NIA
NATIONAL INFORMATION SOCIETY AGENCY

KOREN
KOREA ADVANCED RESEARCH NETWORK

APII Update
– KOREN –

APII Workshop 2014
2014. 10.8.

Sanggyun KIM
KOREN/NIA

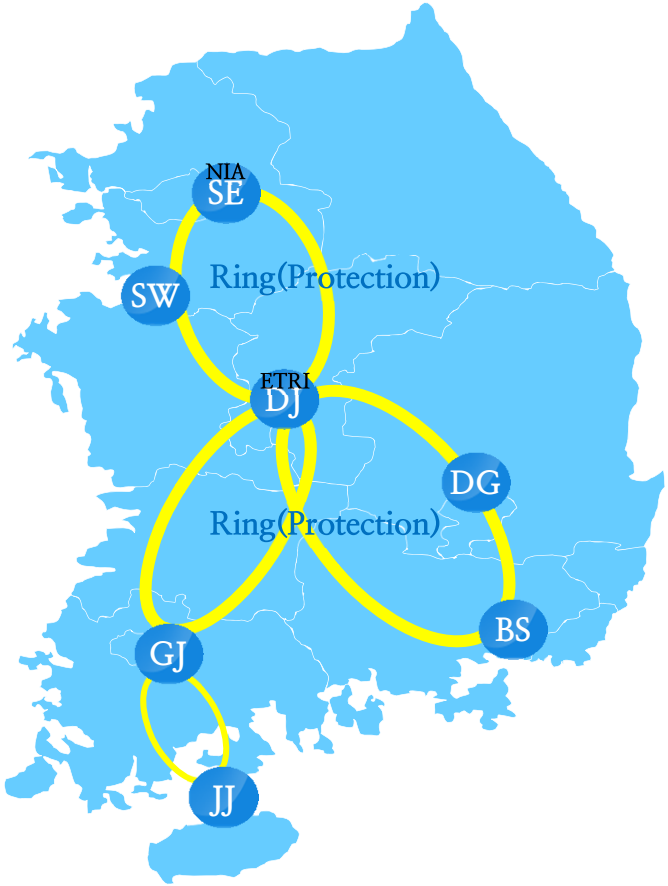
KOREN Update in 2014

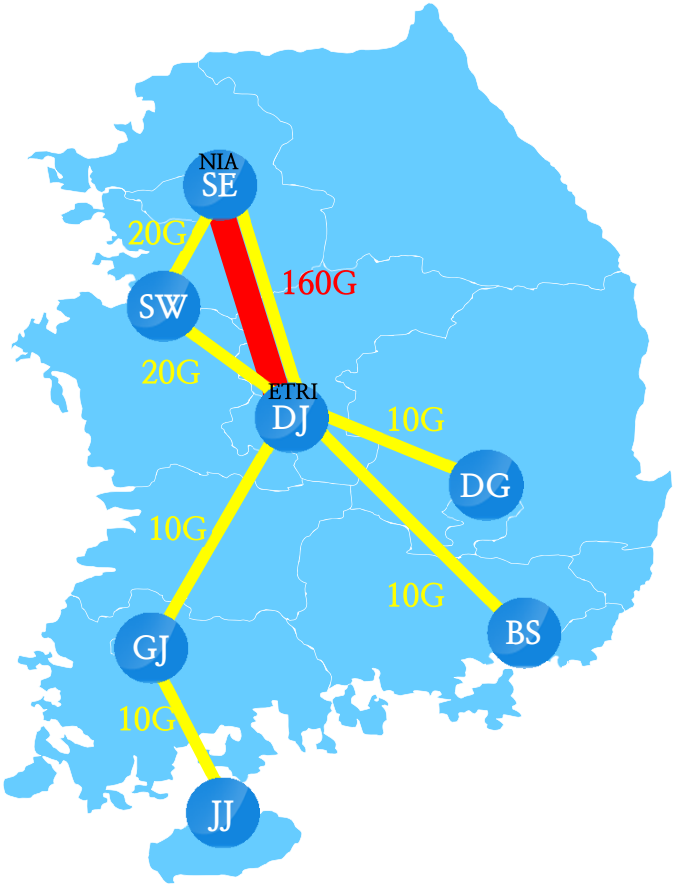
- Infrastructure
  - Backbone(Up to 160G) and Access link (up to 10G) for applying various ICT technologies testing capability
    - 10~160G backbone is deployed nationwide based on ROADM (7 Pops)
    - About 70 connections as Access link to user site
    - Wireless test(LTE only) facilities (EPC core and femto AP) newly deployed
    - Interconnect with KREONET as 2*10G (operate each 10G separately)
  - Testbeds
    - Distributed SDN/Openflow resources was on-going operational for utilization . Promote local SDN developing SME company to co-work tech. verification
  - Collaborate with Other resources
    - M2M testbed, Cloud nodes, Bigdata facility, Giga internet service infra and etc
- Projects
  - SDN(Openflow), Mobile environment and medical application
    - 6 Awarded projects are on-going now
    - Focus on future internet related technology and develop testing facility issues

Backbone

Rebuilding 100G infrastructure

ROADM + ASR Routers

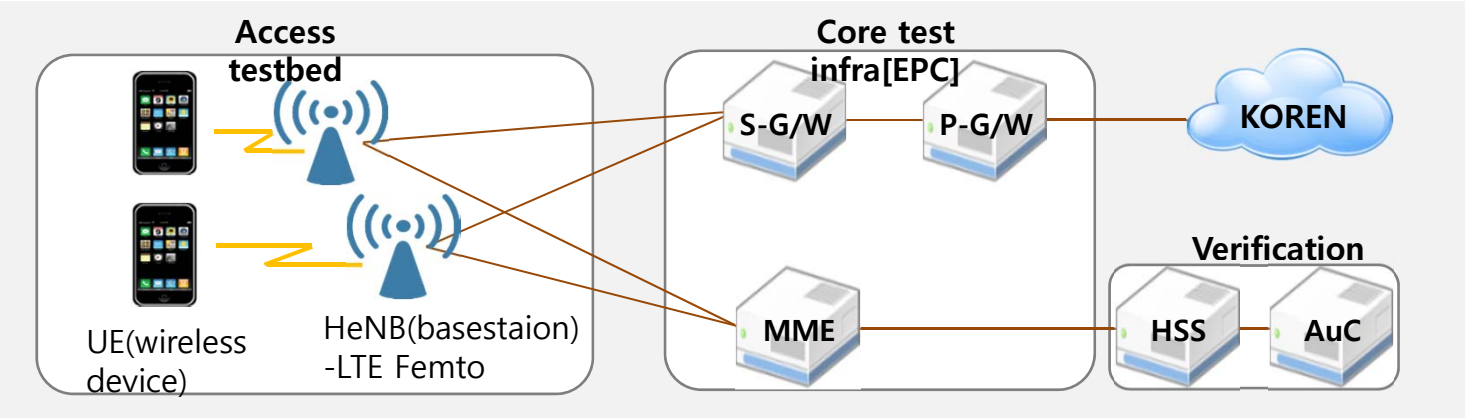




BS: BuSan
DG: DaeGu
DJ: DaeJeon
GJ: GwangJu
SE: Seoul
SW: SuWon
JJ: JeJu

KOREN Update in 2014

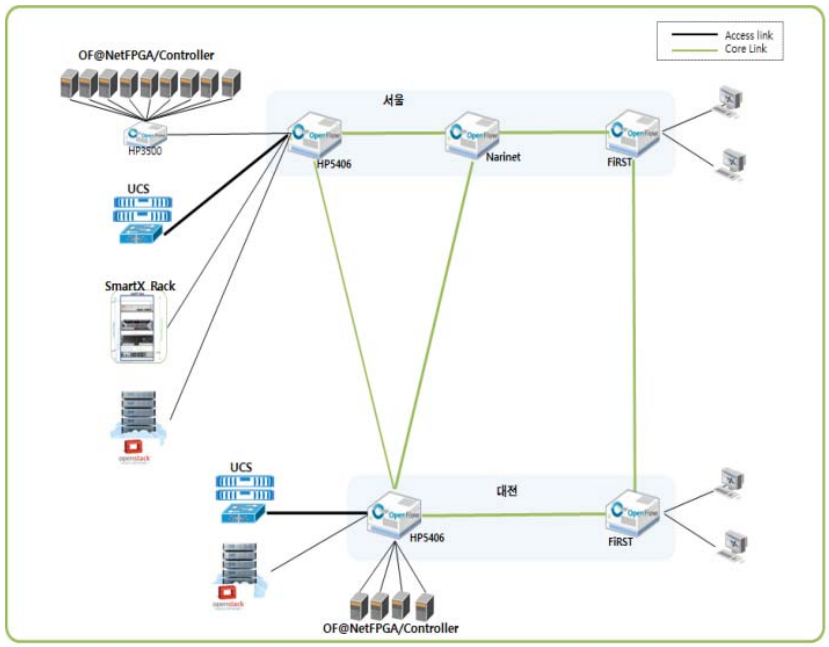
- New domestic backbone was deployed
  - Backbone architecture is similar but upgrade bandwidth
    - ASR routers(Seoul, Daejeon) and local vendor's equipment s
  - Centralized resources for better experimental environment and easy to operate and support
- Additional resource added
  - Mobile research facility attached to KOREN
    - LTE & wifi related technology would be tested



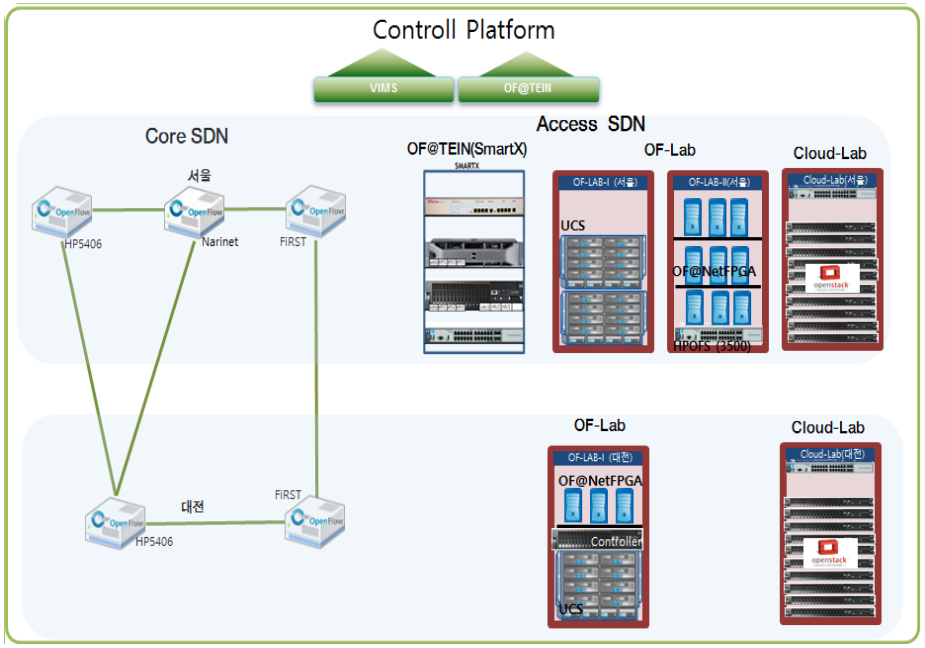
SDN Testbed

SDN facility status in KOREN

- Operate OF Switch, OpenStack, UCS, Controller between Seoul & Daejeon
- Controller : OSCAR, NOX, Floodlight, IRIS (ETRI/release OCT/2013)
- Equipments : First(ETRI], Narinet(OF@TEIN), NetFPGA

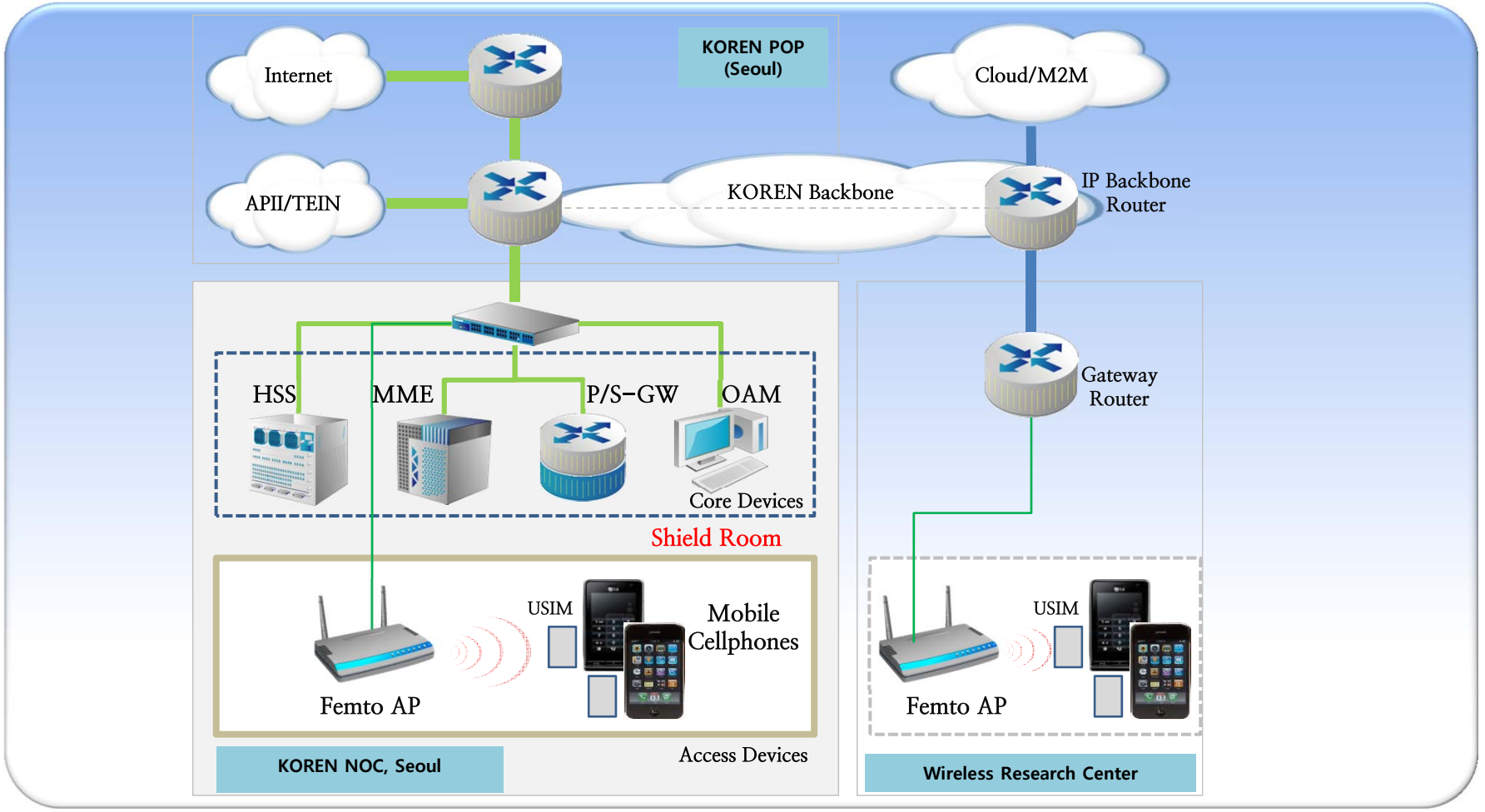


▲ KOREN OF-PC



▲ SDN H/W allocations

Mobile Testbed



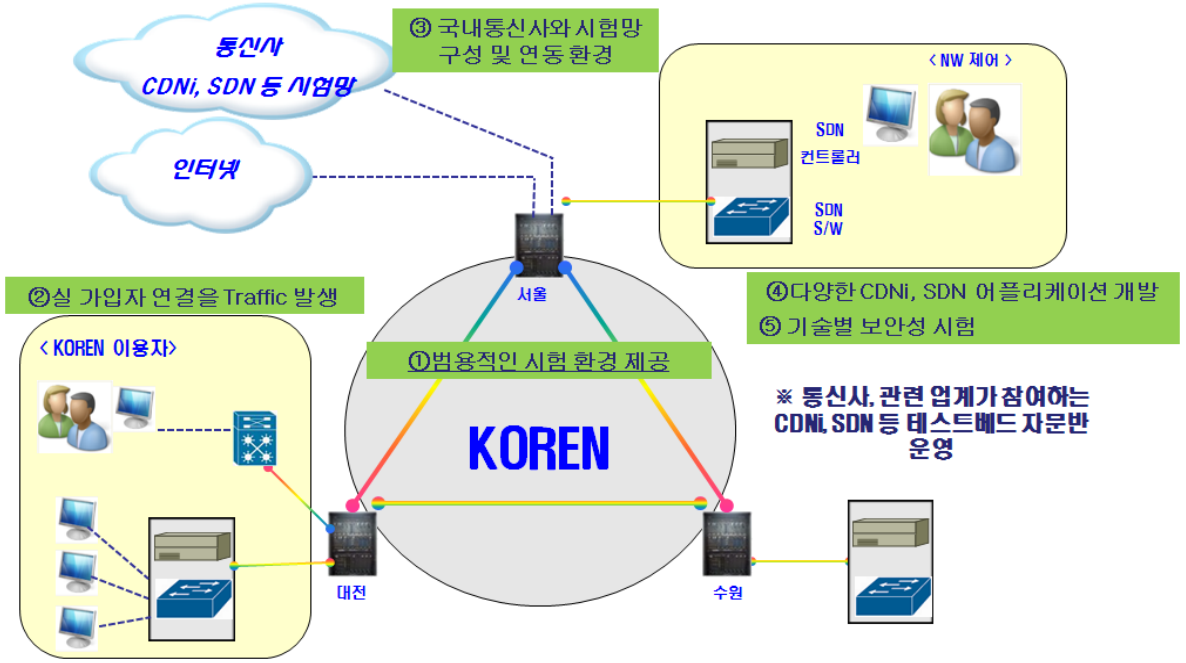
Other Testbeds

- M2M testbed
  - Deploy M2M testbed for pilot service (co-work with NIPA)
  - Provide testing and developing toolkit and service platform
  - Connect with KOREN to M2M support center for testing
- Cloud environment
  - Providing virtual resources to researchers(individual, univ. , industry)
  - About 100 computing nodes would connect to KOREN this year and would provide cloud infrastructure and virtual resources
- BigData analysis platform
  - Providing resources which could make Bigdata related technology and service based on public data
  - KOREN provide connectivity to someone or company which want to access Bigdata facility.

Giga Internet pilot Service

- Giga Internet pilot providers(KT, SKB, LGU+) try to adapt this service in current commercial service
  - KOREN connected each providers trial environment and verify related techs (Contents network efficiency, intelligent tech(SDN))
  - With the results, they would decide whether service will be launched or not

- Currently, consider service plan and proceed commercialization



Verify R&D results

- Test & verification Center for next generation network
  - Deploy environment testing & verifying research output for advancement of R&D projects
  - Locate test environment in KOREN based environment
  - Co-work with R&D Projects partners
  - Support test of commercial equipment
    - Issue test result report.

- Activities
  - Make test procedure for each candidate project
  - Share test equipment with research community (industry, university, and research institutes)

Plans

- Collaborations in 2015
  - Focus on global collaboration infrastructure with partners (especially with Japan)
  - Domestically, expand facility based on user's demand
  - Develop new collaboration fields
  - APII workshop 2015 will be held in KOREA

Thank you

koren@nia.or.kr