5G ROUTER FOR REMOTE CONSTRUCTION WORK

HIGHLIGHTS

- SmartUniversal is a Turkish company specialising in smart and autonomous technologies for construction, logistics, and farming. Its autonomous and remotely operated excavator platform, EXCABOT, is equipped with a sophisticated control system that allows an operator to control its movements and functions remotely.
- To enable seamless data transfer from the EXCABOT to its control unit, monitoring centre and analytic system as well as allow remote access to the operator, a reliable connectivity device with maximum speed and minimum latency was needed.
- Supporting 5G technology, the RUTX50 industrial router can reach ultra-high cellular speeds of up to 3.3 Gbps and latency of single-digit milliseconds, making it possible for the machine and its remote operator to remain synchronised at all times.

THE CHALLENGE – REMOTE CONSTRUCTION WORK

As the march of innovation moves ever forward, our lives become easier and more comfortable. However, while many of us have the luxury of working from home in our slippers, or even from a beach resort with a good Internet connection, not all jobs enjoy the luxuries of remote work.

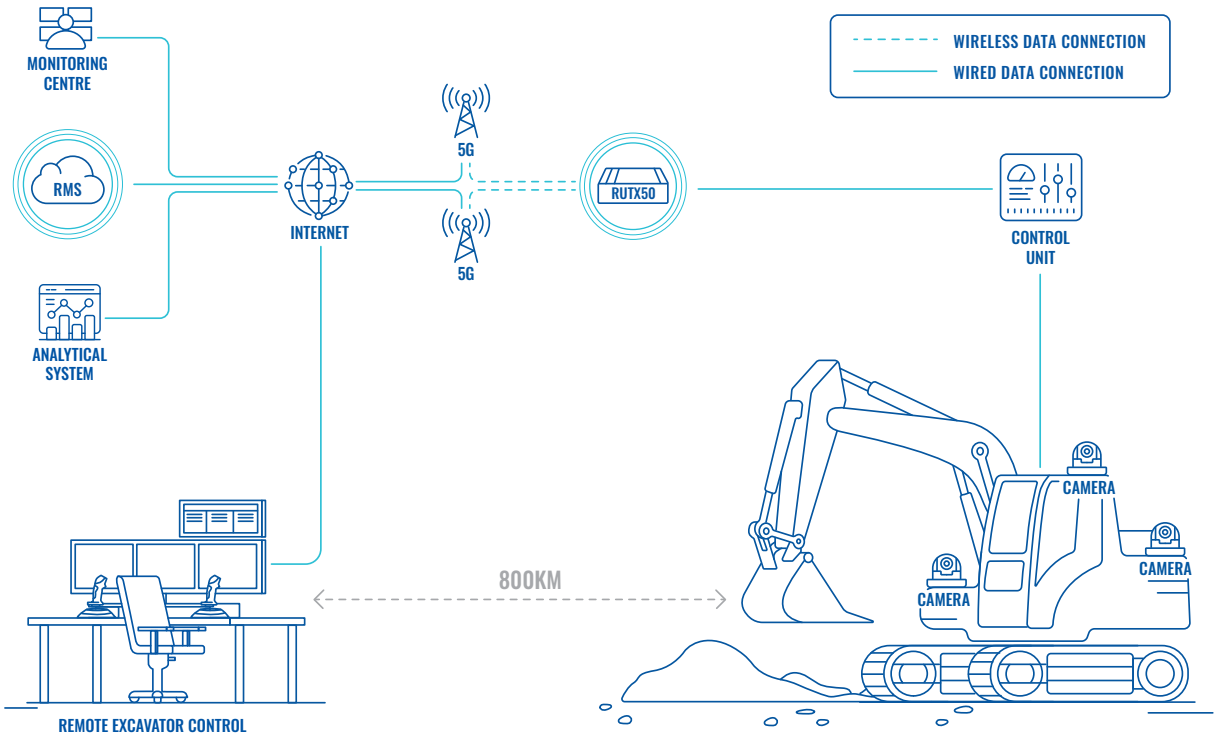
Imagine a construction worker operating heavy machinery, like an excavator. The nature of their job not only means they have to be on-site but also that their work environment is far from comfortable. Icy cold, scorching heat, dust, mud, rugged terrain, and the list goes on and on. And that's without even mentioning work that needs to be done in hazardous environments.

They probably would work from home if they could, but building an entire paved road from scratch isn't a task a makeshift home office can help with. However, this didn't stop innovators from coming up with remote solutions in which the operator can utilise technologies to operate heavy machinery from a remote station that comes with all the comforts we've come to enjoy.

Recognising this challenge, our Turkish partner, SmartUniversal, has developed an EXCABOT, an autonomous and tele-operated excavator platform.

To ensure seamless data transfer from the EXCABOT to its control unit, monitoring centre and analytic system as well as allow remote access to the operator, a reliable connectivity device with maximum speed and minimum latency was needed.

TOPOLOGY



THE SOLUTION – 5G ROUTER PAVES THE FUTURE

The EXCABOT is equipped with a sophisticated control system that allows an operator to control its movements and functions remotely. But even the most advanced remotely operated excavator platforms need reliable connectivity to perform at their best. That's where Teltonika RUTX50 industrial 5G router steps in!

The Internet connection provided by the RUTX50 can reach a speed of up to 3.3 Gbps and latency of single-digit milliseconds. It is precisely this robust performance boost that enables the remote operation of such machinery, making it so the remote operator and on-site machine work in seamless synchronicity.

In addition, the RUTX50 enables real-time 360-degree vision streaming from cameras integrated into the EXCABOT. These high-resolution cameras provide a full panoramic view, enhancing safety and operational awareness. Thanks to the ultra-fast 5G network, the video feeds are transmitted with next to zero delay, ensuring the operator receives clear and up-to-date visuals at all times.

Another key advantage of the RUTX50 is its Ethernet connectivity, which ensures a stable and uninterrupted link between the control unit and the router. By connecting directly via an Ethernet port, the system eliminates the risk of wireless interference, delivering low-latency data transmission for precise machine control. This robust wired connection is critical for industrial applications where reliability and real-time responsiveness are non-negotiable.

Lastly, here at Teltonika we believe that IoT solutions can't be too secure! That's why our RUTX50 5G router supports a myriad VPN services, including OpenVPN, IPsec, ZeroTier, Stunnel, and many more, ensuring security of highest standards.

Do you think that 5G upgrade could benefit your project? If so, don't wait too long – get in touch with us and see how our connectivity devices could benefit your IoT solutions!