



1st day: Digital innovation Hubs across Europe Wednesday 30th November 2022

Plenary session

DigiFed

:45

Welcome coffee Agenda, welcome packs & badges

Digifed main achievements

Key results of the 3 innovation pathways.
DigiFed's innovative pathways: Generic Experiment
& Digital Challenge
Speakers: Isabelle Chartier Digifed Coordinator - CEA,
Ana Georghes DGC

30 Presentation from 4 success stories Speakers: Charles Garnier - CATIE, Steve Gussenhoven - Iotize, Alberto Fusco - Koyré, Yacine Felk - Cysec

10:00 Digifed Impact analysis for the SMEs and best practices Speakers: Margherita Volpe -ZAB, Alice Perez Morillas - BLM

:30 Coffee break

The EDIH-ecosystem and Digital Transformation Accelerator as it's connecting point

Speaker: Helena Rodrigues - Project Officer at the European Commission - DG CNECT 11:20

13:20

Workshop: Setting up joint instruments and services through DIHs and EDIHs collaboration

Speakers: dr. Fredy Rios - SEZ, Olivia Ugen - Blumorpho

Lunch break

Workshop: Setting up joint instruments and services through DIHs and EDIHs collaboration Speakers: dr. Fredy Rios - SEZ, Olivia Ugen - Blumorpho

14:45 Coffee break

Capacity building and EDIH collaboration – Perspectives and opportunities beyond Europe

Speakers: dr. Meike Reimann - AICS-EDIH and DTA Project Partner, Pierre-Damien Berger -Minasmart EDIH and Minalogic, Patrik Schumacher - AEDIB|NET and SEZ

- CEA showroom visit
- 18:50

16:00

City tour Grenoble 14 rue de la République (tourism office)

20:00 Networking Dinner

French local gastronomy Chez Marius - 1 place notre dame





Advanced Technology

Innovative

Solutions



3 innovation Pathways main achievemnts



Funding



Networking



DigiFed Final Event : DIH across Europe 30/11/2022

Isabelle Chartier – CEA-IRT Nanoelec DigiFed Coordinator

Ana Georghes Digital Catapult

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 864266.

DigiFed : Digitising Europe's Industry Together

DigiFed

DigiFed is a H2020 Cascade Funding project dedicated:

European companies

- To support cross-border partnerships European start-ups, SMEs and MidCaps
- To foster digitalization of their product/service
- To help to get into new markets enabled by Cyber Physical Systems (CPS) & Embedded Systems

Digital Innovation Hubs

- To foster European network of DIH collaboration
- To enhance European DIH offer
- To experiment new funding schemes



DigiFed : Digitising Europe's Industry Together

DigiFed

- 12 Partners : 9 European Countries
- Duration: 3 years, 2020 to 2022
- **Budget** : 8 M€
- Support to SMEs:

Financial Cascade Funding: 4 M€ Technical : 1.1 M€ PM from partners



DigiFed is part of the European Commission "Digitalising European Industry - DEI- strategy" https://smartanythingeverywhere.eu/

DigiFed 3 main innovation pathways



Application Experiment

- ~50k€ funding and technical partner expertise to develop a CPS prototype
- 1 or 2 cross-border SMEs
- DigiFed innovation management program
- ~12 month project

44 projects – 71 SMEs *3,6M€ CF*



Digital Challenge

DigiFed

- ~100k€ funding to develop a CPS prototype answering a large company need
- Collaborate with the Digital Challenge Owner to develop & test the prototype
- Get access to new markets
- ~12 month project

3 projects – 7 companies 155k€ CF + 155k€ DCO

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DigiFed EXPERIMENTAL PATHWAYS

Generic Experiment Community

- Technical community led by one Digifed Research Partner
- 5 20 cross-border SMEs
- Share Use Case outcomes with the community & test the latest development of the GE owner
- 5k€ Cascade Funding for Worskhops participation

4 GE - 50 SMEs 230k€ CF + 270k€ Regions

Application Experiments Tool

3 open calls launched 2020-2021 to foster **cross-collaboration** and engagement of **European start-ups**, **SMEs and mid-caps** :

DigiFed

- Partnership : 1 or 2 SMEs (+ DigiFed technical Partner)
- Develop novel and innovative smart solutions enabled by CPS
- Validate the concept on **identified markets**, build **business strategy**.

 \rightarrow 44 projects – 71 selected companies

→3,6 M€ 94% of Digifed CF

→ <u>https://digifed.org/projects-portfolio/</u>



EARASHI New CF project will launch Open



Geo Visual Multi Came





Expertise



Advanced Technology

Generic Experiment



Competencies

Innovative Solutions





Funding



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GENERIC EXPERIMENT AMBITION

Generic Experiments (GE) are designed **to test new collaborations** between research institutes and a **group of SMEs** co-financed by regional funding.

DigiFed

The goal of each GE is to build and animate a **community of SMEs** around a **specific technical topic (GE Topic)** proposed by one DigiFed research centre, the GE owner - GEO

DigiFed will evaluate these experiences to define **new collective services** that could be proposed in a **sustainable way in the framework of the EDIH.**

SERVICES PROPOSED TO GE MEMBERS

DigiFed

- Share requirements and Use Case with other SMEs from different domains
- **Direct access** to GE owner technical experts
- Test and give feedback about the developments realized by the GE Owner
- Contribute to the technology roadmap of the GE Owner
- Stay on top of latest findings on GE topics to be prepared for market movements.
- Become an active member of the DigiFed Network and expand your own network.

Four GE DigiFed communities implemented



51 SMEs members

- 13 EU countries
- 230k€ Cascade Funding invested
- 5k€ / member
- 270k€ co-funding by Regional authorities

Different models experimented

Service : Prototype development, access to excellence Lab , Test before invest.

Community : Transverse Digital sector or dedicated to a market segment, building a value chain



https://digifed.org/generic-experiment/

DigiFed

Impact assessment – on going

• Global and local assessment : common and specific questionnaires

- CEA GE interview of the 20 members
 - 70% (14) already involved in EU projects \rightarrow few new players
 - 40% joined via Digifed \rightarrow role of DIHs
 - Main Impacts for the members
- 85% (17) knowledge & skills
- o 35% (7) Roadmaps
 - \circ 30% (6) Development integration
 - o 20% (4) R&D partnership

Positive

- Direct acces to CEA & ST experts
- \circ Combining techno-providers and users
- \circ $\,$ Testing the proto, and CEA support $\,$
- \circ Workshops

Negative - improve

- Week interactivity between members (covid)
- \circ more contextualisation , popularization
- o Too much "CEA" top down → more co-creation session

Positive feedback



Would you have pay a fee to join the GE ?

- 20% (4) NO
- 30% (6) Maybe, no idea of €
- 55% (11) YES between 1k€ 30k€



Come to our GE Booth to meet the GE owner

- GE Secure PF for IoT : MS Masselot & T. Franco-Rondisson CEA
- GE Industrial Cybersecurity : Xabier Eguiluz, Odei Olalde IKERLAN
- GE IoT Prototyping in agriculture : Jure Trilar Univ Ljubljana
- GE Energy efficient LED Lightning : Andras Poppe BME





Expertise



Advanced Technology

Funding



Competencies

Innovative Solutions

Digital Challenge

General Overview Digital Catapult



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DIGITAL CHALLENGE AMBITION

Designed to create **partnerships** between **industry leaders** and **technology innovators** to accelerate the adoption of advanced technologies within the CPS and Embedded Systems

DigiFed

Addresses key challenges and opportunities across the industry

DigiFed onboarded **3DCOs** and selected **4 start-ups/SMEs** to respond to the DCOs business needs with bespoke solutions





WHAT PROBLEMS ARE WE TRYING TO SOLVE?

DigiFed

- Irregular engagement and collaboration between large organisations and the technology innovators communities
- Inconsistent **business growth** in the region
- Reduced competition among tech innovators within the region
- Limited market awareness around the industry needs
- Insufficient business opportunities for SMEs and Startups
 - Improve **Revenue streams** for affiliates and customers





DIGITAL CHALLENGE AS A SERVICE

A DigiFed model which:

• Facilitates and creates partnerships between industry leaders, technology startups and SMEs

DigiFed

- Accelerates the adoption of advanced technologies
- Can address key challenges and opportunities across the industry

The Digital Challenge enhances a **partnership** between an **industry leader** (DCO) and the **technology startups** or **midcaps**, where:

- The DCO has a business technical challenge which needs a solution; is willing to invest in the open innovation and the solution development;
- The tech innovator (SMEs, startups) is a mature company with the right skills and expertise to develop the bespoke solution for the DCO; and
- The DIH which is leading the open innovation activity and monitoring the solution development
 progress on behalf of the DCO; may need to act as a facilitator between the tech innovator and DCO

Digital Challenge Success Stories

DigiFed

AIOT System of Systems

GE Hydro France is entering Industry 4.0 and looking for solutions to build an AIOT (Artificial Intelligence of Things) system of systems. Critical success factors identified were time to market, set-up time, deployment costs and solution versatility to the GE Hydro's Assets families.





Next-generation sensors for predictive operation of water treatment

ENNA.

CROATIA

DC Innovat

Munich =

Acciona is looking to establish an end-to-end solution for measuring, reporting, and visualising the performance of each reverse osmosis membrane from pressure vessels part of their desalination plants.

SLOVAKIA

HUNGARY

Belgrade .



Drone visual inspection in a confined, metallic, humid, and complex environment EDF HYDRO seek to improve its turbines' inspection, reducing time and costs whilst enhancing inspection quality and predictive maintenance.





OPEN INNOVATION IMPLEMENTATION GUIDELINES

DigiFed

Key activities:

- 1. Engagement of the ecosystem and identification of DCOs (3-6 months)
- 2. Onboarding of the DCOs and defining the Digital Challenge proposition (3 months)
- 3. Definition and set up of the Open Innovation process: open call, comms, evaluation committee, open call evaluation and selection (6-7 months)
- Monitoring and controlling the solution development (9-12 months)

Key resources and timeline:

Human resources for the key activities

Financial resources for the tech innovators

Overall timeline: 21 – 28 months

BENEFITS FOR DIHs

 Unveil niche opportunities by consolidating collaboration with large organisations; including opportunities to finance new DIH-services

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- Facilitate access to business opportunities for SMEs
- Extend DIH ecosystems and activities
- Increase the service offerings to your customers
- Unveil and create new revenue streams for affiliates and customers for DIHs, and potentially attract new customers

DigiFed

Get in touch



'DigiFed Digital Challenge allowed Acciona to find a cuttingedge technological solution in record time. It made it possible to identify best-in-class technology developers and to achieve a strategic alliance with Instrumentation Technologies to develop SWICCSY, a game-changing solution for the desalination market'

Ana Jimenez Banzo

(Head of Innovation Management, Acciona)



CATAPUL



Sucess story

CYSEC Yacin Felk Single AE with CEA KOYRE Marco Caglieris Single AE with ST

- IOTIZE Steve Gussenhoven TWIN
 - CATIE Charles GARNIER DC with GE Hydro

About CYSEC



Active in the following industries



Finance



Space





Infrastructure

Energy





Healthcare

OUR VISION

We believe organizations should be able to benefit from state-of-the art security in a straightforward, transparent and cost-efficient way.

OUR MISSION

Our mission is to protect your business sensitive data and your mission critical processes on distributed architecture you don't own or control.

Member of

CYSEC – Confidential



Our business

CYSEC is a pioneer in **containerized application security** for the financial industry*.

The company provides a hardened container-specific OS to provide a **Trusted Execution Environment (TEE) for containers**

We help companies to adopt a secure & agile container management for sensitive data and mission critical process on distributed architectures (from the core, to the cloud, to the edge).





DISTRIBUTED ARCHITECTURES

A container-based distributed architecture secured by ARCA Trusted OS



DISTRIBUTED ARCHITECTURE

- Container agility
- Scalability and reliability

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- Operation management at scale
- Environment agnostic

SECURITY

- Protection by design
- No re-coding needed
- Allow new third-party interactions

DIGIFED - SEGWAY Extension of secure container orchestration further in the edge

DigiFed



GENERAL FEATURES

- Compatibility with Kubernetes (presently Kubeedge)
- Centralized management of edge gateways from the cloud
- Support intermittent connectivity and low ressources

SECURITY

- Uniformity of security measures between edge and cloud
- Secure communications towards the cloud

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CYSEC

DIGIFED - SEGWAY CYSEC Extension of secure container orchestration further in the edge

DigiFed



En effet, les cyberattaques sont de plus en plus répandues aujourd'hui et font malheureusement partie de notre actualité quotidienne.

CYSEC et AERO41 sont heureux de vous convier à une démonstration au Domaine de Burignon.



https://digifed.org/about-test/success-stories/segway-cysec/ https://digifed.org/portfolio-item/secure-gateway/

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KOYRÉ

- Koyré is a start-up founded in 2018 in Italy
- Founded by 5 senior partners with managerial experience
- We develop innovative IoT sensors for measuring physical parameters (e.g. strength, stress, vibration, temperature) on flexible structures



Marco Caglieris



SensorSail

SENSORize yachting SAILs through IoT enabled fabric

- AE SINGLE project
- STMicroelectronics



DigiFed

Koyré developed SENSORSAIL,
 an innovative IoT systems targeting
 the yachting and naval sector



https://digifed.org/portfolio-item/sensorsail/

SensorSail

 We obtained our first patent (Aug 22) which is being extended to EU and USA

DigiFed

ΚΟΥλέ

- The first product allows us to discuss applications and market development with potential customers (world leaders)
- DIGIFED + STm has been fundamental:
 - to make the first product
 - to discover further technological developments possibilities
 - to put in the pipeline new possible patents

Orize Company presentation

DigiFed



Steve Gussenhoven

No Code Wireless for the IOT

- French start up (2017)
- Solution for embedded systems
 & Industrial Retrofit
- Expertise
 - Wireless & Near Field Communication
 - Mobiles HMI
 - Cloud Integration
 - Information Security



Digifed : Touch&Heat

- <20% of Owners Configure Energy Saving Features !
- NFC Radiators & Configuration App
 - Integration
 - Field testing
 - Product launch (DACH, FR, NL, UK)



Demonstration Video Link







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Touch&Heat

- Partner Results
 - 1st Finished Products Reaching Market
 - Recurring Business BtoB Partners
 - Concept Recognition
- DigiFed Added Value
 - Forum for Cross-Market Collaboration
 - Mitigate Risks of Innovation
 - Visibility & Promotion

https://digifed.org/portfolio-item/touch-heat/





DigiFed







Charles GARNIER European Projects Manager c.garnier@catie.fr





Cyber-Physical Systems

- ✓ Embedded IA
- ✓ IoT & Edge Computing
- Cybersecurity for embedded systems
- ✓ Low consumption Systems & Energy Harvesting
- ✓ Sensors and Real Time solutions for Robotic and Cobotic systems

	•
Data 8	& Algorithms

- Natural Language processing
- Automatic Voice Processing
 - Automatic Learning
- Computer Vision
 - Blockchain Technologies

Human-Centered Systems

- ✓ AI and Human Behavior
- ✓ New Human/Machine Interactions
- ✓ Verbal and non-verbal Communications
- ✓ Physiological analysis for Human Behavior
- ✓ Training / Learning with digital tools
- This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 864266.





Connectivity and structured information are expected to be the cornerstones of Industry 4.0, but acquiring information is still complex and the associated costs must be predictable and as low as possible to optimize ROI.

In this context the **HydroZest** project has been awarded by the DIFIGED H2020 project to implement the **Digital Challenge** proposed by <u>**GE Hydro**</u> and its real-world industry defies.

CATIE offers customized IIoT solution for GE use-case with embedded AI enabling rapid and customizable prototyping, designed for scalability and industrialization.

Aguila Technologies provided the industrial protype.















HydroZest

IIoT solution with embedded Artificial Intelligence

Main impact on business

- A success story to demonstrate our expertise from the requirements phase to the prototyping of a new A.IoT solution.
- Development of new 6TRON prototyping boards with new functions that will be available in opensource and open-hardware.
- > Integration of embedded AI mechanisms.

Added value of Digifed project

- > A starting point for a new collaboration with GE Hydro that could not happen without the project.
- > A great visibility for 6TRON platform.



Thank you!