OIF OPTICAL INTERNETWORKING FORUM

January 19, 2007 **www.oiforum.com**

In This Issue

Upcoming Events

January 23-25, 2007
OIF Q1 Technical and MA&E Committee Meeting
Crowne Plaza San Jose/Silicon Valley
Milpitas, CA USA

January 22-25, 2007
IIR TNS-APAC
Le Meridien
Singapore
http://www.iir-events.com

February 28-March1, 2007
MVA Communications Ecosystem Conference
Manchester Grand Hyatt
San Diego, CA USA
http://www.mvacec.com

March 27-29, 2007
OFC/NFOEC
Booth #3378
Anaheim Convention Center
Anaheim, CA USA
http://www.ofcnfoec.org

April 24-26, 2007
OIF Q2 Technical and MA&E Committee Meeting
Denver, CO USA

June 18-21, 2007
NXTcomm
Booth #2041
McCormick Place
Chicago, IL USA
http://www.nxtcommshow.com

Words from the President

With the start of a new year, it is fitting for the OIF to reflect on what we've accomplished and where we are headed. The Forum greets 2007 as a different organization – we are bigger, better and more focused than ever. The merger with the Network Processing Forum has brought us new faces and fresh ideas and we are pleased to welcome those members into the OIF. The new Software and Benchmarking Working Groups exist as a direct result of the NPF merger, making the OIF a more robust, complete organization.

As the optical networking industry continues to transform itself, the OIF is constantly looking for ways to move forward and remain ahead of the industry. In 2006 we wrote and approved seven Implementation Agreements (IAs) addressing the Physical and Link Layer and Networking areas. The OIF's industry educational and informational workshops on ASON and Interoperability Testing for Long Reach and Extended Reach 10 Gb/s Transponders and Transceivers, are concrete examples of the contribution that the Forum makes to its' members and optical industry at-large.

2007 will continue to provide the industry with provocative and important work from the OIF including IAs, workshops, tutorials and interoperability demonstrations so stayed tuned for more news on these topics.

Despite all of our technical achievements, perhaps the greatest aspect of the OIF is the volunteers themselves and the business and personal relationships that develop from collaboration. I value my company's membership in the OIF and I encourage you to take advantage of the volunteer opportunities that are available!

Best Wishes for a Prosperous 2007,

Joe Berthold
OIF President

Contact Us
Want to contribute something in the next issue? We'd like to hear from you! Send comments and ideas to Kimberly Chiu, OIF Project Manager, at kchiu@oiforum.com

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Industry Analyst

Michael Howard, Infonetics, speaks at OIF Meeting
Tuesday, January 23, 2007
12:00pm-1:30 pm
Crowne Plaza San Jose-Silicon Valley
Milpitas, CA USA

During his presentation Michael Howard will address “The Future of Carrier Optical Networks (as seen by this analyst)”. He will focus on Carrier Network Transformation projects worldwide -- moving data on networks designed for voice to voice on data networks, the eventual goal of IP/Ethernet over WDM, Optical equipment forecasts, measuring the road to IP/Ethernet over WDM and the implications for OIF.

As a Principal Analyst and Co-Founder of Infonetics, Michael Howard covers service provider optical, routing and metro Ethernet. He focuses on optical technologies from the service provider edge to the core, metro Ethernet and access networks, including FTTx, DSLAMs, next gen DLCs and cable aggregation. He is recognized worldwide as one of the industry's leading experts in emerging markets, service provider network market trends and user buying patterns.

Member Section

Founding Member Comment:
"AT&T has a proud history of leadership and innovation in the Telecommunication industry as demonstrated by its participation in the OIF. As a founding member of the OIF we've seen tangible benefits from working with both service providers and equipment vendors to create implementation agreements and open interoperability throughout the industry. The OIF has influenced the direction of many of the optical standards which are driving innovative solutions to the complex networking issues that confront our collective customers,” says Monica Lazer, Principal Member of Technical Staff, “and as such AT&T looks forward to collaborating with the Forum and its members on future projects."

The OIF welcomes its new members!

AVAGO TECHNOLOGIES

INTERNET 2

Level 3 COMMUNICATIONS

RSOFT Design Group — Full Spectrum Photonic and Network Design Automation

SWITCHCORE

YOKOGAWA

Technology Update

The OIF has several ongoing work projects taking place in various working groups. Highlighted in this newsletter are projects out of the Physical and Link Layer (PLL) and Networking Working Groups.

Common Electrical Interface - 25Gb (CEI-25)
This project defines an electrical layer interface with a signaling rate of 20 to 25 Gbps for next generation systems. This project is the next evolutionary step beyond the existing Common Electrical Interface (CEI) IA, which defines electrical layers for signaling rates up to 11.1 Gbps. CEI-25 electrical layer will form the basis of future protocol interfaces developed by the OIF. One goal of the project is to provide important input to the IEEE 802.3 HSSG effort in a manner similar to how CEI-11G served as an important input to the IEEE 802.3ap effort. This project is expected to conduct a straw ballot later in 2007. For more information contact Dave Stauffer, PLL Working Group Chair at dstauffe@us.ibm.com

Electronic Dispersion Compensation (EDC) Modeling
The OIF has begun the effort to measure both transmitters and EDC enabled receivers and to develop the model necessary to fulfill this project goal. This project is expected to be completed by the ITU meeting in June 2007. For more information contact Karl Gass at kgass@sandia.gov

E-NNI 2.0 Signaling
The E-NNI 2.0 Signaling IA defines the protocol used across the E-NNI reference point between adjacent domains (either within the same carrier network or in two different carrier networks) for the purpose of establishing optical connections. E-NNI signaling functions, along with the OIF UNI 2.0 and I-NNI signaling protocols (the latter not specified by OIF), are used to establish end-to-end connection services over multiple domains. The E-NNI 2.0 Signaling IA adds a number of features not found in the E-NNI 1.0 Signaling IA, including:

- the protocol elements necessary to provide UNI 2.0 services
- clarification of how the different E-NNI identifiers are used in the signaling protocol.

This project is expected to go to straw ballot in the first half of 2007. For more information, contact the document co-editors, Eve Varma at evarma@alcatel-lucent.com or Jim Jones at jim.d.jones@alcatel-lucent.com

Integrable Tunable Transmitter Assembly
This proposed project (ITTA-MSA IA) builds on the existing ITLA module agreement and addresses the issues related to integrating a 10G modulator. It is the next logical step to take and it would help to promote standardization in the marketplace and continue to accelerate the adoption of tunable lasers and tunable transponders. For more information on this project, contact the document editor, Tim Simmons at timothy.simmons@bookham.com

Interworking of G.8080
This document defines signaling protocol interworking methods between network domains utilizing OIF/ITU-T and IETF ASON / GMPLS RSVP-TE. In particular the interworking of ASON UNI and E-NNI (based on GMPLS RSVP-TE with ASON extensions, per G.7713.2 and OIF IAs) and GMPLS interfaces (based on GMPLS RSVP-TE, per RFC 3473 and RFC 4208) are tackled and potential solutions highlighted. This project is expected to go to straw ballot in the first half of 2007. For more information contact, Hans-Martin Foisel, Carrier Working Group Chair at hans-martin.foisel@t-systems.com

Logging & Auditing Syslog
This IA specifies how to use a subset of the IETF's standard version of Syslog to log OIF control plane traffic as the basis for an audit capability. It also covers securing the log files and controlling their generation and collection. It is an optional component of the UNI and NNI intended to be used in conjunction with the *Security Extension for UNI and NNI* and the *Addendum to the Security Extension for UNI and NNI.* This project is expected to go to straw ballot in the first half of 2007. Contact Rich Graveman, document editor, for more information at rfgraveman@nac.net

Serial Look Aside (SLA)
This project defines a serial interface between network processing elements and coprocessors such as Network Search Engines. The SLA project originated in the NPF and was adopted by the OIF PLL in May, 2006. SLA is an upgrade to the widely adopted Look-Aside Interface (LA-1). This project is expected to go to straw ballot in the second half of 2007. For more information contact Dave Stauffer, PLL Working Group Chair at dstauffe@us.ibm.com

StatEye
In Q3 of 2006, the OIF funded a major upgrade to StatEye, an open-source software package that is an integral part of the channel compliance methodology of the OIF's Common Electrical Interface Specification (CEI). CEI defines specifications for serial signaling and channels in chip-to-chip and board-to-board applications up to 11 Gb/s. This upgrade of StatEye enables it to handle cross-talk effectively and adds a useful Graphical User Interface and an XML (Extensible Markup Language) framework.

TFI-5/TDM-P Clause in CEI-P
This project defines new clauses in the CEI-P IA which define how to map clients using the TFI-5 and TDM-P protocols into the CEI-P protocol. This project was started at the 4Q 2006 meeting and is expected to go to straw ballot in the second half of 2007. For more information contact Dave Stauffer, PLL Working Group Chair at dstauffe@us.ibm.com

UNI 2.0
The UNI 2.0 Signaling IA defines the protocol used across the UNI reference point between a customer and the service provider's network for the purpose of establishing optical connections. UNI signaling functions, along with the OIF E-NNI 2.0 and I-NNI signaling protocols (the latter not specified by OIF), are used to establish end-to-end connection services

over multiple domains. The UNI 2.0 Signaling IA adds a number of features not found in the UNI 1.0 Signaling IA, including:

- support for Ethernet
- support for G.709
- support for Low Order SDH (i.e. VC11, VC12) and SONET (i.e. VT1.5) services
- support for call/connection modification
- enhanced security
- clarification of how the different UNI identifiers are used in the signaling protocol

This project passed straw ballot on Jan 12, 2007. For more information, contact the document editor, Evelyne Roch at eroch@nortel.com

Educational Resources

Planned for 2007

Connecting the Dots: OIF Protocol/Networking Architecture to OIF/NPF Software Architecture/Framework
Monday, January 22, 2007
2pm-5pm
Crowne Plaza San Jose-Silicon Valley
Milpitas, CA USA

In June 2006 the OIF and NPF merged, creating one forum to facilitate Packet and TDM Transmission Network Element development. One of the goals set forth by the boards of the merged entity is to achieve better integration between the working groups responsible for software and network IA development. This workshop, sponsored by the Networking and Software tracks of the OIF, will facilitate the integration by introducing the architectural frameworks that have been in use in these two tracks.

ASON/GMPLS Tutorial
The OIF is developing an ASON/GMPLS Optical Control Plane tutorial, in support of a long-standing goal to develop and offer educational materials in line with OIF work items. The goal of this tutorial is to provide a thorough review of the ASON requirements and architecture, ASON/GMPLS protocols, OIF interoperability experience, and overall standardization status. The tutorial is expected to be completed during the first half of 2007. If interested in participating in this project, OIF members may subscribe to the oif-agape@oiforum.com exploder or contact Eve Varma at evarma@alcatel-lucent.com

ECOC 2007

- **ECOC 2007 Workshop** on “Global Interoperability in Multi-Domain and Multi-Layer ASON/GMPLS Networks”
- **ECOC 2007 Lab Tours to Deutsche Telekom** premises, located adjacent to the ECOC 2007 Exhibition Hall. DT will be demonstrating the ASON/GMPLS functions of the OIF Worldwide Test Network and the MUPBED European scale network and enabling “hands on” real telco world for the visitors.

What Happened in 2006

OIF Backgrounder
As part of the OIF strategic marketing plan, a comprehensive, high level view OIF Backgrounder has been developed and can be viewed at http://www.oiforum.com/public/documents/OIF_Backgrounder_Final.pdf

2006 Workshops
The OIF held a series of well-attended workshops during 2006 that addressed ASON/GMPLS topics. Each workshop worked to address a different audience including academia and research networks, carrier networks and test beds/demonstrators.

The first workshop covered topics from European (GEANT2, NOBEL, MUPBED) and German (VIOLA) projects and was addressed by top European research experts from GRNET, FhG-IMK, Deutsche Telekom, and Telecom Italia. The presentations are available for public viewing at http://www.oiforum.com/public/meetOIW050806.html

Those in attendance at the Q3 meeting in Vancouver saw a workshop on ASON/GMPLS test beds in North America and Asia (Kei-han-na Open Labs/Japan, ASON implementations in 3TNET/China; HOPI and DRAGON projects from USA)- the workshop presentations are posted at http://www.oiforum.com/public/meetOIW073106testbeds.html

At the OIF Dallas meeting attendees flocked to a workshop entitled “ASON/GMPLS Implementations in Carrier Networks”. Representatives from AT&T, Telecom Italia and Verizon discussed their experience with control plane implementations, highlighting the role and significance of OIF technical agreements in network deployments. The carrier representatives also provided feedback to OIF members from practical experiences and future expectations. Speakers are listed and presentations posted at http://www.oiforum.com/public/meetOIW101606.html

StatEye Tutorial
The OIF offered members and guests a full-day workshop addressing StatEye capabilities and package features at the Q3 meeting in Vancouver. The presentations can be viewed at http://www.oiforum.com/public/meetOIW073106stateye.html

Recent Implementation Agreements and Press Releases

Implementation Agreements

OIF-ENNI-OSPF-01.0 (January 2007)
External Network-Network Interface (E-NNI) OSPF-based Routing - 1.0 (Intra-Carrier)

OIF-SPI-S-01.0 (November 2006)
Scalable Streaming Packet Interface (SPI-S)

OIF-SFI5-02.0 (October 2006)
SERDES Framer Interface Level 5 Phase 2 (SFI-5.2): Implementation Agreement for 40Gb/s Interface for Physical Layer Devices

OIF-LRI-02.0 (July 2006)
Interoperability for Long Reach and Extended Reach 10 Gb/s Transponders and Transceivers

OIF-TDM-P-01.0 (April 2006)
TDM System Interface Protocol (TDM-P) Implementation Agreement

OIF-SEP-02.1 (March 2006)
Addendum to the Security Extension for UNI and NNI

OIF-SMI-02.1 (March 2006)
Addendum to the Security for Management Interfaces to Network Elements

In The News

December 18, 2006
SPI-S From the OIF is Ready for Business
New Scalable Protocol Can Handle Hundreds of Gigabits Per Second

November 8, 2006
New OIF Project Maps TFI, TDM Signals
Carriers Highlight Importance of Forum Work in ASON Network Deployments

September 7, 2006
OIF Unveils StatEye Upgrade: High Speed Channel Analysis
Technical, Working Group Leaders Elected

July 27, 2006
10 Gb/s Reaches Farther at Lower Cost Under New OIF IA
Successful Test at OFC/NFOEC Results in Approved Agreement