FUTURE INTERNET TESTBEDS EXPERIMENTATION BETWEEN BRAZIL AND EUROPE

FIBRE is a research project co-funded by the Brazilian Council for Scientific and Technological Development (CNPq) and the European Commission under the FP7 Cooperation Programme, objective FP7-ICT-2011-EU-Brazil Research and Development.

Objectives

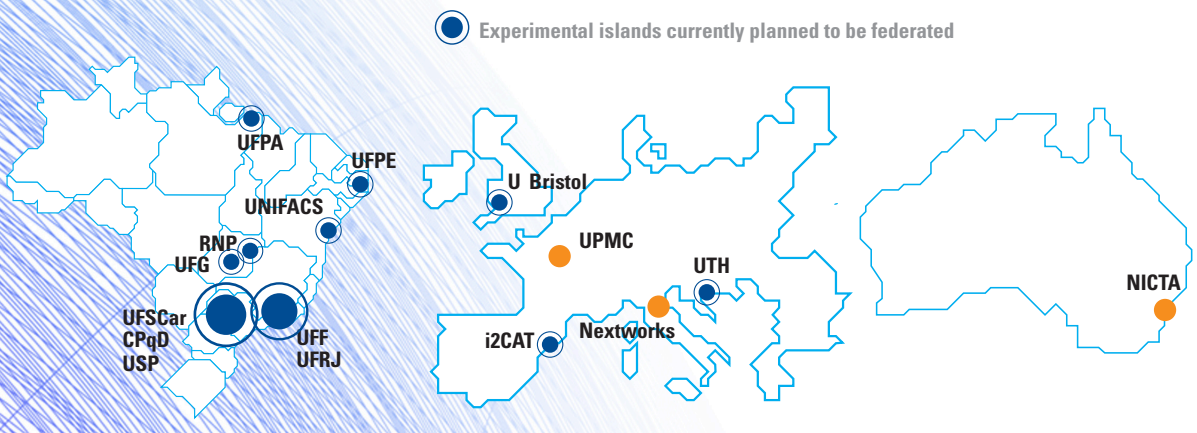
The main objective of the project is the design, implementation and validation of a shared Future Internet (FI) research facility, enabling experimental research into network infrastructure and distributed applications. In order to achieve this goal the project will carry out four main activities:

- The development and operation of a new experimental facility in Brazil, including the setup of equipments to support experimentation with various technologies (fixed layer 2 and layer 3, wireless, optical) as well as the deployment and customization of control frameworks to automate the use and operation of the testbed.
- The enhancement of already existing European testbeds by improving the different software designed to manage different testbeds.
- The federation of the Brazilian and European experimental facilities, both at the physical connectivity and control framework level, to support the provisioning of slices using resources from both testbeds.
- The design and implementation of three pilot applications (a.k.a. project showcases) to validate the federated testbed by demonstrating the public utility of FIBRE infrastructure.

How the FIBRE experimental facility is being deployed?

FIBRE is composed of several experimentation nodes, called islands, across Europe and Brazil. Two of the three European islands are based on previous FIRE IP project OFELIA (http://www.fp7-ofelia.eu/) and are deployed by the University of Bristol (originally in the University of Essex) and the i2CAT Foundation in Barcelona.

The third European island is based on the NITOS testbed (http://nitlab.inf.uth.gr/NITlab/), maintained by the University of Thessaly (Greece) as part of Fed4Fire and OpenLab FIRE IPs projects. In Brazil, ten islands are being deployed in several universities from all the country.



Project acronym: FIBRE

EU Grant Agreement n°: 288356
CNPq process n°: 590022/2011-3
Project type: STREP
Start date: 01/10/2011
Duration: 30 months
Overall budget:
EUROPE
1.560.457,00 €
BRAZIL
R$ 3.314.800,00
Funding from the EC: 1.09 M€
Funding from CNPq: R$ 2.3 M
Funding from RNP + INCT: R$ 1.014.800,00

Total funded effort in person-month: 1074,5 PM (EU 181,5 + BR 893)

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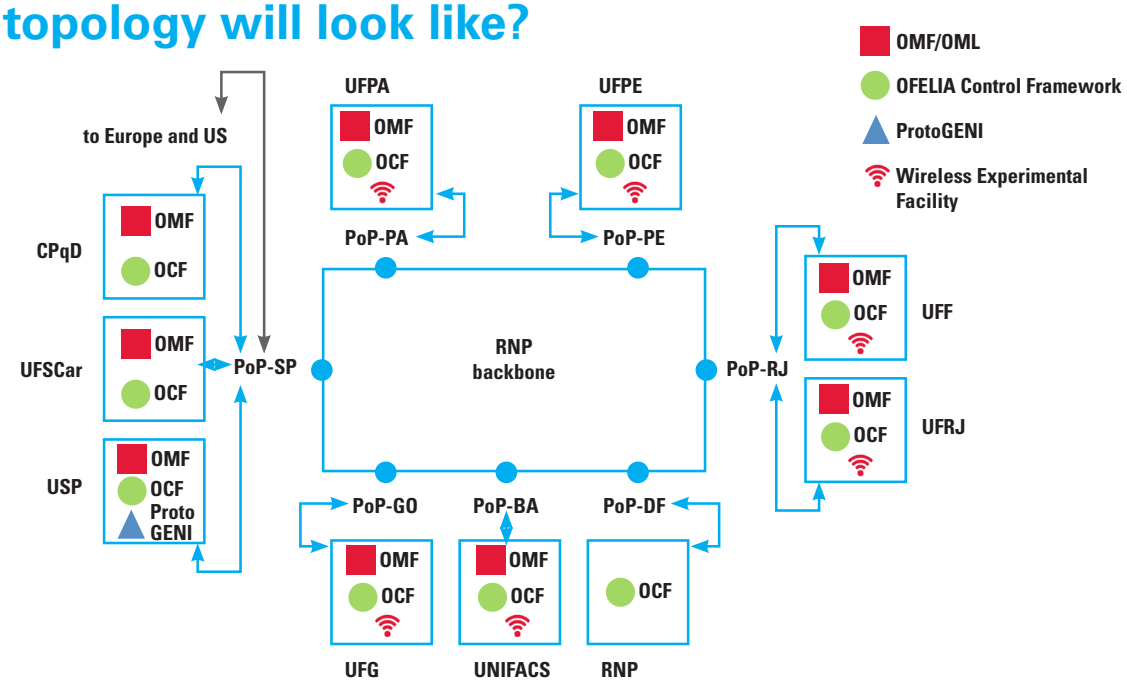
UPMC (FR)
UTH (GR)
NICTA (AU) – third country

How the Brazilian testbed topology will look like?



Why developing testbeds for Future Internet experimentation?

Programmable testbed networks can lower the barrier to entry for new ideas, increasing the rate of innovation in network infrastructure. Virtualization of networks is accomplished by the use of virtual routers and the multiplexing of links between them. These programmable testbed networks call for programmable switches and routers that, using virtualization, can process information flows for multiple isolated experimental networks simultaneously. It is envisaged that a researcher will be allocated a slice of resources across the whole network, consisting of a portion of network links, packet processing elements (e.g. routers) and end-hosts; researchers can program their slices to behave as they wish. A slice could extend across the backbone, into access networks, into college campuses, industrial research labs, and include wireless networks, sensor networks, and may include real users of the applications it supports. Such a testbed facility may serve a widespread community of researchers and users.

Get prepared for running Future Internet experiments on FIBRE

Once the FIBRE facility is operational, experimenters will be offered with a transparent federation of heterogeneous platforms across continents.
Any researcher will be welcome to submit proposals to run experiments on the FIBRE infrastructure. Stay tuned to the latest FIBRE news and announcements by following us on Twitter (@FIBRE_project and/or subscribing to our public mailing list at http://listas.rnp.br/mailman/listinfo/fibre-info