DATA SHEET

Operating Modes	Real Time Post-processing
Input Formats	NTRIP (RTCM through the internet) RINEX 2.X/3.X EGNOS EDAS Proprietary raw format
Supported GNSS Core Constellations	GPS, GLONASS, Galileo, BeiDou
Supported frequencies	Single-frequency (L1) augmentation Dual-frequency (L1/L2 or L1/L5) augmentation
Special messages support	MT-27 and MT-28 Dynamic mask in multi-constellation mode
Output formats	RTCA DO-229F and ICAO SARPs for L1 SBAS EUROCAE ED-259 for DFMC SBAS RTCM SC-104 v2.3 for virtual DGPS emulation SISNET for message dissemination through the internet
Accuracy	1-1.5 m (95%) horizontal accuracy 1-2 m (95%) vertical accuracy

CHECK ALSO

Information website:
https://www.gmv.com/en-es/products/space/magicsbasr

CONTACT

magicsbas@gmv.com

Magic® SBAS

A product by:

gmv® INNOVATING SOLUTIONS

Product Info at:
www.gmv.com/en-es/products/space/magicsbasr

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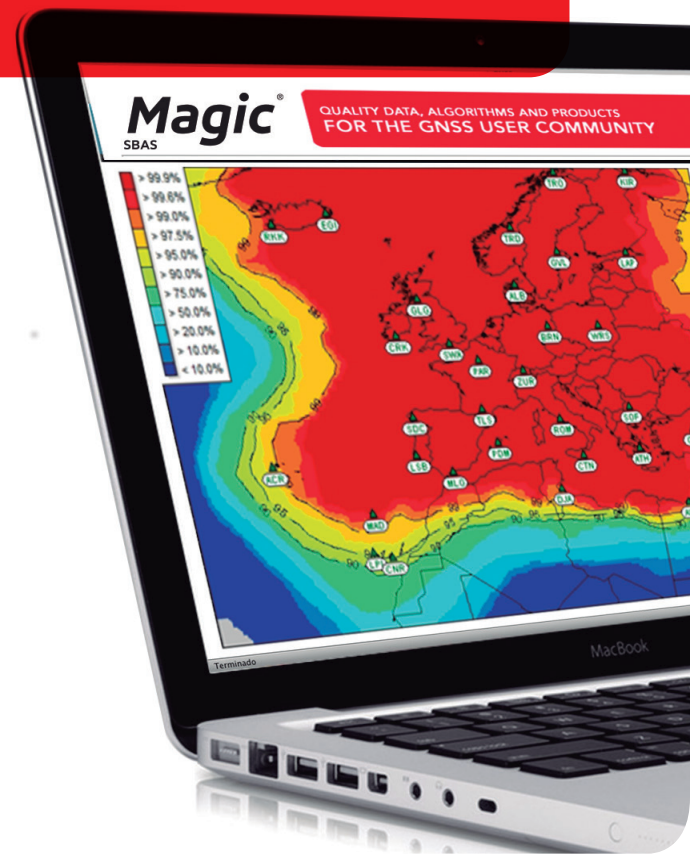
Magic® SBAS

STATE-OF-THE-ART MULTI-CONSTELLATION
OPERATIONAL SBAS TESTBED



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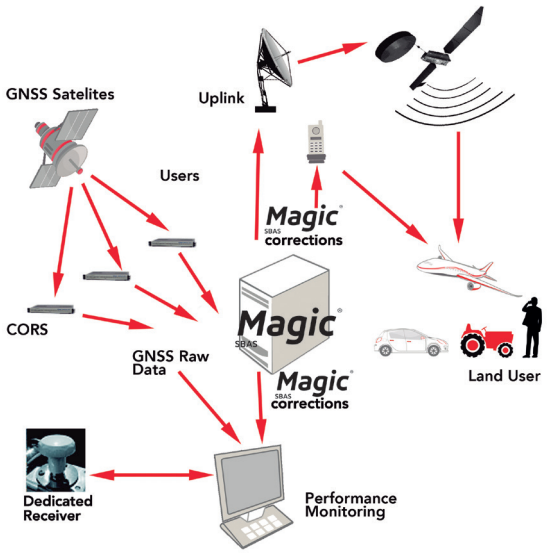
MOTIVATION

The interest in Satellite Based Augmentation Systems (SBAS) is growing worldwide. In addition to the currently existing systems, WAAS in the US, EGNOS in Europe, MSAS in Japan and GAGAN in India, the four already in operational use, other regions are expressing interest in the SBAS technology. In the last years, countries like Australia, New Zealand, South Korea, China or Russia, have launched their own national SBAS programs. Other regions have initiated preliminary feasibility studies for SBAS implementation in their territories.

MagicSBAS can be used both as a powerful engineering environment to support the design and implementation of an SBAS, an also as an operational testbed to provide early services. In testbed mode, ***MagicSBAS*** can be used to demonstrate the benefits of SBAS technology to the potential user community in a given region. ***MagicSBAS*** has been also successfully used for training and capacity building in the area of GNSS/SBAS.



MAIN FEATURES

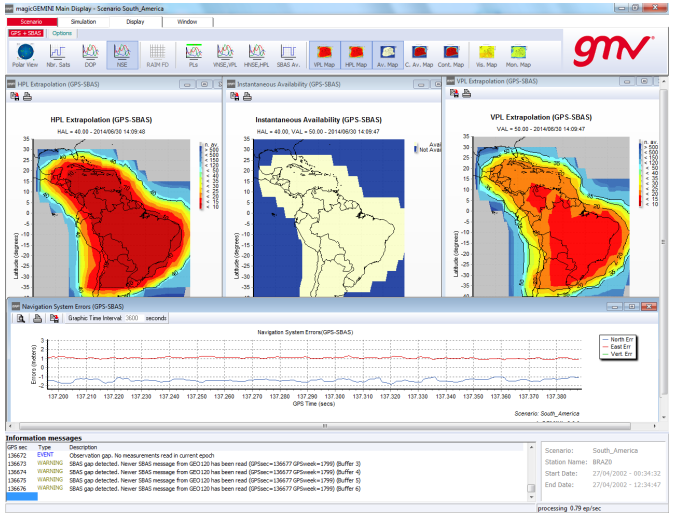
MagicSBAS can process observation data from a Real Time Network of Stations to generate wide area SBAS corrections and integrity parameters compliant with RTCA/DO-229F and ICAO SARPs for L1 SBAS and EUROCAE ED-259 for DFMC SBAS.

MagicSBAS currently supports the processing of multiple GNSS constellations such as GPS, GLONASS, Galileo and BeiDou, optimizing the bandwidth usage by means of an innovative technique for the dynamic management of the satellite mask.

MagicSBAS has been used as message generator in testbeds including GEO broadcast. They have covered areas like South America, South Africa, Australia and New Zealand. These testbed have supported navigation services including SBAS L1, SBAS L5 DFMC and PPP through SBAS L1 and L5 signals.

KEY ADVANTAGES

One of the key advantages of ***MagicSBAS*** is the capability to process raw data in standard formats like NTRIP, RINEX or EGNOS EDAS. The NTRIP protocol in particular is a widely extended, open non-proprietary protocol designed to disseminate GNSS streaming data over the internet and is supported by most of the commercial dual-frequency receivers. There are currently hundreds of Real Time Reference Stations worldwide providing data in this format that can be used together with ***MagicSBAS*** to quickly evaluate the feasibility of an SBAS in nearly any region.



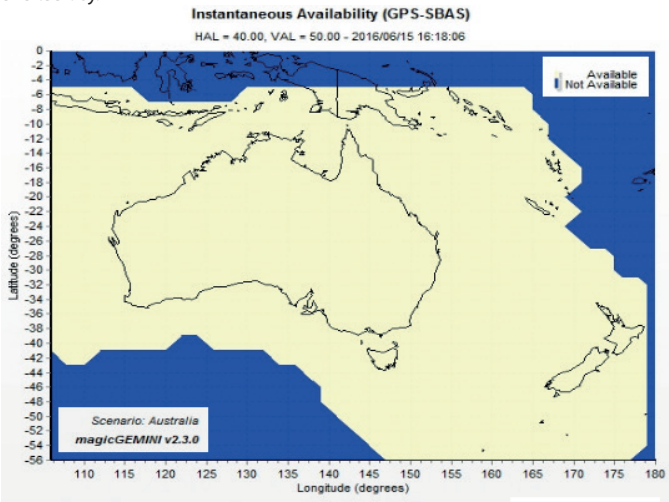
MagicSBAS can be run both in real-time and post-processing modes. In real-time mode, ***MagicSBAS*** can be used to provide an early SBAS demonstration service for aviation users and to support non-safety critical applications like survey, mapping, precision agriculture or multi-modal transportation. In post-processing mode, ***MagicSBAS*** engineering, feasibility studies, integrity analysis and personnel training and capacity building.

MagicSBAS can be interfaced with external RTCM real time services to get precise satellite orbits and clock corrections. This new outstanding feature can improve the clock and ephemeris corrections accuracy up to 50%.

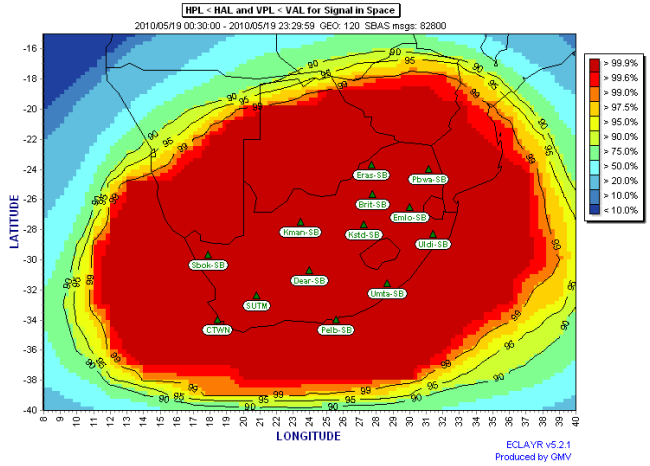
PERFORMANCE

The ***MagicSBAS*** algorithms have been optimized to provide the best performance in the most demanding conditions and have been tested in many regions of the world, including areas over ecuatorial and polar regions. The figures below show examples of SBAS solutions produced with ***MagicSBAS***.

The ***MagicSBAS*** product suite includes a real-time service monitor and two performance analysis-modules called **MagicGEMINI** and eclayr. Using these modules, the operator can perform a comprehensive set of performance analysis including accuracy,integrity, service continuity and availability.



MagicSBAS APV-I availability over Australia and New Zealand



MagicSBAS APV-I availability over South Africa