

## 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-229D / ICAO SARPs for SBAS L1 DFMC ICD draft for L1/L5 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

Product demos at:

<http://www.gmv.com/en/Products/magicSBAS/Testbeds/>

Information website:

<http://www.gmv.com/en/Products/magicSBAS>

## CONTACT

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# magic

## SBAS

A product by

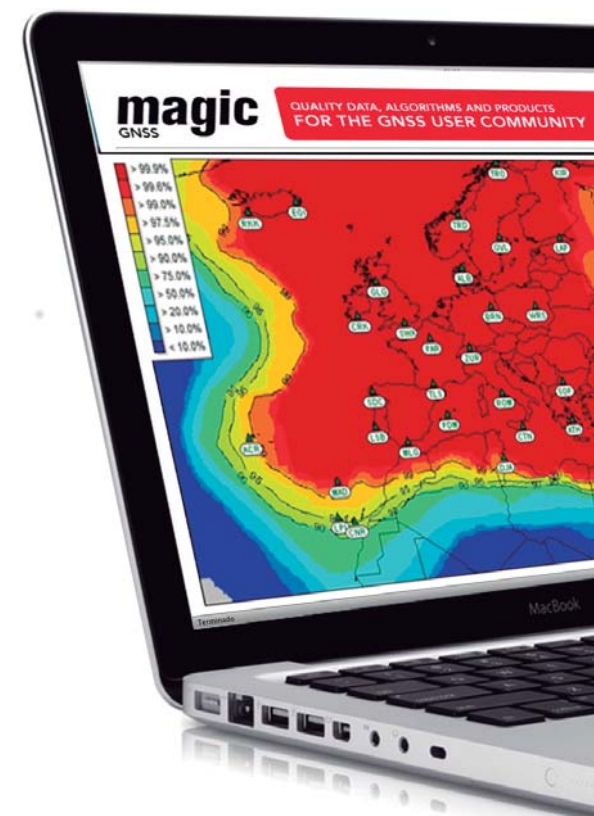


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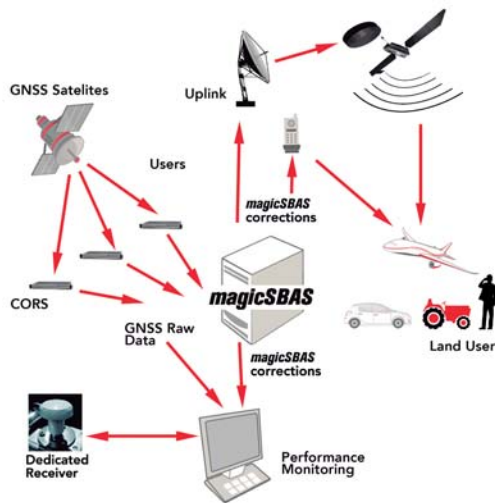
# STATE-OF-THE-ART MULTI-CONSTELLATION OPERATIONAL SBAS TESTBED



## 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 few years, countries like Russia (SDCM) and South Korea have launched their own national SBAS Programs, and 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.



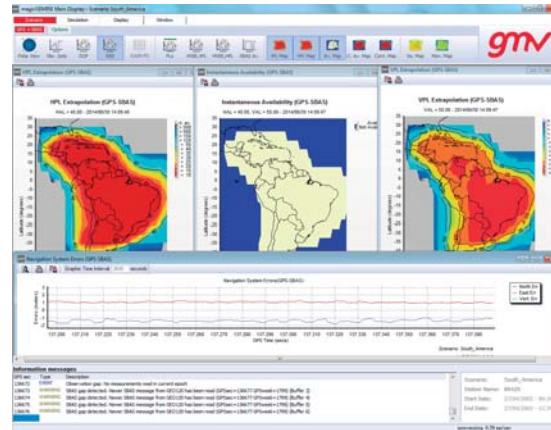
## MAIN FEATURES

**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-229D and ICAO SARPs for L1 SBAS and latest DFMC ICD draft for L1/L5 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.

## 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.

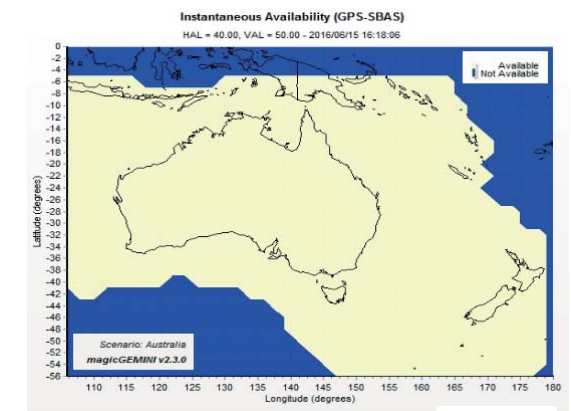


**magicSBAS** can be interfaced with external RTCM real time services to get precise satellite orbits and clock corrections. This new outstanding feature can improve the clock and ephemeris corrections accuracy up to 50%.

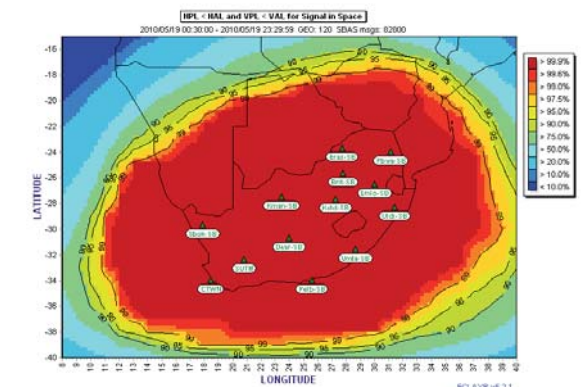
## PERFORMANCE

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 equatorial 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 **elcayr**. 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**