



P07: University of Stuttgart – UST-IKR (Germany)

Description of expertise & activities

Institute of Communication Networks and Computer Engineering (UST-IKR)

Founded in 1829, the foremost aim of the University of Stuttgart in research and teaching lies in the field of engineering and the natural sciences. The close interconnection of research and teaching enables the University of Stuttgart to hold a top position in basic and applied research. The UST-IKR is one of the 19 institutes of the faculty of Computer Science, Electrical Engineering and Information Technology. Since 1982 it is directed by Prof. Dr.-Ing. Dr. h.c. mult. P.J. Kühn and it employs about 25 scientific staff members. They research in the fields of transport, mobile and context-aware networks.

The institute has a strong background in architecture design and performance evaluation of circuit, burst and packed switched communication networks. It has participated in several national and international research projects on photonic networks (e.g. NOBEL Phase 1 and 2, e-Photon/ONE, e-Photon/ONE+, COST 239, COST 266, COST 291, MultiTeraNet, TransiNet etc.) for more than ten years. In cooperation with several European industry partners, the institute works in the IST project NOBEL as well as in the German project EIBONE (with Ericsson, T-Systems and Alcatel-Lucent) towards the future of high-speed metro and core networks. In the field of optical networks, the research portfolio of UST-IKR comprises single and multi-layer network architectures with focus on

- integrated routing and grooming strategies,
- dynamic resilience schemes for protection and restoration,
- network dimensioning and resource optimization,
- automatic bandwidth adaptation,
- control plane for optical networks,
- traffic measurement and characterization,
- optical burst and packet switching techniques including interactions with higher network layers.

Tasks within BONE

See individual WP descriptions.

Key personnel

Sebastian Gunreben received his Dipl.-Ing. degree in Mechatronics in 2004 from the University of Stuttgart, Germany. Since then he has been with the Institute of Communication Networks and Computer Engineering (IKR) at the University of Stuttgart where he works on traffic engineering for IP-over-WDM networks in several projects. He focuses on control plane aspects of multi-layer networks as well as OBS networks.

Joachim Scharf received his Dipl.-Ing. degree in Electrical Engineering in 2005 from the University of Stuttgart, Germany. Since then he has been with the Institute of Communication Networks and Computer Engineering (IKR) at the University of Stuttgart. He works on traffic engineering in resilient multi-layer networks.