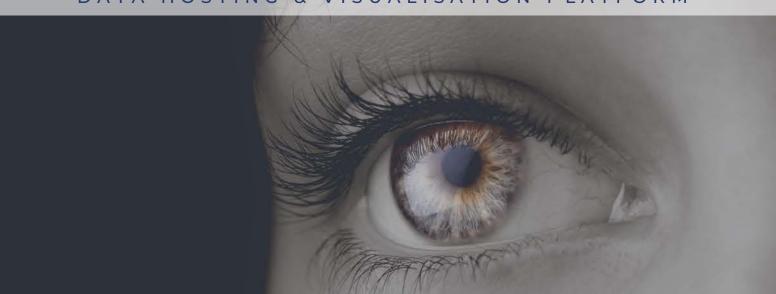
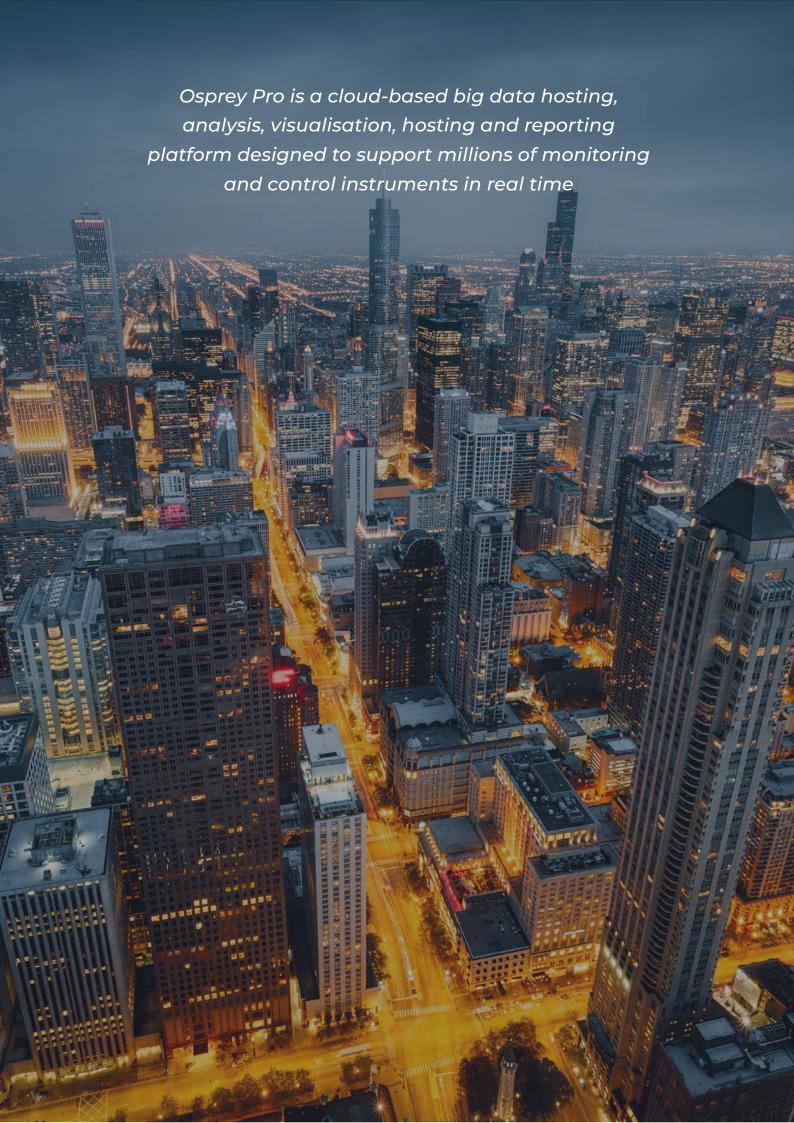


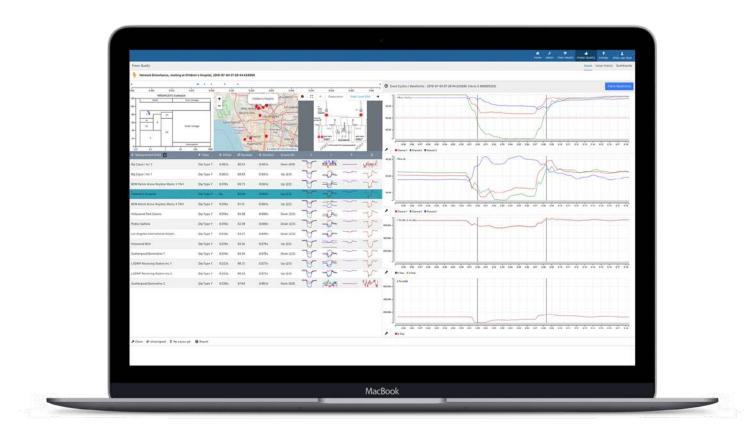
DATA HOSTING & VISUALISATION PLATFORM





VISUALISING DATA

Osprey Pro is your window into the power grid. A user-friendly and intuitive interface that delivers information both efficiently and flexibly.



Advances in waveform visualisation technology delivers an interactive experience that communicates power performance in an entirely new way, allowing the user see the grid at a single node or across the entire enterprise simultaneously.



Key Benefits

Osprey Pro translates more than 9,000 electrical parameters into information that facilitates quick, data-driven decisions*

- System users receive information from the grid in real time, providing clear direction for immediate action
- The system is platform agnostic, making it accessible on any smart device in a user-friendly format
- The system supports data collected using third party recording devices
- The time required to analyse complex interactions between various electrical parameters is significantly reduced
- Visualisation provides unprecedented insight into the steady-state & dynamic behaviour of the networks
- The automated matching, visualisation & annotation of simultaneously recorded events reduces the time required to analyse & report on system faults

- Rich real time data feedback assists installers to correctly match voltage & current channels at every installation
- Measurement campaigns & firmware updates are centralised guaranteeing collection of rich, enterprise wide, homogeneous & time sychronised datasets
- The fleet management module improves operator productivity by reducing the time required to keep the fleet functional
- Record micro-synchro-phasor data offline throughout the network
- Enjoy market-leading accuracy, adaptability & security at low cost
- Billing functionality for prosumers allows for separate export and import time of use tarrif structures

Osprey Pro provides the most productive way to report on grid wide performance

^{*}Every 50kHz data sample is synchronised to within ±100ns from its 20us slot.



2

Features

Grid monitoring

Alarms & notifications

Trigger full resolution recordings, across multiple devices, when network events occur

Event geo- and single-line mapping

Enterprise-wide measurement campaigns

Matching of simultaneously recorded events

System-wide Snapshot® event recording

Harmonic visualisation

Incident annotation & tagging

Big data management

Cloud-based hosting

Support for 3rd party data

Billing & tariffs

Time-of-use tariffs

Separate tariff for import & export

Combined billing

Grid compliance

Data classification according to international norms and standards

Import, export & net powers

Automated reporting with email scheduler

Usability

Fleetwide firmware update

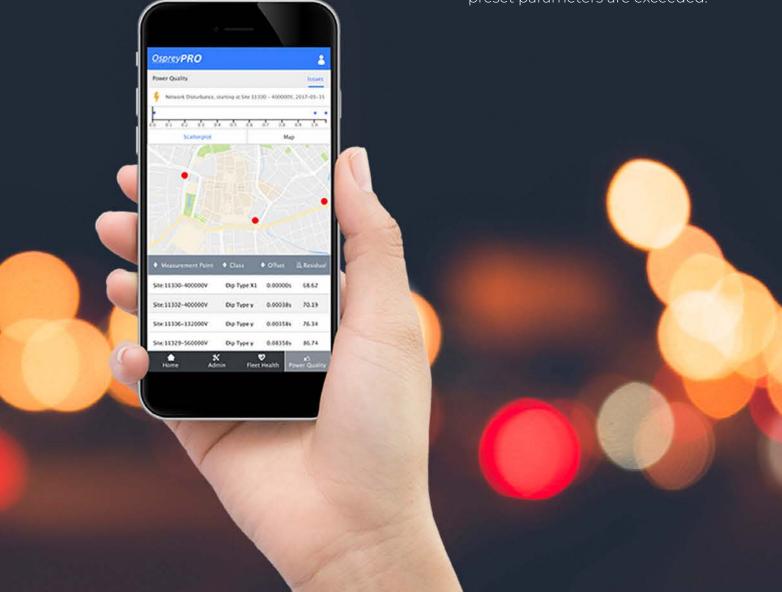
Clipboard supports vector graphics



Alarms & Notifications

High-quality network performance data enables quicker response to system events and more accurate business decisions for the organisation.

- Alarm notifications arrive in near real-time via email and push notifications, delivered to the relevant team members.
- Individual users can sign up to receive notifications on PQ events system faults & alarms or when preset parameters are exceeded.





Fleet Management Module

Osprey Pro's dedicated fleet management module is an incredible productivity booster, offering a high degree of automation, detailed fleet monitoring, with diagnostic tools that reduce complexity & saves operator screen time and trips into the field.

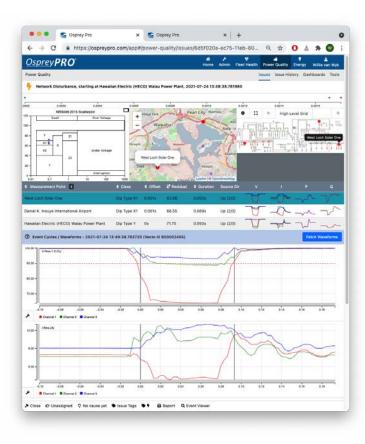


- Newly installed devices automatically inherit pre-defined
- monitoring rules from the central system.
- Changes made to individual measurement campaigns automatically propagate throughout the entire system.
- Simultaneous deployment of various measurement campaigns on a single device enable various users/departments to set up their own rules without interfering with other users/departments.
- Real-time view feedback during installation.
- Simultaneous upgrading of the fleet achieved remotely.
- Built-in ticketing system captures the activity history of each measurement point and device.
- Detects temperature of devices in the field, premature aging of batteries, signal strength, and quality of communication infrastructure.



PQ Incident Browsing & Annotation

The matching and annotation of simultaneously recorded events into consolidated incidents significantly improves insight into the dynamic behaviour of the grid under fault conditions. At the same time, OTELLO also significantly reduces the time required to process and analyse the data generated by the event.*



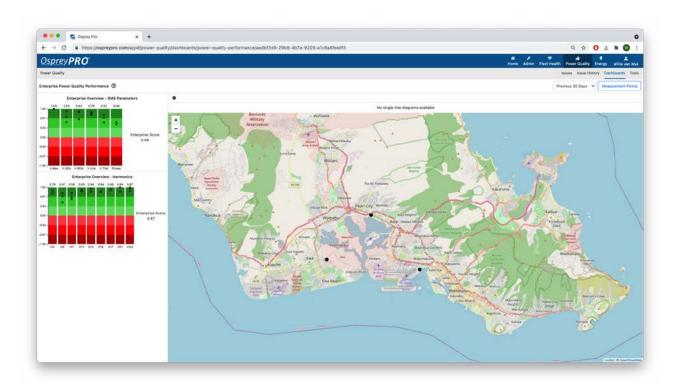
- Concurrent PQ and parameterexceedance events are automatically combined into system-wide incidents.
- A notification is automatically generated upon the creation of a new incident.
- Upon receipt of the notification, users can review incidents on the diagnostic dashboard.
- Osprey Pro supports detailed event tagging that can be utilised in machine learning and network optimisation.
- The dashboard offers a geo-map, line diagrams, sparklines, and waveform profiles for events, which the operator can tag or annotate with additional metadata.
- The operator can remotely close incidents, generate reports, and search historic events.



PQ Dashboards

Osprey Pro converts numeric thresholds into colour bars that allow operators to discern the steady-state performance of PQ parameters at a glance from selected points over selected periods.

- Various dashboards are available to visualise
 PQ performance within the network.
- The Current Enterprise PQ Status dashboard reports on the current PQ status of the network, highlighting any measurement point that exceeds a pre-defined threshold on a single-line diagram and on a geo-map.
- The Enterprise PQ Overview dashboard highlights all prominent PQ trended parameters. Red and green bars indicate available margin per parameter.
- The Network Disturbance
 Summary provides the
 operator with the ability to
 correlate various aspects of
 PQ incident metadata with
 each other. This enables the
 user to search for
 correlations or patterns.

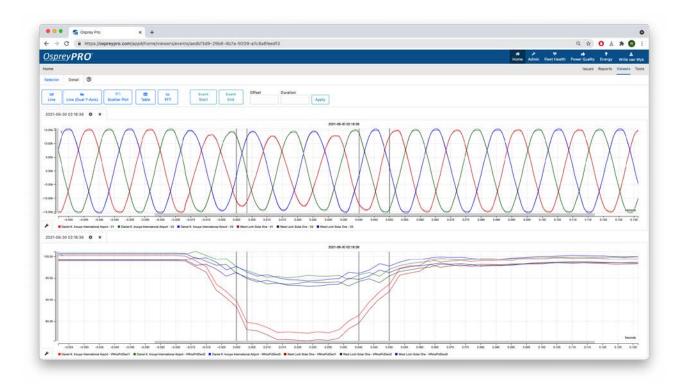




Event Browser

The Event Browser is a visualisation tool for displaying and analysing event data from selected field locations on the same canvas.

- The Event Browser is used to assess a selection of events based on advanced search criteria. The use of sparklines and other tabled parameters enables the user to quickly find one or more events of interest.
- The Event Browser can visualise clock-synchronised data recorded simultaneously at different locations.
- Various graphs can be plotted on the same canvas, including waveform, ½ cycle, and 200ms block values (including harmonics).*
- Graphs can be exported as high-quality vector artwork and data as CSV files, drastically reducing time spent on report generation.



^{*} The Event Browser is capable of performing a 10/12 cycle block FFT on 50kHz sampled waveform data.

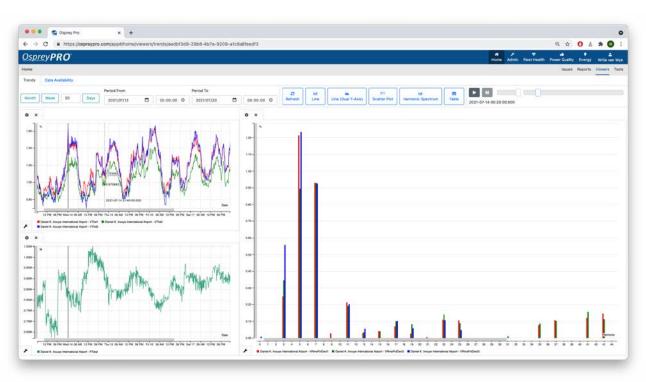


Trend Browser

The Trend Browser provides a powerful graphical tool to simultaneously display various types of trend data from various field recording devices on the same canvas.

- Specialist graphs like scatter plots and the unique animated display of the harmonic spectrum assists operators in identifying strong & weak correlations between multiple parameters.
- It supports visualisation of data captured at different intervals on the same graph.

- Advanced Java-based mathematics can be performed on a series of trended parameters to derive new data.
- Graphs and data can be exported for further analysis and reporting.
- The Trend Browser visualises any trended parameter set from single or multiple measurement points simultaneously.





Users receive valuable system-performance information in a friendly and familiar format at a pre-defined schedule.

 A powerful set of pre-defined reports can be generated ad hoc or be scheduled. Scheduled reports are automatically emailed to a mailing list.

The PQ site-assessment report covers

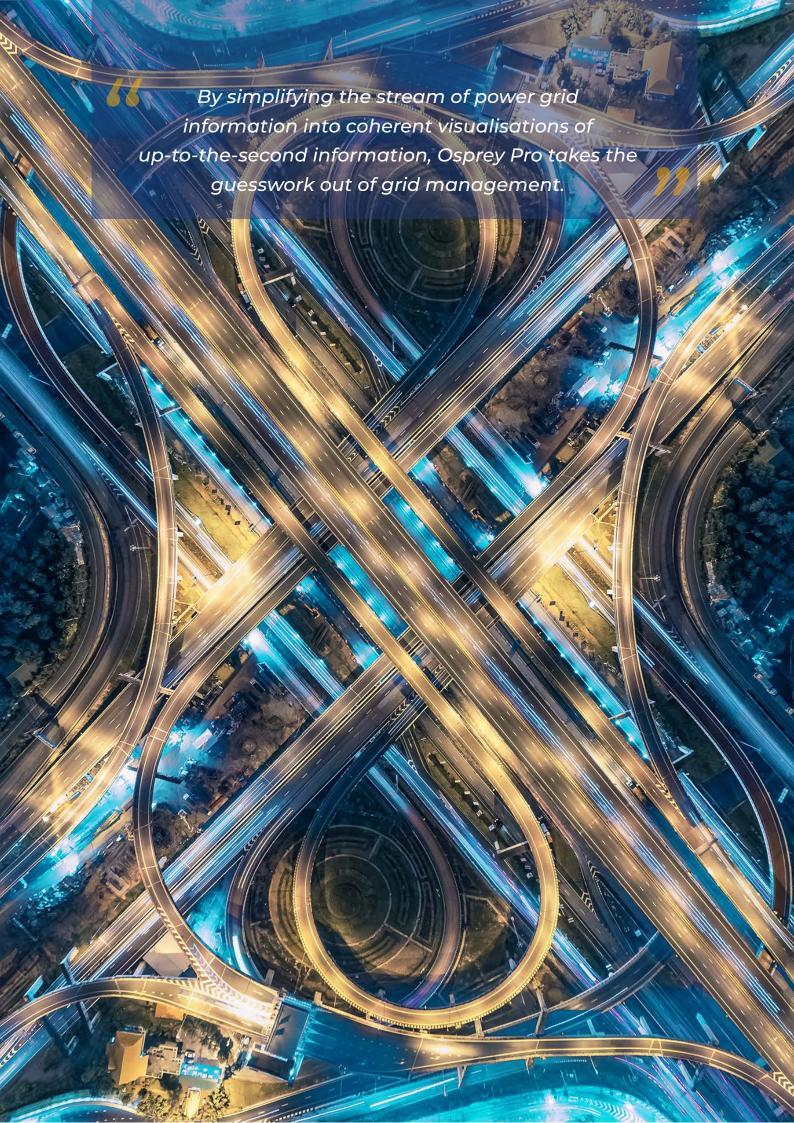
 all individual PQ parameters and events in detail according to a selected international standard or norm.

Other reports include billing, combined billing,

• technical losses, enterprise events, KPI benchmarking, repair status, etc.



Scheduled Reporting

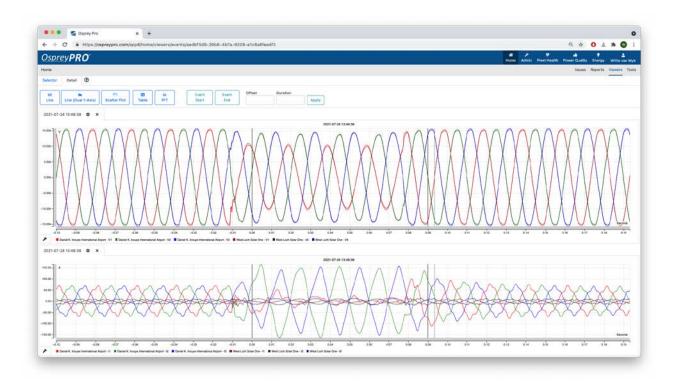




XrossTrigger® & Snapshot®

The XrossTrigger® mechanism enables system wide recording of time-synchronised Snapshot® events. Any event recorded on one permanently connected measurement device can XrossTrigger® a selection of - or the entire fleet of devices to record a time-synchronised Snapshot® event.

- Each Snapshot[®] event contains raw waveform data, ½-cycle RMS & phasor data and 200ms Interval RMS, phasor, and harmonic spectrum data (incl. both amplitude & phase angle information per individual harmonic)
- During network disruptions, the XrossTrigger® mechanism enables the operator to record a complete and perfectly synchronised dataset from a specific portion of the network or from the entire network. This function is essential when investigating Dip/Swell, harmonic, or flicker propagation.





Osprey Pro combines load profile information with time-of-use tariffs to generate electricity bills, undertake bill verification & tariff analysis and measure loads.

- Full support for time-of-use tariffs.
- Separate tariffs for imported and exported energy.
- Combined billing is also supported.
- Periodic scheduling of billing reports.



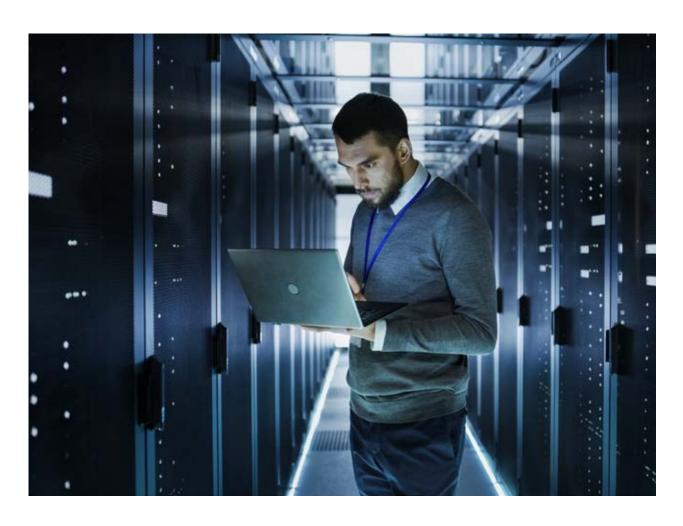
Time-of-use Tariffs



Data Export

Osprey Pro's Data Export function allows for the transfer of data into any other 3rd party system for further analysis.

- A selection of event, raw waveform and trended data can be exported.
- Export format includes CSV, PQDiF and other proprietary formats.
- Supports the simultaneous export of multiple measurement points.
- Harmonics can be selected individually.





Technology

The measurement
platform is Linux based,
which allows for secure
integration into modern
IP-based systems. The
big data storage
technology is hosted by
Cassandra's open
source, cloud-based big
data technology. No
high-priced license fees
are required.

- Devices are powered by the latest multicore ARM technology and Linux.
- Built-in GPS and cellular modems.
- Sixty minutes of battery back-up.
- Power over Ethernet and DC supply enable devices to be permanently powered from DC systems or from UPS backed networks.
- Cloud data storage is based on Cassandra's high availability and big-data open source technology.
- Cassandra scales linearly as more processors and storage is added.
- The system provides extensive support for cybersecurity.
- Measurement and data-hosting technologies support open interfaces to 3rd party devices and





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Data-Hosting Business Models

Osprey Pro offers two hosting plans.
The outsourced plan enables smallquantity users access to enterpriseclass technology without having to
lock into expensive software solutions.
The behind-the-firewall solution

provides additional security and specialist, big-data support—without large capital outlay. Customers have the option to buy a perpetual license, shifting the annual operational expense to a capital budget.

OPTION 1 | CLOUD-BASED DATA HOSTING

- Hosted on Osprey Pro's cloud-based servers.
- Includes Osprey Pro's essential client & product support services.
- Monthly or annual data-hosting fee based on the number of connected devices.

OPTION 2 | BEHIND-THE-FIREWALL DATA HOSTING

- Hosted on client's servers behind their own firewall.
- Includes Osprey Pro's essential support services to maintain the servers and to manage system updates.
- Annual data-hosting and professional-services fee is applicable.

OPTION 3 | PERPETUAL SOFTWARE LICENSE

- Price based on the number of connected devices.
- Annual maintenance fee is applicable to keep software up to date.
- Professional support services contract can be negotiated.



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