

OFELIA now has 10 Islands

- Berlin, Germany (TUB) - partial replacement of existing campus network with OF-switches
- Ghent, Belgium (iMinds) - central hub, large-scale emulation
- Zurich, Switzerland (ETH) - L2 (NEC) switches mesh, connection to OneLab and GENI
- Barcelona, Spain (i2CAT) - L2 (NEC) switches and optical equipment (ROADM ring)
- Bristol, UK (UNIVBRIS) - national hub for UK optical community; optical (ADVA, Calient), L2 (NEC, Extreme) switches, FPGA testbed
- Catania, Italy (CNIT) - based on NetFPGA and OpenSwitch technologies, with focus on ICN (Information Centric Networking)
- Rome, Italy (CNIT) - based on NetFPGA and OpenSwitch technologies, with focus on ICN - under deployment
- Trento, Italy (CREATE-NET) - a city-wide distributed island based on L2 (NEC) switches and NetFPGA; opt-in users via heterogeneous access technologies
- Pisa, Italy (CNIT, 2 locations) - based on NetFPGA and OpenSwitch technologies, with focus on Cloud Data Center management - under deployment
- Uberlândia, Brazil (UFU) - under deployment

If you would like to be part of the testbed, please contact us!

More details are available on the project website: www.fp7-ofelia.eu.



For conducting experiments, users request and get control over a virtual network that is composed of a subset of the physical OFELIA network:

- Virtual machines as end hosts.
- A virtual machine to deploy the OpenFlow network controller. The users may either use their own controller implementation or application, or use one available in the OFELIA framework.
- A subset of the overall network flowspace (data paths allocated on the OpenFlow switch fabric as the network data-plane).

Through a graphical user interface (GUI), a user can create and run experiments. Each island runs a web-based GUI that allows controlling resources in all federated islands.

Federation and Cross-Island Connectivity

In OFELIA we divided federation into two: Intra-Federation and Inter-Federation.

All islands have control and experimental data connectivity through OpenVPN tunnels to Ghent.

On the islands where connectivity to GEANT network is already established, those islands can connect via GEANT (1Gig) through Layer 2 connectivity. In case of islands currently not connected to the GEANT network, connectivity is established via VPN over the Internet.

Currently OFELIA has federated 5 islands together (ETHZ, TUB, CNIT, CREATE-NET, UNIVBRIS) and the federation activity is ongoing.

Cross-island experiments can be set up and managed conveniently through the GUI of the OFELIA Control Framework (Expedient).

OFELIA Control Framework

The OFELIA Control Framework (OCF) is a set of software tools for testbed management. It controls the experimentation life cycle; including reservation, instantiation, configuration and monitoring.

The control framework hides the complexities involved in single and federated island setups, still providing enough information so that experimenters can program their environment using heterogenous, scalable resources. It enables allocating resources and running experiments in the entire OFELIA facility.

The OCF is released under BSD license.

<http://fp7-ofelia.github.com/ocf>

