OPENROAMING™
CASE STUDY – JAPAN : BY CITYROAM

INTRODUCTION

With a subscription to Cityroam's roaming partners or partner ISPs, users can be automatically and securely connected to the access points of Cityroam with OpenRoaming ™. Cityroam is an independent roaming federation hosted at Tohoku University and pioneer of Passpoint® for free/public Wi-Fi services and certified implementer of WBA OpenRoaming™ in Japan. Cityroam and eduroam have provide OpenRoaming services across Japan, targeting telecom operators, including mobile operators, and ISPs, helping them to develop new business streams and solutions to serve more customers, citizens and travelers around the world.

OPENROAMING FOOTPRINTS IN JAPAN

Equipped as part of the OpenRoaming federation with Unique Organization Identifier (WBAID) and an automated roaming consortium codes framework (RCOI), Cityroam enables the OpenRoaming with seamless Wi-Fi connection, better security, reduced cost and easy integration for their partners and users.

Hospitality and Enterprises

Cityroam was established in June 2018 and has 4 years of experience building industry-leading Wi-Fi networks for a wide variety of venues including cafes, shopping malls, conference centres in Nagano and Osaka, hot spring spa and resort venues in Ise and Nagano, and co-working spaces. With the collaboration with Coca-Cola Bottlers Japan Inc., Kyoto University and the National Institute of Informatics (NII), a Cityroam partner Local24 Inc. implemented the first series of vending machines supporting OpenRoaming and Passpoint.

Smart Cities & Transportations

The first sightseeing buses with OpenRoaming were operated in Ibaraki Prefecture. Cityroam is continuing its leadership as OpenRoaming implementer in Japan by providing the roaming infrastructure for the newest innovation Smart Poles in Nishi-Shinjuku by the Tokyo Metropolitan Government (TMG) and has expanded the network with OpenRoaming.

As Easy as Plug-and-Play

Cityroam & eduroam developed OpenRoaming-capable Wi-Fi routers which allow temporary services anywhere with fully-managed easy operation and deployment. This mobile OpenRoaming gadget allows event organizers to deploy OpenRoaming easily for short-term events such as exhibitions, game shows, comic shows, fun fairs, roadshows and many more. The eduroam/OpenRoaming-combined architecture of Cityroam has made such quick and easy deployment possible.

Cityroam solutions with OpenRoaming elevate Wi-Fi to a higher level of performance and richer set of capabilities and reinforces the ability of Wi-Fi to meet 5G requirements for stationary and nomadic connectivity across a wide set of deployment scenarios. As OpenRoaming implementer, Cityroam consisting of multiple operators has adopted access points from a wide variety of vendors including Cisco, Cisco Meraki, HPE Aruba, Extreme, MikroTik, Ubiquiti, Edgecore, and even OpenWrt-based boxes.

In addition, Cityroam has been involved in the "Beyond 5G International Collaborative Research Program" by the National Institute of Communications Technology (NICT) and providing an OpenRoaming testbed. The outcome of the research project is expected to help Cityroam develop better services in the near future.

WHY OPENROAMING IS BETTER

With OpenRoaming, users are able to experience the speed, secured and simplicity of one of the most advanced wireless networks in the world. The service frees travelers, venue partners, hospitality venue, transportations, venue employees and other users from the repeat registration and log-in that public Wi-Fi networks often require. Instead of re-registering or re-entering log-in credentials, Cityroam users enjoy the convenience of instant network access matched with enterprise-grade security. When coupled with the Cityroam infrastructure, OpenRoaming also helps provide a carrier-grade Wi-Fi experience.

"Our unique eduroam/OpenRoaming-combined architecture and federation of Cityroam have helped us a lot in deploying OpenRoaming access points at a wide variety of venues in a short period of time.

This could not be achieved without cooperation of multiple Wi-Fi operators in Japan. While eduroam usage accounts for 75% at the moment, OpenRoaming usage is also growing and we expect much more people will quickly benefit from the secure and seamless Wi-Fi when many telecom/ISP companies enable OpenRoaming."
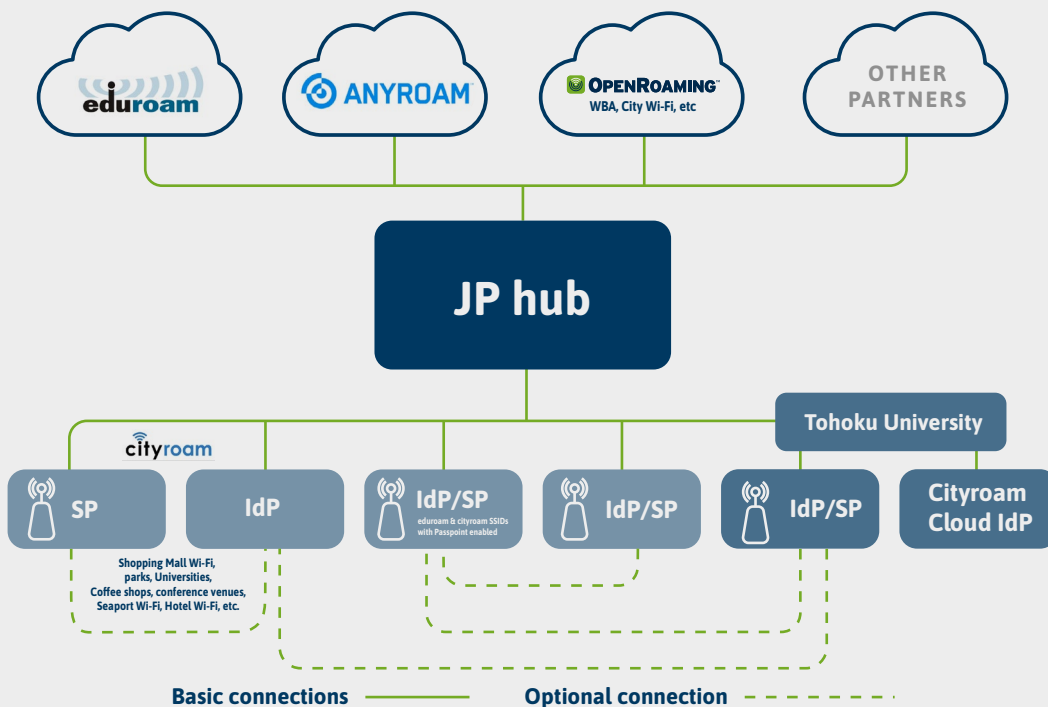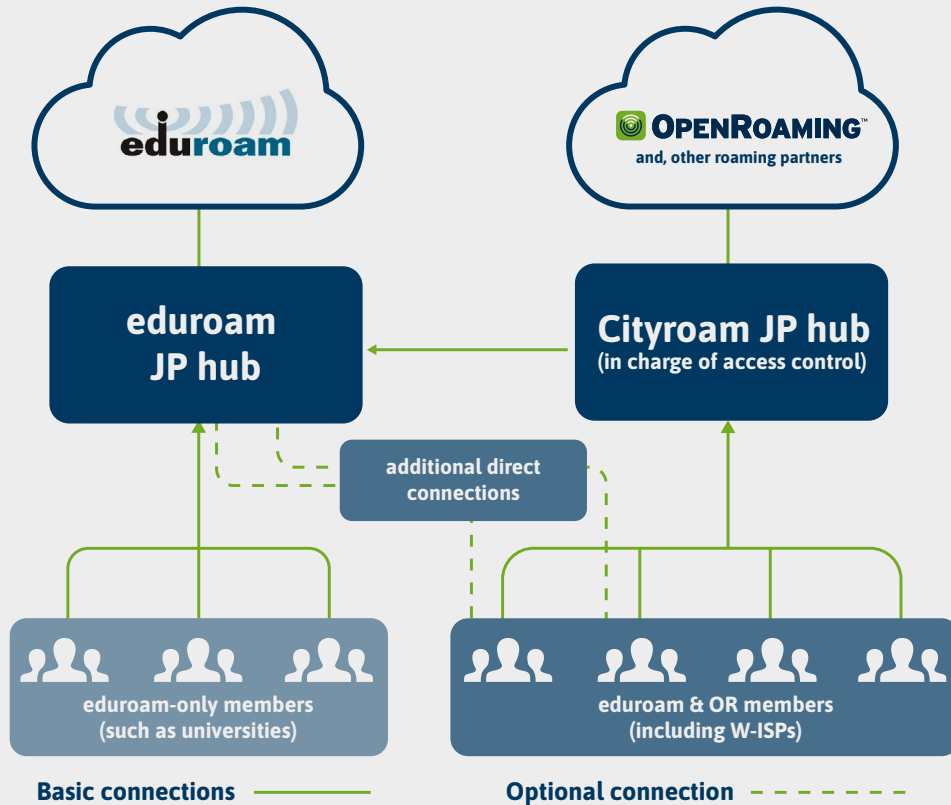
– Dr. Hideaki Goto,
Associate Professor of Tohoku University
and also the founder of Cityroam.

OPENROAMING BENEFITS

Seamless Onboarding	• Connect automatically & keep connected • Cityroam users have the flexibility to access their existing accounts and roam between different networks that are OpenRoaming members and vice versa
Better Security	• Secured interconnection and encrypted communications • OpenRoaming addresses the lack of a standardized secure roaming platform with a roading standard that offer better security
Reduce Cost & increase opportunities	• OpenRoaming addresses the high deployment cost of public Wi-Fi in Japan • Enable Cityroam and eduroam with affordable roaming platform and wider partnership and business opportunities
Easy Deploy	• Bypass bilateral agreements and leverage settlement-free settled roaming model options • Based on WBA's Wireless Roaming Intermediary eXchange (WRIX) standards to scale and facilitate different business models under a harmonized framework; Adding to eduroam and Cityroam Passpoint profile allows access from eduroam users on Cityroam and OpenRoaming hotspots, without change on devices configuration
Larger footprints	• Global reach to millions Wi-Fi Hotspots supported by OpenRoaming Partners

eduroam/OpenRoaming RADIUS Architecture

eduroam

OPENROAMING™
and, other roaming partners

eduroam JP hub

Cityroam JP hub
(in charge of access control)

additional direct connections

eduroam-only members
(such as universities)

eduroam & OR members
(including W-ISPs)

Basic connections —————— **Optional connection** — — — —

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eduroam

ANYROAM

OPENROAMING™
WBA, City Wi-Fi, etc

OTHER PARTNERS

JP hub

Tohoku University

cityroam

| SP | IdP | IdP/SP
eduroam & cityroam SSIDs with Passpoint enabled | IdP/SP | IdP/SP | Cityroam Cloud IdP |

Shopping Mall Wi-Fi,
parks, Universities,
Coffee shops, conference venues,
Seaport Wi-Fi, Hotel Wi-Fi, etc.

Basic connections —————— **Optional connection** — — — —

CITYROAM AND OPENROAMING IN JAPAN

Hospitality:

- Hotel Ryokan Kohro
- Ise Kaguraba Resort Sennomori
- Susobanakyo Natural Hot Spring

Smart Cities & Transportations:

- Sightseeing Buses
- Shinjuku Central Park
- Tokyo City
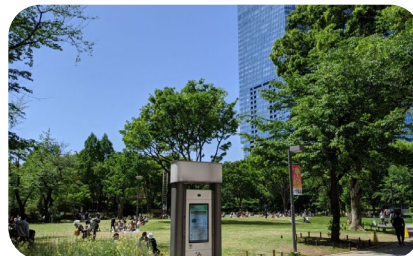
Enterprises:

- Vending Machines

Mobile OpenRoaming Router:

- Pocket OpenRoaming Router

HIGHLIGHTS OF CITYROAMING OPENROAMING VENUES

70+ sites in Japan:

• Cafes, hotels, shopping malls, etc.

• Sapporo Gakuin University

• Ski resorts (Hakuba47)

• Kita-Kyushu Monorail stations

• Conference venues in Nagano and Osaka

• Short-term conferences, exhibitions and trade shows:
  - Internet Week 2018 & 2019;
  - AXIES 2018, 2021;
  - 95th-97th, 99th Comic Market, etc.

• Co-working spaces

• Hot Spring facilities in Nagano

• Resort hotel in Ise

• Hotel Ryokan Kohro

| LEARN MORE FROM CITYROAM | LEARN MORE FROM WBA |

ONE GLOBAL WI-FI NETWORK

FIND OUT MORE