Overview of KPS

Objectives
Providing high-precision PNT information required in the era of the 4th industrial revolution

Goals
Development and construction of KPS system that stably provides PNT services to meet various satellite navigation needs
KPS System Configuration

KPS Satellite Constellation

KPS Segments

- Space
  - 3 GEO Satellites
  - 5 IGSO Satellites
  - Payloads: Navigation, Time-sync, SBAS, and SAR

- Ground
  - Operation Centers
  - Satellite Control Centers
  - Antenna Stations
  - Monitoring Stations
  - Mission Control Stations for MLS/CMLS

- User
  - Research and Development Receiver
  - Reference Station Receiver
  - Test and Evaluation Receiver
  - User Receivers
KPS Development Plan

**System Design ('22~'24)**
- SDR/PDR/CDR of KPS system
- International cooperation for orbits, frequencies, sites acquisition
- Navigation signal and constellation design

**System Development ('25~'28)**
- Development of satellite bus and payloads
- Development of satellite control center and antenna station
- Launch of the 1st IGSO satellite in 2027

**Deployment and Validation ('29~'35)**
- Development and launch of the 4 IGSO and 3 GEO satellites
- Development of all of the ground segment
- Test during IOC and FOC
Main Goal

- Provide APV-I SoL Service to Airports located in South Korea
- Start APV-I SoL Service after 2023
KASS Status (2)

- (Satellite) Malaysian Measat 3D launch with **KASS payload**
- (Date) 23rd June in 2022
- (Vehicle) Ariane 5
- (Launch Location) Ariane Launch Area 3, Kourou, French Guiana
- (GEO Location Life span) 91.5° E / 15 years
**KASS Status (3)**

### Status

- (‘21.6) KUS Infrastructure Facilities Construction Completion
- (‘22.6.23.) KASS 1st GEO satellite (Measat-3D with KASS payload) launch
- (‘22.7.4.~6.) KASS Navigation Payload IOT (In Orbit Test) Completion
- (‘22.7.19.) KASS FAT (Factory Acceptance Test) Completion

### Future Plan

- (‘22.10.~11.) KUS ↔ GEO#1 (Measat-3D) integration test
- (‘22.12.) KASS 1\textsuperscript{st} signal broadcasting (MT0/0)
- (‘23.6.) KASS 2\textsuperscript{nd} signal broadcasting (MT0/0 or MT0/2)
- (‘23.11.) SQR (System Qualification Review)

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* KPO : KASS(Korean SBAS) Program Office * KUS : KASS Uplink Station
GNSS Application in Korea

Various areas including **ICT, Transportation, Commerce, and Safety**

- Smart Phone & Apps
- Self-Driving Car
- Urban Air Mobility
- Aviation Traffic
- Autonomous Ship
- Smart Ports
- Search & Rescue
- Smart Farming
Thank you