

Case Study

Air Traffic Services of the Slovak Republic

The Challenge



Letove prevadzkové služby Slovenskej republiky (LPS SR) is the air navigation services provider of the Slovak Republic. It was commercialised on 1st January 2000 as the follow up to the Air Traffic Control Administration of the Slovak Republic.

With its headquarters at M.R. Stefanik Airport, Bratislava, LPS SR provides en-route services in the airspace of the Slovak Republic and approach and tower services at five airports around the country (Kosice, Piestany Poprad-Tatry Sliac, and Zilina)

The replacement of the existing time reference system was required to improve the quality of the time reference source to support time synchronisation of the systems for the provision of air navigation services.

The new system was to provide centralised control and monitoring of the time reference system, while utilising existing time displays at the controllers working positions.

The Solution

In total eight complete timing systems were supplied plus two Network Monitoring systems. Our highly versatile M211 Modular Time & Frequency System formed the basis of the system, which benefits from nine module slots as well as a suite of popular outputs. Hence we were able to easily accommodate variations at each user site and the customer's requirement for high reliability.

GPS was selected as the synchronising source instead of the previously used DCF to overcome reception difficulties in some parts of the country.

In addition, a module was developed especially to address the requirement of utilising the old digital time displays so the customer no longer needed to run the old and the new timing systems in parallel.

Each M211 included an NTP module (Network Time Protocol) for complete computer synchronisation.

A Network Management software system was installed for the remote control and monitoring of all the sites from Bratislava.

The Result

- The GPS receiver modules have now totally eradicated the problem of poor reception, with zero error reports.
- The time displays are working perfectly well as a result of the incorporation of the brand new module.
- All computers across the entire WAN now display the same time, which is synchronised with the time reference system. This means that a computer in Kosice ATC displays exactly the same time as the wall mounted digital time display in Bratislava.
- Since the installation of the Network Management System, all sites have been centrally monitored and configured from the Bratislava Main airport.

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M211 Modular Time & Frequency System

Configuration for Slovakia ATC

M211 Modular Time & Frequency System

- Ideal where synchronisation of many different output interfaces is required
- 9-slot module output capacity
- Choice of clock synchronisation options
- Choice of master clock accuracy
- Large range of output options
- 3 U high standard 19" rack mount
- 5 button front panel keyboard for equipment configuration and control
- Alphanumeric display of time, date and status
- Equipment configuration stored in non-volatile memory
- Synchronised to an external time and frequency source
- High accuracy internal oscillator options available
- Remotely controllable

Network Management System

- Centralised or remote monitoring and control of TFS Timing System and component parts
- User-friendly graphical interface allows monitoring in overview or detail mode
- Visual representation of instrument front
- Fault log reporting on errors occurring in the Timing System
- Monitoring Status e.g. Alarms, Software and Hardware Faults Errors, Serial number details
- Flexible options: different platforms, customisation or delivered on a pre-configured PC.
- SMS text alerts when alarms are triggered



M211 High Capacity Modular Time & Frequency System