

OFELIA Second Open Call was a Success

In Spring the OFELIA project issued its Second Open call for proposals to extend the experimental facility to enable advanced use and experimentation. Specifically solicited were proposals addressing functional diversity of experimental capabilities, specific measurements and evaluations that need extensions of the already available infrastructure, as well as functional and usability enhancements of the experimental facility.

17 proposals were submitted to the OFELIA open call, in total asking for 1.97 M€ of EU budget contribution, about five times the available budget. Four proposals that were selected by independent reviewers are currently being integrated into OFELIA.

Welcome to Our New Project Partners

As a result of the OFELIA Second Open Call four proposals that were selected by independent reviewers are currently being integrated into OFELIA. The OFELIA team is welcoming the new project partners and we are looking to their functional and testbed additions and to exciting experiments on our facility.

OpenFlow/PCE Integration

[Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Spain]

Functionally enhance the OpenFlow control plane, by introducing new path computation architectures and related new network

operating system applications. By formally decoupling the path computation function involved in the provisioning of connectivity services, the architecture will be able to offload computations to (optionally remote) dedicated servers and to perform load balancing, distributing path computation tasks amongst a pool of such servers. The main objective is to integrate the notion of (hierarchical) PCEs in the OpenFlow centralized control model.

OpenFlow-Assisted VoD

[Lancaster University, UK]

QoE Experimentation and Evaluation. Here OpenFlow will be exploited to support transparent caching of large media objects in a wide-area network, with extensions to the OpenFlow interface where necessary. The goal is to optimize the repeated delivery of identical content, while allowing the applications deployed across the network to continue using apparently simple unicast flows. Furthermore, the impact of delivery mechanisms on the users' perceived Quality-of-Experience (QoE) will be evaluated by applying an established QoE measurement framework to the evaluation of the OpenFlow-based transparent caching system.

EDOBRA

[Instituto de Telecomunicações Aveiro (ITAV), Portugal]

Extending and Deploying OFELIA in BRAZIL, gathers a team of three different institutions from Portugal and Brazil: the Instituto de Telecomunicações (IT), from Aveiro, Portugal, the University of São Paulo (USP), and the Federal University of Uberlândia (UFU), both from Brazil. This proposal aims at extending the capacity of Software

Defined Networks approaches, such as OpenFlow, by enabling the support for vertical handovers using IEEE 802.21 enhanced mechanisms, and by deploying the Entity Title Architecture, a clean slate approach that provides seamless multicast and mobility based on this OpenFlow substrate. EDOBRA will increase the physical coverage of OFELIA by deploying a new node in Brazil, which will improve future Internet research and experimentation by providing these approaches to a broader community.

EMOTICON

[Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNIT), Italy]

Extending OpenFlow for Unified Management and Control of Cloud Data Center Resources. This aims at enhancing OFELIA with a novel functionality that enables the unified control and management of IT and network resources in Cloud Data Centers. New virtualization-aware networking architecture whose advanced traffic engineering capabilities are enabled by OpenFlow-based Virtualization-aware Networking (OFVN) systems. The OFVN architecture will be designed with scalability in mind, so as to guarantee performance requirements concerning communication among the servers even though the Data Center continues to grow in size. EMOTICON will also contribute to increase the physical extension of the OFELIA facility by adding a new island located in Pisa, that consists of two different CNIT sites (National Laboratory of Photonic Networks and Dept. of Information Engineering - University of Pisa) interconnected through a WDM optical ring.

Additional Island Available for Testing

A new OFELIA island was integrated into OFELIA's federated testbed that allows users to create virtual topologies within all OFELIA islands.

The new island is located in Trento (Italy) and has been implemented by CREATE-NET.

Create-Net is working on a new OpenFlow virtualization tool, called VeRTIGO (ViRtual TopologIes Generalization in OpenFlow networks). VeRTIGO extends FlowVisor capabilities in order to provide enhanced flexibility in the setup of logical topologies.

Currently a first release of the software is available at <https://github.com/fp7-ofelia/VeRTIGO/downloads> and could be used as slice controller in all the OFELIA islands

Update from the ETH Zurich Island

The OFELIA island at ETH Zurich now maintains a GpENI node cluster (2 Planetlab + 2 VINI + 1 control nodes). Therefore, the collocation of the two infrastructures (GpENI + OFELIA testbed) is a first step towards the evaluation of "slicing" between OFELIA and GpENI. Many further details need to be studied, but the formation of future federation scenarios is gradually becoming feasible.

With the goal to enable experiments which use real traffic from the ETH campus, implementation schemes for end-user traffic integration in the testbed are investigated and evaluated. All technical and legal considerations to be taken into account are analyzed.

For detailed information about OFELIA experimental islands, please refer to <https://alpha.fp7-ofelia.eu/doc/> „Working with OFELIA - Testbeds“.