

# NREN update

**NREN:** NICT/JGN

**Country:** Japan

**Presenter:** Koichi FUJINUMA

[k-fujinuma@nict.go.jp](mailto:k-fujinuma@nict.go.jp)

The 3<sup>rd</sup> Asi@Connect Project Meeting/ March 26 2018  
Matrix Building, Biopolis, Singapore



# Organization



# NICT

National Institute of

Information and Communications Technology



- Public Services
- Japan Standard Time
  - Space Weather Forecast
  - Wireless Equipment Testing & Calibration ...

1. Strategic R&D
2. Open Innovation
3. Global Deployment

**The Solo National Research Institute in the field of ICT in JAPAN.**

- ICT for Sustainable World and Human Happiness
- Promoting its own research and development
- Cooperating with and supporting industry and academia



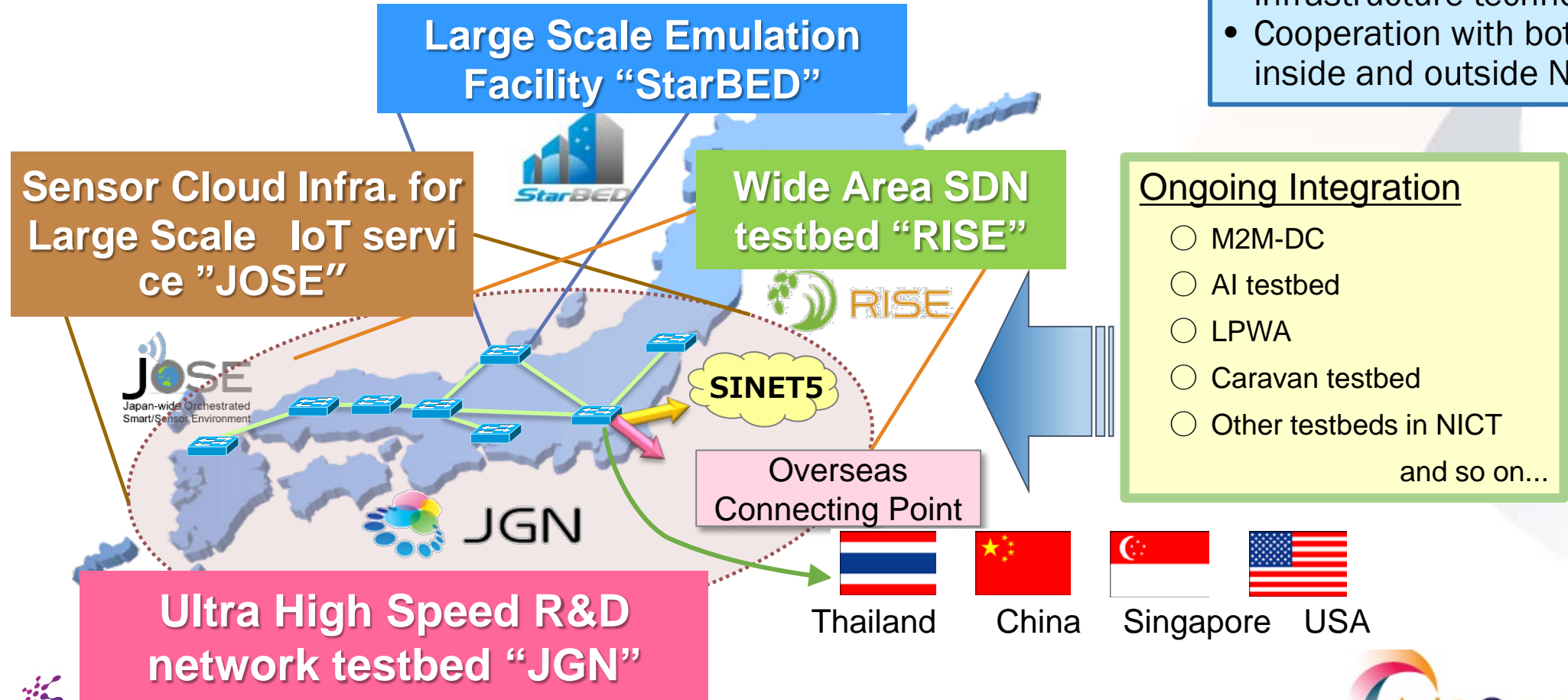
**Industry/Academia/Government  
Innovation Platform**



# Organization

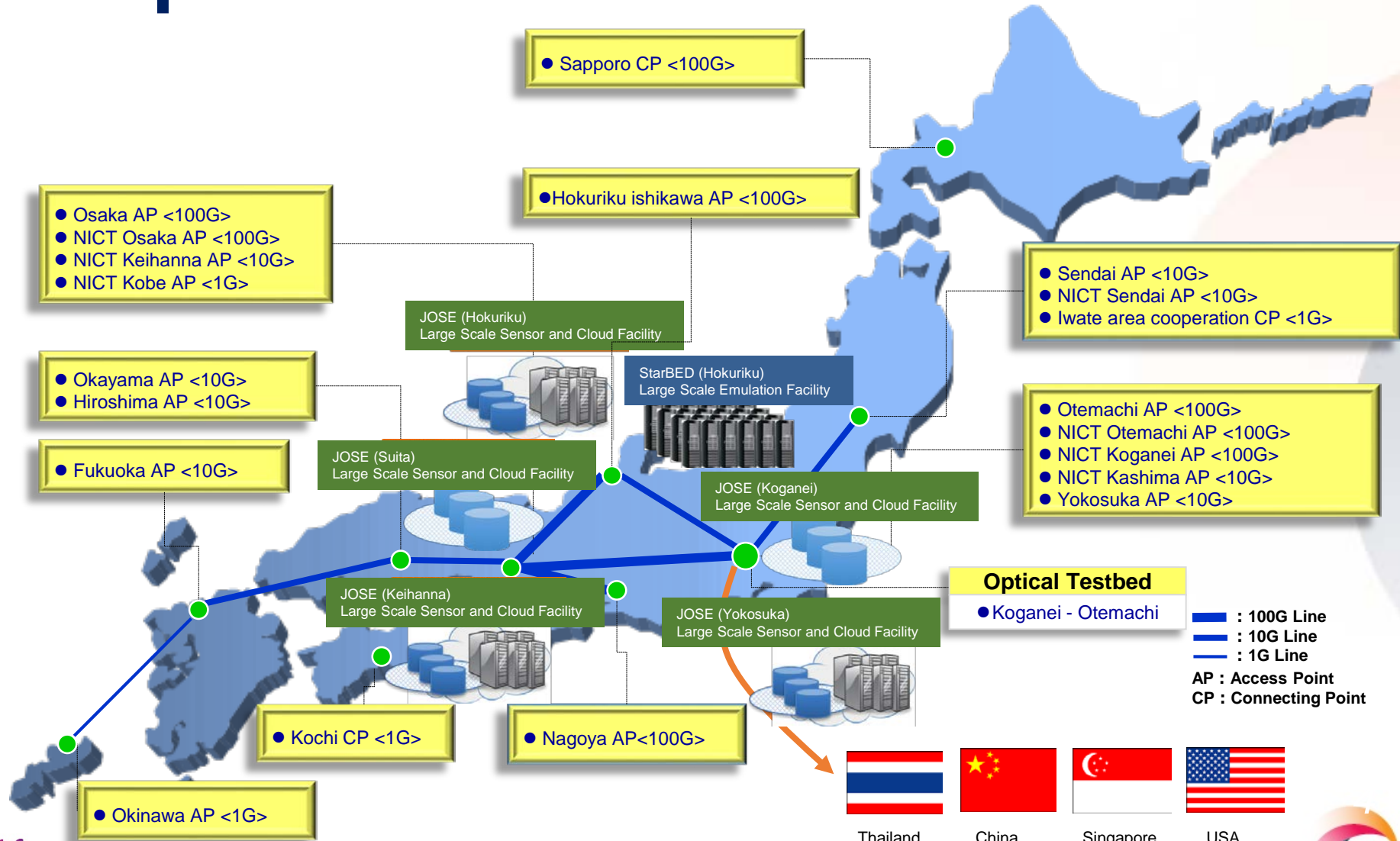
Testbed: Place for field trials of New Technologies  
 Accelerating technical demonstration and actual proof in society as a unit

- Integration of NICT's testbeds on JGN Infrastructure
- activating testbeds use and application
- Establishment of testbed infrastructure technology
- Cooperation with both inside and outside NICT



- Ongoing Integration
- M2M-DC
  - AI testbed
  - LPWA
  - Caravan testbed
  - Other testbeds in NICT
- and so on...

# Network update: Domestic Networks





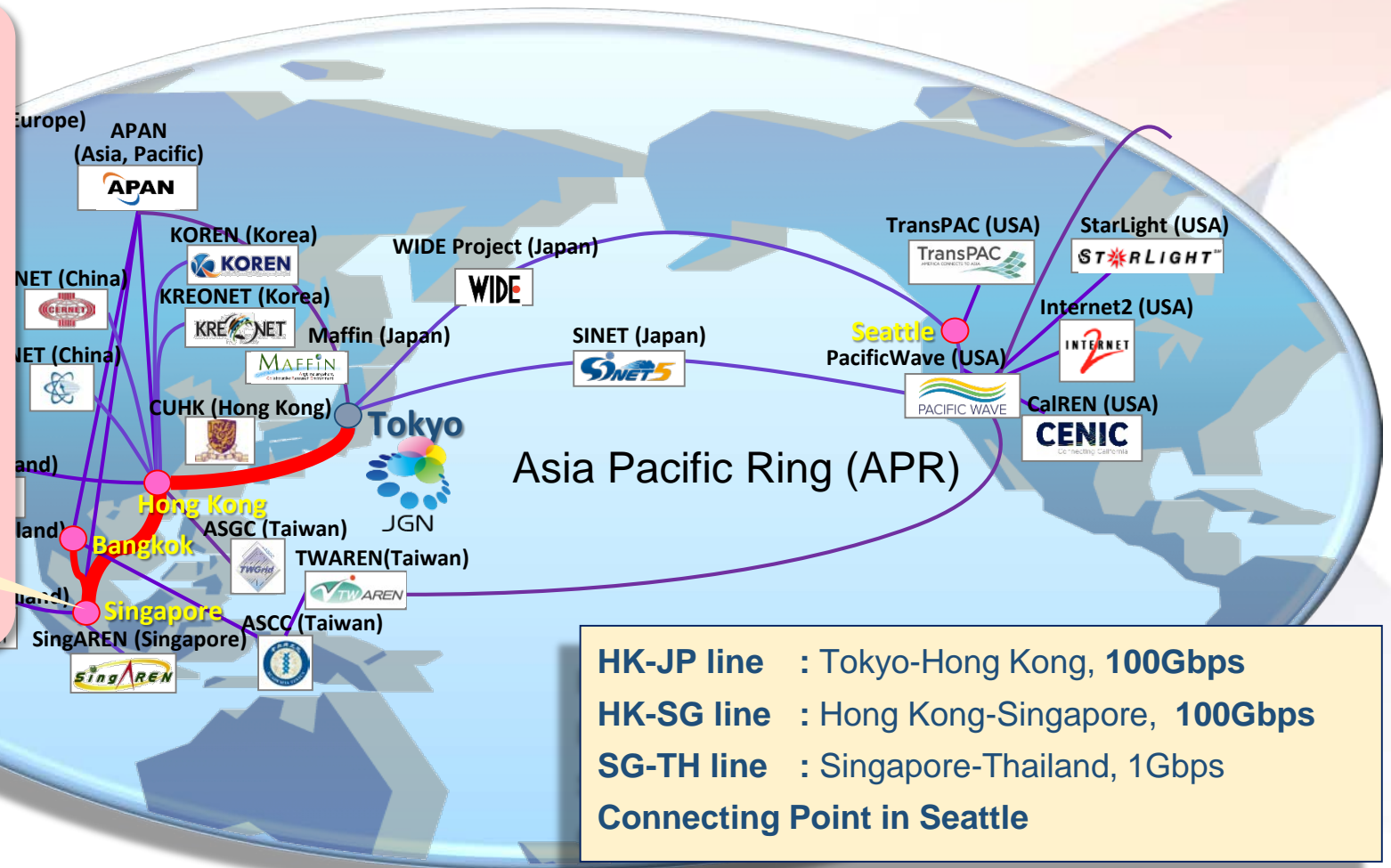
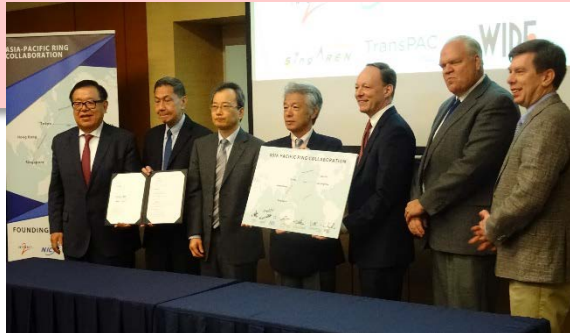
# Network update: Global Networks

## Launch

Tokyo-Hong Kong-Singapore  
100 Gbps Lines  
in November 2017

Cooperating with SingAREN/NSCC

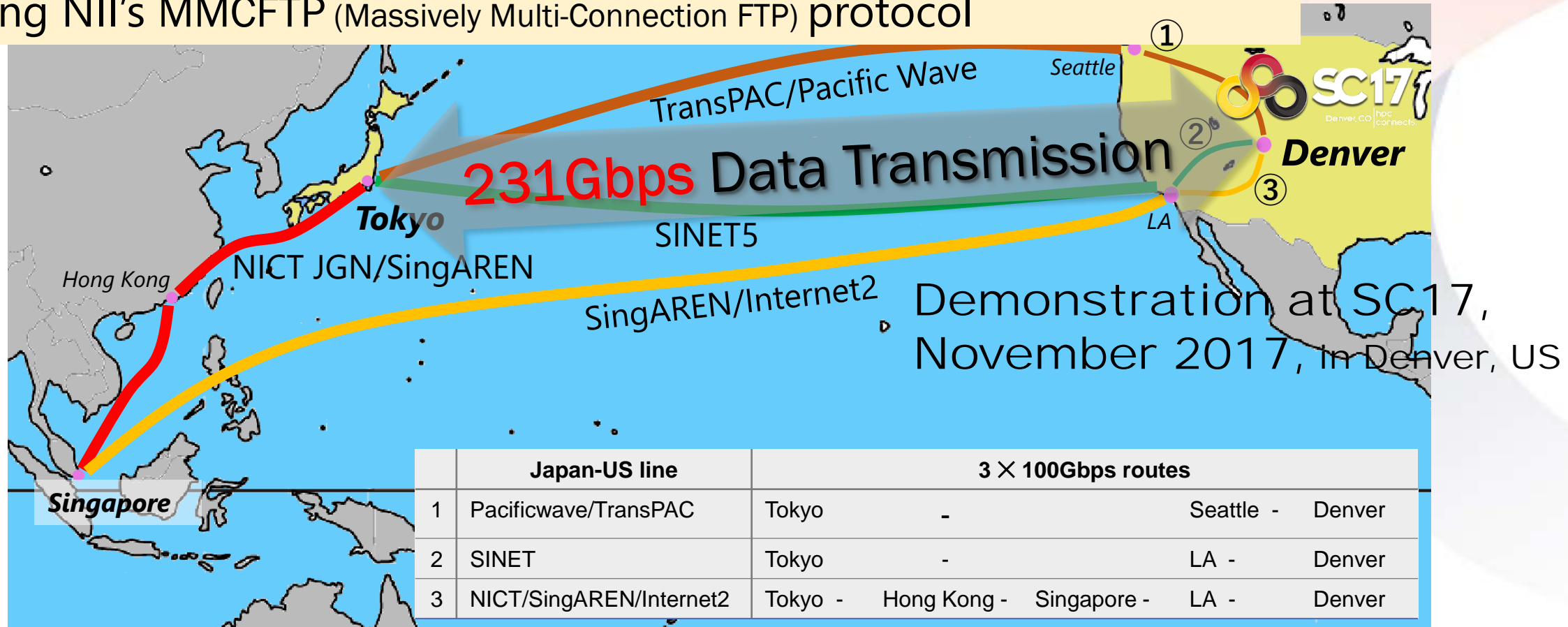
100Gbps lines Launch Ceremony  
1 December 2017 in Singapore



# Activity update 1

**231Gbps data transmission over 100 Gbps × 3 routes**

Using NII's MMCFTP (Massively Multi-Connection FTP) protocol



Related talks are going to be presented in Network Engineering Workshop on 28<sup>th</sup> March.



# Activity update 2

# Sapporo Snow Festival Demonstration



**8K**  
Uncompressed  
Video  
Transmission

8K monitor

8K Camera



4K monitor

Singapore



Hong Kong



Total **54 organizations** joined the demonstration in 2018, including Broadcasting Companies, Telecom Carriers, Network equipment manufactures, AV manufactures, Universities, Research Institute, NRENs,,,,

100Gbps

IP Multicast  
IP Multipath

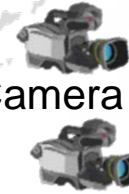
Sapporo



IP Multicast  
IP Multipath

8K Camera

4K Camera



100Gbps \* 2

Tokyo



4K monitor

100Gbps

100Gbps

Seattle



LA



奈良 興福寺 中金堂  
さっぽろ雪まつり

Osaka

100Gbps



Related talks are going to be presented in Network Engineering Workshop on 28<sup>th</sup> March.



# Thank you!!

