



Sterna M3R Remote Monitoring Unit



About us

- Sterna is a Singapore based company that develops, manufactures and distributes Cloud-based security products and monitoring devices for market segments like the Telecom, Petroleum, Utility, Transport, Finance, Medical, Defense and Governmental.
- Our main products are all managed and controlled via The Cloud with 24/7 status in real time and all event data is collected centrally:
 - Electronic Cabinet Locks to IP-rated steel cabinets.
 - MONIT, Monitored padlocks and seals.
 - KIMS Key management systems and VICTOR deposit boxes.
 - ALTERO, Reading mechanical utility meters.

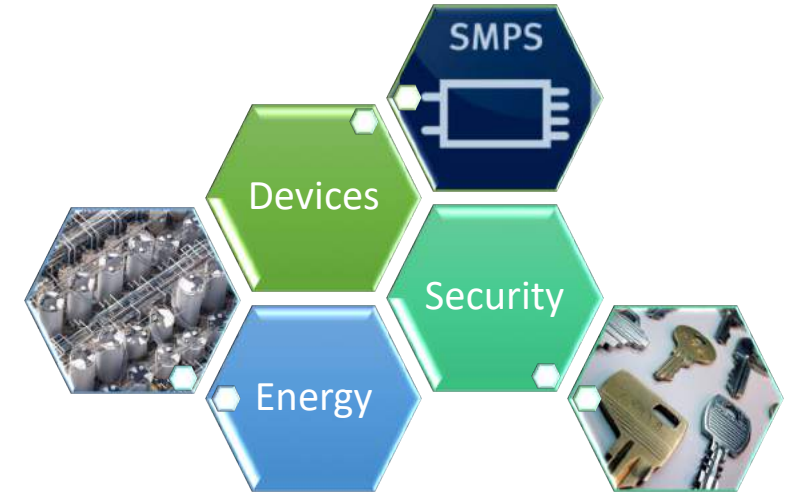
Current Background of Sterna

- Over 250,000 units of our electronic motor locks have been installed and is operating in one on-line Cloud based system in the Indian telecom market controlling the IP-rated steel cabinets in base stations eliminating battery theft and controlling service staff.
- 8,000 petrol trucks are using a fool-proof on-line system which ensures that the tanks can only be opened by an authorized person and the trucks are monitored by GPS. These are now being upgraded to our new Monitored Padlock system.
- KIMS Key management systems and VICTOR Deposit boxes are running in Pilot tests.
- POC's are being conducted with remote readings of mechanical gas and water meters in several markets.

Sterna M3R System - Overview








The Sterna M3R System is highly compatible and can interface with any third party element or equipment via various communication protocols.

- It is equipped with four serial ports, L2 Switch and Ethernet, and 28 I/O ports. The I/O ports are electrically isolated, securing the device's operability under harsh industrial conditions.
- The Remote Extension Units connected to the EyeSite Controller via RS485 MODBUS provide additional alarm, detector, and control interfaces.
- The EyeSite Controller is equipped a backup battery power supply that secures onboard data collection and storage.



Basic Functions



Monitor

-  Temperature
-  Humidity/Dew Point
-  Airflow
-  Light
-  Sound
-  Door Position
-  Smoke
-  Water Leaks
-  Power Failure
-  Voltage
-  Amperage
-  Kilowatt-Hour(s)
-  Battery
-  Video Surveillance

Prevent

-  Equipment Failure
-  Downtime
-  Loss of Revenue
-  Loss of Reputation

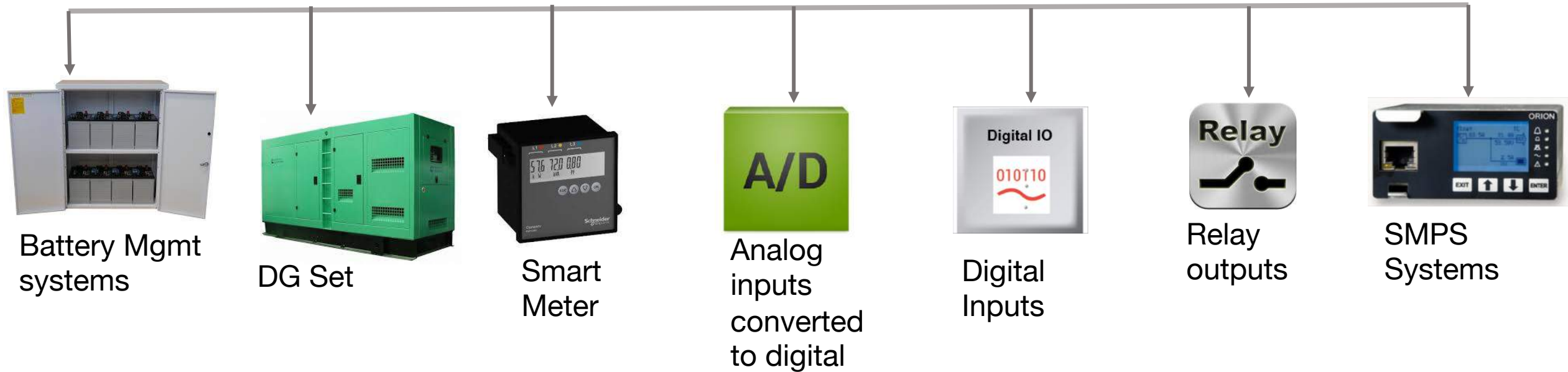
Alerts

-  Alert notifications via Email, SMS,* SNMP Traps and voice call* when user-adjustable thresholds are breached
-  Automation and control of external devices

Outdoor Sites

- Always-On Remote
- Site Connection - 99.999% Availability;
- Communication Redundancy;
- Size : 1U RACK SIZE
- Input: INPUT 18V to 60V input range

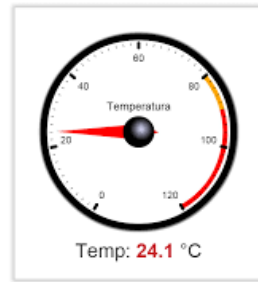
Core Monitoring Interfaces



Core Sensor Feedbacks



Smoke
Detector



Temperature
Sensor



Access
Reader



WATCHDOG SYSTEM®

Watchdog
System



Door
Status

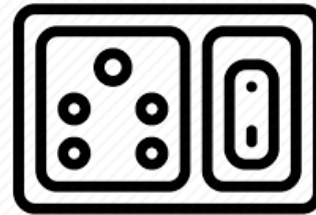
Additional interfaces available if required



Security system for door operations



IP Fan rack or heat exchanger for Thermal Logic management over IP



Any other device that can communicate over RS232 / RS485



Monitoring Wireless Padlocks

Connectivity Options



Element Management Server



Discovery, configuration and topology



Performance, fault and provisioning for operations



Security and Benchmarking



SOAP

SNMP

REST

RS485

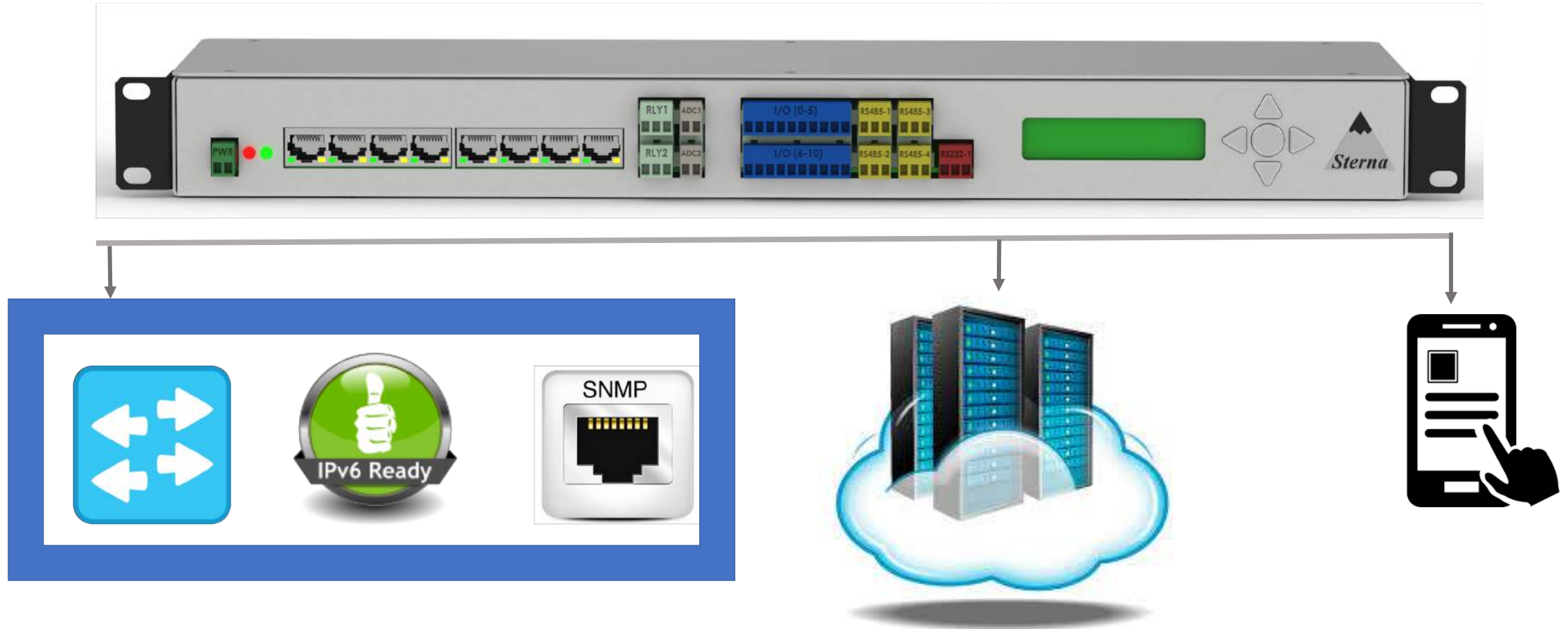
RS232

XML

TCP-IP

MODBUS

Data Pull-back and Device Management



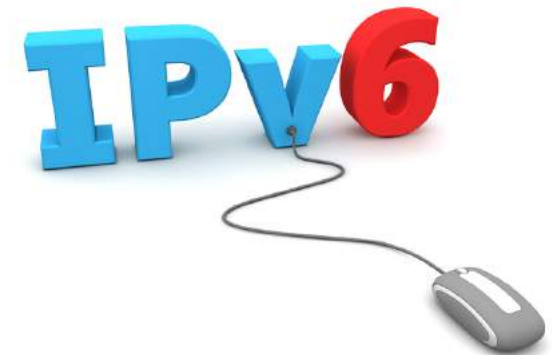
Data can be handled over various EMS / MIB systems for integration XML based interface.

Network Integration

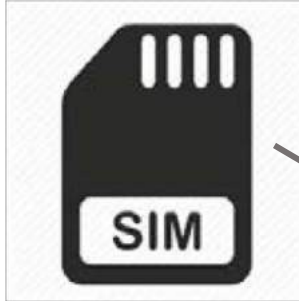
FEATURES

- IPv4 / ARP / ICMP / IGMPv2
- IP fragmentation and reassembly
- DHCP client
- FTP client / server
- SMTP client
- SNMPv1 & v2c agent
- PPP (Point-to-Point Protocol)
- SLAAC / DHCPv6 client
- TCP / UDP
- BSD sockets
- DNS / mDNS / NetBIOS
- HTTP server with CGI scripting
- SNTIP client
- Icecast / SHOUTcast client
- IPv6 / ICMPv6 / NDP / MLDv1

- **IPv4 or IPv6 compatible**
- **DHCP – Stateful or Stateless**
- **MIB browser**
 - * **Traps**
 - * **Rules**



Connectivity Architecture

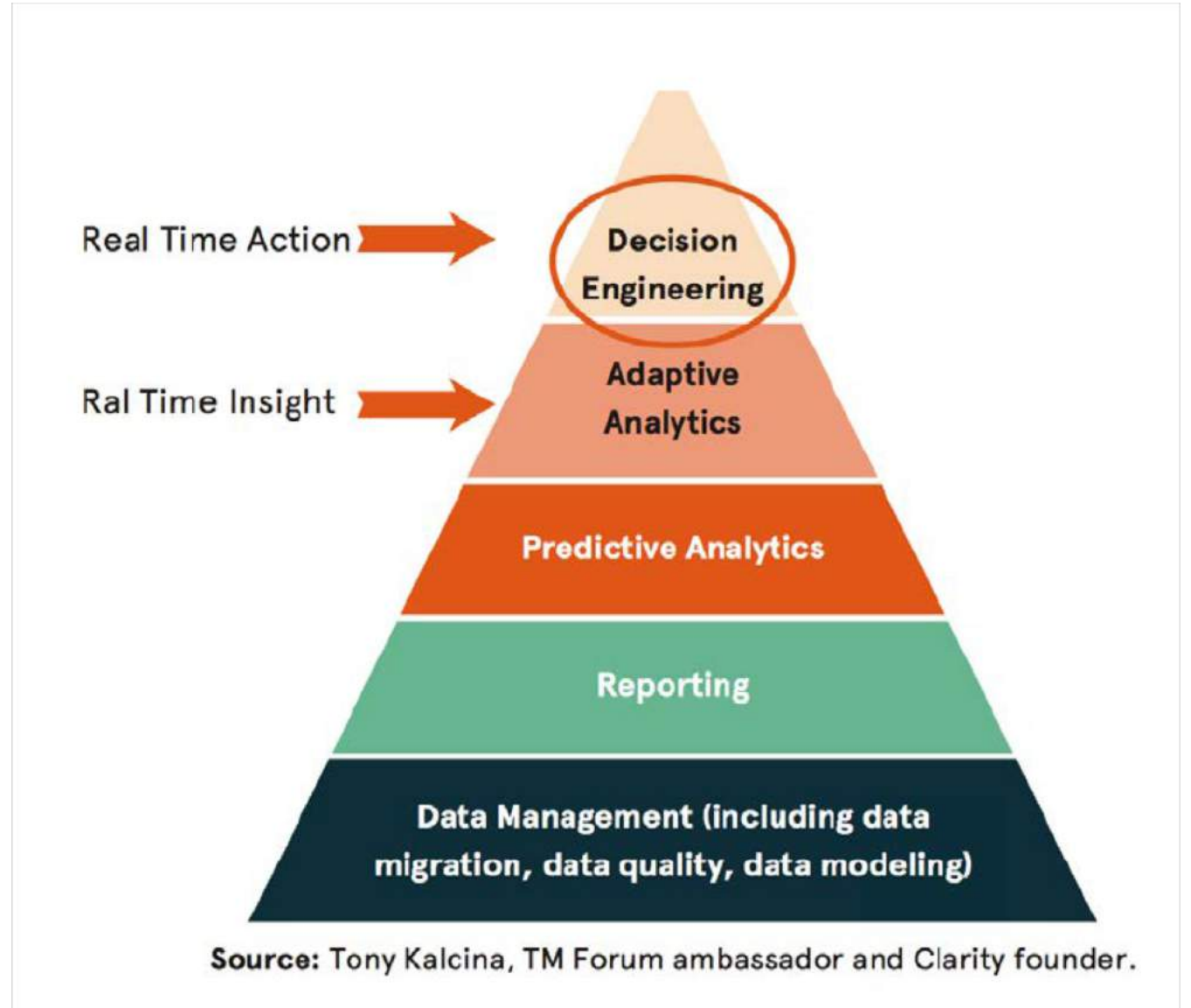


Cloud based systems with connectivity options of hardwired Ethernet or GSM if required



Big Data Analytics

- Core of big data analytics
- Predictive maintenance and support data.
- Network reliability and unit reliability data



Sterna M3R System Summary

- **The M3R System is a state of the art remote monitoring unit for Telecom Base Stations, Remote Utility Stations, ATM's and other cabinets, safes, rooms or other premises that require monitoring.**
- **Easy to use and install.**
- **Handles Access Control and Security management of the site.**
- **Provides complete data for efficient management of the site.**
- **Can communicate with systems connected, e.g. in a battery pack connected to the M3R each battery can individually be Monitored and Managed.**

END OF PRESENTATION

THANK YOU

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