Case Study

Leading Spanish motor racing circuit boosts efficiency, safety and security with MOTOTRBO™ Capacity Plus

Circuit de Barcelona-Catalunya

Located in Montmeló, the Circuit de Barcelona-Catalunya was inaugurated on 10 September 1991. It was a project driven by the Catalan Government, the Royal Automobile Club of Catalonia, and the Montmeló Town Council. The track is circa 4.7km in length and, with long straights and a mix of challenging corners, it is seen as a strong all-rounder circuit. The Circuit has a FIA grade 1 licence, a capacity of 140,700 spectators and regularly hosts the prestigious Spanish F1 Grand Prix, the Catalan MotoGP Grand Prix, the FIA Rallycross World Championships and the FIM Superbike World Championship.

Customer
Circuit de Barcelona-Cataluyna

Partner
Expocom S.A.

Industry
Automotive & Events

Solutions
MOTOTRBO Capacity Plus system comprising:

- 4 x SLR5500 repeaters
- 370 x DP2400e portable two-way radios
- 10 x MOTOTRBO R7 radios
- 5 x DM4601 mobile two-way radios
- Accessories including remote speaker microphones (RSMs), IMPRES™ batteries and IMPRES multiway chargers
- 3M™ PELTOR™ headsets

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Challenge

The Circuit de Barcelona-Catalunya had an ageing analogue system and, in line with the track's modernisation plans, the Circuit approached its long-term partner, Expocom, to replace this installation with a best-in-class digital radio system. Having assessed the Circuit's requirements, especially view the scalability and flexibility needed during large-scale events such as the Formula One (F1) races, Expocom recommended a MOTOTRBO Capacity Plus system with a range of radios and accessories.

Solution

Expocom installed four SLR5500 repeaters to enable eight simultaneous channels and established several initial talk groups including management, track marshals, race management, cranes, security, safety cars, start line, medical, maintenance, warehouse & logistics and pit lane. Site and race directors use the MOTOTRBO R7 radios; all other mobile teams carry DP2400e portable two-way radios or, if they are working near the track or in other high-noise environments, they wear the 3M PELTOR headsets with inbuilt MOTOTRBO radios; and, finally, control room staff use the five DM4601 mobile two-way radios to centrally coordinate operations. Expocom provided training and offers ongoing maintenance and programming; Josep Lluís Santamaría comments: "We are delighted with the way Expocom has managed the project and with the ongoing service and support they offer."

The Circuit has established calling priorities and is using the system for one-to-one, group and all user calls, in case of an emergency; and the system is heavily used. During a F1 race, for example, all 385 radios are in operation all week, with thousands of calls being made daily. The Circuit also shares a few radios with external agencies, such as ambulances and fire & rescue, so these users can also communicate with relevant groups over the Circuit's network, as well as having their own external systems. Day-to-day operations and races are managed from the control room, where, in the case of an accident, for example, teams can effectively coordinate flags, lights, safety cars, fire & rescue and medics. Teams can use the RSMs and individual calling to pass confidential urgent, critical, or sensitive messages; the system also offers a high level of encryption, to ensure communications remain secure and authentication and access control, to block a radio, were it to go missing, for example.

> "Technology, digitalisation, sustainability and communications are all key factors in the current transformation of the Circuit. The new digital radio system we have implemented gives us reliable and fluid communications everywhere on the track and significantly improves functionality. Moreover, the system is fully flexible and scalable, as well as being sustainable, as, to power it, we are using energy we have self-sufficiently produced at the Circuit. The solution is perfectly suited to our needs.
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> – **Josep Lluís Santamaría, Director of the Circuit de Barcelona-Catalunya**

Benefits

The new MOTOTRBO Capacity Plus system is playing a key role in the modernisation of the Circuit de Barcelona-Catalunya, as it now has an advanced, long-term, scalable radio communications solution offering reliable, robust, and secure communications and enhanced functionality. User feedback has been very positive; they especially appreciate the more organised communications and the voice quality; indeed, thanks to the exceptional AI backed audio and suitable accessories, teams can always hear and be heard first time, which is essential, especially in the time-critical environment of motor racing.

Incidents can be managed more effectively with reduced response times, and coordinated teams can work more productively, ultimately resulting in increased operational efficiency and enhanced visitor experience. Sustainability is also a key component of this new system, since battery charging is carried out with the energy generated by solar panels installed at the Circuit. Finally, although the Circuit is solely using the Capacity Plus system for voice communications at this stage, moving forward, it is aware of the options of GPS tracking, messaging, and further integration to suit its future requirements.

Benefits

- Intelligent system with improved functionality, such as dynamic grouping, private calling, and smart, long-life batteries
- AI-backed noise cancelling technology teamed with suitable headsets and accessories for optimal audio clarity
- Stronger coverage across all areas of the Circuit
- Increased operational efficiency and worker productivity
- Improved, faster, more coordinated incident response for enhanced Circuit safety
- Secure communications thanks to system encryption, authentication, and access control
- Long-term, fully scalable system with wider integration capabilities

To learn more, visit:
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