R&D of NTT Access Network Service Systems Laboratories

Operations technologies

Achieve a smart cycle of data collection, analysis and improvement by utilizing IoT, AI, etc. to radically improve operational efficiency and create value by enabling new working styles.

Operational knowledge intelligence technologies

Digitize on-site operational knowledge and minimize operational burden by using AI to analyze and apply the knowledge base.

Operations centralization and analysis technologies

Automate operations through centralized management of diverse networks and failure analysis using AI.

Navigation technologies

Improve operational efficiency of various deskwork by automating terminal operations, simplifying document reference, etc.

Analyze big data and identify areas for improvement utilizing AI

Provide services that improve operational efficiency and quality.

AI analysis

DX operations improvement

IoT data collection

[Smart DX spiral for continuous operational improvement]

Collect operational know-how and information about problems facing the operational frontlines by utilizing IoT etc.

Collection & Deployment

Control engine

Access network system technologies

Faster optical fiber communication services at lower cost.

10G-EPON system with advanced functionality

10Gbps-class high speed communications that are more secure and lower-cost.

Access transmission technologies

Promptly provide high-capacity and wide-ranging services by using access transmission technology that includes multiplexing technology without installing any new optical cables.

[A network that can promptly provide a wide variety of services by flexibly utilizing wavelengths]

Virtualization and modularization technologies

Provide fast and flexible service additions and changes through the virtualization and modularization of various access system functions.

Video distribution technologies

Delivering high-definition video content contributes to provision of various types of service.

Wireless access technologies

Enhance value by expanding wireless technologies service areas in all directions for next-generation (5G and beyond) systems.

Wireless technologies for disaster recovery

Provide safety and security to disaster victims using the whole range of wireless technologies including satellite communication systems, VHF and millimeter wave wireless systems.

Wireless access technologies

Create next-generation wireless systems for 5G and Beyond 5G. Use wireless systems to maintain lifeline utilities and develop new areas of application.

[Launch seamless and intuitive wireless services for new lifestyles]

Diverse wireless service technologies

Create new outside the box services that go beyond the established uses of wireless in positioning, sensing, etc.

Wireless resource management technologies

By managing various wireless resources across the network, provide users with an environment where access to services is so intuitive and seamless.

Optical fiber access technologies

Provide higher-performance, more economical optical access networks and make full use of digital data to enable smart construction, operation and maintenance of infrastructure facilities.

[Cutting edge optical access network and facilities management for smart handling of diverse and complex needs]

Optical fiber environmental monitoring technologies

Monitor facilities conditions with optical fiber sensing (vibrations and temperature) to detect abnormalities. Enables optimization of scheduling maintenance operations.

Optical fiber identification technologies

This technology makes it possible to identify customers by monitoring optical signal information, so that a single field service engineer can rapidly and reliably initiate services, change routing without service interruption, etc.

Optical fiber cable operation technologies

Responds immediately to new needs and fluctuations in demand without any disruption to communications or services. This is achieved through use of optical signal branching, switching and management technologies that enable the flexible allocation of optical fiber resources.

Next generation optical fiber technologies

Ultra-large-capacity optical fiber technology enables handling of diversifying demands for optical and future increases in network traffic.

Infrastructure technologies

Smart maintenance and management of telecommunications infrastructure to support lifeline utilities and business continuity.

Deterioration and disaster impact prediction technologies

Use predictions of deterioration and seismic damage to facilities to set inspection and maintenance intervals, make high-accuracy predictions of seismically vulnerable locations, etc. in order to achieve more efficient maintenance and management.

Inspection and diagnostic technologies

Efficient, high-quality diagnostics for very large-scale facilities.

Facilities maintenance and management technologies

Automate and optimize various tasks by achieving oversight of infrastructure facilities information in terms of absolute positioning (3D spatial mapping).

[Smart maintenance and management of social infrastructure]

Repair and reinforcement technologies

Accurate evaluation of performance degradation due to aging facilities will guide refurbishment plans that ensure facilities continue functioning as needed for the long term.

Remote monitoring and support technologies

Push ahead with DX in cable tunnel management by implementing fully automated monitoring and inspection, 3D model-based centralized management, and remote support for personnel.