

Deliverable D8.2

Communication Plan

Project	P Ulsed L aser depo S ition t E chnology for so L id State battery manufacturing supported by digitalizati O N		
Grant agreement no:	101069686		
Project Short Name:	PULSELiON		
Call:	HORIZON-CL5-2021-D2-01-05		
Funding Scheme:	Action grant		
Project website:	project-pulseion.eu		
Deliverable No.:	D8.2	Due Date:	2023-02-28
Issued by Partner:	TC	Actual Date:	2023-02-21
WP/Task:	WP8/Task8.3	Pages:	17
Confidentiality Status:	Public		

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Document History		Chapters affected	Description of change	Author	Document Status
Date	Version				
31-1-2023	0.1	All	Draft created	Anish Patil	draft
7-2-2023	0.2	All	Peer reviews included, and feedback addressed	Willar Vonk	draft
21-2-2023	1.0	All	Finalised, last feedback addressed after discussion with reviewer	Willar Vonk	final

Document Review		Remarks, Corrections	Reviewer	New Status
Date	Version			
7-2-2023	0.1	Several, tracked in version 0.1	Maxim Fissoun	draft
7-2-2023	0.1	Several, tracked in version 0.1	Dennis Weitze	draft
15-2-2023	0.2	Several, tracked in version 0.2	Anwar Ahniyaz	draft

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Executive summary

The PULSELiON consortium has drafted an initial version of the “Communication Plan,” which is submitted in M6 and is the basis for all the communication activities carried within the project. This document summaries respective activities already implemented and planned in the future of the project. The overall aim of the communication activities within the PULSELiON project is to carry out effective internal and external communication of results and to express those in terms that are readily understandable not only to experts in the field of battery manufacturing, but also to stakeholders at governments and in the battery value chain, to accelerate the implementation of new technologies, research findings and upscaling of innovations.

This deliverable is developed in tandem with the D8.1: dissemination plan and activities; and both these deliverables strongly complement each other. Some overlap between the activities of these deliverables is unavoidable. This document provides the broader context of communication activities and its relevance to maximizing project impact, the communication strategy and the toolkit that will support the execution of the activities.

Abbreviations

Abbreviation	Definition
ABEE	Avesta Battery and Energy Engineering
Ah	Ampere hour
AIT	AIT Austrian Institute of Technology GMBH
CA	Consortium Agreement
CICe	Centro de Investigacion Cooperative de Energias Alternativas Fundacion
CNRS	Centre National de la Recherche Scientifique
CRF	Centro Ricerche FIAT SCPA
EC	European Commission
EV	Electronical Vehicle
GA	General assembly
IKE	Ikerlan S. COOP
INEGI	INEGI Instituto de Ciencia E Inovacao em Engenharia Mecanica E Engenharia Industrial
IP	Intellectual Property
KPI	Key Performance Indicator
NMC	Nickel Manganese Cobalt Oxide
PLD	Pulse Laser Deposition
PNO	PNO Innovation
PU	Public
PULSEDEON	Pulsedeon OY
R	Report
RISE	RISE Research Institutes of Sweden AB
SSB	Solid State Batteries
TC	TechConcepts BV
TRL	Technology Readiness Level
UL	University of Ljubljana
UPJV	Université de Picardie Jules Verne
UPORTO	Universidade do Porto
UPV	Universitat Politecnica de Valencia
WP	Work Package
WPL	Work Package Leader
WPLB	Work Package Leader Board
HEU	Horizon Europe

1. Introduction

PULSELiON project aims to develop a manufacturing process for generation 4b solid-state batteries (SSBs) based on lithium-metal anode, sulfide solid electrolytes, and Nickel-rich NMC cathodes. Novel pulsed laser deposition technique will be used and modified into a single-step vacuum process for safe and efficient manufacturing of anode components composed of lithium metal, protective layers, and sulfide based solid electrolytes. The cathode layer will be made based on conventional wet processing techniques. Initially, the anode and cathode layers will be developed in coin cell format and as monolayer cells for optimizing materials and processes. SSB cells will be developed with optimized process routes and will be upscaled to a pilot line proof-of-concept (TRL 6) in order to manufacture large scale solid-state batteries (10 Ah). Digitalization will be incorporated in the modelling task with the inputs obtained from process upscaling and cell testing tasks, which will be enabling efficient process optimization.

The PULSELiON consortium consists of 15 partners with a broad European geographical coverage and is coordinated by RISE Research Institutes of Sweden. The consortium was formed to put together a group of organisations that complement each other in terms of background knowledge, technical competence, capability of new knowledge creation, business and market experience and expertise in end-user domains.

PULSELiON is represented by 4 major groups of partners (see Table 1-1), **all playing an important role in communicating project results to the different target audience groups, aiming at maximizing the project impact.**

Table 1-1 Partner groups and communication role

Group	Main role
Research partners: Leading universities and research institutions RISE – the Coordinator (Sweden), University of Ljubljana (Slovenia), CNRS and UPVJ (France), UPV, CICE AND IKE (Spain), AIT (Austria) and UPORTO (Portugal) participate to provide the academic knowledge and experience in applied research to further establish the new knowledge in the areas of battery manufacturing processes and technologies, and to explore the feasibility of the improved	To present at conferences and workshops and liaison with the policy makers

<p>technological solutions. INEGI (Portugal) will lead the LCA analysis and Cost modelling of the PULSELiON materials and process.</p>	
<p>Technological partners: The consortium’s technological strength is amplified by the involvement of industrial players who will collaborate in the technology development, upscaling, and integration. PULSEDEON (Finland) is a very active SME with international reputation in the field of Pulsed Laser Deposition technology and development of materials for Li-ion battery solutions. PULSEDEON has facilities for Pulsed laser deposition and laboratory facilities. ABEE (Belgium) is a dynamic engineering company specialized in battery and energy technologies for automotive applications and will provide expertise in Li-ion and next generation solid-state battery system design, modelling, processing and prototyping related to advanced technologies. Both PULSEDEON and ABEE will further commercialise the results of the project.</p>	<p>Liaison with the broader battery industry and commercialise the results</p>
<p>End User: CRF (Italy) will be crucial in the project for the market validation of the PULSELiON solution and following scale-up of the concept. CRF is strongly committed to the electrification of mobility, has EVs in the market and is actively launching new models. Its participation in PULSELiON assures that market requirements are considered throughout the project and that its results will be relevant for the market, thus assuring further exploitation of PULSELiON results. It also proves the industrial interest in developing more efficient and performant battery systems for EVs.</p>	<p>Demonstrator for the PULSELiON innovations; and enable upscaling</p>
<p>Dissemination and exploitation partners: PNO is part of the experts for the Horizon Results Booster and will lead exploitation and innovation management activities, adopting its own IT tools and methodologies. TechConcepts will be responsible for the communication and dissemination activities and will draw on a broad experience in European projects to successfully perform this task.</p>	<p>Facilitating role to ensure effective internal and external communication</p>

2. Purpose and structure of the deliverable

The PULSELiON project is funded by the EC, and the results should therefore benefit Europe in general. The goal is to make the results of the PULSELiON project known to the widest possible group of potential users and maximize the impact.

To achieve this goal, this document builds on initial strategies and plans outlined at the proposal stage, and therefore serves as an addition to what has been presented in the Grant Agreement and presents the updated communication plan and the toolkit to enable its execution. To get a proper insight into the roles and responsibilities during the implementation of the communication activities as presented in the GA, an interactive workshop was facilitated by TC during the Kick-off meeting in Sweden. The objective of that workshop was to draft dissemination and communication activities for the project using the section 2.2 Measures to maximise impact - Dissemination, exploitation and communication and section 3.1.2, WP8 Dissemination, Exploitation and Communication of the proposal as a starting point. To achieve this objective, TC employed a 4-step approach as presented in Figure 2-1 as a guiding principle. The main learnings from this workshop, with regards to the communication activities, were the identification of the associations that are targeted by the PULSELiON partners for collaboration, as well as the identification of the partners interested in leading these initiatives. Furthermore, during this workshop, TC presented the communication toolkit, including the project logo, branding scheme, Microsoft Powerpoint and Word templates and other tools to facilitate internal as well as external communication of the PULSELiON project results. The communication toolkit is elaborated in section 6 of the document.



Figure 2-1: A 4-step approach towards dissemination and communication activities

This document has the following structure:

- **Section 1** provides a short summary of the project, including background.
- **Section 2** explains the importance of communication measures to maximise the project impact.
- **Section 3** outlines and delineates the overall dissemination and communication context.
- **Section 4** shows the overall project stakeholder landscape.
- **Section 5** outlines the planned communication strategy and planned activities.
- **Section 6** elaborates the communication tool-kit and social-media guide.
- **Section 7** presents the summary and next steps.

3. Context

As per the EC website FAQs, there is a strong relation between dissemination, exploitation and communication. Dissemination means sharing research results with potential users - peers in the research field, industry, other commercial players and policymakers). By sharing research results with

the rest of the scientific community, the project contributes to the progress of science in general. Whereas exploitation is the use of results for commercial purposes or in public policymaking. It can be for commercial purposes but also for improving policies, and for tackling economic and societal problems. An appropriate exploitation is based on the dissemination and communication actions aiming promotion and awareness-raising right from the beginning of a project. It makes research results known to various target stakeholder groups (e.g. research peers and the scientific community, industry and other commercial actors, policymakers, and the broader public) to enable them to use the results in their own work. To ensure maximum outreach of the project activities and results, it is of paramount importance to have a plan for dissemination and exploitation and a communication strategy that outlines strategic and targeted measures for promoting project results.

To ensure proper understanding of the terminology, PULSELiON will follow the following distinction between dissemination, exploitation and communication as presented in Figure 3-1. This figure is inspired by the EC presentation “Dissemination and Exploitation in Horizon 2020”¹.

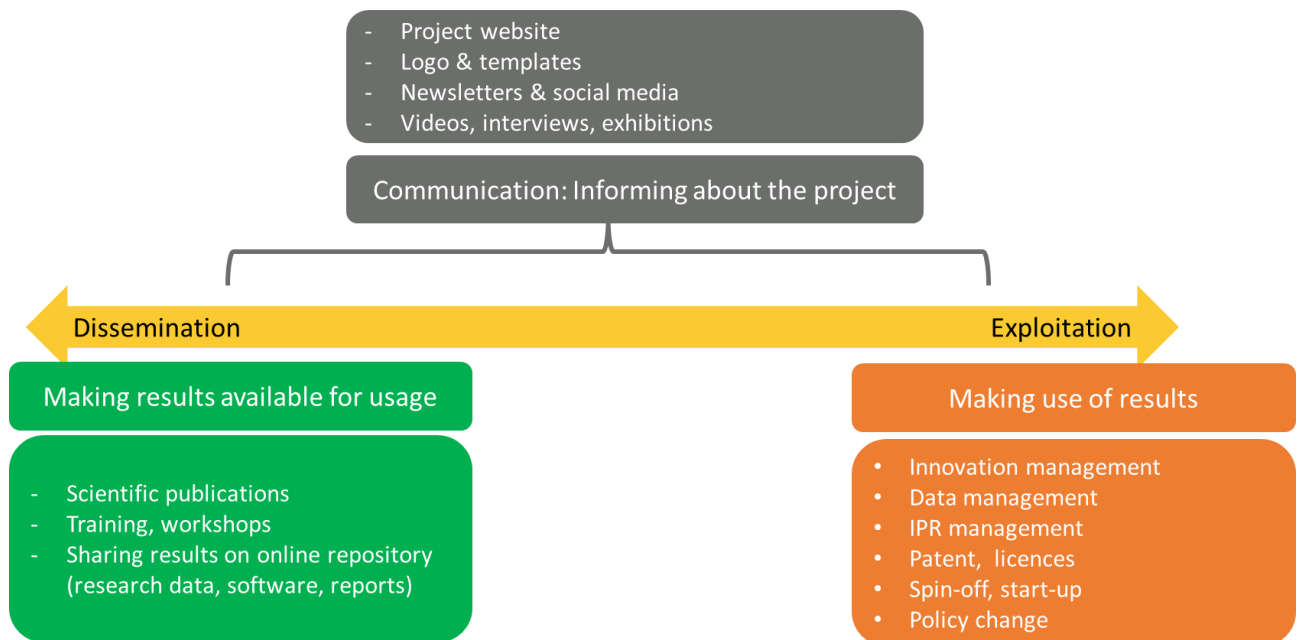


Figure 3-1: Distinction between Dissemination, Exploitation and Communication

Within the PULSELiON project, WP8 is designed to handle all the Dissemination, Exploitation and Communication activities. The overall objectives of the WP8, and the related tasks as well as task leaders are presented in Table 3-1 below.

¹https://ec.europa.eu/research/participants/data/ref/h2020/other/events/2017-03-01/8_result-dissemination-exploitation.pdf

Table 3-1: Objectives of WP8 and related tasks

Objectives	Related task and task leader
Maximize the dissemination of project results, bring widespread awareness to a broader public through presentations at webinars, technical conferences, scientific publications and the project website.	Task 8.2 Dissemination plan and activities led by TC
Generate high impact by carrying out customized communication activities towards relevant industries in the batteries and recycling sector along with the relevant policy makers	Task 8.3 Communication plan and activities led by TC à main focus of this deliverable
Promote awareness of world-wide Intellectual Property (IP) and expertise to enlarge the EU knowhow in the field of solid-state batteries	Task 8.4 Exploitation activities, including market studies, replicability study, exploitation strategies and science-for-policymaking outcomes led by PNO
Clustering activities with other projects, industry clusters and regulatory authorities	Task 8.1 Cooperation with other H2020&HEU projects, battery initiatives and EC agencies led by PNO

Complementing the current document, PULSELiON also submits the draft D8.1 Dissemination plan and activities in M6.

4. Stakeholder overview

The communication strategy is built on the prioritisation of certain groups of stakeholders. This will be decided by the consortium, determining which external stakeholders are needed, based on their joint competencies. The stakeholder analysis will complement this prioritisation by gathering information about relevant stakeholders by assessing their interest and influence on the project. This information provides opportunity to involve external stakeholders in the project with targeted information. Furthermore, joint political and industrial efforts within and outside the EU in support of the Green Deal policy², associated objectives and cross-cutting themes will be conducted in WP8 to bring together relevant stakeholders in support of the EU Green Deal policy. PNO carries out the stakeholder analysis and communication with relevant stakeholders in the battery value chain and policy makers. This will include – one to one meetings with relevant stakeholders, stakeholder board and alignment with relevant EU projects.

² [A European Green Deal \(europa.eu\)](https://european-council.europa.eu/media/en/press-summaries/default/101069686)

As a basis for all communication, dissemination, and exploitation activities, PULSELiON has carried out an initial mapping of the project’s stakeholder landscape. Table 4-1 highlights the relevant stakeholder groups and the key messages that PULSELiON would like to convey to each of these groups.

Table 4-1 Stakeholder groups and relevant messages

Stakeholder groups	Key message(s)
Industry	<ul style="list-style-type: none"> • PLD as a competitive, scaled-up manufacturing technology for advanced ceramic-based batteries • New tools and methods for modelling of manufacturing process and electrochemical performance of solid-state batteries • Results on cell performance and safety characteristics • Technologies/procedures enabling high energy density battery systems • Safety data for cell design
Policy makers	<ul style="list-style-type: none"> • A SSB roadmap • Awareness of the real challenges associated with electrical mobility
Scientific community	<ul style="list-style-type: none"> • New process approaches in R&D and scientific agenda • New tools and methods for modelling of manufacturing process and electrochemical performance of solid-state batteries • Up-scaled thin film deposition of sulfide materials for batteries • Testing procedures and data bases (controlling battery damages) • Results and primary datasets
Broader public	<ul style="list-style-type: none"> • Awareness of the real development and challenges associated to electrical mobility • Highlighting the affordability and sustainability of the PULSELiON concept

5. Communication approach

The main goal of the current communication plan is to serve as an ongoing, concise work plan to realize the communication strategy of the PULSELiON project and to establish suitable actions to make this project successful. Three aspects are relevant for the project to maximise the impact:

1. High volume communications
2. Customised communication
3. Stakeholder platform

Each of the abovementioned aspects is elaborated hereunder.

5.1. High volume communications

A high volume communication is carried out for broader dissemination of project results. TC prepares and distributes project newsletters, collect all dissemination actions and maintain the dissemination tracker and database. Partners plan dissemination activities, provide input for the newsletters and report on dissemination activities performed. TC, with support from PNO as the WP8 leader, tracks the dissemination activities closely.

Please note that D8.1 Dissemination plan and activities, includes screenshots of what has been achieved and future planning with regards to the project website, social media and audio-visual materials. In order to avoid repetition, it has not been included in this deliverable. Task 8.2 and 8.3 are both led by TC and there will be a high level of interaction between these two tasks.

The detailed planning and tracking of the dissemination and communication activities will be supported by PULSELiON Dissemination tracker.xlsx, where the input is collected from the partners in the project. The tracker and the disseminated documents will be stored on the PULSELiON project place (RISE Sharepoint) in the folder [Dissemination Tracker - ALL DISSEMINATION activities](#). The Dissemination tracker is a living document and will be submitted to the EC in M48, as the final version of D8.1.

5.2. Customised communication

A customised communication is carried out to engage with the relevant stakeholders. This will entail high impact communication with 10+ relevant stakeholders in the battery/recycling and policy makers in at least 3 member states.

In order to identify the 10+ relevant stakeholders in 3 member states, PULSELiON follows a 3-step approach

Step 1: Stakeholder mapping

TC will organize a workshop during the M8 GA in Finland, and develop an initial stakeholder mapping overview with all project partners. This will build on the stakeholder mapping undertaken during the project proposal phase and the Kick off. Mapping will involve identification of various stakeholders and delineating them into 4 groups as shown in Figure 5-1 (inspired by³):

1. Key stakeholders (high influence and high interest).
2. Influencers (high influence but low interest).

³ <https://doi.org/10.1371/journal.pcbi.1010520>

3. Interested stakeholders (low influence but high interest).
4. Passive stakeholders (low influence and low interest).

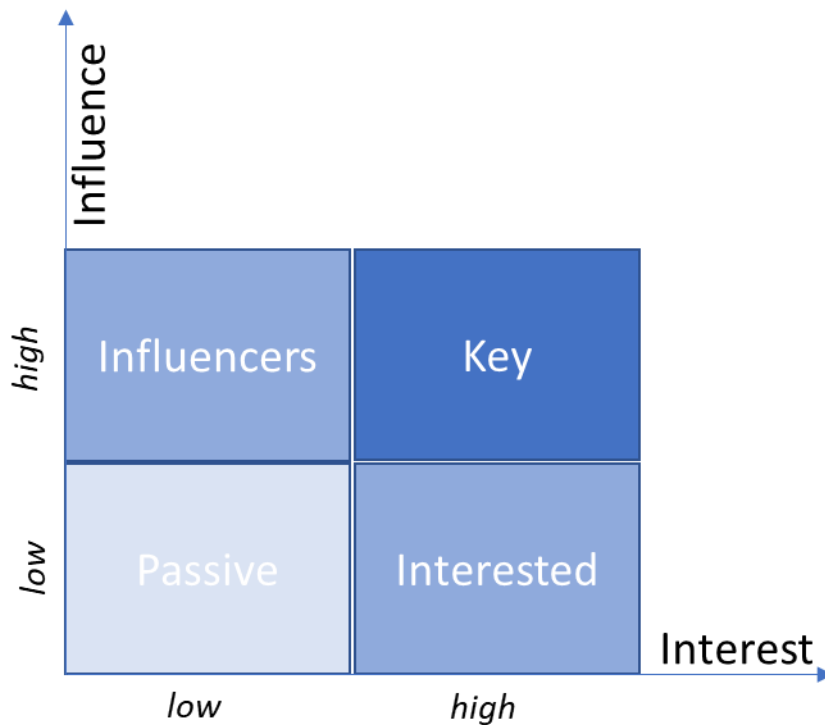


Figure 5-1 stakeholder mapping

Key stakeholders (upper right quadrant) would require customized communication, while on the other hand passive stakeholders (lower left quadrant) would make-do with high volume communication tactics.

Step 2: Stakeholder interests, needs, stakes and challenges

The high-level stakeholder mapping will further be broken down into a more detailed mapping to identify stakeholder interests, needs, stakes and challenges. This will be on the agenda for the M12 GA. The aim is to have a clear process for stakeholder engagement in the first 18 months of the project, which will be put into action once PULSELiON results start coming in.

Step 3: Develop clear framework and key messages for the key stakeholders.

Develop a clear framework, directions, and key messaging to begin mobilising key stakeholders across Europe and across stakeholder types.

5.3. Stakeholder platform

Develop a stakeholder platform by identifying the parties that could prolong the stakeholder platform after project PULSELiON is completed, and hand-over of the communication and dissemination material to these parties in order to continue the collaboration platform that was created by the project. PNO will play a key role in this step, as it is closely related to T8.1 Clustering activities with other projects, industry clusters and regulatory authorities. The partners that are part of the PULSELiON project participate in several technical international associations and platforms relevant to PULSELiON. This network will be actively used to promote the project, maximising the impact. The associations include EARPA – European Automotive Research Partners Association⁴, BEPA The Batteries European Partnership Association / BATT4EU – co-programmed Partnership established under Horizon Europe⁵, 2Zero Towards zero emission road transport⁶, Slovenian Strategic and Innovation Partnership (SRIP) Mobility and SRIP Networks for the transition to Circular economy⁷, IEA International Energy Agency⁸, Battery Cluster Portugal, Batteries Europe. Key targeted associations and lead partners are presented in Table 5-1.

Table 5-1 Key associations and lead partner

Association	Lead partner
EARPA – European Automotive Research Partners Association	INEGI, UPV, ABEE
BEPA The Batteries European Partnership Association / BATT4EU – co-programmed Partnership established under Horizon Europe	RISE (Anwar Ahniyaz) is in the advanced material group
2Zero Towards zero emission road transport	UL, UPV
Slovenian Strategic and Innovation Partnership (SRIP) Mobility and SRIP Networks for the transition to Circular economy	UL
Battery Cluster Portugal	UPORTO (Helena Braga) is at the scientific committee

⁴ [Welcome to EARPA's website! - EARPA](#)

⁵ [BATT4EU \(bepassociation.eu\)](#)

⁶ [Home - 2Zero Emission](#)

⁷ [SRIP – Circular Economy \(srip-krozno-gospodarstvo.si\)](#)

⁸ [IEA – International Energy Agency](#)


Batteries Europe	RISE, CRF
Clustering with other Horizon projects	ABEE would take the lead in connecting with other projects in the same call - SPINMATE ⁹ and SOLID ¹⁰ . ABEE will plan a common workshop - to share public information, perhaps in parallel to the EC Battery Innovation Day, in Brussels.
LiPlanet¹¹	UPJV, CNRS
Battery 2030+¹²	CICe, CNRS

6. Communication toolkit

PULSELiON has developed a communication tool kit, which supports the internal and external communications.

6.1. Branding and visual identity

With the aim of defining a distinct PULSELiON visual identity and creating a distinct branding that will ensure a professional, consistent visual appearance of the project across all outreach activities, TC has designed a number of key design elements:

Design Element	Short Description	Sample													
Logo	Logo is a key element of the project’s visual identity concept.														
Colour Scheme	The primary color is green, highlighting the sustainability aspects of PULSELiON.	<table border="0"> <tr> <td>#1F724A</td> <td>#90DA31</td> <td>#000000</td> <td>#E3E3E3</td> <td rowspan="3"> FONTS: ARIAL ARIAL BLACK </td> </tr> <tr> <td>#3F9A05</td> <td></td> <td>#737977</td> <td>#F0F0F0</td> </tr> <tr> <td>#79AA0F</td> <td></td> <td>#B7B7B7</td> <td>#FFFFFF</td> </tr> </table>	#1F724A	#90DA31	#000000	#E3E3E3	FONTS: ARIAL ARIAL BLACK	#3F9A05		#737977	#F0F0F0	#79AA0F		#B7B7B7	#FFFFFF
#1F724A	#90DA31	#000000	#E3E3E3	FONTS: ARIAL ARIAL BLACK											
#3F9A05		#737977	#F0F0F0												
#79AA0F		#B7B7B7	#FFFFFF												

⁹ [Spinmate – Electric car project](#)

¹⁰ [The Solid Project | A Greener Future](#)

¹¹ [LiPLANET | Network of Li Battery Pilot Lines](#)






¹² [Battery2030+ - Battery 2030+](#)

<p>Media kit- content icons</p>	<p>TC has developed content icons with the PULSELiON colour schemes that can be freely used by all partners during all communication activities.</p>	
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6.2. Templates

For consistency in communication and dissemination activities, Microsoft Word and Powerpoint templates have been developed. Furthermore, a general presentation has been developed including a few slides regarding the project concept and approach, which is devoid of any confidential information to be used by any partners, who wishes to include it while communicating externally about the project. Production of PULSELiON-branded roll-up display and electronics leaflet is in progress and would be completed soon.

<p>Powerpoint Template</p>	
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	<p>Click to add title PULSELiON</p> <div style="border: 1px dashed gray; padding: 10px; margin: 10px 0;"><p>✓ Click to add text</p><div style="text-align: center; margin-top: 20px;"></div></div> <p> <small>Funded by the European Union</small> PULSELiON – GA no. 101069686</p>
<p>Word Template</p>	<div style="text-align: center;">  <hr style="border: 1px solid green;"/></div> <p>*** AAA AAA AAA</p> <p style="text-align: center;">***</p> <div style="text-align: center; margin-top: 200px;"><hr style="border: 1px solid green;"/> <small>Funded by the European Union</small> PULSELiON – GA no. 101069686</div>

7. Summary and next steps

This deliverable provides broader context of communication activities (including a strategy to carry out high volume communications, customised communication and development of a stakeholder platform and highlight its relevance to maximizing project impact. Secondly, it presents the communication toolkit, including project branding, logo and color scheme incorporated into all the templates to enable internal and external communications.

TC, with support from PNO as the WP8 leader, will track the dissemination and communication activities closely. The detailed planning and tracking will be supported by dissemination tracker with input from the partners in the project. The tracker and the disseminated documents will be stored on PULSELiON project place (RISE Sharepoint) in the folder WP8 Dissemination, Exploitation and Communication.