

## ***DICONET promises a disruptive solution for the development of the core network of the future***

**DICONET project members** are pleased to announce the kick-off of the European Research Project DICONET.

DICONET is a Specific Targeted Research Project that is funded by the European Union within the 7th R&D Framework Programme. The project duration is 30 months and the level of funding provided by the EU is 3.200.000 Euros.



The DICONET proposal is targeting a novel approach to optical networking, providing a disruptive solution for the development of the core network of the future. It is the vision and goal of our consortium to provide ultra high speed end-to-end connectivity with quality of service and high reliability through the use of optimized protocols and routing algorithms that will complement a flexible control and management plane offering flexibility for the future network infrastructure.

The project consortium comprises of 4 telecom equipment vendors, 7 academic R&D centers, and 1 telecom operator:

- ADVA Optical Networking (Germany)
- Alcatel-Lucent (France)
- Deutsche Telekom (Germany)
- ECI Telecom (Israel)
- Huawei Technologies (Germany)
- JCP - Consult (France), Project Management
- RELIT/AIT - Athens Information Technology (Greece), **Project Leader**
- Create-NET (Italy)
- IBBT (Belgium)
- Research Academic Computer Technology Institute (Greece)
- Telecom ParisTech, member of Institut Telecom (France)
- Universitat Politècnica de Catalunya (Spain)
- University of Essex (UK)

**ADVA Optical Networking** participates in the DICONET project to drive innovation in dynamic optical networking. To direct the DICONET results towards commercial implementability, characteristics of realistic network components will be provided for the routing algorithms and the investigation of techno-economic issues is supported.

"The need for dynamic optical networking continues to grow in importance for our business," stated Dr. Christoph Glingener, chief technology officer of ADVA Optical Networking. "Our participation in the DICONET project drives our innovation in this important realm, while providing us more experience in dynamic routing and making our transport and planning products more competitive, feature-rich and more cost-effective."

**Alcatel-Lucent's** Bell Labs in France participate in the European DICONET project with its "Optical Network" research domain. In collaboration with universities, telecommunication operators and other equipment vendors, Alcatel-Lucent provides guidance on optical channel monitoring technologies and associated experimental characterizations. Thus Alcatel-Lucent conducts experiments on the physical layer architectures defined in the project to meet the requirements of dynamic and transparent networks. These results will feed the future physical impairment-aware control plane.

**ECI Telecom Israel** participates in the European DICONET project with its "Optical Network" research domain. ECI contributes and shares its knowledge in the field of optical network design as well as the relevant knowledge in optical channel monitoring technologies based on experiments. ECI,

together with other industrial partners of DICONET, defines the physical layer architectures to meet the project requirements, and with the universities partners to define a flexible control and management plane for the future network infrastructure.

**Huawei** Technologies Deutschland GmbH participates in the DICONET project with its optical networking research center. Huawei contributes and shares its knowledge on optical control plane architectures definition, the specifications on the requirements of optical monitors and the interface between optical monitors and optical control plane for different application scenarios. Huawei also studies the physical impairment-aware PCE control plane architecture and leads the activities on the standardizations.

**JCP-Consult** is a French consulting company, specialized in set-up and coordination of European collaborative projects, dissemination, technical training and R&D on network compression techniques. In DICONET, JCP-Consult will have a leading role in dissemination activities and is doing the project administrative coordination.

**AIT** participates in the DICONET project with the "High Speed Networks and Optical Communications - NOC" Research Group ([www.ait.edu.gr/research/RG2/overview.asp](http://www.ait.edu.gr/research/RG2/overview.asp)). AIT had the leading role in the proposal preparation phase as it initiated the project proposal and setup the consortium. AIT's NOC group will have a leading role during the project execution phase (Dr. Tomkos has been elected as Project Leader).

**CREATE-NET** participates in the European DICONET project as a leader of WP5 - network management and control protocols. Particularly, Create-net is leading the implementation of modifications to GMPLS control plane protocols via emulated nodes, in which the modifications/extensions of GMPLS control protocols to incorporate and disseminate the impairment information are defined and implemented in a real GMPLS stack. The extensions of the GMPLS control protocols are validated through emulation. Create-Net plays a principal role in investigations of techniques for disseminating physical impairments info across the network. Here, different architectures (routing-based, signaling-based, and PCE-based) are investigated for carrying the physical impairments in GMPLS control plane by considering both linear and nonlinear impairments, the trade-off between control overhead and efficiency of the network etc.

**IBBT** participates in the DICONET project with the IBCN (INTEC Broadband Communication Networks) research group (<http://www.ibcn.intec.ugent.be/>). The IBBT's IBNC research group will have a leading role during WP2 "Network architecture and support studies".

**Telecom ParisTech**, member of the Institut Telecom, is particularly involved in WP4 of the DICONET project. The optical networking group develops innovative optimization tools for the placement of regenerators and optical monitors in wide area WDM translucent networks. These tools tend to guarantee an admissible quality of transmission for all the connections in optimizing optical resources utilization.

The **Research Academic Computer Technology Institute (RACTI, GR)** participates in the DICONET project in developing novel impairment-aware routing and wavelength assignment algorithms for setting up connections in all-optical networks. Both offline and online RWA algorithms that take into account linear and non-linear impairments in transparent and translucent optical networks will be proposed, implemented and evaluated. RACTI is also experimentally evaluating devices for combating physical impairments, so as to increase the reach of all-optical transmission.

**UEssex** contributes on the control plane design, development and implementation of high-speed impairment-aware forwarding and path selection accelerator in the FPGA with embedded processor. This hardware based platform will perform time critical procedures of impairment-aware forwarding and path selection algorithm.

**UPC** participates in the DICONET project with the "Advanced Broadband Communications Center" (<http://www.ccaba.upc.edu/>). The main role of UPC in DICONET consists of integrating the elements provided by the different project work packages on its GMPLS network test-bed, carrying out

evaluation and experimentation trials. Additionally, UPC will contribute to other work packages, identifying the feasibility complexity of the proposed solutions and assisting with the integration of the various components.

The DICONET project started in early 2008 and will conclude on June 30, 2010. Those interested in getting more information about the project may contact the NOC group leader Dr. I. Tomkos, [itom@ait.edu.gr](mailto:itom@ait.edu.gr), tel: (+30) 210 668 2771 or Dr. Y. Pointurier, [yvan@ait.edu.gr](mailto:yvan@ait.edu.gr), tel: (+30) 210 668 2749.