GIDAS

Global Navigation Satellite Systems (GNSS) positioning and timing services form the backbone of many applications and markets. Civilian GNSS services are free of charge and globally available but insufficiently protected against unintentional and even intentional disturbances. OHB Digital Solution researches for more than 20 years on how to provide means to monitor and augment the GNSS services with GNSS quality assurance. For many applications, it's not only precision that matters, but predominantly integrity too! OHB's **GNSS Interference Detection & Analysis System (GIDAS)** adds to the secureness of your GNSS applications by making threats visible.

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Supported GNSS signals	GPS: L1, L2C, L5 (all civil signals) GLONASS: G1, G2 (all civil signals) Galileo: E1, E5 (all civil signals) BeiDou: B1 (all civil signals) SBAS and regional systems on L1 (e.g. EGNOS, QZSS)
Bandwidth	up to 81 MHz
Dynamic range	up to 2 x 12 bit (complex)
Interference detection	Jamming, Spoofing
Monitoring features	Real-time monitoring and interference detection Classification of interference sources Localization of interference sources Detailed analysis in post-processing
Operating modes	Stand-alone monitoring (static / dynamic) for detection and classification Network monitoring (static) for detection, classification and localization
Outputs	Interference alert Interference detection details Interference classification details Interference localization Automatic reporting Standard GNSS output formats (e.g. RINEX, NMEA) Recording of signal snapshots (incl. metadata description according to ION's GNSS SDR metadata standard) Log-Files (JSON, ASCII, proprietary formats)
Standards supported	ICAO Annex 10 - International Standards and Recommended Practices ICAO Doc. 8071 - Manual on Testing of Radio Navigation Aids RTCA DO-229D - Minimum Operational Performance Standards for Global Positioning System / Wide Area Augmentation System Airborne Equipment
Alerting	via GUI, TCP/IP, email, custom alert interface (e.g., alert device for air traffic controller)
Alarm latency	< 6 seconds (avg. < 3 seconds)
Detection thresholds	User definable as well as predefined (e.g. ICAO, RTCA) threshold masks
Output update rate	1 to 10 Hz (configurable)
Detection probability	>99% for ICAO thresholds
Jamming classification	Classification regarding the spectral characteristics (power, pulsed/non-pulsed, type, modulation index, sweep rate, etc.)
Supported jamming signal types	Pulsed and non-pulsed Amplitude modulated (AM) Frequency modulated (FM) Continuous wave (CW) Swept continuous wave (SCW)
Time / spectrum resolution	Configurable Frequency resolution typically 1kHz Time resolution for classification typically 10µs
Localization	Requires at least 3 Monitoring Stations Techniques - Difference in received signal strength (DRSS) - Time difference of arrival (TDOA) Accuracy - Typically better than 20m
Graphical user interface	Multi-user web client
Interface between stations, monitoring centre and GUI	Local LAN or fiber optic network, LTE mobile network for remote stations, TCP/IP SSH encrypted
Power supply	220-230 VAC (~100W per monitoring sensor)
Dimensions	19" 2U rackmount system for monitoring sensor 19" 2U rackmount server for monitoring center
Operating environment	Operating temperature: 0° to +40°C Storage temperature: -20°C to +50°C Protection class: IP20
Connectors	2x TNC for GNSS antennas, 1x LAN, 1x power
Usability	Designed for easy use and operations No need for extended specific training or extensive GNSS knowledge

esa Acknowledgement: GIDAS was developed under a programme of and funded by the European Space Agency. The view expressed herein can in no way be taken to reflect the official opinion of the European Space Agency.

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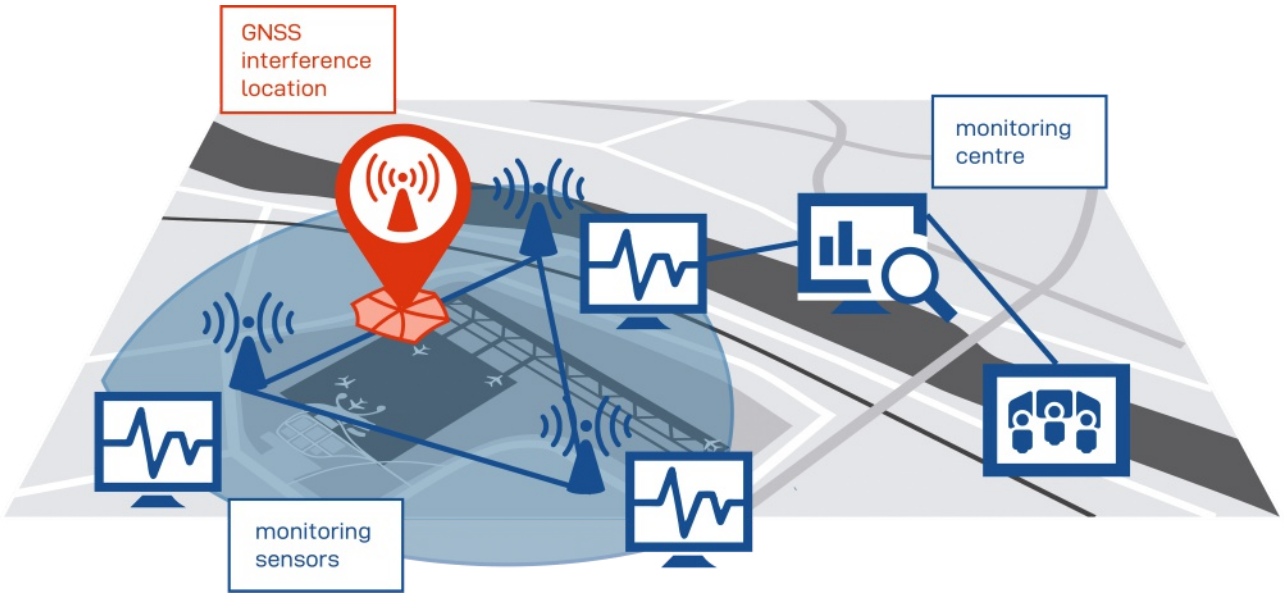
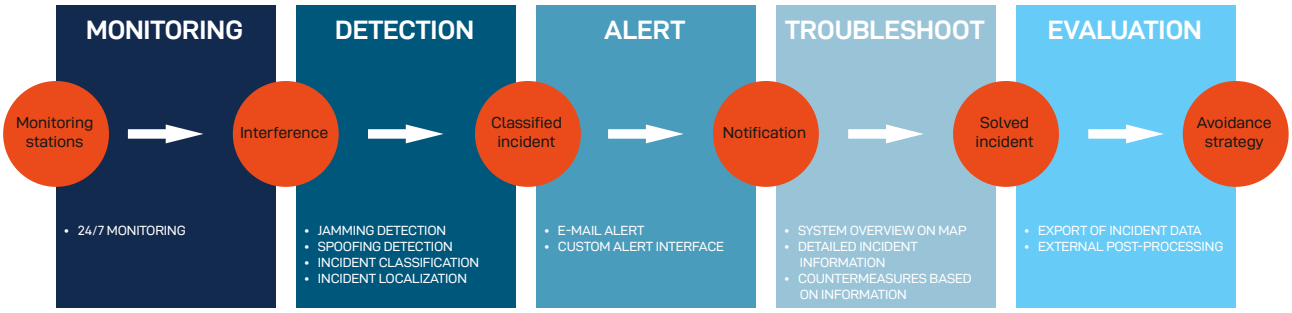
OHB's **GNSS Interference Detection & Analysis System (GIDAS)** is a scalable real-time system to monitor the GNSS services on-premise and get alerted in the case of malfunction or performance degradation. The heart of **GIDAS** is formed by a multitude of jamming and spoofing detection techniques, developed in more than 20 years of research. The smart combination of different monitoring approaches makes for a robust statement of the current local integrity of the GNSS positioning and timing services. **GIDAS** is specifically designed for permanent installation at critical infrastructure and can detect, classify and localize a wide range of jamming and spoofing signals.



The **GIDAS** system

- Network of on-premise GIDAS monitoring sensors
  - Spatially distributed, on-premise GNSS sensors cover the area of interest
  - 24/7 monitoring of the local GNSS service quality and integrity
  - Bearing estimation of local interference sources and localisation of the threat
- Central **GIDAS** monitoring center
  - Local data processing without costly cloud infrastructure
  - On-premise data hosting – full control of the recorded data
  - Central data archive for post processing and analysis of interference events
  - Web-based user interface for seamless operational integration
  - Custom alert interface – depending on the operational context



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GIDAS

GIDAS adds to the operational safety of many different GNSS reliant applications. OHB's **GIDAS** is already operational in ports and airports, to help to secure GNSS navigation. **GIDAS** addresses private companies as well as public and governmental bodies and will be installed in security-critical infrastructures such as power grids, inland waterways, GNSS based toll enforcement gantries, and many more.

A first step of safe GNSS applications is the awareness of present threats - **GIDAS** detects, classifies, localizes and alerts if GNSS is about to be interrupted. OHB makes your GNSS-dependent application more robust and reliable.

Find out more

For more information about OHB Digital's GIDAS system or to discuss other aspects of GNSS quality assurance for critical infrastructure systems, start a technical conversation with our dedicated team of experts.

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