

## **Signals from space enhance GPS accuracy: first EGNOS satellite-based approaches conducted in Switzerland**

**Geneva, 17 November 2011.** Skyguide, Switzerland's air navigation service provider, has adopted its first approach procedures using data from Europe's EGNOS satellite system. The new satellite-based approaches, which have been introduced at the regional airports of St. Gallen-Altenrhein and Les Eplatures (near La Chaux-de-Fonds), have been developed as part of a research programme of the European Commission, with their development co-financed by skyguide and the Commission. The programme is intended to accumulate experience in developing and performing EGNOS-based approaches, as well as to promote their adoption in Europe. The approach paths used remain unchanged from those of existing approach procedures.

The European Geostationary Navigation Overlay Service (EGNOS) satellite system is a supplementary system which substantially increases the accuracy and reliability of satellite navigation systems such as GPS. EGNOS was put into operation in October 2009, and has also been certificated for aviation use since March of this year. Switzerland is the second country in Europe (after France) to adopt EGNOS-based approach procedures. The new approach procedures for St. Gallen-Altenrhein (to Runway 10) and Les Eplatures (to Runway 24) have been developed as part of a European Commission research programme in which skyguide has also been involved.

### **Multiple satellite-based procedures**

Aircraft wishing to make use of the new EGNOS-based airport approach procedures must carry special equipment aboard to receive and process the signals concerned. Few airspace users currently have this. Those which do not can approach St. Gallen-Altenrhein and Les Eplatures using the second satellite-based procedure which skyguide has provided at these airports in parallel to the EGNOS-based procedure. This second procedure also requires special on-board equipment, but of a kind which is already carried by a large majority of today's airspace users. The system is, however, less accurate than EGNOS, and is also less precise than the conventional instrument landing system (ILS), because it is based exclusively on GPS. In view of this, it is unusable in conditions of poor visibility. ILS will remain in operation: its replacement is envisaged, but only in the longer term.

### **Navigation from satellites instead of from the ground**

For decades now, approaches to airports have been largely based on instrument landing systems (ILS), which generate beams from the ground that enable an aircraft to precisely monitor the accuracy of its approach in vertical and lateral terms. With the new satellite-based navigation technology, aircraft can approach airports independently of the ground installations, with the pilots using satellite signals to determine their position. In doing so, the aircraft will follow the path of a set of fixed "waypoints" in a three-dimensional perspective.

**An innovation platform for introducing satellite-based procedures**

The experience gained with the new approach procedures will also be of benefit in further utilising the new navigation technology in Switzerland. Here, as part of the “CHIPS” innovation platform, skyguide is working with various partners to develop and introduce satellite-based navigation procedures. CHIPS currently extends to more than 20 projects at 15 locations throughout the country, and has already seen the adoption of two GPS-satellite-based approach procedures: one for Zurich Airport, and one for the Inselspital hospital in Bern.

skyguide  
swiss air navigation services ltd.  
media relations  
CH-1215 Geneva 15

Contact:

phone: +41 22 417 4008  
email: [presse@skyguide.ch](mailto:presse@skyguide.ch)  
internet: [www.skyguide.ch](http://www.skyguide.ch)

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Skyguide is responsible for providing air navigation services within Swiss airspace and in the airspace of certain adjoining regions in neighbouring countries. The company guides the civil and military aircraft entrusted to its care – around 3 170 flights a day or 1.16 million a year – through the busiest and most complex airspace in Europe. Skyguide is a non-profit limited company which has its head office in Geneva. The majority of its shares are held by the Swiss Confederation. The company generated total operating revenue of over CHF 365 million last year, and employs some 1,400 people at 14 locations in Switzerland. Skyguide is also a member, together with its partner organisations in Belgium, France, Germany, Luxembourg and the Netherlands, of the FABEC initiative to create a common functional airspace block that will bring greater efficiency to Central Europe’s air traffic management services and activities.

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