



EIT ICT Labs aims to turn Europe into a global leader in ICT Innovation, which becomes one of the society's key enablers enhancing our quality of life. The community speeds up ICT innovation by bringing people together from different countries, disciplines and organizations. As one of the EIT ICT Labs research projects, FITTING (Future Internet of THINGS) brings together partners from several of the EIT ICT Labs co-location centres. The FITTING facility extends and eases the utilization of existing testbeds thus enabling network researchers to safely and reliably develop and experiment next generation services and applications. The involved partners have already submitted a proposal to the French "Equipex" national economic stimulus funding initiative for excellence in major scientific equipment and have been awarded € 5.8 million for the development of a testbed federation in France.



FITTING FACILITY: THE BACKGROUND

Researchers across the world are rethinking the design of the Internet - a system that is fundamental to today's society but that is based upon technology that is several decades old. An open, general-purpose, and sustainable large-scale shared experimental facility could foster the emergence of the future Internet.

Federation is perceived as a means to increase the utility of a testbed by providing access to a larger set of heterogeneous resources, scaling to large systems, adding geographical diversity, helping to reach sustainability, and benefiting from best practices.

PROVIDING AN INNOVATIVE TESTBED FEDERATION ARCHITECTURE

FITTING develops a testbed federation architecture that combines wireless and wired networks. Through FITTING, components and solutions developed in the projects OneLab2, PII and SensLAB are brought together to facilitate access. These components and devices complement each other – for instance SensLAB enhances the testbed federation by adding wireless sensors.

Every testbed has its own unique interface – a certain amount of specific training is required in order to use it. When a user needs to deploy experiments on several testbeds (either to compare results, or because an experiment requires more than one environment) this learning curve is a hurdle. FITTING provides middleware that facilitates the utilisation of testbeds by

providing the user with transparent access to multiple individual testbeds. One single portal offers both scale and diversity to the user.

"The testbeds federated by FITTING are each highly successful, with excellent international visibility. By combining them, we create a real added value."

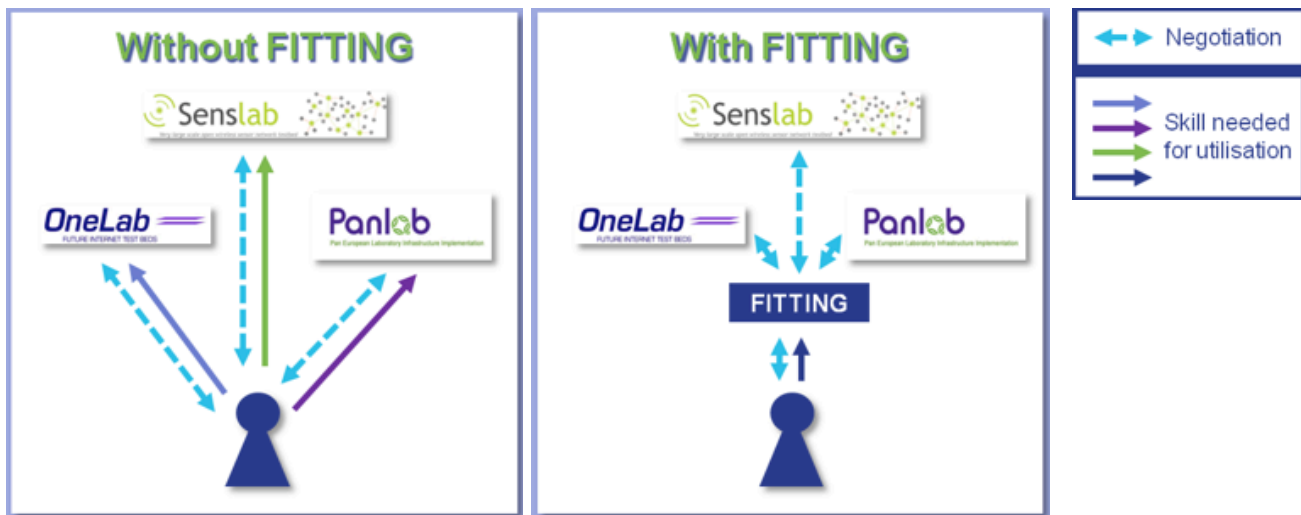
Serge Fdida, leader of FITTING, Professor at UPMC

UNIQUE SELLING POINTS

- FITTING provides a heterogeneous, yet simple access environment where network researchers can safely and reliably experiment. The project promotes commercial exploitation through its release of free open source software with a non-contaminating license.
- FITTING not only interconnects testbeds, but it also enhances the technology to operate them. Such technology is the dominating cost for their implementation and operation.
- Industry can easily commercialize its own versions of platform components, and integrate them into products and processes. Open APIs are suitable for integration into commercial network devices (routers, switches, etc.).
- FITTING helps pooling resources from multiple autonomous organizations and provides a standardized interface for easy access.
- FITTING's testbeds allow experimentation with different technologies to meet the variety of needs of a broad customer base.

“Applying versatile cross-domain testbed federation mechanisms to dynamically and flexibly combine FITTING’s highly successful testbeds, not only enables a broad range of entirely new combinational cross-platform experiments and testing setups, but also efficiently leverages years of extensive R&D on mechanisms for federation of heterogeneous resources.”

Thomas Magedanz, leader of the NGNI Competence Center at Fraunhofer Fokus and Professor at TU Berlin



THE ROAD AHEAD

FITTING will evolve in three dimensions: 1) it will extend its facility to offer access to new integrated testbeds and tools, 2) it will invite and engage more users (researchers, developers, students) and develop its offering based on the expanded user experience, 3) it will open and promote its offerings to the other Nodes and Associate Partners of EIT ICT Labs (Eindhoven, Stockholm, Helsinki, London and Trento).

THE SUCCESS

FITTING partners jointly submitted a project proposal called “FIT” to the French “Equipex” national economic stimulus funding initiative for excellence in major scientific equipment. The proposal was accepted and the new FIT project has received 5.8 M Euros to develop a testbed federation in France.

FITTING SOLUTION

One portal to be used by all users (almost no additional training needed)

Control and management of individual and federated resources

FOR MORE INFORMATION:

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