April 2017 Vol. 15 No. 4

NTT Technical Review 4 2017

https://www.ntt-review.jp/archive/2017/201704.html

Feature Articles
Keynote Speeches at NTT R&D Forum 2017

Hiroo Unoura, President and Chief Executive Officer, NTT

▼Overview

This article introduces NTT Group initiatives to promote the B2B2X (business-to-business-to-X) business model. The content of this article is based on a lecture presented by Hiroo Unoura, NTT President and Chief Executive Officer, at NTT R&D Forum 2017 held in February 2017.

Hiromichi Shinohara, Senior Executive Vice President and Head of Research and Development Strategy Department, NTT

▼Overview

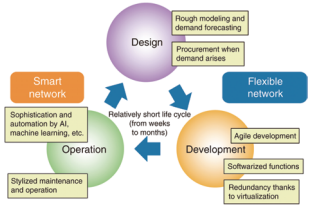
This article introduces NTT's research and development (R&D) activities for creating new value through collaboration with various partners to promote the B2B2X (business-to-business-to-X) business model under the NTT Group's medium-term management strategy, *Towards the Next Stage 2.0*. It is based on a lecture presented by Hiromichi Shinohara, NTT Senior Executive Vice President and Head of the Research and Development Strategy Department, at NTT R&D Forum 2017, which was held in February 2017.

Feature Articles
NTT Tsukuba Forum 2016 Workshop Lectures

Research and Development Activities toward Smart and Flexible Future Network: NetroSphere Concept

▼Abstract

The NTT laboratories announced the NetroSphere concept in March 2015 with the aim of creating future networks that support the Hikari Collaboration Model (business model to wholesale fiber access). This article introduces our recent efforts concerning NetroSphere and explains the importance of creating future smart and flexible networks based on the NetroSphere concept in order to accommodate the digitization of various industries and the rapid growth of multiple Internet of Things services. These Feature Articles are based on lectures given during workshops at the Tsukuba Forum 2016 held on October 26, 2016.



Regular Articles

Low Latency Dynamic Bandwidth Allocation Method with High Bandwidth Efficiency for TDM-PON

▼Abstract

This article describes a low latency dynamic bandwidth allocation (DBA) method with high bandwidth efficiency that is intended for use in campus area networks and mobile fronthaul based on TDM-PON (time division multiplexing passive optical network). These network systems require low latency of under 100 μs and high bandwidth efficiency. Our method involves only three steps for allocation and employs an adaptive DBA cycle depending on the traffic load. We implemented it on a 10-gigabit Ethernet passive optical network (10G-EPON) media access control system-on-a-chip and evaluated the allocation results and the latency on the 10G-EPON system. Our DBA achieved a minimum latency of 60 μs with priority control and high bandwidth efficiency, depending on traffic.