

NEC Corporation Introduction of MSAS and GBAS

NEC is a manufacturer and system integrator of ATM/CNS systems. We have a long history providing conventional ATM/CNS systems such as ILS, DME, ASR, SSR and ATM to not only the Japan Civil Aviation Bureau (JCAB), but other regulatory authorities worldwide. At this year's IWAC, we will be introducing our latest technologies, the MSAS and GBAS satellite-based navigation systems.

NEC's MSAS

The Michibiki Satellite-based Augmentation Service (MSAS) is a wide-area augmentation system for GPS that uses the Quasi-Zenith Satellite No.3 (QZS-3), which is a geostationary orbit (GEO) satellite in the Quasi-Zenith Satellite System (QZSS). MSAS can provide highly precise information to ensure flight safety and to meet the requirements of integrity, accuracy, continuity of service, and availability for air navigation services.

NEC developed the MSAS ground system to fully replace the former MSAS (MTSAT-based Augmentation System). The system was deployed by JCAB for the ER/NPA service over the Fukuoka FIR in April 2020.

Currently, NEC is developing the next generation MSAS system for the APV service.

NEC's GBAS

The Ground-Based Augmentation System (GBAS) is a safety-critical approach and landing system using GPS. GBAS provides differential correction and integrity monitoring for GPS, enabling precision approach and landing.

NEC's GBAS project started in 1997. Our CAT-I GBAS prototypes were installed at two airports in Japan. Our first operational CAT-I GBAS was delivered to Tokyo International Airport in 2020 and is currently under operational evaluation by JCAB.

NEC's GBAS includes the following features:

- Sufficient system availability even in severe ionospheric conditions at low geomagnetic latitudes,
- Fiber-optic connection and dual VDB option enabling flexible siting.

Please visit our exhibition booth at IWAC 2022 for further details.