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IEEE COMMUNICATIONS MAGAZINE

FEATURE TOPIC

Service Interoperability in the Ethernet Passive Optical Networks (SIEPON)

PON-based access networks represent a profound departure from the "traditional", point-to-point twisted-pair-based network architecture that telecommunications operators have used for more than 100 years. First, it is an optical network that employs different components, relies on different design principles, and requires different deployment, troubleshooting, and maintenance procedures. Second, a TDMA-PON (which includes IEEE EPON and ITU-T GPON) can be viewed as a distributed switch that spans the entire access area. All of the intelligence of this distributed switch is concentrated in the edge devices, while the switching fabric is just a passive point-to-multipoint medium. To ensure seamless delivery of the various services, QoS enforcement, various network monitoring features and various power-saving modes, the OLT and ONUs must fully interoperate at all protocol layers. At the same time, the OLT and ONUs are separate physical devices which typically are supplied by different vendors.

The goal of the IEEE P1904.1 Service Interoperability in the Ethernet Passive Optical Networks (SIEPON) project, sponsored by the IEEE Communications Society, is to create an open, international, system-level EPON specification focused on multi-vendor interoperability. A detailed system-level standard, developed in an open fashion by the IEEE, will eliminate the need for network operators and national bodies to create unique interoperability specifications that needlessly fragment the market. The SIEPON specification is being developed to address requirements of telecommunications operators as well as MSOs.

These feature-topic articles are intended to include the analysis of the current access networking landscape and an overview of the key technological challenges associated with multiple service models, multiple provisioning and management concepts, and multiple deployment scenarios. We anticipate that the description of these technical solutions will encourage further research and development, leading to even more advanced techniques. For the equipment vendors and network operators interested in this technology, we expect the articles will provide an in-depth analysis of EPON capabilities and deployment options. Also of interest to the industry will be an introduction to the SIEPON Conformance Program, now under joint development by the SIEPON Working group and the IEEE Conformance Assessment Program (ICAP).

Papers should be of tutorial in nature and authors must follow the IEEE Communications Magazine guidelines for preparation of the manuscript. For further detail please refer to 'Information for Authors' on the Magazine web site at **http://www.comsoc.org/pubs/commag/sub_guidelines.html**. Manuscripts should be submitted through Manuscript Central at **http://commag-ieee.manuscriptcentral.com/** by May 1, 2012. Please select "**September 2012 / Service Interoperability in the Ethernet Passive Optical Networks (SIEPON)**" in the drop down menu.

Important Dates

Manuscript Submission:	May 1, 2012
Acceptance Notification:	June 15, 2012
Final Manuscript Due:	July 1, 2012
Publication Date:	September 2012

Guest Editors:

Mehmet Ulema	**Biswanath Mukherjee**	**Konstantinos Samdanis**
Manhattan College, USA	University of California - Davis	NEC Europe Ltd, Germany
mehmet.ulema@manhattan.edu	mukherjee@cs.ucdavis.edu.com	konstantinos.samdanis@neclab.eu