Promise of significant revenue growth for operators as Broadband Forum publishes first YANG modules for FTTdp management software specifications

TR-355 utilizes advanced software-based techniques, paving the way for delivery of ultrafast broadband services around the world

Fremont, California, August 30, 2016: Service Providers today moved a step closer to realizing the promise of optical fiber speeds and applications – without needing to fully upgrade or virtualize their infrastructures – with the release of a new set of specifications on FTTdp management from the Broadband Forum.

Software deliverable TR-355, YANG Modules for FTTdp Management, allows operators to configure and control fiber-fed nodes (DPUs) in the periphery of the access network using advanced software-based techniques, enabling interoperability for FTTdp management. This opens the door to agile, ultrafast broadband services and provides further stimulus for developing technologies such as G.fast, delivering fiber-like speeds for customers connected by copper cables.

The FTTdp YANG management model is the first software deliverable written in the YANG modelling language, as well as being the first to follow the Forum's new and groundbreaking Intellectual Property (IP) Policy, which has been updated to streamline software licensing and meet the increasing desire of industry players to have software code included alongside traditional standards specifications to accelerate their time to market.

BT's Kevin Foster, Chairman of the Broadband Forum, said: "While the Broadband Forum has been delivering TR-069 software for Residential Gateway management and configuration for more than 10 years, TR-355 breaks new ground for the Forum in that it is the first specification to publish YANG modules and deliver software specifically designed and licensed for wide scale and rapid adoption by the networking industry. This pioneering software-driven deliverable will enable operators to manage standardized FTTdp network elements from multiple vendors, giving more choice and flexibility as ultrafast networks are built out. It will also reduce the integration complexity of adding new network elements as networks scale and evolve to meet demanding customer requirements for advanced, assured and ultrafast broadband services."

TR-355 consists of seven YANG data model software specifications, including common Broadband Forum YANG types, an interface object supporting xDSL and G.fast, and the ITU-T standardized objects for start up of G.fast or VDSL, G.fast and VDSL2 configuration, status monitoring, performance management, testing and diagnostics, and Single-Ended Line Test (SELT) and Metallic Line Test (MELT) configuration and test results. The modules are publicly available via GitHub.

Frank Van der Putten, Rapporteur of the ITU-T Q4/SG15 experts group on broadband access on metallic conductors, said: "ITU-T SG15 welcomes the Broadband Forum's first deliverables on the YANG modules for FTTdp management. They take the ITU-T standardized objects for management of copper access (G.hs, VDSL, G.fast, SELT and MELT) to the next level. The Broadband Forum's move to the state-of-the-art YANG modeling addresses operators' needs for interoperability of management protocols and for programmability of networks, an onset to SDN/NFV evolutions. These deliverables show that collaboration between standards organizations can lead to results which benefit all players in the industry."

G.fast is an area of considerable activity within the Broadband Forum and thanks to its FTTdp Work Area – which produced TR-355 – the Forum has become a center for expertise for YANG

specifications relating to broadband networks, working in close cooperation with the Internet Engineering Task Force (IETF). The next step for the group is to drive re-use of the modules being developed in other areas, such as Fiber-to-the-Home (FTTH).

"The publication of TR-355 is groundbreaking in a number of ways," said Robin Mersh, CEO of the Broadband Forum. "First and foremost are the clear advantages it brings to operators looking to launch new competitive ultrafast services such as G.fast, while vendors will also benefit from the set of defined specifications. Furthermore, our new licensing, detailed in our updated IP Policy, sends a clear message about our continuing evolution to meet the needs of the changing networking industry."

The release of TR-355 comes just a week after the [Forum published the first ever set for the virtual Residential Gateway](). The Network Enhanced Residential Gateway (TR-317) provides requirements for an end-to-end architecture, creating a flexible and agile environment and eliminating the need to provision and attach new services directly to an end-user's Residential Gateway.

More details on TR-355 and how it will impact the industry are available in this video interview with the Forum's Software Architect William Lupton: https://youtu.be/Xo7YxQfbn_g

To view TR-355 in full, please visit: https://www.broadband-forum.org/technical/trlist.php

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