



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

# D6.9 – DigiFed Public Final report including lessons learnt

March 2023

## Technical References

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### Short Description / Executive Summary

This deliverable provides a summary of the actions carried out during the project focusing on the lessons learned in the major group of activities (WPs). The report also describes and highlights the major project's societal implications.

After a contextualization and a short introduction, D6.9 will address two main questions

- **What did the consortium learn?**
- **What are the main societal implication of DigiFed?**

To address these questions, the report gathers key information from each work package so it must be seen as a synthesis of several key deliverables such as D2.3, D2.6, D3.3, D4.2, D4.4 and D5.7 where more details can be found

### Document history

Form	Version	Date	Author	Organization	Modifications made – remarks
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	03	March 2023	Isabelle Chartier	CEA	First draft
	05	April	Fredy Rios Silva	SEZ	Review the sustainability of the model
	06	April	Ana-Maria Gheorghe	Digicat	Review the Digital Challenge section
	07	April	Margherita Volpe, Omar Veledar, A Perez-Morillas	ZAB, AVL, BLM	Review the Application Experiment section
	08	2704/23	I Dor	CEA	Global review
	V1	April, 28 <sup>th</sup> 2023	Niclette B Kampata and Isabelle Chartier	ZAB & CEA	Finalisation for submission

### Disclaimer

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## List of abbreviations

<b>AE</b>	Application Experiment
<b>B2B</b>	Business to Business
<b>CF</b>	Cascade Funding
<b>CFS</b>	Certificate on the financial statement
<b>CO</b>	Confidential
<b>CPS</b>	Cyber-Physical System
<b>DC</b>	Digital Challenge
<b>DCO</b>	Digital Challenge Owner
<b>DIH – eDIH</b>	Digital Innovation Hub – European DIH
<b>DMP</b>	Data Management Plan
<b>DoA</b>	Description of Action
<b>EC</b>	European Commission

<b>EU</b>	European Union
<b>F2F</b>	Face to Face
<b>FAQ</b>	Frequently Asked Questions
<b>GA</b>	Grant Agreement
<b>GDPR</b>	General Data Protection Regulation
<b>GE</b>	Generic Experiment
<b>HW</b>	Hardware
<b>KoM</b>	Kick-off Meeting
<b>LOI</b>	Letter Of Interest
<b>M</b>	Month
<b>MOU</b>	Memorandum Of Understanding
<b>MP</b>	Monitoring Partner
<b>OC</b>	Open Call
<b>PC</b>	Project Coordinator
<b>PM</b>	Person Month
<b>PMB</b>	Project Management Board
<b>PU</b>	Public
<b>RP</b>	Reporting Period
<b>SAEA</b>	Standard Application Experiment Agreement
<b>SME</b>	Small and Medium Enterprises
<b>STP</b>	Selected Third Party
<b>SW</b>	Software
<b>WP</b>	Work Package

## Context of DigiFed project

Within the SAE initiative lies DigiFed dedicated to supporting EU industries to digitalize their product & services and reaching new markets enabled by **Cyber Physical Systems (CPS) & Embedded Systems**.

DigiFed gathers 12 partners with expertise in Digital technologies and innovation management from different countries with established ecosystems to continue expanding and linking with other networks, in order **to create an EU-wide Federation of Digital Innovation Hubs**.

DigiFed partnerships are designed to strengthen a European high-tech ecosystem through the adoption of advanced digital technologies (CPS) and a combination of Regional, National and European funding instruments so that companies, SMEs but also midcaps, can benefit from knowledge sharing regardless of their location.

To that purpose, DigiFed implemented and experienced successfully **3 innovation pathways** testing 1) pure EC funding (Application experiment), 2) combinations of regional and EC funding (Generic Experiment Community), and 3) private-EC co-funding (Digital Challenge).

- **The Application Experiment (AE)** pathway has been the main instrument for DigiFed implementation, with a total of
  - o 44 Application Experiments (AE), an innovative model with “Low digital TWIN AE” involving two cross-border SMEs/midcaps, one of which with low digital maturity level
  - o 71 companies that have implemented R&I projects to disrupt, upgrade, or manufacture an innovative digital product or service;
  - o 3,6 M€ of Cascade Funding

Two innovative pathways have been defined, tested, and evaluated during DigiFed

- **The Digital Challenge (DC)** focuses on trialing new co-funding mechanisms with companies directly involving the enterprise demand side. 3 Digital Challenges (DC) involving 7 companies have been financed with 155k€ CF and 155k€ of private funding
- 
- **The Generic Experiment (GE)** communities are involving a group of SMEs and mid-caps to implement advanced technology demonstrators developed by one of DigiFed RTO (GE Owner) testing as well as co-financing mechanisms between European and regional funding. 4 Generic Experiments (GE) have been implemented involving 51 SMEs (GE members) with a total of 230k€ of CF and 270k€ of regional funding

Overall, DigiFed provided a cascade funding of 4,0 million € to European companies as well as technical and innovation management support corresponding to 1,1 M€ of resources provided by the consortium

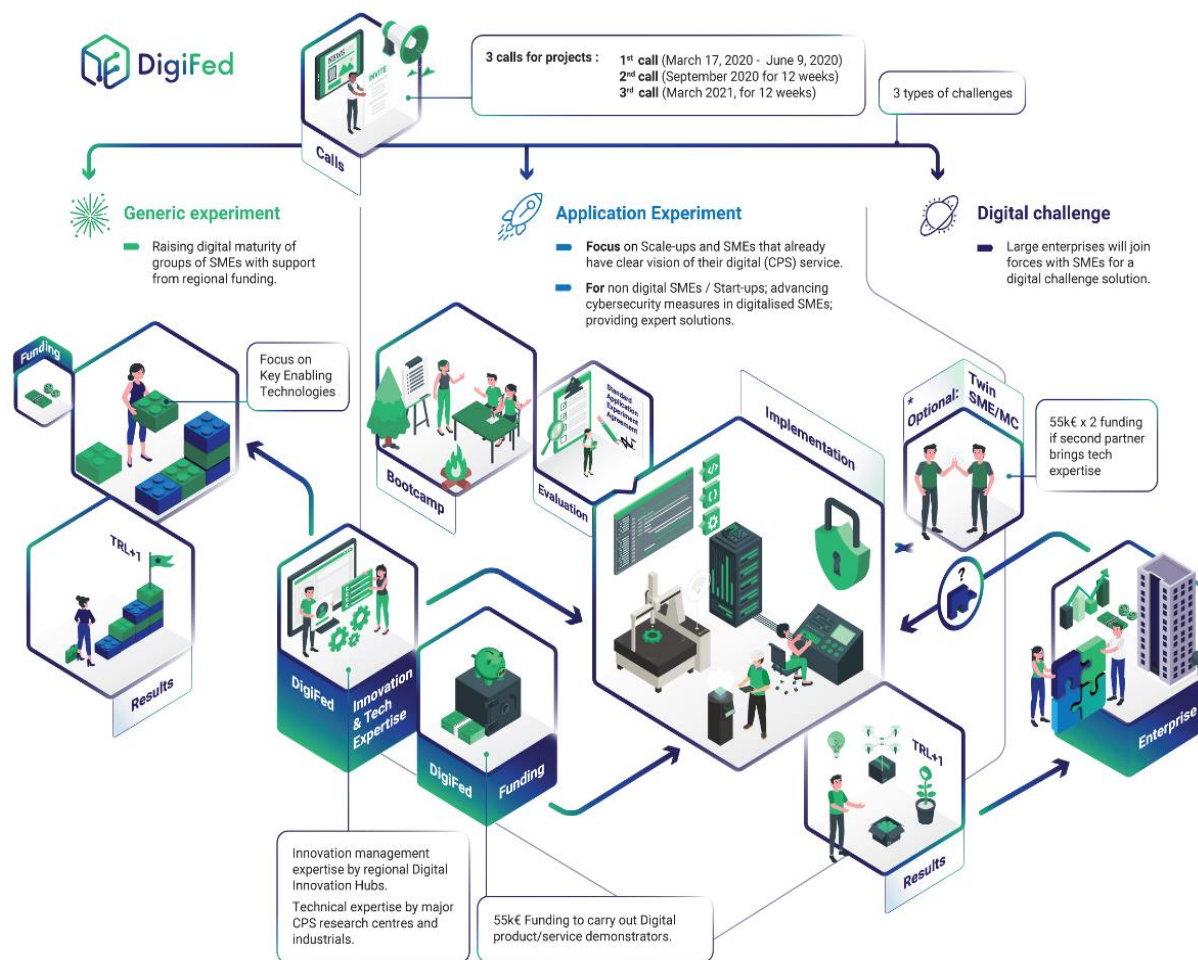


Figure 1: DigiFed project at glance, including the split between three innovation pathways

## 1. Introduction

DigiFed aims at strengthening the European industry – in particular SMEs– through acceleration of digitalisation. On SME side, DigiFed targets SMEs with different level of digital maturity. It offers the capacity for SMEs at lower maturity levels to catch up and upgrade their skills and existing products with dedicated services, tools and solutions. For SMEs with higher digital maturity it offers further innovative technology integration as well as access to potential customers including large industrial stakeholders.

On DIH side, DigiFed experiments with cross-border innovation schemes with existing and emerging DIH all over Europe. It aims at trialling new co-funding mechanisms with regions (Generic Experiment) and companies (Digital Challenge) and the creation of new services towards DIH sustainability. To reach those objectives, DigiFed learns from the success of projects such as those supported by Smart Anything Everywhere (SAE) and ICT Innovation for Manufacturing SMEs (I4MS) and develops new synergies within the value chain and funding from public and private stakeholders.

To reach its objectives, the project is divided into several work packages as explained below and shown in the following figure:

**WP1-Engage and explore** created a community of SMEs and midcaps with a common interest in the adoption of embedded technologies and CPS. The creation of this community fed the tasks of the other technical WPs.

**WP2- Experiment and evolve** focuses on the preparation, implementation, and assessment of the Generic Experiments and the Digital Challenge due to their innovative aspect and co-funding scheme.

**WP3- Application Experiment selection, implementation, and monitoring** focuses on the open call management and selection, monitoring, and assessment of the AEs.

**WP4 - DigiFed network expansion and sustainability** aims at building a solid ecosystem of startups/ SMEs around embedded systems and CPS, providing connections with ongoing initiatives and guaranteeing the long-term sustainability and expansion of the network through a sustainability plan.

**WP5-Communication and dissemination** includes all the communication and dissemination activities and main tools to promote the project's results among relevant audiences.

**WP6-Project management** includes the tasks related to the project management of the consortium such as administrative and financial tasks, collaboration between partners, elaboration and submission of deliverables, communication with the EC, etc.



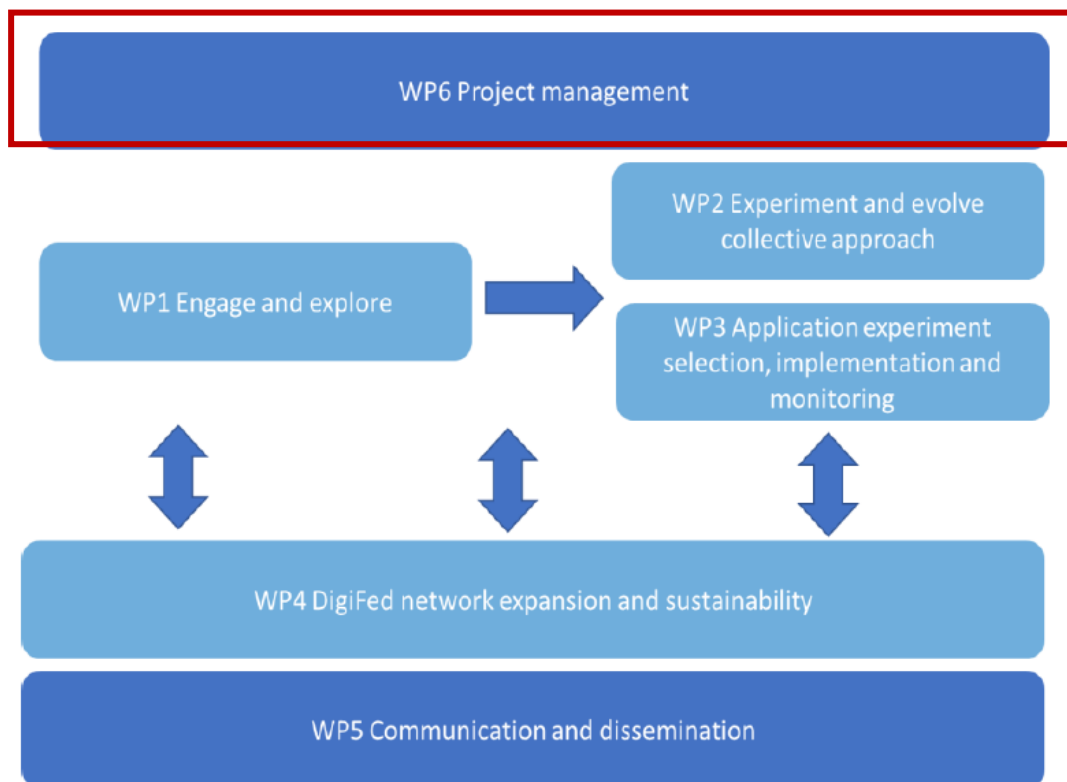


Figure 2: DigiFed WPs structure

This final report falls under WP6 activities and provides the main lessons learnt from all the DigiFed activities. Therefore, D6.9 is to be understood as a synthesis of several key deliverables such as D2.3, D2.6, D3.3, D4.2, D4.4 and D5.7 where more details can be found.

## 2. Lessons learnt from the different project activities

### 2.1 DigiFed innovation pathways

#### 2.1.1 DigiFed Application Experiments

Application Experiment (AE) was the innovation pathway with the highest budget allocation offered by DigiFed to support SMEs, with a final total of over 3.5M€ of Cascade Funding invested in 44 AEs. Three Open Calls were organised to reach this target and they were all closed by June 2021. The selected AEs received different kind of support from the project, namely:

- Financial support via the cascade funding
- Technical support for the single AEs and the low digital twin ones
- Consultancy via the monitoring session and thematic sessions organized
- Innovation management support

#### SMEs contractual engagement








The Standard Application Experiment Agreement was included in the Open Call Applicant process. Based on the DigiFed's partners experience as well as on the feedbacks of AEs' beneficiaries, the advice is to make it as simple as possible: the principal aim is to address NDA, the IP between the technical partners, the payment and ending conditions. To minimize the signature delay, no discussions on the term and condition should be allowed (only direct acceptance) but options can be proposed for the IP management.

It should be very clear in the annex "Technical Program" which is specific to each AEs what are the task of each partner, specifying deliverables for the main milestone and responsible partner. This is very helpful and is needed when a project is stopped before the end a) to define the state of advancement and b) what should be paid to the STP. The closure procedure should be very concise and the ultimate decision maker should be clarified in the SAEA (e.g. the Coordinator in the case of DigiFed but others can be appointed, such as the cascade funding implementation leader or a project scientific coordinator).

An example of SAEA Open call 3 template is added in the annex.

#### AE implementation monitoring

To ensure a proper implementation of the selected AEs, a monitoring process was implemented by DigiFed consortium. It consisted of a monthly monitoring meeting of the AEs organised and chaired by the monitoring partners (MP). Indeed, each AE was monitored by one single organisation or person identified as MP. The monitoring process was also implemented via the monthly internal monitoring alignment between all the monitoring partners, organised and chaired by the WP3 leaders and the coordinator. These meetings were an opportunity for the MPs to gather together and share experiences, information to support the AEs implementation. It also serves to identify and mitigate any risk. Below is an example of a monitoring meeting slide:

Call-ID : <b>01-53</b>	Project Title : <b>SEGWAY</b>	Start : 01-June-18	End : 30-July-19	Status : <b>Active</b> M12 of 15
 Partners	SMEs : CYSEC 	Monitoring Partner Romain <u>Jayles</u>	Techno Partner <u>Collado</u> Raphaël Jayles Romain	Public info / pictures
 Opportunity	Cysec hopes to provide a layer of security to NAS terminals. Their research indicates that 6 million NAS terminals have been sold, 10-20% of which are dedicated to security. At the higher end of this estimate, this would represent 1.2 million terminals dedicated to security.			
 Solution	The CEA has designed a secured board base on a stm32mp1. This board embeds a security module called a TPM with a <u>TrustZone</u> enabled MPU. A lot of development has been carried out in order to create the most secured solution as possible.			
 Impact	The SEGWAY project should lead to diversifying CYSEC product portfolio with the delivery of a secure gateway with a first application related to PKI with a NAS form factor.			

## 01-53 SEGWAY – monthly report



<b>HIGH</b>	<b>HELP REQUIRED</b>
<ul style="list-style-type: none"> <li>The demonstrator has been finished.</li> <li>The Barcelona forum went well</li> </ul>	<ul style="list-style-type: none"> <li>No</li> </ul> <div>10/06 final meeting + check for interview scheduling</div>
<b>LOW</b>	<b>PLANS / KEY PRIORITIES</b>
<ul style="list-style-type: none"> <li>The project has been on hold the last month because of their main developer schedule. The development has restarted on <u>july</u>.</li> </ul>	<ul style="list-style-type: none"> <li>Implement the cryptography using the on-board TPM + <u>TrutZone</u></li> </ul>

AE beneficiaries were also expected to submit reports after each significant milestone and at the end of the project, and held a final interview with the MP to assess the overall experience with DigiFed and comment specific impact aspects (complementing the Innovation Management-related assessment). Overall, the wide majority of AEs' beneficiaries commented that this monitoring approach was sufficiently light not to constitute a burden (also considering the short-term project) and effective enough to push them to work according to the schedule, prevent major delays and comply with expected deliverables.

Moreover, AEs also received additional support and service such as:

**Networking and visibility:** To maximise the visibility of the AE, DigiFed invited them to attend a series of events that gave them the opportunity to showcase their innovation, meet with key stakeholders from the same field. Some key events are shortly described in lessons learnt from Dissemination and communication. DigiFed web site promote the SMEs projects through a portfolio <https://digifed.org/projects-portfolio/> and success story <https://digifed.org/news-events/success-stories/>.

**Additional funding:** A specific effort was dedicated to supporting AEs beneficiaries in access to additional funding, by informing them about different funding opportunities available from both the public and private sectors. This work was done by a) raising awareness about peculiarities of existing public and private funding opportunities via dedicated presentations and webinars and b) introducing AEs owner to investors (several investors pitch took place).

**Cybersecurity support:** To support AE beneficiaries in tackling this challenge, DigiFed organized a dedicated webinar to explore the impact of cybersecurity in IoT, analyze how hackers attack IoT networks, and provide modern mechanisms to keep the IoT secure. The webinar was held by two experts from IKERLAN with a good AEs attendance. This is replicated in the new Cascade Funding project EARASHI.

**In terms of lessons learnt,** the *Final report on AEs and lessons learnt (D3.3)* deeply describes the AEs impact analysis, its methodology and gave the below listed lessons learnt and recommendation according to the different implementation phase of the AEs (more details to be found in the D3.3)

PH ASE	LESSON LEARNT	OPERATIVE RECOMMENDATION DERIVED
Open call	<ul style="list-style-type: none"> <li>- The COVID period did not prevent SMEs from submitting applications but was rather a promotion factor (time availability, research for extraordinary support/means of financing)</li> <li>- Clarification of what CPS was and clarification of the offer of DigiFed partners was essential</li> <li>- Remote support/engagement was still effective</li> <li>- A careful definition of the expected technical scope that is in alignment with the current State-of-the-Art draws attention from a very diverse set of organizations in terms of their market positioning and size. On the other hand, a higher volume of financing is more likely to draw in larger and more established SMEs.</li> </ul>	<ul style="list-style-type: none"> <li>- Anticipate the roadmap of open calls to be launched over the full period is useful to attract more applicants or people for resubmission</li> <li>- Opening up an online helpdesk available live once a week is particularly appreciated (rather than written FAQ only) and reduced the contacts via mail (more time-consuming)</li> <li>- Opening up collaborative application options (like in the case of Twin AEs) can be useful to attract more women entrepreneurs (as they shown a certain propension for collaborative projects)</li> <li>- By aligning the project scope with state-of-the-art technological developments and the current and anticipated market trends, there is a good chance to attract a diverse set of organizations that are approaching the funding mechanism with a strategic intent that is aligned with their existing organizational strategy.</li> <li>- If wishing to attract more established SMEs, increase funding volume per AE. Otherwise, the current volume draws adequate interest from developing SMEs.</li> </ul>
Evaluation	<ul style="list-style-type: none"> <li>- Feedbacks are particularly useful for applicants to either help with resubmission or provide inputs for their own business perspectives</li> <li>- Discrepancies in evaluation/feedback can generate frustration among applicants</li> <li>- The discussion of each AE evaluation in a consensus meeting and the provision of feedback are very time-consuming tasks.</li> </ul>	<ul style="list-style-type: none"> <li>- Define ex-ante a larger pool of potential reviewers and foresee extra/buffer time for their work (for precautionary reasons)</li> <li>- Elaborate a standard schema for feedback provision and reporting in an organic and coherent way the feedback collected by the different reviewers</li> </ul>

<b>Contracting</b>	<ul style="list-style-type: none"> <li>- When the number of grant contracts is high, opening up for comments/negotiation is counterproductive, time-consuming and risky.</li> </ul>	<ul style="list-style-type: none"> <li>- Define ex-ante the grant contract without allowing for modification at the contracting phase.</li> <li>- Noteworthy, contract models need to be tailored to the different types of projects (i.e. single vs. collaborative)</li> </ul>
<b>Implementation</b>	<ul style="list-style-type: none"> <li>- AEs were capable of fostering cross-border coop and opening up business opportunities to each other.</li> </ul>	<ul style="list-style-type: none"> <li>- If seeking to support applicants to enter adjacent markets (geography, domain etc.) it is advisable to encourage cross-border cooperation.</li> </ul>
	<ul style="list-style-type: none"> <li>- Soft management and monitoring structure desirable by SMEs during innovation developments.</li> </ul>	
	<ul style="list-style-type: none"> <li>- Collaborative schemes like the ones implemented in the AEs foster the discovery of new use-cases, exploration of new geographical markets and launch of sustainable collaborations</li> </ul>	
	<ul style="list-style-type: none"> <li>- Smaller, less established SMEs are less focused on market/competitor analysis, which limits the creation of data-driven strategy development. This could be due to the lack of skills or resources, pure focus on technology development, susceptance to dynamic investment decisions (lack of financial stability) etc.</li> </ul>	<ul style="list-style-type: none"> <li>- Offer additional tailored training in terms of innovation management, business and strategy development as well as project management for smaller and less experienced SMEs to enhance their consideration of market opportunities and increase the potential for the long-term success of their go-to-market strategy.</li> </ul>
	<ul style="list-style-type: none"> <li>- Applicants rate their own innovation performance higher if there is support in terms of networking, especially in terms of reaching new client groups.</li> <li>- While applicants acknowledge the need to develop digital skills, there is a lack of investment in developing those, which is, even more, the case when dealing with smaller SMEs.</li> </ul>	<ul style="list-style-type: none"> <li>- Secure a considerable amount of networking activities for those applicants that wish to improve their own innovation capacity and lean on the markets of the network counterparts to enter adjacent geographies and domains.</li> <li>- Offers support in terms of developing digital skills for those applicants that consider those skills as needed, but are less likely to make an investment in such training/development for their people. A recommendation is to consider the digital skillset and people skills in a more data-driven way and to be included in the strategy of the applicants.</li> </ul>
<b>Innovation mgmt</b>	<ul style="list-style-type: none"> <li>- Most companies did not realize the potential benefit they could get before the end of the project</li> </ul>	<ul style="list-style-type: none"> <li>- Use exploitation options described by AEs' beneficiaries as possible guidelines for exploitation planning with beneficiaries in future CF projects</li> <li>- Make the first assessment of innovation management needs mandatory for all companies</li> </ul>
<b>Impact assessment</b>	<ul style="list-style-type: none"> <li>- Most companies valued the experience as positive even though most of them overspent.</li> </ul>	<ul style="list-style-type: none"> <li>- Need for the definition of a standardised method for impact assessment (preferably given by EC to make results comparable)</li> </ul>

Table from D3.3<sup>1</sup>

<sup>1</sup> Final report on AEs and lessons learnt (D3.3) (Alice Perez-Morillas (BLU), Margherita Volpe (ZAB), Gorka Arzallus (ZAB), Giada Bertolini (ZAB), Omar Veledar (AVL))

### 2.1.2 DigiFed toolbox for SME funding

Below is a synthesis of DigiFed toolbox to fund third parties (SMEs) and to ensure a smooth process, the consortium elaborated a cascade funding methodology and templates. This toolbox was optimized after several open call Retex, not only from DigiFed but for the former project EuroCPS, FED4SAE

#### Application submission process

With the aim of facilitating the submission process and supporting the candidates to formulate their projects in a concise and structured manner supporting materials and activities were created:

- Guide for applicants, FAQ, proposal templates
- Online application platform with a dedicated helpdesk
- Events (webinars and bootcamps) with the purpose to inform third parties of the application submission process

#### Selection process

As part of the CF methodology, a selection process was implemented which consisted in:

- Checking the eligibility criterion
- Three parallel evaluation components: 1) evaluation by external experts, 2) business case evaluation and 3) DigiFed internal evaluation
- Consensus meeting to reach a consensus in terms of results. The outcomes of the consensus meeting are delivered to DigiFed's project officer for validation and the sake of full transparency. Once validated, the ranked list of proposals is used for notifications of the third parties

#### Contracting phase

After the communication of the results, the selected third parties were contacted and received the Standard Application Experiment Agreement (SAEA) setting up deadlines for reviews and feedback process. The feedback exchange process limited the number of modifications to be accepted, in order to guarantee the maximum coherence among the different SAEA signed with beneficiaries. Once the feedback exchange process was completed and the selected applicants completed the technical annex, the signature process was launched, and the beneficiaries started to organize their KoM with the support of their respective monitoring partners.

#### Monitoring phase

As explained in the AE section, the consortium elaborated the following monitoring process

- Monthly internal reporting: all monitoring partners will have to monthly report about the status of the corresponding AE using a standardized slide set (with qualitative information about the project status) and filling in the monitoring tool (Figure 12 - AE monitoring tool); the monitoring tool will allow to aggregate information about all AE status and to promptly identify relevant emerging issues;
- AE periodic reporting: AE partners will be requested to fill in a detailed reporting after each key milestone identified at contracting phase, and at project termination; the final reporting will include also a cost reporting form detailing the use of the grant in compliance with the SAEA.

In terms of lessons learnt, the CF methodology implemented by the DigiFed consortium was consistent with a transparent evaluation strategy and in line with the European Commission evaluation criteria. The report on First open call (D3.1) gathered several annexes such as the application supporting material that were shared with the applicants.



### 2.1.3 DigiFed Generic Experiment

Generic Experiments (GEs) were designed to test new collaborations between research centres (RTO and Universities) and a group of SMEs and midcaps as well as evaluate new co-financing mechanisms between European and regional entities in order to foster European industry digitalization. Detailed of the GEs trialling can be found in the two public reports “D2.2 Four GEs implemented” and D2.3 “DigiFed GEs program assessment”.

The objective of the GE program is to build communities of SMEs & Mid-Caps (GE members) around a specific technical topic (GE Topic) proposed by one of the DigiFed research center (the GE Owner).

DigiFed Generic Experiment program main objectives are:

- Develop the GE technical program for the GE members sharing common interests and needs.
- Bring the GE community to define common generic requirement for the GE technical topics.
- Demonstrate the technology performance to the GE community for future adoption.
- Test new co-financing mechanisms between Europe and Regions to support SMEs and Mid-Caps with their digitalization ambitions.
- Set up and experiment at least 3 GE communities with different model (technical topics, service and regional ecosystems) and involving a minimum of 20 SMEs.
- Assess GE new service and best practice for the network of EDIH.

Being an experimental innovation pathway that will require adjustment along the implementation, it was decided to propose 5k€ CF - to the SME's that will join one of the community. This lump sum support was meant to cover the time spent by the members to contribute to the community building, the interaction with the community members to share their use cases and needs, and also to share their feedback about this new type of collaboration between RTO's and SME's. In order to allocate the 5k€ according to H2020 rules, DigiFed launched four Open Calls to select the beneficiaries of the Cascade Funding for each GE.

Altogether the DigiFed program trialled four different GEs with GE owners in France, Spain, Hungary and Slovenia:





GE Owner & Topic	Technology and development	Sector	Service to SMEs	Members	Co-financing
<b>CEA</b> Cyber-security 	Secure PF for IOT Cyber-attack monitoring HW - SW	Transverse digital	Access to CEA expertise and technical results Evaluation of the prototype	21 SMEs 4 Regional SMEs 10% Low digital maturity	Region AURA EASYPOL program
<b>IKERLAN</b> Cyber-security 	Industrial Cyber-security: Smart contract SW	Industry 4.0 Value Chain	Opening Basque project to EU Access technical program results	10 SMEs 5 Regional SMEs 0% Low digital maturity	Basque Region Project
<b>BME</b> LED Lightning 	LEDsBeSmart: lab of excellence for design and characterization	LED Lightning Industry Value chain	Support in LED design and quality test	6 SMEs 3 Regional SMEs 66% Low digital maturity	National Project
<b>UJL</b> Agronomics 	Develop a new IOT prototype for vineyards	Wine Yards Value chain	Get digital experience in IoT technology Collect field measurement	14 SMEs 5 Regional SMEs 40% Low digital maturity	Ministry of Agriculture

Figure 3: Synthetic description of the four DigiFed GE's

The full program gathers 51 GE members from 13 EU countries that have joined one of the four GE program. The Map below illustrates the repartition of the members across Europe.



Figure 4: Map with the 51 GE members location

Each GE was implemented with local specificity, each GE is described following a three criteria segmentation:

### Criteria 1: Technical scope

- Two GEs (CEA and IKL) are technology driven– both on Cybersecurity, while the two others (BME and UL) are addressing a sectorial field through a needs-pull approach (lightning and smart agriculture).
- CEA and UL are proposing HW development to be tested, IKL propose a SW platform and BME a modelling and testing facility.
- All four GE start from a relatively low TRL 2-4 to end up at TRL 4-6.

### Criteria 2: Community

- Two communities are large CEA (21) and UL (14) while the two others are quite small BME (6) and IKL (10). All communities involve by definition SMEs from the RTO region who was co-financing, and SMEs from other European regions and countries.
- For the “technology oriented” communities (CEA/IKL) mainly high digital mature companies (95%) joined by evidence because Cybersecurity concerns mainly digital companies and it is a complex subject to tackle for SMEs. CEA GE members cover very diverse application fields, while for IKL they cover the full industry 4.0 value chain.
- The “sectorial oriented” GEs (BME/UL), manage to attract and involve 50% of low digital maturity companies, because they involved “end user” companies (winemakers, light designers). These two are interesting cases because the community gathers companies, both technology provider and technology user.
- Community animation: for the larger community's collective approach was favored, while for the smaller ones, the one-to-one interaction was more used. The 2 approaches have different advantages: the collective approach favors the community building and exchange between the members, while the one-to-one approach enables more fine understanding of the members' needs and constraints.



### Criteria 3: Service offer

All the four GEs proposed a “test before invest” service but with different approaches:

- CEA and UL proposed to test a HW prototype. For CEA the prototype was lent to 5 members who ran the tests with technical support.
- For UL and IKL, the SME members proposed a use-case or a pilot-site **where** the tests were realized by the GE owner and shared with the community
- For BME, the test was done to validate a virtual prototyping service **and**, the demonstration was done on one member’s use-case.

### Co-financing models

- Three GEs (UL/IKL/BME) started from a running National or regional project as co-financing and used GE to enlarge the consortium with EU companies.
- CEA uses a regional funding scheme to build a cross-border project.
- In all cases DigiFed helped to “Europeanise” national/**regional** funded projects.

### Resources engaged

The *preparation phase* of the GEs ranges from:

- 2 PM for UL and for IKL the preparation phase was already done in the national project,
- 8 -10 PM for BME and CEA: for both project started with a long co-conception phase that lasted almost 10 months.

The *implementation phase* ranges from 13 to 18 PM depending on the community size and the technical development program. The ratio of co-financing ration ranges from: 20-30 % for CEA and BME and ~60% for IKL and UL. The co-financing enables us to cover the implementation phase up to 60% but not the preparation phase.

### GE program assessment methodology

The methodology was designed to take these differences into account, the assessment is organised around two main goals:

1. Local: Assess the impact of each GE at the local level. Implement an evaluation tool for this service.
2. Global: Understand the interest of such collective innovation pathway and its sustainability as a service that could be proposed by EDIH.

The goal of the “Local GE Assessments” is for each GE to evaluate the impact of the specific GE. This assessment targets the GE owner, the GE members and when possible, the local authorities. This local assessment is proceeded by the GE owner to report:

- Objective of the local GE
- Local impact of the GE program
- Lesson learnt
- Exploitation and continuation of the GE in the local ecosystem

For the global analysis and to enable comparison between the different GE implementations, the assessment questionnaires were defined jointly by the four GE Owners, in order to agree on common questions to be asked to all the GE members, while each GE owner added specific questions for their local assessment.

The analysis showed that answers regarding meeting expectations and impact on SMEs' future development were satisfactory across all GEs. Overall, the satisfaction level of members in all GE groups was good. At a very large majority (85%) the members appreciated this new type of service, as a confirmation many of them would join another GE and some would pay fees to join if adapted to their needs.

The main outcome for the SMEs is a gain of knowledge, it also impacted their roadmap and future development integration. Moreover it created some new partnerships between members.

The experiment showed that such collective approach, does not often result in a B2B collaboration between the RTO and the SME immediately after the project but it can be a good intensive to launch for such partnership. 45% of the members wish to continue the initiated collaboration.

One important distinction of the GE framework, as compared to similar frameworks and methods, is that it can be tailored for low digital maturity level SMEs and sectors. For instance, BME GE offer was designed around a LED-light value chain, while UL GE was designed around an existing viticulture ecosystem.

As a result, we can conclude that the GE models were worth it for all participants, including the DIHs, RTOs and SMEs.

The methodology and assessment at local and global level are fully described in the public deliverable D2.3

## GE Sustainability

The GE innovation pathway was presented and discussed with DIH and EDIH that could add GE inspired service to their portfolio. To collect more qualitative feedback, a questionnaire was also shared with these (E)DIHs, to understand if they will propose a GE inspire service.

This was the case for three EDIH from DigiFed that are now proposing GE like a collective service to their ecosystem.

About GE like service, do you :	Digifed GE owner				DigiFed Not GE owner			Ext Digifed	Ext Digifed
	BDIH - IKL	4PDIH - UL	IRT Nano - CEA	EET DIH - BME	DIGICAT	SEZ	MINASMART	INNOVATE	Health Hub
Currently run GE like service				1				1	
Recently add				1			1	1	
Will add		1					1		
Would like to add a service inspired from GE			1	1		1			1
Use DigiFed tool box / methodo	1			1	1		1	1	

## Lessons learnt: How to build a GE service

The DigiFed project has tested variations of the GE model in co-founding schemes, market need- or tech-driven approaches, community structure, and size. The lessons learnt from these tests, as well as implementation and assessment results, confirm that the generalized GE framework is applicable to (E)DIH technological and innovation support packages. Moreover, this framework provides options for designing GE models that are sustainable in (E)DIH offers to SMEs and RTOs.

Based on the 4 GE trailing and the feedback collected with all the stakeholders including DIH, we can describe what shall be the process to launch such service at EDIH level.

### Two ways of building GE offer with DIHs and RTOs:

- *Technology driven* - RTO is the GE owner. In this instance the GE is initiated by the RTO who then subcontracts the animation to his DIH. The RTO remains the project manager for the whole project. The RTO proposes a sufficiently mature technology assumed to be well

adapted to SMEs. The technology can be a local ongoing project that can be valued in the GE. The DIH builds the community and manages the animation and check if it is of interest to SMEs.

- *Needs pull* - DIH is the GE owner. The DIH, known for its entrepreneurial environment support, proposes to RTOs to work on a subject based on the needs of the SMEs. The DIH can look for a particular RTO that will provide answers to the subject. The DIH will fund the RTO. The DIH, thanks to the running GE, could collect even more information on their own SME ecosystem. Such GE can be specifically designed to address an industry sector, Low Digital Maturity companies and sectors.

### **Required resource**

In both approaches described above, differing by the initiator, the support to the GE implementation is provided by both, DIH and RTO alike:

#### **RTO would provide:**

- acculturation and training for SMEs to get in the topic,
- expert support for state of the art, technical use-case analysis,
- IKERLAN experts for technological implementation and support for members testing.
- business development (CEA) or marketing development (IKERLAN) or technological transfer (UL), competence for market analysis and strategic vision (common job with DIH),

#### **DIH would provide:**

- collective meetings organization (organizing the meeting),
- animation and co-working with experts to stimulate community during meetings,
- network management and networking sessions,
- moderation and communication,
- market analysis and strategic vision (common job with RTO),
- legal contract management – follows SME approval and IP rights.

**For the setup of the GE service:** This phase can require up to 6 PM.

- a clear and simple definition of the proposed service including
  - test before invest service
  - Technical state of the art
  - Technical popularization especially Low digital companies are the target
  - Marketing vision
- Community building
  - A community around 10-15 members from EU
  - Invitation and co-optation through workshops to build a balanced community
  - Open call can be necessity if the members received financial support
  - Collaboration between EDIH could help outreach SMEs from all EU
  - Contractualization should be as simple as possible: multipartite NDA
  - Specific Contract (Material Transfer Agreement) if material is to be lent to a member

#### **For the implementation of the GE service:**

- Technical implementation
  - depends on the selected topic,
  - should not be too long 6 – 10 months
  - the SMEs should have some technical tasks if possible (active participation)

- Community animation
  - A good balance between collective session and B2B discussions between RTO and SMEs
  - Session to present and share the use case of the members
  - Session to share the technical needs Co-conception / brain storm
  - Physical meeting at least at the Kick-off and the end
  - Robust and simple animation tools set (sharepoint/collaborative platform, online meeting tool, collaborative tools, etc.)

## Financial aspects

GE is a service that need to be funded (or co-funded) by the State/Region/EU:

- service proposed to the SMEs (for free or partially paid) for evangelisation of cutting-edge digital solutions and increase in innovation activities and technical competence.
- For the RTOs/DIH to be able to facilitate the GE implementation an extent of EU funding is necessary SME inclusion and fostering the relationship between the parties.

## Interactive platform to build collaborations further exploiting DigiFed Innovation Pathways:

In the scope of DigiFed sustainability, the consortium partners have worked to allow the continuity of a part or of all DigiFed project's activities and mission. EDIHs and DIHs are good candidates to further exploit DigiFed Innovation Pathways and set-up collaborations among them and among their members. Indeed, all the schemes developed by DigiFed – The TWIN Application Experiments, the Digital Challenge or the Generic Experiment Community – are based on collaborations.

To further support new collaborations in the scope of DigiFed sustainability, an interactive platform to detect common interest that could lead to collaboration opportunities has been developed.

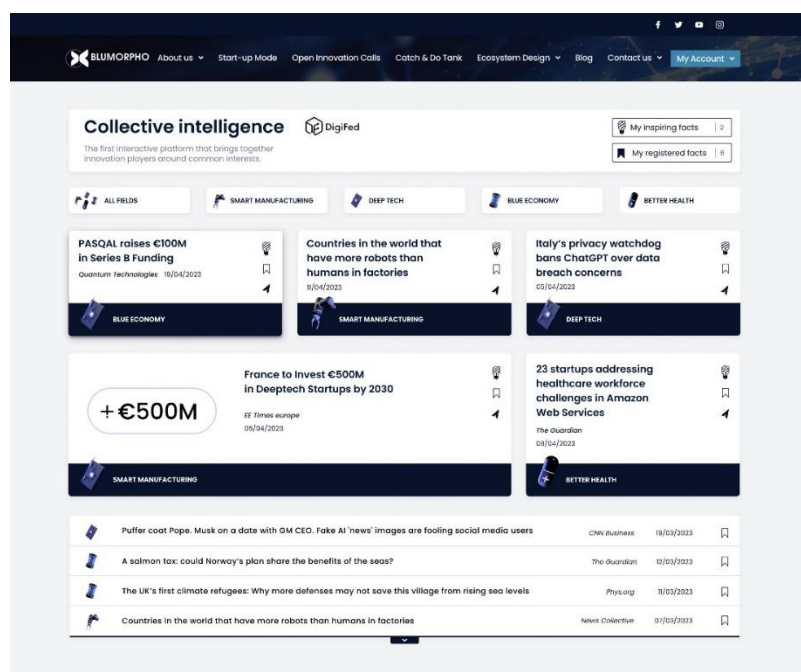


Figure 5: DigiFed interactive platform for the matchmaking and identification of collaborative topics

This platform gathers inspiring facts to stimulate the interest of EDIHs, DIHs and their SMEs members beyond technologies. Inspiration and stimulation are based on specific topics and data that could impact their business and for which they could be interested to know more and could consider possible collaboration.

### 2.1.4 DigiFed Digital Challenges

The Digital Challenge (DC) Innovation pathway was proposed by DigiFed to address the challenge that large organizations face in finding the right partners to implement digital solutions, or of small organizations, with in-depth knowledge and expertise, that cannot access large organisations nor have visibility of such organisations business needs. It enables the development of bespoke solutions for large organizations with unique challenges by technology innovators while fostering collaborations and enhancing business growth across the ecosystem

Through this open innovation initiative, large organisations were invited to participate in the programme and support European companies with funding and access to training, sites to develop a solution for a proposed and realistic business challenge.

The selected third parties received up to a total of Euro 110K programme funding, including co-funding from DigiFed and the Digital Challenge Owner (DCO), to develop and build new solutions, products and services to match the DCOs business needs. Moreover, the innovators have between 9 and 12 months to develop and test these solutions, ideally at the DCO facility.

#### DigiFed Digital Challenge Programme

- Onboarded 3 Digital Challenge Owners (DCOs): GE Hydro France, Acciona from Spain and EDF Hydro France
- Onboarded 4 solution providers, CATIE, AGUILA Technologies, ISYmap and Instrumentation Technologies
- Distributed between 100k€-115k€ to the selected application with a duration of approximatively 12-months

Figure 5 summarises, in a simplistic way, the key activities ran by DigiFed as part of the Digital Challenge WP. For more detailed information around these, the open call results and the Digital Challenge projects please see D2.6 report.



Figure 5: Digital Challenge activity timeline

#### Digital Challenge Services and Business Model

The Digital Challenge initiative is an innovative, collaborative scheme which allows large organisations to deeply focus on one challenge at a time whilst taking a holistic view of the challenge. It provides a structured approach and environment for the DCOs to define and shape their digital challenges for the technology innovators; it allows them to ask the right questions, to identify the appropriate use case and to prioritise their challenges.



The DCOs not only receive extensive support from DigiFed experts in defining the digital challenge but also meet the open call pre-selected applicants during the proposal preparation phase, to learn more about their proposed solutions before they procure it.

Moreover, DigiFed takes a targeted approach when reaching out to the European innovators community and the final selection is done by a jury of experts from both DigiFed and the DCOs looking not only at the technical aspects of the proposed solutions but also at the innovator's profile and maturity, and their business plan.

The key services provided by DigiFed as part of the Digital Challenge initiative are listed in the table below:

Preparation of marketing and communication material	Engagement and onboarding of Digital Challenge Owners
Support in the identification and framing of a suitable challenge topic and make it understandable to the Startups or SMEs in the market	Leading the search, identification, and selection of suitable Startups or SMEs for the challenge using both targeted scouting and open calls
Provide co-funding support to the Startup/SME to address the digitisation challenge within the DCOs business	Project management support from DigiFed partners in the Digital Challenge development

Table 1: DigiFed Services

Programmes like DigiFed, which offer these services along with a business model involving a co-funding mechanism where the DCO provides 50% of the funding (to the selected innovator), create an opportunity for a sustainable funding mechanism where large organisations and small enterprises can work together to solve real use cases while supporting the European economy.

The DigiFed Digital Challenge business model involved 50% of the funding provided by DigiFed (through FSTP or cascade funding) and the remaining 50% of the funding provided by the DCO. Funding up to 110 k€ will go to the selected solution provider with half of this funding being released at the start of the project and the remaining half at the end of project. In addition to this business model, DigiFed has identified three other business models which could be implemented in future programmes or by the European DIHs, which are listed in the next section.

### **Business Model Options:**

**Option 1:** DigiFed, the DCO and the regional authorities co-fund the DC project (funding goes directly to the SMEs/Startups selected) (25% - 50% - 25% with the DCO providing 50% of the funding).

**Option 2:** The DCO funds the DigiFed consortium (or the DIH) to deliver solutions for their challenges (this includes not only the identification of and selection of the startups and SMEs but also the delivery of the selection solution); in addition, the DCO fully funds the selected startup.

**Option 3:** The DCO and the Local / Regional Authorities fund the DigiFed consortium (or the DIH) to deliver solutions for the DCOs challenges (this includes not only the identification of and selection of the startups and SMEs but also the delivery of the selection solution); in addition, the DCO and the Local / Regional Authorities fully co-fund the selected startup.

From the DIHs (DigiFed DIHs) point of view, we tried to understand if the existing co-funding model for the Digital Challenge Innovation tool is appropriate and may work with their business model if they decide to implement such service as part of their services; just below the responses we received from the six DigiFed DIHs partners:

		SEZ	IKL	UL	DC	MIN	BME
A	Co-funding from both the European Commission and the DCO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B	100% funding from the DCO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C	Co-funding from the regional investment and from the DCO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D	Co-funding from the DCO and from a group of investors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E	Co-funding from existing partners and the DCO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F	Co-funding from the DIHs networks and the DCO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Table 2: DIHs feedback on proposed co-funding models (to cover DIHs costs)

## Lessons learnt

A significant part of D2.6 also focused on the assessment analysis of the DC innovation tool using data collected from all key stakeholders and finally gives some lessons learnt and recommendations for improvement. This analysis included feedbacks on our tolls and processes used to deliver the Digital Challenge activities.

In terms of the **Open Call Evaluation and Selection Process**, Acciona expected more direct involvement of the Evaluation Committee team members in the process; a more dynamic exchange of information-ideally the information should have been shared with everyone well before the final / selection meeting. They felt that the Evaluation Committee relied on Acciona's opinion when making the final selection; as the Evaluation Committee was formed of experts in the field, Acciona believed that their opinion was more important and at the end their opinion was valuable to Acciona. The other DCOs, EDF Hydro and GE Hydro found this phase easy to follow; they recognise however that the time available to complete this phase was quite short. **One potential improvement for this phase would be to run the final session of this stage, the selection meeting as a face-to-face workshop where the DCO can ask more questions and have in depth conversations about the proposals put forward; perhaps some technical conversations around the proposed solutions and their scalability can also take place as part of this workshop.**

The next phase involves the **SME Onboarding** and EDF Hydro found this stage quite complicated as there was not much flexibility on the T&Cs of the contracts which made it challenging for them to get internal approval. GE Hydro found the contract and this stage quite 'heavy' given the associated contract value. Acciona would have found it more useful if this stage would have included a separate session where DigiFed could have advised them how to deal with the IPR. They understood the overall principle of the SME to hold the IPR of the developed solution; however, they believed it was not fair for them to contribute, with at least 30% of the development costs, and not receiving anything at the end of the project. **For future implementations of the tool, it is recommended that the legal documents are carefully drafted such that both the DCO and the SMEs can benefit from this agreement; moreover, an IPR expert/consultant should be brought in, as an independent advisor, to help with the negotiations. Depending on the scale of the investment, this may not be feasible, especially if these are implemented as part of European initiatives.**

One of the last stages of the overall Digital Challenge Innovation tool process is the **Monitoring and Controlling process**, which basically involves the project and stakeholder management during the solution development phase; this is done by the Monitoring Partner identified to work with the DCO and the SME. DigiFed notes that it is very important to follow the progress, act as an intermediary and support the relationship between the DCO and the SME. It is also important that the Monitoring Partner intervenes when things are not either clear or the project success is at risk; for example, in the case of the Acciona Digital Challenge, after the testing campaign at Acciona site (which proved to be only partially successful); the SME intended to fix the problems and complete the repeat testing in their lab which was not aligned with Acciona's expectations and would have not achieved the key objective of the project. In this situation, the Monitoring Partner has intervened, discussed with both parties, and helped them to agree on a success criterion for both the test campaign and the project and ultimately on a way forward to complete the project successfully for both parties.

We also captured lessons around the following:

Manage expectations	<ul style="list-style-type: none"> <li>- Manage expectations of the DCO and the SME regarding the IP, before any agreement is signed</li> <li>- Work closely with the DCO to define the challenge in detail, understand the key requirements and success criteria, translate these in a language appropriate for the innovators community</li> <li>- At the start of the Digital Challenge project spend enough time with both the startups and the DCOs to ensure the alignment between the two parties with regard to: what is in scope / out of scope, what is the success criteria, what will the DCO receive at the end of the project, what are the key milestones, what will the final solution entail</li> <li>- Clarify at the start of the Digital Challenge project, the roles and responsibilities of all the parties: SME/Startup, DCO, DigiFed and the Monitoring Partner</li> </ul>
Success Criteria, KPIs, Planning	<ul style="list-style-type: none"> <li>- Ensure agreement on the success criteria for the project and the expected results at the start of the project (to ensure the SMEs do not have to work beyond the available resources and the DCOs are satisfied)</li> <li>- Ensure specific KPIs, aligned with the success criteria need to be defined and agreed at the start of the project</li> <li>- Ensure the delivery plan is reviewed and updated throughout the project</li> <li>- Ensure an in-depth discussion between the SMEs and the DCOs takes place to agree on the detailed requirements of the solution before the development starts (especially when the specifications have not been defined in detail and the innovation plays a key role in the delivery approach)</li> </ul>
IP ownership and financial contributions	<ul style="list-style-type: none"> <li>- Design the 'programme', facilitate discussions such that both the DCO and the SMEs benefit from what is being developed as part of the DC projects, given everyone's financial contributions: either facilitate discussions to agree on IP or ensure there is an agreement between the DCOs and SMEs such that the DCO can benefit from the investment after the completion of the project (i.e. access to the solution, reduced price etc.)</li> <li>- When DCOs are onboarded on the programme, ensure they benefit from the advice of an IP consultant and that any clauses agreed are aligned with any contractual agreements the DCO will</li> </ul>



	<p>sign. In addition, these need to be aligned with the CF rules imposed by the EC.</p> <ul style="list-style-type: none"><li>- When the contract between the SME, the DCO and the H2020 consortium is being discussed, ensure special attention is paid to the IP; if required an IP consultant should be brought in to help with the negotiations.</li></ul>
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The Digital Challenge Innovation tool has been a resounding success for DigiFed and its partners. Designed for the European ecosystem, it was tested with three large organisations and four SMEs and midcaps, exceeding the original goal of Euro 110 k€ co-funding from DCOs. The tool has not only provided large organisations with innovative solutions to their unique challenges in a short period of time but has also allowed technology providers to showcase their expertise and build trust and relationships with these large organisations which will continue beyond DigiFed.

## 2.2 Networking and sustainability

### 2.2.1 EDIH Network

DigiFed has developed and experimented different DigiFed-Innovation Pathways (above-described and in line with WP2, WP3), and developed an extended network of DIHs across Europe to rely upon (WP4).

In order to achieve concrete collaborations, it is key to identify and understand the objectives, technological focus, economic sectors, challenges, and collaboration priorities of the European DIH-landscape. For this, comprehensive research has been performed to document and confirm existent knowledge on said challenges and success factor. Thus, this research has been utilized as a guiding mechanism to pursuit, engage and achieve collaboration with the European DIH-landscape. One of the outcomes of these networking and engagement efforts has been the DigiFed EDIH-booklet (added it in annex) which provides a description of the technological focus and economic sectors of several (E)DIHs that engaged with DigiFed throughout its running time and facilitate opportunities for collaboration within this network. The DigiFed-DIH and EDIH Booklet compiles concise information of 25 (E)DIHs in the DigiFed ecosystem, including key contact persons such that collaboration is facilitated.

Collaborations between these, and other, DIHs has been achieved in different formats, including consolidating communication channels to exchange information (e.g., calls and financial opportunities for SMEs), LOIs and MOUs, networking expansion (within and outside Europe), and join application for additional European funding. Moreover, other forms of collaboration which may include commitment of financial resources, e.g., joint development of services, is currently in evaluation under the EDIH framework.

### 2.2.2 Sustainability of the model

The main objective of the DigiFed sustainability working plan was to identify the added value of the DigiFed's project and explore the condition of its sustainability. To start with, it was decided to engage the consortium partners in a series of internal workshops.

The results of this first part of the sustainability working plan was two-fold:

- The agreement between DigiFed partners on a joint vision of what they meant by sustainability e.g., "the continuity of a part or of all DigiFed project's activities & mission which will create enough added-value to be further supported & funded".
- On the fact that their main strengths were relying in the DigiFed innovation management models, namely the DigiFed innovation pathways, and in their pan-European network.

The second part of the work was then focusing on identifying the critical elements that were necessary to further support the reproducibility of the innovation pathways and the interest of those innovation pathways for European cooperation between Digital Innovation Hubs. This resulted in the production of an "Information Package on the DigiFed innovation pathways" (in annex), which detailed the minimum financial and infrastructure requirements for implementing the Innovation Pathways in a collaborative setting between DIHs and EDIHs. This Information Package was presented at a dedicated Info-Session and at DigiFed's Final Event, in M35 and M36 on the 30<sup>th</sup> of November and 1<sup>st</sup> of December 2022. Those working sessions aimed at identifying potential collaborations where DigiFed innovation pathways could be instrumental to strengthen pan-European collaborations.

Beyond the cohesive work done inside the DigiFed consortium throughout the 3 internal workshops dedicated to the sustainability of the project, the results of those activities have been the active participation of external DIHs to DigiFed final events exploring effective new pan-European collaborations.

- Roughly 20 various DIHs and EDIHs took part first to the Info-session dedicated to the “Information Package for DigiFed reproducibility”. [https://digifed.org/wp-content/uploads/2023/03/DigiFed-Innovation-Pathways-Information-Package\\_v5.pdf](https://digifed.org/wp-content/uploads/2023/03/DigiFed-Innovation-Pathways-Information-Package_v5.pdf)
- 18 (E)DIHs also joined the final event workshops and the matchmaking session and a half of them is already considering new collaborations
- A DIHs booklet describing the participating DIHs was published by DigiFed to support further discussions and is available on DigiFed website: [https://DigiFed.org/wp-content/uploads/2023/02/DigiFed\\_DIHEcosystem-booklet-2.pdf](https://DigiFed.org/wp-content/uploads/2023/02/DigiFed_DIHEcosystem-booklet-2.pdf)
- 7 of those potential collaborations would be designed according to DigiFed innovation pathways.

Several future activities between DigiFed-partners and the (E)DIH-network have been programmed. These include engagement and dissemination of opportunities for startups and SMEs in the context of other projects in which DigiFed-partners are involved, e.g., EARASHI project, participation in visits from DIHs from outside of Europe, development of so-called corridors of collaboration, and development of joint services based on the proposed Innovation Pathways.

The *Final report on liaison with relevant activities, networks and European DIHs* (D4.2) notably describes the results from the sustainability strategy for the DigiFed-network, and its connections with other activities.

### 2.3 Lessons learnt from Dissemination and communication

One of the successes of the project is to have been able to offer SMEs visibility and networking through the participation of external events. Indeed, the project gave the opportunity to the SMEs to participate in several European events in order to showcase their innovation and liaise with relevant stakeholders. Some of these events are listed below:

Four Years From Now Y4FN 21: The conference welcomed start-ups from all over the world with the aim to support start-ups, investors and companies to connect and launch new business ventures together. DigiFed was represented by Minalogic and Zabala, partners of the consortium, who presented DigiFed as an EU cascade funding project dedicated to supporting SMEs and start-ups in their digitization routes. At the conference, the European SME CYSEC participated as leader of the SEGWAY project, one of the projects awarded by DigiFed's first Open Call, which developed a proof of concept (PoC) by deploying CYSEC's cryptographic service on the CEA-LETI secure platform.

IOT Solutions World Congress (in 2022 & 2023): In 2022, during the three-day international event in Barcelona showcasing the technologies that will disrupt the Internet of Things industry, the 20 SMEs behind the 15 projects showcased gained visibility while nine of them were able to network during a pitching session with external investors. In 2023, As some Cascade Funding was remaining - because some SMEs did not claim for all their attributed budget, it was decided by the consortium - in agreement with the Project Officer - to use this budget to organize again a common booth at IoT SWG Barcelona 2023. A total of nine DigiFed SMEs applied to benefits from this dissemination support.

Podium DX: DigiFed participated in Podium DX with attendance managed by UL. The conference is one of the most influential start-up and technology conferences in Europe, bringing together successful

start-ups, active investors, speakers, and business executives. The last two editions were in hybrid format. DigiFed SMEs were invited to join and make use of the matchmaking sessions, pitch session and present their results within dedicated panels. DigiFed attendance consisted of:

- Speaker sessions, panel organisation with UL speakers and guests, SMEs participating in DigiFed innovation funding mechanism.
- Pitch sessions and matching event working as a springboard helping startups to stand out and give them recognition to easily gain trust and attention from investors or other potential business partners. Additionally, participating startups and SMEs also had the possibility to apply for the Podium Pitching Competition to advertise their offers to a wider audience.

DigiFed Final event : In addition to sharing the results of the DigiFed project and discussing potential synergies at several levels in the DIHs network, the main objective of the event was focused on networking and showcasing of DigiFed SMEs and AEs funded. Indeed, the second day of the Final Event, entitled “Showcase your innovation: Digitising the industry”, was completely devoted to showcasing DigiFed supported SMEs and their innovative solutions. This second day was focused on the exhibition of DigiFed projects, among them nine AEs were presented by beneficiary SMEs and companies from the fields of industry, energy, health, mobility, agriculture and others.

These events were much appreciated by the invited SMEs, especially common booth that helped creating group cohesion between STP and DigiFed partner. SMEs appreciated the visibility gain to be associated with well-known partners and the networking with DigiFed ecosystem.

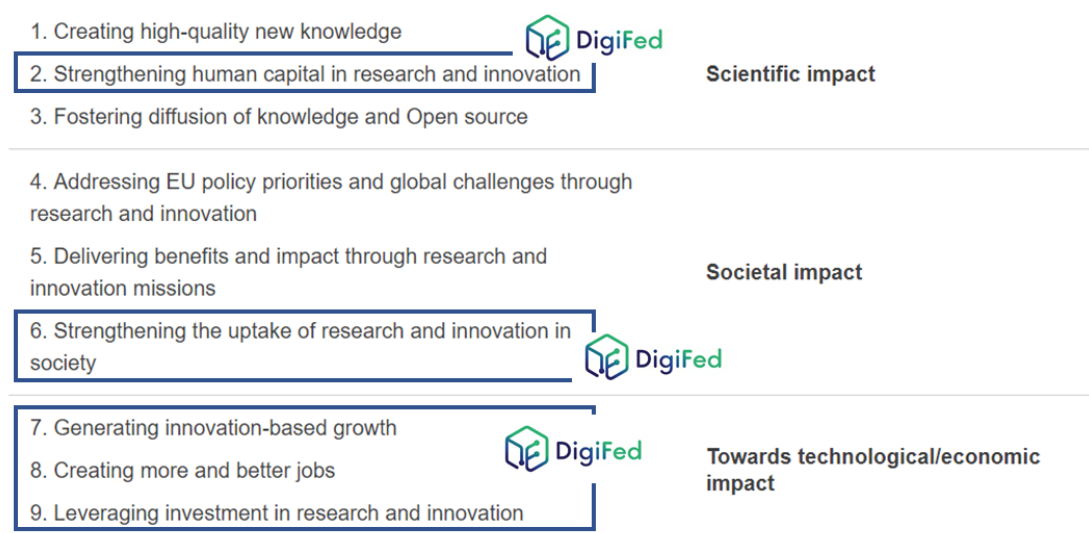
### 3. Societal implication of the project

With Horizon Europe programme, the European Commission has established a new impact driven approach to maximise project impacts. The three Key Impact Pathways are namely:

- Scientific impact: (1) Creating high-quality new knowledge; (2) Strengthening human capital in research and innovation; (3) Fostering diffusion of knowledge and Open source.
- Societal impact: 4) Addressing EU policy priorities and global challenges through research and innovation; (5) Delivering benefits and impact through research and innovation missions; (6) Strengthening the uptake of research and innovation in society; and
- Economic/technologic impact: (7) Generating innovation-based growth; (8) Creating more and better jobs; and (9) Leveraging investments in research and innovation.

As a result of the WP3 impact assessment, it is interesting to highlight the fact that DigiFed, contributed to several impacts pathways from the Horizon Europe programme as explained below:

#### Key Impact Pathways



### Scientific impact

**Creating High Quality new knowledge:** With the submission of several scientific papers, the project contributed to the development of new high quality knowledge. Some are listed below

**Title: Experimentation of Cross-Border Digital Innovation Hubs (DIHs) Cooperation and impact on SME Services**

Author(s): Margherita Volpe, Omar Veledar, Isabelle Chartier, Isabelle Dor, Fredy Ríos Silva, Jure Trilar, Csaba Kiraly, Gabriele Gaffuri, Sabine Hafner-Zimmermann  
Published in: 22nd IFIP WG 5.5 Working Conference on Virtual Enterprises, PRO-VE 2021, Nov 2021, Saint-Etienne, France. 10p  
DOI: 10.1007/978-3-030-85969-5\_39

**Title: Balancing Exploration and Exploitation through Open Innovation in the Automotive**

Domain – Focus on SMEs  
Author(s): Georg Macher, Omar Veledar  
Published in: EuroSPI 2021: Systems, Software and Services Process Improvement pp 336–348.  
DOI: 10.1007/978-3-030-85521-5\_22

**Title: Supporting Innovation in Energy Sector: the SMEs Role and DIGIFED Success Cases**

Author(s): Gaffuri G., Chartier I., Ribeiro P., Nastran S., Volpe M., Dor I., Murillo G., Chanson E., Gonzalez Rojas I., Hofer M.  
Accepted for presentation at the ECIE 17th European Conference on Innovation and Entrepreneurship  
DOI: <https://doi.org/10.34190/ecie.17.1.458>

**Title: Cascade funding as an alternative funding source for innovative investments**

Author(s): Volpe M., Gonzalez Rojas I., Veledar O., Cavallini S.  
Accepted for presentation at the ECIE 17th European Conference on Innovation and Entrepreneurship.  
DOI: <https://doi.org/10.34190/ecie.17.1.507>

**Title: Impact Maximisation of Collaborative Projects through Informal Leadership**

Author(s): Leino T., Veledar O., Macher G., Volpe M., Armengaud E., Koivunen N.  
Accepted for presentation at PRO-VE 2022: 23rd Working Conference on Virtual Enterprises, Lisbon, Portugal, September 19-21, 2022  
DOI: 10.1007/978-3-031-14844-6\_10

**Title: Cybersecurity in connected medical devices**

Author(s): Derek Hill, Alizee Devaux (PDH), Romain Jayles, T Franco Rondisson (CEA), Isabelle Chartier IRT Nanoelec.  
Submitted to: European Nanoelectronics Applications, Design & Technology Conference (ADTC), June 2022, in Dresden (Germany).

**Title: Supporting Innovation in Smart Cities through Cascade Funding: the Case of Water Management**

Author(s): Margherita Volpe, Inigo Gonzalez Rojas, Gabriele Gaffuri, Ramona Marfievici, Edoardo Genova, Ana Gheorghe, Jasmin Kniewallner and Omar Veledar  
Published in: 2022 IEEE International Smart Cities Conference (ISC2), Pafos, Cyprus, 2022, pp. 1-7  
DOI: <https://doi.org/10.1109/ISC255366.2022.9922322>

**Title: Concepts for high throughput LED testing using high-speed optical transients of LEDs**

Author(s): András Poppe (BME); Gusztáv Hantos (BME); János Hegedüs (BME); Péter Csuti (LightingLab Calibration Laboratory); Márta Rencz (BME).  
Published in: 2022 28th International Workshop on Thermal Investigations of ICs and Systems (THERMINIC)  
DOI: 10.1109/THERMINIC57263.2022.9950671

Scientific articles

**Title: Catapulting Innovation**

Author(s): Ana-Maria Gheorghe, Linda Ligios, Ramona Marfievici (all Digital Catapult) and Isabelle Dor (CEA-Leti)  
Published in: HiPEAC Info #67 (October 2022).



### Strengthening human capital in research and innovation:

AEs implementation strengthened overall human capital in R&I, both from the AEs beneficiaries' side (in terms of the design of a collaborative project, implementation in cross-border collaboration and pursuit of the specific scientific goals of each AE) and DigiFed partners side. Indeed, the experience gathered during this project provided relevant insights on CPS applications from SMEs, as well as relevant lessons learned on how to replicate similar projects and foster innovation ecosystems.

With GE programme, 35/51 SMEs involved claimed to have gained knowledge and skills through the GE. Concerning the DC, SMEs claimed:

- 1 SME hired 1 person for this project and is planning to hire 2 more as a result of the DigiFed activity
- All the SMEs have generated new expertise and knowledge
- All 4 SMEs are entering new markets with their products (developed as part of DigiFed)
- One SME developed the product from TRL1 (concept) to TRL6 (testing in a relevant environment)
- All 4 SMEs are planning to integrate the technology developed in other activities and products
- One SME applied for a patent to protect their IPR

And DCOs:

- All the DCOs are benefiting from the outputs and outcomes of these projects
- All the DCOs are continuing the collaboration with the SMEs and are currently planning pilot activities to further test and develop the solutions
- 2 DCOs: the solutions developed as part of DigiFed help them to improve their current expertise and optimise their operations
- 1 DCO - the solution developed, if adopted as part of their operations, it has the potential to revolutionise their business, streamline their operations

### Societal impact

#### Addressing EU policies & Strengthening the uptake of R&I in society :

AEs elaborated relevant products and services derived from research and innovation activities, with a clear view to bringing them to the market either during the AE implementation or in the medium term after it. Noteworthy, the collaborative dynamic promoted by DigiFed call for proposals fostered the exploration of new markets and opportunities for development, thus enlarging the impact that each SME could have had to work alone. Offering these results to the market (either B2B or B2C) will be the ultimate goal of each AE, thus contributing to the digitalization, green or innovation-driven transition promoted by the EC (e.g., Green Deal, RepowerEU, Digital Agenda for Europe, etc.), and by consequence to bring R&I results in society while also somehow addressing some EC policies

DigiFed funded the implementation of AEs in various sectors, some of which are socially oriented and also contributed to the HEU's societal impact. These sectors are notably:

- Health
- Agritech
- Transportation and smart mobility
- Water services

Moreover, the three selected DCs are addressing the energy and environment sector

### Economic / Technological Impact

#### Generating innovation-based growth:

DigiFed contributed to generating innovation-based growth as the awarded granted allowed SMEs to dedicate time and resources to R&D developments, which might not have been possible without this project. Indeed, especially for SMEs which constituted the primary target of the project, resource constraints frequently prevent the possibility to dedicate effort to R&D or other not-directly capitalizable activities. Hence, participation in the DigiFed project provided them with the opportunity to slightly enlarge their focus on core business and explore new possibilities/opportunities for growth, as well as enlarging their competencies and expertise.

The AE impact analysis demonstrated that companies (50%) have generated income or are expected to generate income in 1-3 years after project completion. Regarding the business impact, DigiFed AEs were also asked if they addressed a new market sector and 43% of the companies interviewed confirmed it was the case.

### Creating more and better jobs:

The impact analysis has proven that beneficiaries acquired new skills either through internal training or training on the job, as well as the creation of new jobs during the project implementation (up to 39 new hirings with the AEs), thus overall contributing to the actual creation of more and better jobs in this field. This trend is expected to continue and have further impact in the medium term (3 years after AEs implementation) as most companies reported having in target the expansion of their business and, potentially, the acquisition of additional competencies to support the new business lines created as consequence to DigiFed supported AEs.

### Leveraging investments in R&I:

DigiFed directly contributed to leverage investments in research and innovation, not only due to the grant directly allocated to each AEs (in total >3Mln/EUR leveraged for R&I activities), but also thanks to the direct promotion of AEs during selected events and guidance/training to facilitate access to actual investors (e.g., innovation management programme). The pitching and outreach events were particularly useful to foster these impacts, considering both the investors and investments reached during the DigiFed implementation and in terms of capacity building within the SMEs to continue in the effort to reach new investments (medium-term impact).

Indeed, several SMEs took the opportunity to pitch in front of investors during several events:

#### IOT world congress in Barcelona:

- AMIBIT D.O.O.
- BEEXLAB
- BINARE
- Metrica6
- New Generation Sensors srl
- Pone Biometrics (OffPAD)
- Sonicat Systems SL

#### Monaco Smart and Sustainable Marina

- Agevolt
- Advanced Microturbines
- Safecility
- Waterjade
- Waisense by Metrica6
- DYNAGRID by Energiot
- Amibit

#### Smart Yacht 2023

- Koyre
- AGEVOLT
- Evercam

Furthermore, in terms of leverage of private funds on the top of EU subvention, DigiFed was a good intensive:

- DC pathway : leveraged 155k€ private funding from the DC Owner, for 155k€ EU funding from the CF
- Concerning the AE pathway many SMEs engage more than 30% of their budget
- At a global DigiFed the ration between CF and private funding is given in the table below. Showing that such public funding is a strong intensive for SMEs to invest in R&D

	Total projects costs	Public Funding CF	Ratio CF/Tot	Private funding	Ration Private / Tot
AE	6 046 000 €	3 570 000 €	59%	2 476 000 €	41%
DC	451 000 €	155 000 €	34%	296 000 €	66%



## 4. ANNEX

### 4.1 STANDART APPLICATION EXPERIMENT AGREEMENT - SAEA

#### Standard Application Experiment Agreement

Unless otherwise agreed, the following draft shall apply to the Digital Challenge and the Generic Experiment.

##### DIGIFED STANDARD APPLICATION EXPERIMENT AGREEMENT

This DIGIFED STANDARD APPLICATION EXPERIMENT AGREEMENT for providing financial as technical/non-technical services support to the Selected Third Party, hereinafter referred to as the "Agreement", is entered into by and between:

**Commissariat à l'énergie atomique et aux énergies alternatives**, a French state-owned research entity with a scientific, technical or industrial activity, duly organised under the laws of France and having its registered office located Bâtiment Le Ponant D - 25 rue Leblanc, 75015 Paris, France, and declared at the Paris Register of Commerce and Trade under the following registration number : R.C.S. PARIS B 775 685 019, herein represented by Sébastien DAUVE, Head of the Department **DSYS** hereinafter "Cascade Funding Partner" and "Monitoring Partner"

And

..., an organisation under the laws of ..., having its registered office at ..., herein represented by ..., hereinafter referred to as "XXX"

OPTIONAL if 2 Selected Third Party

and

..., an organisation under the laws of ..., having its registered office at ..., herein represented by ..., hereinafter referred to as "XXX"

Hereinafter referred to as "Selected Third Party"

And

OPTIONAL if there is an Innovation Management Partner:

BLUMORPHO, an organisation under the laws of France, having its registered office at 8, rue de l'Isly, 75008 Paris, France, herein represented by Geraldine Andrieux, hereinafter referred to as "Innovation Management Partner"

Hereinafter sometimes individually or collectively referred to as "Party" or "Parties".

Whereas CEA, AVL, BME, BLUMORPHO, DIGICAT, IK4-IKERLAN, MNT, STGNB 2 SAS, ST-I, SEZ, UL, ZABALA BRUSSELS, (hereinafter collectively referred as the "DigiFed Beneficiaries") participate to the H2020 project entitled "Digital Innovation Hubs (DIH) federation for large scale adoption of digital technologies by European SMEs" (hereinafter the "DigiFed Project").

Whereas the DigiFed Beneficiaries entered into a Grant Agreement N°872088 with the European Commission (the "Grant Agreement" or "GA") and signed together in 2020 a Consortium Agreement with respect to the DigiFed Project (the "Consortium Agreement" or "CA").

Whereas the DigiFed Project involves financial support to Selected Third Party through a cascade funding scheme (hereinafter "Cascade Funding") as technical/non-technical services.

Whereas further to an open call for a specific Application Experiment as described in Annex 3 "Specific Application Experiment Agreement", the Selected Third Party has been selected by the Evaluation Committee of the DigiFed Project with an appointed Monitoring Partner to implement such Application Experiment.

Whereas the Selected Third Party will implement such Application Experiment with the participation of the Cascade Funding Partner, and with the Monitoring Partner identified in Annex 3 "Specific Application Experiment Agreement".

Whereas the Cascade Funding Partner is willing to provide Financial Support to the Selected Third Party for the implementation of such Application Experiment and the Selected Third Party is willing to receive such support under the terms and conditions of this Agreement.

Whereas in accordance with the Grant Agreement and the Consortium Agreement, the Cascade Funding Partner shall sign an agreement with the Selected Third Party, and with the Monitoring Partner compliant with the GA and CA.

Whereas the Monitoring Partner is responsible for the execution of this Agreement with the Selected Third Party and for the monitoring of the Application Experiment.

Now therefore it has been agreed as follows:

## 1. DEFINITIONS

Words beginning with a capital letter shall have the meaning defined in the preamble of the Agreement or in this Section:

**1.1 Access Rights** means rights to use Results or Background under the terms and conditions laid down in this Agreement.

**1.2 An Affiliated Entity** in relation to a Party, means any legal entity which directly or indirectly controls, is controlled by, or is under common control with that Party. For the purposes of this definition, “control” shall mean (a) direct or indirect holding of more than 50% of the nominal value of the issued share capital in the legal entity concerned, or of a majority of the voting rights of the shareholders or associates of that entity or (b) the direct or indirect holding, in fact or in law, of decision-making powers in the legal entity concerned, provided that this entity is listed in Annex 3 “Specific Application Experiment Agreement”. Any such legal entity shall be deemed to be an Affiliate of such Party only as long as such ownership or such control exists. However, the following relationships between legal entities shall not in themselves constitute controlling relationships:  
(a) the same public investment corporation, institutional investor or venture-capital company has a direct or indirect holding of more than 50% of the nominal value of the issued share capital or a majority of voting rights of the shareholders or associates;  
(b) the legal entities concerned are owned or supervised by the same public body.

**1.3 Agreement** means this Standard Application Experiment Agreement, together with its Annexes.

**1.4 Application Experiment** means the experiment detailed in Annex 3 “Specific Application Experiment Agreement” to be carried out by the Selected Third Party, with the objective to foster the introduction of digital technologies in their product and service offerings.

**1.5 Background** means any data, know-how or information – whatever its form or nature (tangible or intangible), including any rights such as intellectual property rights – that:

- (a) is held by a Party before the effective date of the Specific Application Experiment Agreement, and
- (b) is Needed by another Party to implement its own tasks under the Application Experiment or to Exploit its own Results,

but solely within a) and b) to the extent that such data, information, know-how and/or intellectual property rights are introduced into the Application Experiment by the owning Party, and provided it is listed in Attachment 1 (Background included) to this Consortium Agreement.

**1.1 Exploitation or Exploit** means the direct or indirect use of Results in (a) further research activities other than those covered by the Application Experiment, or (b) in developing, creating or marketing a product or process, or (c) in creating and providing a service, or (d) in standardisation activities.

**1.2 Fair and Reasonable conditions** means appropriate conditions, including possible financial terms or royalty-free conditions, taking into account the specific circumstances of the request for Access Rights, for example the actual or potential value of the Results or Background to which Access Rights are requested and/or the scope, duration and other characteristics of the exploitation envisaged. To fall within Fair and Reasonable conditions, the conditions must also be non-discriminatory.

With respect to Parties not established for the purpose of directly carrying on an industrial or commercial activity (for instance public bodies), considering their specific positioning, “appropriate conditions” necessarily means a financial compensation in case of direct or indirect industrial or commercial exploitation.

**1.3 Financial Support** means the cash element of the financial support to be given by the Cascade Funding Partner to the Selected Third Party for the implementation of the Application Experiment as detailed in Annex 3 “Specific Application Experiment Agreement”.

**1.4 Force Majeure** means any situation or event that:

- prevents either party from fulfilling their obligations under the Agreement,
- was unforeseeable, exceptional situation and beyond the parties' control,
- was not due to error or negligence on their part (or on the part of third parties involved in the action), and
- proves to be inevitable in spite of exercising all due diligence.

The following cannot be invoked as force majeure:

- any default of a service, defect in equipment or material or delays in making them available, unless they stem directly from a relevant case of force majeure,
- labour disputes or strikes, or
- financial difficulties.

**1.5 Intellectual Property Rights Policy** means the Policy set out at Section 5 of this Agreement.

**1.6 Legitimate Interest** means but is not limited to academic or commercial interest or interest related to a Party's corporate image, which breach would result in such Party suffering significant harm in the cases provided for in this Standard Application Experiment Agreement. For the purpose of this Agreement, Legitimate Interest shall also mean prior written authorization of the Monitoring Partner when an Affiliated Entity of the Selected Third Party has an activity which is competitive to the Partner's activity (i.e. for Access Rights, ...).

**1.7 Needed** means in respect of executing or carrying out the Application Experiment, and/or in respect of Exploitation of Results, technically essential and:

(a) For the implementation of the Project:

Access Rights are Needed if, without the grant of such Access Rights, carrying out the tasks assigned to the recipient Party would be technically or legally impossible, or significantly delayed;

(b) For Exploitation of a Party own Results:

Access Rights are Needed if, without the grant of such Access Rights, the Exploitation of the recipient Party's own Results would be technically or legally impossible.

**Results** means any tangible or intangible outputs of the Application Experiment, such as data, knowledge and information whatever their form or nature, whether or not they can be protected, which are generated in the Application Experiment, as well as any rights attached to them, including intellectual property rights. For the sake of clarity, Results shall be considered Confidential Information.

## 2. CONDITIONS FROM THE GRANT AGREEMENT AND THE CONSORTIUM AGREEMENT REFLECTED IN THE AGREEMENT

The Cascade Funding Partner receives funding from the European Commission for organizing the Application Experiment. Under the DigiFed Grant Agreement and the Consortium Agreement, some of the obligations have to be imposed to the Monitoring Partner and Selected Third Party. Those obligations are reflected in this Agreement. The specific obligations that the Selected Third Party must ensure described in the Grant Agreement are reproduced in Annex 1.

The Monitoring Partner and the Selected Third Party acknowledge and agree that these obligations comprised in this Agreement are fully applicable to it and shall do everything that is necessary to comply with these obligations, it being understood that the Selected Third Party is only bound by this Agreement and not by the GA or CA.

## 3. TERMS AND CONDITIONS FOR THE FINANCIAL SUPPORT

**3.1** The Selected Third Party shall take part in the Application Experiment in accordance with the state of the art.

The Selected Third Party shall carry out the tasks according to the schedule set forth in Annex 3 "Specific Application Experiment Agreement" at the latest and shall report to the Monitoring Partner on the activities' progress in regular intervals as indicated in Annex 3 "Specific Application Experiment Agreement". Such technical reports based on the template reproduced in Annex 2 shall contain detailed information on the Results generated by the Selected Third Party.

- 3.2** Upon report of the Monitoring Partner, the Cascade Funding Partner shall give Financial Support for the Application Experiment carried out by the Selected Third Party, within the limits and in accordance with the schedule of payments specified in Annex 3 "Specific Application Experiment Agreement".

For each Application Experiment, and at the time the selected Monitoring Partner will issue the Specification Application Experiment Agreement as described in Annex 3, the Cascade Funding Partner shall deliver the Financial Support of the form of a lump-sum of fifty percent (50%) of the eligible costs of the Application Experiment incurred by the Selected Third Party, accordingly to H2020 Funding Rules for Innovation Actions, and within the limit of the ceiling defined in the guidelines of the DigiFed project.

- 3.3** The Selected Third Party shall provide a technical report with deliverables to the Monitoring Partner which will report it to the Cascade Funding Partner. The Selected Third Party shall use the "Implementation of the Application Experiment" in Annex 3. The following elements shall at least be included in this technical report:

- a) The Identification of the Application Experiment;
- b) The identification of milestones, based on the completion of several tasks;
- c) Detailed information on the deliverable achieved for the implementation of the Application Experiment.

No payment will be made by the Cascade Funding Partner if no sufficient evidence document is presented by the Selected Third Party.

The Cascade Funding Partner will transfer the amount of the Financial Support to the Selected Third Party on the basis of (i) a written payment request by the Monitoring Partner to be sent to the Cascade Funding Partner together with a technical report with deliverables validated by the legal representative of the Selected Third Party in accordance with the schedule set forth in Annex 3 "Specific Application Experiment Agreement" and (ii) a decision of the Monitoring Partner for awarding the amount to the Selected Third Party, provided the terms and conditions of this Agreement are complied with, in particular after the written validation by the Monitoring Partner of the corresponding deliverable(s) identified in Annex 3 "Specific Application Experiment Agreement". The payment shall be made as indicated in Annex 3 "Specific Application Experiment Agreement" after the written validation of the payment request by the Monitoring Partner however always provided that the conditions listed in this Section 3 are met by the Selected Third Party.

#### **4. LIABILITY**

- 4.1** The Selected Third Party shall comply with all applicable laws, rules and regulations, including, but not limited to safety, security, welfare, social security and fiscal laws, rules and regulations.
- 4.2** The Selected Third Party shall not be entitled to act or to make legally binding declarations on behalf of the Monitoring Partner or the Cascade Funding Partner and shall indemnify all of the latter from any third party claim resulting from a breach of these obligations.
- 4.3** The contractual liability of the Monitoring Partner and the Cascade Funding Partner under this Agreement shall in any case be limited to the amount of the Financial Support provided to the Selected Third Party hereunder. The Monitoring Partner and the Cascade Funding Partner shall not in any case be liable for any indirect or consequential damages such as:
- loss of profits, interest, savings, shelf-space, production and business opportunities;
  - lost contracts, goodwill, and anticipated savings;
  - loss of or damage to reputation or to data;
  - costs of recall of products; or
  - any other type of indirect, incidental, punitive, special or consequential loss or damage.

By exception, the maximum amount of liability to be taken into account in case of breach of confidentiality and/or infringement of the intellectual property rights of any other Party or any Affiliated Entity, which is the result of any activity or use of such intellectual property rights that exceeds the scope of the Access Rights granted by or pursuant to Standard Application Experiment Agreement shall not exceed once the amount of the financial support provided to the Selected Third Party hereunder.

- 4.4** This limitation of liability (4.3) shall not apply in case of willful act or gross negligence.
- 4.5** The Selected Third Party shall fully and exclusively bear the risks in connection with the Application Experiment for which Financial, technical/non technical Support is granted by the Monitoring Partner and/or the Cascade Funding Partner. The Selected Third Party shall indemnify the Monitoring Partner and the Cascade Funding Partner for all damages, penalties, costs and expenses which the Monitoring Partner and/or the Cascade Funding Partner as a result thereof would incur or have to pay to the European Commission or to any third parties with respect to such Application Experiment financially supported and/or for any damage in general which the Monitoring Partner and/or the Cascade Funding Partner incur as a

result thereof. In addition, should the European Commission have a right to recovery against the Cascade Funding Partner and/or the Monitoring Partner regarding the Financial Support granted under this Agreement, the Selected Third Party shall pay the sums in question in the terms and the date specified by the Monitoring Partner and/or the Cascade Funding Partner. Moreover, the Selected Third Party shall indemnify and hold the Monitoring Partner and/or the Cascade Funding Partner, their respective officers, directors, employees and agents harmless from and against all repayments, loss, liability, costs, charges, claims or damages that result from or arising out of any such recovery action by the European Commission.

- 4.6** In respect of any information or materials (including but not limited to Software, Results and Background) supplied by one Party to another Party or to a Beneficiary, or by the Monitoring Partner to a Party, no warranty or representation of any kind is made, given or implied as to the sufficiency, accuracy or fitness for purpose nor as to the absence of any infringement of any proprietary rights of third parties. Such information or materials are provided AS IS.

Therefore,

- the recipient, shall in all cases be entirely and solely liable for the use to which it puts such information and materials (including but not limited to Software, Results and Background), and
- there is no liability in case of infringement of proprietary rights of a third party resulting from any Access Rights.

## 5. INTELLECTUAL PROPERTY RIGHTS POLICY

The Selected Third Party acknowledges the terms of the “Intellectual Property Rights Policy” defined hereinafter. The Selected Third Party agrees that it will comply with the Intellectual Property Rights Policy to ensure that the Cascade Funding Partner will always be able to comply with such terms towards the Monitoring Partner. For the sake of clarity, the Parties precise this article is subject to the Legitimate Interest of the Monitoring Partner.

### 5.1 General Principle regarding Ownership

Results are owned by the Party that generates them.

### 5.2 Joint Results

If in the course of carrying out work on the Project, a Result is generated by two or more Parties or their Affiliated Entities involved in the Project, and if the contributions to or features of such Result form an indivisible part thereof to the extent that none of the said Parties could reasonably claim full ownership of this Result, such Result shall be jointly owned by them in according to their share of contribution, unless differently agreed by the Parties concerned.

The joint owners shall execute a joint ownership agreement regarding the allocation and the terms and conditions of Exploitation of the joint Result as soon as possible. They shall do all their best efforts to execute such joint ownership agreement at the latest twelve (12) months as from the date of generation of such joint Results

The joint owners shall agree on all protection measures, on their joint ownership shares and on the division of related costs in a joint ownership agreement to be negotiated.

For each Application Experiment, and at the time the selected Monitoring Partner will issue the Specific Application Experiment Agreement as described in Annex 3, the Monitoring Partner [OPTIONAL if a 2 Selected Third Party are involved : the Selected Third Party Name XXX (the one whom the technology belongs)] shall make, at his own discretion, the choice of one of the options hereunder stated regarding the exploitation of Joint Foreground :

#### **OPTION 1 :**

Unless otherwise agreed:

- each of the joint owners shall be entitled to use their jointly owned Results for non-commercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and
- each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given:
  - (a) at least 45 calendar days advance notice; and
  - (b) Fair and Reasonable compensation.

With respect to Parties not established for the purpose of directly carrying on an industrial or commercial activity (for instance public bodies), considering their specific positioning, “appropriate conditions” necessarily means a financial compensation in case of direct or indirect industrial or commercial exploitation.

#### **OPTION 2 :**



In case of joint ownership, each of the joint owners shall be entitled to Exploit the joint Results as it sees fit, and to grant non exclusive licences, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners.

### 5.3 Access Rights

For the purpose of this article 5.3, Background shall mean the Background as listed in the Specific Application Experiment Agreement and validated by the Parties for the concerned Application Experiment.

Access Rights to Background and Results may be requested by the Selected Third Party only if these Access Rights belong to a Party and if the following conditions are fulfilled, and unless specific restrictions inserted in Annex 3 "Specific Application Experiment Agreement":

- Subject to the prior written approval of the holding Party, Access Rights on Background or Results to Selected Third Party, if Needed for implementation of the Selected Third Party's own tasks in the Application Experiment, shall be granted for the duration of the Application Experiment on royalty-free basis, except in the event such Background has been prior identified as not being accessible on a royalty free basis and/or subject to separate licenses agreements signatures with the holding Party;
- Subject to the prior written approval of the holding Party and upon separate written bilateral agreement, Access Rights on Background or Results to Selected Third Party, if Needed for Exploitation of the Selected Third Party's own Results obtained through the Application Experiment, shall be granted on Fair and Reasonable conditions, except in the event such Background has been prior identified as subject to legal restrictions or limits. A request for Access Rights for Exploitation may be made up to twelve (12) months after the end of the Application Experiment.

In case of total or partial transfer or change of Control of Selected Third Party share's as set out in Section 10.2 of the Standard application Experiment Agreement, Access Rights may be refused to said Selected Third Party, if such granting is contrary to the Legitimate Interest of the Party which owns the Background and/or the Results.

Selected Third Party which obtain Access Rights in return will fulfil confidentiality obligations as determined in the Section 6.

For the sake of clarity, a Party participating to an Application Experiment shall not grant to a Selected Third Party any Access Rights to another Party's Background or Results without the holding Party's prior written authorization.

The Monitoring Partner enjoys the same Access Rights on Background or Results owned by the Selected Third Party for implementation of the Application Experiment or, direct or indirect Exploitation of their Results, under the same conditions mentioned hereinabove.

For the avoidance of doubt, any grant of Access Rights not covered by this Section shall be at the absolute discretion of the owner and/or holder and subject to such terms and conditions as may be agreed between the owner and/or holder and recipient.

## 6. CONFIDENTIALITY

- 6.1 All information of whatever nature and in whatever form or mode of communication, which is disclosed by a Party (the "Disclosing Party") to another Party (the "Recipient") in connection with the Application Experiment during its implementation and which has been explicitly marked as "confidential" at the time of disclosure, or when disclosed orally or in intangible form has been identified as confidential at the time of disclosure and has been confirmed and designated in writing within thirty (30) calendar days from oral or intangible disclosure at the latest as confidential information by the Disclosing Party, is "Confidential Information".

For the sake of clarity, the Selected Third Party acknowledges and agrees that any information of whatever nature and in whatever form or mode of communication disclosed and/or listed in the Background by STMicroelectronics as "prototype" or "pre-serial" or equivalent or similar mention is Confidential Information, as well as any subsequent information of any nature and any form whatsoever generated by the Selected Third Party from such Confidential Information.

The Recipients hereby undertake for the duration of the Application Experiment and a period of 5 years after the end of the Application Experiment:

- not to use Confidential Information otherwise than for the purpose for which it was disclosed;
- not to disclose Confidential Information to any third party other than its Affiliated Entities (and safe in the event of a Legitimate Interest for the Disclosing Party) without the prior written consent by the Disclosing Party;

- to ensure that internal distribution of Confidential Information by a Recipient to its employees or to its Affiliated Entities shall take place on a strict need-to-know basis; and
- use the Confidential Information solely for the purpose of the execution of the Application Experiment and not otherwise use the Confidential Information in the design or manufacture of its products or the design of its processes, or in any other manner;
- not reverse engineer, decompile, disassemble, modify, adapt, translate or otherwise alter in any way, any prototype, product, sample, software, schematic, flowchart or other tangible objects which embody the Confidential Information, except if so authorized in writing by the Disclosing Party;
- except as required for continuing Access Rights, to return to the Disclosing Party on demand all Confidential Information which has been supplied to or acquired by the Recipients including all copies thereof and to delete all information stored in a machine readable form. The Recipients may keep a copy to the extent it is required to keep, archive or store such Confidential Information because of compliance with applicable mandatory laws and regulations (i.e. public policy legislation).

The Recipients shall be responsible for the fulfilment of the above obligations on the part of their employees or third parties (subcontractors, Affiliated Entities) if previously authorized involved in the Application Experiment and shall ensure that they remain so obliged, as far as legally possible, during and after the end of the Application Experiment and/or after the termination of the contractual relationship with the employee or third party.

The above shall not apply for disclosure or use of Confidential Information, if and in so far as the Recipient can show that:

- the Confidential Information becomes publicly available by means other than a breach of the Recipient's confidentiality obligations;
- the Disclosing Party subsequently informs the Recipient that the Confidential Information is no longer confidential;
- the Confidential Information is communicated to the Recipient without any obligation of confidence by a third party who is to the best knowledge of the Recipient in lawful possession thereof and under no obligation of confidence to the Disclosing Party;
- the disclosure or communication of the Confidential Information is foreseen by provisions of the Grant Agreement;
- the Confidential Information, at any time, was developed by the Recipient completely independently of any such disclosure by the Disclosing Party; or
- the Confidential Information was already known to the Recipient prior to disclosure without any obligation of confidentiality to the Disclosing Party or
- the Recipient is required to disclose the Confidential Information in order to comply with applicable laws or regulations or with a court or administrative order subject to the last paragraph of this Section.

The Recipient shall apply the same degree of care with regard to the Confidential Information disclosed within the scope of the Application Experiment as with its own confidential and/or proprietary information, but in no case less than reasonable care.

Each Recipient or Disclosing Party shall promptly advise the other Recipient or Disclosing Party in writing of any unauthorised disclosure, misappropriation or misuse of Confidential Information after it becomes aware of such unauthorized disclosure, misappropriation or misuse.

If a Party becomes aware that it will be required to disclose Confidential Information in order to comply with applicable laws or regulations or with a court or administrative order, it shall, to the extent it is lawfully able to do so, prior to any such disclosure:

- notify the Disclosing Party of said request, and
- comply to the extent possible with the Disclosing Party's reasonable instructions to protect the confidentiality of the information at the Disclosing Party's expense, and
- make such disclosure only to the extent it is compelled.

**6.2** As far as the Cascade Funding Partner or the Monitoring Partner is concerned, disclosure of Confidential Information to the European Commission shall be governed by the terms of the Grant Agreement.

## 7. DISSEMINATION

Each Party agrees that any dissemination activity (including but not limited to publications, presentations or contributions to any standards organisation) by the Selected Third Party is subject to the prior written approval of the other Parties.

The Cascade Funding Partner and the Monitoring Partner are entitled to include the main issues and information regarding the Application Experiment in their reporting towards the European Commission, subject to prior written notification to the Selected Third Party.

## 8. CHECKS AND AUDITS

The Selected Third Party undertakes to provide any detailed information, including information in electronic format, requested by the European Commission or by any other outside body authorised by the European Commission to check that the Application Experiment and the provisions of this Agreement are being properly implemented.

The Selected Third Party shall keep at the European Commission disposal all original documents, especially accounting and tax records, or, in exceptional and duly justified cases, certified copies of original documents relating to the Agreement, stored on any appropriate medium that ensures their integrity in accordance with the applicable national legislation, for a period of five years from the date of payment of the balance specified in the Grant Agreements.

The Selected Third Party agrees that the European Commission may have an audit of the use made of the Financial Support carried out either directly by the European Commission staff or by any other outside body authorised to do so on its behalf. Such audits may be carried out throughout the period of implementation of the Agreement until the balance is paid and for a period of five years from the date of payment of the balance. Where appropriate, the audit findings may lead to recovery decisions by the European Commission.

The Selected Third Party undertakes to allow European Commission staff and outside personnel authorised by the European Commission the appropriate right of access to the sites and premises of the Selected Third Party and to all the information, including information in electronic format, needed in order to conduct such audits.

In accordance with Union legislation, the European Commission, the European Anti-Fraud Office (OLAF) and the European Court of Auditors (ECA) may carry out spot checks and inspections of the documents of the Innovative Company, and of any recipient of Cascade Funding, including at the premises of the Innovative Company, in accordance with the procedures laid down by Union law for the protection of the financial interests of the Union against fraud and other irregularities. Where appropriate, the inspection findings may lead to recovery decisions by the European Commission. The Articles 22 and 23 of the Grant Agreement, reproduced in Annex 1, also apply to the Selected Third Party.

## 9. COVID-19

The Parties hereby acknowledge that given the date on which this Agreement is signed, i.e. after the implementation of lockdown measures decided by the French authorities involving a suspension and/or major decrease of CEA, STI, STF or any other Parties' on-site activities, all or part of the Application Experiment to be carried out under this Agreement cannot be carried out under the conditions set out herein during the lockdown period, a gradual restart of activities and any future potential resumption(s) of the said measures or any measures having a similar effect.

Consequently, the Parties expressly agree to confer as soon as circumstances permit to define via an amendment any eventual change to the Application Experiment such as to schedule, dates, list of deliverables, costs that may be needed given the exceptional circumstances experienced in the execution of the Application Experiment.

## 10. TERMINATION

The Cascade Funding Partner can terminate this Agreement with immediate effect through written notice to the Selected Third Party and the Beneficiary:

- if the Selected Third Party is in breach of any of its material obligations under this Agreement, which breach is not remediable, or, if remediable, has not been remedied within thirty (30) days after written notice to that effect from the party not in breach,
- if, to the extent permitted by law, the Selected Third Party is declared bankrupt, is being wound up, is having its affairs administered by the courts, has entered into an arrangement with its creditors, has suspended business activities, or is the subject of any other similar proceeding concerning those matters, or
- if the Selected Third Party is subject to an event of Force Majeure, which prevents the Selected Third Party from correct performance of its obligations hereunder and such circumstances have lasted, or can reasonably be expected to last more than 3 months.

Access Rights granted to the Selected Third Party shall cease immediately upon the effective date of termination.

## 11. CONCLUDING CONDITIONS

**11.1** This Agreement shall enter into force on the date as written in the Annex 3 "Specific Application Experiment Agreement".



Any ancillary agreements, amendments, additions or modifications to this Agreement shall be made in writing and signed by the Parties confirming that it agrees.

- 11.2** The Selected Third Party's consistent level in its respective field of expertise played a key role in the selection of the Selected Third Party to implement the Application Experiment. Any total or partial transfer of provisions and the rights and duties it entails is subject to the prior formal approval of all signatories. The Selected Third Party shall promptly notify any total or partial transfer or change of Control of said Selected Third Party to the other Parties.
- 11.3** Any subcontract by the Selected Third Party concerning some of its tasks under this Agreement requires the prior written consent of the Cascade Funding Partner and does not affect its own obligations resulting from this Agreement. The Selected Third Party shall secure that the subcontractor will comply with all obligations – especially coming from the GA, and with regard to confidentiality – resulting from this Agreement and that the results attained by the subcontractor will be available in accordance with Section 5.
- 11.4** If any provision of this Agreement is determined to be illegal or in conflict with the applicable law, the validity of the remaining provisions shall not be affected. The ineffective provision shall be replaced by an effective provision which is economically equivalent. The same shall apply in case of a gap.
- 11.5** This Agreement shall be governed by and construed in accordance with the laws of Belgium.
- 11.6** Any disagreement or dispute which may arise in connection with this Agreement and which the Parties are unable to settle by mutual agreement will be brought before the courts of Brussel, Belgium.
- 11.7** List of Annexes:
  - Annex 1 Grant Agreement specific obligations
  - Annex 2 Technical report template
  - Annex 3 Specific Application Experiment Agreement

## ANNEX 1 - GRANT AGREEMENT SPECIFIC OBLIGATIONS

As an indirect beneficiary, the Selected Third Party has to fulfill the obligations described in article 22, 23, 32, 35, 36, 38 and 46 of the Grant Agreement. These sections are part of the Agreement. In case of contradiction between these sections and the Agreement, the terms of the Agreement will prevail.

### ARTICLE 22 – CHECKS, REVIEWS, AUDITS AND INVESTIGATIONS – EXTENSION OF FINDINGS

#### 22.1 Checks, reviews and audits by the Commission

##### 22.1.1 Right to carry out checks

The Commission will – during the implementation of the action or afterwards – check the proper implementation of the action and compliance with the obligations under the Agreement, including assessing deliverables and reports.

For this purpose the Commission may be assisted by external persons or bodies.

The Commission may also request additional information in accordance with Article 17. The Commission may request beneficiaries to provide such information to it directly.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

##### 22.1.2 Right to carry out reviews

The Commission may – during the implementation of the action or afterwards – carry out reviews on the proper implementation of the action (including assessment of deliverables and reports), compliance with the obligations under the Agreement and continued scientific or technological relevance of the action.

Reviews may be started up to two years after the payment of the balance. They will be formally notified to the coordinator or beneficiary concerned and will be considered to have started on the date of the formal notification.

If the review is carried out on a third party (see Articles 10 to 16), the beneficiary concerned must inform the third party.

The Commission may carry out reviews directly (using its own staff) or indirectly (using external persons or bodies appointed to do so). It will inform the coordinator or beneficiary concerned of the identity of the external persons or bodies. They have the right to object to the appointment on grounds of commercial confidentiality.

The coordinator or beneficiary concerned must provide – within the deadline requested – any information and data in addition to deliverables and reports already submitted (including information on the use of resources). The Commission may request beneficiaries to provide such information to it directly.

The coordinator or beneficiary concerned may be requested to participate in meetings, including with external experts.

For **on-the-spot** reviews, the beneficiaries must allow access to their sites and premises, including to external persons or bodies, and must ensure that information requested is readily available.

Information provided must be accurate, precise and complete and in the format requested, including

electronic format.

On the basis of the review findings, a '**review report**' will be drawn up.

The Commission will formally notify the review report to the coordinator or beneficiary concerned, which has 30 days to formally notify observations ('**contradictory review procedure**').

Reviews (including review reports) are in the language of the Agreement.

### 22.1.3 Right to carry out audits

The Commission may – during the implementation of the action or afterwards – carry out audits on the proper implementation of the action and compliance with the obligations under the Agreement.

Audits may be started up to two years after the payment of the balance. They will be formally notified to the coordinator or beneficiary concerned and will be considered to have started on the date of the formal notification.

If the audit is carried out on a third party (see Articles 10 to 16), the beneficiary concerned must inform the third party.

The Commission may carry out audits directly (using its own staff) or indirectly (using external persons or bodies appointed to do so). It will inform the coordinator or beneficiary concerned of the identity of the external persons or bodies. They have the right to object to the appointment on grounds of commercial confidentiality.

The coordinator or beneficiary concerned must provide – within the deadline requested – any information (including complete accounts, individual salary statements or other personal data) to verify compliance with the Agreement. The Commission may request beneficiaries to provide such information to it directly.

For **on-the-spot** audits, the beneficiaries must allow access to their sites and premises, including to external persons or bodies, and must ensure that information requested is readily available.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

On the basis of the audit findings, a '**draft audit report**' will be drawn up.

The Commission will formally notify the draft audit report to the coordinator or beneficiary concerned, which has 30 days to formally notify observations ('**contradictory audit procedure**'). This period may be extended by the Commission in justified cases.

The '**final audit report**' will take into account observations by the coordinator or beneficiary concerned. The report will be formally notified to it.

Audits (including audit reports) are in the language of the Agreement.

The Commission may also access the beneficiaries' statutory records for the periodical assessment of unit costs or flat-rate amounts.

## 22.2 Investigations by the European Anti-Fraud Office (OLAF)

Under Regulations No 883/2013<sup>14</sup> and No 2185/96<sup>15</sup> (and in accordance with their provisions and procedures), the European Anti-Fraud Office (OLAF) may – at any moment during implementation of

the action or afterwards – carry out investigations, including on-the-spot checks and inspections, to establish whether there has been fraud, corruption or any other illegal activity affecting the financial interests of the EU.

### 22.3 Checks and audits by the European Court of Auditors (ECA)

Under Article 287 of the Treaty on the Functioning of the European Union (TFEU) and Article 161 of the Financial Regulation No 966/2012<sup>16</sup>, the European Court of Auditors (ECA) may – at any moment during implementation of the action or afterwards – carry out audits.

The ECA has the right of access for the purpose of checks and audits.

### 22.4 Checks, reviews, audits and investigations for international organisations

Not applicable

### 22.5 Consequences of findings in checks, reviews, audits and investigations – Extension of findings

#### 22.5.1 Findings in this grant

Findings in checks, reviews, audits or investigations carried out in the context of this grant may lead to the rejection of ineligible costs (see Article 42), reduction of the grant (see Article 43), recovery of undue amounts (see Article 44) or to any of the other measures described in Chapter 6.

Rejection of costs or reduction of the grant after the payment of the balance will lead to a revised final grant amount (see Article 5.4).

Findings in checks, reviews, audits or investigations may lead to a request for amendment for the modification of Annex 1 (see Article 55).

Checks, reviews, audits or investigations that find systemic or recurrent errors, irregularities, fraud or breach of obligations may also lead to consequences in other EU or Euratom grants awarded under similar conditions (**'extension of findings from this grant to other grants'**).

Moreover, findings arising from an OLAF investigation may lead to criminal prosecution under national law.

#### 22.5.2 Findings in other grants

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<sup>14</sup> Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council of 11 September 2013 concerning investigations conducted by the European Anti-Fraud Office (OLAF) and repealing Regulation (EC) No 1073/1999 of the European Parliament and of the Council and Council Regulation (Euratom) No 1074/1999 (OJ L 248, 18.09.2013, p. 1).

<sup>15</sup> Council Regulation (Euratom, EC) No 2185/1996 of 11 November 1996 concerning on-the-spot checks and inspections carried out by the Commission in order to protect the European Communities' financial interests against fraud and other irregularities (OJ L 292, 15.11.1996, p. 2).

<sup>16</sup> Regulation (EU, Euratom) No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union and repealing Council Regulation (EC, Euratom) No 1605/2002 (OJ L 298, 26.10.2012, p. 1).

The Commission may extend findings from other grants to this grant ('**extension of findings from other grants to this grant**'), if:

- (a) the beneficiary concerned is found, in other EU or Euratom grants awarded under similar conditions, to have committed systemic or recurrent errors, irregularities, fraud or breach of obligations that have a material impact on this grant and
- (b) those findings are formally notified to the beneficiary concerned – together with the list of grants affected by the findings – no later than two years after the payment of the balance of this grant.

The extension of findings may lead to the rejection of costs (see Article 42), reduction of the grant (see Article 43), recovery of undue amounts (see Article 44), suspension of payments (see Article 48), suspension of the action implementation (see Article 49) or termination (see Article 50).

### 22.5.3 Procedure

The Commission will formally notify the beneficiary concerned the systemic or recurrent errors and its intention to extend these audit findings, together with the list of grants affected.

22.5.3.1 If the findings concern **eligibility of costs**: the formal notification will include:

- (a) an invitation to submit observations on the list of grants affected by the findings;
- (b) the request to submit **revised financial statements** for all grants affected;
- (c) the **correction rate for extrapolation** established by the Commission on the basis of the systemic or recurrent errors, to calculate the amounts to be rejected if the beneficiary concerned:
  - (i) considers that the submission of revised financial statements is not possible or practicable or
  - (ii) does not submit revised financial statements

The beneficiary concerned has 90 days from receiving notification to submit observations, revised financial statements or to propose a duly substantiated **alternative correction method**. This period may be extended by the Commission in justified cases.

The Commission may then start a rejection procedure in accordance with Article 42, on the basis of:

- the revised financial statements, if approved;
- the proposed alternative correction method, if accepted or
  - the initially notified correction rate for extrapolation, if it does not receive any observations or revised financial statements, does not accept the observations or the proposed alternative correction method or does not approve the revised financial statements.

22.5.3.2 If the findings concern **substantial errors, irregularities or fraud** or **serious breach of obligations**: the formal notification will include:

- (a) an invitation to submit observations on the list of grants affected by the findings and
- (b) the flat-rate the Commission intends to apply according to the principle of proportionality.

The beneficiary concerned has 90 days from receiving notification to submit observations or to propose a duly substantiated alternative flat-rate.

The Commission may then start a reduction procedure in accordance with Article 43, on the basis of:

- the proposed alternative flat-rate, if accepted or
- the initially notified flat-rate, if it does not receive any observations or does not accept the observations or the proposed alternative flat-rate.

## **22.6 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, any insufficiently substantiated costs will be ineligible (see Article 6) and will be rejected (see Article 42).

Such breaches may also lead to any of the other measures described in Chapter 6.

## **ARTICLE 23 – EVALUATION OF THE IMPACT OF THE ACTION**

### **23.1 Right to evaluate the impact of the action**

The Commission may carry out interim and final evaluations of the impact of the action measured against the objective of the EU programme.

Evaluations may be started during implementation of the action and up to five years after the payment of the balance. The evaluation is considered to start on the date of the formal notification to the coordinator or beneficiaries.

The Commission may make these evaluations directly (using its own staff) or indirectly (using external bodies or persons it has authorised to do so).

The coordinator or beneficiaries must provide any information relevant to evaluate the impact of the action, including information in electronic format.

### **23.2 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the Commission may apply the measures described in Chapter 6.



## **SECTION 3 RIGHTS AND OBLIGATIONS RELATED TO BACKGROUND AND RESULTS**

### **SUBSECTION 1 GENERAL**

#### **ARTICLE 23a – MANAGEMENT OF INTELLECTUAL PROPERTY**

##### **23a.1 Obligation to take measures to implement the Commission Recommendation on the management of intellectual property in knowledge transfer activities**

Beneficiaries that are universities or other public research organisations must take measures to implement the principles set out in Points 1 and 2 of the Code of Practice annexed to the Commission Recommendation on the management of intellectual property in knowledge transfer activities<sup>17</sup>.

This does not change the obligations set out in Subsections 2 and 3 of this Section.

The beneficiaries must ensure that researchers and third parties involved in the action are aware of them.

##### **23a.2 Consequences of non-compliance**

If a beneficiary breaches its obligations under this Article, the Commission may apply any of the measures described in Chapter 6.

#### **ARTICLE 32 – RECRUITMENT AND WORKING CONDITIONS FOR RESEARCHERS**

##### **32.1 Obligation to take measures to implement the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers**

The beneficiaries must take all measures to implement the principles set out in the Commission Recommendation on the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers<sup>21</sup>, in particular regarding:

- working conditions;
- transparent recruitment processes based on merit, and
- career development.

The beneficiaries must ensure that researchers and third parties involved in the action are aware of them.

##### **32.2 Consequences of non-compliance**

If a beneficiary breaches its obligations under this Article, the Commission may apply any of the measures described in Chapter 6.

## ARTICLE 35 – CONFLICT OF INTERESTS

### 35.1 Obligation to avoid a conflict of interests

The beneficiaries must take all measures to prevent any situation where the impartial and objective implementation of the action is compromised for reasons involving economic interest, political or national affinity, family or emotional ties or any other shared interest (**'conflict of interests'**).

They must formally notify to the Commission without delay any situation constituting or likely to lead to a conflict of interests and immediately take all the necessary steps to rectify this situation.

The Commission may verify that the measures taken are appropriate and may require additional measures to be taken by a specified deadline.

### 35.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43) and the Agreement or participation of the beneficiary may be terminated (see Article 50).

Such breaches may also lead to any of the other measures described in Chapter 6.

## ARTICLE 36 – CONFIDENTIALITY

### 36.1 General obligation to maintain confidentiality

During implementation of the action and for four years after the period set out in Article 3, the parties must keep confidential any data, documents or other material (in any form) that is identified as confidential at the time it is disclosed (**'confidential information'**).

If a beneficiary requests, the Commission may agree to keep such information confidential for an additional period beyond the initial four years.

If information has been identified as confidential only orally, it will be considered to be confidential only if this is confirmed in writing within 15 days of the oral disclosure.

Unless otherwise agreed between the parties, they may use confidential information only to implement the Agreement.

The beneficiaries may disclose confidential information to their personnel or third parties involved in the action only if they:

- (a) need to know to implement the Agreement and
- (b) are bound by an obligation of confidentiality.

This does not change the security obligations in Article 37, which still apply.

The Commission may disclose confidential information to its staff, other EU institutions and bodies. It may disclose confidential information to third parties, if:

- (a) this is necessary to implement the Agreement or safeguard the EU's financial interests and
- (b) the recipients of the information are bound by an obligation of confidentiality.

Under the conditions set out in Article 4 of the Rules for Participation Regulation No 1290/2013<sup>23</sup>, the Commission must moreover make available information on the results to other EU institutions, bodies, offices or agencies as well as Member States or associated countries.

The confidentiality obligations no longer apply if:

- (a) the disclosing party agrees to release the other party;
- (b) the information was already known by the recipient or is given to him without obligation of confidentiality by a third party that was not bound by any obligation of confidentiality;
- (c) the recipient proves that the information was developed without the use of confidential information;
- (d) the information becomes generally and publicly available, without breaching any confidentiality obligation, or
- (e) the disclosure of the information is required by EU or national law.

## 36.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

## ARTICLE 38 – PROMOTING THE ACTION – VISIBILITY OF EU FUNDING

### 38.1 Communication activities by beneficiaries

#### 38.1.1 Obligation to promote the action and its results

The beneficiaries must promote the action and its results, by providing targeted information to multiple audiences (including the media and the public) in a strategic and effective manner.

This does not change the dissemination obligations in Article 29, the confidentiality obligations in Article 36 or the security obligations in Article 37, all of which still apply.

Before engaging in a communication activity expected to have a major media impact, the beneficiaries must inform the Commission (see Article 52).

#### 38.1.2 Information on EU funding – Obligation and right to use the EU emblem

Unless the Commission requests or agrees otherwise or unless it is impossible, any communication activity related to the action (including in electronic form, via social media, etc.) and any infrastructure, equipment and major results funded by the grant must:

- (a) display the EU emblem and
- (b) include the following text:

For communication activities: *“This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 761708”.*

For infrastructure, equipment and major results: *“This [infrastructure][equipment][insert type of result] is part of a project that has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 761708”.*

When displayed together with another logo, the EU emblem must have appropriate prominence.

For the purposes of their obligations under this Article, the beneficiaries may use the EU emblem without first obtaining approval from the Commission.

This does not, however, give them the right to exclusive use.

Moreover, they may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means.

### 38.1.3 Disclaimer excluding Commission responsibility

Any communication activity related to the action must indicate that it reflects only the author's view and that the Commission is not responsible for any use that may be made of the information it contains.

## 38.2 Communication activities by the Commission

### 38.2.1 Right to use beneficiaries' materials, documents or information

The Commission may use, for its communication and publicising activities, information relating to the action, documents notably summaries for publication and public deliverables as well as any other material, such as pictures or audio-visual material received from any beneficiary (including in electronic form).

This does not change the confidentiality obligations in Article 36 and the security obligations in Article 37, all of which still apply.

If the Commission's use of these materials, documents or information would risk compromising legitimate interests, the beneficiary concerned may request the Commission not to use it (see Article 52).

The right to use a beneficiary's materials, documents and information includes:

- (a) **use for its own purposes** (in particular, making them available to persons working for the Commission or any other EU institution, body, office or agency or body or institutions in EU Member States; and copying or reproducing them in whole or in part, in unlimited numbers);
- (b) **distribution to the public** (in particular, publication as hard copies and in electronic or digital format, publication on the internet, as a downloadable or non-downloadable file, broadcasting by any channel, public display or presentation, communicating through press information services, or inclusion in widely accessible databases or indexes);
- (c) **editing or redrafting** for communication and publicising activities (including shortening, summarising, inserting other elements (such as meta-data, legends, other graphic, visual, audio or text elements), extracting parts (e.g. audio or video files), dividing into parts, use in a compilation);
- (d) **translation**;
- (e) giving **access in response to individual requests** under Regulation No 1049/2001<sup>25</sup>, without the right to reproduce or exploit;
- (f) **storage** in paper, electronic or other form;
- (g) **archiving**, in line with applicable document-management rules, and
- (h) the right to authorise **third parties** to act on its behalf or sub-license the modes of use set out in Points (b), (c), (d) and (f) to third parties if needed for the communication and publicising activities of the Commission.

If the right of use is subject to rights of a third party (including personnel of the beneficiary), the beneficiary must ensure that it complies with its obligations under this Agreement (in particular, by obtaining the necessary approval from the third parties concerned).

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<sup>25</sup> Regulation (EC) No 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding



Where applicable (and if provided by the beneficiaries), the Commission will insert the following information:

“© – [year] – [name of the copyright owner]. All rights reserved. Licensed to the European Union (EU) under conditions.”

### **38.3 Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

## **ARTICLE 46 – LIABILITY FOR DAMAGES**

### **46.1 Liability of the Commission**

The Commission cannot be held liable for any damage caused to the beneficiaries or to third parties as a consequence of implementing the Agreement, including for gross negligence.

The Commission cannot be held liable for any damage caused by any of the beneficiaries or third parties involved in the action, as a consequence of implementing the Agreement.

### **46.2 Liability of the beneficiaries**

Except in case of force majeure (see Article 51), the beneficiaries must compensate the Commission for any damage it sustains as a result of the implementation of the action or because the action was not implemented in full compliance with the Agreement.



## ANNEX 2 - SAEA TECHNICAL REPORT TEMPLATE

### Document Description

The technical report includes an explanation of work carried out, an overview of progress and a publishable summary (describing the overview of the results and the exploitation and dissemination, the conclusions of the actions and its socio-economic impacts).

#### 1. Public summary

Description of the objectives of the Application Experiment (concept and objectives), progress beyond state-of-the-art and potential innovation.

Including

- High-resolution picture(s) of the prototype with caption(s)
- Video of the prototype
- Partners list
- Description of problem to be solved

#### 2. Results and Analysis

- Short discussion of the state-of-the-art
- . Describe the results including required details
- Use diagrams, tables and figures for overview and understanding
- Show results vs. requirements vs. state of the art
- Describe cooperation of the Parties
- Give an interpretation and/or analysis of the results
- Highlight major achievements

#### 3. Business strategy and exploitation

- Market description
- Strategic positioning & unique value proposition
- Sustainability plan
- Value Chain description
- Public co-funding opportunities
- Private funding opportunities

#### 5. Summary and Conclusion

Summarize major results and achievements and evaluate them compared with the objectives

#### 6. Declaration of costs

This table is CONFIDENTIAL, declaring the Selected Third Party costs (Balance payment and in-kind) at the end of the Application Experiment versus estimated costs presented inside the Specific Application Experiment Agreement (SAEA).

Selected Third Party Costs (Balance Payment and in-kind)	Estimated (SAEA)			Declared		
	Total estimated cost EUR	Rate %	Maximum DigiFed contribution EUR	Total declared cost EUR	Rate %	Maximum DigiFed contribution EUR
1. Personnel		70				
2. Consumables, materials, component		70				
3. Travel		70				
4. Subcontracting		70				
5. Indirect costs		70				
		70				

All information will be delivered by the Selected Third Party.

## ANNEX 3 - SPECIFIC APPLICATION EXPERIMENT AGREEMENT

### DIGIFED Specific Application Experiment Agreement

This DigiFed Specific Application Experiment Agreement for implementation of the Application Experiment by the Selected Third Party, hereinafter referred to as the "Specific Agreement", is entered into by and between:

**Commissariat à l'énergie atomique et aux énergies alternatives**, a French state-owned research entity with a scientific, technical or industrial activity, duly organised under the laws of France and having its registered office located Bâtiment Le Ponant D - 25 rue Leblanc, 75015 Paris, France, and declared at the Paris Register of Commerce and Trade under the following registration number : R.C.S. PARIS B 775 685 019, herein represented by Sébastien DAUVE, Head of the Department **DSYS** hereinafter "Cascade Funding Partner" and "Monitoring Partner"

And

..., an organisation under the laws of ..., having its registered office at ..., herein represented by ..., hereinafter referred to as "XXX"

OPTIONAL  
and

..., an organisation under the laws of ..., having its registered office at ..., herein represented by ..., hereinafter referred to as "XXX"

hereinafter referred to as "Selected Third Party"

And

OPTIONAL if there is an Innovation Management Partner

..., an organisation under the laws of ..., having its registered office at ..., herein represented by ..., hereinafter referred to as "Innovation Management Partner" involved in the Application Experiment

Hereinafter sometimes individually or collectively referred to as "Party" or "Parties".

Whereas the Cascade Funding Partner, the Selected Third Party and the Monitoring Partner have agreed the main terms and conditions to implement the Application Experiment in the course of the DigiFed Project by signing the Standard Application Experiment Agreement n° ..... which form part of this Standard Application Experiment Agreement.

Now therefore it has been agreed as follows:

### 1. TERMS AND CONDITIONS FOR THE APPLICATION EXPERIMENT

The Selected Third Party shall implement the Application Experiment in accordance with the following:

Description of the Application Experiment	
Acronym	
Call N°	
Full Title	
DigiFed call identification	
Starting date of the Application Experiment:	
Duration of the Application Experiment:	

Date of selection of the Selected Third Party(ies) by the Evaluation Committee	
--	--

Application Experiment outcomes	
Expected results in terms of Industrial Impact	
Expected results in terms of building blocks, IPs, software and hardware solution	

Implementation of the Application Experiment	
Outline scope of work	
Milestones	
Deliverables	
TASK 1	
Task 1.1	
Description	-
Starting date	T0
Duration	
Inputs	
Actions per partner	
Deliverable date and resp partner	-
Task 1.2	
TASK 2	
TASK 3	
TASK 4	

Parties IPR	
Beneficiary's Background (including limitations and restrictions)	<describe Background >
[If 2 Selected Third Party, please complete the name of the Selected Third Party XXX] Selected Third Party's Background (including limitations and restrictions)	<describe Background >
OPTIONAL if 2 Selected Third Party : [Please complete the name of the Selected XXX] Third Party Selected Third Party's Background (including limitations and restrictions)	<describe Background >
Joint Results Option chosen by the Beneficiary	Option 1 <input type="checkbox"/> or Option 2 <input type="checkbox"/>

<b>Financial conditions</b>	
Financial Support	Corresponding to 70% of the Selected Third Party total eligible costs of the Application Experiment accordingly to H2020 Funding Rules for Innovation Action and within the limit of the ceiling defined in the guidelines of the DigiFed project.
Schedule of payment	50% at Standard Application Experiment Agreement signature and 50% balance payment at completion of Application Experiment and validation of final report (deliverables validated)
Payment conditions	
Application Experiment rejection	In case the Standard Application Experiment Agreement is not signed by all the Parties within 4 months (120 days) from the notice day and time of the selection of the Selected Third Party, the Application Experiment will be simply rejected, without appeal, and without any Financial Support payment.
Application Experiment extension	At the midterm of the Application Experiment, a checkpoint will be made by the Monitoring Partner to validate if the Application Experiment will be completed on time or if an extension is requested. One extension only, of a maximum of three months, will be given. Balance payment will be post-poned to the end of the extension. Passed the extension time, the Application experiment will be terminated. In any case, with or without forced termination, the balance payment is conditional upon provision of the final report by the Selected Third Party.
Penalties	Depends on each Standard Application Experiment Agreement

<b>Parties involved in the Application Experiment</b>	
Cascade Funding Partner	
<b>Name &amp; surname</b>	
<b>Department</b>	
<b>Tel:</b>	
<b>Email:</b>	
Selected Third Party	
<b>Name &amp; surname</b>	
<b>Department</b>	
<b>Tel:</b>	
<b>Email:</b>	
Other Selected Third Party	<i>Optional</i>
<b>Name &amp; surname</b>	
<b>Department</b>	
<b>Tel:</b>	
<b>Email:</b>	
Monitoring Partner	
<b>Name &amp; surname</b>	
<b>Department</b>	
<b>Tel:</b>	
<b>Email:</b>	
<b>Date of agreement of all the Parties involved in the Application Experiment</b>	

The Selected Third Party will estimate costs, per category of costs to be covered by the Financial Support and its (their) in-kind contribution. Short description of costs will also be given.

The Financial Support represent 70% of the total costs while in-kind contribution of the company represents 30% of the total costs, in compliance with H2020 Funding Rules for Innovation Action and within the limit of the ceiling defined in the guidelines of the DigiFed project.

Selected Third Party costs (Financial Support and in-kind)	Estimated (SAEA)			Short description
	Total estimated cost EUR	rate Max 70%	Maximum DigiFed contribution EUR	
1. Personnel				
2. Consumables, materials, components				
3. Travel				
4. Subcontracting				
5. Indirect costs				
Total costs				

## 2. MISCELLANEOUS

2.1 This Specific Application Experiment Agreement, composed of the Standard Application Experiment Agreement and its Annexes 1 to 3 included, constitutes the sole and complete understanding of the Parties with respect to its subject matter and supersedes all prior or contemporaneous communications between the Parties concerning such subject matter. This Specific Application Experiment Agreement will be governed and construed according to the choice of governing and constructive law set forth in the Standard Application Experiment Agreement.

2.2 Save to the extent expressly modified in this Specific Application experiment Agreement, all of the terms of the Standard Application Experiment Agreement and Annexes 1-3 included shall apply to this Specific Application Experiment Agreement. Save to the extent expressly specified in this Specific Application Experiment Agreement, all capitalized terms used in this Specific Application Experiment Agreement which are defined in the Standard Application Experiment Agreement shall have the meaning set force in the Standard Application Experiment Agreement. In the event of a conflict between this Specific Application Experiment Agreement and the terms of the Standard Application Experiment Agreement, the terms of the Specific Application Experiment Agreement shall apply.

2.3 The terms of Article 11.1 of the Standard Application Experiment Agreement shall apply to the signing and enforceability of this Annex 3.

Done in xx (XX) originals, one for each Party.

Signature Selected Third Party N° 1	Signature Selected Third Party N°2
Date :	Date :

Cascade Funding Partner/Monitoring Partner
Date :

## 4.2 - EDIH BOOKLET (some pages)

Available on [https://digifed.org/wp-content/uploads/2023/02/DigiFed\\_DIH-Ecosystem-booklet-2.pdf](https://digifed.org/wp-content/uploads/2023/02/DigiFed_DIH-Ecosystem-booklet-2.pdf)





DIH and EDIH-Booklet of the DigiFed-Ecosystem



## Executive Summary

The present document compiles and presents a concise description of 25 DIHs and EDIHs from 14 European countries in the DigiFed DIH-ecosystem, for the purpose of facilitating and fostering concrete collaboration between these structures. This network has been built throughout the running of the project and is based on different levels of collaboration between these (E)DIHs and the DIHs within the DigiFed-consortium.

A subset of the (E)DIHs have contributed to the DigiFed-Final Event by means of participating in the DIH-pitching session, providing a keynote and panel discussion, and taking part in the speed-dating DIH-matchmaking activity during the 30<sup>th</sup> of November. Additional material related to their specific participation is referenced in the corresponding sections of the booklet.

The booklet closes with a display of the geographical coverage of the DigiFed DIH-ecosystem.

DIH and EDIH-Booklet of the DigiFed-Ecosystem



## Introduction and context

The DigiFed-Innovation Action DigiFed gathers 12 partners with expertise in Digital technologies and innovation management from different countries, an established ecosystem, and a view to continue expanding and linking with other networks to create an EU-wide Federation of Digital Innovation Hubs. DigiFed aims to strengthen a European high-tech ecosystem through the fostering and adoption of advanced digital technologies, particularly cyber physical and embedded systems, by start-ups and SMEs as well as fostering collaboration between such companies with large corporates.

To achieve this objective, DigiFed has developed and experimented with different instruments, the so-called DigiFed-Innovation Pathways, and developed an extended network of DIHs across Europe to rely upon. Moreover, these instruments have been documented and prepared<sup>1</sup> to be offered to the DigiFed-network of DIHs as B2B products that may be implemented in a collaborative setting.

The first step to achieve this type of concrete collaboration is to identify and understand the objectives, technological focus, economic sectors, challenges, and collaboration priorities of this DIH-network. Hence, the objective of this booklet is to document this information and facilitate opportunities for collaboration within this network.

It is worth noting that many of the DIHs and European-DIHs (EDIH) presented in this booklet have actively collaborated with the DigiFed-project during its running time in different ways, from networking to joint-application for projects and so on. Furthermore, some of the DIHs and EDIHs in the booklet have also participated in the DigiFed-Final Event<sup>2</sup> as keynotes and panellists, but most notably, as speakers in the Pitching-Session to foster DIH-collaboration. Thus, the references to the corresponding DIH-pitch presentations can also be found in this booklet.

Thus, the DigiFed-DIH and EDIH Booklet compiles concise information of 25 (E)DIHs in the DigiFed-ecosystem, including key contact persons such that collaboration is facilitated. These (E)DIHs come from different regions in 14 countries in Europe, i.e. Austria, Bulgaria, Croatia, Finland, France, Germany, Greece, Hungary, Italy, Slovenia, Slovakia, Spain, The Netherlands and the United Kingdom, in addition to several African regions covering economic sectors such as manufacturing, energy and utilities, agriculture, health, biotechnology, and many others including their sub-branches of specialization.

DIH and EDIH-Booklet of the DigiFed-Ecosystem



## DIHs and EDIHs in the DigiFed Ecosystem

### (E)DIH INNOVATE



**Anna Katharina Beyer**  
Project Manager  
(E)DIH INNOVATE  
[anna.beyer@dih-innovate.at](mailto:anna.beyer@dih-innovate.at)  
[www.dih-innovate.at](http://www.dih-innovate.at)

**Technological focus:** AI (e.g. robotics, computer vision, automation), CPS (e.g. digital twins, smart industry, IoT), and advanced digital skills (big data analytics, forecasting, AR/VR etc).

**Economic sectors:** Food and agriculture, forestry, wood processing industry, energy.

**Flagship service:** Prototyping, ideation, trend scouting, accelerator programs, digital maturity assessment, experimentation infrastructure, trainings, funding support.

**Foreseen challenges:** Impact creation, time constraints within target groups, building trust, data access, language barriers, access to target groups.

**Interests and requirements for collaboration:** cross-sector and cross-country collaborations, expanding the EU-network for collaboration and SME support activities (e.g. match-making).



**Region of operation:** Austria and Europe

### 4PDIH



**Jure Trilar**  
4PDIH Lead  
4PDIH  
[jure@4pdih.com](mailto:jure@4pdih.com)

**Technological focus:** AI, IoT, blockchain, cyber-security.

**Economic sectors:** Agriculture, public sector, education, manufacturing, tertiary services.

**Flagship service:** Municipalities data tools, IoT in agriculture, blockchain prototyping, funding and innovation support, democratization, and ethics of technology.

**Foreseen challenges:** Funding, staff

**Interests and requirements for collaboration:** Joint tenders and co-funding calls, technology, and practices exchange.

**Additional information:** Pitch presented at DigiFed-Final Event. Slides available [here](#).



**Region of operation:** Ljubljana and Slovenia

### AEDIB | NET



**Patrik Schumacher**  
Project Consultant  
Steinbeis Europa  
Zentrum  
[patrik.schumacher@steinbeis-europa.de](mailto:patrik.schumacher@steinbeis-europa.de)

**Technological focus:** All kinds of digital innovation in the four main economies: Climate Smart Agriculture, Smart Cities, Digital Trade and Clean Tech.

**Economic sectors:** Climate Smart Agriculture, Smart Cities, Digital Trade and Clean Tech.

**Interests and requirements for collaboration:** African-European collaborations between African and European DIHs.

**Additional information:** Network of 11 African DIHs. Keynote speaker at the Panel 'Capacity building and EDIH collaboration' at DigiFed-Final Event. Slides available [here](#).



**Region of operation:** Africa

Here you will find the location of the DIHs and EDIHs across Europe according to their economic sectors<sup>3</sup>.



<sup>3</sup> The most referenced Economic Sectors have been selected, i.e. agriculture related industries and sectors, health industry and sector, manufacturing, and energy and mobility sectors. For further details, please visit the individual entries in the booklet.



DIH and EDIH-Booklet of the DigiFed-Ecosystem



Figure 3. (E)DIHs in the DigiFed-ecosystem with manufacturing as economic sector of focus.



Figure 4. (E)DIHs in the DigiFed-ecosystem with energy and related industries as economic sector of focus.

### 4.3 – DigiFed innovation pathways – Information Package

[https://digifed.org/wp-content/uploads/2023/03/DigiFed-Innovation-Pathways-Information-Package\\_v5.pdf](https://digifed.org/wp-content/uploads/2023/03/DigiFed-Innovation-Pathways-Information-Package_v5.pdf)



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

# DigiFed Innovation Pathways Information package for DigiFed reproducibility

V4.0





## Information Package

Single/Twin Application Experiment (SAE/TAE)	
Definition	The SAE/TAE facilitates the collaboration of a European company with another European company of complementary expertise and a technical partner – here member of the DigiFed (DIH) consortium. This Pathway has been especially designed to foster the digitalisation of low digital companies through SME-SME collaboration by providing them with additional technology expertise beside the Financial Support to Third Party.
Implementation within DigiFed	In the DigiFed framework, individual SAEs involved a DigiFed-technical partner and an SME (the applicant), which is awarded up to 55K EUR. TAEs considered two European SMEs with complementary expertise, which are awarded a maximum grant up to €55k for each SME. TAEs that include one non-digitally savvy company may also request technical support from a DigiFed-technical partner. The AEs were implemented via the launch of 3 dedicated open call for implementing the project over a 12-month period.
Minimum requirements to reproduce it according to the DigiFed-experience	<ul style="list-style-type: none"> <li>Human resources: <ul style="list-style-type: none"> <li>Community, marketing, and open call management. Legal management for contracts, NDAs, and IP/knowledge management</li> <li>Training programme to skill-up of the existing workforce in cooperation with SMEs</li> <li>Strong and permanent cooperation between the companies and the involved RTOs</li> </ul> </li> <li>Financial resources: <ul style="list-style-type: none"> <li>Awareness on public &amp; private funding opportunities, sustainable cascade funding. A minimum of 100K EUR to be allocated for larger projects with pilot testing</li> <li>Funding to explore innovation in areas of high risk-high reward</li> </ul> </li> <li>Infrastructures resources: <ul style="list-style-type: none"> <li>Collaborative hardware &amp; B2B platforms</li> <li>E-catalogue of services &amp; technical expertise available</li> </ul> </li> <li>Ecosystem building resources: <ul style="list-style-type: none"> <li>Network of E-DIHs, clusters for matchmaking facilitation.</li> <li>Legal framework for the go-to-market strategy.</li> <li>A follow-up process to improve the implementation of the solutions developed and thus the sustainability and interest of such AE.</li> </ul> </li> <li>Technical resources: <ul style="list-style-type: none"> <li>Access to an RTO to facilitate SAE/TAE for low tech companies</li> </ul> </li> </ul>
Possible revenue stream	<ul style="list-style-type: none"> <li>Funding by local authorities/programmes</li> <li>Include registration/participation fees</li> </ul>
DigiFed partners to partner with	<ul style="list-style-type: none"> <li><b>Minalogic / Minasmart</b> interested in the instrument as a whole</li> <li><b>CEA</b> potentially interested in a TWIN model also including RTO technology.</li> <li><b>BLUMORPHO</b> interested in (i) Partnership building; (ii) Business mentoring; (iii) Go-to-market strategy</li> <li><b>IKERLAN</b> interested in (i) Providing technical expertise for CPS/embedded, sensing, SHM, cybersecurity, AI and communication systems for industrial and harsh environments</li> <li><b>BME</b> interested in implementing adapted versions of the instrument</li> <li><b>AVL</b> interested in providing technical expertise for (i) SAE: CPS/ embedded, sensing, human centric; (ii) TAE: Automotive or general human sensing</li> <li><b>Digital Catapult</b> interested in providing technical expertise for AI Compute, Machine Learning and AI Ethics, experimentation with new network technologies, performance evaluation and benchmarking</li> </ul>

Digital Challenge (DC)	
Definition	<p>The DC-Innovation Pathway consists of a partnership between an industry leader (Digital Challenge Owner - DCO) and technology start-ups or mid-caps to accelerate the adoption of advanced technologies within the CPS and Embedded Systems sector while addressing some of the key challenges and opportunities across the industry.</p> <p>The DC-Innovation Pathway aims to consolidate collaboration between large corporate organisations, with unique challenges and looking for tailored solutions, and European Technology Innovators (SMEs/midcaps), with the right experience and expertise to solve /develop such technical digital challenges. The model includes the DigiFed methodology and guidelines which gives the DIHs the necessary tools to implement</p>

<b>Implementation within DigiFed</b>	In the DigiFed framework, the DCO with a specific need co-financed the selected innovative company, together with DigiFed, with up to 110K EUR (55K EUR each party) to allow them to develop the solution in 9 to 12 months.
<b>Minimum requirements to reproduce it</b>	<ul style="list-style-type: none"> <li>Finding of an industrial partner with a specific need and willing to invest in an open innovation process to identify or develop new solutions and POCs.</li> <li>Skills and resources to lead the process with/for them, such as: challenge definition, communication material, open calls process and methodology, contracting and project management and controlling (of the product/solution/PoC)</li> </ul>
<b>Possible revenue stream</b>	<ul style="list-style-type: none"> <li>100% costs covered by the DCO (for the open innovation services and associated with the development of the bespoke solution)</li> <li>Possible co-funding with some regional/national authority depending on the expected impact of the DC results on the local ecosystem.</li> </ul>
<b>DigiFed Partners to partner with</b>	<ul style="list-style-type: none"> <li><b>Digital Catapult, Minalogic/Minasmart, CEA, and Ikerlan</b> interested in the DC as a whole</li> <li><b>BLUMORPHO</b> interested in (i) Ideation process; (ii) Open call &amp; development management; (iii) Solutions scouting; (iv) Technology and business assessment</li> </ul>

### Generic Experiment Communities (GEC)

<b>Definition</b>	<p>Generic Experiments (GE) are designed to test new collaborations between research institutes and a group of SMEs as well as evaluate new co-financing mechanisms between European and regional funding to foster European industry digitalization.</p> <p>The goal of each GE is to build and animate a community of SMEs (between 6 and 20) around a specific technical topic (GE Topic) proposed by one DigiFed research centre, the GE owner. The GE co-creation mechanism connects the GE owner, being either the local DIH or the technology research center, and a community of European SME-participants that help to identify market needs, co-create technological solutions, and validate the prototypes. The GE community gather SMEs either from market or a technical sector.</p> <p>GE Topic and market segment can be designed to attract low or not digitized SMEs. Activities include workshops, demonstrations, interviews, surveys, etc., through which the GE-owner gathers inputs for the technological development roadmap and prototype development.</p>
<b>Implementation within DigiFed</b>	In the DigiFed framework a GE is financially supported through a combination of EU funds with regional funding instruments. Four GEs have been launched, involving 51 SMEs coming from 13 EU countries. A total of 230k€ of cascade funding has been distributed to the selected SMEs and 270k€ of co-financing have been leverage from regional authorities. Each GE member receives a 5K€ voucher for compensation for involvement in this community activity in a defined timeframe (6-12 months).
<b>Minimum requirements to reproduce it</b>	<ul style="list-style-type: none"> <li><b>Human resources:</b> Community management, collaborative project management, marketing, technical expertise, legal skills to manage contracts, NDAs &amp; IP. At least 3PM for a 12-months GE.</li> <li><b>Financial resources:</b> depending on the business model and the technical objectives but a minimum of 200K (or 12-18PM) for the technical development seems reasonable.</li> <li><b>Infrastructures resources:</b> places for collaborative working sessions, workshops, and technical test &amp; demonstration.</li> <li><b>Ecosystem building resources:</b> <ul style="list-style-type: none"> <li>Create specialized networks related to the specific topic of each GE.</li> <li>Access to a community of potential members through EDIHs to gather at least 10 members in each experiment.</li> </ul> </li> <li><b>Technical resources:</b> <ul style="list-style-type: none"> <li>a well-designed tech offers</li> <li>interested tech providers</li> <li>minimum TRL5</li> <li>agile infrastructure for fast technical development</li> <li>portfolio of technical solutions to enable innovation and support SMEs to overcome their digital gap.</li> </ul> </li> </ul>
<b>Possible revenue stream</b>	Co-funding, membership fees, programme-access/registration fee, priority access to technology to participants, regional/local co-funding
<b>DigiFed Partners to partner with</b>	<ul style="list-style-type: none"> <li><b>CEA, UL, IKERLAN</b> and BME are interested in the GE as a whole</li> <li><b>BLUMORPHO</b> interested in (i) Ideation process; (ii) Open call &amp; development; (iii) management; (iv) Solutions scouting; (v) Technology and business assessment</li> </ul>

## Value Proposition Mapping

	TWIN Application Experiments (TAE)	Digital Challenge (DC)	Generic Experiment Community (GEC)
<b>Product/service offered by DigiFed through the Instrument</b>	A DigiFed-Model for the implementation of an instrument to foster digitalization of SMEs through cross-border innovation-based collaboration. The model considers a methodology and guidelines for the implementation of the instrument	A DigiFed-Model for the implementation of an instrument to consolidate collaboration between large corporate companies and SMEs to develop tailored solutions for specific technical challenges. The model considers a methodology and guidelines for the implementation of the instrument	A DigiFed-Model for the implementation of an instrument to consolidate collaboration between SMEs and technical organisations to evaluate, refine and facilitate the adoption of digital technologies. The model considers a methodology and guidelines for the implementation of the instrument
<b>Proposed DIH-issues addressed/solved by the Instrument</b>	<ul style="list-style-type: none"> <li>Remove access barriers to new markets for DIH-customers, i.e. SMEs</li> <li>Reducing risks and removing obstacles for DIH-customers for the development and implementation of new innovative solutions</li> <li>Bridge the gap between businesses and technology, as well as between different technologies</li> </ul>	<ul style="list-style-type: none"> <li>Enhance the engagement between key stakeholders of the ecosystem, in particular between large organisations and the innovators community</li> <li>New services in the form of simpler procurement for large organisations</li> <li>New services in the form of reduced costs for large organisations (the PM/Procurement done by the DIH)</li> <li>New services in the form of targeted outreach to identify suitable solution providers</li> <li>Business growth within its (local) ecosystem</li> <li>Encouraging the competitiveness of technology innovators</li> <li>Improve market awareness around the industry needs</li> <li>Reduced uncertainty of larger corporate companies when outsourcing the development of solutions</li> <li>Mitigate red tape restrictions in large organisations through operating in a more dynamic setting</li> <li>Access to DIH ecosystems and its expertise</li> </ul>	<ul style="list-style-type: none"> <li>Improve and facilitate the usage and development of test-before-investing services</li> <li>Eliminate barriers and fears of SMEs to access and implement digital/technical solutions</li> <li>Limit and reduce errors SMEs may undertake when adopting new digital technologies</li> <li>Flatten the learning curve of SMEs when being introduced to new digital technologies</li> <li>Active involvement of local SMEs to build market awareness regarding digital/technical needs in local and more accessible markets</li> <li>Active involvement of European SMEs to identify global market trends and provides opportunities for cross-border networking and market expansion for all parties</li> </ul>
<b>Identified DIH-gains, outcomes, and benefits</b>	<ul style="list-style-type: none"> <li>Improve the opportunities to consolidate collaboration between companies in different</li> </ul>	<ul style="list-style-type: none"> <li>Unveil niche opportunities by consolidating collaboration with large corporate companies,</li> </ul>	<ul style="list-style-type: none"> <li>Improve and increase the usage of the infrastructure of technical partners of DIHs</li> </ul>

<b>through the instrument</b>	<p>countries, i.e. achieve concrete collaboration while promoting digitalization of companies across Europe.</p> <ul style="list-style-type: none"> <li>• Create programmes to foster digitalization of non-digital SMEs</li> <li>• Improve cooperation between compatible businesses that would otherwise be unlikely to collaborate</li> <li>• Increasing the offering of services to customers</li> <li>• Unveil or create new revenue streams for affiliates and customers of DIHs, and potentially attract new customers</li> </ul>	<p>including opportunities to finance new DIH-services</p> <ul style="list-style-type: none"> <li>• Facilitate access to business opportunities for SMEs</li> <li>• Extend DIH-ecosystems and activities</li> <li>• Increase the services' offering to customers</li> <li>• Unveil or create new revenue streams for affiliates and customers of DIHs, and potentially attract new customers</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate the development of programmes for testing, refining, promoting, and implementing advanced digital/technical development</li> <li>• Trust creation within the local ecosystem and for engagement with DIHs</li> <li>• Facilitate access to a typically untapped set of customers, i.e. non-digitally savvy SMEs</li> <li>• Increase the offer of services to customers</li> <li>• Unveil or create new revenue streams for affiliates and customers of DIHs, and potentially attract new customers</li> <li>• Access to combined EU and regional funding opportunities dedicated to improving access to non-digitally savvy SMEs</li> </ul>
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