ONYX™

software

Features and Technical Specification

SINTELA

ONYX™ software

Features and Technical Specification

Extracting more value from quantitative data

Harnessing our unrivalled expertise and over a decades worth of experience in deploying fiber optic Distributed Acoustic Sensing (DAS) across the world, our ONYX™ software has been designed to extract maximum value from your data and deliver transformational change to your infrastructure and business, tailored to your specific industry needs.

SINTELA

ONYX™

Monitoring data in real-time, any time

Unrivaled software in every ONYX™ Sensing Unit

The software is served from each ONYX™ Sensing Unit connected to Local or Wide Area Networks. This provides full remote access to all the functions including, engineering setup, instrument diagnostics, data visualization, data processing and alert notification.

Key features

- Web based User Interface served directly from each ONYX™ Sensing Unit
- Remote access available from anywhere in the world using a secure VPN login
- GIS window with overlay of fiber route and alert data
- Time verses distance 'waterfall' plots available for real-time and historical data
- System Dashboard provides an overview of the fiber route and activity across a network of systems
- Detection and classification of items of interest implemented using Machine Learning and attribute analysis signal processing techniques
- Audio output available in real-time directly from cursor location on waterfall

SINTELA

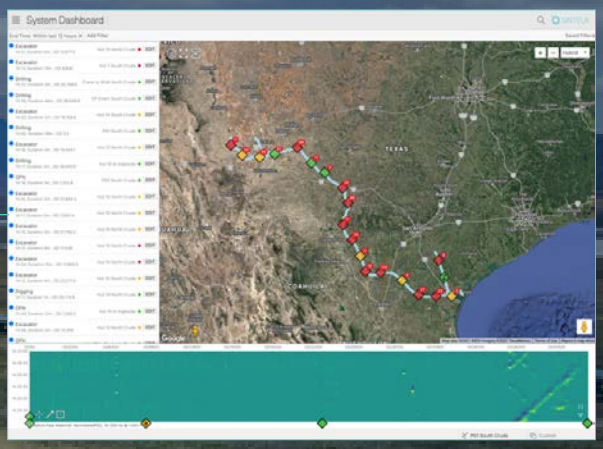
ONYX™

ONYX™ data display

Customisable display elements provide concise, contextual visualisation of the data acquired and alerts generated.

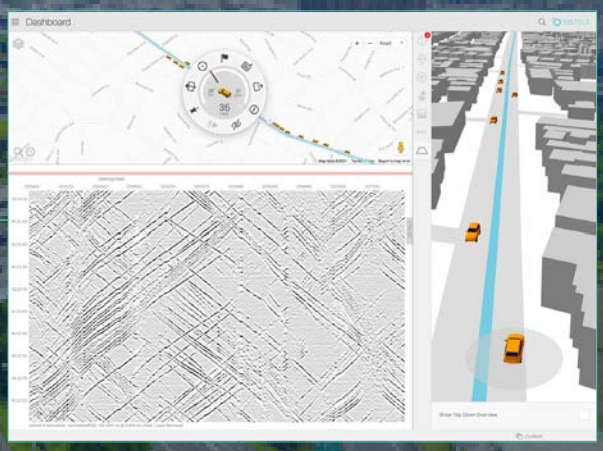
System dashboard

Shows activity along the route of a multi-node system



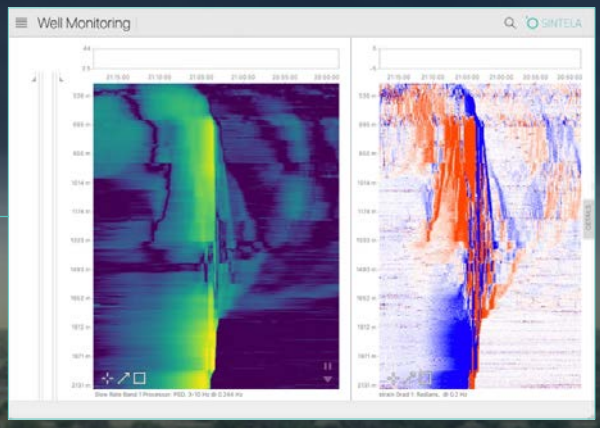
Dashboard display

Configurable to highlight items of interest such as real-time vehicle location and speed tracking with waterfall data



Well monitoring display

Alongside a well diagram, waterfalls of real-time processed downhole data are displayed



SINTELA

ONYX™ data analysis

Raw and filtered ONYX™ acquired data can be easily displayed and analyzed.

Synchronization of ONYX™ clock to a Global Navigation Satellite System (GNSS) signal ensures data and triggers are timed to better than +/-100ns accuracy

Audio output from any channel is available. A remote user can therefore listen in real-time to the activity occurring from anywhere along a monitored fiber

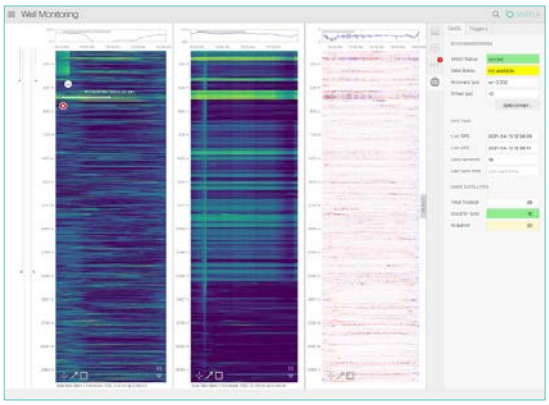
Smart cursor measures time, distance and velocity of traces on the waterfall

Analysis Display enables a user to investigate the time series and spectral content of any channel

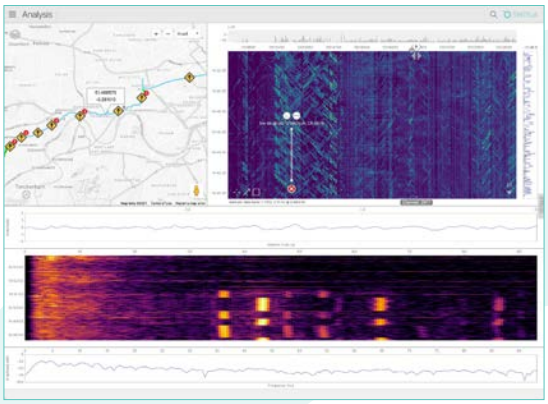
Compare Display enables an operator to compare multiple waterfall display outputs from the processing chain

Alerts Information such as time, position, duration and signal structure can be investigated in depth directly from the Web based User Interface

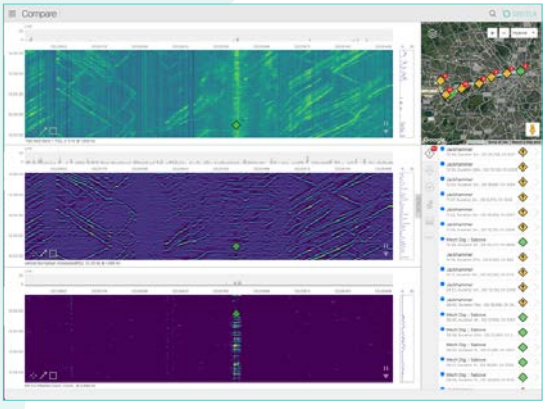
Signatures from Items of Interest can be labelled then saved or uploaded to the signal library used for Deep Learning training



Well monitoring display with GNSS sync – Provides time synchronization



Analysis display – For investigation of signal characteristics

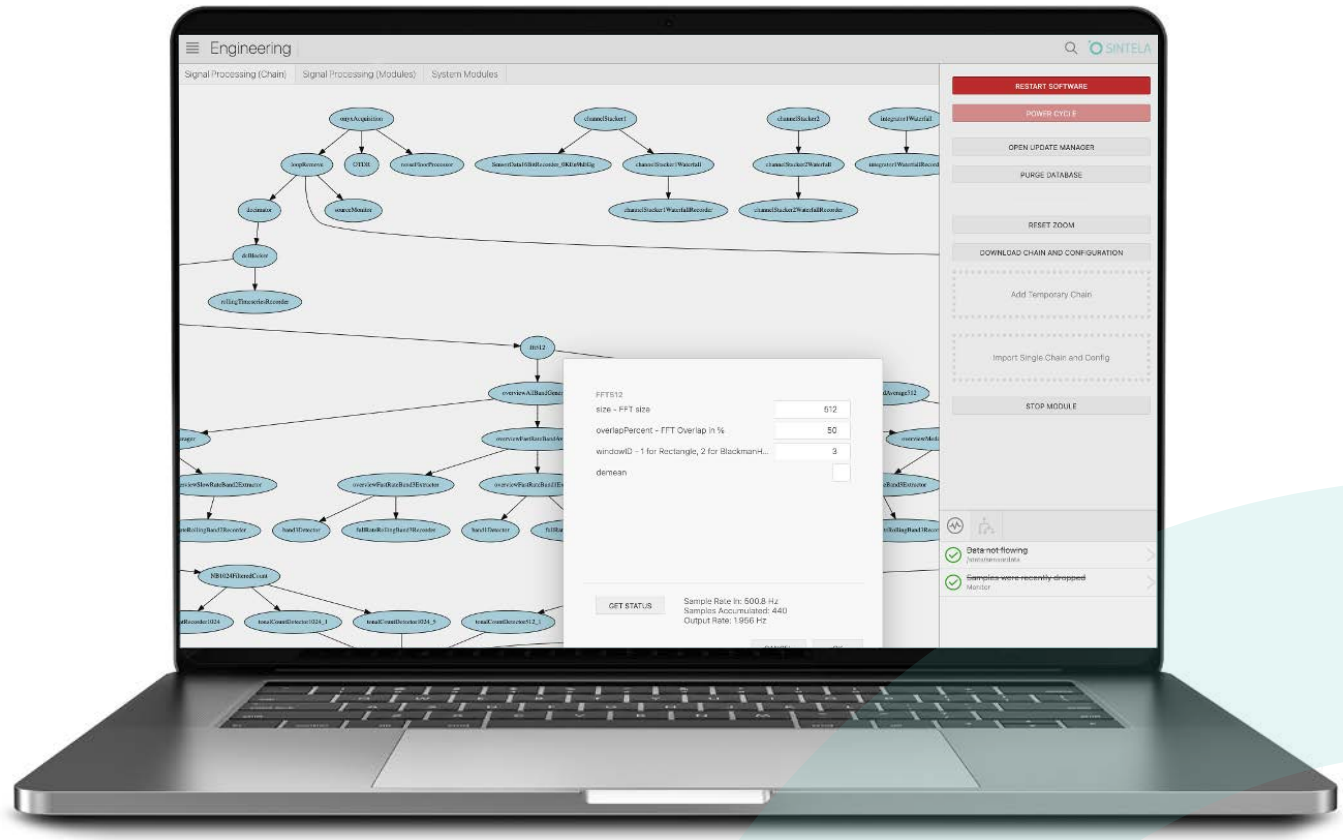


Compare display – For assessing real-time filtered data output

ONYX™

ONYX™ processing

Sophisticated DAS processing and data manipulation managed from a graphical display of the processing chain.



Engineering display – Provides client control of the 'chain' used to process, in real-time, the raw data acquired on the ONYX™ Sensing Unit. The processing chain can easily be configured to filter and process the data, providing multiple output streams which can be viewed and recorded as required.

A graphical display of the processing chain provides quick access to the higher level processing parameters. Saved chains developed for specific applications can be drag and dropped onto the system for quick setup.

SINTELA

ONYX™ set-up & control

Instrument control is made through DAS control tab allowing for configuration of the interrogator, data acquisition and real-time data processing.

Key features

Measurement Configuration

- Inbuilt OTDR for system configuration and fiber health monitoring
- Auto optical setup and optimization of sampling rate and gauge length
- Fiber calibration tools to assist in mapping fiber length to geospatial coordinates
- User defined and behavior control of multiple zones along the fiber

Control

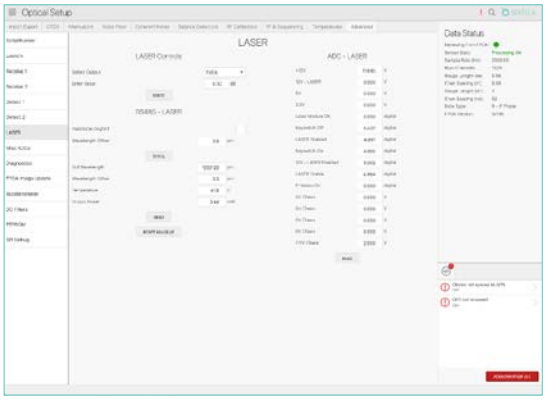
- All sub-systems in the interrogator can be controlled from the graphical user interface
- Role based access to higher system details
- Multi Factor Authorization at system login

Data Streaming

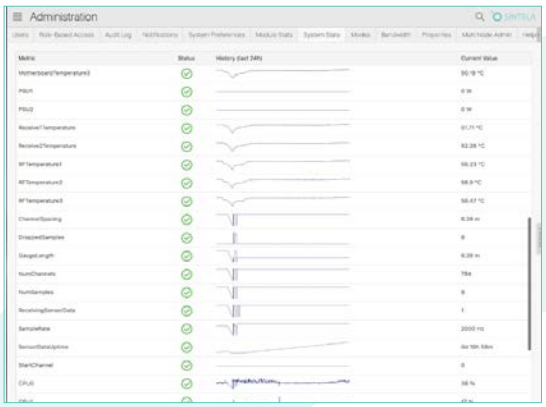
- Web based User Interface served directly from ONYX™ Sensing Unit
- Client access available locally or remotely from a web browser
- Streamed raw or processed data can be uploaded directly to a users browser or be sent directly to cloud based storage

Monitoring

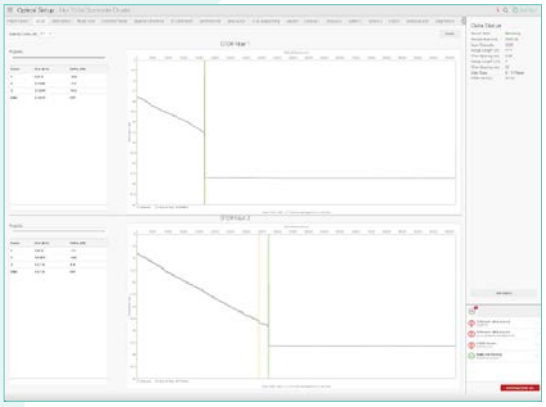
- Continuous logging of status for all ONYX™ Sensing Unit sub-systems
- Automatic reporting to remote operators in case of warnings
- Transfer rates to recorders monitored and disk capacity supervised with warning issued when nearing capacity



Optical setup display – Controls for an administrator to remotely configure an ONYX™ Sensing Unit



System status display – Real-time and historical trend of system vitals



OTDR display – For fiber quality measurements on both fibers

SINTELA

For more information contact:

David Hill, PhD | Chief Technology Officer
T. +44 7909 484755
E. david.hill@sintela.com

www.sintela.com

SINTELA