

OPTIMIZED USE OF RESOURCES IN HVAC SYSTEMS

SUMMARY

Any residential, commercial, or industrial building requires a Heating Ventilation and Air Conditioning (HVAC) system. Consumers usually do not notice the significance of HVAC in everyday life as long as it functions properly. However, whenever there is any failure in any part of the HVAC system, the effects are felt immediately. Since the HVAC system not only provides heating and ventilation but also ensures appropriate humidity levels, temperature control, removes dust, odours, bacteria, and increases the overall quality of air, seamless functioning of these systems are especially important in industrial use.

CHALLENGE

HVAC systems are quite complicated in the sense that they have many different components that are all interrelated. If one of them stops functioning as it should, the whole system might be affected and discontinue working. While the system itself does not require internet, adding connectivity enables managing it remotely and, as such, early detection or even prevention of any issues in the system.

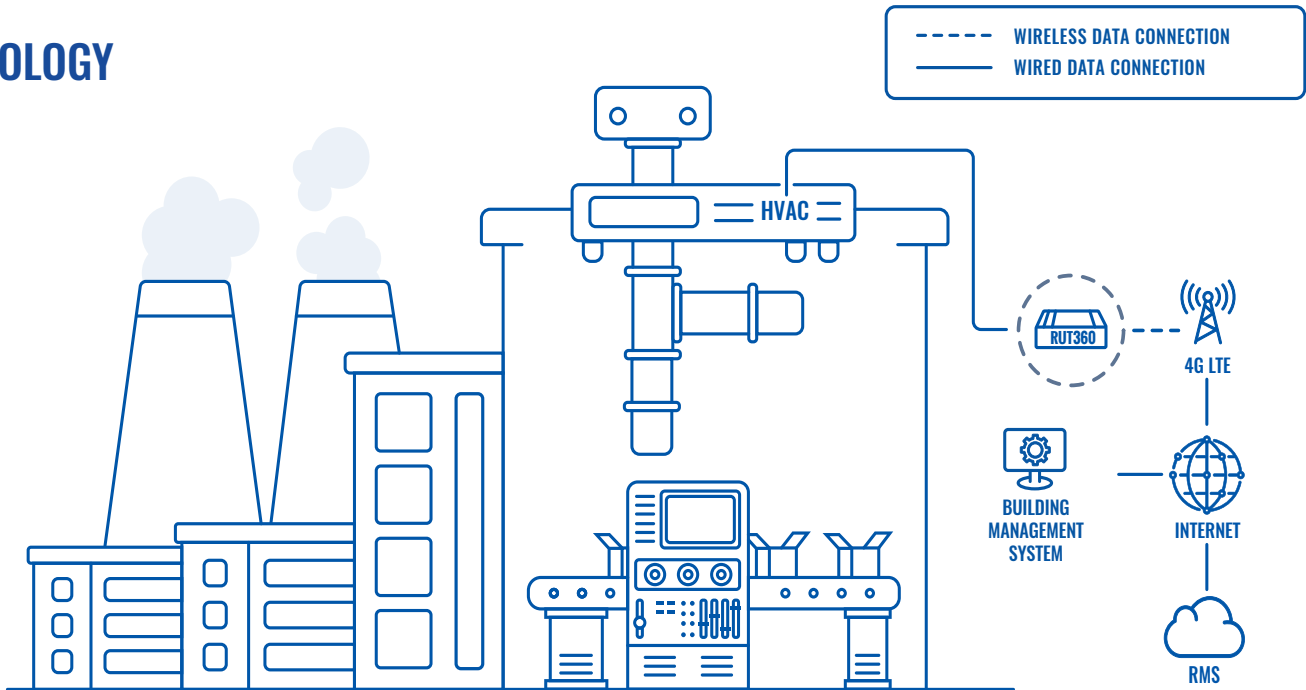
Another challenge is related to efficiency and resource optimization. As you may imagine, such systems consume a lot of energy, and therefore making data-driven changes and automation could result in significant financial and environmental benefits.

While internet connectivity is often limited in remote industrial locations, choosing a cellular router ensures a reliable connection. The only way a manufacturer or integrator can ensure their top-quality service is when the solution has a stable, uninterrupted connection. The same applies to the benefits gained by data collection - it will only be consistent if gathered continuously as opposed to intermittently.

SOLUTION

The Teltonika Networks RUT360 industrial cellular router connects to the HVAC system via Ethernet cable. Internet connectivity enables easy integration with the Building Management System and remote management of the HVAC infrastructure.

TOPOLOGY



RUT360 is an LTE Cat 6 router with Carrier Aggregation capability, making it perfect for industrial application scenarios, where the connectivity options are limited. Carrier Aggregation which comes with LTE-Advanced functionality allows to maximize bandwidth even in locations with poor signal. Even though this IoT solution does not require high data throughput, Carrier Aggregation ensures the connection is stable and reliable.

The Building Management System collects data using the MQTT protocol and analyses it for predictions and optimization. The reports provide valuable insights on where energy exploitation could be reduced and allow automating processes. Remote management comes in handy for scheduling the operation of various devices and amending these schedules as per changing needs.

BENEFITS

- Increased efficiency – data-driven decisions help cutting energy consumption and more streamlined automated operation of the HVAC system.
- Wide temperature range – RUT360 is a professional device in a sturdy aluminum housing, which can operate in environments from -40C to 75C.
- Reliable connectivity – LTE Cat 6 with Carrier Aggregation ensures a stable and reliable connection.
- Remote support and warranty service – remote access to their devices save travel time and finances for manufacturers as they may troubleshoot and resolve the issue from their office.
- Remote Management System (RMS) – offering varied functionalities, RMS not only allows remotely managing Teltonika Networks devices but also the whole infrastructure of the solution via RMS Connect. In case of lost electricity, it sends out a “last breath” notification, which is crucial for a timely reaction.

WHY TELTONIKA NETWORKS?

Teltonika Networks is a highly experienced manufacturer of cellular industrial networking devices. Working with a variety of different projects across the globe provided valuable insights. It enabled us to create products that are reliable, user-friendly and tailored for specific purposes. Staying close to our clients long after the sales process is complete gave us a competitive advantage while improving our products, processes, and services.

