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Drones4Safety

Research & Innovation Action (RIA)

Inspection Drones for Ensuring Safety in Transport Infrastructures

Report on stakeholders' engagement and liaising with other EU initiatives

D8.4

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1 Executive Summary

The goal of the Drones4Safety project is to provide a cooperative, autonomous, and continuously operating drone system that will be offered to railway and bridge operators to inspect their transportation infrastructures accurately, frequently, and autonomously.

The project does not only focus on technology and research: it puts attention to the state of art and needs of people interested in the system. Clearly, Drones4Safety touches a wide range of stakeholders: railways and trains operators, drone operators and manufacturers, power lines and bridges workers, but also drone and safety regulators, industrials and industrial associations, scientific organizations and researchers. With this in mind, stakeholders' engagement and relation with other similar EU projects are essential to the project success. Drones4Safety promotes discussions, debates, involvement, and comparisons to keep the usability of the system at the center of the project.

This document describes the Drones4Safety activities aimed at increasing the external engagement and the liaison with related EU projects. These actions refer to the period M1-M30, that is from June 2020 to November 2022. It is built according to what was stated in D8.2 Dissemination, Communication and Exploitation Plan.

This paper reports:

- The overall approach to engagement
- Target of engagement
- Engagement activities with stakeholders and other EU projects.

Finally, it also investigates the constraints and impediments faced during the before mentioned period. For those reasons this deliverable represents not only the report but also an update of D8.2 that will guide further activities in the last months of the project.

Contents

Acronyms

Acronym	Description
AB	Advisory Board
D	Deliverable
D4S	Drones4Safety
EC	European Commission
EU	European Union
KoM	Kick-off Meeting
KPIs	Key Performance Indicators
M	Month
WP	Work Package

2 Introduction

The Drones4Safety project faces different topics (infrastructure, safety, energy harvesting, use of technologies, …) and, consequently, involves a wide range of potential stakeholders and users. In this context, the communication, dissemination and exploitation activities play a key role in achieving the project goals. They go on all the project lifetime based on a constantly monitored, assessed and improved plan (D8.2 Dissemination, Communication and Exploitation plan).

This document aims at reporting the activities carried out during the period M1-M30 and aiming at engaging with stakeholders and liaising with other EU projects.

It comprises four main parts:

- Overall approach
- Stakeholders' engagement activities
- Activities with other EU projects
- Conclusions

3 Overall approach

The overall goal of Drones4Safety's communications and dissemination activities is to transfer information about the results generated during the project lifecycle to the relevant stakeholders in order to create awareness, facilitate their exploitation and their involvement: in other words, maximize the impact of the project. To this extent, the knowledge and information generated by the project are being available to all interested stakeholders and reused and replicated in other projects.
The Drones4Safety communication and dissemination specific goals evolve throughout the project in order to take into consideration the evolution of the project itself, as well as the diverse interests it can engage. All are directly or indirectly related to the stakeholders' engagement. Depending on the phase of the project and on the expected involvement of the stakeholders, the following high-level objectives are being pursued:

1. Raising awareness around the project: This means circulating information about the project, its scope, its expected results, and its activities, in order to make all the potential interested parties aware of it. This phase begins in the early stages of the project and continues for all its duration.
2. Generating understanding: This goal regards transferring specific messages to the target audience, enhancing their knowledge and comprehension of the project itself through the generation of follow-up discussions on Drones4Safety, requests for further information, or use of project materials (documents, reports or dissemination material) for other research activities. This activity will be constant during the length of the project to ensure constant dissemination of its progress and achievements.
3. Engaging stakeholders: A variety of initiatives promote interaction and active participation of the stakeholders (mainly industry and service providers, as well as infrastructures related operators) and potential customers and users from all over Europe. This phase is a step ahead in the communication process.
4. Ensuring impact: The dissemination objectives will ensure the long-term impact of the project results on the target audience. This is the most ambitious target of dissemination.

The proper identification of stakeholders who may be interested in the project findings, and, consequently, on the personalization of the communication means and messages to deliver, based on their characteristics, interests and needs has been a key action of the project before deciding on the specific communication and dissemination activities to perform.

The stakeholder's audience identified has been split into three main clusters, with a different level of interest in the topic:

1. General Public: people and groups interested in the general topics pertaining to Drones4Safety, even not primarily involved in technical activities related to the topic. For example: civil society groups, passengers, transporters, citizens residing near the infrastructures, aviation and railway enthusiasts and people recognizing the importance of the project topics and benefits in improving their everyday lives.

2. Specialized Audience: people or groups who may directly use or be impacted by the project results (e.g., in their work, study, research, or life). They constitute the main target audience for Drones4Safety. This target audience can be further split into several stakeholders' segments:

- Railways, train, power lines and bridges provider, operators and safety experts interested in issues related to safety.
- Drone operators, ICT industry, Large and SMEs specialized in AI, Cloud & Big Data; key innovators in safety, data management and software developers, interested in issues related to automated drone operations.
- Industries and industrial associations interested in acquiring a better overview on available experimental innovations.
- Academic and scientific community: developing research projects in the domains involved in the project (universities, scientific organizations, students, research establishments, professors, etc.).
- Other EC projects and Coordination and Support Actions (CSAs), as well as large national and international initiatives working in similar areas where synergies can be found.

3. Policy Makers, Governmental and International bodies: public authorities defining societal safety in transports, social and economic priorities, as well as entities aligning the allocation of resources and investments with these priorities.

These three clusters of audience are expected to be interested, at different levels, in the information and knowledge that Drones4Safety generates. Thus, the stakeholder's engagement consists in the implementation of activities based on the status of the project and targeted on the audience, with the formulation of tailored messages for each cluster of stakeholders, and the use of proper communication means.

4 Stakeholders' engagement activities

Based on the premises in the previous section, dissemination activities consider the most appropriate set of dissemination means for each category of stakeholders. Below is a list of the principal means used:

a) Primary stakeholders: Official reports and deliverables, periodic face-to-face meetings, D4S Workshops and roundtable consultations, technical handouts, articles on local/international press and EC communication channels.
b) Specialized audience: Website; Academic publications; Articles and news on sector magazines or EU portals (CORDIS, Transport Research and Innovation Portal); Dissemination flyers and handouts; conference speeches, presentations and posters; D4S Workshops and dissemination events; participation to third parties conferences, brokerage events and exhibitions.
c) General public: Website, Non-academic publications, articles in magazines, brochures, posts / news on social media, open-access repositories for all D4S-documents being classified as "public".

On D8.3 it is possible to find a deep analysis of each of these means in the framework of the general report of the dissemination, communication and exploitation activities.

In this document, attention is paid to the action directly addressed to a specialized audience and related project.

4.1 Mailing list

At the very beginning of the project all the consortium members were asked to identify the main categories of stakeholders to be addressed and, drawing from their respective contact networks, prepare a list of contacts.
Starting from this, Deep Blue has collected the contacts and implemented a mailing list after receiving their consensus, in line with the GDPR requirements. The list is shared with all the consortium. Partners have the possibility of leveraging their customer relationship management systems, inviting relevant contacts to subscribe to the mailing list.

Currently, a mailing list of about thirty contacts has been set up and is constantly update with contacts of relevant stakeholders and potential customers of the developed system, in order to ensure the sustainability of the project after its closure, by promoting project results among organizations and bodies dealing with the issue of safety in the transport domain thanks to the usage of drones.

4.2 Advisory Board

The Advisory Board (AB) comprises relevant stakeholders (Railways Service Providers and Infrastructure Network Managers, Drones Industries, University and Research Centers, Shift2Rail2, SESAR and H2020 projects, etc.). This board was built up with the collaboration of all the consortium.

The Advisory Board meets annually in order to continuously formulate and sharpen the required end-user input for the success of the overall D4S project.

First meeting was held on 12th February 2021 (news at this link: https://drones4safety.eu/2021/02/10/drones4safety-workshop-with-ab/). Due to the Corona virus spread, the meeting was online. The aim was to discuss the improvements of the project and collect feedback from the members of the Advisory Board. In particular, two activities were proposed through the use of an interactive dashboard:

- Activity 1: after showing the conceptual view of D4S, all members were asked to express strengths, critical issues and suggestions of the system proposed. This activity was aimed at collecting feedback from members.
- Activity 2: all members were asked to indicate similar projects by distinguishing between industrial projects, European R&D projects, national projects and other initiatives. This activity was aimed at considering potential synergies and links to implement with other related projects.

Figure below shows the results of the activities:

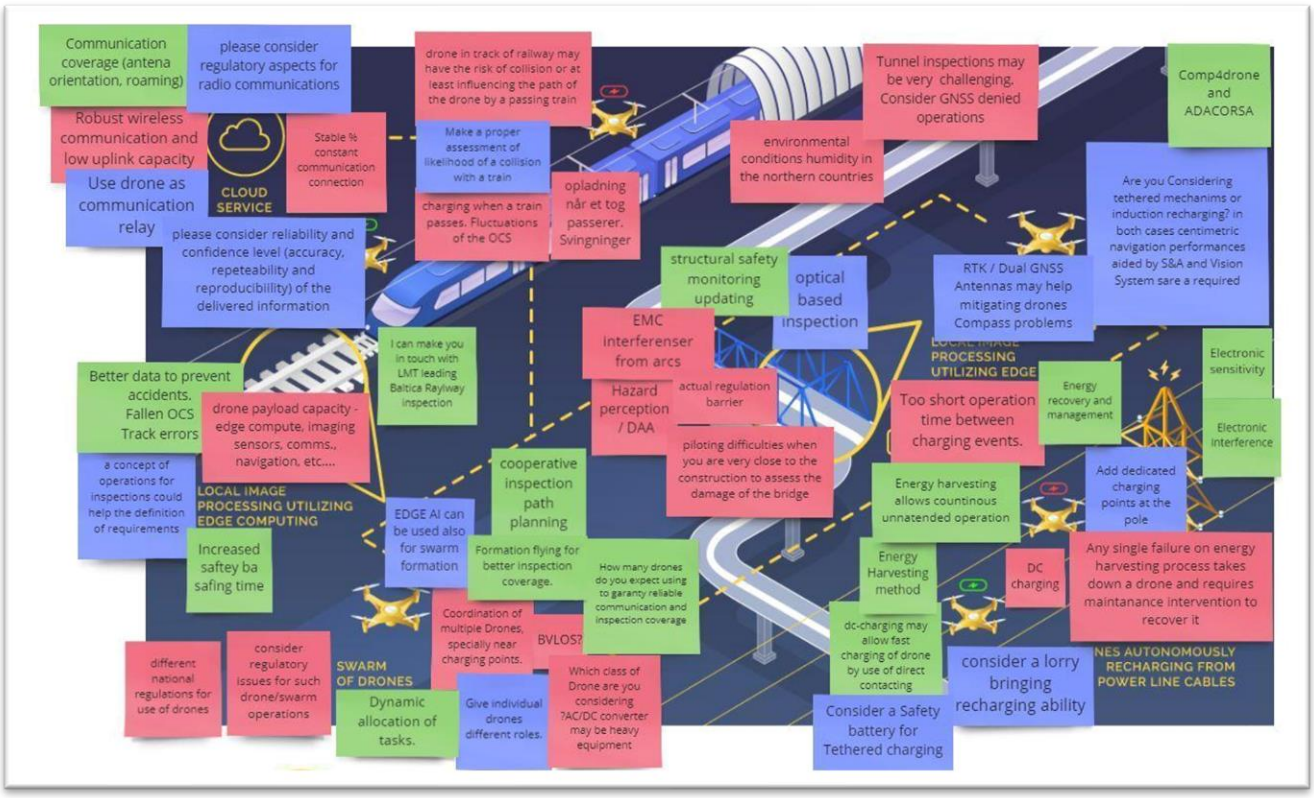

Figure 1 Activity 1

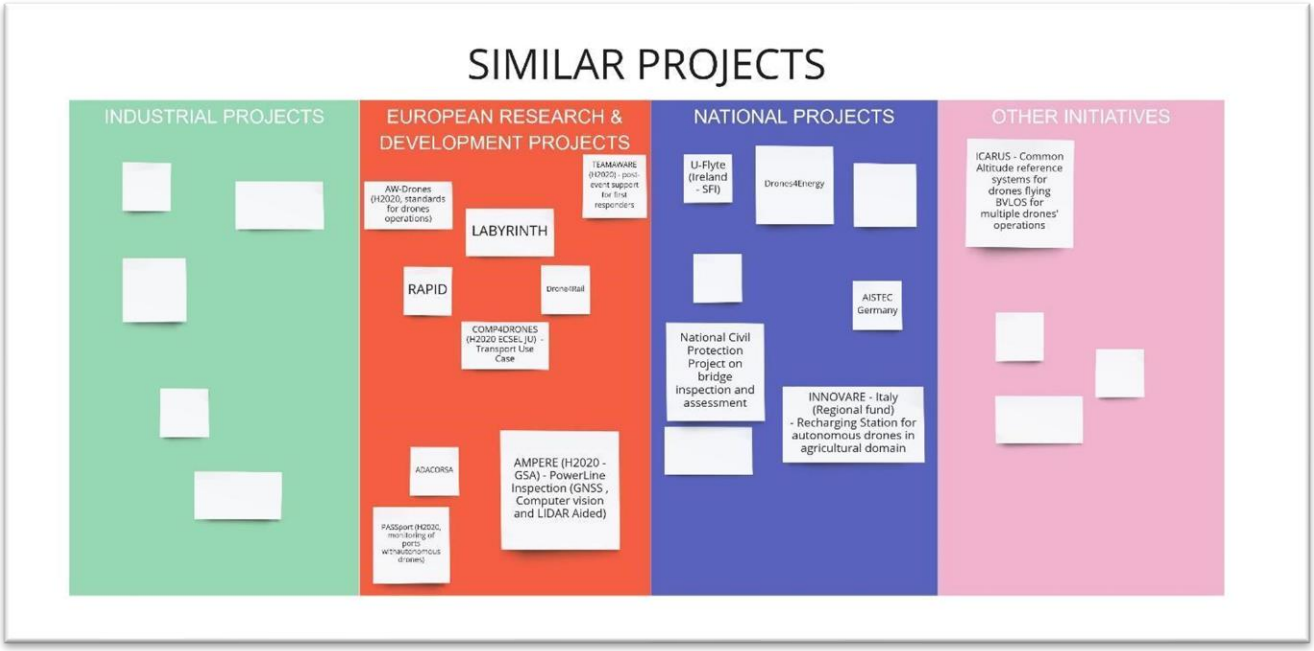

Figure 2 Activity 2

The second meeting was held online on 1st March 2022 (news at this link: https://drones4safety.eu/2022/03/04/ii-drones4safety-workshop-with-the-advisory-board/). The aim was to expose the challenges to be faced by the WPs 3, 4 and 5 and receive feedback from the members of the board through the use of an interactive dashboard (see the figure below).

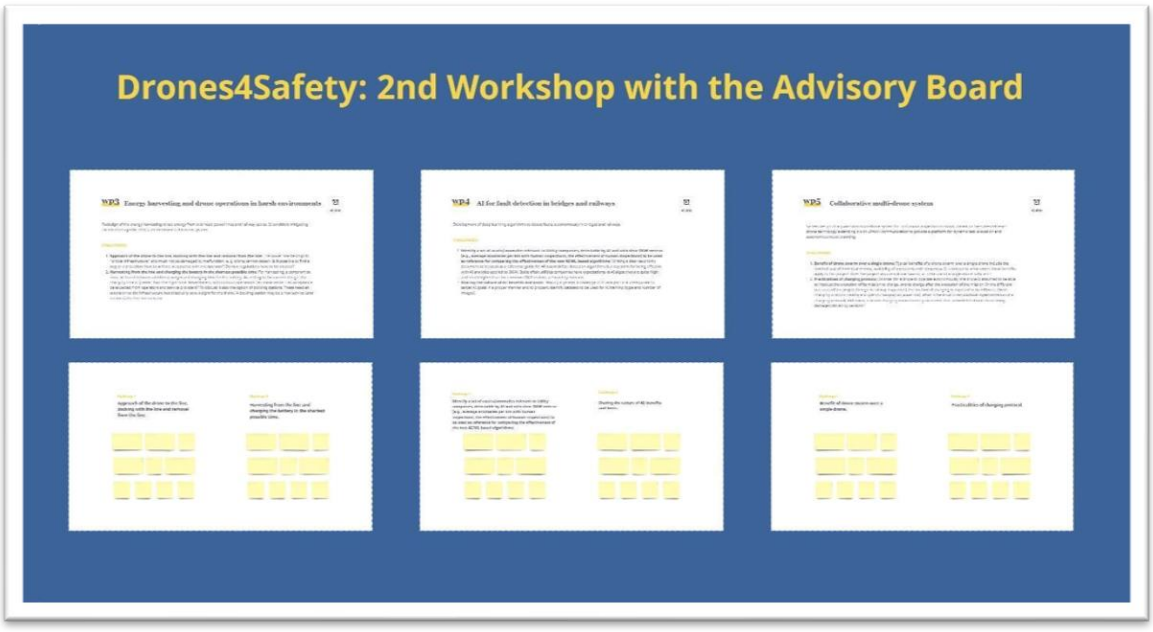

Figure 3 Second workshop with AB

Currently the Drones4Safety consortium is organizing the third workshop with the Advisory Board, to be held on 16th and 17th January 2022 in Toulouse. During the workshop, partners will present the project progress and ask for feedback.

4.3 Workshops with stakeholders

Participation in third-party events is aimed at different levels, to raise awareness among concerned stakeholders about the project and its underlying issues. These outreach events also acted as catalysts for communication actions and help to amplify the communication campaign messages. The table below provides a list of external events attended by Drones4Safety:

Event	Venue	Date	Institutions
2020 23rd Euromicro Symposium on Digital System Design	Online, Slovenia	26.08.2020 / 28.08.2020	University of Maribor
2020 IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR),	Online, United Arab Emirates	04.11.2020 / 06.11.2020	IEEE
ICUAS 2021	Greece	May 2021	Conference, Greece
IEEE International Conference on Robotics and Automation 2021 (ICRA) -	Xi'an (China)	30.05.2021 / 05.06.2021	
11th EASN International Conference on “Innovation in Aviation & Space to the Satisfaction of the European Citizens”.	Online, Salerno	2.09.2021	EASN
NiPS – EnABLES Summer School “Powering the Internet of Things 2021”	Perugia	15.09.2021 / 18.09.2021	University of Perugia (Italy) and the EnABLES EU-funded project (grant no. 730957)
Trako Fair 2021	Gdańsk	19.09.2021 / 22.09.2021	MTG SA Gdańsk International Fair Co. and the PKP Group
International Drone Show 2021	Odense	22.09.2021	Odense Robotics and UAS Denmark International Test Center
Expo Ferroviaria 2021	Milan	28.09.2021 / 30.29.2021	Mack-Brooks Exhibitions Limited
IROS 2021	Online, Prague	1.10.2021	https://www.iros2021.org/committee
2021 IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR)	Online	26.10.2021	

"Use of drones for emergency support and damage inspection of bridge infrastructures" Webinar for the University of CostaRica	Online, Costa Rica	11.11.2021	University of Costa Rica
PhD Students Webinar Series "Innovative applications of drones for ensuring Safety in transport"	Online	23.11.2021	Drones4Safety, Labyrinth and Rapid
Drone Days 21	Online	26.11.2021	Hub.brussels and enterprise europe network
IEEE MILCOM 2021	San Diego (USA)	30.11.2021	Comsoc and AFCEA
Utilizzo Droni in ambito Protezione Civile	Online	02.12.21	EUCENTE and Regione Lombardia
KL Workshop - Teknologivurdering af Droner (KL Workshop – Technology Assessment of Drones)	Oral	31.01.2022	KL Kombit
European Robotics Forum 2022	Rotterdam	28 – 30.06.2022	euRobotics
International Drone Show 2021	Odense	30.08.2022	Odense Robotics and UAS Denmark International Test Center
European Robotics Forum 2023	Odense	Planned 14 – 16.03.2023	euRobotics
Drones4Safety stakeholder event for the bridge inspection in ASTI	Asti, Italy	Planned in March/April 2023	Drones4Safety

Participation at these events was determined based on the relevance of their topics for Drones4Safety: this allowed the project to address specific stakeholder segments and stress on those specific topics in line with the project nature.

5 Activities with other EU projects

Another aim has been to create and maintain synergies between the D4S project and other relevant EU initiatives. Once the relevant projects were identified, the members of the consortium set up a direct communication channel with the coordinator of such a project, in order to make possible the prompt and efficient exchange of relevant information (in accordance, of course, to the confidentiality measures imposed by the EC).

The EU "sibling" projects[1] identified are Labirinth, Rapid and 5DAerosafe. Liaison activities with these projects were led to the organization of joint events between different projects, dramatically improving the effectiveness of the dissemination and communication efforts spent by the involved consortia, in particular:

[1] Funded within the same call MG-2-8-2019 - Innovative applications of drones for ensuring safety in transport

- A Joint workshop at the EASN conference 2021 (2.09.2021): the cluster of projects was presented by their representatives to describe their in progress technologies and goals; presentations were followed by a public roundtable discussion (news at this link: https://drones4safety.eu/2021/08/31/joint-participation-in-the-11th-easn-conference-for-drone-projects-ensuring-safety-in-transport/).
- IROS 2021 (1.10.2021): a forum to share best practices and facilitate knowledge exchange around challenges that are common to a plethora of urban- industrial use cases in energy, construction, transport and security (more info at this link: https://drones4safety.eu/iros-workshop-2021/).
- Two Phd Student Webinar (on 23.11.2021 and on 22.11.2022): the idea was to share knowledge between the PhD students that are working under the same H2020 projects in using drones to ensure safety in transport; students presented their PhD work to their peer and discussed common challenges and possible solutions (news at this link: https://drones4safety.eu/2021/11/19/phd-students-webinar-series/).
- Joint social campaigns have been carried out with these projects.

Within Deep Blue, periodic meetings with other EU projects related to the UAS domains (SESAR Exploratory Research Invircat (https://www.invircat.eu/), URClearED (https://www.urcleared.eu/) and SESAR Industrial PJ13 ERICA) are conducted to share best practices, stay updated on the latest progresses and seek to generate new ideas and approaches for the research.

6 Conclusions

This deliverable gives an overview of the communication, dissemination and exploitation activities of the Drones4Safety project carried out for the stakeholders' engagement and liaison with EU projects. . This report also updates the initial plan, based on the analysis of the activities performed until M30 and on new possibilities and constraints identified in the meantime, to provide further guidance on achieving the dissemination objectives.

Collaboration with other projects for promoting research and building on further progress are the key words for overall success. Thanks to the different activities conducted by the Drones4Safety project, the communication of the Drones4Safety progress and the dissemination of its results is in line with what can be expected based on the advancement of the project.