

## Location

NTT Access Network Service Systems Laboratories are located in three locations - Tsukuba R&D Center, Yokosuka R&D Center and Musashino R&D Center - and are undertaking R&D into access networks, which link customers to NTT central offices.



**Tsukuba R&D Center**  
1-7-1 Hanabatake, Tsukuba-shi, Ibaraki-ken



**Yokosuka R&D Center**  
1-1 Hikarinooka, Yokosuka-shi, Kanagawa-ken



**Musashino R&D Center**  
3-9-11 Midori-cho, Musashino-shi, Tokyo

# NTT Access Network Service Systems Laboratories

## ISO 14001 Certification

Acquired ISO 14001 certification in 2000. Involved in environment-friendly R&D such as developing recyclable materials, reducing the use of hazardous materials, and employing power-saving goods.



## Website Address

- NTT Access Network Service Systems Laboratories website  
<https://www.rd.ntt.as/>  
Introduces the various laboratories



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# R&D of NTT Access Network Service Systems Laboratories

## Access network system technologies

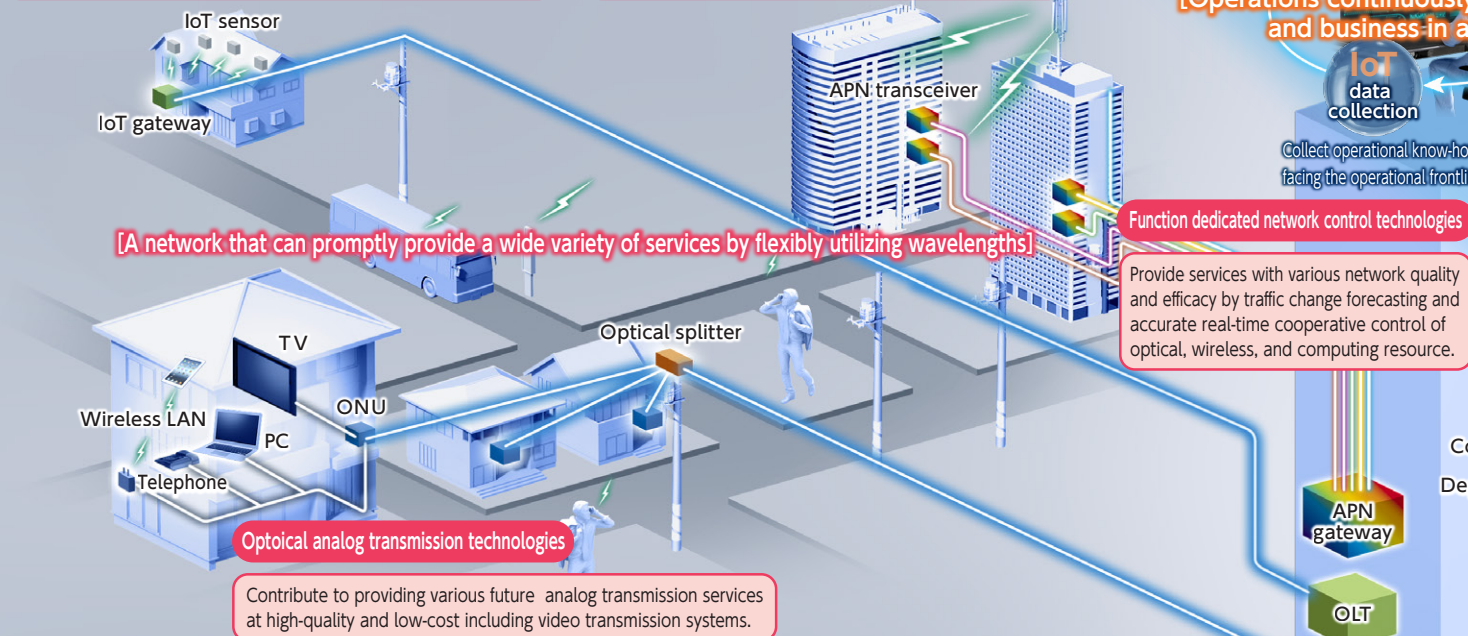
Very high speed optical fiber communication services at lower cost.

### Optical access system technologies

Provide services to wider areas by making terminals more functional and resilient, such as supplying power from light carried by optical fibers to remote terminals installed in non-electrified areas.

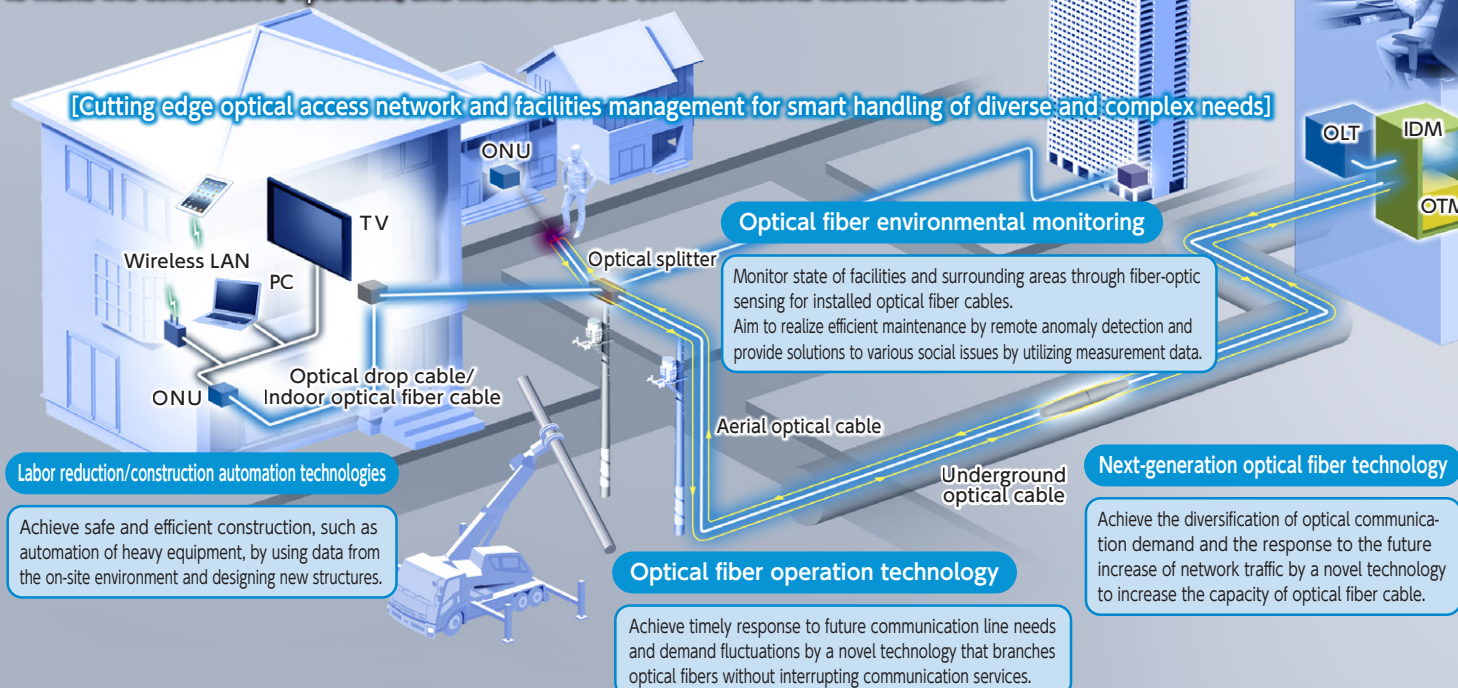
### APN access configuration and transmission technologies

Provide advanced services to diverse customers by implementing high-bandwidth, low-latency All Photonics Networks (APN).



## Optical fiber access technologies

These technologies are an effort to make access networks advanced and economical, and to make the construction, operation, and maintenance of communications facilities smarter.



## Operations technologies

Archive operation supports to adapt diverse environments and situations of access systems, to accelerate digital transformation and to cause a chain reaction of value creation.

### Self-evolving failure-event analysis technologies

Analyze network device alarms and past records about failures and estimate fault points in physical devices and logical configurations by utilizing AI, etc.

### Collaborative digital transformation support technologies

Analyze actions and distinguishing characteristics of operators using terminal devices, and support and improve their operation by utilizing diverse organizations' IT assets and AI.

### Integrated management and distribution platform technologies for network resources

Streamline assessing impact on services from network failures or disasters by integrated management of network resources.

Analyze big data and identify areas for improvement utilizing AI

AI analysis

Provide services that improve operational efficiency and quality.

DX operations improvement

[Operations continuously evolving networks, services, and business in an integrated manner]

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

IoT data collection

Collection & Deployment

APN gateway

OLT

OLT

OLT

OLT

OLT

OLT

OLT

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OLT

OLT

OLT

Wireless aggregation unit

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OLT

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### Wireless access sophistication technologies

Create post-B5G/6G and next-generation wireless systems and services. Also use wireless systems to maintain lifelines and cultivate zones for applying new wireless systems.

[Launch seamless and intuitive wireless services for new lifestyles]

### Wireless service diversification technologies

Create new value-added over and above telecommunications, including but not limited to applying wireless technologies to inspecting large structures with wireless sensing or drones.

### Wireless service management technologies

Build environments allowing users to use services transparently by implementing high-quality, protocol-agnostic wireless domains and managing multiple wireless system resources.

## Wireless access technologies

Achieve greater wireless technology sophistication and enlarge service areas to raise the value of post-B5G/6G and next-generation wireless systems and services.

### Wireless coverage extension technologies

Achieve enlarged coverage of areas wherein diverse services may be provided, including but not limited to voice, IoT, onboard Wi-Fi, and disaster response communications, via multilayered hierarchical non-terrestrial networks (NTN) configured of geostationary and low-earth orbit satellites (GEO, LEO) as well as high-altitude platform stations (HAPS).

## Infrastructure technologies

Achieve "smart world" with telecommunications platforms/facilities and other civil infrastructure solutions.

### Facility maintenance technologies

Achieve greater efficiency in facility management operations with absolute coordinate management (3-D mapping) of platform/facility and inspection information.

### Inspection diagnostic technologies

Achieve greater inspection diagnostic operation efficiency and lifecycle cost optimization by carrying out present facility state assessments and future forecasts with inspection images and other data.

[Smart maintenance and management of social infrastructure]

Bridge conduits

Conduits

Manholes

### Facility asset utilization technologies

Build facilities inexpensively for new kinds of civil infrastructure assisting in resolving civic matters, including providing energy, by utilizing telecommunications facility assets.

### Structural performance diagnostics technologies

Optimize lifecycle costs by determining inspection and maintenance schedules on per-facility basis with facility degradation forecasts and structural performance evaluation.

### Disaster impact forecasting technologies

Achieve resilient civil infrastructure by enabling proactive responses based on forecast of impact on civil infrastructure due to diverse natural disaster.