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EXCELSIOR Project

H2020-WIDESPREAD-2018-2020 | Grant Agreement No 857510	
Project full title:	**ERATOSTHENES: Excellence Research Centre for Earth Surveillance and Space-Based Monitoring of the Environment**
Project acronym:	**EXCELSIOR**
Work Package:	**WP8 ECoE Digital Innovation Hub in EMMENA**
Deliverable:	**D8.6 Report on ECoE Networking & Knowledge Hub (update 1)**
Version:	**D8.6**
Dissemination level:	**Public**

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Deliverable D8.6: Report on ECoE Networking & Knowledge Hub (update 1)				
Sections to be protected	**Description**	**Owner**	**Access Rights**	
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Executive Summary

Deliverable D8.6 presents the updated status and evolution of the ERATOSTHENES Centre of Excellence (ECoE) Networking Platform and Knowledge Hub, developed under Work Package 8 (WP8) – "ECoE Digital Innovation Hub in EMMENA" within the EXCELSIOR project. Building upon the conceptual design and initial specifications introduced in Deliverable 8.5: "Report on ECoE Networking & Knowledge Hub", this report documents the transition of both platforms from design to operational and functional implementation, reflecting their progressive maturation into core digital services that support ECoE. In alignment with the broader WP8 ecosystem, including the Regional Exploitation Platform described in Deliverable 8.4: "Report on Regional Exploitation Platform (update 1)", which provides access to Earth Observation (EO) data, processing tools, and analytics environments, the Networking Platform enables stakeholder discovery and interaction across the East Mediterranean, Middle East and North Africa (EMMENA) region, while the Knowledge Hub serves as a structured repository offering access to datasets, tools, publications, training materials, and project information.

This deliverable highlights the latest developments, enhancements, and added functionalities of both platforms, as well as their contributions to strengthening collaboration, knowledge dissemination, and innovation within the regional EO ecosystem. It further documents the integration and transfer of the platforms to ECoE's operational infrastructure, supporting their long-term sustainability and continued use beyond the EXCELSIOR project. Together with the Regional Exploitation Platform, the Networking Platform and Knowledge Hub form a complementary digital environment that links data access, service development, and stakeholder engagement, and supports research excellence, networking, and capacity building. Through these functions, they reinforce ECoE's role as a regional Digital Innovation Hub for EO, and facilitate the uptake of EO-based solutions that address environmental and societal challenges.

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Abbreviations and Acronyms

AI	Artificial Intelligence
CUT	Cyprus University of Technology
DEC	Department of Electronic Communications
DIH	Digital Innovation Hub
DLR	German Aerospace Centre
ECoE	ERATOSTHENES Centre of Excellence
EO	Earth Observation
EMMENA	East Mediterranean, Middle East and North Africa
ESA	European Space Agency
GEO	Group on Earth Observations
NOA	National Observatory of Athens
TROPOS	Leibniz Institute for Tropospheric Research
WP	Work Package

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1. Introduction

Through the establishment of the ERATOSTHENES Centre of Excellence (ECoE), the EXCELSIOR project aims to position Cyprus as a regional Digital Innovation Hub (DIH) in Earth Observation (EO). Within this framework, Work Package 8 (WP8) of EXCELSIOR focuses on the development of the "ECoE Digital Innovation Hub in EMMENA." WP8 explores and enhances ECoE's potential to deliver innovative EO services and tools that support digital transformation and regional growth across the East Mediterranean, with a strategic focus on the Middle East and North Africa (EMMENA region).

The ECoE Networking Platform and Knowledge Hub, introduced and conceptually described in Deliverable D8.5, constitute core components of this digital ecosystem. D8.5 defined the initial architecture, objectives, and functionalities of the two platforms, highlighting their role in fostering collaboration, facilitating access to knowledge resources, and promoting the exploitation of EXCELSIOR results. D8.5 established the foundations for:

- stakeholder engagement through a structured networking environment,
- access to EO tools, datasets, and methodologies, and
- the creation of a coordinated knowledge-sharing ecosystem supporting research and innovation activities.

This deliverable builds directly on this foundation, providing an updated and more mature view of the Networking Platform and Knowledge Hub as they have evolved during the subsequent implementation period. While D8.5 focused on conceptual design and initial specifications, D8.6 documents the operationalisation, enhancement, and integration of the platforms within the ECoE infrastructure.

More specifically, the structure of this report is as follows:

- **Chapter 1** introduces the deliverable by providing a brief description of the Networking Platform and Knowledge Hub.
- **Chapters 2 and 3** describe the modifications and additional features applied to the Networking Platform and Knowledge Hub, respectively, since the previous deliverable.
- **Chapter 4** discusses the added value and impact of the two platforms in strengthening collaboration, knowledge sharing, and innovation within the EO community.
- **Chapter 5** provides an overview of platform analytics, highlighting usage insights and engagement indicators.
- **Chapter 6** describes the transfer and integration of the platforms into the ECoE infrastructure, ensuring their sustainability and operational continuity.
- **Chapter 7** concludes the deliverable and outlines the next steps.

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2. ECoE Networking Platform - Modifications and Features Added

At this stage of development, a series of design and functionality modifications of the ECoE Networking Platform have been completed to better serve its intended purpose within the project and the Centre. These include a fully operational Networking Platform website and a complete set of networking functionalities for registered members. The main developments and improvements are presented in this section.

The ECoE Networking Platform is a web-based stakeholder engagement platform available on the ECoE Networking Platform website. It provides an open-access digital environment for registration, discovery, filtering, and interaction among stakeholders involved in EO and related thematic areas across the EMMENA region. Searchable profiles allow users to identify and connect with organisations and individuals by geographic location and thematic domain. The platform supports community building and communication among research institutions, industry actors, policymakers, and other stakeholders. Its functions include advanced search and filtering, sector-based stakeholder browsing, discussions, and other engagement tools. It serves as a hub for networking and research uptake, knowledge sharing, and cooperative initiatives in EO and environmental sciences. The Networking Platform complements the Regional Exploitation Platform (D8.4) and the Knowledge Hub, forming an integrated DIH ecosystem that connects data, services, and stakeholders.

The Networking Platform is designed to operate beyond the EXCELSIOR project lifetime as part of the ECoE infrastructure, ensuring continued stakeholder engagement, knowledge exchange, and support to the regional EO ecosystem.

Key features of the Networking Platform include:

- **Stakeholder Registration and Networking:** Users can join the platform to connect and collaborate with stakeholders across the EMMENA region and beyond. Members can create and manage profiles, indicate thematic interests, and engage with other stakeholders. Stakeholder registrations and profiles are subject to validation by platform administrators to ensure data quality and relevance. As of the reporting date, 77 stakeholders from 13 countries are registered on the platform, including local authorities, industrial partners, universities, and research organisations.
- **Stakeholder Mapping and Filtering:** The platform provides interactive mapping and advanced filtering tools that allow users to identify stakeholders by geographic location and thematic domain. It currently includes stakeholders from 13 countries, supporting broad regional and international outreach and engagement.
- **Stakeholder Interaction and Collaboration:** Registered members can submit comments, initiate discussions, and exchange knowledge, fostering collaboration and community building among research institutions, industry, policymakers, and other actors.



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- **Thematic Structure and Research Domains:** The platform is organised around three main thematic areas:
    - **Environment & Climate**: Ground-based remote sensing, atmospheric monitoring (aerosols and clouds), and applications in agriculture, water, and land management.
    - **Resilient Society**: Research and services aimed at societal well-being, resource efficiency, disaster risk reduction, and protection from natural and anthropogenic threats.
    - **Big Earth Data Analytics**: Systems and methodologies for managing and analysing large-scale geospatial and socio-economic datasets derived from satellite, GIS, and related sources.
- **Database and Browsing Services:** The platform functions as a structured stakeholder database, enabling users to browse profiles, explore thematic areas, and access relevant information supporting research uptake and cooperation.
- **News and Events:** The platform disseminates updates on ECoE activities, including collaborations, symposia, international programmes, and advances in EO and geospatial research.
- **Project Information, Affiliations, and Funding:** The platform provides transparent information on project support and partnerships. ECoE was established with funding from the European Union's Horizon 2020 Research and Innovation Programme, the Government of the Republic of Cyprus, and the Cyprus University of Technology, and it collaborates with national and international organisations.
- **Additional User Services:** These include an About section, newsletter subscription functionality, and structured navigation options that facilitate access to stakeholder listings and thematic content.

The development and refinement of the above functionalities during the reporting period are further illustrated below.

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Landing Page ("Home")

The platform's landing page (Figure 1, left) contains key information and filtering capabilities, along with user interface controls that enable navigation to subpages that provide the corresponding services. It will also include links to the Knowledge Hub and other related components of the EXCELSIOR digital ecosystem.

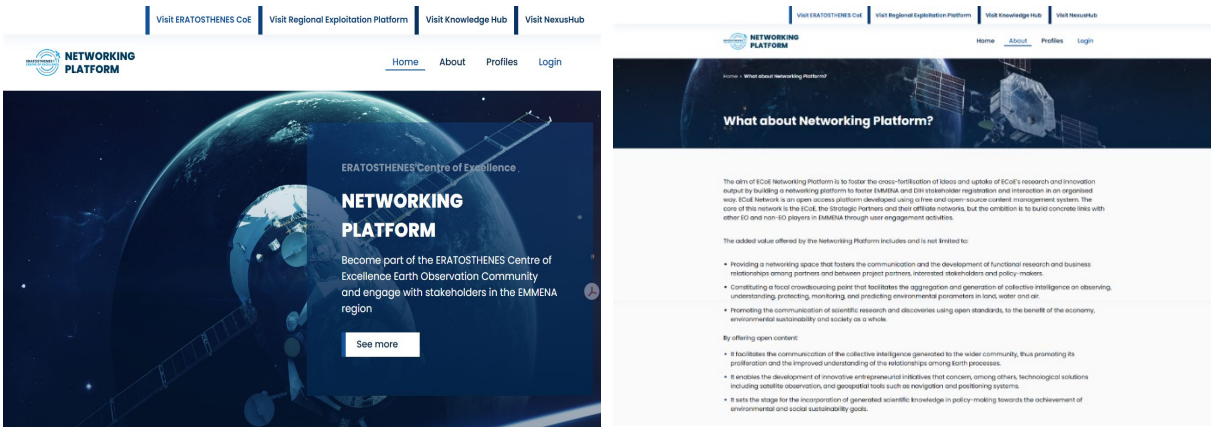


Figure 1: ECoE Networking platform: Landing page (left) and "About" subpage (right).

More specifically, the landing page is structured into multiple content sections (Figure 2) that present different types of information, including:

- "Stakeholders": providing an overview of the stakeholders registered on the platform, with filtering and search options, as well as key statistics (e.g. the number of countries represented, the total number of stakeholders, and total profile views), and information on the most recently registered stakeholders.
- "Database services": providing shortcuts to the "Login" and "Profiles" sections, as well as the option to create and post discussion entries.
- "Thematic Areas": presenting information on ECoE's three thematic areas, corresponding to its three research departments (Figure 3).
- "News": providing users with live feeds from ECoE social media posts.
- "Future Events": presenting information on upcoming events organised by ECoE and providing access to the "Events" subpage, which lists past and future events, and includes search functions. Each event is presented on a dedicated subpage with a geolocation feature.
- "Be a part of the platform": encouraging users to actively participate by submitting discussion posts and engaging with the platform community.
- "Subscribe to our newsletter": allowing users to subscribe to ECoE's newsletter.

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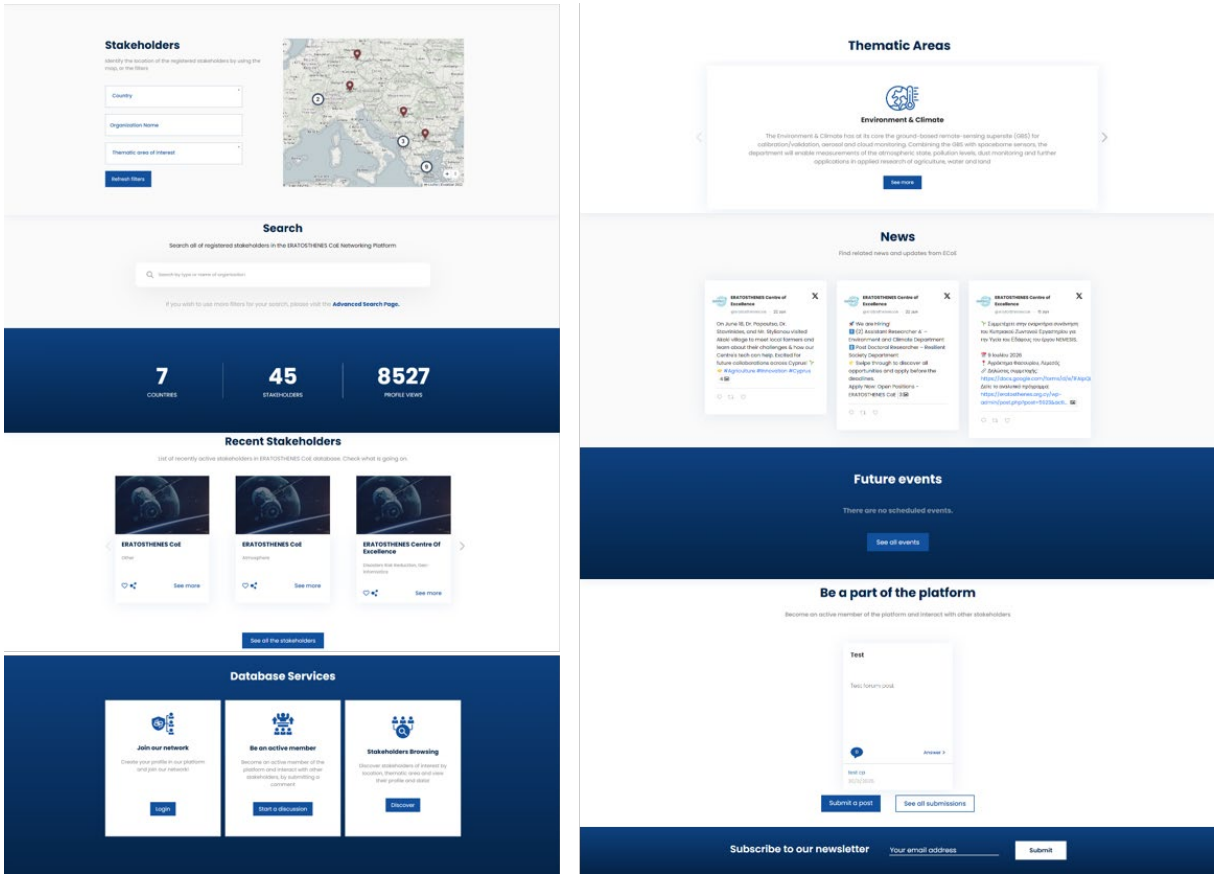


Figure 2: ECoE Networking platform: Content sections of the landing page.

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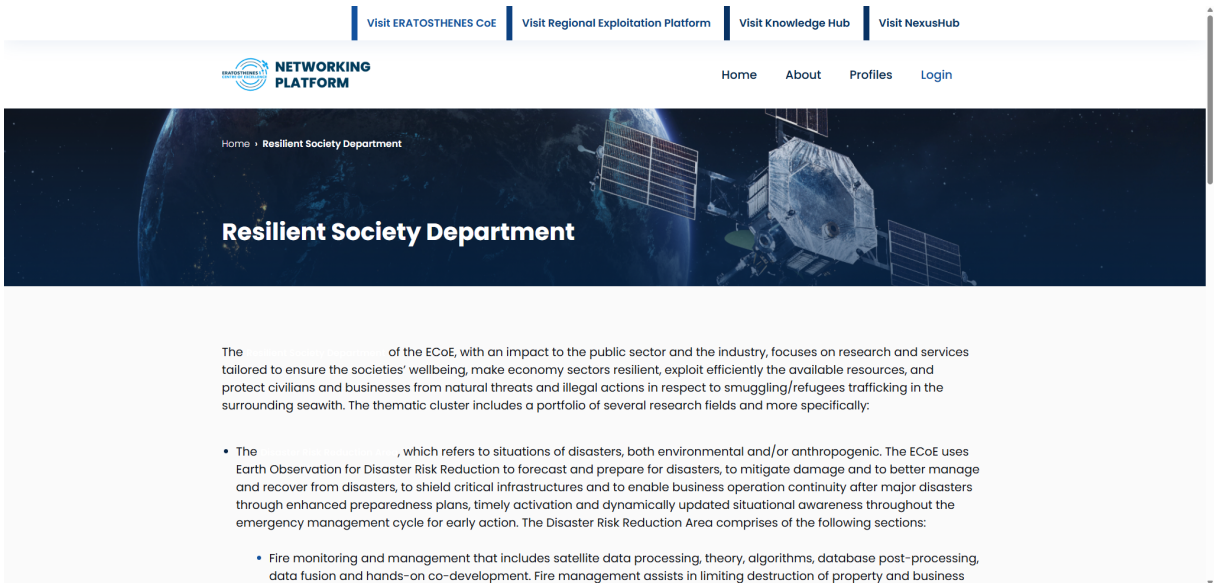


Figure 3: ECoE Networking platform: Thematic Area description page.

"About" subpage

The About subpage (Figure 1, right) provides general information about the platform, including its purpose, key features, and added value.

"Profiles" subpage

The Profiles subpage (Figure 4, left) lists all stakeholders registered on the Networking Platform and includes filtering options.

"Login" subpage

The "Login" subpage (Figure 4, right) allows stakeholders to register their profile information and log in to the platform.

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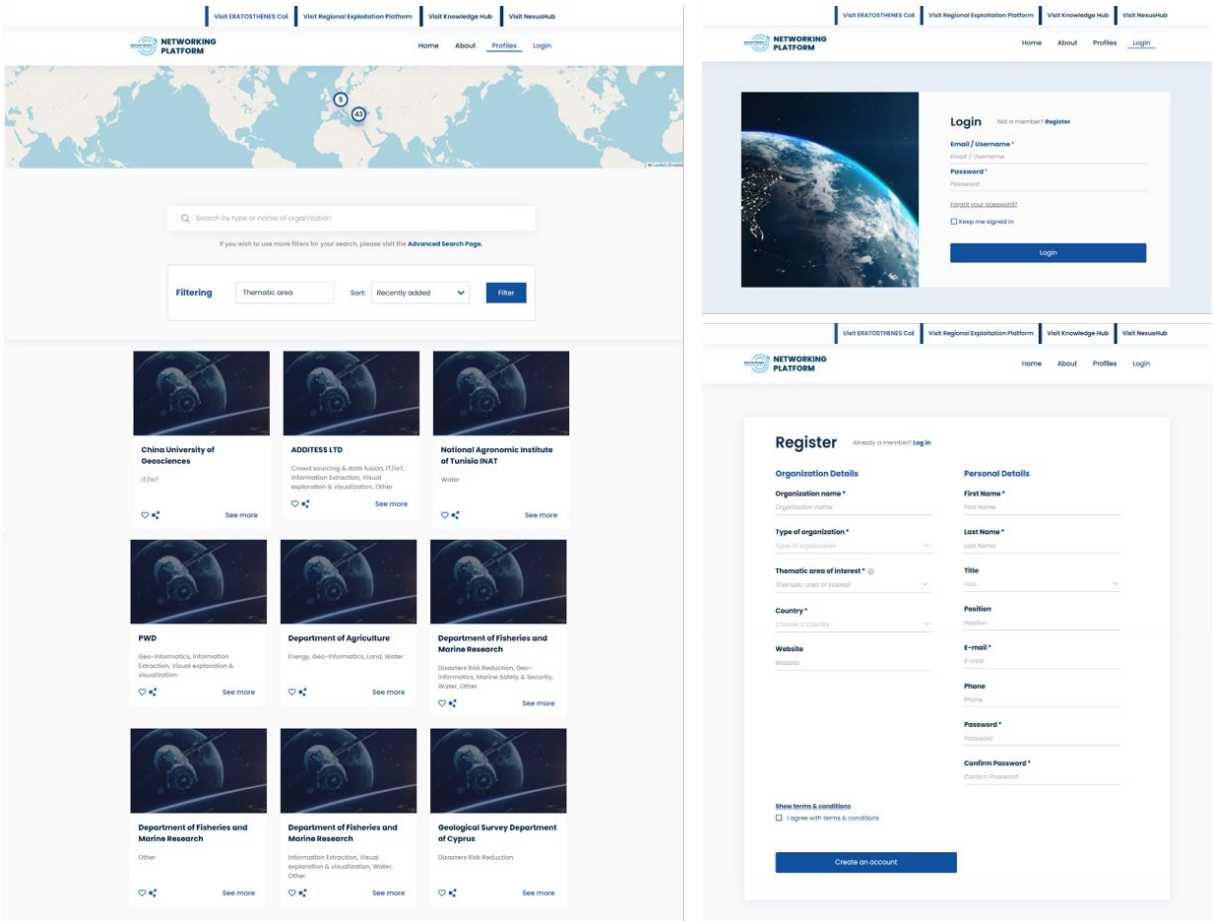


Figure 4: ECoE Networking Platform: "Profiles" (left) and "Login"/"Register" (right) subpages.

Within the "Profiles" subpage, advanced filtering functions, including geo-location, are available (Figure 5). Logged-in users can also add specific stakeholders to their favourites.

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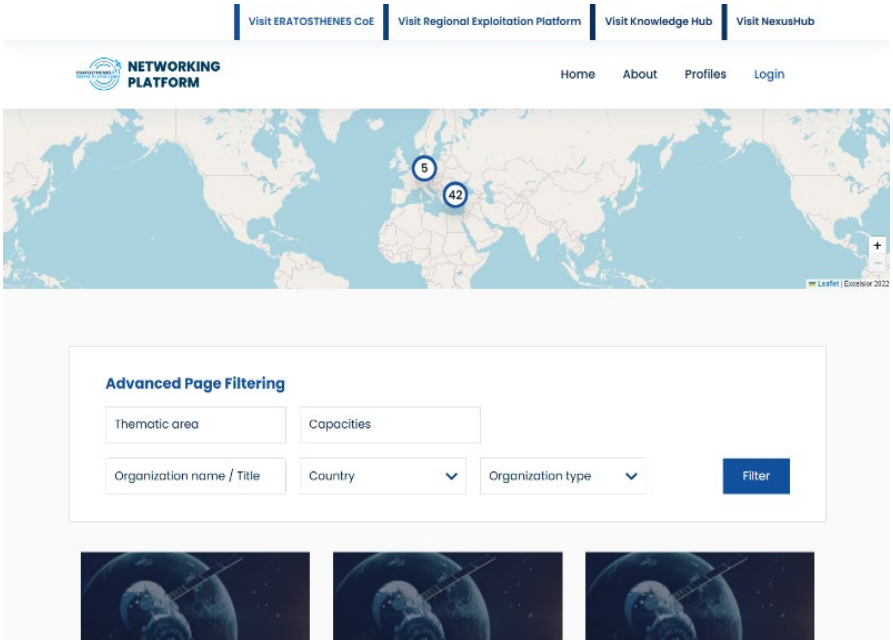


Figure 5: ECoE Networking platform: Advanced Filtering options.

Individual profile pages for stakeholders registered on the platform (Figure 6) provide information content and contact details to viewers, under five tabs:

- Description, including Contact Person Information
- Details, including website and social media information
- Activity Focus, including Thematic Areas of interest, which constitute one of the advanced filtering fields
- Capacities, which can similarly be used as a parameter in advanced filtering
- Activities/Services

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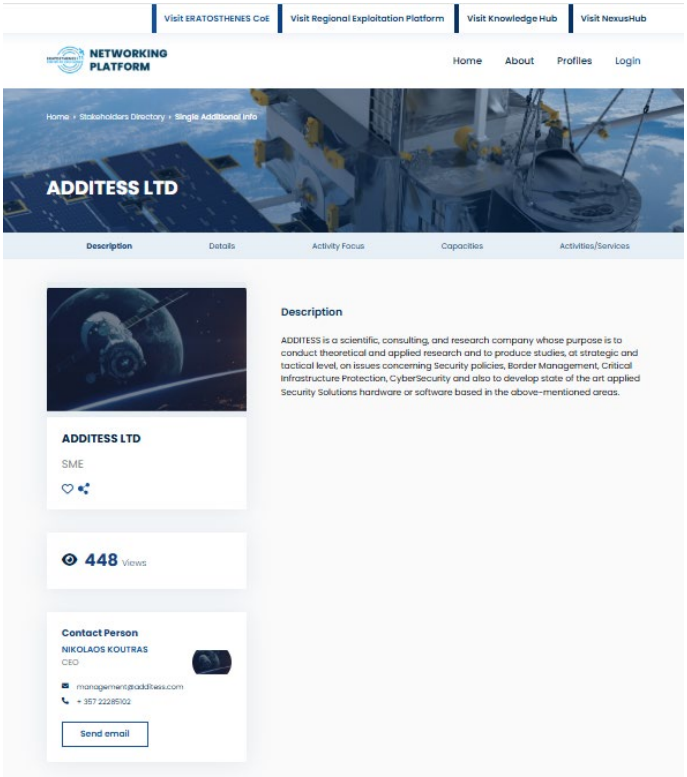


Figure 6: ECoE Networking platform: Example of an individual Profile Page.

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3. ECoE Knowledge Hub: Modifications and Added Features

At this stage of development, the ECoE Knowledge Hub has completed a series of design and functional enhancements to better serve its intended purpose within the project and the Centre. These include a fully operational Knowledge Hub website and a complete set of relevant functions, including services available to registered members.

The ECoE Knowledge Hub is available through the ECoE Knowledge Hub website. It is a centralised digital repository and information service designed to support research, innovation, and capacity building in EO across the EMMENA region and beyond. It provides structured, open access to curated knowledge resources that enhance scientific and technological capabilities in the thematic domains addressed by the ERATOSTHENES CoE. The Knowledge Hub operates in synergy with the Networking Platform and Regional Exploitation Platform (D8.4) as part of the integrated DIH ecosystem. It is designed to operate beyond the EXCELSIOR project as part of the ECoE infrastructure, supporting the long-term availability and sustainability of its services and resources.

Key features and components of the Knowledge Hub include:

- **Accessible Knowledge Resources**: Provides access to project documentation, analytical tools, publications, training materials, and datasets relevant to EO applications, supporting the development of technical expertise, methodological understanding, and innovation capacity. The platform serves stakeholders, staff from government departments and other public authorities, students, and researchers worldwide who can benefit from these resources.
- **Project Portfolios:** Offers searchable overviews of ongoing and completed EO research and innovation projects, covering areas such as climate-resilient agriculture, cultural heritage risk assessment, artificial intelligence for disaster risk reduction, and geospatial data analysis frameworks.
- **Knowledgebase Services:** Enables users to explore structured content, including tools, publications, datasets, and educational resources, supporting evidence-based decision-making and the advancement of EO research and applications. Educational resources are prepared by ECoE and are provided as open-access materials. Publications are retrieved using the ORCID IDs of researchers affiliated with EXCELSIOR partner organisations.
- **Funding and Data Access: Highlights relevant funding opportunities and provides curated links to European and international datasets, facilitating research uptake, innovation, and knowledge integration** across projects. Data are retrieved through CKAN, an open-access data management system that provides access to government data repositories such as data.gov.cy and data.gov.gr, as well as to repositories including the United States Geological Survey Earth Explorer, the Cloudnet portal, and the European Data Portal.

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- **User Engagement:** Supports registered users in accessing and interacting with content, fostering collaborative learning, knowledge dissemination, and the exchange of best practices among EO stakeholders.
- **Support for Excellence and Innovation:** Contributes to the enhancement of scientific and technological excellence, enabling knowledge transfer, integration of research results, and promotion of long-term, large-scale EO initiatives within the EMMENA region.

Overall, the Knowledge Hub operates as an integrated information ecosystem that consolidates resources, promotes collaborative research, and enhances capacity building in EO and related domains. It aligns with the objectives of Horizon 2020 and the EXCELSIOR project regarding innovation, scientific excellence, and societal impact. The development and refinement of these functions during the reporting period are illustrated below.

Landing Page ("Home")

The platform's landing page (Figure 7) contains key information, provides an overview of recent datasets, and includes user interface controls that enable navigation to subpages providing the corresponding services. It also links to the Networking Platform and other components of the EXCELSIOR and ECoE digital ecosystem.

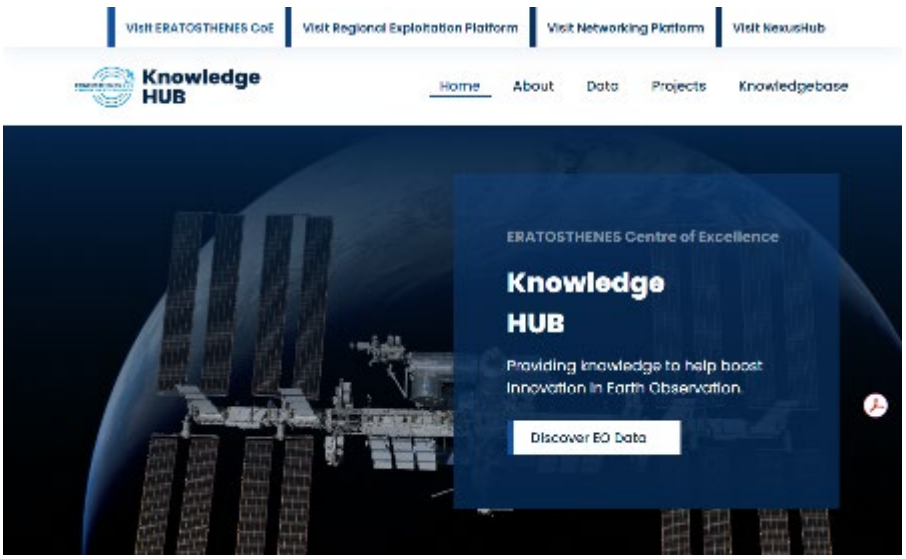


Figure 7: ECoE Knowledge Hub: Landing page.

More specifically, the landing page is structured into multiple content sections (Figure 8) that present different types of information, including:

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- "Register to our Knowledge Hub": allowing users to create a profile and log in to the system. The registration and login functions are shared with the Networking Platform (Figure 4, right), ensuring a unified user experience across both platforms.
- "Projects": providing an overview of recently funded projects in which ECoE participates and access to the Projects subpage.
- "Knowledgebase": providing access to the Knowledgebase subpage.
- "Funding opportunities": providing information on funding opportunities related to EO applications.
- "Recent datasets": displaying recent datasets and providing access to the Data subpage.
- "Subscribe to our newsletter": allowing users to subscribe to ECoE's newsletter.

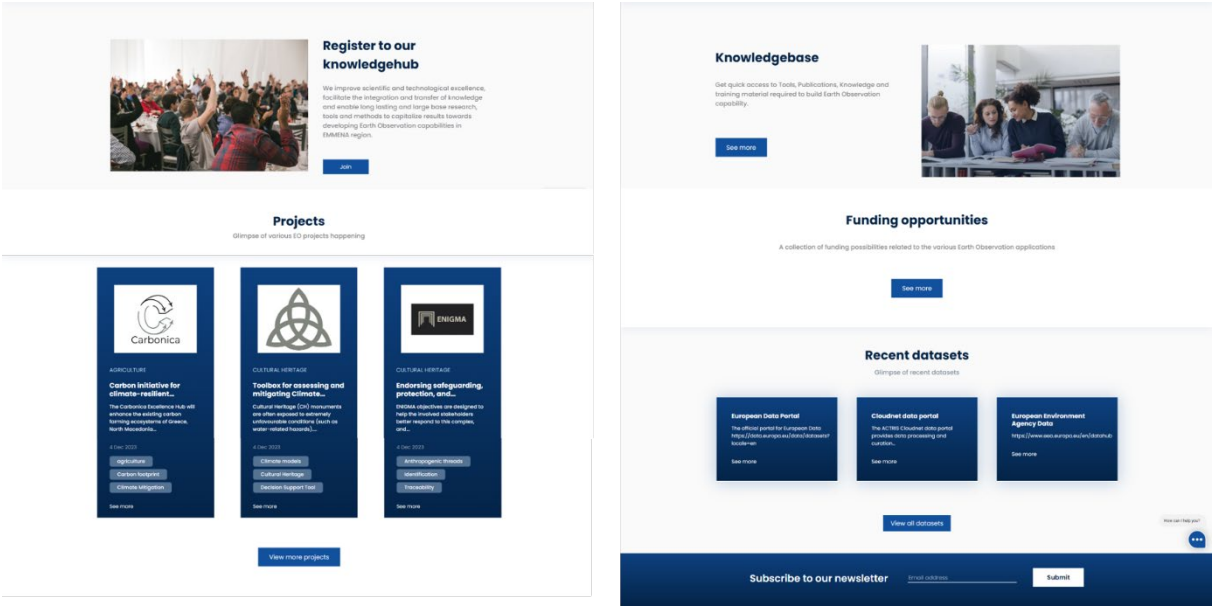


Figure 8: ECoE Knowledge Hub: Content sections of the landing page.

"About" subpage

The About subpage provides information about the Knowledge Hub (Figure 9).

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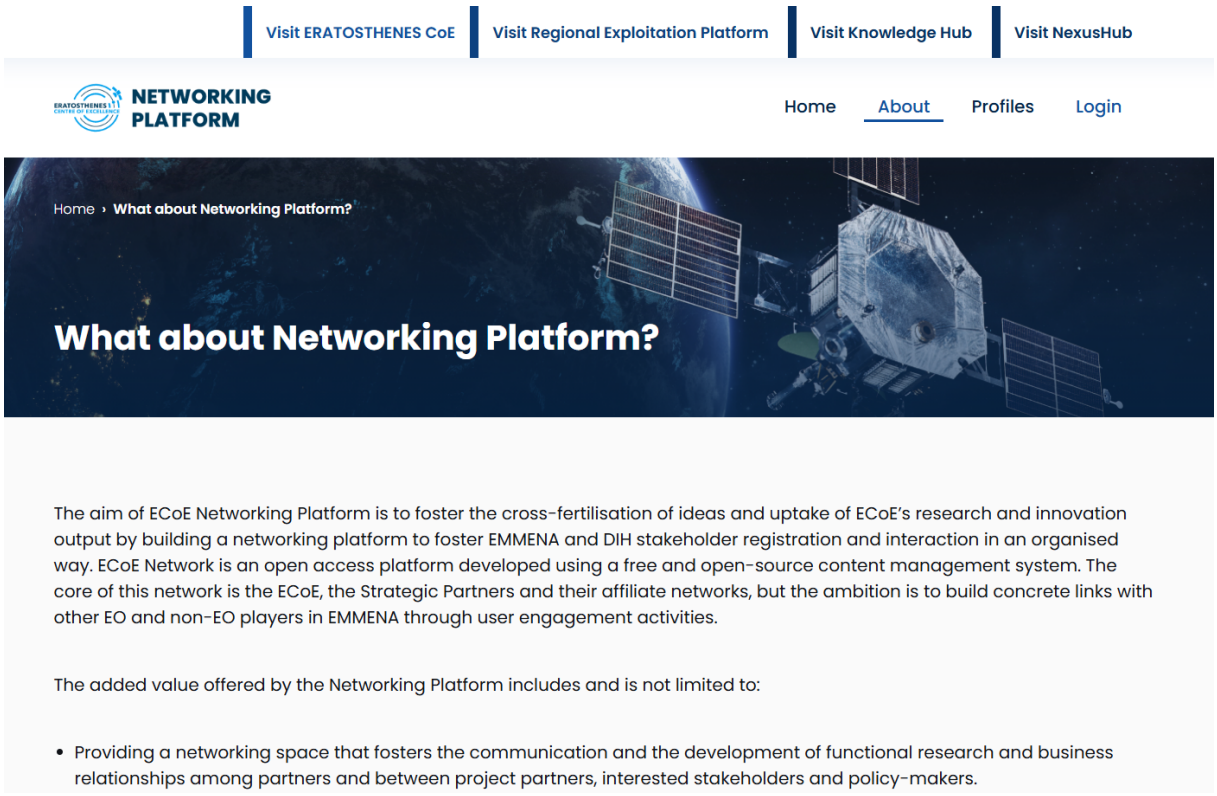


Figure 9: ECoE Knowledge Hub: "About" subpage.

"Data" subpage

When users navigate to the Data subpage, they are directed to the CKAN Data Management System (DMS), a widely adopted open-source data portal platform that supports the publication, management, and dissemination of datasets (Figure 10). Through CKAN, the Knowledge Hub provides access to a comprehensive catalogue of datasets, with search, discovery, and retrieval functions, support for multiple data formats, and API-based access.

The datasets available through the platform are organised and categorised using structured metadata, thematic groupings, and tags, enabling users to discover and access data across a wide range of topics. CKAN also supports organisations that manage and publish collections of datasets, with user roles providing different levels of access and control.

Dedicated dataset pages provide access to associated resources, detailed descriptions, and metadata, facilitating data understanding, reuse, and integration into downstream applications (Figure 11). Datasets are also organised into thematic areas, enabling more efficient browsing and filtering.

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The Stakeholders subpage (Figure 12) provides an overview of the organisations that contribute data and content to the platform, ensuring transparency about data sources and enabling users to identify data providers relevant to their domain of interest.

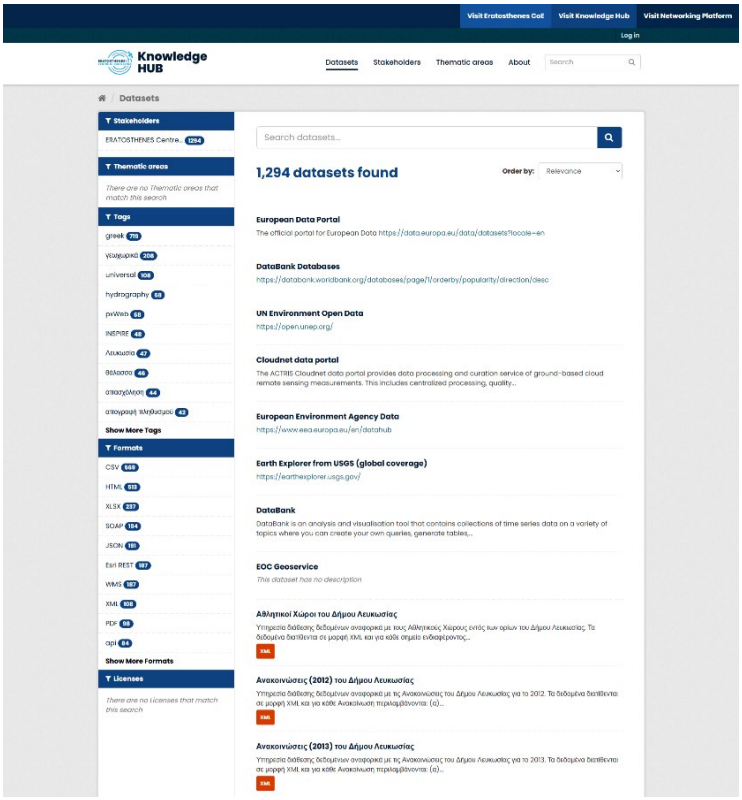


Figure 10: ECoE Knowledge Hub: Data Management System.

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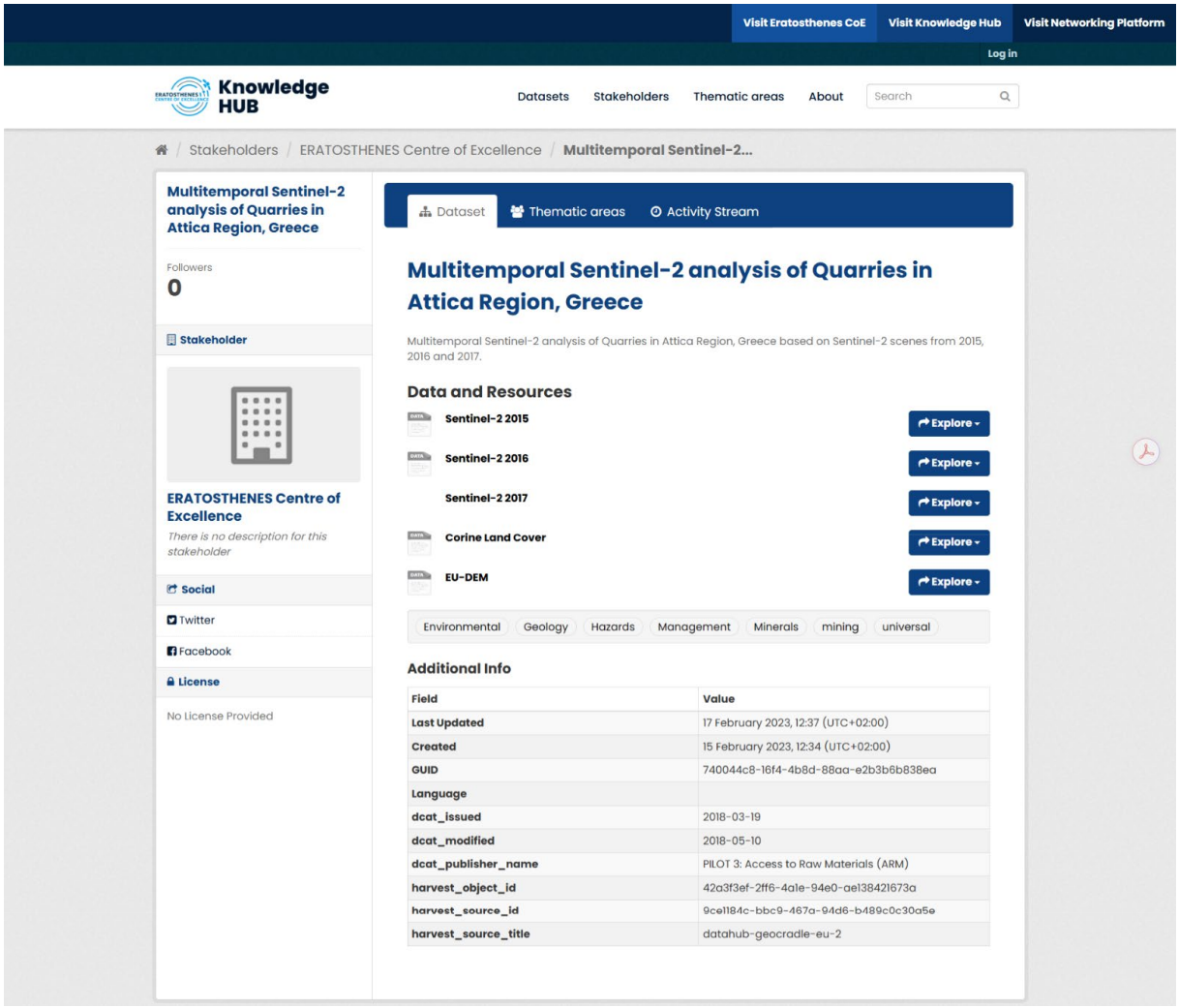


Figure 11: ECoE Knowledge Hub: Individual dataset subpage, including associated resources, descriptions and metadata.

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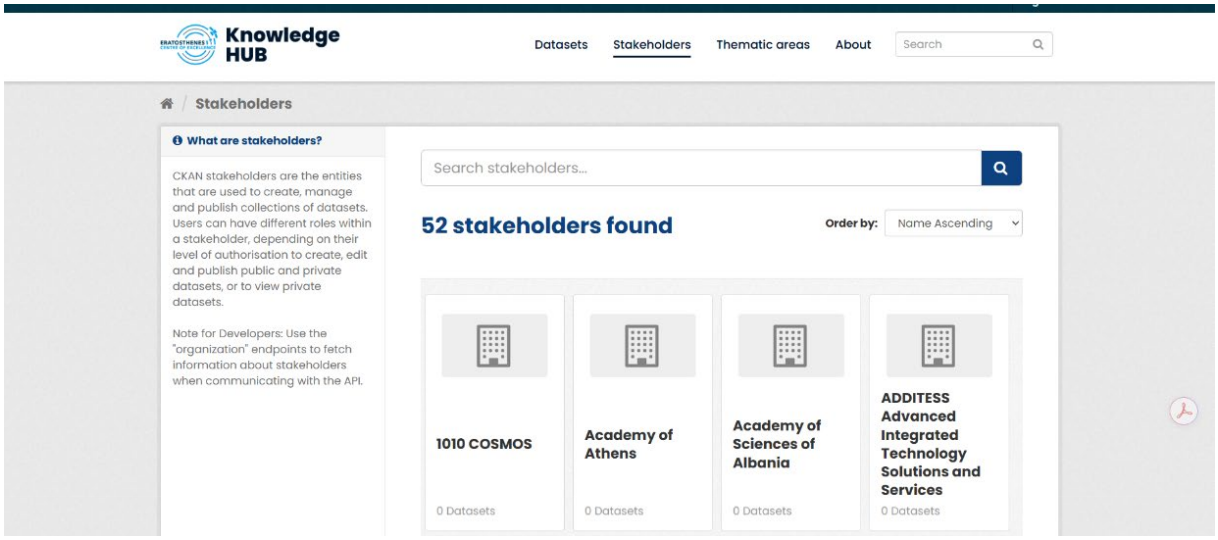


Figure 12: ECoE Knowledge Hub: Stakeholders subpage.

"Projects" subpage

The Projects subpage (Figure 13, left) provides a complete list of all the externally funded research and innovation projects in which ECoE participates. It also enables users to navigate to dedicated subpages that present detailed project information (Figure 13, right).

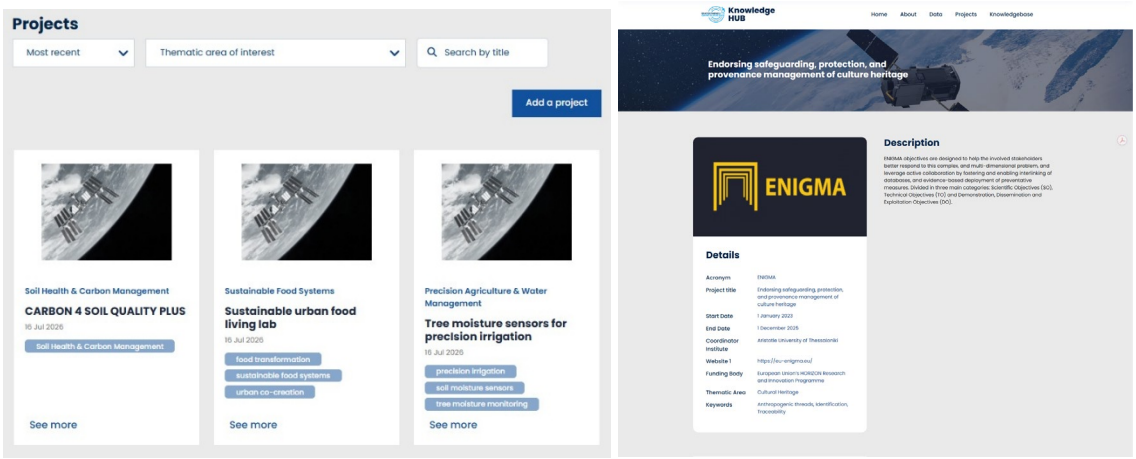


Figure 13: ECoE Knowledge Hub: Projects subpage (left) and individual project subpage (right)

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"Knowledgebase" subpage

The Knowledgebase subpage provides structured access to the Tools, Library, and Training Materials sections, allowing users to browse and explore available resources (Figure 14).

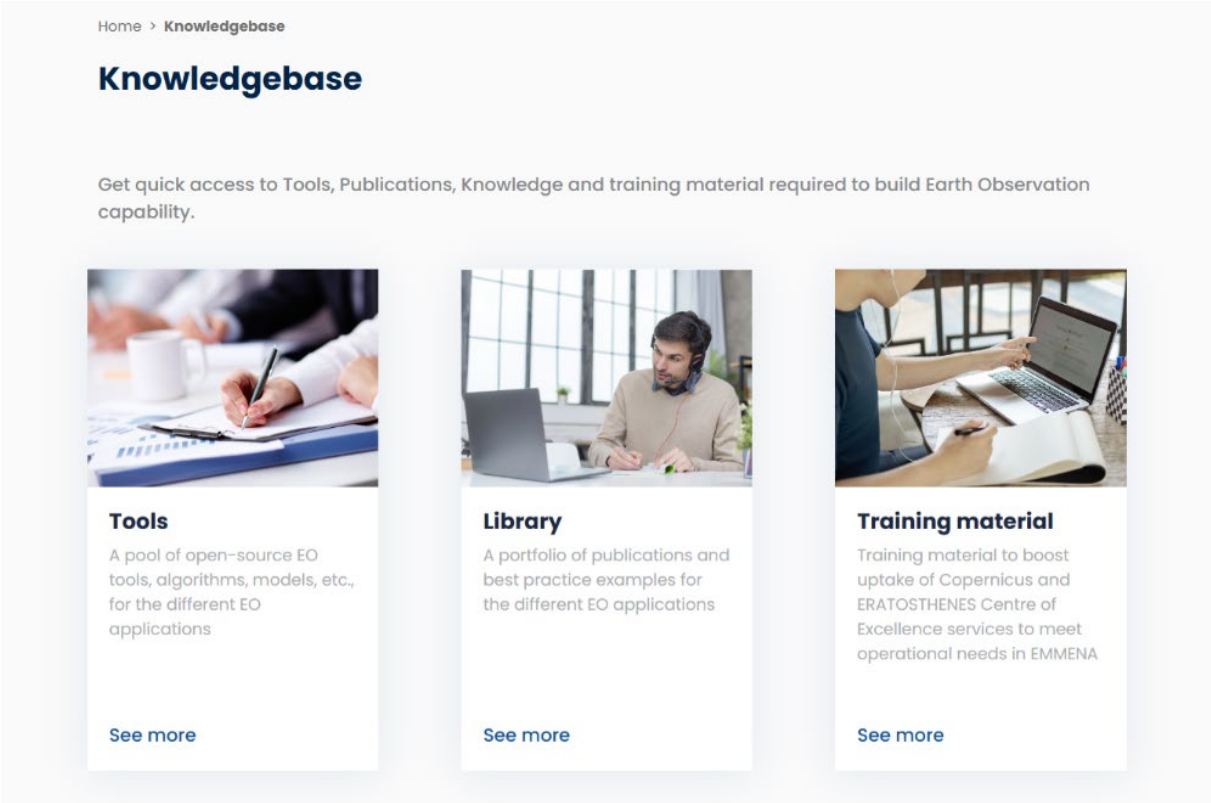


Figure 14: ECoE Knowledge Hub: Knowledgebase

The Tools subpage (Figure 15) lists available tools and applications relevant to EO, with filtering options supporting targeted search.

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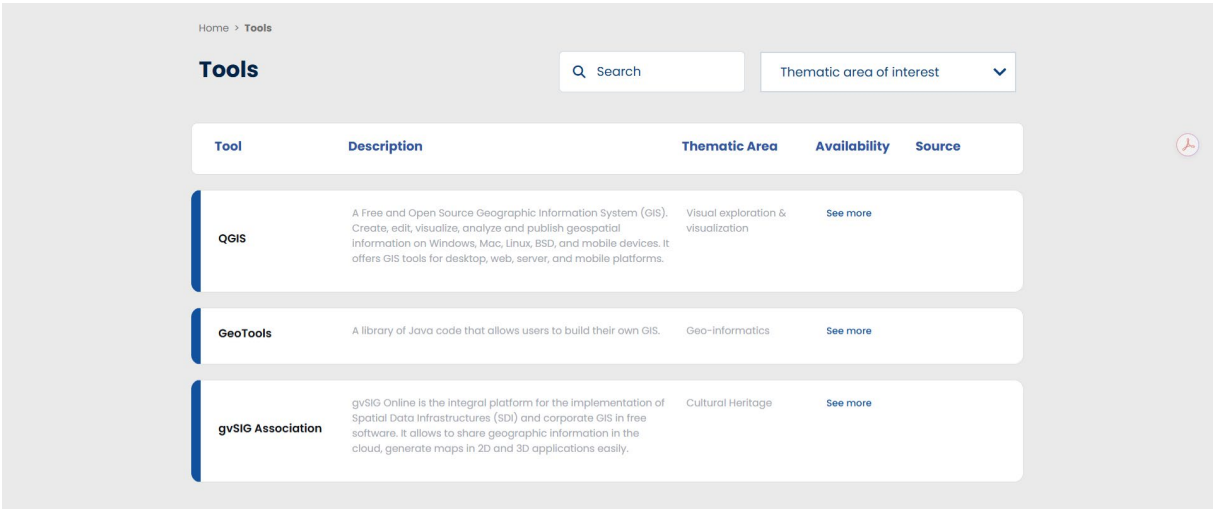


Figure 15: ECoE Knowledge Hub: Tools subpage

The Library subpage (Figure 16) provides an overview of relevant publications, including filtering options to facilitate content discovery.

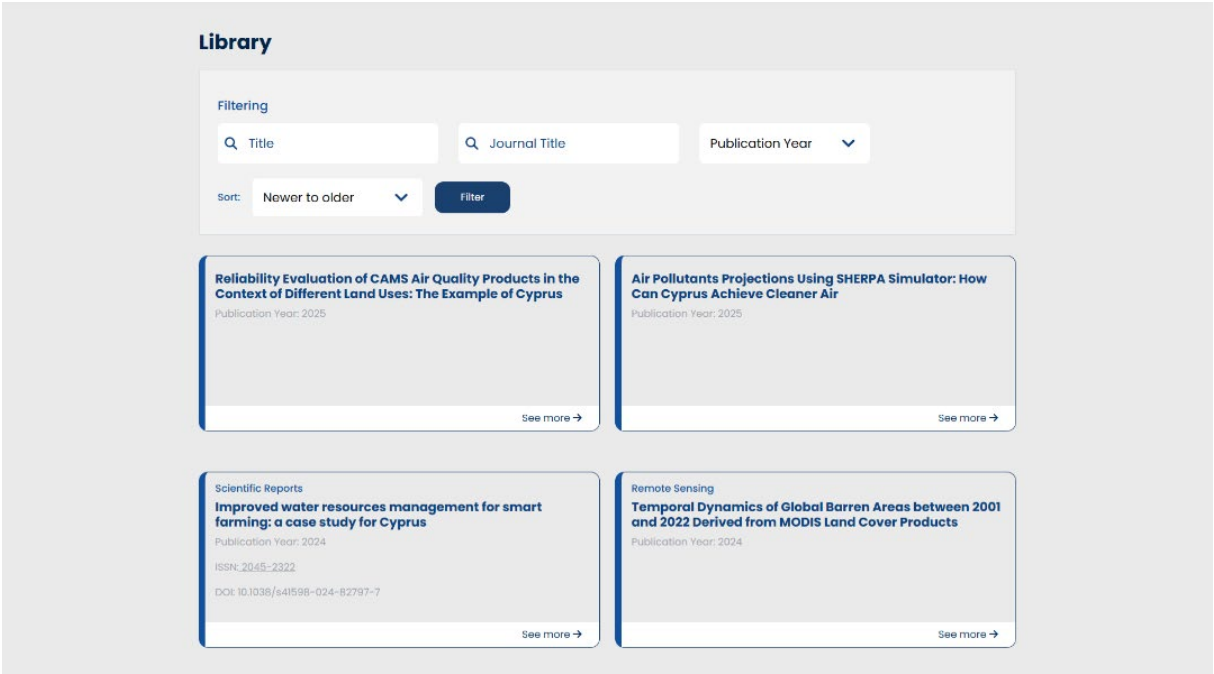


Figure 16: ECoE Knowledge Hub: Library subpage

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The Training Material subpage (Figure 17) provides access to curated learning resources, with options to browse and filter the available materials.

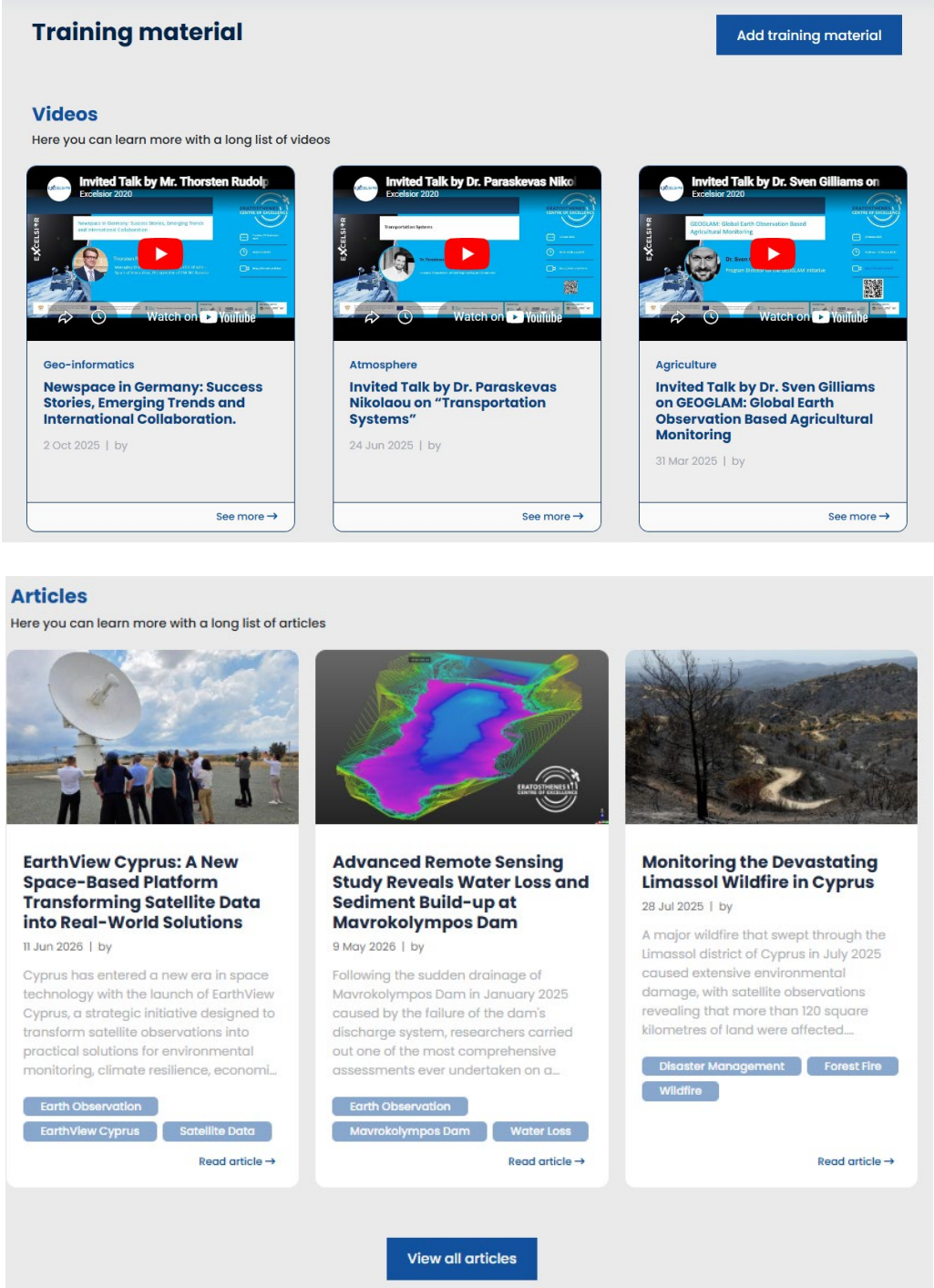


Figure 17: ECoE Knowledge Hub: Training material subpage, top videos section; bottom articles section.

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4. Added Value and Impact

The development of the **ECoE Networking Platform and Knowledge Hub** represents a key strategic advancement in strengthening the EO ecosystem in the EMMENA region. Together, the two platforms create an integrated digital environment that facilitates collaboration, knowledge exchange, and the broader exploitation of EO research and innovation outcomes, in alignment with the objectives of the ECoE DIH and complementary infrastructures such as the Regional Exploitation Platform (D8.4).

A primary benefit of the platforms is their ability to **connect a diverse community of stakeholders** involved in EO activities. By enabling organisations, researchers, policymakers, and private-sector actors, and institutions to identify one another and interact through a common digital environment, the Networking Platform reduces fragmentation and supports the formation of new partnerships. This connectivity is particularly important in a geographically diverse region such as EMMENA, where cross-country and cross-sector cooperation is essential to address complex environmental and societal challenges.

The platforms also contribute significantly to the **dissemination, accessibility, and exploitation of knowledge** generated through research and innovation projects. The Knowledge Hub provides structured access to scientific outputs, tools, datasets, and training materials, enabling users to discover and reuse valuable resources. This facilitates the transfer of research results into operational services, encourages interdisciplinary collaboration, and enhances the visibility of EO capabilities developed within ECoE and its partner organisations. In this context, the platforms directly support the transition from research outputs to downstream applications and services.

Another key impact relates to **capacity building and skills development** across multiple stakeholder groups. By offering access to curated resources, project information, and educational material, the Knowledge Hub supports researchers, professionals, and institutions seeking to expand their expertise in EO technologies and applications. The platform serves as a structured learning and knowledge-sharing environment that strengthens regional capabilities in remote sensing, geospatial analytics, environmental monitoring, and digital innovation, thereby contributing to long-term human capital development in the region.

The Networking Platform further enhances the **innovation potential and market uptake of EO solutions**. By bringing together actors from academia, industry, and public authorities, it creates opportunities for collaboration that can lead to the development of new applications, services, and business models. SMEs, start-ups, and technology providers can identify potential clients, partners, and funding opportunities, while public authorities can access innovative EO solutions that support evidence-based policymaking and environmental management. This interaction fosters an innovation ecosystem that supports the co-creation and validation of EO-based services.

In addition, the platforms strengthen ECoE's regional and international positioning. By providing a visible digital gateway to ECoE's activities, collaborations, and expertise, they increase outreach and

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foster stronger links with European and global EO initiatives. This helps integrate the EMMENA region more effectively into the broader EO community and supports the strategic objective of establishing the ERATOSTHENES CoE as a regional DIH and reference point for EO innovation.

From a broader perspective, the platforms help address **societal and environmental challenges** by facilitating access to information, fostering collaboration, and enabling the development of EO-driven solutions. Applications supported through the community and knowledge resources of the platforms can contribute to areas such as climate monitoring, disaster risk reduction, environmental protection, sustainable agriculture, and urban resilience, supporting evidence-based decision-making and policy development at regional and international levels.

The combined operation of the Networking Platform and Knowledge Hub supports a structured impact pathway (Figure 18). Inputs such as EO data, knowledge resources, and stakeholder networks are transformed into platform services and collaborative outputs. These outputs can lead to measurable outcomes, including increased cooperation, knowledge reuse, and capacity building, and ultimately contribute to broader societal and economic impacts.

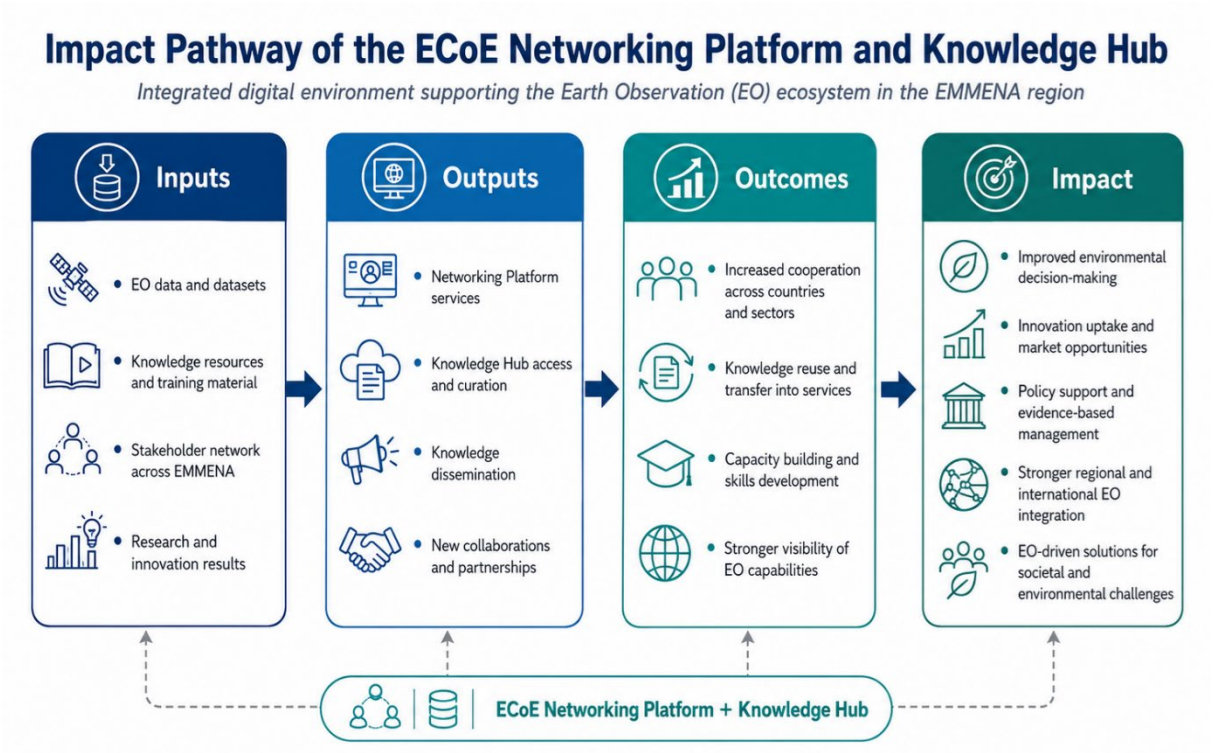


Figure 18: Impact pathway of the ECoE Networking Platform and Knowledge Hub.

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5. Technical Aspects and Analytics

5.1 Personal data protection measures

In addition to the security measures implemented at the hosting infrastructure level (e.g., server hardening, SSL/TLS encryption, firewalls, etc.), the ECoE Networking Platform and Knowledge Hub (https://ecoehub.eratosthenes.org.cy/ and https://ecoehub.eratosthenes.org.cy/knowledge-hub/), developed on WordPress (v. 6.9.4), incorporates additional application-level mechanisms to protect personal data. These measures are provided by both the WordPress core and the platform's custom configuration.

Explicit Consent During Registration: The registration form (/register) includes a mandatory "I agree with the Terms & Conditions" checkbox. The Terms & Conditions contain a dedicated "Personal Data and Cookies" section, which explicitly refers users to the separate Privacy Policy and Cookie Policy of the ERATOSTHENES CoE.

Built-in GDPR Tools: Since version 4.9.6, WordPress has included native Export Personal Data and Erase Personal Data tools (Tools > Export/Erase Personal Data), enabling administrators to respond to right-of-access and right-to-erasure requests under the GDPR. WordPress also provides a default privacy policy template with recommended content.

Secure Password Management: User passwords are stored using secure one-way hashing (phpass/bcrypt) provided by the WordPress core and are never stored in plain text. Password resets (/password-reset/) are performed using a unique, time-limited token sent to the user's registered email address, rather than by transmitting the existing password.

CSRF Protection via WordPress Nonces: All user forms (registration, login, and newsletter subscription) are protected against Cross-Site Request Forgery (CSRF) through the WordPress nonce mechanism, which validates each form submission.

User Roles and Access Control (Roles and Capabilities): WordPress provides a roles-and-capabilities framework (e.g., Administrator and Subscriber) that restricts access to personal data based on user permissions, helping to ensure that only authorised users can access sensitive registration and profile information.

Anti-Spam and Honeypot Protection: Registration, login, and newsletter forms include hidden honeypot fields (e.g. "Only fill in if you are not human" or "Leave this field empty if you're human") to prevent automated bot submissions and reduce the risk of mass data harvesting or abuse.

Controlled "Keep Me Signed In" Functionality: The "Keep me signed in" option relies on the built-in WordPress authentication cookie mechanism, which uses cookies with predefined expiration periods rather than permanently storing user credentials.

Separation of Personal Data by Processing Purpose: Registration information (e.g., organisation and contact details) is collected separately from newsletter subscription data, allowing users to provide separate consent for each processing purpose in accordance with GDPR principles.

5.2 CKAN Data Portal

The Knowledge Hub platform integrates through the "Data" section a separate, standalone open data portal based on CKAN (v. 2.9.5). CKAN is an open-source data management system specifically designed for publishing and managing open data and is widely used by organisations such as data.gov.uk. As this is a separate subsystem with its own user account management mechanism, its privacy and security features are assessed independently.

Controlled User Account Creation: CKAN user accounts are created automatically when users register on the main WordPress website, ensuring that account creation is centrally managed and preventing unauthorised self-registration directly through the CKAN portal.

Secure Password Reset: Password resets (/user/reset) are performed through a unique, time-limited link sent to the user's registered email address. This is a built-in CKAN security feature and does not involve transmitting or displaying the user's existing password.

"Remember Me" with Secure Session Management: The "Remember Me" functionality relies on CKAN's built-in session and cookie management mechanisms, rather than storing user credentials in plain text.

Public User Profiles Without Sensitive Information: Public user profiles (e.g., /user/<username>) display only the username and an optional biography (e.g. "This user has no biography"). Email addresses, telephone numbers, and other contact details are not publicly exposed unless the user explicitly chooses to provide them.

Organisation-Based Roles and Permissions: CKAN includes a role-based access-control system at the "Organization" level (e.g., Admin, Editor, and Member), restricting who can create, modify, or delete datasets and who can access user and organisation management functions.

API Access Control: Personal API Keys: Access to the CKAN REST API (/api/3) by authenticated users is secured through individual API keys. These keys can be revoked or regenerated by either the user or a system administrator, eliminating the need for shared credentials and providing secure, auditable API access.

5.3 Platform Usage

This section provides an overview of key website traffic statistics for the ECoE Networking Platform and Knowledge Hub, based on Google Analytics data from 1 January 2025 to 14 July 2026. It covers overall performance indicators, visitor geography, the most-viewed content, and the main traffic-acquisition channels.

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During the reporting period, the platform received approximately 120 unique visits per day. Most sessions (77.3%) originated from Direct traffic. This indicates that a significant proportion of users access the platform directly via the URL or bookmarked links, suggesting a growing base of returning or highly engaged users. Organic Search accounted for 17.3% of all sessions, indicating a gradual improvement in the platform's visibility within search engine results. By contrast, Referral traffic represented 4.7% of sessions. Fluctuations in referral traffic are expected because this acquisition channel typically depends on a limited number of external sources, such as partner websites, press releases, or third-party publications. These sources often generate short-term increases in traffic while the related content remains recent, followed by a natural decline over time. The observed shift towards Direct and Organic Search traffic represents a positive long-term trend, as these channels are generally more sustainable and less dependent on isolated external referrals. Together with the overall increase in users, this suggests that the ECoE Networking Platform and Knowledge Hub is strengthening its visibility, recognition, and regular use among its target audience. The platform attracted visitors from 85 countries; the 10 countries with the most visitors are Cyprus, China, Singapore, Greece, the United States, Ireland, the Netherlands, Germany, Brazil, and Italy.

Compared with the period prior to 1 January 2025, active and new users doubled, demonstrating that the platform continues to attract a steadily expanding user base. At the same time, the total number of recorded events decreased by approximately 40%, despite the substantial increase in users. This suggests that, on average, users are having fewer interactions per visit. This reduction should not necessarily be interpreted as a negative outcome, since it may reflect a change in the composition of the audience, as first-time visitors generally perform fewer interactions than returning users who are already familiar with the platform. Further, if users can locate the information they require more efficiently, fewer clicks and interactions are needed to complete their tasks, resulting in a lower average number of events per session. The observed trend towards Direct and Organic Search traffic is positive over the long term, as these channels are generally more sustainable and less dependent on isolated external referrals. Together with the overall increase in users, this suggests that the ECoE Networking Platform and Knowledge Hub is strengthening its visibility, recognition, and regular use among its target audience. The Knowledge Hub's library page recorded the most views, approximately 900, followed by the Knowledge Hub main page with 463.

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6. Transfer to ECoE Infrastructure

As part of the project scope and sustainability strategy, the partners coordinated the transfer of the Networking Platform and Knowledge Hub to the ECoE infrastructure. The transfer was designed to ensure the platforms' long-term operational continuity, maintainability, and scalability beyond the EXCELSIOR project's implementation period. The transition included migrating all web-based components, databases, datasets, user management functions, and supporting services to the ECoE production infrastructure. It also consolidated the Networking Platform and Knowledge Hub within the broader ECoE DIH ecosystem, alongside the Regional Exploitation Platform (D8.4).

The overall infrastructure consists of two closely connected environments: the web-based Networking Platform and Knowledge Hub, implemented through custom WordPress themes and services, and the CKAN-based Data Management System (DMS), which supports the management and dissemination of EO datasets. The transfer therefore included both the application layer and the underlying data infrastructure.

Prior to the transfer, the partners conducted a detailed technical review of the platforms to identify and resolve outstanding issues, verify system stability, and ensure compatibility with the target infrastructure environment. The review included verification of platform functionalities, testing of user workflows, validation of dataset accessibility, assessment of external integrations, and confirmation of backup and recovery procedures.

The transfer procedure included migrating and restoring all Docker volumes containing platform configuration files, storage resources, metadata, database content, and search indexes. An export of the production volumes was prepared in advance to support safe restoration of the operational environment without data loss. The procedure also included restoring the CKAN configuration environment, deploying custom extensions and themes, and verifying all dependent services after deployment.

In parallel, the transfer included migrating the custom-developed WordPress environments that support the Networking Platform and Knowledge Hub. The infrastructure consists of two independent custom themes that implement stakeholder-networking functions and knowledge-repository services, respectively. The platforms use modular architectures with functions for dynamic content filtering, stakeholder interaction, project browsing, event management, and dataset integration.

The migration covered the transfer of all custom-developed functions, including:

- custom post types and taxonomies,
- stakeholder registration and profile management services,
- project and training material repositories,
- AJAX filtering and search functionalities,

- external integrations with CKAN APIs and ORCID services,
- geolocation and mapping services,
- newsletter functionalities,
- user authentication and account management components.

Particular attention was given to preserving interoperability between the Networking Platform, the Knowledge Hub, and the CKAN environment. Because several functions rely on API-based communication between the systems, the transfer included validation of API endpoints, synchronisation services, metadata retrieval mechanisms, and external service dependencies. Appropriate security, access control, and data management procedures were implemented to support system integrity and compliance with relevant standards.

In addition, operational procedures and maintenance guidelines have been documented to support the ECoE technical team during and after the transfer. These include deployment procedures, backup and restoration mechanisms, container management practices, configurations, and mitigation measures for known operational issues identified during platform operation.

The transfer of the Networking Platform and Knowledge Hub to the ECoE infrastructure represents an important step towards the sustainability and long-term exploitation of the digital services developed within EXCELSIOR. Following the migration, the platforms will continue to support collaboration, knowledge dissemination, stakeholder engagement, and EO innovation across the EMMENA region beyond the project lifetime. ECoE has assumed and will retain responsibility for the long-term operation, maintenance, and further development of the platforms after the completion of the EXCELSIOR project.



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EXCELSIOR

7. Conclusions

The development of the **ECoE Networking Platform and Knowledge Hub** represents an important milestone in strengthening the ECoE's digital ecosystem and advancing its role as a regional hub for EO in the EMMENA region. Together, these platforms provide an integrated environment that supports stakeholder engagement, knowledge dissemination, and collaboration in EO across research, industry, and public-sector communities, in the EMMENA region and beyond.

Significant progress has been achieved in enhancing the design, functionality, and accessibility of both platforms. The **Networking Platform** has evolved into a fully operational stakeholder engagement environment that enables organisations and individuals to connect, identify potential partners, and exchange expertise across thematic EO domains. Through advanced filtering, stakeholder mapping, and interactive features, the platform facilitates collaboration between research institutions, industry, policymakers, and other actors in EO and related disciplines.

In parallel, the **Knowledge Hub** has evolved into a structured digital repository that consolidates a wide range of resources, including project information, datasets, publications, tools, and training materials. By providing open and organised access to these resources, the platform supports capacity building, promotes the reuse of knowledge generated by research and innovation activities, and contributes to the broader dissemination of EO solutions.

The combined operation of the Networking Platform and Knowledge Hub, in synergy with the Regional Exploitation Platform, creates a **coherent ecosystem** that strengthens the ERATOSTHENES Centre of Excellence's role as a regional hub for EO innovation. These platforms connect stakeholders, support the uptake of EO technologies, and facilitate collaborative initiatives addressing environmental monitoring, climate resilience, disaster risk reduction, and sustainable resource management.

Importantly, the successful transfer and integration of the platforms into the ERATOSTHENES CoE operational infrastructure ensures their sustainability and long-term availability beyond the EXCELSIOR project's lifetime. The platforms are positioned to continue supporting collaboration, innovation, and capacity-building activities while contributing to the long-term exploitation of project results.

Overall, the Networking Platform and Knowledge Hub significantly reinforce the strategic positioning of the ERATOSTHENES CoE as a regional DIH for EO, enhancing its visibility, strengthening its ecosystem, and enabling it to play a key role in addressing environmental and societal challenges through the development and uptake of EO-based solutions.

7.1 Future Development and Sustainability

The transfer of the Networking Platform and Knowledge Hub to ECoE was successfully completed, and the Centre has assumed full ownership and responsibility for the long-term operation, maintenance, and further enhancement of both platforms. This transition establishes a sustainable governance framework that will enable continuous content development, technical improvements, and increased community engagement beyond the project's lifetime.

A content development strategy will be implemented, including the regular publication of scientific news and research highlights, project updates, success stories, videos, webinars, training materials, presentations, newly funded projects, innovative EO applications, technology transfer activities, and collaboration opportunities. These updates will aim to attract researchers, public authorities, industry representatives, entrepreneurs, and funding stakeholders interested in EO and related technologies.

To improve discoverability through search engines, the Knowledge Hub will undergo a comprehensive search engine optimisation (SEO) process. Existing content will be reviewed and reorganised using carefully selected keywords aligned with commonly searched EO topics, Copernicus services, geospatial technologies, climate services, AI, environmental monitoring, and other relevant thematic areas. Additional thematic pages, resource collections, and regularly updated articles will be developed to increase organic search traffic and improve the platform's visibility within the international Earth Observation community.

The dissemination and promotion strategy will also be strengthened through coordinated communication campaigns across multiple channels. The Networking Platform and Knowledge Hub will be systematically promoted during major scientific events organised by ECoE, for example during the RSCy annual conference. These activities will be complemented by regular campaigns through social media, newsletters, and partner communication channels to increase awareness among existing and potential users.

In parallel, the usability and overall user experience of both platforms will be continuously improved. Future developments will focus on simplifying navigation, enhancing the visual presentation of content, improving search functionality, and introducing interactive features that facilitate user engagement.

As part of the platform sustainability plan, measurable performance indicators have been established to monitor growth and impact. A primary objective is to increase the average daily traffic by at least threefold within the next 18 months through a combination of content expansion, improved search engine visibility, stronger dissemination activities, and enhanced user engagement. Additional indicators, including returning visitors, registered users and session duration, will be monitored to evaluate the effectiveness of the implemented measures and guide future improvements.

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In the longer term, ECoE envisions transforming the Networking Platform and Knowledge Hub into a leading EO knowledge portal serving the EMMENA region. The ambition is to evolve beyond platforms primarily dedicated to ECoE activities and to establish a comprehensive regional gateway for EO knowledge, collaboration, innovation, and capacity building. By aggregating information on EO projects, datasets, services, research infrastructures, funding opportunities, training resources, publications, and experts from across the region, the combined platform ecosystem aims to become a primary online destination for researchers, public authorities, industry, entrepreneurs, policymakers, and students seeking reliable and up-to-date EO information. This strategic evolution will strengthen the international visibility, sustainability, and long-term impact of both platforms and ECoE.