

Fostering DIHs for Embedding Interoperability in Cyber-Physical Systems of European SMEs



Guide for Proposers

Grant Agreement:
872548



Table of Contents

1. Introduction	3
2. Open Call Objectives	5
2.1. Overview	5
2.2. Technological topics	5
3. Open Call Information.....	4
4. DIH4CPS Open Call Requirements	5
4.1 Eligibility Criteria.....	5
4.2 Additional Requirements	5
4.3 KPIS	5
5. Submission of Proposals	6
5.1 General Information.....	6
5.2 Submission process.....	6
5.3 Acknowledgement of receipt	8
6. Indicative budget for DIH4CPS Open Call 1.....	9
7. Evaluation Criteria	10
8. Relationship with DIH4CPS and funding scheme	12
8.1 Relationship with the DIH4CPS and funding scheme.....	12
8.2 Funding scheme.....	12
8.3 Intellectual property rights	13
9. Support to Experiments	14
9.1 Call Helpdesk	14
9.2 Useful Documents	14

1. Introduction

The initiative for Fostering DIHs for Embedding Interoperability in Cyber-Physical Systems of European SMEs (DIH4CPS) will help European enterprises overcome innovation hurdles and establish Europe as a world-leading innovator of the Fourth Industrial Revolution. DIH4CPS is creating an embracing and interdisciplinary network of DIHs and solution providers, focused on cyber-physical and embedded systems (CPES), interweaving knowledge, technologies from different domains and connecting regional clusters with the pan-European expert pool of DIHs.

Open Call 2 will add at least 8 DIHs to the DIH4CPS ecosystem building on the 26 DIHs that are currently part of the network.

Below are the DIHs currently involved in DIH4CPS:

Name	City, Country
BIBA	Bremen, Germany
ICT 4 Manufacturing DIH	Lyon, France
Quai Alpha	Lorraine, France
Politecnico di Milano	Milan, Italy
Innovalia ZDM Digital Innovation Hub	Bilbao, Spain
Basque Digital Innovation Hub	Bilbao, Spain
Hub 4.0 of Manufacturing Sectors in Valencian Region	Valencia, Spain
Data Cycle Hub	Valencia, Spain
PRODUTECH Digital Innovation Hub National Platform	Porto, Portugal
Digital Manufacturing Innovation Hub Wales	Swansea, United Kingdom
Luxembourg Institute of Science and Technology	Luxembourg, Luxembourg
HPC4Poland	Poznan, Poland
Innomine	Budapest, Hungary
iMan Norte Hub	Porto, Portugal
Digital Innovation Hub Trentino	Trentino, Italy
Digital Innovation Hub Industry 4.0	Burgos, Spain
Swiss Smart Factory	Bienne, Switzerland
MADE	Milan, Italy
CIDIHUB – Canary Islands Digital Innovation Hub	Canary Islands, Spain
DIHBAI-TUR	Mallorca, Spain
Czech Institute of Informatics, Robotics and Cybernetics	Prague, Czech
Digital Innovation Hub Andalucía Agrotech	Seville, Spain
Basque Digital Innovation Hub	Bilbao, Spain
Digital Innovation Hub in Healthcare and Biotech	Ljubliana, Slovenia
Smart Production Systems Saxony	Dresden, Germany
inNova4Tech	Lisbon, Portugal

In addition to these DIHs, DIH4CPS has 23 experiments with SMEs that can be found below (more information in <https://dih4cps.eu>):

N	Description	Sector	Country
1	CPS for safe and sustainable aquaculture farming	Aquaculture	Germany
2	Complete clinical data with data from patient environment	Healthcare	France
3	Personalised interactive Tourist Platform	Tourism	France
4	Energy management in buildings and residential sector	Energy	Italy
5	Advanced 3D audio-visual installations for hospitality events, trading shows and conferences	Entertainment	Spain
6	Increased productivity in olive processing by implementing CPS and image recognition	Food Processing	Spain
7	CPS for security and wellbeing of shop floor workers	Healthcare	Portugal
8	Track and trace scheduled product in an open and hostile environment by deploying CPS.	Construction	UK
9	Smart Mobility using Cyber-Physical embedded systems	Mobility	Luxembourg
10	Sensorised planter boxes for urban orchards	Agriculture	Poland
11	Capacity planning and production optimization for custom machine orders for SMEs	Machine Production	Hungary
12	M-Aid	Manufacturing	Spain
13	AgroCPS	Agriculture	Spain
14	NeuroCPS4Maintenance	Manufacturing	Spain
15	Aident	Healthcare	Spain
16	CPS4Agri	Agriculture	Spain
17	Francis	Manufacturing	Germany
18	Cogintel	Manufacturing	Czech Republic
19	HealthyFitness	Retail, Healthcare	Slovenia
20	CPS4Retail	Retail	Switzerland
21	Step	Healthcare	Italy
22	Gem-Edge	Retail	Italy
23	IS2 Industries	Manufacturing	Portugal

2. Open Call Objectives

2.1. Overview

Open Call 2 aims to attract new DIHs that are devoted to CPES and would like to bolster and participate in the existing DIH4CPS network. A successful proposal should demonstrate fully how a DIH applicant would provide the network with new capabilities, reinforce the existing consortium and demonstrate how they themselves would benefit from participation in the network in the future. This might include technical or sectoral additions to the ecosystem as well as the ability to expand the DIH4CPS network into new geographies. New DIHs will reinforce and build on the work of the existing consortium as well as providing novel capacities and dissemination actions. Moreover, geographical regions which are currently under-represented in the consortium will be prioritized.

2.2. Technological topics

DIHs should demonstrate their capacity to assist European Start-ups, SMEs and Mid-Caps paving the way for innovative products or services with advanced digital technologies in the field of Cyber-Physical and Embedded Systems (CPES). They should have technical capacities in one of the following technological topics (but not strictly limited to):

1. **Digital twins.** This concept refers to a replica of physical assets, processes, devices or systems which allows real-time optimization. Examples of applications of this technology can be found within various sectors, such as healthcare or manufacturing.
2. **Augmented reality.** This topic refers to the technology behind the interactive experience of a real-world environment enhanced by computer-generated perceptual information. Common sectors for this technology include healthcare, entertainment, tourism and architecture.
3. **Artificial Intelligence.** Human decision-making and control over physical systems could, in various applications, be replaced with mechanisms related to artificial intelligence. Customized artificial intelligence developments are also used for Big Data Analytics. Algorithms based on artificial intelligence have a broad spectrum of applicability including proactive maintenance, logistics and agriculture.
4. **Dashboard controls.** Some industrial control systems and medical monitoring systems require surveillance and inputs from human operators. Providing the human operator with valid graphic information is key to the successful control of physical systems and processes.

3. Open Call Information

Identifier: DIH4CPS OC2

Call title: Open Call for DIHs for Embedding Interoperability in Cyber-Physical Systems European Network

Project full name: Fostering DIHs for Embedding Interoperability in Cyber-Physical Systems of European SMEs

Acronym: DIH4CPS

Grant agreement number: 872548

Deadline: 13/12/2021, at 17:00 Brussels local time

Expected duration of participation: 8 Months, with expected **start January 28, 2022**

Indicative budget for DIH4CPS Call-2: € 160 000

Lump sum request per proposal: € 20 000

Submission language: English

Internet address for full open call information: www.dih4cps.eu

Submission site: <https://dih4cps.eu/open-calls/>

A contact tool is available inside the submission site.

Mail: calls@dih4cps.eu

4. DIH4CPS Open Call Requirements

4.1 Eligibility Criteria

1. Applicants must be legal entities established in countries eligible for participation in EC H2020 projects, as indicated in the following documents:
https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-a-countries-rules_en.pdf
http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/3cpart/h2020-hi-list-ac_en.pdf
2. The DIH must be enrolled in the EC DIH catalogue¹ or provide a convincing plan on how successful enrolment will be completed before the end of the experiment.
3. Applicants can only be selected for funding for one proposal.
4. Applicants shall not have any potential conflict of interest with the selection process and during the implementation of the project. All cases of potential conflict of interest will be assessed case by case.
5. Existing DIH4CPS consortium members or DIHs participating in the winning experiments from Open Call 1 cannot apply for this Call.
6. If a third party has already received financial support from any other I4MS or Smart Anything Everywhere initiatives, the maximum amount of total support can be €100 000.
7. The proposal must be submitted in English

4.2 Key Performance Indicators

Applicants must clearly indicate in their proposal the results they intend to achieve and how to measure them providing a set of measurable Key Performance Indicators (KPIs) to be validated during the contract negotiation phase. This is a mandatory requirement for any proposal.

¹ <https://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-catalogue>

5. Submission of Proposals

5.1 General Information

Submission deadline: All submissions must be made by 17:00 Brussels local time, 13th of December 2021

Electronic submission: Proposal submission is exclusively in electronic form using the proposal submission tool accessible via the DIH4CPS open call website: <https://dih4cps.eu/open-calls/>

The central component of proposal submission is the uploading of a PDF document (whose size must not exceed 5.0 MB) compliant with the instructions on the proposal structure given below.

Proposal format and structure: Proposals must be submitted in English. The main section of the proposal must not exceed 10 pages in length (with text no smaller than 11 point Arial font). Thus, with the inclusion of the cover page and administrative pages (discussed below), the maximum page count is 13 pages. **Proposals will be truncated to this page count and the independent expert evaluators will only be provided with the truncated version.**

The structure of the proposal (and indicative length per section) should be as follows:

1. DIH profile (2 pages)
2. Technology aspects covered by the DIH (2 pages)
3. Added value to be brought by the DIH to the DIH4CPS network (3 pages)
4. Dissemination, network improvement and enlargement activities: Obligatory and voluntary (2 pages)
5. Work plan (1 Page)

As indicated above, the overall length of the above 5 sections must not exceed 10 pages.

In addition to the 10-page proposal description, a cover page and 2 pages of administrative data for statistical analysis, including, when available, the Participant Identification Code (PIC) issued by the European Commission.

<http://ec.europa.eu/research/participants/portal/desktop/en/organisations/register.html>

5.2 Submission process

Proposals must be submitted electronically in PDF format ONLY at <https://DIH4CPS.ems-innovalia.org/>

If you discover an error in your proposal, provided that the call deadline has not passed, you may submit a new version. Only the last version received before the Call deadline will be considered in the evaluation.

Proposals must be received by the closing time and date of the Call. Late proposals, including force majeure circumstances or proposals submitted in any other way than through the online submission tool, will not be evaluated.

Once the general details of the proposal are saved, the proposer is granted access to fill in the rest of the online proposal sections, such as the abstract and budget allocation (Figure 1).

The screenshot shows a web interface for inserting an abstract. On the left is a vertical navigation menu with five items: 'General details', 'Technical proposal' (highlighted in blue), 'Budget', 'Annexes', and 'Submission'. Below the menu is a note: 'Please make sure that you save all your changes before moving to a next section.' The main content area is titled 'Abstract (Left 2000 / Max. 2000 characters)'. It contains a paragraph of instructions: 'Please provide the summary of the project (max 2000 characters). Please note that this information may be used for dissemination purposes. You should therefore ensure that it gives a concrete overview of the concept and the innovation capacity, the planned used of FIWARE technologies, and the envisaged impact.' Below this is a large text input field labeled 'Abstract'. At the bottom right of the main area is a blue 'Save' button with a download icon.

Figure 1: Insert abstract

Next, the proposer can upload their technical proposal (Figure 2).

The screenshot shows a web interface for uploading a technical proposal. At the top left, the breadcrumb path is 'My area > My proposals > Demo FAB > Annexes'. On the left is a vertical navigation menu with five items: 'General details', 'Technical proposal', 'Budget', 'Annexes' (highlighted in blue), and 'Submission'. Below the menu is a note: 'Please make sure that you save all your changes before moving to a next section.' The main content area is titled 'Technical proposal'. It displays the following information: 'Maximum: 5 MB', 'Type of document: PDF', 'Mandatory: Yes', and 'Template: FABulous_Technical Proposal template.doc'. To the right of this information is a file upload field with a 'Choose file' button and the filename 'DemoFAB Proposal.pdf'. Below the file field is a blue 'Upload' button with a download icon.

Figure 2: Upload technical proposal

Once all sections are filled in, the proposer can submit his or her proposal and receive a PDF version of it afterwards (Figure 3).

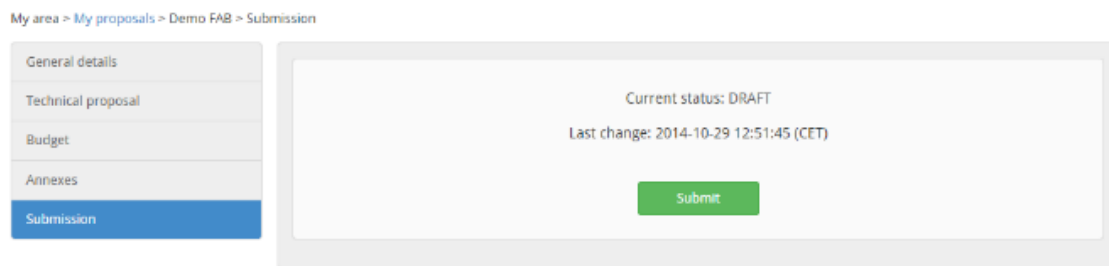


Figure 3 Submit proposal

5.3 Acknowledgement of receipt

As soon as possible after the close of the Call, an Acknowledgment of receipt will be emailed to you by DIH4CPS. The sending of an Acknowledgment of receipt does not imply that your proposal has been accepted as eligible for evaluation.

6. Indicative budget for DIH4CPS Open Call 2

DIH4CPS will make use of the H2020 Cascade Funding method to support the winners of the open calls. The funding budget for Third Parties for DIH4CPS OC2 is € 160 000.

The funding of Third Parties must follow the same principles as used for existing project beneficiaries of DIH4CPS, which receives European Commission funding as an “Innovation Action”.

The funding for each individual proposal is a total lump sum of 20 000 €. The evaluation will take into account the appropriateness of the requested resources explained. Each DIH should comply with the listed activities demanded by the DIH4CPS OC2 and those described as part of their capacities to be provided to the DIH4CPS project.

7. Evaluation Criteria

The evaluation criteria and scoring scale remain aligned with the H2020 Programme.

The ranking of selected projects will be created assessing:

1. DIH profile relevance
2. Technology aspects covered by the DIH
3. Innovation potential: Added value to be brought by the DIH to the DIH4CPS network
4. Impact: Dissemination, network improvement and enlargement activities: Obligatory and voluntary
5. Quality of work plan
6. Geographical network coverage
 - Part A: Is my DIH in a country that is not yet covered by the DIH4CPS network? (if yes 1 point, if no see part B.)
 - Part B: Is my DIH in a region that is not yet covered by the DIH4CPS network? (If yes 0.25)

Each criterion will carry a score ranging from 0 to 5 as usual for H2020:

- 0: The proposal fails to address the criterion under examination or cannot be judged due to missing or incomplete information
- 1 (Poor): The criterion is addressed in an inadequate manner, or there are serious inherent weaknesses
- 2 (Fair): While the proposal broadly addresses the criterion, there are significant weaknesses
- 3 (Good): The proposal addresses the criterion well, although improvements would be necessary
- 4 (Very good): The proposal addresses the criterion very well, although certain improvements are still possible
- 5 (Excellent): The proposal successfully addresses all relevant aspects of the criterion in question

There will be a threshold score of 3 for all criteria.

Funding is then awarded to the most highly ranked proposals provided that there are funds available.

The priority order for proposals with the same score is handled as follows:

- These proposals will be prioritised according to the scores they have been awarded for the criterion impact (#3).
- If these scores are also equal, priority will be based on scores for innovation potential (#2).
- If these scores are also equal, priority will be based on scores for the criterion implementation of the work plan with a final reference to the use of resources (#4).

- In the case two proposals have the same score and priorities (as described above) geographical coverage would be taken into account.

All proposers (successful and unsuccessful) will be contacted with the results of their evaluation.

8. Relationship with DIH4CPS and funding scheme

8.1 Relationship with the DIH4CPS and funding scheme

Contracts with the Subgrantee will be done by DIH4CPS's coordinator, UNINOVA.

Any legally binding commitment from the side of UNINOVA shall be subject to a written contractual agreement between UNINOVA and the Subgrantee.

The administrative tasks for the Subgrantee, including cost and activity reporting obligations and related documents will be provided during the negotiation and contracting phase.

The Subgrantee will be requested to submit, at the end of the project, a "Final Report" consisting of:

- Progress of the activities
- Technical results including KPI
- Dissemination and exploitation activities
- Personnel Months Spend description

Besides the mandatory report, Subgrantees are free to define and issue other deliverables or documents to present the results of the project.

Subgrantees must comply with the rules and the principles mentioned in Section I, Article 6 (Eligible and ineligible costs) of the H2020 AMGA – Annotated Model Grant Agreement (see

http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf), in the same way as the beneficiaries of the DIH4CPS project. The rules concerning eligibility of costs, identification of direct and indirect costs and upper funding limits can be found in Section I, Article 22 of the H2020 AMGA. Following other articles of the AMGA apply: 23, 35, 26, 38 and 46.

8.2 Funding scheme

DIH will receive the €20,000 through lump sum payment, which will be made after signing the contract and receiving the bank details through a form that will be made available in the preparation of the contract.

8.3 Intellectual property rights

Any IPR generated by the Subgrantee will be owned by it.

Subgrantees grant the DIH4CPS consortium partners access to activity related-results, for the pursuance of the objectives of the Project and the exploitation of the Project results in accordance with the GA. Details will be defined during the negotiation phase.

Subgrantees shall respect the intellectual property rights, including copyright, and abide by data protection legislation, that apply to software and data available or part of the DIH4CPS platform.

9. Support to Experiments

9.1 Call Helpdesk

For further information on the call, contact: calls@dih4cps.eu

For more general information, please refer to info@dih4cps.eu

9.2 Useful Documents

- DIH4CPS Open Call Announcement
- DIH4CPS FAQ

Please refer to <http://dih4cps.eu/open-calls/> for the complete documentation.