# GWG GATEWAY

USAGE IN **SCADA - PLC** MODBUS COMMUNICATION USING SD-WAN AND MOBILE TECHNOLOGIES

Geneko GWG gateway is designed for rapid in-field deployment. By relying on cellular networks rather than fixed wired lines, Geneko GWG gateways can be deployed virtually on any location with cellular coverage, making it an ideal solution for connecting remote sites with inadequate infrastructure typical for utility systems edge. On the other hand, last couple of years many of vendors and providers have been increasingly deploying different implementations of SD-WAN (Software Defined Wide Area Networks) technologies, not only for fixed wired access but also for mobile. SD-WAN could be also widely used for IoT (Internet Of Things) technologies. This document describes GWG cellular usage in IoT environment with special accent on connecting PLC in industrial enviroment with Scada systems.
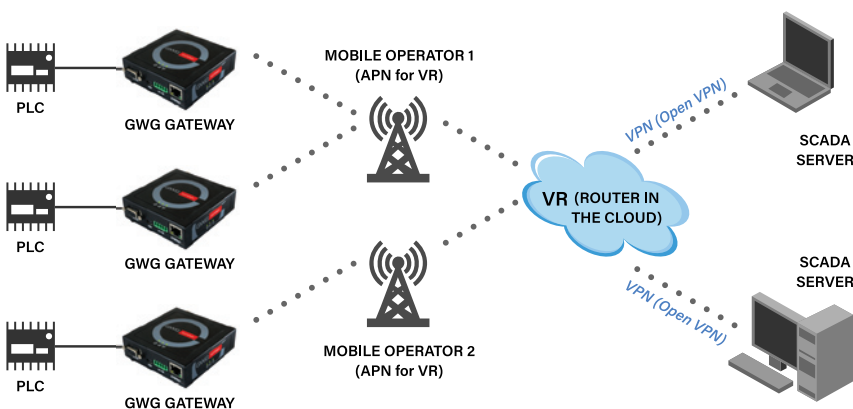
Network scenario

Some of global mobile providers have started to offer SD-WAN solutions with special accent on IoT. Those solutions are in most cases cloud based, easy to deploy and user friendly with high level of automation. For our demonstration we have used one of mobile providers with coverage in many countries. That means that one SIM card can be deployed in all covered countries without restrictions of roaming and local providers' settings (global provider has signed the agreements with local partners in covered countries).
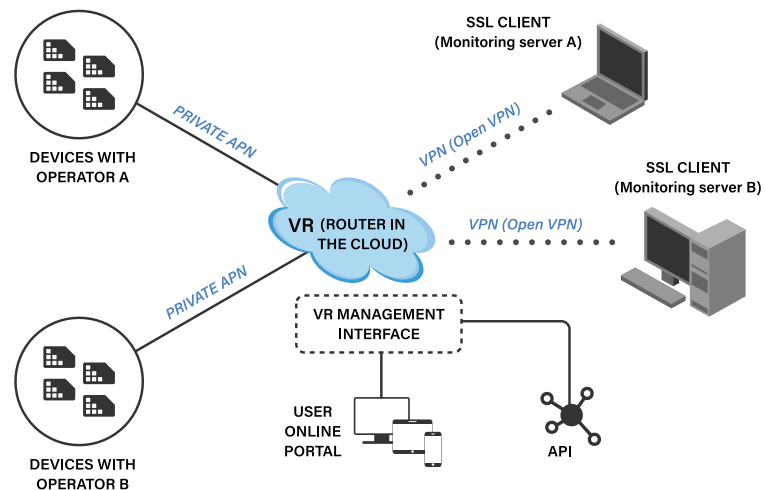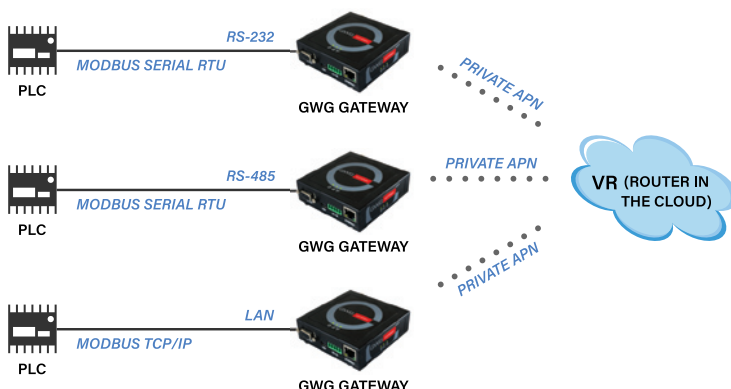

Connection between VR members: SIM cards and Open VPN connected devices

On web based user portal it is possible to monitor usage of every SIM cards in company device fleet and there is special option to define one or more so called virtual routers (VR). VR is actually layer3 VPN (router in the cloud) able to provide communication between VR members: SIM cards and SSL connected devices (typical case are computers/servers with software for monitoring).

On user portal we can easily pick up some SIM cards from company device fleet and include them into VR. On the other side, on every VR there is an option to create one or more SSL certificates and export them to different computers to be placed in openvpn client config file. In this way both SIM cards and SSL devices are connected into same VR. Once in VR, full IP communication between SSL clients (computers) and GWG gateways with SIM cards is enabled. On GWG mobile settings we always use same APN (provided to us by provider) regardless of geographical region and country.

Modbus SCADA – PLC deployment

After creating VR and importing SSL clients and SIM cards there is almost limitless IP connectivity between SSL computers and GWG with SIM cards: almost all TCP and UDP are opened and we can easily deploy any kind of server – client software for maintenance and monitoring.

With all these in mind it is very easy to deploy SCADA – PLC communication. SCADA software can be installed on SSL clients and PLC could be connected on GWG LAN or serial RS232 and RS485 ports (both TCP/IP and serial RTU modbus protocols are supported).

Advantages

It is very easy, simple and relatively cheap to deploy such solution:

- No need for wired network infrastructure on PLC sites. Cellular coverage is simple enough
- Same SIM and APN can be used regardless of country and local providers
- GWG can be relocated geographically without need to change network/mobile settings
- GWG can be easily managed from SSL server via http/https and ssh connections
- SSL client/server need just Internet connection and openvn client - easy for relocation.

Constant use of same APN regardless of geographical region, country and operator

CONTACT US

Geneko Support Team
e-mail: gwrsupport@geneko.rs

Bul. Despota Stefana 59a
11000 Belgrade • Serbia
Phone: +381 11 3340-591
www.geneko.rs

Possibility to use LAN, RS232 and RS485 ports on GWG Gateway depending on types of PLC devices