PS-LTE in Korea

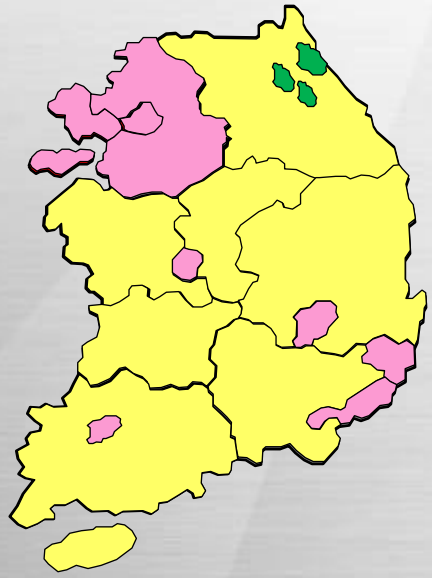
2016. 10

PS-LTE Deployment

Overall Plans(Initial version)

■ Deployment Plan (Timeline)

Stage I (2014-2015)	Stage II (2016)	Stage III (2017)
• 2014.3Q: RFI, 2015.1Q: ISP • 2015.3Q~: Pilot Project	8 province Deployment	Providing nationwide PS-LTE services

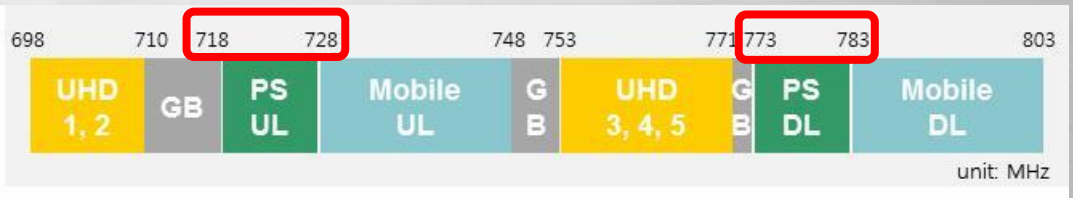


■ Deployment Overview

Period	• 2015-2017
Spectrum	• 700M (Up:718~728MHz, Down: 773~783MHz)
Budget	• 840 Million Dollar (Estimation)
User	• 8 Sectors, 330 Org., 200,000 Responders

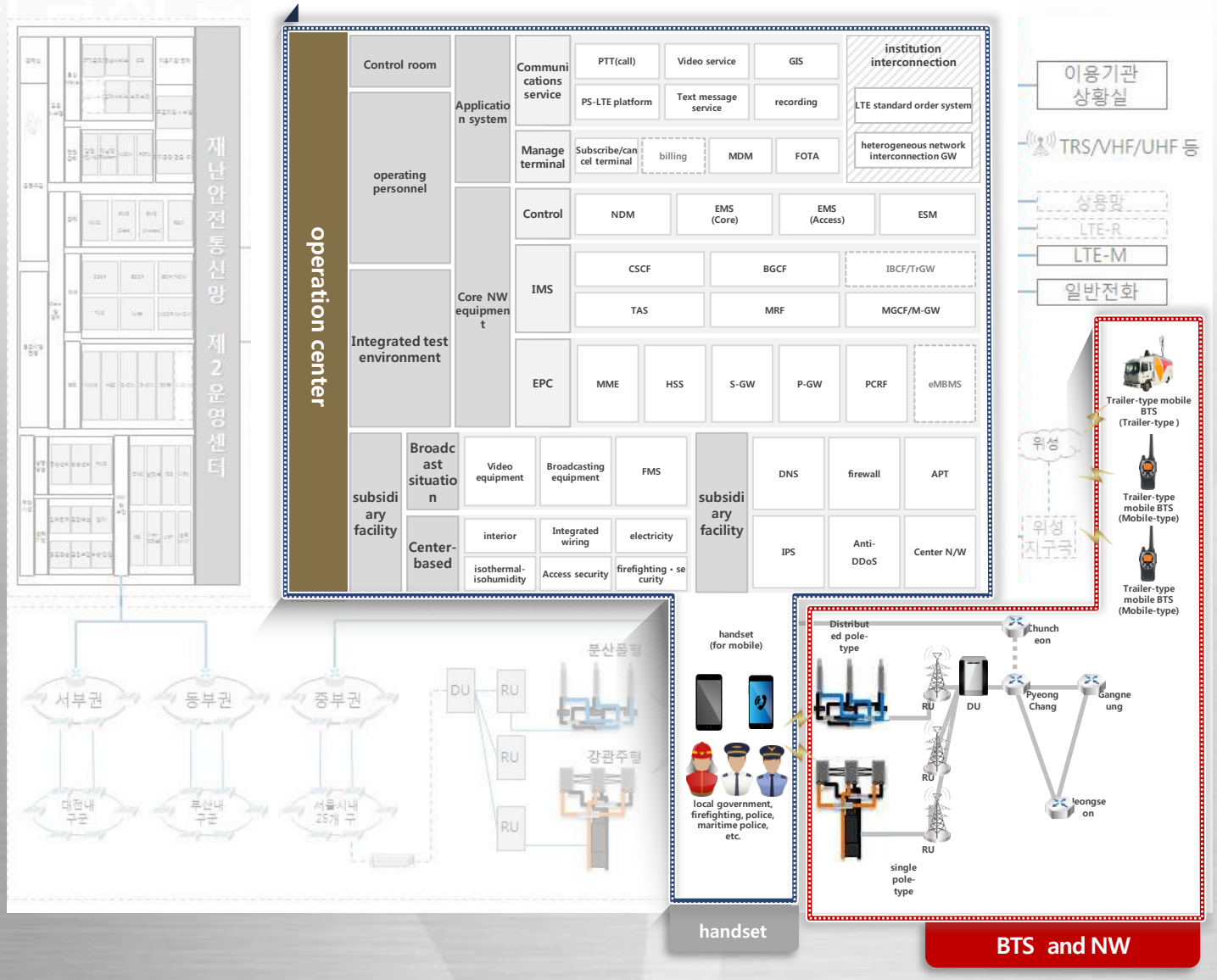
- ~ 2016.4 (Pilot Deployment)
- ~ 2016.12(8 Provinces)
- ~ 2017.12(Nationwide)

■ Public Safety Spectrum Allocation



PS-LTE Deployment

Scope of 1st stage



1 1st Operation center

- Core NW (EPC,IMS)
- Service system (PTT,GIS,PS-LTE platform, etc.)

2 Fixed and Mobile BTS

- Use existing tower
- Vehicle Mounted mobile BTS

3 IP Network and Security

- Router and switch
- Security equipment

4 Mobile Handset

- Smartphone-type handset
- Radio-type handset

5 Support institution

- Responder Control system

PS-LTE Deployment

Proceedings

- '14.May.19 — Promised Speedy deployment of Public Safety Network(President)
- '14.Jul.31 — Determined PS-LTE technology for Public Safety Network
- '14.Oct.14 — Initiated Information Strategic Plan(ISP)
- '14.Dec.10 — Determined 700MHz RF Carrier
- '15.Oct.8 — Selected trial business operators (SKT/KT)
- '16.Jun.30 — Completed deployment of the trial network
- '17.1Q — RFP for Stage 2&3

PS-LTE Deployment

Network Structure

1. Independent Infra for PS-LTE

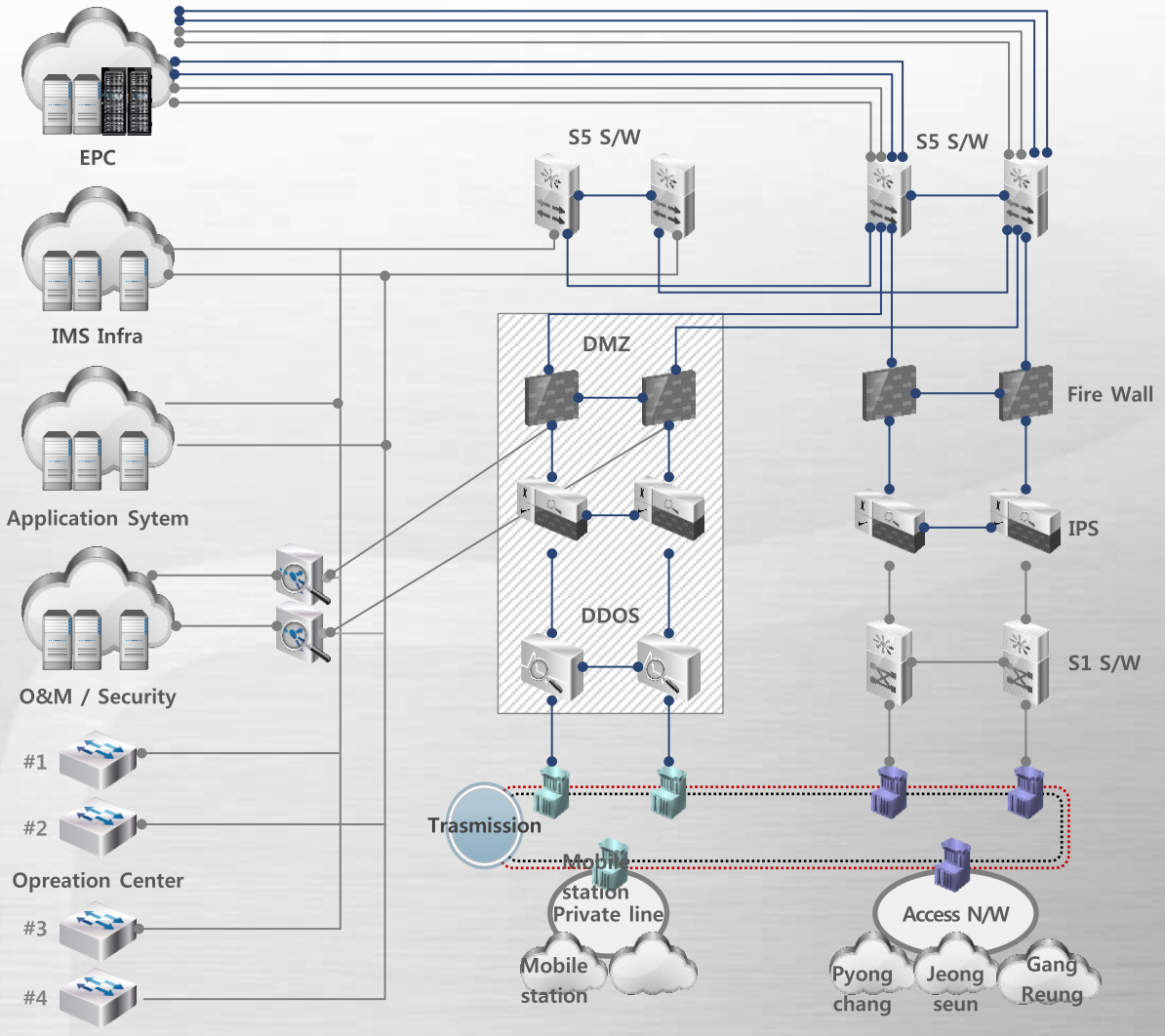
- Dedicated Access & Core Network
- Build a New Platform for PS Service, Security and Charging

2. Two Operation Centers

- 1st Center was built in Stage I
- 2nd Center will be built in Stage Ⅲ

3. Network Interworking

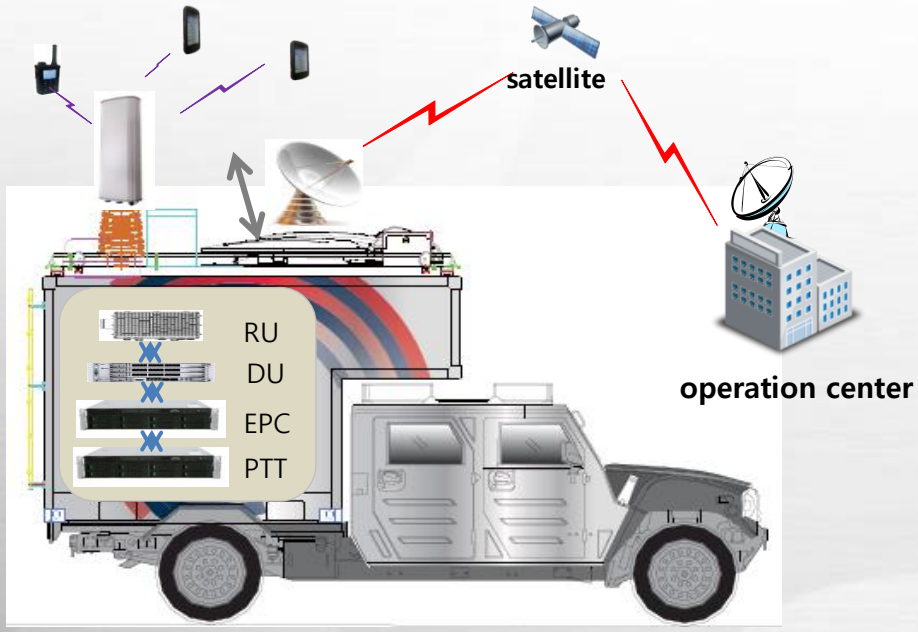
- Interwork Legacy Network using RoIP G/W
- Commercial Network(RAN Sharing)
- CS Voice / VoLTE interworking with Commercial PSTN / LTE Network
- LTE-R(Railroad) / LTE-M(Maritime)



범례

PS-LTE Deployment

Mobile BTS(Vehicle)



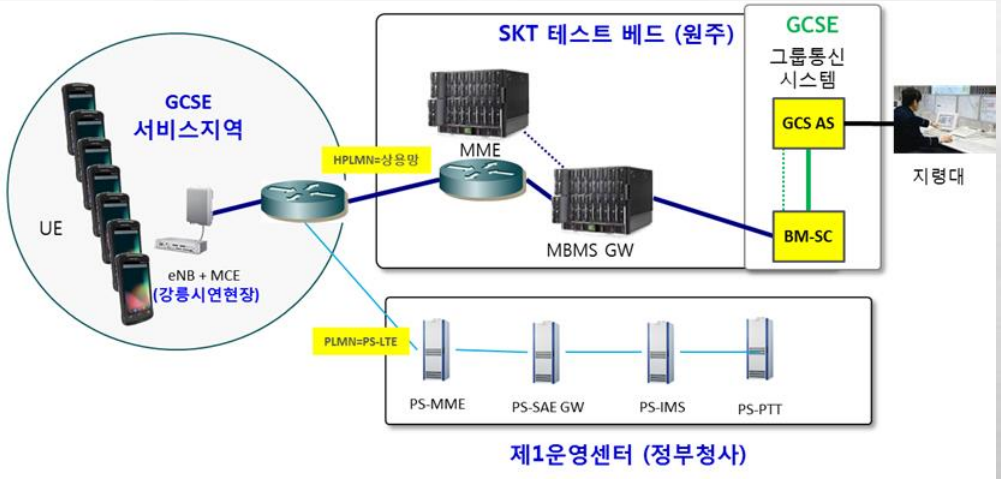
system	components	function
Satellite module	Satellite antenna, Satellite modem, amplifier	Organize line for satellite between operation center and BTS
LTE BTS	DU(Digital Unit) RU(RF Unit)	Process data in digital/ RF transmission
LTE Core	EPC+HSS (Evolved Packet Core)	Role of core in standalone operating mode
PTT server	PTT(Push to Talk)	Function of group communications, voice call
Auxiliary facility	antenna, mast, generator	Sector antenna, mast (12m) generator(7KW)

Major function and performance

Off road driving : 4-wheel drive
Climbing capacity: Gradient 60%, Side 40%
Fording : 76cm
Load weight : 2.9 ton
Max speed: 130Km/h, 8 speed automatic transmission
Independent suspension
Run-flat tire: 50Km can run if flat
10KW generator in power train
※ Detachable communications shelter

PS-LTE Deployment

GCSE Demonstration (June 8th, 2016)



- SKT consortium developed GCSE in Jan '16.
  - Based on eMBMS and IP-PTT System
- Demonstrated GCSE on June 2016.
  - Feasibility Showing in the Real Field
- Plans to develop IP-PTT to MCPTT and commercialize MCPTT based on the technology defined in 3GPP Rel. 13

SK telecom

Partner for New Possibilities