D9.3 - Dissemination Plan

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Version	1.0	Status	Final
Description	This deliverable reflects and formalizes the events, scientific actions and industrial dissemination planned. In this document, a comprehensive description of the PIXEL's role in every industrial niche, scientific forum and public exposure in order to maximize both innovation and impact.		
Work Package	WP9		

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Abstract

This deliverable has been created in the context of the Work Package 9 (*Exploitation, Dissemination and Communication*) of the H2020-funded project PIXEL (Grant No. 769355).

In this document, the plan for Dissemination activities of PIXEL is depicted. All the guidelines for undertaking the dissemination actions are related in the sections of the deliverable.

First of all, the Communication Strategy is written down, after having been agreed among all partners. This includes the periodicity of update of the social media and website of the project, specifying the content to be included in each of the diffusion channels of PIXEL, the way that the partners can contribute through, relation with other projects, etc.

This deliverable goes beyond the digital Communication of the results of the project. It also shows the types of dissemination that are planned for the project (scientific, industrial, varying depending on the field of interest) and the different targeted audiences that will be addressed to through each one. This is a crucial point for the Dissemination of the project, due to its importance on selecting the proper events (fairs, congresses, showcases, etc.) to be attended (and by whom).

Furthermore, a provisional schedule for the dissemination activities (already identified) that are taking place in the next period of the project, is described. Dissemination and Communication are volatile in a very changing realm as ICT and transport/environment, so both the schedule and the events intended to be attended/observed can be modified later on during the project.

The relation of this plan and execution with the Innovation Strategy is close, and so is represented and described in this document, aiming at aligning both activities to work together seamlessly.

Finally, the very first report of Dissemination/Communication activities is done through this document. The results correspond to the first six-month period of the project (M1-M6) and the report is done according to a pre-defined template and division that is explained in this deliverable as well.

Statement of originality

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List of acronyms

Acronym	Explanation
CA	Consortium Agreement
COREALIS	Capacity with a pOsitive enviRonmEntal and societAL footprInt: portS in the future era
CSA	Coordination and Support Action
DX.Y	Deliverable Y of work package X
EC	European Commission
ESPO	European Sea Ports Organisation
ETP	European Technology Platform
EU	European Union
GA	Grant Agreement
ICT	Information and communication technologies
IoT	Internet of Things
IF	Impact Factor
IMO	International Maritime Organization
IP	Intellectual Property
IPP	Impact per Publication
ISO	International Organization for Standardization
LNG	Liquefied Natural Gas
MX	Month X of execution of the project
OBOR	One Belt One Road
PEI	Port Environmental Index
PERS	Port Environmental Review System
PIXEL	Port IoT for Environmental Leverage
R&D	Research and Development
RIA	Research and Innovation Action
SJR	Scimago Journal & Country Rank
SMP	Small and Medium Ports
SNIP	Source Normalized Impact per Paper
TEN-T	Trans-European Transport Networks
TRL	Technology Readiness Level
TX.Y	Task no. Y within WP no. X
WP	Work Package

1. About this document

The idea behind this deliverable is to establish the guidelines for the Dissemination of PIXEL. The Consortium is including in this document both the intended actions to perform regarding Communication and Dissemination (website, social media, events to attend...) and the targeted audiences which they will be addressing to. This resource is intended to be a reference for all the partners to be analysed when conducting dissemination activities. Furthermore, it will be a living document, as it contains the template for reporting and evaluating the dissemination actions undertaken within the scope of PIXEL.

1.1. Deliverable context

Table 1. Deliverable context

Keywords	Lead Editor
Objectives	This deliverable must be considered as highly transversal, not being addressed to any particular goal of those listed in the GA. Nevertheless, creating a clear Dissemination/Communication plan is crucial for the impact creation of the outcomes of the project.
Exploitable results	The PIXEL video is not an Exploitable Result itself, but it will surely contribute to disseminate the results of the project and maximizing its scope and coverage in both academic and industrial field.
Work plan	Associated tasks: T9.1 – Communication and impact creation: This deliverable establishes a pace and purpose of communication through digital means. It will serve as a guidance for the activities of the task. T9.2 and T9.3 – Scientific and Industrial Dissemination: D9.3 reflects the strategy, scope, targeted audiences and actions to be undertake by both the scientific and industrial partners with regard to dissemination. T9.4 – Exploitation and Business plan: Deliverable D9.6 is more focused in T9.4, but in this document the relation with innovation is remarked and some comments about how dissemination can affect exploitation and Business plan are included.
Milestones	N/A
Deliverables	D9.1 set up the website and social media, that are crucial for the Communication Strategy. D9.2 delivered the supporting material for Dissemination. D9.6 is the twin document to D9.3 but focused on Exploitation instead of Dissemination and Communication.
Risks	This deliverable does not match with any of the identified risks according to the GA, but concerns arise about the impact of it to the dissemination of PIXEL. Not reaching the expectations of quality and utility of the Dissemination plan could mean an insufficient spread of the results of the project. That is the reason why, in section 6 of this document, a specific chore has been introduced to identify particular risks associated to the Dissemination plan of the project.

2. Objectives and mission of PIXEL

The available operational data in ports (resources tracking, container status, vessel operations, surface or berth available, air/water quality measurements, etc.) is constantly increasing and technology is getting inexpensive and widely available. However, the application of such systems is still single-entity centric, since the information is not shared, keeping the real potential of the Internet of Things (IoT) hidden. Furthermore, an effective integration of operational data is far from optimal in most ports, and especially so in medium or small ports, where budget is limited and IT services usually are outsourced.

PIXEL enables a two-way collaboration of ports, multimodal transport agents and cities for optimal use of internal and external resources, sustainable economic growth and environmental impact mitigation, towards the Port of the Future. PIXEL will leverage technological enablers to voluntary exchange data among ports and stakeholders, thus ensuring a measurable benefit in this process. The main outcome of this technology will be efficient use of resources in ports, sustainable development and green growth of ports and surrounding cities/regions.

Built on top of the state-of-the art interoperability technologies, PIXEL centralises data from the different information silos where internal and external stakeholders store their operational information. PIXEL will enhance productivity and operational efficiency of resources in ports by the following features:

- Close the gap between small and large ports by providing an easy-to-use open source smart solution for operational data interchange
- Migrate from document-centric management systems to data-centric interoperable systems
- Reduce environmental impact in Port Cities and surrounding areas by improving the knowledge and control of the port operations, optimizing processes and improving management
- Focus on small-medium ports innovation
- Improve the energy efficiency of the ports, promote the use of clean energies, improve logistics processes, increase the environmental awareness of all the stakeholders involved and, in general, contribute to reduce the carbon footprint and the environmental impact of the ports and port-related activities

PIXEL objectives are:

- Enable the IoT-based connection of port resources, transport agents and city sensor networks
- Achieve an automatic aggregation, homogenization and semantic annotation of multi-source heterogeneous data from different internal and external actors
- Develop an operational management dashboard to enable a quicker, more accurate and in-depth knowledge of port operations
- Model and simulate port-operations processes for automated optimization
- Develop predictive algorithms
- Develop a methodology for quantifying, validating, interpreting and integrating all environmental impacts of port activities into a single metric called the Port Environmental Index (PEI).
- Develop guidelines for mitigating possible environmental and health effects of port activities and develop evidence-based, standardized and cost-effective procedures for environmental monitoring in port areas

PIXEL addresses ambitious goals and they will be, hopefully reached by the capable technical team of the Consortium. The outcomes originated from this action will need to be properly communicated during and after the period of execution of the project, so that to maximize the impact and scope of its results. In this sense, dissemination and communication activities are an inherent part of PIXEL, and are taken seriously from the beginning by all the partners. Spreading PIXEL word among the community will be useful both for the scientific impact creation and for the exploitation that several partners are planning of different PIXEL assets. In the following sections, the methodology of how this communication and dissemination actions will be performed is outlined.

3. PIXEL Dissemination and Communication goals

The general objective of the Dissemination and Communication in PIXEL (and their WP9 associated tasks T9.1, T9.2, T9.3 and T9.4) is to organize in a coherent way the activities leading to maximize impact for the overall project. The main objective for each partner is to have a structured, complete and achievable business model strategy and a proper communication of results. Specific objectives are:

- To have a consensus on a common Communication Strategy for PIXEL, to be followed by all partners and all dissemination activities carried out.

- To prepare and update a plan for the dissemination of results, including a record of activities related to dissemination that have been undertaken and those still planned.

- To prepare marketing materials (e.g. flyers, posters, etc) in sync with the innovation guidelines, and T9.3 and T9.4 aims combined to boost commercial exposure.

- To raise awareness and visibility through the project web site, flyers, and social networks to end-users (e.g. port agencies), stakeholders (smart-city agents, transport companies, etc.) and the general public.

- To disseminate the scientific and policy-oriented research done in the framework of PIXEL, by participating to academic and policy-oriented conferences, by presenting working papers and scientific contributions, and by submitting scientific articles to peer-review journals.

- To exhibit PIXEL prototypes in primarily industrial and scientific events, in sync with the specific objectives of the Tasks 9.3 and 9.4 regarding the industrial exposure of PIXEL throughout booths and pitch activities, and the associated preliminary marketing and sales activities, respectively.

To help identifying and transferring the PIXEL exploitable results to business operations and product development departments Communication refers to the diffusion of the main PIXEL concepts and ideas to the general public. One of the main aims is to inform both the European contributor and the general public as much as possible on outcomes of the PIXEL project. This task obliges to the effort of clarification of the PIXEL message, scaling down its technical content, so that the standard person can access to this information. T9.1 addresses this work.

Dissemination activities in PIXEL are targeted to specific communities, such as: (i) the several scientific communities of the different domain fields in PIXEL; (ii) the industrial communities that we direct ourselves to in order to identify business opportunities, generate leads and commercial opportunities; (iii) the open source communities; (iv) the local governments and port authorities, etc. The tasks T9.2 and T9.3 are dedicated to coordinate these activities. Dissemination is divided in two different tasks depending on its nature:

Scientific dissemination is performed in PIXEL in order to maximize the visibility of the project in the community and academia. Attendance to congresses, giving presentations and other actions (further analysed in this document) have the following objectives:

1. To show PIXEL advances (beyond the state of the art) to the scientific community
2. To enhance PIXEL visibility among academia and other research agents
3. To take advantage of networking activities establishing synergies with other projects and scientific groups
4. To potentiate PIXEL technical flavour and bring latest trends to the transportation field

Industrial dissemination is conducted by the consortium through raising awareness also beyond the affected use case communities (the four pilot-host ports involved in the project). The specific objectives are:

1. To show the PIXEL solutions as a standard customizable for every port agency and associated actors.
2. To advertise PIXEL technical achievements and prototypes: fundamental knowledge, methodologies and technologies developed during the project.
3. To provide adequate web visibility.
4. To accompany those dissemination actions with presence in international port and maritime solutions fairs promoting and exhibiting PIXEL advances and benefits.
5. To be aligned and participate with CSA DocksTheFuture in all kind of dissemination events.

4. Communication Strategy

For PIXEL Consortium, it is crucial to communicate the results and advances of the project to the community and tax-payers, letting the general public know how the resources are used for actual research and development. Furthermore, many PIXEL partners share a commercial interest in communicating the successful PIXEL's results and establishing a brand feeling among the industry of ports.

The plan for Communication has been designed by the Consortium trying to answer the following questions, which have been analysed based on EC recommendations (European Commission, 2014):

- What do we want to achieve with PIXEL Dissemination? (answered in the previous section)
- Who are our audiences?
- How will we achieve our objectives?
- How can we measure our Dissemination?

Thus, this section will establish a common framework of which audience we want to reach, which are our preferred channels, which type of content must be selected, the frequency of updates of social networks, common assets to be included in the website, objective of followers, etc.

Based on these assumptions, the structure of this section, corresponding with the effective Communication Strategy of PIXEL, relies on the following milestones:

1. Release the management of Communication and Dissemination within the partners of the Consortium (**sect. 4.1**).
2. Define the high-level subject of Dissemination (what will be disseminated?) (**sect. 4.2**).
3. Provide an explanation of the division of dissemination actions and events in a three-fold structure. (**sect. 4.2.1**)
4. Identify the target audiences (who will most benefit from the project results? and who would be interested in learning about the project findings?) (**sect. 4.2.2**)
5. Define the methods, the tools (what is the most effective way to reach the target audience?),the timing (when dissemination will take place?) and the KPIs of digital communication and Virtual Presence (**sect. 4.2.3**).
6. Determine the dissemination management, policy and execution on site (who is responsible of and how dissemination is ruled?) (**sect. 4.2.4**).
7. Agree on the first steps on events attending and tentative schedule for the partners (**sect. 4.2.5**)

4.1. Internal communication

Internal communication is critical to PIXEL because of our geographically dispersed and virtual structure and because it is vital to develop an impact-led culture among all partners. Because of this, a great deal of attention is directed into how project partners will communicate. Thus, ensuring effective internal communication and dissemination among the consortium partners represents an important key success element for PIXEL.

Partners' organizations are important for dissemination for two reasons: they are potential users of PIXEL project results themselves, and they represent "influencers" due to their impact on associated industrial sectors.

The project's internal communication is intended to ensure a constant and effective exchange of information between the partners and the project's governing bodies (frequent exchange of emails, setting up of the project website and of a secure area for the partners only). It will also ensure effective and shared management of the knowledge generated by the project's activities (data, methodologies, policies, procedures, reports, any other document)

The internal communication activities are being planned and executed within Work Package 9 (Project Management). The internal communication audiences consist of the PIXEL project partners and the External

Advisory Board. The tools for communication are the project meetings, mailing lists within the programme (e.g. for the Management Group or Communication Media List) and digital networking.

The internal communication objectives for PIXEL are:

- To maintain all partners fully informed about planning, work in progress and existing or potential problems.
- To promote collaboration and dialogue between the project partners: all partners are invited to actively communicate with WP Leaders about technical progresses and issues, as well as WP Leaders are invited to keep PIXEL partners updated about the activities.
- Internal communication about dissemination opportunities will be encourage for all partners in order to maximize the impact and visibility of PIXEL both in academic and industrial fields.
- Regarding the Advisory Board, internal communication serves to develop and maintain common project messages based on the project's objectives.
- To encourage the project partners to promote the distribution of information acquired in the work packages to the defined target audiences

The following table presents tasks and subtasks that are related to the objectives defined in previous sections. It defines the responsible partner per task, the actions related to the task and when the activity to be performed. The action plan covers the whole duration of the project and it sets the starting point of actions that will be further tracked and updated in the relevant reports on communication and dissemination activities in M18 and M36.

Table 2. Internal Communication sub-tasks

WP9 Tasks	Subtasks	WP9 Responsible Partner	Actions related to the tasks	When
Social media	Create social media profiles in Facebook, Twitter, LinkedIn	IPEOPLE	IPEOPLE created the profiles and posts on a regular basis. All WP9 partners should contact IPEOPLE about any interesting news that should be disseminated on social media.	M2
	Update content	IPEOPLE		M3-M36
	Provide updates	IPEOPLE		M3-M36
Internal communication	Admin Project platform	UPV, All partners	UPV uploads all WP9 files on Admin and informs partners.	M1-M36
	WP9 conference calls	All partners	WP9 conference calls will be organized by UPV in coordination with XLAB and IPEOPLE to inform partners on WP9 issues or plan activities.	Every two weeks
	Emails	All partners		Daily
Website	Design and develop the website	IPEOPLE and UPV	IPEOPLE designed and developed the PIXEL website and shared it for partners for review. During the project's implementation, IPEOPLE will be responsible for updating and addition of new sections if necessary.	M2-M36
	Find news and interesting articles, press items for the News section	All partners		

	Manage queries received	IPEOPLE	For example, new sections might be necessary to upload feedback related to the PIXEL technical workshops that will take place in the pilot sites.	
	Monitor the visibility (Google Analytics)	IPEOPLE		

Standard Project meetings

The project has four types of standard meetings which are organized at one of the partner premises. The meetings are conducted for the different project boards:

- Plenary Meetings
- Technical Meetings
- Technical Workshops
- Executive Advisory Board (AB) meetings.

The meetings are being used for communication within the different boards and between the coordinator and the project members. The communication in meetings would be realized through the following activities:

- Presentations and distribution of handout material.
- Discussion and Q&A sessions.
- Informal discussions on the meeting days.
- Decision making sessions Outcome measures: number of persons attending the meetings, effective participation of all attendees.

Existing communication channels

Currently in PIXEL the partners are using email lists and the committee and meeting structures to pass information around, trying to ensure that all levels of PIXEL are represented where possible and appropriate. In order to support the project implementation, the following tools are being used by project partners:

- **Collaborative workspace.** This project uses a collaboration space (using the open source CMS technology **OnlyOffice**) at url: https://onlyoffice.pixel-ports.eu/. PIXEL OnlyOffice workspace has been set up as restricted access area (password-protected). In the internal workspace the consortium members have access to important project documents such as minutes of meetings, Consortium Agreement, templates, corporate design manual, contact lists, literature and guidelines as well as the fields monitor, a calendar and all finalized deliverables. More concretely, this space is being used to store:
  - o Project summaries, minutes of meetings,
  - o Project deliverables,
  - o Information related to the implementation of the different work packages and related tasks,
  - o Any project related documents that project partners needs access to,
  - o Other information as determined by the Coordinator.
- **Project meetings and regular web conferences** are taking place in order to coordinate the activities of the partners and the implementation of their respective Work Packages. Dedicated coordination sessions may be held for each Work Packages if needed.
- **Email distribution list**. All team partners' members are included on an email list. The project Coordinator set it up and is currently maintaining this list and others that are being created under particular requests. Any team member can use this list to communicate easily with the team on matters that affect the entire team. Specific internal communication related to some specific work packages (WP) or tasks will be ensured by more targeted distribution list, set-up by task or work packages leaders.

- **Web conferencing system/account**. The team accesses a web conferencing system, ISL (https://islv61.islonline.net/), in order to hold team meetings that include remote team members. XLAB is providing this tool.
- **Website** – involved partners dedicated space: All involved partners will have access to a dedicated space on the project website (currently this is on-going). This space will allow partners to have access to all material and deliverables. This space gathers of documents produced by the different WP's including the ones which won't be accessible to the public.

Building confidence and consensus – "Dissemination funnel" concept

PIXEL technical partners and stakeholders will work on building confidence and consensus to accelerate replication of PIXEL scalable solution that will reduce environmental impact while optimizing port ecosystems operations through IoT technology.

Each pathway to achieving this will be unique and involve multiple different contact points with the project – likely both in person and online. A "**dissemination funnel**" framework will work to push professionals towards a constructive commitment to smart city solutions. At pan-European level, PIXEL project partners will seek to raise awareness about PIXEL actions and solutions to a broad cross section of European stakeholders. An editorial calendar of quality, targeted content such as in-depth articles and interviews with technical experts will be pushed to science, technology and specialist media across Europe. Online PIXEL owned media – such as LinkedIn Project page, twitter feed, Facebook, Research Gate and website – will inform dissemination targets with easily accessible and up to date content on project aims, progress and key contextual issues and challenges. Local C&D 'desks' in Use Cases Ports and in follower cities are expected to mirror awareness and information as appropriate – dedicating a suitable amount of their news releases and channels to strengthen uptake in their city, region and country.

All PIXEL partners will have to work together to achieve a maximum transfer of information and shareable research results. Each organization and individual connected to PIXEL must be able to discuss and reference the project in an engaging way. Regular content, clear branding, active social media and 'elevator pitch' discussion points will be made available to all. Professional conferences and events providing face-to-face opportunities are very important in this phase. Specific and clear calls to action will aim to secure the commitment and contribution of the most gifted and enthusiastic.
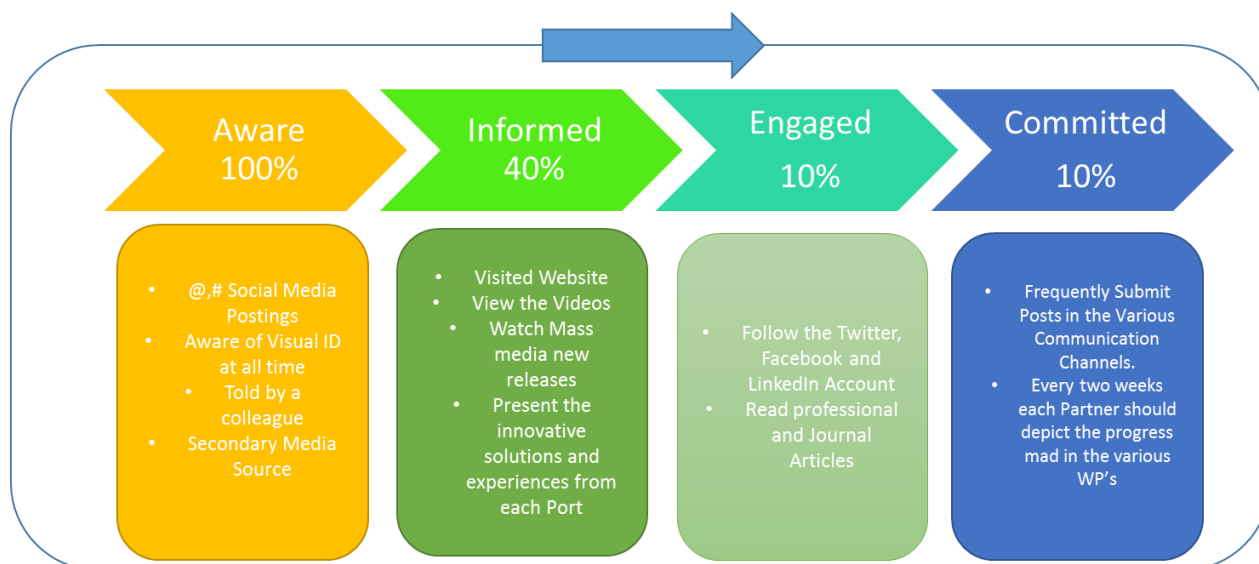

Figure 1. PIXEL "Dissemination Funnel"

Training activities should contribute to professional development through advanced training of key staff, research managers, industrial executives, and potential users of the knowledge generated by the project.

Different training approaches could be adopted at various levels for PIXEL, but at a first stage of defining PIXEL's Communication strategy, the only action scheduled in this sense is:

- Periodic technical meetings/workshops; being also an opportunity of training, cross-fertilization.

Table 3. Internal dissemination actions- Workshops

Type of training activity	Planned activity	PIXEL partner involved	Date / Period
#1 Technical Workshop	Technical workshop/CodeCamp to be conducted in one of the ports participating in the project. In this workshop the integration of PEI and environmental measurements will be exhibited and partially functioning technology will be demonstrated. Particularly, in the first workshop, integration will be performed in order to test software components developed in PIXEL in a testbed environment (phase 1). It is considered a dissemination action as there will be expositions and invitations will be sent to other entities to exchange knowledge. Furthermore, internal communication will be enhanced due to lectures and other training actions to be carried out.	UPV, PRO, XLAB, INSIEL, CATIE, SDAG, ORANGE, CREOCEAN, MEDRI, THPA, PPA, IPEOPLE , other partners according to availability (e.g. ASPM, CERTH)	Mid 2019
#2 Technical Workshop	Technical workshop/CodeCamp to be conducted in one of the ports participating in the project. In this workshop the integration of PEI and environmental measurements will be exhibited and partially functioning technology will be demonstrated. Particularly, in the second workshop, actions will focus on effectively integrate the PIXEL Information System resources to the existing data sources in the different pilot scenarios (phase 2). It is considered a dissemination action as there will be expositions and invitations will be sent to other entities to exchange knowledge. Furthermore, internal communication will be enhanced due to lectures and other training actions to be carried out.	UPV, PRO, XLAB, ORANGE, CREOCEAN, MEDRI, THPA, PPA, GPMB, IPEOPLE, other partners according to availability (e.g. ASPM, CERTH)	Mid 2020
Final Workshop	To be held in UPV's premises and inviting both industrial and academic agents Final dissemination workshop with presentation of final results to the community.	ALL partners	End 2020

4.2. External dissemination

The external dissemination activities in a project aim to distribute relevant information to specific target group members. Having clear which kind of audiences, the project must address to and clarifying the approach and monitoring process are the key to develop a fruitful action.

The first step done to elaborate the external dissemination approach has been to sub-divide the PIXEL dissemination domains, regarding its technical context. They have been decided according to the objectives and results of the PIXEL project. Thus, the division has resulted in three clearly differentiated topics:
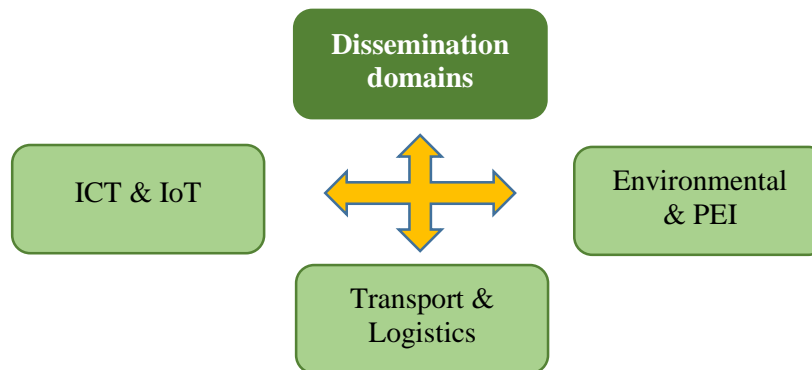
Figure 2. Dissemination Plan. The technical domains for the dissemination activities

- **ICT and IoT**: The whole PIXEL solution will rely in the use of new and advanced IoT techniques and platforms, sensoring, systems integration, new software development and, in general, ICT tools. In this regard, two work packages in the project (WP4 and WP6) are completely focused in these matters, being the ones in charge of the core designers of PIXEL ICT infrastructure. Several events (workshops, congresses, industrial meetings, etc.) are forecasted to be attended and/or followed in relation with the most technological field of PIXEL.

- **Transport and Logistics**: Ports are the cornerstone of the project. Multimodal transportation, hub processes optimization, traffic congestion reduction or more efficient management of operations are some among the features covered by PIXEL. Several important partners are located within this realm (ports, consultancy companies, logistic-specific entities...), so the project is expecting to perform dissemination activities addressing this field. Particularly, fairs, CSA events and other clusters' initiatives are being studied and will be attended in the scope of PIXEL.

- **Environmental (and PEI)**: One of the most outstanding characteristics of PIXEL is, indeed, to address a single environmental performance metric that can be adopted by any kind of port. The research in PIXEL is, at an important rate, focused on elaborating this asset. Henceforth, the dissemination activities (presentation in events, publications, etc.) are in the agenda of the Consortium specially in the environmental aspect of the project.

Another important thing to be aware of is the different kind of actions that can be performed based on their nature. Thus, the main types identified to be sort by are the following:

- **Scientific Dissemination**: Technical papers, demonstrations, or talks (e.g. panels) at relevant international conferences, workshops, technical events, industrial forums and cooperation with European stakeholders, etc.

- **Industrial Dissemination**: presence in international port and maritime solutions fairs, assisting to industrial events, presenting PIXEL solution to private companies potentially interested, etc.

- **Virtual Presence**: Actions carried out in the website (news publishing, content shared, deliverables made public, etc.), in or social networks profiles (mainly Twitter, Facebook and LinkedIn) and the newsletter.

Once these divisions have been made, the External Dissemination for PIXEL can be defined. The following actions are needed to establish the PIXEL strategy regarding external dissemination:

1. Creation of a monitoring tool
2. Identification of target groups to be addressed with the different actions.

3. Specification of diffusion channels that PIXEL counts on
4. Analysis of on-site dissemination opportunities
5. Study of planned actions (sorted by the aforementioned split)
6. Global provisional schedule of forthcoming actions

Those steps have been already done by PIXEL partners, and are documented in the following items of the section:

4.2.1. Dissemination matrix

At the beginning of the project, PIXEL Consortium has considered useful to create a shared tool to monitor the different dissemination actions carried out within the project. With this intention, a shared spreadsheet has been defined where the partners are able to indicate their dissemination activities performed.

The spreadsheet consists of four separate sub-sheets:

- The main sheet is the **Dissemination Matrix** itself: a matrix where the different activites are coded to be monitored in an overview. The structure is as follows:
    o Three main columns, one per each dissemination domain (ICT&IoT, Transport&Logistics and Environmental&PEI)
    o Three rows, one per each kind of dissemination activity (Scientific dissemination, Industrial Dissemination and Virtual Presence)
    o Inside each of the nine "spaces", one row must be created for each dissemination action undertaken.
        ▪ Every individual action will be characterised by an identifier (id), a short description and the partners that have been the executors.
            • Identifiers are unique and follow a certain pattern: **#** + **[Kind of action]** + **[Domain]** + **iterative number**
            • E.g.: **#S.T.1** : Event 1 framed on Scientific Events in the field of transportation and logistics.
- **One sheet for Scientific Dissemination and another for Industrial Dissemination**: In this sheet, every item corresponding to this classification is listed (sorted by its unique ID) and more detailed than in the previous global matrix. Explanation of the event/publication/action such as the dates, place or role of the partners is described more deeply.
- **One sheet for Virtual Presence:** This sheet is devoted to collect particular actions performed in PIXEL's virtual channels of dissemination. Here must be included the news that have been published in the website, the articles written and published in the website and/or social networks, statements regarding PIXEL (in general) done in social media, etc. Nevertheless, we are not expecting to include in this sheet information like: tweets done, retweets, shared Facebook pages, etc. A study of these activities will be reported in each period following a different approach (see 7.1 and 7.3).

This tool will be used to monitor the activities done and to perform a reporting of dissemination as well. The format will allow both the responsible of Dissemination and the Work Package leader to prepare useful reports and get conclusions on the advance of this crucial component of the project.

A graphical clarification of this matrix can be found at sections 7.5, 7.6 and 7.7. of this document, where, the first Report of Dissemination is done.

4.2.2. Target groups identification

One of the key elements of the PIXEL Dissemination and Communication strategy is the identification of dissemination target areas and audiences.

Potential stakeholders have been identified, segmented and divided into primary and secondary target groups. The direct focus for dissemination activities lays on primary target groups, whereas the secondary target groups have the role of multiplying those activities.

A questionnaire has been prepared and sent to the four PIXEL port partners - Port of Monfalcone, Port of Bordeaux, Port of Piraeus and Port of Thessaloniki - to build the following table defining the potential target groups of customers and actors, end users of PIXEL developments and results (see the Questionnaire and the ports answers [with the websites coordinates] in Appendix A).

Table 4. Dissemination Plan. Port/Industrial sector and others. Target groups

Primary - Customers in the port industry sector

The Port authorities of:
 	
• The PIXEL partner's ports: Port of Monfalcone (It), Port of Bordeaux (Fr), Port of Piraeus (Gr), Port of Thessaloniki (Gr).
 	
• The Small and Medium sea Ports (SMP) and inland Ports of the three port participating countries: Italy, Greece and France:
    • France and French Overseas territories (http://www.vigie-ports.fr/index.php/gie/membre-de-la-gie/): Brest, Concarneau, Lorient, Roscoff, Saint Brieux-Le légué, Saint-Malo, Grand Port maritime de La Rochelle, Bayonne, Port La Nouvelle, Sète, Port-Vendres, Grand Port Maritime de Guadeloupe, Grand Port maritime de la Martinique, Grand Port Maritime de Guyane.
    • Italy: Marina di Carrara, Piombino, Portoferraio, Rio Marina, Cavo, Fiumicino, Gaeta, Castellamare di Stabia, A.P. Gioia Tauro - Porto di Crotone, A.P. Gioia Tauro - Porto di Corigliano Calabro, Bari, Brindisi, Manfredonia, Barletta, Monopoli, Palermo, Termini Imerese, Catania, Olbia, Port Torres, Golfo Aranci, Oristano, Portovesme.
    • Greece:
        • Busiest maritime ports for passengers transport: Aegina, Antirrio, Corfu, Heraklion, Igoumenitsa, Keramoti, Kyllini, Mykonos, Paloukia (Salamis), Paros, Patras, Perama, Piraeus, Rafina, Rio, Souda Bay (Crete), Thasos, Thira (Santorini), Tinos, Zakynthos ;
        • Busiest maritime ports for goods transport: Agioi Theodoroi, Alexandroupolis, Aliveri (Euboea), Amaliapoli/Almyros, Antikyra, Antirrio, Eleusis, Heraklion, Igoumenitsa, Kavala, Larymna, Megara, Milos, Paloukia (Salamis), Patras, Perama, Piraeus, Rio, Thessaloniki, Volos.

The stakeholders (terminal operators, shipping company and industry) in the port area of the PIXEL ports:
 	
• Port of Bordeaux: Silo Portuaire Bordeaux Letierce (SPBL), CMA-CGM company, Sea-Invest Bordeaux ;
• Port of Monfalcone:
    • Port operators: Marterneri S.p.A., Cetal S.r.l., Compagnia Portuale S.r.l., Midolini F.lli S.p.A.;
    • Shipping agencies: Cap. L. Cattaruzza S.r.l., Marterneri S.p.A., Francesco Parisi S.p.A., Friultrans S.p.A., Marlines S.r.l., Nogarosped S.r.l., Samer & Co. Shipping S.p.A., Ferest Shipping S.r.l., Multi Marine Services S.r.l..
• Port of Thessaloniki: Shipping Agents Association of Thessaloniki, Association of Customs Brokers Thessaloniki, Hellenic Logistcs Company of Northern Greece, Association of Information Technology Companies of Northern Greece;
• Port of Piraeus:
    • Terminal operators: PPA terminals: car, cruise, container, coastline passenger. PCT container terminal;

- Shipping companies: Minoan Lines Shipping S.A., Blue Star Ferries Maritime S.A., Attica Ferries Maritime Company, Shipping Company of Crete S. A., Neptune Lines Shipping Managing Enterprises S.A., Hellenic Seaways Maritime S.A., Arista Shipping Co. Ltd., Lavar Shipping Company Ltd., Hellenic Short sea Ship owners Association, Association of Passenger Shipping Companies: ELIME, MSC CRUISE MANAGEMENT UK, CELESTYAL CRUISES PRINCESS CRUISES, NORWEGIAN CRUISE LINE, PULLMANTUR, ROYAL CARIBBEAN CRUISES, ATTICA GROUP, SEA JETS
- Other companies: Ocean Finance Ltd., Centre for Research and Technology Hellas.

The stakeholders (terminal operators, shipping company and industry) of the Small and Medium sea Ports (SMP) and inland Ports of the three port participating countries:

- Italy, Greece and France. Stakeholder activities related for landing/storage/transportation: containers, liquid bulk, dry bulk, energy industry, bio-industry, petrochemical (LNG, biofuel, oil, chemistry,...), off-shore, cruise…

Secondary - Intermediate actors, e.g. industry and port associations

Port associations:

- L'Union des Ports de France (UPF: http://www.port.fr/article/lunion-des-ports-de-france);
- The British Ports Association (BPA: https://www.britishports.org.uk/);
- The European Sea Ports Organisation (ESPO: https://www.espo.be/);
- The International Association of Ports and Harbors (IAPH: https://www.iaphworldports.org/);
- World Ports Climate initiative, Italian Ports Association (ASSOPORTI: http://www.assoporti.it/);
- Hellenic ports Association (ELIME: https://www.elime.gr/);
- North Adriatic Ports Association (NAPA: http://www.portsofnapa.com/);
- The International Maritime Organization (IMO: http://www.imo.org/en/About/Pages/Default.aspx);
- The worldwide network of port cities (AIVP: http://www.aivp.org/en/);
- The European Federation of Inland Ports (EFIP: https://www.inlandports.eu/);
- Puertos del Estado de España (OPPE: http://www.puertos.es);
- The Federation of European Private Port Companies and Terminals (FEPORT: https://www.feport.eu/).

Industry/company associations (logistics, transport, manufacturers...):

- European Association for Forwarding, Transport, Logistics and Custom Services (CLECAT: https://www.clecat.org/organisation/objectives);
- European Logistics Platform (ELP: http://www.european-logistics-platform.eu/);
- The European Technology Platform ALICE (ETP-Alice: http://www.etp-logistics.eu/).

Ships association:

- SEA Europe (European Ships and Maritime Equipment association : https://globalmaritimehub.com/industry-link/sea-europe-european-ships-and-maritime-equipment-association);
- European Shippers' council (ESC: https://europeanshippers.eu/);
- European Community Association of Ship Brokers and Agents (ECASBA: https://www.fonasba.com/fonasba-member/ecasba)

Other than ports:

- Airports;
- Generic multimodal terminals and transportation.
- Cities

4.2.3. Diffusion channels

PIXEL will create impact with communications actions to build trust, accelerate transition, and attempt to make a sustainable change by meeting the following key objectives:

- Tell the 'PIXEL story' empowering port stakeholders to share their experiences of smart Port transition through PIXEL initiatives and citizen engagement track actions.
- Prioritize places and channels where audiences already gather – on and offline to get a greater audience
- Illustrate the credibility and personalities behind PIXEL to stakeholders and establish trust by showing intent, integrity and capacity for results
- Deliver a rolling flow of relevant news and content pushed to multiple communication channels with ideal frequency and timing
- Mix textual and rational written material with visual video supports
- Work with PIXEL Ports to localize content and overcome cultural barriers

This section deals with how the advances, news, information and global distribution of PIXEL will be made. Concretely, the Table 5 illustrates the diffusion channels that have been enabled for PIXEL for reaching the target groups.

Special mention goes to the Virtual Presence of PIXEL. Nowadays, as more sophisticated and well-designed presence in digital media one idea/project/product gets, more are the opportunities it takes to reach the market or, at least, to position its own brand on it. It is for that reason that the PIXEL Consortium puts huge efforts on establishing a good strategy on website, social media, etc. In the following lines we are describing the "digital presence" diffusion channels that we are using for PIXEL, and at the end of the section, some KPIs are depicted accompanying the pace of updates that we are committing. **Being tied to these guidelines will ensure a proper presence of the project in the right digital audiences.**

- **Website**

The PIXEL public website was developed to act as an information hub about the project's aims, goals, activities and results. The website works as a prime public dissemination tool making available the project published results. The PIXEL website has been designed, developed and populated with initial content. The website was launched in July 2018 and can be found at https://pixel-ports.eu

Key features of the website are:

- The Homepage showcasing the project vision, latest news and events,
- Project information including details of work packages, partners and deliverables.
- Links to the **Port of the Future Network tab:**
  - Short description, logo and link to the other cluster-related projects:
    - COREALIS
    - PortForward
    - The CSA itself: *DocksTheFuture*
- Social Media pages
- Mobile friendly design. The website will dynamically (responsively) adjust to the device of the viewer.

The PIXEL project has established social media pages, which serve as a complementary part of the project dissemination and outreach strategy. The website will continue to be maintained and updated as the project progresses. The project social media presence will be further developed by updates, interactions and community building activities

Introduction

An initial design meeting was held between members of the PIXEL work package 9 and the project Coordination team to identify the design and functional requirements of the website. Key requirements were:

- ✓ An attractive, modern and professional design with a focus on creating a clean and clear user experience.

- ✓ A homepage showcasing the project vision, latest news and events
- ✓ Easy access to project information including details of work packages, partners and deliverables. •
- ✓ General information about the PIXEL Project
  - o Description of all consortium members taking part in the project
  - o Information about titles, leaders and objectives of all work packages
  - o Description of events organized within the framework of the project
  - o Press releases
  - o Information about publication of the results
  - o Public deliverables
  - o Recent news about the project
  - o Addressing and contact information
  - o Appropriate acknowledgment and reference to the European Union's Horizon 2020 Framework Programme
  - o Disclaimer excluding European Commission responsibility
- ✓ Ability to update content regularly throughout the project

The initial design of the website has as a target the development of a modern and dynamic website that moves away from being a repository and towards being a 'digital anchor' for PIXEL content as a pillar of the dissemination and communication strategy. Priority is given to an easy to update and well connected website with PIXEL content featured in the media or sectorial sites, twitter feeds, interviews and blog posts front and center. The PIXEL website is publically available and hosted by UPV web server and maintained by IPEOPLE. An important characteristic of this layout is that it is responsive to smart devices such as smart phones and tablets, allowing easy use and facilitating presentation of information, as illustrated in the following images.

Plan:

The plan that is being implemented responds to Table 5, including modifications in the community web page and improvement of communication towards the stakeholders:.

- The website will have embedded videos in the webpage (the most relevant ones). A video will be present in the front page, and there will be more in the Media page (tab to be created).

- PIXEL Consortium will keep working on creating good and interesting material of PIXEL project; be determined and responsible at the schedule to deliver the material on time. Aside, keep exploiting and disseminating content through social media.

- It is planned to perform a more exhaustive SEO analysis using with SEO QUAKE Google tool in the next dissemination reporting period.

- Followers are mostly from Spain. For PIXEL project there are no barriers so trying to get more followers or users from every corner of the world, taking advantages of English as an international language is very important and optimal.

- The main features depicted in the main page of the project are being re-visited in this very moment, and indeed more focus on the PIXEL slogan ("PIXEL: where IoT meets the port of the future") and other recent statements will be included in the next iteration.

Additionally, the website will be changed based on requests from the partners. The responsible for the site (IPEOPLE) manages a dedicated mailing list and, each week, gathers all requirements received via mail or other means and will update it accordingly.

- **Twitter**

Current media plans need to take Twitter into account. This social media channel requires immediacy, so we write about important things that happen within the project's scope as soon as they are known. The Twitter account for the project is @PortsPixel (see Figure 3).

When participating to a conference, tweets are prepared in advance when possible, and are delivered before, during and after the conference with different contents. All other posts (videos, news, etc.) are also disseminated through the Twitter channel.

The PIXEL Twitter account follows several well-known names in software testing, trying to share their knowledge through our channel. Curating content through the @PortsPixel Twitter account may position us as a reference account regarding IoT for ports and environmental reduction in transport and logistic hubs.

Project's Twitter account also follows several EU accounts, and other EU funded projects in an aim to find synergies and collaborate with them in sharing their achievements.

Figure 3. PIXEL's Twitter account

- **YouTube channel**

As part of project's media channels, a YouTube channel for PIXEL was opened This channel will contain videos demonstrating the project in action. In addition, if the participation of any partner of the project in an event is recorded, the videos are also linked from the project's YouTube channel. This makes easier for anyone to find video recordings related to the project.

- **LinkedIn**

As a professional platform, PIXEL LinkedIn account addresses similar IoT projects, EC communities, networks, State initiatives, LSPs.

LinkedIn is an online platform for business- and employment-oriented social networking services. An account in such an online platform is of major importance for PIXEL since it will facilitate the communication with specific target groups and online communities such as ICT professionals, researchers, technical innovation groups and engineers. Maintaining contact with such groups and individuals will not only assist in communicating the project's results and content in such audience but also in finding contribution and support by specialists in certain domains essential for the project.

LinkedIn highlights are offering among others interactive and real-time social media platform, favoured by smart Ports/City actors, academics, businesses and stakeholders.

- **ResearchGate**

PIXEL will also make use of ResearchGate. The tool has more than 12 million members, from the field of science and research, allowing PIXEL to publish reports and have access to millions of researchers. It is also possible to connect and collaborate with colleagues, peers, co-authors, and specialists in the field. Each scientific action reluctant to be spread to the community will be published via this channel.

- **Facebook**

The Facebook profile consists of a public page available at https://web.facebook.com/PIXELPORTS/. Through this channel the PIXEL Consortium aims at addressing a different audience. Quick news, adverts of forthcoming

events, evocative images condensing the main PIXEL ideas and advances, etc. will be the most useful content to be included in this regard.

A solid plan for its use and expected impact has been also elaborated and is part of the Communication Strategy of PIXEL.

Table 5. Diffusion channels KPIs and publishing pace

Diffusion channel	Key objective	Time / update	Impact measure and expected number
Website	To inform all stakeholders about the project and the results, activities, monitoring process, etc.	Set up M1 of the project. Updated every month The last day of each month the website will be updated. Last day for sending suggestions: 20th of each month.	Number of accesses to the website Total of 2.000
Social networks	To inform our followers about latest updates on PIXEL, other CSA projects and related news. To gain new followers, mainly potential future customers	Twitter	1 Tweet per week / 1 FB post per month. 400 total followers. 500 total tweets
		YouTube	50 videos. 2000 views.
		ResearchGate	20 presentations. 2000 view
		LinkedIn	Profile Views: 1000 Network: +500
		Facebook	Views: 3000 Mentions: 100
Digital newsletters	To provide latest news, status of the project and results	Every 6 months	Number of subscribers
Project reports	To inform about the achieved results	As soon as deliverables are available	Number of times accessed Average of 20 per deliverable
Web Portal	To distribute the results through the port and industrial sectors. To inform all target groups about the project progress	As soon as new developments and results are available	Number of news: 6 total news in the project
Media communication	To inform all target groups about the project progress	Entire project duration	Number of expected press releases 15
Websites of the PIXEL partners	To present the project and its results	Entire project duration and after the project end	Number of visitors 15 per partner

4.2.4. On site dissemination opportunities

In addition to the diffusion tools to spread PIXEL project, there have been identified several communication instruments and opportunities which can be attended on-site by partners and/or the project itself.

Table 6. On site dissemination opportunities for PIXEL

Event	Key objective	Time / update	Impact measure and expected number
Workshops / Seminars	To explain the concept and results, to support information exchange and discussions	Entire project duration	Number of participants: 30 (average)
Conferences	To present the latest developments and results, to support information exchange and networking	Entire project duration	Number of conferences 3
Trade Fairs / Exhibitions	To present commercial results, products, concepts	Entire project duration	Number of fairs and exhibitions:5 - Number of contacts from each: 10
Case study sites	To present the installation and performance of the PIXEL settlements	With the beginning of the construction time	Number of visitors: 20

4.2.5. Other planned actions

4.2.5.1. Identified spaces

The PIXEL partners will publish and present scientific advances in technical papers as well as in journals (peer reviewed or not) and magazines. Scientific publications are an effective way to disseminate high level project information and to attract the interest of representatives of industrial target group.

The following journals and magazines are relevant for the dissemination strategy of the PIXEL project:

Table 7. Primary identified spaces -

Kind of publication	Details	Website	Comments
Newsletter	CSA DocksTheFuture newsletter	https://www.docksthefuture.eu/	CSA will publish articles, advances and other news from PIXEL. Partners will write this content.
Technical journal	For scientific results, the dissemination will be conducted through publication in academic journals: Current trends in academic (journal) publishing divide journals into a number of categories, that PIXEL will be willing to address during the project: • Journals with impact factor (IF; indexed in Thomson Reuters Web of Science) • Journals without impact factor (IF), but with available bibliometric performance data (SNIP, IPP and SJR) • Other journals (no IF and no SNIP, IPP and SJR) related to ICT/IoT, environmental impact or logistics that can be considered		

- New journals directly related to any of the three realms of impact of PIXEL that have been created by top publishers (e.g. Springer), but do not have yet bibliometric track record.

In the next sub-rows some interesting journals are mentioned, not being the only to be addressed, and not tying the Consortium to publish on them:

Port Technology (UK)	https://www.porttechnology.org/	"Technology about ports, harbours and terminals world-wide"
GREEN PORT newsletter	http://www.greenport.com/	"Projects and initiatives: environmental challenges"
Environmental journal	Environmental Monitoring and Assessment	-
IEEE journals	IEEE Transactions on Software Engineering,	-
Elsevier journals	Elsevier Journal of Network and Computer Applications, Elsevier Future Internet.	-
Elsevier transportation journals	i.e., Elsevier Transportation research Part C: Emerging Technlogies	"Development, applications, and implications, in the field of transportation, of emerging technologies
Book series	Springer Series on Internet of Things	"Publishes new developments and advances in the various areas of the different facets of the Internet of Things"

Industry magazine	LNG Ships&Terminals newsletter	LNG magazine	"LNG shipping news"
	PortSEurope (Ports News & Information - The Mediterranean, Caspian & Black Seas)	http://www.portseurope.com/	"Environmental subject"
	PIANC - The World Association for Waterborne Transport Infrastructure	http://www.pianc-aipcn.org/aboutpianc.php	"Design, development and maintenance of ports, waterways and coastal areas"
Transport Magazine	€uromerci (Italy)	http://www.euromerci.it/	"Logistics"
	Logistica Management (Italy)	Logistica	"Industry and logistic"

Meetings and conferences can be divided by its audience. Basically, two broad categories exist defined by target groups and focus:

1. Possible customer with focus on innovations in technology and method development.
2. Secondary target groups (e.g. industry associations, etc.) with focus on spreading and multiplying project results.

Participation of PIXEL partners in fairs and exhibitions is a good way to distribute information to the primary target groups, but also to most of the secondary ones.

Here below we depict three tables, one per each part of our structure to which each event belongs (ICT and IoT, transport and logistics, environment and PEI). A questionnaire (Appendix B) has been filled in by the PIXEL partners asking them regarding a previous listing of industrial events (related to the three PIXEL domains) "what are the events intended to be attended to disseminate PIXEL results?".

Following the answers, a level of interest for each event has been proposed in the following tables, based on the following classification:

- Level 1: Strong interest (positive answers ≥ 4)
- Level 2: Medium interest (4 < positive answers ≥ 2).
- Level 3: Low interest (1 positive answer).

Table 8. Identified events - ICT and IoT Events

Date	Dissemination events	Involved / Expected partners	Comments	Level of interest
2018				
November 13-15	Smart City Expo World Congress, Barcelona (Spain)	ASPM XLAB	"Human-centric societal development shaped by real-time connected technologies, markets and policy"	2
November 26-28	5th Fiware Summit - Malaga (Spain)	ORANGE	"Smart solution platform of choice and it is open source"	3
2019				
January 16-18	Connected Smart Cities Conference (CSCC), Brussels (Belgium)	CATIE XLAB ASPM PPA	"Human-centric societal development shaped by real-time connected technologies, markets and policy"	1
April 25-26	IoT Tech Expo Global 2019, London	PPA		3
June 14-17	IoT Week 2019, Aarhus (Denmark)	Orange UPV PRO INSIEL CATIE ASPM	"IoT and smart city"	1
June 17-18	Living Bits and Things, Bled (Slovenia)	PPA	-	3
June 19-20	IoT Tech Expo Europe 2019, Amsterdam	PPA	-	3

Spring/autumn	Fiware Global Summit - Genoa/Berlin (candidate)	Orange CATIE PPA XLAB ASPM	"Smart solution platform of choice and it is open source"	1
To be defined	Alliance for IoT Innovation (AIOTI) events with cities and metropolitan areas	Orange CATIE ASPM XLAB	"IoT research and innovation, policy issues and proposed standards"	1
2020				
To be defined	The IoT showroom SIDO	CATIE ASPM	"French national trade show on IoT and connected systems"	2
To be defined	IoT World	CATIE ASPM	"French national trade show on IoT and connected systems"	2
To be defined	Fiware Global Summit	Orange CATIE ASPM XLAB	"Smart solution platform of choice and it is open source"	1
To be defined	Alliance for IoT Innovation (AIOTI) events with cities and metropolitan areas	Orange ASPM CATIE	"IoT research and innovation, policy issues and proposed standards"	2
To be defined	Living Bits and Things event, Bled	ASPM		3

Table 9. Identified events. Transport & Logistic Events

Date	Dissemination events	Involved / Expected partners	Comments	Level of interest
2018				
6 Nov.	ETP Alice – One Belt, One Road Event	UPV	"New OBOR routes, challenges & opportunities for European Companies and potential impact for transport in Europe"	1
To be defined	Alliance for logistics innovation through collaboration in Europe - ETP ALICE	CERTH CATIE ASPM XLAB	"To develop strategies for research, innovation and market deployment of logistics and supply chain management innovation in Europe"	1
2019				

May 29-30	MED PORTS exhibition and conference events (Casablanca, Morocco)	ASPM CATIE PPA	"Current issues and developments in the field of transport logistics and shipping"	2
June 4-7	Transport logistic (Messe Munchen, Germany))	SDAG INSIEL CATIE ASPM XLAB	"Logistics, mobility, telematics and transport exhibition"	1
June	TOC Europe	PRO CATIE ASPM XLAB	"Industry developments / advancements (container port, shipping & logistics communities)"	1
July 4-5	Black Sea Ports and Shipping, Constanta (Romania)	CATIE ASPM	"Global transport and logistics, shipping lines, cargo / freight / logistics / terminal services, railway / port-rail equipment services, in the railway, shipping & aviation products industry"	2
To be defined	Green Logistics Expo, Padua	CATIE ASPM PPA	"Intermodal transport, industrial logistics, e-commerce and services for the smart city"	1
To be defined	ICHCA International Conference	PRO CATIE XLAB	"Improve cargo handling throughout international supply chains"	2
To be defined	Assises du Port du Futur (Paris)	CATIE ASPM, PPA	"French event involving French ports"	2
2020				
To be defined	Alliance for logistics innovation through collaboration in Europe - ETP ALICE	CERTH CATIE XLAB	"To develop strategies for research, innovation and market deployment of logistics and supply chain management innovation in Europe"	2
To be defined	TEN-T days (Croatia)	CATIE PPA	"The biggest event concerning the EU transport policy"	2
To be defined	International trade fair for transport technology innovative components. Vehicle. Systems (INNOTRANS)	SDAG INSIEL XLAB	"The future of mobility"	2

Table 10. Identified events. Environmental and PEI Events

Date	Dissemination events	Involved / Expected partners	Comments	Level of interest
2018				
October 8-11	European Week of Regions and Cities, Brussels	PPA	"Budget and legislative proposals related to cohesion policy and rural development, as well as future of Europe in a regional and local perspective"	3
October 16-19	GreenPort Cruise-Congress, Valencia (Spain)	ASPM PPA	"The latest in sustainable development and environmental practice"	2
November 13-15	Smart City Expo World Congress, Barcelona (Spain)	CATIE ASPM XLAB PPA	"Human-centric societal development shaped by real-time connected technologies, markets and policy"	1
2019				
January 16-18	Connected Smart Cities Conference (CSCC), Brussels (Belgium)	CATIE ASPM XLAB PPA	"Human-centric societal development shaped by real-time connected technologies, markets and policy"	1
To be defined	European Sea Ports Organisation (ESPO) conference - Livorno (Italy)	CERTH CATIE ASPM PPA CREO	"Meeting point for European port industry and transport policy makers"	1
To be defined	GreenPort Congress	CERTH CATIE ASPM PPA CREO	"Latest in sustainable development and environmental practice implement the changes needed to reduce the carbon footprint and to be more sensitive to environmental considerations"	1
October	Sardinia 2019 - 17th International waste management and landfill symposium, Santa Margherita di Pula (Italy)	MEDRI XLAB	"Various aspects, case studies and new technologies of waste management"	2
To be defined	AIVP World Congress	GPMB UPV CATIE ASPM	"Implementation of new strategies to the changes that impact economic, social and environmental development in port cities"	1

		XLAB CREO		
2020				
To be defined	European Sea Ports Organisation (ESPO) conference	CERTH CATIE ASPM PPA CREO	"European port industry and transport policy makers"	1
To be defined	NAFEMS France conference	CATIE ASPM, XLAB	Industrial conference in relation with modelling and simulation	*2*
To be defined	European Environmental Ports conference	MEDRI CATIE ASPM PPA CREO	Communication related to the development of the port environmental index as well as the standard operating procedures for environmental monitoring in port areas.	1

These events have been tagged as interesting to keep track of during the lifetime of the project. Of course, the attendance to all of them will be subordinated to budget availability, timetable, schedule of partners obligations, relevance of the event, moment of the project, etc.

4.2.5.2. Relation with other projects - CSA

One of PIXEL priorities is networking with other H2020 projects with relevant objectives. An official request of collaboration will be made to the leading partners of the relevant projects at the start of the PIXEL project.

Having this clear, the main interaction of PIXEL project (and partners) with other initiatives will be through the called **"Ports of the Future Projects" network**. This naming has been created after the Coordination and Support Action funded under the same topic than PIXEL: DocksTheFuture.

The pursuance of a collaborative and integrated approach between the projects in relation to both their technical outputs and communication/dissemination strategy aims at capitalising on the synergies between the projects with a view to be as impactful as possible. Henceforth, by implementing a collaborative approach, the Ports of the Future Projects Clustering of Activities Mechanism is guided by the following objectives:

- To maximise the impact of the communication and dissemination of results amongst the relevant stakeholders by joining forces, rather than having each project operating individually;

- To exchange technical information between the four projects to contribute for a cross-fertilisation of results leading to a stronger, more accurate vision of the Ports of The Future in 2030;

- To highlight the importance of EU funding programmes in supporting European Research and Innovation able to stand out in an ever-changing world, where top-notch R&D has become the standard;

- To fulfil the European Commission's expectation of an integrated collaborative approach between the four projects, namely, with regards to the tight-knit relation between the approved CSA (DocksTheFuture) and RIAs:
  - COREALIS
  - PIXEL

   o PortForward

A **common joint integrated Dissemination Strategy** has been planned for all the projects, to maximize impact and visibility towards the Port of the Future. After a series of teleconferences among the CSA and the projects (having PIXEL represented by WP9 leader (UPV)), the following items were agreed upon to be followed by everyone:

- **Ports of The Future Projects** have established (as agreed on mid August 2018) that a two-monthly conference call will be held in order to align and fine-tune the strategy, to assess the state of play of the deployment of the communication & dissemination strategy, to plan forthcoming activities and to make decisions deemed necessary (at least one person of each project related with communication to attend).

- Common social media action: **The Ports of The Future Projects** agreed (on mid August 2018) to deploy an integrated Social Media action, allowing for cross-promotion. Therefore, the following decisions have been made and are currently being implemented:
  - The use of common hashtags. The common hashtag for clustering activities will be **#PortsoftheFuture;**
  - The projects will mention and tag each other in their posts. Furthermore, the projects will also share each others' posts;
  - All projects have or will create a tab on their website, named **Port of the Future Network**, where a short description, logo and link to the other projects will be included
  - If possible, **all projects** will publish one piece of news per month in their websites regarding the other projects (this could refer to the kick-off of projects, participation in events; to disseminate projects results, among others).

- Regarding attendance of events (conferences, congresses, etc.) and general on-site dissemination, the strategy will serve a three-fold purpose:
  - To allow the **Port of The Future Projects** to be able to reach a higher number of stakeholders;
    - In a later phase of the CSA, the projects will have common booths in events to maximise their visibility and the communication budget. This will allow the **Ports of The Future Projects** to be presented as a network and to answer to the European Commission's expectations
  - To endow the Port of the Future Projects with higher visibility/impact;
  - To maximise the budget each project has allocated for this purpose

In the following table, there is a summary of the interactions planned by PIXEL, including both CSA-related and other independent, due to common interests and similarities. It is worth to mention that this is not a fixed or mandatory table. Probably, further contacts and interactions will be performed with other projects not included in this list, and some of the indicated could not end to fruitful terms.

Table 11. Dissemination Plan. Port/Industrial sector. Liaison with other EC projects

Networking activity	Name of the project, Details and Network / link	Leader / Coordinator	Planned cooperation activity
Other EU project	DOCKSTHEFUTURE - Developing the methodology for a coordinated approach to the clustering, monitoring and evaluation of results of actions under the Ports of the Future topic - https://twitter.com/DocksTheFuture	Circle srl (Italy)	All projects will publish one piece of news per month in their websites regarding all other projects

Other EU project	COREALIS proposes a strategic, innovative framework, supported by disruptive technologies, including IoT, data analytics, next generation traffic management and 5G, for modern ports to handle future capacity, traffic, efficiency and environmental challenges	Institute of Communication and Computer Systems (Greece)	Within the scope of the Ports of the Future Projects network
Other EU project	PortForward proposes a holistic approach that will lead to a smarter, greener and more sustainable port ecosystem focused on: (i) efficiency in operations, (ii) real-time monitoring, (iii) remote monitoring and management, (iv) hinterland and inland waterways, (v) urban environment and (vi) transferability.	Fraunhofer - IFF	Within the scope of the Ports of the Future Projects network
Other EU project	PORTKLIMA project - https://www.hs-bremen.de/internet/de/forschung/einrichtungen/iwa/fue/portklima/	Bremen - City University of Applied Sciences (Germany)	Punctual communications and update of advances
Other EU project	ICONET - New ICT infrastructure and reference architecture to support Operations in future PI Logistics NETworks - ICONET will extend state of the art R&D around the PI concept in pursuit of a new networked architecture for interconnected logistics hubs that combine with IoT capabilities and aiming towards commercial exploitation of results -	Inlecom Group (Belgium)	Punctual communications and update of advances
European Technology Platform	The European Technology Platform (ETP) ALICE - is set-up to develop a comprehensive strategy for research, innovation and market deployment of logistics and supply chain management innovation in Europe.

ALICE is based on the recognition of the need for an overarching view on logistics and supply chain planning and control, in which shippers and logistics service providers closely collaborate to reach efficient logistics and supply chain operations. | | Some common partners among both projects. Joint actions will be further studied. Alice events will be try to be attended by PIXEL members and viceversa. |

5. Innovation Strategy on dissemination

The communication activities are of great importance to the success of the marketing of PIXEL. In particular, the task T9.1 is responsible by the maintenance of online and offline dissemination channels - including website, social media, video presentation, marketing materials, etc. The communication of the PIXEL message - through the communication channels over a concise communication strategy - is one of the vehicles of implementation of the go-to-market strategy, and thus require a continuous sync with T9.4.

This is particularly evident in the industrial dissemination activities within the Task T9.3, which will be responsible to set-up booths at industrial events, and boost pitch events that have sales and marketing nature. Thus, the industrial dissemination needs to be in sync with the exploitation guidelines from T9.4 and the marketing materials and communication channels from T9.1 to enable efficient and to the point activities while preparing campaigns in highly relevant events.

The dissemination activities in PIXEL project have a clear impact in the protection of the intellectual property (IP) rights. IP protection was agreed among PIXEL project partners and is stated in the Consortium Agreement (CA) . In fact, even a public presentation can affect a patenting process and therefore, the scientific and industrial dissemination must be in sync with the exploitation strategy.

Moreover, the scientific dissemination activities from the task T9.2, highly contribute to the image of PIXEL innovation, confirming its scientific excellence and commercial potential. Although the disjunction of these activities and business development, they fall in the field of academic exploitation that is covered by T9.4 originating brief interaction.

The most important interaction between this task and the PIXEL's innovation is summarized in the following list:

- **To work together towards a Communication Strategy for the project**: In deliverable D9.3 it is defined how, what, who, when and under which conditions and processes must be performed the dissemination in PIXEL. Task T9.2 addresses the Scientific Dissemination, and how it is envisaged and depicted in the document is tightly related to how the Exploitation of the PIXEL results will be performed. In particular, the Innovation Strategy acts as the glue who ties both approaches.

- **To agree on the expected scientific outcomes of the project**: PIXEL is a Research and Innovation Action with a clear technological (ICT particularly) component. This implies a considerable level of innovation that is introduced *per-se* due to the incorporation of advanced techniques and equipment. In this regard, these two tasks must interact and agree upon the level of innovation (TRL, novelty, trending ability, etc.) of the different scientific outcomes of PIXEL.

- **To align the targeted public and fora to be reached**: During the execution of the project, several scientific dissemination actions are planned. Congresses, events and expositions will generate both material and fields of action for the Exploitation regards. Agreement on targeted audiences is necessary to focus effort during technical activities, taking into account future exploitation of every asset generated.

- **To continuously monitor IPR regarding scientific material**: .The PIXEL Consortium forecasts to produce several technical outcomes (such as e.g. software specification, APIs, code, set of guidelines, etc.) that must be tied to certain IPR rules and constraints. Huge interaction between T9.2 and T9.4 is envisioned in this regard.

- **To transmit Advisory Board perspective to the technical realm of PIXEL**: According to CA and GA, the Innovation Manager, acting under the scope of T9.4 will be assisting in the Advisory Board - PIXEL collaboration (attending to meetings as well). Thus, providing feedback to the scientific dissemination team, regarding trends in the sector, recommendations for publications, etc. are some things that will be done during the whole task.

6. Risks

The PIXEL project's risks defined in the project proposal ("Risk management" chapter), include some risks which may be realized in the communication and dissemination strategy. The dissemination in PIXEL aims at spreading as much as possible the outcomes of the project, allowing both the EC contributor and the general public to know about the advances of the project and the interest of the final product to solving real-world problems for ports and other transport hubs. It is for that reason why it is necessary to analyse which additional risks (plus the global ones defined for the whole PIXEL action) will be faced by the partners in this regard. These risks have been identified as follow:

Table 12. Risks of the Dissemination Plan

Risk Description	Risk Mitigation Actions
Lack of interest on the PIXEL project results by industrial stakeholders	Presence of 4 industry related partners at the project helps to the identification of the interested industrial stake holders. Early engagement and awareness of industrial stakeholders.
Partners need to contribute in the communication of the results on a frequent manner to the wider audience possible. This can mean a workload that could affect the work of the project.	Strong project management and firm timetables will guarantee the timely submission of deliverables. Communication objectives and activities will have to be adjusted to partners' budget and availability
Limited distribution of data available and project results	Detailed and targeted dissemination plans (as the one we are delivering through this document) can insure that project results will reach all interested parties.
Overlapping – misunderstanding between PEI, ISO 14001 and Ecoports	The difference between widely used standards as ISO 14001 and Ecoports – PERS and a new developed index such as PEI should be clear.
Use of ineffective channels and platforms and unattractive supporting material (video, leaflet, poster, etc.)	The detailed dissemination plan which is being described now (in an early stage of the project) will be constantly monitored and updated if needed, as well as the supporting material.
Non comprehensive presentation of results	Identification of the results that really interest industrial partners. Targeted outputs with appropriate format presenting project results clearly.
Attending too many events organised by the CSA, or being too ambitious when being present in industrial events could mean a higher dedication and extra costs than the initially planned.	Solid plan and schedule. Coordination, Innovation Management, WP9 key partners work continuously on the timetable of events and attendance, in order to ensure the proper allocation of partners in actions.
Communication actions can mean an extra effort to partners, where no specialised staff is available.	Partners with more experience in Community Management and Dissemination will be taking more responsibility in tasks T9.1, 2 and 3 than others, according to workplan and resources.
Not enough internal communication to enhance the dissemination	Mailing list created specifically for this purpose New ones can be easily added on demand.
Not enough tools and spaces to disseminate and reach the highest possible audience	Enabled: website, Twitter, newsletter, Facebook, LinkedIn, ResearchGate, Youtube, press releases, identified papers, identified niches, Ports of the Future Network. So, enough sources envisioned.

These identified risks will be assessed and kept track of considering the following:

- Risks have to be assessed throughout time, and probably the impact at early stages of the project will be reduced as there will be no significant outcomes. Therefore, effort is placed in the beginning on finding the correct target audiences so that later on the process of disseminating outcomes is more easy and straightforward.
- Some media channels might end up with low coverage. Pixel intends to maximize the dissemination impact by using potential social networks; however, it is up to the stakeholders to select which social network to follow. Pixel first commitment regarding dissemination is to engage all stakeholders through at least one communication channel.

7. Initial report on dissemination activities

This section constitutes the report of the dissemination and communication activities carried out during the corresponding period of the project. This section will be common to all of the three deliverables planned for Dissemination Report (due dates in M6, M18 and M36) and will be fulfilled accordingly.

The structure of the section has been designed to cover all the possible diffusion channels considered for communication and dissemination of PIXEL results (see section 2.4.3.).

For communication (Virtual Presence), the activity of (i) the website, (ii) the video channel and (iii) social networks will be tracked and finally reported. Additionally, new material created to represent the PIXEL image and concepts in events and communications will be referred and described in there.

Regarding dissemination, this report will include the scientific activities performed (publications) and the participation in industrial events.

Finally, the report will be completed with the updated picture of the Dissemination Matrix (see explanation in 4.2.1.).

The report exposed in the following pages corresponds to the first period of dissemination reporting: M1-M6.

7.1. Website

Following the information already depicted in sect. 4.2.3, the PIXEL website is the main element of visibility of the project, where more efforts are put and it isthe tool that will be reviewed and improve more frequently related with dissemination.

PIXEL On-site traffic report after the first dissemination period:

Hereby the Consortium provides a wide vision of the user's traffic in the PIXEL Ports web, as an overview of what was happening on the site from the beginning of the website July 2018 until now (October 2018) approximately, three months from the creation of the PIXEL website. The report aims to show updated data about WordPress analytics.

The main goal is to keep focused on those tasks that reveals good data. Handling on Wordpress Analytics, JetPack, as a tool, many variables such as reactions, timing, visitors and demographics will be analyzed.

JetPack can monitor the activity from different perspectives making easy its use. The results are also given in very simple charts. Moreover, the data reflected can give information that determines the behavior of our visitors, progress and the impact over time.

Key words and terminology:

- **Engagement:** The fact of being involved with something or the process to encourage people to be interested in the work of an organization.
- **Impact:** Have a strong effect on someone or something.

- **Bounce rate:** It represents the percentage of visitors who enter the site and then leave "bounce" rather than continuing to view other pages within the same site.
- **Sessions (visits):** Visit is a unit of measurement of a user's actions taken within a period of time or with regard to completion of a task. Sessions per user can be used as a measurement of website usage.

1. AVERAGE VISITORS:

Monitoring the average of visitors related to sessions and page views it can be observed whether the content on PIXEL website reveals curiosity and continuity (**engagement**) or just great **impact** without any other interest.

It is really important the fact that PIXEL project needs to reach diverse audience and high number of visitors but always have in mind what is better regarding to the objectives of the project; quantity or quality? In terms of the purpose of PIXEL a balance betweeen both is needed, emphasizing on obtaining real visitors interested in the project.

2. DASHBOARD AUDIENCE

Globally, during the entire period, the average duration on the site (**2.01 min**) is initially a neutral number having in mind that there is no examples or history where reflecting. Every web is different and has their particularities, and own goals so it is difficult to stablish an efficient time average.

2.69 pages are visited in average per session while the percentage of new visitors for the period is about 56.9%. The total number of pages of the current website is 11.

The most visited pages on the website are the **homepage** in the first place; the **project** is taking up the second place and finally **Ports of the Future Network is** on the third place.

3. AVERAGE OF VISITORS

If we have a look in average of visitors, we can see that the first impact is really good, **150 first visits, for mid October 2018.**

We remind that the target is 2.000 (for the entire project duration which is 3 years, and at this moment we are about to conclude the 1ˢᵗ project year).

There are many visits at the first time and the percentage of visitor that returns to watch the site isn't that good either but it is acceptable. There is an obvious **impact** with the website; the problem in the case of improving is about generating engagement.

Visitors in the first period comes from **social** (43%) mostly while at the second are coming mostly from **direct** (69%). Analysing the whole period without any division, **direct** is also the first one gathering 55.1% of channels, which drives to the website.

4. DEMOGRAPHICS

Most of the visitors are from **Spain.**

7.2. Video

During the first dissemination reporting period, some actions have been done with regards to PIXEL's video channel. It is an objective of the Consortium to turn this mean of communication one of the main entrance gates of the average user towards the PIXEL project.

In the following (standard-formatted) table, there are referenced the videos created and made available. They are included with their corresponding identifier, that is the same which with they are identified within the Dissemination Matrix in section 7.7.:

Table 13. Report on PIXEL Video Channel - M1 to M6

id	Full description	Domain	Date of publishing	Partners	Type of contribution
#VP.N.1	First release of the website of PIXEL. It was done several days after the simple initial webpage was made available (the one that can be seen in deliverable D9.1). Partners gathered improvements and the official website of PIXEL (as it is now) was released.	PIXEL global	Jun-18	IPEOPLE All:	Responsible of the website Provide comments
#VP.N.2	Publishing in the website the promotional video of PIXEL This video was created within the scope of D9.2 (corresponding to T9.1). The objective was to create a promotional video to show to the community what PIXEL is, to whom is addressed and its main characteristics. A script was made, several iteration were done and finally, the result was published in the official channel on time. It can be watched at the following link: https://www.youtube.com/watch?v=zmWiwwNWHGQ&t=2s	PIXEL global	30-Jul-18	UPV IPEOPLE	- video ellaboration /guidance/script making - responsible of the video
#VP.N.3	Introductory video to PIXEL done by Coordination. First delivery of a set of partners' contributions.	PIXEL global	5-Oct-18	UPV	Presenter. Creator of the video.

PIXEL YouTube channel currently hosts 2 videos. Those videos hosted at the PIXEL channel sum up 204 watching minutes, with an average view duration of 1:36 minutes, 13 likes, 39 shares, and 12 subscribers. The most prominent video is the one recorded for the overall presentation of the project (#VP.N.1), with 84 views and 4 likes. The second most popular is a presentation of the technical approach of the PIXEL Concept (#VP.N.2).

The idea is, after this first presentation video (from Coordination – UPV), having all partners creating similar content explaining the importance of PIXEL for their organisations. This action will serve as a powerful dissemination tool, as different audience profiles will be addressed while enhancing the impact of the PIXEL concept among several realms. It is planned to span these videos throughout the whole project lifecycle.
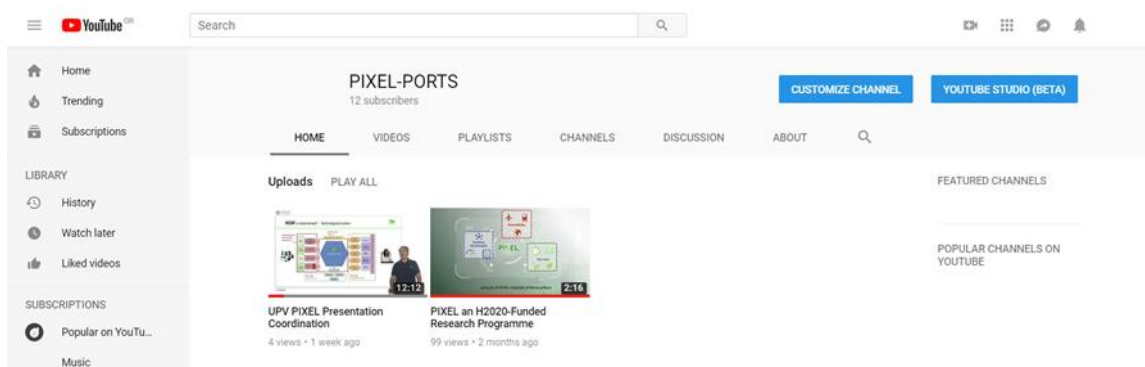

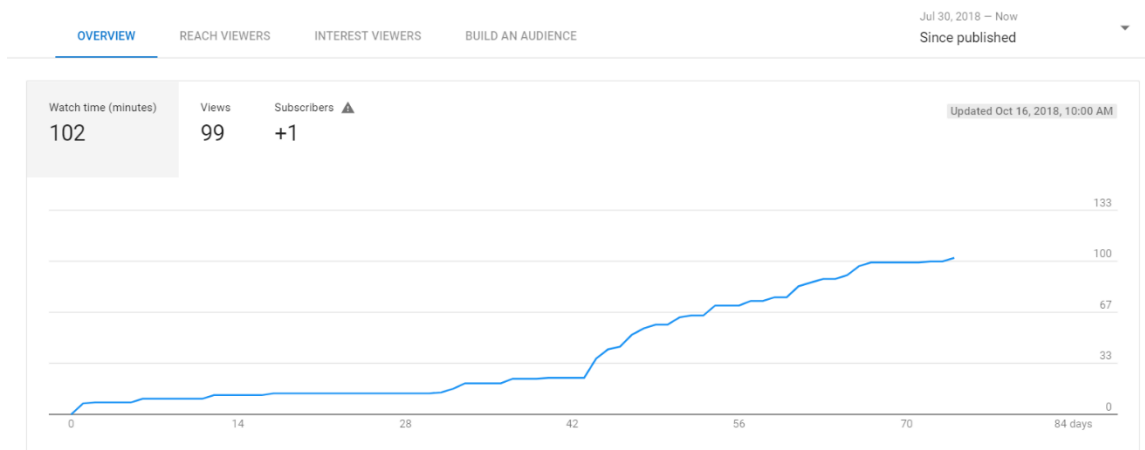*Figure 4. PIXEL videos uploaded to Youtube*

Figure 5. Overall PIXEL Concept video statistics

7.3. Social networks

To report the advance on Social Networks during this first dissemination reporting period, here below it is shown a table with the most current relevant data to each of them:

Table 14. Social networks report

PIXEL Social Media Channels	
Twitter	Tweets: 50 Following: 53 Followers: 87 Likes: 254
YouTube channel	Videos: 2 Views: 87
ResearchGate	Presentations: 1 Reads: 28
LinkedIn	Profile Views: 90 Network: 50
Facebook	Views: 203 Mentions: 15

7.4. Supporting material

One of the key components of the Dissemination planning and execution is to create and establish some common material to identify and show an image for the project. In particular, it is a basic activity at the beginning of a project to design and agree in the official and not official logo, promotional poster of the project, introductory video and assets to bring to showcases and events.

In this sense, within the scope of one of WP9 tasks (T9.1), various partners collaborated to create common materials to support the dissemination and communication of PIXEL. For deliverable D9.2 (UPV responsible), the following material was designed:

- **PIXEL official poster**: UPV designed a draft of the poster, trying to incorporate all the necesary elements: (i) concept of the project, (ii) use cases, (iii) technology overview, (iv) partners, (v) social media links and (vi) EC funding reference. After several iterations with partners, a final design was reached to represent, for the time being, the project at showcases and events to be attended by the partners where PIXEL is present.

- **PIXEL official leaflet:** Following a similar approach to the aforementioned poster, the leaflet was envisioned by UPV. Besides including the same common basic elements, the leaflet was conceived as a fresher and lighter information piece. It was fitted into a classic triptych size. The final design can be consulted in D9.2, which is available in the official website of PIXEL:

- **PIXEL stickers**: A simple design, that was proposed by UPV, has been elected as the PIXEL sticker. Several unities were printed and distributed among the partner in the last Plenary Meeting of the project.

This material was consequently published in the different diffusion channels by IPEOPLE according to the targeted audiences. Also this material was a matter of discussion during the 2nd PIXEL Plenary that took place at Valencia in September. As it can be consulted in the generated minutes of the meeting, some inquiries were made and the pending actions in this regard were the following:

- Update with newer and more modern design both the poster and leaflet.

- Re-visit the supporting material each 6 months to adapt them to the novelties of the period of the project.

- Create ad-hoc material depending the event to attend by different partners (industrial, scientific, more focused on ports, on environment, on IoT...)

7.5. Publications

The **PIXEL** Consortium is committed on publishing the results of its findings in peer-reviewed journals as well as top-notch scientific and technical conferences in the field. To that end we are targeting Q1 scientific journals (the top 25% journals in the field), with occasional publications in Q2 journals (the top 50%).

So far, **PIXEL** published some of our preliminary work in the journal Environmental Monitoring and Assessment (Q2) (Springer). The journal publishes technical developments and data which stems from environmental monitoring campaigns, principles in the design of systems for pollution monitoring, and the use of monitoring data in assessing environmental impact and pollution risks.

One **PIXEL** member (P08 MEDRI) has published in this journal a paper entitled **"Model of calculating a composite environmental index for assessing the impact of port processes on environment: a case study of container terminal",** describing the development of a composite index for assessing the environmental impacts of a container terminal located in the port of Rijeka (Croatia). This item has been tagged with the identifier #S.E.1 in our Dissemination Matrix.

PIXEL will keep on building on the published results and will improve the methodology in several ways. It will include the broadening of the scope by including other actors in addition to terminals, such as ships and port authorities.

In addition, **PIXEL** will address several types of cargo including containers, liquid bulk, dry bulk, petroleum products, etc. Some of the technical issues relating to weighing the environmental indicators, which is an extremely important issue when developing any kind of composite indicator, will also be improved by **PIXEL**.

Finally, since the paper addresses just one port terminal, the indicators used were site-specific. Under **PIXEL** a universally applicable index will be developed, and the number and type of indicators will be re-evaluated and revised considerably. As the project progresses we plan on publishing several other papers on the Port Environmental Index (PEI) as well as other findings on environmental impacts of port processes (emission inventories of ports, dispersion modelling of pollutants in port areas, waste management practices in ports, etc.). In addition to scientific publications, we plan on publishing several white papers and distribute them through technical journals aimed at port operators, environmental consultants, regulatory agencies, etc.

7.6. Participation at events

PIXEL Consortium is willing to share the concepts of the project and the outcomes of its works to the broadest audience.

One of PIXEL members (P13 GPMB) has initiated meetings with the Green Marine Association in Québec (Canada) in order to understand the incentives of North American ports and stakeholders to promote

environmental-friendly behaviours. The Green Marine program should be one of the important inputs for the definition of PEI as there are more than 140 participants sharing their experiences since 2008.

Taking profit from its attendance to the ports workshop of the Atlantic Corridor organised by EU (DG MOVE) in Algeciras, GPMB (P13) has described the objectives of PIXEL. This action was undertaken prior to the official start of the project (during the GA closing), but the Consortium feels appropriate to include it as an effective dissemination action indeed. This item has been tagged with the identifier #I.T.1 in our Dissemination Matrix.

Later on, one member of the PIXEL Consortium (Michel Le Van Kiem, from P13 GPMB), travelled to Quebec to expose PIXEL to the Port of Quebec and Green Marine Association. This meeting, considered as an Industrial Dissemination action has lead the Consortium to new ideas regarding the approach of our PEI, while showing the benefits of PIXEL for European small and medium ports to some very active entities with regard to environmental impact for ports.

Port of Québec is one of the co-founders of the Green Marine set of indicators. In order to shape a universal PEI, GPMB's role is to learn from their Canadian colleagues and then to spread this knowledge to the whole PIXEL project.

Green Marine is a voluntary environmental certification program for the North American marine industry. It is a rigorous, transparent and inclusive initiative that addresses key environmental issues through its 12 performance indicators:

- For shipowners: aquatic invasive species, cargo residues, garbage management, oily water, pollutant air emissions (NOx), pollutant air emissions (SOx & PM).
- For ports & terminals: community impacts, dry bulk handling and storage, environmental leadership, prevention of spills and leakages, waste management.
- For all stakeholders: greenhouse gas emissions, underwater noise. Participants are shipowners, ports, terminals, Seaway corporations and shipyards based in Canada and the United States. The program encourages its participants to reduce their environmental footprint by taking concrete actions.

This item has been tagged with the identifier #I.E.1 in our Dissemination Matrix.

7.7. Dissemination Matrix update

The current status of the Dissemination Matrix, at the moment of the submission of this deliverable, is the following:

		ICT & IoT			Transport & Logistics			Environmental & PEI	
	id	Description	Partners	id	Description	Partners	id	Description	Partners
SCIENTIFIC DISSEMINATION EVENTS				#S.T.1	DocksTheFuture Workshops with Experts	XLAB, PRO, CERTH	#S.E.1	Paper in "Environmental Monitoring and Assessment"	MEDRI
INDUSTRIAL DISSEMINATION EVENTS				#I.T.1	Workshop of the Atlantic Corridor - EU (DG MOVE) - Algeciras	GPMB	#I.E.1	Presentation of PIXEL to Port of Quebec and Green Marine	GPMB

	id	Description	Partners
VIRTUAL PRESENCE	#VP.N.1	First release of the website of PIXEL http://pixel-ports.eu/	UPV, IPEOPLE
	#VP.N.2	Publishing in the website the promotional video of PIXEL	UPV, IPEOPLE
	#VP.N.3	Introductory video to PIXEL done by Coordination	UPV

Figure 6. Dissemination Matrix (M6 of the project)

8. Conclusions

8.1. Global conclusions

The first dissemination reporting period of the project has been marked by the creation of initial content and definition of goals and scope rather than executing on-field actions. It is highly due to the fact of the moment of the project itself. In the month 6 of its execution, the main actions that have been carried out are related with use-cases definition, requirements specification, market study and setup of the whole working environment. Only the last month of the project has been devoted to technical activities and, by far, it is still too early to have substantial content to be spread (from academic and business point of view). Only one paper was published about the conceptual basis that will be considered to develop our PEI. Additionally, few industrial activities were observed and attended in the first months, representing an advance of the events attendance that will be performed later during the project.

Nonetheless, it has been a very busy period for Dissemination and Communication **team:**

On the one hand, this document has been agreed upon. This is not a minor thing, as D9.3 is intended to be a reference deliverable throughout the project, providing guidelines and timelines to the partners when tackling Dissemination action in every regard.

On the other hand, the Virtual Presence of the project has been considerably boosted by creating and enriching both our social media accounts and our website. All the PIXEL Consortium has worked together in establishing a common baseline and message to transmit through all our channels, that will be re-visited periodically as the project will be advancing. At the same time, several multimedia content such as presentation videos, dissemination supporting material (poster, leaflet…) were created to enhance the future PIXEL impact and extent. Looking at the report on Virtual Presence, and taking into account the moment of the project, the performance can be catalogued as successful, creating a good image among different communities and continuously generating content in several spaces.

Finally, one of the most important activities in this regard has been the interaction and joint work with the CSA DocksTheFuture and the other EC-funded projects (Ports of the Future Projects Network). A joint dissemination action has been established and common events and activities will be carried out looking forward a thriving collaboration among all the projects.

To sum up, we have hereby elaborated a Communication Strategy, that should serve as the basis for a successful forthcoming Dissemination and Communication. There are two more planned Dissemination reports during the lifetime of the project (M18 and M36) that will follow/update this strategy. Thus, based on the present report, related activities will be assessed and improved for the sake of PIXEL.

8.2. Provisional schedule

In this section, PIXEL Consortium indicated the events and communication actions that are going to undertake during the next few months. The idea is to make this (as well) a "live" document, updated at every new iteration (report) with the planning of the forthcoming period.

There is no previous information with what work over, due to this deliverable being the first regarding Dissemination. However, in section 0, the report of the first 6-months period of the project has been included.

The following table shows the planned events and bold communication actions to be performing during the next "dissemination reporting" period. According to PIXEL workplan, the next update will take place on M18 (October, 2019), so the following table is covering the tentative schedule for PIXEL members during the next year:

Table 15. Provisional schedule for next «dissemination reporting period»

2018	Date
Continuous update of the website – According to schedule (section 4.2.3)	Continuous
Continuous joint action with CSA and the other Port of the Future Projects	Continuous
Continuous posting content in social media - According to schedule (section 4.2.3)	Continuous
Attendance of Ports of the Future Network event with Experts – Port of Leixões	29-30 October
ALICE ETP One Belt One Road event – Athens	6 November
2019	
Continuous update of the website – According to schedule (section 4.2.3)	Continuous
Continuous joint action with CSA and the other Port of the Future Projects	Continuous
Continuous posting content in social media - According to schedule (section 4.2.3)	Continuous
Connected Smart Cities Conference (CSCC), Brussels (Belgium)	January 2019
Update of the communication toolkit (Support Material: Leaflet and Poster)	January/February
DocksTheFuture Mid-term conference	March/April
Joint Organisation Collaborative days – With Ports of the Future Projects	March/April
FIWARE Global Summit	May 2019
ESPO Conference 2019	May/June
IoT Week 2019	June 2019
First Technical Workshop of PIXEL	June 2019
FIWARE Global Summit	May 2019
GreenPort Congress 2019	October 2019
Sardinia 2019 - International Waste Management	October 2019

It is worth to mention that this is a flexible document. Final dissemination actions can differ to the events and actions identified here now. This is the materialisation of a strategy into particular items, but PIXEL Consortiums keeps the right to modify it according to the evolution of the project, market or technical trends or for any other particular reason.

References

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H2020 Online Manual http://ec.europa.eu/research/participants/docs/h2020-funding-guide/index_en.htm

Communication and Visibility Manual for European Union External Actions http://ec.europa.eu/europeaid/work/visibility/index_en.htm

Appendix A - Questionnaire to the PIXEL ports

Appendix B - Questionnaire to the PIXEL partners