

# Radio-communication systems

**TELERAD** is a leader in aeronautical radio-communication systems. Its aim is to provide civil and military customers complete solutions with products and systems that are designed and manufactured in order to meet the most stringent requirements based on software-designed radios and VoIP technology. Globally recognised, the company's innovative solutions are designed to guarantee its customers quality, reliability and performance.

**T**he safety of air traffic control (ATC) remains a top priority. Technical requirements mean higher performance must be introduced. In order to face these constraints, the quality of aeronautical telecommunications is of utmost importance. To meet these needs, TELERAD has developed a complete range of products. In addition to VHF and UHF radio systems, the range extends to navigation aid systems such as VHF data broadcast for differential landing systems (GBAS – ground-based augmentation systems) and non-directional beacons. In addition, TELERAD offers R&D services and radio systems expertise to its customers.

## **VHF and UHF software-defined radios: VoIP ED-137 compliant**

The TELERAD Series 9000-2G radio systems are specifically designed to meet the operational requirements of ATC centres and commercial airports on VHF and UHF bands. Fully scalable and with growth capacity, they feature high reliability, and remote control and maintenance capability.

The 2G radios offer multimode functionality in one software defined radio (AM, FM, VDL modes) and support voice over internet protocol (VoIP) as specified in EUROCAE ED-137.

TELERAD series 9000-2G technology is ready to be integrated into new systems and ensures secured future analogue-to-IP transition for air navigation service providers (ANSPs).

## **VDB for GBAS landing systems: Cat II/III ready**

The TELERAD VHF data broadcast (VDB) system is specifically tailored to meet the VDB GBAS requirements for Cat II/III landing systems worldwide. TELERAD GBAS is composed of:

- **EM9009 transmitter:** designed to broadcast the GPS correction data
- **RE9009 receiver:** monitors the VDB signal in space
- **H-POL ANT9009H antenna:** as EM9009 transmitter and RE9009 receiver.

TELERAD also provides VDB airborne receiver modules.

## **Research and development**

The R&D department is a driving force at TELERAD. It allows the company to remain a leader in the field of aeronautical communications.

All equipment manufactured and marketed by TELERAD – from the first radio for the Merchant Navy in the 50s until the recent radios supporting the VoIP technology for ATC – were designed by the TELERAD R&D team.

TELERAD R&D expertise covers analogue and digital electronics in areas as diverse as RF transmit and receive, microcontrollers and FPGA, digital signal processing, real-time embedded operating systems and VoIP.

The study and design are based on simulation and development software, but testing and implementing remain very important, and are based on wide experience related to the 'radio' environment, such as co-site specific constraints, reliability and performance requirements.

The engineers of the R&D department have extensively contributed to the development of different technologies in the ATC field such as 8.33 channelisation, VDL modes, GBAS and VoIP.

## **TELERAD training centre**

TELERAD's training centre offers a full range of courses, improving students' knowledge and reinforcing their levels of expertise in their fields of activity. Training focuses on TELERAD products, but also deals with more theoretical areas such as electromagnetic co-siting problems, digital modulations, VoIP or radio-performance testing.

Training courses are made from an adapted balance between a theoretical part and a practical one, allowing direct application of the acquired knowledge. These practical exercises are done on technical platforms representing real on-site operating systems.

## **60 years of expertise and innovation in high-quality products for ATC**

TELERAD is an SME founded in 1950. Its mission is the design, manufacture, commissioning and marketing of radio systems for ATC in civil and military fields.

The company addresses the global market with 70% of sales generated abroad. TELERAD radio systems are operated in more than 60 countries around the world.

The quality-management system of the company is ISO 9001:2008-certified.

With more than 60 years' experience in the design and manufacture of radio systems, TELERAD is recognised as highly reliable and a provider of innovative, high-quality products. ■

**Further information**  
TELERAD  
[www.telrad.fr](http://www.telrad.fr)

