




Improved Robotic Platform to perform Maintenance and Upgrading Roadworks: The HERON Approach

Grant Agreement Number: 955356

D8.4: Dissemination and Communication Plan (second version)

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List of HERON consortium partners

Acronym	Consortium partner
ICCS	Institute of Communications and Computer Systems
ACCI	Acciona Construcción S.A.
OLO	Olympia Odos Operation S.A.
UGE	Université Gustave Eiffel
ETHZ	Eidgenössische Technische Hochschule Zurich
ROB	Robotnik Automation
CORTE	Confederation of Organisations in Road Transport Enforcement
STWS	SATWAYS
RISA	RisaSicherheitsanalysen Gmbh
INAC	InnovActs
IKH	AINOOUCHAOU PLIROFORIKI SA -IKnowHow
RG	Resilience Guard Gmbh

List of abbreviations

Abbreviation	Definition
AB	Advisory Board
AI	Artificial Intelligence
AU	Augmented Reality
CUD	<i>Chaussée Urbaine Démontable</i> (Demountable Urban Roadway)
GA	Grant Agreement
IPR	Intellectual Property Rights
RI	Road Infrastructure
V2I/X	Vehicle to Infrastructure (X: everything)

Executive summary

This deliverable presents the updated (second) version of the Dissemination & Communication Plan for the HERON project. The first version submitted in M6 of the project implementation identified the objectives of dissemination, target audiences and relevant channels for dissemination of project results, as well as presented a strategy to reach these objectives with an overall goal to increase the impact of the project. This deliverable builds on the previous version and provides updates on dissemination and communication activities implemented during the first two years of the project (M24).

The overall objective of HERON dissemination strategy is to stimulate the interest from target audience, stakeholders and other interested parties and actively engage them in the implementation of activities throughout the course of the project. Dissemination activities target different audiences that constitute the HERON community, including end-users, researchers, representatives of industry, as well as the general public. An important dissemination aspect are clustering activities with related EU-funded R&I projects, which are presented in a separate deliverable D8.7 submitted together with the present deliverable in M24. Dissemination activities ultimately aim to promote and facilitate the uptake of HERON results and therefore support exploitation activities of the project.

1 Introduction

HERON aims to develop an integrated automated system to perform maintenance and upgrading roadworks, such as sealing cracks, patching potholes, asphalt rejuvenation, autonomous replacement of CUD elements and painting markings. The system also aims to support the pre- and post-intervention phase, including visual inspections and dispensing and removing traffic cones in an automated and controlled manner.

The HERON system consists of:

- Autonomous ground robotic vehicle that will be supported by autonomous drones to coordinate maintenance works and the pre-/post-intervention phase;
- Various robotic equipment, including sensors and actuators (e.g., tools for cut and fill, surface material placement and compaction, modular components installation, laser scanners for 3D mapping) placed on the main vehicle;
- Sensing interface installed both to the robotic platform and to the Road Infrastructures (RI) to allow improved monitoring (situational awareness) of the structural, functional and RI's and markings' conditions;
- Control software that interconnects the sensing interface with the actuating robotic equipment;
- Augmented Reality (AR) visualization tools that enable the robotic system to see in detail surface defects and markings under survey;
- Artificial Intelligence (AI)-based toolkits that will act as the middleware for:
 - a) optimally coordinating the road maintenance/upgrading workflows and
 - b) intelligent processing of distributed data coming from the vehicle and the infrastructure sensors for safe operations and not disruption of other routine operations or traffic flows;
- Integration of all data in an enhanced visualization user interface supporting decisions and
- Communication modules to allow for Vehicle-to-Infrastructure/-Everything (V2I/X) data exchange for predictive maintenance and to increase users' safety.

HERON aims to reduce fatal accidents, maintenance costs, traffic disruptions, thus increasing the network capacity and efficiency.

The first version of the dissemination and communication plan outlined the approach on how to effectively communicate the project's objectives, developments and outcomes, how to engage stakeholders and how to guide consortium partners in planning and implementing their respective dissemination activities. The aim of the dissemination plan is to identify activities that will facilitate and support the successful exploitation of HERON's results, both during and after the project's life cycle. This deliverable is the second iteration of the communication and dissemination plan, providing updates on dissemination and communication activities implemented during the first two years of the project (M24).

1.1 Purpose of the document

This document is deliverable 8.4 in Work Package 8: High-Impact Communication and Dissemination Activities. The aim of the document is to provide an update on the implementation of the dissemination strategy of HERON with an objective to reach the objectives of WP8, namely to:

- Disseminate project findings and results to a wide and diverse range of stakeholders;

- Engage relevant stakeholders and end-users in order to have a good understanding of their needs and to involve their input;
- Ensure that the results will be exploited by interested stakeholders beyond the project life cycle.

This deliverable is to be complemented by two versions of a report on clustering activities with related projects (D8.7 submitted together with this deliverable in M24, and D8.8 which will be submitted at the end of the project in M48), as well as by regular progress reports where we report about the status of implementation of activities and the achieved results.

1.2 Intended audience

The target audience of this deliverable is primarily HERON consortium partners, as the document outlines a dissemination strategy that will be implemented through combined efforts from all partners. The deliverable is also a report towards the European Commission about the dissemination strategy of the project.

1.3 Interrelation with other work packages

This deliverable interacts with all work packages and project activities, as it defines the overall dissemination strategy that will be implemented throughout the whole duration of the project and by all partners of the consortium.

2 HERON Dissemination & Communication Strategy

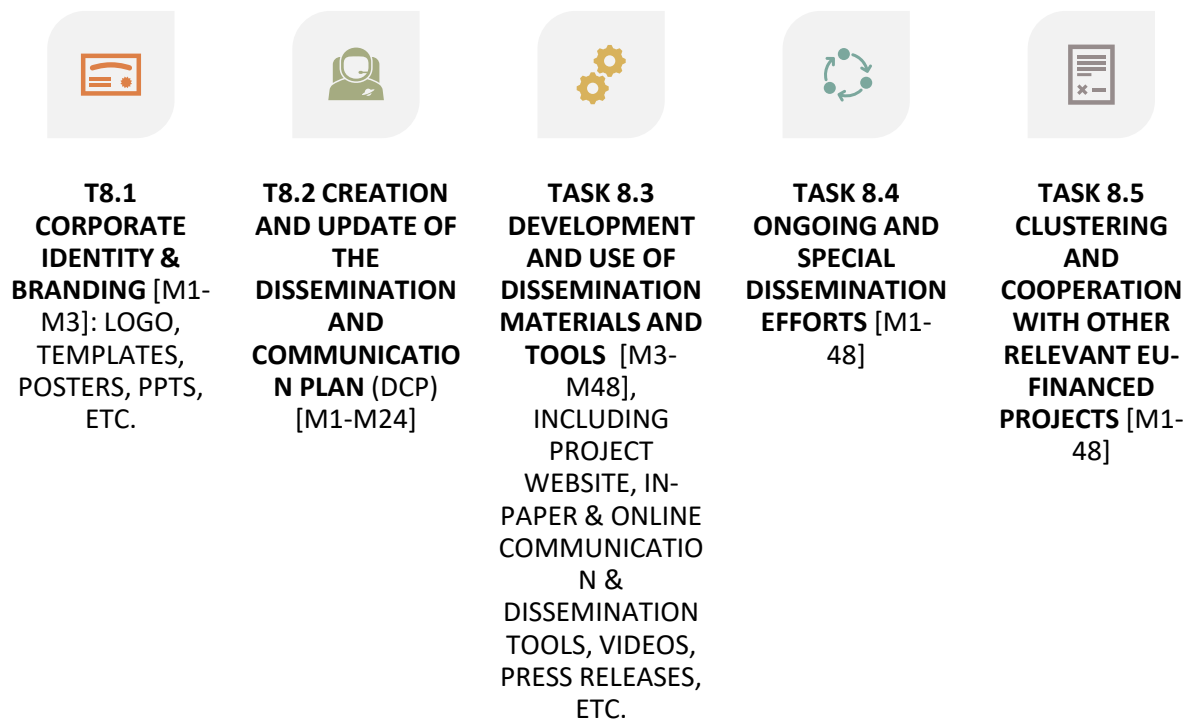
2.1 Context

The present deliverable has been developed in the context of WP8: High-Impact Communication and Dissemination Activities. The objectives of this WP are to:

- **Create and enhance visibility of the project** and its most important outputs to pave the way for a wide-spread acceptance and implementation of project results, while fully respecting security and confidentiality matters with regard to sensitive project outcomes.
- Agree on a **plan for sustaining necessary visibility actions** for the future of the HERON community and communications platform.
- Define a clear vision by means of roadmaps, which include the key factors, scenarios, impacts to **accelerate deployment of HERON in Europe** (and worldwide), by supporting exploitation activities implemented in WP9.

The following figure presents an overview of tasks that are being implemented in WP8, as set in the Grant Agreement. The present deliverable is part of T8.2: Creation and update of the dissemination and communication plan.

Figure 1: Overview of tasks in WP8



2.2 Dissemination strategy

HERON relies on a strategic dissemination approach that includes the following 4 phases:

- 1) **conception** of the dissemination strategy,
- 2) **implementation** of the dissemination strategy, and
- 3) **follow-up** of the implementation phase, and
- 4) **continuity** of dissemination activities.

The first phase focused on the **conception of the dissemination strategy**, identifying the objectives, stakeholders, target audiences, and communication channels for dissemination. This phase took place in the first six months of the project and resulted in the first version of the dissemination and communication plan (D8.3). During this time, the consortium also defined HERON's visual identity and branding, including the logo, to ensure the visual consistency and effective graphical identity of the project.

The (current) second phase focuses on the **implementation** of dissemination activities, based on the outlined strategy and by using defined communication channels. This phase will take place during the entire duration of the project, intensifying from M6 onwards.

During the **follow-up phase**, partners will capitalize on the exploitation workshops to increase public understanding about HERON solutions and create acceptance for the new solutions.

The last phase will aim to ensure the **continuity of HERON dissemination activities**. The focus will be on continuing the communication and dissemination activities beyond the conclusion of the project by sustaining the stakeholder network created in HERON and engaging them through digital communication channels established under the project. Continuity will also be fostered through HERON partners' continuous promotion of outcomes via their activities and networks, stakeholders / other multipliers and scientific publications.

All partners have been actively participating and contributing to dissemination both at organizational and individual level. Combined, the consortium partners have a wide network of contacts in different networks of HERON stakeholders (such as end-users, technology providers, academic community, public authorities, international transport organizations, etc.) which ensures a solid basis for a strong collaboration with these stakeholder groups. HERON dissemination activities focus on ensuring continuous, proactive and dynamic dissemination to all relevant target groups.

2.3 HERON stakeholder community

HERON stakeholder is any entity with an interest in the work implemented by HERON or its results and outcomes. The consortium outlined a preliminary list of stakeholders already as part of the grant agreement, based on the assessment by partners both in terms of their potential interest in the project as well as the level of importance of their input and feedback for the success of the project implementation. The list has been revised and expanded in the first months of the project and will be continuously monitored throughout the project.

The table below provides an overview of entities that constitute the HERON stakeholder community so far, specifying the type of entity and their country of origin.

Table 1: HERON stakeholder community

Stakeholder	Type	Country	Website
Olympia Odos	Road operator (end user)	Greece	https://www.olympiaodos.gr/en/
Acciona Construcción	Road operator (end user)	Spain	https://www.acciona.com/?_adin=02021864894
International Road Union (IRU)	Transport association	-	http://www.iru.org/
European Road Federation (ERF)	Transport association	-	https://erf.be/
European Automobile Manufacturers Association (ACEA)	Transport association	-	http://www.acea.be
International Motor Vehicle Inspection Committee (CITA)	Transport association	-	https://citainsp.org/
Danish Transport Authority	National transport authority	Denmark	https://www.trafikstyrelsen.dk/en/
IN Groupe / Imprimerie Nationale	National authority	France	www.imprimerienationale.fr
Ministry for Innovation and Technology – National Transport Authority	National transport authority	Hungary	https://kormany.hu/
Ministry of Transport, Mobility and Urban Agenda	National transport authority	Spain	http://www.fomento.es
Road Safety Authority	National transport authority	Ireland	http://www.rsa.ie/
Vias institute	Public institute	Belgium	https://www.vias.be/en/
FEHRL (Forum des Laboratoires Nationaux Européens de Recherche Routière)	Research association	Belgium	https://www.fehrl.org/
IDRRIM	Public institute	France	https://www.idrrim.com/
CEDR	Public body	Belgium	https://www.cedr.eu/
Routes de France	Association of French road owners	France	https://www.routesdefrance.com/
GEMALTO	Transport company	France	http://www.gemalto.com/
INELO	Transport company	Poland	www.inelo.pl
Continental	Transport company	Germany	http://www.continental-corporation.com
Stoneridge	Transport company	Sweden	http://www.stoneridge-electronics.com

2.5 Overview of deliverables submitted in WP8 so far

The following table presents a list of deliverables in WP8 that have been submitted to date.

Table 3: Dissemination plan

Deliverable number	Deliverable title	Due date	Status
D8.1	Corporate identity and general templates for dissemination material	M3	Delivered
D8.2	Project website	M3	Delivered
D8.3	Dissemination and Communication Plan (first version)	M6	Delivered
D8.4	Dissemination and Communication Plan (second version)	M24	Delivered (<i>this deliverable</i>)
D8.5	Information Packs for referenced and networked communication amplifiers	M12	Delivered
D8.6	Annual magazine (first version)	M12	Delivered
D8.7	Report on the project clustering activities (first version)	M24	Delivered
D8.9	Annual magazine (second version)	M24	Delivered

2.6 Dissemination strategy per stakeholder group

The section below presents specific dissemination strategies for the main categories of HERON stakeholders. It provides an overview of specific stakeholders targeted by HERON, identifies their main motivations and related objectives of the dissemination strategy and proposes the most suitable means / channels to be used in communication activities towards them. The consortium will continue mapping their needs and based on the understanding of their expectations (especially in terms of the work in WP2), in order to produce results and outcomes that are highly relevant and useful for the end-users.

Table 4: Dissemination strategy per stakeholder group

Stakeholder category	Motivations & needs	Objectives of HERON dissemination activities	Dissemination activity
Policy makers in the field of transport at European level	<ul style="list-style-type: none"> ▪ Understand opportunities and risks associated with new products and services developed under HERON ▪ Deploy innovative solutions ▪ Understand need for any new laws and policies 	<ul style="list-style-type: none"> ▪ Engage them in a dialogue ▪ Raise their awareness about impacts of the project ▪ Provide them evidence-based information about technical challenges addressed by the consortium and the proposed solutions 	<ul style="list-style-type: none"> ▪ HERON website ▪ Social media ▪ Press release ▪ Leaflet ▪ Newsletters ▪ Clustering with EU projects ▪ HERON conference
National road transport authorities and road operators	<ul style="list-style-type: none"> ▪ Understand their needs, issues and challenges ▪ Assess sectorial and geographical needs 	<ul style="list-style-type: none"> ▪ Engage them in a dialogue ▪ Raise their awareness about impacts of the project and added value offered by its products and services 	<ul style="list-style-type: none"> ▪ HERON website ▪ Social media ▪ Press release ▪ Leaflet ▪ Newsletters ▪ HERON conference
Technology providers (e.g., robotic devices and software developers, construction/ maintenance companies, data engineers, etc.)	<ul style="list-style-type: none"> ▪ Ensure good strategic discussions for exploitation of project products and services. Identify and capitalise on new business opportunities and develop technologies, products and services to increase competitiveness and access to market 	<ul style="list-style-type: none"> ▪ Engage them in a dialogue ▪ Raise their awareness about the results from individual work packages and about HERON system as a whole ▪ Encourage them to provide feedback on the consortium's results 	<ul style="list-style-type: none"> ▪ HERON website ▪ Social media ▪ Press release ▪ Leaflet ▪ Videos ▪ Annual magazines ▪ HERON conference
Scientific community / academic institutions in the fields pertinent for HERON	<ul style="list-style-type: none"> ▪ Develop technical knowledge in the relevant fields ▪ Promote the development of collaborative and open knowledge 	<ul style="list-style-type: none"> ▪ Engage them in a dialogue ▪ Raise their awareness about the impacts of the project. 	<ul style="list-style-type: none"> ▪ HERON website ▪ Social media ▪ Press release ▪ Leaflet

(transport, climate modelling, risk analysis, etc.)		<ul style="list-style-type: none"> ▪ Provide them evidence-based information about technical challenges addressed by the consortium and the proposed solutions ▪ Encourage them to provide feedback on the consortium’s results, technologies developed and research findings 	<ul style="list-style-type: none"> ▪ Videos ▪ Annual magazines ▪ Publications in scientific journals ▪ Participation in events ▪ HERON conference
Advisory Board	<ul style="list-style-type: none"> ▪ Ensure good strategic discussions for exploitation of project products and services. Identify and capitalise on new business opportunities and develop technologies. ▪ Develop technical knowledge in the relevant fields ▪ Promote the development of collaborative and open knowledge 	<ul style="list-style-type: none"> ▪ Engage them in a dialogue ▪ Raise their awareness about the results from individual work packages and about HERON system as a whole ▪ Encourage them to provide feedback on the consortium’s results 	<ul style="list-style-type: none"> ▪ HERON website ▪ Social media ▪ Press release ▪ Leaflet ▪ Videos ▪ Annual magazines ▪ Demo events ▪ HERON conference
Related EU-funded project	<ul style="list-style-type: none"> ▪ Create multidisciplinary and multi-sectorial networks of expertise and competence ▪ Develop, test and leverage innovative solutions at the EU level 	<ul style="list-style-type: none"> ▪ Raise awareness of partners in related EU projects to the objectives of HERON and activities of our consortium ▪ Exchange information, findings and results with them ▪ Create synergies and anticipate (and avoid) any overlaps of activities 	<ul style="list-style-type: none"> ▪ HERON website ▪ Social media ▪ Clustering with EU projects ▪ Press release ▪ Leaflet ▪ Videos ▪ Annual magazines ▪ Participation in events ▪ HERON conference

General public	<ul style="list-style-type: none">▪ Be informed about political, societal and technological trends	<ul style="list-style-type: none">▪ Provide tailored information to improve their awareness and understanding about recent scientific findings and innovations	<ul style="list-style-type: none">▪ HERON website▪ Social media▪ Press release▪ Leaflet▪ Poster▪ Videos
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2.7 Quality management

In order to ensure the effective management and implementation of the dissemination activities, all dissemination and communication activities implemented in HERON follow certain rules and criteria:

Acknowledgment of the EU funding

All the documents related to HERON (deliverables, presentations, papers, newsletters, leaflets etc.) shall contain the following statement: “This project has received funding from the European Union’s Horizon 2020 Research and Innovation Programme under grant agreement no 955356.

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2.8 Key Performance Indicators (KPIs) for dissemination activities

A number of Key Performance Indicators (KPIs) have been set up to in the Grant Agreement to monitor the success of implementation of dissemination activities in respect to the objectives and to address any weaknesses.

The following table presents the KPIs are being continuously monitored throughout the project and reported in regular progress reports. The KPIs may be adjusted as the project progresses.

Table 5: KPIs related to HERON dissemination activities

Activity	Description	Timeline	Current status
Creation of recognizable brand identity	Development of the HERON brand : To ensure the impact of the project, HERON will develop an EU wide recognizable brand that visually translates the project idea and concept in all outreach materials and events.	M3	Implemented (D8.1)
KPI	1 project logo, HERON templates, illustrations and graphics		
Communication kit	Leaflets and posters based on HERON’s visual identity will be produced until M12. This material will be distributed at conferences, workshops, exhibitions and other large-scale events. Regular newsletters are being distributed to HERON’s stakeholder and to relevant EU projects and initiatives (H2020 and beyond). A video presenting the main objectives and target outcomes of HERON was produced in the early stages of the project. Additional videos will be also produced to showcase the proposed HERON’s solution in the various events.	M1-M48	8 videos produced so far
KPI	2 leaflets, 1 poster, at least 2 animation videos and 3 newsletter issues		
Dedicated project and code websites	Launch of the HERON website in M3 . Its basic objective is to create an easily accessible public platform for dissemination of deliverables, open access publications, presentations, newsletter issues etc. Interactivity and updated content will attract attention and repeated visits.	M5-48, with the aim to keep it active for 5 years after the end of the project	HERON was launched (D8.2) and is regularly updated
KPI	1 official project website; 10,000 visitors per year combined		
Social media channels	Social media are used to reach the target audience frequently and cost-efficiently, and to strengthen the HERON stakeholder community . Basic information on HERON and its concept are also disseminated through the partners’ existing social networking pages as well as the H2020 social media accounts.	M1-M48	HERON social media channels (4) have been established and have been actively updated
KPI	Active HERON Facebook, LinkedIn, Twitter & ResearchGate accounts. The aim is to gather at least 200 members by M48. At least 4 announcements per partner in individual social media accounts; at least 6 announcements in H2020 social media sites. In total, we will aim to publish 150 posts/year across all platforms.		
Conference presentations	HERON will have presentations and demos in relevant international conferences and other events. We will also organize special sessions and other project events at well-known transport conferences. Some indicative conferences are included in a dedicated table in this deliverable.	M12-M48	In the course of implementation
KPI	Minimum 3 presentations per year targeting at least 10		

presentations in total			
Peer- reviewed publications	Effort are being made to publish papers in well-respected and highly rated peer-reviewed journals. This task is undertaken mostly by the research partners, and the publications will cover several project fields of work. Particular effort will be made to secure Open Access (OA) to all interested persons, mainly through the project website but also through respective OA repositories such as OpenAIRE. Some indicative journals are identified in the following sections of this deliverable.	M18-M48	In the course of implementation
KPI	At least 2 publications in scientific ISI journals per year (after 2nd year) and at least 8 publications in total		
EU dissemination networks & channels	The consortium, in close collaboration with the EC project officer, will investigate the possibilities to disseminate the project vision and main results through various means offered by the EU, e.g., Horizon Magazine, research*EU results magazine. Partners have participated in EU research conferences and public events and will continue to investigate possibilities for participation in relevant future events.	M06-M48	In the course of implementation
KPI	At least 2 press releases per year; 5 media publications; Participation in EU events		
Training & Demo events	Training sessions in relevant events or online: HERON puts emphasis on “educating” the communities and relevant organizations about the need for additional advanced research to cover their requirements.	M24-M48	To be implemented
KPI	1 online session; 3 Pilot demonstrations; Training package; Attendance of 50 non-specialist attendees		
Final Event	A conference will be organized at the end of the project to demonstrate to a large number of stakeholders the HERON system as a result of the project and other outcomes achieved.	Around M48	To be implemented
KPI	1 HERON conference (more than 80 participants in total); Conference proceedings and report		

3 Implementation of dissemination activities

3.1 Corporate identity and branding

HERON's visual identity and branding was defined by M3, with the aim to ensure the visual consistency and the effective graphical identity of the project and to support the dissemination and communication activities. It is presented in detail in D8.1.

A dedicated logo together with colour palettes and typefaces were provided in order to shape HERON's identity and to promote instant public recognition. A set of specific guidelines was also provided to assist the consortium in using correctly all the above brand identity elements when designing and producing communication and dissemination material. In addition, a set of HERON MS Office templates has been created to ensure HERON's consistent brand identity and to keep a credible and professional "look and feel".

3.2 Online dissemination material

HERON online dissemination material allows to share the results of the project with a wide range of stakeholders as well as the general public. HERON website serves as the main dissemination platform, but the consortium has been also capitalising on the possibilities offered by social media to reach a wide audience and enhance the visibility of the project.

3.2.1 HERON website

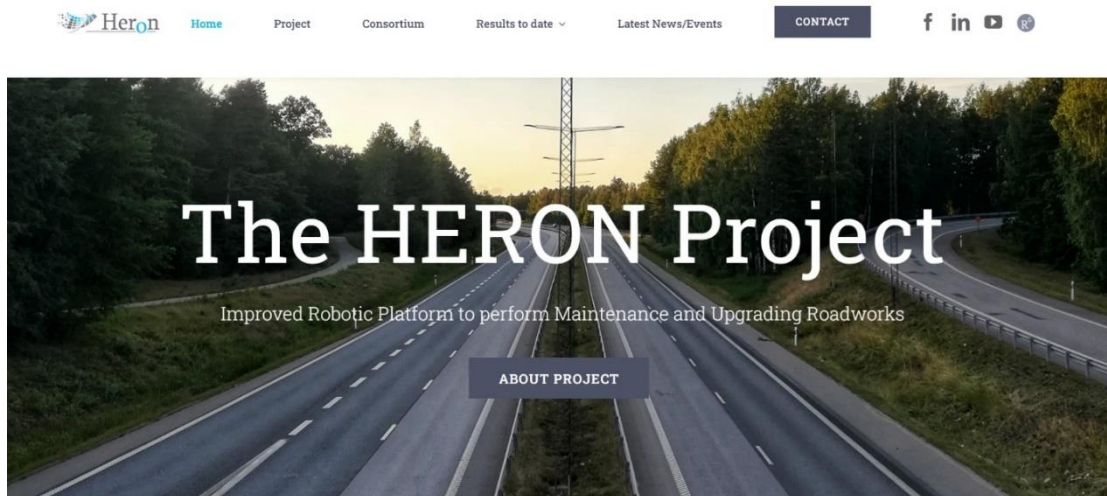
The website is one of the crucial dissemination channels for all categories of stakeholders. HERON website was launched in M3. It was implemented as deliverable D8.2 by the consortium partner Resilience Guard (RG) and is hosted on the domain <https://www.heron-h2020.eu/>. It features information on project objectives, presentation of the consortium, results to date, latest news and events related to the project, as well as the presentation video and press release. The website is regularly updated and populated with content during the whole implementation period.

As such, it is the main source of information and updates about the project but also a place where interested stakeholders will be able to download documents about the project, such as presentations, public deliverables, articles produced by HERON partners and other available dissemination material.

CORTE as dissemination and communication manager, together with Resilience Guard who implemented HERON website monitors its usage using web analytics, to identify the number of visitors and where they are coming from, what pages on the website are the most popular, etc.

In order to populate the content and make the website more attractive for visitors in the future, the dissemination leader will introduce blog posts that will be added to the website. Blog posts will be articles of around 350 words related to the field of work implemented in HERON (what will be achieved through the project, current trends in the field, etc.) as a contribution from each partner. Ideally these posts will be related to a specific role or field of a specific partner to present the added value of the project through their perspective.

Figure 2: Homepage of HERON website with the header menu



3.2.2 HERON social media

HERON utilises the opportunities offered by social media networks as very efficient means of communication, especially for raising awareness and promotion. HERON’s active presence on social media will allow to:

- Raise awareness and visibility attention to HERON activities and foster communication with stakeholders and the general public.
- Widely share invitations to HERON events.
- Promote HERON results and findings which will facilitate exploitation of project outcomes beyond the project.
- Foster interaction with related EU-funded projects.
- Share interesting news and updates about scientific and technical developments in the fields relevant to HERON.
- Direct internet traffic to the HERON website, by sharing links to the content and dissemination material on the website (deliverables, newsletters, videos, etc.).

HERON consortium has established profiles of the project on the following social media platforms:

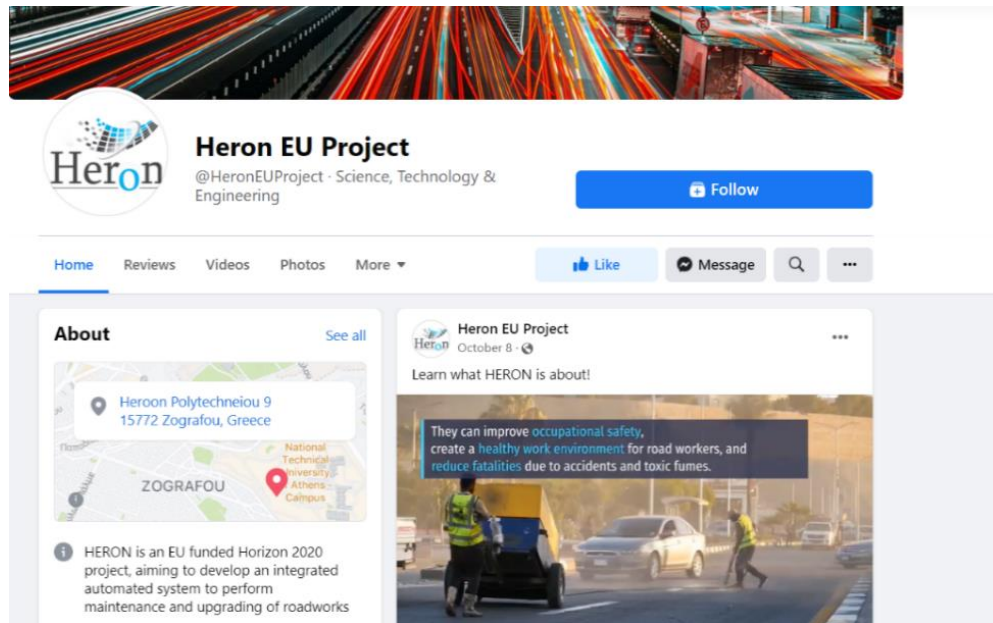
- Facebook: <https://www.facebook.com/HeronEUProject>
- LinkedIn: <https://www.linkedin.com/company/heroneuproject/>
- Twitter: https://twitter.com/HERON_H2020
- ResearchGate: <https://www.researchgate.net/project/HeronEUProject>

The links leading to these profiles are clearly displayed on the homepage of the project website.

While LinkedIn allows the consortium to readily share updates from the project and build a community of experts in various fields of interest to HERON, Twitter with its convenient format of spreading information in short messages, aims to draw the attention of industrial stakeholders, policy makers at EU and national level, related EU-funded projects, academics and the general public.

Social media activities of HERON are managed by the Dissemination Leader in coordination with Resilience Guard as the partner implementing the HERON website, who is also responsible for publishing the website content.

Figure 3: HERON Facebook page



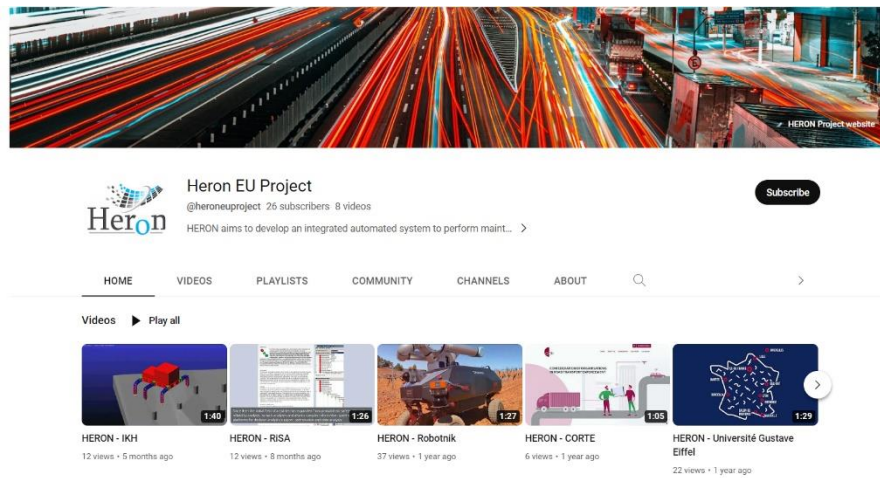
3.2.3 HERON YouTube channel

YouTube is another efficient and attractive platform that allows for a wide dissemination of videos, presenting HERON technical results and progress in an interactive way. The consortium has already established a dedicated HERON YouTube channel that is accessible on the following link: <https://www.youtube.com/channel/Ucc3hqqt-DVuVQ21b7fH-SOw>

So far, 8 videos have been developed and published on the channel. An introductory video has been produced by CORTE and presents HERON, its objective and consortium, while using a non-technical language for easy understanding by a wide group of stakeholders. Other videos present consortium project partners and their contribution to the project.

In the future, the dissemination leader will produce more videos, presenting technical progress achieved in different work packages and demo activities. Recordings from the events organized by HERON, such as webinars, workshops, etc., may also be uploaded to the channel.

Figure 4: HERON YouTube channel



3.2.4 Press releases and annual magazines

The first press release was prepared for the occasion of the project launch and disseminated through the networks of all consortium partners to present the project to the public. The press release is available on HERON website via the following link:

https://www.heron-h2020.eu/wp-content/uploads/2021/07/HERON_Press_Release_1.pdf

Two annual magazines were published so far, presenting HERON achievements, demo activities and the application of project results. Two more annual magazines are due in M36 and M48, respectively.

Table 6: Timeline for the publication of HERON annual magazines

Title	Deliverable number	Due date
Annual magazine (first issue)	D8.6	M12
Annual magazine (second issue)	D8.9	M24
Annual magazine (third issue)	D8.10	M36
Annual magazine (fourth issue)	D8.11	M48

3.2.5 Flyer

HERON flyer was developed for the purpose of presenting the project and the consortium in a concise way to the wider public.

Figure 5: HERON flyer



PROJECT COORDINATOR:
 Institute of Communications
 and Computer Systems, Athens
 (Greece)
 Dr Dimitris Kalogeras
 D.Kalogeras@noc.ntua.gr

Please, follow us on social media and keep up to date with our news items and downloadable content on www.heron-h2020.eu

Improved Robotic Platform to perform Maintenance and Upgrading Roadworks: The HERON Approach

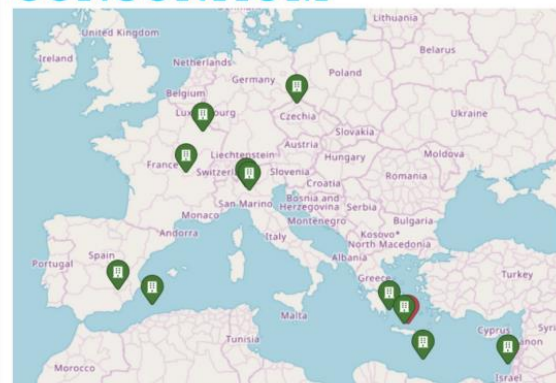



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 955356.

HERON aims to develop an integrated automated system to perform maintenance and upgrading roadworks, such as sealing cracks, patching potholes, asphalt rejuvenation, autonomous replacement of CUD elements and painting markings. It will also support the pre/post-intervention phases, helping conduct visual inspections and dispense/remove traffic cones in an automated and controlled manner.

- Scientific Objective 1** Develop an integrated robotic platform with increased navigation and positioning capabilities for maintenance and upgrading tasks and concurrent assessment of the RIs.
- Scientific Objective 2** Provide an optimized control framework for developing and refining robotic manipulation skills required to perform assessment and maintenance and upgrading interventions of RI.
- Scientific Objective 3** Integrate improved sensing and communication capabilities to the robotic platform to extract required measurements in identified areas of concern within an acceptable degree accuracy.
- Scientific Objective 4** Implement an AI toolkit enriched with image analysis modules, to optimally coordinate the whole maintenance process and simultaneously process, in a smart way, the data from sensing interface to take accurate and prompt decisions.
- Scientific Objective 5** Design and develop proper communication architecture to support seamless and ubiquitous services among the various actors of the maintenance and upgrading operations (sensors, UGVs and drones).
- Scientific Objective 6** Implement an integrated Decision Support System (DSS) and an advanced Incident Management System (IMS) with interactive AR/VR visualization tools.
- Scientific Objective 7** Implement on-site integration, scaled-demonstration of the services and the technological components and validation of the HERON platform in three case studies (Greece, France and Spain).

HERON CONSORTIUM



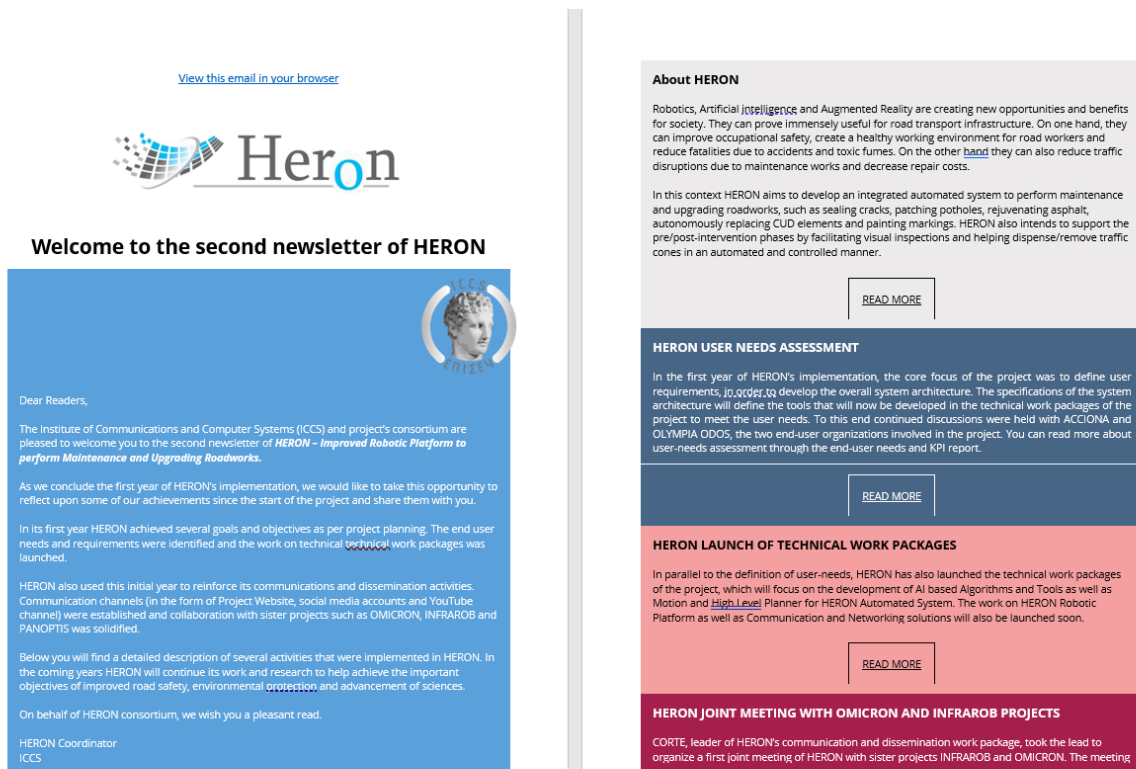
3.2.6 Newsletters

The dissemination leader has produced regular newsletters to provide an update regarding the progress and achievements of the project to stakeholders. Four newsletter issues have been published so far. They are distributed online to a wide range of stakeholders from the networks of consortium partners. All newsletters are also available on the HERON website under a dedicated category.

Table 7: Timeline for the publication of HERON newsletters

Title	Date
Newsletter (first issue)	February 2022
Newsletter (second issue)	July 2022
Newsletter (third issue)	October 2022
Newsletter (fourth issue)	June 2023

Figure 6: HERON newsletter



3.3 Publications in scientific journals and online repositories

Publications in scientific journals are important for the academic partners involved in HERON to disseminate project findings among the research and scientific community in the fields of relevance to the project.

A list of relevant journals in the fields of transport, robotics and ICT was already identified during the proposal phase. HERON academic partners seek to approach them in order to submit papers with project

outcomes and findings. In addition to this, the dissemination leader has established a dedicated **ResearchGate account** for HERON to share research papers as well as public deliverables.

The following table provides an overview of the publication by the HERON consortium to date. All publications, together with abstract, are also published on the HERON website under a dedicated category ‘Publications’: https://www.heron-h2020.eu/?page_id=1294

Table 8: Publications by HERON partners to date

Publication	URL
Katsamenis I., Bimpas M., Protopapadakis E., Zafeiropoulos Ch., Kalogeras D., Doulamis A., Doulamis N., Montoliu C. M-P., Handanos Y., Schmidt F., Ott L., Cantero M., Lopez R. (2022). Robotic Maintenance of Road Infrastructures: The HERON Project. Proceedings of the 15th International Conference on Pervasive Technologies Related to Assistive Environments, Corfu, Greece.	https://dl.acm.org/doi/10.1145/3529190.3534746
Zafeiropoulos Ch., Protopapadakis E., Chatzidaki A., Doulamis A., Vamvatsikos D., Zotos N., Bogdos G., Kostaridis A., Schmidt F., Ientile S., Sevilla I., Tilon S., Rallis I. (2022). A holistic monitoring scheme for road infrastructures. Proceedings of the 15th International Conference on Pervasive Technologies Related to Assistive Environments, Corfu, Greece.	https://dl.acm.org/doi/abs/10.1145/3529190.3534745
Katsamenis I., Karolou E.E., Davradou A., Protopapadakis E., Doulamis A., Doulamis N., Kalogeras D. (2022). TraCon: A Novel Dataset for Real-Time Traffic Cones Detection Using Deep Learning. Proceedings of the 2nd International Conference (NiDS 2022), Athens, Greece.	https://doi.org/10.1007/978-3-031-17601-2_37
Katsamenis I., Davradou A., Karolou E.E., Protopapadakis E., Doulamis A., Doulamis N., Kalogeras D. (2022). Evaluating YOLO Transferability Limitation for Road Infrastructures Monitoring. Proceedings of the 2nd International Conference (NiDS 2022), Athens, Greece.	https://doi.org/10.1007/978-3-031-17601-2_34
Burnreiter L., Khattak S., Ott L., Siegwart R., Hutter M., Cadena C. (2022). Collaborative Robot Mapping using Spectral Graph Analysis. Proceedings of the 2022 International Conference on Robotics and Automation (ICRA), Philadelphia, USA.	https://ieeexplore.ieee.org/document/9812102

More publications are expected in the upcoming phase of the project, as the work in technical work packages is progressing.

The following table provides an overview of the relevant publications that have been mapped by the consortium so far. The list may be updated during the project.

Table 9: List of scientific journals relevant to HERON

Publication title	URL
Automation in Construction	https://www.journals.elsevier.com/automation-in-construction
Computer-Aided Civil and Infrastructure Engineering	https://onlinelibrary.wiley.com/journal/14678667
Computers, Environment and Urban Systems	https://www.journals.elsevier.com/computers-environment-and-urban-systems
Drones	https://www.mdpi.com/journal/drones
Engineering Structures	https://www.journals.elsevier.com/engineering-structures
Field Robotics	http://journalfieldrobotics.org/JFR/Home.html
GIScience & Remote Sensing	https://www.tandfonline.com/toc/tgrs20/current
IEEE Geoscience and Remote Sensing Letters	https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=8859
IEEE Intelligent Systems	https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=9670
IEEE Journal on Selected Areas in Communications	https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=49
IEEE Open Journal of Intelligent Transportation Systems	https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=8784355
IEEE Transactions on Automation Science and Engineering	https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=8856
IEEE Transactions on Cybernetics	https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=6221036
IEEE Transactions on Geoscience and Remote Sensing	https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=36
IEEE Transactions on Image Processing	https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=83
IEEE Transactions on Intelligent Transportation Systems	https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=6979

IEEE Transactions on Robotics	https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=8860
IEEE Transactions on Vehicular Technology	https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=25
IET Circuits, Devices & Systems	https://digital-library.theiet.org/content/journals/iet-cds
Infrastructures	https://www.mdpi.com/journal/infrastructures
International Journal of Applied Earth Observation and Geoinformation	https://www.sciencedirect.com/journal/international-journal-of-applied-earth-observation-and-geoinformation
International Journal of Robotics Research	https://journals.sagepub.com/home/ijr
IEEE Robotics and Automation Letters	https://www.ieee-ras.org/publications/ra-l
ISPRS International Journal of Geo-Information	https://www.mdpi.com/journal/ijgi
ISPRS Journal of Photogrammetry and Remote Sensing	https://www.journals.elsevier.com/isprs-journal-of-photogrammetry-and-remote-sensing
Journal of Civil Structural Health Monitoring	https://www.springer.com/journal/13349
Journal of Highway and Transportation Research and Development (English Edition)	https://ascelibrary.org/journal/jhtrcq
Journal of Infrastructure Systems	https://ascelibrary.org/journal/jitse4
Journal of Structural Engineering	https://ascelibrary.org/journal/jsendh
Journal of Transport Geography	https://www.journals.elsevier.com/journal-of-transport-geography
Journal of Transportation Engineering, Part A: Systems	https://ascelibrary.org/journal/jtepbs
Remote Sensing	https://www.mdpi.com/journal/remotesensing

Robohub	https://robohub.org/
Sensors	https://www.mdpi.com/journal/sensors
Structural Monitoring and Maintenance	http://www.techno-press.org/?journal=smm&subpage=5
The Photogrammetric Record	https://onlinelibrary.wiley.com/journal/14779730
The Robot Report	https://www.therobotreport.com/
Transportation	https://www.springer.com/journal/11116/
Transportation Research Part C: Emerging Technologies	https://www.journals.elsevier.com/transportation-research-part-c-emerging-technologies

3.4 Participation in international conferences, scientific workshops and other events

The consortium has aimed to generate Interest in HERON through participation of consortium partners in various types of international events, such as conferences, scientific workshops, etc. Participation will be considered with regards to the availability of partners and project results, as well as the relevance of a particular event.

Dissemination leader keeps track of all events with the participation of HERON consortium partners. Details about these events, such as number and types of stakeholders reached at specific events as well as results, are reported in periodic reports.

The following table presents a list of conferences, scientific workshops and other types of R&I events that HERON consortium partners have attended so far to present research results and outcomes of the project. The partners will keep a proactive approach towards identifying possibilities for participation in these types of events in the future.

Table 10: Overview of conferences, scientific workshops and other events attended by the consortium in relation to HERON

Date	Event	Type of event	Description
10/11/2021	ASECAP Days	Digital conference	HERON participated in the 48th ASECAP Study & Information days: Regaining trust and confidence to boost the economy and to recover from pandemic, where a presentation was made on the topic <i>“A Robotic-based Communized Platform for Automatic Maintenance of Road Infrastructures”</i>
1/12/2021	CORTE General Assembly	External event	HERON was presented at the CORTE General Assembly, before an audience of more than

			100 participants from national transport (enforcement) authorities, transport associations and transport companies.
17/05/2022	HERON Presentation in PANOPTIS Workshop	Online workshop	HERON participated in the final workshop of the PANOPTIS Project. This was an occasion to showcase how HERON will uptake and build upon the work done in PANOPTIS and identify synergies with other sister projects such as OMICRON and INFRAROB.
23/05/2022	International Conference on Robotics and Automation (ICRA)	Publication, External event	Poster presentation and publication (peer-reviewed conference proceedings) in the top scientific conference in the field of robotics. Bernreiter, Lukas, Shehryar Khattak, Lionel Ott, Roland Siegwart, Marco Hutter, and Cesar Cadena. "Collaborative Robot Mapping using Spectral Graph Analysis." In 2022 IEEE International Conference on Robotics and Automation (ICRA), IEEE, 2022. ETHZ is a research partner in Task 5.1 on 3D Mapping where "ETHZ will contribute to the development of techniques for 3D SLAM". Also related to HERON KPI-4 on SLAM accuracy.
23-27/05/2022	EGU General Assembly 2022 (Vienna, Austria) https://www.egu22.eu/	External event	UGE presented HERON project during the special session, followed by several discussions in this regard during EGU22: https://www.egu22.eu/
11-15/06/2022	SS 14 – Data Management and Analysis for Predictive Maintenance of Aging Infrastructure (IALCEE23)	Special session in a conference	Organised by UGE.
22/06/2022	Future of Construction Symposium	Conference	Poster presentation of ETHZ WP4 research on manipulation of granular materials like sand/bitumen for RUP, potholes.
29/06-01/07/2022	PErvasive Technologies Related to Assistive Environments (PerInt - 4th Workshop on Pervasive Intelligence in Engineering) (Corfu, Greece)	Conference	Presentation of HERON's objectives and impact. http://www.petrae.org/
29/06-01/07/2022	PErvasive Technologies Related to Assistive Environments (PerInt - 4th Workshop on Pervasive Intelligence in Engineering) (Corfu, Greece)	Conference	Presentation of the monitoring scheme that uses AI tools and services as well as novel technologies in order to deliver an integrated platform that can be applied to road infrastructures.
05-07/07/2022	International Conference on Natural Hazards & Infrastructure	International conference	Presentation of HERON innovation and developments at the booth of SATWAYS. https://iconhic.com/

	(Athens, Greece) https://iconhic.com/2021/		
22/07/2022	Technical visit and meetings with the project management team of TRANSPOLIS	External meeting	UGE had a technical visit and meetings with the project management team of TRANSPOLIS and the EMGCU team/Département MAST from Université Gustave Eiffel. TRANSPOLIS is one of the field case studies in HERON.
27-29/09/2022	MS7: Digital Bridge Monitoring: Integration of NDTs and Visualization Tools for Structural and durability Assessment	Special session in a conference	Organised by UGE.
29/09-01/10/2022	BEYOND 2022 (Thessaloniki, Greece)	International exhibition	SATWAYS exhibited at the International Exhibition BEYOND 2022 at TIF-Helexpo, Thessaloniki, Greece.
14-17/11/2022	TRA 2022 (Transport Research Arena) (Lisbon, Portugal)	International conference	HERON participated in a joint session with related EU projects.
14-16/02/2023	Conference on Results from Road Transport Research (RTR 2023) (Brussels, Belgium)	Conference	HERON participated in a joint session with related EU projects.

3.5 Clustering with related EU projects and initiatives

HERON has been actively working to identify and establish links and collaborative relationships with the ongoing projects in the fields of road transport, critical infrastructure and other fields relevant for HERON. These relationships facilitate information sharing and help to promote the objectives and results of HERON. Within the Horizon 2020 framework the European Union has funded several projects related to infrastructure maintenance in the past that have some linkages to HERON. All these projects have now concluded, but the work done in these projects continues to have relevance for HERON and will be leveraged under the project. To this end, cooperation with some of the recently concluded projects such as PANOPTIS has been established by HERON.

Most notably, HERON has established a close cooperation with two related sister projects funded under the Horizon 2020 research and innovation funding programme, more specifically under the ‘H2020-EU.3.4. - SOCIETAL CHALLENGES - Smart, Green and Integrated Transport’ programme: OMICRON and InfraROB. Below we present the most important outcomes of the clustering activities so far, while the following actions are foreseen in the future:

- Register for their newsletter and share HERON dissemination material with them;
- Invite them to HERON meetings, workshops, final conference and other events, organized by HERON;
- Investigate possibilities to organize a common event for a larger group of stakeholders;

- Actively initiate their input and facilitate knowledge sharing in different formats, for example through the organization of a common workshop on a certain topic of common interest or by informing deliverables within the possibilities of respecting aspects related to confidentiality.

3.5.1 Joint session at The Transport Research Arena (TRA) 2022

HERON, together with OMICRON and InfraROB, participated in a joint session at the Transport Research Arena (TRA), the largest European Research and Technology Conference on transport and mobility. The 2022 edition of TRA took place on 14-17 November 2022 in Lisbon and attracted transport policymakers, practitioners, and researchers from Europe and beyond to present and discuss policy issues, best practices, and research findings across the broad spectrum of transport. The conference also offered the opportunity to network, participate in technical visits, and explore the exhibition.

The three projects took part in a session on intelligent and automated solutions for road asset management, together with three preceding Horizon 2020 projects (RESIST, SAFEWAY and FORESEE). The panel discussion focused on the journey to safer, better and more efficient road inspection, maintenance and intervention. It discussed emerging technologies such as Artificial Intelligence based decision support, Infrastructure Digital Twins and Autonomous Robotic intervention solutions. HERON, as well as OMICRON and InfraROB, presented insights into their perspectives of working towards a common goal of providing an integrated solution for more efficient road inspection, maintenance and intervention.

Mr Nikos Bakalos from ICCS participated on behalf of HERON and provided insights into how HERON has been working towards addressing key challenges related to integrated solutions for infrastructure resilience.

To promote the session, the three projects combined their efforts on social media by creating dedicated visuals and posts which were shared on social media profiles (LinkedIn and Twitter) of the three projects.

Figure 7: HERON at the TRA 2022



3.5.2 Joint session at the RTR Conference 2023

HERON participated in the 2023 edition of the **Conference on Results from Road Transport Research** taking place in Brussels on 14-16 February 2023. The RTR Conference has been an entry point into the state-of-the-art of European funded research projects in road transport. Participants learned about Horizon2020 projects’ results and expected impacts, and what the next research steps are in essential areas for road transport: Green Vehicles, Urban Mobility, Logistics, Intelligent Transport Systems, Safety, Automated Road Transport. The conference aimed to deliver a holistic view of how the European research scene is moving forward in these fields. HERON, together with InfraROB & OMICRON, participated in a session on full automated infrastructure upgrade and maintenance.

Mr Nikos Bakalos from ICCS participated on behalf of HERON and presented the technical work implemented by the project so far.

Figure 8: HERON at the RTR conference 2023



4 Conclusions

This is the second version of the Communication and Dissemination plan that updates the version developed at the beginning (M6) of the project. The document provides a guideline for all communication and dissemination activities implemented in the project. It also provides an update on communication and dissemination tools and materials developed by the project so far.

The main achievements during the first two years of the project implementation are:

- HERON's visual identity and branding have been defined;
- The first press release was issued and disseminated to HERON stakeholders;
- HERON flyer was developed;
- HERON website has been launched and is regularly updated;
- HERON social media profiles have been established and are regularly updated;
- 2 annual magazine issues were published;
- 4 newsletters issued were issued and disseminated to HERON stakeholders;
- 8 videos related to HERON were developed and published on HERON YouTube channel;
- HERON scientific partners have published several articles in scientific publications;
- HERON partners presented the project in various conferences and other types of events;
- HERON established good collaboration with sister EU projects InfraROB and OMICRON;
- HERON organized a joint session together with sister EU projects at the TRA and RTR conferences.

Dissemination activities will evolve and intensify during the project, through the use of different dissemination and communication channels and stakeholders reached, in order reach the stakeholders actively engage them in the implementation of activities, but also to pave the way to the exploitation of HERON results after the project.