Dissemination and Exploitation Plan
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6GSatNet-SeS

6GSatNet

Programa de Universalización de Infraestructuras Digitales para la Cohesión – 6G I+D

Financiado por la Unión Europea
NextGenerationEU

GOBIERNO DE ESPAÑA

Plan de Recuperación, Transformación y Resiliencia

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Nivel de diseminación	PU
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Nivel de diseminación	
PU	Publico
PP	Restringido a otros participantes del programa
RE	Restringido a un grupo especificado por el consorcio
CO	Confidencial solo para miembros del consorcio

Tipo	
PR	Prototipo
RE	Reporte
SP	Especificación
TO	Herramienta
OT	Otro

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1 Tabla de Contenidos

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Plan de Recuperación, Transformación y Resiliencia

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GOBIERNO DE ESPAÑA
Plan de Recuperación, Transformación y Resiliencia

2 Lista de Tablas

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NextGenerationEU
GOBIERNO DE ESPAÑA
Plan de Recuperación, Transformación y Resiliencia

3 Lista de Figuras

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4 Lista de Acrónimos

UNICO	Universalización de Infraestructuras Digitales para la Cohesión
URL	Uniform Resource Location
UE	Unión Europea
PRTR	Plan de Recuperación, Transformación y Resiliencia
ETSI	European Telecommunications Standards Institute
OSM	Open Source Mano
KVM	Kernel Virtual Machine
OA	Open Access
ECO6G	European Ecosystem Event on 6G
IEEE	Institute of Electrical and Electronics Engineers
PhD	Philosophical Doctor
IoT	Internet of Things
IPR	Intellectual Property Rights
KTM	Knowledge and Technology Market
R&D	Research and Development

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5 Document Scope

The 6GSatNet Exploitation and Dissemination Plan document describes the tools and strategies to be used by the coordinated project called "Contribución sobre 6G para el despliegue de redes de satélites en el paradigma de las redes no terrestres"; which a acronym is 6GSatNet; which includes three subprojects: 6GSatNet-GS, ref number TSI-063000-2021-1; 6GSatNet-SeS, ref number TSI-063000-2021-8; 6GSatNet-SS, ref number TSI-063000-2021-5; 6GSatNet project, to raise awareness about the research results achieved by the project, detailing the planned activities to be used for dissemination, communication and exploitation of the results.

This document aims to coordinate and plan the dissemination, communication and exploitation activities. Partners will contribute to the dissemination activities via the most appropriate methods according to their expertise. It is expected that academic partners and research institutes are expected to put more emphasis and time into journal publications and conference presentations, while industrial partners will rather focus on standardization and presentations towards potential users and stakeholders, which enable the project to get feedback on the achieved outcomes.

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Plan de Recuperación, Transformación y Resiliencia

6 Communication Tools

6.1 Project Website

6GSatNet's website will have a major role in dissemination and communication activities. At the beginning of the project an eye-catching website was launched to cover all the projects in the UNICO I+D 6G program coordinated by i2CAT[1]. Figure 1 presents the front page of this global program website.

The website has been created under the responsive design criteria in order to guarantee the best user experience whether viewed on a desktop or a smartphone. Also, the website has been designed to be compliant with the Visual Identity requirements established by Plan de Recuperacion, Transformacion y Resiliencia from the Spanish Government, see, https://planderecuperacion.gob.es/identidad-visual, I more details in section 6.3 (Visual Identity)

Figure 1: Front page of i2CAT activities in the UNICO I+D 6G program

In this website, a dedicated subsite is integrated for the project 6GSatNet[2]. Such subsite offers a general description of the project and its main objectives and a brief reference to the principal investigator. All the information about the project´s activities (past, on-going, upcoming), developments, and results will be accessible from the 6GSatNet subsite.

[1] Main website: https://i2cat.net/unico/
[2] 6GSatNet website: https://i2cat.net/unico/6gsatnet/

Figure 2: Website of 6GSatNet project

Additionally, the 6GSatNet subsite already includes pages where to disseminate the results achieved in the project. Specifically, the website incorporates a “News” section to communicate the different phases of the project as well as the achievements reached within it. The website also includes. a “Documents” section wich offers open access to all the scientific publications (e.g. journals, conferences, workshops, etc.) and links to the code repositories with the resulting software.

6GSatNet subsite will also include links to other relevant sites, from projects point of view, as for example the code repository, or links to the project publications.

The URL for 6GSatNet subsite is the following: https://i2cat.net/unico/6gsatnet/

In order to ensure the sustainability of the project results, the UNICO I+D 6G program website will be available a minimum of two years after project’s end.

6.2 Social Media and Press releases

The i2CAT corporate social media accounts (Twitter and Linkedin) remain indispensable tools for the project's dissemination, allowing it to reach broad audiences through specific campaigns based on the project's news, events and achievements. The following figures present examples of the communication of opened tenders of this project.

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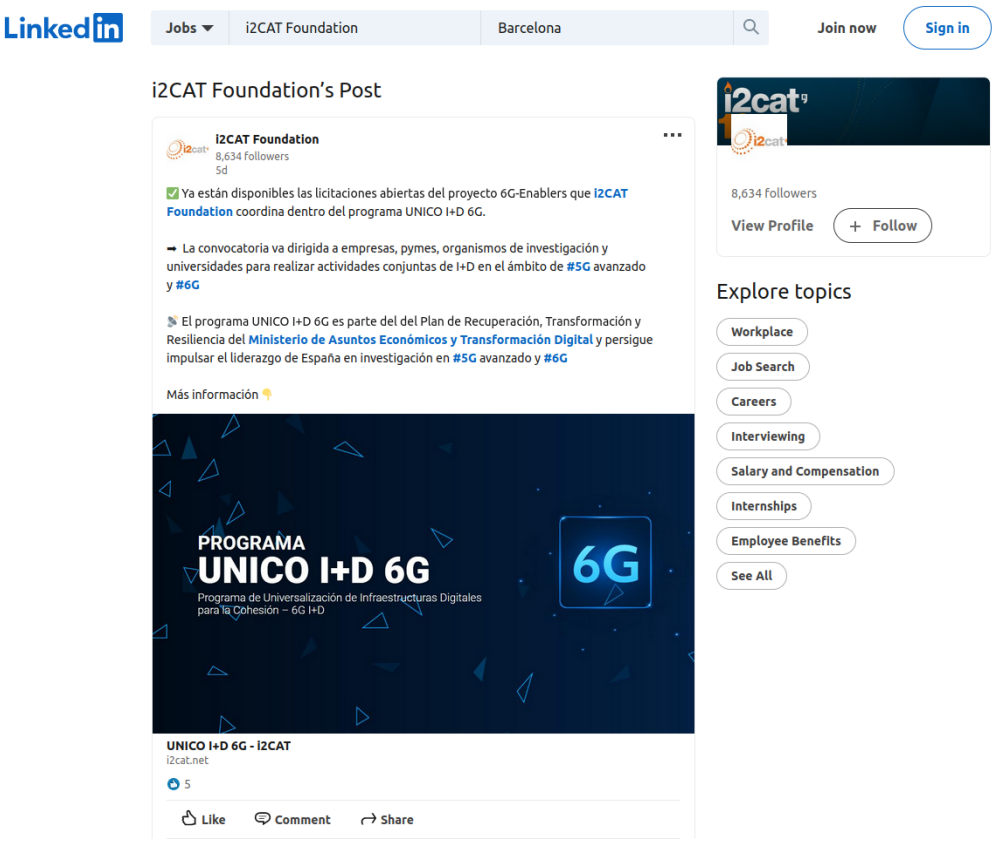

Figure 3: Example of notification through the i2CAT's Linkedin account

Figure 4: Example of notification through the i2CAT's Twitter account

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The i2CAT Communications department will closely work with the project's research team to keep track of the project and elaborate press releases when the project achievements might be of interest to the media. i2CAT will also mention the project in other external campaigns aimed at disseminating the center's 5G and 6G research strategy.

6.3 Visual identity

The project will respect the visual identity defined by the following rules:

(a) In the publications, communication activities, and websites, it must be indicated the Ministerio de Asuntos Económicos y Transformación Digital and the European Union-NextGenerationEU as funding entities, in the “marco del Plan de Recuperación, Transformación y Resiliencia y el Mecanismo de Recuperación y Resiliencia”, as indicated in the “artículo 34.2 del Reglamento (UE) 2021/241 del Parlamento Europeo y del Consejo, de 12 de febrero de 2021, por el que se establece el Mecanismo de Recuperación y Resiliencia”.

(b) It must present in all the communication activities (posters, electronic publications, website, etc.), in a correct and relevant form, the UE banner with the statement of the funding that indicates «financiado por la Unión Europea-NextGenerationEU», with the logo of the PRTR (available in this link[3]).

(c) Communication activities will avoid any discrimination image against women, promoting the equality, and the role plurality. Additionally, it must avoid sexist language.

6.4 Document template

In order to have a more coherent view of the 6GSatNet outcomes, a set of templates are available to be used for presentations and deliverables. These templates are available to the whole project members and subcontractors.

[3] https://planderecuperacion.gob.es/identidad-visual.

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Plan de Recuperación, Transformación y Resiliencia

Figure 5: Deliverable document template

Figure 6: Presentation Template

6.5 Promotional Material

To inform the public when organizing or participating in events, leaflets, brochures and posters are key elements to disseminate information about the project. Leaflets will be distributed on the events where the 6GSatNet project will be present.

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Plan de Recuperación, Transformación y Resiliencia

7 Dissemination activities

7.1 Open Source Contributions

6GSatNet plans to participate in a number of open source communities with the aim of possible source code contribution in accordance with the results of the project aligned with the necessities of the targeted open source communities.

The communities identified as potential stakeholders where the results of the project could have a bigger impact are the following:

KVM community

Contributions to Magma

Contributions to ETSI OSM

7.2 Industry Events

In order for 6GSatNet to have a bigger impact on the industry, it is very important to make itself visible by organizing workshops at national / international level about 5G and edge technologies. This provides the consortium the opportunity to highlight project results in the industry.

In consequence, the project aims to be present and to participate in the most relevant world-wide events, such as:

- Mobile World Congress
- Industrial IoT World Congress
- International Astronautical Conference
- Fog computing Expo

7.3 Publication and Posters

6GSatNet will expand its reach by producing research publications for top-tier conferences and journals such as SIGCOMM, CoNEXT, USENIX ATC, NSDI, INFOCOM, ACM CCR, IEEE ComMag, AC, etc.). These publications will target different audiences such as for example the Industry Community, the Scientific Community or just the general public attending EU organized Events. The types of documents in each of the segments are as follows:

- Industry related (SCWE, MWC, etc.): Publications of White papers, magazines, technology roadmaps, and industry-led journals

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GOBIERNO DE ESPAÑA
Plan de Recuperación, Transformación y Resiliencia

- Scientific community (IEEE ICC, IEEE Globecom, IEEE NFV/SDN, etc.): Publication of scientific results in high-impact journals and leading conferences
- EU events (e.g., EuCNC, etc.): Presentation of 6GSatNet results, research and innovation activities, booth exhibition and demo set ups

Posters will be created during the project's lifetime. At the beginning posters will include key information related to the project. Later versions will be enhanced with research results and achievements of the project. The posters will be used in conferences, workshops and other events in order to increase awareness about the objectives and outcomes achieved by the project.

In the following subsections, we summarize the internal procedures to address the publications in academic journals. We make emphasis on the necessity of publishing in open journals and on the necessity of acknowledging the funding body.

7.3.1 Open Access Policy

Open access (OA) refers to the practice of providing, free of charge to any user, online access to: all peer-reviewed scientific information and all the research data.

In particular, the 6GSatNet project, as well as other UNICO i+D 6G project from i2CAT, must provide open access to the research results, including results disseminated by means of scientific publications and the data generated during the research, in compliance with the “articulo 37 de la Ley 14/2011, de 1 de junio, de la Ciencia, la Tecnología y la Innovación” and its exceptions. Moreover, 6GSatNet is also in compliance with the established model of Grant Agreement from the Horizon Europe program regarding the management of digital research data.

Following this premise, the 6GSatNet project must:

(a) As soon as possible and at the latest on publication date, deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications, or in the project website; Moreover, the beneficiary must aim to deposit at the same time the research data needed to validate the results presented in the deposited scientific publications.

(b) Ensure open access to the deposited publication — via the repository — at the latest on publication, if an electronic version is available for free via the publisher.

(c) Ensure open access — via the repository — to the bibliographic metadata that identify the deposited publication.

Only the following exceptions apply in the 6GSatNet project:

(a) When the data and results generated during the research could be applied to a request of intellectual or industrial property protection. The ownership of these rights will be applied according to the corresponding regulation.

(b) When the nature of the data is held to the personal data protection policy or may affect public security.

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Plan de Recuperación, Transformación y Resiliencia

7.3.2 Publication Procedure

All scientific publications shall follow an internal procedure of i2CAT to ensure its quality. Specifically, 14 days prior to the submission of the document, the main author shall provide the resulting manuscript to the different authors to receive their feedback. When a publication gets reviewed and approved, it will be submitted to the corresponding publisher media, and follow the corresponding peer-reviewed process. If the manuscript is accepted for publication, it shall be uploaded to the project website.

7.3.3 Acknowledgement

All the publications, conference proceedings, presentations on workshops, or public events must take into account the following rule:

Unless explicit requests or agrees otherwise or unless it is impossible, any dissemination of results (in any form, including electronic) must include the following text:

"This work was supported by the Spanish Ministry of Economic Affairs and Digital Transformation and the European Union – NextGeneration EU, in the framework of the Recovery Plan, Transformation and Resilience (PRTR) (Call UNICO I+D 5G 2021, ref. number TSI-063000-2021-8-6GSatNet-SeS)."

7.4 Impact in Academia

Aside from the impact that will have in the academia through the research papers, we have identified further impacts:

(a) A PhD student is developing a Thesis on Inter-Satellite Communications mechanisms with the project.

(b) A PhD student is developing a Thesis on Software Virtualization in satellite systems with the project.

(c) A PhD student is developing a Thesis on the integration of Quantum Key Distribution in satellite communications with the project.

7.5 Workshops

The project will participate in the European Ecosystem Event on 6G (ECO6G)[4], organized by i2CAT, by presenting the activities, research challenges addressed, and the results achieved of the project. The workshop started in 2022 with its first edition, and it is planned to be organized in the following years. The participation of the members from the 6GSatNet project is also planned.

[4] https://eco6g.com/

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Transformación
y Resiliencia

8 Exploitation Plan

8.1 Exploitation of results of 6GSatNet project

i2CAT works to boost collaborations with the companies and the innovation ecosystem players through strategic alliances to create innovative market-oriented technologies and solutions.

The center also coordinates the design and implementation of technology trials for use case validation with tech companies and end-users, among which are public administrations, industry partners and citizens. i2CAT also creates mixed innovation teams to cooperate in the development of IPR and prototypes (pre-commercial products), with the commitment of transforming promising scientific research into unique ingredients for a profitable tech company.

This is usually made possible by:

- Co-development: fostering strategic alliances to create innovative market-oriented technologies and solutions addressed to different industries.
- Technology orientation: gathering direct feedback of a societal challenge from the main stakeholders to improve and orient technologies that will meet real requirements and have a better market and society uptake.
- Knowledge and Technology transfer: setting up exploitation agreements on IPR and collaboration in go-to-market strategy with state-of-the-art methodologies that improve the success probability of deep-tech opportunities.

i2CAT has an internal unit for this purpose, which is named Knowledge and Technology Market (KTM), and is in charge of identifying all the R&D project results to define their potential market fit and the business opportunity. Such valorisation and commercialization efforts start when KTM receives the invention disclosures from the research area managers, who are in charge of notifying the project results that can become transferable assets.

These invention disclosures should include all the necessary information to carry out a deep market analysis, with focus on the identification of potential partners and customers, market specifications or requirements, needs and current technologies and platforms.

Once the invention disclosure is handed in to KTM, all relevant information is assessed and KTM issues an invention evaluation report where first conclusions of the invention potential in terms of market fit and business opportunity are drafted. This is measured thanks to a score that allows i2CAT to prioritize its efforts and resource allocation.

In the event that enough resources are available, KTM defines a proper valorisation project to move forward through the commercialization process. Part of this task can be done internally by the technology transfer unit (KTM) or contracted to a specialized company. Gathering information from the market including feedback from potential

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Plan de Recuperación, Transformación y Resiliencia

customers/licensees/users, will help i2CAT with the objective of creating a first draft of a commercial pilot to engage them into a business deal.

In parallel, i2CAT will also deal with IPR matters, assessing the possibility of protecting the results with patents and performing a first brief freedom-to-operate analysis to identify the potential infringement of other patents or third party components that must be used in the proper implementation of the results (very common in software projects).

Finding a company to license-out a relatively unproven technology can be challenging. Often the best leads come through corporate partners who have been involved with the project from the outset since they already know the value of the technology.

A license can be a good option in case there is a suitable company already developing a very similar product, technology or service that can take the IPR and build up something marketable with their R&D and product innovation resources. In such cases, the IPR should have an easy migration into the licensee's product development roadmap. If no suitable licensing company exists or the gap between the current IPR and the future opportunity seems too large, then it would be considered creating a spin-off.

The types of licensing deals can vary widely and are established on a case by case basis but will usually involve a royalty, possibly with an annual minimum, a time period, etcetera. The option of exclusivity is a useful card to play, but should come with higher royalties or greater minimum values to offset the reduction in revenues due to a single licensee. The technology would be supplied by the research center 'as is', with no warranty at all.

Spin-offs, created in the frame of a research center are usually established when there is no existing company to conduct a significant scientific breakthrough in a given sphere, or because a certain scientific work has clear capabilities to create many products and applications, and this is potentially extremely valuable.

One key aspect is to think whether the IPR results can support a new company (which is effectively a new, tiny competitor to the existing industry) versus the licensing path.

Finally, i2CAT will work on the definition of the business model, according to different scenario assumptions and forecasts. Once the business model is defined, i2CAT will allocate resources needed to reach the milestones on the roadmap.

Since IPR management in R&D projects is crucial to i2CAT, in each project it participates an IPR management manual is followed. This management is presented in the following sections.

8.2 Management of IPR among the participants

This manual aims to establish the mechanisms of notification, control and management of intellectual and industrial property rights to which both the developments prior to the project that the participants can contribute and the results they achieve thanks to their participation in it may be subject.

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8.2.1 Background

The project participants must identify and notify which background of their own or those of third parties are going to be used for the execution of their tasks in the project. The purpose of this notification is to make the rest of the participants aware of the rights of access and use that they will hold over these previous developments, as well as possible restrictions or legal limits.

Each participant undertakes not to use, in the implementation of their tasks in the project, any previous development that they have not notified. Therefore, any participant must request the addition, modification or elimination of all or part of the previous developments identified by submitting said request to the project leader.

8.2.2 Results

In the event that a result has been co-developed between project participants, the following procedure below should be followed to ensure that there is a common understanding of who is the co-owner of each joint result:

- Any participant who contributes to an activity that results in co-ownership results must notify the other potential co-owners and try to achieve their acceptance of the proposed co-ownership.
- This notification shall be made by email in the following 30 days since the result is identified.

Two or more project participants will jointly own the results if:

- they have generated them jointly; and
- it's not possible:
    - establish the respective contribution of each participant; or
    - separate them for the purposes of requesting, obtaining or maintaining their protection.

In the case of co-ownership, the co-owners must establish an agreement within 6 months of notification of the project result. If necessary, the co-owners can agree in writing to extend said 6-month period. Such an agreement must cover in particular:

- how the ownership is divided between the co-owners,
- how jointly owned results will be protected, including issues regarding the division of related protection costs (for example, patent registration and examination fees, renewal fees, prior art searches, infringement actions, etc.),
- how the results of joint ownership will be exploited and disseminated and how the income or profits will be shared among the co-owners,
- how disputes will be resolved (for example, through an arbitrator, applicable law, etc.).

8.2.3 Results notification

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For each project result, as mentioned above, an invention disclosure must be filled out. The document must be self-explanatory so all the information about the result must be there. External links to documents or the web are only to extend the information.

The document should include the following items:

- Result description: How would you briefly define the object of the invention? What was invented? (algorithm, method, library, application, HW design…)
- Technical problem and solution: What technical problem does the result solve? Please, be concise and specific. Explain too how the result it solves and explain why is an original approach, from the technical point of view (compared to the current state of the art).
- Dependencies: Are other components used in the implementation of the result (regardless they have not been modified)? Please, consider any other party components (software, design, library...), publicly available (open source) or not. Please, include a diagram to understand the result in its context and relations with other devices, functions, data…
- Ownership: Please specify the ownership regime as established in the tender.
- Potential use cases: Have you defined/implemented/tested any potential use case? Please specify. Be clear explaining the dependencies or interactions with the environment where the result would work to understand clearly the difficulties for a real implementation and operation.
- Experiments, tests or simulations: In case you carried out some experiments, tests or simulations, please describe them here focusing on the results. Be specific about the data obtained and how relevant the results are from a technical and business perspective.
- Target Market: Please, define the target market based on the type of product in which the technology would be integrated and type of companies that manufacture said products.
- Product integration: Please, list a set of products to define the type of product in which the technology would be integrated and point to the benefits that it could give to this type of product.
- Company profile for tech transfer: Can you imagine what kind of companies would be interested in and capable of licensing-in your result? Can you provide some contact details of relevant employees of such companies for licensing matters?

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Plan de Recuperación, Transformación y Resiliencia

9 Impact indicators and reporting

9.1 Impact indicators

The set of KPI defined in the 6GSatNet project will help when measuring the success of the dissemination, communication, and exploitation activities. This section intends to review the foreseen impact of the dissemination plan with the KPI.

(a) Open Source Contributions: 6GSatNet project will contribute to different Open Source communities (and the goal for this particular item is to have at least two contributions accepted within the project´s lifetime). The project will target some principal Open Source contributions which will be addressed during the second period once the project has advanced its technical development.

(b) Demonstrations: The project will conduct 5 demonstrations in laboratory environment related to the different research activities conducted

(d) Industry events and ad-hoc meetings: 6GSatNet consortium has been tasked to participate in at least 2 industry events.

(e) Publications: 6GSatNet wants to be present in the industry and the scientific communities and also on the events organized by EU, and for that the following KPI have been set, to ensure that the project reaches the objective.

- Industry related Publications: at least 4 publications
- Scientific Publications: at least 10 publications
- EU events Publications: at least 2 publications in some of the EU organized events

(f) Website, and social networks: 6GSatNet will set up a public website, and use a social networking tool. The project has already launched a Website that is actively using social networking.

9.2 Reporting

In order to track and plan dissemination and communication activities, event and publication tracking methodology has been introduced. The members participating in the 6GSatNet project will internally report, on a monthly basis, both the foreseen dissemination opportunities of the project, the attendance to events as well as the publications related with the project. In addition to the regular information of the events (where it took place, who assisted, contributions, etc.), the partners are requested to report about the number and kind of audience and the future outcomes and impact of the activity (publications, contacts, press releases.) These internal reports will materialize to the project reports, delivered every year.

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10 Conclusions

The dissemination and communication plan defines what communication tools are used to promote the dissemination actions, what specific events and channels are used to disseminate the project, the commitments of the different members, the activities to exploit the results, and the indicators of the results impact.

All in all, the project has established an initial dissemination, communication, and exploitation plan to coordinate the efforts of the members in an effective and coherent approach such that the dissemination objectives of the project are ensured. The plan presented in this document is subject to update depending upon the progress of the project, in an adaptive way, to make sure dissemination, communication, and exploitation goals are achieved.

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