



Ministry of Land,
Infrastructure and Transport

KASS to Provide its First Precision Positioning Signal from 15 Dec.

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Enhanced positioning accuracy by the KASS expected in the position-based industry, etc.

The Ministry of Land, Infrastructure and Transport (MOLIT, Minister WON Hee-ryong) announced that the Korea Augmentation Satellite System(KASS) will provide the significantly precise positioning information service to all over the country for the first time on 15 December by reducing GPS's positioning error up to the level of 1~1.6 m.

* KASS(Korea Augmentation Satellite System): Korean style differential global positioning system that provides precise position in real-time by reducing the GPS's positioning error (15~33 m → 1.6 m), which was registered as 7th international standard

After the successful launch of the Augmentation Satellite No. 1 (23 June), the processes such as linking test and performance verification, etc. by each step between ground systems* have been made. It is going to provide the KASS signal in advance to test and utilize it over diverse fields such as position-based industry, academic research, and so forth, prior to starting aviation service at the end of 2023.

* Domestically, there are 7 reference stations, 2 uplink stations, and 2 central processing & integrated operation stations all over the country.

Prior to the first provision of the KASS precision positioning signal, it carried out performing tests for its accuracy improvement by using vehicles, etc. with the researcher from the Korea Aerospace Research Institute, which is the research institute in charge, confirming that the current GPS error has been reduced to the level of 1 m.

In addition, MOLIT has thoroughly checked up the preparation status for the KASS signal provision together with related diverse experts on 8 December at the 'KASS Promotion Policy Committee*' that is composed of experts in the field of satellite navigation.

* Composed of around 15 experts in the field of satellite navigation such as government including MOLIT in charge, Ministry of Science and ICT, Ministry of Oceans and Fisheries, as well as Korea Agency for Infrastructure Technology Advancement, Korea Aerospace Research Institute, Korea Transport Institute, Konkuk University, Kookmin University, Korean Air, etc.

** The Committee has been discussed and examined continuously the major progress of the KASS project, cooperative and supportive issues among related institutions, and so forth, since 2018.

Pursuing full preparation in order for the KASS to provide stable service, MOLIT is making an effort to vitalize it in general industrial fields by organizing 'KASS Alliance' with industry-university-research institute based cooperative foundation and the government-related institutions. MOLIT also has a plan to discuss more specific utilization measures while taking this first KASS signal provision as an opportunity.

* Composed of 80 persons covering 6 departments such as aviation (UAM, drone), road (autonomous vehicle, navigation), railways & oceans, positioning information (mobile phone, telecom company, map, chipset), geodetic survey, safety (public safety and fire protection)

Participating companies will start the test and the verification using the KASS signal in the fields of drone, car navigation, etc. when the KASS precision positioning signal is provided and in some fields, it is expected that the commercialization can be started from the first half of next year at the earliest.

The position-based service industry utilizing smart phone expressed its expectation, “If the KASS signal is applied to smart phone, the positioning accuracy in the navigation, parking and taxi calling service, etc. will be improved greatly.”

Adding that, “The fields using GPS such as emergency rescue service, agriculture, etc. as well as the mobility industry like drone, urban air mobility (UAM), autonomous vehicle, and so forth, are expected to be able to utilize more precise positioning information”.

KASS is going to provide its signal in earnest from the end of 2023 through the processes such as collecting users’ opinion, system stabilization for aviation service, certification for aviation in accordance with the standards of International Civil Aviation Organization (ICAO), etc. and has a plan to implement the consignment operation by designating separate professional operating institution for the systematic management and operation.

Description	First Provision of KASS Signal	Second Provision of KASS Signal	Third Provision of KASS Signal
Expected Date of Provision	Since Thu. 15 Dec. 2022	Since Jun. 2023	After the end of 2023
Signal	KASS Precision	KASS precision	KASS precision

Information	Positioning Signal (Cut off during subsequent test period)	positioning signal (Stable)	positioning signal + reliability information (Stable)
Form of Message	Test mode	Open service mode	Aviation service mode
User	Enable to utilize in confirming message and testing	Enable to utilize KASS message stably	Enable to utilize KASS message stably (Guarantee the reliability for aviation)

When the service in aviation is provided, flexible options to choose aircraft access and landing routes can be possible, and effects of reduced aircraft delays and cancellation, as well as the enhancement of safety are expected. Particularly, it is expected that the provision of access procedure enable local airports such as Ulsan where the installation and operation of instrument landing system (ILS*) are impossible due to mountainous terrain, etc.

* Instrument Landing System: to provide landing information to aircrafts installed on the ground by runways

JOO Jong-wan, Director General for Airport and Air Navigation Facilities Policy of MOLIT said, “Starting with this KASS precise positioning signal provision, we will make our best effort for successful establishment and stable operation of the KASS by cooperating actively with position-based industry so that the general public can use the highly accurate positioning information.”

* Related technical information, provision schedule, etc. are provided through the homepage of KASS project group of Korea Aerospace Research Institute so that users can apply the KASS signal smoothly.