HEDGE

HElicopters Deploy GNSS in Europe

About HEDGE

HElicopters **D**eploy **G**NSS in **E**urope (**HEDGE**) is a project commissioned by the European GNSS Supervisory Authority (GSA) and part-funded under the EU's Seventh Framework Programme (FP7).

The aim of the project is to develop and demonstrate new helicopter approach procedures as well as other EGNOS applications for general aviation. The initiative builds on the outcomes of the GIANT project (Framework Programme 6).

Most activities within **HEDGE** are directed towards helicopters, but the project also covers fixed-wing activities.

The Benefits

This project will significantly help the aviation industry by:

- Progressing new EGNOS enabled helicopter applications that will enhance safety and increase the commercial viability of helicopter operations.
- Demonstrating fixed-wing EGNOS approaches (known as APV SBAS) for small aircraft and General Aviation.
- Demonstrating a "total system concept" using EGNOS for navigation and surface/airborne surveillance.

See inside for three examples of helicopter demonstrations and flight trials being undertaken by **HEDGE**.

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The HEDGE Consortium

The nine partners of the **HEDGE** consortium include technical and management consultancies; research and development specialists; and fixed-wing and helicopters operators.

HELIOS · PildoLabs · Capital High Tech · TAF Helicopters · ROYAL-STAR AERO · AEROCLUB BARCELONA-SABADELL · rega · HELILEO The art of navigation

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Innovative helicopter applications

Unlocking EGNOS benefits

http://hedge.askhelios.com

SEVENTH FRAMEWORK PROGRAMME

GSA

Helicopter Emergency Medical Services (HEMS)

On HEMS missions, helicopters sometimes have to fly in poor meteorological conditions at all hours. This might result in HEMS missions being cancelled due to adverse weather conditions. The use of EGNOS will decrease the risk of accidents and enable a significant improvement of life-saving helicopter operations under all meteorological conditions.

HEDGE will aim to certify an Agusta 109 helicopter with Rega and perform helicopter specific Point-in-Space (PinS) approaches with EGNOS certified equipment to the Hospital at Interlaken, Switzerland. This will encompass the entire development process including the procedure description and design, operational concept and FAS datablock, demonstration flights with data logging. A technical / economic feasibility study and roll-out plan will be accompanied by required safety assessments and pilot questionnaires.

SBAS Offshore Approach Procedure (SOAP)

In the GIANT project, a new type of approach procedure called SOAP was designed for helicopter approaches to oil rigs. This overcomes a number of the limitations that are currently inherent during low visibility approaches that utilise the weather radar as an approach aid.

In **HEDGE**, prototype avionics will be constructed and demonstrated. The new SOAP approach has the following advantages over the old one:

- Less reliance on the weather radar
- Use of EGNOS gives high navigation accuracy
- New approach allows a “straight line” procedure from final to missed approach
- Positive guidance from EGNOS signal gives much lower crew workload.
- EGNOS vertical guidance is used and provides a cross-check against the existing altimeter source

Mountain rescue approach

Most air rescue helicopter operators are constrained in similar ways to HEMS - being only able to fly during day and night under visual flight rules that require minimum conditions in terms of visibility and distance from clouds.

HEDGE will demonstrate that EGNOS enabled approaches improve both the safety and service level of helicopter rescue operations in bad weather.

During **HEDGE**, an experimental avionics suite will be installed on a Eurocopter AS350 helicopter operated by TAF. This will be used on flight trials of an EGNOS enabled APV SBAS (LPV) procedure using steep approaches at La Cerdanya aerodrome in the mountainous region of the Catalan Pyrenees.

With the possibility of continuous operations regardless of the weather conditions, several Spanish rotorcraft operators and aerodromes are following developments of these flight trials with a keen interest.