HUBCAP
Digital Innovation HUBs and Collaborative Platform for Cyber-Physical Systems

Newsletter 4 October 2021

HUBCAP Newsletter

Call #2.2 EXPERIMENT opening soon!

The second iteration of our EXPERIMENT series, Open Call #2.2, launches **3rd November 2021** and will stay open until **2nd February 2022, 17h CET (Brussels Time)**!

Are you a European SME looking to experiment with MBD tools for CPSs? Call #2.2 offers SMEs in a consortium of two, funding of €30 000 to €75 000 to support with the integration of HUBCAP assets and creating new MBD solutions over a duration of 4-6 months.

Call #2.2 EXPERIMENT helps SMEs towards the adoption or improvement of CPS products and services by applying assets from the HUBCAP platform in consortia of two SMEs working together.

These experiments aim to promote the adoption of MBD for CPSs using assets and services from the platform, in particular from SMEs with less digital experience. Experiments will connect users and suppliers from various industries and funding experimental collaboration with consortia of two SMEs ensuring that these are focused. HUBCAP will provide funding and services to each awarded project.

To apply and for more information check-in on our website! @ **hubcap.eu** !

In this issue:

Call #2.2 EXPERIMENT!

- Up to 75,000€ in support
- Free services and support
- 4-6 months duration

APPLY NOW hubcap.eu

Call #3 INNOVATE Winners

The one and only INNOVATE open call series is now officially entering its most exciting phase, which will see the start of the 12 month development period for all approved projects. The call winning consortia will get to work on their projects with the help and support of the HUBCAP Digital Innovation Hubs readily available at all times. If you want to find out more about the 10 accepted projects, you can do so on the following pages of the newsletter!

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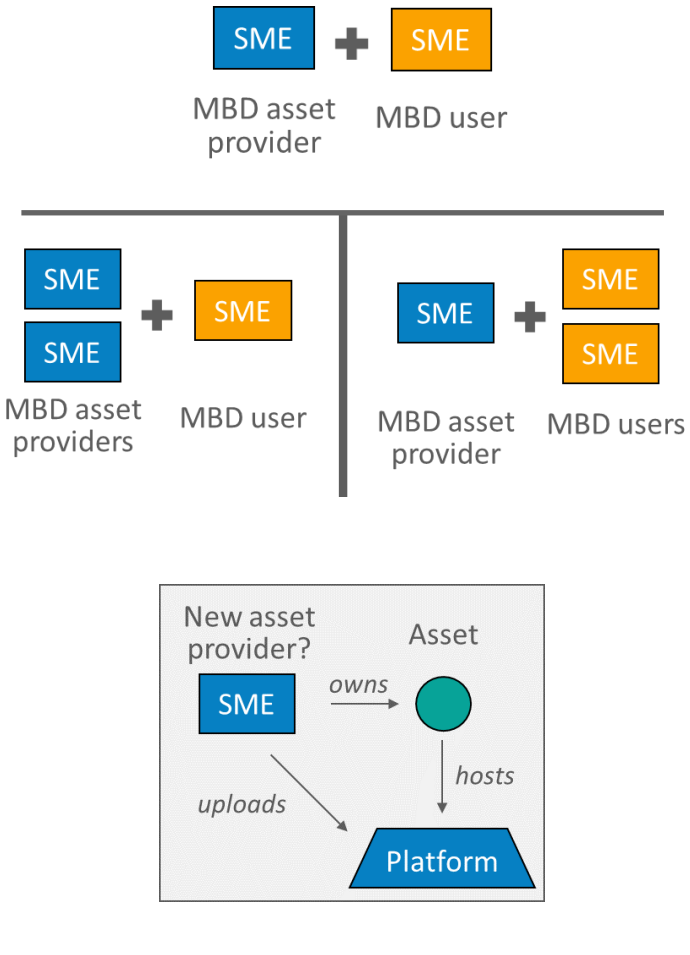
What is an INNOVATE project?

Call #3 supports consortia of 2 or 3 SMEs to develop innovative new Cyber-Physical System (CPS) products using Model-Based Design (MBD) techniques. At lease one SME should be an MBD asset provider and at least one a new MBD user. The asset provider can be a winner from a Call #1.x, or be new to the HUBCAP ecosystem. SMEs who are new to the HUBCAP Ecosystem can deploy their assets to the platform for others to find and as well.



Call #3 INNOVATE project types and asset deployment

MENIoR

Consortium: Draxis Environmental SA | HOP Ubiquitous SL

This project aims to enable industrial employees to better understand the environmental conditions in which they work and protect their wellbeing by leveraging the potential of Internet of Things (IoT) with the application of Augmented Reality (AR) techniques and Digital Twins (DT) integrated into a Cyber-Physical system solution. Environmental data will be collected via a low-cost environmental monitoring network, developed and setup by the consortium in industrial operations, while the measurements will then be analysed on the cloud. A web Digital Twin of the industry will be provided to the industry admins to enable them visualize the collected data and assess scenarios for environmental improvement inside the industry, while employees will be provided with data visualisation through a mobile application in an AR interface.

SimTank

Consortium: Intellia ICT | METRICON Digital Systems

In SimTank, we are dealing with the important problem of testing and validating energy-efficient CPSs for the monitoring of tank trucks. We customize a CPS in the form of a sensor network deployed on fleets of tank trucks and we follow a model-based design (MBD) approach to deliver an energy simulator that will minimize the overall energy required for the fleet monitoring. The software is responsible for model checking, controlling and simulating the performance of the sensor network. We formulate the total energy consumption as an optimization problem (energy for sensing, processing and communication tasks) and we apply Quadratic Logic Programming to optimize the energy use.

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Call #3 INNOVATE Projects

AID4asBuild

Consortium: Vertliner P.C. | GIVE SMPC

AID4asBuilD is a novel approach to the precision inspection of building assets using an autonomous UAV flying through tightly confined spaces, a task today significantly difficult and dangerous for humans. AID4asBuild focuses on the specific use-case of fully automated elevator shaft inspection while bridging the gap between the construction and the elevator industry. This is implemented through an autonomous UAV connected to a cloud platform for the precise, safe and timely measurement of any newly constructed building's elevator shaft. The solution targets stakeholders of the AEC industry (Architecture, Engineering, Construction), such as main contractors, elevator system installers and manufacturers.

LocoMoCap

Consortium: Cyberith GmbH | A.C. Codewheel Ltd

LocoMoCap is a project that is the common vision of a leading provider of professional locomotion devices for virtual reality (VR) and an AI-based motion capture (MoCap) start-up. Its ultimate goal is the exploitation of the latter's emerging technology for improving the former's existing product (Virtualizer) experience and performance. To overcome the challenges in integrating the sensor-based MoCap subsystem with the Virtualizer's motion platform, it will develop the LocSim simulator. The added value of this approach is an efficient and cost-effective continuous integration of a physical system spanning both hardware and software.

Block-IoT-Chain

Consortium: Future Sense SL | Qartech Innovations S.L.

Block-IoT-Chain will develop an infrastructure and network that can integrate blockchain technology into any IoT measurement device. With Airchain you can generate a permissioned blockchain network in the cloud to securely store all the measurements of your IoT sensors, which makes it the perfect tool from the HUBCAP ecosystem to test and implement this technology in our current IoT sensor. This is the boost that Airchain needs for a successful development and will also serve to differentiate Future Sense products.

Future Sense (FS) has designed a PCBA that can turn any sensor into an IoT measurement device. Once we have developed the blockchain infrastructure, the idea is to use this technology to expand to other sectors (chemicals, water analysis, etc.) and sensors (CO2, VOCs, PMs, etc.), thus stimulating and expanding the adoption of more CPS.

FISS

Consortium: Xilbi Sistemas de Información SL | Fotovoltaica Macotera SL | Cyblix Unipessoal Lda

The Farming Intelligence System of Systems (FISS) aims to take the interaction between the farmers and their plantation fields to a new level. It will deliver an Environmental Digital Twin and associated Artificial Intelligence(AI) based Decision Support System (DSS) which will allow farmers to maximise the benefit of existing operational assets and know how. This will be achieved by connecting, exchanging and analysing the data, via the FISS Cyber-Physical(CPS) platform, from deployed technological existing sub-systems.

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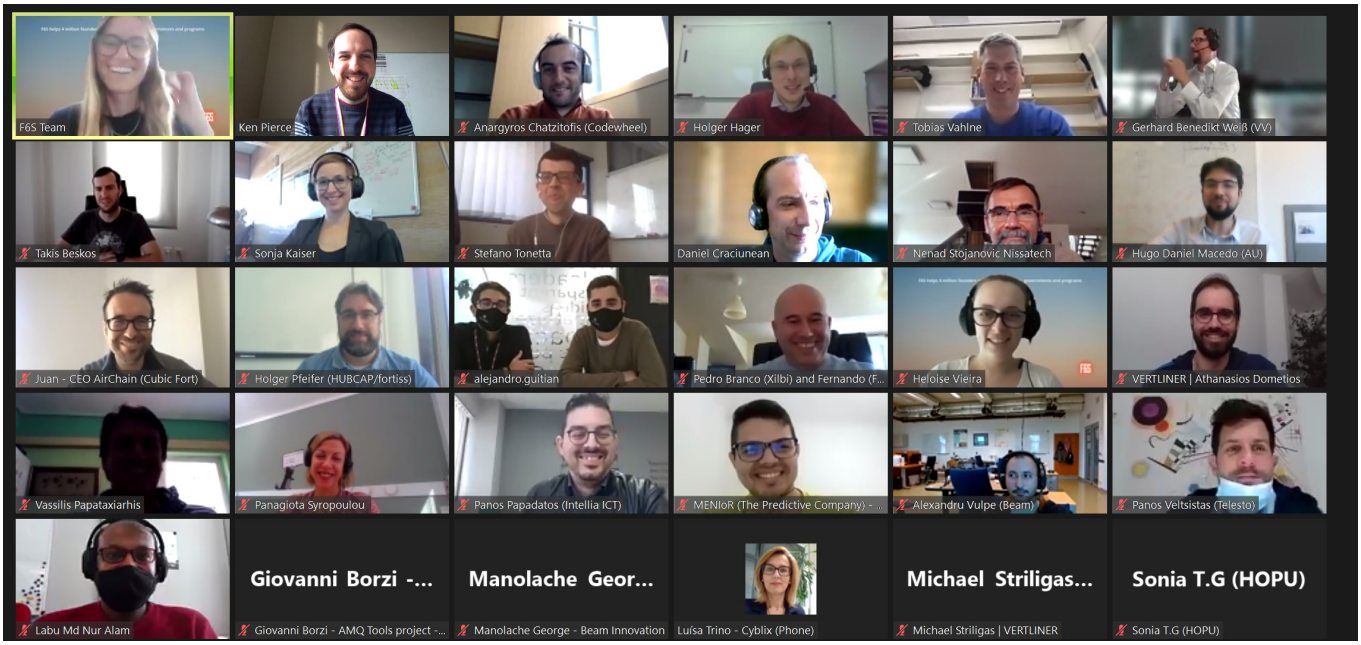

Participants at the Call #3 INNOVATE kick-off workshop, October 2021

ModelBasedEcoQuality

Consortium: Nissatech | EMDIP | Zona Zdravlja

This project will develop (with HUBCUP support) a CPS-based infrastructure for enabling a comprehensive monitoring, analysis and improvement of the eco-friendly quality of the manufacturing process, through focusing on three main factors of environmental footprint: Energy, Emission and Anomalies (Waste), measured using corresponding sensors and cameras. It means that the envisioned system should monitor the eco-quality of these processes in the context of the given manufacturing process and use complex behaviour understanding to react in situations when some of the environmental aspects will be changing.

AM QTOOLS

Consortium: EnginSoft SpA | KIlometro Rosso SpA | Press-X srl Systems

AM QTOOLS addresses Additive Manufacturing (AM) quality control with a decision support framework which integrates a design for AM and a process simulation software solution (ANSYS Additive Suite), with the Smart ProdACTIVE digital platform that connects the AM machines (EOS M290), with quality assurance requirements and quality control data. Smart ProdACTIVE is a fully integrated system, that connects the production processes with data sources (machines, sensors, HMIs), and exploits traceability information to correlate such data with quality outcomes.

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BIE-T4S

Consortium: Telesto IoT Solutions | Beam Innovation SRL

Large crowd-gathering public spaces have been the target of numerous terrorist and other violent attacks in the past, leading to significant loss of lives and causing societal insecurity as well as economic disruptions. The goal of this project is to provide an integrated platform as a venue-agnostic threat management by combining T4S, an existing solution supporting security and evacuation, with business intelligence tools from BEAM who joined the HUBCAP ecosystem during Call #1. The goal is to provide the integrated BIE-T4S platform as a venue-agnostic threat management platform delivering increased preparedness against different types of threats (terrorism, natural disasters, pandemics etc.) and support the complete lifecycle evacuation management in any crowded place.

GIMLI

Consortium: MULTIWAVE METACRYSTAL SA | QUASIR Ltd | MULTIWAVE TECHNOLOGIES SAS

Positron Emission Tomography (PET) is a crucial technique widely used for cancer diagnosis and treatment. Large scale simulations based around Monte Carlo methods are employed for design by Multiwave SAS. These are expensive in terms of simulation time. GIMLI project aims to use machine learning to accelerate the simulation and software engineering through the Quaisr company platform to vastly accelerate design process and improve the quality of simulation.

Call #1 PULL

Attracts and engages individual SMEs to join and to integrate existing CPS and MBD tools in the HUBCAP platform. To enlarge the HUBCAP ecosystem

Call #2 EXPERIMENT

Stimulates SMEs towards the adoption or improvement of CPS products & services by applying assets from the HUBCAP

Call #3 INNOVATE

Funds the deployment of new products and demonstrations of highly-innovative collaborations using the HUBCAP platform.

Upcoming Events

Call #1.4 PULL 04.11.2021

The fourth call of our PULL series closes in November 2021! Hurry up to receive €1000 to join a workshop and the HUBCAP Ecosystem!

Call #2.2 EXPERIMENT 03.11.2021

The second instalment of the EXPERIMENT open call will open in November of 2021!

Webinars & Matchmaking

Keep up to date with webinars and matchmaking events by following us on social media!

Upcoming Open Calls

Call #1.4 PULL

September 2021 – November 2021

Call #1.5 PULL

February 2022 – March 2022

Call #2.2 EXPERIMENT

November 2021 – January 2022

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