broadband forum

Welcome to the Broadband Forum Quarterly Newsletter

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

In my time with the Broadband Forum, we have had some memorable meetings and important moments but last week in Porto probably topped the lot as our members enthusiastically embraced the restructured organization. To have reached this point within just three months has been an incredible journey and I would like to thank everyone involved in making this possible. A great deal of credit has to go to the whole Forum, but our Technical Chair, Mike Fargano, deserves particular praise.

The new Work Areas and Project Stream Leader roles and responsibilities seem to have bedded in well and with 350 contributions received during the meeting there was certainly no shortage of work for all those involved.

We are quite clearly embarking on a new era for the Forum and I am confident that the re-shaped organization is well placed to deliver what the industry needs as we all adapt to the need for fast, agile responses in a world where software is becoming increasingly significant.

I hope you all feel as enthusiastic as the leadership team about what has already been achieved. But make no mistake about it – this is just the start. As I write this editorial, we are finalizing major conference presentations at Gigabit Europe – a Light Reading event in Munich – the Layer 123 SDN and Openflow World Congress in Dusseldorf and the Broadband World Forum in London. This will tell the market much more about the vision that lies behind our restructure. I hope many of you will attend and will urge colleagues from your companies taking part to come along and hear the Broadband Forum message.

Thank you so far.

Robin Mersh, CEO

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Restructuring of working groups completed on schedule

A major project to restructure the traditional working groups of the Forum has been completed on time following three months' hectic activity and the Q3 meeting in Porto saw the organization working in its new structure for the first time.

The new Work Area reports are covered in this edition of the newsletter and an important part of the new

structure is the appointment of several Project Stream Leaders within those work areas. These leaders will actively take control of delivering and driving the projects within their work areas –giving them much more freedom and responsibility to move forward more quickly and decisively.

"The new look will give us the agility we are looking for. We need to deliver quickly, with a project focus, and in smaller phases and this will help us better serve the needs of the market in a world where software is playing a more and more significant role," said CEO Robin Mersh.

The new Work Areas and their directors are:-

- Architecture and Migration Work Area Directors: David Allan (Ericsson) & David Thorne (BT)
- Broadband User Services Work Area Directors: John Blackford (Pace) & Jason Walls (QA Cafe)
- Fiber to the Distribution Point Work Area Directors: Chris Croot (BT) & Sven Ooghe (Alcatel-Lucent)
- Fiber Access Networks Work Area Director: Wei Lin (Huawei Technologies) with Michael Shaffer (Alcatel-Lucent) serving as Acting Co-Director until the end of the year
- Routing & Transport Work Area Directors: Charles "Drew" Rexrode (Verizon) & David Sinicrope (Ericsson)
- Physical Layer Transmission Work Area Directors: Les Brown (Huawei Technologies) & Massimo Sorbara (Ikanos Communications)
- SDN and NFV Work Area Directors: George Dobrowski (Huawei Technologies) & Ken Ko (ADTRAN)
- Wireline-Wireless Convergence Work Area Acting Director: David Allan (Ericsson)

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Work Area updates from Porto, Portugal

A packed debut for the SDN and NFV Work Area

The Porto meeting of the SDN and NFV Work Area represented enhanced focus on application of SDN and NFV concepts into the Multi-Service Broadband Network (MSBN), and judging by the interest, this is going to be a very busy group! It was strictly standing room only for the opening session of the team. The new Work Area addresses software defined control and virtualization of functions in network elements across the access and aggregation networks, coordinated with the work by the Architecture and Migration Work Area.

This Work Area is committed to making a real impact in terms of SDN and NFV in the broadband network, allowing fast, agile deployment of customized broadband services and applications. In turn this will create new revenues and provide differentiation for service providers while managing OPEX both in the access network and in single and multi-tenant residential and business locations.

The Work Area has two project streams, SDN and NFV. The SDN stream is giving particular focus on issues around evolution and mixed deployments and will work closely with the Architecture and Migration Work Area. In NFV, the stream is looking at similar issues and its initial priority is the virtual business gateway (WT-328), handling the defining functionalities

needed to ease the deployment and management of business services. The SDN project stream is being led by Charles Cook of CenturyLink and at the time of "going to press" the NFV project stream leader was still being confirmed.

BUSy times for the Broadband User Services (BUS) Work Area

The newly reformed Broadband User Services (BUS) Work Area had a busy week, handling its constantly evolving and growing Device:2 data model for CWMP. This included the resolution of the final round of comments on the next version of the data model (Device:2.10), which includes support for MQTT interfaces on TR-069 CPE, as well as numerous updates proposed by both members and external organizations, demonstrating the flexibility of the modelling process and its importance to the industry.

Work also continued on vitally important home network discovery and measurement topics, providing information to service providers on how they can map the topology of the end user's network as the number of networked devices increases. This will be enabled by extensions for the TR-069 data model as well as new device requirements for home network CPE.

Lastly, the group continued to generate key content for assisting the emerging IoT world, finalizing a marketing report on how providers can use TR-069 to deploy M2M systems. The group also dedicated a full day's worth of sessions to its new Universal Service Platform, making inroads in architecture, discovery, operation modeling, and message types. The group will be releasing a two-page overview of USP and how it can help providers, developers, and end users in deploying M2M, Smart Home and virtualized broadband services, in late October.

The Broadband User Services work area has announced the following Project Streams and Project Stream Leaders:

- Alternate Management Path: Peter Silverman (ASSIA)
- Compliance Testing: Marion Dillon (UNH IOL)
- CWMP Project: John Blackford (Pace) & Klaus Wich (Axiros)
- CWMP Data Model: William Lupton (BBF) & Klaus Wich (Axiros)
- Device 2.10: Tim Carey (Alcatel-Lucent) & Klaus Wich (Axiros)
- Device Requirements: Jean-Didier Ott (Orange)
- Network Measurement: Tim Carey (Alcatel-Lucent), Barbara Stark (AT&T) & Miodrag Djurica (KPN)
- Software Tools: Mark Tabry (Google) & William Lupton (BBF)
- Universal Service Platform: Barbara Stark (AT&T) & Mark Wilson (Verizon)
- Voice Service Data Model for CWMP: Jean-Didier Ott (Orange).

Kick-off time for the FTTdp Work Area

The group had a very positive meeting and, with the scope focussing on all areas of Fiber to the Distribution Point (FTTdp) in a single area, it has helped ensure the correct experts are able to attend and contribute in a major way. This has translated into three separate project streams.

The team agreed the commencement of a new project stream "FTTdp Interop & Testing," under the leadership of Lincoln Lavoie (UNH-IOL)to develop a test plan for the interface between the Persistent Management Agent (PMA) & Distribution Point Unit (DPU) to help drive the goal of interoperability.

The FTTdp Management project stream, led by William Lupton (BBF) and Ken Kerpez (ASSIA) progressed the work on the YANG models and had good discussion on a way forward for managing VLAN forwarding with the different models presented having synergies with each other. Significant time was devoted around the best practice for the forum developing its YANG models and several ideas were progressed into the Software Advisory Group (SAG) to discuss further.

A further Architecture and Requirements Project Stream is led by Michael Schaffer (Alcatel-Lucent) and Dong Wei (Huawei).

Having come into the meeting with the first issue of TR-301 agreed and the decision to move the relevant parts of WT-318 into WT-301i2, work has started with gusto progressing this. Good progress was also made on the topic of PMA discovery, with a hope that a common agreement can be made during a conference call before the next meeting.

FAN waves goodbye to major milestone work on FTTdp

The Fixed Access Networks Work Area began their meeting with a handover to the new Fiber to the Distribution Point Work Area of one of their most significant pieces of work – the completion of what is now TR-301. This gives service providers the opportunity to architect a fiber-rich future, offering super and ultra-fast broadband speeds via copper, enhancing G.fast technologies as well as VDSL2, which means an improved broadband experience for users and new revenue stream opportunities for operators keen to offer new high-speed services. FAN enabled this through a radically new Fiber to the Distribution Point (FTTdp) architecture and set of associated requirements.

There was also further progress on Multi-Wavelength PON Inter-Channel-Termination Protocol (ICTP) Specification (WT-352), which enables the ability of NGPON2 systems to hand off control of ONUs across wavelengths, allowing more flexibility in the access network.

Work on the Study Document on Architecture and Technical Requirements for PON-based Mobile Backhaul networks (WT-331) was slightly held up, as key members for this work were unable to obtain travel visas in time.

The Work Area also saw three project stream leaders working in their new roles for the first time. They were Vincent Buchoux of LAN (Interoperability Test Project), Mark Wilson of Verizon (NGPON2 Wavelength Management Project) and Robin Grindley of Broadcom (PON Based Mobile Backhaul Project).

Important developments in G.fast and VDSL2 work

In Physical Layer Transmission, much of the focus has been around comments received following the straw ballot for the G.fast certification test plan ID-337. This work area

activity is being chaired by Les Brown and Massimo Sorbara and this latest activity comes after the conclusion of the fourth G.fast interoperability plugfest event.

In VDSL testing activity, there is a project extension to address enhanced bit rates for the new VDSL2 profile 35b for vectoring. Profile 35b allows vectoring-compatibility of VDSL2 transceivers operating with 35 MHz bandwidth together with the transceivers operating with 17 MHz bandwidth (current profile 17a), which allows operators to serve a wider radius of VDSL2 deployments with enhanced data rates – benefiting both the service provider and their customers. With this activity, the Broadband Forum is responding to the ITU-T's operator-driven definition.

The Physical Layer Transmission Work Area has announced the following Project Streams and leaders:

- Bonding: Massimo Sorbara (Ikanos Communications) & Herman Verbueken (Alcatel-Lucent)
- G.fast and RPF Certification: Les Brown (Huawei Technologies) & Frank Van der Putten (Alcatel-Lucent)
- Home Networking: Les Brown (Huawei Technologies) & Marcos Martinez (Marvell)
- VDSL2 Physical Layer Testing: Lincoln Lavoie (UNH IOL) & Aleksandra Kozarev (Lantiq)

HD Video – the effect on the network – a major talking point in Architecture

Virtualization of business services as a carrier managed service at the enterprise is a hot topic in the industry at present, with many believing it represents a high running early adopter use case for NFV. The Architecture & Migration Work Area is already adapting Broadband Forum terminology and conceptual models to address this industry trend and during the Q3 meeting, the work was positioned to transition to the specification stage. This next stage will be carried out by the SDN and NFV Work Area.

The Architecture & Migration Work Area has also initiated a project to examine the significant effect of the widespread use of the network to stream Ultra High Definition (UHD) Video where the network impacts are expected to be exacerbated by widespread deployments of UHD capable tablets and smartphone devices.

A new project stream under Bruno Cornaglia of Vodafone is looking into Fixed Access Network sharing. This will greatly expand opportunities for wholesaling and virtual network operators and the work has a special focus on how network resources will be exposed and can be monetized in multi-operator sharing scenarios.

The Migration Project Stream within Architecture & Migration Work Area is led by Oliver Thorp (Sky plc).

Public Wi-Fi Work nears completion

The work on streamlining access to WiFi hotspots through public access (WT-321) made further progress. It is technically complete and set to go to Final Ballot. Further work is to be defined at the next meeting. The Converged Policy and Control Project Stream Leader for the Area is Frederic Klamm of Orange and there is currently a vacancy for the Hybrid Access Project Stream Leader position.

Packet Optical Evolution and Cloud Service Infrastructure are Major Topics in Porto

After a brief introduction to the Forum's new structure, the Routing & Transport Work Area got straight to work with major activity around Packet Optical Evolution (WT-319) and Cloud Interconnect (WT-350) in Porto, as well as addressing critical work around Mobile Routing and Transport (TR-221) that will provide higher bandwidth and coverage on LTE Networks around the world.

In packet optical, the project has already produced specifications integrating the packet network with the colored optical network thereby consolidating equipment needed – bringing with it potential OPEX and CAPEX savings for operators. The project is now looking towards a common agreed specification for the packet network to optical network interaction, to provide further efficiencies for operators.

The Cloud Interconnect project is focused on movement of data to deliver cloud based services in a way that ensures customers experience no degradation of service wherever they are in the world. As with other projects, it is being managed on the basis of incremental delivery and the first phase of the work will very shortly go to final approval. Work has also started on a tutorial and a proposal for phase two of the architecture will be vetted post meeting.

The Mobile Routing and Transport project is critical to providing enhanced network synchronization needed to support the greater density of small and macro cells –helping multiple base stations better co-ordinate radio signals between themselves. This work is also seen as helping to prepare for a 5G world and there will be further discussion of 5G concepts at the next meeting.

The leaders for these projects are: Packet Optical Evolution - Diane Patton (Cisco Systems) and Dean Cheng (Huawei Technologies); Cloud Interconnect - Rao Cherukuri (Juniper Networks) and Mobile Routing & Transport - Yuanlong Jiang (Huawei Technologies) and David Sinicrope (Ericsson).

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Innovating with the Broadband Forum

At the end of the meeting a new initiative was announced – the Innovation Track. This is where members can openly discuss, stretch and socialize ideas that could be described as perhaps a little "out of the box" and embryonic. It can be about technology innovation but other subjects (such as service requirements) are welcome as well – with the goal being to road test and help mature ideas. Those more solid proposals could then lead to Birds of a Feather sessions (BOFs) and even be adopted within the Work Areas as fully-fledged Forum projects.

5G is one subject that will be addressed early on, with a potential BoF in Q4.

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Documents approved include:

- LAN-Side DSL CPE Configuration Specification (TR-064 Corrigendum 1)
- LAN-Side DSL CPE Configuration Specification (TR-064 Issue 2)

- ACS Northbound Interface Requirements (TR-131 Amendment 1)
- TR-064 Extensions for Service Differentiation (TR-133 Corrigendum 1)
- STBService:1.4 Service Object definition (TR-135 Amendment 4)
- Enabling Network Throughput Performance Tests and Statistical Monitoring (TR-143 Amendment 1 Corrigendum 1)
- FAPService:2.1 Femto Access Point Service Data Model (TR-196 Issue 2 Amendment 1)
- Performance Test Plan For In-premises Powerline Communications Systems (TR-208)
- Fiber to the Distribution Point (TR-301)
- TR-069 UPnP-DM Proxy Management Guidelines (TR-330)

These documents will be published in the following days, however for a full list of all work in progress, click here. Please feel free to share this information with your colleagues, so they are engaged and aware of the developments of this work.

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Welcome to our new and returning Members!

National Broadband Network (NBN) as a Principal Member and TP Link as an Auditing Member!

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CIO Review: Unlocking the true potential of SDN for Broadband

CEO Robin Mersh recently provided his thoughts on SDN's potential of becoming a key driver for innovation and changes in networking. Read the full article on CIO Review here.

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Events Calendar

2015 Broadband Forum Meetings:

Q4 Meeting: November 16-20, Puerto Vallarta, Mexico

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:
Gigabit Europe, September 29-30, Munich, Germany
IIR Network Virtualization Forum North America, October 7-9, Dallas, USA
SDN & OpenFlow World Congress, October 12-16, Dusseldorf, Germany
Broadband World Forum, October 20-22, London, UK

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