

KPS & KASS Status Updates

13th February 2024



Overview of KPS (Korean Positioning System)

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



Program

KPS R&D Program
(including Space, Ground and User Segment)

Period

2022~2035 (14 years)

Governing



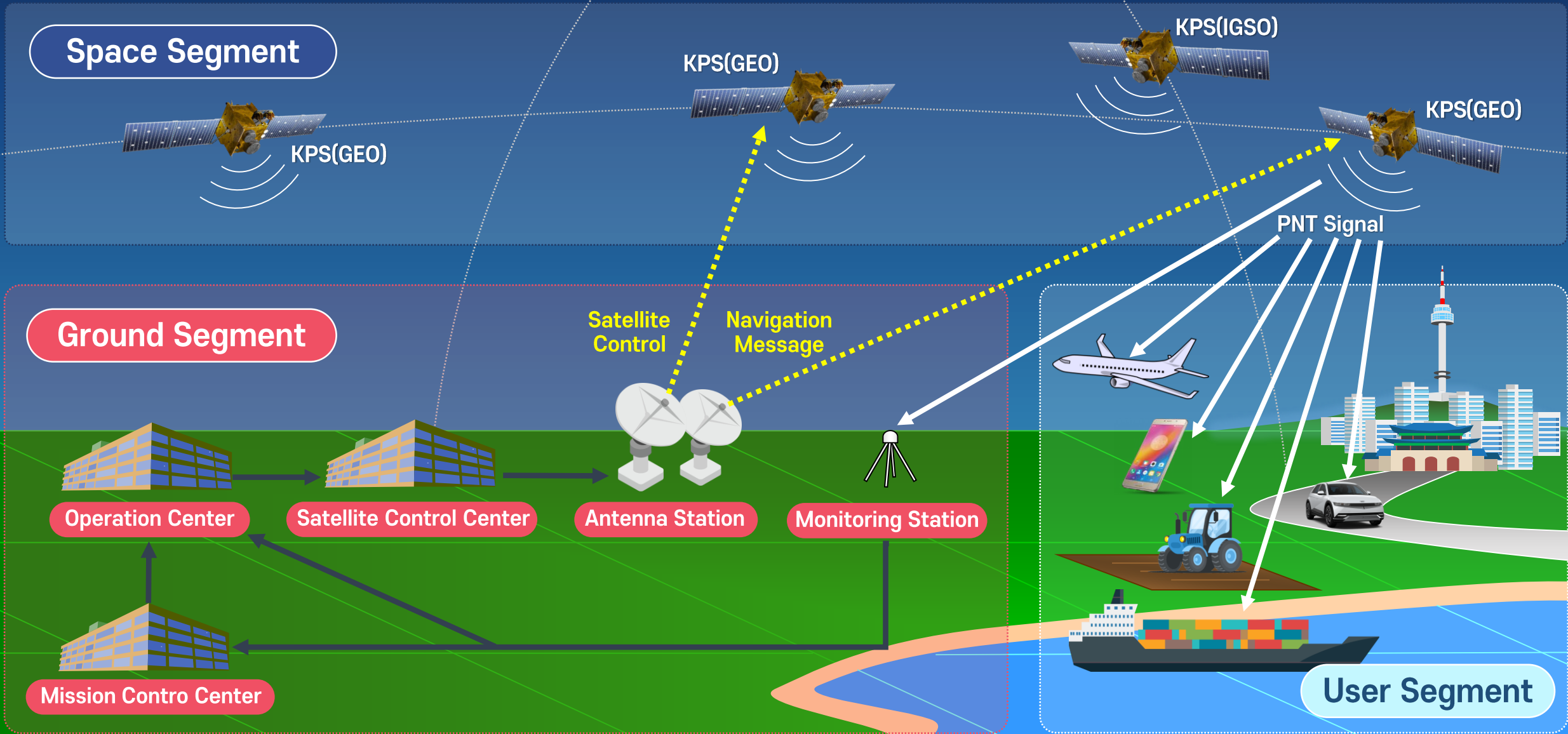
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R&D



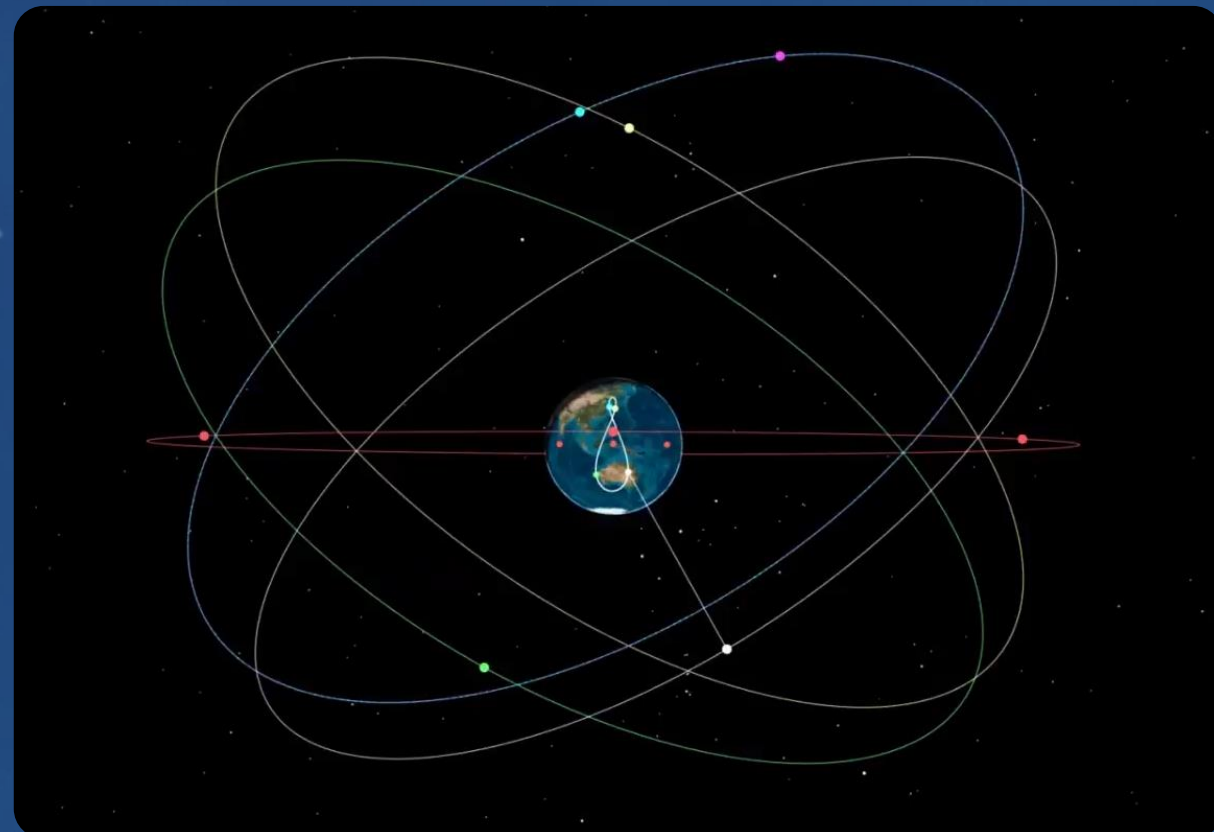
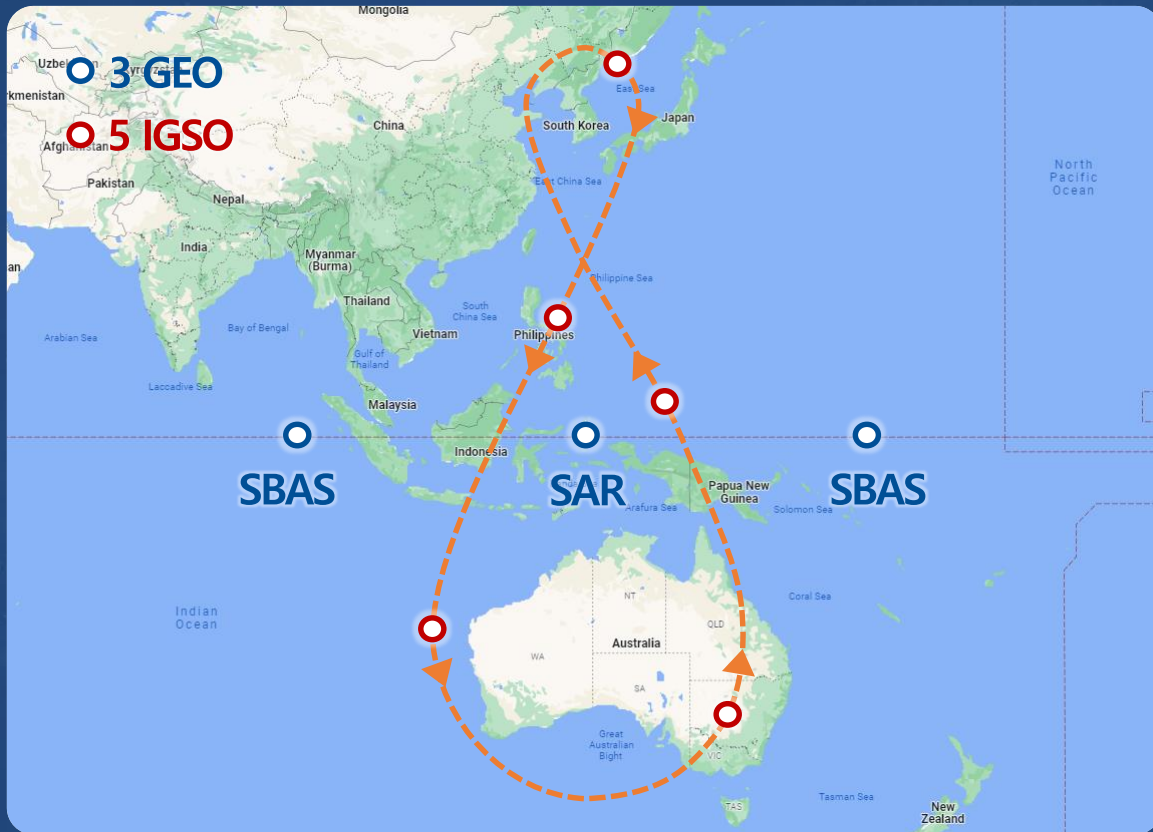
한국항공우주연구원
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KPS System Configuration



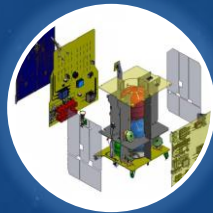
KPS Satellite Constellation

It consists of 3 GEO satellites and 5 IGSO satellites.



KPS Development Plan

Launching 1st KPS-IGSO in 2027, Finishing Deployment until 2035



System Design ('22~'24)

- KPS R&D start and application for international satellite network registration
- Navigation signal and Constellation design



System Development ('25~'28)

- Development of satellite bus, payloads, and ground segments
- Launch of the 1st IGSO satellite in 2027



Deployment and Validation ('29~'35)

- Development and launch of the remaining 4 IGSO and 3 GEO satellites
- Development of all of the ground segments, Test and validation

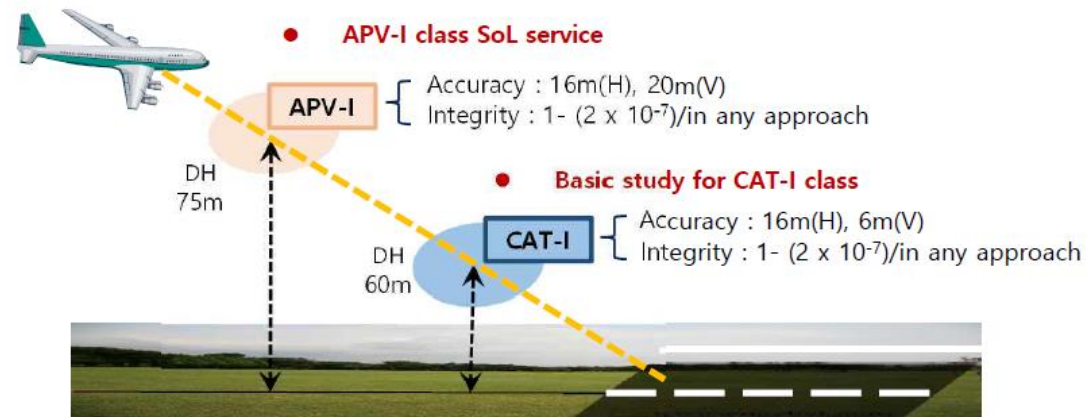
Overview of KASS (Korea Augmentation Satellite System)

Main Goals

- Provide APV-I SoL Service to Airports located in South Korea
- Started KASS Service in December of 2023



- APV-I and NPA service provision within Incheon FIR
 - APV-I : around airports (land mass and Jeju Island)
 - NPA : Outside of the APV-I service area
- SoL service commencement
 - After 2023yr



※ APV(APProach with Vertical guidance), CAT(CATEGORY), DH(Decision Height), SoL (Safety of Life)

KASS System Deployment



KRS : KASS Reference Station



KUS : KASS Uplink Station

- : KRS
- : KPS, KCS
- : KUS
- : GEO Satellite

KPS : KASS Processing Station

KCS : KASS Control Station



SBAS Message
Broadcasting (2)



MEASAT-3d (91.5° East)



Launch Vehicle
: Ariane-5ECA

International Cooperation



UN International Committee on Global Navigation Satellite Systems (ICG)

- The ROK Joined as a ICG member state in 2021.
- The ROK expressed the interest to host the ICG-19 in 2025.



GNSS Application

Various areas including ICT, Transportation, Commerce, and Safety



Smart Phone & Apps



Self-Driving Car



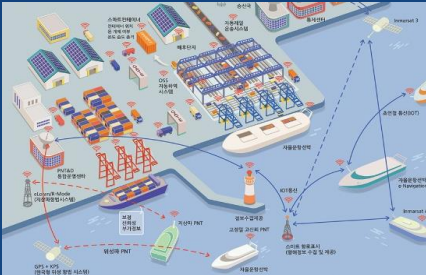
Urban Air Mobility



Aviation Traffic



Autonomous Ship



Smart Ports



Search & Rescue



Smart Farming

Thank you



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