



# Digital Challenge Owners Open Call



General Overview  
Digital Catapult



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# What is DigiFed?

**DigiFed\*** is a EU funded innovation action on the H2020 programme

**Main goal to drive innovation across European SMEs & Midcaps via large scale adoption of Cyber Physical Systems (CPS) & Embedded Systems**

**3 Open Calls and 3 Main Innovation pathways to help European companies to digital transform their operations, products and service offerings**

**12 Partners from 9 European Countries**

**Duration:** 3 years, 01 January 2020 to 31 December 22

**Cascade Funding:** € 3.9 million in direct support for SMEs & Midcaps

\* Digital Innovation Hubs Federation For Large Scale adoption of digital technologies by European SMEs



# DigiFed and industry context

DigiFed operates within the framework of the '[Smart Anything Everywhere Initiative](#)', which has the ambition to boost the adoption of advanced digital technologies, or cyber-physical systems (CPS) by industry in Europe. The use of CPS in the manufacturing sector, for example, have been shown to increase productivity by up to 25% and reduce CO<sub>2</sub> emissions by 4.5%.

This programme looks to accelerate and support industry in piloting innovative new technologies, linking industrial companies with some of Europe's most interesting and innovative early stage technology companies.

# DigiFed Consortium

Commissariat à l'Énergie Atomique et aux Énergies Alternatives (**CEA**)

AVL list GmbH (**AVL**)

Budapesti Műszaki és Gazdaságtudományi Egyetem (**BME**)

Blumorpho SAS (**BLUMORPHO**)

**Digital Catapult (DIGICAT)**

Ikerlan S. Coop (**IK4-IKERLAN**)

Minalogic Partenaires Association (**MMNT**)

STMicroelectronics Grenoble 2 SAS (**STGNB 2 SAS**)

STMicroelectronics SRL (**ST-I**)

Steinbeis Innovation GGmbH (**SEZ**)

Univerza V Ljubljani (**UL**)

Zabala Brussels (**ZABALA BRUSSELS**)



# Digital Challenge

- **Digital Challenge:** a 9-12 months project where the selected 3<sup>rd</sup> party develops a solution/product/service for which no CPS or embedded system solutions has been identified in the market yet.
- The proposed solution, product or service will respond to the needs of a Digital Challenge Owner who agrees to co-fund this experiment.
- The **Digital Challenge** targets startups and SMEs from across Europe.
- The 3<sup>rd</sup> parties applicants will be selected through an open call which will launch in **May 2021**.
- **The Digital Challenge involve matched funding from the Digital Challenge Owners (€30,000-€50,000 per challenge)**





# Technology focus

1. The focus of this challenge is on **Cyber Physical Systems (CPS) & Embedded Systems** which should include **components from each of these 3 categories**
2. The Digital Challenge cannot be purely software related

## Software

- Embedded programming
- Machine Learning/Edge computing (e.g. neural networks)
- Security/encryption
- Data compression
- Systems of systems architecture (e.g. for predictive maintenance)
- Software Defined Radios.

## Physical Components

- Microcontrollers
- Sensors
- Human Machine Interface: AR/VR, touchless interfaces.
- Actuators
- New modes of power e.g. energy harvesting.

## Communication

- Wireless communication: PAN – Mesh, BLE, WiFi
- WAN LPWAN, cellular (5G), satellite
- Heterogeneous networks
- Protocols e.g. Modbus, OPC UA

# Challenge examples

## Edge IoT for welding optimisation

Artificial neural networks (ANN) combined with sensors and machine vision can develop an adaptive AI based ultrasonic welding system that can produce high value/high quality parts in small batches.

Intelligent welding parameter control is a key technology to achieve higher quality in automated welding. Recent advances in intelligent systems has showed the benefits of AI based adaptive welding systems.

## Industrial environment monitoring

Utilising next generation sensors can be deployed to monitor extreme industrial environments, improving safety and providing insight into fuel usage in heavy manufacturing processes.

The use of advanced analytics can determine the optimum conditions for an industrial process and optimise manufacturing conditions to enable an efficient and process driven operation.



# Solution and TRL\*

The duration of the Digital Challenge is 12 months and we expect that the project will result in a functional prototype that could be expanded and adopted beyond the Digital Challenge.

The solution will be provided by a startup or SMEs with high digital maturity. We expect that the selected company will have existing customer experience and have ideally, successfully taken a product or a service from TRL 3 to TRL 8.

The expected outcome of the Digital Challenge is an innovative solution with a high TRL which may also be used as a first-generation product.

\*TRL= Technology Readiness Level

[https://ec.europa.eu/research/participants/data/ref/h2020/wp/2014\\_2015/annexes/h2020-wp1415-annex-g-trl\\_en.pdf](https://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/annexes/h2020-wp1415-annex-g-trl_en.pdf)

# IP\* rights

- Any IP developed during this process will be owned by the startup or SME who have developed the solution.
- The Digital Challenge Owner however, may have preferential rights to negotiate a licensing agreement at the end of the Digital Challenge.
- It is strongly advised to have the legal teams mutually discuss the IP and licensing rights during the early stages of the contracting phase.

\*IP= Intellectual Property

# Digital Challenge Owner (legal entity)

- Applicants shall be pan-European (EU member states or H2020 associated countries, including the UK) organisations residing in an EU Member State (including their overseas departments) or in one of the EU Associated Countries.
- The Digital Challenge owner shall be a large organisation or a mid-cap (250-3,000 employees). A legal entity will be considered midcap if it complies with the European Commission's and the European Investment Bank definition at:  
<https://www.eib.org/en/about/priorities/sme/index.htm>

# Benefits

**Digital Challenge Owners will benefit from the opportunity to:**

- Engage in focused innovation around key business objectives
- Receive support in the identification of suitable challenge topic and make it understandable to innovators on the market (open call drafted by DigiFed partners)
- Get access to leading edge innovators from across Europe
- Accelerate the company's innovation journey to digitally transform its operations, products and service offerings
- Learn about new technologies and uncover new markets
- Raise company profile through marketing and programme association
- Minimise risks by offering an alternative way of procuring new suppliers
- Gain access and develop new partnerships with leading Digital Innovation Hubs across Europe

N.B. Project management run by DigiFed partners

# Budget

**Digital Challenge Owners are expected to contribute funding between €30,000 - €50,000 per challenge** (50% match funding from DigiFed consortium, 100% funding to be cascaded directly to innovators). Contributions over €50,000 might also be accepted subject to DigiFed co-funding availability.

Selected organisations will also agree to:

- Engage with DigiFed to define an innovation challenge based on a need for which no digital solution is currently available on the market
- Commit resources (1-2 days per month on average) to work with innovators to implement the technology solution
- Provide mentoring, access to facilities, knowledge needed for the implementation phase
- Participate in technical reviews and sign off meetings

# Contracts (H2020 or Commercial route)

Digital Challenge Owners have **two** options:

- Sign DigiFed contract with the Consortium
- Sign a contract with a delivery partner in a specific country (commercial).

N.B. Contract templates to be shared as early as possible to avoid delays



# Contact details

For further information on the DigiFed Digital Challenge Owners Open Call please contact:

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