

MarGal

What is MARGAL?

MARGAL will introduce Galileo services to the maritime user community by use of EGNOS. In particular the use of differential corrections and integrity alarms will be demonstrated in order to provide more accurate and reliable positioning services, as well as providing a harmonised and seamless service from high seas to inland waterways.

The project will identify a number of business cases based on services provided by EGNOS and the Galileo positioning system. These services are related to vessel operations in ports and inland waterways.

The project will demonstrate a technological platform for these services based on EGNOS user equipment and AIS shore based infrastructure.

MARGAL aims to:

- provide inputs to standardisation and legislation work for a common infrastructure for Port and Inland Waterways;
- provide a working prototype of an infrastructure to implement the services needed to support business cases on EGNOS and Galileo;
- investigate and propose solutions to applications and business cases covering the safety and security issues connected with use of EGNOS and Galileo, both SIS and distributed signals using Local Elements;
- develop a technological platform enabling transition from EGNOS to Galileo to be cost effective from a user perspective by introducing Software Defined Receivers;
- support networks of local elements to wide area coverage and integrity monitoring



Applications

As a result of higher requirements related to security and safety both in port and inland waterway operations, a number of application have been proposed for navigation and reporting outside of the classic marine applications.

Applications like VTS (Vessel Traffic Services) is being proposed for inland waterways, enhanced

reliability requirements are becoming a cornerstone for efficient and safe docking operations. Early warning for port and lock operations requires automatic positioning devices. The MARGAL is based on AIS technology to monitor vessels and to deliver EGNOS differential corrections and integrity warning to application where direct reception of

signal is not possible.

The current EGNOS and the future Galileo integrity services can be utilised in operational applications

like remote pilotage, queue systems for ports and locks. Another key element in the MARGAL project is the implementation of Software defined receivers, making a smooth transition from EGNOS to Galileo possible.

Technical Information

At system level, the main functions of MARGAL are:

- Distribute EGNOS differential correction in Inland Waterways and Ports
 - Provide infrastructure and user terminals for EGNOS integrity monitoring and related services
 - Link integrity monitoring to practical user cases
 - Use enhanced positioning integrity in application providing better safety and security in ports and inland waterways
- Provide basis for a smooth transition from EGNOS to Galileo;
 - demonstrate the added value of Galileo by use of the EGNOS signal to complement GPS signals to add integrity navigation data;

Schedule

The 2-year project started at the beginning of 2004. The overall architecture of the demonstrator and the business model has been defined in Phase A.

The demonstration phase will last until November 2005, followed by evaluation to conclude the project in January 2006.

Phase B will contain the design and specification of the demonstrator. This will be finalised in the first quarter of 2005, and the demonstrator will be integrated and tested in the second quarter of 2005.

Consortium

The MARGAL consortium comprises leading specialists from all areas of maritime traffic monitoring, control and surveillance, and from the navigation field:

- the project is led by Kongsberg Seatex (N), which is also responsible for the system architecture, terminals and base stations
- future requirements and use cases for port applications are investigated by FDC (F)
- current needs and solutions for port operation are defined by Trinity House(UK)
- current needs and solutions for inland waterways are defined by via donau (A) in collaboration with RSOE (Hun), CRUP (Croatia) and VUD (Slovakia).

- business cases, VHF coverage assessments and result dissemination are done by Telematica (D);
- software defined receivers will be implemented by NordNav(S)

The MARGAL project is co-founded by the Galileo Joint Undertaking under the 1st call of the Galileo 6th framework programme.

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