Improving cancer diagnosis and prediction with AI and big data

A Multimodal AI-based Toolbox and an Interoperable Health Imaging Repository for the Empowerment of Imaging Analysis related to the Diagnosis, Prediction and Follow-up of Cancer

Deliverable 9.4

Second Dissemination and Communication Activities Report

WP9 – Dissemination, Awareness Raising and Clustering

30-03-2023

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Executive Summary

This document outlines the Communication and Dissemination (C&D) tools, activities and results carried out from 25th March 2022 until 15th March 2023. The C&D tools and activities executed from the beginning of the project (October 2020) to 24th March 2022 were included in D.9.3 First Dissemination and Communication Activities Report.

The deliverable concludes that the overall assessment of this second period is very positive. On the one hand, we increased our participation in scientific and industrial events, published new scientific articles in peer-reviewed journals and conference proceedings, created and shared new contents of interest related to the project, and significantly boosted our activity and engagement on social media.

On the other hand, we achieved the short-term goals that we set in the previous report and have future plans to improve our C&D activities' potential.

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Terms and Abbreviations

Abbreviation	Description
AI	Artificial Intelligence
AI4HI	Artificial Intelligence for Health Imaging (cluster)
C&D	Communication and Dissemination
EC	European Commission
KPIs	Key Performance Indicators
WP	Work Package

1 Introduction

1.1 Purpose and scope

This deliverable aims to present a yearly report of the project's C&D activities. This second report compiles our actions and results obtained from 25th March 2022 until 15th March 2023.

This document is aligned with D9.2 Communication and Dissemination Plan (C&D Plan), in which we identified user groups with similar interests to the INCISIVE project that can be addressed through various C&D activities. In the Plan, we also described the process to inform the general public and specific user groups, considering when the information will be delivered and what communication channels will be used to deliver them.

All the KPIs we show in this document are constantly monitored and will also be included in the following deliverables to assess the progress and impact of the C&D activities of the project.

1.2 Document structure

This document is structured following the definitions of C&D shared by the European Commission (EU, 2022- Reference 1):

- **Communication** is "taking strategic and targeted measures for promoting the action itself and its results to a multitude of audiences, including the media and the public, and possibly engaging in a two-way exchange".
- **Dissemination** means "sharing research results with potential users – peers in the research field, industry, other commercial players and policymakers. By sharing your research results with the rest of the scientific community, you are contributing to the progress of science in general".

Sometimes, there is a grey zone between those terms, and many activities can be classified both as "communication" and "dissemination". For this reason, this document has only differentiated the results obtained by the communication tools (such as the website and social media, which can also be used for dissemination purposes) from the results obtained in C&D activities (such as publications and events).

Apart from the results, the document includes a section about the monitoring and evaluation, future activities, and conclusions.

1.3 Relation with other deliverables

This deliverable is closely related to the following deliverables:

- **D9.1** INCISIVE Web Presence
- **D9.2** Communication and Dissemination Plan
- **D9.3** First Dissemination and Communication Activities Report
- **D9.5** Clustering Events Proceedings and Raising Awareness Campaigns Results V1
- **D9.6** Final Dissemination Activities Report
- **D9.7** Clustering Events Proceedings and Raising Awareness Campaigns Results V2

2 Communication tools

The D.9.2 C&D Plan defined a set of tactics and tools to increase the impact of the project. The objectives of the plan are to:

- **Promote** - Inform and educate all interested communities;
- **Inform** - Make the outcomes developed in the INCISIVE project available to the different relevant target audiences
- **Engage** - Receive inputs and feedback from the various target groups to the different project activities, i.e. requirements, pilot activities, etc.
- **Exploit** - Enhance INCISIVE results exploitation potential
- **Make sustainable** - Ensure that the outputs will be sustained after the end of the project lifetime.

The sub-points of this chapter describe the communication tools that we developed and their results.

2.1 Visual identity

Visual identity is a compilation of graphic elements that serve to represent and differentiate a brand, business, or a specific project, such as an EC funded project. It basically refers to any visible components like the logo or brand colours that help customers identify the brand.

A common branding strategy, including the project's logo, typography, colours, and applications, was rapidly designed at the beginning of the INCISIVE project. The final materials were presented in D.9.3 First Dissemination and Communication Activities Report.

During the analysed period, **we followed the visual identity guidelines for developing all the project's public materials**. Here is a compilation of some examples:

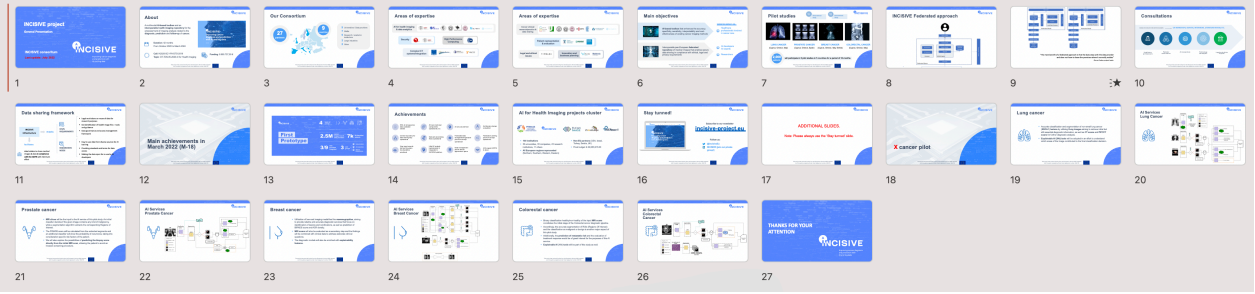


Figure 1: INCISIVE's slide deck. In June 2022 we created a PowerPoint Presentation to help partners when they present general information about the project at scientific conferences.

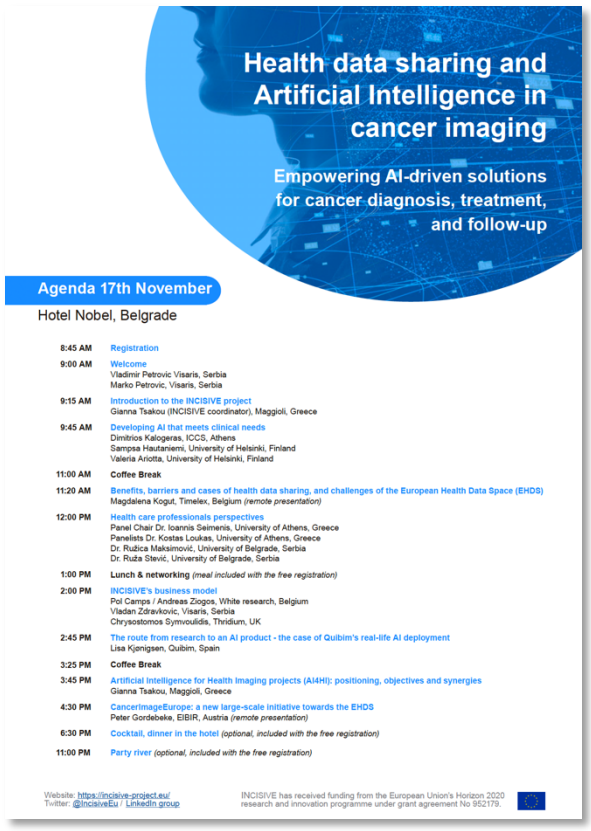


Figure 2: INCISIVE's Belgrade event agenda. The event took place in Belgrade in November 2022.

Figure 3: Roll-up for the INCISIVE's Belgrade event appearing behind a TV reporter.

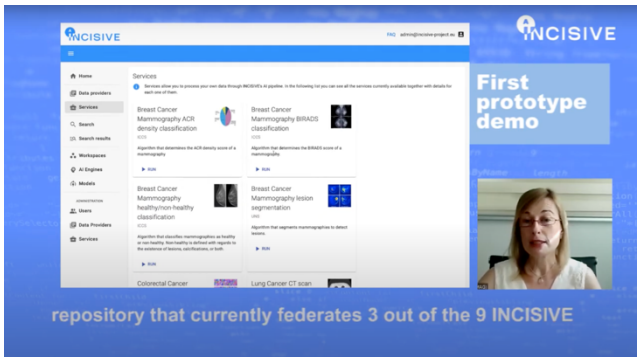


Figure 4: First repository video published on the Horizon Results Platform.

Figure 5: Example of a social media video post on Twitter.

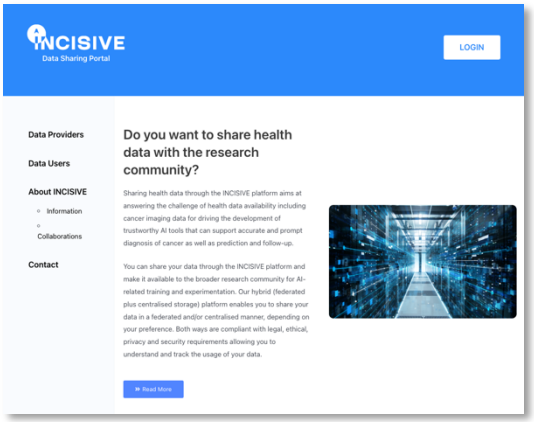


Figure 6: Homepage of the Data Sharing Portal

2.2 Website

INCISIVE's website (INCISIVE, 2023) is the main communication tool for enhancing the visibility of the project. It was launched in January 2021, with the aim to reach the target stakeholders with meaningful knowledge as well as to serve as a platform for community engagement. All the rationale behind the website development was thoroughly described in D9.1 INCISIVE Web Presence deliverable.

The website is updated regularly with new content, and the sections are subject to changes to improve either the design or the user's experience.

In May 2022, **we updated the cookies policy and changed the website's analytics tool** in compliance with the General Data Protection Regulation. Thus, we moved from Google Analytics to a European-based analytical tool (Matomo, 2023). We also disabled all the cookies by default, so users must accept them individually. This change affected the internal monitoring of the website's Key Performance Indicators (KPI) since we do not have the data of the users who do not accept cookies. As a result, the numbers provided below are significantly lower than those presented in the previous deliverable (D9.3), and **we will not be able to achieve our main KPI for the website**, which we set at 10.000 unique visitors at the end of the project.

We explain below the website's analytics from 10th May 2022 to 15th of March 2023, divided by visitors, average time, most viewed pages, and traffic acquisition.

- **Visits:**

The website had **1,103 visits**. The charts in figures 7 and 8 show the number of visits per month and their origin. Regarding the users by country, 71 % visited our website from Spain, Greece, and Serbia. Concerning the cities, a significant part of the visitors were from Barcelona (Spain), followed by Thermi (Greece), Madrid (Spain), Dublin (Ireland), Vallromanes (Spain), and Belgrade (Serbia).

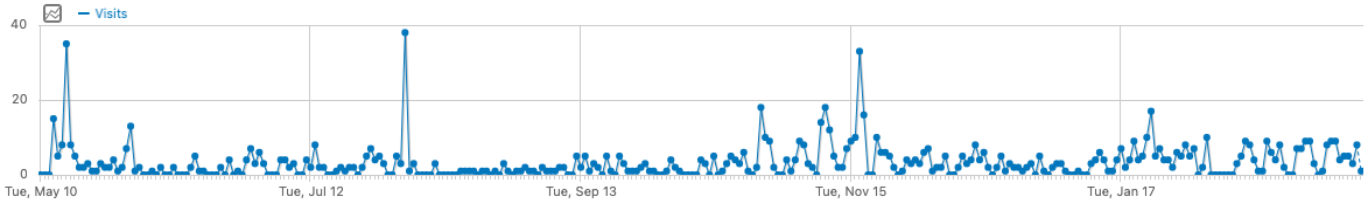
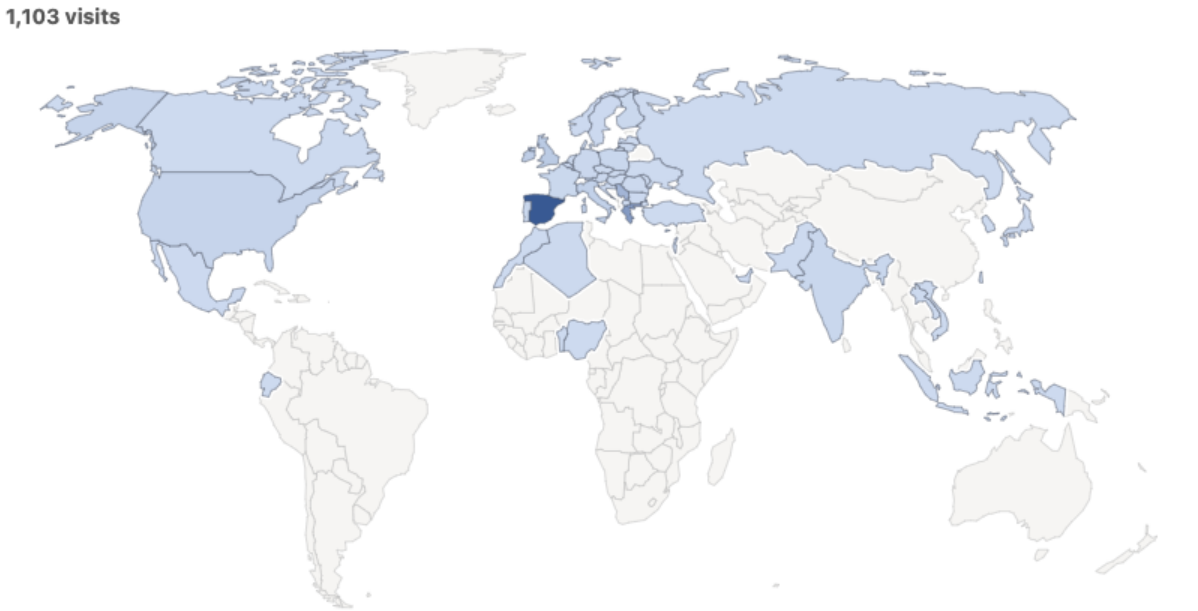


Figure 7: INCISIVE's webpage visits by month



CITY	VISITS
Barcelona, Spain	139
Madrid, Madrid, Spain	57
Thérmi, Greece	50
Dublin, Leinster, Ireland	41
Vallromanes, Spain	41
Belgrade (Stari Grad), Serbia	40
Belgrade, Serbia	36
Alcobendas, Madrid, Spain	32
Sant Martí, Spain	32
Marousi, Greece	31

COUNTRY	VISITS
Spain	449
Greece	216
Serbia	124
United Kingdom	52
Ireland	43
Italy	32
United States	22
Cyprus	20
Belgium	17
Portugal	12

Figure 8: INCISIVE's webpage users by country and city of origin

- **Average time:**

The average amount of time spent on a single page by all users of the website, also known as 'Average time', was **4 minutes and 24 seconds**.

According to Contentsquare's 2023 Digital Experience Benchmark Report (Contentsquare, 2023), the average time on a web page across all industries is 69 seconds on Desktop and 34 seconds on mobile devices. In the case of the INCISIVE website, 83% of users used desktop devices, and 15%

their smartphones. Thus, **the average time of the INCISIVE website is excellent** considering the mentioned report as a reference.

Another way of measuring the user's interest in INCISIVE's website is the number of events by a user, e.g., the number of pages viewed, clicks, downloads, or even the scroll. In this case, the number of events by a user on INCISIVE's webpage was 3.8.

- **Most viewed pages**

A total of **3,889 pages were viewed**. The most visited pages were the homepage, the events, and the partners sections, as detailed in figure 9.

PAGE TITLE	PAGEVIEWS
Home - Incisive Project	919
Events - Incisive Project	273
Partners - Incisive Project	182
News - Incisive Project	238
About INCISIVE - Incisive Project	172
INCISIVE event in Belgrade: Health data sharing and AI in cancer imaging - Incisive Project	115
Pilots - Incisive Project	99
INCISIVE partners meet in Athens for the 3rd Plenary Meeting - Incisive Project	104
Publications - Incisive Project	85
Contact Us - Incisive Project	70

Figure 9: Most viewed pages of INCISIVE's website

- **Traffic acquisition**

The main traffic sources of INCISIVE's website were direct entry (62%), organic search engines (23%), social media (9%) and direct links on websites (6%).

2.3 Social media

Since the beginning of the project, INCISIVE has been present on two social media networks: Twitter and LinkedIn. In April 2022, we created the YouTube channel, coinciding with the publication of the first results and following the indications of the project's C&D Plan.

The content for social media is usually linked to the present. Every news article published on the project's website, every significant milestone achieved, and every project presentation at a scientific conference is shared in the most convenient social media account. Besides, social media also allows informing about different aspects of the project, regardless of the date, sharing similar initiatives or external information related to the project, and engaging with stakeholders. The main goals of the social media content strategy are:

- To inform and raise awareness about the project
- To engage the target audience
- To increase the number of followers on social media (thus, to increase our contacts' network)
- To generate traffic to the project's webpage

Increasing the activity and engagement on social media was one of the goals we set in D.9.3 First Dissemination and Communication Activities Report. After analysing the results of this second term, **we can conclude that we broadly achieved our goal**. However, there is still room for improvement, especially on LinkedIn, where interaction with users is scarce.

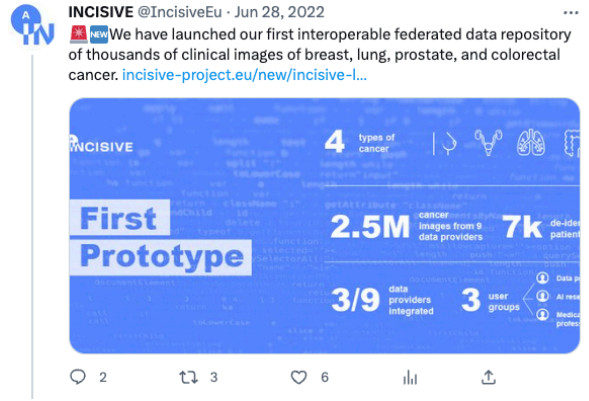
The tables below summarize the results of each social network. We kept the results of the first period analysed in D.9.3 First Dissemination and Communication Activities Report in the first column, to show the evolution of the results at a glance. Additionally, we included some tweets to illustrate the content of some of the messages shared during the period studied in this report.

- **Twitter**

Objective	INCISIVE Twitter account is used to promote the project's news and related activities as well as reach a wide range of communities and establish connection and communication with the following: other related projects, health providers, academia and civil society, industry, media
Content and Messages	Project news, next generation eHealth, AI and Big data advancements, related news, discussion topics
Target Audience	All stakeholders
Set up	October 2020

	First C&D Activities Report (October 2020-15th March 2022)	Second C&D Activities Report 25 March 2022 – 15th March 2023	Balance
Followers	104	155	49%
Impressions	21.100	20.881	-1%
Profile visits	7.158	9.211	29%
Retweets	51	116	127%
Likes	124	372	200%
Mentions	32	65	103%
Tweets	43	113	163%

Table 1: Twitter objectives and results



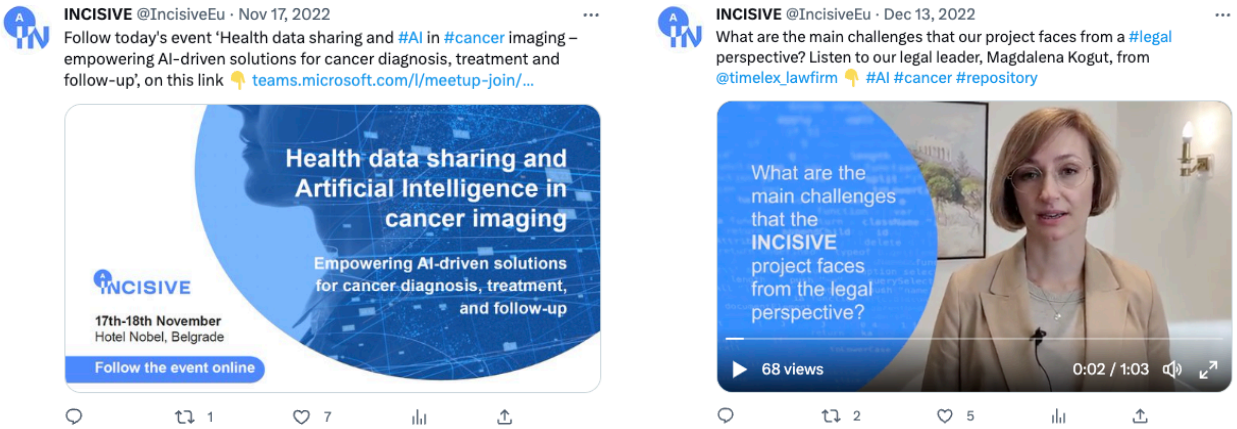


Figure 10: Example of tweets since 25th March 2022.

- **LinkedIn:**

Objective	The INCISIVE Linkedin group is used to announce INCISIVE achievements to other professionals from relevant fields of action, to raise questions and obtain feedback that can contribute to the project's development; announce events and gather interest from other people that join our community
Content and Messages	Keep in contact and inform health providers and researchers
Target Audience	All stakeholders (mainly professional communities and researchers)
Set up	October 2021

	First C&D Activities Report (October 2020-15th March 2022)	Second C&D Activities Report 25 March 2022 – 15th March 2023	Balance
Members	115	136	18%
Posts	18	20	11%
Likes	73	65	-11%

Table 2: LinkedIn results

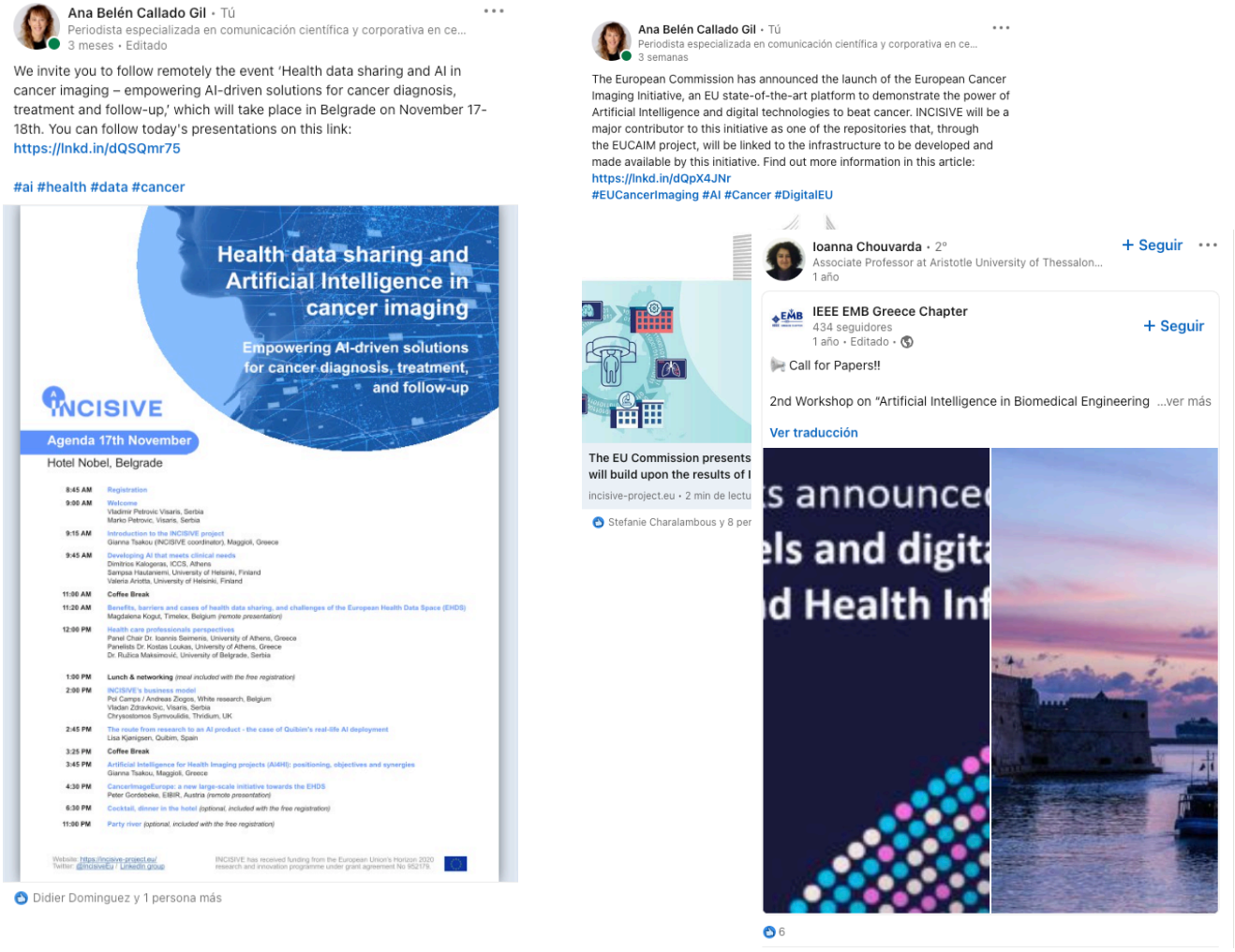


Figure 10: Example of LinkedIn posts since 25th March 2022.

- **YouTube:**

YOUTUBE	
Objective	The INCISIVE YouTube channel is used as a repository to promote the audiovisual content related to the project. It is also used for internal purposes (for instance, to share private demos)

Content and Messages	Promotional videos for the project concept and results
Target Audience	All stakeholders
Set up	April 2022

	First C&D Activities Report (October 2020-15th March 2022)	Second C&D Activities Report 25 March 2022 – 15th March 2023	Balance
Videos published	Not available	4	-
Views	Not available	46	-
Subscribers	Not available	1	-

Table 3: YouTube Results

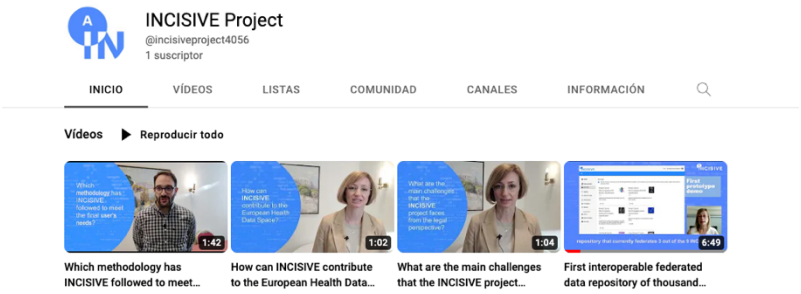


Figure 12: INCISIVE YouTube channel

2.4 Leaflet

A leaflet (INCISIVE, 2021) with the project's key objectives and expected outcomes was designed and distributed to the partners. The brochure is available in the resources section of the website and **more than 100 copies have been distributed** in dissemination events during the analysed period.

2.5 Editorial Calendar

The aim of an editorial calendar is to have a plan of different topics to communicate and disseminate related to the project. The INCISIVE's editorial calendar contains more than 50 subjects divided into the following categories: milestones, interviews, project material, deliverables, and project events. Each topic has a due date and a responsible / author. The document is available in the internal repository and can be subject to changes.

2.6 Activity Report

The Activity Report is an internal excel document that contains all the C&D activities of the consortium. This document does not include the website's new articles and social media posts because they are already gathered on the INCISIVE's website and social media profiles.

Partners update the Activity Report regularly every time they carry out a dissemination activity. The document contains 7 sheet tabs divided by the following categories: scientific papers, presentations, synergies, webinars, clustering events, external events, and other C&D activities (such as press releases and partners' news articles or tweets). All the results are shown in section 3 of this deliverable.

2.7 Newsletter

The newsletter is an online communication tool to inform all stakeholders about project progress and findings and keep their interest high.

Every time a new user comes to INCISIVE's website, a pop-up message invites them to subscribe to the newsletter. Besides, there is a specific URL in the site's menu with the subscription form. We regularly share this link on social media and encourage partners to promote the newsletter with their contacts.

During the analysed period, we sent **two newsletters**:

- Newsletter 2: INCISIVE launches its first interoperable cancer data repository prototype (July 2022)
    - Subscribers: 45
    - Results: 51% open, 17% clicks.
- Newsletter 3: The Horizon Results Platform offers information about our Repository of Cancer Images and Accompanying Clinical Data (December 2022).

- Subscribers: 51
- Results: 37% open, 8% clicks.

3 Communication and Dissemination activities

Since the beginning of the project, we have encouraged INCISIVE partners to share information about the project on their respective communication channels, and to participate in dissemination and clustering activities. The following sub-points include all the C&D activities performed by INCISIVE partners during the analysed period (from 24th March 2022 to 15th March 2023).

3.1 Events: presentations, synergies, and clustering events

INCISIVE partners participated in multiple events to increase the project's visibility, attract stakeholders to the consortium and share our results. They also participated in the Artificial Intelligence for Health Imaging (AI4HI) cluster meetings and activities.

- **Events**

  Our partners presented or mentioned the project in the following scientific and technological events:

  - **European Lung Cancer Conference:** Prague, March 30 – April 2, 2022. The ELCC is a collaborative effort of the most important multidisciplinary societies representing thoracic oncology specialists, working together to advance science, disseminate education and improve the practice of lung cancer specialists worldwide. Andreas Charalambous from the Cyprus University of Technology gave a conference at the event, sharing INCISIVE's information and milestones related to lung cancer. More information.
  - **Privacy symposium:** Venice, April 5-7, 2022. The symposium aims at promoting international dialogue, cooperation, and knowledge sharing on data protection regulations, compliance, and emerging technologies. Magdalena Kogut from Timelex talked about building a repository of donated health data – reconciling legal requirements and researchers' needs, and shared the legal work that she is leading in INCISIVE. More information.
  - **Conference 'Les dades de salut a Catalunya':** Barcelona, April 22, 2022. This conference aimed to show the management model of biosanitary data in Catalonia. In 2019-2020, Bioinformatics Barcelona, with the sponsorship of Amgen, held a course on Big Data and Artificial Intelligence in the field of health

called "Innovació tecnològica basada en dades aplicada a la salut: a quins reptes s'enfronten els professionals sanitaris?" (Data-driven technology innovation in health: what challenges do health professionals face?) aimed at these professionals. This conference was initially conceived as a complement to this course and sought to provide feedback to all professionals involved or interested in the use of this data and technology. The former Director of TIC Salut Social Foundation, Eugeni Fernández, mentioned INCISIVE in his presentation 'The role of ICT Social Health in data management'. More information.

- **The MedTech Forum:** Barcelona, May 3-5, 2022. The MedTech forum is one of the largest health and medical technology industry conferences in Europe. The conference gathered industry leaders, leading innovators and investors to discuss the future opportunities in the medical technology sector. Susanna Aussó from TIC Salut Social Foundation, participated in the session 'Trustworthy Artificial Intelligence in Healthcare'. More information.
- **ESBB Coffee break seminar 'The trap of the anonymization":** online, May 12, 2022. Magdalena Kogut from Timelex discussed anonymizations and pseudonymization issues, also in the context of INCISIVE, in this webinar hosted by the European Middle Eastern & African Society for Biopreservation and Biobanking. More information.
- **15th Annual Panhellenic Scientific and Professional Conference**: Chania, March 12-15, 2022. The conference was focused on how interdisciplinarity in the nursing sector may contribute to the evolution of health systems. Prof. Maria Lavdaniti, on behalf of the Hellenic Cancer Society, talked about INCISIVE on her presentation "The application of technology in oncology area. The paradigm of artificial intelligence". More information.
- **Oncology Professional Care:** London, May 24-15, 2022. The two-day educational event was addressed to all oncology healthcare professionals and multidisciplinary teams in cancer care. Shereen Nabhani-Gebara from Kingston University London was invited to speak about the use of AI in the early detection of cancer and spent a significant time in her presentation talking about INCISIVE. More information.
- **IEEE MELECON**: Palermo, June 14-16, 2022. IEEE is a major international forum presenting design methodologies, techniques, and experimental results in emerging electro-technologies. Ivan Lazic from the University of Novi Sad

participated in the special session 'Big Data Integration and Personalised Medicine' with the conference 'Information Extraction From Clinical Records: An Example for Breast Cancer'. More information.

- **Kingston University Festival of Research:** London, June 28, 2022. The festival brought together staff and students to showcase impact of work and share expertise through a series of 25 webinar events. Shereen Nabhani-Gebara from Kingston University offered a conference about INCISIVE.
- **44th International Engineering in Medicine and Biology Conference**: Glasgow, July 11-15, 2022. The theme of this international conference was 'Biomedical Engineering transforming the provision of healthcare: promoting wellness through personalized & predictable provision at the point of care'. INCISIVE partners from the Aristotle University of Thessaloniki gave the talk 'Data Integration Quality for Cancer Imaging Research' and mentioned the project in a poster presentation.
- **ESMO Congress**: Paris, September 9-15. ESMO is the leading professional organisation for medical oncology, and an influential oncology platform for clinicians, researchers, patient advocates, journalists and healthcare industry representatives from all over the world. Maria Lavdaniti and Evangelia Stalika, from the Hellenic Cancer Society, presented a poster entitled "Mapping the Functional Assessment of Cancer Therapy (FACT-G) in Greek Patients with Neoplasm: An interplay of Statistical and Bioinformatics approach". More information.
- **Women Evolution Congress**: Sant Cugat, October 6, 2022. The conference was aimed at female managers, businesswomen, professionals and entrepreneurs in Catalonia. The focus of this edition was "Challenges of 21st Century Women in Health, Leadership and Technological Innovation". Susanna Aussó from TIC Salut Social Foundation talked about INCISIVE in the panel 'Women Health & AI'. More information.
- **International Conference Learning and implementing social innovation**: Coimbra, November 8-9, 2022. The conference aimed to expand knowledge and information about socially innovative networks and projects, give visibility to the participating initiatives, facilitate their interconnection and strengthen the community of social innovators in the field. INCISIVE's coordinator, Gianna Tsakou, participated in the panel 'Next steps on ethics, data and citizen empowerment', mentioning INCISIVE

and discussing about data sharing and how it can act as a form of citizen empowerment considering that citizens are the first link in the data sharing chain. More information

- **Seminar 'Health Research: European Health Data Space challenges'**: Valencia, November 16th, 2022. The seminar was organised by the Chair of Privacy and Digital Transformation Microsoft-Universitat de València, with the aim to discuss the requirements for healthcare research repositories. The event included experts from all the sectors involved and, above all, researchers, governments and data protection authorities. Magdalena Kogut, from Timelex, participated in a panel as a member of ELSI group. She presented the perspective of medical repositories for AI, and INCISIVE view on data sharing and collection of medical data for research. More information
- **Biosignals 2023**: Lisbon, January 16-18, 2023. BIOSIGNALS is part of BIOSTEC, the 16th International Joint Conference on Biomedical Engineering Systems and Technologies. The purpose of the conference was bringing together researchers and practitioners from multiple areas of expertise working at the intersection of engineering, mathematics, statistics, computer science, data science, biology and medicine, who develop and apply algorithmic tools, models and techniques to solve challenging problems in biology and medicine. INCISIVE presented a short paper at the conference. More information
- **Mobile World Congress**: Barcelona, February 28- March 2, 2023. The MWC is the largest and most influential event for the connectivity ecosystem. This year's them was 'Velocity' and the key topics included 5G, AI, the fair share debate and public policy, as well as cross-sector collaborations. Susanna Aussó and Didier Domínguez from TIC Salut Social Foundation presented information about INCISIVE at their booth at the congress. More information
- **Smart Health Awareness Course:** Barcelona, March 7, 2023. More than 200 Catalan healthcare professionals and managers who wished to learn about the challenges and opportunities of Artificial Intelligence and Big Data in the biomedical sector joined the Smart Health Awarness Course, that started in January 2023. Susanna Aussó from TIC Salut Social Foundation gave a master class about INCISIVE.

- **Upcoming events:**
  - **ASLAN Awards:** Madrid, March 22, 2023. Partners from TIC Salut Social Foundation presented the case of the INCISIVE project at the ASLAN Awards 2023. The nomination made it to the final and Susanna Aussó attended the award ceremony in Madrid. More information (Note: Despite this event took place before the submission of this deliverable, it appears in the upcoming events section because this document only includes the C&D activities until the 15th of March 2023).
  - **European Lung Cancer Congress:** Copenhagen, March 29 – April 1, 2023. The ELCC 2023 is a collaborative effort of the most important multidisciplinary societies representing thoracic oncology specialists, working together to advance science, disseminate education and improve the practice of lung cancer specialists worldwide. Andreas Charalambous from the Cyprus University of Technology will make a presentation on Artificial Intelligence in Screening.

- **Synergies and clustering events**

The AI4HI cluster is made up of five collaborative projects funded under the AI for Health Imaging action of the European Union's Horizon 2020 research and innovation program (CORDIS, 2023): INCISIVE, EuCanImage, ProCAncer-I, CHAIMELEON, and PRIMAGE. The cluster gathers over 100 institutions, from universities to companies, from all European regions and several non-EU partners.

A major step of the cluster has been the **kick-off of the EUICAM project** (European Commission, 2023 - Reference 2), which will establish and deploy a pan-European digital and federated infrastructure of FAIR pan-cancer anonymized images and provide a research platform for the development and benchmarking of AI tools toward precision medicine. The project builds upon the progress achieved by the cluster regarding system architecture, reference APIs, metadata, data structure and quality, legal requirements, and repositories. The details of this project, as well as a more detailed explanation of the clustering activities of INCISIVE can be found in D.9.5 Clustering Events Proceedings and Raising Awareness Campaigns Results V1.

INCISIVE partners participated in the following activities or initiatives related to the cluster:

- **European Society of Radiology Congress**: July 13-17, Vienna, 2022. The ECR is one of the largest medical meetings in Europe and the second-largest radiological meeting in the world. ECR attendees span all areas of the radiology arena

including: radiology professionals, radiographers, physicists, industry representatives, and press reporters for both the medical and consumer press. INCISIVE was a main contributor in the workshop 'Building bridges: From Radiomics/AI research to clinical practice: the ProCAncer-I vision'. More information.

- **IEEE-EMBS BHI:** Ioannina, September 27-29. The conference provided a unique forum to showcase enabling technologies of devices and sensors, hardware and software systems, predictive models, databases, and big data analytics and machine learning that optimize the acquisition, transmission, processing, monitoring, storage, retrieval, analysis, visualization and interpretation of vast volumes of multi-modal biomedical data, as well as related social, behavior, environmental, and geographical data. Together with the AI4HI funded projects, INCISIVE co-organised the workshop 'Developing open, standard-based, interoperable Cancer Imaging Repositories in Europe: Issues, Experiences and Challenges'. More information.
- **INCISIVE event 'Health data sharing and AI in cancer imaging':** Belgrade, November 17-18, 2022. More than 50 professionals, including AI researchers, health care practitioners, R&D managers and representatives from the Serbian government attended the event. We offered them the chance to deepen their knowledge in Artificial Intelligence and discover the latest advances of INCISIVE and other projects of the AI4HI cluster. The 2-day program included sessions and hands-on training on data sharing and its benefits, the perspectives and needs of health care professionals, the legal framework and challenges of the European Health Data Space, medical image (DICOM) de-identification, and even a specific example of the route from research to an AI product, among other topics. More information.
- **Webinar 'Obstacles and avenues for data sharing and AI in cancer imaging'**: online, November 17, 2022. This webinar, organised by the AI4HI project EuCanImage, European Society of Oncology Imaging (ESOI) and the European Association for Cancer Resaerch (EACR), covered topics on caring, handling, annotation, and sharing'. Two INCISIVE's partners participated in the webinar: Magdalena Kogut from Timelex in the legal panel session, and Ioanna Chouvarda from the Aristotle University of Thessaloniki in the technical panel. Watch the webinar.

- **European Congress of Radiology:** Vienna, March 1-5, 2023. ECR is one of the largest medical meetings in Europe and the second-largest radiological meeting in the world. The congress' attendees span all areas of the radiology arena including: radiology professionals, radiographers, physicists, industry representatives, and press reporters for both the medical and consumer press. INCISIVE's coordinator, Gianna Tsakou, presented INCISIVE in the session 'Paving the way for a European infrastructure for AI for health imaging', in which all AI4HI projects were also featured. Additionally, Maria Lelegianni from the Aristotle University of Thessaloniki participated in a session with the talk 'Generation of a breast imaging repository and an AI breast imaging toolbox by INCISIVE 2020'. More information.
- **AI4HI clustering meetings:** online, regularly. Nine working groups were set up among the AI4HI projects and meet regularly to discuss common approaches.

- **Other clustering activities and workshops:**
  - **Webinar 'Deploying FHIR: How to co-engage public and private players?'**: online, May 12, 2022. ETHEL, which is a multi-stakeholder organisation within Europe that brings together organisations and individuals engaged in all aspects of eHealth, organised this webinar to provide the perspective of both industry and public authorities on the question of integrating and managing FHIR. It also explored the different business and incentivisation models, which have been implemented across Europe to enforce compliance from industry players to emerging new standards. Sara Martínez from TIC Salut Social presented the work with HL7 FHIR in INCISIVE. More information

- **Upcoming clustering activities and workshops:**
  - **45th Annual International Conference of the IEEE Engineering in Medicine & Biology Conference**: Sydney, July 24-28, 2023. Susanna Aussó from TIC Salut Social Foundation will participate in a mini symposium that was submitted by the AI4HI cluster.
  - **INCISIVE Clustering event, Madrid 2023:** The event will contribute to increase the project's visibility in the ecosystem, exchange knowledge with other sector professionals and promote the contribution of medical images to the hybrid repository. We have started to identify potential locations, speakers and to define

the agenda for the event. Meetings are already arranged with two healthcare leading organizations in Spain, to assess if it could be co-organized with them, to extend the invitation to a larger community of stakeholders (such as healthcare providers and AI developers).

3.2 News, articles, and press releases

The website's news section is updated regularly with new articles related to the project itself or its scope. We published 14 articles during the analysed period:

- INCISIVE's lung cancer pilot study is presented at the European Lung Cancer Congress (06/04/2022)
- INCISIVE's legal work is shared at the Privacy Symposium (03/05/2022)
- The European Commission launches the European Health Data Space to advance data sharing and reuse (09/05/2022)
- INCISIVE launches its first interoperable cancer data repository prototype (27/06/2022)
- Successful 18-month external review by the EC confirms that INCISIVE is on the right track to achieve its goals (07/07/2022)
- INCISIVE's participation at the European Congress of Radiology 2022 (21/07/2022)
- "It is important to understand user behaviours, needs and motivations, so we can incorporate their vision" (26/07/2022)
- Survey: How are you performing AI validation? (14/09/2022)
- The Holistic Perspective of the INCISIVE Project—Artificial Intelligence in Screening Mammography (16/09/2022)
- Experiences of cancer survivors in Europe: Has anything changed? Can artificial intelligence offer a solution? (04/10/2022)
- INCISIVE partners meet in Athens for the 3rd Plenary Meeting (25/10/2022)
- INCISIVE gathered AI researchers and healthcare practitioners in Belgrade (30/11/2022)
- The blog on Artificial Intelligence of the European Society of Radiology published our AI4HI position paper (02/12/2022)
- The EU Commission presents the European Cancer Imaging Initiative which will build upon the results of INCISIVE and other related projects (24/01/2023)

We also encouraged INCISIVE partners to publish information about the project on their respective communication channels, with two main goals. Firstly, to concentrate on making the

project results and evolution known among its different target audiences, facilitating data collection activities and participation to project surveys for requirements' collection. Secondly, to create synergies with other EU and national initiatives and inform the research community.

- **News articles about or related to INCISIVE published on partners' websites and/or newsletters:**
  - Barcelona SuperComputing Center (2022): The BSC brings its AI expertise to the first shared repository of cancer data and images.
  - Maggioli (2022). INCISIVE cancer and AI-related EU-Project coordinated by Maggioli Group, completes its first major milestone
  - National and Kapodistrian University of Athens (2022): INCISIVE @ ProCancer-I dissemination event in ECR 2022.
  - National and Kapodistrian University of Athens (2022): INCISIVE launches its first interoperable cancer data repository prototype.
  - National and Kapodistrian University of Athens (2022): July-October newsletter
  - TIC Salut Social Foundation (2022). El Mobile World Congress tanca amb més de 60 mil assistents
  - TIC Salut Social Foundation (2022). The INCISIVE project launches its first interoperable cancer data repository prototype.
  - TIC Salut Social Foundation – Programa Salut/IA (2022). The INCISIVE project launches its first interoperable cancer data repository prototype.
  - TIC Salut Social Foundation (2022). Artificial Intelligence to improve the diagnosis, prognosis and treatment of cancer
  - TIC Salut Social Foundation (2022). July newsletter.
  - TIC Salut Social Foundation (2022). September newsletter.
  - TIC Salut Social Foundation (2023). The European Commission Presents the European Cancer Initiative.
  - TIC Salut Social Foundation – Programa Salut/IA (2023). The European Commission Presents the European Cancer Initiative.
  - TIC Salut Social Foundation (2023). Are you going to the Mobile World Congress 2023?
  - White Research (2022): The INCISIVE project has launched its first prototype of interoperable federated cancer data repository
  - Visaris (2022): Website for the INCISIVE event in Belgrade

- **Specific page or mention to the project on partners' websites:**
  - Barcelona Supercomputing Center
  - CER ICT
  - Cyprus Association of Cancer Patients and Friends
  - European Dynamics
  - Gruppo Magglioli
  - Hellenic Cancer Society
  - National and Kapodistrian University of Athens
  - Squaredev
  - Thridium - The commercial name for Telesto IoT Solutions Limited
  - TIC Salut Social Foundation
  - Timelex
  - University of Helsinki
  - University of Novi Sad
  - Visaris
  - White Research

- **News about or related to INCISIVE published on external webpages:**
  - European Cancer Imaging Initiative (European Commission).
  - INCISIVE Repository of Cancer Images and Accompanying Clinical Data (Horizon Results Platform – European Commission)
  - Metadata Models: The position of the AI for Health Imaging (AI4HI) network (Post in the European Society of Radiology AI Blog).
  - Considerations for artificial intelligence clinical impact in oncologic imaging: an AI4HI position paper (Post in the European Society of Radiology AI Blog)

- **News about INCISIVE published in the media:**

In this category, we would like to highlight the excellent media coverage of the INCISIVE event in Belgrade, thanks to the efforts of our local partners Visaris and the University of Novi Sad. Unfortunately, the media impacts' links are unavailable, but we include some images.

  - **RTS** streamed a piece of video news with an Interview to Vladan Zdravkovic from Visaris (7 min).
  - **RTS Science Program** streamed a video interview to Vladan Zdravkovic from Visaris.

- **Euronews** streamed a piece of video news with an interview to Vladan Zdravkovic from Visaris and Gianna Tsakou from Maggioli (6 min.).
- **HEPI**, the National Serbian TV, streamed a video news with an interview to Vladan Zdravkovic from Visaris.
- The **CNN affiliate for SEE** streamed a piece of video news with an interview to Vladimir Petrovic from Visaris (4 min.).

Figure 11. Compilation of images of the Serbia event media dissemination

Besides the Serbia event, INCISIVE partners from TIC Salut Social were interviewed in a digital magazine for this report:

- Los datos al servicio de la asistencia sanitaria (BYTic Media)

3.3 Publications

The publication of relevant scientific outputs in an academic context is one of INCISIVE's main targets. During the analysed period, we published nine articles in peer-reviewed journals and conference proceedings, and we currently have some publications under review.

- **Stalika E, Gavrilaki K, Koziokos I, Chouvarda I, Lavdaniti M. CN9 Mapping the Functional Assessment of Cancer Therapy (FACT-G) in Greek patients with neoplasm: An interplay of statistical and bioinformatics approach. *Annals of Oncology*, Volume 33, S1354 - S1355. DOI: https://doi.org/10.1016/j.annonc.2022.07.319**

  Abstract: **Background**: Cancer patients frequently experience emotional distress which negatively impact theirs quality of life. Aim of this study is to determine the Functional Assessment of Cancer Therapy in Greek Patients with Neoplasm based on FACT-G questionnaire. **Methods**: A cross-sectional study was conducted in an Oncology department of a Greek Hospital. The convenience sample consists of 321 cancer patients undergoing chemotherapy. Demographic data and functional levels assessed using the FACT-G Scale were collected. The FACT-G is a 27-item tool containing 4 subscales: physical (PWB), functional (FWB), social/family (SWB) and emotional (EWB) well-being. Each subscale has a score, and a higher score indicates better HRQOL. Clustering was performed on the above subscales, to investigate the existence of different subgroups. **Results**: A total of 321 patients were invited to participate. Patients had an average age of 60,3 years and 63% were male. Several cancer types were referred, however the majority of patients' diagnosis (72,8%) concerned lung and colorectal cancer. The Pearson correlation analysis indicated that high FACT-G total scores was associated with gender, age and educational level. Particularly, (i) PWB,SWB and EWB were associated with the gender; (ii) PWB and FWB with the age; and (iii) SWB, EWB and FWB with the educational level. Moreover, Mann-Whitney U test revealed that undergoing chemotherapy significantly influenced the FACT-G and SWB. In order to further investigate the role of undergoing chemotherapy, 200 out of 321 patients completed FACT-G questionnaire after 1st and 2nd cycle of chemotherapy. Cluster analysis revealed different patients' subgroup based on the score of four above subscales, indications that further strengthen the results that came up from the statistical analysis. **Conclusions**: Demographic factors play a critical role to the functional status of cancer patients. Moreover, the patients' clustering based on the outcomes of FACT-G questionnaires offers a new frontier in patients' management in the context of patients-centered approach.

  Impact factor: 32.976

- **Hesso I, Kayyali R, Charalambous A, Lavdaniti M, Stalika E, Lelegianni M, Nabhani-Gebara S. Experiences of cancer survivors in Europe: Has anything changed? Can**

artificial intelligence offer a solution? Front Oncol. 2022 Sep 14;12:888938. DOI: 10.3389/fonc.2022.888938. PMID: 36185207; PMCID: PMC9515410.

Abstract: **Introduction**: Cancer is a major global health issue. Despite technological advancements in oncology, challenges remain in many aspects related to cancer management. This study constitutes one part of the user requirement definition of INCISIVE EU H2020 project, which has been designed to explore the full potential of artificial intelligence (AI) based technologies in cancer imaging. The study aimed to explore cancer survivors' experiences of cancer care in five European countries. **Methods**: A qualitative study employing semi-structured interviews was conducted. A purposive sampling strategy was used to recruit participants across the five validation countries of INCISIVE project: Greece, Cyprus, Spain, Italy, and Serbia. Forty cancer survivors were interviewed between November 2020 and March 2021. Data was analysed thematically using the framework approach and coded using NVivo12 software. **Results**: The analysis yielded several gaps within the cancer care pathway which reflected on the participants experiences. Five key themes were revealed; (1) perceived challenges during the cancer journey, (2) the importance of accurate and prompt diagnosis, (3) perceived need for improving cancer diagnosis, (4) absence of well-established/designated support services within the pathway and (5) suggestions to improve cancer care pathway. **Conclusion**: Cancer survivors experienced significant burdens pertaining to cancer diagnosis and treatment. Our findings underscored some main gaps within the cancer care pathway which contributed to the challenges articulated by the participants including lack of resources and delays in diagnostic and treatment intervals. Additionally, several suggestions were provided by the cancer survivors which could be considered towards the improvement of the current state of care, some of which can be optimised using new technologies involving AI such as the one proposed by INCISIVE.

Impact factor: 5,36

- **Marti-Bonmati L, Koh DM, Riklund K. et al. Considerations for artificial intelligence clinical impact in oncologic imaging: an AI4HI position paper. *Insights Imaging* 13, 89 (2022). DOI: https://doi.org/10.1186/s13244-022-01220-9**

  Abstract: To achieve clinical impact in daily oncological practice, emerging AI-based cancer imaging research needs to have clearly defined medical focus, AI methods, and outcomes to be estimated. AI-supported cancer imaging should predict major relevant clinical endpoints, aiming to extract associations and draw inferences in a fair, robust, and trustworthy way. AI-assisted solutions as medical devices, developed using multicenter

heterogeneous datasets, should be targeted to have an impact on the clinical care pathway. When designing an AI-based research study in oncologic imaging, ensuring clinical impact in AI solutions requires careful consideration of key aspects, including target population selection, sample size definition, standards, and common data elements utilization, balanced dataset splitting, appropriate validation methodology, adequate ground truth, and careful selection of clinical endpoints. Endpoints may be pathology hallmarks, disease behavior, treatment response, or patient prognosis. Ensuring ethical, safety, and privacy considerations are also mandatory before clinical validation is performed. The Artificial Intelligence for Health Imaging (AI4HI) Clinical Working Group has discussed and present in this paper some indicative Machine Learning (ML) enabled decision-support solutions currently under research in the AI4HI projects, as well as the main considerations and requirements that AI solutions should have from a clinical perspective, which can be adopted into clinical practice. If effectively designed, implemented, and validated, cancer imaging AI-supported tools will have the potential to revolutionize the field of precision medicine in oncology.
Impact factor: 5.036

- **Kondylakis H, Ciarrocchi E, Cerda-Alberich L, Chouvarda I, Fromont LA, Garcia-Aznar JM, Kalokyri V, Kosvyra A, Walker D, Yang G, Neri E; the AI4HealthImaging Working Group on metadata models**. Position of the AI for Health Imaging (AI4HI) network on metadata models for imaging biobanks. *Eur Radiol Exp*. 2022 Jul 1;6(1):29. doi: 10.1186/s41747-022-00281-1. PMID: 35773546; PMCID: PMC9247122.**
  Abstract: A huge amount of imaging data is becoming available worldwide and an incredible range of possible improvements can be provided by artificial intelligence algorithms in clinical care for diagnosis and decision support. In this context, it has become essential to properly manage and handle these medical images and to define which metadata have to be considered, in order for the images to provide their full potential. Metadata are additional data associated with the images, which provide a complete description of the image acquisition, curation, analysis, and of the relevant clinical variables associated with the images. Currently, several data models are available to describe one or more subcategories of metadata, but a unique, common, and standard data model capable of fully representing the heterogeneity of medical metadata has not been yet developed. This paper reports the state of the art on metadata models for medical imaging, the current limitations and further developments, and describes the

strategy adopted by the Horizon 2020 "AI for Health Imaging" projects, which are all dedicated to the creation of imaging biobanks.
Impact factor: 3.79

- **Lazic I, Agullo F, Ausso S, Alves B, Barelle C, Berral JL, Bizopoulos P, Bunduc O, Chouvarda I, Dominguez D, Filos D, Gutierrez-Torre A, Hesso I, Jakovljević N, Kayyali R, Kogut-Czarkowska M, Kosvyra A, Lalas A, Lavdaniti M, Loncar-Turukalo T, Martinez-Alabart S, Michas N, Nabhani-Gebara S, Raptopoulos A, Roussakis Y, Stalika E, Symvoulidis C, Tsave O, Votis K, Charalambous A. The Holistic Perspective of the INCISIVE Project—Artificial Intelligence in Screening Mammography. *Appl. Sci.* 2022, 12, 8755. DOI: https://doi.org/10.3390/app12178755**
Abstract: Finding new ways to cost-effectively facilitate population screening and improve cancer diagnoses at an early stage supported by data-driven AI models provides unprecedented opportunities to reduce cancer related mortality. This work presents the INCISIVE project initiative towards enhancing AI solutions for health imaging by unifying, harmonizing, and securely sharing scattered cancer-related data to ensure large datasets which are critically needed to develop and evaluate trustworthy AI models. The adopted solutions of the INCISIVE project have been outlined in terms of data collection, harmonization, data sharing, and federated data storage in compliance with legal, ethical, and FAIR principles. Experiences and examples feature breast cancer data integration and mammography collection, indicating the current progress, challenges, and future directions.
Impact factor: 3.021

- **Lazic I, Jakovljevic N, Boban J, Nosek I, Loncar-Turukalo T. Information extraction from clinical records: an example for breast cancer. 2022 *IEEE 21st Mediterranean Electrotechnical Conference (MELECON)*, 2022, pp. 942-947. DOI: 10.1109/MELECON53508.2022.9842995**
Abstract: The extraction of relevant information from electronic health records (EHR) can facilitate large scale clinical studies related to certain diseases to uncover diversity of their biological and clinical signatures, and patterns of treatment and prognosis. Variety of EHR formats and use of clinical narrative present significant challenges to this task. In this work we describe a process of an automated information extraction from an oncology hospital clinical reports related to 2966 subjects with suspected or confirmed breast cancer. The

lack of open medical term dictionaries for the Serbian language and the variety of clinical data types required, imply the use of rulebased approaches with exact matches, regular expressions, hierarchical rules and customized mini dictionaries to analyze clinical text. The accuracy of the applied approach has been validated on manually extracted clinical data of 50 breast càncer patients. The accuracy varied, field dependent, between 71.3% to 100%, indicating that certain relevant fields can be successfully captured, yet implying the need for sophisticated natural language processing tools for accurate extraction of more descriptive features.

- **Kosvyra D, Filos D, Fotopoulos D, Tsave O, Chouvarda I. Data Quality Check in Cancer Imaging Research: Deploying and Evaluating the DIQCT Tool, 2022 *44th Annual International Conference of the IEEE Engineering in Medicine & Biology Society* (EMBC), 2022, pp. 1053-1057. DOI: 10.1109/EMBC48229.2022.9871018.**
  Abstract: Data harmonization is one of the greatest challenges in cancer imaging studies, especially when it comes to multi-source data provision. Properly integrated data deriving from various sources can ensure data fairness on one side and can lead to a trusted dataset that will enhance AI engine development on the other side. Towards this direction, we are presenting a data integration quality check tool that ensures that all data uploaded to the repository are homogenized and share the same principles. The tool's aim is to report any humaninduced errors and propose corrective actions. It focuses on checking the data prior to their upload to the repository in five levels: (i) clinical metadata integrity, (ii) template-imaging consistency, (iii) anonymization protocol applied, (iv) imaging analysis requirements, (v) case completeness. The tool produces reports with the corrective actions that must be followed by the user. This way the tool ensures that the data that will become available to the developers of the AI engine are homogenized, properly structured and contain all the necessary information needed for the analysis. The tool was validated in two rounds, internal and external, and at the user experience level. Clinical Relevance— Supporting the harmonized preparation and provision of medical imaging data and related clinical data will ensure data fairness and enhance the AI development.

- **Sykiotis S, Tzortzis I, Angeli A, Doulamis N, and Kalogeras D. A deep-learning based diagnostic framework for Breast Cancer. *In Proceedings of the 15th International Conference on PErvasive Technologies Related to Assistive Environments (PETRA '22)*.**

Association for Computing Machinery, New York, NY, pages 641-645. 2023. DOI: https://doi.org/10.1145/3529190.3534769

Abstract: In this paper, we present a deep-learning based diagnostic pipeline for breast cancer that has been designed in the H2020 INCISIVE project. The design of the pipeline has taken into consideration the needs of medical professionals and has been adapted to focus on early and accurate detection of malignant lesions to improve the patient's survival rate. The main goal of our approach is to create a complete diagnostic service and bridge the gap towards real-world adoption of Artificial Intelligence on medical imaging. The pipeline will be offered as a service to medical professionals during the pilots of the project to evaluate its performance and assess the maturity of integrating such a service in a clinical workflow.

- **Fotopoulos, D, Filos D, Xinou E, and Chouvarda I. Towards Lung Cancer Staging via Multipositional Radiomics and Machine Learning. In Proceedings of the 16th International Joint Conference on Biomedical Engineering Systems and Technologies - Volume 4: *BIOSIGNALS*, ISBN 978-989-758-631-6, pages 317-324. 2023. doi: 10.5220/0011781500003414**

  Abstract: This work addresses lung cancer diagnosis, and more specifically disease staging, as a major clinical challenge, crucial for further treatment decisions. The procedure is currently performed by experts based on clinical and medical imaging data and is time consuming and costly. Within INCISIVE, an EU-funded research project which aims to develop a pan-European federated image repository for cancer and implement Artificial Intelligence (AI) tools for clinical practice, clinical challenges have been identified that can be supported by AI in medical imaging data to facilitate accurate diagnosis and support treatment planning. The support and automation of lung cancer staging has been identified as a priority among the INCISIVE clinical challenges. In this scope, we propose a method to automatically classify between the group that represents disease stages I and II (low severity), vs the group that includes stages III and IV (severe). Tumour-Node-Metastasis system is used as a reference for staging. Based on lung CT image series with tumour and lung volume segmentation, we calculate and harmonise radiomics features and we propose the combination of tumour and lung lobes radiomics features towards improving the classification performance. Having a rich feature set as a basis, several combinations of feature selection and classification methods are tested and compared. Multiple repetitions of cross-validation and external testing splits are used to reach robust manner. The proposed method is trained and tested on an integrated dataset comprised

of two open datasets (the NSCLC-Radiomics and the NSCLC-Radiogenomics dataset from the Cancer Imaging Archive). It achieves average Precision and Recall of 77.5% and 78.7% respectively, which could be further improved with a more extensive training set. Therefore, this can be the basis for a prioritisation tool regarding lung cancer cases and detailed staging/treatment decisions.

4 Monitoring and evaluation

As described in the C&D Plan, we use a combination of criteria or feedback mechanisms to measure the effectiveness of each dissemination and/or communication activity, so we keep an aggregated record of all the activities and report them in the respective deliverables.

This section includes a summary of the Key Performance Indicators (KPIs) that we monitor in this document, the expected C&D KPIs of the project, and a general summary of C&D activities linked to the project and audience reached, following the categories established by the EC for the internal reports of the project.

4.1 KPIs monitored in the project

We regularly monitor the KPIs compiled in this deliverable to evaluate the results of the communication activities. Constant monitoring allows making adaptations and readjustments in our actions to achieve the KPIs described in the project's protocol and the C&D Plan.

Indicator	*Description*
Website	Users, returning visitors, users by country and city, average time, most viewed pages, traffic sources.
Social Media	Twitter: Followers, impressions, profile visits, retweets, likes, mentions, tweets. LinkedIn group: members, posts, likes.
Scientific publications	Number, type, Journal impact factor for peer reviewed publications.
Newsletters	Number of newsletters, subscribers, opens, clicks.
Presentations, synergies, and clustering events	Conference contributions, presentations in international industrial events, external events and conferences, synergies with major initiatives and networks, workshops and webinars.
Leaflets	Number of materials developed, number of leaflets distributed at events.
Press releases	Number of press releases.

News articles	Number of news articles published in the consortium website, number of news articles and information about the project published in partners' websites.
Media impacts	Number of impacts.

Table 4: C&D indicators.

4.2 Expected results of the project and progress

In the following table we present the expected values for **C&D KPIs for the end of the project**. These values were described in the project's protocol and the C&D plan, and we added new indicators in the 3rd Plenary Meeting, in October 2022. The table also includes what we have achieved since the beginning of the project until 15th March 2023, and the results presented at the end of March 2022, in order to show the project's progression. Please note that some events are placed in different categories (for instance, we had a booth at the Mobile World Congress, where we made presentations about the project).

Category	KPI	Value expected	Achieved by 24th March 2022	Achieved by 15th March 2023 (aggregated data)
Website	Number of visits at the project website	**> 10.000 unique visitors**	3.007 users	4.110 users
	Average time	**>1 min**	1 min. 08 sec.	4 min. 24 sec.
Social Media	Followers on Twitter	**>200**	104	155
	Twitter impressions	**>50.000**	21.100	41.000
	Members on LinkedIn	**>150**	118	136
Scientific publications	Number of scientific papers published	**> 35 peer-reviewed scientific publications**	8	17

Presentations, synergies, and clustering events	Conference contributions	**> 10 conference contributions**	4	19
	Presentations in international industrial events	**Presentations of results at least in 10 international events**	2	5
	External events and conferences	**> 12 events/year** **> 3 booth participations in conferences**	19 events 1 booth in conference	48 events 2 booths in conference
	Synergies with major initiatives and networks.	**10 joint actions**	7	13
	INCISIVE clustering events	**2 clustering events with the participation of at least 15 research initiatives**	3	4
	1 workshop on pan-European health imaging repository	**Targeting 100 participants**	Not available yet	Not available yet
	1 final workshop	**Targeting 100 participants**	Not available yet	Not available yet
	INCISIVE AI toolbox demonstrations webinars	**>3 webinars**	Not available yet	Not available yet
Newsletters	Subscribers	**>100**	35	51
Leaflets	Number of leaflets distributed	**>100**	+100	+200
Press releases	Number of press releases	**3**	1	2

News articles	Number of articles on the project's webpage	**>40**	18	32
Media impacts	Number of articles published in the media	**>10**	5	11
Other	Pan-European health imaging repository members	**> 40 members (data providers)**	Not available yet	Not available yet
	Develop INCISIVE health professionals / industrial stakeholders' database	**> 300 contacts**	Not available yet	Not available yet

Table 5: C&D indicators expected and progress achieved

- **Summary of estimated number of persons reached**

Table 6 shows the estimated number of people reached during the analysed period, in the context of all C&D activities, following the categories established for the project's regular report to the EC.

Categories	Audience reached
Scientific Community (Higher Education, Research)	**+5.000** (participation in more than 19 scientific events)
Industry	**+500** (participation in conferences, workshops, visitors in partners' websites, etc.)
General Public	**+15.000** (more than 20.000 impressions on social media, 1.000 visitors on the website, audience from the media and from partner's websites, etc.)

Policy makers	**+15** (EU institutions, national and local authorities participating in clustering events, workshops, etc.)
Media	**5** (impacts on the media)
Investors	Not applicable
Customers	Not applicable
Other	-

Table 6: Summary of estimated number of people reached

5 Future communication activities

In the C&D Plan we expected to carry out the C&D activities of the project in three main phases, spanning throughout the project duration and extending beyond it:

- **Phase I: Inform and engage** to create general awareness about the project (from month 1 to 42)
- **Phase II: Demonstrate and Contribute** to promote the INCISIVE novel services and show cases; engage target users and early adopters in the project activities (from month 12 to 42)
- **Phase III: Share & Influence**: to support the exploitation of the INCISIVE outcomes (from month 35 to 42).

In the same document, we provided the following indicative list of INCISIVE's main assets with great exploitation potential that will be promoted through the project's C&D activities:

- The INCISIVE **pan-European repository** of health images and clinical data that will enable the secure access and sharing of data, and ultimately support the large-scale adoption of AI solutions in cancer diagnosis and follow-up.
- The INCISIVE platform which, through its **HPC and HDPA-as-a-service**, will provide the secure and cost-effective performance of computationally intensive processing, without the need of maintaining expensive equipment.
- The INCISIVE **AI-driven models** enhancing image processing and data analysis focusing on improving sensitivity and specificity in diagnosis and statistical assessment of cancer.
- The INCISIVE **user services and reporting tools** in the form of intuitive and highly interactive visualizations, addressing the needs of stakeholders visualizing the analysis results along with corresponding reasoning, enabling the accurate detection, prediction and follow-up of cancer and allowing informed decisions.
- The INCISIVE **anonymization mechanism** aiming to create an anonymous and homomorphous representation of a user (cancer survivor, which then can be shared and further processed).

Besides the most significant milestones of the project listed above, and the continuous publication of advances related to the project on INCISIVE's website and social media channels,

WP9 has short-term goals that are planned to be achieved in 2023. The table below lists our goals until the end of the year:

Goals for 2023	Action points
Increase the generation of audiovisual content for social media and the project's website.	Publication of short videos about the results or specific tasks of interest carried out by a partner or a group.
Amplify the dissemination of the Second Prototype	Publication of a news article and social media copies that will be shared with partners to expand the dissemination through their communication channels as much as possible.
Find new opportunities to promote and share the advances of the AI4HI projects' results	Analyse, together with the other projects of the AI4HI cluster, a possible joint application to the Horizon results booster services. Plan new contents of interest and social media posts together
Organisation of clustering events and workshops to synergize with similar initiatives and enlarging the impact of the project	Organize a clustering event in Madrid, promoted by INCISIVE and plan at least one workshop related to the pan-European hybrid repository. Participate in the dissemination or exploitation meetings of the AI4HI network.
Increase the number of subscribers to the newsletter	Regular reminders to partners to encourage their contacts to subscribe to the INCISIVE's newsletter, and regular publications on social media.

Table 7: C&D specific goals and actions for 2023

6 Conclusions

The overall assessment of the C&D activities performed during the last year (from 24th March 2022 to 15th March 2023) is very positive: not only we maintained but also increased our participation in scientific and industrial events, published new scientific articles in peer-reviewed journals and conference proceedings, shared contents of interest related to the project, and boosted our activity and engagement on social media.

We also achieved most of the short-term goals that we set in the D.9.3 First Dissemination and Communication Activities Report for this period, which were:

Goals for 2022	Summary of results achieved
Increase the activity and engagement on social media	We significantly improved our results on Twitter and, though to a lesser extent, on LinkedIn, by publishing new contents of interest in different formats (video, images, news articles, etc.).
Start working on the organisation of clustering events and workshops to synergize with similar initiatives and enlarging the impact of the project	We successfully organised the first INCISIVE event in Belgrade and participated in more than five clustering events.
Humanisation of the project communication materials	We increased the human visibility of the project sharing video interviews, team pictures, news about different meetings, etc.
Improvement of the project website	We improved some functionalities of the website, but there are still some sections that will be developed or improved in the following months.
Engage partners in communication activities	We continuously encourage our partners to keep participating in C&D activities, and most of them are always willing to help.

Increase the number of subscribers to the newsletter	We sent reminders to partners to encourage their contacts to subscribe to INCISIVE's newsletter and published several calls to action for subscriptions on social media. We increased our number of subscribers by 45%, but this number is still low, so we will continue promoting the subscription.

Table 8: Summary of C&D 2022 goals achieved

Regarding the project's C&D KPIs, which we mention in section 4.2, we can conclude that **we are on track**, since the progress is favourable and it seems feasible to reach our goals, except the KPI for the webpage visits, due to the reasons exposed in section 2.2.

Finally, we would also like to point out the involvement of INCISIVE partners in all C&D activities, because they are participating proactively in external events, sharing slides and information about the project whenever they can, they are using the project materials properly (presentation templates, meeting minutes, etc.), and providing valuable insights and feedback to WP9.

ANNEX 1. References

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