

## FLY TO MORE PLACES, STAY FUTURE READY

## Combines extreme accuracy with lower cost

The Jan. 1, 2020, Federal Aviation Administration mandate for ADS-B Out will require that all aircraft be equipped to use the Satellite Based Augmentation System (SBAS) for position accuracy and integrity. The next-generation GLU-2100 multimode receiver (MMR) from Collins Aerospace will make your aircraft SBAS capable, with high position accuracy.

Along with that high accuracy, the GLU-2100 provides your aircraft with added capabilities that unlock new advantages in flight.

For example, with the emergence of SBAS into the air transport market, the GLU-2100 will support SBAS Localizer Performance with Vertical Guidance (LPV) approaches. Your airline will then benefit from near-CAT I approaches at non-CAT I equipped airports. Fly to more places, more often, without the delays and diversions associated with weather at smaller airports.

## **KEY FEATURES**

- Software-only upgrades to advanced features:
  - SBAS LPV
  - GLS CAT II/III
  - Multi-frequency/ multi-constellation
- Patented hardware capability to support:
  - Dynamic satellite tracking for multi-constellation
  - Policy/LPV database housing
  - Improved sensor robustness
- Developed and qualified to latest OEM and industry standards
- Integrated VOR
- Direct, drop-in replacement to existing MMRs



## FUTURE READINESS DRAWS ON DECADES OF MMR EXPERTISE

Since 1995, when Collins Aerospace certified the first MMR, we've consistently provided timely and value-added upgrades to support the global navigation and landing guidance capability needs of the air transport industry.

The introduction of the GLU-2100, our next-generation MMR, will continue that legacy of commitment for advancing global navigation to meet emerging airspace requirements. It directly benefits from our SBAS-capable products, which have been in service since 2007. Each of these products is a mature solution to help meet the U.S. mandate for ADS-B Out.

As the air transport industry sees an increase in Ground Based Augmentation Systems (GBAS) around the world, airlines can benefit from our long history of providing global positioning landing system (GLS) CAT I capability. This capability was first certified in our GLU-925 in 2006 and available at entry into service in the GLU-2100. The GLU-2100 will be capable of GLS CAT II/III by 2019.



Multi-frequency/multi-constellation global navigation satellite system (MF/MC GNSS) capability is the future of global navigation. It provides SBAS-like precision and integrity anywhere in the world.

GPS has long been the standard for GNSS navigation and has been operational since the 1970s. It's now being upgraded with new satellites capable of multi-frequency, but many other constellations have been or are being developed as follows:

- GLONASS (Russia) operational since 1995, with modernization upgrade plans through 2025
- Beidou (China) regionally operational since 2012, with global operations planned in 2020
- Galileo (Europe) SBAS operational since 2009, with global GNSS operation planned for 2020
- Others MTSAT Satellite Augmentation System (MSAS) and Indian Regional Navigation Satellite System (IRNSS)

With the GLU-2100, Collins Aerospace will be on the leading edge of developing multi-frequency/multi-constellation capabilities with patented hardware in place to dynamically switch each channel from one constellation or frequency to another. As geopolitical expectations begin to govern the use of multi-constellations, the GLU-2100 will have database hosting capabilities to efficiently manage constellation usage – with or without input from the flight crew.

As the aviation industry's requirements change – and as MMR technologies advance – the GLU-2100 is poised to meet future capability needs with quick, simple software updates that don't require a change in hardware.

The GLU-2100 is now available on the Boeing 737 MAX, and follow-on certifications for the 737NG and 777 are expected to be completed in the first quarter of 2019. In the third quarter of 2019, certification on the Airbus A320 will begin, with other platforms following. Additionally, Collins Aerospace has supplemental type certifications for retrofit available or planned on all major air transport platforms.

When it comes to global navigation, and the many airspace modernization requirements that will drive advanced GNSS features in the future, you can put your trust in the only MMR supplier that has consistently developed the capabilities requested when they're needed. You can also count on our award-winning customer service and support for your Collins Aerospace equipment.

Specifications subject to change without notice

