



D7.2 Dissemination and Communication activities

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DEFINITION AND ABBREVIATIONS

| | |
|-------|--|
| ATC | Air Traffic Control |
| ERTMS | European Rail Traffic Management System |
| EGNOS | European Geostationary Navigation Overlay system |
| GNSS | Global Navigation Satellite System |
| IPR | Intellectual Property Protection |
| LIDAR | Laser Imaging Detection and Ranging |

EXECUTIVE SUMMARY

According to the European Commission H2020 Online Manual, “dissemination means sharing research results with potential users - peers in the research field, industry, other commercial players and policymakers”, which implies contributing to the progress of science in general.

Proper project dissemination and communication are key in order to ensure the maximum impact of the HELMET project. The main goal of the planned communication activities is to increase the visibility of the HELMET project on communities and target groups, from local to European and International levels, in order to promote the implementation and use of project results, always considering confidentiality and IPR protection aspects. Although it was a project that went through the COVID-19 pandemic all partners of the consortium have contributed to the HELMET dissemination, according to their foreseen role and effort, and using all available tools and channels.

This document provides a description of the HELMET dissemination and communication activities carried out during the whole duration of the project. The aim of this report is to provide a detailed description of the dissemination strategy and how this was implemented during the 36 months of project implementation, including the materials and strategies that have been used to facilitate the widespread of information and knowledge of the results created by the project. The dissemination of HELMET is essential throughout the project’s life and needs to be carried out with the cooperation of all Work Packages.

First, materials and strategies for communicating and disseminating HELMET to railway stakeholders, the scientific community, and the general public are presented. Those include the creation of a project identity; the creation of a website; the production of one brochure and two newsletters; the organization of dissemination events; the participation in conferences. Moreover, this report describes how expert groups will interact with the project. Finally, a list of events is presented. The dissemination of the project’s research activities and results are fundamental component of the HELMET project.

The dissemination objectives of this project were:

- to ensure that all important actors in the European railway sector are informed about HELMET;
- to increase the likelihood of the results and the acceptance of the project outcomes following the latest knowledge and the state of the art regarding key energy harvesting methodologies and communication solutions for enhancing train integrity functionalities and signaling, throughout the interaction with relevant railway stakeholders;
- to disseminate, engage and promote the project and its research activities to relevant audiences.

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INTRODUCTION

HELMET rely on the achievements of the most relevant EUSPA-funded projects such as ERSAT EAV, STARS, RHINOS, and ERSAT GGC, counting the participation in the HELMET consortium of some of their partners.

HELMET (High integrity EGNSS Layer for Multimodal Eco-friendly Transportation) is a 36 months EUSPA (GSA) Open Call project within the Horizon2020 Programme of the European Commission. The main objective of HELMET is to develop innovative EGNSS based applications for the most impacting eco-friendly and green transportations means as automated and driverless cars, connected cars, train signalling and control, and Unmanned Aerial Vehicles for surveillance and integrated information management of roads and railways. For those applications a high integrity, accurate, reliable self-localization of vehicles will bear towards higher safety and lower CO2 emissions while saving investments and operational costs.

The priority is given to the exploitation of the distinguishing features of EGNOS and Galileo to be used on collision avoidance vehicle's automation systems, primarily for public transport, to improve capacity and safety. The aggregation of cars, trains, roads, and railways needs is the HELMET vision to create a critical mass of safety of life applications to convey the value of certified EGNSS services for land transportation systems.

The HELMET project has the ambitious objective to set the stage for a future standard of GNSS applied to railway/automotive/UAV applications to foster the adoption of EGNSS applications. Consequently, a specific effort is planned for a multi-purpose dissemination plan targeting the key stakeholders and users

PROJECT DISSEMINATION

Even though the project took place in difficult times, during the COVID-19 pandemic, the project dissemination was of key importance for maximizing HELMET's impact and for disseminating the project results. Communication of the project research activities involved reaching relevant railway stakeholders, and the scientific community and creating awareness among the general public. This has been achieved through creating a project identity, leaflet, social media accounts, and a public website, and attending conferences and relevant events.

PROJECT IDENTITY

A project identity will be set at the beginning of the project including templates for presentations and reports, a project brochure as well as the HELMET. The project identity will help the dissemination activities and ensure a consistent communication of the project concept, objectives and results. The brochure will be distributed at project workshops and conferences, where project partners will participate.


The development of a visual identity and a project logo ensures project outputs are consistent and easily recognisable. A brainstorming took place to find an appropriate concept for the project logo. For this, key aspects of the project were considered. The core elements represented in the logo shown in Figure1.

It is also important to follow and respect the project visual identity in order to maximize the impact on the audience. For this purpose, templates with HELMET brand have been prepared for partners use, Figure 2.

Figure 1: HELMET Logo



Figure 2: A4 Template



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Start date of project: 02/01/2020 Duration: 24 months

This project has received funding from the European Union's Horizon 2020 research and innovation programme under GA No 870257

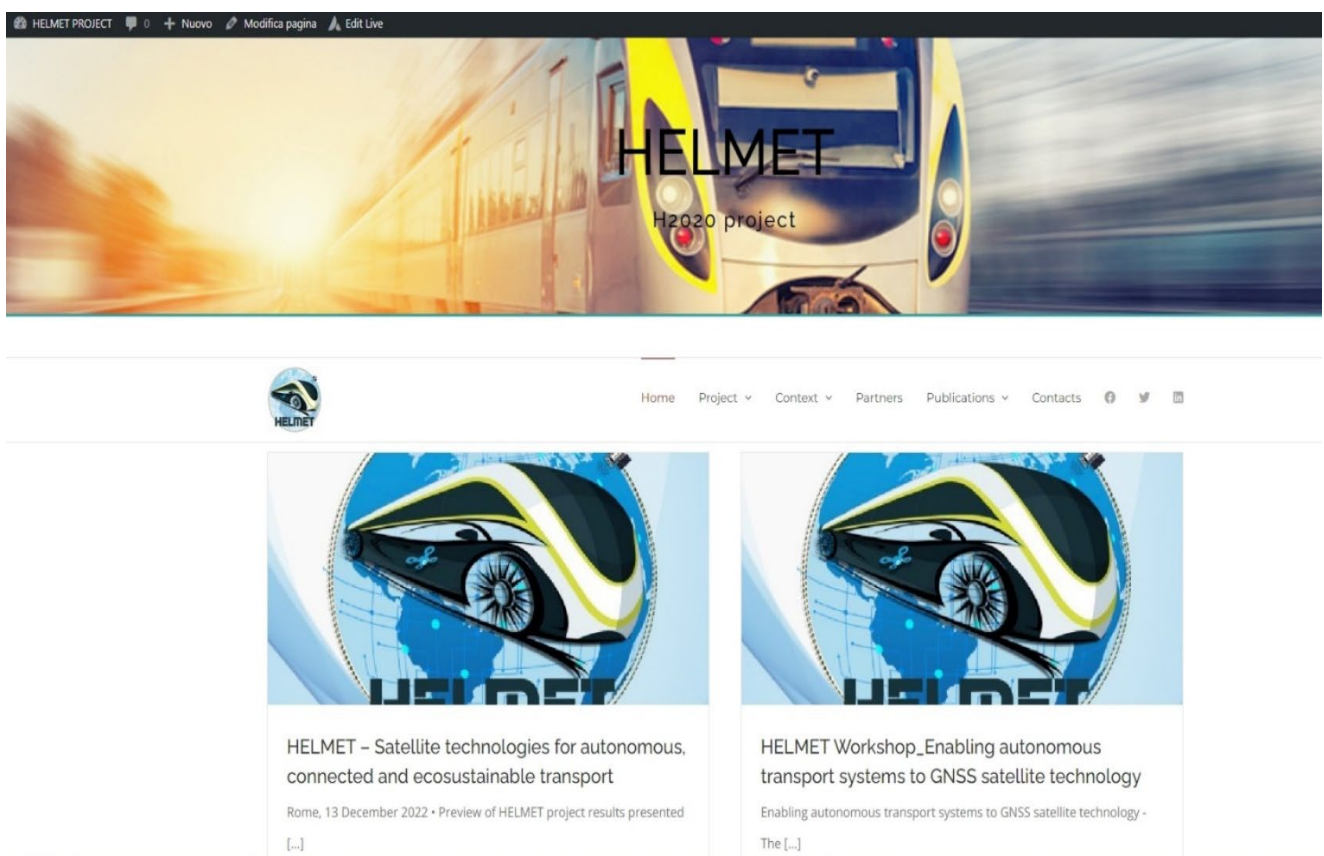
WEBSITE

A dedicated website was set up at the beginning of the project. The website was a user-friendly platform that collects the relevant information about the project and was created and updated carefully in order to improve the visibility for search engines. The website is openly available, with a section where visitors can register their interest. A link to the Social networks (LinkedIn, Facebook, Twitter) was allocated on the front page of the website to allow the visitors the possibility to subscribe to the project pages.

The public portal is open to the public and displays the key project information, partners, results, news/events and links to the partners' institutions. The webpage also offers links to the EUSPA website as well as to the websites of the EC.

WEBSITE URL: <https://www.helmet-project.eu/>

Figure 3: HELMET Website



LEAFLET

The brochure has been distributed at project workshop and on line, to reach out to a larger number of people. One project leaflet has been produced to raise awareness of contents the project framework: main activities, objectives and links of the project. **Figure 4: Leaflet**



HELMET is a European project funded by the European Union Agency for the Space Programme under the Horizon 2020 Programme that aims at developing innovative EGNSS based applications for the most impacting eco-friendly and green transportation means. The target adopters are automated and driverless cars, connected cars, train signalling and control, and UAVs for surveillance and integrated information management of roads and railways. HELMET multi-modal architecture is designed to operate in three different application segments: railway, automated car and UAV. It includes three different subsystems: the Augmentation subsystem, the Communication subsystem and the Multi-sensor On-Board subsystem. The Augmentation subsystem is identical for all three application segments while the communication and the On-Board subsystems are tailored to each application.

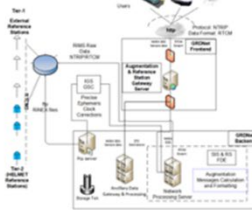


Figure 1: Overall Augmentation Detailed Design

The designed Augmentation Subsystem is able to serve different applications in a multi-modal framework. The Augmentation Network, based on a Network of Reference Stations providing real-time raw measurements to the Control Centre, is compliant to RTCM SC-104 and RTCM SC-134 and provides two level of services. The first, suitable for the automotive sector, is based on healthy real time masks, allow the user to perform its own Integrity algorithms. The second, for very high integrity applications, as for the rail sector, is based on the 2-Tiers approach (two layers of Reference Station networks), where SIS and network statistical parameters are sent to the user (including probability of fault of satellite and constellations and measurement variances) and allows it to achieve the needed THR. The Augmentation System is independent from single receiver trademarks.

The overall architecture of the Railway Multi-sensor On-Board subsystem is based on both GNSS FDE and multi-sensor FDE. Particularly the integrity scheme operates at different layers as the signal domain (I/Q samples), measurement domain (Raw data) and the position domain (after PVT estimation). The a-priori knowledge of the track digital map is also exploited in the estimation computation to improve the accuracy of the PVT estimation process. The Communication subsystem guarantees the communication with the Augmentation Network.



Figure 2: Railway MOBU functional architecture



Figure 3: Automotive MOBU functional architecture

The Automotive MOBU collects data from the Augmentation Network and multiple sensors (GNSS, IMU and Stereo camera system), and processes them to achieve reliable navigation with integrity information. The software processing is divided into 3 main blocks: GNSS Processing Block with dedicated local fault detectors and integrating the augmentation information, Sensor fusion & Integrity Monitoring Block able to provide a high accuracy-high integrity solution and Camera Processing Block to detect lane marks on the road. Additionally, a Localization Mode Selector Block makes smart decisions about the most suitable solution to be provided to the user. The algorithms are validated with tests performed with real data in automotive scenarios.

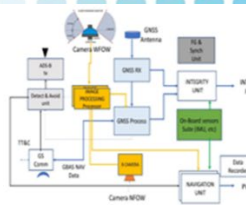


Figure 4: UAV MOBU design

An aircraft navigation system combines the information from the On-Board sensor suit to determine and manage the following information:

- > Kinematic information (acc. & angular rates, etc)
- > Navigation states
- > Trajectory and track parameters
- > Internal self-status

Basically, the aircraft operates based on external reference data but can also flight for same time and occasion in dead-reckoning even from one reference point to another.

One of the main tasks of the HELMET project is the identification of the requirements for the identified target users. The focus of the project is on rail and automotive considering also the UAV applications intended as support for the rail and road applications. One of the key point of the HELMET approach is the exploitation of the strong synergies among rail and road applications. As a matter of fact, the operational environment is quite similar since often roads and rails run close one to the other. The identified requirements have been provided in terms of Integrity, Accuracy, Alert Limit, Time to Alert, Availability, Continuity and Security. As shown below, the rail applications have a stronger need in terms of integrity than the road applications.

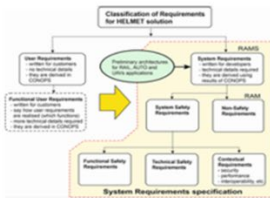


Figure 5: System Requirements Specification process

The system requirements specifications started from the HELMET CONOPS (Concept of Operations) used to define and justify high-level user requirements for rail, automotive and UAV safety applications. The conclusions of the GNSS User Consultation Platform (UCP) organised by EUSPA were also utilized. The most challenging operational scenarios in terms of accuracy and integrity were selected and the high-level user requirements for HELMET solution were specified and justified in more detail. System requirements were then derived according to the methodologies in IEC 61508, EN 50126, EN 50129 and ISO 26262. Finally, the Requirements Traceability Matrices for the individual user's groups were developed to map the links and dependencies between the high-level user requirements and the system requirements.

| Application | Category | User Requirement / Use case | Integrity | Accuracy 95% | Alert Limit | Time to alert | Availability | Continuity | Security |
|--------------------------|------------------------------|--|-----------|---------------------------|---------------------------|---------------|--------------|------------|-----------|
| Rail Localization System | Localization System | Track Identification | <1e-6% | 70 cm | 3.7 m | 10 - 30 s | High | N/A | Very High |
| | | Odometry Calibration | <1e-6% | 70 cm | 3.7 m | < 1 s | High | N/A | Very High |
| | | Cold Movement Detection | <1e-6% | 3 m | 3 m | < 10 s | High | N/A | Very High |
| Road Localization System | Automated Driving on Highway | Automated Driving on Highway | <1e-6% | Lat. 17 cm Long. 4.3 m | Lat. 47 cm Long. 11 m | 1 s | > 99.5% | High | Very High |
| | | Automated Driving on Local Roads | <1e-6% | Lat. 17 cm Long. 40 cm | Lat. 42 cm Long. 1 m | 1 s | > 99.5% | High | Very High |
| | | Automated Driving on Narrow and Curved Roads | <1e-6% | Lat. 7 cm Long. 11 cm | Lat. 17 cm Long. 20 cm | 1 s | > 99.5% | High | Very High |

Figure 6: Identified user requirements

Project Partners

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SOCIAL MEDIA

HELMET had an active presence in the social media to show the characteristics and results of the project and leverage the benefits of R&I public funding policies to a wider audience, as well as to boost engagement with this audience. In this sense, the social media accounts have been used to improve the awareness of the project results among stakeholders of the rail and automotive sector and maximize the impact.

The presence of the project on social media is fundamental to accomplishing the objectives, and it was used as a relevant tool to reach third parties, and the research community, and to interact with the general public. The availability of new project results was communicated informing about its progress, disseminating the project outcomes, and creating a scientific hub interested in collaborating with the project.



<https://www.linkedin.com/in/helmet-project/>



<https://www.facebook.com/Helmet-Project-113478633368391>



<https://twitter.com/EuHelmet>

NEWSLETTER

The project has produced two newsletters in M10 and M24, which provided up-to-date information on the main achievements and results of the project. The newsletters were provided up-to-date information on the status and achievements of the project. The newsletters were circulated via e-mailing lists. In order to ensure that the widest audience possible is reached, each partner used its own mailing list.

EVENTS

Radiolabs have organized a workshop with the most relevant standardisation stakeholders to ensure the uptake of the results. The event was held in Rome on December 12, 2022, at the auditorium of Roma Tre University. The event gathered 80 participants, including project consortium members, stakeholders from the rail industry, the aerospace, and automotive sector, and, various research centers, with a significant impact on the rail and automotive community.

The first session of the event included the welcome and extensive summary of the main achievements and results of the project.

The HELMET workshop, opened by prof. **Alessandro Neri** – coordinator of HELMET – has been a unique opportunity to involve the players of the sector to focus on the challenges that railways and road operators will have to face to benefit from the European GNSS infrastructures with EGNOS and Galileo.

Anna Masutti, president of RFI (FS Group), in her greeting message underlined the importance of GNSS technologies for the railway sector as evidenced by the commitment made by RFI in the various research and innovation projects conducted since 2012 in Europe which confirmed the expectations.

Carlo des Dorides, former executive director of EUSPA, congratulated for the considerable progress in recent years in the diffusion of GNSS technologies in the railway and road ecosystems, which have demonstrated important technological synergies in the HELMET project and emphasized the central role of EUSPA, which has the exact task of promoting the use of GNSS in the various sectors, and in particular that of transport, which will probably become the largest user of GNSS systems in Europe too given the positive experiences in the USA and Asia.

Fabio Senesi, Senior Manager Head ERTMS Plan of RFI, in presenting the ERTMS plan which is being implemented according to the planning of the PNRR, underlined "the importance of being able to have new technologies - such as satellite ones which improve economic sustainability and environment by making the ERTMS system more competitive.

Gabriele Ridolfi, technical director of ERTMS Users Group, highlighted the expectations of the main European railways in order to have a safe, interoperable and economically sustainable solution that allows the use of GNSS technology in order to improve the "train positioning" function, with consequent benefits in terms of safety, performance and economic sustainability. Ridolfi also added that the plan for achieving the aforementioned objectives, and in particular for standardization at the European level must be correlated with the roadmap of the Europe's Rail Joint Undertaking (ERJU) research and innovation programme, which involves all the main industries and railway operators.

"The Anas Smart Road - declared **Luigi Carrarini**, Center of Excellence Smart Road & SHM of Anas (FS Group) - is the key element of the mobility of the future, enabling the development of Smart Mobility and preparatory to future scenarios of autonomous driving of vehicles. It is a revolutionary passage, from the road intended as a civil work made up of asphalt and concrete to an intelligent and connected road, a digital and energetically sustainable corridor for the benefit and safety of the territories crossed".

Benedetto Carambia, R&D manager of Movyon Gruppo Autostrade per l'Italia illustrated the Mercury program indicating its main cornerstones, which include both the innovative mobility solutions developed by Movyon, and the trials of additional services to support connected and autonomous driving that integrate with the positioning capabilities based on satellite systems

The technological synergies between ERTMS and connected and autonomous driving cars were the subject of the speech by **Massimiliano Ciaffi**, Head of ERTMS on board subsystems at RFI, who

explained that safe and accurate satellite localization and video sensors are common for control of trains (ERTMS) and connected driving cars.

Alberto Tuozzi of ASI, head of unit for relations with the EU, in his speech stated that ASI has been alongside RFI since 2012 by supporting various research projects which are part of a common roadmap which also involves ESA and EUSPA for the introduction of satellite technologies in the ERTMS system.

Daniel Lopour, EUSPA Market Development Officer, highlighted the importance of HELMET as a driver of the technological synergies between Rail and Road and shared the next actions to achieve the goal of full integration of GNSS in ERTMS systems. In his speech, he highlighted the need of convergence towards a pan-European augmentation solution, with EGNOS being the common denominator of the different solution architectures using European GNSS for fail-safe train localization in frame of ERTMS.

Maria Jose Garcia Prieto, project officer in the ERTMS and Telematics Unit at ERA, described the process to introduce innovations into the ERTMS regulatory framework underlining the importance of the alignment between all the actors of the sector and the key role that ERJU and System Pillar will play on that. Furthermore, most of the new technologies foreseen for the evolution of the ERTMS are already planned for the connected and autonomous cars.

ANSFISA looks with great interest at the opportunity represented by satellite systems, as reiterated by **Giulio Margarita**, of the Agency's Railway Safety Department, speaking of a technological innovation very useful for raising safety standards overall: from the application of these systems effective solutions can emerge for real-time monitoring of traffic, for maintenance, for the management of potential critical situations.

In the afternoon session, the achievements of the HELMET project were presented by the HELMET team in front of an audience of international experts, showing also the recent results of two field tests, on the Rome- Fiumicino motorway and on the Cagliari-San Gavino railways. These tests have demonstrated the capability of the HELMET system in operational environments with specifically designed localization units installed respectively on a car and a train. The car's Mobile On-Board Unit developed by DLR with Roboauto, is based on a multi-sensor enabled by accurate GNSS measurements, Augmentation messages, RTK solution, filtering with inertial sensor and the support from video camera. The train's Mobile On-Board Unit developed by Radiolabs based also on a multi-sensor with GNSS, IMU, Augmentation messages, plus LIDAR and video camera, was tested in the field in a version with GNSS-IMU loose coupling mode in line with the short term ERTMS needs.

The HELMET architecture is composed by two layers. The 1st tier reuse GPS and Galileo navigation satellites and SBAS corrections and integrity information provided over a ground-based communication link. A secure communications network (along with direct signal transmission) links this 1st tier to the 2nd tier, which includes local-area GNSS augmentation based upon networks of ground reference receivers located near where users operate. This 2nd tier - provided during the tests by a local network of Sogei – is a novelty of HELMET looking at the perspective of federating other networks to ensure capillary coverage. Another novelty of HELMET is that the same architecture supports three classes of users: rail, smart roads /connected cars, and UAV with separate "adaptation layers," as the augmentation provided by the 2nd tier will be translated into information customized to each user type and formatted accordingly.

Sam Pullen from Stanford University - one of the leading GNSS experts in the world – concluded the technical session by presenting the GNSS techniques being adopted internationally and provided useful indications to consolidate the HELMET results in anticipation of its next phase planned before operational use. According to Pullen, HELMET improves and expands upon the multi-tier GNSS

augmentation concept of the previous project RHINOS. Yet it allows user service level improvement over time provided by mature augmentations (SBAS and GBAS) which are improving with multi-frequency, multi-constellation service. Newer augmentations (PPP and RTK) to localize a vehicle with a “meter or less” accuracy can theoretically meet all rail/road performance requirements and the next step is to certify the integrity. Pullen underlined the need to continue current activities to build a safety case for mature augmentation tiers and the evaluation of road and rail user multipath errors.

The closing of the works was entrusted to **Francesco Rispoli**, general manager of Radiolabs, who recall that the HELMET project is the result of an international collaboration born with the RHINOS project at a time when the possible synergies between rail and automotive could be glimpsed in a vision shared with prof. Per Enge of Stanford University, one of the "fathers" of GPS. “

The rest of the session was dedicated to present the activity of the technical work package related to the Automated Update of Test Environment (WP5), Continuous Integration, Automated Test Repetition and Evaluation (WP6), Railway Scenarios Requirements and Test Cases Definition (WP2), Methodology for the Characterization of GNSS errors in the Railway environment, (WP3) and Geo-distributed simulation and verification platform (WP4).

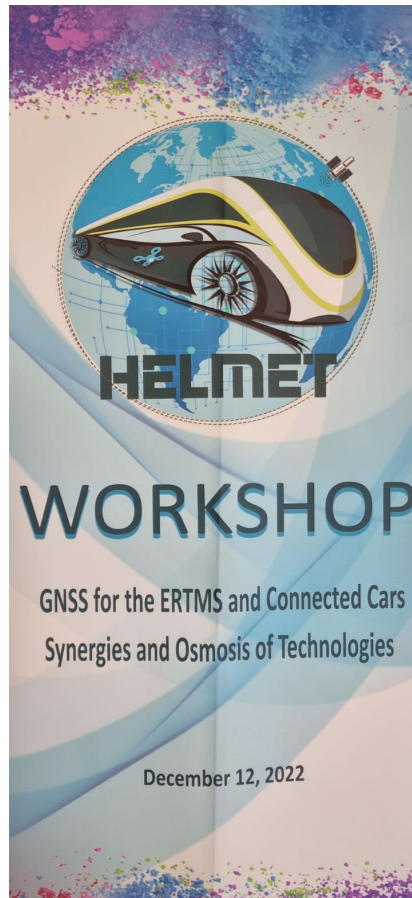
During the second session of the event was dedicated to present the activity of the technical work package related to the Automated Update of Test Environment (WP5), Continuous Integration, Automated Test Repetition and Evaluation (WP6), Railway Scenarios Requirements and Test Cases Definition (WP2), Methodology for the Characterization of GNSS errors in the Railway environment, (WP3) and Geo-distributed simulation and verification platform (WP4).

The HELMET project had the ambitious objective to set the stage for a future standard of GNSS applied to railway/automotive/UAV applications to foster the adoption of EGNSS applications and the workshop finalized with a proactive and instructive dialogue between the participants and the consortium.

Brochures and gadgets with the project logo were distributed at this workshop and a press agency was also present to help us effectively disseminate the project's results.







PRESENTATIONS AND PUBLICATIONS

HELMET has been actively involved in high-profile academic and industrial events that fall within the scope of the project, such as ION (navigation institute) Journal and Conference Proceedings, IEEE journals, etc.

HELMET has actively looked-out for high profile academic and industrial events that are within the domain of interest of the project. HELMET partners has disseminated the project and results of the project in the following events and publications:

| Type* | Short Description | Link |
|--------------------|--|---|
| Event participated | RTCM - Special Committee 134 for High Integrity Layer | https://www.rtcn.org/committees |
| Publication | ION GNSS+ 2020 | https://www.ion.org/publications/abstract.cfm?articleID=17608 |
| Publication | "A Safety Regulatory Framework for Certification and Authorization Process of Self-driving Cars: Experience from European Railways", Authors: Filip, A., University of Pardubice, Czech Republic; Rispoli, F., Hitachi Rail STS S.p.A, Italy; Capua, R., Sogei S.p.A, Italy. E-proceedings of the 30th European Safety and Reliability Conference and 15th Probabilistic Safety Assessment and Management Conference (ESREL2020 PSAM15) | https://www.rpsonline.com.sg/proceedings/esrel2020/html/4397.xml |
| Event participated | User Consultation Platform 2020 (UCP) (Rail Session) | https://www.gsa.europa.eu/user-consultation-platform-2020-ucp |
| Publication | "Certification of EGNOS Safety-of-Life service for ERTMS according to IEC 61508 and EN 50129", Author: Filip, A., University of Pardubice, Czech Republic; WIT Transactions on The Built Environment, Volume 199, pp. 115-125 | https://scholar.google.it/scholar?hl=it&as_sdt=0%2C5&as_vis=1&q=WIT+Transactions+on+The+Built+Environment%2C+Volume+199%2C+A.Filip&btnG= |
| Publication | "On the Use of Differential Correction Clustering for Facing Spoofing Attacks to GNSS Augmentation Networks," Baldoni, Sara, Roma TRE University, Italy; Battisti, Federica, University of Padova, Italy; NERI, Alessandro, Roma TRE University, RADIOLABS, Italy, in IEEE Access, vol. 8, pp. 219903-219922, 2020, doi: 10.1109/ACCESS.2020.3042469. | https://ieeexplore.ieee.org/document/9281300 |
| | Submitted idea: „Certification of EGNOS Sol. service for ERTMS/ETCS according to IEC 61508 and EN 50129” - Filip, A. – received the „Winner Czech Republic 2020” award. | The European Satellite Navigation Competition (ESNC) / Galileo Masters |
| Publication | ION GNSS+ 2021, "Integrity Bounds for Rail and Road Applications Based on Local Hazard Maps", Alessandro Neri, Roma TRE University, RADIOLABS, Italy; Roberto Capua, SOGEI, Italy; Aleš Filip, University of Pardubice, Czech Republic; Agostino Ruggeri, RADIOLABS, Italy | https://www.ion.org/gnss/abstracts.cfm?paperID=10564 |
| Publication | "GNSS-Imaging Data Fusion for Integrity Enhancement in Autonomous Vehicles", Baldoni, Sara Roma TRE University; Battisti, Federica, University of Padova; Brizzi, Michele, Roma TRE University; NERI, Alessandro, Roma TRE University, RADIOLABS, Italy; IEEE Transactions on Aerospace and Electronic Systems | https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=9754275 |
| Publication | "Clarification of Discrepancies in the Classification of 1oo2 and 2oo2 Architectures Used for Safety Integrity in Land Transport", Authors: Filip, A., University of Pardubice, Czech Republic, Capua, R., Sogei S.p.A, Italy; Neri, A., RadioLabs, Italy; Salvatori, P., RadioLabs, Italy E-proceedings of the 31st European Safety and Reliability Conference (ESREL2021) | https://cmswebonline.com/esrel2021-epro/html/052.xml |
| Event participated | On September 24th Radiolabs has been invited by Rete Ferroviaria Italiana (RFI) to join the Table established by RFI for the ERSAT programme together with Alstom, Hitachi Rail and MERMEC. Prof. Neri made a presentation of the HELMET project underlining important synergies with ERSAT. In particular for the Augmentation Network solution being developed in HELMET as a candidate architecture for up-grading the proprietary solution of the Novara-Rho, Prof. Neri added that the HELMET solution is expected to adopt the new RTCM-SC 134 standard for railways applications for which he is involved as chairman of the railways working group. During this presentation Alstom and MERMEC raised several technical questions expressing the interest for sharing further documentation on the HELMET project asking Prof. Neri and RFI to organize a follow-up meeting. | |
| Event participated | Radiolabs presented the HELMET project at "Connected vehicles, IoT and machine learning for intelligent transport systems" event held at the Expo 2020 Dubai. | https://www.youtube.com/watch?v=y7Fvh0a-wFk |
| Event participated | HELMET has been presented by Radiolabs to ANAS (Road Infrastructure Manager) that is interested to exploit the synergies between Smart Roads and ERTMS. In this respect, ANAS has involved Radiolabs in the WG for the preparation of the Position Paper requested by Ministry of Infrastructure and Sustainable Mobility | |
| Event participated | HELMET has been invited by RFI to join the WG on Satellite composed by Hitachi, Alstom, Mermec. Work is in progress and a Position Paper is being prepared. | |
| Event participated | HELMET team has participated to the Workshop organized by DEFIS with the ARAIMTOO team. | |
| Event participated | On May 24th 2022 Radiolabs has been invited by Eurisy to participate to the webinar "Space 4 Critical Infrastructure: Putting the EC-proposal into action", organized in collaboration with NEREUS (Network of European Regions Using Space Technologies). Radiolabs, as project coordinator, presented the HELMET project, providing an example of a European project on the definition and development of innovative EGNSS applications for smart mobility solutions, presenting objectives and activities carried out by the consortium, as well as new R&D opportunities that could involve road and rail infrastructure managers and service providers. | https://www.eurisy.eu/event/space-4-critical-infrastructure-putting-the-ec-proposal-into-action/agenda/ |
| Publication | Synergies Between Road and Rail Transport in the Development of Safe Self-driving Vehicles - Filip, A. | Int. Journal Transp. Dev. Integr., Vol. 6 , No. 3 (2022), pp. 313-325. DOI: 10.2495/TDI-V6-N3-313-325 |
| Publication | Derivation of harmonised high-level safety requirements for self-driving cars using railway experience - Filip, A., Capua, R., Neri, A. and Rispoli, F. | Springer Nature - Scientific Reports - Note: paper was accepted by the journal on 20/12/2022. It will be published as an open access paper very soon |

PROJECT EXPLOITATION

HELMET is an ideal project to share competences between the rail, automotive, UAV, and the GNSS sectors. Radiolabs, being involved in both rail and automotive applications, take advantage of the partner experiences in both sides of the chain to develop a complete methodology based on state of the art and prepared for technology evolution.

Furthermore, the presence of the advisory board constituted by stakeholders (RFI, ANAS, ERTMS, ERA etc.), space agencies, and standardization group assures the exploitation of the project outcomes. This allowed those key stakeholders to be informed regarding the project's outputs and to provide feedback to facilitate their acceptance.

CONCLUSIONS

This document, D7.2 Dissemination and communication activities, present a comprehensive strategy of the HELMET project. The dissemination and communication activities described all the materials and strategies that were used for external communication by relevant stakeholders.

The dissemination and communication activities were discussed at the WP level and were coordinated via WP7 with the collaboration of all the other partners, accomplishing the dissemination of the project results to a wide range of audiences.