



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 861111

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Drones4Safety

Research & Innovation Action (RIA)

Inspection Drones for Ensuring Safety in Transport Infrastructures

Project Website D8.1

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Dissemination Level		
PU	Public	✓
CO	Confidential, only for members of the consortium (including the Commission Services)	

Change Log

Rev.	Date	Who	Site	Change
1	01/08/2020	Damiano Taurino	Deep Blue	Created initial version
2	28/08/2020	Damiano Taurino	Deep Blue	Final version
3	31/08/2020	Emad Samuel Malki Ebeid	University of Southern Denmark	Final Revision

Executive Summary

This document presents the Drones4Safety website structure, developed to communicate and promote the project progress and achievements to the stakeholders' community, EU decision makers as well as general public. The website is designed to provide full overview of the project. It is the main public interface and the practical framework for Drones4Safety communications activities. It will be constantly updated during the course of the project.

The main goals to be achieved through the Drones4Safety website are:

- Inform the stakeholder community and the general public about the project activities and goals;
- Increase awareness about the project results and benefits;
- Promote the use of project outcomes for the future and support exploitation;
- Stimulate participation at all levels in order to support the European Commission's rulemaking process and strategies regarding the safety management of transport.

The website can be reached at <http://www.drones4safety.eu/>.

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1 Introduction

The website is one of the main elements within the dissemination plan of the Drones4Safety project. It is aimed at displaying general information and arising overall awareness about the project, its objectives, activities and results. In order to improve the effectiveness of dissemination, it will offer a wide range of functionalities: these include document download, information on news and events, and relevant external links to create synergies with other EU projects or related initiatives. It links to the project social networks (Linkedin and Twitter), so to provide updated information about the status and progress of the activities and any other relevant communication related to Drones4Safety.

The website will have an essential role in helping the Drones4Safety project to achieve its purpose to engage with key stakeholders and end-users. It will grant visibility to the project at all levels: in fact, not only it will facilitate communication and interaction within the Consortium but also it will be essential to disseminate information towards specialists, politicians and public funding authorities, as well as the general public. For this reason, the website will be continuously monitored and updated.

The website is meant to remain available beyond the D4S project duration in order to ensure the exploitability of new knowledge and achievements.

The website is available on: <http://www.drones4safety.eu/>.

2 Website structure and main feature

Deep Blue has designed and developed the website. It will maintain the website structure, its graphic layout and content with the Consortium approval. Deep Blue has preliminary shared with all the partners the templates and contents, who were then internally discussed and reviewed. The Project Manager has given the final approval before the publication. The same process will occur before the publication of new contents.

In order to populate and update the website, Deep Blue will ask all the partners to provide documents, news, information or any other dissemination material of public interest. In addition, Deep Blue will also ask them to share the website new contents through their main communication means (social network, newsletter, etc.).

The website is online starting from M3 (August 2020). It will be kept online beyond the end of the project. The interface is user-friendly: the website categorizes information in a organic and searchable way. The users will be able to navigate through pages well organized in a simple layout with clear sections, texts and contents easy to understand.

Deep Blue used a Content Management System (CMS) platform for the development of the website, to ensure an easy management of both the graphical layout and its content. The chosen platform is WordPress (WordPress.org), a free, open-source CMS whose features include a plugin architecture and a template system. This makes the website easy to design, maintain and modify throughout the duration of the project.

The project uses Google Analytics to monitor the quantitative and qualitative performance of the website. Google Analytics is a web analytics service that tracks and reports website traffic and is the most widely used web analytics service on the web. It will be used to analyze the visitors' traffic and consequently shape and implement the communication strategies. It will also show in-depth details about the visitors (age, gender, interests and location), how long they stay, and all pages do they visit on the website. For all these reasons, it will be used to easily extrapolate dissemination and communication assessment indicators (number of visits, countries' visitors, etc.) and evaluate the website effectiveness as a communication and dissemination tool along the whole project lifecycle.

The website comprises the following pages:

- **Homepage:** an introductory, scroll-down page with general information about the project. It consists of 6 sections:
 - **Payoff:** together with a static image, it sums up in a simple and immediate way the project mission;
 - **Objectives:** with a brief description of the project and its goals;
 - **Numbers:** illustrating the relevant data (duration, budget, partners, member states) of the project;
 - **Consortium:** listing the different partners involved into the project with their logo linked to their website;
 - **News carousel:** a slider with the articles published by the project. It will include the events that Drones4Safety organizes or attends.

- **Contacts:** showing the contacts of the Project Coordinator and the Dissemination Manager, and the link to the project social media (twitter and linkedin). In this section will be add a small and updated preview of the twitter profile.
- **Page of the news:** presenting the text of the news (article or press release) or information about the events related to the project. It includes a section for users comments.

Finally, a header and a footer will always be available on each page of the website.

- **Header:** provides the main website menu;
- **Footer:** provides the project disclaimer.

3 Future development

The website will be enriched with a new page related to the Work-plan of D4S project. This page will show the structure of the project through the list of the 8 Work Packages and related information about objectives, timing and partners involved. For each Work Package will be also indicated the deliverables expected and their status (not started/ in progress/ submitted).

Once the Advisory Board will be established, the information about its composition and contribution to the project will be published on the website.

The website will be enriched further with videos, infographics, news and editorial outputs (periodical project reports, scientific papers and publications).

All public deliverables and products of the project will be made available for download from the website.

Appendix

A.1 Design colors



#4811161



#16438071

The website shows a neutral color background with colored buttons and boxes in order to focus the visitor on the key concepts expressed. Those used are the recognizable colors of the project logo, the blue and the yellow. This helps establish recognition and familiarity with the project but moreover contributes to give to the project a powerful visual identity.

A.2 Home page

The screenshot shows the home page of the DRONES4SAFETY project. At the top, there is a navigation bar with the project logo and links for Home, Mission, Consortium, News, and Contact. Below this is a hero section with a background image of a power line tower and the text: "Building a cooperative, autonomous, operating drone system to enhance transport safety". A "DISCOVER THE PROJECT" button is centered below the text.

The main content area is titled "DRONES4SAFETY OBJECTIVES" and includes a sub-header: "The aim of the Horizon 2020 project DRONES4SAFETY is to develop a system of autonomous self-driving, cooperative drones that can inspect a large number of transport infrastructure in a cost-effective manner. This will be achieved through the following objectives:"

Five objective cards are displayed:

- Energy Harvesting:** The proposed solution harvests energy by the vertical part of the tower in the proximity of the support infrastructure to be inspected to avoid to return to ground for recharging.
- Inspection efficiency:** Working in an agnostic way towards infrastructure components and design, automatically inspect both in earth.
- Cooperative drone operation system:** Building a collaborative and coordinated drone system to inspect diverse sites of the same infrastructure.
- Failure Inspection:** Inspecting a wide spectrum of tower, meeting harsh environmental conditions and monitoring the state of high-voltage power grids.
- Autonomous Navigation:** Providing a safe system monitoring and controlling mobility for the autonomous drone.

Below the objectives is a yellow bar with four statistics:

- 36 PROJECT PARTNERS
- 35 PROJECT PARTNERS
- 9 PROJECT PARTNERS
- 5 PROJECT PARTNERS

The "CONSORTIUM" section features a sub-header: "The consortium comprises the 37 partners that for the development of an autonomous self-driving collaborative drone system." It lists the following partners:

- SDU (Denmark)
- University of Twente (Netherlands)
- Fraunhofer (Germany)
- EUROPEAN UNIVERSITY OF CYPRUS (Cyprus)
- UNIVERSITY OF CALIFORNIA, SAN DIEGO (USA)
- UNIVERSITY OF CALIFORNIA, SAN DIEGO (USA)
- EUCEM (France)
- DELAIR (France)
- neat (France)
- ARTO (France)
- deepblue (France)
- EUROCONTROL (Belgium)
- MIT (USA)
- UCL (UK)
- ESA (Spain)

The "NEWS" section contains three news items with images and short text snippets.

At the bottom, there is a dark blue banner with the text: "WANT TO KNOW MORE ABOUT OUR PROJECT? Use our contacts below". Below this banner are contact options: Email (Team Co-ordinator, Project Co-ordinator, Project Manager), Social Media (Facebook, Twitter), and a logo for the European Union.

At the very bottom, there is a small text line: "Project DRONES4SAFETY has been funded by the European Union's Horizon 2020 Research and Innovation programme under grant agreement No 101019720."

A.3 Page of the news

Home | About | Contact | News | Contact

UNCATEGORIZED

INCREASING SAFETY IN CIVIL TRANSPORT WITH DRONES

POSTED 23/07/2023 BY MARILYN LARSEN



In June 2023, a consortium of three partners coordinated by the University of Southern Denmark has launched the European UNDRONES project with the aim of increasing safety and security in European civil transport. UNDRONES4SAFETY provides an innovative solution that replaces the direct human involvement in safety and bridge inspections with a cooperative, autonomous and continuously operating drone system, energy harvesting, without intelligence and a secure system are the key aspects of the project.

In the light of the drone technology evolution, the European Union has funded numerous and investments with the scope of using drone applications to ensure greater safety, security and sustainability. UNDRONES4SAFETY is one of the most ambitious projects in this sense. Formed within the Horizon2020 Framework Programme, it addresses infrastructure managers, public services operators, drone operators, and citizens. Overall, the project of UNDRONES4SAFETY is to ensure an accurate, autonomous and continuous inspection of transportation infrastructures, thus enhancing safety and security of both users and passengers.

OPERATIONAL SYSTEM

Currently, inspections, water pollution or human operations control: the inspectors of railways and bridges with very limited functionality. The system proposed by UNDRONES4SAFETY will overcome these limits by developing artificial intelligence algorithms for drones. Thanks to them, they will be able to detect infrastructure components and automatically recognize possible defects or anomalies through satellite and camera data. Once the drone detects fault, it will report it to the drone operator via a cloud service system, which will not only detect anomalies, but also send data back to the operator for these reasons. In process efficiency, a complete collaboration these models will ensure the inspection of different areas of the inspected infrastructure.

The energy harvesting from high-voltage and railway cables will ensure the long autonomy of the operation. **One of the main challenges is also to see how we can integrate the drone flight and operation systems (control system (Radar), flight controller and Autopilot (Autopilot) of University of Southern Denmark, (Germany), (Spain) and we have not the 70% of bridges in Europe are under a three-component system from high-voltage cables. So, this can impact the drone of the future (high bandwidth) over a bridge and, under the safety of air, using the bridge high voltage cable, remaining monitoring and then using data to repair the bridge.**

PARTNERS INVOLVED

The UNDRONES4SAFETY consortium is well balanced in terms of equipment, facilities and industrial resources as it brings together leading industrial, research and academic experts. The team, coordinated by the University of Southern Denmark (Denmark), is composed by Airbus University (Germany), Fraunhofer (Germany), ILLUMINATE (Spain), DELTAI (France), NEAF (Spain), ARK-Green (Germany), Deep Blue (Italy), Eurocontrol (Belgium).

EXPECTED BENEFIT

UNDRONES4SAFETY intends to increase safety and security in the European civil transport with a better and monitoring system. It also aims at improving the feasibility of inspections, retrieval in case of lack of ground access or situations that impede inspections, continuous self-charging energy sources, equipment & drone sustainable suitable to reduce the CO2 emission produced by traditional helicopters.

The project will produce both software services and a hardware drone system for transport operators to use. It is estimated that UNDRONES4SAFETY will open a new business model and generate economic growth. Moreover, it will secure a competitive advantage to the European industry to take leadership in using drones in various applications.

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