# EASY & CUSTOMIZABLE REMOTE CAPABILITIES FOR SIEMENS PLCs

## HIGHLIGHTS

- Master Chips is a distributor of electronic components in the Belgian and Dutch markets with over 30 years of market experience. It maintains a strong focus on IoT and M2M communication and connectivity.
- Enabling remote capabilities to Siemens PLCs requires costly licenses. Seeing this growing market need, Master Chips set out to create a solution that would bypass this restriction.
- With some help from our R&D team, Master Chips developed a customized Python code for our RUT956 that provides end clients with easy, direct, and fully customizable remote access to and management capabilities of Siemens PLCs.

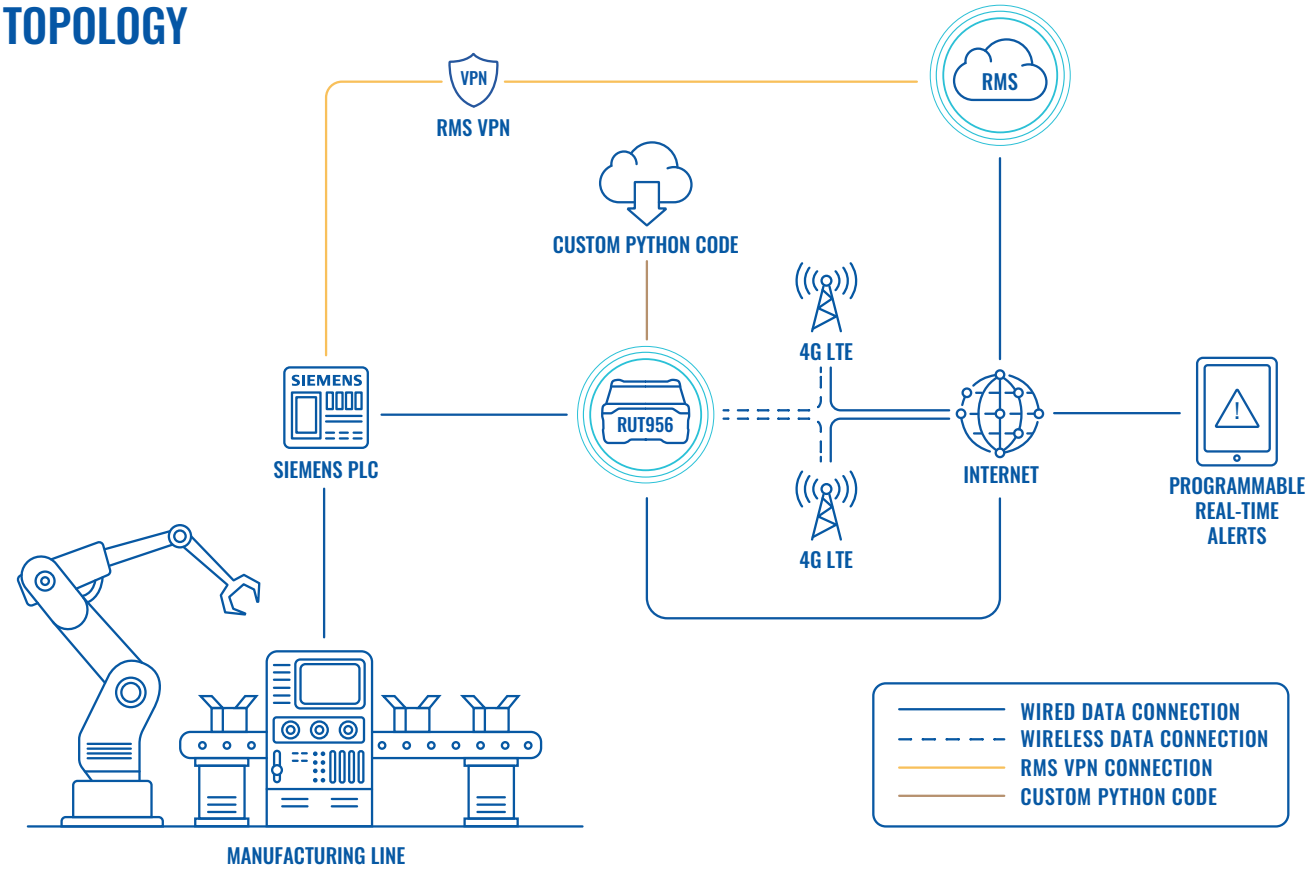
## THE CHALLENGE – LICENSE LIMITATIONS

Where there is technological progress and automation, there is also bureaucracy. In the case of manufacturing lines, progress comes in the form of implementing remote monitoring and management capabilities. Ideally, your fleet of PLCs on the manufacturing floor should be monitored 24/7 and instantly notify you when something requires you to act. The technology for that is widely available and quite affordable, so why isn't everyone using it?

The simple answer is licensing. The PLCs are not an open-source product anyone can freely add features to – they are produced by Siemens, and adding such remote capabilities requires acquiring costly licenses.

But what if there was a simple, more affordable way that doesn't involve making any changes to the PLCs? What if an external solution could act as a mediating bridge between you and your PLC? This is the growing need Master Chips saw in the market, and together with Teltonika Networks, they set their mind to create such a solution. It is here that IoT connectivity rolls up its sleeves and turns the complex and restricted into the simple and accessible.

# TOPOLOGY




# THE SOLUTION – PYTHON COILS AROUND THE PROBLEM

One of the great features of Teltonika Networks devices is the Package Manager, which lets you install additional software to the device. Master Chips chose our RUT956 cellular router for the job and got help from our R&D team in developing a customized Python code for the router's software, as RutOS supports Python as of version 7.02.

With RUT956 connected to a PLC via Ethernet, this code allows the router to be a bridge between the PLC and the world of remote capabilities – using Siemens's own S7 Communication protocol (S7comm). S7comm runs between Siemens PLCs of the S7 family and is used for programming a PLC and accessing and exchanging its data. In particular, Master Chips' solution utilizes two of S7comm's instructions: PUT for sending data and GET for receiving it.

Using PUT/GET communication, this solution enables the monitoring of the PLC's alarms and the execution of actions to those alarms triggering, such as sending an SMS. Since the solution is highly customizable, it also opens up the door to easily-adapted customizable alerts for specific needs and industrial scenarios. The end client can decide which alarms they want to monitor, what actions should be taken, and how should those actions be executed.

RUT956 was chosen in no small part for its reputation as a bulwark of high reliability and performance, as well as adaptability for more unique applications like this one. It delivers LTE Cat 4 connectivity with Dual SIM failover, ensuring an interrupted connection. In addition, the router's serial interfaces are crucial for connecting any additional legacy machines to the solution, as they typically don't have Ethernet ports.

On top of that, RUT956 is packed with advanced software features, like Modbus, SNMP, TR-069, NTRIP, MQTT, and multiple VPN services. It's also compatible with our Remote Management System (RMS), enabling easy remote access to the PLC and the remote reading and writing of data with RMS VPN.

In short, this solution takes away the restrictions that come with Siemens PLCs and provides easy, direct, and fully customizable remote access and management capabilities. RUT956 seals the deal by ensuring reliability and performance. In short, this router and solution don't let you down.