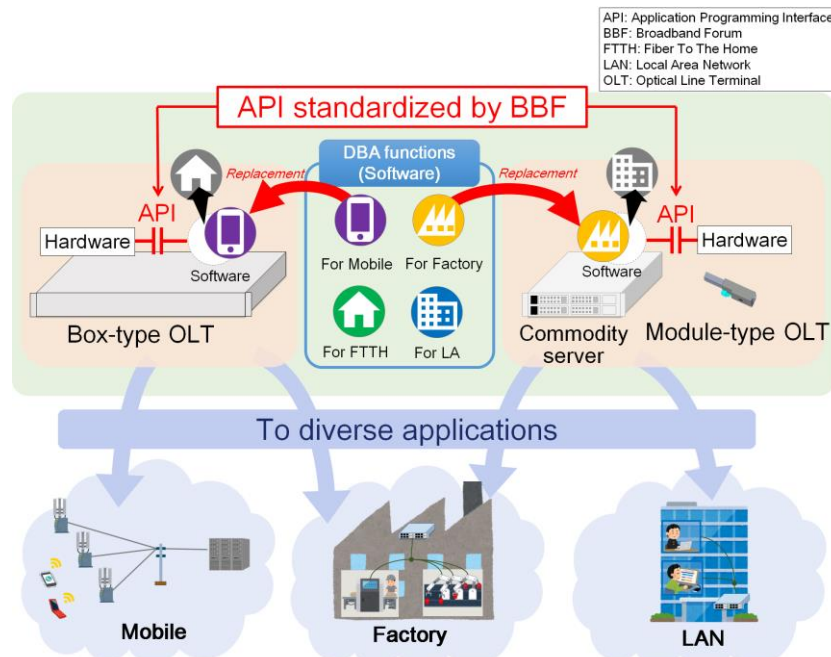# Broadband Forum publishes landmark standards to achieve modularization of Dynamic Bandwidth Assignment

NTT and Chunghwa Telecom work with Broadband Forum and other operators to deliver new specification that paves way for 5G era by using API to replace DBA software module

"Software-ized" DBA functions are replaced with an API to meet each service requirement. Image courtesy of NTT.

Fremont, California, 13 February 2019: Broadband Forum has released new standards for the modularization of the Dynamic Bandwidth Assignment (DBA) function, representing a significant advance in the Quality of Service (QoS) of optical access systems and a milestone for 5G by accelerating the time-to-market for time-critical applications.

The landmark specifications define an Application Programming Interface (API) that enables the DBA software module to be replaced. As a result, optical access systems can quickly and cost-effectively provide a wide range of services, including support for 5G fronthaul interfaces and services for business users.

NTT and Chunghwa Telecom have jointly proposed use cases of the DBA software module and developed the API specifications as international standards within the Broadband Forum.

"These technical advances will enable carriers to use a common access system for a diverse range of services including the accommodation of base stations for 5G mobile systems, which place strict requirements on acceptable latency thresholds," said Jun Terada, General Manager at NTT Access Network Service System Laboratories. "Although DBA, which requires high-speed processing in the region of sub-milliseconds, was thought difficult to modularize due to its time critical nature, it is a crucial function that significantly impacts QoS

in optical access systems. We believe that the widespread use of the API as an international standard will lead to the drastic expansion of the application area of optical access systems."

The new standards – the culmination of Broadband Forum's [PON Abstraction Interface for Time Critical Applications (TCAs) project which was launched by NTT 2017](#) – consist of two Technical Reports, [TR-402](#) and [TR-403](#). The former provides an overview of the modularization of the DBA function, including a use case regarding accommodation of base stations for 5G mobile systems over an optical access network, and specifies the functional requirements of the API. TR-403 specifies details of the API, including format and performance requirements.

Prior to this, NTT launched the new concept of [Flexible Access System Architecture®](#) [(FASA)](#), with the target of realizing the future access network, and conducted research and design activities on primary technologies and specifications. Alongside this, Broadband Forum intensively developed new architectures, interfaces, and protocols that can disaggregate the functions composing access systems.

In 2018, [NTT successfully demonstrated Optical Line Terminal (OLT) modularization](#) and succeeded in developing and testing OLT prototypes with the API that enables the smooth replacement of DBA software modules to meet new service requirements.

Looking ahead, NTT will modularize the remaining access functions in cooperation with carriers, system vendors, Standards Developing Organizations (SDOs), and Open Source Software (OSS) organizations in order to avoid the significant investment of redeveloping hardware-level equipment from scratch. This will result in cost-effective access systems that can quickly meet various requirements.

"The work completed by NTT and Chunghwa Telecom is essential to meet changing user demands, and we are proud to have had such an important project undertaken within Broadband Forum," said Robin Mersh, Broadband Forum CEO. "The work fits perfectly with our other initiatives around next-generation access and will enable operators to cost-effectively upgrade their optical access networks as they prepare for the 5G era. We applaud NTT for its innovation and its commitment to feeding this work into new industry-wide standards which will create an open broadband infrastructure and simulate mass deployment."

To view TR-402, please click [here](#). TR-403 is available [here](#).

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About the Broadband Forum
Broadband Forum is the communications industry's leading organization focused on accelerating broadband innovation, standards, and ecosystem development. Our members' passion – delivering on the promise of broadband by enabling smarter and faster broadband networks and a thriving broadband ecosystem.

A non-profit industry organization composed of the industry's leading broadband operators, vendors, and thought leaders, our work to date has been the foundation for broadband's global proliferation and innovation. For example, the Forum's flagship TR-069 CPE WAN Management Protocol has nearly 1 billion installations worldwide.

Broadband Forum working groups collaborate to define best practices for global networks, enable new revenue-generating service and content delivery, establish technology migration strategies, and engineer critical device, service & development management tools in the home and business IP networking infrastructure. We develop multi-service broadband packet networking specifications

addressing architecture, device and service management, software data models, interoperability and certification in the broadband market.

Our free technical reports and white papers can be found at https://www.broadband-forum.org/.

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NTT Group views NTT R&D as a wellspring of new value to be created in diverse fields through the realization of new technologies to support customers' digital transformations as well as to transform individual lifestyles together with NTT group operating companies and parties in various industries. NTT has approximately 2,500 researchers engaging in a wide range of diverse research activities, from basic research to R&D that supports the business development initiatives of operating companies.

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Glossary

Dynamic Bandwidth Assignment (DBA)
A dynamic bandwidth control function for point-to-multi point optical access networks. In order to avoid the collision of upstream data from multiple ONUs, the DBA function in an OLT assigns times to each ONU at which to start upstream transmission and the transmission duration.

Application Programming Interface
An interface that specifies how components should interact.