



**HORIZON 2020**  
**Information and Communication Technologies**  
**Integrating experiments and facilities in FIRE+**

# Open Call Announcement

**Grant Agreement number: 687884**

**Project acronym: F-Interop**

**Project title: FIRE+ online interoperability and performance test tools to support emerging technologies from research to standardization and market launch  
The standards and innovations accelerating tool**

**Type of action: Research and Innovation Action (RIA)**

**Project website address: [www.finterop.eu](http://www.finterop.eu)**



# 1 Project summary

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F-Interop is a Horizon 2020 European Research project, which proposes to extend the European Future Internet research infrastructure (FIRE+) with online and remote conformance, interoperability and performance test tools supporting emerging technologies from research to standardization and to market launch. The outcome will be a set of tools enabling:

- Standardization communities to save time and resources, to be more inclusive with partners who cannot afford travelling to attend physical *interoperability* events, and to accelerate standardization processes;
- SMEs and companies to develop standards-based interoperable products with a shorter time-to-market and significantly lowered engineering and financial overhead.

F-Interop intends to advance existing FIRE+ testbeds in order to become an accelerator for new standards and innovations activities. It will achieve so by federating the following FIRE+ testbed facilities into the F-Interop cloud-based testing architecture. The testbeds cover the full spectrum of networked devices:

- **Fed4FIRE** (<http://www.fed4fire.eu/testbeds/>) federates 24 FIRE+ testbeds, bringing together cloud, IoT, wireless, wireless mobile, LTE, cognitive radio, 5G, openflow, SDN, NFV and network emulation technologies.
- **OneLab** (<https://onelab.eu/>) federates testbeds for the future Internet, including IoT, cognitive radio, wireless and overlay network technologies
- **IoT lab** (<http://www.iotlab.eu/>) federates crowd sourcing and crowd sensing testbeds, including smart campus, smart building and smart office testbed.

By doing so, F-Interop aims to address the following objectives:

- Integrate and extend several FIRE+ testbeds federations with a shared “Testbed as a Service”, bringing together a federation of over 32 testbeds and 4755 nodes in a common reference architecture for online test and standardization support;
- Extend FIRE+ through research and development of online testing tools for the IoT, including: interoperability, conformance and performance tests;
- Support IoT standardization and enable closer cooperation with the industry, providing engagement with emerging IoT standards and standardization bodies as well as developing new online certification and labeling mechanisms.

To achieve such objectives F-Interop **includes the coordinators of the 3 targeted FIRE+ testbeds** (Fed4Fire, OneLab, IoT lab), while at the same time its members bring **expertise from complementary research projects and have strong links with standardization bodies** (ETSI, IETF, IEEE, ITU, etc.) and international forums (IoT Forum, IPv6 Forum, etc.).

More information is available on F-Interop website: [www.f-interop.eu](http://www.f-interop.eu)

## 2 Objectives for inviting new third parties

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The F-Interop project offers a number of innovations that will move existing FIRE+ testbeds beyond the state of the art for interoperability testing. It is therefore critically important that these innovations are tested and validated in terms of their added value and user acceptance. It is also important that the project make every effort to ensure the F-Interop platform is adopted and commercially exploited by a wide range of SMEs and large enterprises. In order to achieve this, the project allocated a dedicated budget to support a number of measures in order to select SMEs and web entrepreneurs to develop innovative applications based on the F-Interop framework, as well as to support complementary activities.

The F-Interop Open Call is designed to include projects that develop innovative testing tools and test designs around the F-Interop platform. These applications may be for the purpose of validating the platform or extending the existing capabilities of the platform with new features and capabilities, new interfaces or new tools.

In addition to the tool and test development projects described above, the open call will also select three SMEs to conduct plugtest events with the purpose of outreaching even more members of the interoperability and standards development communities and to benchmark the effectiveness of the developed online and remote tools.

More explicitly, the financial support to third parties in the F-Interop open call will target R&D for 4 categories of projects:

- A. **New testing tools:** Aim of this kind of projects is to extend the F-Interop platform. F-Interop will select up to three (3) projects to develop new testing tools that extend the F-Interop capabilities, with funding up to €100K to the third parties and an additional €10K to an existing consortium partner supporting integration with the F-Interop platform. Requested funding will cover SW development and HW/SW integration and provisioning of access to F-Interop testbeds. The outcome of this kind of experiment will be a new integrated testing tool available on the F-Interop platform. Clear explanation of advancement with respect to existing tools should be provided in Section 1 (Excellence) of the proposal template. Example of tools include but are not limited to: SW tools for guaranteeing privacy and confidentiality of the generated test data; HW and SW tools for increasing the security and validity of the message generated during each test session; tools to support the testing of new protocols using the F-Interop developed testing framework, e.g., to analyse test results, visualize test outcomes, issue of certifications.
- B. **New test design:** Aim of this kind of projects is to extend the library of test descriptions and test scripts already covered by the current F-Interop platform for protocol functionalities currently not covered. F-Interop will select three (3) projects to develop (and subsequently perform) new interoperability tests designs and specifications based on F-Interop existing framework. Requested budget should cover funding of €60k to the third parties and an additional €10K to an existing consortium partner to support integration with the F-Interop platform. This category should target standardization communities including ETSI, IETF, ITU, IEEE and W3C. Funding will cover test design and development and HW/SW Integration into F-Interop platform as necessary. The outcome of this kind of experiment is new test designs available on the F-Interop platform for further use and new users. Clear explanation of advancement with respect to already covered scenarios should be provided in Section 1 (Excellence) of the proposal template. Expected test design should include but not limited to: OneM2M, 6TiSCH, 6LoWPAN, Web of Things standards as well as other standards such IPv6, BLE. Formal support from the SDO will be considered as a plus.
- C. **SME F-Interop assessment reports:** Aim of this kind of projects is to generate and provide feedback on usability study for the current implementation of F-Interop platform and related tools. F-Interop will allocate 10 small grants of €10k each to SMEs for testing the F-Interop platform and provide a written report on potential improvements. Funding will cover testing on the F-Interop platform and preparation of a report. The outcome of this kind of experiments is a report detailing potential improvements to the F-Interop platform. Clear explanation of the

methodology followed in order to provide the above identified usability study should be provided in Section 1 (Excellence) and Section 3 (implementation) of the proposal template. Focus of the feasibility study should include but not limited to: understanding the simplicity of use and effectiveness of the proposed tools, while simplifying access to conformance, interoperability and performance online tests, and replicating the experience of physical tests session. A description of the report requirements and expected content, and a set of detailed questions will be provided by F-Interop.

- D. **Plugtest Events:** Aim of this kind of projects is to outreach a larger number of communities with F-Interop platform and to collect feedback. F-Interop will select one or more third parties to conduct up to three (3) remote, online plugtest events. The objective of these events will be to involve interop communities to adopt and provide feedback on F-Interop tools for technical and/or syntactical Interoperability tests. €10k will be awarded to the third parties selected to run an event and another €10k will be allocated to the consortium partner that supports this plugtest event. Funding will cover the planning, promotion and delivery of each event, the follow-up with a survey and preparation of a report detailing the results of the entire interop tests conducted during the plugtest. Clear explanation of advancement and benefit of organizing remote plugtest events with respect to physical ones should be provided in Section 2 (Impact) of the proposal template. Example of target communities should include but not limited ITU, IETF, W3C, ETSI, IEEE. The call will consider the formal support of SDOs as a key factor of success.

It is expected that proposal should focus on a specific target, however those covering multiple targets should select a leading one and explain in the proposal (Section 9 in the Guide for Applicants) how they also address different expected outcomes.

## 3 Type of new third parties

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Eligible third parties of the F-Interop open calls program includes the following:

- Single European mid-caps, SMEs and Micro SMEs as defined in EU law: [EU recommendation 2003/361](#),
- Web entrepreneurs and individual sole-traders;
- European secondary and higher education establishments, research institutes and other not-for-profit research organisations;
- Standards bodies such as ETSI, IETF, ITU, IEEE and W3C, BSI.

Each of these must be established in a EU Member State, in an Associated Country or in a country that contributes substantially to the financing of F-Interop research project. To avoid conflicts of interest, applications will not be accepted from persons or organisations who are partners in the F-Interop consortium or who are formally linked in any way to partners of the consortium. All applicants will be required to declare that they know of no such potential conflicts of interest that would prevent them from applying. Because successful applicants will not be required to join the F-Interop consortium, there will be no request for applicants to exhibit possession of a PIC number.

The following categories of third parties are envisioned to participate to the application process:

- *New tools providers (aka F-Interop tools contributors):* these are SMEs or research organizations that will form a new consortium fully supported by the F-Interop open call budget, whether awarded, to develop new testing tools that extend the F-Interop capabilities following clearly identified existing gaps in the current infrastructure;
- *New test designer and providers (aka F-Interop tests contributors):* these are SMEs or research organizations that will form a new consortium fully supported by the F-Interop open call budget, whether awarded, to develop and implementing new test cases extending the scenarios currently covered by the F-Interop platform;
- *Platform users (aka F-Interop users):* these are the SMEs that are expect, if awarded, to use existing tools provided by the F-Interop platform in order to run tests and provide reports on the platform usability and user acceptance;
- *Plugtest event managers:* these are the entities that, if awarded, will organize, promote and run plugtest events by engaging new and relevant interoperability communities. Value added by additional involved communities should be clarified.
- *Existing project partners (aka F-interop platform providers):* these are original F-Interop partners that will receive support, whether a project of category A, B and D is awarded, to support integration into the F-Interop platform of new tools and new developed test as well, when required by plugtest managers, to support the plugtest activities.

In consideration of the funding available and the objectives of the call, we encourage focused proposals submitted by a single institution. For proposal A, however for particular reasons, that must be explained and justified, a proposal may involve up to three legal entities. In this case, the splitting of responsibilities, activities, and resources should be made very clear in the project proposal.

## 4 Task of new third parties

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New third parties will be requested joining the technical activities and quantitatively assessing and documenting their results into deliverables. In addition new third parties are expected to contribute to F-Interop dissemination and engagement activities and are strongly encouraged to contribute to F-Interop open data and open source repositories. In particular for experiments in category A this will result in support to maintain developed tools. For details regarding the dissemination and engagement activities guidelines, please refer to Section 13 of the Guide for Applicants.

Furthermore, in order to maximise impacts, sub-projects posing the basis for strong results' exploitation, and which can significantly empower F-Interop infrastructures, will be strongly encouraged. For this reason, prospective applicants, especially if applying for Projects in category A should mention (if applicable) in their project application (namely Part B, Section 11 of the Guide for Applicants) their availability to continue maintain the F-Interop tools also after their sub-project end-date. It is responsibility of the new third parties to identify a viable business model allowing them to sustain their activity beyond the project scope.

Submission of a number of good quality proposals, including proposals generated by Eastern Europe countries is particularly welcomed.

## 5 Obligations of new third parties

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New third parties will be requested to sign the standard contract to protect IPR and identify responsibilities. Proposed solutions must comply with the F-Interop architecture and interfaces, as well as with additional technical requirements for integration with F-Interop tools and testbeds available as part of the F-Interop Open Call technical documentation.

*Each developed module must be released as an open source code made available without restriction to the F-Interop platform and partners.*

The final version of the documentation on F-Interop architecture and interfaces and re-deployable facilities will be made available at least one month prior to the submission deadline.

## 6 Application process

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Proposals for selection as additional third parties in the F-Interop project are submitted in a single stage, through the preparation of a complete proposal application, prepared according to the guidelines and the templates provided in the Guide for Applicants.

**Proposal should be submitted** by accessing the only form available at: <http://www.finterop.eu/index.php/open-call> according to the procedure described in the Guide for Applicants.

**Submission deadline:** the application process will open on July 31st 2016 and will close on January 25<sup>th</sup>, 2017, 17:00 CET time.

**Expected duration of participation in F-Interop project:** Acceptance notification will be sent on April 26<sup>th</sup>, 2017 and selected projects are supposed to start in August 2017 and to run until June 2018.

Duration of expected projects lies between 10 and 3 months. In particular, the different type of projects selected will have the following maximum expected duration:

- **Category A:** around 10 Months
- **Category B:** around 6 Months;
- **Category C:** around 4 Months;
- **Category D:** around 3 Months;

**Call budget:** total budget allocated for the call is 700K, of which 610K will support 19 projects (and a minimum of 19 expected third parties external institutions), while 90K will be used to assist consortium partners to deliver technical support for new tools integration and plugtests organization.

Details about the maximum contribution recommended for each of the five project types encompassed by the call are as following:

- **Category A:** 100K per third parties; 3 in total;
- **Category B:** 60K per third parties; 3 in total;
- **Category C:** 10K per third parties; 3 in total;
- **Category D:** 10K per third parties; 10 in total.

**Language in which the proposal should be submitted:** English

**Web address for further information (full call text/guidelines):** <http://www.finterop.eu/index.php/open-call>

**Email address for further information:** [maria.prokopi@digicatapult.org.uk](mailto:maria.prokopi@digicatapult.org.uk) (helpdesk support will be active between September 1<sup>st</sup>, 2016 and January 27<sup>th</sup>, 2016)

### Criteria:

Several criteria will be taken into account for the pre-selection. The weighted criteria are indicated in the following table:

| Criteria                               | New Tool | Test design | SME reports | Plugtest |
|--|----------|-------------|-------------|----------|
| Innovative dimension                   | 2        |             | 1           |          |
| Expertise of the applicant             | 2        | 2           | 2           | 1        |
| Potential number of users/participants | 3        | 3           |             | 2        |
| Relevance for academic researchers     | 1        | 1           |             |          |
| Relevance for SMEs                     | 2        | 2           |             | 1        |
| Turnover of the applicant              |          |             | 2           |          |
| Number of products to be tested        |          |             | 3           | 4        |
| Diversity                              |          | 2           | 2           | 2        |
|  | 10       | 10          | 10          | 10       |

Moreover, the final selection will take into account complementary criteria such as geographic distribution among the selected projects within each category, and potential impact for standardization communities.