



Madrid, 1 August 2012

To whom it may concern,

This letter is to provide details of the ERA's multilateration systems in Spain delivered at several airports under our Control (AENA).

Airport multilateration system at each airport is designed to provide accurate aircraft/vehicles positions and identification and to assist apron and tower controllers to safely manage airport surface traffic.

ERA's multilateration system at Madrid Barajas Airport

The largest and most complex airport in Spain in Madrid Barajas (MAD) comprising five terminals, four runways of total length 3.500 (two of them), 4.100 and 4.349 meters configured as two parallel pairs, well over 200 gates and more than 600 stands. The surface area covered by the system is more than 35 square kilometre.

Era implemented their MSS system which provides coverage with accuracy better than 7.5 meters (percentile 95) within 5 nautical miles of the airport. The system comprises 45 ground stations, of which 31 are receivers and 14 are both receivers and interrogators, and 4 reference and monitoring transponders. This represents one of the largest surface management systems in the world.

The MSS system by ERA passed Factory Acceptance Testing with ease and Site Acceptance Testing in March 2010. The implementation of this system has already demonstrated its ability to increase the flow of aircraft movements and will make the airports more efficient.

ERA's multilateration system at Palma de Mallorca Airport

After an international competition, ERA company has been awarded with two contracts by AENA to supply multilateration systems for Palma de Mallorca (PMI) and Asturias (OVD) airports.

Due to complexity of the airport configuration and the challenging requirements on the system performance and redundancy, the Palma de Mallorca installation is made of 16 receiving, 6 receiving /transmitting stations and 2 reference and monitoring transponders.

The system was installed during 2004 and had become fully operational in autumn. The system has been tested in a long-term evaluation period during the summer traffic peak and passed it with great expectation; subsequently AENA has integrated ERA's system information into the A-SMGCS system in the Palma airport.

The cooperation between AENA and ERA has been highly satisfactory and it is being proven by developing tools that will enable us to optimise not only the system certification, but also the periodical evaluation of the information reported by the system.

ERA cooperates with the Spanish company EMTE which have built up the entire infrastructure system, including the communication network and has assisted during the tuning stage.



Among others requirements, AENA had precise requisites on ground and airborne Mode A/C tracking and 100% coverage of the movement airport area with a high accuracy with position precision. These requirements have been well covered by the system, which has been proven as expected and is applicable as an A-SMGCS sensor.

Other airports under our management where we have successfully implemented ERA surface multilateration systems are Tenerife Norte (TFN) and Santiago de Compostela Airport (SCQ).

If you need any further information, please don't hesitate to contact the undersigned.

A handwritten signature in blue ink, appearing to read 'Francisca Moreno García', with some stylized flourishes.

Francisca Moreno García

In absence of: Miguel Angel Salamanca Bueno
Head of Navigation and Surveillance Division
Aena