DATA SHEET

Supported bands	GPS L1C/A, GPS L5, Galileo E1, Galileo E5a.
Standards	IEC 61108-1, IEC 61108-3, IEC 61162-1, IEC 61162-450, IEC 62288, IEC 62923.
Operational modes	Single frequency, Single frequency with differential corrections, double frequency for Galileo and GPS.
Components	GNSS Antenna, Navigation sensor and chassis, GNSS Receiver, Control and Display Unit.
Outputs	Interface compliant with IEC 61162-1, IEC 61162-450.
Power supply	12/24 VDC.
Connections	2 RJ45, 8 output ports, 5 input ports, SD card slot.
Display	7" LCD Display panel.
Features	Differential corrections, OSNMA available, RAIM.

CHECK ALSO

ASGARD project website:
https://asgard.gmv.com/

CONTACT

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ASGARD

Developed by:

gmv INNOVATING SOLUTIONS

www.gmv.com

SAAB TECHNOLOGIES

www.saab.com

Project funded by:

EUSPA European Union Agency for the Space Programme

www.euspa.europa.eu

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https://asgard.gmv.com/

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ASGARD GNSS project

ASGARD

Advanced Shipborne Galileo Receiver Double Frequency (ASGARD)

MOTIVATION

ASGARD is a cost-efficient GNSS solution that aims to encourage the penetration of E-GNSS in the maritime domain.

ASGARD is a dual-frequency shipborne multi-constellation receiver that complies with various maritime regulations such as IEC 61108-1, IEC 61108-3, IMO: MSC 401 (95) and MSC 432 (98). The multi-constellation approach is being implemented in a wide range of applications as it increases robustness to single-constellation failure and provides certain degree of robustness against interferences.

KEY ADVANTAGES

ASGARD users can benefit from:

- The addition of Galileo satellites to the GPS constellation improves resiliency, availability, and accuracy performance.
- The use of additional Galileo satellites with dual frequency capability also enhances service robustness against interferences.
- Better coverage at high latitudes (poles) improving Arctic navigation.
- Use of Galileo E5 band for improved accuracy and robustness against multipath.
- Spoofing detection and mitigation based on authentication, thanks to Galileo OSNMA.
- Multi-constellation provides additional information source to perform information integrity checks and also in case of a complete constellation failure.
- Improved performance in areas of sky obscuration.

COMPONENTS

ASGARD equipment is based on a modular approach allowing maximum flexibility for satisfying the customer needs. There are three main components:

GNSS Antenna:

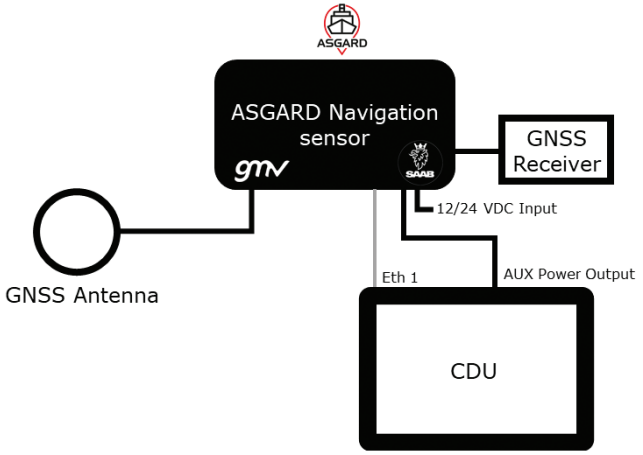
- An active multi frequency antenna which purpose is to provide a good reception of the GNSS signals.

Navigation Sensor and chassis, including a GNSS receiver:

- The GNSS Receiver is mounted on the **ASGARD** Navigation Sensor board that provides power to the GNSS receiver and antenna, stores configurations, checks thresholds and generate status/performance information, such as alerts.
- The ASGARD Navigation Sensor board has a number of external bidirectional interfaces that can be used to connect external devices and networks.

Control Display Unit (CDU):

- The seven-inch LCD with touch control CDU is a display/control device which is connected to the **ASGARD** Navigation Sensor by the external Ethernet interface and provides the operator with a user-friendly interface for configuration and monitoring of the system.



MAIN FEATURES

- Standardized communications interfaces (IEC 61162-1, IEC 61162-450).
- Compliant with IMO Resolutions MSC.401 and MSC.432.
- Modular approach.
- BAM compliant.
- Graphical interface.
- Multi-GNSS, multi-frequency: GPS L1C/A, GPS L5, Galileo E1b, Galileo E5a.
- Robustness and resilience to spoofing, thanks to implement Galileo OSNMA.
- Receiver Autonomous Integrity Monitoring system (RAIM).
- AIS/VDES capable 7" touch display in SAAB shipborne ecosystem.
- Wide frequency ranges from 925Mhz and 2175MHz that allows to cover all the GNSS central frequencies.
- Maximum analogue bandwidth of 80 MHz.
- Web interface allowing for configuration and service in a "black box" installation, where the CDU is not available.
- Interface for processing RTCM 2.3 data

OSNMA principle of operation

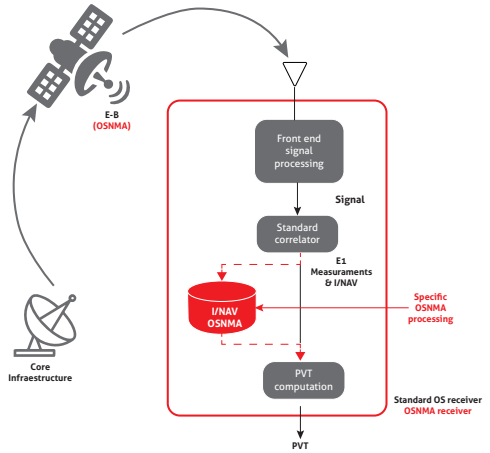


Image based on Galileo OSNMA info note