EGNOS FACT SHEET

15: TO THE EMERGENCY ROOM WITH EGNOS

Last year we reported on the first helicopter trials, telling you how EGNOS had passed stomach-churning helicopter flight trials with flying colours. In this issue we are going to look at how EGNOS can be used to improve the efficiency of the Helicopter Emergency Service (HEMS).

In Western Europe today, 125 operators (civil and public) run 450 HEMS helicopters. They have two distinct missions: transport from the scene of an accident to hospital; and transportation between hospitals. Despite the fact that most of their helicopters are fitted with

HEMS: A Vital Safety Service

digital auto-pilots and are Instrument Flight Rules (IFR) certified, nearly all HEMS operations are carried out under Visual Flight Rules (VFR) even in adverse weather conditions. This is due to the lack of helicopter-specific IFR procedures and the lack of a landing system suitable for helicopter instrument approaches.

You may be wondering why HEMS is not already a significant user of GPS technology and pressing for the introduction of EGNOS. After all, we can draw on solid evidence from the US to support the fact that important safety and economic benefits can be gained from the introduction of IFR procedures. The statistics are compelling: a $500k US investment in IFR has returned $709k US over 24 months; and more than 2000 critically ill patients have been transported to hospital using IFR GPS approaches when weather conditions would have otherwise grounded the flights.

Having heard about the barriers for the introduction of IFR approaches, let's now discuss solutions for the helicopter landing system. We can state a basic set of requirements: any helicopter landing system must support steep glide slopes and multiple legs, and need little or no ground infrastructure.

We can rule out the conventional Instrument Landing system for a number of reasons, leaving GNSS-based systems. There are currently three candidates: GPS, EGNOS and ground-based augmentation systems (GBAS). Of these, EGNOS is the most appropriate because it delivers a high level of performance and needs no local ground installation.

A joint French/German team is currently validating the use of EGNOS on HEMS helicopters as part of a research programme to improve the ability of helicopters to fly in adverse meteorological conditions. They have fitted an EGNOS Test Bed User Equipment (TBUE) receiver on an EC 155-HTT helicopter. This has been coupled to the flight management system so that EGNOS-guided helicopter approaches can be flown. We look forward to reporting detailed results from this trial in a future issue. EGNOS can deliver real benefits to the HEMS helicopters by bringing helicopter IFR approaches to reality. There will be less noise at ground level, and it should be safer to fly in adverse weather conditions. Crucially, a more reliable service with fewer cancelled flights means more lives saved.