference 2021
Date	14 June 2021
Activity	Type: Participation in a conference. Channel: Website
Audience	Type: Scientific community, Customers. Size: 200
URL	https://emodnetconference2021.eu/

Title	IOC Assembly Webinar Ocean InfoHUB - Latin America & Caribbean
Date	8 June 2021
Activity	Type: Webinar. Channel: Webinar
Audience	Type: Scientific community, Customers. Size: 50

Title	VA service of the week
Date	23 August 2023
Activity	Type: Non-scientific and non-peer-reviewed publication (popularised publication). Channel: Webinar

Audience	Type: General public. Size: 100
URL	https://www.jerico-ri.eu/2023/08/23/virtual-access-ocean-best-practices-system/

Annexe 4.21 VLIZ Marine Data Archive (ID 38.1)

The following is the list of outreach activities reported by VLIZ Marine Data Archive, which belongs to VLIZ.

Title	Open Belgium presentation of Marine Data Management
Date	6 March 2020
Activity	Type: Participation in a conference. Channel: Website, Email and newsletter, Twitter
Audience	Type: Scientific community. Size: 10
URL	https://2020.openbelgium.be/session/breaking-out-research-data-cycle-20-years-marine-data-management

Title	Presentation: "MDA & IMIS, data repositories as treasure chests for documented data"
Date	28 February 2020
Activity	Type: Organisation of a workshop. Channel: Website, Email and newsletter, Twitter
Audience	Type: Scientific community. Size: 33
URL	https://lifewatch.be/en/advancing-data-stewardship

Title	Presentation of MDA for Andromeda project
Date	17 September 2020
Activity	Type: Training. Channel: Project meeting
Audience	Type: Scientific community. Size: 15

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Title	Presentation of MDA for Fish Intel project
Date	11 May 2021
Activity	Type: Training. Channel: Project meeting
Audience	Type: Scientific community. Size: 15

Title	Presentation of MDA for SUMES project
Date	30 November 2021
Activity	Type: Participation in a conference. Channel: Project meeting
Audience	Type: Scientific community. Size: 10

Title	EMODnet Biology course
Date	8 June 2020
Activity	Type: Training. Channel: Website
Audience	Type: Scientific community. Size: 50
URL	https://classroom.oceanteacher.org/enrol/index.php?id=430

Title	Adding the Marine Data Archive to FAIRsharing.org
Date	30 July 2020
Activity	Type: Website. Channel: Website
Audience	Type: Scientific community. Size: >10
URL	https://fairsharing.org/FAIRsharing.CjHLQw

Title	Presentation of MDA in the presentation"ARMS workflow: photographic and genetic data from Autonomous Reef Monitoring Structures (ARMS) to track NIS colonisation of European waters and monitor long-term changes of marine hard-bottom communities (scientific side)."
Date	20 May 2021

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Activity	Type: Participation in a workshop. Channel: Website, Email and newsletter, Twitter, YouTube
Audience	Type: Scientific community. Size: 55
URL	https://www.youtube.com/watch?v=frcpBr6_few

Title	MDA listed as a recommended data repository for Nature Scientific Data
Date	30 July 2021
Activity	Type: Social Media. Channel: Twitter
Audience	Type: Scientific community. Size: 1857 views on Twitter
URL	https://twitter.com/PatriciaMariaMC/status/1421032517491216384

Title	Task Force Matchmaking Flanders Open Science Board: IMIS & MDA tutorial
Date	24 September 2021
Activity	Type: Participation in a workshop. Channel: Tutorial presentation in a physical meeting
Audience	Type: Scientific community. Size: 30

Title	EMSEA Conference: European Marine Science Educators Association
Date	26 September 2022
Activity	Type: Participation in a conference. Channel: Physical conference
Audience	Type: Scientific community. Size: 100
URL	https://emsea.glueup.com/event/emsea-conference-mallorca-59232/

Title	Data Managment workshop dissemination
Date	31 January 2022
Activity	Type: Social Media. Channel: Twitter

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Audience	Type: General public. Size: 257
URL	https://twitter.com/PatriciaMariaMC/status/1490962852873904132

Title	Data management workshop at GA Mission Atlantic
Date	2 October 2023
Activity	Type: Participation in an event other than a conference or workshop. Channel: physical meeting
Audience	Type: Scientific community. Size: 50

Title	FAIR data for marine biologist and data managers
Date	24 January 2024
Activity	Type: Organisation of a workshop. Channel: Website
Audience	Type: Scientific community, Students. Size: 25

Title	Data management for a project
Date	14 December 2023
Activity	Type: Organisation of a workshop. Channel: physical meeting
Audience	Type: Scientific community, Students. Size: 15