



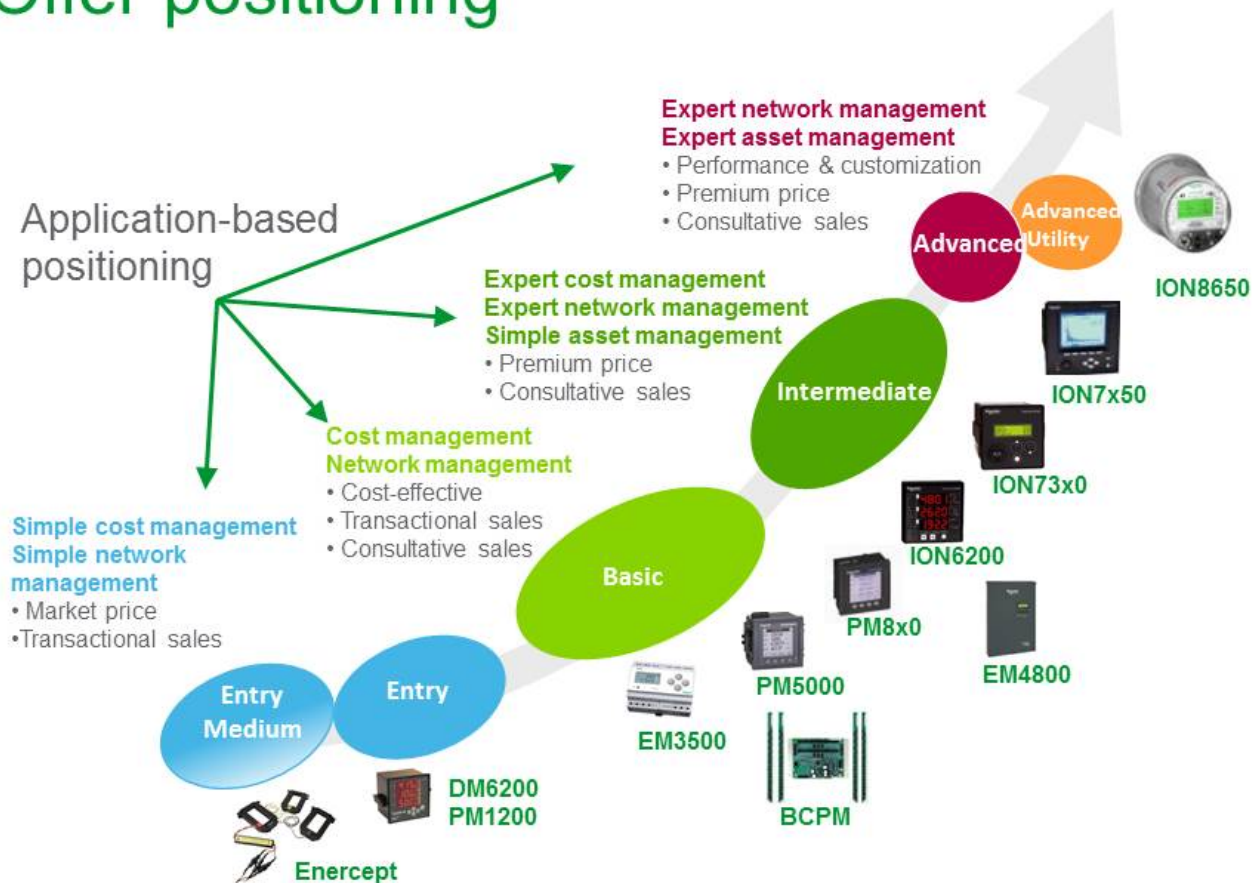
The ION8650 and the Customer

PowerLogic™ ION8650

The world's most advanced energy and power quality meter



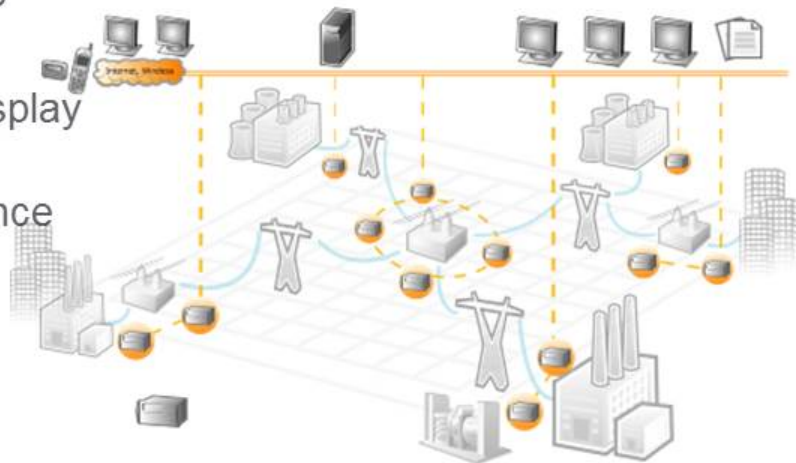
Offer positioning



Pending Release

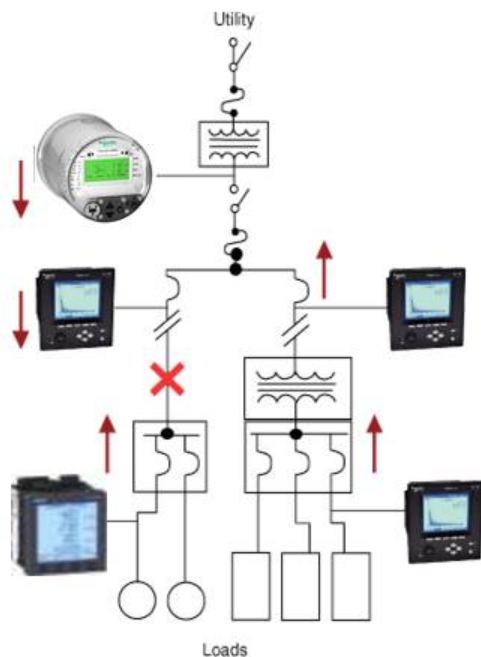
- Firmware V407 Now at Measurement Canada

- Disturbance Direction Detection
- DNP millisecond timestamp
- DLMS – serial
- Support for new brighter display
 - Hardware coming in 2015
- Single phase service entrance
 - 2 element 3 wire



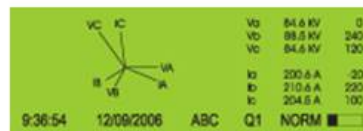
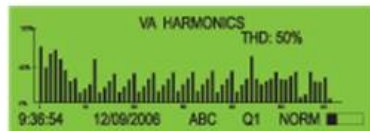
Disturbance Direction Detection Patented Technology

Let the meter be your PQ expert on watch 24/7



- Determines the location of a voltage disturbance relative to the meter.
- Analyzing disturbance direction detection information from multiple meters in a power monitoring system enables the location of the cause of the disturbance to be determined more quickly and accurately.
- Disturbance Direction Detection is standard in ION7550, ION7650, and **now** on the ION8650 meters. And will be included in PM8000 meters, too.

ION8650, ION7650 Power Quality



| Power Quality Monitoring and Analysis | ION7550 | ION7650 | ION8650 Feature Sets | | |
|---|---------|---------|----------------------|------|-------|
| | | | C | B | A |
| Sag/swell monitoring | ● | ● | ● | ● | ● |
| Symmetrical components: zero, negative, positive | | ● | ● | ● | ● |
| Transient detection, microseconds ¹ | | 17/20 | | | 65/78 |
| Harmonics (individual, even, odd, total) up to | 63rd | 63rd | 31st | 63rd | 63rd |
| Sampling rate, maximum samples/cycle | 256 | 1024 | 1024 | 1024 | 1024 |
| Flicker, harmonics to EN50160, IEC 61000-4-7 / 4-15 | | ● | | ● | ● |
| Configurable for IEEE 519-1992, IEEE 1159, SEMI | | ● | | | ● |
| IEC 61000-4-30 Class A/S | | A | | S | A |

¹For 60 Hz/50 Hz nominal frequency

Coming in 2015



Wireless Technologies

- Verizon Cellular Modem
 - Prototypes for US customer feedback
 - Fixed IP, external antennae,
 - Expected release Q2 2015

- Ethernet WiFi Under Glass
 - Finalizing design



Major Firmware release v4.20

2015 mid year Launch

- Fully backward compatible
 - Upgrade through firmware
- Cybersecurity – Following NERC CIP
 - Port hardening
 - Improved User & Password management
 - Security Log
- IEC61850 Ed2
 - Latest revision of protocol
- EN60150 Ed4
 - The latest revision of Power Quality reporting standard
 - IEEE 519 for the US



Port Hardening

- User can disable physical communication ports (IR, Modem, IRIG-B) through ION and front panel



- User can turn off all TCP ports independently via ION and front panel
 - No reboot required
- Ability to change port number assignments for all Ethernet protocols

User and Password Management

- Meter advanced security support up to 50 (increased from 16) users which can be configured through ION
 - Configurable user ID's (user 1, user 2....)
 - Password complexity of 8 characters which include upper and lower case, numeric and special characters

- New User Privileges
 - Communication admin



Security Log

- Security Log as part of the Event Log

- Security events include valid/invalid access attempts & configuration changes by user, etc
- Customer would pull and save logging security data via ION Software
- Security log must be backed up before framework paste, firmware update etc to maintain records for an audit



- Support for Syslog

- Push security events to a Syslog server in addition to ION event log

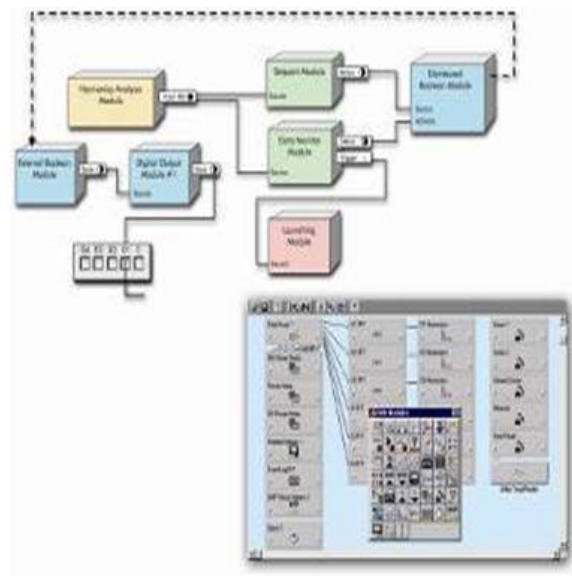
- Meter will have the capability to send email alert for customer definable security events

- Definable through ION framework (ex detected invalid access attempts)

Keeping Utilities in Mind

Future Proof

- Free, downloadable firmware upgrades via communications ensure your meters are always up-to-date with the latest features
- ION8650 meters use patented ION technology, giving meters a modular, flexible architecture that allows for extensive user programmability
 - Adapts to changing needs, avoiding obsolescence



Revenue Metering

- ION8650 meter provides twice the accuracy specified by current ANSI C12.20 0.2 and IEC 62053-22 Class 0.2S standards
 - It is a true Class 0.1 energy meter
- four-quadrant, bidirectional true RMS voltage, current, and power measurements
- Anti-tamper sealing with multi-level security and hardware lock
- Transformer / line loss compensation
 - MC working group
- Socket and switchboard (integrated test switches) form factors



The world's
most accurate
socket meter

Thank You



Thank You

