

Precision analysis of satellite-based landing system signals

On the ground or in the air, the R&S®EVS300 analyzer is capable of performing VHF data link measurements on ground based augmentation systems (GBAS) as well as measurements on conventional ILS ground systems and VOR systems. The battery-powered R&S®EVS300 ILS/VOR analyzer is an all-round tester for terrestrial navigation and ground based satellite navigation applications.

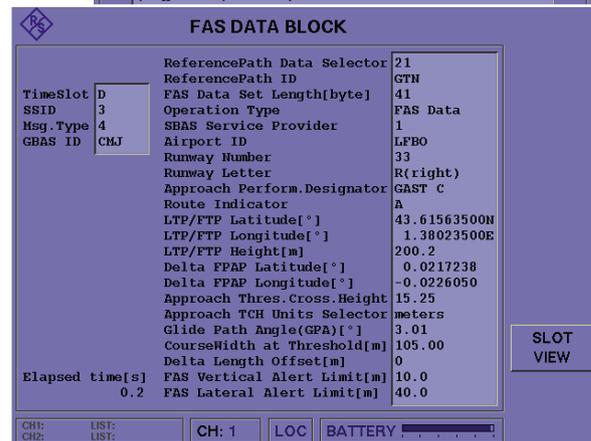
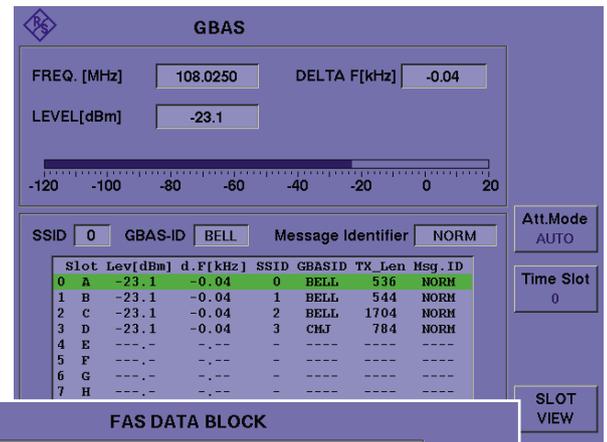
GBAS – the new landing system

For decades, precision approach systems have been based on analog instrument landing systems (ILS). Since the beginning of 2012, DFS, the German air navigation service provider has been operating a ground based augmentation system in Bremen. This is a pilot system approved by the German Aviation Safety Agency and the first system for which category (CAT) I satellite-based precision approach has been permitted. Two to four high-precision GPS reference receivers input correction data into a multimode receiver on board the aircraft via a VHF data link (D8PSK, 108.025 MHz to 117.95 MHz).

Systems must be able to function reliably under all conditions within the limits established by the International Civil Aviation Organization (ICAO). Service providers around the world will be facing new challenges over the next few years as they support and qualify a combination of conventional and new technologies, both on the ground and in the air. Equipped with the R&S®EVS-K9 option, the R&S®EVS300 is ideal for analyzing both analog systems and GBAS systems.

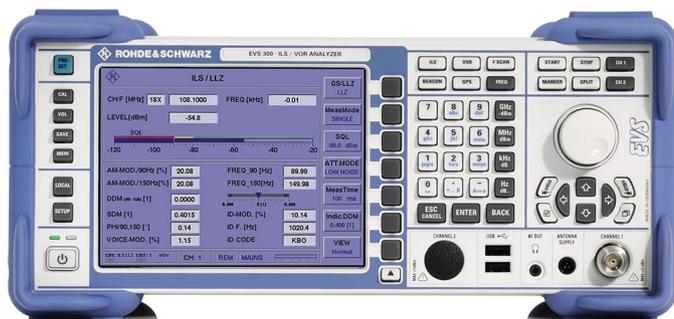
Precision measurements with high reproducibility

The R&S®EVS-K9 option accurately measures the level and frequency of GBAS signals in the VHF range. Ground and flight inspections are crucial for system analysis. The R&S®EVS300 supplies precise data for both of these



Overview of the GBAS timeslots (top) and decoded GBAS data for a landing approach.

R&S®EVS300 ILS/VOR analyzer.



applications. In addition to measuring analog signal parameters, the analyzer determines the data content used to correct GPS-based approaches. This enables the user to verify, for instance, the GBAS ID, the message block identifier and the final approach segment data block (FAS DB), either on the display or via remote control on a PC.

The R&S®EVS300 efficiently verifies the correct functioning of advanced precision approach systems, helping to ensure the highest possible level of aviation safety.

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