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ARM  ENG  PAP  Input

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**Agenda item** [[2]](#footnote-2) 3.1

**Technical domain/ Task number** 2 Radionavigation services

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Update on Satellite-based Radionavigation Service Plan in Republic of Korea

# background

The Republic of Korea (ROK) is developing satellite-based radionavigation services for use in various fields as well as maritime use. The Ministry of Oceans and Fisheries (MOF) of the ROK is participating in these radionavigation service projects for maritime safety and effective marine utilization. This paper explains the current status and plans of the satellite-based radionavigation services which are being promoted by the ROK updated as of August 2022.

# Updated Plan for Satellite-based Radionavigation Services

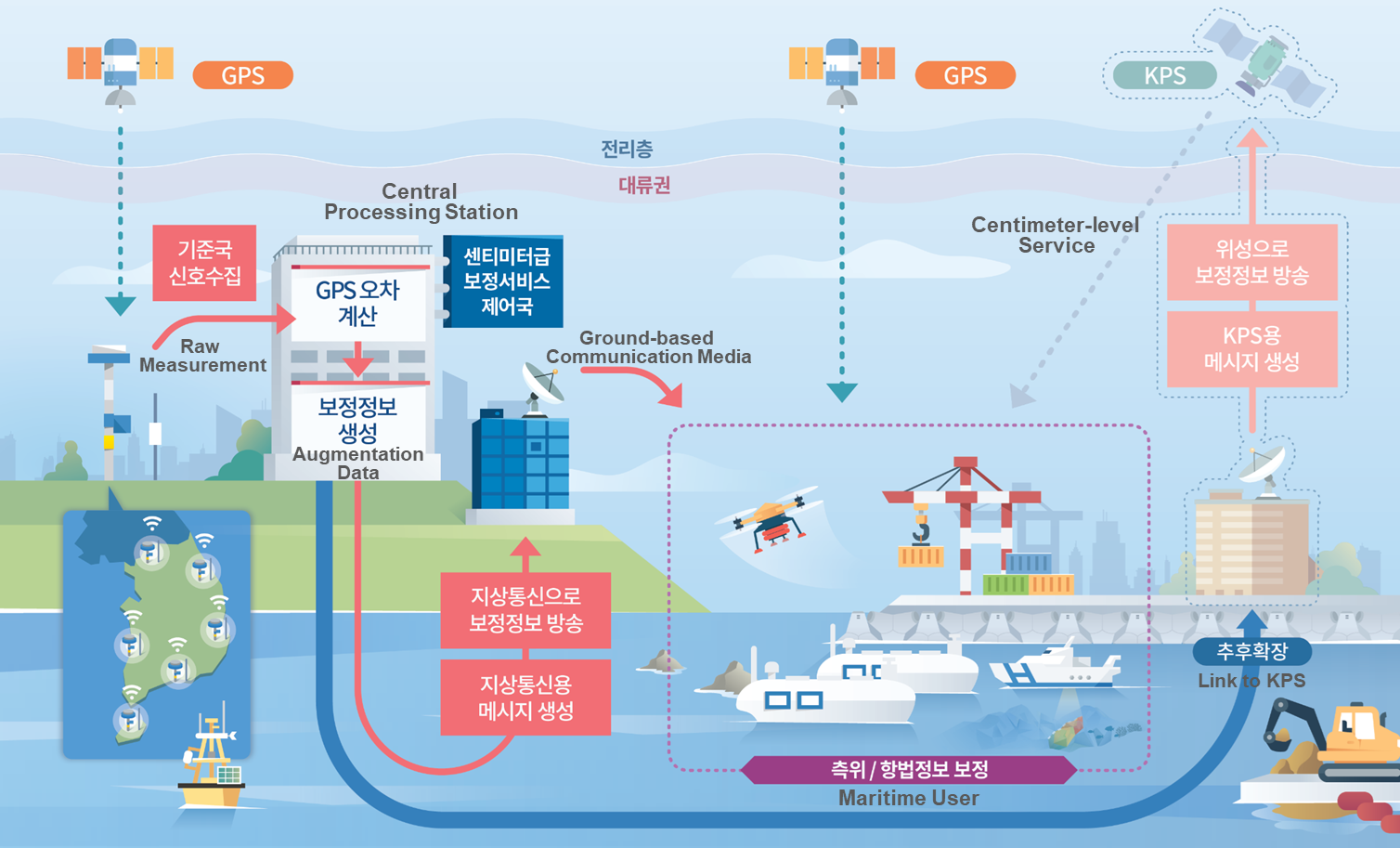
The R.O.K. initiated the Precise Positioning and INTegrity monitoring (POINT) project in April 2020. The POINT project aims to develop an infrastructure that provides users with precise positioning and integrity monitoring information in the maritime and to achieve an improved location’s accuracy of 5cm (95%, horizontal) within 100km of the Korean coastline. The POINT project will be carried out from 2020 to 2024. The Korean Positioning System (KPS) project is planning to closely link with the POINT project and use the research results of the POINT project to develop KPS’ centimetre-level service. The R.O.K. would like to provide the target performance achieved through the maritime POINT project through KPS service.

This year, the ROK launched the KPS development project. A total of eight KPS satellites will provide GNSS service. There are five KPS services, which are classified as open service, metre-level service, centimetre-level service, SAR service and SBAS service. The KPS program plans to launch its first satellite in 2027 and complete the deployment of eight satellites by 2035.

The KASS, which is the ROK's Satellite Based Augmentation System (SBAS), is planning to verify its service using a geostationary orbit (GEO) satellite. It plans to provide the first KASS signal from December 2022 after the interworking test between the KASS Uplink Station (KUS) and the GEO satellite from October to November 2022. From June 2023, after the test and integrated verification, the second KASS signal will be provided more stably than the first KASS signal. After completing the system qualification review and obtaining certification in November 2023, the ROK plans to broadcast the third KASS signal for an aviation service (SoL service). After the launch of the KASS SoL service, the MOF will conduct a feasibility analysis study on a maritime KASS service and determine the Korean maritime SBAS plan based on the study results.

# Conclusions

Currently, the ROK is promoting the MASS development R&D project; results of this POINT project will be associated with the MASS R&D project. In addition, after completing the verification of POINT service performance through testbed, a pilot service covering all coasts, including the ports, is expected to be released in 2025. We would also like to make efforts to expand technologies related to maritime precise positioning and navigation by periodically sharing the status of POINT and other satellite-based radionavigation service projects with IALA member countries through the IALA ENG Committee.



1. Relationship between the maritime POINT service and KPS

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