CLOUDIFACTURING OPEN CALL 2

Guide for Applicants (GfA)

Call identifier:	CloudiFacturing-2
Submission Deadline:	30th September 2019, at 17:00 h (Brussels local time)
Expected duration of participation:	1st January 2020 to 31st December 2020
Foreseen financial support for CloudiFacturing-2:	up to approx. EUR 700,000 financial support for 3rd parties, which corresponds to approx. EUR 1 million budget

This amount of financial support is planned to be spent on at least seven experiments.

- The maximum amount of financial support to be granted to one 3rd party for one application experiment must not exceed EUR 60,000.
- The maximum amount of financial support to be granted to one 3rd party over the course of the project, i.e. re-occurring 3rd parties in more than one experiment must not exceed EUR 100,000. In other words, 3rd parties which propose complementary and highly innovative ideas have the possibility to participate in more than one experiment, respecting the above mentioned maximum amount of financial support. If the same 3rd party participates to more than one experiment this must be indicated in the proposal.
- Funding will not be awarded to individual legal entities that have already received more than EUR 100,000 via open calls (FSTP) from H2020 I4MS and SAE projects.

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1 CLOUDIFACTURING AND THE OPEN CALL PROCESS

CloudiFacturing - Cloudification of Production Engineering for Predictive Digital Manufacturing - is a European Innovation Action (IA) in the framework of Factories of the Future (FoF) with the mission of optimizing production processes and producibility, using Cloud/HPC-based modelling and simulation, and leveraging online factory data with advanced data analytics; thus, contributing to the competitiveness and resource efficiency of manufacturing companies, especially small and medium-sized enterprises (SMEs). To pursue this mission, computationally demanding production engineering and simulation as well as data analytics tools are to be provided as Cloud services to ease accessibility and make their use more affordable.

CloudiFacturing is a project, which is open to new (teams of) participants (3rd parties). With this guide, we would like to stimulate you to respond to our call for proposals by submitting the description of an *Application Experiment*. *Application Experiments* are dedicated sub-projects with one-year duration that are executed within the scope of CloudiFacturing. With our Open Call, we are looking for / seeking innovative use cases in the context of the project's mission. The use cases shall clearly state their industrial impact and exploitation perspective for the involved manufacturing companies, based on their expected benefit from leveraging computational engineering and production services and workflows powered by the CloudiFacturing technology.

We especially welcome use cases aka *Application Experiments* that

a) simulate and optimize manufacturing processes or manufacturing tools,
b) leverage factory data to learn from it, and
c) optimize manufacturing processes and/or producibility of goods.

The use cases need to be driven by the end user; in other words, a manufacturing company, preferably an SME.

Small consortia consisting of 2 to 5 multidisciplinary partners, e.g.

- end users from the manufacturing sector,
- Independent Software Vendors (ISVs),
- engineering or software consultants, aka Value-Added Reseller (VARs),
- research organizations,
- High-Performance Computing (HPC) providers,
- Digital Innovation Hubs,

have the opportunity to propose use cases from different manufacturing sectors to be executed within the framework of the CloudiFacturing project.

The following conditions when proposing an Application Experiment have to be met:

- The minimum number of third parties (partners in the experiment consortium) in an Application Experiment is *two*: one end user and one ISV / VAR.
- Each Application Experiment shall include at least 2 partners, each from a different country eligible for funding.
- End users shall be new to the technology being investigated in the experiment.
- ISVs and / or VARs shall be familiar with simulation, modelling or big data analytics in order to cloudifying their software tools and solving the end-user challenge.

The following characteristics when proposing an Application Experiment will be considered an advantage:

- Companies new to the concept of European Commission (EC) projects are welcome since there is a political will to involve more and more SMEs to accelerate innovation via European funds.
- Proposers shall indicate if they are new to European Commission (EC) projects in the proposal template if they have not yet participated to EC projects.
- Proposers shall indicate to which extent the technologies being applied in the experiment are new to the end user / ISV. In many former experiments ISVs have been cloudifying their software for the first time and / or simulation and analytics technologies have been introduced to end users for the first time, at least in the context of the proposed use case.

We encourage proposals with a high ratio of SMEs and participants from new member states. In our terminology SMEs comprise mid-caps.

Why to participate?

Selected *Application Experiments* (use cases) will offer the proposers (third parties) the opportunity to

- investigate and gather experience with HPC/Cloud Computing technologies for their use case;
- explore technical benefits, e.g. better assessment of the producibility and production process optimization by more accurate simulation results using HPC/Cloud resources;
- exploit information discovered in factory data to improve processes;
- assess Cloud-based business settings and their impact; and
- leverage the CloudiFacturing Digital Marketplace being developed as a complementary distribution channel.

What does CloudiFacturing provide?

- A vendor independent Cloud platform, already containing engineering and simulation applications and services, on which new experiments can be built on.
- Secured data management and exchange within the platform.
- Visibility: through CloudiFacturing online channels and also by participating at key European events (like Hannover Messe etc.).
- International network and access to key European players.
- Exploitation of the implemented service offerings via the CloudiFacturing Digital Marketplace.
- A tailored access to HPC/Cloud resources (with a contractual environment protecting IPR).
- Support for evaluation and validation of experiments against identified requirements.
- Collective experience from more than 35 executed experiments from previous projects.
- Advice on business models and human factors from existing CloudiFacturing partners (SUPSI and University of Nottingham).
- Participation in the I4MS ecosystem (www.i4ms.eu).
- Co-funding for selected, innovative Application Experiments.

For a more detailed description of the CloudiFacturing project please see:
https://www.cloudifacturing.eu/

The initial set of ongoing application experiments are described at:
https://www.cloudifacturing.eu/wave-1-experiments/

The set of running 2nd wave application experiments are described at:
https://www.cloudifacturing.eu/wave-2-experiments/

2 OBJECTIVES OF THE OPEN CALL

From a proposer's point of view, the objectives are as follows. The Application Experiments shall:

- democratise the access to ICT solutions via cloud-based HPC resources,
- support SMEs to boost their competitiveness,
- facilitate cross-border cooperation,
- profit from a network of experts,
- excellent opportunity for SMEs to access EC-funding for experiments with new technology and to address current challenges,
- relatively compact proposal and lightweight evaluation process,
- high success rate in comparison to the EC's SME program – at least in former Open Calls,
- support from CloudiFacturing Digital Innovation Hubs (DIHs) in preparation phase of proposals.

For more details see section 3, 'New CloudiFacturing Application Experiments'.

The main objectives of the Open Call from the CloudiFacturing project's point of view are as follows:

- The Open Call seeks to increase the impact of the CloudiFacturing project by involving additional Application Experiments beyond the initial seven that were included at the start of the project, helping end users to approach and possibly solve their challenging use case and populate the CloudiFacturing Digital Marketplace with additional modelling, simulation and data analytics tools.
- Application Experiments shall be rooted in computational technology for manufacturing and engineering industries, preferably small and medium-sized enterprises (SMEs).
- Application Experiments shall utilize, leverage and extend the CloudiFacturing Solution.
- Application Experiments shall exploit their results via the CloudiFacturing Digital Marketplace.
- Priority will be given to innovative use cases with high potential technical and economic impact as described below.
- Experiments are expected to complement the on-going experiments with use cases that require near real-time data processing, visual data analytics, solving of demanding simulation problems, workflow support or execution of tool chains in Cloud and/or on HPC resources.

3 NEW CLOUDIFACTURING APPLICATION EXPERIMENTS

Application Experiments shall be rooted in information and communication technology (ICT) for manufacturing industries, preferably small and medium-sized enterprises (SMEs) and mid-caps[1], in value chains covering but not limited to:

- Improved/innovative product design for producibility,
- potentiation of manufacturing facilities,
- improvement of manufacturing planning and execution,
- optimization of manufacturing processes,
- quality control and maintenance.

Please note that just product design or just quality assurance is not enough, a forward-directed or backward-directed link to manufacturing is required, since CloudiFacturing is aiming to link yet disconnected manufacturing stages, while benefitting from exploiting data, synergizing experience for optimization, and creating impact.

The experiments are expected to positively impact on, e.g.:

- production performance (technically and economically – i.e. costs), e.g.
    - producibility, efficiency, lower scrap rates / error rates, increased eco-friendliness, improved product performance, etc.
- costs and time for manufacture
- flexibility and efficiency of manufacturing processes
- reduction of ramp-up times, down-times, maintenance cost, etc.

These improvements shall be achieved by exploiting at least one of the following information and communication technologies:

- Cloud/HPC-based simulation and optimization using numerical simulation and simulation models (e.g. Digital Twins),
- Big Data, data processing and data analytics of factory (shop floor) data streams from sensors, Manufacturing Execution Systems (MES), edge nodes (PLC), etc.,
- visualization and visual analysis of simulation and data analytics results.

These technologies are used with the aim of reducing the time to generate insights (based on simulation/optimization and data analytics) and feeding these insights into the manufacturing process for validation.

Application Experiments are required to build on the CloudiFacturing Solution and are expected to complement the on-going experiments (i.e. application experiments from areas different from the current experiments are encouraged).

Priority will be given to innovative use cases with high potential technical and economic impact, addressing workflows of tool chains using Cloud and HPC resources.

[1] To check if your organization is an SME you can visit http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en. There is no common EU definition of mid-cap companies. While SMEs are defined as having fewer than 250 employees, mid-caps are broadly said to have between 250 and 3000 employees.

3.1 TARGETED MANUFACTURING INDUSTRIES

SMEs and mid-caps from all manufacturing sectors are welcome to submit a proposal to the Open Call. Please note that large companies cannot act as the only manufacturing end user in an experiment without an SME. However, a large company can apply together with an SME end user for a collaborative use case.

3.2 CHARACTERISTICS OF APPLICATION EXPERIMENTS

The Application Experiments are to show as many characteristics as possible from the following lists.

The must-haves:

- They **must** be motivated by a manufacturing company as end user, preferably an SME.
- Their focus **must** be different from any of the existing experiments in CloudiFacturing, i.e. we do not want to have new Application Experiments which try to optimize the same production facility or process already being addressed in one of the current experiments.
    - The initial set of ongoing application experiments are described at: https://www.cloudifacturing.eu/wave-1-experiments/
    - The set of running 2nd wave application experiments are described at: https://www.cloudifacturing.eu/wave-2-experiments/
- They **must** address a complex, challenging simulation problem **OR** they **must** entail a data processing challenge, which requires highly parallel computer resources – they can also address both.
- They **must** exhibit a complexity (of models and data), which cannot be handled economically by/with desktop computing resources but requires the use of HPC/Cloud environments to yield near real-time results / manage the complexity of the problem dimension in reasonable time.
- They **must** integrate with the CloudiFacturing Solution (see short technical description on https://www.cloudifacturing.eu/open-call-application-system-w2/).
- They **must** extend the number of services provided by the CloudiFacturing Platform and the Digital Marketplace; thus, they require a software solution to be brought into the CloudiFacturing portfolio.
- They **must** have and describe in the proposal a clear commercialisation perspective of the experiment results for all stakeholders (3rd parties) involved in the experiment.
- They **must** contribute to the CloudiFacturing Digital Marketplace where the experiment results are expected to be used from and offered to a wider audience of customers. The CloudiFacturing Digital Marketplace is expected to be a complementary distribution channel to widen outreach and impact, especially for ISVs / VARs.
- They **must** work out business opportunities and models. The business opportunities can be twofold:
    - for an end user: affordable access to HPC/Cloud/Big Data technology and/or
    - for a software vendor: provision of computational services on a pay-per-use basis.
- They **must** be innovative by exposing the end user to ICT-based solutions, which he/she is not familiar with, e.g. allowing to address challenges that cannot be tackled with current means.
- They **must** be innovative to the ISV / VAR, e.g. w.r.t. cloudification of existing software tools, new business models, and larger outreach via the CloudiFacturing Digital Marketplace.

At least one of the following characteristics has to be addressed by an Application Experiment:

- It uses on-line data / real-time data stemming from manufacturing processes / sensors.
- It requires working with data streams.
- It strives to establish collaboration / data sharing / integration / data feedback
    - along the production chain (preparation, product simulation, producibility simulation, production, and quality control, …),
    - across sites in the company or
    - across companies involving more than one end user.
- It strives to work on challenging data sets (dimensionality, size, variance of data, …).
- It strives to use chains of different software tools along workflows, e.g. pre-processing, simulation, post-processing, data analysis, links between data analysis and post-processing of simulation results.
- It strives to make tools that require a lot of expertise and investment more affordable and accessible.
- It strives to render complex tools more usable by tailoring their (web) interfaces to the experiment needs.

The overall goal of each experiment must be to make all stakeholders more competitive by raising additional revenue and creating additional jobs on the mid to long-term.

To which extent the proposed Application Experiment addresses these characteristics / criteria has to be answered in the proposal. The proposal must follow the structure, content, and indications (guiding questions) described in the CloudiFacturing Proposal Template.

3.3 WHERE TO FIND HELP AND SUPPORT?

If you are interested in our Open Call or you have questions, please contact one of our local Digital Innovation Hubs (DIHs), which are spread all over Europe:

- For southwest Europe:
    - Elena Femenía: efemenia@insomniaconsulting.es, Insomnia, Spain
    - Elena Villa: evilla@insomniaconsulting.es, Insomnia, Spain
- For south of Europe:
    - Marco Barbagelata: m.barbagelata@stamtech.com, Stam, Italy
- For southeast and northeast Europe:
    - Gabor Vicze: gabor.vicze@innomine.com, Innomine, Hungary or
    - Tomáš Karásek: tomas.karasek@vsb.cz, Technical University of Ostrava, Czech Republic
- For northwest and north Europe:
    - Simon Bergweiler: Simon.Bergweiler@dfki.de, German Research Center for Artificial Intelligence, DFKI SmartFactory Lab, Germany

These DIHs will support you with your questions and ideas and they will help you to prepare a high-quality proposal for experiments that well suit our Open Call and have a high potential impact.

Discussing your idea with the DIHs is of key importance. The DIHs will promote the Open Call, initiate discussions, and know the right people at the Competence Centres involved in CloudiFacturing to clarify any remaining questions that they may not be able to answer ad hoc.

4 APPLICATION EXPERIMENT CONSORTIA

Application Experiment consortia consist of 3rd parties, i.e. organizations that are not associated with the initial CloudiFacturing consortium. The 3rd parties are contracted by the CloudiFacturing coordinating organization, namely Fraunhofer.

4.1 WHO CAN BECOME A THIRD PARTY?

As I4MS (ICT Innovation for Manufacturing SMEs - http://www.i4ms.eu/) is the European initiative to digitize the manufacturing industry, especially SMEs and mid-caps. The following types of organizations and companies from countries that are eligible for H20202 are entitled to become 3rd parties:

- End users (manufacturing companies): SMEs, mid-caps and big companies
  These end users pose the use case to be executed in the application experiment proposed via the Open Call.
- Independent Software Vendors: SMEs, mid-caps and big companies
  These ISVs provide the cloudified or to be cloudified software for solving the challenge of the end user.
- Engineering consultants (VARs): SMEs and mid-caps
  These engineering consultants provide the domain expertise to solve the challenge of the end user with the software provided by the ISV or as Open Source. In some cases, a single company may play both roles: the one of the ISV and the one of the VAR.
- Research organizations
  These organizations may contribute their domain expertise to solve the challenge of the end user. Alternatively, they may also support with their skills the extension of the software to be able to solve the end user's challenge or to cloudify the software. The software may be provided by an ISV, the research organization themselves or an Open Source community.
- Any organization that will act as a Digital Innovation Hub
  For further details about the profile of a DIH, refer to the following link:
  https://ec.europa.eu/digital-single-market/en/digital-innovation-hubs/

An HPC centre or Cloud provider can become a 3rd party acting either as

- a VAR providing a software on its hardware resources,
- an engineering consultant contributing its expertise to enable setting-up and solving the simulation problem on their resources or
- a research organization.

Organizations acting as Digital Innovation Hubs **must**

a) be part of an Application Experiment consortium, i.e. they cannot form a consortium by their own, **AND**
b) clearly state in the experiment proposal what they do and add to existing activities to open access to new countries, which are not yet represented by current CloudiFacturing DIH and / or partners.

[2] for eligible countries see:
http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/3cpart/h2020-hi-list-ac_en.pdf
AND
http://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-ga_en.pdf

The above categories are meant to be interpreted as roles in which 3rd parties can act. Partners of some 'type' can act in a different 'role', e.g.:

- research organisations can act as VARs if and only if they provide the knowledge to 'cloudify' the software to be used in the experiment (can be an open-source solution) and perform the corresponding task as well as commit to the commercialisation of the resulting solution, e.g. set of Cloud/HPC-based services,
- an HPC centre can act as DIH providing that they fulfil the DIH criteria.

Beneficiaries, i.e. current partners in the CloudiFacturing consortium, cannot become 3rd parties. However, they will support new Application Experiments.

4.2 REQUIREMENTS TO BE FULFILLED BY CONSORTIA

An Application Experiment consortium has to meet the following requirements:

- The minimum number of partners in an experiment consortium is 2:
  - one end user and
  - one ISV or VAR.
- Each consortium has to include partners (3rd parties) from at least two countries eligible for funding, i.e. experiments must be cross-border.
- Optionally, the experiment consortium can be augmented by consultants, research organizations, DIHs (see section 4.1. Who can become 3rd party) and even additional end users or ISVs / VARs.

The ICT solution resulting from the Application Experiment is expected to be offered as a service in the CloudiFacturing Digital Marketplace to multiply effects and to impact beyond the end user within the experiment, by making the resulting ICT solution accessible to a larger number of potential customers. The owners of the resulting ICT solution shall decide whether they aim to pursue

a) a direct commercialization with their customers (i.e. independent frontend with owned marketing, support, and billing) or
b) an indirect commercialization via the operators of the CloudiFacturing Solution (i.e. common frontend with marketing, support, and billing conducted by the operators of the CloudiFacturing Solution).

Conditions and details of the commercialization are to be worked out by the ICT-solution owners during the experiment execution in collaboration with CloudiFacturing Competence Centres.

Amongst proposals that receive the same marks by the independent evaluation process, the ones with the higher rate on novelty will be preferred.

Amongst proposals that receive the same marks by the independent evaluation process, the ones with the higher SME rate will be preferred, following the directives the I4MS III initiative, of which CloudiFacturing is part of.

We encourage proposals from new Member States. Amongst proposals that receive the same marks by the independent evaluation process, the ones with the higher rate of partners from new Member States will be preferred.

4.3 EXAMPLES FOR TYPES OF ACTIVITIES FOR 3RD PARTIES

To indicate what potential / typical activities the different 3rd parties have to perform (which are the obligations of the different roles), the following bullet list exemplifies activity types:

- The end user(s) of which one is driving (leading) the experiment:
  - provides the use case
  - defines the requirements
  - provides models, data, etc. needed to implement the experiment
  - evaluates the experiment results
  - contributes to reports and a publishable summary
  - demonstrates impact reached via the completion of the experiment
- The independent software vendor (ISV):
  - deploys the functionality of its software solution to a Cloud/HPC environment thus expanding the CloudiFacturing Solution
  - runs experiments via the CloudiFacturing Solution
  - evaluates different options for business models in a Cloud/HPC setting
  - develops usable (web) applications for their Cloud/HPC services
  - trains users
  - promotes and offers the result on the CloudiFacturing Digital Marketplace
  - demonstrates impact reached via the completion of the experiment
- Engineering consultant (VAR):
  - contributes its know-how on setting up a simulation, optimization, analytics model
  - implements the simulation, optimization, analytics model with a given software
  - connects data sources to the CloudiFacturing Solution
  - adapts existing technology (software)
  - evaluates the simulation, optimization, analytics results
  - tweaks parameters for the simulation, optimization, analytics model
  - measures the performance of the simulation, optimization, analytics model
  - acts as data scientist setting up the pipeline to analyse the data streams from the manufacturing facilities
  - gets insights from the data
  - feeds models based on insights
  - consults the experiment partners
  - demonstrates impact reached via the completion of the experiment.
- Research organization:
  - can act as an engineering consultant
  - provide technology needed to realize the experiment
  - may provide compute resources to run simulation, optimization, analytics models
  - may provide data processing resources to analyse Big Data
- DIHs:
  - support the experiments
  - monitor the progress of the experiments
  - promote experiment results
  - train people and contribute to skill development
  - widen outreach / impact across Europe
- Cloud / HPC provider:
  - contributes its hardware for running Application Experiments
  - enables the connection to the CloudiFacturing Solution

- tracks the use of resources for 'testing' business models, calculating the constraints to which a business model has to conform
- demonstrates impact reached via the completion of the experiment

One of the 3rd parties in an experiment is the experiment leader. The experiment leader:

- communicates to the associated DIH
- reports progress
- compiles publishable summary (approx. 2 pages) of the experiment result and its impact on all stakeholders (technical and economic impact)
- participates at reviews

Each experiment partner (3rd party) shall disseminate intermediate and final experiment results.

Each proposal has to name the HPC/Cloud provider of their choice. We currently have two HPC/Cloud providers: IT4I and CloudSigma. If a new HPC/Cloud provider is proposed as 3rd party in an Application Experiment, the rationale behind and the complementarity to the existing ones has to be explained. The contact points for IT4I and CloudSigma, respectively, are: Tomáš Karásek (IT4I: HPC provider) and Peter Gray (CloudSigma: Cloud provider). You best contact them via your DIH instead of contacting them directly.

Note that the activities have to be carried out in collaboration with the existing CloudiFacturing partners that offer:

- adaptation of the CloudiFacturing Solution
- additional services with new functionality
- consultancy and training

Please also note that the amount of effort that existing CloudiFacturing partners have to support experiments is limited. Thus, the feasibility of the experiments with respect to effort, time and timeline of the overall project is also taken into consideration during the evaluation and experiment selection process. Therefore, we strongly encourage you to get in touch with the DIHs that will either talk with current technical partners or bring you directly in touch with these to talk about the technical feasibility of your experiment idea(s).

For more details on the various roles please see the following table.

Type of Partner / Criteria	End user	Independent software vendor (ISV)	Engineering consultant (VAR)	Research institution	DIH	HPC/Cloud provider
Required number of partners	Minimum one (mandatory)	Minimum one ISV or VAR (mandatory)		Zero or more	Maximum one	Maximum one
	End user is the driving force behind the experiment.	The ISV(s) provides required software to the CloudiFacturing Solution complementing existing services and applications.	The VAR(s) provides required software to the CloudiFacturing Solution complementing existing services and applications.	Research institutions are not mandatory. An experiment can have more than one if required and justified.	An experiment may bring maximum one DIH as 3rd party. Note that we already have 5 DIHs to accompany the experiment proposers.	An experiment may bring maximum one HPC/Cloud provider as 3rd party. Note that we already have an HPC (IT4I) and a Cloud provider (CloudSigma) to run your experiment.
"Newness" to CloudiFacturing project	New 3rd party to the CFG project	New 3rd party to the CFG project or existing experiment partner	New 3rd party to the CFG project or existing experiment partner	New 3rd party to the CFG project	Existing CloudiFacturing DIH or new 3rd party DIH if justified	Existing CloudiFacturing partner (IT4I, CloudSigma) or new 3rd party if justified
Size of company	SMEs strongly recommended	SMEs recommended	SMEs recommended	NA	NA	SMEs recommended
Recommended effort	3 – 6 person months (PM)	2 – 12 PM	2 – 12 PM	0 – 6 PM	1-2 PM	1 – 3 PM

5 RULES FOR PROPOSAL PREPARATION AND SUBMISSION

5.1 ONE-STAGE PROPOSAL PROCESS

Proposals for a new Application Experiment in CloudiFacturing follow a single stage process by submitting a complete application following the proposal template for the CloudiFacturing-2 Open Call found at:

https://www.cloudifacturing.eu/open-call-application-system-w2/

Only proposals using the CloudiFacturing-2 template will be evaluated. The page limits in the template must not be exceeded. Proposals exceeding the page limits will be cut according to the limits. Independent experts will only assess the text that is within the limits. Therefore, please be concise, address the topics in the template and carefully follow the hints in each section of the template.

5.2 PROPOSAL LANGUAGE

The application as well as all corresponding documentation have to be written in English. Proposals submitted in any other language will not be evaluated.

5.3 SUBMISSION OF PROPOSALS

Proposals must electronically be submitted in PDF form via the following webpage:

https://www.cloudifacturing.eu/submission/

PDF files must not exceed 5 MB. Proposals not using the proposal template for the CloudiFacturing-2 Open Call will not be evaluated.

Proposals must be received before the closing time and date of the call:

30th September 2019, 17:00 h (Brussels local time).

Provided the call is not yet closed, the consortium can upload the proposal several times, overwriting previous versions. Only the last version received before the closing time will be considered for evaluation. Proposals handed in later or provided by any other means will not be considered.

It is strongly recommended not to wait until the last minute to submit the proposal. Failure of the proposal to arrive in time for any reason including communication delays will not be accepted as a valid justification. The time of receipt as recorded by the submission system will be definitive.

5.4 ACKNOWLEDGEMENT OF RECEIPT

Applicants will receive a formal acknowledgement e-mail as soon as possible after the close of the call. The sending of this acknowledgement does not imply that the proposal is eligible.

5.5 RE-OPENING THE CALL

In case that the evaluation procedure concludes with not enough proposals reaching the necessary thresholds to justify funding for sound application experiments, we reserve the right to re-open the call.

6 PROPOSAL EVALUATION AND SELECTION

CloudiFacturing will evaluate the proposals according to the defined criteria to ensure compatibility of the new experiments with the CloudiFacturing Solution, respecting the usual evaluation goals and criteria of project proposals submitted to the European Commission.

The evaluation criteria for CloudiFacturing Application Experiments and the evaluation form can be found as annexes of the proposal template for the CloudiFacturing-2 Open Call at:

https://www.cloudifacturing.eu/open-call-application-system-w2/

The evaluation will be done involving independent experts from appropriate fields external to the CloudiFacturing consortium (and the proposed experiments) to assess soundness and impact with respect to the evaluation criteria, namely:

- Industrial Relevance,
- Dissemination and Exploitation Strategy,
- Experiment Design,
- Soundness of Technical Approach,
- Quality of Work Plan,
- Resources to be committed, and
- Appropriateness of the Consortium.

These categories correspond to the structure of the proposal template.

The evaluation of each proposal will be performed by:

- two independent experts (two votes, one vote each)
- one representative of the core CloudiFacturing team (one vote)

Thus, the majority of votes is in the hands of the independent experts.

These three persons constitute the evaluation board for each proposal.

The independent experts will be individuals from the fields of industry, science and/or innovation management. They will be selected out of a database of experts, considering their expertise, independence from the project and the proposers avoiding conflict of interest, regional distribution and gender aspects to achieve fair and profound assessment of the proposals. The independent experts will follow the evaluation criteria published with the Open Call and the corresponding documents (esp. the proposal template), including the range of scores to be used and the weights for each criterion.

The two independent experts will be complemented by a representative of the core team of CloudiFacturing to oversee the proposals and to ensure maximum complementarity and impact as well as feasibility - within the constraints imposed by the overall CloudiFacturing project - of the proposals best ranked by the external experts.

Using the consensus evaluation forms, CloudiFacturing will select the best ranked proposals that fit into the available amount of EC contribution for 3rd parties – a budget of approx. EUR 700,000 is expected to fund at least seven application experiments.

Please note that resources to be committed is one of the evaluation criteria, i.e. ‘costs are to be economically justified’. Proposers are expected to explain the effort that they foresee for their activities. Reviewers (external experts) will be instructed to assess on a per-effort basis, instead of on

a per-cost basis. Since proposers from lower-wage countries have smaller per-months costs, we do not expect them to propose unrealistically high amounts of effort to exhaust the maximum funding.

Also note that in case there are equally ranked proposals, preference will be given to those where regions are represented by 3rd parties not yet covered by existing CloudiFacturing Application Experiment partners (beneficiaries and 3rd parties).

CloudiFacturing, however, is not obliged to accept a highly-ranked proposal if it has objective grounds for refusal, such as feasibility with respect to the CloudiFacturing Platform / Solution in the financial framework of the project. In this case, the choice may pass to the next ranked proposal.

CloudiFacturing may conclude that even the highest scoring proposal is of inadequate quality, in which case it will make no selection. In the event of no selection being made, the CloudiFacturing project reserve the right to re-open the call at a later date.

All proposers will receive an evaluation summary report as the result of the consensus meeting of the experts evaluating their proposal. The selected Application Experiments will be invited to negotiations for accession to the CloudiFacturing project's Application Experiment model contract:

https://www.cloudifacturing.eu/wp-content/uploads/2019/06/ModelContract-w2.pdf

6.1 PROCEDURE AND TIMING OF THE PROCESS

After submission, the proposals will be evaluated by a jury consisting of independent experts and representatives of the CloudiFacturing project. This process is planned to last 2 months. Beginning of December 2019 proposers will be informed about the outcome of the evaluation process. During December 2019 contract signature is foreseen, so that the experiments can start beginning of 2020.

Following the example of the EC, we do not plan to have hearings with the 3rd parties, but during the four weeks until contract signing, topics coming up from the assessment will be clarified.

6.2 CONTRACTING THIRD PARTIES

Experiment proposers selected in the Open Call will be contracted as 3rd parties. The contract will be set up between the CloudiFacturing coordinating organisation (Fraunhofer) and the 3rd parties participating in the respective application experiment.

The contract will – amongst other things – regulate IPR arrangements, i.e. the use of background and foreground and ensure the use of the experiment results beyond the duration of the experiment.
IPR arrangements will be part of the exploitation strategy under conditions that are worked out as part of the business modelling activity accompanying the experiments.

The contract will be signed between the 3rd parties and the CloudiFacturing coordinating organisation within four weeks preceding the start of the application experiment.

Contracted 3rd parties will be exposed to all the contractual obligations to be fulfilled by 3rd parties according to the rules of Horizon 2020, especially ARTICLE 15 (FINANCIAL SUPPORT TO THIRD PARTIES of the Model Grant Agreement) and Annex K (Actions involving financial support to third parties - General Annexes - HORIZON 2020 – WORK PROGRAMME 2016-2017), and make sure that the 3rd parties (recipients of financial support - cascaded funding) accept the European Commission measures described in the two documents just mentioned (Article 15 and Annex K).

The contract ensures, according to the above-mentioned Annex K that the recipients of the financial support (the 3rd parties) allow the European Commission, the European Anti-fraud Office (OLAF), and the Court of Auditors to exercise their powers of control on documents, information, even stored on electronic media, or on the final recipient's premises.

6.3 FURTHER INFORMATION

Link to Model Contract to be signed between 3rd parties and the CloudiFacturing coordinating organisation (Fraunhofer):

https://www.cloudifacturing.eu/wp-content/uploads/2019/06/ModelContract-w2.pdf

For further questions please first consult our frequently asked questions list (FAQ) under:
https://www.cloudifacturing.eu/FAQ

In case you do not find the answer to your question there, you can make a question by contacting:
contact@cloudifacturing.eu

which CloudiFacturing will try to answer within 3 working days.

The consortium is aware of and makes the 3rd parties aware of the new regulations (see below) and will apply it:

- EU General Data Protection Regulation (GDPR 2016/679)

By submitting a proposal, the proposers declare to agree to the evaluation process, which involves providing their proposals to the respective independent experts and CloudiFacturing core partners. The experts are being contracted for their reviewing activities by CloudiFacturing – non-disclosure of information related to the application experiment proposals is part of the contract, which is being signed between the experts and CloudiFacturing.

7 FUNDING REGULATIONS

Contracted 3rd parties will only receive funding via the CloudiFacturing project if they are eligible to receive funding under the rules of the Horizon 2020 Programme (H2020).

7.1 ELIGIBLE COSTS, CRITERIA FOR AWARDING FINANCIAL SUPPORT AND TYPES OF ACTIVITIES

We apply the cost categories eligible for beneficiaries to the 3rd parties within CloudiFacturing.

The experiment proposal describes activities, deliverables and milestones together with efforts to achieve these. Financial support will be granted based on progress with respect to the experiment work plan, which becomes part of the contract between the coordinating organization (Fraunhofer) and the 3rd parties in compliance with the rules and regulations imposed by the conditions of the H2020 Work Programme.

We allow 3rd parties to receive financial support for the same activity types as for beneficiaries (partners from the beginning of the project), specifically

- innovation development,
- management of experiment,
- travel and related subsistence allowances,
- equipment and infrastructure,
- consumables and supplies (publications and conferences),
- administrative efforts for accounting and reporting.

7.2 CRITERIA FOR CALCULATING THE EXACT AMOUNT OF FINANCIAL SUPPORT (REIMBURSEMENT RATE)

Financial support will be based on effort and direct costs figures of the 3rd parties that will be part of the experiment proposals and the contract signed between them and the CloudiFacturing coordinator. For calculating the amount of financial support, we will apply the H2020 rules for for-profit (70% funding) and non-for-profit (100% funding) organisations, respectively, taking the specifications for 3rd parties with respect to overhead into account.

For more details see our Proposal Template chapter 6 and the contained explanations.

7.3 CATEGORIES OF PERSONS WHICH MAY RECEIVE FINANCIAL SUPPORT

We do not plan to directly contract persons, 3rd parties are organisations (for-profit and non-for-profit) in our understanding. The categories of persons within the organizations, which may work in experiments are supposed to be:

- engineers (technical staff),
- managers (incl. consultants),
- factory workers,
- researchers,
- PhD candidates,
- administrative staff.

7.4 MAXIMUM AMOUNT OF FINANCIAL SUPPORT TO BE GRANTED

The maximum amount of financial support to be granted to one 3rd party for one application experiment must not exceed EUR 60,000. The maximum amount of financial support to be granted to one 3rd party over the course of the project, i.e. re-occurring 3rd parties in more than one experiment must not exceed EUR 100,000.

We foresee this exceptionally high maximum amount of financial contribution to one 3rd party of EUR 100,000, in order to maximize stimulation of innovation in application experiments involving the same third party in more than one experiment. In other words, 3rd parties, which propose complementary and highly innovative ideas should be given the possibility to participate in more than one experiment, respecting the above mentioned maximum amount of financial support.

However, funding will not be awarded to individual legal entities that have already received more than EUR 100,000 via open calls (FSTP) from H2020 I4MS and SAE projects.

In addition to this funding, reasonable technical support from the CloudiFacturing partners will be available.

7.5 PROGRESS MONITORING, QUALITY CHECKING AND PAYMENTS TO THIRD PARTIES

Progress monitoring of the application experiment with respect to its work plan is the obligation of the DIHs and Competence Centres (CCs) collaborating with the experiment partners (3rd parties). The experiment partners will be obliged to hand in a concise quarterly progress report to the respective DIH / CCs. They will check the quality and if the progress is in accordance to the work plan for the experiment, they will correspondingly inform the project coordinator about acceptance or rejection of the progress report. Quality checking can also include demonstration of intermediate results of the experiments. If the progress report is accepted by the coordinator, a payment will be triggered (see below).

In case of underperforming (non-acceptance of progress reports), we will apply a yellow / red flag rule, similarly to what EC does with projects and beneficiaries

- Yellow flag means that the experiment has two weeks to work out the recommendations made by the DIH and submit the improved progress report.
- Red flag means that the experiment is put on hold, costs are frozen for 6 weeks. During this time the 3rd parties get the chance to fix the issues and get an in-depth review by the DIH, which decides whether the experiment is back on track to continue or will be abandoned.

The EC has strict rules for payments / pre-payments that are taking project phases into account and reserve some budget for cases that are unlikely but still happening, e.g. bankruptcy of a partner. We re-interpret these rules in the following sense for the 3rd parties within CloudiFacturing:

1. After contract signature, CloudiFacturing's coordinator (Fraunhofer) will issue a partial pre-payment (15%) of funding for the first quarter of the experiment, avoiding cash flow problems especially for SMEs.
2. After acceptance of the first quarterly progress report, additional 10% of funding are transferred as pre-payment.
3. After acceptance of the second, third, and forth quarterly progress report respectively, additional 20% of funding are transferred as pre-payment.

These pre-payments are 'loans' given to each 3rd party until the corresponding work is accepted after review, respectively audit, by the Funding Authority (the EC).

The remaining 15% are only granted after

a) the completion of the application experiment,
b) the participation of the experiment leader at the corresponding project review, and
c) the acceptance of the experiment work, results and deliverables by the Funding Authority (the EC).

If the leader is not the end user in the experiment, the end user is expected to participate in the project review, too. In case of a non-acceptance, the experiment consortium has to comply with the EC project reviewers' recommendations and gets the final payment only after satisfying the EC project reviewers' recommendations.

Any financial re-claims of the Funding Authority, in case of irregularities within the experiments' cost statements will be forwarded to the respective 3rd party.

8 VALIDITY CHECK FOR THIRD PARTIES

Since consortium partners in an application experiment become 3rd parties to the CloudiFacturing project, they do not need to undergo a formal validation by the respective EC services.

However, the proposing parties need to register with the EC to get a Participant Identification Code (PIC) number. The PIC number of each proposer needs to be provided with the proposal.

Before becoming 3rd parties to the project, the CloudiFacturing coordinating organisation will run a lightweight validity checking procedure for the proposing experiment partners to ensure that only eligible companies are contracted. The lightweight check amongst other things will consider checking the respective commercial registry to see if the 3rd party exists under the provided 'coordinates' and consulting the EC for apparent issues with this proposer. Part of the check is concerned with the status of the proposer to identify whether it is an SME, large company, research organization, which will affect the corresponding funding rate. Proposers are encouraged to determine their status by themselves for being able to provide correct calculations of budget and requested funding according to the EC rules as part of the proposal. Determining the status of its own entity is not always trivial according to EC rules, especially for SMEs with a complex ownership structure. Thus, we urge all partners of experiment proposals to make a serious attempt when self-declaring their status to avoid disappointing and/or surprising effects when it finally comes to the correct funding rate and the actual financial contribution to the proposal. Errors in the status cannot be compensated by raising effort at a later time.

The procedure of enabling DIHs and CCs co-work with the proposers is minimizing risks and maximizing confidence – on both sides – that potential 3rd parties and beneficiaries of the CloudiFacturing project are serious and professional companies / entities.

For details on the standard process - which does not fully apply here – including getting a PIC number, validation process, constraints to be made to be accepted in a certain status (for a specific funding rate), please consult the participant portal. Go to:

https://ec.europa.eu/research/participants/portal/desktop/en/home.html

and scroll down to "How to participate". Please note again, the validation process described there does not apply here.