



# Platforms to make LV Networks fit for the future

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## VisNet® Hub

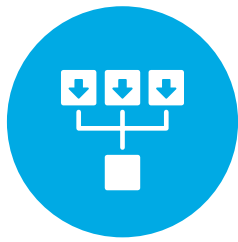
Providing valuable insight into the operation and capacity of today and tomorrow's LV networks

[www.eatechnology.com.au](http://www.eatechnology.com.au)

# VisNet® Hub

VisNet® Hub is EA Technology's production monitoring platform providing measurement and insights in LV distribution substations.

It has been designed to:



Push intelligence to the network edge



Increase visibility



Improve analysis capability

## An LV Network Revolution

Our energy system is undergoing a transformation. Radical shifts are happening, changing the way we generate electricity, allowing us now to use low carbon electricity for new purposes – like powering our homes using rooftop solar and batteries, accessing IoT devices to make our houses smarter or the electrification of the cars we drive. The high rooftop solar adoption is becoming a key factor of the new challenges that are arising in network performance, such as the risk of reverse demand/power flows. This will put pressure on the Low Voltage underground cables and overhead lines that deliver power to our homes and businesses.

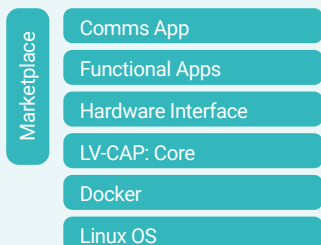
These extensive and in many cases aged, bits of infrastructure are critical to our society - providing the backbone to our very economy. However each cable has a finite capacity, which, if operated above this, causes damage; ultimately resulting in the lights going out.

The LV networks are highly passive in their operation and monitoring at this level is limited. With the above changes, network operators around the world are recognising the need to instrument these networks, but it needs to be done cost-effectively, and at the right pace.

## Opening Up Networks

We see lots of equipment being deployed in a substation for a single purpose, yet most rely on the measurement of busbar voltage, feeder currents and possibly other peripherals. Our VisNet® Hub can act as a single platform in the substation to do this, and more.

It has been designed to push intelligence to the network edge, with local processing to reduce the need for heavy communications back to a central brain. Incorporating our Low Voltage Common Application Platform (LV-CAP™), applications and algorithms can be deployed onto the platform long after installation to expand the functionality of the units beyond simple measurement.



LV-CAP™ is a software platform, similar to Google's Android or Apple's iOS, but for electricity distribution substations. The platform comes with the VisNet® Hub and is capable of hosting Applications (or 'Apps').

LV-CAP™ and pre-production variants of our VisNet® Hub units have been deployed by Western Power Distribution as part of the OpenLV project ([www.OpenLV.net](http://www.OpenLV.net)), a £6M project funded from the 2016 Network Innovation Competition.

# What is VisNet® Hub?

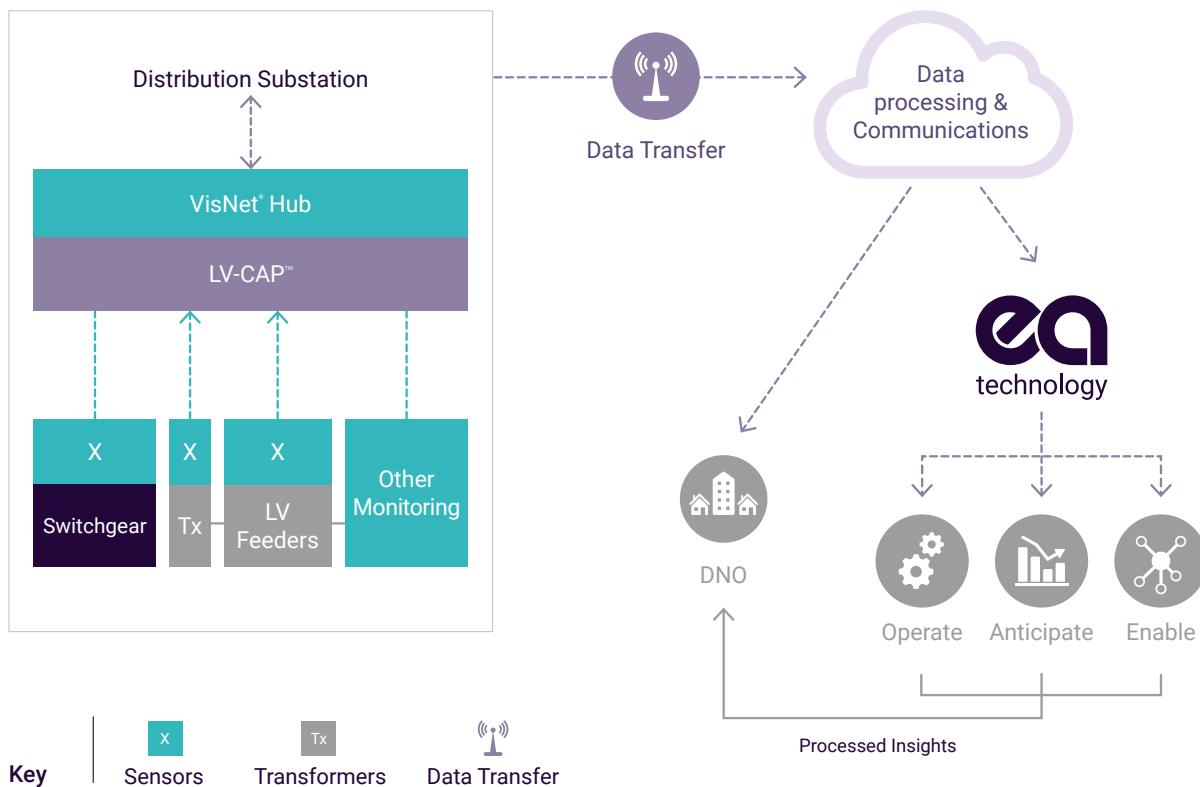
The **VisNet® Hub** is a monitor that checks voltage and current data on every LV feeder giving insight about load, faults and condition information across the network. It measures three phases, plus neutral for up to six Low Voltage feeders, busbar voltage and battery status. Sending information back to cloud-based data systems via the 3G/4G telecommunications network.

**VisNet® Hub** is a cost effective, flexible monitoring platform for LV distribution substations. **LV-CAP™** provides an upgrade platform and path for enhancing the capability of the substation, whilst minimising the risk of stranded assets. The platform:

- Allows insights to be mined from data locally and consolidated centrally.
- Can be combined with a tailored suite of locally developed software Apps, allowing operators to distribute intelligence across the network and optimise data transfer volumes in this data rich environment.
- Provides local intelligence to allow credible decisions to be made.

This rounded solution gives electricity distribution companies the opportunity to have full visibility and control of their LV network, at the lowest possible cost.

## VisNet® Hub allows agile network wide analysis and response as well as reduced data transmission



## VisNet® Hub Capability

- VisNet® Hub provides comprehensive network visibility with its capability to monitor 6 feeders and communicate via GPRS (2G/3G/4G)
- Capacity to report on predetermined time-scales of every minute, 3 minutes, 10 minutes, 30 minutes, hourly or daily
- Communications defined by Applications, DNP3, HTTPS & IEC61850
- Compact and neat design (Size 430 x 266 x 71mm (h x w x d))
- Enclosure protected to IK08, IP 55
- Can be upgraded to support emerging standards i.e. IoT-NB, LTE Category M and 5G

## VisNet® Hub Compatibility

- The VisNet® Hub also integrates with the ALVIN® range of equipment to provide LV network control and automation capability
- The VisNet® Hub can also take inputs from other sensors to monitor the substation environment, presence detection and equipment condition
- Information from the VisNet® Hub can be used with software modelling tools to improve their accuracy

Quartz is EA Technology's service offering to turn raw data from Low Voltage (LV) networks into actionable insights.

### Why do you need this?

Low-cost monitoring is now being deployed across the grid, and for good reason. The LV networks are being asked to work harder and operate closer to their limits due to the continually increasing capacity of installed rooftop solar, along with the electrification of transport. With more data, new challenges are presented including:

- Making sense of the myriad of data
- Converting data to insights and actions
- Identifying capacity requirements or constraints
- Seeking the best, enduring tools to facilitate the DSO

### Our solution

Quartz is a service offering sitting on top of our VisNet® Hub hardware and LV-CAP™ software stack.

### Operate

This group of algorithms is based around support for the operational teams in the control room and the field. It is, by definition, focussed on activities from real-time through to c3/6months ahead.

### Anticipate

Our Anticipate group of algorithms focusses on the typical functions of a network planner, identifying longer term trends in demand, and signalling areas that may require an intervention (e.g. reinforcement or flexibility resource).

### Enable

Our Enable function is available to link the substation to the outside world. We have a range of third-party systems in play as part of the OpenLV project ([www.OpenLV.net](http://www.OpenLV.net)), and are currently looking beyond this to explore technical and commercial models with a range of organisations.

To book your demonstration or to get further information and advice please contact us on +61 7 3256 0534 or email [au.sales@eatechnology.com](mailto:au.sales@eatechnology.com) / [www.eatechnology.com.au](http://www.eatechnology.com.au)



Safer, stronger, smarter networks

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