



# MEDINA

## Deliverable D7.4

### Dissemination and Communication Report-v1

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<b>Editor(s):</b>	Marinella Petrocchi (CNR)
<b>Contributor(s):</b>	Maitena Ilardia, Leire Orue-Echevarria, Cristina Martínez (TECNALIA)
<b>Reviewer(s):</b>	Christian Banse (FhG), Cristina Martínez (TECNALIA)
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<b>Abstract:</b>	This deliverable presents the dissemination and communication activities followed during the first reporting period (M01-M18) as well as the results from these activities and will update project's dissemination and communication plan respectively. This report also contains the relevant activities executed to foster a close collaboration with projects related to MEDINA, as well as future networking plans.
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## Terms and Abbreviations

AISBL	Association Internationale Sans But Lucratif
BSI	British Standards Institution
CAB	Conformity Assessment Bodies
CAM	Continuous Automated Monitoring
CEN CENELEC	European Committee for Electrotechnical Standardization
CERN	Conseil Européen pour la Recherche Nucléaire
CISO	Chief Information Security Officer
CSA	Coordination and Support Actions
CSP	Cloud Service Provider
DoA	Description of Action
EC	European Commission
ECSO	European Cyber Security Organisation
ENISA	European Union Agency for Cybersecurity
ESG	Expert Stakeholder Group
EUCS	European Cybersecurity Certification Scheme for Cloud Services
GA	Grant Agreement to the project
GRC	Governance, Risk and Compliance
IEC	International Electrotechnical Commission
ICT	Information and Communication Technology
ISO	International Organization for Standardization
KPI	Key Performance Indicator
MTRL	Market & Technology Readiness Level
NCCA	National Certificate Authorities
NeCS	European Network for Cyber Security
NIST	National Institute of Standards and Technology
OSCAL	Open Security Controls Assessment Language
RIA	Research and Innovation actions
SC	Standardization Committee
SCCG	Stakeholder Cybersecurity Certification Group
SDO	Standardization Development Organization
SEO	Search Engine Optimization
SW	Software
SWForum.eu	European forum of the software research community
WG	Working Group

## Executive Summary

This deliverable (D7.4) is a public report, result of the activities on communication and dissemination of Work Package 7 -Awareness, Training and Sustainability- and is the first one of two deliverables explaining the dissemination and communication activities followed during the reporting periods, as well as the results from these activities. If needed, the deliverable will update project's dissemination and communication plan respectively. This report will also contain the relevant activities executed to foster a close collaboration with projects related to MEDINA, as well as future networking plans.

Communication, dissemination and networking activities during the first eighteen months of the project were executed as planned in deliverable D7.2 [1], and the key performance indicators established were mostly achieved.

The dissemination activities have been performed targeting both scientific and industrial communities. They have involved the publication of scientific results in journals and conferences, the collaboration with similar projects and initiatives, the participation to -and the MEDINA presentation at- panels, seminars, lectures, and other public events like workshops and webinars, and the collaboration with the Expert Stakeholder Group (ESG), a group of external experts that have accepted to advise the MEDINA consortium for the project lifetime.

The communication activities have been fulfilled with the different project materials used to achieve dissemination, that is, brochure, newsletter, project presentation, poster, newsletter, and press release. Other communication actions that have been performed are the publication of blog posts related to the project activities. Furthermore, the impact of social media platforms (Twitter, LinkedIn, reddit, YouTube and SlideShare) have also been evaluated with Google analytics tools to monitor their behaviour.

The networking activities have involved cooperation actions with several institutions, including other European projects running in the topic of certification, cloud computing and cybersecurity, the Gaia-X initiative, other non-structured and temporal associations such as the future Cloud cluster, and other initiatives like SDOs and ENISA.

There will be a follow-up of this deliverable, D7.5 [2], which will present the overall results achieved by the MEDINA consortium for what concerns dissemination, communication, and networking activities along the whole lifetime of the project.



# 1 Introduction

The focus of Work package 7 - Awareness, Training and Sustainability- is to maximize the impact of the project by ensuring proper communication and dissemination of the project results and subsequently to raise awareness to the scientific, industrial, and general public communities.

This deliverable reports the activities in reference to the deliverables of Work package 7 (D7.1 [3] and D7.2 [1]), whose goals were to set the common ground, and to plan the proper dissemination, communication and networking actions. The revised version of this deliverable, D7.5 [2], will be released at the end of the project.

## 1.1 About this deliverable

MEDINA partners fully understand the importance of spreading the knowledge about the project and are fully committed to contributing to various dissemination, communication, and networking activities. The initial goals for these activities have been outlined in the DoA and in the deliverable 7.2. Here, we list and describe the results achieved during the first eighteen months of the project, taking into consideration the KPIs defined and highlighting also possible deviations from what was initially planned.

## 1.2 Document Structure

This document is structured as follows:

- Section 1 gives a general introduction, scope, and structure of this deliverable.
- Section 2 summarises the main results in terms of dissemination, communication, and networking activities.
- Section 3 describes in detail the dissemination material that was created during the first reporting period.
- Section 4 focuses on the MEDINA digital strategy and describes the tools that were intensively used during the reporting period (project website, blog and social networks).
- Section 5 lists the relevant scientific publications of the MEDINA partners, as well as the seminars, teaching activities, and business dissemination events in which the consortium has participated to promote the project. Moreover, the section introduces the ESG and describes the meetings that took place in 2021.
- Section 6 describes the networking activities carried out with other European projects, with ENISA, and initiatives like Gaia-X.
- Section 7 recalls the MEDINA dissemination and communication strategy and outlines alignments and discrepancies between planned strategy and results to date.
- Section 8 concludes this deliverable.

## 2 Overall MEDINA Results

This section summarizes the results achieved in terms of dissemination, communication, and networking activities during the first eighteen months of the MEDINA project.

### 2.1 Dissemination Results

In the first eighteen months of the MEDINA project, we have produced 1 scientific paper published in the proceedings of the “First SWForum Workshop on Trustworthy Software and Open Source”; 1 scientific paper published in the “Cloud Computing Security Workshop 2021”; 1 scientific paper published in the “IEEE International Conference on Cloud Computing 2021”; 1 paper accepted for publication in the “3rd International Workshop on Secure Mobile Cloud Computing 2022”; 2 papers currently submitted for publication to two different cloud security conferences; and finally, 2 paper currently submitted to the “Journal of Systems and Software”. Concerning whitepapers, MEDINA has published 2 joint whitepapers that are available on the project website. The list of publications, as well as all the other dissemination results, are reported in Section 5.

The consortium has also participated in several events when the goals and results of the MEDINA project were promoted, such as a Ph.D. Winter School, a panel on “Cloud Standardisation and Open-Source for a Robust Digital Cloud Landscape”, a seminar on “Continuous Cloud Cybersecurity Certification”, a MEDINA presentation at the German Workshop “BSI Sicherheitskongress”, a webinar on “Cybersecurity in automotive industry”, a MEDINA presentation at the Italian Cybersecurity Day by CNR, and a MEDINA presentation at the US NIST “OSCAL Workshop 2021”.

In July 2021, the consortium virtually joined with the Expert Stakeholder Group in a kick-off meeting. The meeting resulted on rich feedback from the experts, in particular related to the validation of the different EUCS Assurance levels in MEDINA.

The consortium has already started (or, in some cases, envisioned) liaison activities with related EU projects and initiatives, like the ENISA AdHoc WG on Cloud Security Certification, Gaia-X Community and Federated Services, and the ENISA EUCS Experimentation.

MEDINA partners have also participated in panels and technical discussions on topics like Cloud Standardisation and Open-Source for a Robust Digital Cloud Landscape, and Cloud Security and Assurance, just to cite a few.

### 2.2 Communication Results

During the first eighteen months of the project, different communication channels have been used to facilitate the partners the execution of the project activities, namely web page, blog and social networks. Several project materials have been provided, including press releases, brochures, posters, presentation slides and newsletters, so that the interested parties can complete the dissemination tasks (see Section 3). The different material gives an overview of the project, its objectives, results and expected impacts to keep the supporters and specialized media informed about the activities executed in the MEDINA project.

One of the challenges faced by MEDINA has been the publication of blog posts with the aim of discussing those topics related to the partners' skills that are being developed in the project activities. Also, within the ‘Library’ section of the website, different communication actions have been included, such as the publications of papers and articles or the updated list of submitted public deliverables. Moreover, in the ‘Communication Materials’ section, is it possible to find the press releases, newsletters, brochures and posters used for the communication work.

Social media platforms have been used to reach a wider objective audience. Their use has increased the communication and interaction with our target communities, other research projects, and people in the general public who are enthusiastic about cybersecurity, cloud computing and certification security topics. The selected media have been mainly Twitter and LinkedIn, and to a lesser extent reddit, YouTube and SlideShare.

MEDINA project has also used Google Analytics to monitor the behaviour of the website, that is, geographical information, audience, acquisition of the traffic channels of the different social networks, etc. This information is relevant to understand the operation and wellness of the different social networks and to evaluate the progress of the MEDINA website. The description of the MEDINA communication activities is reported in Section 4.

## 2.3 Networking Results

Networking and collaborating with other projects and initiatives is a crucial activity for a collaborative research project such as MEDINA (see Section 6). During the first eighteen months of the project, networking activities have been carried with other European projects, namely Coordination and Support Actions (CSAs) in the field of Cloud computing and cybersecurity, as well as other Research and Innovation actions (RIAs).

Another target of collaboration has been Gaia-X, which is one of the largest initiatives in the field of cloud services. Several partners of MEDINA are members of the Gaia-X AISBL association and participate actively in Gaia-X working groups since the beginning of 2020.

MEDINA partners have also collaborated in the Future Cloud Cluster, which was created under the umbrella of unit E2 of DG CONNECT of the European Commission, namely in the definition of research roadmaps for the upcoming Horizon Europe work programmes, and the development of a reference architecture for a Cloud Federation.

Finally, it is worth noting the collaboration of MEDINA with Standardization Development Organizations (SDOs) and ENISA, being MEDINA one of the proof-of-concepts that validated the version of December 2020 of the EUCS. Collaboration has also been established with other initiatives such as CEN-CENELEC WG, several ISO Standardization Committees, the NIST OSCAL group, and the SCCG (Stakeholder Cybersecurity Certification Group).

### 3 Brand Identity and Project Materials

Branding is essential to augment visibility and attention of a project. This section describes the communication materials that have been created to establish the MEDINA brand identity, with the aim of ensuring that all documents produced in the project, including reports, flyers, posters, presentation slides, and newsletters, have a professional and homogeneous view. These materials will be updated as the project progresses.

#### 3.1 Project Logo

The logo is the principal identity element and the key to build a prosperous dissemination campaign. The MEDINA logo (see Figure 1) will be fixed on all graphic material and documents related to the project and its design represents MEDINA's concept and vision.



*Figure 1. MEDINA project logo*

#### 3.2 Brochure

The brochure aims to raise awareness of the project and provide brief and thematic information to be distributed at events and fairs. The aim of the brochure is to give an overview of the project, its objectives, results and expected impacts.

In the first eighteen months of the MEDINA project, a brochure has been created and is available on the project website: <https://medina-project.eu/communication-materials>

As shown in Figure 2, this brochure contains four pages and provides information on the project's key results, approach, benefits, use cases and the companies involved in the MEDINA consortium.



Figure 2. MEDINA Brochure

### 3.3 Newsletter

The project newsletter is a communication channel used to keep project supporters informed about the activities carried out in MEDINA. They will include the key activities and achievements related to the project.

At the time of writing this deliverable in April 2022, the first edition of the MEDINA Newsletter has been designed (see Figure 3). This newsletter was published on the project website and sent to the project email list.

The newsletter is available on the project website: <https://medina-project.eu/2021-newsletter>



Figure 3. MEDINA Newsletter

### 3.4 General Presentation

The MEDINA presentation slides are part of the project's dissemination tools and have been designed to be used by all partners when presenting the project results at events and meetings. This presentation will be continuously updated throughout the duration of the project.

The presentation template, whose header page is shown in Figure 4, includes an overview of the project, background, objectives, focus, goal, partners and contact information. The full content of the presentation can be found in Appendix A.



Figure 4. MEDINA Presentation

### 3.5 Poster

The aim of the MEDINA posters is to create recognition at the different events, conferences and workshops used for the dissemination of the project results.


In the first eighteen months of the project, a poster has been designed around the objectives of the AMOE<sup>1</sup> component (see Figure 5). This poster introduces the objectives of AMOE, the development of the solution, a conclusion, and some references, as well as contact information. It also includes the MEDINA logo and the logo of the partner that has created the poster.

This poster is available on the project website: <https://medina-project.eu/communication-materials>


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<sup>1</sup> AMOE: Assessment and Management of Organizational Evidences

# Assessment and Management of Organisational Evidences - AMOE



Franz Berger  
MEDINA project - Fabasoft



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### Objectives

The AMOE component is focusing on providing a solution to enable continuous and semi-automatic auditing for cloud service providers using the MEDINA framework.

### Introduction

Cloud security schemes like the ENISA EUCS [1] include some controls and requirements that are of organisational nature, meaning they are not suitable to be automatically monitored like technical requirements. Therefore, a subtask of the MEDINA project has been dedicated to find a solution. The result of the related research activities is a simple prototype based on pre-trained models. As MEDINA's assessment strategy for technical requirements is based on metrics the approach was adapted to organisational requirements resulting in the usage of so called organisational metrics. Each org. metric consists of some keywords that are used to reduce the search space. The metric description is a simple question targeted to measure a specific feature commonly found in text documents relevant for audits. The metric target value is used for assessment hints to be provided to the compliance manager (user). The compliance manager or auditor needs to confirm that the extracted evidence (aided by an assessment hint if possible) fulfills the compliance status to an org. metric. This can be done in an interactive GUI that displays the processed documents as well as the original for double checking the information. Given well defined metrics, this could speed up the auditing process. The policy data processed is sensitive for the security of a cloud service and thus big datasets are being difficult to obtain. The relevant evidence parts need to be annotated for further training of new models and quality measurements of the prototype.

### Data

The experiments and research conducted is based on unstructured textual policy data. The queries for the evidence extraction is based on the organisational metrics which are created specifically for the MEDINA project. An example would be:

- **metric name:** LogDataRetentionTimeQ1
- **description:** How long is log data stored?
- **keywords:** logging, monitoring
- **scale:** days
- **operator:** <=
- **target value:** 100
- **data type:** int

Every security requirement of the EUCS is linked to multiple metrics that can be used to assess concrete parts defined in the rather generic requirements. Depending on the Cloud Service Provider (CSP) and number of cloud services covered, policy documents can be very long (e.g. 50 pages). Therefore the input data needs to be reduced to speed up processing time, which can also lead to more precise results.

### Evidence extraction

The extraction of evidence snippets is based on a pre-trained question answering (QA) system (roberta-base-squad for QA[2]). The bottom part of Figure 1 shows the pipeline steps for evidence extraction. First, the input text document is filtered using the org. metric keywords to reduce search space and thus processing time for the QA model. Then the selected sections are used to query the potentially relevant evidence text using the metric description (question). If the org. metric has set a target value - the output of the model is translated into similar format (if possible) and an assessment hint is computed by checking the output against the target value with the defined metric operator. The QA model provides a score that could aid in determination of whether the output is relevant (not all queries produce relevant output). However, here is a promising research result for the example metric listed in the poster's data section (extracted answer in bold): "How long is log data stored?" answer of QA: "From a operational necessity standpoint, we therefore configure the log retention time to a maximum of 90 days after which log data are automatically deleted."

### Pre-processing

MEDINA research discussion have shown that most of the CSP's policy documents are available as unstructured text documents (e.g. PDFs). To retain some of the structure given by e.g. section headings, the PDF documents are pre-processed to HTML. Depending on the document origin, some headings need further rule-based recognition. This process is depicted in the upper part of Figure 1.

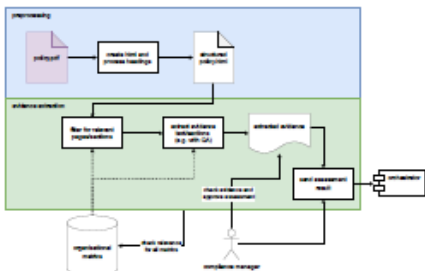


Figure 1: Architectural overview of the prototype

### Conclusion

The tool presented here could be a useful extension for any CSP to automate the auditing of textual policy documents. To make this tool future-proof, however, the challenge of creating a suitable dataset remains. In the future, other approaches such as text similarity can also be incorporated as well as further research on pre-processing.

### References

[1] ENISA EUCS - Cloud Service Scheme. <https://www.enisa.europa.eu/publications/multi-cloud-service-scheme>

[2] Question answering model - roberta-base-squad. <https://loggingface.co/deepser/roberta-base-squad>

### Contact Information

• Web: <https://medina-project.eu/>  
• Email: [franz.berger@fabasoft.com](mailto:franz.berger@fabasoft.com)

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Figure 5. MEDINA poster

## 3.6 Press Release

The aim of the MEDINA press release is to promote the downloading of project results. It is also a means of dissemination, so that specialized media can learn about the work being developed in the MEDINA project.

At the time of writing this deliverable in April 2022, the first MEDINA press release has been published. This press release, which can be downloaded from the project website<sup>2</sup>, has also been translated into the partners' official languages, namely Finnish<sup>3</sup>, German<sup>4</sup>, Italian<sup>5</sup>, Slovenian<sup>6</sup>, and Spanish<sup>7</sup>. All versions are available on the project website.

Figure 6 shows the English version of the press release. The other language versions can be found in Appendix B and online at: <https://medina-project.eu/communication-materials>. Appendix C shows how the press release has been disseminated through MEDINA partners' social networks.

<sup>2</sup> <https://medina-project.eu/sites/default/files/MEDINA%20Press%20Release.pdf>

<sup>3</sup> [https://medina-project.eu/sites/default/files/MEDINA\\_Press\\_Release\\_March2022\\_fi.pdf](https://medina-project.eu/sites/default/files/MEDINA_Press_Release_March2022_fi.pdf)

<sup>4</sup> <https://medina-project.eu/sites/default/files/Press%20Release%20German.pdf>

<sup>5</sup> <https://medina-project.eu/sites/default/files/MEDINA%20Press%20Release%20Italian.pdf>

<sup>6</sup> <https://medina-project.eu/sites/default/files/Press%20Release%20Slovenian.pdf>

<sup>7</sup> <https://medina-project.eu/sites/default/files/MEDINA%20Press%20Release%20espa%3%B1ol.pdf>





Figure 6. MEDINA Press release (English version)

### 3.1 Showcases

Videos are an excellent tool to disseminate the work carried out in the MEDINA project. Therefore, different types of videos are foreseen, depending on the target audience.

Until April 2022, two videos have been created (see Section 4.2.4):

- A presentation video, showing the objectives of the project and the benefits.
- A specialized video, showing the features of the MEDINA SATRA tool<sup>8</sup>.

The MEDINA YouTube channel where all showcases and videos are available is:

<https://www.youtube.com/channel/UClvJMKwz1cGfH3OS67k2A7Q>

<sup>8</sup> SATRA: Self-Assessment Tool for Risk Analysis

## 4 Communication Activities

In MEDINA, communication activities are aimed at making available to the identified target audiences the on-going project developments as well as the results achieved. As a reminder, these key target audiences were identified in D7.2 [1]: CSPs, including CISOs and compliance managers; CABs, auditors and NCCAs; ENISA; and General public and cloud service users.

The monitoring of the communication activities and the KPIs achieved is a continuous activity in MEDINA. The tools used for monitoring are Google analytics, Twitter analytics (in its free version) and the monthly dissemination report sheet created in the project. The review of the communication KPIs can be found in Section 7.

### 4.1 MEDINA Digital Strategy

A digital strategy is the process of identifying and articulating messages on digital media with the objective of increasing the competitive advantage of an organization [1]. In MEDINA we follow an adaptation of the Inbound Marketing strategy, that is focused on three pillars:

- SEO (Search Engine Optimization).
- Content Marketing: web, blogs, videos, webinars, infographics, documentation generated from the project activities, etc.
- Social Media marketing: networking.

These three pillars should work in an integrated way to enhance the reputation of MEDINA and achieve greater online visibility.

MEDINA's digital strategy in the reporting period has revolved around the project's website, especially the Blog, and social media profiles, with a special focus on Twitter and LinkedIn. The motivation behind the Blog is twofold, to use it as an online dissemination channel, and to create interest and attract visitors. The social media profiles are also used for the dual purpose of attracting stakeholders and generating traffic to the website and its contents. Every time a post is published on the Blog, or content is uploaded to SlideShare or YouTube, it is announced on Twitter and LinkedIn, with the link associated with the content.

#### 4.1.1 Project Website

The MEDINA website (<https://medina-project.eu/>) is a platform for disseminating and communicating MEDINA project information (project developments, results, events, etc.). The website was set up at the beginning of the project and has been an efficient tool for reporting on MEDINA project activities as well as for communicating with people outside the project.

The MEDINA website and its sections (see Figure 7) have been designed to allow the user to access the most comprehensive information on the project organisation, the project objectives, solution and vision, the general features and key results, the use cases, the results currently available, and the partners working on the project. In addition, it provides the blog posts, elaborated by the MEDINA partners to allow the general public to follow the project activities (see Section 4.1.2).

The initial structure of the website presented in D7.1 [3] is still valid. However, as the project progresses, new sections have been added. For example, the 'Library' menu item, which gives access to three sections:

- **Public Deliverables** section where all public deliverables released up of month 18 are available (see Figure 8).

- **Communication Materials** section, which includes project presentations, press releases, posters, newsletters, and brochures (see Figure 9).
- **Publications** section, which includes whitepapers and scientific publications (see Figure 10).

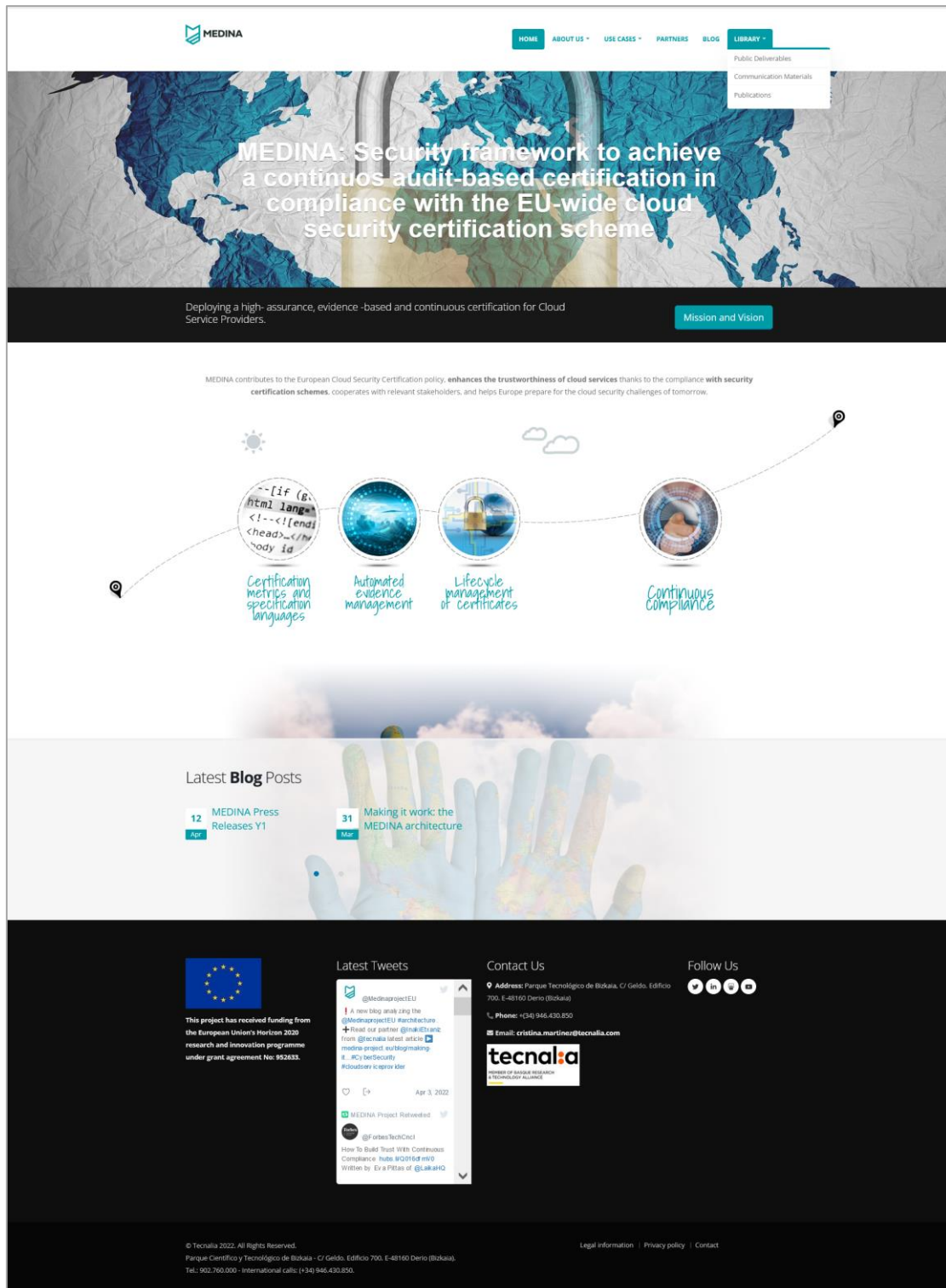
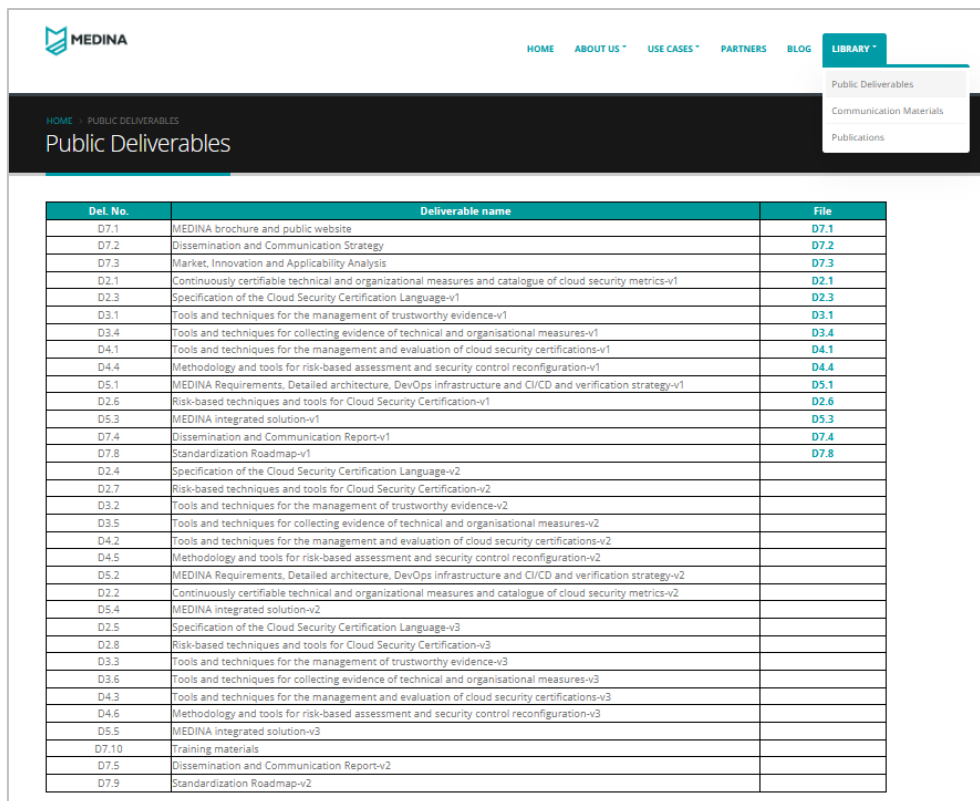
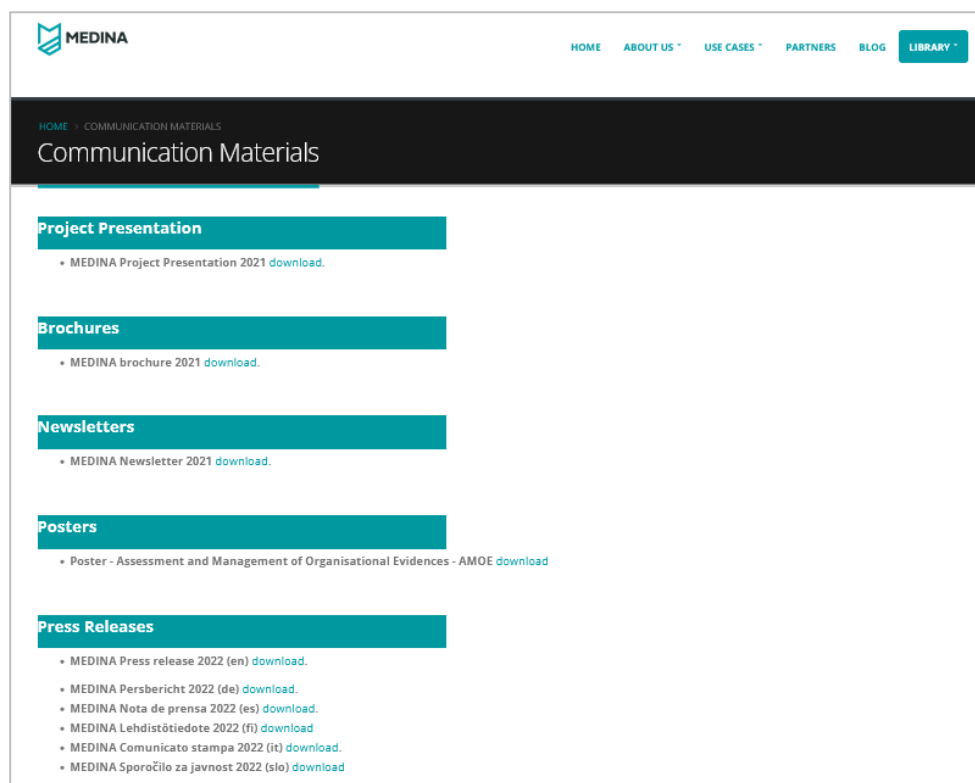


Figure 7. MEDINA Website



Del. No.	Deliverable name	File
D7.1	MEDINA brochure and public website	D7.1
D7.2	Dissemination and Communication Strategy	D7.2
D7.3	Market, Innovation and Applicability Analysis	D7.3
D2.1	Continuously certifiable technical and organizational measures and catalogue of cloud security metrics-v1	D2.1
D2.3	Specification of the Cloud Security Certification Language-v1	D2.3
D3.1	Tools and techniques for the management of trustworthy evidence-v1	D3.1
D3.4	Tools and techniques for collecting evidence of technical and organisational measures-v1	D3.4
D4.1	Tools and techniques for the management and evaluation of cloud security certifications-v1	D4.1
D4.4	Methodology and tools for risk-based assessment and security control reconfiguration-v1	D4.4
D5.1	MEDINA Requirements, Detailed architecture, DevOps infrastructure and CI/CD and verification strategy-v1	D5.1
D2.6	Risk-based techniques and tools for Cloud Security Certification-v1	D2.6
D5.3	MEDINA integrated solution-v1	D5.3
D7.4	Dissemination and Communication Report-v1	D7.4
D7.8	Standardization Roadmap-v1	D7.8
D2.4	Specification of the Cloud Security Certification Language-v2	
D2.7	Risk-based techniques and tools for Cloud Security Certification-v2	
D3.2	Tools and techniques for the management of trustworthy evidence-v2	
D3.5	Tools and techniques for collecting evidence of technical and organisational measures-v2	
D4.2	Tools and techniques for the management and evaluation of cloud security certifications-v2	
D4.5	Methodology and tools for risk-based assessment and security control reconfiguration-v2	
D5.2	MEDINA Requirements, Detailed architecture, DevOps infrastructure and CI/CD and verification strategy-v2	
D2.2	Continuously certifiable technical and organizational measures and catalogue of cloud security metrics-v2	
D5.4	MEDINA integrated solution-v2	
D2.5	Specification of the Cloud Security Certification Language-v3	
D2.8	Risk-based techniques and tools for Cloud Security Certification-v3	
D3.3	Tools and techniques for the management of trustworthy evidence-v3	
D3.6	Tools and techniques for collecting evidence of technical and organisational measures-v3	
D4.3	Tools and techniques for the management and evaluation of cloud security certifications-v3	
D4.6	Methodology and tools for risk-based assessment and security control reconfiguration-v3	
D5.5	MEDINA integrated solution-v3	
D7.10	Training materials	
D7.5	Dissemination and Communication Report-v2	
D7.9	Standardization Roadmap-v2	

Figure 8. Public Deliverables section on the MEDINA Website



**Project Presentation**

- MEDINA Project Presentation 2021 [download](#).

**Brochures**

- MEDINA brochure 2021 [download](#).

**Newsletters**

- MEDINA Newsletter 2021 [download](#).

**Posters**

- Poster - Assessment and Management of Organisational Evidences - AMOE [download](#)

**Press Releases**

- MEDINA Press release 2022 (en) [download](#).
- MEDINA Persbericht 2022 (de) [download](#).
- MEDINA Nota de prensa 2022 (es) [download](#).
- MEDINA Lehdistötiedote 2022 (fi) [download](#)
- MEDINA Comunicato stampa 2022 (it) [download](#).
- MEDINA Sporočilo za javnost 2022 (sl) [download](#)

Figure 9. Communication Materials section on the MEDINA Website

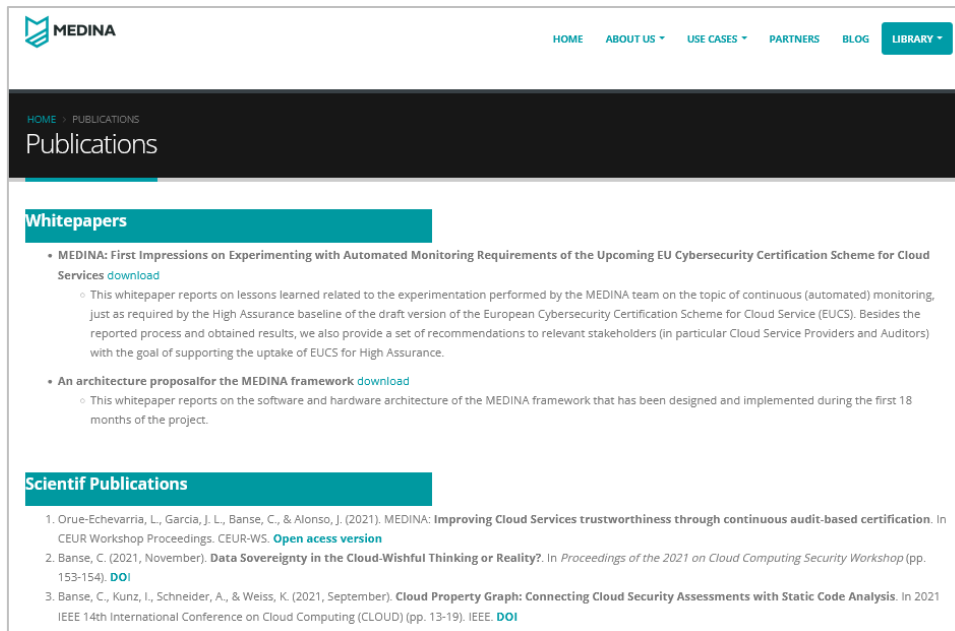


Figure 10. Publications section on the MEDINA Website

#### 4.1.2 Blog

The Blog is part of the website but has a dedicated menu item (see Figure 11). As explained above, the Blog is used as a lead generator for the project. Blog posts are published approximately every two weeks and all partners contribute to this task. A calendar has been defined to schedule the publications of the blog posts (see Figure 12). The topic is freely selected by the person responsible for the post, the aim is to discuss the topics proposed in the project that are related to the partner's skills. To name a few, blog posts have been published on use cases, architecture, framework, risk analysis tools, cloud services, etc.

The Blog is also used in coordination with the social media profiles to disseminate the project's activities (see Section 4.2). The blog posts and their specialized contents are also helping to position the project and its SEO, increasing the visits that come from search queries (Organic Search) as shown in Figure 17.

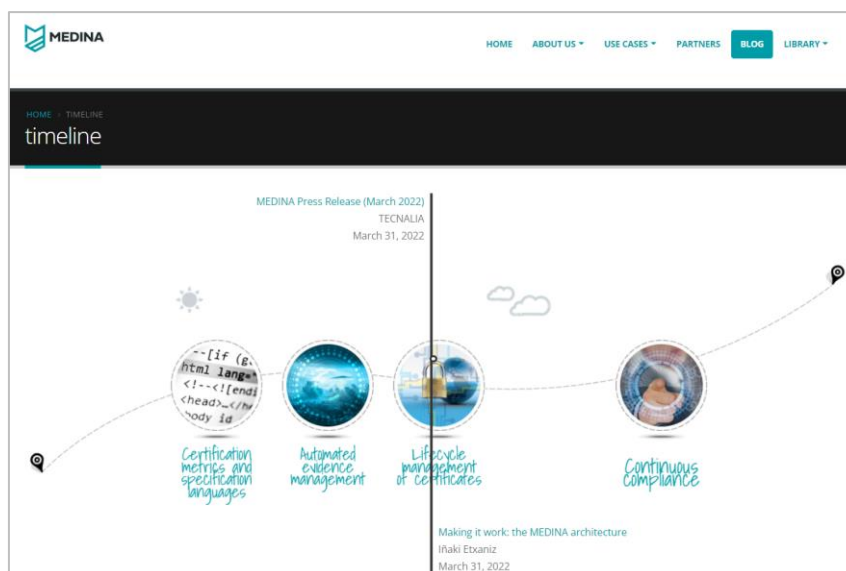


Figure 11. MEDINA Blog

Year	2022											
Month	Jan		Feb		Mar		Apr		May		Jun	
Post	1	2	1	2	1	2	1	2	1	2	1	2
Responsible	NIXU	XLAB	TECNALIA	BOSCH	CNR	Fabasoft	FgH	HPE	NIXU	XLAB	TECNALIA	BOSCH

Year	2022											
Month	Jul		Aug		Sep		Oct		Nov		Dec	
Post	1	2	1	2	1	2	1	2	1	2	1	2
Responsible	CNR	Fabasoft	FgH	HPE	NIXU	XLAB	TECNALIA	BOSCH	CNR	Fabasoft	FgH	

Year	2023											
Month	Jan		Feb		Mar		Apr		May		Jun	
Post	1	2	1	2	1	2	1	2	1	2	1	2
Responsible	HPE	NIXU	XLAB	TECNALIA	BOSCH	CNR	Fabasoft	FgH	HPE	NIXU	XLAB	TECNALIA

Year	2023											
Month	Jul		Aug		Sep		Oct		Nov		Dec	
Post	1	2	1	2	1	2	1	2	1	2	1	2
Responsible	BOSCH	CNR	Fabasoft	FgH	HPE	NIXU	XLAB	TECNALIA	BOSCH	CNR		

Figure 12. Excerpt of the Blog post calendar

During the first eighteen months of the project, fifteen (15) entries have been posted on the MEDINA Blog. Table 1 shows the title, main author, and release date for each entry.

Table 1. MEDINA Blog entries

Title of blog entry	Main author	Release date
<a href="#">MEDINA deliverables published in April 2022</a>	Maitena Ilardia (TECNALIA)	29 April, 2022
<a href="#">MEDINA Press Release (March 2022)</a>	Maitena Ilardia (TECNALIA)	31 March, 2022
<a href="#">Making it work: the MEDINA architecture</a>	Iñaki Etxaniz (TECNALIA)	31 March, 2022
<a href="#">MEDINA Framework: a technical overview</a>	Anže Žitnik (XLAB)	16 March, 2022
<a href="#">MEDINA Risk Assessment tool</a>	Artsiom Yautsiukhin (CNR)	15 March, 2022
<a href="#">How to enable better security posture in the cloud environment?</a>	Tatu Suhonen (NIXU)	08 March, 2022
<a href="#">The role of standardization in MEDINA (part I - Introduction)</a>	Jesus Luna Garcia (Bosch)	03 February, 2022
<a href="#">MEDINA General Assemblies</a>	Maitena Ilardia (TECNALIA)	20 December, 2021
<a href="#">Connecting Cloud Security Assessments with Static Code Analysis</a>	Immanuel Kunz (FhG)	10 December, 2021
<a href="#">HORIZON CLOUD SUMMIT</a>	Maitena Ilardia (TECNALIA)	09 December, 2021
<a href="#">Whitepaper on “Experimenting with Automated Monitoring Requirements of the Upcoming EU Cybersecurity Certification Scheme for Cloud Services”</a>	Jesus Luna Garcia (Bosch)	26 October, 2021
<a href="#">Automated cybersecurity monitoring: the path to continuous compliance</a>	Björn Fanta (Fabasoft)	04 October, 2021

<a href="#">Using NLP to extract compliance-related evidence</a>	Björn Fanta (Fabasoft)	29 June, 2021
<a href="#">MEDINA and EU cybersecurity – a new European approach to security?</a>	Björn Fanta (Fabasoft)	10 June, 2021
<a href="#">Cybersecurity: Certifying cloud services with real-time data</a>	Björn Fanta (Fabasoft)	08 March, 2021

### 4.1.3 Website Analytics

MEDINA uses Google Analytics to monitor the behaviour of the website. From the analytics collected (see Figure 13), it can be seen that the total number of visits to the MEDINA website is about 3680, with an average session duration of 00:01:02. Throughout the whole period of operation of the website, MEDINA has had a stable number of daily users, with increases appearing every time there is some relevant activity in the project, such as the publication of a blog post. The number of users has increased during the last month, coinciding with the publication of the press release.

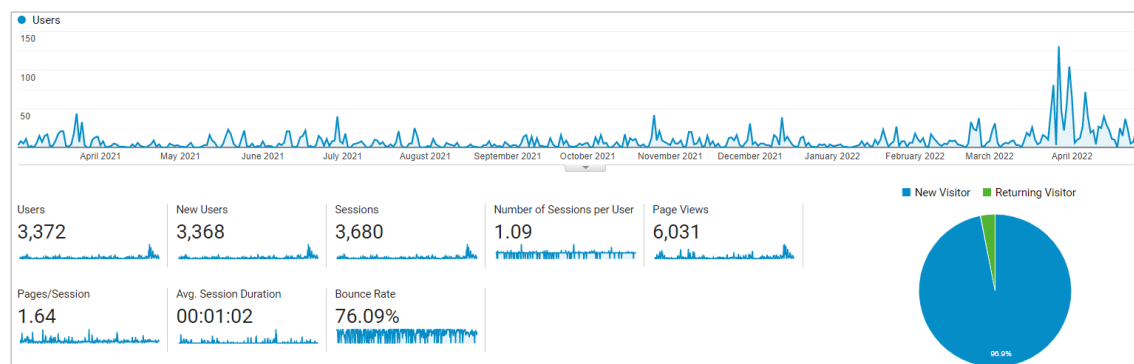


Figure 13. MEDINA website analytics from March 2021 to April 2022

As mentioned above, blog posts often mark the highest number of visits to the MEDINA website. This trend is confirmed by the fact that the blog (rows `blog-timeline` and `timeline` in Figure 14) is the second most visited page after the homepage, with 7.83% of visitors going directly to it. The fourth most visited page is the communication-materials page, with 5.87% of the visits.

Page	Views of a page	Views of a page
	6,128 % of total: 100.00 % (6,128)	6,128 % of total: 100.00 % (6,128)
1. /	1,919	31,32 %
2. /mission-and-vision	367	5,99 %
3. /communication-materials	360	5,87 %
4. /partners	343	5,60 %
5. /blog-timeline	276	4,50 %
6. /public-deliverables	270	4,41 %
7. /timeline	204	3,33 %
8. /european-certification-multi-cloud-backends-iot-solutions	161	2,63 %
9. /key-results	159	2,59 %
10. /blog/using-nlp-extract-compliance-related-evidence	126	2,06 %

Figure 14. Most visited pages on the MEDINA website

Regarding the geographical location of MEDINA's audience, the countries with the highest number of visitors are Spain, Germany and the United States, as shown in Figure 15 and Figure

16. The publication of the press release in several languages, namely English, Finish, German, Italian, Slovenian, and Spanish, has helped to increase the traffic from different countries. This best practice will be reinforced in the next period.

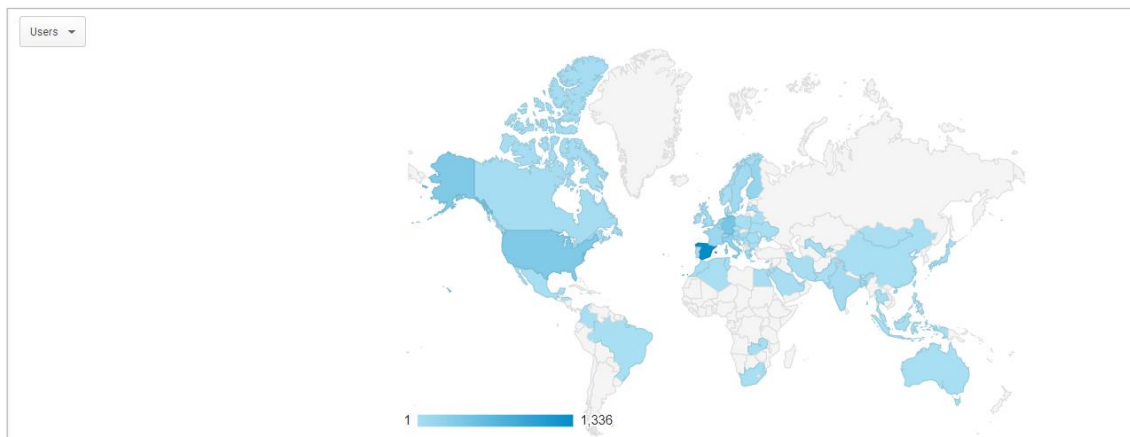


Figure 15. Visits to the MEDINA website by geographical location

Country ?	Acquisition			Behaviour		
	Users ? ↓	New Users ?	Sessions ?	Bounce Rate ?	Pages/Session ?	Avg. Session Duration ?
	<b>3,372</b> % of Total: 100.00% (3,372)	<b>3,368</b> % of Total: 100.00% (3,368)	<b>3,680</b> % of Total: 100.00% (3,680)	<b>76.09%</b> Avg for View: 76.09% (0.00%)	<b>1.64</b> Avg for View: 1.64 (0.00%)	<b>00:01:02</b> Avg for View: 00:01:02 (0.00%)
1.  Spain	<b>1,336</b> (39.59%)	<b>1,332</b> (39.55%)	<b>1,538</b> (41.79%)	<b>64.37%</b>	<b>2.16</b>	<b>00:01:56</b>
2.  Germany	<b>412</b> (12.21%)	<b>411</b> (12.20%)	<b>443</b> (12.04%)	<b>81.26%</b>	<b>1.31</b>	<b>00:00:31</b>
3.  United States	<b>338</b> (10.01%)	<b>337</b> (10.01%)	<b>341</b> (9.27%)	<b>92.08%</b>	<b>1.06</b>	<b>00:00:03</b>
4.  Italy	<b>210</b> (6.22%)	<b>210</b> (6.24%)	<b>221</b> (6.01%)	<b>79.19%</b>	<b>1.50</b>	<b>00:00:43</b>
5.  Finland	<b>169</b> (5.01%)	<b>169</b> (5.02%)	<b>194</b> (5.27%)	<b>87.11%</b>	<b>1.26</b>	<b>00:00:37</b>
6.  France	<b>110</b> (3.26%)	<b>110</b> (3.27%)	<b>119</b> (3.23%)	<b>84.03%</b>	<b>1.55</b>	<b>00:00:30</b>
7.  Netherlands	<b>90</b> (2.67%)	<b>90</b> (2.67%)	<b>90</b> (2.45%)	<b>90.00%</b>	<b>1.04</b>	<b>00:00:02</b>
8.  Austria	<b>70</b> (2.07%)	<b>70</b> (2.08%)	<b>71</b> (1.93%)	<b>71.83%</b>	<b>1.37</b>	<b>00:00:12</b>
9.  Sweden	<b>69</b> (2.04%)	<b>69</b> (2.05%)	<b>73</b> (1.98%)	<b>91.78%</b>	<b>1.07</b>	<b>00:00:02</b>
10.  United Kingdom	<b>58</b> (1.72%)	<b>58</b> (1.72%)	<b>58</b> (1.58%)	<b>87.93%</b>	<b>1.07</b>	<b>00:00:05</b>

Figure 16. Countries with the highest number of visits to the MEDINA website

The SEO, as explained before, is improving on a continuous basis thanks to the provisioning of dedicated and targeted content through the Blog. As shown in Figure 17, visits coming from direct search queries have increased along the timeframe of the project, representing about 76% of the traffic (2565 users), while 20% of the visitors to the MEDINA website (682 users) come through organic searches. This is the primary channel that inbound marketing strives to increase.



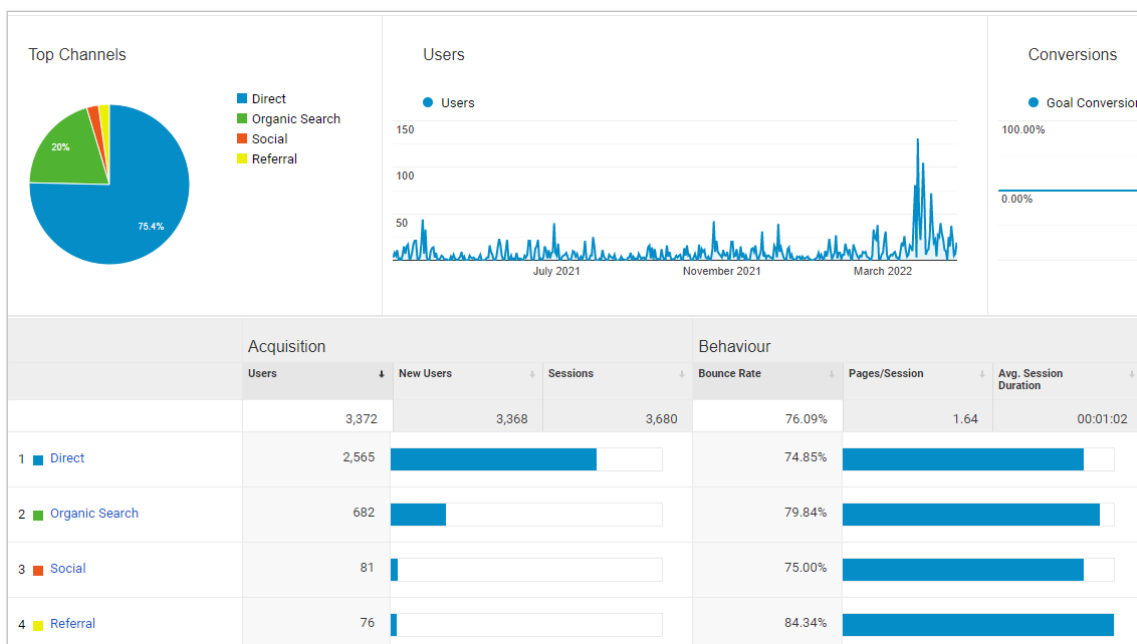


Figure 17. Traffic in the MEDINA website

In terms of the visits provided by the social networks (see Figure 18), we can see that Twitter has been the main channel used to access the MEDINA website, accounting for more than 65% of sessions, followed by LinkedIn with a percentage of sessions around 25%. At the time of writing this deliverable in April 2022, Facebook, reddit and YouTube sessions are just beginning to emerge.

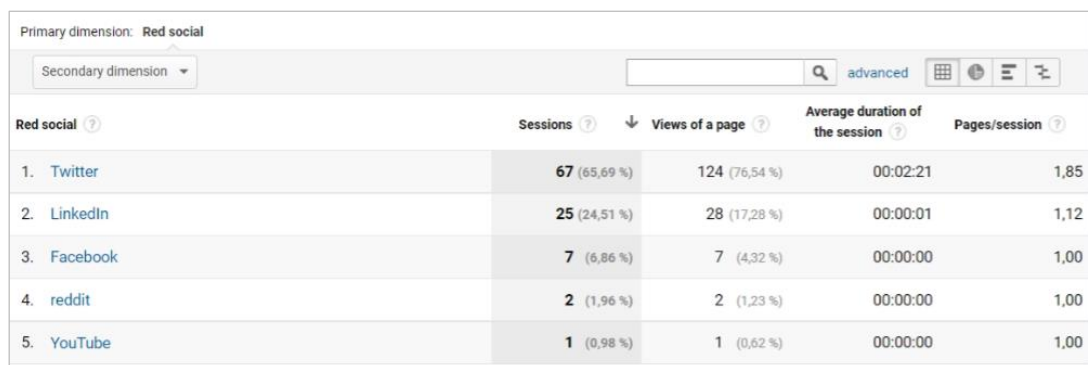


Figure 18. Traffic provided by the social networks

## 4.2 Activity in Social Networks

The MEDINA project uses social media as a channel to reach a wider and more accessible target audience in different parts of the world. This strategy has enabled communication and interaction with our target communities, other research projects, and people in the public who are interested in certification, cybersecurity and cloud.

During the reporting period we have followed a focused approach, putting more effort on the Twitter and LinkedIn platforms, and have started to explore other media such as SlideShare, YouTube and reddit. The messages that are launched in these networks serve to attract traffic to the project's website, which is the project's primary means of dissemination.

In the following sections, we explain how each social network is used to outreach MEDINA project activities.

### 4.2.1 Twitter

The project's Twitter account is **@MedinaprojectEU** and was created in November 2020, shortly after the start of the project (see Figure 19). The Twitter feed can be found at: <https://twitter.com/MedinaprojectEU>.

Twitter is the most prominent of the MEDINA project's social networks. Until April 2022, this account had a total of 64 followers and 72 tweets have been published. These are both original contents (e.g. attendance to events, blog posts, press releases) or retweets of content from external stakeholders that the MEDINA finds interesting and relevant.

Every time a certain event takes place in MEDINA, such as a blog post, the publication of a report, a video, a poster or a press release, a tweet is published including detailed information, the URL to the information and relevant hashtags. The aim of including the URL is to generate interest in additional content, and thus increase awareness of the MEDINA project.

In addition, MEDINA partners use their respective Twitter feeds to directly promote MEDINA-related events and news. MEDINA Twitter's profile then functions as a central hub that retweets partners' mentions and ensures a centralized distribution of all project-related news.

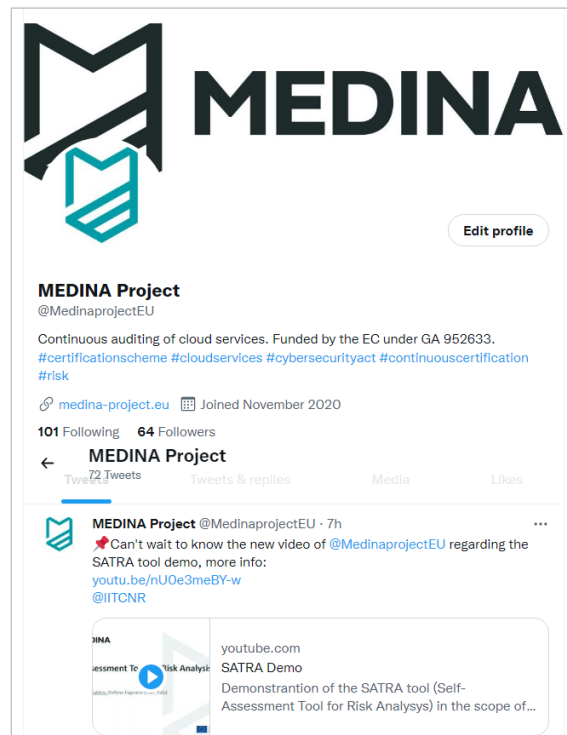


Figure 19. MEDINA Twitter account

The number of interactions in Twitter has increased over the last months, with a peak of 863 impressions in April 2022, as shown in Figure 20. The total number of impressions during the first eighteen months of the project is 13,236 and the number of profile visits is 8,777. Figure 21 shows the tweets with the highest number of impressions during the reporting period.



Figure 20. MEDINA Twitter account analytics for the last 28 days

**Apr 2022** • 27 days so far...


TWEET HIGHLIGHTS

**Top Tweet** earned 149 impressions

A new blog analyzing the @MedinaprojectEU #architecture .  
 +Read our partner @InakiEtzaniz from @tecnalia latest article [medina-project.eu/blog/making-it...](https://medina-project.eu/blog/making-it...)  
 #CyberSecurity #cloudserviceprovider

View Tweet activity View all Tweet activity

**Top Follower** followed by 17.4K people



**CNR Consiglio Nazionale delle Ricerche**  
 @CNRsocial\_ FOLLOWS YOU  
 Notizie, eventi, comunicati, video e immagini dal #Cnr Consiglio Nazionale delle Ricerche. Segui: Facebook <https://t.co/9KME33mXok> Instagram <https://t.co/PSlWlRlPdx>

**Jan 2022** • 31 days

TWEET HIGHLIGHTS

**Top Tweet** earned 139 impressions

We are having today an #integrationworkshop in order to have the first version of the integrated MEDINA framework. 😊  
 #EUCS #cloudservices #certification  
[pic.twitter.com/9eKkSZKNU2](https://pic.twitter.com/9eKkSZKNU2)



View Tweet activity View all Tweet activity

**Dec 2021** • 31 days

TWEET HIGHLIGHTS

**Top Tweet** earned 113 impressions

MEDINA is happy to invite you to HORIZON CLOUD Summit 2021  
 8-9 Dec @CloudExpoEurope  
 Contribute to shaping the #CloudComputing priorities fit for Europe's green & digital transformation 🌱  
 Register now [bit.ly/3unuGz0](https://bit.ly/3unuGz0)  
 #HorizonCloudSummit @HCloud\_Project  
[pic.twitter.com/znGfLu6en](https://pic.twitter.com/znGfLu6en)



View Tweet activity View all Tweet activity

**Jun 2021** • 30 days

TWEET HIGHLIGHTS

**Top Tweet** earned 338 impressions

It's a wrap! Two intensive days of discussions about #cloudsecurity #certification , #evidencemanagement , #securityrequirements , #contnuousevaluation and #certificatelifecycle. #eucs #EUCyberSecurityAct  
[pic.twitter.com/f1nrxwWbeQ](https://pic.twitter.com/f1nrxwWbeQ)



View Tweet activity View all Tweet activity

**Apr 2021** • 30 days

TWEET HIGHLIGHTS

**Top Tweet** earned 339 impressions

Watch @leiretecnalia presenting MEDINA's position paper in @SWforumEU's cross fertilization workshop. Enjoy!  
[twitter.com/SWforumEU/stat...](https://twitter.com/SWforumEU/stat...)

View Tweet activity View all Tweet activity

**Top Follower** followed by 1,499 people



**Alessandra Bagnato**  
 @alebagnato FOLLOWS YOU  
 Research Scientist & Head of Research at Softeam Software (Docaposte Group), <https://t.co/Lg4wATBeqh>, <https://t.co/ZGN4w0Ylel>, <https://t.co/w7DJ3Z8ChB>

**Mar 2021** • 31 days

TWEET HIGHLIGHTS

**Top Tweet** earned 223 impressions

Cybersecurity: Certifying cloud services with real-time data [medina-project.eu/blog/cybersecu...](https://medina-project.eu/blog/cybersecu...)  
 #continuouscertification #EUCyberSecurityAct #eucs #cloudsecuritycertification @Fabasoft

View Tweet activity View all Tweet activity

**Top Follower** followed by 470 people



**Pledger**

**Feb 2021** • 28 days

TWEET HIGHLIGHTS

**Top Tweet** earned 292 impressions

Exciting discussions today in the second GA of MEDINA. What is a technical and organizational measure, a metric, a measure and a measurement result in #certification?

View Tweet activity View all Tweet activity

**Dec 2020** • 31 days

TWEET HIGHLIGHTS

**Top Tweet** earned 156 impressions

@enisa\_eu has released a draft version of the candidate #certification scheme for #cloud services (EUCS). A public consultation of this document is open until 7.2.2021

✔ Read the draft EUCS: [bit.ly/3aExEXV](https://bit.ly/3aExEXV)  
 ✔ Participate in the consultation: [bit.ly/3nLI3VI](https://bit.ly/3nLI3VI)

View Tweet activity View all Tweet activity

**Nov 2020** • 30 days

TWEET HIGHLIGHTS

**Top Tweet** earned 680 impressions

Our first day of the kick off meeting just finished. Lots of passionate and interesting discussions on #cloudsecuritycertification #securitycontrols #cybersecurityact #DLT #riskmanagement.  
[pic.twitter.com/xwvRzclQy2](https://pic.twitter.com/xwvRzclQy2)



View Tweet activity View all Tweet activity

Figure 21. MEDINA Top Tweets

### 4.2.2 LinkedIn

LinkedIn is a social network that allows to increase contacts and foster interpersonal relationships between MEDINA partners and other professionals involved in cybersecurity, cloud computing and certification topics.

Blog posts published on the MEDINA website are replicated as posts or articles (depending on the content) on the MEDINA LinkedIn group to attract more visitors to the website.

Until April 2022, the MEDINA LinkedIn group has 39 members and 65 posts have been published. It is expected that as soon as more results become available, MEDINA will increase the effort in this social network as it is an excellent tool to showcase the achievements of the project.

MEDINA's LinkedIn group can be found at: <https://www.linkedin.com/groups/12486585/>.



Figure 22. MEDINA LinkedIn group

### 4.2.3 reddit

reddit is a network that creates communities where people can dive into their interests, hobbies, and passions. Users can add text, images, videos, or links, and can vote for or against content, causing it to appear in featured posts. MEDINA is interested to disseminate its activities in three reddit communities: **r/cybersecurity**, **r/netsec** and **r/security community**.

MEDINA has only recently started to disseminate its activities through the reddit communities (see Figure 23). Until April 2022, 4 posts have been published. Figure 24 shows one of the posts at the reddit r/cybersecurity room.

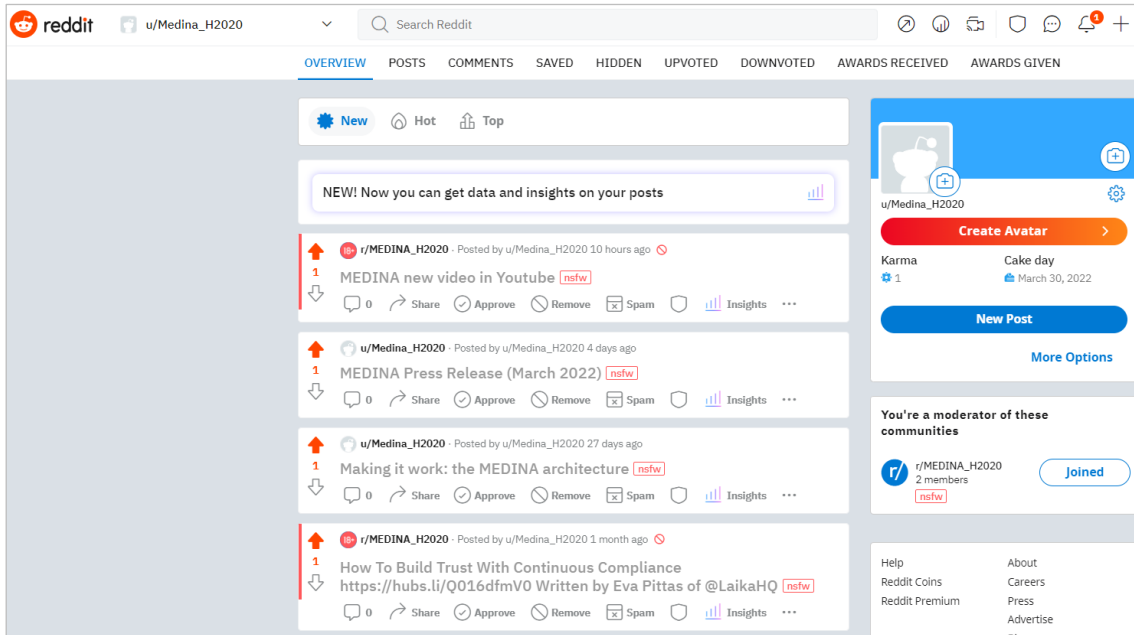


Figure 23. MEDINA reddit page

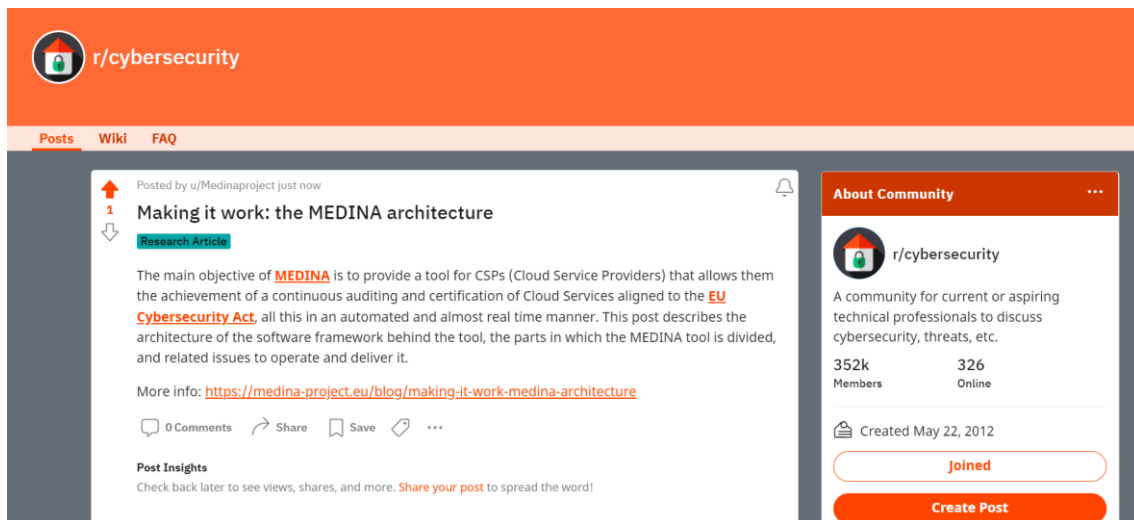


Figure 24. A post of MEDINA project at the reddit r/cybersecurity room<sup>9</sup>

#### 4.2.4 YouTube

Videos have a great communication and positioning value and can be used to communicate MEDINA key results with bigger impact. In principle, the aim of the YouTube profile is not to generate direct traffic to the MEDINA website, as with other social media, but rather to use it as a channel in which to place all videos generated during the project.

9

[https://www.reddit.com/user/Medina\\_H2020/comments/tvckpk/making\\_it\\_work\\_the\\_medina\\_architecture/](https://www.reddit.com/user/Medina_H2020/comments/tvckpk/making_it_work_the_medina_architecture/)

At the time of writing this deliverable in April 2022, the MEDINA YouTube profile hosts two videos (see Figure 25): a video giving an overview of the MEDINA project and a video showing a demonstration of the SATRA tool (see Section 3.1). The YouTube profile is expected to gain more relevance as more demonstrators of MEDINA components are available.

MEDINA's YouTube channel can be found at:

<https://www.youtube.com/channel/UClvJMKwz1cGfH3OS67k2A7Q>

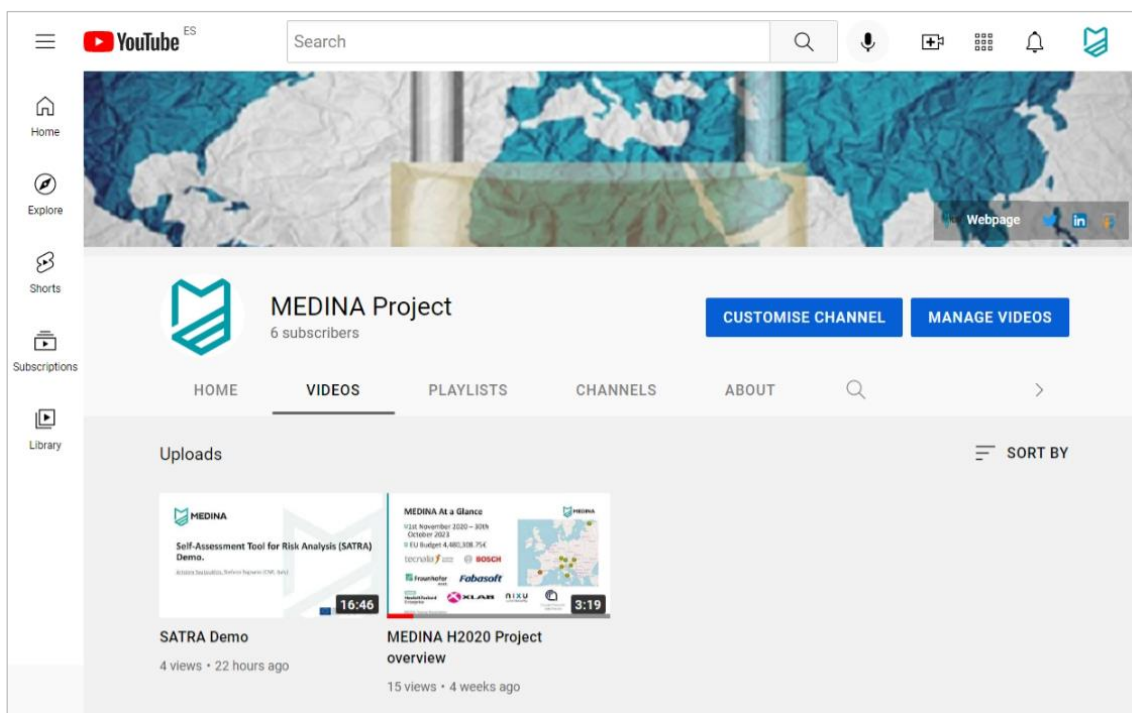


Figure 25. MEDINA YouTube profile

#### 4.2.5 SlideShare

SlideShare is used to spread the achievements of the MEDINA project to all target groups. It offers project partners the possibility to upload and share publicly or privately documents in different formats (Adobe PDF, Microsoft Word, and OpenOffice).

The MEDINA SlideShare profile has been defined to contain relevant presentations, generic or specific, presenting the results and achievements of the project. At the time of writing this deliverable in April 2022, 4 project presentations and 2 documents (Whitepaper and Brochure) have been uploaded to the SlideShare platform.

MEDINA's SlideShare profile can be found at:

<https://es.slideshare.net/MEDINAContinuousclou>

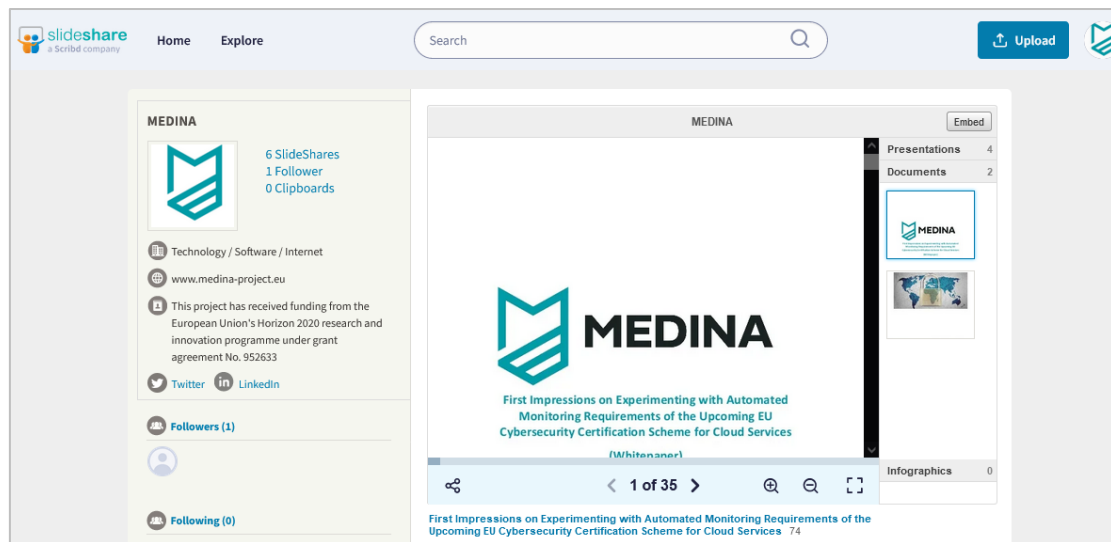


Figure 26. MEDINA SlideShare profile

In terms of the SlideShare analytics, the total number of views on MEDINA’s SlideShare channel until April 2022 was 674 (see Figure 27). The document with the most views is the MEDINA brochure with 474 views, followed by the MEDINA Whitepaper with 72 views.

Top content	
Name	Views
<a href="#">MEDINA project brochure 2021</a>	474
<a href="#">First Impressions on Experimenting with Automated Monitoring Requirements of the Upcoming EU Cybersecurity Certification Scheme for Cloud Services</a>	72
<a href="#">Medina general presentation</a>	56
<a href="#">Medina general presentation</a>	40
<a href="#">Medina general presentation</a>	20

Figure 27. MEDINA SlideShare analytics

## 5 Dissemination Activities

This section lists the results of the dissemination activities carried out from the beginning of the project to month 18. The revision of the dissemination KPIs can be found in Section 7.

Dissemination activities mainly concern scientific publications, participation to industrial events related to MEDINA, as well as the participation of partners to panels, seminars, lectures in which the MEDINA project has been presented and enhanced. The consortium updates monthly devoted dissemination reports, in order to be always updated on this kind of activities as well as to monitor their outcome. Scientific Publications

Table 2 introduces the complete list of scientific publications (up to month 18, included) in the MEDINA project. Table 3 reports those publications submitted but not yet accepted at time of writing this report.

Table 2. List of scientific published and accepted publications

Title of the article	Event and publication	Name of author and Organisation
<i>Data Sovereignty in the Cloud-Wishful Thinking or Reality?</i>	Proceedings of the 2021 Cloud Computing Security Workshop, November 15, 2021	Christian Banse (FhG)
<i>MEDINA: Improving Cloud Services trustworthiness through continuous audit-based certification</i>	SWForum.eu Workshop on Trustworthy Software and Open Source 2021, March 23-25, 2021	Leire Orue-Echevarría (TECNALIA), Juncal Alonso (TECNALIA), Jesus Luna (Bosch), Christian Banse (FhG)
<i>Cloud Property Graph: Connecting Cloud Security Assessments with Static Code Analysis</i>	IEEE International Conference on Cloud Computing 2021, September 5-10, 2021	Christian Banse (FhG), Immanuel Kunz (FhG), Angelika Schneider (FhG), Konrad Weiß (FhG)
<i>A Continuous Risk Assessment Methodology for Cloud Infrastructures</i>	3rd International Workshop on Secure Mobile Cloud Computing (IWSeMC-22, in conjunction with CCGrid), May 16, 2022 (accepted at time of writing)	Immanuel Kunz (FhG), Angelika Schneider (FhG), Christian Banse (FhG)

Table 3. List of Scientific Publications submitted but not yet accepted (at time of submission of this deliverable)

Title of the article	Event and publication	Name of authors and Organisations
<i>Application-Oriented Selection of Privacy-Enhancing Technologies</i>	Annual Privacy Forum 2022, June 23-24, 2022, Warsaw	Immanuel Kunz (FhG), Andreas Binder
<i>Understanding the challenges and opportunities of Multi-Cloud native applications</i>	The Journal of Systems and Software	Juncal Alonso (TECNALIA), Leire Orue-Echevarria (TECNALIA), Ana Isabel Torre (TECNALIA), Maider



<i>– A systematic literature review</i>		Huarte (UPV), Ana Juan (ATOS), Valentina Casola (UniNA)
<i>Privacy Property Graph: Towards Automated Privacy Threat Modeling via Static Graph-based Analysis</i>	Privacy Enhancing Technologies Symposium (PETS) 2022, July 11-15, 2022	Immanuel Kunz (FhG), Konrad Weiß (FhG), Christian Banse (FhG), Angelika Schneider (FhG)

## 5.1 Detailed Information of Scientific Publications (once published)

Table 4 shows more detailed information about those scientific publications that have already been published at time of writing this report.

Table 4. List of Scientific Publications (detailed info)

Title	Authors	Title of the periodical or the series	Number, date or frequency	Publisher	Year of publication	Relevant pages	Permanent identifiers (if available)	Is/Will open access be provided to this publication?
<i>MEDINA: Improving Cloud Services trustworthiness through continuous audit-based certification</i>	Leire Orue-Echevarría, Juncal Alonso (TECNALIA) Jesus Luna (Bosch) Christian Banse (FhG)	First SwForum workshop on trustworthy software and open source	CEUR-WS.org, ISSN 1613-0073 Vol 2878	CEUR-WS (Online)	2021	8-15		Yes <a href="http://ceur-ws.org/Vol-2878/paper3.pdf">http://ceur-ws.org/Vol-2878/paper3.pdf</a>
<i>Data Sovereignty in the Cloud-Wishful Thinking or Reality?</i>	Christian Banse (FhG)	Proceedings of the 2021 on Cloud Computing Security Workshop		ACM	2021	153-154	DOI: 10.1145/3474123.3486792	No Open Access
<i>Cloud Property Graph: Connecting Cloud Security Assessments with Static Code Analysis</i>	Christian Banse (FhG), Immanuel Kunz (FhG), Angelika Schneider (FhG), Konrad Weiß (FhG)	IEEE International Conference on Cloud Computing 2021		IEEE	2021	13-19	DOI: 10.1109/CLOUD53861.2021.00014	No Open Access

## 5.2 Business Publications and Whitepapers

Table 5 lists the main business publications, including publications on partners' websites, interviews and featured articles in the media.

Table 5. List of general and business publications

Title	Link or reference	Date	Partner
<i>Certificación continua de seguridad para servicios en la nube</i>	<a href="https://www.tecnalia.com/noticias/certificacion-continua-alta-seguridad-servicios-nube">https://www.tecnalia.com/noticias/certificacion-continua-alta-seguridad-servicios-nube</a>	12/04/2022	TECNALIA
<i>How to enable better security posture in the cloud environment?</i>	<a href="https://www.nixu.com/blog/how-enable-better-security-posture-cloud-environment">https://www.nixu.com/blog/how-enable-better-security-posture-cloud-environment</a>	25/02/2022	NIXU
<i>Cybersecurity: Certifying cloud services with real-time data</i>	<a href="https://www.fabasoft.com/en/news/blog/cybersecurity-certifying-cloud-services-real-time-data">https://www.fabasoft.com/en/news/blog/cybersecurity-certifying-cloud-services-real-time-data</a>	30/10/2020	Fabasoft
<i>Automated cybersecurity monitoring: the path to continuous compliance</i>	<a href="https://www.fabasoft.com/en/news/blog/automated-cybersecurity-monitoring-path-continuous-compliance">https://www.fabasoft.com/en/news/blog/automated-cybersecurity-monitoring-path-continuous-compliance</a>	27/10/2021	Fabasoft
<i>Continuous compliance: From traditional auditing to real-time certification</i>	<a href="https://www.fabasoft.com/en/news/blog/continuous-compliance-traditional-auditing-real-time-certification">https://www.fabasoft.com/en/news/blog/continuous-compliance-traditional-auditing-real-time-certification</a>	04/10/2021	Fabasoft
<i>Using NLP to extract compliance-related evidence</i>	<a href="https://www.fabasoft.com/en/news/blog/using-nlp-extract-compliance-related-evidence">https://www.fabasoft.com/en/news/blog/using-nlp-extract-compliance-related-evidence</a>	29/06/2021	Fabasoft
<i>MEDINA and EU cybersecurity – a new European approach to security?</i>	<a href="https://www.fabasoft.com/en/news/blog/medina-and-eu-cybersecurity-new-european-approach-security">https://www.fabasoft.com/en/news/blog/medina-and-eu-cybersecurity-new-european-approach-security</a>	21/05/2021	Fabasoft
<i>MEDINA entwickelt Methoden und Werkzeuge für automatisierte Sicherheitsüberprüfung</i>	<a href="https://www.aisec.fraunhofer.de/de/presse-und-veranstaltungen/presse/pressemitteilungen/2021/Medina_Project.html">https://www.aisec.fraunhofer.de/de/presse-und-veranstaltungen/presse/pressemitteilungen/2021/Medina_Project.html</a>	28/01/2021	FhG
<i>Fabasoft "goes MEDINA": On track to real-time certification for cloud services</i>	<a href="https://www.fabasoft.com/en/news/latest-news/fabasoft-goes-medina-track-real-time-">https://www.fabasoft.com/en/news/latest-news/fabasoft-goes-medina-track-real-time-</a>	20/01/2021	Fabasoft

Title	Link or reference	Date	Partner
	<a href="#">certification-cloud-services</a>		

Table 6 lists the joint whitepapers that have been published by MEDINA partners.

Table 6. List of whitepapers

Title	Link or reference	Date	Partner
<i>An architecture proposal for the MEDINA framework</i>	<a href="https://medina-project.eu/communication-materials">https://medina-project.eu/communication-materials</a>	29/04/2022	TECNALIA, Bosch, CNR, FhG, HPE, NIXU
<i>MEDINA: First Impressions on Experimenting with Automated Monitoring Requirements of the Upcoming EU Cybersecurity Certification Scheme for Cloud Services</i>	<a href="https://medina-project.eu/communication-materials">https://medina-project.eu/communication-materials</a>	01/11/2021	Bosch, NIXU, Fabasoft

### 5.3 Participation in Events

Table 7 lists the main dissemination events in which the MEDINA partners have participated during the first eighteen months of the project.

Table 7. List of events

Event	Date	Name and type of audience	Countries addressed	Size of audience	Partner
Beyond AI Algorithms: How can AI systems be protected and trusted <a href="https://www.ai-circle.de/16-ai-circle">https://www.ai-circle.de/16-ai-circle</a>	26/04/2022	Industry, Academia, Public Sector	Online/International	~100	Jesus Luna Garcia (Bosch)
TAS-S Seminar “From Continuous Monitoring to Continuous Cloud Cybersecurity Certification” <a href="https://tas-security.lancs.ac.uk/seminars/">https://tas-security.lancs.ac.uk/seminars/</a>	04/02/2022	University seminar	UK, EU	30	Jesus Luna Garcia (Bosch)
Lecture/Teaching: Cyber insurance	18/01/2022	NeCS winter school	Online	25	Artsiom Yautsiukhin (CNR)

Event	Date	Name and type of audience	Countries addressed	Size of audience	Partner
“Future Proofing and Certifying Supply Chains” Clustering Workshop <a href="https://www.project-assured.eu/event/future-proofing-and-certifying-supply-chains/">https://www.project-assured.eu/event/future-proofing-and-certifying-supply-chains/</a>	13/12/2021	EU projects	EU, Online	100	Leire Orue-Echeverria (TECNALIA)
H-cloud summit 2021 – Participation in the panel “Cloud Standardisation and Open-Source for a Robust Digital Cloud Landscape”	08/12/2021	CSPs, Academia, EU projects	Worldwide	50	Jesus Luna Garcia (Bosch), Leire Orue-Echeverria (TECNALIA)
Talk: Lo strumento di analisi e riduzione dei rischi (ENG: The tool for risk analysis and reduction)	08/10/2021	CyberSecurity Day 2021	Italy	100	Artsiom Yautsiukhin (CNR)
Webinar: Cybersecurity in automotive industry	21/09/2021	Slovenian Chamber of Commerce members, ICT sector	Slovenia	50	Aleš Černivec (XLAB)
Workshop: MEDINA: Security framework for cloud service providers to achieve a continuous audit-based certification	03/09/2021	CyberCert 2021	International	20	Artsiom Yautsiukhin (CNR)
BSI Sicherheitskongress	03/02/2021	Automatisierte Compliance Prüfung in Software-Artefakten	Germany	100	Christian Banse (FhG)
US NIST “OSCAL Workshop 2021” <a href="https://www.nist.gov/news-events/events/2021/02/2nd-open-security-controls-assessment-">https://www.nist.gov/news-events/events/2021/02/2nd-open-security-controls-assessment-</a>	03/02/2021	Industry, Academia, Public Sector	US/International	500	Jesus Luna Garcia (Bosch)

Event	Date	Name and type of audience	Countries addressed	Size of audience	Partner
<a href="#">language-oscal-workshop</a>					

## 5.4 Liaison Activities with other Related EU Funded Projects

Table 8 lists the projects on which the partners are collaborating, under which areas and topics, and the status. The networking activities of MEDINA are presented in detail in Section 6.

### *Explanation symbols*














	Collaboration has already started – concrete collaboration activities are reported
	Collaboration is envisioned but have not started yet
	Collaboration is not feasible Collaboration have started but could not be continued – concrete collaboration activities are not reported

Table 8. Collaboration with other projects

Project	Areas for collaboration	Remarks	Status
Microsoft Azure Security – Product Group	Azure CSPM (Cloud Security Posture Management)	Monthly discussion established with product group in Israel	
CYRENE and ASSURED	Participation in the workshop organized by two projects	Searching for synergies	
ENISA EUCS Experimentation	Proof of concept (POC) related to automated/continuous monitoring EUCS requirements.	Follow-up meeting took place June-24 <sup>th</sup>	
CloudBank ( <a href="http://www.cloudbank.org">www.cloudbank.org</a> )	Exchange of cloud security certification good practices. Lead by Bosch (MEDINA) and CERN (Cloudbank).	Assessing topics of interest for workshop.	
ENISA AdHoc WG on Cloud Security Certification	Participation in public consultation	MEDINA submitted opinion to the public consultation	
Gaia-X Community and Federated Services	Participation in WP4 (Continuous Monitoring) and Specification Alignment within the Federated Services Project	Continuous Alignment of Specification of Continuous Automated Monitoring (CAM) GAIA-X module to WP3 and WP4 modules of MEDINA	
ENISA EUCS Experimentation	Proof of concept (POC) related to automated/continuous monitoring EUCS requirements.	MEDINA's POC was approved and started in April-2021.	

ENISA AdHoc WG on Cloud Security Certification	Participation in public consultation	MEDINA submitted opinion to the public consultation	
SWForum.eu CSA	Participation in events and testing SWForum results	MEDINA participated in the first SWForum workshop and tested the MTRL analysis	
HUB4Cloud CSA	Participation in events	MEDINA participated in the H-Cloud summits organized by the CSA	

## 5.5 Other Dissemination Activities

Table 9 lists other dissemination activities performed during the first eighteen months of the project, such as participation in panels and discussion tables.

*Table 9. Other dissemination activities*

Type	Name & Comment	Partner	Date
Panel	LIVE at Horizon: Cloud Standardisation and Open-Source for a Robust Digital Cloud Landscape	TECNALIA, Bosch	08/12/2021
Technical discussion	Cloud Security and Assurance discussion with CERN	Bosch	24/11/2021
Technical Discussion	MEDINA presentation to internal Power Tool business unit	Bosch	29/11/2021
Technical Discussion	Bosch's Product Security Board presentation of MEDINA	Bosch	11/11/2021
Technical discussion	OSCAL, EUCS and Continuous Certification with Microsoft – discussion with MS lead on cybersecurity standardization (Andreas Fuchsberger)	Bosch	09/11/2021
Technical Discussion	MEDINA presentation to Bosch's Central IoT Digitalization and Security business unit.	Bosch	08/11/2021
Technical discussion	MEDINA and standardization of automated monitoring with Oracle Compliance (Meghan Hester)	Bosch	07/09/2021
Technical Discussion	EUCS and MEDINA – discussion with Google Engineering Compliance (Nathaly Rey)	Bosch	16/06/2021
Workshop	Internal workshop with company cFocus on OSCAL adoption for continuous auditing and FedRAMP compliance.	Bosch	22/04/2021
Workshop	Internal workshop with Oracle's GRC team (US) on continuous certification with MEDINA and NIST OSCAL.	Bosch, Fabasoft, FhG	21/04/2021

## 5.6 Expert Stakeholder Group (ESG)

As mentioned on the Description of Action (DoA) document [4], the MEDINA project has assembled an Expert Stakeholder Group (ESG) to provide feedback on planned research and innovation on cloud certification. The ESG presented in the DoA was proposed with recognized experts from academia, industry, and the standardization community. The prospective group of experts was confirmed in June 2021 with the members shown in Table 10.

Table 10. Members of MEDINA's Expert Stakeholder Group

Name	Affiliation	Country	Value for MEDINA
Andreas Weiss / Thomas Niessen	Gaia-X	Germany	Gaia-X is in the core of MEDINA's exploitation plan (WP7).
Patrick Grete	BSI	Germany	The German Ministry of Information Security (BSI) maintains a security controls framework <sup>10</sup> which was the first to introduce the notion of continuous (automated) monitoring (WP2-WP6).
Eric Vetillard	ENISA	Greece	ENISA is the lead developer of EUCS, which is one of the main focus for MEDINA's activities (WP2-WP7).
Jim de Haas	ABN Amro	Netherlands	Provides the cloud customer perspective and expertise to the outcomes from MEDINA, which support the project's exploitation activities (WP7).
Meghan Herster	Oracle / ISO	US	Represents global Cloud Service Providers with strong interest on compliance and certification automation. Mrs. Herster is also ISO/IEC representative for cloud security (WP7).
Michaela Iorga	NIST	US	NIST develops one of the most prominent standards <sup>11</sup> for machine-readable exchange of cybersecurity assessments (WP2-WP7).
Roberto Cascella	ECSC	Italy	Brings to the consortium the perspective of the cloud customers along with their interest in developing a single market for certification (WP7).
Ronit Reger	Microsoft	US	One of the major global Cloud Service Providers, and pioneer in continuous compliance mechanisms for the cloud (WP2-WP7).
Volkmar Lotz	SAP Research	France	Provides the EU research perspective to the outcomes and activities from MEDINA (WP2-WP4).

<sup>10</sup> Please refer to:

[https://www.bsi.bund.de/EN/Topics/CloudComputing/Compliance\\_Criteria\\_Catalogue/Compliance\\_Criteria\\_Catalogue\\_node.html;jsessionid=BC93835E06756BF8DF81CD531A513DD4.internet462](https://www.bsi.bund.de/EN/Topics/CloudComputing/Compliance_Criteria_Catalogue/Compliance_Criteria_Catalogue_node.html;jsessionid=BC93835E06756BF8DF81CD531A513DD4.internet462)

<sup>11</sup> Please refer to <https://pages.nist.gov/OSCAL/>



As seen on Table 10, the ESG composition shows diversity from different perspectives (e.g., expertise, geography, industrial sector, gender) which results on a high value for MEDINA. Despite the DoA proposes to have a strong engagement with the ESG during the second half of the project's duration, it was decided to engage the experts earlier in order for them to realize how the project matures in its different stages. For this reason, on May 2021 the prospective ESG members were contacted based on an email communication with the following text:

*Dear Expert Stakeholder Group members,*

*I would like to inform you that starting in November 2020, we are working on [MEDINA Project](#) "MEDINA-Security framework to achieve a continuous audit-based certification in compliance with the EU-wide cloud security certification scheme"- SU-ICT-02-2020 No. 952633.*

*Some months ago, you showed interest on participating in this project as a Member of the MEDINA Expert Stakeholder Group (ESG).*

*The objective of the MEDINA Expert Stakeholders Group is to extend the MEDINA capability to involve experts outside the project's consortium, to improve project's assessment on its approaches, technologies and strategies, as well as to support the project in improving its capability to analyse opportunities for dissemination or standardization and to validate the exploitation strategy.*

*We have recently faced Month 6 of the project and we would like to have our first (on-line) meeting with the objective of presenting the initial outcomes and gathering feedback from all of you.*

*We want to acknowledge you that MEDINA project is for the purpose of research and not for profit and that your participation in this group is voluntary. You are free to withdraw from the project at any time. With your participation you will make a substantial contribution to achieve MEDINA project main goal, i.e. to enhance cloud customers control and trust in consumed cloud services, by supporting CSPs towards the successful achievement of a continuous certification aligned to the EUCS.*

*If you finally agree to be part of the ESG please complete the following doodle with your availability so that we can start the preparation of the kick-off meeting:*

*We would like to share with you the project brochure with an overview of the project (attached). You can also follow our latest news through our social networks:*

*Website and blog: <https://medina-project.eu/>*

*Twitter: <https://twitter.com/medinaprojecteu>*

*LinkedIn: <https://www.linkedin.com/groups/12486585/>*

*Slideshare : <https://www.slideshare.net/MEDINAContinuousclou>*

*Regards, the MEDINA consortium*

Based on the positive responses and interest from the ESG members, we decided to organize virtual kick-off meetings on July-16<sup>th</sup> 2021 and July-23<sup>rd</sup> 2021 (two different meetings took place in order to accommodate the different time zones of the ESG members). The agenda for both meetings covered not only the background and objectives of MEDINA, but it also provided a deep dive on two technical topics which were selected based on preliminary discussions with the ESG and our WP leads. The selected topics were risk management (WP2), and evidence collection (WP3) which were presented by the respective MEDINA experts.



Figure 28. ESG Kick-off Meetings

The kick-off ESG meeting resulted on rich feedback from the experts, in particular related to the validation of the different EUCS-Assurance levels in MEDINA, and technical details related to the presented risk assessment methodology. Provided feedback has been followed up by the corresponding WP leads, and integrated into the corresponding activities of the project (e.g., the static risk assessment tool discussed in the D2.3 [5]).

At the time of writing this deliverable, the consortium has already scheduled a second ESG meeting which will take place on May 3<sup>rd</sup>, 2022. This meeting is being structured to present the progress of MEDINA after 18 months, including the demonstration of some of the project's tools for risk management and automated assessment of organizational evidence. Furthermore, and given the strong presence of ESG members affiliated to standardization bodies, it is also planned to present MEDINA's standardization roadmap as presented in the D7.8 [6].

During the second half of MEDINA's duration, the ESG is expected to be met again at least once per-quarter (and in some cases with one-to-one adhoc meetings). This decision has been taken based on the involvement and interest of most of the ESG members in the activities of MEDINA.

## 6 Networking activities

Networking and collaborating with other projects and initiatives is a crucial activity for a collaborative research project such as MEDINA. Due to COVID-19 travelling restrictions, the face to face events have been cancelled and this has posed several challenges in getting to know, for instance, other similar European projects running in the topic of certification and cybersecurity, which are facing similar technical challenges as the ones MEDINA is facing.

In this section we report networking and collaboration activities carried with:

- Other European projects: namely Coordination and Support Actions (CSAs) in the field of Cloud computing and cybersecurity, but not only. Collaboration with other Research and Innovation actions (RIAs) has been included.
- Gaia-X, which is one of the largest initiatives in the field of cloud services running at the time of writing this deliverable.
- Non-structured and temporal associations such as the Future Cloud cluster, promoted by the Commission.
- SDOs and ENISA.

### 6.1 Networking with other European projects

**H-Cloud** is a Coordination and Support action (CSA) that aims at creating a European Cloud Community. Among its tasks it also seeks to create a research roadmap on cloud computing topics that could be used as input for the European Commission to develop the work programmes for Horizon Europe and it organizes events to create said cloud community. H-Cloud's successor is **HUB4CLOUD** and has similar objectives to the ones by H-Cloud, but the target topics vary, being HUB4CLOUD topics more relevant to what MEDINA is doing, namely: standardization, and open source.

For the contributions towards the research roadmap, MEDINA has participated in the workshops under invitation to discuss the H-Cloud green and white papers.

For the creation of the community, H-cloud and HUB4CLOUD have a monthly communication task force meeting where various partners of MEDINA participate. In addition to that, MEDINA partners have participated in the **H-cloud summit 2021**<sup>12</sup>, organized jointly by H-cloud and HUB4LOUD. MEDINA participated with Leire Orue-Echevarria and Jesús Luna as panellists in the session “Cloud Standardization and Open-Source for a Robust Digital Cloud Landscape” (see Figure 29), which was held virtually on December 8<sup>th</sup>, 2021 in a collocated session of the CloudExpo Europe.



Figure 29. H-cloud summit 2021

<sup>12</sup> <https://www.h-cloud.eu/event/horizon-cloud-summit-2021/>

Moreover, in the context of HUB4CLOUD, MEDINA answered the questionnaire shared to understand the position of MEDINA in regard to open source, standardization, cloud business models, and training. The answers are collected in HUB4CLOUD D1.4 deliverable.

**SWForum.eu** is another CSA. The focus of SWForum.eu is on Software Technologies, Cybersecurity and Digital infrastructures. The goal of the project is to *“raise awareness and strengthen the competitiveness of the European Software Industry by facilitating a sustainable European forum for stakeholders representing scientific researchers, providers, developers, operators and policy-makers relevant to software technologies, digital infrastructures and cybersecurity”*.<sup>13</sup> This will be achieved through the organization of cross-fertilization workshops, the development of research and innovation roadmaps that will serve as input to the EC and the creation of a forum of practitioners.

Until March 2022, SWForum has organized 2 cross-fertilization workshops. The **First SWForum workshop**<sup>14</sup> was held in February – March 2021 and organized as a call for papers and keynotes. MEDINA submitted a position paper that was accepted and presented. The paper is open access and released as part of CEUR proceedings of the first SWForum workshop. The presentation, as well as the whole workshop, was recorded and the video is available on the YouTube channel of SWForum. The **Second SWForum workshop** under the title *“Research Challenges, Collaboration, and Coordination in European Software Engineering Projects”*, took place on June 2021. This was a three day long workshop, with each day devoted to a topic, that is, the first day research challenges were discussed whereas the second collaboration aspects among projects were put on the spotlight and the third day the next steps on how to coordinate collaboration efforts among the participants were shared. MEDINA partners participated in the discussions.

Moreover, MEDINA appears in the **project hub** that SWForum has created (see Figure 30 and Figure 31) and has participated in the **MTRL assessment**.

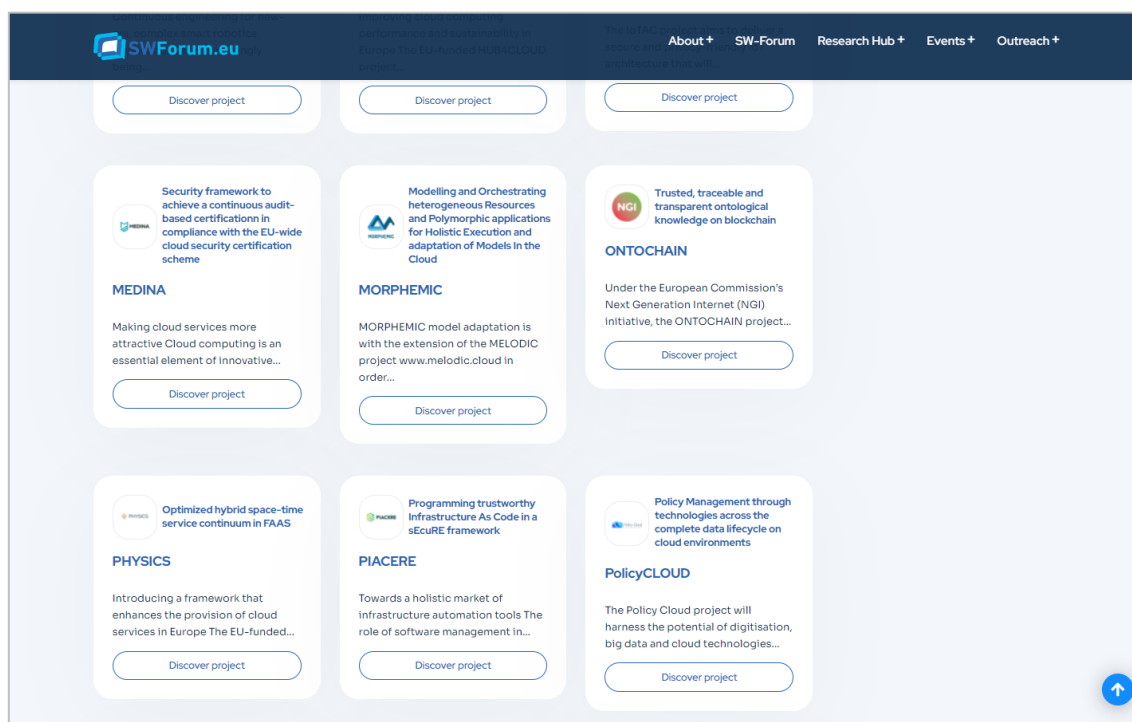


Figure 30. MEDINA in the Project Hub of SWForum

<sup>13</sup> <https://cordis.europa.eu/project/id/957044>

<sup>14</sup> <https://swforum.eu/events/first-swforumeu-workshop-trustworthy-software-and-open-source>

**Security framework to achieve a continuous audit-based certification in compliance with the EU-wide cloud security certification scheme**

SWForum.eu / Project Hub / Security framework to achieve a continuous audit-based certification in compliance with the EU-wide cloud security certification scheme /

01 Introduction 02 News 03 Events 04 Publications 05 Video

### Making cloud services more attractive

Cloud computing is an essential element of innovative economies. The European Commission's recent Data Strategy aims to make it possible for European businesses to access more secure, sustainable, interoperable, environmentally friendly and scalable cloud infrastructures and services. Despite trust-building efforts, the adoption of cloud computing is limited. A perceived lack of security and transparency is the reason for the slow uptake. The EU-funded MEDINA project will work to counter this trend. It will propose a framework for achieving a continuous audit-based certification for cloud service providers, complying with the EU Cybersecurity Act. The project will also address the definition and assessment of technical and organisational measures, security testing, machine-readable certification language and audit evidence management.

#### Project Objective

Despite the evident benefits of cloud computing, its adoption is still limited partially because of EU customers' perceived lack of security and transparency in this technology. Cloud service providers (CSPs) usually rely on security certifications as a mean to improve transparency and trustworthiness, however European CSPs still face multiple challenges for certifying their services (e.g. fragmentation in the certification market, and lack of mutual recognition). In this context, the new EU Cybersecurity Act (EU CSA) proposes improving customer's trust in the European ICT market through a European certification scheme.

The proposed EU CSA's cloud security certification scheme conveys new technological challenges due to its notion of "levels of assurance" (e.g. high-assurance through continuous certification for the whole supply chain), which need to be solved in order to bring all of EU CAS's expected benefits to EU cloud providers and customers.

**Project Agreement No.**  
952633

**Start date:** Nov 01 2020 **End date:** Nov 30 2023

**Website:**  
<https://medina-project.eu/>

**Sector:**  
Advanced Digital Skills

**Project domain:**  
Cybersecurity

[Contact](#)

Figure 31. MEDINA details in the SWForum project Hub

The project CYRENE and ASSURED organized in December 2021 a clustering workshop titled "Future Proofing and Certifying Supply Chains". The session can be seen online<sup>15</sup>. The agenda of the event (see Figure 32) included a presentation of the general scope of the project as well as of the current status and was complemented with some discussions on the next steps for collaboration.

TIME (CET)	PRESENTATION	SPEAKERS
9:00–9:15	Welcome and Introduction of the Agenda	Sofoklis Efremidis, Maggioli
9:15–9:45	Keynote #1   Understanding Supply Chain Attacks Threat Landscape The presentation aims at highlighting the key observations and major findings described/illustrated in the ENISA "Threat Landscape for Supply Chain Attacks" report that was published in July 2021. The report provides a mapping and analysis of 24 supply chain attacks based on incidents identified and reported from January 2020 to early July 2021, along with their classification based on a proposed taxonomy of their key characteristics and techniques. The analysis answers the questions: what are the most common attack techniques being used in supply chain attacks, what are the main customer assets that attackers are after and which is the relationship between attacks and assets targeted.	Ifigenia Lella, ENISA
9:45–10:15	H2020 SANCUS Project Overview & Technical Status	TBD
10:15–10:45	H2020 ASSURED Project Overview & Technical Status	Thanassis Giannetsos, UBITECH
10:45–11:15	H2020 FISHY Project Overview & Technical Status	TBD
11:15–11:30	Coffee Break	
11:30–12:00	H2020 CYRENE Project Overview & Technical Status	Sofoklis Efremidis, Maggioli
12:00–12:30	H2020 MEDINA Project Overview & Technical Status	TBD
12:30–13:00	H2020 BIECO Project Overview & Technical Status	TBD

Figure 32. Future Proofing and Certifying Supply Chains Cluster workshop agenda

<sup>15</sup> <https://www.cyrene.eu/future-proofing-and-certifying-supply-chains-clustering-workshop/>

## 6.2 Networking with Gaia-X

Gaia-X<sup>16</sup> is an initiative initially launched by Germany and France in summer 2020. The initiative has become now European with organizations from multiple European countries participating in it and several national hubs already launched.

Several partners of MEDINA are members of the **Gaia-X AISBL** association and participate actively in the working groups of Gaia-X since the beginning in 2020. Some of the activities where MEDINA partners have been more involved are:

- Participation in the working group of **Compliance** (not active any more at the time of writing this deliverable in April 2022). This working group dealt with issues related to certification schemes, policy and rules, and continuous automated monitoring. MEDINA has been presented several times in that working group. The definition of the metrics as they stand now come from the inputs provided by MEDINA partners.
- Participation in the working group of **Federated Catalogue**: this group works in the definition of the service lifecycle of a cloud resource. MEDINA partners have provided input related to how certification should be considered and how the status of a certificate can affect a service and its lifecycle.

In addition to the participation in these working groups, the MEDINA partner Fraunhofer AISEC is one of the winners of the Lots of the Gaia-X Federated Services (GXFS)<sup>17</sup> project, namely the one on Continuous Automated Monitoring<sup>18</sup>. The core functionalities of these Federation Services include integration, identity and authentication, security as well as compliance. The work performed in MEDINA will be used as baseline and complemented in GXFS. Additionally, the MEDINA partner XLAB has been contracted for the implementation of the portal services of the GXFS project.

Being Bosch a founding member of Gaia-X and given its particular focus on the topic of Industry 4.0<sup>19</sup>, it has committed efforts to the design of the CAM and the topic of cybersecurity compliance to guarantee alignment with the EUCS. Bosch actively participates on the working group of Compliance, which so far has produced an initial version of the Policy Rules Document<sup>20</sup>, where cybersecurity aspects already show alignment to the EUCS categories. Furthermore, given the recent creation of Catena-X<sup>21</sup> (i.e., a Gaia-X application project for the automotive sector in Germany) we expect further synergies with MEDINA in the upcoming months.

The Gaia-X Spanish Hub Working Group on Industry 4.0 was launched on February 15<sup>th</sup>, 2022 in Bilbao. The event was organized by the Secretary of State of Digitalization and Artificial Intelligence (SEDIA), and the Office for Data (Oficina del dato) of the Spanish Government and the Department of Economic Development of the Basque Government. The workshop had in its agenda the speeches of the Spanish Secretary of State Carme Artigas and the Vice minister of technology, innovation and digital transformation of the Basque Country, Estibaliz Hernaez. A TECNALIA representative under the affiliation of the Basque Research and Technology alliance (BRTA)<sup>22</sup> was among the presenters, as TECNALIA co-leads the working group. The presentation introduced the

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<sup>16</sup> <https://gaia-x.eu/>

<sup>17</sup> <https://www.gxfs.eu/>

<sup>18</sup> <https://www.gxfs.eu/continuous-automated-monitoring/>

<sup>19</sup> <https://www.data-infrastructure.eu/GAIX/Redaktion/EN/Artikel/UseCases/collaborative-condition-monitoring.html>

<sup>20</sup> [https://gaia-x.eu/sites/default/files/2022-04/Gaia-X\\_Policy%20Rules\\_Document\\_v22.04\\_Final.pdf](https://gaia-x.eu/sites/default/files/2022-04/Gaia-X_Policy%20Rules_Document_v22.04_Final.pdf)

<sup>21</sup> <https://catena-x.net/en/>

<sup>22</sup> BRTA is an alliance of 17 technology centres and cooperative research centres of the Basque Country and counts with the support of the Basque Government, SPRI and the Provincial Councils of Araba, Bizkaia and Gipuzkoa.

challenges of a cloud federation and the data spaces in the industry. MEDINA was mentioned as one of the current initiatives that could help increase the trust in cloud services. During the questions and answers, a dedicated question to the EUCS and MEDINA was asked.

### 6.3 Networking with the Future Cloud Cluster

The Future Cloud Cluster was created under the umbrella of unit E2 of DG CONNECT of the European Commission with the aim of “*providing a forum for discussion and collaboration for research and innovation initiatives that address next generation Cloud Computing challenges and issues, including diverse forms of distributed computing (Cloud, Multi-Cloud, Edge, Fog, Ad-hoc and Mobile computing)*”<sup>23</sup>. Participants are members of running and past projects. Participation is on a voluntary basis.

During this period, the work of the cluster has revolved around two main topics:

- **Research roadmaps**<sup>24</sup>: in 2020, the Future Cloud Cluster received the request from the European Commission to update the research areas already described in 2017 (see Figure 33). The focus of said areas are Edge computing, Multi-Cloud, Computing continuum and Federated Cloud, all areas tightly related with MEDINA. The purpose of the submitted document was to provide the European Commission with input for the definition of topics in the upcoming Horizon Europe work programmes. In this context, and based on the experience of MEDINA, several topics were proposed, namely, #1, #2 and #3.

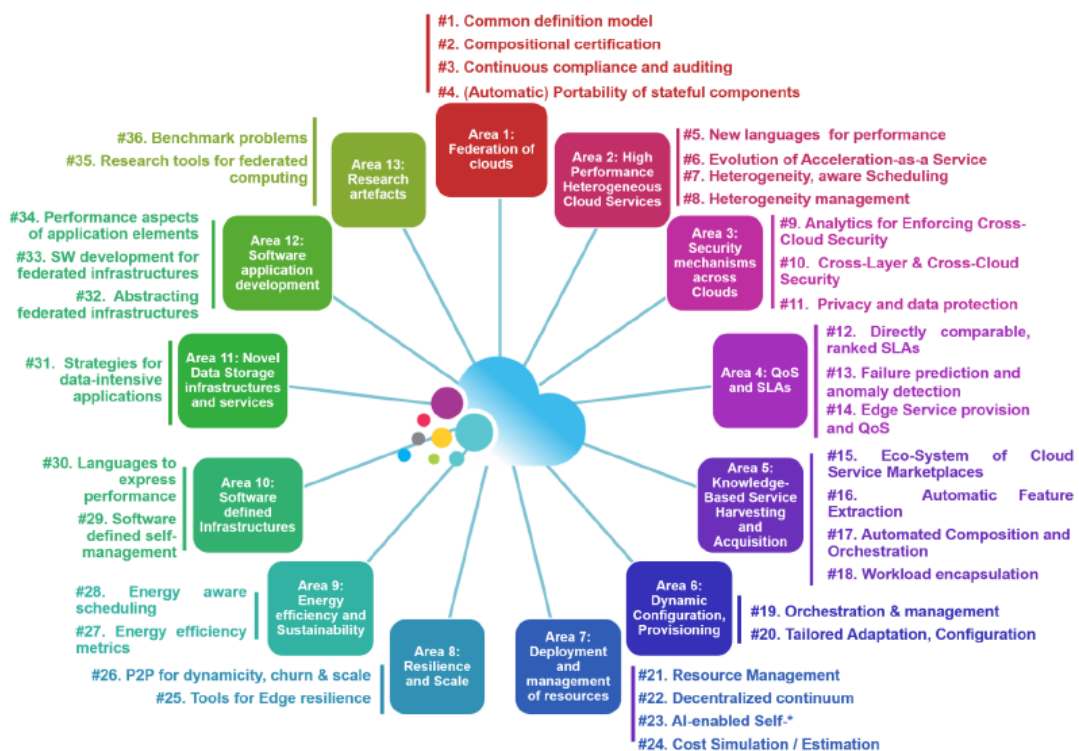


Figure 33. Future Cloud research areas (source: Future cloud cluster research roadmap)

- **Cloud Federation Reference Architecture**<sup>25</sup>: several projects and members of the Future Cloud Cluster developed, at the request of the European Commission, a reference

<sup>23</sup> <https://eucloudclusters.wordpress.com/future-cloud/>

<sup>24</sup> <https://drive.google.com/file/d/1Qw-PIR5D4H-ZZ4-CZ1pXRkf8IUzjLMzE/view?usp=sharing>

<sup>25</sup> [https://drive.google.com/file/d/1Kw6j41bcGw8v\\_o8KW18TkE0xe4kxBMIR/view?usp=sharing](https://drive.google.com/file/d/1Kw6j41bcGw8v_o8KW18TkE0xe4kxBMIR/view?usp=sharing)

architecture for a cloud federation. MEDINA participated in the different discussions held in the group and contributed to the architecture and analysis of current initiatives. Finally, MEDINA was mapped as one of the research projects that have provided or will provide research findings in that can contribute to the realisation of the reference architecture building blocks. The final paper can be found online.

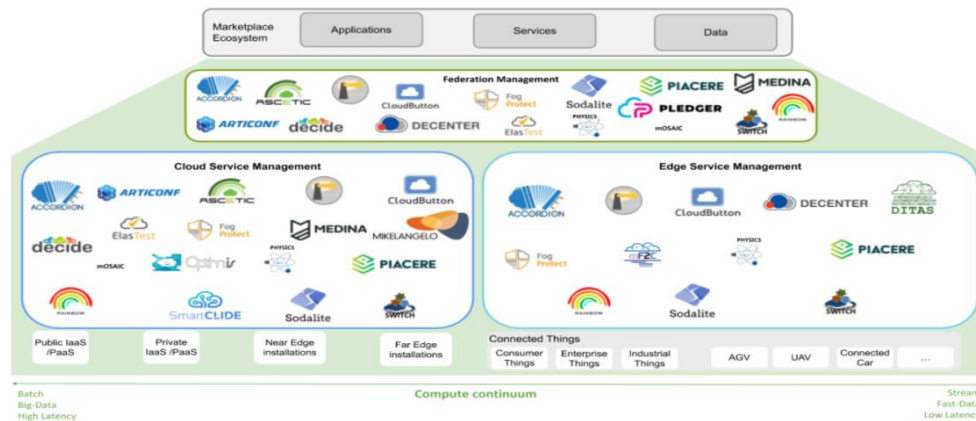


Figure 34. Mapping of Research projects to Reference Architecture layers. MEDINA is featured among the selected projects.

## 6.4 Networking with other initiatives such as standardization development organizations (SDOs) and ENISA

The collaboration activities with ENISA have been and still are very important for MEDINA. The details of said collaboration are summarized next.

- Participation of Leire Orue-Echevarria (TECNALIA) and Jesús Luna (Bosch) in the ad-hoc working group (AHWG) of ENISA that is defining the cloud services certification scheme (EUCS). Leire Orue-Echevarria led the technical group devoted to the definition of the technical security requirements.
- MEDINA was one of the proof-of-concepts that validated the version of December 2020 of the EUCS, more specifically, MEDINA was focused on the requirements of assurance level high.
- Participation of Leire Orue-Echevarria (TECNALIA) and Jesús Luna (Bosch) in CEN-CENELEC WG, working in the standardization of the requirements identified in EUCS.
- Participation in several SC of ISO, namely SC38 and SC7.
- Continuous contact with NIST, more specifically, the group dedicated to OSCAL. Participation in at least two workshops organized by NIST OSCAL.
- TECNALIA participates in the SCCG (Stakeholder Cybersecurity Certification Group), where MEDINA was briefly presented under the scope of certification research projects.




The details of these activities can be found in D7.8 [6], standardization roadmap.



## 7 Revising the Dissemination and Communication strategy and the associated KPIs

This section presents the values achieved for the dissemination and communication KPIs defined in D7.2 [1]. These values are then analysed, and improvement actions are proposed for those KPIs that have not been fully achieved.











### Explanation symbols

	Criterion has been met
	Some actions have already been done
	Nothing to report yet

### 7.1 Planned vs. Actual work

Table 11 summarises the dissemination strategy defined in D7.2, as well as the level of achievement of the dissemination KPIs at month 18.

Table 11. MEDINA Dissemination tools and KPIs at month 18

Dissemination tool	KPI	Objective	Period 1 (M1-M18)	
Brochures	Number of leaflets / brochures produced	>3	1	
Conference / Journal publications	Number of publications: Scientific journals	2	1 in submission	
	Number of publications: Scientific conferences	15	3 published – 1 accepted- 2 under submission	
Project posters	Number of posters	At least 3	1	
Press releases	Number of specialized press releases	2 per country and language	1 per country	
Project showcases	Number of different demonstration videos produced	10	2	
Project newsletters	Number of newsletters	1 per year	1	
Attendance at industry-focused events	Number of events attended	5 per year	7	
Whitepapers	Number of whitepapers published	2 per year	2	
Cloud Community, Software and Services Publications	Number of references in external magazines (Collaboration and Support Actions, EC)	20	0	
















Courses / Capacity building	Number of training activities delivered	4	2	
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Table 12 summarises the communication strategy defined in D7.2, as well as the level of achievement of the communication KPIs at month 18.

Table 12. MEDINA Communication KPIs at month 18

Diss. tool	KPI	Objectives	Tool used	Period 1 (M1-M18)	
MEDINA website	Yearly visits	>1,700	Google analytics	3,680 (total number of visits)	
	Duration of visits	More than 2 min. for 40% of users	Google analytics	00:01:02 (average)	
	Monthly downloads: Posters, flyers	35	384 (total number of downloads)		
	Monthly downloads: Public reports	50			
	References from external web pages	20 (excluding partner webs)	Manual / Conversion rates by Google Analytics	2	
Twitter feed	Number of followers (new)	>200 followers	Twitter analytics (free version)	64	
	Number of Tweets (new)	>700	Twitter analytics (free version)	72	
	Number of following profiles (new)	>200	Twitter analytics (free version)	101	
	Number of likes (new)	>600	Twitter analytics (free version)	49	
	Impressions(new)	>5000	Twitter analytics (free version)	13,236	
SlideShare	Number of views	>300	SlideShare analytics	674	
YouTube	Number of views	>200	YouTube	19	

<b>Mass Media</b>	Number of releases	<b>2 per country in the project</b>	Monthly dissemination report	<b>1 per country</b>	
<b>Blog posts</b>	Number of entries	<b>at least 6 every year</b>	Monthly dissemination report	<b>15</b>	
<b>reddit posts</b>	Number of posts	<b>&gt; 6 posts per year</b>	Monthly dissemination report	<b>4</b>	

## 7.2 Adjustments - Future plans

As we can see in Table 11, some of the **dissemination KPIs** have not been reached (or are still a bit far from being reached). In particular, this refers to:

- The publication of scientific articles in journals (KPI on the whole project: 2).
- The realization of videos showing demos of the prototypes made during the span of the project (KPI on the whole project: 10).
- The Cloud Community, Software and Services Publications with references to MEDINA (KPI on the whole project: 20).

As far as publication in journals is concerned, failure to meet the KPI should not be a cause for concern. In fact, in order to be considered for publication in a journal, an article must have a maturity such that it is not feasible to have it in the first months of the project, where the activities are being defined and the results have not yet been fully achieved. Furthermore, it is well known that the evaluation procedures for articles in computer science and information engineering journals are very long. For an article submitted for review it can take months before acceptance. So, it is true that until April 2022 not even 1 journal article has been published, but one is in the submission phase, and the technical results of the project are coming out, so it is very likely to reach a minimum number of publications of 2 by month 36.

Concerning the realization of videos about prototypes, exactly the same thing applies: the prototypes of MEDINA components are being realized starting from the time of writing of this deliverable, so it is highly probable that the videos will be published during the second half of the project.

Regarding the number of references to the project in Cloud Community, Software and Services publications, we are confident that the work of networking and liaison with similar initiatives conducted in the first eighteen months of the project will lead MEDINA to be talked about in such specific publications.

As we can see in Table 12, some of the **communication KPIs** have not been reached. In particular, this refers to:

- Tweeter feed
- reddit posts
- YouTube views

Concerning to the improvement of impact of the Twitter feed and the number of followers for the next reporting period, we will work with institutions, team members and other relevant stakeholders with strong social media presence to communicate information about MEDINA. The

evolution of the project, such as the releases of the source code, the demo videos planned, and the publication of the deliverables will also allow the project to achieve greater engagement. In addition, we will create a tweet publication schedule like the one created for the blog (see Section 4.1.2).

About the reddit posts, as mentioned above (see Section 4.2.3), we have recently started dissemination activities through this social network, so we expect to increase the impact in the coming months. In relation to the YouTube views, we are confident that the number will increase as more video demonstrators are published in the channel.

Finally, we do not see, as of April 2022, any specific reason to change the established dissemination and communication plan defined in D7.2 [1].

## 8 Conclusions

This deliverable presented the description of the dissemination, communication and networking activities carried out as part of the MEDINA project in the first eighteen months of the project lifetime. Almost all partners have been involved in these activities, either as contributors or leaders.

The achievement of the majority of the KPIs for the current period demonstrates that the strategy followed is appropriate. Comparing the expected results with the achieved ones, we see no need to change the dissemination and communication plans for the time being.

The next publication of these activities will be in D7.5 [2], where the final outcome will be reported.

Finally, we would like to remark that, although this deliverable covers the main activities that partners undertook to disseminate and communicate the results of the project, partners will always look for additional ways to spread knowledge about MEDINA.

## 9 References

- [1] MEDINA Consortium, “D7.2 Dissemination and Communication Strategy,” 2021.
- [2] MEDINA Consortium, «D7.5 Dissemination and Communication Report-v2,» 2023.
- [3] MEDINA Consortium, “D7.1 MEDINA brochure and public website,” 2021.
- [4] MEDINA Consortium, “MEDINA Annex 1 Part B - GA Number 952633,” 2020.
- [5] MEDINA Consortium, “D2.3 Specification of the Cloud Security Certification Language-v1,” 2021.
- [6] MEDINA Consortium, “D7.8 Standardization Roadmap-v1,” 2022.

## APPENDIX A: Project Presentation Slides

The following figures show the slides of the MEDINA presentation, which can be downloaded at: <https://www.slideshare.net/MEDINAContinuousclou/medina-general-presentation-250342609>



**MEDINA: Security framework to achieve a continuous audit-based certification in compliance with the EU-wide cloud security certification scheme**

Leire Orue-Echevarria, PhD, PMP (TECNALIA)

### MEDINA At a Glance

1st November 2020 – 30th October 2023  
EU Budget 4,480,308.75€



tecNALIA Inspiring Business | BOSCH

Fraunhofer AISEC | Fabasoft

Hewlett Packard Enterprise | XLAB | NIXU cybersecurity | Consiglio Nazionale delle Ricerche

### Context

- Low adoption of cloud services in Europe
- Why? According to Eurostat (2018)

Risk of a security breach

Data storage localization

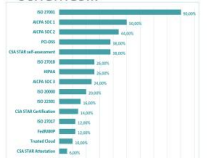
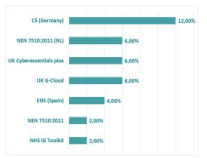
Legal jurisdiction

Insufficient skills

Lack of interoperability

### Context

Can certification be a solution? There are many certification schemes...

Accredited certifications by the Top 50 CSPs (XaaS) – Source: SMART 2016/0029; Data from 2018

Compliance with Member States' initiatives by the Top 50 CSPs (XaaS) – Source: SMART 2016/0029; Data from 2018

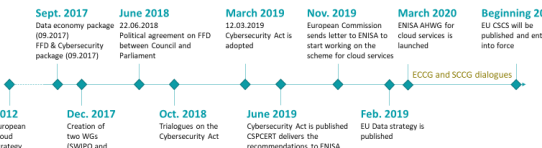
### Context

And with different coverage in the controls, as well as Different assessment methods

	EU CLOUD CYBERGOVERNANCE	CONSORBIO	ISO 27002	ISO 27001	CS GERMANY	CSA CCSA	NSA 100-52	CSM SENSIA
1 Information Security	8.20%	8.20%	8.70%	6.7%	5.70%	7.41%	11.11%	
2 Personnel & Training	5.90%	14.50%	4.3%	5.40%	6.5%	11.11%		
3 Asset Management	9.17%	9.17%	6.90%	7.30%	8.00%	3.70%		
4 Identity & Access Management	11.93%	11.93%	11.30%	21.17%	18.80%	3.70%		
5 Cryptography	1.83%	1.83%	3.48%	2.92%	0.00%	0.00%		
6 Physical Security	13.76%	13.76%	4.37%	9.80%	5.9%	7.41%		
7 Operational Security	9.17%	9.17%	30.00%	6.7%	6.0%	10.00%		
8 Communications Security	6.42%	6.42%	6.90%	3.65%	0.00%	0.00%		
9 Procurement Management	10.42%	10.42%	12.17%	10.97%	11.50%	7.41%		
10 Incident Management	14.42%	14.42%	10.80%	2.10%	4.10%	7.41%		
11 Business Continuity	1.67%	1.67%	4.37%	2.1%	9.74%	3.70%		
12 Disaster Recovery	0.00%	0.00%	0.00%	0.00%	0.00%	3.70%		
13 Compliance	13.14%	13.14%	2.41%	10.80%	6.42%	11.11%		
14 Security Assessment	0.00%	0.00%	2.41%	0.00%	0.00%	7.41%		
15 DevSec Management	0.00%	0.00%	0.0%	0.00%	0.00%	0.00%		
16 Interoperability	0.00%	0.00%	4.37%	0.00%	0.00%	3.70%		
17 Systems Security & Integrity	0.00%	0.00%	0.00%	0.73%	10.33%	11.11%		
18 Change & Configuration Management	0.00%	0.00%	0.00%	0.00%	4.83%	3.70%		
19 Risk / Threat / Vulnerability Management	0.00%	0.00%	0.00%	0.73%	2.20%	3.70%		

### Context

Several regulations and initiatives have been launched by the European Commission to promote the adoption of cloud computing and avoid fragmentation in certification approaches



2012 European Cloud Strategy

Dec. 2017 Creation of two WGs (SWIPO and CSPCERT)

Sept. 2017 Data economy package (09.2017) FFD & Cybersecurity package (09.2017)

June 2018 Political agreement on FFD between Council and Parliament

Oct. 2018 Triologues on the Cybersecurity Act

March 2019 Cybersecurity Act is adopted

June 2019 Cybersecurity Act is published CSPCERT delivers the recommendations to ENISA and EC

Nov. 2019 European Commission sends letter to ENISA to start working on the scheme for cloud services

Feb. 2019 EU Data strategy is published

March 2020 ENISA AHWS for cloud services is launched

Beginning 2021 ECCC and SCCG dialogues

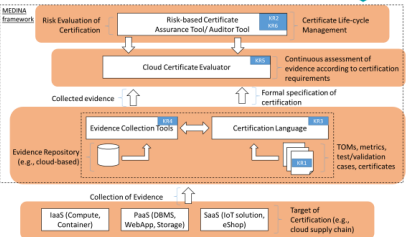
EU CCS will be published and enter into force

### MEDINA Project Objective

Provide a holistic framework that enhances cloud customers' control and trust in consumed cloud services, by supporting CSPs (IaaS, PaaS and SaaS providers) towards the successful achievement of a continuous certification aligned to the EU Cybersecurity Act (EU CSA).

[...] The proposed framework will be comprised of tools, techniques, and processes supporting the continuous auditing and certification of cloud services where security and accountability are measurable by design. As the MEDINA framework is leveraged into a cloud supply chain, it will support continuously assessing the efficiency and efficacy of security measures to ultimately achieve and maintain a certification.

### Overview



The process starts with 'Collection of Evidence' from IaaS (Compute, Container), PaaS (DBMS, WebApp, Storage), and SaaS (IoT solution, eShop). This leads to 'Evidence Repository (e.g., cloud-based)' and 'Evidence Collection Tools'. The process then moves to 'Certification Language' and 'Formal specification of certification'. This is followed by 'Cloud Certificate Evaluator' which performs 'Continuous assessment of evidence according to certification requirements'. The final step is 'Risk-based Certificate Assurance Tool/Auditor Tool' leading to 'Certificate Life-cycle Management'.

The figure consists of four presentation slides from the MEDINA project. The top-left slide, titled 'MEDINA Approach', features a central 'MEDINA' logo with a circular flow diagram connecting four main stages: 'Define metrics', 'Select controls', 'Specify the certification language', and 'Collect and evaluate evidences'. Each stage is linked to a detailed box containing specific tasks and goals. The top-right slide, 'Benefits', lists three key advantages: guidance on control implementation to reduce time, support for automatic compliance to reduce effort and risk, and ease of evidence collection and evaluation. The bottom-left slide, 'Target users', identifies CSPs, auditors, and CABs as primary stakeholders. The bottom-right slide is a teal background with the MEDINA logo, the text 'Thank you!', and contact information for the project website and a specific contact person.

**MEDINA Approach**

- Methods and tools for the management of cloud security certifications, in accordance to both chosen conformity method and assurance level
- Re-evaluate the risk and the selected security controls based on the continuous feedback loop with the evaluation component
- Representation and management of cloud certifications based on smart contracts

**Define metrics**

- Technical and Organizational (TOM) measures
- Catalogue of metrics

**Select controls**

- Risk based approach to select the security controls in accordance to the CSP's risk appetite
- Identify core assets of the service
- Identify threats
- Propose optimal security controls

**Specify the certification language**

- Specify the EU wide cloud certification scheme under the Cybersecurity Act in a machine-readable way (DSL) using NLP
- Define a certification target: the scope of the certification, assurance level, conformity assessment method, and so on

**Collect and evaluate evidences**

- Tools and methodologies to collect evidence at code and service level at design and operation time
- Tools and techniques needed to gather and manage cloud evidence's life-cycle
- Integrate these tools in new architectures (e.g. serverless) and paradigms (DevOps, IaC)
- Improve the trustworthiness of gathered evidence with e.g. smart contracts

**Benefits**

- Guidance on the **implementation of the controls**, measures to be applied and evidences to be collected, **reducing the time**
- Support for an **automatic compliance** of the controls of existing certification schemes, **reducing the effort, cost and risk of achieving and maintaining a certification**
- Ease the effort in the **collection and evaluation** of evidences
- Ensure the **Audit Trail** of the evidences, and that **no one has tampered with them**

**Target users**

- CSPs (Cloud Service Providers): IaaS, SaaS, PaaS, XaaS
- Auditors
- CABs (Conformance Assessment Bodies)

**Thank you!**

[www.medina-project.eu](http://www.medina-project.eu) // [cristina.martinez@tecnalia.com](mailto:cristina.martinez@tecnalia.com)

Figure 35. MEDINA Presentation slides



## APPENDIX B: Press Release in different languages

The following figures show the content of the press releases translated into the languages of the MEDINA partners, namely Finnish, German, Italian, Slovenian, and Spanish.

### Lehdistötiedote

**MEDINA viitekehys pilvipalvelujen tarjoajille mahdollistaa jatkuvan ja korkeatasoisen tietoturvatason arvioinnin**

Bilbao, Espanja, 28 Maaliskuuta 2022

Pilvipalvelut tarjoavat lukuisia etuja käyttäjilleen. Niiden käyttöä olisi mahdollista lisätä entistäkin parantamalla eurooppalaisten asiakkaiden luottamusta pilven tietoturvaan ja läpinäkyvyyteen. Pilvipalvelujen tuottajat luottavatkin useimmiten tietoturva-auditointeihin ja sertifiointeihin parantamiseen luotettavuuttaan asiakkaiden silmissä. Sertifiointimarkkina pilvipalveluille on kuitenkin sirpaleinen ja sekava, ja tästä seuraa haasteita voittoa asiakkaiden luottamus palveluiden turvallisuuteen.

Uusi EU lyhytturnausaidsääntö (EU CSA) pyrkii parantamaan tilannetta Euroopan ICT markkinoilla uudella sertifiointiohjelmalla (EUCS). Tämä uusi ohjelma on haastava toteuttaa, sillä siinä määritellään tietoturvalle erilaisia tasoja, joiden tekniset haasteet on ratkaistava ennen kuin EU CSA:n tavoitteeseen parantaa luottamusta pilvipalveluihin on mahdollista päästä.

**MEDINA on innovatiivinen Eurooppalainen Horizon2020 tuotekehityshanke, jonka tavoite on luoda tietoturvalle uusi viitekehys, jossa pilvipalveluntuottajien sertifiointi tapahtuu jatkuvan arvioinnin periaatteella ja EUCS:n määrittelemällä tavalla.**

MEDINA ratkoo haasteita mm. tietoturvatilanteiden, koneellistavan sertifiointisääntöjen ja todisteiden hallinnan alueella ja tarjoaa:

- Apua ja ohjeita EUCS tietoturvakontrollien toteuttamiseksi esimerkiksi toimenpiteiden ja todisteiden keräämisen suhteen. Tämän tavoitteena on lyhentää sertifiointiprosessin läpimenoaika.
- Automaattisen tarkastuksen vaatimustenmukaisuudesta tärkeimpien pilvipalveluita ohjaavien kontrollien osalta. Tämä vähentää manuaalista työtä, vähentää kuluja ja helpottaa sertifiointin saamista ja sen säilyttämistä.
- Vähentää vaivaa digitaalisen todistusaineiston keräämisessä ja arvioimisessa.
- Mahdollistaa digitaalisen todistusaineiston eheyden ja estää todisteiden luvattoman muokkauksen sertifiointin voimassaoloaikana.

**TECNALIAN johtama MEDINA konsortio on tasapainoinen kokonaisuus akateemisia ja kaupallisia toimijoita kuten tutkimuslaitoksia (TECNALIA, Consiglio Nazionale delle Ricerche, Fraunhofer) pilvipalveluiden tarjoajia (Bosch, Fabasoft), teknologiaomistajia (Hewlett Packard Enterprise, XLAB) ja auditoijia (Nessus).**


MEDINAN tavoitteiden toteutumista arvioidaan kahden todellisen käyttötapauskäytön kautta. Bosch ottaa viitekehiksen käyttöönsä multi-cloud IoT backend ympäristöönsä (IaaS, PaaS) ja Fabasoft valitsee julkisen sektorin palveluun (SaaS).

MEDINAN tavoitteena on myös lisätä tietoisuutta viitekehiksen edusta ja EU CSA:n tavoitteista tarjoamalla koulutusta ja osallistumalla standardointityöhön (kuten ENISA:n EUCS).

Yhteenvetona, MEDINA tulee auttamaan uuden Eurooppalaisen pilvipalveluiden sertifiointi järjestelmän kehityksessä tavoitteenaan parantaa pilvipalveluiden tietoturvaa ja luotettavuutta. MEDINAN avulla Eurooppa varustuu hyvissä ajoin vastaamaan tulevaisuuden pilvipalveluiden tietoturva-vaasteita.

Ensimmäiset 18 kuukautta 36 kuukauden hankkeesta on nyt takana ja työskentely on ollut intensiivistä. Toistaiseksi MEDINA on keskittynyt yleiseen arkkitehtuuriin ja teknologian ja prosessien kehitykseen. Kehitetyt teknologiat ja prosessit tullaan validoimaan Boschin ja Fabasoftin toimesta hankkeen aikana. Kehitettyjen työkalujen joukosta voidaan mainita riskiperusteinen sertifiointipapuri sekä keskitetty vaatimusjärjestelmä sisältäen tietoturvametriikat. Monipuolinen vaatimusjärjestelmä on keskeinen mahdollistaja jatkuvan ja automaattisen tietoturvanomintoroinnin toteuttamiseksi EUCS:n määrittelyiden mukaisena.

**Jos haluat lisää uutisia ja tietoa, vieraile <https://medina-project.eu> sivustolla.**

 Tämä projekti saa rahoitustensa Euroopan Unionin Horizon 2020 tuotekehitys- ja innovaatio ohjelmasta, Sopimus No 952633

**Yhteydenotot**  
 Malena Rando, MEDINA Dissemination and Communication Manager, TECHNICALIA  
[malena.rando@medina-project.eu](mailto:malena.rando@medina-project.eu)  
 Parque Científico y Tecnológico de Rikizia, C/Ordoño, edificio 700, E-48160 Derio (Biskaija)  
 International call: (+34) 945 430 800

Figure 36. MEDINA Press release translated to Finnish<sup>3</sup>

### Press Release

**MEDINA setzt auf eine hochsichere, auf digitalen Nachweisen basierende, kontinuierliche Zertifizierung für Cloud Service Provider**

Linz, Österreich, April, 2022

Trotz der offensichtlichen Vorteile des Cloud-Computing ist seine Akzeptanz immer noch begrenzt, was zum Teil daran liegt, dass die Kunden in der EU diese Technologie als nicht sicher und nicht transparent genug empfinden. Anbieter von Cloud-Diensten (CSPs) verlassen sich in der Regel auf Sicherheitszertifizierungen als Mittel zur Verbesserung der Transparenz und Vertrauenswürdigkeit, doch stehen europäische CSPs bei der Zertifizierung ihrer Dienste immer noch vor zahlreichen Herausforderungen (z. B. Fragmentierung des Zertifizierungsmarktes und fehlende gegenseitige Anerkennung).

In diesem Zusammenhang schlägt die neue EU-Cybersicherheitsverordnung (EU CSA) vor, das Vertrauen der Kunden in den europäischen IKT-Markt durch ein europäisches Zertifizierungssystem für Cybersicherheit für Cloud-Dienste (EUCS) zu verbessern. Dieses Zertifizierungssystem liegt aufgrund seines Konzepts der "Sicherheitsstufen" neue technologische Herausforderungen, die gelöst werden müssen, um den Cloud-Anbietern und -Kunden in der EU alle erwarteten Vorteile der EU CSA zu bieten.

MEDINA ist eine vom europäischen H2020-Programm unterstützte Forschungs- und Innovationsmaßnahme mit dem Ziel, einen Sicherheitsrahmen zu schaffen, um eine kontinuierliche, auf Audits basierende Zertifizierung für CSPs auf der Grundlage des EU-Zertifizierungssystems für Cybersicherheit für Cloud-Dienste zu erreichen.

Zu diesem Zweck wird MEDINA Herausforderungen in Bereichen wie Sicherheitsvalidierung/-tests, maschinenlesbare Zertifizierungssprachen, Cloud-Sicherheitsleistung und Verwaltung von Auditnachweisen angehen, um Folgendes zu bieten:

- Leitlinien für die Umsetzung der EUCS-Kontrollen, einschließlich der anzuwendenden Maßnahmen und der zu sammelnden Nachweise, um den Zertifizierungsprozess zu verkürzen
- Unterstützung für automatische Konformitätsprüfungen der Kontrollen in den wichtigsten Cloud-Sicherheitszertifizierungssystemen, wodurch der Aufwand, die Kosten und das Risiko für die Erlangung und Aufrechterhaltung einer Zertifizierung verringert werden
- Erleichterung des Aufwands für die Sammlung und Auswertung digitaler Nachweise
- Sicherstellung eines Prüfpfads für die Nachweise, um zu gewährleisten, dass niemand sie während der Gültigkeitsdauer des Zertifikats manipuliert hat.

Das MEDINA-Konsortium, das von TECNALIA geleitet wird, besteht aus einer ausgewogenen Gruppe von akademischen und industriellen Partnern, die eine Schlüsselrolle im EU-Ökosystem für die Cloud-Sicherheitszertifizierung spielen, darunter Forschungszentren (TECNALIA, Consiglio Nazionale delle Ricerche, Fraunhofer) Cloud Anbieter (Bosch, Fabasoft), Technologieanbieter (Hewlett Packard Enterprise, XLAB) und Auditoren (Nessus).

Der MEDINA-Ansatz und das MEDINA-Toolset werden in zwei realen Cloud-Anwendungsfällen bewertet, die die drei Cloud-Service-Modelle (IaaS, PaaS und SaaS) abdecken. Einerseits wird Bosch ein Szenario für die europäische Zertifizierung von Multi-Cloud-Backends für IoT-Lösungen einsetzen, andererseits wird Fabasoft ein kontinuierliches Audit von SaaS-Lösungen für den öffentlichen Sektor validieren.

MEDINA wird auch das Bewusstsein für die Vorteile des beigetragenen Rahmens im Zusammenhang mit dem EU-Cybersicherheitsgesetz schärfen, indem es Aktivitäten im Zusammenhang mit europäischer Ausbildung, Bewusstseinsbildung und relevanten Interessengruppen Zusammenarbeit und Europa dabei hilft, sich auf die Herausforderungen der Cloud-Sicherheit von morgen vorzubereiten.

Zusammenfassend lässt sich sagen, dass MEDINA zur europäischen Politik der Cloud-Sicherheitszertifizierung beiträgt, die Vertrauenswürdigkeit von Cloud-Diensten dank der Einhaltung von Sicherheitszertifizierungssystemen erhöht, mit den relevanten Interessengruppen Zusammenarbeit und Europa dabei hilft, sich auf die Herausforderungen der Cloud-Sicherheit von morgen vorzubereiten.

MEDINA hat die erste Hälfte des 36-monatigen Projekts abgeschlossen und macht rasche Fortschritte bei der Erreichung der nächsten Etappenziele. Bislang konzentrierte sich die Arbeit auf die Definition der allgemeinen MEDINA-Architektur sowie auf die Entwicklung des integrierten Rahmens (sowohl Technologie als auch Prozesse), der durch die Anwendungsfälle von Bosch und Fabasoft validiert werden soll. Unter den entwickelten Werkzeugen sind der risikobasierte Zertifizierungsvorbereitungsdienst von MEDINA und der Katalog der Sicherheitsanforderungen und -metriken hervorzuheben, die wesentliche Voraussetzungen für die kontinuierliche (automatische) Überwachung gemäß EUCS und anderen Zertifizierungssystemen sind.

**Weitere Informationen unter: <https://medina-project.eu>**

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**Kontakt**  
 Bijon Fariš, Fabasoft  
[bijon.faris@fabasoft.com](mailto:bijon.faris@fabasoft.com)  
 Honauerstraße, 4020 Linz, Austria. Phone: +43 732 606162-0

Figure 37. MEDINA Press release translated to German<sup>4</sup>


<p><b>Comunicato stampa</b> </p> <p><b>MEDINA implementa una certificazione continua ai fornitori di servizi cloud. Una certificazione ad alta affidabilità e basata su evidenze digitali</b></p> <p>Milano, Italy, 8 April 2022</p> <p>Nonostante gli evidenti benefici del cloud computing, la sua adozione è ancora limitata, in parte a causa della mancanza di sicurezza e trasparenza percepita dagli utenti europei. I fornitori di servizi cloud (CSP) di solito si affidano alle certificazioni di sicurezza come mezzo per migliorare la trasparenza e l'affidabilità, tuttavia i CSP europei devono ancora affrontare molteplici sfide per certificare i loro servizi (ad esempio, la frammentazione del mercato della certificazione e la mancanza di un riconoscimento reciproco).</p> <p>In questo contesto, il nuovo EU Cybersecurity Act (EU CSA) propone di migliorare la fiducia dei clienti nel mercato europeo dell'ICT, attraverso uno schema Europeo di certificazione di sicurezza informatica per i servizi cloud (EUCS). Questo schema di certificazione porta ad affrontare nuove sfide tecnologiche, a causa della presenza di "livelli di garanzia" che devono essere soddisfatti al fine di portare tutti i benefici attesi dell'EU CSA ai fornitori di servizi cloud dell'UE e ai clienti.</p> <p><b>MEDINA è una "Research and Innovation Action" finanziata dal programma europeo H2020, con l'obiettivo di creare un sistema sicuro per ottenere una certificazione continua, basata su audit, per i CSP. Il sistema si basa sullo schema di certificazione di sicurezza informatica dell'UE per i servizi cloud.</b> A questo scopo, MEDINA affronterà sfide in aree come validazione/test di sicurezza, i linguaggi di certificazione interpretabili da un calcolatore, prestazioni di sicurezza del cloud e fornitura/gestione delle prove di audit.</p> <ul style="list-style-type: none"> <li>- Guida all'implementazione dei controlli EUCS, comprese le misure da applicare e le prove da raccogliere, riducendo così il tempo del processo di certificazione;</li> <li>- Supporto per le verifiche automatiche di conformità dei controlli nei principali schemi di certificazione della sicurezza del cloud, riducendo l'impegno umano, i costi e i rischi per ottenere e mantenere una certificazione;</li> <li>- Snellimento per la raccolta e valutazione delle evidenze digitali;</li> <li>- Assicurazione di un audit trail delle evidenze, per garantire che nessuno le abbia manomesse durante il periodo di validità del certificazione.</li> </ul> <p>Il consorzio MEDINA, guidato da TECNALIA, consiste in un insieme ben equilibrato di partner accademici e industriali, che svolgono ruoli chiave nell'ecosistema della certificazione della sicurezza cloud dell'UE. Il consorzio comprende centri di ricerca (TECNALIA, Consiglio Nazionale delle Ricerche, Fraunhofer), fornitori di cloud (Bosch, Fabasoft), fornitori di tecnologia (Hewlett Packard Enterprise, XLAB) e auditing (Nixu).</p> <p>La metodologia di MEDINA sarà valutata in due casi d'uso reali che coprono i tre modelli di servizio cloud (IaaS, PaaS e SaaS). Da un lato, Bosch implementerà uno scenario per la certificazione europea di backend multi-cloud per soluzioni IoT, e dall'altro, Fabasoft valuterà un audit continuo di soluzioni SaaS per il settore pubblico.</p>	<p>MEDINA aumenterà anche la consapevolezza sui benefici del progetto nel contesto del Cybersecurity Act, portando avanti attività di training e di standardizzazione (ad esempio, ENISA EUCS).</p> <p>In sintesi, MEDINA contribuisce alla politica europea di certificazione della sicurezza del cloud, migliora l'affidabilità dei servizi cloud grazie alla conformità con gli schemi di certificazione di sicurezza, collabora con le parti interessate, e aiuta l'Europa a prepararsi per le sfide di sicurezza del cloud di domani.</p> <p><b>MEDINA ha completato la metà del percorso (la durata complessiva è pari a 36 mesi) e sta progredendo rapidamente verso il raggiungimento delle prossime tappe.</b> Finora, il lavoro si è concentrato sulla definizione dell'architettura generale di MEDINA, delle sue componenti e della loro integrazione. Il tutto sarà convalidato dai casi d'uso di Bosch e Fabasoft. Tra gli strumenti sviluppati possiamo evidenziare il servizio di gestione del rischio e il catalogo dei requisiti e delle metriche di sicurezza, entrambi essenziali per un monitoraggio continuo (e automatico), come richiesto da EUCS e da altri schemi di certificazione.</p> <p>Breaking news and info available at <a href="https://medina-project.eu">https://medina-project.eu</a></p>
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Figure 38. MEDINA Press release translated to Italian<sup>5</sup>


<p><b>Sporočilo za javnost</b> </p> <p><b>MEDINA uvaja neprekinjeno certificiranje ponudnikov oblaknih storitev, ki temelji na visoki stopnji zanesljivosti / digitalnih dokazih</b></p> <p>Ljubljana, Slovenija, April 8, 2022</p> <p>Kljub očitnim prednostim računalništva v oblaku je njegova uporaba v državah Evropske unije še vedno omejena, deloma zato, ker ga stranke ne zaznavajo kot dovolj varno in transparentno tehnologijo. Ponudniki oblaknih storitev se občajno zanašajo na varnostne certifikate, s čimer izboljšujejo transparentnost in zanesljivost svojih storitev, vendar se pri tem soočajo tudi s številnimi izzivi (npr. razdrobljenost trga, pomanjkanje vzajemnega priznavanja).</p> <p>V zvezi s tem si novi evropski akt o kibernetiki varnosti (EU CSA) s pomočjo evropske certifikacijske sheme za kibernetiko varnost v oblaku (EUCS) prizadeva izboljšati zaupanje strank v trg informacijsko-komunikacijske tehnologije. Omenjena shema prinaša tudi nekaj tehnoloških izzivov, ki jih je potrebno nasloviti in razrešiti ter s tem zagotoviti, da bodo ponudniki in stranke lahko deležni vseh koristi, ki jih prinaša novi akt.</p> <p><b>MEDINA je raziskovalni in inovacijski projekt v okviru evropskega programa za raziskave in inovacije Obzorje 2020, ki se osredotoča na vzpostavitev varnostnega okvira za doseganje neprekinjenega in revizijsko podprtega certificiranja ponudnikov oblaknih storitev, ki temelji na evropski certifikacijski shemi za kibernetiko varnost storitev v oblaku.</b> MEDINA se spopada z izzivi na področjih, kot so preverjanje/tesiranje varnosti, strojno berljivi certifikacijski jeziki, učinkovitost varnosti v oblaku in upravljanje revizijskih dokazov, da bi zagotovila:</p> <ul style="list-style-type: none"> <li>- smernice za izvajanje kontrol EUCS, vključno z ukrepi, ki jih je treba uporabiti in dokazi, ki jih je treba zbrati, s čimer se skrajša čas postopka certificiranja;</li> <li>- podporo za samodejno preverjanje skladnosti kontrol v glavnih shemah certificiranja varnosti v oblaku, kar zmanjšuje trud, stroške in tveganje za pridobitev in vzdrževanje certifikata,</li> <li>- olajšano zbiranje in ocenjevanje digitalnih dokazov,</li> <li>- revizijsko sled dokazov, ki zagotavlja, da v času veljavnosti potrdila nihče ni posegel vanje.</li> </ul> <p>Konzorcij MEDINE pod vodstvom TECNALIE sestavlja uravnotežen nabor akademskih in industrijskih partnerjev, ki igrajo ključno vlogo v ekosistemu Evropske unije za certificiranje varnosti storitev v oblaku. V projekt so vključeni raziskovalni centri (TECNALIA, Consiglio Nazionale delle Ricerche, Fraunhofer), ponudniki oblaknih storitev (Bosch, Fabasoft), ponudniki tehnologije (Hewlett Packard Enterprise, XLAB) ter revizorji (Nixu).</p> <p>Pristop in nabor orodij MEDINA bosta ocenjena v dveh praktičnih primerih, ki zajemata tri modele storitev v oblaku (IaaS, PaaS in SaaS). Podjetje Bosch bo uvedlo scenarij za evropsko certificiranje večoblačnih zaledij za rešitve interneta stvari, podjetje Fabasoft pa bo potrdilo stalno revizijsko rešitev SaaS za javni sektor.</p>	<p>MEDINA bo s podpiranjem dejavnosti, povezanih z evropskim usposabljanjem, ozaveščanjem in ustreznimi standardizacijskimi dejavnostmi (npr. ENISA EUCS), povečala tudi ozaveščenost o prednostih skupnega okvira v sklopu akta EU o kibernetiki varnosti.</p> <p>Projekt MEDINA pomembno prispeva k evropski politiki certificiranja varnosti v oblaku, povečuje zanesljivost storitev v oblaku zaradi skladnosti s certifikacijskimi shemami, sodeluje z ustreznimi zainteresiranimi deležniki ter pomaga Evropi, da se pripravi na varnostne izzive prihodnosti.</p> <p>Trenutno je 36 mesečni projekt na polovici trajanja in hitro napreduje pri doseganju naslednjih mejnikov. Doslej so bile aktivnosti osredotočene na opredelitev splošne arhitekture ter na razvoj integriranega okvira (tako tehnologij kot procesov), ki bo potrjen s praktičnimi primeri uporabe podjetij Bosch in Fabasoft. Med razvitimi orodji lahko izpostavimo storitev pripravljenosti za certificiranje na podlagi tveganja ter katalog varnostnih zahtev in metrik, ki sta bistvena pripomočka za stalno (avtomatizirano) spremljanje, kot je opredeljeno v EUCS in drugih certifikacijskih shemah.</p> <p>Več informacij o projektu: <a href="https://medina-project.eu">https://medina-project.eu</a></p>
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Figure 39. MEDINA Press release translated to Slovenian<sup>6</sup>

## Press Release



### MEDINA implementa una certificación continua de alta seguridad / basada en evidencia digital para proveedores de servicios en la nube

Bilbao, España, 28 de marzo de 2022

A pesar de los beneficios evidentes de la computación en la nube, su adopción aún está limitada en parte debido a la falta de seguridad y transparencia percibida por los clientes de la UE en esta tecnología. Los proveedores de servicios en la nube (CSP) generalmente confían en las certificaciones de seguridad como un medio para mejorar la transparencia y la confiabilidad; sin embargo, los CSP europeos aún enfrentan múltiples desafíos para certificar sus servicios (por ejemplo, fragmentación en el mercado de certificación y falta de reconocimiento mutuo).

En este contexto, la nueva Ley de Ciberseguridad de la UE (EU CSA) propone mejorar la confianza de los clientes en el mercado europeo de las TIC a través de un Esquema Europeo de Certificación de Ciberseguridad para Servicios en la Nube (EUCS). Este esquema de certificación transmite nuevos desafíos tecnológicos debido a su noción de "niveles de garantía" que deben resolverse para brindar todos los beneficios esperados de EU CSA a los proveedores y clientes de la nube de la UE.

**MEDINA es una Acción de Investigación e Innovación respaldada por el programa H2020 de Europa, con el objetivo de crear un marco de seguridad para lograr una certificación continua basada en auditorías para CSP posicionado en el Esquema de certificación de ciberseguridad de la UE para servicios en la nube. Para este propósito, MEDINA abordará desafíos en áreas como la validación/prueba de seguridad, lenguajes de certificación legibles por la máquina, rendimiento de seguridad en la nube y gestión de evidencias de auditoría, para proporcionar:**

- Orientación sobre la implementación de los controles EUCS, incluidas las medidas a aplicar y las evidencias a recopilar, lo que reduce el tiempo del proceso de certificación.
- Compatibilidad con verificaciones automáticas de cumplimiento de los controles en los principales esquemas de certificación de seguridad en la nube, lo que reduce el esfuerzo, el costo y el riesgo de lograr y mantener una certificación
- Facilitar el esfuerzo en la recolección y evaluación de evidencias digitales
- Asegurar un registro de auditoría de las evidencias, para garantizar que nadie las haya manipulado durante el periodo de validez del certificado.

El consorcio MEDINA, liderado por TECNALIA, reúne un conjunto equilibrado de socios académicos e industriales, que desempeñan un papel clave en el ecosistema de certificación de seguridad en la nube de la UE, que incluye centros de investigación (TECNALIA, Consiglio Nazionale delle Ricerche, Fraunhofer), proveedores de la nube (Bosch, Fabasoft), proveedores tecnológicos (Hewlett Packard Enterprise, XLAB) y auditores (Nixu).

El enfoque y el conjunto de herramientas de MEDINA se evaluarán en dos casos de uso de la nube del mundo real que cubren los tres modelos de servicios en la nube (IaaS, PaaS y SaaS). Por un lado, Bosch desplegará un escenario para la certificación Europea de backends multi-nube para soluciones IoT y, por otro lado, Fabasoft validará una auditoría continua de soluciones SaaS para el sector público.

MEDINA también creará conciencia sobre los beneficios del marco aportado en el contexto de la Ley de Ciberseguridad de la UE apoyando actividades relacionadas con la formación europea, la concienciación y las actividades de normalización pertinentes (p. ej., ENISA EUCS).

En resumen, MEDINA contribuye a la política Europea de Certificación de Seguridad en la Nube, mejora la confiabilidad de los servicios en la nube gracias al cumplimiento de los esquemas de certificación de seguridad, coopera con las partes relevantes interesadas y ayuda a Europa a prepararse para los desafíos de seguridad en la nube del mañana.

**MEDINA ha completado la primera mitad de este proyecto de 36 meses de duración y avanza rápidamente hacia el logro de sus próximos hitos. Hasta el momento, el trabajo se ha centrado en la definición de la arquitectura general de MEDINA, así como en el desarrollo del marco integrado (tanto tecnológico como de procesos) que será validado por los casos de uso de Bosch y Fabasoft. Entre las herramientas desarrolladas podemos destacar el servicio de preparación para la certificación basado en riesgos de MEDINA y el catálogo de requisitos y métricas de seguridad, que son habilitadores esenciales para el monitoreo continuo (automatizado) como se define en el EUCS y otros esquemas de certificación.**

Últimas noticias e información disponible en <https://medina-project.eu>

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**Contacto**  
Màriena Iardía, MEDINA Dissemination and Communication Manager, TECNALIA  
*mariena.iardia@tecnalia.com*  
Parque Científico y Tecnológico de Biotekia, C/Geldo, Edificio 700, E-48160 Derio (Biotekia)  
Tel.: 902.760.000 International call: (+34) 946.630.850

Figure 40. MEDINA Press release translated to Spanish<sup>7</sup>

## APPENDIX C: Dissemination of the Press Release

Table 13 summarizes how the first press release of the MEDINA project has been disseminated through the MEDINA partners' social networks.

Table 13. Dissemination of the first MEDINA Press Release

TECNALIA	
<p><b>Twitter</b>  <a href="https://twitter.com/tecnalia/status/1513846160825499648">https://twitter.com/tecnalia/status/1513846160825499648</a></p> 	<p><b>LinkedIn</b>  <a href="https://www.linkedin.com/feed/update/urn:li:activity:6919613256126898176">https://www.linkedin.com/feed/update/urn:li:activity:6919613256126898176</a></p> 
<p><b>Facebook</b>  <a href="https://www.facebook.com/Tecnalia/posts/5156247404414312">https://www.facebook.com/Tecnalia/posts/5156247404414312</a></p> 	<p><b>Twitter</b>  <a href="https://twitter.com/tecnalia/status/1518980428216078337">https://twitter.com/tecnalia/status/1518980428216078337</a></p> 

### Facebook

<https://www.facebook.com/Tecnalia/posts/5196300190409033>

**Tecnalia**  
3 h · 🌐

#MEDINAProjectEU implementa una certificación continua de alta seguridad basada en EVIDENCIA DIGITAL para proveedores de servicios #Cloud

MEDINA es una Acción de #Investigación e #Innovación apoyada por el programa europeo #H2020 con el objetivo de crear un marco de #Seguridad para lograr una certificación de auditoría continua para CSP basada en el Esquema de #Certificación de #Ciberseguridad de la UE para #CloudServices.

Con este propósito, MEDINA abordará desafíos en áreas como validación/pruebas de seguridad, lenguajes de certificación legibles por máquina, rendimiento de seguridad #cloud y gestión de pruebas de auditoría.

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#MEDINAProjectEU implements continuous high security certification based on DIGITAL EVIDENCE for #Cloud service providers

MEDINA is a #Research and #Innovation Action supported by Europe's #H2020 program with the objective to create a #Security framework to achieve a continuous audit-based certification for CSPs based on the EU #Cybersecurity #Certification Scheme for #CloudServices.

For this purpose, MEDINA will tackle challenges in areas such as security validation/testing, machine-readable certification languages, #cloud security performance, and audit evidence management.

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**Jesus Luna** @jlunagar · Apr 13

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**Jesus Luna** (He/Him) · 2nd  
Cloud and AI Cybersecurity at Robert Bosch GmbH  
6d · 🌐

Cual es la importancia del modelo de certificación continua de la seguridad Cloud? Como llevarla a cabo en la practica? Mas informacion al respecto en nuestra nota de prensa #MEDINAProjectEU #cloud

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mejora la confiabilidad de los servicios gracias al cumplimiento c...see more

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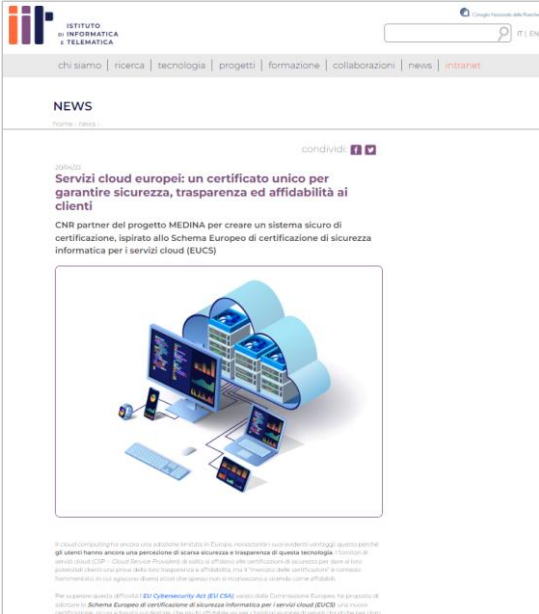
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### Website

<https://www.iit.cnr.it/en/news/european-cloud-services-certificate-security-transparency-reliability/>



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