IOWN INTEGRAL

NTT R&D FORUM 2024

RESEARCH

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Distributed antenna system utilizing analog-RoF

Mobile network operators will be able to construct 6G high-capacity wireless networks

#Customer Experience Value Creation

大容量無線システムのユースケース

Use cases for high-capacity wireless systems

///Technical Issue

Wireless communication infrastructure that utilizes high-frequency bands is expected, but it is difficult to provide high-quality, stable wireless networks.

///Research Goal

Providing a high-capacity and stable wireless communication system by this high-frequency band distributed antenna system using radio-over-fiber technology.

---Technology

- Distributed antenna beam selection technology that shares resources among distributed antennas.
- Switching based radio-over fiber routing technology to improve uplink communication quality.
- Implementation of the simulator that integrates the technologies expected in 6G.

---Novelty

- High-speed tracking beam search technology even when the number of distributed antennas increases.
- Uplink noise reduction technology when multiple antennas are deployed.
- Early integration of various 6G technologies on the simulator and visualization of the performance.

---Applicable Business

- In the information and telecommunications industry, this distributed antenna system can be effectively used in areas with high user density such as stations and stadiums, where large-capacity and stable wireless communications are required in 6G, beyond 5G and local 5G, etc. (from around 2028).
- / In the information and telecommunications industry, this simulator can be used as a platform for verifying the application areas of various 6G technologies and will be used to create new services in the 6G era in collaboration with partner companies (from around 2026).

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