

EUROCONTROL integrates Rohde & Schwarz ATC direction finding technology into its deployment of an advanced safety technology system

To enhance the performance of air traffic control (ATC) stations and increase safety, an advanced radio direction finder system has been rolled out in a crowded segment of European airspace. A key component of the system is a precise and accurate digital direction finder from Rohde & Schwarz.

Munich, May 08, 2017 — Commercial aircraft flying in the airspace that is controlled by EUROCONTROL's Maastricht Upper Area Control Center (MUAC) are enjoying an extra measure of safety today thanks to the installation of a radio direction finding (RDF) system that employs Rohde & Schwarz products. In the first phase of a deployment that helps air traffic controllers locate and track aircraft voice communications, four RDF units have been in operational use since October 2016. The complete rollout of seven units in Belgium, the Netherlands and northwest Germany is planned by the end of June 2017.

More than 1.77 million flights pass through MUAC's area of responsibility each year, making it the third busiest air traffic control facility in Europe in terms of traffic volume. In this densely populated airspace, 25 aircraft are often being controlled at any one time in a single sector. Radiolocation based on RDF helps controllers quickly locate which aircraft are transmitting on each frequency. RDF technology accurately calculates a transmitting aircraft's area by analyzing its radio transmissions. This helps reduce call sign confusion, readbacks from wrong aircraft and crossed transmissions. Patrick Bardet, project manager at EUROCONTROL, comments: "RDF makes working with heavy traffic easier for air traffic controllers because it gives them an idea of which aircraft is calling, saving them precious seconds, especially when aircraft have similar call signs."

At the system level, all data from the different RDF stations is collected and processed centrally at MUAC. Measurement results are collected from each RDF and also at several frequencies of interest in parallel, enabling air traffic controllers to monitor the desired frequencies in their allocated flight sector.

The EUROCONTROL system uses the R&S DDF04E direction finder from Rohde & Schwarz, which features parallel direction finding on multiple channels with the same high level of accuracy on all channels. A wide-aperture DF antenna with nine antenna elements is used to collect the aircraft's radio transmission data, which is analyzed according to the correlative interferometer direction finding method. This combination provides high accuracy, sensitivity and outstanding immunity to reflections. Direction finding can be accomplished on as many as 32 channels simultaneously with the same high level of performance. Software for the flexible management of the frequency channels is embedded in the direction finder.

The European Organisation for the Safety of Air Navigation (EUROCONTROL) is an intergovernmental organisation with 41 Member States and 2 comprehensive agreement states. EUROCONTROL, together with its partners, is committed to building a Single European Sky that will deliver the air traffic management (ATM) performance required for the twenty-first century and beyond.

The Eurocontrol RDF project is co-financed by the Innovation and Networks Executive Agency (INEA).

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Rohde & Schwarz

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