

- ✓ **SOFTWARE DEFINED NETWORKS** Utilizing OpenFlow protocol, OFELIA enables experimenters to change the behavior of the network as part of the experiment rather than as part of the experiment setup.
- ✓ **FEDERATED ISLANDS** A set of five islands creates a diverse OpenFlow infrastructure that allows experimentation on multi-layer and multi-technology networks
- ✓ **OFELIA ARCHITECTURE** SFA compliant architectural design
- ✓ **OPEN CALLS** Two open calls will be published to invite experimenters that bring their use cases and experimental scenario to the facility creating a feedback loop to extend the OFELIA facility according to the needs of the user community. The first one received 21 proposals.



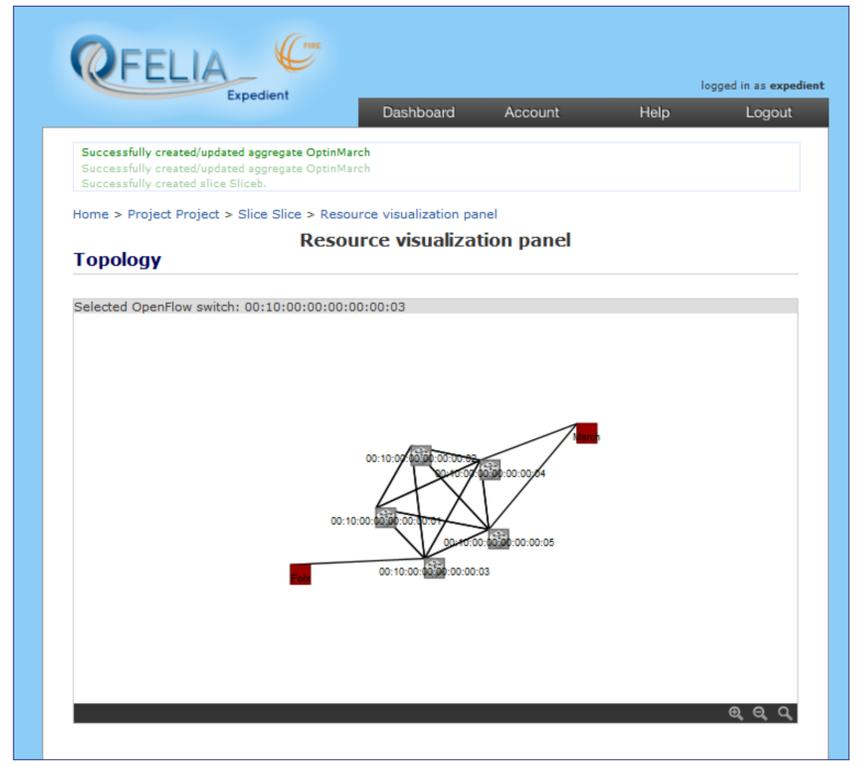
Map of OFELIA islands

Island equipment

- i2CAT**: 5x NEC switches model IP8800/S3640-24T2XW, 3x HP E3500-48G-PoE+ yl switches and 5x SuperMicro SYS-6010T-T servers.
- IBBT**: one NEC 1P8800 /S364 0-48T2XVV-LW equipped with a 10G XFP, virtual servers. WiLab facility, a large-scale real-life wireless test environment. Virtual Wall facility, a generic test environment for advanced network, distributed software and service evaluation, which supports scalability research.
- UEssex**: 4x Campus grade OpenFlow enabled switches (NEC), 3x Carrier grade Ethernet switches, 2x Virtex-4 FPGA boards, 5x Dell PowerEdge servers (OFELIA CF), ultra high definition video streaming/visualization, high capacity storage (10TB), 3x ADVA FSP 3000 ROADMs, 1x Calient DiamondWave Optical Fiber Switch, 3-5 Openflow enabled soft switches, one cluster of physical servers
- ETH**: 3x OpenFlow switches NEC IP8800/S3640-24T2XW with two optical 10GBase interfaces (each of them), an Intel Quad-core processor with 4 GB of RAM PC to deploy FlowVisor
- TUB**: 5x NEC IP8800/S3640-48TWLW with 48 10/100/1000 BASE-T LAN interfaces and 4x SFP, one HP 5400 with a 24 port SFP module with 16x HP SFP MM-SX duplex transceivers, Rack-Server-PC for OpenFlow Controller

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Detail of the Resource Visualization Panel of OFELIA CF

OFELIA objectives

- ✓ Provide an experimentation space that allows for flexible integration of test and production traffic.
- ✓ Offer a high performance cluster facility capable of serving as a source for high-volume artificial traffic and of providing a corresponding sink.
- ✓ Provide access to forwarding and processing functionalities and will allow for experimentation on all layers (physical to application), exploiting opportunities arising from cross-layering approaches.
- ✓ Provide a testbed for experimentation on top of commercial-grade routers, switches and optical equipment.
- ✓ Provide the European research community with large-scale virtual networks, including virtualization of basic networking functions, virtualization of end systems and programmable network applications.

More information at: <http://www.fp7-ofelia.eu>