**eduroam JP as a national infrastructure for smart and virtual campus**

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"eduroam JP" and R&D

Started in 2006, now it is a community of 21 institutions.

Federated Delegate Authentication System

- Centralized RADIUS server: simplifies (stabilizes) the RADIUS proxy tree.
- Account Issuer SP: as a federated Shibboleth SP. pseudonymous, fixed-term, traceable ID.
- No RADIUS IdM in member institution: Easy deployment and operation.

Collaboration with commercial WLAN operators

Livedoor, a WLAN ISP, provides eduroam service.

Agreement between eduroam JP and a WLAN ISP

- eduroam service on 2400+ commercial hotspots: expands campus networks in downtown areas.
- enables ubiquitous accesses to academic resources.
- Distinguishable SSID to show the responsible operator, and to avoid connection flapping between operators.
- Negotiation is under way with some other ISPs.

Experimental shared AP in campus network

- Commercial & academic services in campus: includes services for visitors, and smart phones.
- New model for future campus WLAN: by outsourcing of campus WLAN solution to the ISP. University pays less for better system and operation. ISP sells shared AP, and gets coverage and customers.

eduroam in disaster-affected campuses

Borderless eduroam helped suffering staff

Nomadic network in temporary evacuation campus

- Tohoku University faced the big earthquake in March. Many buildings were severely damaged. Staff moved to other buildings where networks are operated by different departments.
- eduroam is an effective rescue for them to use network.

Nation-wide eduroam access network

SINET and eduroam JP provide a guest access network

Can a university assign an IP address to a visiting eduroam user?

- An assigned IP address is often a membership certificate. Various security and legal issues.
- A separated guest access network can be an answer. A nation-wide VLAN with a new IP address block (only for eduroam). Visiting users use this VLAN for internet access. IPv6 ready - IPv4/IPv6-dual access network on SINET.