



D9.2 – PROJECT WEBSITE

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Document History

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0.1	2017-03-16	UNI-KLU	Initial Description of Website
0.2	2017-03-17	UNI-KLU	Added Introduction and Scope
0.3	2017-03-19	UNI-KLU	Additional Materials
0.4	2017-03-20	UNI-KLU	Update Partners Page
0.5	2017-03-29	UNI-KLU	Update Partners Page
0.6	2017-04-20	UNI-KLU	Comments from ISMB are addressed, ready for internal review
0.7	2017-04-20	UNI-KLU	Comments from S-LAB are addressed, ready for internal review
0.8	2017-05-05	UNI-KLU	Updating the website content, ready for internal review
1.0	2017-05-10	UNI-KLU	Final version ready to be submitted

Table 1: Document history

Internal Review History

Review Date	Reviewer	Summary of Comments
2017-03-28	Regina (SLAB)	Review, Major issues highlighted
2017-03-28	Dario Bonino (ISMB)	Review, Major issues highlighted
2017-05-08	Dario Bonino (ISMB)	Conditionally accepted (given that required amendments are applied)
2017-05-09	Regina (SLAB)	Minor issues to fix

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1 Executive summary

This report presents the design principles, sections, and technologies used in the CPSwarm website. The report is organized as follows:

- Introduction to the CPSwarm website and how it assists dissemination of the CPSwarm project. Additionally, its scope and the related documents are presented.
- Discussion of the adopted web technologies, the sitemap and the sections of the website
- Additional materials for disseminating the CPSwarm project are presented which can be used in advertising the CPSwarm project at public events such as workshops or conferences.

2 Introduction

The website of the CPSwarm project is the main tool to communicate project results to scientists, scholars, professionals, the interested public and other stakeholders. In particular, it aims at providing a project introduction as well as continuous updates on project results. The website is designed using the Wordpress blogging system, as it naturally supports the combination of static pages with blog entries that are continuously added. Wordpress also provides an editorial system that supports the coordination of inputs from the different partners and collaborators of the project.

The target user group of CPSwarm is at least generally interested in research and therefore will be able to read and understand texts in English language. Consequently the main language of the web site is English, while internationalization support may be added at a later stage of the project. The domain name for the webpage was chosen together with all partners to be cpswarm.eu, which reflects the project name, indicates the European connection and is a short and comprehensive.

The website has been designed with the following principles in mind:

- To serve the public with a "friendly" interface to get information about communication, dissemination, exploitation and standardization initiatives carried out by the project.
- To contribute to the promotion of the visual identity of the project.

2.1 Scope

The CPSwarm website is a result of WP9 – "Dissemination and Exploitation" and specifically of "Task 9.2 – "Dissemination". Task T9.2 includes activities to set up the initial version of the project website and additional materials. Further, Task 9.2 includes maintaining and updating the webpage throughout the project lifetime, which is also formalized in a future deliverable D9.2.2 – "Updated Project Website and Advertising Materials".

2.2 Related documents

ID	Title	Reference	Version	Date
[D1.1]	Project Quality Control and Risk Management plan	D1.1		
[D9.1]	Communication and Dissemination Strategy	D9.1		

Table 2: Related documents

3 Adopted Tools and Technologies

The project website uses mostly open-source tools and technologies. In particular, the project website is built upon a Wordpress installation.

3.1 Wordpress

Wordpress is an online, open source, website creation tool written in PHP, and it is a free CMS used by more than 26.4% of the top 10 million websites as of April 2016. Wordpress¹ allows full control on the project website's graphic theme and code. Moreover, it permits maintainers to install and/or customize functions through its flexible plugin systems and through its modifiable set of PHP and CSS files.

The overall graphic theme of the website was discussed with partners and several possible alternatives were evaluated. Among them, the consortium selected a slightly customized version of the Diamond V1.1.6 Theme produced by Woo Commerce. Such a theme offers a set of functions, including page layouts, search and categorization services, etc., that cover most of features mandated by the Information Architecture considerations described in Section 0.

4 Project Website

4.1 Information Architecture (IA)

The web page was structured according to common information architecture principles as a mostly flat page except for the scenarios which have a second hierarchy. This structure allows browsing the contents with few mouse clicks and is further extendible for publishing project results such as source code or tutorial videos. Organization and labelling of content has been done in order to achieve the best interaction among visitors, context and content.

WordPress has many tools built right into its content management system (CMS) that can be used for information architecture planning by applying the four basic functional components of an IA plan:

- 1) Organization: The Diamond V1.1.6 Theme has a predefined structure, with flexible ability for editing, about how content is assembled, presented, and organized. It is possible to customize post types such as blog post, page, or a slider plugin.
- 2) Labeling has been done considering how visitors are expected to interpret and navigate the website structure. For example, the words 'Contact Us' and 'Publications' will give the visitor a clear impression about what he/she will find by clicking on these words.
- 3) Navigation: The CPSwarm website exploits a single, primary navigation menu. Additionally, some elements of the primary menu have subsections, to categorize those elements. For example, the Scenarios section has three categories Swarm Drones, Automotive CPS and Swarm Logistics.
- 4) Search: CPSwarm has a search box located on the blog sidebar, allowing the visitor to search for posts, pages or any keyword in the website.
- 5) Responsive design and support for mobile devices: the page is well accessible on devices with different screen sizes. On mobile devices switching a page requires more effort than scrolling, therefore the content has been concentrated on a few number of pages rather than in many subpages.

In particular, the webpage content was structured and organized having four types of user behaviour² in mind:

User searching for a known item: In this case the user has already a seeking pattern, for example a user could look for the project description or the list of partners. For this, the website provides a number of pages addressing the most common items such as publications, contact, project and application scenarios.

Exploratory visitor: Such a user will not search for specific information but browse the webpage for interesting information. For this type of user, the landing page provides a "graphically nice" welcome with links to other parts of the webpage. In the linked pages the user will learn more about the project contents, scenarios, results and, finally, about current activities posted on the news section.

User searching for unknown items: This kind of user doesn't know exactly what they need to know, which is the case if somebody performs a web search for research projects without knowing the typical structure of information pages adopted in such domain. To better support this kind of user behaviour, brief information teasers are displayed in the slider on the landing (home) page and a search field is provided on the right side of the same. For example, if the user searches for the keyword "smart grids", links to the partners' page will be presented, telling the visitor that the research areas of some of the partners include also this field.

Recurring visitors: Recurring visitors are either looking for news on the project or for re-finding information they discovered previously on the webpage. In order to support re-finding, the page provides a clear and flat structure, so that each page can be reached with a maximum of two mouse clicks. Recurring visitors will find updates about the project in the news blog and the publications section. Later changes in the webpage structure are possible and therefore will be announced in the news section (e.g. "Downloads for FREVO now open") to inform recurring visitors.

4.2 Home Page

The Home page contains basically three parts:

- 1- A large slider with high quality images is located on the top, under the navigation menu. It allows the visitor to slide and browse the main sections in the website such as the introduction to the project, the project applications and details for each of the project use cases. Figure 1, shows the Home page of the CPSwarm website.
- 2- A set of widgets on the right side, under the slider, enable the visitors to search on the website, read the recent posts and comments on the website. In addition, there is a possibility to browse the website archives from a specific month.
- 3- All posts on CPSwarm website will be displayed on the left side of the page, under the slider, ordered by publication time.

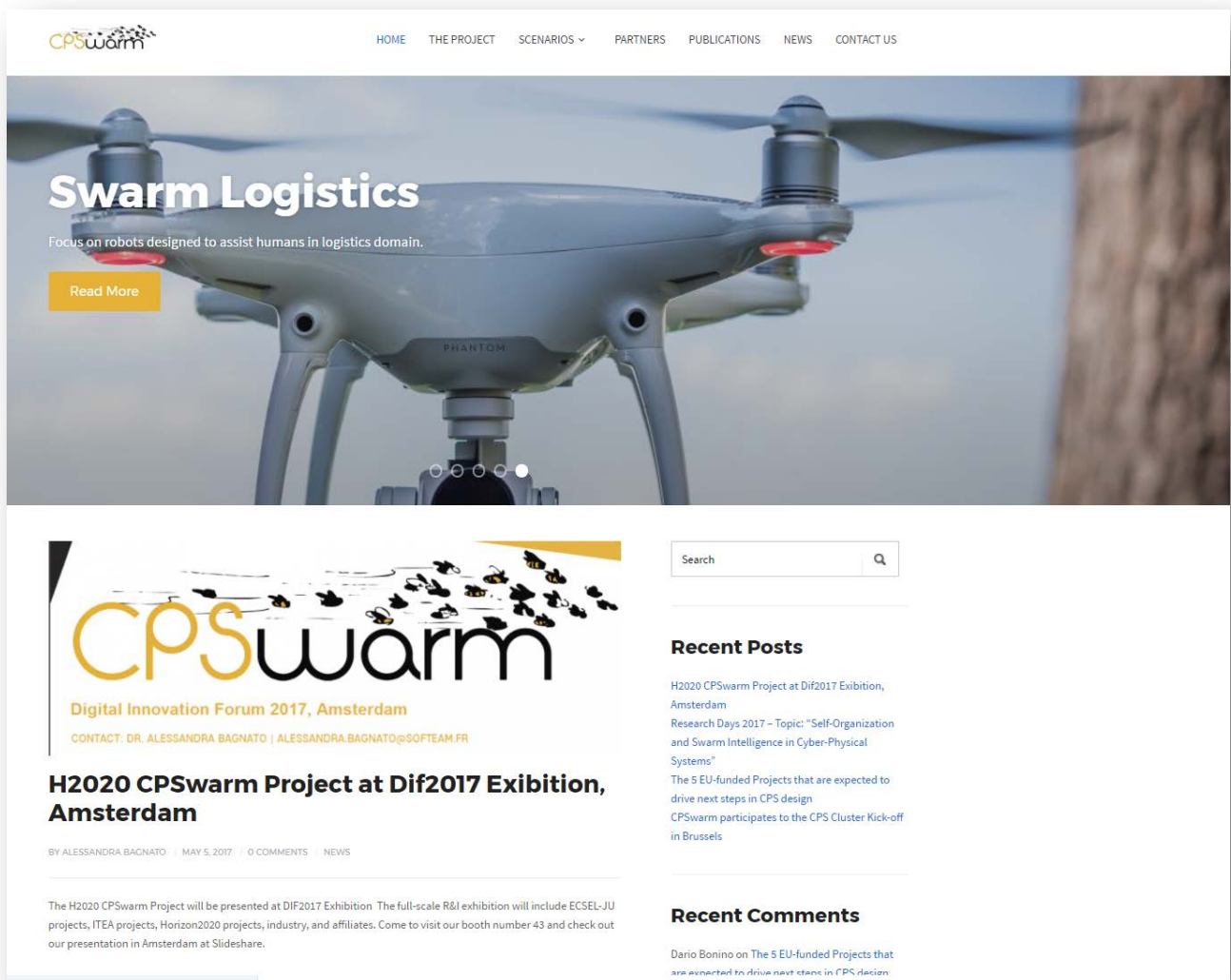


Figure 1: The Home page

4.3 The Project

This area provides information about the project by describing the motivations and the overall goal of CPSwarm. On the topmost section a set of quick facts is presented which allows to immediately grasp the main features of the project in terms of funding, research programme, etc. Then, the main objectives of the project are described in summary, also providing hints on the main expected outcomes. ... Figure 2 shows the Project area.

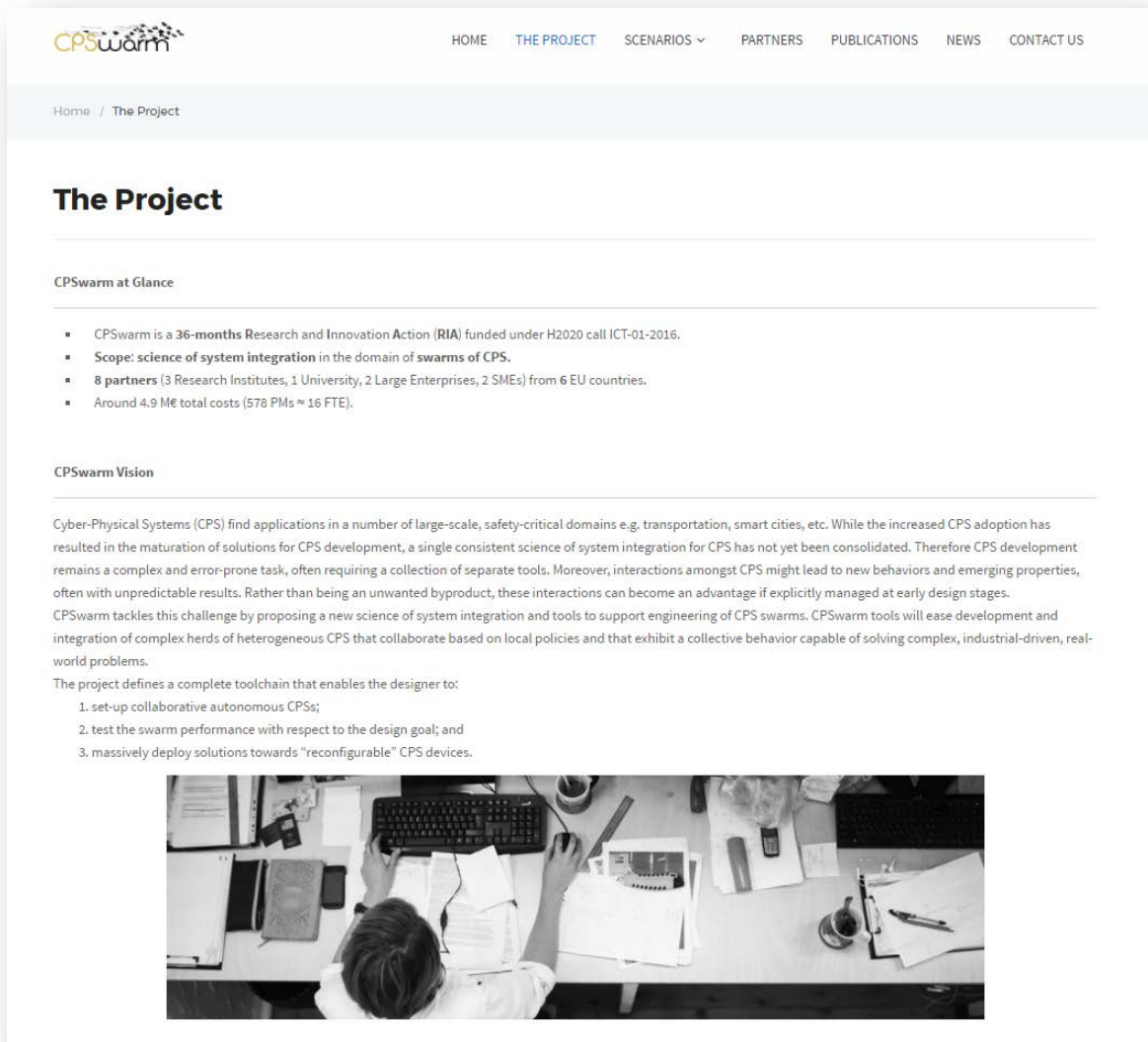


Figure 2: The Project page

4.4 Scenarios

The Scenarios area, as shown in Figure 3, contains three subsections designed to present in more details the main project use cases:

1. **The Swarm Drones:** Applications of Cyber-Physical Systems for surveillance of critical infrastructures, search and rescue.
2. **The Automotive CPS:** Applications of Cyber-Physical Systems for collective driving with a focus on autonomous driving vehicles intended for freight transportation.
3. **The Swarm Logistics:** Focus on robots designed to assist humans in the logistics domain.

The visitor can read a short description about each scenario either by sliding the carousel on the Home page or by browsing the Scenarios page using the navigation menu. Then, he/she can browse to a specific scenario depending on his/her interest / willingness to read more details.

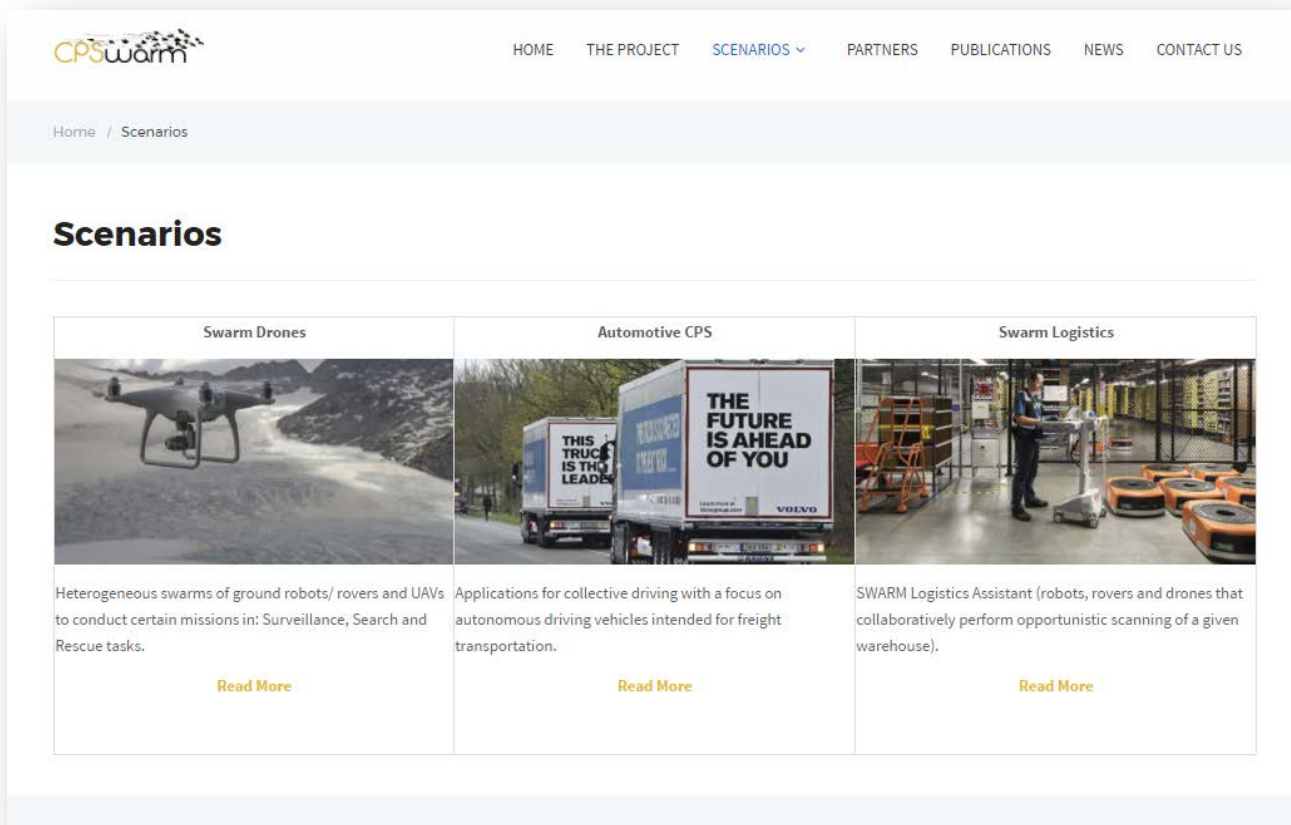


Figure 3: Scenarios page

4.5 Partners

Figure 4 shows the Partners area on the CPSwarm website. Each partner logo is shown and linked to the partner website. Additionally, a short description about each partner is presented.

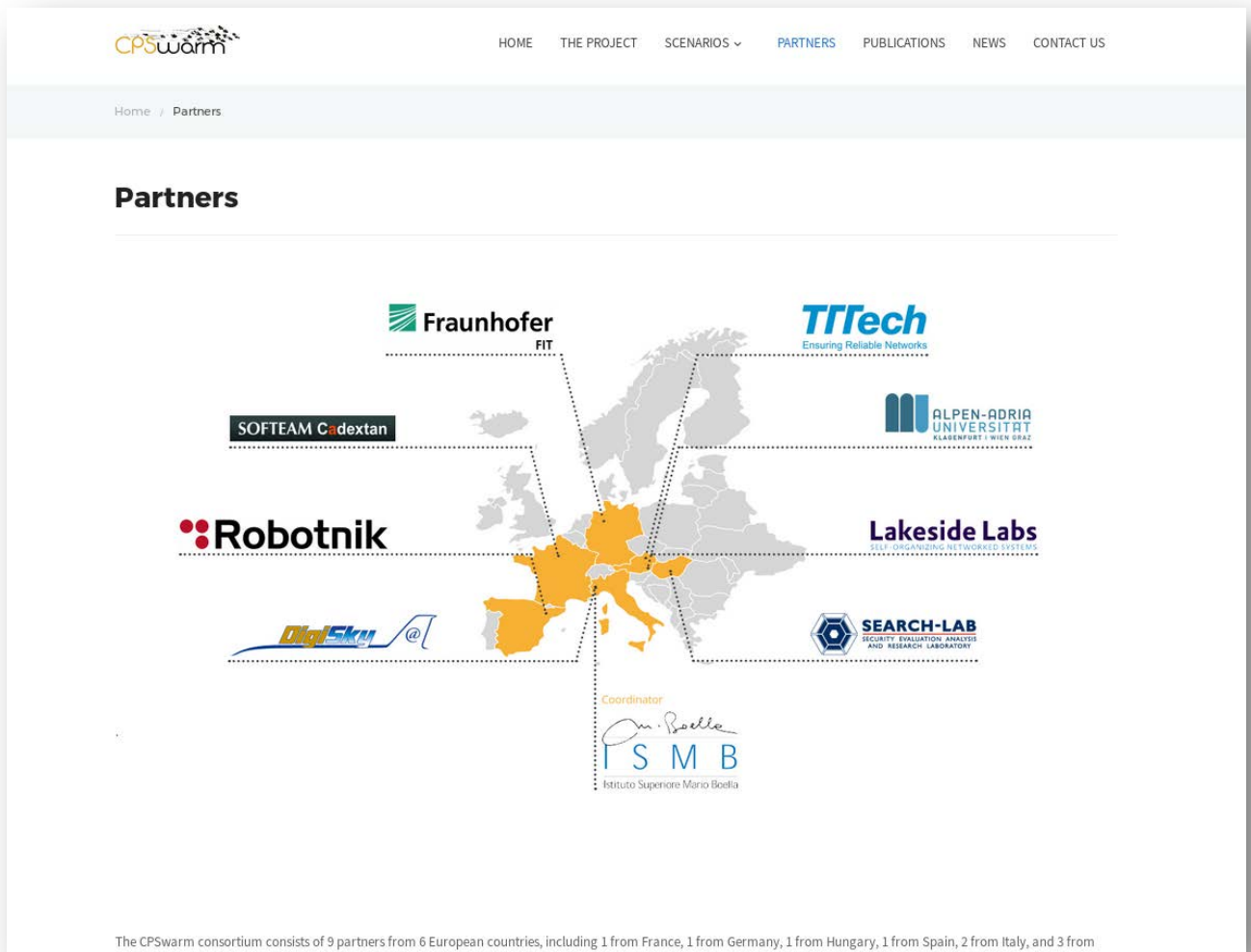


Figure 4: Partners area

4.6 Publications

The Publication area lists all publications related to the project. At the moment, it is organized depending on the date of the publication and it contains currently one publication as shown in Figure 5. Following the progress of the CPSwarm project, it will be later divided in two subsections "Conferences" and "Journals".

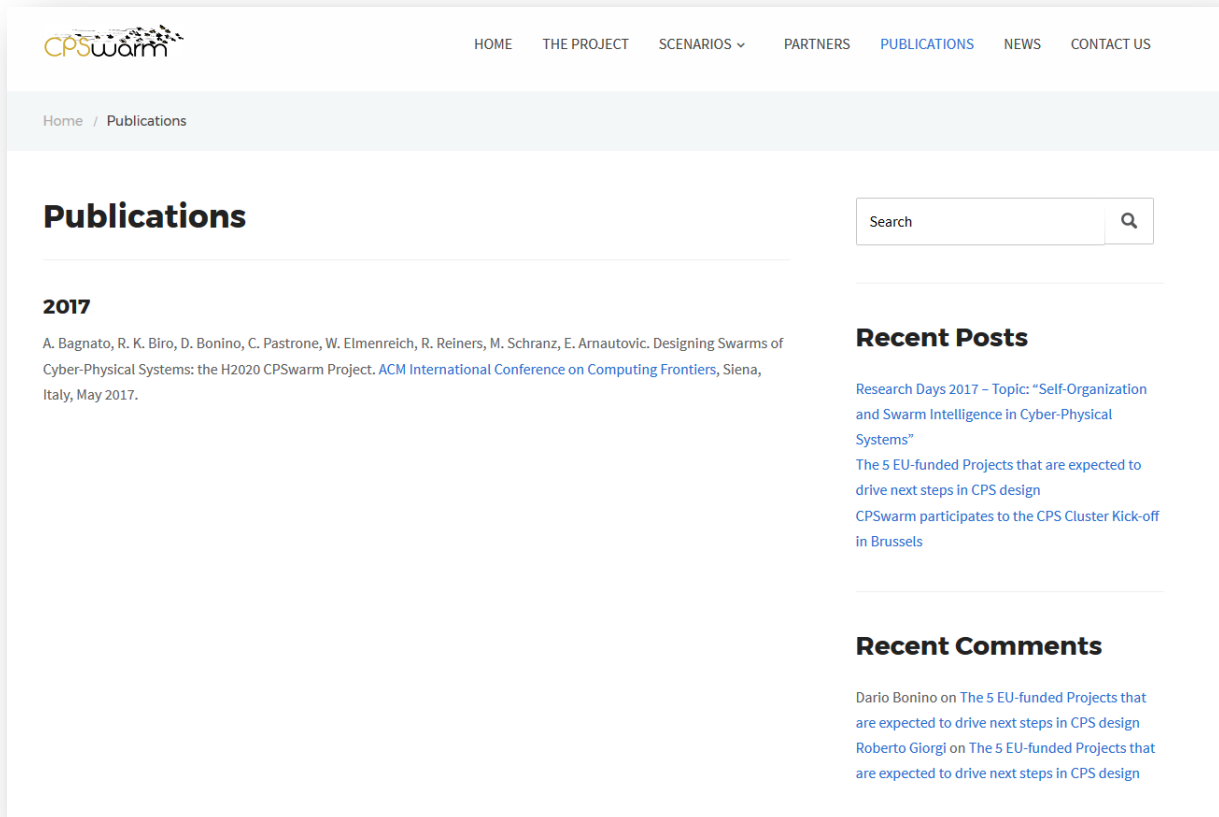


Figure 5: Publication area

4.7 News

The News area shows all posts, activities and events to which the project participates. Currently, visitors are free to add comments and interact with any post. If this will cause a spam problem in the future, this access will be restricted. The posts can be easily navigated by either scrolling in the Home page or the News page. Figure 6 shows the News area.

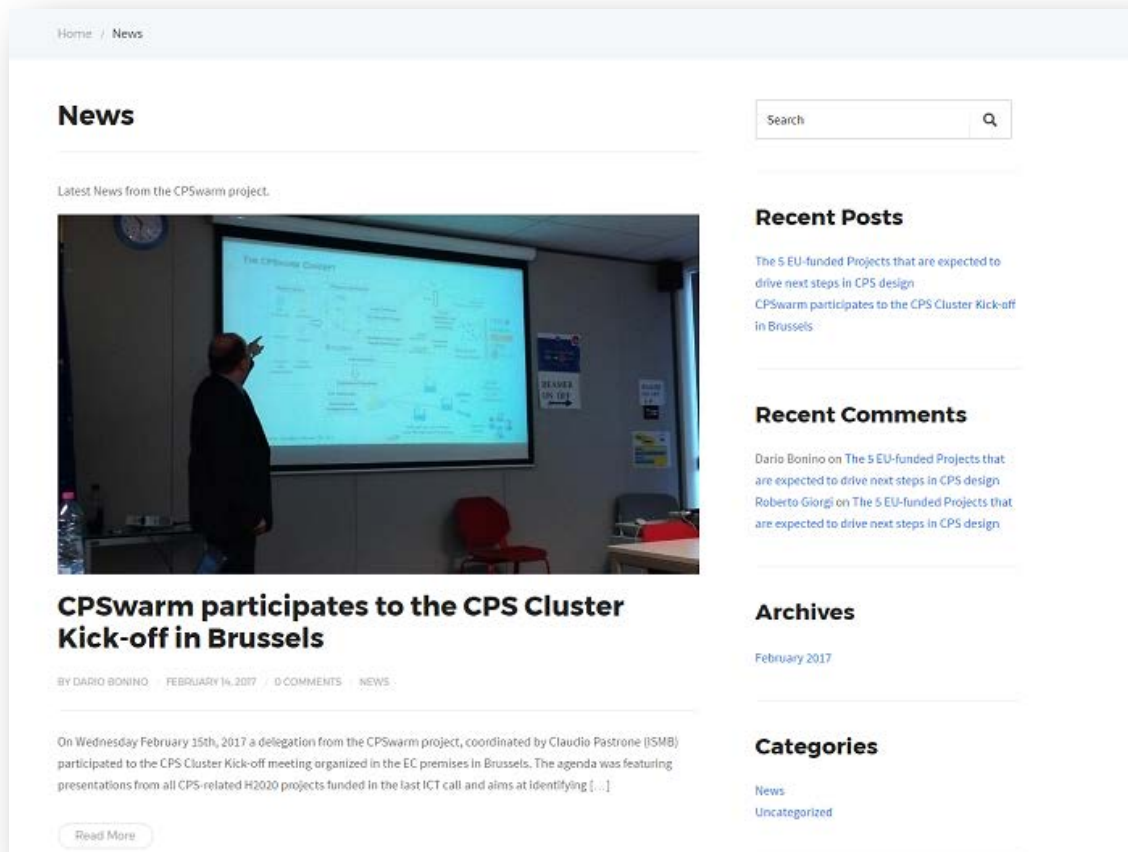



Figure 6: News area

4.8 Contact Us

The Contact Us area contains a form to collect feedback or requests from the CPSwarm website visitors as it is shown in Figure 7. The visitor should provide his/her first and last name, and an email address in order to send any comments, suggestions for improving the website, and if he/she runs into any bugs or issues that need to be addressed. In addition, the contact detail about the project coordinator is presented.



[HOME](#)
[THE PROJECT](#)
[SCENARIOS](#)
[PARTNERS](#)
[PUBLICATIONS](#)
[NEWS](#)
[CONTACT US](#)

Home / Contact Us

Contact Us

Project coordinator

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 VIA PIER CARLO BOGGIO 61
 10138 TORINO
 Italy

First Name*

Last Name*

Email*

Comment

Submit


Figure 7: Contact area

5 Printed Materials

In addition to the website, CPSwarm will advertise its results via brochures, which will be issued at public events such as workshops or conferences. An initial foldable leaflet and poster have been designed based on the materials from the webpage. The structure is designed to allow later extensions and changes to the content in order to reflect new project results. For the same reason, the leaflet will be printed on demand, so that up to date information will be available at the particular events. Figure 8, 9 show the current versions of the CPSwarm leaflets and poster that are used in the Digital Innovation Forum 2017 exhibition in Amsterdam.



Figure 8: CPSwarm leaflet



CPSwarm

MODEL-CENTRIC DESIGN AND PREDICTIVE ENGINEERING ARE THE PILLARS OF THE PROJECT ENABLING TO BUILD A TOOLCHAIN FOR ENGINEERING CYBER-PHYSICAL SYSTEMS

CONTACT: DR. ALESSANDRA BAGNATO | ALESSANDRA.BAGNATO@SOFTTEAM.FR

THE CPSWARM PROJECT

CPSwarm pushes forward CPS engineering at a larger scale, with an expected significant reduction of development time and costs.

The project defines a complete toolchain that enables the designer to:

- Set-up collaborative autonomous CPSs.
- Test the swarm performance with respect to the design goal.
- Massively deploy solutions towards "reconfigurable" CPS devices.

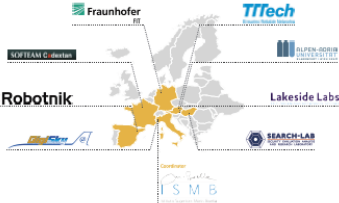
Project results will be tested in real-world use cases in 3 different domains:

- 01** SWARMS of Unmanned Aerial Vehicles and Rovers for safety and security purposes
- 02** Autonomous driving for freight vehicles
- 03** SWARM Logistics Assistant (robots, rovers and drones that collaboratively perform opportunistic scanning of a given warehouse)

THE CPSWARM VISION


Interactions amongst CPS might lead to new behaviors and emerging properties, often with unpredictable results. Rather than being an unwanted byproduct, **these interactions can become an advantage if explicitly managed** at early design stages.

THE CPSWARM PARTNERS





THE CPSWARM METHODOLOGY AND OBJECTIVES

CPSwarm follows an **agile, iterative project methodology**, starting from the analysis of three application scenarios for swarms of CPSs.



- Drastically improve support to design of complex, autonomous CPS
- Define a complete library of swarm and evolutionary algorithms for CPS design
- Provide a self-contained, yet extensible library of re-usable models for describing Cyber-Physical Systems
- Establish reference patterns and tools for integration of CPS artefacts
- Enabling a sensible reduction in complexity and time of CPS development workflow by automating deployment
- Address real industrial needs in CPS design, with a particular focus on the autonomous robotic vehicles and drones, freight vehicles and smart logistics domain

THE CPSWARM COORDINATOR CONTACT

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Figure 9: CPSwarm poster

6 The website statistics

A dedicated statistics plugin, namely the WP statistics plugin, has been integrated in the CPSwarm website to track actual usage patterns of the CPSwarm website, without depending on external services. This plugin provides features such as the estimation of the number of users currently online, information about used browsers, search engine referrals and details on the number of visits and visitors. Figure 10 shows an example of a summary about the CPSwarm website.



Figure 10: Statistical summary

7 Conclusions

This report presents the initial CPSwarm project website and the advertising materials. Following the progress of CPSwarm project, the website will be improved in terms of content and adding new elements to the structure in order to follow continuously updates on project results. Therefore, CPSwarm website as it is the main communication tool, will keep the project results up-to-date to its professional visitors, the interested public and other stakeholders. Additionally, other channels like twitter and advertising materials will be used to disseminate results from the project. Evolution progress and all new updates on the CPSwarm website will be addressed in the final project website and advertising materials report.

Acronyms

Acronym	Explanation
PHP	Hypertext Preprocessor
CMS	Content Management System
CSS	Cascading Style Sheets

Table 3: Acronyms

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References

- ¹ WordPress website www.wordpress.org
- ² <http://boxesandarrows.com/four-modes-of-seeking-information-and-how-to-design-for-them/>