MARITIME GALILEO – SEAMLESS HARMONISED SERVICES FOR PORTS AND INLAND WATERWAYS

The MarGal project addressed the application of EGNOS/GALILEO services to the maritime user community. In particular, it aimed to demonstrate the use of differential corrections and integrity alarms to provide more accurate and reliable positioning services, as well as establishing a harmonised and seamless service from high seas to inland waterways.

BACKGROUND

In the context of increasingly stringent safety and security requirements in ports and inland waterways, the new possibilities offered by EGNOS/GALILEO offer many opportunities for new GPS based applications for the maritime user community. The MarGal project looked at ways of taking advantage of these opportunities and developed prototype demos of new applications.

OBJECTIVES

The aim of the project was to addresses the various challenges related to port and harbour approach, navigation, monitoring and docking as well as inland waterway monitoring, precise navigation and calamity abatement. The objective was to develop new local maritime services based on EGNOS/Galileo differentiators to support coastal and inland waterways operations. In addition to functionality, MarGal also looked at issues relating to: safety and security; accuracy; integrity; continuity and availability. Specific project objectives included:

- to provide input to standardisation and legislation work for a common infrastructure for Port and Inland Waterways;
- to provide a working prototype of an infrastructure to implement the services needed to support business cases on EGNOS and Galileo;
- to 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;
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- support networks of local elements to wide area coverage and integrity monitoring.

DESCRIPTION

The current situation and expected user requirements were evaluated by MARGAL, based essentially on IMO requirements. A set of practical scenarios were identified and public demonstrations organised on this basis. For port applications, the selected scenario looked at what could be done if the inlet to a harbour is limited, and high position accuracy and integrity is needed for safe passage of two vessels. For inland waterways, the selected scenario addressed the tracking and reporting of hazardous goods, and the need for reliable position reporting in order to ensure damage control and limitation. MARGAL focused on the use of Automatic Identification Systems (AIS) and integrity monitoring using differential corrections and integrity information received directly from both Galileo and EGNOS satellites. As a local component for Galileo, AIS Base Stations were used to transmit differential corrections and integrity information. This led to the successful demonstration of port approach and calamity abatement external services.

RESULTS

MARGAL was successful in raising awareness of Galileo in the maritime and inland waterway sector, and in identifying key service areas in which Galileo may provide a benefit to the users. These services were then demonstrated using MARGAL prototype equipment. For port and harbour approaches, the key service differentiators were identified as the potential to provide an improvement in accuracy, continuity, availability and integrity (service permitting) over current GNSS services. Two public demonstrations were organised in autumn 2005, one in the Danube river in Hungary and the other in the UK Port of Harwich.

PROJECT DETAILS

Acronym: MARGAL
Name of Proposal: Maritime GALILEO – Seamless harmonized services for ports and inland waterways
Contract Number: GJU 1009/CTR/FP6/C
Classification: -
Total Cost: 3 238 363
EU Contribution: 1 273 384
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<td><strong>Duration:</strong> 24</td>
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**Project Links:** [Website](#)

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