

OpenFlow experimental facility to boost future ICT research

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The explosion of high-tech devices such as laptops, tablets and smartphones into the market and the subsequent rise in demand for greater bandwidth has resulted in a drive towards sophisticated network communications systems. This rapid evolution has in turn facilitated big data storage in the form of cloud computing but increasing concerns

over stagnating innovation in network technologies have fuelled efforts to develop experimental platforms.

Many of today's [network protocols](#) were developed 30 years ago, leaving them unable to adapt to the rapidly changing needs of consumers and businesses. Aiming to breathe new life into network communication technologies, the EU-funded project OFELIA (Open Flow in Europe: Linking Infrastructure and Applications) developed an OpenFlow-based test [networking platform](#).

The project team, in cooperation with GÉANT - the pan-European research and education network, designed a platform to allow new and innovative networking protocols and software to be developed and tested. The OFELIA facility is based on Software Defined Networking (SDN) and OpenFlow, an emerging [networking technology](#) that allows virtualization and control of the network environment through secure and standardized interfaces.

The facility allows users not only to experiment on a test network but to control and extend the network itself precisely and dynamically allowing for a more targeted problem - solution approach. It is built on software-based network resources; OpenFlow switches referred to as OvS and network links interconnecting them.

OpenFlow technology addresses many of the common problems facing internet users including slow-speed and unreliable networks. By jointly developing OpenFlow-based test-bed facilities, GÉANT and OFELIA are giving Europe's researchers the ability to test new systems across networks that are representative of real-world commercial networks and ensure Europe is at the forefront of ICT research.

The researchers aimed to provide an experimental test-bed environment that could above all offer its users agility. To achieve this, the OFELIA

facility enables experimenters to change the behaviour of the network as part of the experiment rather than as part of the experiment setup. The service can offer [network](#) administrators greater control over their resources in a cost-effective and efficient way making it an ideal solution for the high-bandwidth requirements of today's applications.

To date the OFELIA facility has been demonstrated at three stakeholder events, drawing attention from both industry and academia. The project is scheduled to reach completion at the end of August and received a EUR 4.4 million contribution from the EU.

More information: www.fp7-ofelia.eu/

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