

Virtual Access Substation Gateways



Protocol Gateway Summary

- IEC 62351, DNP3, IEC 62443, Modbus
- RS232, RS485
- Digital I/O
- Conversion at remote site
- Central site application available
- Deploy to same device everywhere to simplify maintenance
- Substation-hardened device
- Two seconds last GASP power

Key Benefits

- Supports existing protocols
- Supports IEC 612351 for future proofing
- Single device provides multiple functions
- WAN interfaces include 4G, fibre, DSL, dual radio, Ethernet
- IP-rated, rugged device
- Last GASP message for power failure
- Rugged: high isolation options on the PSU and interfaces
- Vibration and mechanical to EN standards
- Roadmap includes analogue I/O and sensor inputs

Introduction

Distribution System Operators (DSO) typically use a variety of outstation devices, master systems and protocols. Each new protocol increases the test, maintenance, deployment and IT system overheads, so most DSOs are looking to consolidate around a master running a specific protocol for SCADA.

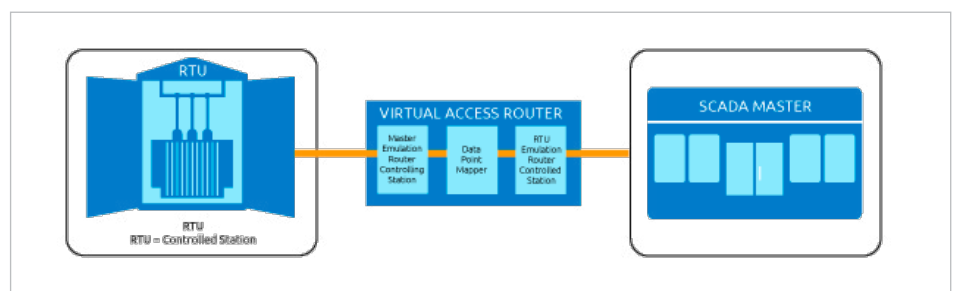
Virtual Access Mini RTU

Virtual Access substation hardened gateways include a function called Mini RTU that provides protocol conversion allowing the DSO to consolidate on a single protocol. Even if it is not one of the protocols listed above, we are continually adding protocol support and can implement non-standard protocols.

Mini RTU includes the following functionality:

- For connection to the master, it emulates an RTU that is the controlled station function.
- For connection to an RTU, it emulates a master that is the controlling station function.

A data point mapper maps between the master and RTU protocols providing completely generic mapping between outstation and master, meaning that it can work with any outstation or master device.



The protocol table below shows the protocols currently available.

Protocol	Router = Controlled Station	Router = Controlling Station
IEC 60870-5-104 (TCP)	Yes	Yes
IEC 60870-5-101 (Serial)	No	Yes
DNP3 Serial	Yes	Yes
DNP3 TCP	Yes	Yes
Modbus TCP	Yes	Yes
Modbus Serial	Yes	Yes
IEC 61850	Yes	Yes

Management

A key difference in our solution is the carrier-grade Activator provisioning and monitoring system designed to scale to tens of thousands of devices. This means that devices do not need to be pre-configured and can be installed without staff skilled in networking. The solution allows the DSO to maximise the level of process and field deployment automation by integrating with northbound IT systems and enables devices behind the VA router in the substation's cabinets to be configured identically, while still being individually addressable from the central SCADA systems.

