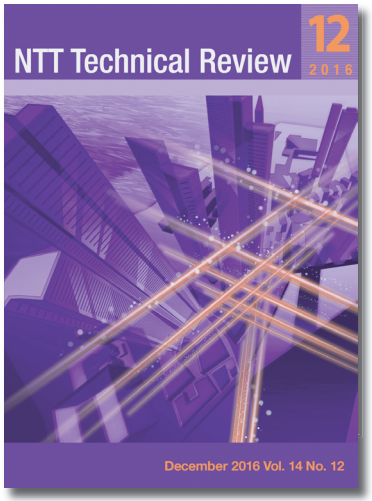
December 2016 Vol. 14 No. 12

NTT Technical Review 12 2016

https://www.ntt-review.jp/archive/2016/201612.html



View from the Top

- Hiroyasu Asami, Senior Executive Vice President, NTT DOCOMO

Feature Articles
2020 Showcase

- 2020 Showcase—Providing Japan and the Rest of the World with State-of-the-art Technology for 2020
- 2020 Airport/Station—Hospitality for Foreign Visitors at Airports and Train Stations
- 2020 Town—Web Design Converter for Providing Guidance Assistance to Individuals in Cities
- 2020 Town—Developing MACHINAKA Service, a Device Integration Service that Utilizes Artificial Intelligence Technology
- 2020 Public Viewing—*Kirari!* Immersive Telepresence Technology
- 2020 Entertainment—A New Form of Hospitality Achieved with Entertainment × ICT
- 2020 MICE—New Hospitality through Exhibitions × ICT
- Promotion of Co-innovation through Collaboration with Different Business Sectors

Regular Articles

- Milagro Multi-Factor Authentication
- Path Loss Models for Wireless Access Network Systems Using High Frequency Bands

Global Standardization Activities

- Report on Apache Big Data North America 2016 and Spark Summit 2016

Short Reports

- Deployment of NTT's Open Source Software GoBGP in INTERNET MULTIFEED's JPNAP Service Achieves Automation of Operation and Vast Improvement in Efficiency

View from the Top

Hiroyasu Asami, Senior Executive Vice President, NTT DOCOMO

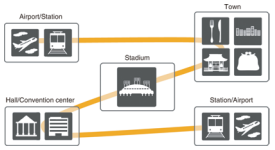
▼Overview

Feature phones and smartphones have become an indispensable part of our lives. How can NTT DOCOMO, a company that has a strong connection with its customers, seize the opportunities to leap forward into the society of the future? We sat down with Hiroyasu Asami, Senior Executive Vice President, to learn about the present role of NTT DOCOMO and its strategies for business expansion, and to hear about a work philosophy that is essential for making predictions about the future.

Feature Articles
2020 Showcase

2020 Showcase—Providing Japan and the Rest of the World with State-of-the-art Technology for 2020

▼Abstract

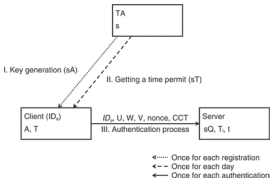


The international sporting events that will be held in Tokyo in the year 2020 will be seen as a great opportunity to showcase our new innovations to Japan and the rest of the world. The Feature Articles in this issue focus on the 2020 Showcase—a trial held by NTT Service Evolution Laboratories to introduce the new technologies we are developing in preparation for 2020 and to accelerate the introduction of these technologies into society. We will also introduce some of the business aspects of this initiative.

Regular Articles

Milagro Multi-Factor Authentication

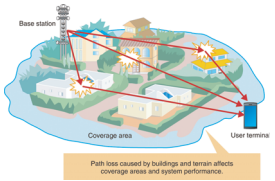
▼Abstract



Apache Milagro (incubating) is an open source project to establish open source software (OSS) for cloud computing. A system designer can choose the M-Pin Authentication Protocol (M-PIN) or the extended M-Pin Authentication Protocol (e-M-PIN) in Milagro Multi-Factor Authentication (Milagro-MFA), which is an authentication system in Apache Milagro (incubating). Additionally, e-M-PIN is a non-interactive protocol and is compatible with password-based Hypertext Transfer Protocol (HTTP) authentication methods such as Basic and Digest Access Authentication since password-based HTTP authentication is also non-interactive. Thus, an authentication system that uses password-based HTTP authentication can be easily migrated to e-M-PIN. We presented e-M-PIN at ApacheCon North America held in May 2016 as a contribution for the OSS community.

Path Loss Models for Wireless Access Network Systems Using High Frequency Bands

▼Abstract



To design coverage areas for wireless communication systems and evaluate the performance of the systems, it is necessary to develop a path loss model that can be used for the systems' frequency bands. The fifth-generation mobile communication system (5G) is expected to use high frequency bands above 6 GHz. Therefore, developing a path loss model for wireless access communication systems using high frequency bands has become a pressing issue. NTT Access Network Service Systems Laboratories has developed path loss models for the 20–40 GHz bands that are suitable for use scenarios of mobile phones and wireless local area networks. This article introduces the developed models.