broadband forum

Keeping you updated about our activities! Here we highlight our latest work and focus on areas which are most critical.

A Word from our CEO

Delivery is the key for 2016

Last week's Hong Kong meeting marked an important moment in the realization in the development of Broadband 20/20, our vision for the broadband industry. We have already identified the need to advance ultra-fast access and the Smart Home in order to deliver new services that can build new value for the broadband industry and to smooth the way forward for service providers looking for new broadband-based revenues as they shape their networks for the future.

This launch has been an enormous success. But now is the real test for us all. Now we have to deliver on Broadband 20/20.

The focus for us, therefore, is to keep up the momentum we have created. This will be done by not only working on the evolution of the broadband network architecture today, but by stimulating discussions further by looking at some active projects by consortiums and open source projects to see how they may apply to the issues the Forum is addressing, and how we may in fact use some of their outputs. Many of you saw some of that this week in Hong Kong with the demonstration of the UNIFY project and more will follow in the coming months, especially at the interim meeting in Atlanta (May 18th to 20th). There, we will see a demonstration of the ONOS CORD project, as well as further detailed discussions on the business requirements driving the evolution of the broadband network (including the impact of new capabilities such as 5G, NFV and SDN).

A ringing endorsement of Broadband 20/20 came in Hong Kong, when we hosted a VIP visitor in Marc Halbfinger, the CEO of leading Hong Kong service provider PCCW Global. Marc spent two hours with us and both listened with keen interest about the new strategy and gave valuable input based around his experiences in what is arguably the world's most competitive and open market for broadband.

I would like to welcome new Board members Massimo Sorbara, of Qualcomm, and Ken Kerpez, of ASSIA, who were elected this week at the annual meeting, and our new Forum members Digital Lightwave, Intec and Trinity College, Dublin.

Hong Kong was busy but we are used to that. And in years to come perhaps we'll look back and see how fitting it was that we should start the real delivery of Broadband 20/20 in the world's most advanced broadband city.

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Forum reaches out to Open Source organizations in modelling initiative

The Broadband Forum's Software Architect William Lupton is spearheading an initiative on both information and data modelling with the Internet Engineering Task Force (IETF) and several Open Source organizations.

This follows the Forum's participation in January's Workshop on Information Modelling for NFV, organized by ETSI NFV ISG and hosted by CableLabs in Louisville, Colorado. The Forum is looking to talk to Open Source groups to improve its understanding of the market and to offer to share its data modelling and domain expertise for the overall benefit of the industry.

"If we can be agile and efficient to ensure Forum solutions are ready as and when needed, there are major benefits for everyone," said William. "The Open Source organizations remain as quick to market, the Broadband Forum enables Open Source organizations to deliver solutions that incorporate the latest standards, and the industry achieves a more robust answer to its needs without any time delays."

Further developments will be reported in future editions of the newsletter.
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European Union UNIFY Project demonstrated in Hong Kong

UNIFY – an EU-funded research program which has already done good work on how to migrate to a network based on SDN and NFV techniques – was demonstrated to members during the Broadband Forum Q1 meeting. UNIFY is one approach relevant to the SD-365 Controller analysis being carried out in Joint Architecture and Migration and SDN-NFV sessions. It follows multi-company contributions at the 2015 Q3 and Q4 meetings. Other approaches are also part of the analysis.
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Innovation Track introduces new Broadband Assured Services work

The Innovation Track was recently formed to be the incubator for new projects such as the developments in 5G. In Hong Kong, as envisaged in the Broadband 20/20 vision document, the Broadband Forum has begun work on Broadband Assured IP Services. It has long recognized the need for standardized, on-demand user-initiated performance-assured services and is leveraging several new technologies (SDN, NFV, G.fast, etc.), its IP expertise and experience with more than 350 million TR-069 installations. The project was presented in the Innovation Track session. It covered several use cases, the development of a number of technical specifications and implementation models for both business and consumer users in a variety of locations. The work envisages several practical implementation models including user initiated services covering several application types (interactive meetings, medical, financial cloud apps, live and recorded video content, gaming, etc.) to be offered in addition to standard internet services. You are encouraged to follow this and other Innovation Track developments over the next quarter.
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Five Forum members honored after year of transition

During the opening plenary, President Tom Starr highlighted the transformation of the Broadband Forum in 2015, acknowledging the vision and commitment of CEO Robin Mersh in driving through Broadband 20/20 which is now seeing the Forum work in new, crucial areas of the market, such as SDN, NFV, Internet of Things (IoT), G.fast and, for the first time, software development.

Starr said that 2015 had been a year of outstanding effort and during this session five members received Outstanding Contributor of the Year awards. They were Les Humphrey, of BT, Bruno Cornaglia, of Vodafone, Ken Schneider, of Telebyte, Rao Chrukuri, of Juniper Networks, and Klaus Wich, of Axiros.
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Top Asian Editor visits Hong Kong meeting

Globally-respected telecommunications writer John Tanner – the editor of Telecom Asia – dropped in to the Hong Kong meeting for an interview with Robin Mersh. John, whose magazine is seen as the leading trade publication across Asia, stayed for more than an hour and was briefed about the Forum's Broadband 20/20 strategy and the re-structuring that had taken place to make it happen.

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Europe to get the message in March

The Forum is giving keynotes and presentations at three events across Europe next month so please spread the word among your colleagues who may be attending. Robin Mersh will deliver a keynote on G.fast at Gigabit Copper in Brussels on March 8, while the Forum will also speak – speaker to be confirmed – at the MPLS & SDN World Congress in Paris from March 8 to 11. At the end of the month on March 30, Robin will give a presentation on both Broadband 20/20 and G.fast at the SCTE Spring Lecture in London.

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Work Area Updates from Hong Kong

SDN and NFV Group looking at new virtualization work around the central office

During a busy week for the SDN and NFV Group, new work was discussed to support virtualization of voice services as the Group moves forward. By pulling voice-related functions into the network virtualization infrastructure, Service Providers will be able to manage, update and introduce new voice services more flexibly, with potential for significant OPEX savings.

Work is also continuing on Software Defined Access Network (SDAN), which is bringing SDN technology into the access network for the first time. This aspect of SDN will enable software defined control of all the major access technologies of copper, fiber and wireless.

Since both SDN and NFV technologies have architectural implications, a great deal of the Work Area's activities are conducted jointly with the Architecture and Migration Work Area. This joint work includes: WT-328, which is defining virtualization of business gateways; WT-345, which defines the specific requirements necessary to support the migration of the MSBN infrastructure, topologies and deployment scenarios into an NFV environment; and WT-359, which is defining a framework for network virtualization.

BUS fine tunes CWMP

Work started in Broadband User Services (BUS) on a new version of CWMP (TR-069 Amendment 6) to incorporate several new features and updates from our ongoing issues list. Targeted for Q2 2017, this version will add support for the management of firmware via firmware banks, improve security and provide updates for some of the alternative notification mechanisms. This version will likely be the standard stable version of CWMP for quite a long time.

In addition, work began on a new revision of the CWMP Device:2 data model, fast tracking changes to add parameters for G.fast interfaces, a critical component of the Broadband

20/20 vision.

BUS continues to meet new use cases in subscriber network management, pushing forward with its Alternate Management Path architecture and making strides in home network measurement guidelines.

Meanwhile, the User Service Platform - the natural evolution of TR-069 into the world of IoT and visualization - finalized decisions in security, messaging, and proxying. Focused support from a host of major players is allowing the USP project to meet its ambitious deadline of having testable implementations by the end of the year.

FTTdp Work Area paving the way for NETCONF/YANG managed DPUs

The Fiber to the Distribution Point (FTTdp) Work Area lead by Directors Chris Croot, of BT, and Sven Ooghe, Alcatel-Lucent, had a jam-packed meeting, with close to 40 contributions covering the full spectrum of FTTdp architecture and management. The group is determined to use its expertise to remove remaining roadblocks for DPU deployments, in particular on the communication challenges between the Persistent Management Agent and the DPU. Clearly the industry is recognizing the potential of FTTdp, as many new meeting participants attended the sessions.

The FTTdp Management project stream, led by William Lupton, the Forum's Software Architect, and Ken Kerpez, of ASSIA, drove the work on the YANG modules for FTTdp Management. These are key to allow operators to start integrating the DPUs in their network management systems. The VDSL/G.fast YANG modules defined in WT-355 and WT-371 have now reached a level of maturity to start Straw Ballot comment resolution, with the aim to publish the work later this year. Efforts are now quickly ramping up to specify all other YANG modules in the FTTdp ecosystem, including service management (VLAN forwarding, multicast) and equipment management.

FAN increases flexibility in the access network

Fiber Access Network (FAN) working group is communicating and cooperating closely with the Full Service Access Network (FSAN) to develop ITU-T xPON interoperability test cases and organize test events. Future BBF-FSAN IOP events will target NGPON2 and XGSPON systems, which are very important for industry maturity.

The Multi-Wavelength PON Inter-Channel-Termination Protocol (ICTP) Specification (WT-352) has made great progress on ICTP message format and transportation and the ICTP ad hoc group is now working on the OLT TC state machine.

Project WT-280, G-PON in the context of TR-178, which adds to the requirements for G-PON systems deployed in access networks, has discussed submissions on traffic management and performance monitoring aspects.

Project WT-312, PON Access Node Management Requirements, needs to be revisited from this meeting on and this document is expected to be ready for straw ballot very soon.

WT-372, Framework for Multi Management PON Devices, has been approved and confirmed as a new project in FAN, in order to facilitate the usage of dual managed PON devices.

Physical Layer Transmission moves forward with G.fast Certification

In the G.fast testing and certification project stream, the Physical Layer Transmission group completed the first pass of comment resolution for the second straw ballot of ID-337 (G.fast certification test plan). This second straw ballot will remain open until the expected completion of the beta testing in April 2016.

There was continued activity on the advancement of WT-338 – the test specification of Reverse Power Feed (RPF) equipment, where the customer premises equipment provides power to the Distribution Point Unit (DPU) via the twisted wire-pair connection. This document defines procedures for testing the end-to-end functionality of RPF equipment in FTTdp applications at both customer premises and DPU locations.

In the VDSL2 testing project stream, there was continued progress on performance and functionality testing of transceivers supporting the new VDSL2 profile 35b, which allows vectoring compatibility between VDSL2 transceivers operating with 35 MHz bandwidth and transceivers operating with 17 MHz bandwidth (current profile 17a). Profile 35b allows operators to provide customers served on shorter loops with enhanced data rates beyond those of vectored profile 17a, while customers on longer loops receive the current quality of service offered by vectored profile 17a.

In the bonding project stream, work progressed on the development for testing of the initialization time of VDSL2 transceivers deployed with bonding, for inclusion in a new amendment to WT-273.

In the home networking project stream, work progressed on inclusion of application layer tests in WT-208 issue 2, the powerline home networking test suite.

Architecture and Migration Work Area completes NERG working text

Virtual home gateway work (WT-317) known as NERG (Network Enhanced Residential Gateway) has completed its straw ballot and now will move towards the final ballot process. This is important because it has been one of the first applications of NFV to be addressed by the Forum and member companies are already showing great interest in what is being developed. It is expected that there will be follow on work as much of the NFV aspects require definition across the industry.

The enterprise version of WT-317, known as virtual enterprise gateway, has continued to progress and is expected to go into straw ballot after the Q2 meeting in Prague. It expands on the virtualization of CPE by exploring options for both carrier managed virtualization at the customer premises, as well as network hosted services.

Work around the sharing of copper access (WT-349) is now in straw ballot process. It defines the business to business interface between infrastructure providers and virtual network operators to facilitate new business models for broadband access. This will create new opportunities for monetizing access for service providers.

A study of the impacts of 4K video on the network is now underway and has been helped by the detailed information being received from Forum members. With the proliferation of smartphones able to extract a UHD stream directly from the network, this is expected to dominate network dimensioning in the metro for the foreseeable future and is a major issue for the Forum to address.

Progressing the Forum's work on SDN and NFV, WT-345 on migration to NFV is approaching technical completion and expected to commence straw ballot comment resolution in Q2. WT-345 defines models for introduction of NFV into legacy networks to facilitate the network transformations currently underway in the industry.

Finally, the Forum continues to lay groundwork for the future with work on a framework for virtualization and associated SDN reference architecture.

Wireline-wireless Convergence Work Area focuses on 5G

This work area addresses the needs of converged operators, who have both wireline and mobile networks deployed and are in a position to leverage all of their assets with combined subscriber offerings.

Phase one of the work on hybrid access, which combines wireline and wireless access to enhance reliability, provide fast fulfilment and offer greater bandwidth, is now in straw ballot and is expected to be published shortly. Phase 1 lays the groundwork for the solution space that will be addressed by Phase 2 commencing in Q2.

A study document has been started on 5G and the first contributions were heard in Hong Kong. It will explore the role of fixed broadband and as an enabler for the rollout of 5G.

Routing and Transport Area wraps up marketing push ahead of MPLS & SDN World in Paris

A major priority for the Cloud Interconnect Project was the Ethernet Virtual Private Network (EVPN) tutorial, which is in the final stages of approval and set to be presented at the MPLS & SDN World Congress in Paris next month. The project is also finalizing work on an EVPN white paper to be published shortly after the conference.

Phase 2 of the EVPN architecture work (TR-350) also began, focusing on point-to-point and point-to-multipoint service implementation (i.e. E-LINE, E-TREE). The work will be progressed in usual cooperation with the IETF. The Cloud Interconnect project's main focus is on movement of data to deliver cloud-based and mobile services in a way that ensures customers experience no degradation of service wherever they are in the world.

The Packet Optical Evolution project concluded its work on WT-319 part B. It will start the final ballot process after the meeting. Work on the associated tutorial and white paper are still in progress and contributions are encouraged. The project has already produced specifications integrating the packet network with the colored optical network, thereby consolidating equipment needed – bringing with it potential significant OPEX and CAPEX savings for operators.

Work on the MPLS in Mobile Backhaul amendment was also progressed. A new work proposal for 5G mobile transport was introduced and is being considered by the organization. This work would be a progress of the successful Forum work on MPLS in Mobile Backhaul (TR-221 and TR-221 Amd 1).
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Welcome to our new and returning Members!

We are pleased to welcome Digital Lightwave, Intec and Trinity College Dublin to the Broadband Forum.

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Are you following our new company page on LinkedIn?

We have launched a new LinkedIn company page which we are inviting all our members to follow for official updates from the Forum, including news, events, images, videos and documents.

In addition, we would also like to boost our presence with sponsored content. In order to do this, we need more than 100 followers. With more than 1,500 people already following our Group page, we're sure we'll soon pass the milestone.

To view the new Broadband Forum company page on LinkedIn, please *click here*.

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Broadband Forum in the news

In case you missed it, the Broadband Forum received some significant press coverage over the last quarter. RCR Wireless and Vanilla Plus both carried an opinion piece on how operators can unlock the true potential of SDN, while Light Reading hosted a blog on why independent NFV interop tests need to go a step further.

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Events Calendar

2016 Broadband Forum Meetings

Q2 Meeting: April 18 – 22, Prague, Czech Republic
Q3 Meeting: July 25- 29, Berlin, Germany
Q4 Meeting: October 24 – 28, Kansas City, Missouri

Sponsoring a BBF meeting can be a great way to get some company recognition! If you are interested in sponsoring a meeting, then please *click here* for more information or contact Christine Corby at ccorby@broadband-forum.org.

Forthcoming Industry Events

FTTH Conference: February 16 - 18, Luxexpo, Luxembourg
Gigabit Copper: March 8, Brussels, Belgium
MPLS and SDN World Congress: March 8 - 11, Paris, France
SCTE Spring Lecture: March 30, London, England
Light Reading Gigabit Cities Live: April 5, Charlotte, North Carolina

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Contact information
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