CGI Telemetry Insights

DNP3 Analyser

Analyse the health of your SCADA communications network using CGI's Telemetry Insights

CGI Telemetry Insights gathers detailed metrics on the performance and availability of every RTU and displays results in a simple web interface.

Features

Broad compatibility

Designed to work seamlessly with any SCADA system using the DNP3 protocol by analysing packet capture (PCAP) files captured on the SCADA master host.

High scalability

Proven in environments with over 3,000 RTUs generating more than 300 DNP3 packets per second.

Comprehensive decoding capabilities

CGI Telemetry Insights decodes across analogs, counters, binary inputs and outputs, time sync operations, files, and more—almost all DNP3 groups and variations are supported.

Key benefits

- Identification of previously unknown RTU and communication network issues, accelerating repair cycles and reducing service impact.
- Enhanced telemetry quality, supporting improved decision-making across operational and planning teams.
- On-demand analysis of significant network events (e.g. storms) to evaluate and review how well the network performs during heightened activity periods (*on-prem version only*).
- Increased infrastructure resilience, helping to anticipate risks and ensure continuity of service.
- Provides baseline view of communications network health with a single pane of glass view highlighting areas of concern.

FEATURES

- Available as on-prem 24x7 solution or via ad-hoc service provided by CGI.
- Works with any SCADA platform that uses DNP3 to communicate to RTUs.
- Supports TCP and UDP traffic.
- Can analyse data from RTUs connected permanently to SCADA master, as well as transient inbound connections established by low-power RTUs.
- Works with industry standard PCAP file format.
- Web-based display provided to view results.

DNP3 DECODING

All variations supported for the following groups:

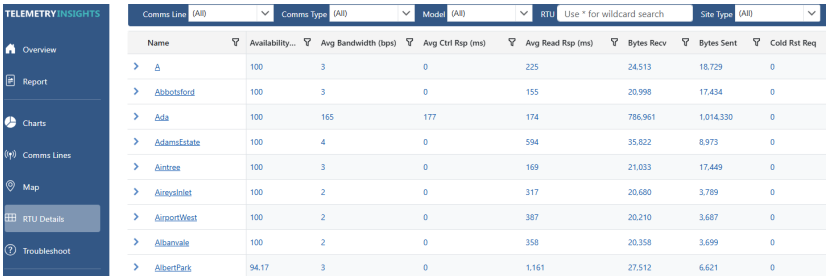
- g1 Binary Inputs Static
- g2 Binary Input Events
- g3 Double-Bit Binary Inputs Static
- g4 Double-Bit Binary Input Events
- g10 Binary Outputs Static
- g11 Binary Output Events
- g12 Binary Output Commands
- g13 Binary Output Command Events
- g20 Counters Static
- g21 Frozen Counters Static
- g22 Counter Events
- g23 Frozen Counter Events
- g30 Analog Inputs Static
- g31 Frozen Analog Inputs Static
- g32 Analog Input Events
- g33 Frozen Analog Input Events
- g34 Analog Input Deadbands
- g40 Analog Output Status
- g41 Analog Output Commands
- g42 Analog Output Events
- g43 Analog Output Command Events
- g50-52 Time Information
- g60 Class Information
- g70 Files
- g100 Floating-Point
- g110-111 Strings

Web-based interface

An easy-to-use self-contained web application provides access to detailed analysis results. No internet access* required.

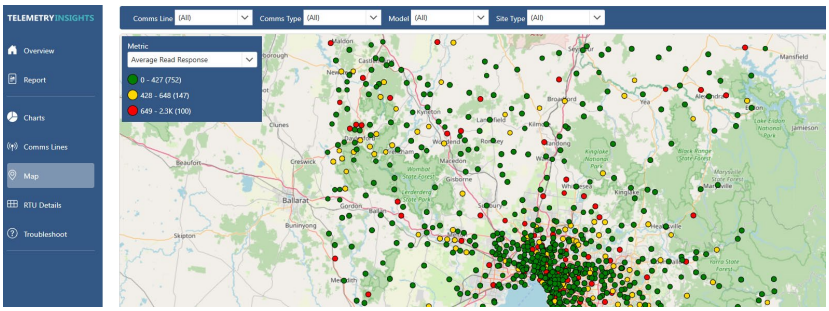
Details

View and filter metrics on an RTU-by-RTU basis. Filter and sort on any column. Export data to Excel for further analysis.



Map

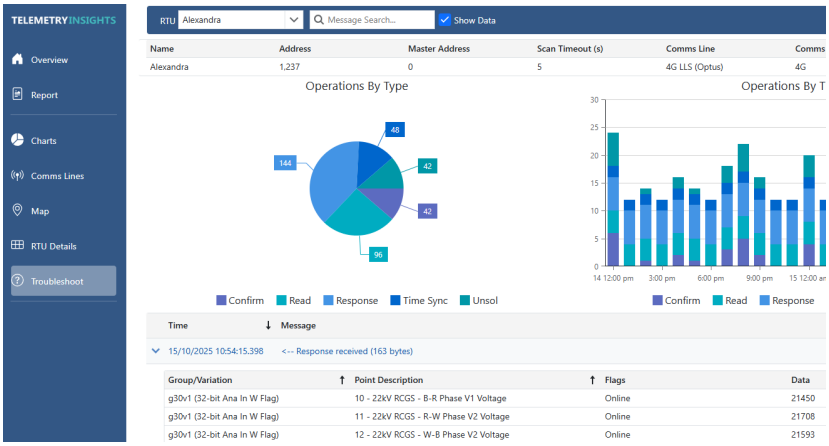
View colour-coded metrics on a map display to find patterns in data based on geographic region.



**Map currently requires access to OpenStreetMap servers to display map background tiles. A future version will allow map tiles to be downloaded from an on-prem map server such as ArcGIS.*

Troubleshoot

View details of every DNP3 packet sent to and from every RTU, including data values.



METRICS

- Availability
- Average Bandwidth
- Average Control Response
- Average Read Response
- Bytes Received
- Bytes Sent
- Cold Restart Requests
- Control Requests
- Control Responses
- Errors
- IIN Class 1 Events
- IIN Class 2 Events
- IIN Class 3 Events
- IIN Config Corrupt
- IIN Device Trouble
- IIN Local Control
- IIN Need Time
- IIN No Function Code Support
- IIN Object Unknown
- IIN Operation Already Executing
- IIN Parameter Error
- Link Messages Received
- Link Messages Sent
- Maximum Read Response
- Minimum Read Response
- Point Reports
- Read Requests
- Read Responses
- Timeouts
- Time Sync Requests
- Time Sync Responses
- Unsolicited Disable Requests
- Unsolicited Disable Responses
- Warm Restart Requests
- Write Requests

CGI works collaboratively with our clients and is committed to the continuous improvement of the design and performance of CGI's products. While every effort is made to ensure the information provided in this brochure is accurate, specifications are subject to change without notice.

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