CELLULAR ROUTER FOR THERMAL RESPONSE TESTS

HIGHLIGHTS

- Ello Research is a French engineering and design company, utilising the SaaS model to provide cloud-hosted applications to their clients.
- For its construction site TRT networking solution, Ellen Research needed a dual SIM cellular router with an RS485 interface to enable reliable connectivity for telemetric transmission.
- Our RUT906 LTE router is the perfect device for the job, featuring auto-failover, a dedicated RS485 interface, and support of additional key serial interfaces – all at an affordable price.

THE CHALLENGE – CONSTRUCTING FROM THE UNDERGROUND UP

When we think about construction sites, we often fixate on the equipment above ground. Cranes, bulldozers, excavators, etc. all come to mind.

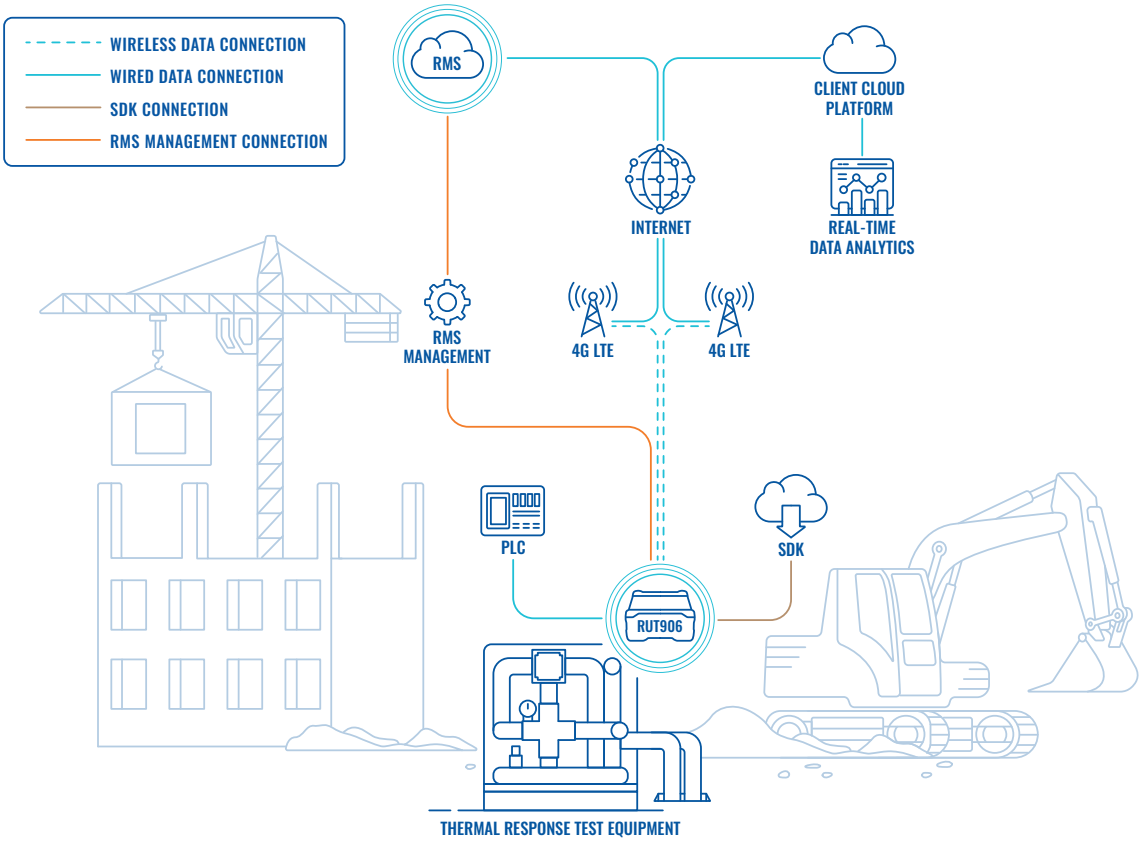
But in reality, the underground deserves just as much attention.

Geothermal ground source heat pumps and seasonal thermal energy storage systems, for example, are an essential part of the infrastructure being built in construction sites. For these to be built, a thermal response test (TRT) must be conducted. This test is an indirect way to determine the thermal properties of the ground, so that construction can be planned with these properties in mind.

TRTs involve measurement equipment and a PLC to control said equipment. In order to maintain the acquisition of real-time data, which is vital for accuracy, the equipment needs to be connected to the Internet. This way, the data can be remotely collected in a dedicated cloud server and the test operation can enjoy remote monitoring with maximum efficiency.

Our partner, Ello Research, needed a cellular router for its construction of geothermal projects in France; an LTE router capable of enabling remote management, maintaining a steadfast connection, and having a few failsafe tricks up its metallic sleeve.

TOPOLOGY



THE SOLUTION – STABLE CONNECTION FOR STABLE CONSTRUCTION

Ello Research chose the Teltonika Networks RUT906 industrial cellular router for its TRT networking solution deployed in geothermal projects.

An SDK (Software Development Kit) embeds custom code into the PLC, laying down the foundations for telemetric transmission. Connected to that PLC via a dedicated RS485 interface, this 4G router provides LTE Cat 4 connectivity to the solution. In turn, this enables smooth, real-time data transfer from the PLC to Ello Research's dedicated cloud server.

RS485 isn't the only serial interface supported by the RUT906. It also supports RS232, as well as a host of industrial protocols, including MQTT, BACnet, OPC UA, and more. All these combined don't translate to a hefty price though – the affordability of this cellular router is among its key strengths.

In addition, the RUT906 is a dual SIM cellular router equipped with auto-failover, backup WAN, and other switching scenarios. This allows not only for two separate ISPs, but for automatically switching between them in case of any network interruption. The result is a stable, uninterrupted connection and a reliable, real-time data transfer.

Since this solution requires remote monitoring and management capabilities, Ello Research also utilises our Remote Management System (RMS). RMS allows for the remote configuration of the RUT906 4G router, as well as remote monitoring and access to the PLC via RMS Connect.

Together with this remote management tool, the RUT906 cellular router enables the remote data transfer needed for efficiently and affordably when conducting TRTs. When it comes to robust connectivity and serial interface support, the RUT906 is the perfect choice.