



FI-STAR Competitive Call for Additional Project Partners

Call identifier: **FI-STAR-1**

Call title: **Applications and FI-STAR platform enhancements**

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

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Project website: <http://www.fi-star.eu>

1 Introduction to FI-STAR

Within the context of the term Future Internet (FI), a number of research and industrial activities aim at evolving the current Internet technologies and innovating different business sectors by leveraging on such technologies. The Future Internet Public Private Partnership (FI-PPP)¹ initiative aims to accelerate the development and adoption of FI technologies in Europe by delivering a common platform supporting large-scale trials running in different business domains and leveraging on a wide range of Future Internet (FI) infrastructures.

In this context, FI-STAR is an early trial project in the health care domain and is part of the second phase of the Public Private partnership on Future Internet² (FI-PPP).

FI-STAR is establishing early trials in the health care domain building on Future Internet technology, creating a robust framework based on a “software to data” paradigm and validating the FI-PPP core platform concept by using generic enablers to build its framework. Its concept is to bring the software to the data, rather than bringing the data to the software. The FI-STAR project is building its framework using the technology foundation being delivered in the FI-PPP programme by project FI-WARE³. The technology foundation delivers the platform architecture and open specifications⁴ of Generic Enablers (GEs), as well as a set of implementations of these, which are available in the FI-WARE Catalogue⁵.

A sustainable value chain following the life cycle of the Generic Enablers (GEs) will enable FI-STAR to grow beyond the lifetime of the project. FI-STAR will build a vertical community in order to create a sustainable ecosystem for all user groups in the global health care and

¹ www.fi-ppp.eu

² <http://cordis.europa.eu/fp7/ict/netinnovation/docs/wp2011-13.pdf>

³ www.fi-ware.eu

⁴ <http://wiki.fi-ware.eu>

⁵ <http://catalogue.fi-ware.eu>

adjacent markets based on protection of sensitive and personal data travelling in public clouds.

A number of test applications are being deployed at FI-STAR experimentation sites in the health domain and aim at the execution of a diverse set of use case scenarios. These scenarios are integrated with advanced Internet-based network and service capabilities that are available in the FI-PPP programme.

FI-STAR will deploy and execute seven early trials across Europe, serving a large number of European citizens. Through the trials FI-STAR will validate the FI-PPP technology foundation concept by using GEs to build its framework and will introduce ultra-light interactive applications for user functionality.

The project started in April 2013 and its duration is 24 months.

The current use case scenarios are being deployed at these locations:

- **Basque region, Spain:** New Interactive Future Internet based services for people with Mental Health problems
- **Leeds, UK:** 2-D bar-coding for real time reverse medicament supply chain:
- **Munich, Germany:** Virtualization of operating theatre environments and real time data integration for monitoring and reduction of errors
- **Krakow, Poland:** Interactive online facilities for access and quality of care for cancer patients
- **Bucharest, Romania:** Online Cardiology service for people with heart failure
- **Tromsø, Norway:** Tele-health network for Diabetes patients
- **Emilia Romana region, Italy:** Provision of a network capable to connect different applications and devices

2 Objectives of the call

FI-STAR has dedicated an amount of its budget to invite local solution providers and system integrators to get involved in the project and deliver innovative technology for the benefit of its experimentation sites and the FI-PPP programme as a whole.

The objective of FI-STAR with this open call is to proactively prepare for Phase III of the FI-PPP programme⁶ by soliciting additional partners to undertake specific tasks for increasing the value of the FI-STAR platform. The objectives fall into three categories:

1. Strengthen the technology basis of the FI-STAR platform by adding functionality that is currently not foreseen but which will provide significant added value to the existing experimentation sites and use case scenarios of FI-STAR⁷.
2. To attract developers to deliver innovative applications or value added services, among others for the existing experimentation nodes, using the FI-STAR platform including the generic enablers and specific enablers that comprise this platform.
3. To strengthen the reach to the stakeholders of the sector by additional dissemination mechanisms

⁶ <http://cordis.europa.eu/fp7/ict/netinnovation/docs/wp2011-13.pdf>

⁷ <https://www.fi-star.eu/use-cases.html>

2.1 Technical requirements

Several areas have been identified as areas for providing added value for the FI-STAR platform and community and are organised according to the above categories.

Category 1: Strengthen the technology basis

The following list presents services and functionalities that have been identified as being highly desirable to complete the service offering of the FI-STAR project in particular for the target sector of health care and in more generally the context of phase III of the FI-PPP programme in general.

The list below is not presenting a particular order or priority. Furthermore the list should not be considered exhaustive. Proposals that are strengthening the technology basis of FI-STAR in other, well presented, ways are equally welcome.

Minimum 3 proposals will be accepted in this category.

Marketplace and deployment tool

For the purpose of discovering offered services and applications, as well as for automated deployment of FI-STAR platform services, a marketplace functionality with associated tools should be provided:

- Implementation of a marketplace component that offers catalogue and discovery functionality for software components
- Implementation of brokerage services and associated tools to browse, identify and provision the most suitable software components based on selection criteria for offered software components
- Implementation of minimal client-side functionality that is able to execute provisioning requests from the marketplace component
- Support the orchestration of multiple deployments on several clients with scalable properties
- Optionally, support version management of offered software components in the marketplace

Geo-fencing specific enabler

A geofencing enabler will allow the implementation of location-aware services and applications. The health sector knows many privacy, data management, good tracking, and patient monitoring services that critically depend on health sector specific location-awareness implementations.

This level of location-awareness will be provided by the geofencing specific enabler to be developed.

- Definition of health sector specific requirements on location-awareness
- Development of a geofencing enabler for typical health environments as hospitals
- Evaluation and demonstration of the enabler by integration in FI-STAR services

Reminder services for patients

Reminder services and devices for patients are necessary in several scenarios, like following the medication prescription instructions, do their physical exercise, follow special treatment schedules, etc. Such devices and service can be connected to health care stakeholder organisations that can monitor the treatment and progress of high risk patients remotely. Such devices should be minimally invasive and easy to use, yet interface with the FI-STAR platform backend services in a seamless way. Related concrete topics are:

- embedded architectures for remote user information management
- use-cases for smart appliances supporting remote monitoring over the Internet
- cloud services for appliances management

Real-time processing of patient data

In order to enable proactive reaction on health related problems a solution should be provided that can operate on patient data that are sensed and processed in real-time. The solution should potentially be supported by domain ontology and semantic technologies that allow fast mapping of events and ensure interoperability.

Among others, the capabilities that should be developed could be used to build early warning and decision making tools to automate the decision making process in health care, wellness and ambient assisted living.

Category 2: Innovative applications and value added services

The following list provides examples of applications and value added services that could complement the service offering of the FI-STAR project in particular for the target sector of health care and more generally in the context of phase III of the FI-PPP programme in general.

The list below is not presenting a particular order or priority. Furthermore the list should not be considered exhaustive. Proposals that are presenting additional value added services using the FI-STAR platform and the FI-PPP generic enablers are equally welcome.

Maximum 3 proposals will be accepted in this category.

Work-flow engine for accounting purposes

For accounting purposes and other standardized processes involving actors being distributed over a number of remote locations, a web-based Workflow Application with the following core features should be provided:

- Definition and execution of workflows
- Development environment for the rapid implementation of the particular workflow tasks
- Self-explaining user interface for the execution of the work flow tasks even by unskilled end users

- Administrator user interface for monitoring the workflow states, starting, ending and resetting of the workflow instances as well as assigning workflow tasks to particular users and user groups
- History keeping of user actions and data capturing for auditing purposes
- Utilization of the FI-STAR cloud infrastructure to the maximum extent

Pseudonymization of users

Pseudonymization is a method by which the user adopts a new artificial identity provided by a trusted and secure component. This identity is called pseudonym and includes all features and credentials needed by the existing Identity Management generic enabler. A pseudonymization specific enabler should:

- Preserve context coherence without allowing third parties to trace back the association to the user himself
- Preserve the non-repudiation security requirement allowing authorized parties to resolve the association between the pseudonym and the real identity.
- Implement secure logging and monitoring of all access to personal data.

Emotion recognition

Design and implement an emotion recognition solution that allows the collection of evidence concerning the emotional state of the patient. Optionally the solution should provide a prototype for system reactions (treatment purposes), for example based on neuro-feedback concepts.

Motion processing

Design and implement a solution that enables the utilisation of motion recognition devices for medical purposes in a generic manner. Non-exhaustive examples include support for end-user devices like the Microsoft Kinect or motion sensors and accelerometers in modern Android based smartphones, or the M7 co-processor in recent Apple iPhone smartphones.

GS1 Enabler

Design and implement a specific enabler to simplify the management of barcodes and radio frequency (RF) based identifiers supporting ad hoc interoperability with devices including Android, Windows and IOS based devices. While consideration of the GS1 standard is mandatory due to its use in health care in some European countries, for example the UK, proposers might consider additional existing standards for barcodes and RF based identifiers. The newly created enabler should not only be restricted to linear barcodes but should in particular enable the recognition of 2D barcodes and should endorse work done by the European Commission and the European Pharmaceutical Industry with a view towards serialization of pharmaceuticals and medical consumables.

Electronic Health Record (EHR) connector

Electronic Health Records (EHRs) are in widespread use today. Since several years several vendors are implementing personal and electronic health record systems. The continuous trend towards multi-institutional health networks may also pave the way for standards-based interfaces for accessing and managing EHRs. In the context of FI-STAR a solution should be provided that seamlessly connects to systems that store such records in standards based formats, and makes them available as a service of the FI-STAR platform adhering to the FI-PPP Generic and Specific enabler concepts. The work should cover insertion and retrieval of EHR conforming to legal requirements in Europe and enabling innovative business models for new stakeholders. Any solution should endorse the work so far completed under the epSOS project (www.epsos.eu). The focus hereby would be the use of the prospective specific enabler in order to integrate summary records created on the basis of epSOS rules into EHRs of organisations which have not yet subscribed to epSOS and which would otherwise not be able to integrate the epSOS records seamlessly.

Category 3: Strengthen the reach to stakeholders

Maximum 1 proposal will be accepted in this category.

Dissemination – extension of TV/broadcast presence

For the purpose of increasing the dissemination potential of the project, this call is seeking a broadcast partner to disseminate FI-STAR generated content to television audiences.

The dissemination work in the project creates new content covering use cases, applications, cloud, data and internet technologies, creating the basis to gather and create content for TV audiences.

The objectives of the tasks of the additional participant are:

- To pilot and transmit a television programme about the FI-STAR and the Future Internet programme of innovative healthcare solutions for the elderly. Such a programme shall address the EU-wide issue of medical care for the aging population across Europe.
- Along with a TV pilot the broadcaster should be interested in a parallel, integrated Future Internet platform to enable further viewers and user participation.
- To pilot such a TV concept with a view to develop an integrated TV / multiplatform series based on future digital healthcare solutions.

FI-STAR partners include experienced TV and multiplatform producers and can provide content and concepts according to broadcast standards. The additional partner (broadcaster) will work very closely with the respective team in the project.

As the FI-STAR embraces many EU communities the call is addressed preferably to EU broadcasters.

3 Inclusion into the consortium

Once an organisation (or a group of organisations – up to two partners), is selected to perform the proposed work, it will be included in the project consortium and in the FI-PPP programme until the end of the project. Due to the overall duration of the FI-STAR project, the total planned duration of the R&D work should not exceed 12 months. Expected start of the work will be 1st April 2014 or earlier.

It is required that the proposal includes a schedule of the R&D activities that fits in the overall timing of the project. Considering the current plans the FI-STAR project will be active until spring 2015.

It is a requirement that the organisations that join the consortium, sign the FI-STAR consortium agreement as well as the FI-PPP collaboration agreement. Both agreements are available to potential proposers in confidence and upon request.

4 Eligibility Requirements and Evaluation Criteria

The proposal must be submitted by an organisation that is an established legal entity and which can join forces with up to one further organisation to form a consortium of two organisations. The proposing organisations must be eligible for participation in the EC Framework Programme 7 (FP7). Information about eligibility criteria for participation and further information can be found at <http://ec.europa.eu/research/participants/portal>. Proposing organisations must be entities not part of the existing project consortium.

The proposal must state precise costs for the execution of the proposed work in terms of personnel and other costs following the financial rules for EC FP7 projects (<http://ec.europa.eu/research/participants/portal>). The maximum EC contribution for individual proposals is set at 180,000 € per proposal.

Following the selection of the proposals that should join the project, an updated resource and project plan will be developed through negotiations between the proposing organisations, the project coordinator the project Board, and in consent with the EC Project Officer. Successful negotiations with additional partners (maximum 2 partners per proposal) will lead to an amendment to the project Grant Agreement.

In the context of this call, proposals that are driven by industry or are defined in close collaboration with industry are preferred. It is necessary that the proposals present a detailed expected business impact of their work in the context of the FI-STAR project and the FI-PPP programme.

The additional beneficiaries will receive an EU contribution in accordance with the standard FP7 payment rules: covering 50 or 75% of eligible costs, depending on the type of organisation, and considering direct and indirect costs.

4.1.1 Category 1 and 2

Proposals falling in category 1 (Strengthen the technology basis) and category 2 (Innovative applications and value added services) have to demonstrate technological expertise, scientific novelty and quality. The proposed work must be undertaken using to the maximum extent possible to services of the FI-STAR platform that are based on the FI-WARE Generic Enablers. Only in exceptional and well justified cases the use of other technologies

is acceptable. If such a case arises, the proposal must present a detailed integration plan with the FI-PPP technology. The proposers are expected to pursue an appropriate level of knowledge dissemination (e.g. in international publications and FI-PPP related events) and potentially contribute to the planning of such activities by the consortium and the FI-PPP programme.

The proposals will be evaluated by independent experts, who will be briefed by the consortium about the selection criteria. Selection criteria will include:

- industrial relevance,
- degree of innovation,
- scientific excellence,
- fulfilment of one or more technical requirements,
- qualifications of the organisations performing the work,
- expected impact for the FI-STAR project,
- commitment to the long term vision of the FI-PPP programme,
- consideration of socio-economic and other relevant non-technical aspects

4.1.2 Category 3

Proposals falling in category 3 (Strengthen the reach to stakeholders) have to present an innovative concept and expertise to perform the proposed work and achieve the objective of a wide reach to the FI-STAR stakeholders. Proposals in this category are exempted from the requirements to use the FI-STAR platform and the FI-WARE Generic Enablers. The proposers are expected to support knowledge dissemination (e.g. in FI-PPP related events) and potentially contribute to the planning of such activities by the consortium and the FI-PPP programme.

The proposals falling in category 3 (Strengthen the reach to stakeholders) will be evaluated by independent experts, who will be briefed by the consortium about the selection criteria. Selection criteria for category 3 proposals will include:

- fulfilment of the technical requirements,
- degree of innovation of dissemination concept,
- potential reach to stakeholders,
- qualifications of the organisations performing the work,
- expected impact for the FI-STAR project,
- commitment to the long term vision of the FI-PPP programme,
- consideration of socio-economic and other relevant non-technical aspects

Detailed information about the open call and its aspects can be retrieved online at <http://www.fi-star.eu/open-call/> including:

- Call announcement
- General Information and Requirements
- Guide for applicants
- Frequently asked questions

5 Summary of call information

The particular tasks envisaged by this competitive call pertain to the research and development of platform enhancements and applications for the health care sector, based on the future Internet technologies being delivered by the FI-STAR project and the functions provided by the FI-PPP Generic Enablers, including tasks for dissemination to a wider audience.

Maximum budget available for new beneficiaries 1,323,000 €

Maximum funding request per proposal 180,000€

Project full name: **FI-STAR: Future Internet – Social and Technological Alignment Research**

Project grant agreement number: **604691**

Call identifier: **FI-STAR-1**

Call title: **Applications and FI-STAR platform enhancements**

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

Submission deadline: 20th November 2013, at 17:00 Brussels local time

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- General Information and Requirements
- Guide for applicants
- Frequently asked questions

Proposal submission is accepted only via the submission portal available at <http://www.fi-star.eu/open-call/>

Internet address and full open call information: www.fi-star.eu/open-call/

E-mail: contact@fi-star.eu