FIBRE project: Brazil and Europe unite forces and testbeds for the Internet of the future

FIRE Engineering Workshop
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Main Objective

Create a common space between the EU and Brazil for Future Internet (FI) experimental research into network infrastructure and distributed applications, by building and operating a federated EU-Brazil Future internet experimental facility.

The project will design, implement and validate a shared Future Internet research facility between Brazil and Europe, supporting the joint Future Internet experimentation of European and Brazilian researchers.
Experiment islands to be federated

FIBRE members not committing resources
Enhancements of the OFELIA testbeds (i2CAT and U. Essex) and the UTH's NITOS testbed
FIBRE Brazil testbeds

Nine geographically distributed institutional facilities

L2 long distance network connections
FIBRE’s Federation architecture

- Physical resources shared between federated islands
- Existing CMFs federated through common federation control plane
- Experiment configurations backed up for reuse
- I&M framework integrating data from the different islands and CFs
Pilot Use Cases

Seamless Mobility for Educational Laptops

8K/4K Video Streaming
UK and Brazil

High definition content delivery across different sites

Bandwidth on Demand through OpenFlow GMPLS in the FIBRE facility
Expected Results

• Intercontinental slices of heterogeneous infrastructure to network researchers.
• A federated infrastructure automatically controlled by one or more CMFs
• High speed intercontinental links connecting the European and the Brazilian parts of the joint facility.
• Enhanced OFELIA Control Framework software
• Enhanced OMF and OML software
• Federation software and tools
• Experimental network application software
• Network of contacts between Brazilian and European partners

http://www.fibre-ict.eu
Benefits

• FIBRE is a showcase project in international collaboration in Future Internet
  – Demonstrate capacity to collaborate with leading European projects in this important area
  – Provide local experimental facilities for validating and demonstrating new FI proposals
  – Provide opportunity for extension to and participation by researchers from other Latin American countries
  – Promote involvement of and technology transfer to the industrial sector, to prepare for Future Internet needs.
Intercontinental experimental platform

- Federation of EU and Brazil FIBRE research infrastructures creating an intercontinental multi-domain, multi-layer and multi-technology experimental platform.
1st FIBRE Open Workshop

26 - 27 November, 2012
Salvador + Bahia + Brazil

Tentative agenda includes:

• Presentation of FIBRE results and demonstration
• Presentations from Future Internet driven initiatives worldwide
• Round table with industry players and policy makers
• Example of Future Internet Applications
• Short courses / hands-on training

photo: Leandro N. Ciuffo
Thank you
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