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**Deliverable 7.1**  
**Dissemination, Communication and**  
**Data Management Plan**

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1.0	Final version	ICCS

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## Executive Summary

Deliverable D7.1 “Dissemination, Communication and Data Management Plan” is the outcome of the work that has been conducted so far within Task 7.1: Dissemination of the UPTIME Solution, Task 7.2: Awareness Creation and Community Building and Task 7.3: Demonstration to Potential Future Users since the beginning of the project, among other activities. In addition, D7.1 constitutes the strategic document in which all project communication activities are defined with specific timelines, responsibilities and measured results.

D7.1 defines the main elements of the project dissemination & communication plan that is to be followed by the consortium management structures and partners throughout the lifetime of the project. These elements include the identification of target groups, the definition of main messages for the identified target groups and the communication channels to pass these messages to the target groups. The plan assigns relevant partners to produce dissemination & communication material and to undertake specific activities along with specific timelines and responsibilities. An additional part of the dissemination & communication roadmap is related to dissemination project activities such as workshops and linking with related projects, which also offer great communication opportunities. D7.1 also documents the data management plan, based on the expected available data and project outputs.

Evaluation and reporting is an important part of dissemination & communication activities. To this end, we define the main Key Performance Indicators (KPIs) in order to monitor and evaluate the effectiveness of the planned activities along with reporting responsibilities. We note that dissemination & communication is a continuous activity that exceeds the duration of the project.

In order for the dissemination & communication strategy to achieve its listed objectives, all partners commit to undertake the activities. For this reason, the project has set up a communication team to guide the dissemination & communication activities and to ensure the quality of the dissemination & communication, in terms of forms and content. The dissemination & communication strategy of the project will assign responsibilities to partners according to their domain of expertise and existing liaisons in order to achieve the optimum results in terms of communication.

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# 1 Introduction

The key objectives of WP7 are to set up concrete initiatives to promote UPTIME, diffuse its results and prepare the market deployment. In this context, the consortium is setting up the needed dissemination & communication means to attract and interact with a wide audience, including stakeholders from both the academic and industrial sectors, and communicate the project results in a variety of activities and actions.

The dissemination & communication activities are expected to ensure that the project's advancements are widely diffused to the intended targeted audiences with appropriate mechanisms in a timely manner, and that the key stakeholders for the project's exploitation and market update are early engaged and actively participating to the various project's implementation phases. A well-defined dissemination & communication plan is necessary for becoming a guide that will lead the consortium dissemination & communication efforts to the maximum level, taking into account existing capabilities, resources and budget constraints, as well.

In the dissemination, communication & data management plan, we define the target groups, responsibilities at the project, partner and individual levels along with the various communication & dissemination channels to be used. A set of Key Performance Indicators (KPIs) is also defined in this document for monitoring and evaluating the communication activities. Timelines and responsibilities for the production of the project communication reports are also defined.

In order for the dissemination & communication plans to achieve their listed objectives, all partners commit to undertake the activities as follows:

- BIBA is responsible for general communication. BIBA will implement the website, create the social media accounts, and lead a general role for the guidelines towards communication and the validation of the content disseminated
- ISADEUS is the primary point of contact for awareness creation and community building. ISADEUS is responsible for the organisation of focused workshops and linking activities with related projects. ISADEUS has shared responsibility for community creation and management, including promotion of the UPTIME Solution with potential new customers, and refinement and enrichment of the UPTIME Product Evolution Roadmap, as well as solutions convergence analysis.
- ICCS is responsible for the overall management of all scientific dissemination activities including the organisation of scientific workshops and special sessions in conferences.
- RINA is responsible for demonstration of UPTIME to potential future users.
- SUITE5 is responsible for managing the data resulting from the project.
- MEWS is responsible for the Deployment Methodology for New Customers. MEWS has shared responsibility for community creation and management.

The remaining of the document is structured as follows:

- Section 2 describes our general communication strategy and the tools that we will use to implement it.
- Section 3 provides an overview of the scientific dissemination plan and outlines its phases.
- Section 4 provides an overview of the community building & awareness creation plan and outlines its phases.
- Section 5 describes the plan to demonstrate UPTIME to potential users.
- Section 6 presents the data management plan.

- Section 7 provides the KPIs for the evaluation of the dissemination, communication and data management plan and defines the tasks for the production of annual reports based on communication activities and results.
- Finally, in Section 8 we conclude the document.

## 2 General Communication Strategy and Tools

### 2.1 General communication objectives

The UPTIME communication plan is the key strategy paper for all awareness creation and community building activities within the project. It defines a clear strategy in terms of responsibility, timing, tools and communication channels, as well. This plan is based on best practices and guidance, available in [2], [3], [4] and [5]. The communication plan is driven by the following communication objectives:

- COMM.OBJ. I: To create awareness of the project among the full range of potential adopters / users in the general public.
- COMM.OBJ. II: To provide a clear view of the project’s concept, goals and results by formulating adapted key messages, and preparing communication material.
- COMM.OBJ. III: To create an active community of potential users and collect feedback to be taken into account by the project's activities.
- COMM.OBJ. IV: To prepare the ground for the exploitation of project's results.
- COMM.OBJ. V: To support targeted dissemination of the project’s results.
- COMM.OBJ. VI: To foster the wide adoption of the project’s results in industry.


Communication Mechanisms	UPTIME Phases	Phase I: Raise Awareness (M1-M9) <i>Comm. Obj. I, II, III, V</i>	Phase II: Diffuse Knowledge (M10-M18) <i>Comm. Obj. I, II, III, V</i>	Phase III: Communication Culmination (M19-M36) <i>Comm. Obj. I, II, III, IV, V, VI</i>
(C1) UPTIME Project Website		C1.I) Design & Development of an intuitive and responsive project’s web site; Search engine optimization	C1.II) Regular update of the website content; Watch website’s analytics to measure impact and provide content of interest	C1.III) Regular update of the website content; Clear visibility of results, demo / application material in an interactive way
(C2) Social Media Presence		C2.I) Establishment of presence in:  Reproduce relevant content and monitor relevant hashtags; Upload public material; Follow influencers of the domain; Engage with other projects and initiatives	C2.II) Promote the UPTIME outcomes and events; Interact with followers to get feedback; Answer on comments and private messages on the various channels; Upload public material; Reproduce relevant content and monitor relevant hashtags	C2.III) Promote the UPTIME outcomes and events; Interact with followers to get feedback; Answer on comments and private messages on the various channels; Upload public material; Reproduce relevant content (more sporadically)
(C3) Traditional Media		C3.I) Press release to announce the project’s launch	C3.II) Press releases to announce the significant events / results	C3.III) Press releases to promote the business case of the UPTIME results
(C4) Communication Material		C4.I) Design logo and project identity; Prepare project factsheet, brochure, banner, e-Newsletter and promo video	C4.II) Prepare revised brochure, banner and frequent releases of e-Newsletter; Publish blogs / news in EU instruments (e.g. Cordis News, research*eu magazines etc.)	C4.III) Prepare final brochure, banner, frequent releases of e-Newsletter and video demonstrators; Publish blogs / news in EU dissemination instruments

Figure 1. UPTIME Communication Plan Phases

In Phase I Raise Awareness, we will capture and consolidate Industrial Partners Business Requirements list (T4.2, T5.2, T6.2), highlighting common and specific expectations. Moreover, we will enrich the previous list with New Potential Customers Additional Business Expectations (T8.1). Further, we will design & develop an intuitive and responsive project’s website and establish search engine optimization strategies. We will establish the presence of UPTIME in social media by reproducing relevant content and monitoring relevant hashtags, uploading public material; following influencers of the domain; and engaging with other projects and initiatives.

In Phase II Diffuse Knowledge, we will embark on community creation and management:

- Setup of all necessary means (e.g. website, forum, blog, newsletter...)



- Promote UPTIME Solution with Potential New Customers
- Refine and enrich UPTIME Product Evolution Roadmap
  - System testing and corrections within the frame of the 3 business cases
- Capture of Non conformance and issues
- Solutions convergence analysis

RINA will lead the preparation of demos to ensure a high credibility of UPTIME's Value Proposition.

Phase III - Communication & Culmination is related to continuous monitoring of results, as well as, reporting procedures and responsibilities. This feedback will be used for undertaking corrective actions based on the predefined set of KPIs. The adoption methodology will be elaborated in year 3 to take into account concrete feedbacks from our industrial use cases.

## 2.2 Target Groups

In marketing and advertising, a target audience *"is a specific group of people within the target market at which a product or the marketing message of a product is aimed at"* [6]. The people that form this group are defined by the product or message, and could be for example a certain age group, gender, type of work, educational level etc.

The identification and profiling of the targeted audience is the first step for any communication plan. After the identification of the target audience, the second step is the definition of messages that are going to be used to get through the main messages. After the identification of the target groups and the definition of messages, the selection of the most effective communication channels to use follows. Table 1 describes these main groups and provide specific action plans for communicating the project activities and results.

Table 1. Target Groups

Target Group	Description	Tools & Channels	Objectives
A – Manufacturers, Industry 4.0 Stakeholders	Individuals, teams, R&D departments, manufacturers of various scales that are part of the white goods, aviation, packaging industries or any other industry in need of predictive maintenance solutions.	<ul style="list-style-type: none"> <li>- Website, newsletter, social media, press releases, marketing material</li> <li>- Demo workshops, webinars</li> </ul>	<ul style="list-style-type: none"> <li>- Utilisation of project's results in everyday operations</li> <li>- Enhance industrial innovation by blending with in-house artefacts</li> <li>- Training on project's outcomes</li> <li>- Participation in the project's events</li> <li>- Secure the capture of the requirements and of their update</li> <li>- Validate the UPTIME capabilities against the requirements</li> </ul>
B – IT Industry Players	IT companies, web entrepreneurs, software engineers of solutions for the manufacturing domain	<ul style="list-style-type: none"> <li>- Demo workshops, webinars</li> </ul>	<ul style="list-style-type: none"> <li>- Participation in project's events</li> <li>- Exploitation of project's open source results</li> <li>- Inspiration for new ideas and applications</li> <li>- Identify new possible partnerships</li> </ul>
C – Industry Associations & Technology Clusters	European initiatives and clusters (like FIWARE, BDVA), research communities, associations, federations (like IMS, EFFRA, IFIP, IEEE)	<ul style="list-style-type: none"> <li>- Newsletter, press releases, marketing material</li> </ul>	<ul style="list-style-type: none"> <li>- Inclusion of project's results to collaborative research activities (roadmap, white papers...)</li> <li>- Dissemination of project's results to their members</li> <li>- Bilateral participation in events for knowledge exchange</li> </ul>
D – Factories of the Future Programme Stakeholders	Participants, project partners and relevant stakeholders active in the H2020 projects funded under the FoF programme	<ul style="list-style-type: none"> <li>- Website, newsletter, social media, press releases</li> </ul>	<ul style="list-style-type: none"> <li>- Identification of common topics</li> <li>- Synergies and collaborations for results promotion</li> <li>- Enhancing innovation through results combination</li> <li>- Co-organisation of events</li> </ul>
E – Researchers and Academia	Individuals engaged in research initiatives and/or working in research/academic institutes	<ul style="list-style-type: none"> <li>- Website, scientific dissemination</li> </ul>	<ul style="list-style-type: none"> <li>- Further advance the project's research</li> <li>- Extension / reuse of the project's innovative technologies to other application domains</li> <li>- Inspiration for future research initiatives based on the project's concept and results</li> <li>- Participation in the project's events</li> </ul>

## 2.3 Communication Governance and organization

In order to oversee and guide the dissemination and communication activities, the project has set up a communication governance team comprising one representative from BIBA (the coordinator), ISADEUS (WP7 leader) and ICCS (scientific dissemination leader). This team serves as the primary Point of Contact (POC) for all communication activities (Table 2). Regular meetings via electronic means will be arranged frequently in order to ensure that the objectives of the various communication efforts are met.

Table 2. UPTIME Communication & Dissemination Governance Team

Partner Name	POC Name	POC e-mail
BIBA	Karl Hribernik	hri@biba.uni-bremen.de
ISADEUS	Yves Keraron	yves.keraron@isadeus.fr
ICCS	Alexandros Bousdekis	albous@mail.ntua.gr

## 2.4 Communication tools

In this section, we describe the main dissemination & communications tools and channels that the project will utilise. The UPTIME communications channels will serve as means to demonstrate tangible project achievements by making use the project internal resources as well as resources provided by EC.

A database will be created, where relevant events (exhibitions, conferences, workshops, journal's/magazine's CFPs) during the lifetime of the project will be stored. For each event, a partner will be responsible to control the project's contribution, while a detailed work plan will be foreseen for each event. Due to variety of the nature, background, experience and field of the members of the consortium, we are confident in reaching a very broad audience not only in number, but also in a very heterogeneous set of profiles. Moreover, we are planning to organize two (2) UPTIME scientific workshops targeted to the scientific and Factory of the Future research and industrial communities with the aim to present the project's results and outcomes, as well as to exchange ideas and experiences (best practices and lessons learned) with other experts from academia and industry. In conjunction with the workshops, predictive maintenance concertation meetings will take place, making the results obtained available to the Factory of the Future sectors and software industry in Europe for facilitating knowledge and experience sharing. The consortium members commit to provide contributions to the following activities: (a) Exploitation of synergies / technical concentration: participation to workshops, contribution to Working Groups; (b) Joint activities for exchange, dissemination and training. The results of this task will be documented in D7.2a,b. "Dissemination, Awareness Creation and Communication Kit".

### 2.4.1 Website

The UPTIME project website, accessible via [www.UPTIME-h2020.eu](http://www.UPTIME-h2020.eu), is one of the key communication tools. A screenshot of the project homepage is shown in Figure 2. It serves as a public window, in which the project communicates relevant information about its goals, progress, etc. The website also includes features like search and article categorization for improved content discovery. As another means for increasing communication between the consortium and third parties, a news section is also maintained as a section within the webpage. News posts will comprise events and news in general as well as blog posts related to the project, including more extensive descriptions about project

achievements and demo versions. Additionally, the news section may serve as a means of increasing the traffic of the page and a reason for visitors to check back the website at a later stage.

The website has been developed and will be managed by BIBA. There is a dedicated page for the distribution of the UPTIME newsletters where users can register to receive the periodical newsletter regarding project updates and more. The registration process is very simple and it is completed once the visitor inserts an e-mail address in the form that is located inside this dedicated page. This page also allows the visitor to access a complete archive of all newsletters produced by the project in a downloadable form (PDF).

The UPTIME website will also deploy mechanisms for easily sharing content via email and the social media; easily accomplished with a click of a button located under the main section of each post and page. The presence of the project on key social media websites (e.g. Twitter) is considered critical as it allows the engagement of large audiences who consistently check in their social media profiles. Links to the project's social accounts exist on the header of the website and are visible throughout navigation.

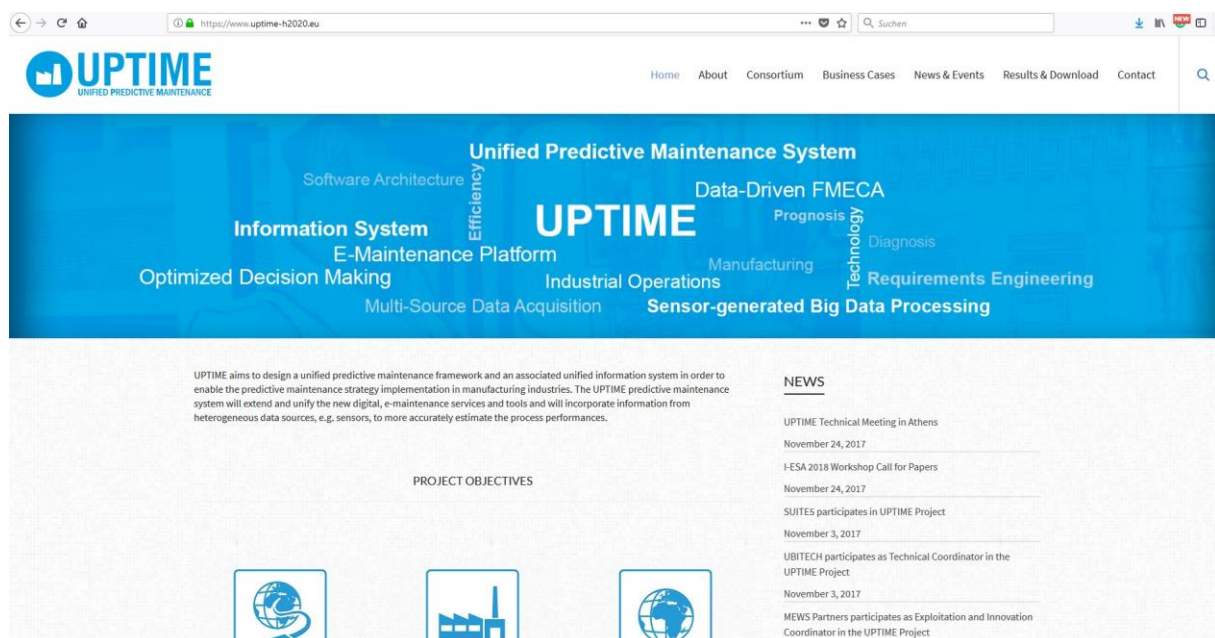


Figure 2. UPTIME Project Website

## 2.4.2 Newsletters

6 Periodic newsletters will be produced during the project life, providing news, articles, and in-depth information about the project progress and outcomes, and any other relevant information that applies at the time of the publication. The newsletters will present the several activities undertaken by UPTIME, describing the project developments, the deliverables' findings and the results that will be reached step-by-step, and they will provide suggestions coming from the project's meetings and the partners' collaboration.

The process of the newsletter production will be based on the following steps:

- ISADEUS will design the newsletter template.
- All partners will provide suggested content for the newsletter to ISADEUS.

- ISADEUS will review/edit and develop the final draft version that will be sent to BIBA.
- BIBA will review/edit and approve the content of the issue and provide authorisation for publication.
- All partners will disseminate the newsletter in National and International interest groups.

The newsletters will be produced in **English**. Language should be clear and as simple as possible, in order to be attractive to readers and easily understood also by non-technical experts. When available, articles will be enriched by relevant photos and images.

Graphically, the visual design will be arranged to be attractive, and conveying a strong recognition value, based on the logo and colours already chosen at the beginning of the project to characterize UPTIME.

All the newsletter's issues will contain at least the following elements:

- The UPTIME logo and logos of all the project's partners.
- The project details, i.e., start/end date and project duration, the specific HORIZON call and the Grant Agreement reference, the budget and EU funding.
- The web address of the UPTIME website.
- The contact details of the UPTIME project.
- The standard disclaimer for the HORIZON Programme.

The newsletters will be mainly released electronically (Table 3), through the UPTIME website to a wide audience of all target groups and also via all partners' existing websites. Newsletters will be printed in a number of hard copies, and distributed in occasion of major events (e.g. conferences, workshops) participated by the project's partners, and in any other dissemination opportunity.

*Table 3. Newsletter release plan*

Newsletter Issue	Publication Date
UPTIME Newsletter #1	2018 Q3
UPTIME Newsletter #2	2019 Q1
UPTIME Newsletter #3	2019 Q3
UPTIME Newsletter #4	2020 Q1
UPTIME Newsletter #5	2020 Q2
UPTIME Newsletter #6	2020 Q3

### 2.4.3 Social Networks

The consortium recognizes the significance of spreading the progress of the project to a wider community. On this line and in order to increase project visibility and create room for exchange of experiences, among professionals and stakeholders we will create a LinkedIn group where the members of the consortium may exchange ideas and knowledge not only between them but also with the greater scientific and industrial community.

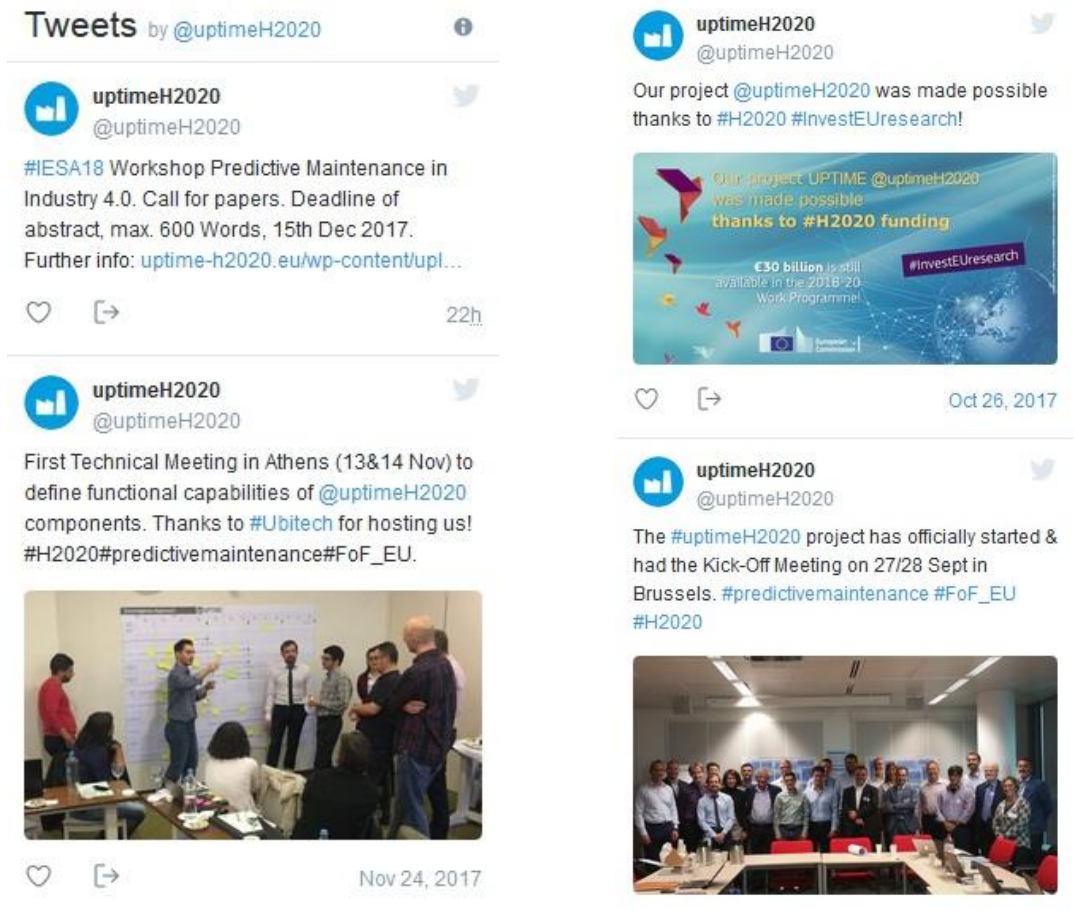


Figure 3. UPTIME Twitter

It becomes imperative for all project partners to invite stakeholders in this group and communicate UPTIME advances within this group. Additionally, to the LinkedIn group, a Twitter account has also been created. The UPTIME twitter account, [@uptimeH2020](https://twitter.com/uptimeH2020), is considered as essential, especially during workshops and conferences, where the activity of the consortium is advantageous to be populated instantly; the use of hashtags will also allow our vision to reach more people. Figure 3 shows a screenshot of the actual UPTIME Twitter.

#### 2.4.4 Press Releases

Local press is another communication channel that will be used in the project. All partners will put additional effort to release the project concept, scope, objectives and expected outcomes in local press in partners' countries. The communication governance coordinates the creation and dissemination of press releases in English. Press releases will be prepared between M1 and M9 to announce the project's launch, M18 to announce intermediate results and M36 to promote business cases and the final outcomes of UPTIME. All partners may translate the press releases in their local language. Press releases will be posted to the project website (Figure 4).



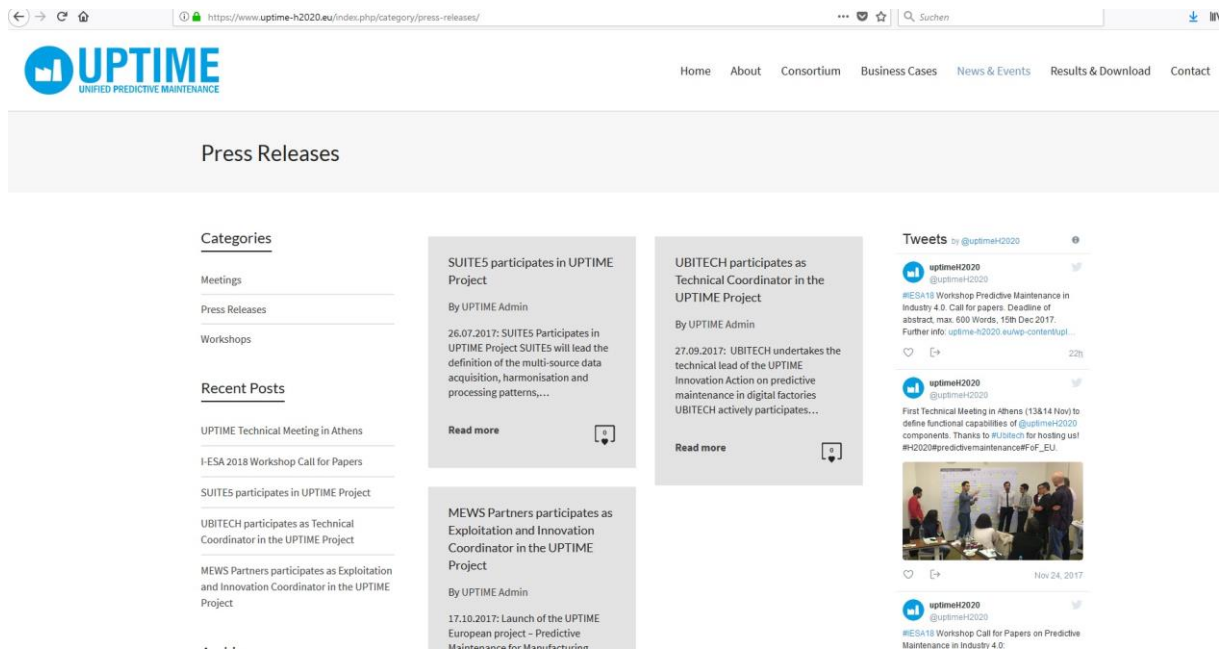


Figure 4. UPTIME Project's Launch Press Releases via Project Website

## 2.4.5 EC Communication Mechanisms

To pursue communication and maximum networking with other ongoing related activities, we will make maximum use of the EC supported communication mechanisms, such as publication of project information on the official sites of EC. In addition, networking activities organized by European Commission are included in the EC communication mechanisms.

CORDIS Wire<sup>1</sup> enables users to advertise events or publish press releases relevant to Research, Technological Development and Innovation activities on the CORDIS News and Events service. UPTIME will periodically share significant project milestones that would be interesting for the community. CORDIS Wire will help us publicize important news and events and categorizing it properly per programme or country or subject so that we can get better online visibility.

As indicated in Table 1, UPTIME representatives will participate in European initiatives and clusters, research communities, conferences, associations and federations. European Factories of the Future Research Association (EFFRA) and the Manufature conference are of outmost interest for the UPTIME consortium. It is planned that the project will participate in such events with the aim to be informed about the latest advancements and to exchange knowledge. In addition, this communication channel will enable the dissemination of project's results to their members and participants. Until now, representatives of the UPTIME project attended Manufature 2017 that took place in 24-25th October 2017 in Tallinn of Estonia.

<sup>1</sup> [http://cordis.europa.eu/home\\_en.html](http://cordis.europa.eu/home_en.html)

### 2.4.6 Poster

The UPTIME poster will be prepared by MEWS and released by January 2018. A second version of the poster will be released after the end of the development phase. The poster will provide information about:

- What is UPTIME: brief introduction to the UPTIME project and proposed solutions
- Overview: including expected results of the project
- Partners and project details: including duration, Grant Agreement number, Call, budget, and contact details.
- Benefits: segments of society and foreseen benefits
- Conceptual diagram of the UPTIME solution

### 2.4.7 Presentation

The UPTIME presentation is a document with the aim to be used by the project partners to provide an overview of the project scope, objectives and expected results in various events (e.g., workshops, conferences, etc.).

A first version of the UPTIME presentation will be developed by BIBA by January 2018. The presentation will include at least the following content:

- What is UPTIME
- Partners
- Objectives
- Concept Diagram
- System Architecture
- Use cases
- Contact details

### 2.4.8 Brochure

The UPTIME brochure will serve as a communication means to get through the main message of the project. The brochure will be available in both as a soft copy in the UPTIME website and as hard copies to be disseminated by the partners in any dissemination event. The brochure provides information about:

- Concept: Brief introduction to the UPTIME project and the architecture
- Overview: including expected results of the project
- Partners and project details: including duration, Grant Agreement number, budget, and contact details.
- Benefits: segments of society and foreseen benefits
- Conceptual diagram of the UPTIME solution

MEWS will prepare and release the project brochure by M7; updates will be issued following the project advancements through its lifecycle.



## 2.5 Participation in International Exhibitions

The participation in international exhibitions is a combined action that engages both dissemination and exploitation activities. Therefore, all project partners will seek any opportunity for participating in International exhibitions, based on existing experience and budget constraints. In fact, within UPTIME there is not any provision for participation in International exhibitions. Therefore, each one partner will make their own assessment for their participation in International exhibitions, based on company's business plans.

### 3 Scientific Dissemination Plan

#### 3.1 Scientific dissemination objectives

The dissemination activities will deal with the diffusion of scientific and technological knowledge generated within the context of the project, aiming to ensure both a mid- and long-term impact. The dissemination strategy to be applied in the project is aligned to the following objectives:

- DISS. OBJ. I: To ensure maximum visibility of the project in the target audiences via appropriate key messages.
- DISS. OBJ. II: To timely diffuse the scientific and technological knowledge generated in the project within and beyond the project's consortium.
- DISS. OBJ. III: To establish liaisons with other projects and initiatives for knowledge and innovation transfer.
- DISS. OBJ. IV: To engage the targeted audiences to get feedback and validate the project's results.
- DISS. OBJ. V: To attract potential users / clients and stimulate the appropriate market segments to support the project's exploitation strategy.

UPTIME Dissemination Mechanisms	UPTIME Phases	Phase I: Raise Awareness (M1-M9) <u>Diss. Obj. I, III</u> Activities' Intensity: Low Target Audiences: ALL	Phase II: Inform and Interact (M10-M18) <u>Diss. Obj. I, II, III, IV</u> Activities' Intensity: High Target Audiences: ALL	Phase III: Promote (M19- M36) <u>Diss. Obj. II, III, IV, V, VI</u> Activities' Intensity: High Target Audiences: ALL
(D1) Organization of Project Events		D1.I) Organization of workshops in scientific conferences	D1.II) Organization of workshops and special sessions in scientific conferences	D1.III) Organization of workshops and special session in scientific conferences, industry events & fairs
(D2) Participation to Conferences & Workshops		D2.I) Participation to events; Presentation of UPTIME project scope; Interaction with participants	D2.II) Presentation of UPTIME results to events	D2.III) Presentation of UPTIME results to events; Representation in demo sessions
(D3) Scientific Publications		D3.I) Publication of position papers / review papers in conferences	D3.II) Publication of methodology papers in conferences	D3.III) Publication of overall project's results in journals
(D4) Community Building / Engagement with Stakeholders		D4.I) Establishment of contact points; Liaison with scientific communities and networks; Promotion of project's communication material	D4.II) Validation of results with key stakeholders in events / online; Invitation to project's events	D4.III) Creation of network of potential scientific stakeholders
(D5) Collaboration and synergies with projects		D5.I) Synergies identification; Establishment of contact points; Exchange of ideas & intentions	D5.II) Periodic bilateral exchange of news & results, Joint presence in events	D5.III) Joint engagement in events / conferences
(D6) Internal Dissemination in partner's networks		D6.I) Project's links & news in partners' website, social media accounts, newsletters	D6.II) Inclusion of UPTIME results in partners' events	D6.III) Demonstration of UPTIME results in partners' premises; Training; Reuse of results
(D7) Standardization Contributions		D7.I) Registration / participation to relevant working groups; Alignment with existing standards	D7.II) Participation to working groups' telcos and events	D7.III) Participation to working groups' activities

Figure 5. UPTIME dissemination plan phases

Bearing in mind the above objectives, the UPTIME dissemination plan is based on three phases and outlines the tasks associated with each one phase (Figure 5). In Phase I Raise Awareness, we have been analysing the main objectives of dissemination, the target groups and the partners' responsibilities associated with the dissemination workload. We will define the dissemination tools and the means to pass through the project messages and results. This phase will be completed by M9. In Phase II Inform & interact, we will put in action a number of activities including organisation of scientific workshops, participation in International Conferences and linking UPTIME with National,

European and International related projects. In Phase III, we will strengthen the reach of our dissemination activities, by publishing results related to the overall UPTIME solution, the benefits it can bring to industrial applications and further research directions.

### 3.2 Scientific Workshops

The consortium is planning to organise at least two scientific workshops. The results of these workshops will be reported with the Deliverables D7.2a,b and relevant information will be also provided in the UPTIME website and newsletters. Overall management of this activity is performed by ICCS. Currently, one scientific workshop has already been planned for March 2018. The planned workshop will be organized by BIBA and ICCS and it will be a jointly organised workshop together with the Z-BRE4K project. The title of the workshop is: Predictive Maintenance in Industry 4.0: Methodologies, tools and interoperable applications. The Workshop aims to promote and encourage research and industrial efforts with the aim to cover a number of topics related to methodologies, concepts, architectures, tools and interoperable applications for predictive maintenance in the frame of Industry 4.0. The main goal of this workshop is to provide a forum for researchers and practitioners with diverse backgrounds to meet, exchange research and implementation ideas, and share experience and results regarding predictive maintenance within the Industry 4.0 paradigm.

### 3.3 Scientific publications

Scientific dissemination activities will also be carried out through publications in peer-reviewed journals by prioritizing open access journals. The link to these peer-reviewed publications will be uploaded on the project website, to facilitate the access for potential readers. In order to foster and leverage international cooperation in research and innovation, the consortium partners will participate in on going international discussions and workshops. Partners will grant open access to scientific journals, by following the specific provisions in the grant agreement.

Overall management of this activity is performed by ICCS. A first list of potential scientific journals has already been stored in an Excel-based internal database. The related journals that have been identified until now are:

- Computers in Industry
- IEEE Transactions on Industrial Informatics
- International Journal of Computer Integrated Manufacturing
- Expert Systems with Applications
- IEEE Intelligent Systems
- Industrial Management and Data Systems
- Journal of Intelligent Manufacturing
- Reliability Engineering & System Safety
- IEEE Transactions on Reliability
- International Journal of Intelligent Systems
- Computing
- Pervasive Computing

- Cyber Physical Systems (Taylor Francis)
- Industrie management
- International Journal of Distributed Sensor Networks

### 3.4 Scientific conferences

The scientific results of UPTIME will also be disseminated through presentations in scientific conferences and publication of papers in the conference proceedings. The link to these peer-reviewed conference proceedings will be uploaded on the project website, to facilitate the access for potential readers. In order to foster and leverage international cooperation in research and innovation, the consortium partners will participate in ongoing international discussions and workshops. These dissemination activities will be reported with the Deliverables D7.2a,b and relevant information will be also provided in the UPTIME website and newsletters.

Overall management of this activity is performed by ICCS. A first list of potential scientific conferences has already been stored in an Excel-based internal database. Similarly to the other scientific dissemination activities, this database will be updated throughout the lifetime of the project and partners will be assigned to them according to their field, interests, and project results. The aforementioned list of scientific conferences is shown in Table 4. For each conference, the dates and the place of the next event is reported as well as the submission deadline. There is also the website of the conference. The table is going to be updated with new events and more information regarding the existing ones.

Table 4. List of scientific conferences

Logo	Conference Name	Next Conference		
		Dates and Place	Submission Deadline	Conference Website
	Interoperability for Enterprise Systems and Applications (IESA)	19-23 March 2018 Berlin, Germany	23/11/2017	<a href="http://ies2018.ipk.fraunhofer.de/4941/">http://ies2018.ipk.fraunhofer.de/4941/</a>
	IEEE International Conference on Industrial Technology (ICIT)	20-22 February 2018 Lyon, France	15/10/2017	<a href="http://icit2018.org/en">http://icit2018.org/en</a>
	ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS)	9-12 April 2018 Porto, Portugal	Abstract: 29/09/2017 Full paper: 6/10/2017	<a href="http://iccps.acm.org/2018test/">http://iccps.acm.org/2018test/</a>
	CIRP Conference on Manufacturing Systems (CMS)	16-18 May 2018 Stockholm, Sweden	Abstract: 30/9/2017 Full paper: 31/12/2017	<a href="https://www.cirp-cms2018.org/">https://www.cirp-cms2018.org/</a>
	International Conference on Advanced Information Systems Engineering (CAISE)	11-15 June 2018 Tallinn, Estonia	Abstract: 24/11/2017 Full paper: 01/12/2017	<a href="https://caise2018.ut.ee/">https://caise2018.ut.ee/</a>
	IFAC Symposium on Information Control Problems in Manufacturing (INCOM)	11-13 June 2018 Bergamo, Italy	15/12/2017	<a href="http://www.incom2018.org">http://www.incom2018.org</a>

	IEEE International Conference on Systems, Man, and Cybernetics (SMC)	7-10 October 2018 Miyazaki, Japan	31/03/2018	<a href="http://www.smc2018.org/">http://www.smc2018.org/</a>
	International Conference on Through-life Engineering Services (TESConf)	1-2 November 2018 Cranfield, UK	-	=
	IEEE International Conference on Industrial Informatics (INDIN)	-	-	=
	Advances in Production Management Systems (APMS) International Conference	- Seoul, Korea	-	<a href="http://www.apms-conference.org/">http://www.apms-conference.org/</a>
	OTM/IFIP International Workshop on Enterprise Integration, Interoperability and Networking (Ei2N)	-	-	<a href="http://www.otmconferences.org/">http://www.otmconferences.org/</a>
	International Conference on Information, Intelligence, Systems, Applications (IISA)	23-25 July 2018 Zakynthos, Greece	-	=
	International Conference on Business Information Systems (BIS)	-	-	=
	IEEE International Conference on Business Informatics (CBI)	-	-	=
	Working Conference on Virtual Enterprises (PRO-VE)	-	-	<a href="http://www.pro-ve.org/">http://www.pro-ve.org/</a>
	IEEE Symposium Series on Computational Intelligence (IEEE SSCI)	8-21 November 2018 Bengaluru, India	15/06/2018	<a href="http://ieeessci2018.org/">http://ieeessci2018.org/</a>
	ACM International Conference on Distributed and Event-Based Systems	25-29 June 2018 Hamilton, New Zealand	Abstract: 21/02/2018  Full paper 26/02/2018	<a href="http://www.cs.otago.ac.nz/debs2018/">http://www.cs.otago.ac.nz/debs2018/</a>
	IEEE International Conference on Tools with Artificial Intelligence (ICTAI)	-	-	=
	International Conference on Service-Oriented Computing	-	-	=
	International Conference on Knowledge-Based and Intelligent Information and Engineering Systems	3-5 September 2018 Belgrade, Serbia	-	<a href="http://kes2018.kesinternational.org/">http://kes2018.kesinternational.org/</a>
	IFAC Workshop on Advanced Maintenance Engineering,	-	-	=

	Service and Technology (AMEST)			
	International Conference on Intelligent Systems in Production Engineering and Maintenance (ISPEM)	-	-	=
	International Conference on Dynamics in Logistics (LDIC)	-	-	<a href="http://www.ldic-conference.org/">http://www.ldic-conference.org/</a>
	IFAC Conference on Manufacturing Modelling, Management and Control (MIM)	28-30 August 2019 Berlin, Germany	31/10/2018	<a href="https://blog.hwr-berlin.de/mim2019/">https://blog.hwr-berlin.de/mim2019/</a>
	IFAC World Congress	13-17 July 2020 Berlin, Germany	-	<a href="http://www.ifac2020.org/">http://www.ifac2020.org/</a>

Currently, one conference paper has already been presented at the International Conference on Information, Intelligence, Systems, Applications (IISA) 2017 conference and the proceedings are in press. One more conference paper has already been submitted at the Interoperability for Enterprise Systems and Applications (IESA) 2018 conference.

### 3.5 Linking with Related Projects

UPTIME will link to other projects that have been funded under the same call in order to notify areas of synergies. Linking activities will be initiated primarily by the UPTIME Project Coordinator and supported by the UPTIME Decision Manager. An initial list of the projects mostly related to UPTIME is the following:

**Z-BREAK:** UPTIME shares similar objectives with Z-BREAK. The Z-Break solution comprises eight (8) scalable strategies at component, machine and system level. Among them the following four ones are highly relevant for UPTIME: (1) the prediction occurrence of failure (Z-PREDICT), (2) the early detection of current or emerging failure (Z-DIAGNOSE), (3) the prevention of failure occurrence, building up, or even propagation in the production system (Z-PREVENT), (4) the estimation of the remaining useful life of assets (Z-ESTIMATE).

**SERENA:** The SERENA project will build upon the needs for saving time and money, minimizing the costly production downtimes. The proposed solutions are covering the requirements for versatility, transferability, remote monitoring and control by a) a plug-and-play cloud based communication platform for managing the data and data processing remotely, b) advanced IoT system and smart devices for data collection and monitoring of machinery conditions, c) artificial intelligence methods for predictive maintenance (data analytics, machine learning) and planning of maintenance and production activities, d) AR based technologies for supporting the human operator for maintenance activities and monitoring of the production machinery status.

The SERENA consortium will demonstrate the proposed approach in different industrial areas, one of which is the same as the one used in UPTIME (white goods). The participation of the same partner in both projects will enable us to examine on-hands the inter-operability between developed solutions as well as their capability to synergistically deliver value to the end users.

**PreCoM:** The project will deploy and test a predictive cognitive maintenance decision-support system able to identify and localize damage, assess damage severity, predict damage evolution, assess

remaining asset life, reduce the probability of false alarms, provide more accurate failure detection, issue notices to conduct preventive maintenance actions. All 4 modules of the envisaged platform are relevant to the work performed in UPTIME: 1) a data acquisition module leveraging external sensors as well as sensors directly embedded in the machine tool components, 2) an artificial intelligence module combining physical models, statistical models and machine-learning algorithms able to track individual health condition and supporting a large range of assets and dynamic operating conditions, 3) a secure integration module connecting the platform to production planning and maintenance systems via a private cloud and providing additional safety, self-healing and self-learning capabilities and 4) a human interface module including production dashboards and augmented reality interfaces for facilitating maintenance tasks.

**PROGRAMS:** The main objectives of this project are to develop a model-based prognostics method integrating the FMECA and PRM approaches for the smart prediction of equipment condition, a novel MDSS tool for smart industries maintenance strategy determination and resource management integrating ERP support, and the introduction of an MSP tool to share information between involved personnel.

**PROPHECY:** PROPHECY will deliver and validate a PdM services platform, comprising: (i) A CPS platform optimized for PdM activities (PROPHECY-CPS), which will enable maintenance driven real-time control, large scale distributed data collection and processing, as well as improved production processes driven by maintenance predictions and FMECA activities. (ii) Novel Machine Learning and Statistical Data processing techniques for PdM (PROPHECY-ML), which will be able to identify invisible patterns associated with machine degradation and assets depreciation, while at the same time using them to optimize FMECA activities. (iii) Visualization, knowledge sharing and augmented reality (AR) services (PROPHECY-AR), which will enable remotely supported maintenance that can optimize maintenance time and costs, while increasing the safety of maintenance tasks. (iv) A PdM service optimization engine (PROPHECY-SOE), which will enable composition of optimal PdM solutions based on the capabilities provided by PROPHECY-CPS, PROPHECY-ML and PROPHECY-AR. Service optimization aspects will consider the whole range of factors that impact PdM effectiveness (e.g., OEE, EOL, MTBF and more). (v) PROPHECY will establish and expand an ecosystem of PdM stakeholders in the context of which UPTIME partners can establish collaboration and examine possible routes for joint work in the context of the running projects.

## 4 Community Building and Awareness Creation Plan

### 4.1 Objectives

The general goal of the Community Building and Awareness creation is to prepare the go-to-market and maximize the chances of success.

To achieve this high-level goal, 4 main objectives are defined:

- Make UPTIME visible to the industrial end-users
- Validate as much as possible the Value Proposition of UPTIME and the main hypotheses for the Business Model
- Define the UPTIME Roadmap which will describe how UPTIME offer will evolve to reinforce its competitiveness and attractiveness
- Create a structured portfolio of potential customers already involved in discussions about UPTIME deployment in order to generate business leads at the end of the project

Hence, the target groups for these activities are:

- Group A – Manufacturers, Industry 4.0 Stakeholders as future end-users (main focus)
- Group B – IT Industry Players as possible partners (secondary focus)
- Part of Group C – Industry Associations & Technology Clusters as possible re-disseminators and prescribers to industrial members (secondary focus)

Furthermore, the approach described below should be executed with agility and pragmatism by continuously adapting the activities according to the feedbacks gathered in order to reach these objectives.

### 4.2 General approach

An overview of the approach is described in Figure 6.

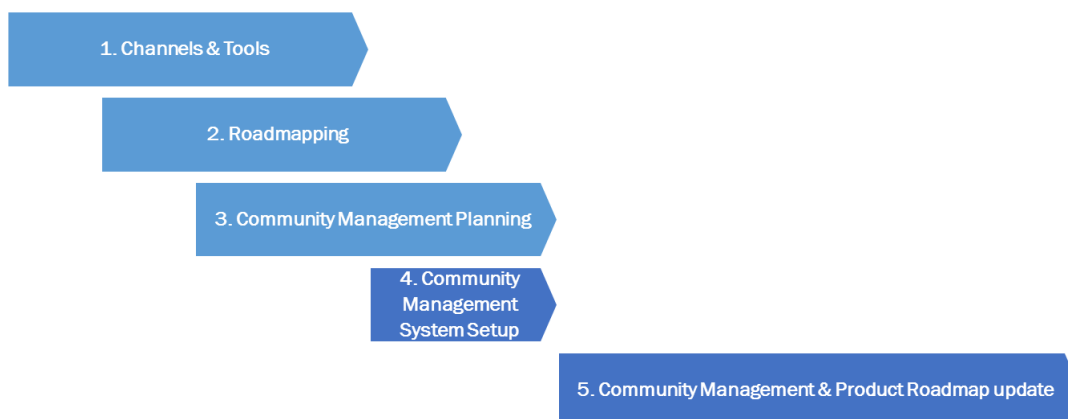


Figure 6. Community Building and Awareness Creation approach

The first three steps will be led by Mews Partners and the steps 4 and 5 by ISADEUS.



### 4.3 Detailed approach

This section describes the content of the main activities. A global action plan is presented in 4.3.6.

#### 4.3.1 Channels & Tools

This first step aims at identifying the most efficient channels and tools to promote UPTIME to the end-users and collect their feedbacks. The main activities will be:

- Review the channels & tools already listed in this document
- Benchmark other European Projects and other relevant approaches
- Evaluate the efficiency of the channels & tools and optimize the compromise

These activities will be led by MEWS with the active support of ISADEUS.

#### 4.3.2 Roadmapping

The objective of this second step will be to initialize the UPTIME Development Roadmap that best fits to the end-users needs. The main activities will be:

- Capture and consolidate Industrial Partners Business Requirements list (T4.2, T5.2, T6.2), highlighting common and specific expectations
- Enrich the previous list with New Potential Customers Additional Business Expectations (T8.1)
- Perform a Fit Gap analysis between Business Requirements & Expectations and UPTIME definition and Vision (T2.2)
- Determine the UPTIME Development Roadmap

These activities will be led by MEWS.

#### 4.3.3 Community Management Planning

This third step will focus on the organization and the planning of the Community Management, as described in the following:

- Define the Communities to consider (for example: awareness partners, privilege partners, clusters) and the corresponding value proposition of the Community Management & Services
- Setup an end-user database
- Precise the Mission and the detailed objectives of the Community Management
- Organize the coordination of the showcases workshops (M18 & M30) in order to engage the Communities and to enlarge them
- Define the KPIs to follow-up (e.g. number of members for each community, number of feedbacks, level of satisfaction...)

These activities will be led by MEWS with the active support of ISADEUS.

#### 4.3.4 Community Management System Setup

The purpose of this step is to finalize the preparation of all the necessary tools (website, newsletter, dashboard...), contents and processes in preparation to the launch of the Community Management.

The community management tools will be defined and progressively detailed further according the structure of the community and its requirements in order to support the processes of community management with efficiency:

- Use of the functions of the UPTIME Website: Contents edition and comments, blogs, newsletters, events, contact forms, analytics, links with generic and specific twitter accounts,
- Communication strategy on social networks, LinkedIn, groups creation,
- Management of the contents edition and channels towards the targets,

- Management of the feedback from the community: Analysis, sorting, redirecting for answers and actions,
- Use of the selected outcomes of Task 7.3 “Demonstration to Potential Future Users” to feed the website: events, videos of demonstrators,
- Awareness and basic training material publishing, webinars organization, ...

These means will be adapted according the lessons learnt as the project will progress.

These activities will be led by ISADEUS with the active support of MEWS.

#### 4.3.5 Community Management & Product Roadmap update

This last step, starting from M10, will aim to build Communities, raise awareness about UPTIME, collect feedbacks and update the Product Roadmap accordingly. At the end of the project, the Exploitation Plan will integrate the outcomes of the Community Management activities and make propositions to transform them into an action plan and a Business Development Roadmap.

Workshops, webinars, meetings will be organized to present the UPTIME solutions to the community. Feedback will be collected on possible issues, additional needs and requirements from the end-users in order to improve the solution. At least two showcases workshops will be performed at M18 and M30.

These actions will be realized with the contributions and supports of the partners of the consortium: industrials to share their experience of UPTIME, components providers for possible adaptation of their components to additional requirements, integrator for an extended, integrated and interfaced solution to new customers environments.

The outcomes of the workshops, webinars and meetings will be input to update the roadmap of the solution. Relevant KPI, focused on the achievements of the objectives listed in § 4.1 will be monitored to take decisions. These activities will be led by ISADEUS with the active support of the other partners.

#### 4.3.6 Action plan summary

Table 5 outlines the main activities regarding community management, responsible partners and estimated date of implementation.

*Table 5. Action Plan*

Activities	Step	Partner Responsible	Partner Contributor	When
Review the channels & tools	1	MEWS	ISADEUS, BIBA, ICCS	M5
Benchmark other European Projects	1	MEWS	ISADEUS	M6
Optimize the compromise about channels & tools	1	MEWS	ISADEUS	M6
Capture and consolidate Industrial Partners Business Requirements list	2	MEWS	FFT, MAILLIS, WHEMEA	M6
Collect New Potential	2	MEWS	RINA	M6-M8

Activities	Step	Partner Responsible	Partner Contributor	When
Customers Additional Business Expectations				
Fit Gap analysis	2	MEWS		M8
UPTIME Development Roadmap	2	MEWS	All partners	M9
Define Communities & Value Proposition	3	MEWS	ISADEUS	M7
Setup an end-user database	3	MEWS	ISADEUS, RINA	M8
Mission and detailed objectives	3	MEWS	ISADEUS	M9
Organize the coordination of the showcases workshops	3	MEWS	ISADEUS, RINA	M9
Define the KPIs to follow-up	3	MEWS	ISADEUS	M9
Community Management System Setup	4	ISADEUS	MEWS, BIBA	M8-M9
Community Management	5	ISADEUS	All partners	M10-M36
Product Roadmap update	5	ISADEUS	MEWS	As required, at least M30

## 5 Plan to Demonstrate UPTIME to Potential Future Users

As described in paragraph 2.2, there are different stakeholders target groups interested in applying the UPTIME results. In particular, for the demonstration of UPTIME results, the two main stakeholders target groups to be involved in the UPTIME show cases are reported in the table below:

*Table 6. Stakeholders target groups to be involved in the UPTIME demonstration results*

Target Group	Description
A – Manufacturers, Industry 4.0 Stakeholders	Individuals, teams, R&D departments, manufacturers of various scales that are part of the white goods, aviation, packaging industries or any other industry in need of predictive maintenance solutions.
B – IT Industry Players	IT companies, web entrepreneurs, software engineers of solutions for the manufacturing domain

These stakeholders will play an important role in the validation, dissemination and application of project results. In order to involve these stakeholders, even if specific actions should be tailored on the different Target Groups, a common approach should consider contacting the stakeholders personally and in their mother tongue. Just requesting the reference people to evaluate the potentialities of UPTIME project through informative materials in English, sent by email, is expected to have limited effect. As many of the stakeholders experience spamming on an almost daily basis, another email containing project descriptive material is expected to have limited response. An approach where some preliminary information is presented personally and the potential stakeholders can respond is expected to be more successful, especially when accompanied by an official recommendation from the Coordinator. However, basic information (in English) to be shared in local language is needed as an agreed starter kit to ensure that the proposed information is not biased.

Table 7 summarizes the actions to be performed to address each identified target groups.

*Table 7. Stakeholders target groups involvement actions*

Target Groups	Action to be done
A –Manufacturers, Industry 4.0 Stakeholders	<ul style="list-style-type: none"> <li>• Identify the group or the single expert on predictive maintenance solutions and production processes within the companies</li> <li>• Identify the already available contacts (potentially interested in UPTIME project) from task 7.2</li> <li>• Schedule with the identified contact a meeting (both physical and remote) to share in local language the informative material, previously agreed within the consortium, and focused on predictive maintenance solution providers and Manufacturers companies business needs: <ul style="list-style-type: none"> <li>○ Reduction of production cost;</li> <li>○ Improvement of revenues.</li> </ul> </li> <li>• If the contact shows to be really interested in the project, propose him/her to sign the Letter of Interest</li> </ul>

	<ul style="list-style-type: none"> <li>• Gather the signed letter (if possible) already during the first meeting or send it by email after the date and take care to collect it signed in the very next days</li> </ul>
B – IT Industry Players	<ul style="list-style-type: none"> <li>• Identify the area of the company responsible for the supply of IT solutions for Industry 4.0 framework</li> <li>• Identify the already available contacts (potentially interested in UPTIME project) from task 7.2</li> <li>• Schedule with the identified contact a meeting (both physical and remote) to share in local language the informative material, previously agreed within the consortium, and focused on the IT solution provider core business areas</li> <li>• If the contact shows to be really interested in the project, propose him/her to sign the Letter of Interest</li> <li>• Gather the signed letter (if possible) already during the first meeting or send it by email after the date and take care to collect it signed in the very next days</li> </ul>

### 5.1 Implementation action plan

Once identified the specific target groups contacts deriving from the activities done in Task 7.2 “Awareness Creation and Community Building”, the following actions will be performed in order to have their active involvement:

- A questionnaire addressing the stakeholder requirements, conditions and needs for predictive maintenance solutions will be distributed and analysed.
- As mentioned in section 4.3.3, two showcases workshop will be organized to demonstrate and disseminate and discuss, the UPTIME achievements with all stakeholders, having also as focus to overcome the barriers in the demonstrators and market upscaling:
  - 1st showcases workshop. This meeting will present the first UPTIME projects and its main first outcomes. This will be a great chance for the exploitation of the predictive maintenance solutions developed within UPTIME. Proposed date: M18.
  - 2nd showcases workshop. This meeting will present relevant updates on the UPTIME project to the selected stakeholders target groups. This will be a second chance for the exploitation with a set-up of demo live session of the predictive maintenance solutions developed within UPTIME. Proposed date: M30.
- Two webinars (internet conferences) will be organized:
  - First webinar. This webinar will present the progress and the intermediate results of UPTIME to all selected stakeholders. Proposed date: M25.
  - Second webinar. This webinar will present the final results of UPTIME, to all selected stakeholders. Proposed date: M35.

Table 8 summarizes the detailed actions to be performed to complete the implementation plan.

Table 8. UPTIME demonstration plan

Activities	Reference Task	Partner Responsible	Partner Contributor	When
Creation and management of potential future users database including contact list	Task 7.2	MEWS/ISADEUS	RINA Consulting, ICCS, SUITE5	From M1
Questionnaire preparation for End User requirement elicitation	Task 7.2	MEWS/ISADEUS	RINA Consulting, ICCS, SUITE5	From M1

Activities	Reference Task	Partner Responsible	Partner Contributor	When
Mail invitation before webinars or showcase workshop	Task 7.3	RINA Consulting	MEWS, ISADEUS, ICCS, SUITE5	3 months before the event (i.e. M15, M22, M27, M32)
Promotion of webinars or showcase workshops on social network	Task 7.2	ISADEUS	RINA Consulting, MEWS, ICCS, SUITE5	3 months before the event (i.e. M15, M22, M27, M32)
Preparation of the demo materials and questionnaire to be presented before and during the webinars	Task 7.3	RINA Consulting	MEWS/ISADEUS ICCS, SUITE5	From M1
Preparation of the live demo, demo materials and questionnaire to be presented during the showcase workshop	Task 7.3	RINA Consulting	MEWS/ISADEUS ICCS, SUITE5	From M1
Coordinate the webinars	Task 7.2	MEWS, ISADEUS	ISADEUS ICCS, SUITE5, RINA Consulting	M25,M35
Coordinate the showcase workshop	Task 7.2	MEWS, ISADEUS	ISADEUS ICCS, SUITE5, RINA Consulting	M18,M30
Collect web conference results	Task 7.3	RINA Consulting,	MEWS/ISADEUS ICCS, SUITE5	M25,M35
Collect showcase workshop results	Task 7.3	RINA Consulting,	MEWS/ISADEUS ICCS, SUITE5	M18,M30
Share webinars results with the potential future users via mail, website and social network	Task 7.2	ISADEUS	RINA Consulting, MEWS, ICCS, SUITE5	Within one month after event
Share showcase workshops results with the potential future users via mail, website and social network	Task7.2	ISADEUS	RINA Consulting, MEWS, ICCS, SUITE5	Within one month after event

## 6 Data Management Plan

### 6.1 Overview

In general, a Data Management Plan intends to make the project's research data 'FAIR', that is findable, accessible, interoperable and re-usable following the Horizon 2020 FAIR Data Management Plan (DMP) template<sup>2</sup>. In such a Data Management Plan, the main elements of the data management policy with regard to all research datasets that will be generated during the business cases' execution and the efficient management of publications are agreed and followed by the Consortium, in accordance with the H2020 guidelines regarding Open Access to Scientific Publications and Research Data<sup>3</sup>.

It needs to be noted, though, that the UPTIME consortium has already opted out from the Pilot on Open Research Data respecting the security and industrial privacy requirements of the pilot users and taking into account that the project does not produce any research data per se. In the future, upon thoroughly evaluating the requirements of all business cases, the UPTIME consortium will re-examine whether there are data (either currently available or analyzed in the future) to which open access can be granted, without infringing any industrial privacy requirements. If such a case is indeed applicable, an updated version of the present Data Management Plan shall clearly address issues such as: the specification of data types that the project generates and/or collects, the standards that will be used, the process of how this data will be exploited and/or shared/made accessible for verification and re-use, the data preservation and maintenance processes, etc.

In this context, this section will only investigate the appropriate open repositories for data management and dissemination, in order to offer through open access as much UPTIME information as possible (beyond the business cases' confidential data). Such information would be public deliverables produced by the project consortium, scientific publications issued, white papers published, open source code generated, mock-up datasets used for supporting the algorithms development and experimentation process, etc.

As the data management plan methodology is expected to be followed along the project duration, it is envisaged as a "living" document that is expected to be refined in further detail and updated whenever significant changes arise such as (but not limited to):

- new data or new conditions (regarding the data) are generated
- changes in consortium policies (e.g. new innovation potential, decision to file for a patent)
- changes in consortium composition and external factors (e.g. new consortium members joining or old members leaving).

Such updates will constitute part of the UPTIME deliverables D7.2a,b "Dissemination, Awareness Creation and Communication Kit" (where the definition of the datasets and components developed in the project will be provided if the project eventually decides to opt in the Pilot on Open Research Data), which are due on M18 and M36, respectively.

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<sup>2</sup> Guidelines on FAIR Data Management in Horizon 2020, [http://ec.europa.eu/research/participants/data/ref/h2020/grants\\_manual/hi/oa\\_pilot/h2020-hi-oa-data-mgt\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf)

<sup>3</sup> Guidelines to the Rules on Open Access to Scientific Publications and Open Access to Research Data in Horizon 2020, [http://www.gsrt.gr/EOX/files/h2020-hi-oa-data-mgt\\_en.pdf](http://www.gsrt.gr/EOX/files/h2020-hi-oa-data-mgt_en.pdf)

## 6.2 Publishable Results

**Public Deliverables.** The UPTIME Project public deliverables, as well as the UPTIME predictive maintenance framework and algorithms, are considered as part of the data management plan and will be published under appropriate Creative Commons licences (that will be defined in due time).

**Scientific Publications.** In alignment with the EC Guidelines on Open Access to Scientific Publications and Research Data in Horizon 2020, the UPTIME will follow a combination of Gold and Green Open Access strategy to its scientific publications, with a potential embargo period for peer-reviewed publications that will be agreed on an individual basis. Gold Access will be encouraged for high-impact journal publications while the self-archiving, Green Access will be granted for the rest of the publications. The repositories listed in OpenDOAR ([http://www.open\\_doar.org/](http://www.open_doar.org/)) and the repositories available through the consortium members are considered while there will also be a relevant repository in the website of the project and in social networking sites for scientists and researchers, as mentioned in section 7.2.

**Software Components.** In UPTIME, the software to be developed and deployed that will be released as open source will be distributed under appropriate licenses that will be defined by the responsible partners in due time.

## 6.3 Data Publishing Platforms

Table 9 lists the envisaged data publishing platforms that are anticipated to be used in the UPTIME project.

Table 9. UPTIME Data Publishing Platforms

Platform	Purpose	Timeframe
UPTIME Project Website	In the UPTIME Project Website (that is described in detail in section 2.4.1), a dedicated section will be devoted to downloads in order to publish reports and white papers. All documents will be published using the portable document format (PDF). All downloads will be enriched by using simple metadata information like the title and the type of the document. All information on the UPTIME website shall be accessible without requiring from the visitor to create an account. The webpage will be backed up at least once per month.	From M3 till 2 years after the official project end.
UPTIME ResearchGate account	An UPTIME ResearchGate account will be created to promote the dissemination of scientific publications of the project. Open Access (or self-archived) documents are published using the portable document format (PDF). All downloads will be enriched by using simple metadata information like the title, a short description and the type of the document.	From the moment the 1 <sup>st</sup> UPTIME paper is published.
Zenodo	Zenodo ( <a href="http://zenodo.org">http://zenodo.org</a> ) is an open data repository service to archive, and make available research outputs in all scientific disciplines in alignment with the open data requirements of Horizon 2020. All public results generated or collected during the UPTIME project will be uploaded to Zenodo for long-term storage and open access.	From the moment the initial UPTIME public results are available.
GitHub	GitHub ( <a href="https://github.com/">https://github.com/</a> ) is a leading software development platform for distributed source code development, management, and revision control, as well as for tracking issues and retrieving documentation. All open source components that are developed during the UPTIME project will be uploaded to an open access GitHub repository, linked also with the Zenodo account of the project.	From the moment the open source code of the UPTIME platform and components is released.



## 7 Evaluation and Reporting

### 7.1 Evaluation objectives

In order to measure the impact of the planned communication activities, spanning the whole duration of the project, and to be able to adjust the communication strategy for achieving the expected outcomes and maximized visibility, distinct metrics and indicators have to be defined per type of activity, which will constantly be measured and monitored.

In order to evaluate the communication activities, a number of KPIs will be used, as well as various diagrams that will be included in the annual reports. The following sections describe the KPIs, diagrams and the respective reports that are to be developed. The KPI for Community Building will be characterized later when the community structure will be more defined. They will include feedback indicators as mentioned in the chapter 4.

### 7.2 General Communication Indicators

The KPI's that will be used for evaluating the planned general communication activities within UPTIME are presented in Table 10.

*Table 10. Key Performance Indicators for general communication activities*

Expected Impact	KPI	Target
Increased collaboration with other relevant initiatives; Increased awareness.	Number of industrial workshops organized	2
	Number of demo events	3
Ideas' gathering and knowledge exchange with relevant communities and initiatives; Information about latest technologies / advancements; Liaisons with other initiatives; Increased awareness.	Number of attended events	20
	Number of events with project's presentation	15
	Number of project's demo booths	4
Communication of project news, events & results; Validation of project's concept, findings and advancements; Ideas' gathering and knowledge exchange; Attraction of potential clients and adopters; Increased awareness.	Number of industry contact points	>50
	Number of informed industry communities	10
	Number of webinars	2
Communication of project news, events & results; Validation of project's concept, findings and advancements; Ideas' gathering and knowledge exchange; Increased awareness.	Number of internal partners' events	6
	Number of links to the project's website	10
	Number of training sessions	3
Main online information point; Communication of project news, events & results; Liaisons with other initiatives, projects through links; Increased awareness.	Number of unique visitors	>5,000
	Number of page views	>10,000
Increasing visibility to stakeholders active in social media; Attainment of interest of stakeholders; Viral marketing	Number of accumulative followers	750
	Number of accumulative posts	1,000
	Number of interactions	250

by “word of mouth” through the followers; Direct communication mechanism with followers.		
Communication of main project’s concepts and advancements in a catchy and easily understandable manner.	Number of posts Number of interactions	50 100
Communication of project news, events & results; Increased awareness.	Number of press releases	8
Unique branding and visual identity of the project; Provision of instant information about the project; Creating a unified experience for the audiences targeted; Improved communication of results and information provision during events.	Number of project’s factsheets / brochures Number of videos Number of blog posts in EC mechanisms	6 4 6

### 7.3 Scientific Dissemination Indicators

The KPI’s that will be used for evaluating the planned scientific dissemination activities within UPTIME are presented in Table 11.

*Table 11. Key Performance Indicators for scientific dissemination activities*

Expected Impact	KPI	Target
Increased scientific information exchange and dissemination; Synergies establishment for joint research.	Number of scientific workshops organized	2
Validation of project’s concept, findings and advancements; Promotion of results to scientific communities; Ideas’ gathering and knowledge exchange with relevant communities and initiatives.	Number of conference papers Number of journal papers Number of articles in industry magazines	10 4 8
Knowledge exchange; Mutual validation of results; Joint dissemination activities exploiting synergies; Attraction of potential future partners for research collaborations.	Number of projects with synergies Number of joint activities	15 8
Communication of project technological results; Validation of project’s concept, findings and advancements; Increased awareness.	Number of working groups Number of project’s presentations in standardization meetings	3 2

### 7.4 Analysing Results

Communication results will be analysed and evaluated with respect to the overall communication plan. In order to better overview and evaluate the effectiveness of the planned communication activities, a number of diagrams will be used. We will measure website visits on a monthly basis. Results will be used to monitor the effectiveness of the website design and the effect of the multilingual environment. A high number of the UPTIME web site visits along with the download on-line materials will provide strong indications on the effectiveness of the website and the quality of on-line materials.

The project will also focus on balancing international and national activities, aiming at increasing the outreach of the UPTIME results while ensuring the creation of an exploitation potential both in the countries involved in the project as well as at an international level

## 7.5 Reporting

The aim of reporting is twofold. First, the reports will be used to inform consortium members and the Project Officer about the development of the project communication activities. Second, the reports will be used to assess the effectiveness of the communication plan based on specific quantitative metrics. Therefore, these reports should include all communication activities that have been carried out, during a reporting period, by the consortium as a whole and by individual partners. The reports will include communication results, corrective actions for improvements and updates on this plan. An outline of the project communication report is illustrated below:

- List of dissemination and communication activities (workshop, scientific publications, press releases...)
- Description of communication activities and the main outcomes
- List of on-line communication activities (e.g. LinkedIn, Twitter, online discussions, website)
- Analytics and statistics for communication activities conducted during the reporting period
- Assessment on the performance of UPTIME communication plan
- Updates and corrective actions on the communication plan
- Conclusions

## 8 Conclusions

In this deliverable, we provided the main components of UPTIME dissemination, communication and data management plan. Within the plan, we have defined its main components and the actions to take place for the realisation of the plan. The plan presented in this deliverable can be considered as provisional in the sense that it will be continuously updated and tuned according to the outcomes of the other work packages and deliverables such as UPTIME concept, market analysis, users community feedbacks.

The main target groups have been identified based on UPTIME concept, objectives and application areas. Different sets of messages for the identified target groups will be defined by taking into account the project phases. The importance of choosing the proper communications channels for the communication of project scope and results was assessed. A well-designed project website has been developed and launched before the end of M3. In the same direction a project LinkedIn group and twitter account have been created to increase the project visibility within the professional community.

The UPTIME dissemination, communication and data management plan was defined and comprises four major parts. In the first part, we described the overall communication strategy and outlined the supporting documentation that will be used for communicating the project activities and results along with timelines and production responsibilities. The supporting documentation include the project poster, presentation, newsletters, brochure. In the second part, we defined the means and outlets that we will use to disseminate the scientific results such as publications in international conferences and journals. Linking UPTIME to related on-going projects is another planned activity which will be leveraged by UPTIME partners that already participate or have participated in related projects. The third part focuses on community building and awareness creation activities mainly towards the industry and prospective clients. Means to facilitate community building include the organisation of the UPTIME Workshops. Finally, the fourth part describes our data management plan.

Performance evaluation of the UPTIME dissemination & communication plan is an important element of the plan itself. Therefore, a number of relevant Key Performance Indicators (KPIs) have been defined along with the procedures for evaluation and reporting.

## 9 References

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