BONDING MOBILE ROUTERS FOR EV MOTORSPORTS CONNECTIVITY

HIGHLIGHTS

The Lestrup Racing Team is a group of Swedish engineers and developers that create fully electric racing vehicles and organises racing series events like the NXT Gen Cup.

The team manages a large amount of data, including GPS tracking and CAN bus car data, which must be transmitted from race cars to the team garage. To handle this, they needed reliable Internet support at all times.

They equipped each race car with our RUTX12 mobile routers, while the team garage was set up with the RUTC50 5G router, the TRB500 5G gateway, and Starlink. Bondix® by SIMA GmbH bonded each connection, enabling high-speed connectivity essential for the team's operations.

THE CHALLENGE – HAS ANYONE SEEN SUBLIME CONNECTIVITY?

Recognising the effects of CO_2 being spit from gasoline-driven vehicles, sustainability is prioritised across multiple sectors, including motorsports. So, electric vehicles (EV) and racing events dedicated to them, like the NXT Gen Cup, are starting to take off, and it's easy to see why.

EV motorsports are not only better for the environment, but also offer advanced technological benefits that enhance the racing experience for drivers and teams alike. Plus, they're setting new benchmarks by focusing on data-driven strategies, proving that there's more to racing than just speed.

Our partner, the Lestrup Racing Team, is well-aware of this: organising racing events, putting electric race cars on the track, and delving deep into each EV's racing and engineering metrics, like telemetry, live position tracking on the track, and car and driver status. The Lestrup Racing Team also educates drivers on a wide range of features, functions, and quirks of their EVs, all to achieve that sweet spot of peak performance and viewing pleasure.

However, no matter how great this sounds, without reliable Internet connectivity—it's impossible. All the data for in-depth diagnostics need to be transmitted from vehicles to the team garage using network connectivity. And with race cars speeding around and events taking place in remote locations, it's not exactly a walk in the park.

Fortunately, the Lestrup Racing Team decided to trust Teltonika and Bondix to provide a reliable and exceptionally fast source of connectivity at all times.

TOPOLOGY
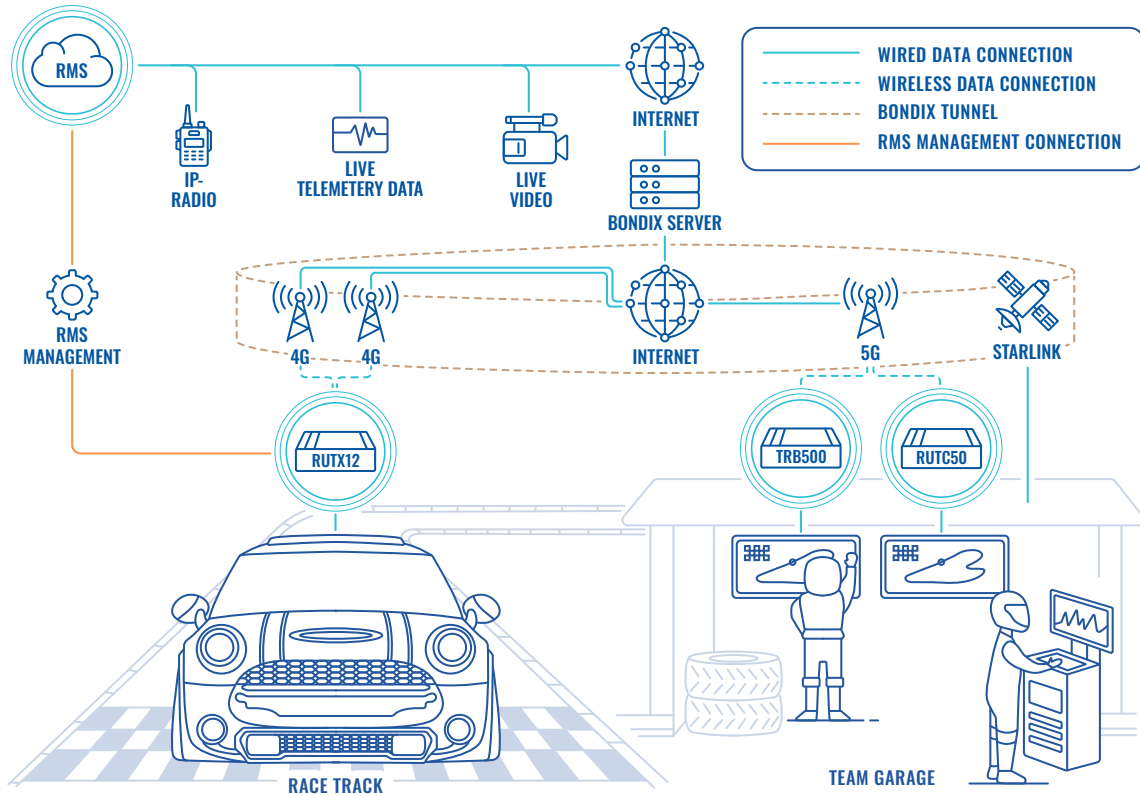
THE SOLUTION – BEEP BEEP, MOBILE ROUTERS ARRIVING

The Lestrup Racing Team equipped each of their 20 electric racing cars with a RUTX12 mobile router. At the team garage, they installed Starlink along with Teltonika's RUTC50 Wi-Fi 6 router and TRB500 IoT gateway, both featuring 5G modems. All devices are boosted by Bondix's WAN bonding technology.

Each RUTX12 mobile router has five RJ45 Gigabit Ethernet ports, which plug into real-time data acquisition systems for data transmission to the team garage. Transmitted data includes live HD video feeds, vehicle location, and CAN bus data – all for the sake of ensuring top vehicle performance and health. Additionally, the RUTX12 has Wi-Fi, enabling IP radio communications.

Thanks to its dual 4G LTE modules that work simultaneously, the RUTX12 is perfect for Bondix's WAN bonding magic, combining two mobile connections from separate SIM card carriers to deliver cellular speeds of up to 600 Mbps. This is exactly what the solution yearns for, as data transmission in real time is a top priority.

5G modems offer exceptional mobile speeds, and integrating the RUTC50 5G router and TRB500 5G gateway provides the team garage with robust connectivity. However, a significant connectivity boost also comes from adding Starlink, which is connected via one of the RUTC50's RJ45 ports. The WAN bonding of these three devices provides the team garage with cellular speeds of up to 650 Mbps—truly impressive for remote racing locations.

Each RUTX12 mobile router connects to the RUTC50 via an established Bondix tunnel for secure data transmission, keeping the entire team connected and data flowing seamlessly, enabling to push racing results higher and higher.

Another key player in this setup is Teltonika's Remote Management System (RMS). It's a true game-changing IoT platform that simplifies management of all Teltonika's networking devices that make this whole IoT solution possible.

RMS allows for remote management of all Teltonika routers and gateways, eliminating the need for manual, individual maintenance. This is especially crucial when a car is tearing around the track and any connectivity issues need an instant fix.

As a bonus, RMS is the tool that enables the Lestrup Racing Team to attain real-time insights into detailed metrics from the routers along the track, like temperatures, connection types, signal strength, and more, ensuring every mobile router employed stays in top shape for many more thrilling races to come.

Having robust and reliable networking devices by your side takes a lot of stress off your shoulders, and when mobile connections are bonded, connectivity issues definitely won't appear on your 'risks' list.