D9.3 – PROJECT WEBSITE

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Review Date	Reviewer	Summary of Comments
13-12-2017	Regina Bíró (SLAB)	Accepted with minor corrections e.g., some typos.
19-12-2017	Gianluca Prato, Davide Conzon (ISMB)	Accepted with minor revisions

Executive Summary

This deliverable "D9.3 – Updated Project Website and Advertising Materials", gives a detailed description of the final project website, extending and updating the previous deliverable,"D9.2 – Initial Project Website and Advertising Materials". It explains the strategy behind the updates to the project website and presents:

- The updated and extended CPSwarm website
- The technologies used to improve the accessibility of the website and search engine optimization
- Additional advertising materials for the dissemination of the CPSwarm project for use at public events such as workshops or conferences
- The status of the ongoing task "9.3 Contribution to interoperability activities and standardization".

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1 Introduction

Following the CPSwarm dissemination and communication strategy, which it is documented in D9.1, this report presents the updates to the website carried out during Q3 and Q4. In general, the updates were made in response to the detailed information architecture presented in D9.2. They consider organization, labelling, navigation and search within the site and aim to improve the interactions between the various target visitor groups (students, researchers and the public), context and content. Most importantly, the website must continue to provide up-to-date information about news and events throughout the project lifespan, and communicate results with the CPSwarm community.

The CPSwarm website updates cover the following points:

- Improving social media presence, in particular the project's visibility on Twitter and Facebook, with the aim of establishing search relevance on different channels and thus increasing the CPSwarm project's ranking in search results
- Increasing student involvement in the CPSwarm community by offering educational materials and thesis topics
- Developing awareness of the project results, news, and events among the CPSwarm community by sending a regular newsletter to subscribers
- Announcing upcoming events in advance using the multiple channels such as the website, Facebook and Twitter
- Providing downloadable versions of the software created in the project and links to relevant open source software
- Providing downloadable versions of public deliverables
- Optimizing search engines results and improving website accessibility

2.1 Scope

The CPSwarm website is a result of "WP9 – Dissemination and Exploitation" and specifically of "Task 9.2 – Dissemination" and "Task 9.3 – Contribution to Interoperability Activities and Standardization". Task 9.2 includes activities to set up the initial version of the project website and additional materials, as well as maintenance and updates to the site throughout the project's lifetime as formalized in the previous deliverable "D9.2 – Initial Project Website and Advertising Materials". Task 9.3 includes activities to enable interoperability between different CPS models and provides abstraction to the lower layers of the implementation. The results of Task 9.3 are partially documented in this deliverable and will be formalised in a future deliverable "D9.4 – Report on the Contributions in Interoperability Initiatives".

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		
[D9.2]	Initial Project Website and Advertising Materials	D9.2		

Table 1: Related documents

2 Updated Project Website

Most of the updates to the website concern its structure (originally documented in D9.2):

1- The "News" section has been removed. The section was largely redundant, as most website content could be viewed as news. Instead, all posts are displayed on the home page regardless of their category.
2- A 'Downloads' section has been added, as described in Section 2.1.
3- Publications are now accessible directly from "Publication" section, as outlined in Section 3.2.

Finally, a set of widgets has been added to the right side of the page providing up-to-date information on upcoming events, the website's categories, the latest CPSwarm tweets, and an easy way to subscribe to the newsletter.

2.1 Downloads

A "Downloads" section has been added to the website to allow visitors to download the software associated with the project. Initially, this consists of links to the open-source software used in the project, as shown in Figure 1, the first CPSwarm Workbench release is scheduled to be available within Q1 2018.

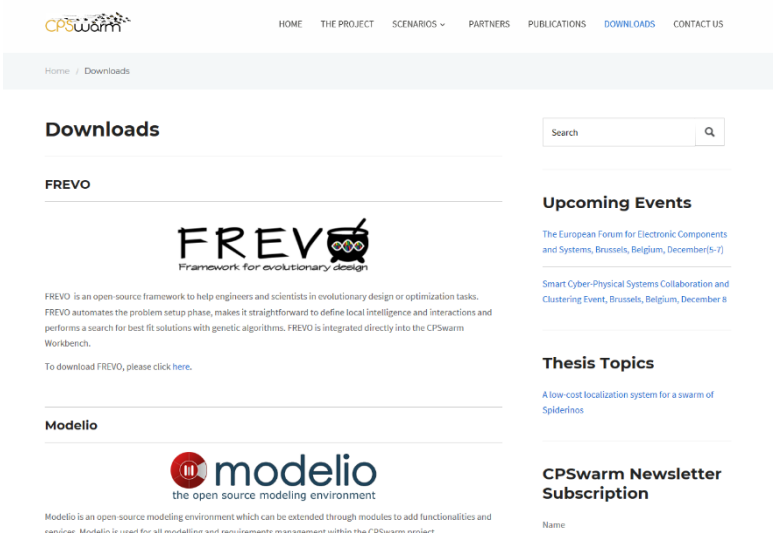

Figure 1: Downloads

2.2 Publications

The "Publications" section lists all the publications related to the project. As shown in Figure 2, these may be divided into three types:

1- Research output, consisting of the academic output of the project. Full bibliographical details are provided.
2- Public deliverables, such as formal specifications and reports. Each item includes a brief description together with the possibility to download it.
3- Educational materials that visitors can download, e.g. public presentations about CPSwarm.

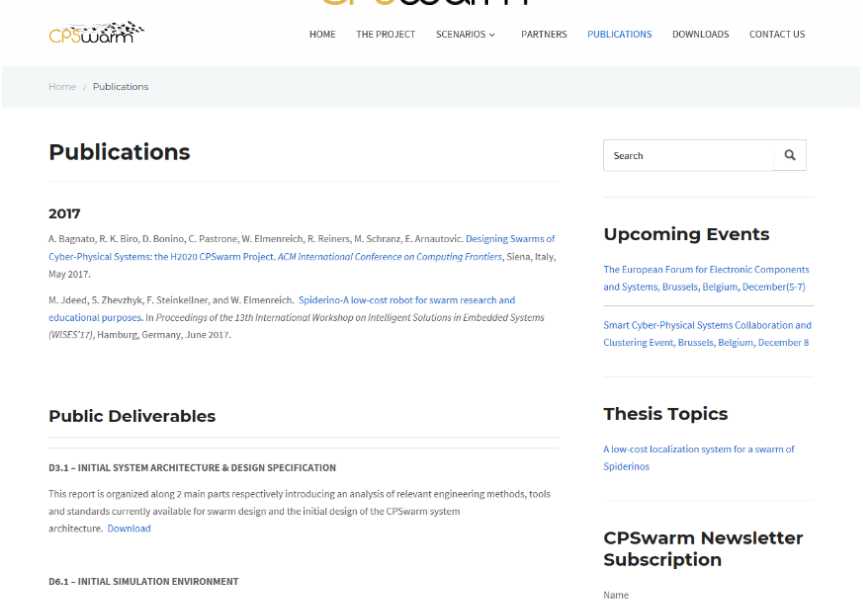

Figure 2: Publications

2.3 Upcoming Events

The "Upcoming Events" widget, which provides information about upcoming events where the project is scheduled to appear, is located prominently on the right side in order to draw attention as illustrated in Figure 3. A post is connected to each entry containing additional details such as location and a brief description.

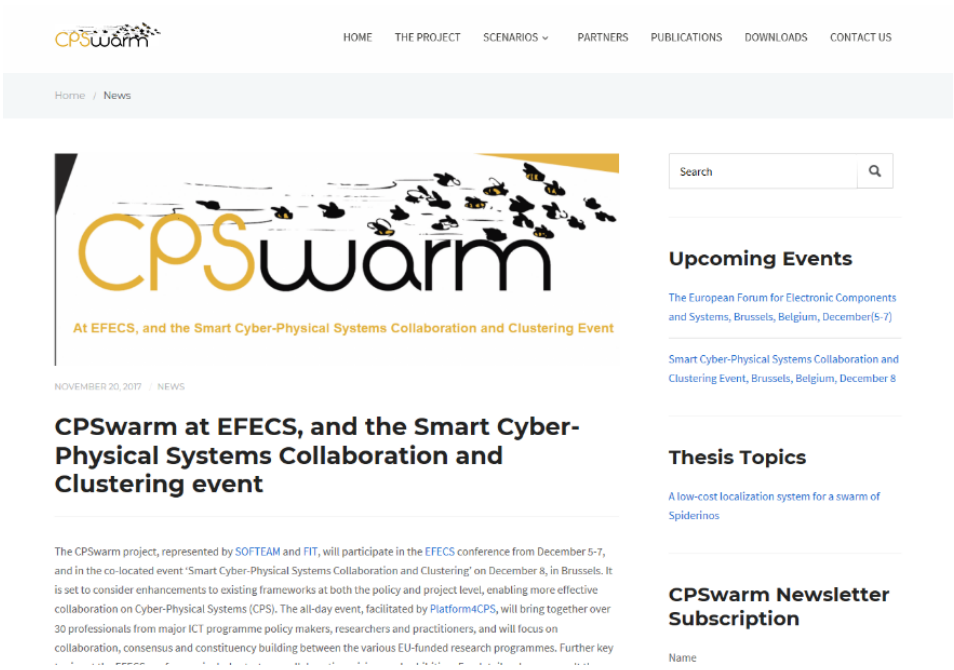

Figure 3: Upcoming events widget

2.4 Thesis Topics

The "Thesis Topics" widget advertises open thesis topics within the CPSwarm project and seeks to attract students to become involved. By clicking on the topics (Figure 4), students can check requirements and contact potential supervisors.

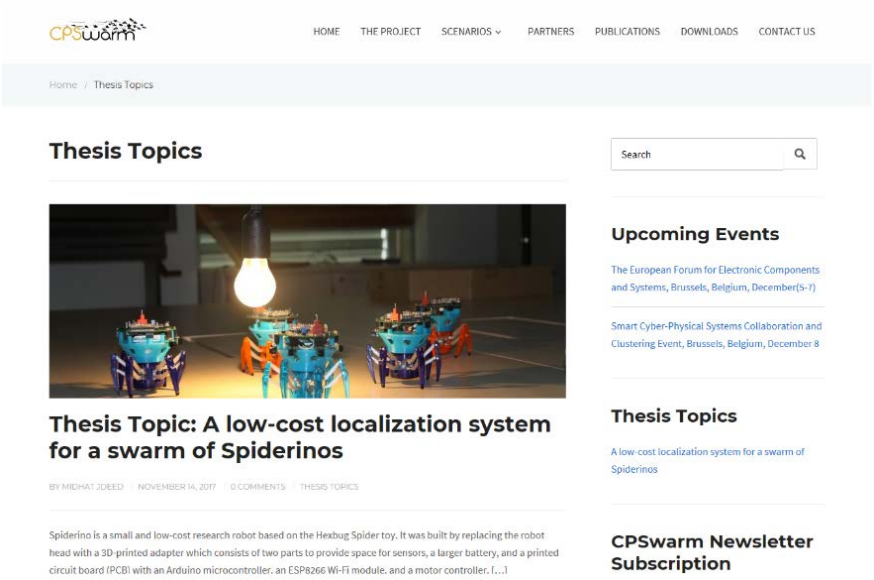

Figure 4: Thesis topics

2.5 Newsletter

The newsletter provides an easy way for the community to keep in touch with the project, by regularly pushing out news to subscribers. The "CPSwarm Newsletter Subscription" widget (Figure 5), displayed prominently on the right side of the site, ensures signing up is straightforward. The newsletter itself is created automatically by the "Email Subscribers & Newsletters" plugin.

Figure 5: CPSwarm newsletter

2.6 Integration with Social Media

As part of the website update, a widget has been added to display the most recent tweets from the CPSwarm Twitter account directly on the website (Figure 6). Moreover, a Facebook page[1] has recently been created. More information about the CPSwarm social media channels is presented in Section 3. The website has an integrated plug-in, Blog2Social[2], which can auto publish, schedule and share posts on Facebook and Twitter. This allows all posts and events to be easily synchronized on the website, the twitter account and the Facebook page.

Figure 6: Twitter widget

2.7 Accessibility and Search Engine Optimization

Built using the open source WordPress platform, the CPSwarm website aims to be performant and accessible on both desktop and mobile devices. While user numbers remained relatively low during this initial stage of the project (Figure 7), we anticipate increased traffic once our publications and downloads become widely available. In particular, we expect an increase in mobile traffic and traffic originating from social networks.

[1] https://www.facebook.com/CPSwarm.Eu/
[2] https://wordpress.org/plugins/blog2social/

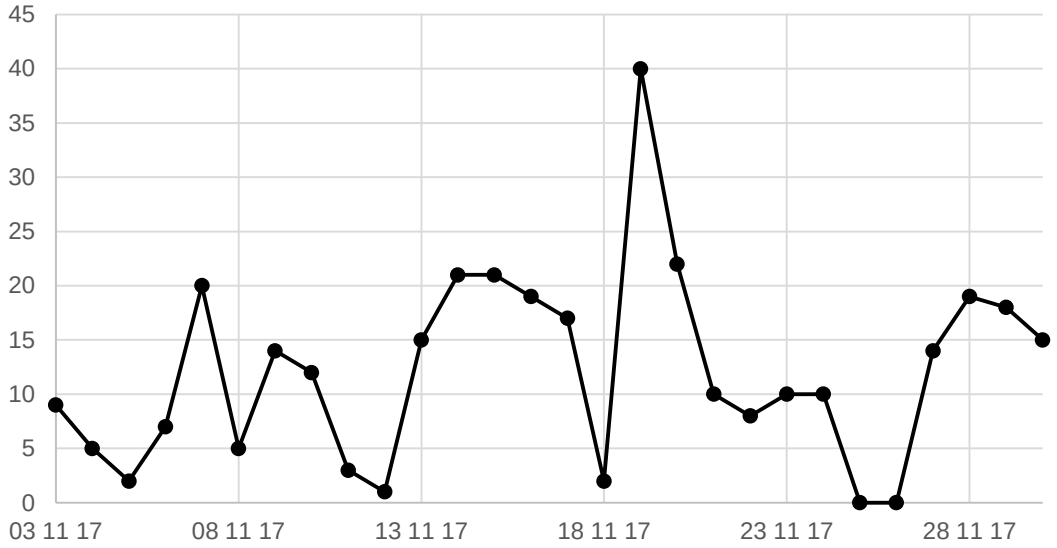

Figure 7: Website Sessions - November 2017

As part of the website update, various improvements have been made to accessibility and search engine optimization:

- A cookie consent plugin has been installed which notifies the user that the site uses cookies to improve their experience on the site and makes it easy for them to find out more information. This ensures the site is compliant with the EU regulations regarding usage of website cookies.
- Google Analytics has been installed as part of our content optimization strategy. By understanding our users' demographics, such as their geographic location, language, and how they arrived on the site as well as their behaviour, we hope to better connect with external stakeholders and other interested parties.
- Continuous steps to improve search engine optimization (SEO) ensure that the site is well placed in organic search results and thus visible, leading to an increase in visitor numbers.

3 CPSwarm in Social Media

Social media is used by millions of people around all the world including researchers, students and businesses.
With more than 2.5 billion users, Facebook and Twitter are two of the important popular social media platforms, and allow the project to connect with target groups, offering much greater reach than traditional methods of communication such as workshops and conferences.

3.1 Twitter account

The CPSwarm Twitter account (@CPSwarm_EU) has been active since January 2017 and, at the time of writing, has 85 Tweets, 121 followers and 89 likes, thus making it one of the project's primary dissemination and networking channels, as shown in Figure 8.

Figure 8: CPSwarm Twitter page

3.2 Facebook page

To provide an additional method of contact for the project, a Facebook page for CPSwarm was created in November 2017 (Figure 9). News will also be posted here as the project progresses. Currently, the page has a few followers but will be promoted using the other communication tools: The website, Twitter and the printed materials.

Figure 9: CPSwarm Facebook page

4 Updated Printed Materials

Additional printed materials, such as posters and leaflets, are a key part of the CPSwarm project's dissemination strategy. The first template for these materials is designed to be easily extensible and allow updates to the content as the project progresses. Figures 10 and 11 show the updated versions of the CPSwarm leaflet and poster that will be used in HiPEAC 2018 in Manchester. Previous versions have been used in the Digital Innovation Forum 2017 exhibition in Amsterdam, and in HiPEAC 2017 in Stockholm. The most recent version of the poster focuses on the CPSwarm Workbench and the open-source software used rather than the general description of the project.

Figure 10: An updated CPSwarm leaflet

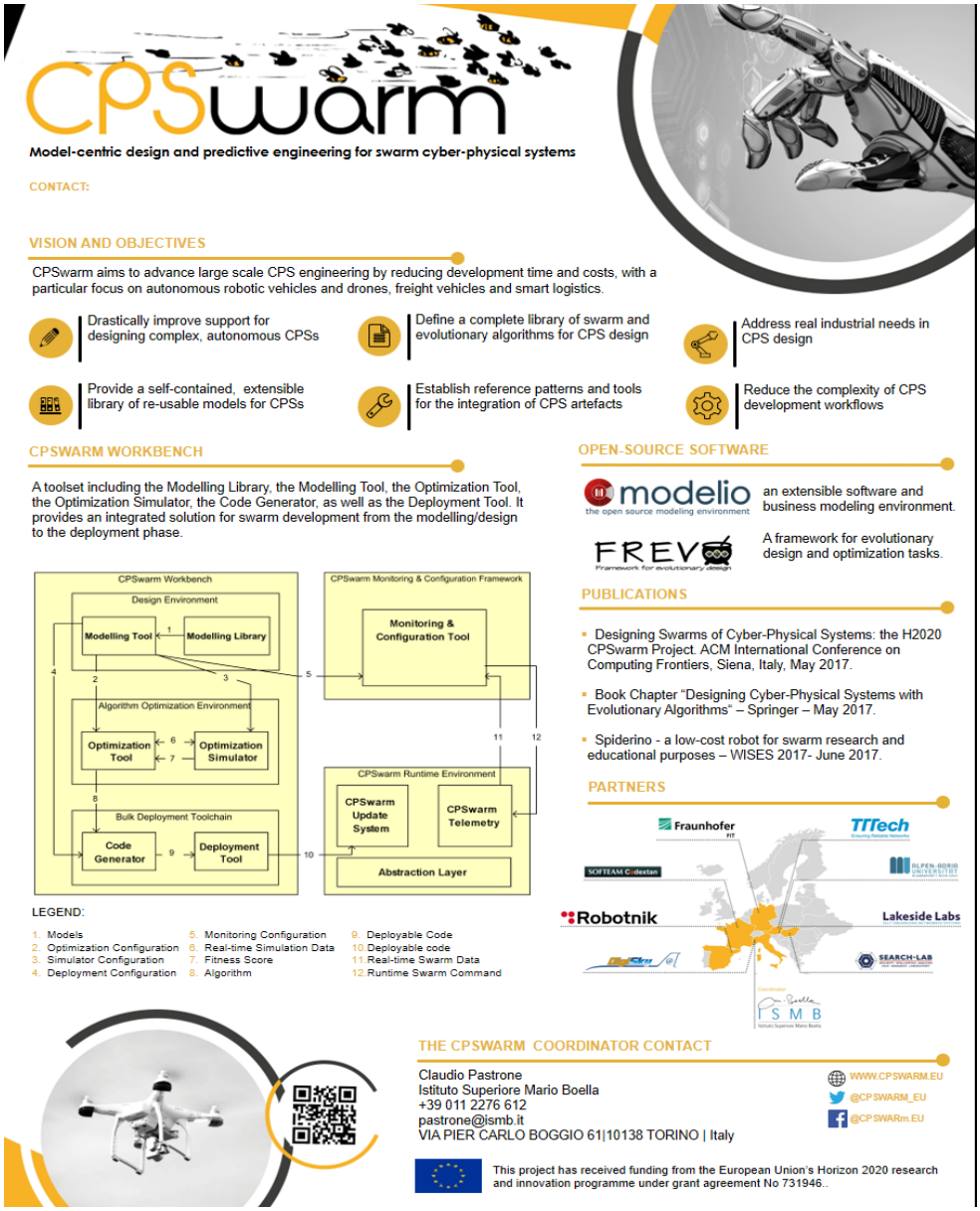

Figure 11: An updated CPSwarm poster

5 Interoperability Activities and Standardization

5.1 Interoperability Activities

After the CPS Cluster Project Kick-off in Brussels on February 15th 2017, CPSwarm represented by Softeam took part to the following event to push towards interoperability among the currently running CPS projects and lead by Platform4CPS CSA project.

23rd October – CPS Consensus on Roadmaps - Paris
This workshop included together Leaders of CPS related roadmaps who seek to form consensus on the common and differing priorities. The CPSwarm team presence could gain insight into over 10 CPS related roadmaps. Discussions among roadmappers offered windows for other guests to raise flags on points needing further refinement after the meeting [1-7].

The Platforms4CPS Roadmapping Consensus Workshop, held on October 23rd 2017 in Paris [8], was set to discuss visions and priorities of recently produced roadmaps in the area of Cyber-Physical Systems (CPS) and related fields, draw recommendations for future research and innovation activities and elaborate more specifically on three Platforms4CPS focus themes.

The workshop gathered 23 experts from industry, academia and policy-making, and started with presentations providing a broad overview on activities, challenges, priorities and recommendations in the area of 'Digitising the European Industry' and related fields like CPS, Cyber-Physical System-of-Systems (CPSoS), Embedded Components and Systems (ECS), Advanced Computing, and Factories of the Future (FoF). Above others, experts presenting results and perspectives from the ECS-SRA, HiPEAC, CPSoS, CyPhERS, Road2CPS, agendaCPS, PICASSO and sCorPiuS roadmaps were present [2-7]. Moreover, the European Commission (EC) representative provided insights into strategic developments and directions for the upcoming CPS research program as well as the related vision for beyond 2020. During the interactive sessions in the afternoon, the participants elaborated on current and future research priorities, especially regarding the three Platforms4CPS focus themes: 'CPS Platforms', 'Autonomous CPS' and 'Virtual/CPS Engineering'.

A high priority for the future, presented by the EC representative, was in Autonomous Cyber Physical Systems (ACPS), a topic that had also been highlighted in many roadmaps and chosen as a focus theme in Platforms4CPS. Its importance was broadly shared amongst the workshop participants and was a theme highlighted as 'emerging new theme' in the interactive session as well as group work.
Comparative presentation of the different roadmaps and an interactive session to build a matrix of priority themes, revealed similarities but also differences amongst the roadmaps. Research priority themes of great consent between roadmaps, also confirmed by statements of the participants were:

- Interoperability, reference architectures, platforms, standards and seamless connectivity
- Safety, reliability & (cyber)security, privacy, trust
- Autonomous CPS, artificial intelligence, cognitive systems and situation awareness
- CPS engineering of large, complex systems including modelling & simulation
- Human machine interaction, human in the loop, human as part of the system
- Computing and storage
- CPS science and cross-disciplinary R&D and research on the foundations of CPS

Furthermore, other important priorities to help CPS implementation were highlighted:

- Enhance multi-disciplinarity, cross-fertilisation (application domain & engineering domain)
- Foster collaboration, European coordination and de-fragmentation across Europe
- Cross-disciplinary education, T-shape education, life-long learning
- CPS enabled business models and business services, facilitate access of SMEs and start-ups

- CPS regulation, questions around liability and ethics
- Raise awareness, promote societal dialogue, enhance user acceptance and trust

Regarding the trends and new/emerging themes 'autonomous systems' became very prominent in connection with 'artificial intelligence' and 'trust'. New or improved (virtual) CPS engineering approaches to manage the more and more complex systems including the human as a part, but also co-engineered safety and security were discussed intensively. Agile (open source) platforms as well as the federation of platforms also ranged high amongst the future challenges [8].

Moreover, the CPSwarm project, represented by SOFTEAM and FIT, will take part in the European Forum for Electronic Components and Systems (EFECS) conference on December (5-7), and in the co-located event 'the Smart Cyber-Physical Systems Collaboration and Clustering' on December 8, in Brussels. It is set to consider enhancements to existing frameworks at both the policy and project level, enabling more effective collaboration on CPS. The all-day event, facilitated by Platform4CPS, will bring together over 30 professionals from major ICT programme policy makers, researchers and practitioners, and will focus on collaboration, consensus and constituency building between the various EU-funded research programmes. Further key topics at the EFECS conference include strategy, collaboration, vision, and exhibition. For details, please consult the EFECS programme.
The 8th December day – Cooperation between the EU funding Programmes will have as focus on helping collaboration, consensus & constituency building between the EU funding programmes. The day will be split into two parts, where one will have overviews of the Programmes with discussion and one will have representative projects provide overviews and followed by discussions. This event will be back to back with EFECS[3].

5.2 Standardization

Dissemination of the CPSwarm results not only occurs through the website, or conferences, but also through interaction with standardisation bodies. Softeam is involved in two standardisation bodies and one Association in with CPSwarm result might be relevant.

SysML [http://www.omgsysml.org/]
Specific effort made in SysML Physical Interaction And Signal Flow Simulation Specification (SysPISF) Working Group in order to coupling develop and improve SysML model simulation[4].

MARTE [http://www.omg.org/spec/MARTE **]**
A work has been set up to carry out an INTO-CPS Open Source Consortium where Softeam from January will be involved into the modelling of Cyber-Physical Systems. INTO-CPS Consortium aims to provide an open source tool chain focused on Model-based Design of Cyber-Physical system where CPSwarm aims to provide support and tools for Model-based Design of swarm of Cyber-Physical system. By being involved into the INTO-CPS Association, Softeam want to be able to use and influence as soon as possible relevant technologies coming from it for CPSwarm project purpose. We will be able to report more on that in the next period.

[3] https://efecs.eu/key-topics.html
[4] http://www.omg.org/spec/SysPISF/About-SysPISF/

6 Conclusions

This deliverable presents the updated CPSwarm project website and the advertising materials as well as the ongoing task of interoperability activities and standardization. The website, twitter account, and Facebook page will be continuously updated with new content and results as the CPSwarm project progresses. New posts, downloads, education materials, deliverables, and publications will be added to fulfil the Key Performance Indicators (KPIs) as documented in "D9.1: Communication and dissemination strategy". The CPSwarm website, as the main communication hub, will keep the community up-to-date, while its social media channels will help to expand it by attracting different groups such as students, the interested public and other stakeholders. Additionally, the advertising materials will be used to disseminate project results and will be continuously updated throughout the project lifetime.

7 References

[1] D'Elia, Sandro (2017): 'CPS towards 2020 and beyond' presentation at the Platforms4CPS Roadmap Consensus Workshop in Paris, 23rd October 2017.
https://www.platforms4cps.eu/fileadmin/user_upload/08_EC_DG_CONNECT_CPS_towards_2020_and_beyond.Pdf

[2] Reimann, Meike (2017): 'Roadmap Pitch: Road2CPS - Roadmapping Project' presentation at the Platforms4CPS Roadmap Consensus Workshop in Paris, 23rd October 2017.
https://www.platforms4cps.eu/fileadmin/user_upload/01_Road2CPS_Steinbeis_2i_RoadmapPitch.pdf

[3] Pfeifer, Holger (2017): 'Roadmap Pitch: CyPhERS - Cyber Physical European Roadmap and Strategy' presentation at the Platforms4CPS Roadmap Consensus Workshop in Paris, 23rd October 2017.
https://www.platforms4cps.eu/fileadmin/user_upload/02_Cyphers-Pitch_fortiss_RoadmapPitch.pdf

[4] Thompson, Haydn (2017): 'Roadmap Pitch: CPSoS - Roadmapping Project' presentation at the Platforms4CPS Roadmap Consensus Workshop in Paris, 23rd October 2017.
https://www.platforms4cps.eu/fileadmin/user_upload/03_CPSoS_THHINK_RoadmapPitch.pdf

[5] Sonntag, Christian (2017): 'Roadmap Pitch: Towards EU - US Collaboration on the Internet of Things (IoT) & Cyber-physical Systems (CPS)' presentation at the Platforms4CPS Roadmap Consensus Workshop in Paris, 23rd October 2017.
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[6] De Carolis, Anna (2017): 'Roadmap Pitch: sCorPiuS - European Roadmap for Cyber-Physical Systems in Manufacturing' presentation at the Platforms4CPS Roadmap Consensus Workshop in Paris, 23rd October 2017.
https://www.platforms4cps.eu/fileadmin/user_upload/05_sCorPiuS_Politecnico_di_Milano_RoadmapPitch.pdf

[7] Niehaus, Jürgen (2017): 'Roadmap Pitch: From the General to the Specific: NRMES, agendaCPS, WG Autonomous Systems, CP-SETIS' presentation at the Platforms4CPS Roadmap Consensus Workshop in Paris, 23rd October 2017.
https://www.platforms4cps.eu/fileadmin/user_upload/06_NRMES_SafeTrans_RoadmapPitch.pdf

[8] Report on the Platforms4CPS Consensus Roadmap Workshop Paris, 23rd October 2017 https://www.platforms4cps.eu/

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