Fed4FIRE+ Open Call - Experiments "SME & NGI Cascaded Experiments"

(updated 01 April 2021)

Call information:
- Project full name: **Fed4FIRE+: Federation for FIRE plus**
- Project grant agreement number: **732638**
- Call identifier: **F4Fp-SME_NGI**
- Call title: **Fed4FIRE+ Competitive Call - Innovative Experiments**
  Category "SME & NGI Cascaded Experiments"

Submission deadline: **Continuous submission (2-weekly cut-off dates)**

Financial information:

- Maximum requested funding per experiment:
  - € 12 500 (incl. a max of €2 500 for patron)

- The above mentioned amounts include the budget for the Fed4FIRE+ partner(s) acting as Patron for the experiment. The split of budget between experimenter and patron is flexible with a maximum set for the budget allocated to the patron as indicated per stage.

The proposer:
- Proposals will only be accepted from a single party eligible for participation in the EC H2020-projects
- Proposals can only be accepted from:
  - SMEs
  - Parties who have successfully participated in one of the Open Calls of an H2020 NGI project.

Detailed information about the open call and its aspects can be retrieved online (**www.fed4fire.eu)**

Language in which the proposal must be submitted: English

Contact: contact@fed4fire.eu

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2 Introduction to Fed4FIRE+

Fed4FIRE+ is a Research and Innovation Action under the European Horizon 2020 Programme addressing the work programme topic Future Internet Research and Experimentation. The project started on 01 January 2017 and runs for 60 months, until the end of 2021.

The Fed4FIRE+ project has the objective to run and further improve Fed4FIRE+'s "best-in-town" federation of experimentation facilities for the Future Internet Research and Experimentation initiative. Federating a heterogeneous set of facilities covering technologies ranging from wireless, wired, cloud services and open flow, and making them accessible through common frameworks and tools suddenly opens new possibilities, supporting a broad range of experimenter communities covering a wide variety of Internet infrastructures, services and applications.

Fed4FIRE+ continuously upgrades and improves the facilities and include technical innovations, focused towards increased user satisfaction (user-friendly tools, privacy-oriented data management, testbed SLA and reputation, experiment reproducibility, service-level experiment orchestration, federation ontologies, etc.). It will open this federation to the whole community and beyond, for experimentation by industry and research organisations, through the organization of Open Calls and Open Access mechanisms

The project also offers a flexible, demand-driven framework which allows test facilities to join during the course of its lifetime by defining a set of entry requirements for new facilities to join and to comply with the federation.

Fed4FIRE+ also continues to build on the existing community of experimenters, testbeds and tool developers and bring them together regularly (two times a year) in engineering conferences to have maximal interaction between the different stakeholders involved.

An overview of the available FIRE facilities offered through Fed4FIRE+ can be retrieved at the [facility overview page on the Fed4FIRE+ website](#)[1]. Additional background information about both the offered facilities, the tools adopted by the federation, and the implementation steps needed from a facility when joining the federation can also be found in [the Fed4FIRE+ training material](#)[2].

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[1] https://www.fed4fire.eu/testbeds/
[2] http://doc.fed4fire.eu/

3 Objectives of the call

The major objective of this Open Call is to make the federated infrastructure directly available for execution of innovative experiments by experimenters originating from SMEs or from other parties (also not restricted to SMEs) who have successfully completed an experiment or project in the framework of one of the Open calls of any of the other NGI-projects of the European Commission. The aim is to offer these parties the possibility to carry out extra experimental with a limited amount of effort in preparing the proposals and increasing the quality of the experiments.

Standard Open Calls within Fed4FIRE+ imply a relatively significant investment in time and effort for the proposing party to prepare and submit a proposal. It also takes a significant amount of time for the proposer to receive notification of acceptance / rejection of the proposals. These considerations regularly restrict the submissions by SMEs and their participation in Open Calls or submissions by parties who have not yet any experience in submitting a proposal for experimental work to Fed4FIRE+ but have successfully completed projects within one of the other European NGI-projects.

To overcome these thresholds, Fed4FIRE+ has run in the past a 2-staged submission process in the 2ⁿᵈ Fed4FIRE+ Open Call and based on the positive feedback implements this staged submission in a continuous way through this Open Call.

The principle is as follows:
1) A submission requires the submission of a very limited-sized proposal for a short-duration experiment after consultation with the required testbeds.
2) Bi-monthly, all submitted proposals are collected and submitted to an external panel of reviewers for a fast review.
3) This quasi continuous review process targets a notification of acceptance / rejection within 2 weeks. In exceptional circumstances like holiday periods,… this period may be slightly longer but feedback will always be provided within 4 weeks.
4) This review process involves a review by:
    a. at least 3 reviewers as well as
    b. a review on technical feasibility by the Patron(s), i.e. the responsible of the testbeds intended to be used.
5) Once accepted, the experiment runs for 3 months
6) The budget is max. 12 500 euro including the support for the Patrons (testbed providers). How the split of the budget is made the experimenter and the patron is flexible however the budget of the Patron cannot exceed 2 500 euro.
7) At the end of the experiment a report is produced by the experimenter to Fed4FIRE+.
8) If a proposal is not accepted, re-submission is only allowed after 2 months.

The experiments submitted are innovative experiments with a limited time in order to collect information on feasibility, requirements, challenges,.. to prepare for more extensive work in later projects.

Examples of such experiments may include but are not limited to testing of new protocols or algorithms, performance measurements, service experiments. It is required that these

experimenters will come from parties or organisations that are not part of the Fed4FIRE+ project consortium and which have NOT submitted any proposal yet in the previous Open Calls of the Fed4FIRE+ project. Parties which have submitted proposals in Open Calls from other projects are eligible.

The Fed4FIRE+ project is issuing this series of open and competitive calls for experiments with a degree of industrial and/or scientific innovation, relevance for the Fed4FIRE+ federation and an appropriate scale of complexity. Independent evaluations of the submitted proposals will be performed, in order to select experiments which will be executed within the project. It is required that the experiments are performed by a single organization.

This continuous Open Call targets only experiments originating from SME's or from other parties (also not restricted to SMEs) who have successfully completed an experiment or project in the framework of one of the Open calls of any of the other NGI-projects of the European Commission. These projects are (restrictive list):

NGI Pointer	NGI Assure
NGI0 Discovery	NGI ESSIF-Lab
NGI Atlantic.EU	LEDGER
NGI DAPSI	NGI TRUST
NGI ZERO	NGI EXPLORERS
NGI0-PET	Ontochain
TREBLO	

External reviewers will evaluate proposals and selection will be made upon:

- Exceeding set thresholds on specific evaluation criteria (see below)

Benefits for an experimenter to propose experiments on the Fed4FIRE+ federation of testbeds:

- Possibility to perform experiments that break the boundaries of different testbeds or domains (wireless, 5G, wired, OpenFlow, cloud computing, smart cities, services, etc.)
- Easily access all the required resources with a single account.
- Focus on your core task of experimentation, instead of on practical aspects such as learning to work with different tools for each testbed, requesting accounts on each testbed separately, etc.
- An extra benefit which is offered in this call is the
  - minimum effort for preparing the proposal
  - A dedicated support from specific Fed4FIRE+ members. Each proposer, preparing a proposal is required to seek a supporting Fed4FIRE consortium partner or partners (the "Patron") that will be in charge of dedicated (advanced) support of the experiment.
  - A limited budget available for running small experiments

4 Eligibility

- Proposals will only be accepted from parties eligible for participation in EC H2020-projects.

- Proposals will only be accepted from single parties (no consortia are allowed).

- Proposers must originate from parties or organisations that are not already part of the Fed4FIRE+ project consortium.

- Proposers can submit multiple experiment proposals, but only one experiment per proposer will be selected for funding every 6 months. In case multiple proposals are submitted by the same party, reference should be made to each submitted proposal and clear indication should be given on the complementarity of the proposals.

- A proposal, if rejected can only be re-submitted after 2 months.

- Proposers who have submitted proposals in previous calls of the Fed4FIRE+ - project are allowed to re-submit. Details on how this information needs to be included in the proposal are given below and should be included in a specific section in the proposal (cfr. Proposal template)

  - Parties who have submitted proposals in previous calls which were NOT selected for funding should indicate the exact dates and details of the previous submissions.

  - Parties who have submitted proposals in previous calls which were selected for funding should indicate the difference between the current proposal and the previously submitted proposal.

  - Parties belonging to a legal entity of which other groups have submitted proposals in previous calls also need to indicate the difference between the current proposal and the previously submitted proposals.

- This continuous Open Call targets only experiments originating from SME's or from other parties (also not restricted to SMEs) who have successfully completed an experiment or project in the framework of one of the Open calls of any of the other NGI-projects of the European Commission. These projects are:

NGI Pointer	NGI Assure
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5 Inclusion into the consortium

Once a party is selected to perform the proposed experiment, it will be contracted by the Project Coordinator (imec) as a 3rd Party receiving financial support. This will require the signature of the Agreement of which can be found as download on the Fed4FIRE+ website together with this Call information.

6 Participation in meetings and submission of reports

6.1 Submission of reports (templates can be found as download on the Fed4FIRE+ website together with this Call information):

The proposer will need, if its experiment is:

- Selected for funding:
  - to submit a report (template provided)
  - to prepare a flyer (1 A4-page) describing the objective and results of the experiment as well as the impact of the experiment on the proposers' business. This flyer can be used by the Fed4FIRE+ consortium at public events.
  - to prepare a presentation and demo, to be used at the formal review meeting, explaining and illustrating:
    - the objective and results of the experiment
    - the impact of the experiment on the proposers' business.
    - The feedback towards the Fed4FIRE+ consortium on the use of the facilities
  - The production of a short video about the experiment is recommended. This video will be used by the Fed4FIRE+ project at public events.

6.2 Attendance at meetings (to be budgeted in the proposal)

- No physical meetings are scheduled, all meetings and the review will take place online.

- The proposer of a proposal, is *stimulated* to attend or consult Fed4FIRE+ webinars or tutorials available on the Fed4FIRE+ website
  - Objective: attend tutorials and learn about Fed4FIRE+

- If accepted for funding, experimenters are *required* to attend an online review meeting:
  - To be attended by all funded experimenters
  - Objectives:
    - presentations by the finished experiments will serve as tutorials and demonstrations towards participants and new experiments attending the event.
    - formal review meeting by EC representatives of all finished experiments.

- Project meetings
  - As the experimenter will be linked to the project as 3rd Party, there will no possibility to attend formal meetings of the consortium but specific (remote) meetings regarding the experiment can be set up with Fed4FIRE+ partners.

7 Targeted timing:

- Submission deadline: 2-weekly cut-off dates
- Notification of selection: 2 weeks (target) after submission
- Attending FEC Tutorials (suggested): continuous
- Start of the experiment: 1 month after notification of acceptance (maximum)
- End of the experiment 3 months after start
- Submission of Report: 3 months after start
- Formal review meeting (online) following end of experiment

8 Open Research Data

Not applicable for this Open Call

9 Proposal template

The use of a specific proposal format as described in this section is mandatory. The template (can be found as download on the Fed4FIRE+ website together with this Call information) is limited in size and is focusing on "what experimenters want to do" and "what the expected result is".

Section A   Information page and Summary (200 word summary)
The information in this section may be used in public documents and reports by the Fed4FIRE+ consortium.

Section B   Description and Expected Results (target length 2 pages)
describing the details on the planned experiment (what do you hope to obtain, how, why is it relevant, how this follows earlier work (e.g. in the framework of the NGI Open Calls)). This section may also include all information with respect to the State-of-the-Art to show the innovative character of the experiment and the expected business impact

Section C   Requested Fed4FIRE+ tools, testbeds and facilities (1 page, standard form)
The information in this section needs to be collected in collaboration with the Fed4FIRE+ partner acting as patron on this experiment. For this section a specific format needs to be used, which is attached to this document and available for download.

Section D   Compliance check (max. 1 page, standard form to be provided by the Fed4FIRE+ Patron)
This section contains the formal statement of the Fed4FIRE+ partner(s) acting as patron on this experiment that he/she has been informed about your proposed experiment and that he agrees that it can be carried out on the required testbed(s).

Section E   Background and qualifications (target length 1/2 page)
This section describes the proposing experimenters and includes an overview of the activities, your qualifications, technical expertise and other information to allow the reviewers to judge your ability to carry out the experiment.

Section G   Requested funding (1 page. standard form).
This section provides an overview of the budgeted costs and the requested funding. A split is made in
o   personnel costs
o   other direct costs (travel, consumables,..) and
o   indirect costs (see section 6).

This section also includes the split between the budget allocated to the experimenter and the budget allocated to the Patron(s), clearly arguing this split (max. €2 500 in total for the patron(s)).
The budget can be split in a flexible way between the experimenter and the Patron but the split needs to be provided and argumented in the proposal. It is thus possible to have:

- example 1:   Experiment budget = 10 000 euro
  Patron budget = 2 500 euro

- example 2:   Experiment budget = 11 000 euro
  patron budget = 1 500 euro

- example 3:   Experiment budget = 10 500 euro
  Patron 1 budget = 1 500 euro
  Patron 2 budget = 500 euro

Section G   Participation in previous Open Calls of the Fed4FIRE+ project.
This section provides information on previous participation in Open Calls of the Fed4FIRE+ project:

- Parties who have submitted proposals in previous calls which were NOT selected for funding should indicate the exact dates and details of the previous submissions.

- Parties who have submitted proposals in previous calls which were selected for funding should indicate the difference between the current proposal and the previously submitted proposal.

- Parties belonging to a legal entity of which other groups have submitted proposals in previous calls also need to indicate the difference between the current proposal and the previously submitted proposals.

10 Support during experiment and the role of the Patron

Experimenters in this open call category have access to basic and advanced support:

A. Basic support

- Guaranteeing that the facility is up and running (e.g. answering/solving "could it be that server X is down?")
- Providing pointers to documentation on how the facility can be used (e.g. "how to use the virtual wall testbed" => answer: check out our tutorial online at page x")
- Providing pointers to technical questions as far as relevant (e.g. answering "do you know how I could change the WiFi channel" => answer: yes, it is described on following page: y"; irrelevant questions are for example "how to copy a directory under Linux")
- This support will be handled through the support forum detailed at http://doc.fed4fire.eu/support.html

B. Dedicated (advanced) support includes all of the following supporting activities by the patron:

- Deeper study of the problem of the experimenter: invest effort to fully understand what their goals are, suggest (alternative) ways to reach their goals. To put it more concretely (again using the example of the Virtual Wall testbed), these experimenters do not need to know the details on the Virtual Wall or how it should be used, they will be told what is relevant to them and can focus on their problem, not on how to solve it.
- Help with setting up the experiments (e.g. "how to use the virtual wall" => answer: the tutorial is there, but let me show you how what is relevant for you, let me sit together with you while going through this example and let us then also make (together) an experiment description that matches what you are trying to do.
- (Joint) solving of practical technical problems (e.g. "do you know how I could change the WiFi channel" => yes, it is described on page y, in your case you could implement this as following: ..., perhaps we should quickly make a script that helps you to do it more easily, ...)
- Custom modifications if needed: e.g. adding third-party hardware and preparing an API for this.
- Technical consultancy during/after the experiments (e.g. "I do get result x but would have expected y, what could be the problem?")

It is essential that you get in contact with the Fed4FIRE+ partner in charge of the testbed(s) you will use for your experiment to discuss your experiment and the specific requirements. Each proposing party must therefore contact the Fed4FIRE+ consortium regarding its submission to identify a possible Patron. The proposing party must submit its draft proposal to this Patron. The feedback by the Patron is provided in section D of the proposal.

The role and support by the Patron will be reflected in the budget (see section G of the proposal). At least one Patron is needed per experiment, but more are possible.

11 Budget & Payment scheme

As the experimenter will be linked to the Fed4FIRE+ consortium as 3rd Party receiving financial support, specific arrangements exist with respect to financial costs and payment schemes:

11.1 Compliance rules

- As a 3rd Party, the proposing party needs to include an overview of the estimated costs in its proposal at the time of submission. Costs consist of personnel costs, direct costs (such as travel, consumables, etc.) and indirect costs. The costs of a 3rd Party have to comply with the rules and the principles mentioned in Section I, Article 6 (Eligible and ineligible costs) of the H2020 AGA — 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, and must be recorded in the accounts of the 3rd Party. In other words, the rules relating to eligibility of costs, identification of direct and indirect costs and upper funding limits apply. Equally those concerning controls and audits of Section I, Article 22 of the H2020 AGA.

11.2 Acceptable costs:

- The budget for the experimenter covers the costs for:
  - getting acquainted with the testbed
  - executing the experiment
  - reporting feedback about the federation framework
  - submitting the required documents
  - attending the required meetings (travel)

- The budget for the Fed4FIRE+ partner(s) acting as Patron(s) covers the costs for:
  - supporting the proposer during the preparation and execution of the experiment
  - specific adaptation of the testbed to run the experiment
  - providing feedback and quality-check on the submitted reports and materials by the experimenter.

11.3 Budget

The maximum requested funding for each experiment in this Call is set at 12.5k euro (incl. the costs for the Patron)

The budgeted costs and the requested funding should include:
- personnel costs
- other direct costs (travel, consumables,..) and
- indirect costs (see below).

The budget can be split in a flexible way between the experimenter and the Patron but the split needs to be provided and argumented in the proposal. It is thus possible to have:

11.4 Indirect costs:

For the Experimenter all numbers must include indirect costs, for the Patron, indirect costs follow the H2020 guidelines and are defined as 25%.

11.5 Submission of invoices

- The proposer will need, if its experiment is selected for funding:
- To submit an invoice for 75% of the budget allocated to the 3rd Party which will be paid by imec as coordinator upon an approval of the report by the Fed4FIRE+ consortium.
- To submit an invoice for 25% of the budget allocated to the 3rd Party which will be paid by imec as coordinator upon receiving a positive evaluation report by the EU appointed reviewers following a formal review by the EU representatives.
- Payments to the Fed4FIRE+ partner acting as Patron will be made internally within the consortium.

12 Access to Foreground information from the project

As indicated by the EC Guidelines, a 3rd Party is paid in full for its contribution made to a project by the Coordinator. As a consequence, 3rd Parties do not have any IPR rights on the foreground of the project.

13 Reporting

As the experimenter will be linked to the Fed4FIRE+ consortium as 3rd Party receiving financial support, no input will be required for any of the regular project reports which the Fed4FIRE+ consortium needs to submit to the EU.

A final report needs to be submitted after conclusion of the experiment. A specific template needs to be used (can be found as download on the Fed4FIRE+ website together with this Call information) and will include:

Part A.   Summary

Part B.   Detailed description
This section describes the details on the experiment and provides information as you have been collecting this from your point of view and from your business. It includes:
B.1   Concept, Objectives, Set-up and Background
B.2   Technical Results & Lessons learned
B.3   Business impact

Part C.   Feedback to Fed4FIRE+
This section contains valuable information for the Fed4FIRE+ consortium and describes your experiences by running your experiment on the available testbeds. Note that the production of this feedback is one of the key motivations for the existence of the Fed4FIRE+ open calls. It includes:
C.1   Resources & tools used
C.2   Feedback based on design/set-up/running your experiment on Fed4FIRE+
C.3   Why Fed4FIRE+ was useful to you

This report will not only serve as an evaluation tool to judge payment of the experimenter, but will mainly serve as input to the Fed4FIRE+ sustainability plans, evaluation of the user-friendliness of the Fed4FIRE+ tools and identification of missing gaps in both testbeds and tools.

Part of this report may be used by the Fed4FIRE+ consortium for inclusion in their reporting documents to the EU and in public presentations. Inclusion of confidential information should therefore be indicated and discussed with the Fed4FIRE+ consortium.

This report will also be used for the formal review by the European Commission.

14 Criteria for evaluation and ranking of experiments

Proposals can only be submitted by eligible parties (cfr section 4):

Evaluation and ranking will be carried out by an external review panel. Selection will mainly be based upon:

Proposals for experiments have to demonstrate:

Criteria I. A degree of **industrial and/or scientific innovation & relevance** including a motivation for the experiment. (Section B of the Proposal Template)
The score given here should reflect:
- the degree of innovation: if an experiment is pushing the boundaries of its domain, then it should get a higher score here then experiments testing trivial things. In order to demonstrate these criteria, the proposer may opt to indicate the State of the Art in the appropriate field
- and / or the industrial relevance including the expected and projected impact on the experimenter through product development or the scientific relevance and the projected impact on the organisation

Criteria II. **Relevance for Fed4FIRE+**: This criterion provides a score taking into account several possible issues:
Use of Fed4FIRE+ facilities and tools (Sections B & C of the Proposal Template): The use of the proposed testbeds and tools will be evaluated on the basis of the relevance and the required complexity. Proposals will not be penalized for using only single testbeds or single tools, but use of multiple testbeds is stimulated, as Fed4FIRE+ is a federation of testbeds. No distinction is made between achieving this by running the same experiment in sequence on multiple testbeds (e.g. to evaluate different wireless environments), or by running a single experiment that relies on resources from different testbeds at the same time. If however proposals have made their design artificially more complex than needed just in order to use multiple testbeds, then the score will be lower. Similarly, if proposals have made their designs too trivial while you can easily identify opportunities for involving other testbeds that would have made the experiment stronger, then the score will also be lower. In order to optimise the design of the experiment, the proposer should seek information on the available testbeds.

Criteria III. **Indication on possible future follow-up experiments and how this can support the sustainability of the federated testbed facilities**. (Section F of the Proposal Template).
The proposer may indicate possible follow-up projects and experiments which can contribute to the sustainability of the Fed4FIRE+ facilities. The quality, the size and the expected feasibility to carry out these future experiments will be reflected by the score in this criterion.
These future plans can be new experiment with Fed4FIRE+, a new research project, internal projects, product commercialization…. As the objective of Fed4FIRE+ is to provide an incentive, seed budget or initial assistance in your business or research, any new initiative triggered by this experiment is

acceptable to be listed. The future plans do not have to exclusively impact the future of Fed4FIRE+!

Criteria IV.   The proposer should exhibit **technological expertise and quality**. This information must be included in Section E of the Proposal Template.

Criteria V.   Preference is given to proposals **originating from new players in the field**. Therefore, the following restrictions will be implemented:

–   parties who have submitted a proposal in previous calls of Fed4FIRE+ and which were selected for funding are allowed to submit a new proposal only when clear distinction can be made with previous submitted proposals.

–   Parties who have not submitted or been participating in previous calls of the Fed4FIRE+ project but are belonging to same legal entity as proposers which have submitted proposals in previous calls, are eligible in case they can clearly identify the difference with previous submitted proposals by the other groups.

–   This information must be included in Section G of the Proposal Template.

Amongst all above listed criteria, Criteria I and II will be weighted higher.

The proposed experiment must be executed on the available Fed4FIRE+ testbeds. This competitive call allows for both experiments using multiple testbeds (in parallel and/or in sequence) and experiments using a single testbed. Information about the current Fed4FIRE+ testbeds is available at the dedicated pages[1]. The proposed experiment must use the experimentation tools provided by Fed4FIRE+ in order to provide feedback to the project about their usefulness and maturity in a final report. In justified cases additional external tools may be used.