The Affectli Ontology Platform
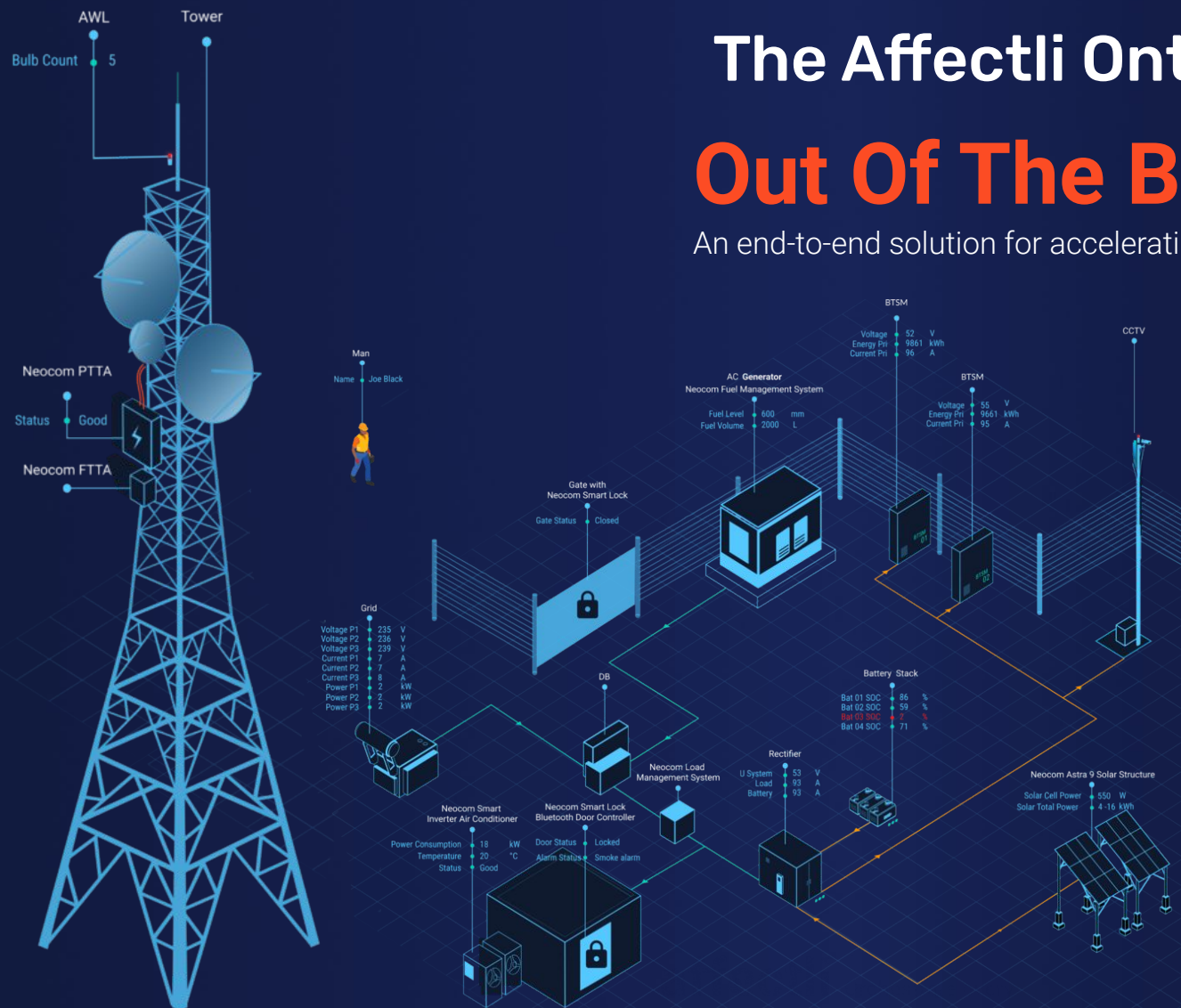
Out Of The Box TowerCo

An end-to-end solution for accelerating growth & maximising revenue

AWL

Tower

Bulb Count   5

Neocom PTTA

Status   Good

Neocom FTTA

Man

Name   Joe Black

BTSM

Voltage   52   V
Energy Pri   9861   kWh
Current Pri   96   A

BTSM

Voltage   55   V
Energy Pri   9661   kWh
Current Pri   95   A

CCTV

AC Generator
Neocom Fuel Management System

Fuel Level   600   mm
Fuel Volume   2000   L

Gate with
Neocom Smart Lock

Gate Status   Closed

Grid

Voltage P1   235   V
Voltage P2   236   V
Voltage P3   239   V
Current P1   7   A
Current P2   7   A
Current P3   8   A
Power P1   2   kW
Power P2   2   kW
Power P3   2   kW

DB

Battery Stack

Bat 01 SOC   86   %
Bat 02 SOC   59   %
Bat 03 SOC   2   %
Bat 04 SOC   71   %

Neocom Load
Management System

Rectifier

U System   53   V
Load   93   A
Battery   93   A

Neocom Astra 9 Solar Structure

Solar Cell Power   550   W
Solar Total Power   4-16 kWh

Neocom Smart
Inverter Air Conditioner

Power Consumption   18   kW
Temperature   20   °C
Status   Good

Neocom Smart Lock
Bluetooth Door Controller

Door Status   Locked
Alarm Status   Smoke alarm

affectli

Own your data.
Orchestrate everything.

Imagine a World in which Companies own their data,
and with a push of a button, orchestrate everything...

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Own your data.
Orchestrate everything.

affectli

Own your data.
Orchestrate everything.

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Own your data. Orchestrate every*thing*.

Cutting-edge technology for Mission Critical Environments

Affectli is an award-winning **Ontology** solution and flagship product of Mi-C3 International that is designed to improve efficiencies across the entire value chain of any organisation.

"What Android & iOS is to your smartphone, Affectli is to your business…"
~ CEO & Founder, Glen Scott

Our disruptive, trusted software solution is a powerful **Business Operating System** that allows organisations to realise their full potential. Not only does Affectli allow you to take full control and ownership of your data, we give you the ability to **orchestrate everything across your organisation** through a **single pane of glass** that supports informed decision making through **Situational & Actionable intelligence using real-time data**.

- ✔ Reduce operating costs
- ✔ Improve efficiencies
- ✔ Increase profits
- ✔ Build long-term sustainable growth

Mi-C3 is at the forefront of Global Digital Transformation

Award-winning & Trusted Technology

Malta Communication Authority
Malta Communication Authority Business Awards 2008:
Best B2B Application

World Summit Award
World Summit Awards (2018) Business & Commerce Category:
Best B2B Application

AICPA SOC
aicpa.org/soc4so
SOC 2®, Type 2
Examination & Report Obtained

Certified Company ISO / IEC 2001: 2013
ISO 27001:2013
Information Security Management System

Certified Company ISO 9001:2015
ISO 9001:2015
Quality Management Systems

Certified Company ISO 2000-1:2011
ISO 2000-1:2011
Service Management System

We Take Data Security Seriously!

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Own your data.
Orchestrate every*thing*.

The ⊕affectli Ontology Orchestration

We **integrate existing systems, datasets & unlimited IoT devices** to deliver a **single pane of glass** with **consolidated, real-time information**.
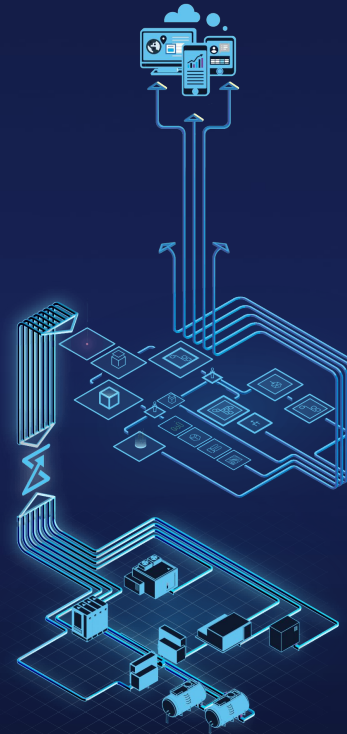
Affectli is designed for **data sovereignty**, whilst ensuring that **the right people get the right information at the right time**.

Our technology is:

✔ Single stack software solution

✔ Scalable

✔ Agile

✔ Multi-tenancy

✔ Device Agnostic

✔ Browser Independent

✔ Industry Agnostic

✔ Market Vertical Agnostic

Under The Hood

Functionality Modules

COMMUNICATION
Chat & Broadcast
Instant messaging
Contextual communication
Scheduled notifications

MAPS
Situational Awareness
Semantic relationships
Pivot on any Data Point
Heat Maps
Custom Map Layers

INSIGHTS
Data Visualisation
Graphing
Mapping
Digital Twins
Dashboards
Analytics

AI / M2M
Data In Motion AI
Data at Rest AI
AI Engine Agnostic
AI Model Agnostic

BIG DATA
Data Ingestion
Data Lake /
Data Pool Correlation

ORCHESTRATION
Intelligent Workflow
Automated Process Management
Real-time identification / Alerting
Task Management

IoT
Hardware / System Agnostic
Support ALL known digital
protocols & standards

⊕ **affectli** Own your data.
Orchestrate everything.

TowerCo / Telco end-to-end services

Digitise workflow processes and future proof your organisation with apps that are infinitely scalable, agile and customisable to meet your exacting operational requirements.

Choose from a selection of Out-The-Box (OTB) apps or develop your own.

Affectli has proven to be hugely successful at scale to monitor and process real-time data from millions of endpoints, as well as orchestrate operational efficiencies across thousands of sites for the largest TowerCo companies in Africa and throughout Europe.

TowerCo/Telco Suites each contain multiple Apps/Processes.

- Asset Management
- NOC Essentials
- Operations Field Functions
- Operations Planning
- Operations Projects
- Operations Power & Billing
- Web Customer Portal Suite
- Site Acquisition
- Landlord Management
- Customer Lease Management
- Site Build Management
- Change Management
- CEO Dashboards & Reports

Semantic Ontology

Simply put: Semantic Ontologies show how **EVERYTHING** within your organisation is connected.

Our highly advanced technology applies Semantic Ontology to **connect every datapoint** within our platform.

These connected data points give you the ability to not only view **layers of information in real-time**, but it can also be pivoted and visualised with the simple click of a button.
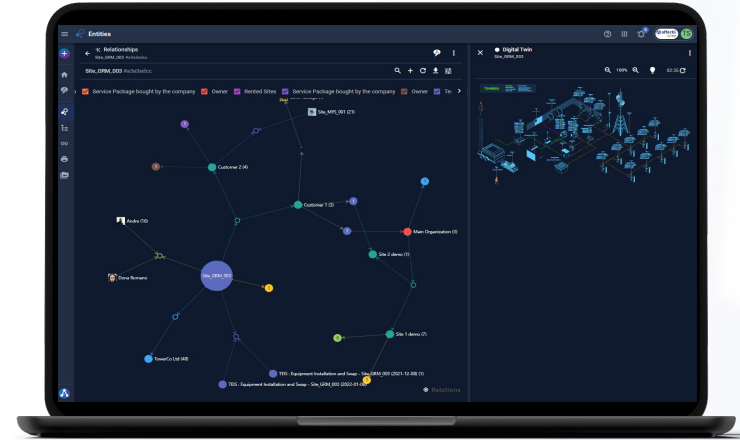
View real-time data on Relationships for any Entity, including Profiles, Tasks, Digital Twins and more..

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Orchestrate everything.

affectli OTB Accelerators for TowerCo

affectli OTB for TowerCos

Circular diagram segments: Operate · Maintain · Site Acquisition · Asset Management · PMO & Rollout
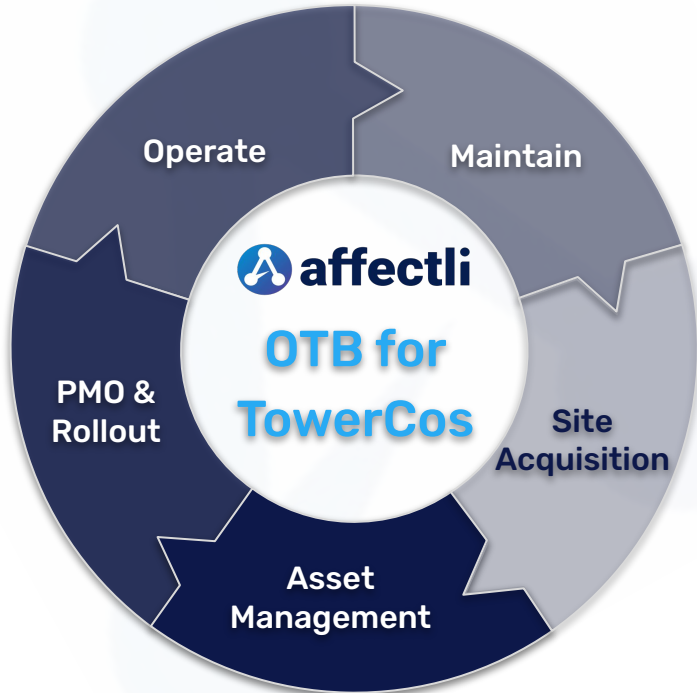
The OTB for TowerCo Solution Modules include:

Site Acquisition
- Web Customer Portal Suite
- Site Permitting and Acquisition
- Lease Management: Landlord & Customer

Asset Management
- Site Audits
- Tower Audits
- Energy Management/Optimisation

PMO & Rollout
- Site Build Management
- Site Equipment Upgrades
- Colocation

Operate
- NOC Incident Management
- Site Access
- Site Key Management
- 2D Digital Twins Modelling
- 3D Digital Twins using Drones
- Billing for Customer & Vendor

Maintain
- Planning of Site Operations Function
- Operations Field Functions

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Highlights & functionality include:

- **Extensive Integration capabilities** - This is not a rip & replace solution! Affectli is hardware and system agnostic that supports all known digital protocols and standards, allowing you to sweat existing assets and consolidate any number of new & existing systems, devices and datasets.

- **Multi-tenancy** functionality with Market-based separation capabilities to ensure data sovereignty, whilst delivering the right information to the right people at the right time.

- **Semantic Ontology** that connects every data point, and allows for real-time data to be pivoted & visualised with the simple click of a button.

- **Big Data** capabilities for processing unlimited data points.

- **Data Structuring** through our powerful Mi-Stream engine that feeds into a real-time Events Monitor.

- **AI / M2M** for machine learning and predictive analytics.

- Business Process Management tools that **digitise Workflows & Business Processes** to ensure standardisation and compliance across the organisation.

- Maps that provide real-time **Situational Awareness** and allow you to pivot any data point.

- **Digital Twins** with real-time data and layers of information that are drillable into granular detail.

- **Communication tools** for end-to-end encrypted contextual collaboration, including Instant Messaging; Contextual Communication within Tasks & Entities; as well as Broadcast notifications.

- **Document Storage** solution for a number of supported files that is linked directly to any Entity, Ticket, Task and more.

- **Insights tools** for Graphing, Mapping, Reporting, Super Analytics & CEO Dashboards

- And more..

Digitize Workflows

Collaborative Workspaces

Broadcast Messages

Encrypted Chat Feature

Events Monitor

Multiple Language Options

Situational Awareness

CEO Report

2D Digital Twins

1.6k

3D Digital Twins

MTTR Trend

Site Access Requests

Availability Dashboard

Available Offline

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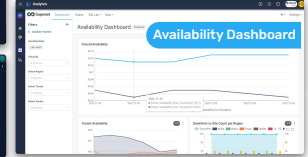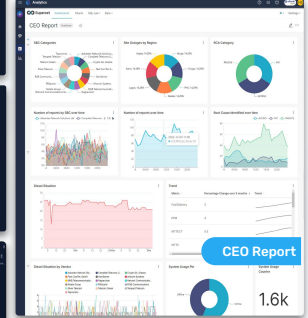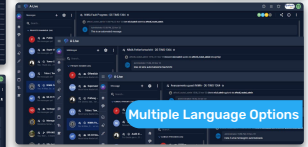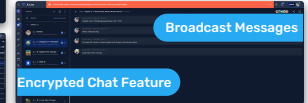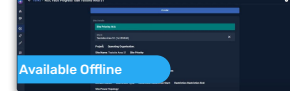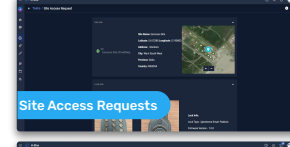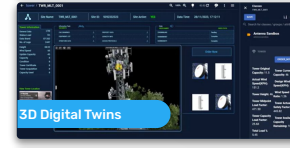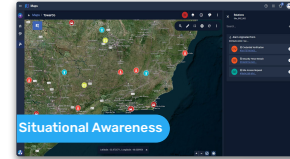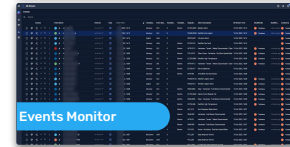
Drillable Digital Twins for TowerCos

2D Digital Twins
Real-time data and layers of information that are **drillable into granular detail**.

Semantic View & Digital Twins for TowerCos

Real-time data & visualization for:

- Customers
- Engineers
- Operations
- Asset Lifecycle Management

3D Digital Twins & Drone as a Service
Real-time data and layers of information that are **drillable into granular detail**.

affectli Own your data. **Orchestrate everything**.

Affectli for TowerCo Billing Solution

Our solution delivers **real-time visibility & live reporting** to meet Telco billing requirements, including Receipts & Costs.

Receipts:
- Bill Customers for:
  - Hosted equipment
  - Shared equipment
- Penalty charges per Vendor SLAs

Costs:
- Billing from Vendors
- Billing from Subcontractors
- Penalty charges per Vendor SLAs

Affectli Billing for TowerCos: Ontology Driven Meaningful Data

Pivot and visualise **real-time information** including:

- Per Site
- Per Tenant
- Per RTU
- Per BTS
- Per Customer
- Per Grid
- Per Generator
- Per Rectifier

...and more

affectli Own your data.
Orchestrate everything**.**
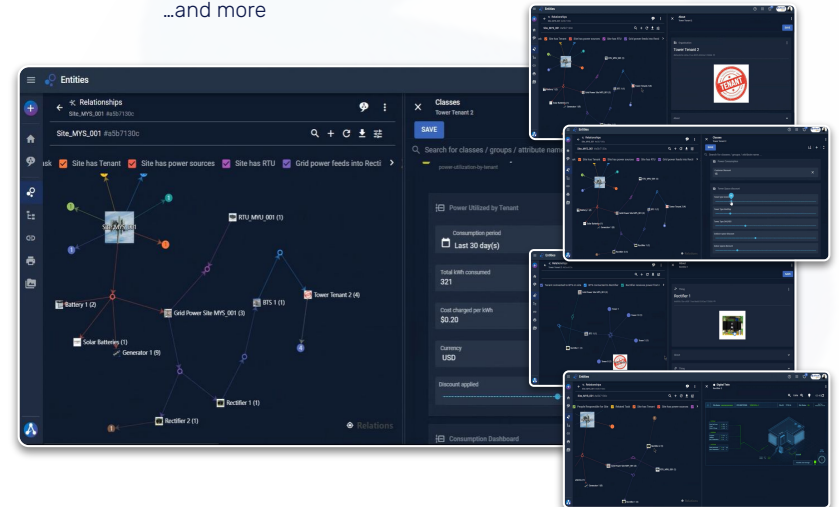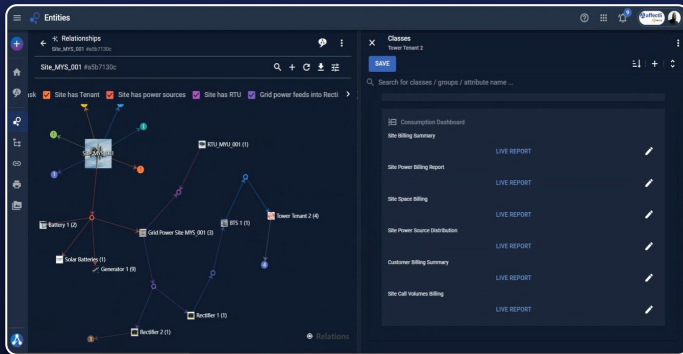
Affectli Billing for TowerCos: Data Sources

Affectli provides real-time information from various Data Sources including:

Power Consumption:
- Affectli supports any RMS device using any networking protocol.

Space Utilisation:
- Based on captured information such Assets, Equipment and Location.

Customer SLA Compliance:
- Using RMS Alarm data
- Tracked through NIMA (NOC Incident Management) that provides cumulative date on downtime and root cause analysis.

Vendor SLA Compliance:
- Extracted from Incident Management and on-site Field Services System.
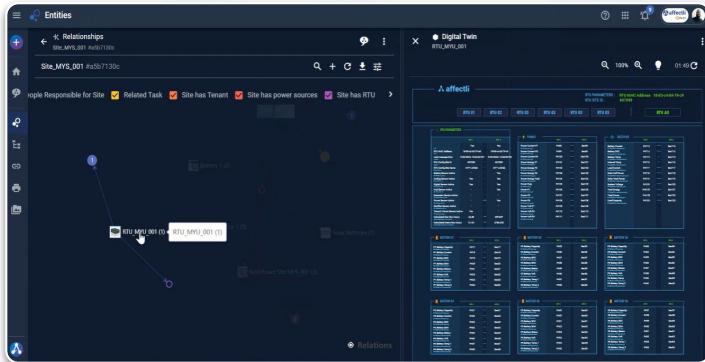
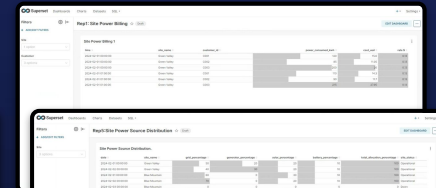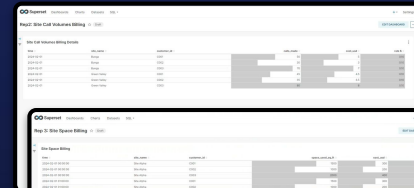# Affectli Billing for TowerCos: Granular Billing

Executive Dashboards & Granular Billing with real-time information is included and covers various levels of details for both **Vendor & Subcontractor Billing** and **Customer Billing**.
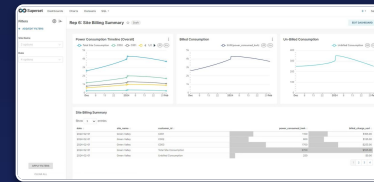
**Site Billing Summary**   **Customer Billing Summary**
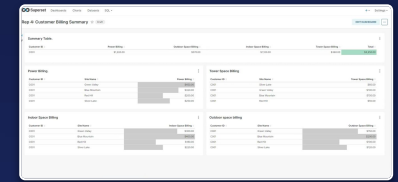
**Granular Billing i.e.
Site Power, Site Call Volumes, Site Space,
Site Power Source Distribution**

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RMS Hardware Solutions

Affectli is device independent, but we have partnered with Tag N Go to supply market-leading hardware solutions that are designed for situations where **speed**, **quality** and **efficiency matter**.
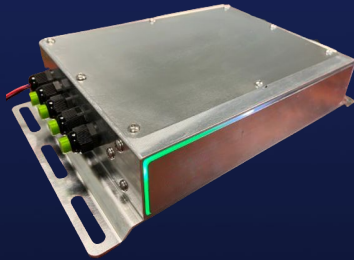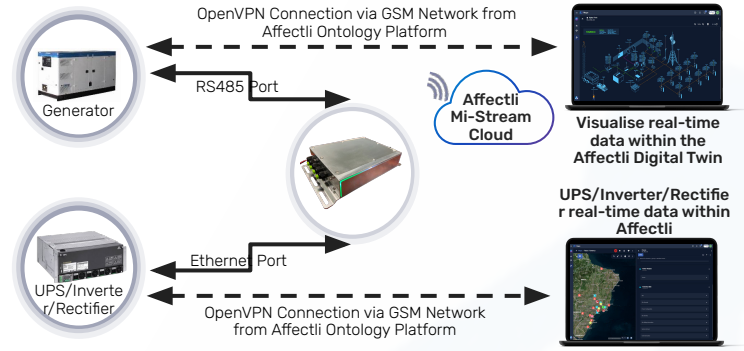
TAG N GO

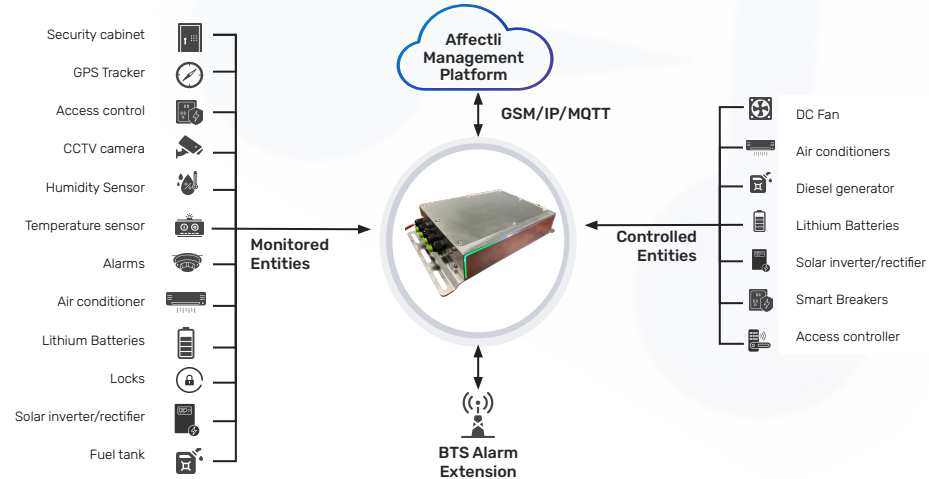**An innovative RMS solution with an on-site Virtual Technician.**

Discover operational issues and make changes to the required parts of your system without any human intervention.

Pass-through or Cut-through Operation

OpenVPN Connection via GSM Network from Affectli Ontology Platform

Generator

RS485 Port

Affectli Mi-Stream Cloud

Visualise real-time data within the Affectli Digital Twin

UPS/Inverter/Rectifier real-time data within Affectli

UPS/Inverter/Rectifier

Ethernet Port

OpenVPN Connection via GSM Network from Affectli Ontology Platform

RMS Solution Application: Equipment Remote Monitoring & Control

Security cabinet
GPS Tracker
Access control
CCTV camera
Humidity Sensor
Temperature sensor
Alarms
Air conditioner
Lithium Batteries
Locks
Solar inverter/rectifier
Fuel tank

Monitored Entities

Affectli Management Platform

GSM/IP/MQTT

Controlled Entities

DC Fan
Air conditioners
Diesel generator
Lithium Batteries
Solar inverter/rectifier
Smart Breakers
Access controller

BTS Alarm Extension

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Wired Peripherals & Sensors for Typical Telecom Application

- Power Conversion Systems
- Site Battery DPP Voltage & Current
- Solar Power DPP Current & Energy
- Tenant DC Load DPP Current & Energy
- Lithium Ion Batteries BMS
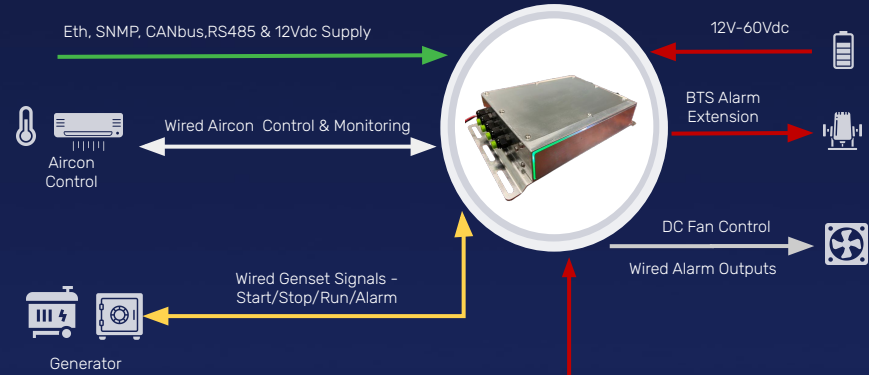- AC Supply/Load Voltage & Current Power & Energy
- IP Camera
- Gate/Door Access Control
- Diesel Tank Fuel Level Sensor

Wired Peripherals & Sensors

Eth, SNMP, CANbus, RS485 & 12Vdc Supply

12V–60Vdc

Aircon Control — Wired Aircon Control & Monitoring

BTS Alarm Extension

DC Fan Control

Wired Alarm Outputs

Wired Genset Signals – Start/Stop/Run/Alarm

Generator

Temperature & Humidity Readings & Alarms

Smoke Sensor / Fire Panel Alarm

Cabinet Door Alarms

UPS / Inverter Alarms

Surge Protection Alarms

Motion Detector

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Proven Success : TowerCo

The Challenge

A TowerCo Client with operations in multiple countries

Our Client was faced with challenges in meeting their stringent SLA criteria that resulted in penalties with significant financial implications. This was further fuelled by their flawed computerised systems that overloaded their servers and resulted in inaccurate reporting.

Within the operations, they experienced difficulties managing theft, plus tracking & monitoring their equipment that is situated in remote locations. In addition, they faced efficiency challenges with regards to identifying problems on their sites, plus challenges in managing tenants, vendors and third-party suppliers across various sites.

The Results

"We have experienced a transformative benefit of their product … we're more reliably and rapidly informed about the status of our assets and have reduced considerably our reaction times to deal with arising situations …"

"Mi-C3 has provided timely delivery and high adaptability to our continually changing needs through the implementation of Affectli."
- Head of IT

PROVEN AT SCALE

Grown from 11,000 sites (2016) to over **30,000 sites** (2023).
Monitoring 850,000+ endpoints & ingesting approx **1.6 million records per hour**.
Company listed on NYSE - October 2021 - (USD) $8 Billion Market Cap.

Client Results

50%
Reduction in SLA

Sub-Second MTTD
Issue Detection

20+%
ROI within 1st year

99.9%
ave. system availability

31 million
reduced emails monthly

Customer Asset Management &
Customer Billing

Site Access
Management

affectli Own your data.
Orchestrate everything.

Maximise your efficiencies.

Get in touch

To request a demo or a tailored Affectli solution,
email **contact@affectli.com**
or visit our website **www.affectli.com**
for more information.

kumoco

The TowerCo System Integrator

Setting the standard for TowerCo excellence

Kumoco: the TowerCo Specialist System Integrator

Setting the standard for TowerCo excellence

In the competitive global TowerCo landscape, it is crucial to employ efficient, adaptable processes and platforms. These should support rapid product launches and offer real-time business insights.

Real-time Operations and Maintenance are critical to achieve compliance with governance requirements.

Realise cost savings and build new products with an end-to-end TowerCo business platform.

Embed Best Practice processes to drive customer satisfaction.

Embrace a fully integrated TowerCo architecture.

Partner with Kumoco to transform your TowerCo

Choose the right TowerCo partner

Expertise & Guidance: Kumoco navigates the complex landscape of TowerCo platforms, selecting the optimal solution for your unique needs

De-merge & Migrate: Kumoco executes the process of decoupling from the incumbent telco to create a standalone organisation

Strategic Delivery: Deliver using the experience of Kumoco to pragmatically address existing and future customer contractual requirements

Training & Support: Equip yourself and your customers with the knowledge and skills to operate and leverage your platform effectively, maximising its value

Ongoing Optimisation & Support: Partner with Kumoco TowerCo Managed Services to continuously monitor, refine, and optimise your platforms

EXPERIENCE ACCELERATES SUCCESS

- SI Authority
  - Effective Comms
  - Exec Leadership
  - Integrated Team (Bus & IT)
  - Measurable Outcomes
- Proper Planning
  - Strong Scope Mgmt
  - Highly Skilled People
  - Thorough Testing
  - Agile Fast-Track Delivery
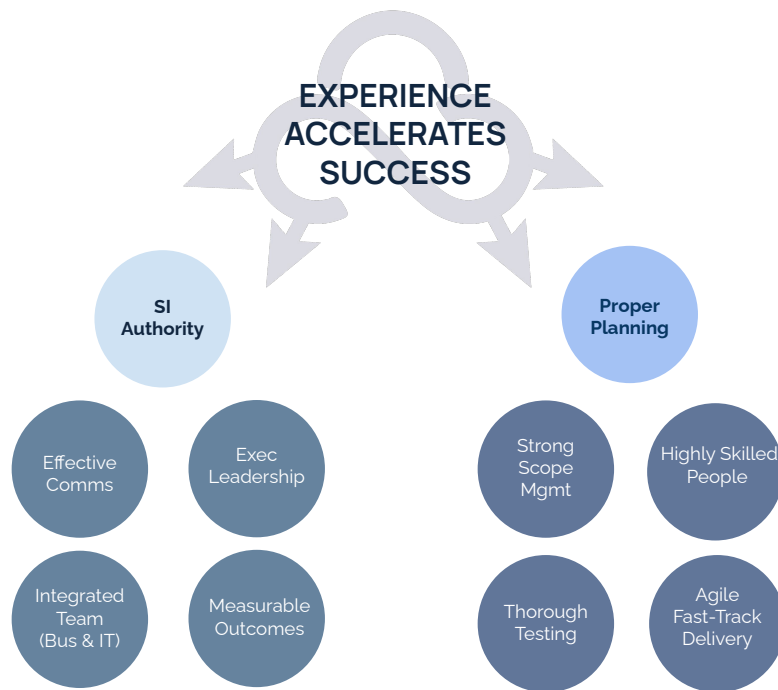
The Kumoco partnership provides a comprehensive SI service to grow your TowerCo estate rapidly

KUMOCO & AFFECTLI
The TowerCo Solution

Together we provide high performance TowerCo Mission Critical Environments

Affectli is an award-winning flagship product of Mi-C3 International.

Aligned with TMForum processes, Affectli provides extensive out of the box capabilities to accelerate your TowerCo business transformation.

The cutting edge software solutions are tailored for Mission Critical Environments that require a consolidated, detailed, real-time view of highly complex operations, and deliver meaningful Situational & Actionable Intelligence to the right people at the right time.

Mi-C3 is at the forefront of **Global Digital Transformation**

AWARD-WINNING & TRUSTED.
We take data security seriously!

Malta Communication Authority
Malta Communication Authority Business Awards 2008: Best B2B Application

World Summit Award
World Summit Awards (2018) Business & Commerce Category: Best B2B Application

AICPA SOC
SOC 2®, Type 2 Examination & Report Obtained

ISO ISO / IEC 2001:2013
ISO 27001:2013 Information Security Management System

ISO ISO 9001:2015
ISO 9001:2015 Quality Management Systems

ISO ISO 2000-1:2011
ISO 2000-1:2011 Service Management System

ISO ISO 2000-1:2015
ISO 14001:2015 Environmental Management System

OUR INTEGRATED ITSM & TOC SOLUTION - KUMOCO & AFFECTLI

Simplify operations, drive revenue, and gain control with best practice and out of the box processes

Maximise Revenue Potential: Optimise revenue with automated tenant billing, proactive lease management, and tower space utilisation tools.

Data-Driven Decisions: Leverage powerful analytics, data variables and reporting tools to identify trends, predict issues, and make informed decisions for your business.

Future-Proof Solution: Our scalable platform adapts to your evolving needs and integrates seamlessly with existing RMS, IOT and enterprise systems.

Seamless Integration: Eliminate data silos and streamline workflows with our combined ITSM and TOC platform, built specifically for TowerCos.

Comprehensive Visibility: Real-time insights and reporting into your entire tower portfolio, from site status and tenant needs; to equipment health and regulatory compliance.

Enhanced Efficiency: Automate routine tasks, optimise resource allocation, and reduce operational costs with powerful ITSM functionalities.
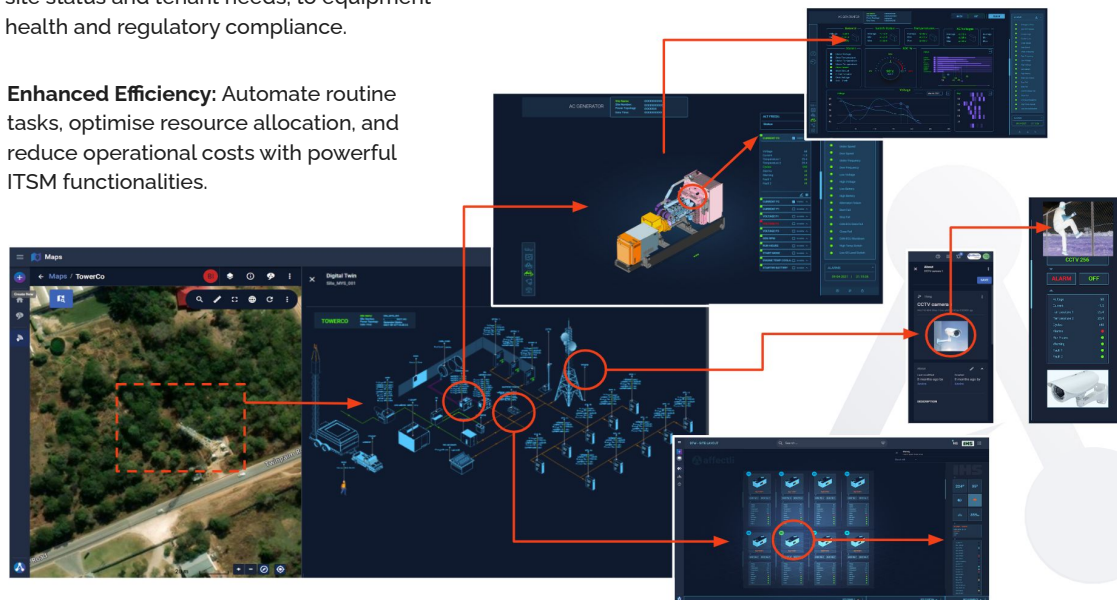
AFFECTLI TOWER

Real-Time Monitoring
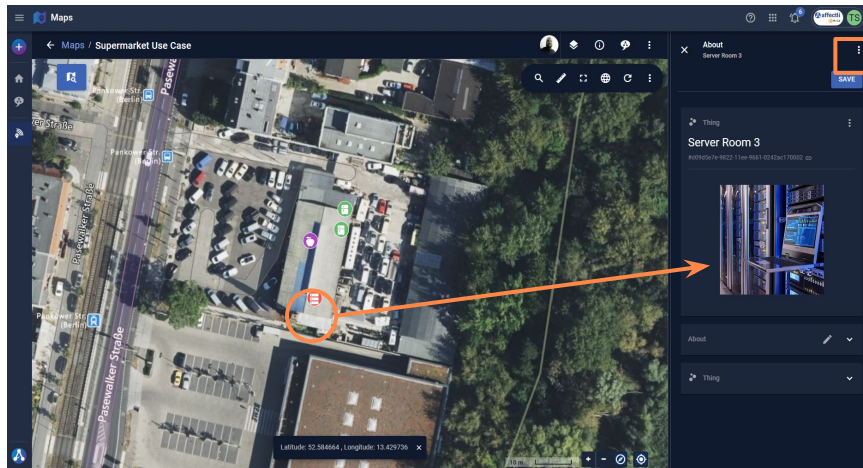
Click on **Tower** icon to view all data, contact details and information relevant to that site, including maintenance history and schedules.
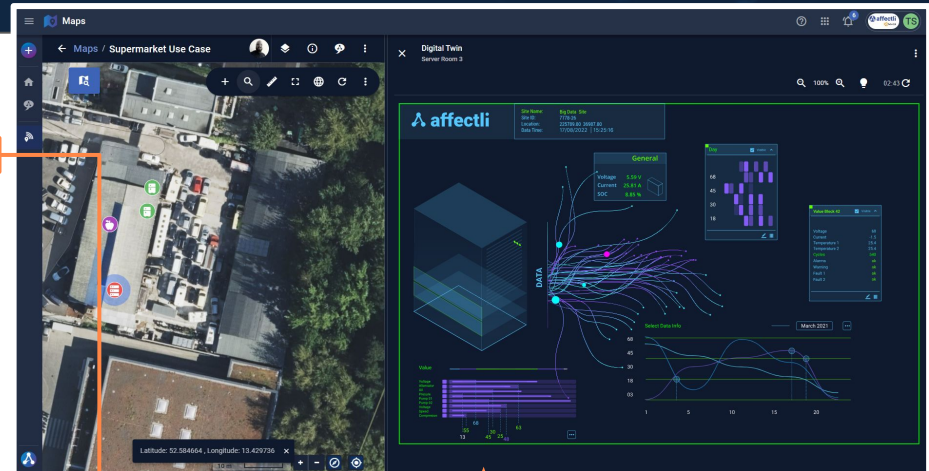
Click through to **Tower Digital Twin** and view real-time data pertaining to Doors, Temperatures, Voltage, Current, SOC and more.

AFFECTLI LANDLORD MANAGEMENT

Landlord Property Management (LPM) represents a significant advantage to making informed decisions on prime geographical gains. Our solution will track critical land and property data and provide informed insight into the landlord management lifecycle from the perspective of the landlord, as well as the tenant / tower owner.
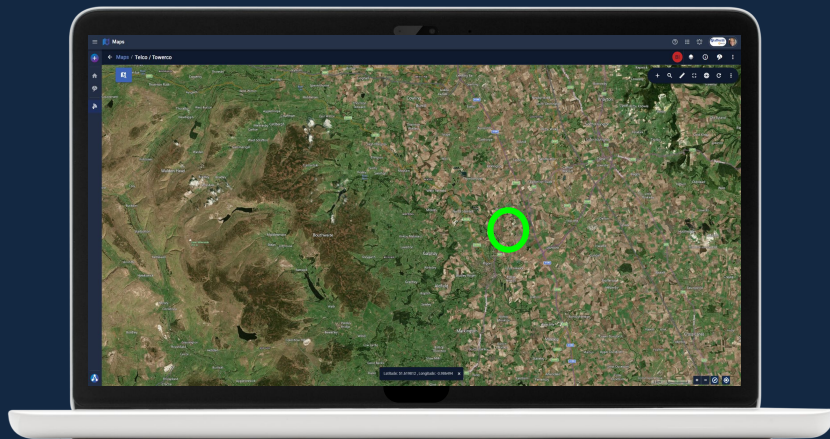
1. ACQUIRE
Facilitate site agreement negotiations to maximise value for both parties

2. AGREE & CONTRACT
Execution of lease agreements through a secure digital signature portal

3. SECURE & CAPTURE
Implement processes to reliably capture information within the master data module

4. MANAGE
Generate reports to provide the organisation with insights into lease progression

5. MAINTAIN
Ensure maintenance of contractual obligations for both Landlord and Lessee

6. RENEW / CANCEL / RETIRE
Streamline the management of renewals, cancellations, and retirement of sites and assets

AFFECTLI REAL-TIME TOWERCO BILLING

Fully configurable billing system supporting all TowerCo use cases.

Real-time Power Consumption Metering: Gain granular insights into power usage with our advanced RMS metering system, ensuring accurate and real-time billing for each tenant.

VRan Consumption Metering: Provides metering of power usage, shared and dedicated rental, and data transmission costs.

Accommodate diverse tenant needs: Flexible equipment hosting options for equipment housed within your data centre.

Eliminate manual calculations & disputes: with automated tower space rental & billing that is instantly calculated taking into consideration all pre-defined complex tariffs, discounts & agreements.

Transparent Consolidated Billing: Simplify financial management with consolidated billing for all TowerCo use cases.

Drill-down Reporting: Generate customisable reports with comprehensive filtering options, to track usage trends, identify cost-saving opportunities, and optimise your billing strategy.
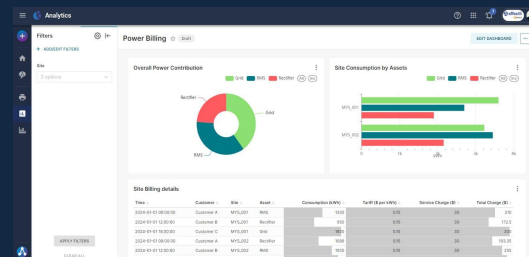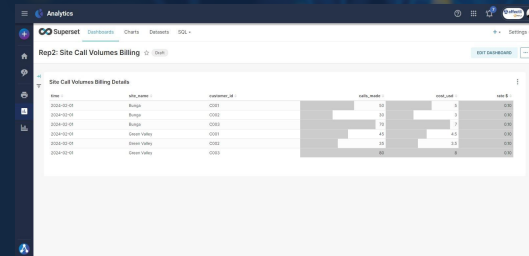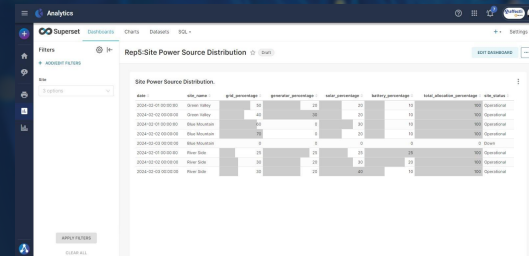
AFFECTLI TOWERCO POWER BILLING

Fully configurable billing system supporting all TowerCo use cases.

RMS

RMS based billing allows the granular billing of all connected devices where usage data is available.

This includes all data records from the IOT devices, Rectifiers or any other technology.

The data records schema is conferred into the Affectli platform and the billing workflows assigned. These workflows take the Tenant data, asset register and tarifs and creates Power Billing Data Records (PBDR).

These PBDRs are rated against the Tenant tariffs applied as part of the contract.

NON RMS

Non RMS billing allows the aggregations of data per site for pro rata allocation per tenant per asset.

Non itemised data requires rules to be configured and include the following:

- Irregular meter reading
- Monthly averages
- Diesel litres
- Fixed/Mobile rating
- Split per tenant
- Split per asset
- Standing charges
- Other Weighting Factors

KUMOCO TOWERCO RMS INTEGRATES TO AFFECTLI

Seamlessly integrate to Affectli with our RMS or use your existing RMS for real-time insights and proactive management

- **Real-time Analytics:** Monitor everything from environment to equipment performance with instant IoT data
- **Smart Alerts:** Get notified instantly of critical events, enabling swift response
- **Customisable Dashboard:** Track key metrics across multiple sites with personalised KPIs & health visualisations
- **Predictive Maintenance:** Avoid issues before they occur with AI-powered maintenance suggestions
- **Real-time Energy Optimisation:** Reduce costs and enhance sustainability
- **Easy Integration:** Works seamlessly with your existing RMS and various sensors/protocols
- **Secure & Compliant:** Industry-leading security and regulatory compliance
- **ESG:** Understand the impact of your towers on the environment

- **Boost Efficiency:** Streamline operations, reduce manual inspections
- **Unmatched Reliability:** Ensure optimal tower performance and service availability
- **Extended Equipment Lifespan:** Identify inefficiencies and cut costs

KUMOCO TOWERCO RMS
IoT SENSORS SUPPORTED

- Power Conversion Systems
- Site Battery DPP Voltage & Current
- Solar Power DPP Current & Energy
- Tenant DC Load DPP Current & Energy
- Lithium Ion Batteries BMS
- AC Supply/Load Voltage & Current Power & Energy
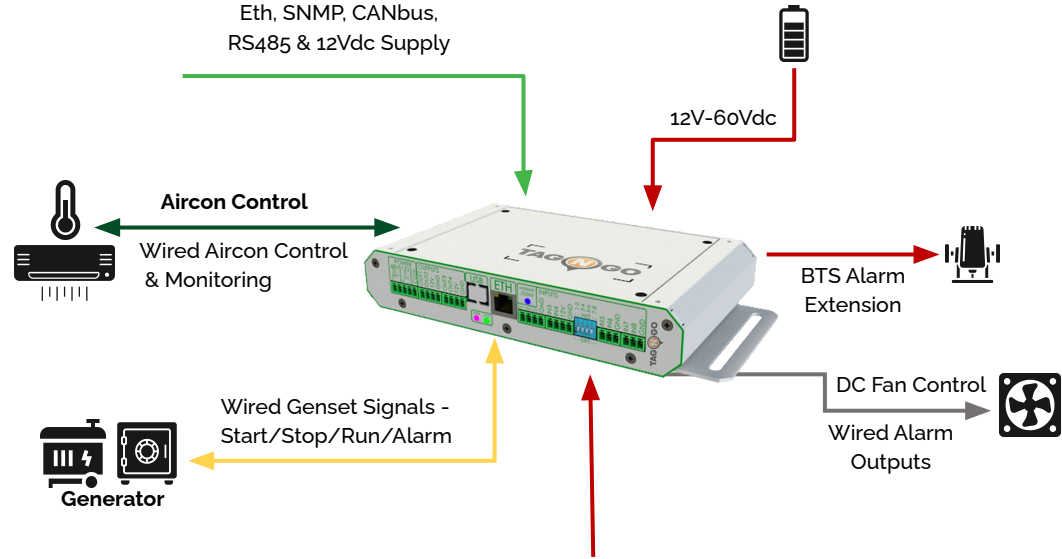- IP Camera
- Gate/Door Access Control
- Diesel Tank Fuel Level Sensor
- Weather Sensors
- Tilt / Vibration Sensors

Most standards supported:

- ITU-T X.3670
- 3GPP TS 23.234
- LwM2M
- LoRaWAN
- Sigfox etc

Eth, SNMP, CANbus, RS485 & 12Vdc Supply

12V-6oVdc

Aircon Control

Wired Aircon Control & Monitoring

BTS Alarm Extension

Wired Genset Signals - Start/Stop/Run/Alarm

Generator

DC Fan Control

Wired Alarm Outputs

Temperature, Humidity Readings & Alarms	Smoke Sensor / Fire Panel / Gas Alarm
Cabinet Door Alarms	UPS / Inverter Alarms
Surge Protection Alarms	Motion Detector

TAG-N-GO

AFFECTLI DIGITAL SMART LOCK MANAGEMENT & INTEGRATION

Bringing Security Of The Future To The Now

Embracing smart lock tower security management will benefit your business and operations in ways that you may never have considered.

KEY BENEFITS

- **Remote Lock/Unlock:** Eliminates physical key handling and management; reduces physical site visits and associated costs.
- **Highly Discriminate Access Control:** Grant access to specific people for specific times = improved security and accountability.
- **Compliance & Safety:** Meet regulations and protect personnel with controlled access to potentially hazardous areas.
- **Integrations:** Link with security systems for holistic site protection and operational insights.
- **Durable & Reliable:** Purpose-design for harsh environments, strengthening operation whatever the weather.
- **Scalable & Flexible:** Easy and quick to add locks and update access rules.
- **High Security and Compliance:** Encryption, remote monitoring, and audit trails.
- **Reduced Costs:** Save on key management and physical site visits.
- **All common platforms supported:** Allegion, Assa Abloy, Honeywell, Nedap, ISEO etc.

FLM WITH INTEGRATED CONTRACT & ENGINEER MANAGEMENT

Manage First Line Maintenance, 3rd party contracts and contractors all on the one Affectli platform
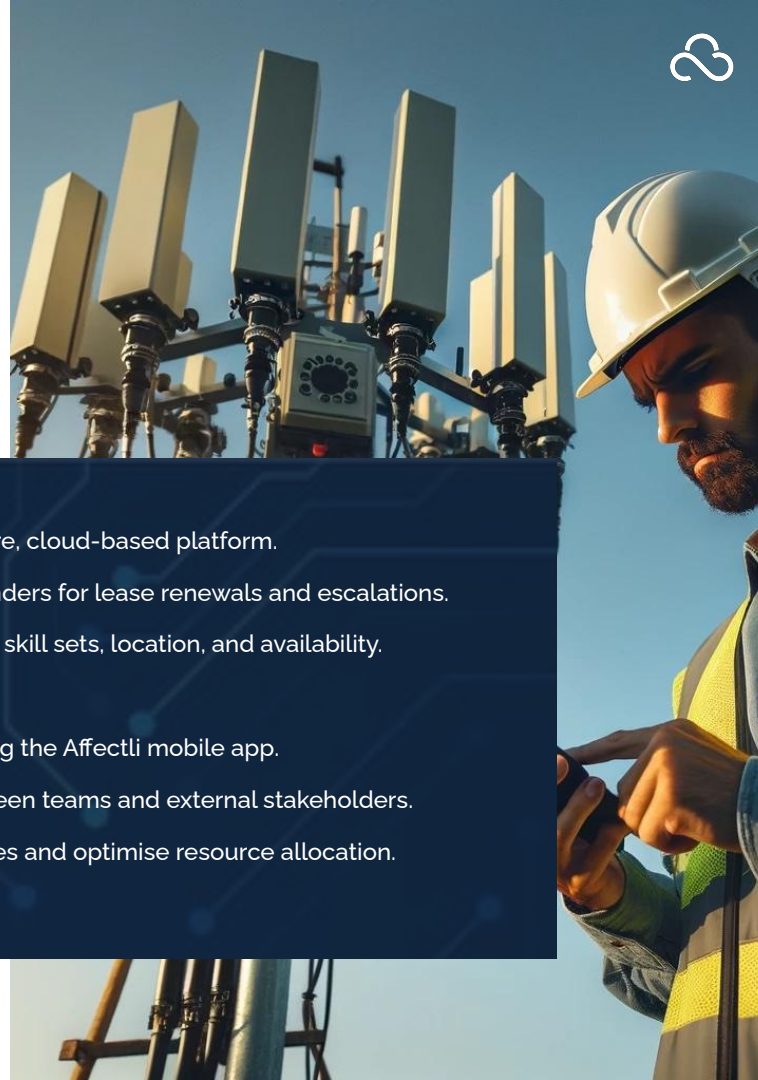
Contract Management: Store, organise, and access all tower lease agreements in one secure, cloud-based platform.

Automated Workflows: Streamline approvals, track key dates, and receive automated reminders for lease renewals and escalations.

Seamless Engineer Management: Assign, track, and optimise engineer schedules based on skill sets, location, and availability.

Real-time Visibility: On contracts' status, engineer workloads and project progress.

Mobile Accessibility: Anywhere, anytime access to all information on handheld devices using the Affectli mobile app.

Enhanced Collaboration: Facilitates open, seamless communication and data sharing between teams and external stakeholders.

Data-Driven Decisions: Leverage reporting and analytics to identify cost-saving opportunities and optimise resource allocation.

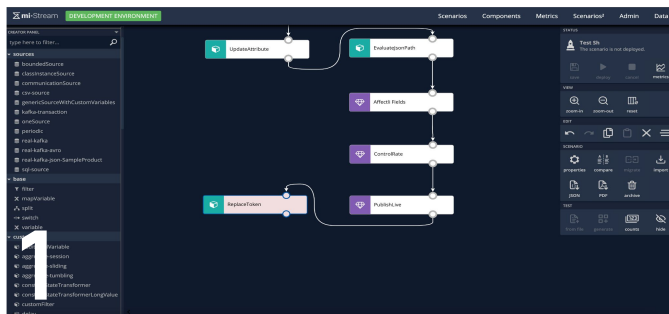# BUSINESS PROCESS MANAGEMENT

Digitise Workflows & Business Processes through the user-friendly Low Code, No Code, drag & drop app designer tool.
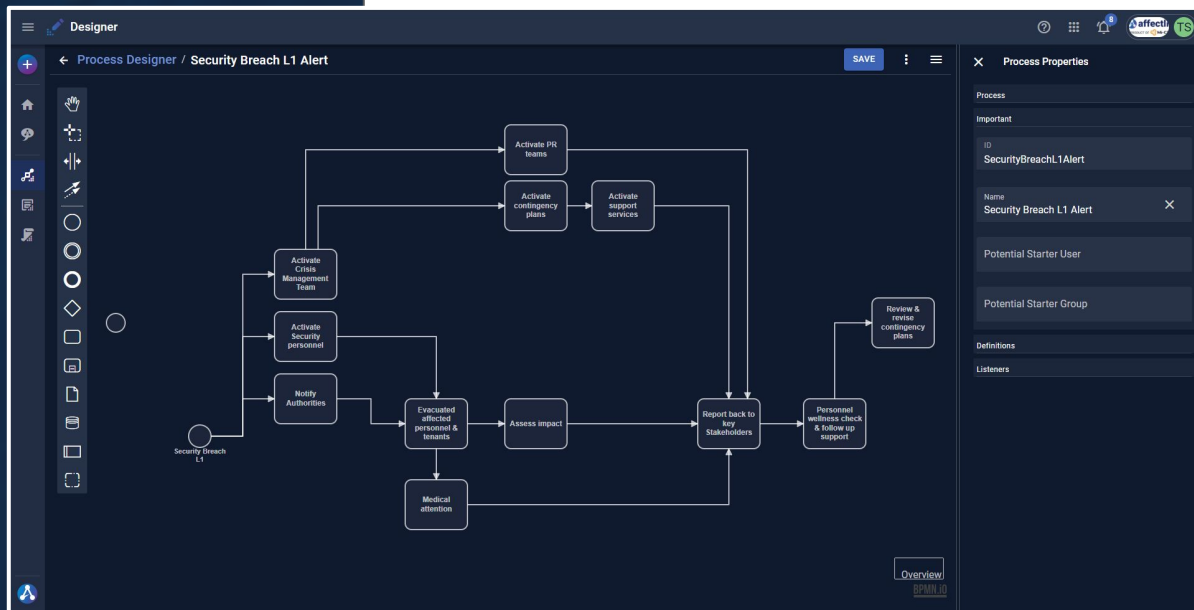
- **Standardise** workflow processes across the organisation
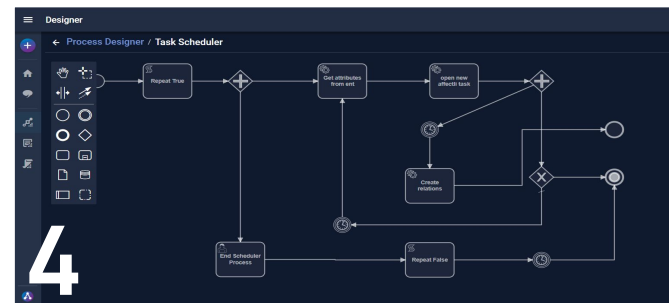- **Ensure** compliance
- **Immediate** implementation

AFFECTLI DATA INTEGRATION & PROCESS WORKFLOWS

1 Create Data Streams to integrate your data sources and orchestrate data flow

2 Design visualisations for a real time view of your estate (eg. Status Digital Twin, Map, etc)

3 Create recommendations that trigger when critical events happen (Robotic Process Automation)

4 Digitise and automate business and operational process in response to these events

AFFECTLI REPORTING
& SUPER ANALYTICS

Meaningful Intelligence
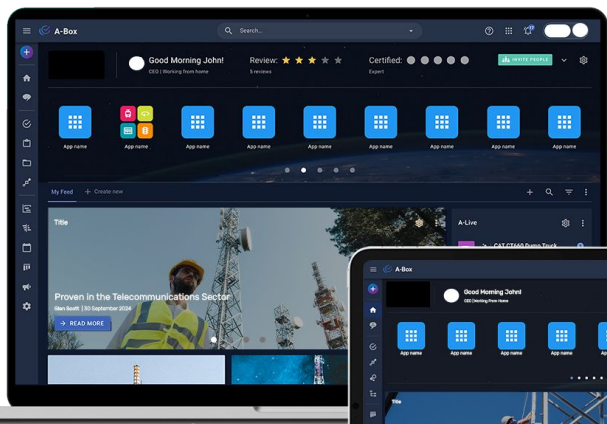
Customised dashboard & reports
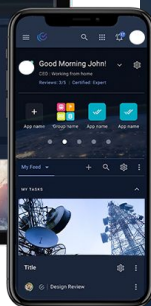
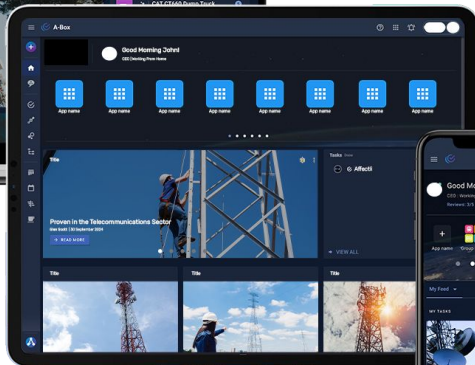**Real-time information**
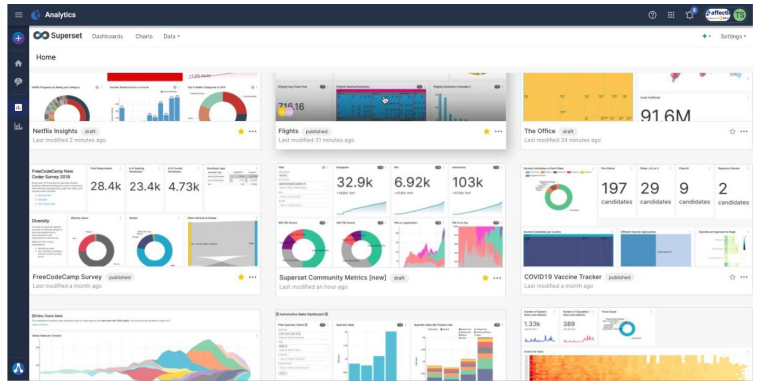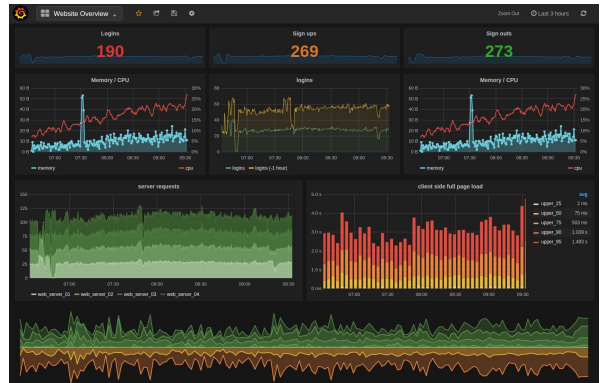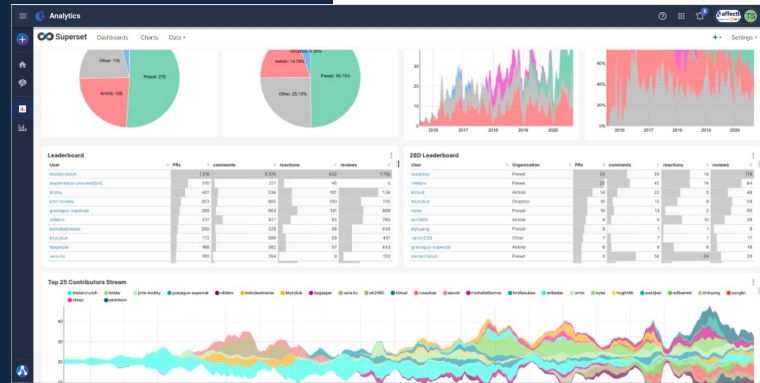
AFFECTLI IS DEVICE AND BROWSER AGNOSTIC

Personal Computer & Control Room Monitors

Tablet PC

Smart Phone

Designed using
Progressive Web App (PWA) technology
and always with a "**Mobile First**"
approach.

EASY TO NAVIGATE

FAST

FRESH

**RESPONSIVE**

AVAILABLE OFFLINE

TOWERCO ASSESSMENTS

Making Transformation Crystal Clear

Strengths, Weaknesses, Operational Maturity & Performance - where is your business at?

Kumoco have devised a sophisticated, proprietary TowerCo assessment methodology Radar to pinpoint precisely where our clients lie within the Rollout, Operate and Maintain functions of the business.

The result is a clear technology-agnostic roadmap that guides the Transformation journey.
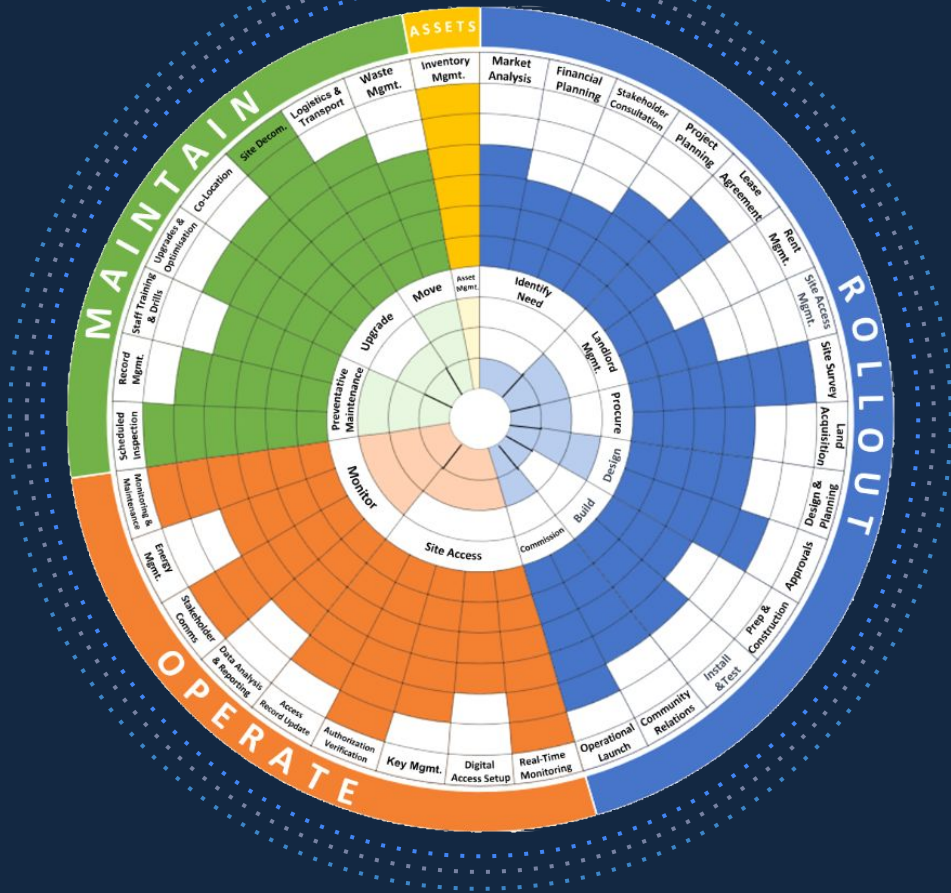
Kumoco
Real Experience

Working with Global Telecoms Companies for 30+ Years

Kumoco is a highly-regarded SI specialising in the execution of TowerCo strategies.

Kumoco has extensive experience designing and implementing Service Assurance, RMS, Billing, ERP and large-scale, complex transformation programmes across Europe and the Middle East.

We provide tower trends, roadmaps and investment advice to the ExCo and our comprehensive experience of agile delivery. This comes with a depth of knowledge and capability that helps to drive programmes smoothly, from strategy definition to operational implementation.
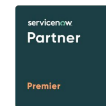
Terry Benge
COO
terry@kumoco.com

Product Solutions

NEOCOM
SOLUTIONS (PTY) LTD

Tailors of Technology

Supplying the African market.

Our Vision is to be the supply company of choice for the African market, while making it our mission to supply cost effective and innovative solutions to our clients.

Neocom Introduction

Neocom Solutions Company Certification

EMPOWERLOGIC

Broad Based Black Economic Empowerment Verification Certificate

Issued to

Neocom Solutions (Pty) Ltd

Level 1 Contributor

Measured Entity

Company Name	Neocom Solutions (Pty) Ltd
Registration Number	2018/064420/07
VAT Number	4110281138
Address	74 Regency Drive, Route 21 Corporate Park
	Irene, Gauteng
	0157

B-BBEE Status

B-BBEE Status Level	Level 1				
Total Points Obtained	101.06	EO: 22 points; MC: 14.48 points; SD: 14.58 points; ESD: 45 points; SED: 5 points			
Discounting Principle Applied	No	Procurement Recognition	135.00%	Participated in Y.E.S Initiative	No
Empowering Supplier	Yes	Measurement Period Year End	31/03/2023		
Black Voting Rights	51.09%	Black Women Voting Rights	30.05%	Black Designated Groups	0.00%
Black Economic Interest	51.09%	Black Women Economic Interest	30.05%	Black Youth	0.00%
51% Black Owned	Yes	30% Black Women Owned	Yes	Black Disabled	0.00%
Normal Flow Through Applied	Yes	Black New Entrants	19.69%	Black Unemployed	0.00%
Modified Flow Through Applied	No	Mandated Investment Exclusion Applied	No	Black People Living in Rural Areas	0.00%
				Black Military Veterans	0.00%

Issue Date	16/10/2023
Expiry Date	15/10/2024
Certificate Number	ELC12064RGENBB
Version	Final
Applicable Scorecard	Amended Codes - Generic
Applicable BBBEE Codes	Amended Generic Codes Gazetted on 11 October 2013 and Amendments Gazetted on 31 May 2019

EmpowerLogic (Pty) Ltd
Reg. No. : 1995/000523/07
BBBEE Verification Agency

Per Gianna Le Roux
Member - Verification Committee

SANAS Accredited

BVA018

This certificate is the result of an independent and impartial verification of the BBBEE status of the measured entity measured against the Codes of Good Practice on Broad Based Black Economic Empowerment and has been issued in accordance with the EmpowerLogic Verification Certificate Policy. This certificate supersedes any previous certificates issued to the Measured entity. For enquiries please contact EmpowerLogic at 086 111 4003.

CERTIFICATE

Standard	ISO 9001:2015
Certificate Registr. No.	01 100 928670

TÜV Rheinland Inspection Services Certifies:

Certificate Holder: Neocom Solutions (pty) Ltd
74 Regency drive,
Route 21 Corporate park
Irene
Pretoria
0157

Scope: Design, source and provide solutions and products to the telecommunications markets in Africa.

An audit was performed, Report No. 928670. Proof has been furnished that the requirements according to ISO 9001:2015 are fulfilled.

The due date for all future audits is 14 – 01 (dd.mm).

Validity: The certificate is valid from 2022-05-31 until 2025-03-31
First Certification 2019

South Africa, 2022-06-07   TÜV Rheinland Inspection Services (Pty) Ltd
4th Floor
138 West Street
Sandton
2196
Certification Body No. C09

sanas
C09

TÜVRheinland®
Precisely Right.

www.tuv.com

NC
NEOCOM
SOLUTIONS (PTY) LTD

Innovation

Idea Generation

Design and Engineering

Prototype Development

Product Commercialization

Product Certification

Customer Approval

Market Penetration

Product Supply and Logistics

Continuous Product Support

Continuous Improvement

Continuous Improvement and Development

Product Range

Cooling	**Locking Solutions**	**High Security Bunkers**	**High Security Safes**	**Energy**	**Remote Management**	**Accessories**	**Services**
Smart	Smart keyless Locks	Drop on site	Single door 6 Tier Battery	Batteries	Site Load Management	Cable Kits	PAAS
AC and DC				Generators			
Combined Active and Passive Cooling	Mechanical Locks	Cast on Site	Double Door	SPDU	Fuel Management	Solar AWL	Battery As A service
			DC Cooled version	Tailor-made Energy Solution		Solar Kits	NOC Facility
Multiple version				Renewable Energy	Power Management	Tools and Accessories	Batteries on a trailer
				PAAS/ ESCO	PAAS		

The below diagrams illustrates a typical site layout with required points of security integration required for a smart lock secured controlled access.
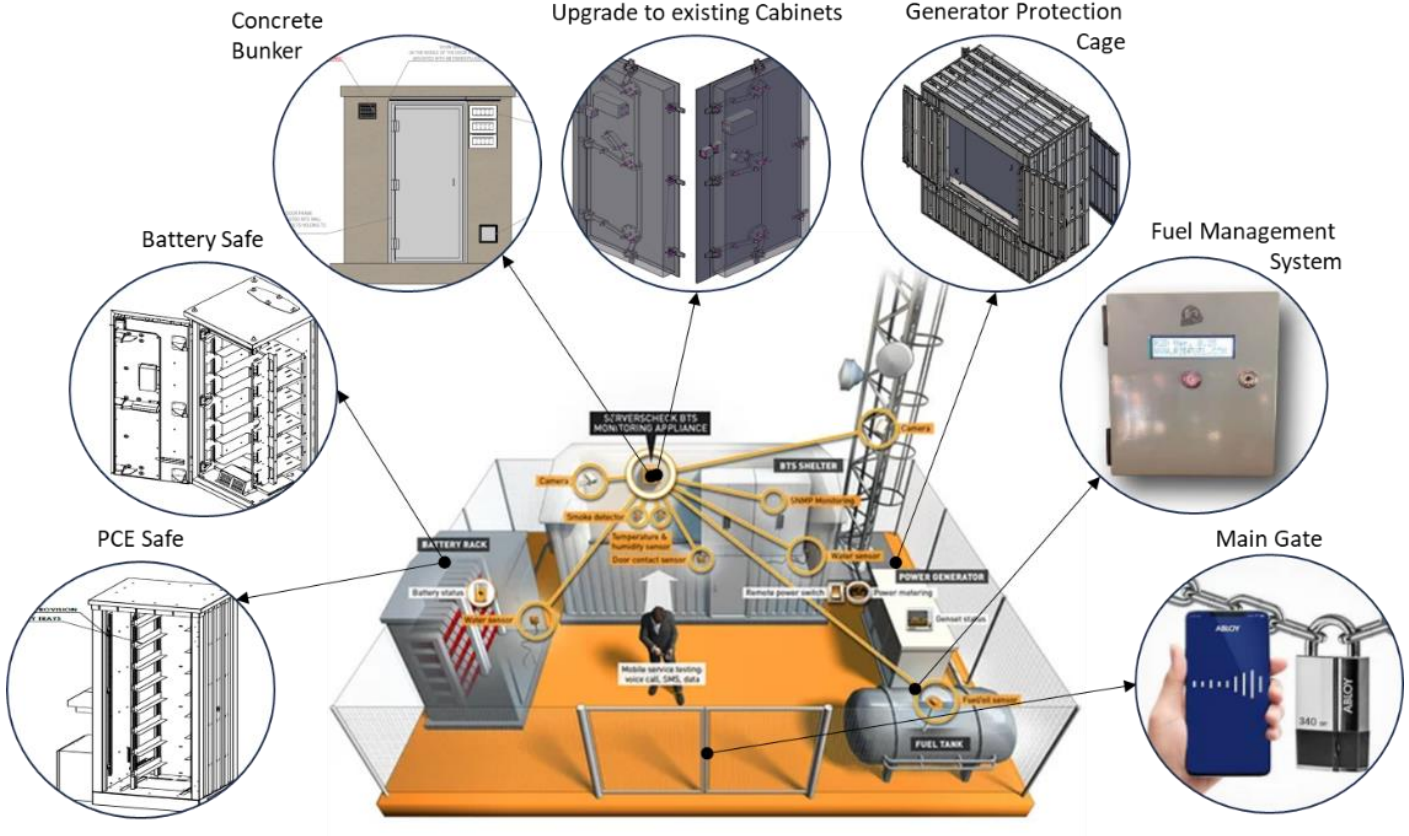
Hybrid Rectifier Solution

Vertiv Esure Rectifier 4300kW module

The 4.32 kW high-efficiency Vertiv eSure rectifier is designed to convert standard AC supply voltages into stable nominal -48 V DC voltage that is adjustable to application needs. This constant power rectifier offers the latest patented switch mode technology, using DSP (Digital Signaling Processor) functionality for efficient operation.

For a higher load capacity, rectifiers can be connected in parallel to support a variety of telecom applications. Remote management and control of the power system is enabled when combined with a Vertiv™ controller.
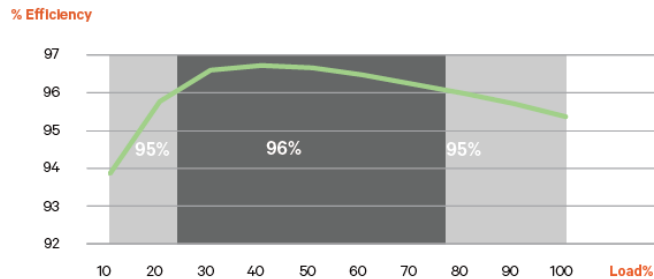
Vertiv™ eSure™ Solar Converter

The S48-4300E4 Vertiv™ eSure™ Solar Converter efficiently delivers 4300 watts of power at -48 VDC to the load and battery. This constant power converter designed with the latest patented switch-mode technology, uses DSP (Digital Signal Process) to provide clean power to the load with acute control and management.

The S48-4300E4 can be connected in parallel with other converters and rectifiers to support a variety of telecom applications. Unified remote management and control of the power system is enabled when combined with a controller. Implementing solar conversion and control from Vertiv, ensures your critical network is highly available and extremely affordable to operate.
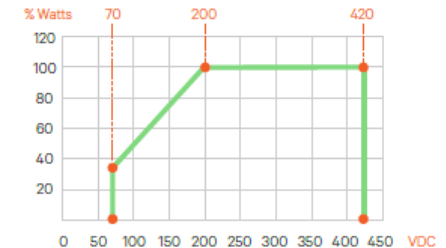

Figure 1: Output Power vs. Input Voltage and Vo > 48 VDC at Tamb < 55°C

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Hybrid Rectifier Solution

Vertiv™ NetSure™ Control Unit (NCU)

The NetSure™ Control Unit (NCU) is an advanced controller designed for a wide range of DC power applications, enabling remote monitoring and control of modern communication sites. The factory-installed (standard) or field-added NCU is backward compatible with existing NetSure power systems, controlling all aspects of the power chain, including AC mains, DC power plant, battery backup, diesel generator, and the local site environment. Optional interface boards enable the user to access an even greater set of site parameters.

Remote monitoring through the NCU enables cost saving techniques like Peak Shifting and Peak Shaving. When utility pricing is high during a predictable time frame, Peak Shifting allows you to plan a repeating routine to put rectifiers on standby and support the load with batteries or other energy sources instead. Shifting the load is scheduled to save energy and reduce operating costs. Peak Shaving is another energy-saving strategy for unpredictable utility cost fluctuations that allows operators to shift a site load in real time when demand spikes and the cost of electricity goes up.

NETSURE 7100

The NetSure 7100 Standard Series DC power system is designed for Deployment in telecom access network applications requiring a reliable and high power density supply up to 31.5 kW at 48 VDC. The system is available as a subrack for integration in an outdoor enclosure or existing cabinet, mounted on top of a battery rack or integrated in a cabinet.

The 17.5 kW subrack comes in a 5U high integrated power shelf and the 31.5 kW subrack in a 6U high integrated power shelf, both supporting 19" rack mounting. The distribution section supports up to (29) load circuit breakers and up to (6) battery circuit breakers. The distribution circuit breakers can be divided into two priority load disconnect levels via dedicated LVD contactors. Prioritized load disconnect can result in significant savings on the backup battery investment.

NEOCOM
SOLUTIONS (PTY) LTD

Shoto Li Ion Batteries

Model	48-100	51.2-100
Nominal Capacity (kWh)	4.8	5.12
Depth of Discharge	90%	
Usable Capacity (kWh)	4.32	4.6
Cycle Life	≥5000 @25 ℃	
Charge Voltage (V)	54	57.6
Discharge Voltage (V)	45	48
Nominal Voltage (V)	48	51.2
Max Parallel Quantity (Pcs)	16	
Charge/Discharge Current(A)	Recommend 50（0.5C）	
	Max 100 (1C)	
Communication Port	RS485 & CAN	
Weight (Kg)	41	43
Dimensions (W*H*D)mm	442*133*420	
Operating Tempature	Charge -5℃~+45℃	
	Discharge -20℃~+50℃	
Recommend Operating Tempature	Charge +15℃~+35℃	
	Discharge +15℃~+35℃	
	Storage -20℃~+35℃	
Humidity	5%-95%	
Altitude	≤4000m	
Certificate	TUV(IEC 62619)/CE-EMC/UN38.3	
Compatible Inverters	Growatt,Goodwe,Victron,Deye,Sofar and more brands to be announced	

Neocom Solutions has partnered with Shoto, a global giant in the Telecoms Industry who supplies batteries to 127 countries across the 5 continents.

The Shoto battery SANS approved and has IEC Certification.

Neocom being a bespoke solutions partner in the industry has together with Shoto developed a battery security solution for the South African market, which we know will assist the network to bring the high theft rate being experienced currently significantly down. And we will continue to look at newer more effective ways to prevent theft of equipment from sites.

The current solution comprises of the most advanced mechanical, technical and software enhancements.
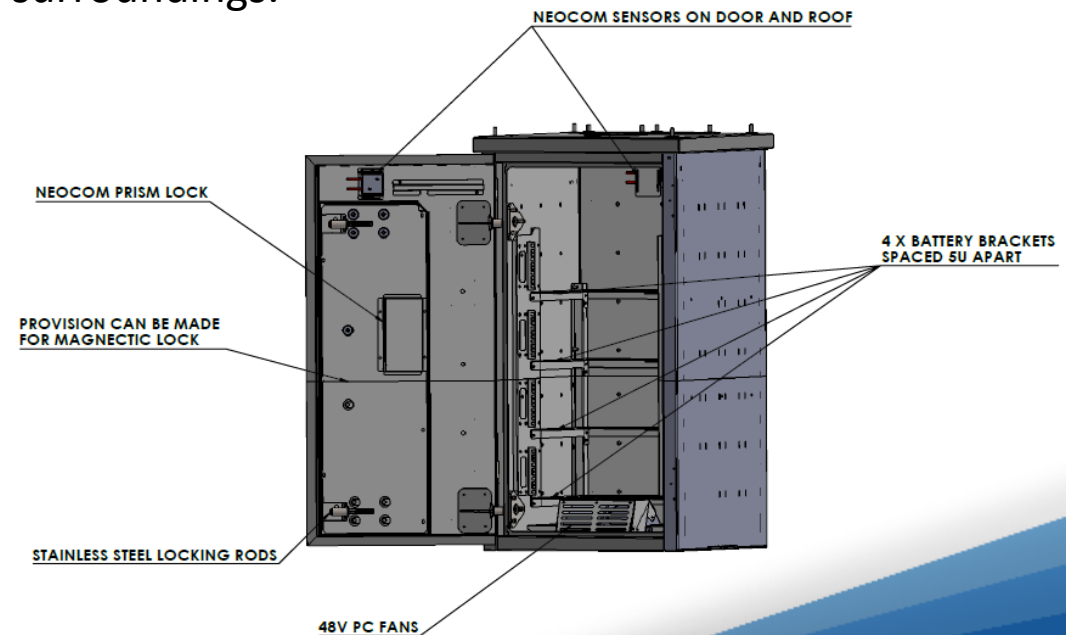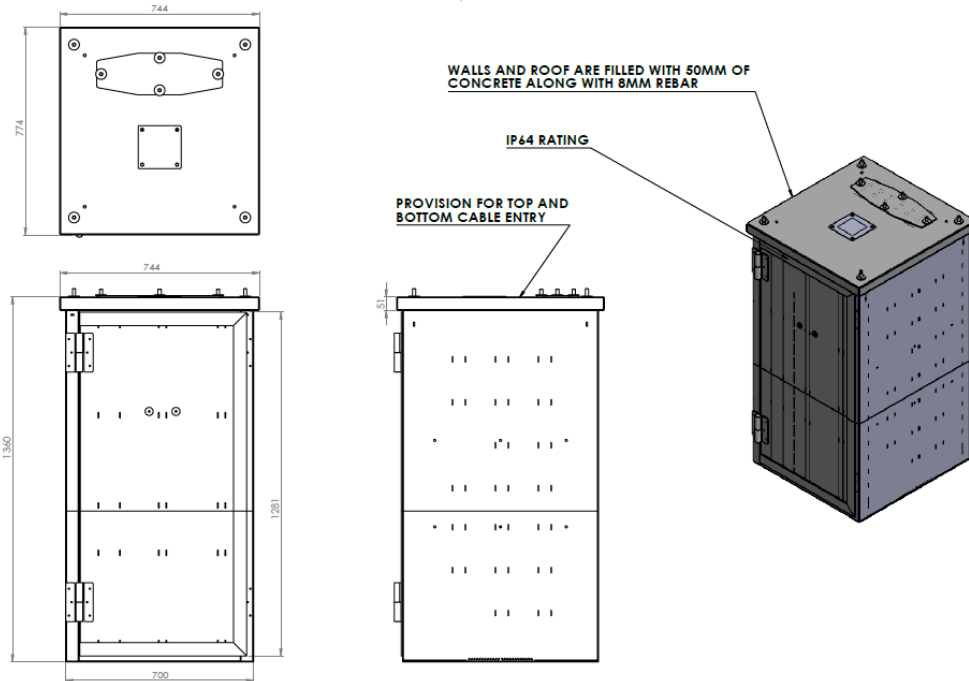
Following options of batteries available LidePO4:
- 4.8kW 100 Amp
- 5,12kW 100 Amp
- 5,12kW 150 Amp
- 5,12kW 200 Amp

NEOCOM
SOLUTIONS (PTY) LTD

High Security Safe 20U

WALLS AND ROOF ARE FILLED WITH 50MM OF CONCRETE ALONG WITH 8MM REBAR

IP64 RATING

PROVISION FOR TOP AND BOTTOM CABLE ENTRY

High Security Battery Safe:

- High security battery safe to secure high value assets on smaller sites such as Lamp Post, Low Profile, Street Furniture and DAS sites.
- Fitted with a 19" Rack for easy equipment installation
- Safe securely locked with keyless lock for additional security and access control.
- Various colours available for seamless integration into surroundings.

NEOCOM SENSORS ON DOOR AND ROOF

NEOCOM PRISM LOCK

PROVISION CAN BE MADE FOR MAGNECTIC LOCK

4 X BATTERY BRACKETS SPACED 5U APART

STAINLESS STEEL LOCKING RODS

48V PC FANS

6 Teir 38U Battery Safe

Overview

- ✓ Category 3 Safe.
- ✓ Ultra-High level of security to protect critical assets.
- ✓ Manufacturing in compliance of ISO 9001 – 2015 requirements.
- ✓ Designed for Indoor and Outdoor use.
- ✓ IP 56 and IP65 Compliant.
- ✓ Available with various corrosion protection coatings and colours.
- ✓ Cooling ventilation provided at bottom and top.
- ✓ Internal Cable Management.
- ✓ 6 Individual shelves

- ✓ 710mm (L) x 700mm (B) x 1770mm (H)

Technical Specifications

- ✓ Battery safe is manufactured from 3CR12 material.
- ✓ SS304 External hinges.
- ✓ Overall weight 297kg.
- ✓ Cavity walls filled with specialized concrete mixture
- ✓ for quick curing cure and hardening.
- ✓ Gland entry plates provided for easy cable routing.
- ✓ Fitted with a Hybrid Controller to power optional
- ✓ AC devices and air conditioners.
- ✓ Fitted with tamper and vibration sensors to raise alarm when sensed.
- ✓ Auxiliary 12V power points provided in door to power up the system
- ✓ in the event of total power failure on site to obtain access.
- ✓ Fitted with a keyless, smart lock. (Various platform integration options available)
- ✓ Fitted with a powerful actuator to lock and unlock door
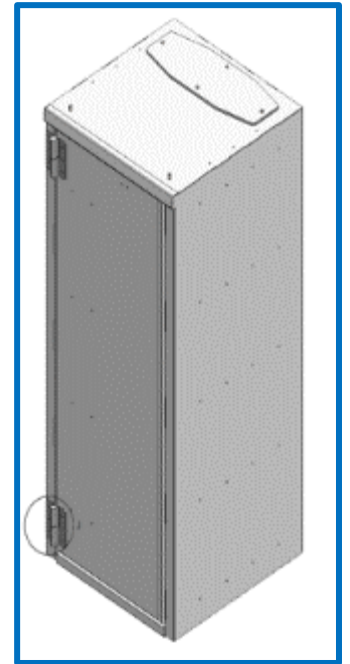
NEOCOM
SOLUTIONS (PTY) LTD

Single Door Cabinet – High Security

- Single door 48U outdoor Equipment Cabinet with 3mm 3cr12 stainless steel plate with special high security crete
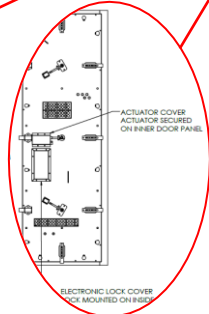 - 12000 BTU Smart Air Conditioner mounted on door for active & passive cooling
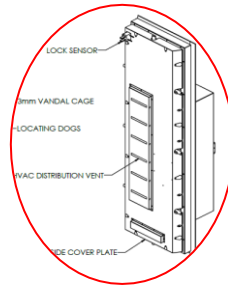
Business Continuity:
Base station sites are critical for maintaining telecommunications services, and battery backups are a key component in ensuring business continuity during power outages or other emergencies. Our fortified battery safe helps ensure that the batteries are protected and ready to provide uninterrupted power when needed.

Enhanced Security for Asset Protection:
Backup batteries are valuable assets, and protecting them from theft, vandalism, or environmental damage is essential. Our fortified battery safes come with a robust locking and security mechanisms to deter unauthorized access and protect the batteries from external threats.

Peace of Mind:
Knowing that the critical battery backup system at a cell site is well-protected can give operators and stakeholders peace of mind. This confidence in the safety and reliability of the site's infrastructure can be invaluable, particularly in remote or hard-to-reach locations.

- ESTIMATED WEIGHT - EMPTY SAFE: ± 780 kg
- ESTIMATED WEIGHT - CEMENT FILLED SAFE: ± 2000 kg
- ESTIMATED BAGS OF CEMENT REQUIRED: ± 38 BAGS

Front Layout View

Side Layout View

Internal Layout View

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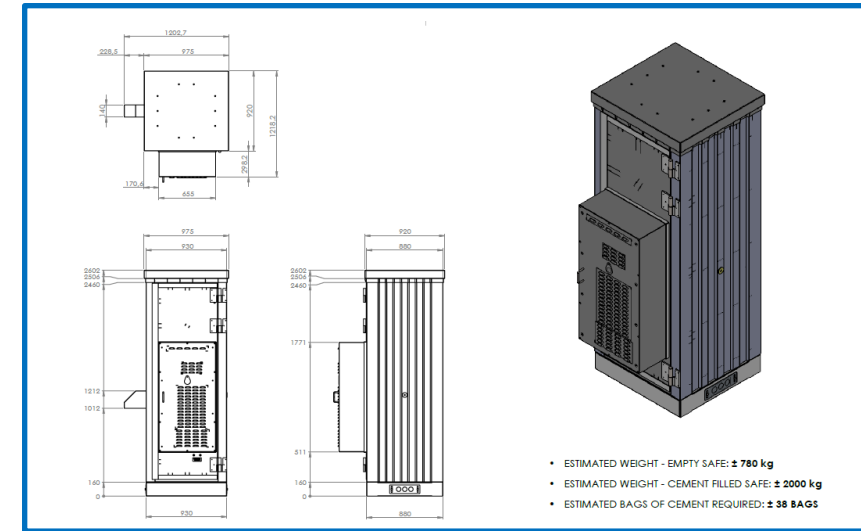
Single Door Cabinet – High Security

- Single door 48U outdoor Equipment Cabinet with 3mm 3cr12 stainless steel plate with special high security crete
  - 12000 BTU Smart Air Conditioner mounted on door for active & passive cooling

Optional Smart AC/DC 12000 BTU air conditioner installed on door with security cage for protection. Smart Air conditioner provides Passive and Active cooling with up to 70% energy savings.
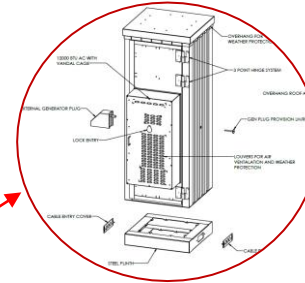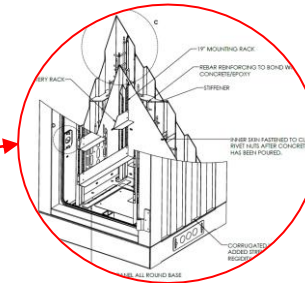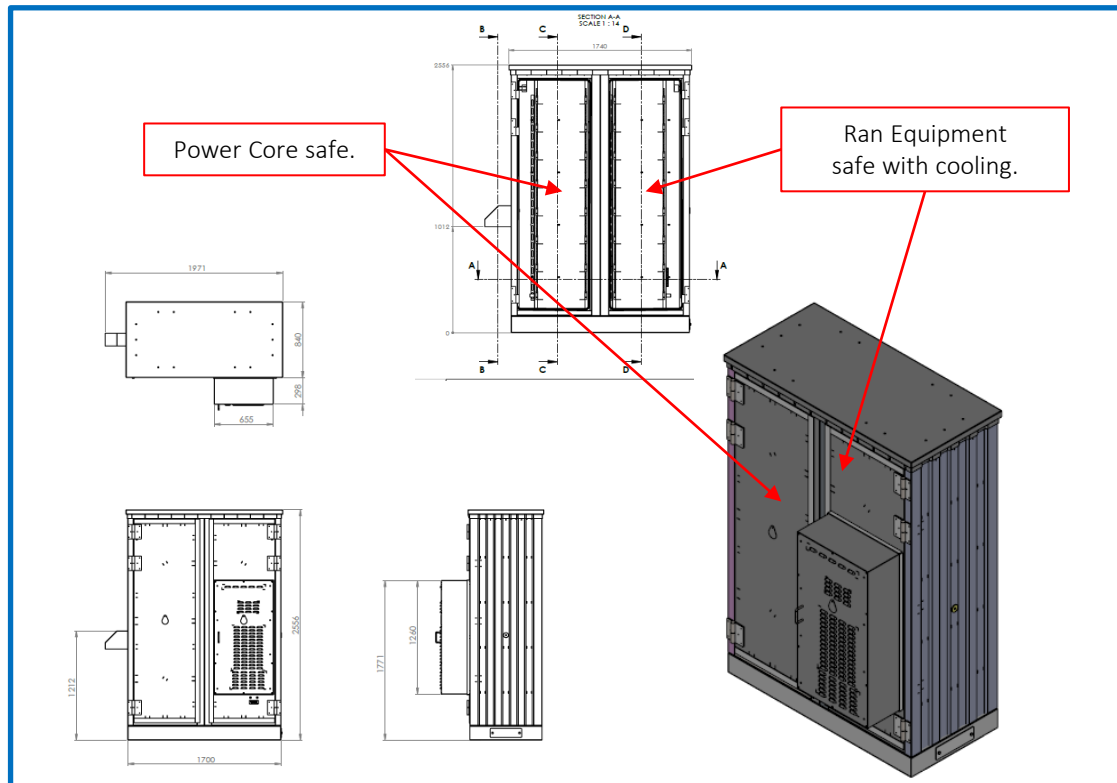
Fitted with NCS PRO MAX Keyless lock for secure controlled access.

Door fitted internally with air ducts to provide effective cooling for the installed equipment.

Battery safe constructed of 3CR12 stainless-steel material to withstand vandalism attacks and protect against weather conditions and corrosion.

Designed with reinforced cavities which is filled with special filler to provide additional support and the highest protection.

5 Point robust locking and security mechanisms inside the door.
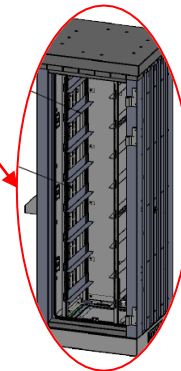
Fitted with a standard 19" rack system for easy equipment installation.

Designed for a 5U rectifier and 7 x 200Amp hr batteries.

Double Door Cabinet – High Security

- Double door 48U outdoor Equipment Cabinet with 3mm 3cr12 stainless steel plate with special high security crete
  - 12000 BTU Smart Air Conditioner mounted on door for active & passive cooling

Power, Cooling and Environment Design (PCE)

The fortified double door battery safe has been design to the same high standards of the single door battery safe but now can provide security, cooling and environment for the necessary active equipment on site.

Peace of Mind:

Knowing that the critical battery backup system at a cell site is well-protected can give operators and stakeholders peace of mind. This confidence in the safety and reliability of the site's infrastructure can be invaluable, particularly in remote or hard-to-reach locations.

Power Core safe.

Ran Equipment safe with cooling.

Front Layout View

Side Layout View

Internal Layout View

NEOCOM
SOLUTIONS (PTY) LTD

NCS PRO MAX Smart Keyless Locking Solution

✓ Keyless Solution

✓ iCrypto Integrated (Android and IOS)

✓ End-to-end Accountability

✓ Enhances iCrypto

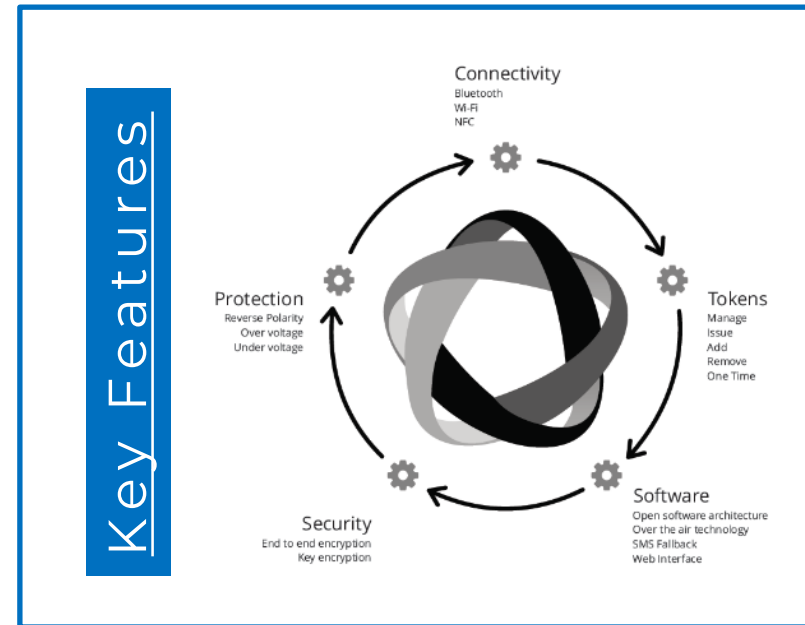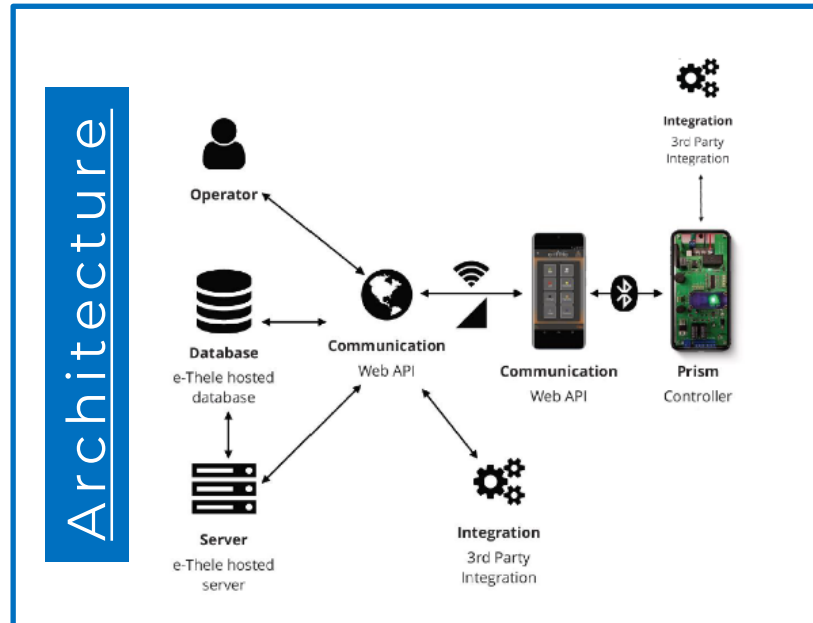| **A**uthentication | **A**uthorization | **A**ccountability |

ONE CONTROLLER FOR ALL

Smoke Detector

Intelligent Door Sensor set

Wi-Fi AP

Field
Equipment
Cabinet/safe

Mobile Web
App

Seismic Sensor

Actuator

IR Passive

PRISM Controller with Tamper
Detection, PSU and AUX backup

OVER VIEW WIRING DIAGRAM

DC-TO-DC Power Supply
48-50V
((Non Polarity conscious)

TX Smart Door Sensor 4 Pin
Connector
(Female)

RX Smart Door Sensor 4 Pin
Connector
(Male)

AUX Backup Power
12-13.5V
(Non Polarity conscious)

Actuator
(Non Polarity conscious)

N E O C O M   S O L U T I O N S   (P T Y)   L T D

NC
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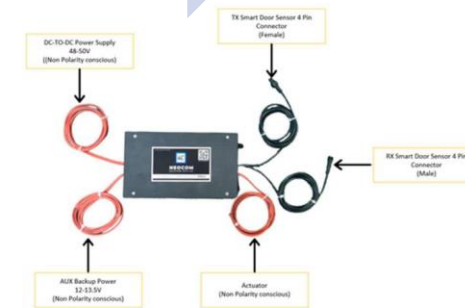
NCS PRO MAX Smart Keyless Locking Solution

- ✓ No traditional key required - Smart device is the "KEY"
- ✓ Telecoms grade design: DC-DC converter
- ✓ End-to-End Encryption (Cloud to Controller)
- ✓ Workflow process ensures Authentication, Authorization, Accountability
- ✓ Strong Bluetooth (BLE5.0) and Wi-Fi signal (locks works on low signal strength)
- ✓ Works with different site solutions (cabinets, bunkers, containers, etc.)
- ✓ OTA function for upgrades of software, firmware and updating encryption keys to devices
- ✓ Infra red addressable door sensor with random frequency modulation
- ✓ Reliable effective measures to detect and protect against physical tampering
- ✓ Local manufacturing and Support

Architecture

Key Features

Secure App Login

Dashboard

Connecting to Lock

Works Order & Token

Works Order & Token

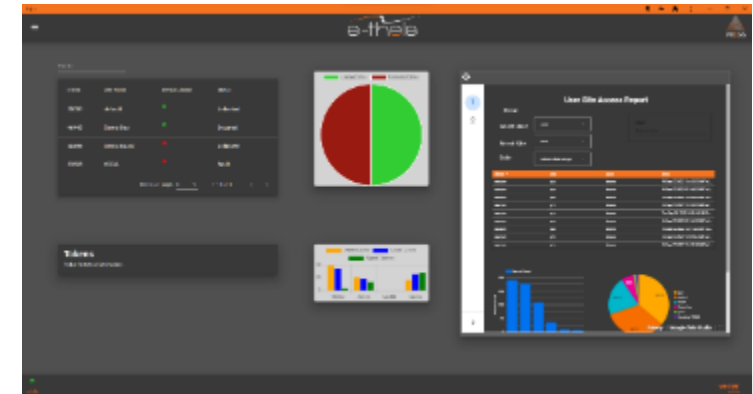*Workflow customizable per client requirement.

Works Order & Token

User Token

Lock Open

Full Functional Test

Dashboard View

N E O C O M   S O L U T I O N S   (P T Y)   L T D

Super Weather Proof Bluetooth padlock for all conditions

- Award-winning keyless access solution operated with digital key and mobile app.

- Super Wather Proof and made to perform at all times in the most demanding environments.

- Available in two versions: with a fixed and removable shackle

  – Model series

    - PLK340 – Fixed shackle

    - PLK348 – Removable shackle

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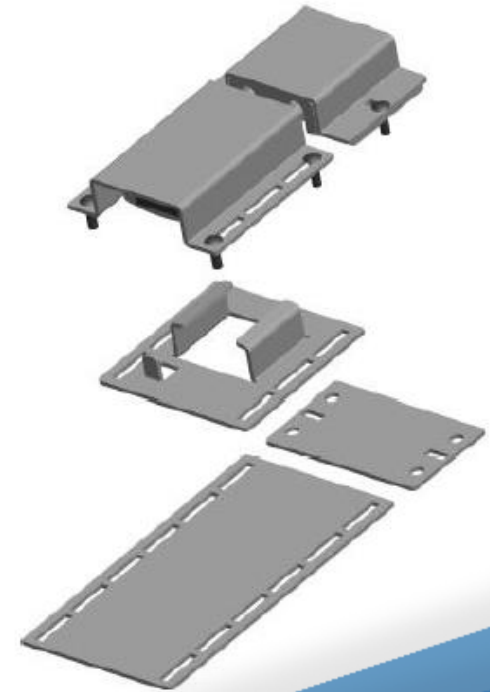
ABLOY BEAT
padlock specifications

Body
- Material: Case-hardened steel
- Finish: Chrome
- Non-metallic part: Grivory

Shackle
- Fixed or removable shackle
- Material: Case-hardened steel
- Finish: Chrome
- Thickness: 10mm

Battery lifetime
- 5 years or 5000 access cycles
- Battery types: Panasonic CR2 and Saft LS14250
- Back up power through USB cable

Operating temperature
- -25°C to 60°C

Security Grade
- EN16864 grade 4 for retained and Removable shackle versions

IP class grading
- IP68
- IP66

Connectivity
- Bluetooth® Low Energy 4.2
- Range up to 50m

Shackle monitoring
- LED indications for lock status
- Audit logs

Award-winning
- Govies Government Security Award in the Lock and Locking systems category (2020)

ABLOY
340 SWP

NC
NEOCOM
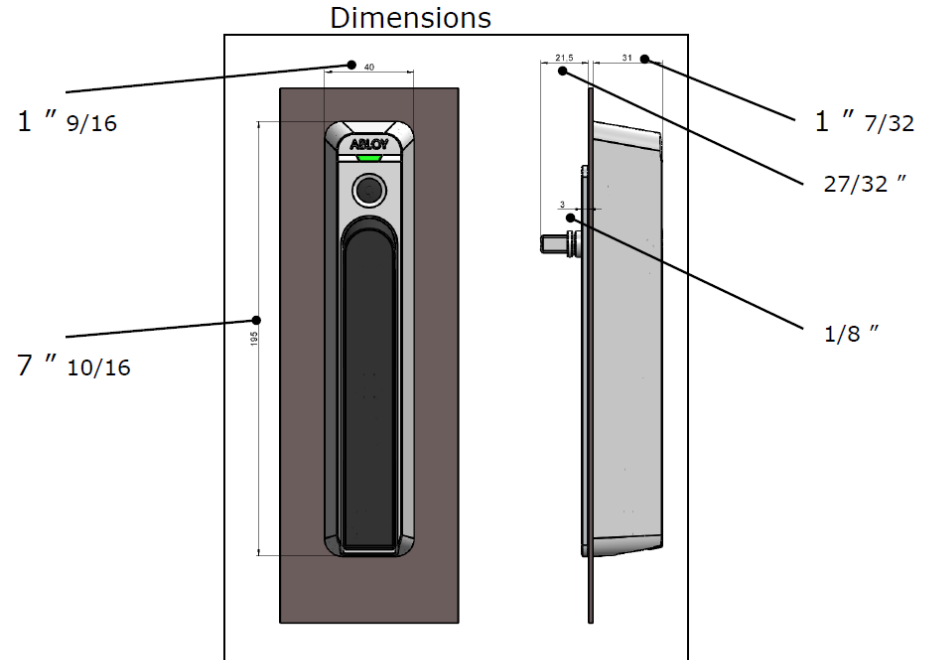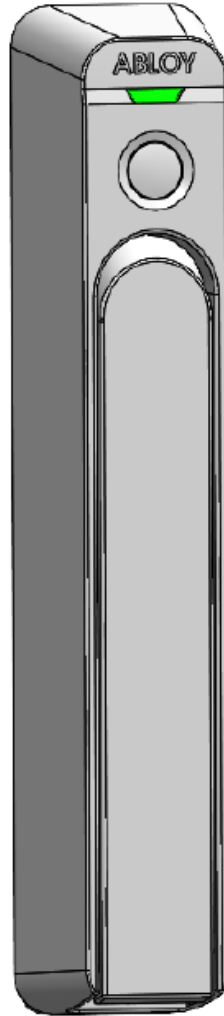SOLUTIONS (PTY) LTD

ABLOY® BEAT Swing Handle

Standalone (operated only with mobile)

- **Standard functions**
  - LED status indication
  - Wake up button
  - Handle
  - Internal sensors under metal frame
  - Back up power USB C port

Dimensions

1 ″ 9/16

7 ″ 10/16

1 ″ 7/32

27/32 ″

1/8 ″

NEOCOM
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Container door lock – BTS Option 2

- **Voltage:** 11.4 - 26VDC
- **Current:** Peak Current: 1000mA, Idle Current: 35mA @12VDC with LED activated
- **Unlocking Pre-Load:** Side Load rated: Motorised unlocking - 100kg max at the bolt
- **Strength:** Maximum 1000kg
- **Monitoring:** Lock Status Monitoring: NO/NC, Door Position Monitoring: NC
- **Unlocking Time:** 1 Second under Preload
- **Locking Time:** 3 Seconds
- **Environment:** Weather resistant construction to IP53
- **Operating Temperature:** -10 to +60 Degrees Celsius
- **Endurance:** 500,000 operations (120N Unlocking, 50N Locking)
- **Dimensions:** Body: 210L x 24W x 42D (mm), Faceplate: 256L x 30W (mm), Strike Plate: 256L x 30W (mm)
- **Construction:** Stainless Steel lock body, Face plate and Strike Plate

Solar Structure with Panels

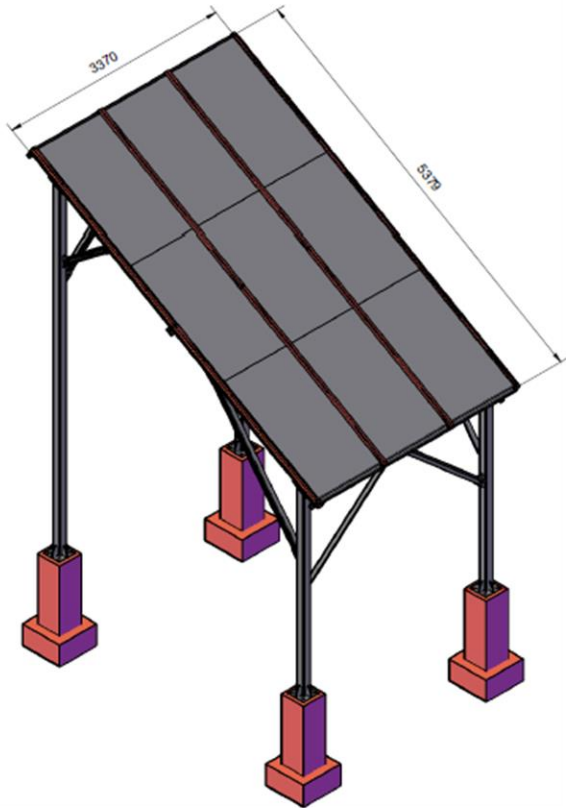| 540~555W	0~+5W	21.5%	≤ 2.0%	≤ 0.55%
POWER RANGE	POWER SORTING	MAX MODULE EFFICIENCY	FIRST YEAR POWER DEGRADATION	YEAR 2-25 POWER DEGRADATION

ASTRO 5

CHSM72M-HC

Monofacial Series（182）

PERC+ / Multi-busbar / Half-cut

Non-destructive cutting

PID resistance

Low BOS cost & LCOE

12 Years Product Warranty

25 Year linear Power Warranty

ASTRO 5 Semi

Create Sustainable and Efficient Green Energy

CHSM72M-HC
Monofacial Series (182)

540~555W

PERC+ / Multi-busbar / Half-cut

Non-destructive cutting

PID resistance

Low BOS cost & LCOE

Assist carbon neutrality

NC

NEOCOM
SOLUTIONS (PTY) LTD
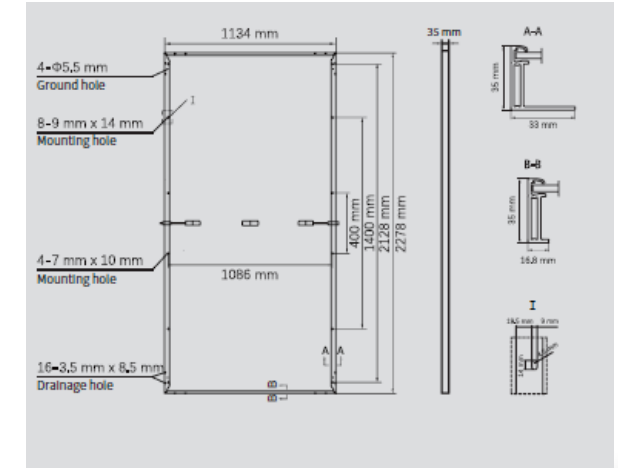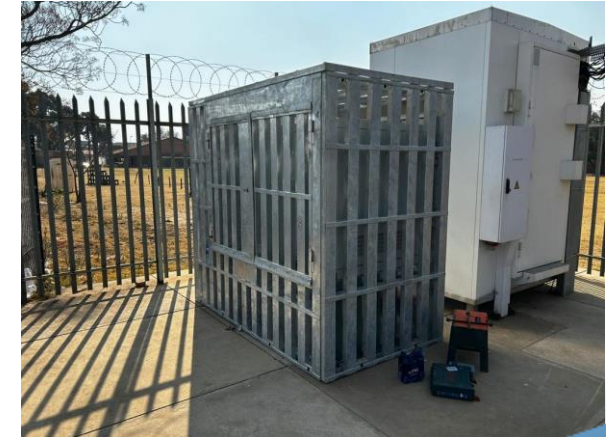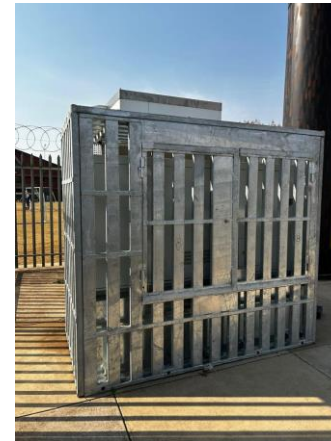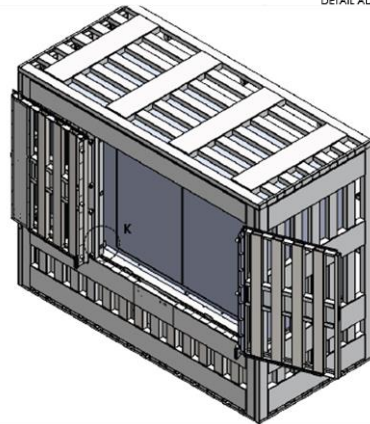
Generator Vandalism Cage
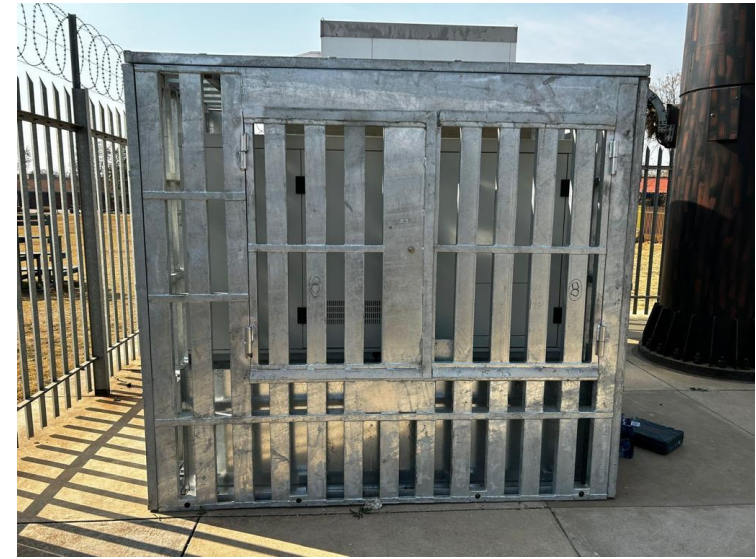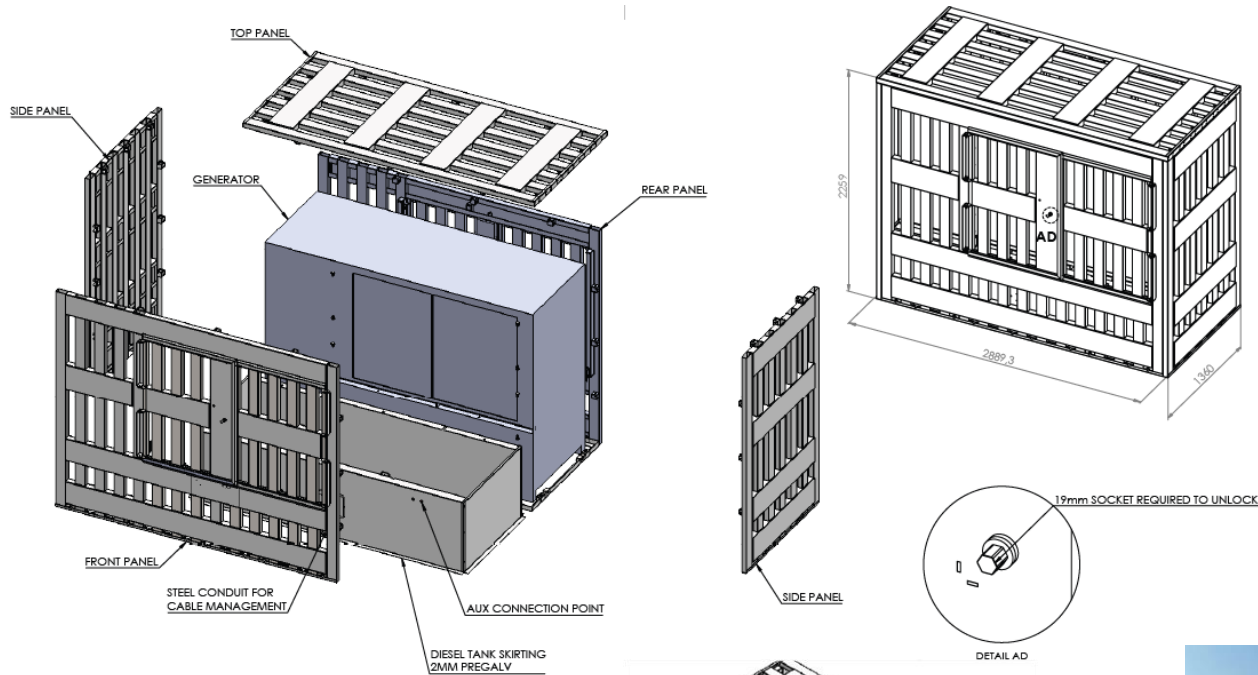
Generator vandalism cage design from high strength steel for protection against vandalism and theft of diesel and batteries

Fuel Management System

Telecommunication companies face several challenges with securing their assets. One of the main challenges is the financial loss caused by the theft of diesel which can be costly to replace.

Neocom Solutions FMS is a comprehensive fuel management system installed into new or existing non-commercial fuel storage or dispensing systems. Suitable for use on static tanks and mobile bowsers to monitor and control both fuel receipts and various site dispensing with live residual tank levels displayed after each event both on the controller and the web portal, all viewable from any mobile device or computer.

Neocom management solution, convenient for many stationary and mobile applications with live 30 second updates on current tank volumes. Fuel theft and unauthorized dispensing reporting via SMS and email. With all dispensing values and activities recorded on the cloud server offering a convenient accurate audit trail and accounting of the liquid asset.

Live monitoring
Live information and activity transmitted within seconds on the GSM network of your choice, with low-cost international roaming options available.

Current GPS location
Our multi-constellation GNSS receiver provides accurate positional data and real time stamping.

Mobile Friendly
Our web-based app is super easy and friendly to use on your computer, tablet and phone.

N E O C O M   S O L U T I O N S   (P T Y)   L T D

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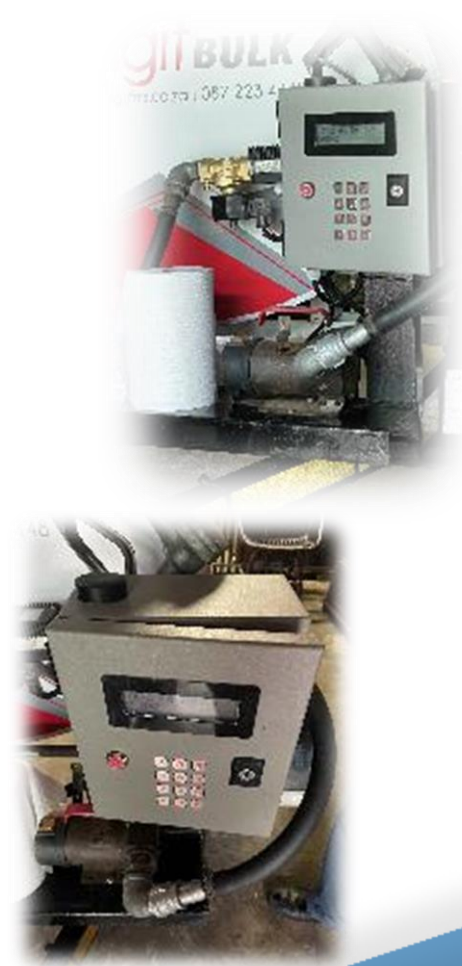# A Great solution for the Management of your fuel

How does it
Work

Cloud Server
Saved to the cloud

All data is updated every few minutes to the server and made instantly available on our online portal. Receive alarm notifications directly to your phone and have all your site history instantly accessible

R2D Controller
Main fuel controller

The NEOCOM Controller with remote adjustable LCD display including covert non-display settings. The adjustable brightness allows easy viewing from any angle.

Live Levels
Tank level sensor

Our Tank level sensor displays live fuel levels at the controller and web portal while monitoring fuel drops and adds with precision, providing fuel theft alerts and low-level alarms.

Remote Access
Reports and control

Access your sites from anywhere in the world. View the latest fuel events or pull up reports from months back. See current fuel levels and a live summary health report on all your sites from the comfort of your home, office or holiday destination.

Pump Control
Solenoid switch

Control the flow of fuel from the pump with an electrically controlled valve and/or pump motor contactor, both prevent dispensing from unauthorised ID tags.

Reading Flow
Flow meter

The accurate volumes dispensed can be metered by an array of different flow meters.

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Management made easy

With more than 14 years' experience in telemetry and IT systems we are making this proudly South African product affordable and available for easy integration with both existing and new infrastructure. Managing and accounting for every liter received and dispensed is essential for profitability, with the current prices of fuels can you afford not to?

You have taken the step to install a state-of-the-art fuel depot at your premises and now you want to add a system that can do fuel monitoring.

Our system integrates directly with your already owned hardware and making your remote site fuel visible from the comfort of your office and if you do not have an office, check in via your cell phone and get notified on live fuel events directly to your phone.

Fuel Dispensing

The NEOCOM controller will display the current fuel volume dispensed at the pump as well as the remaining fuel in each storage tank. With data uploading to the cloud this information is available on your computer within seconds.

Fuel Levels

A maximum of 3 fuel tanks can be monitored from a single NEOCOM controller. The scrolling display reports the current level in each tank while a convenient summed value and percentage is displayed permanently.

Secure Dispensing

The system automates control and security, with only authorized button tags and users accepted. Easy allocation of up to 1400 different tag numbers with our USB powered Tag2Text readers.

01 Level Sensor

The primary fuel monitoring device is a level sensor on your physical bowser/fuel storage tanks. All live levels and any changes are frequently recorded on the server, even a one litre change in 9000L can be recorded.

02 Measurement

If possible we integrate into your existing flow meter pulse or provide you with a reputable and calibrated alternative to measure the flow and volume dispensed in any one event.

03 Control

When it comes to saving money you need control to account for every litre dispensed, know where it was issued, by whom and record the asset or vehicle receiving the fuel. We also offer fleet management platforms to report and compare the fuel volumes received by the same vehicle.

04 Secure PSU & Controller

The secure aluminum box enclosure includes a power supply with back-up battery. It houses the LCD screen and tag receptacle, giving you peace of mind back-up power and fuel monitoring during a power outage.

NEOCOM SOLUTIONS (PTY) LTD

Easy Reporting

From the online software a general dashboard overview of user and controller information is available below a map of the current live position of the controller. A controller can monitor up to three storage tanks with a simple representation of the live liquid level in each tank. The software platform offers an extensive range of services and reports to manage and control your liquid assets. Reports included are **Tag Specific Reports, Tag Summary Reports, Fuel Add/Drop Report, Dispense Report, Fuel Level Report, Controller health report** and many more.
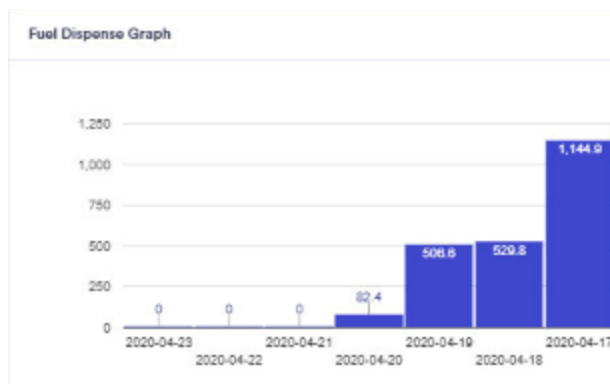
Multi tier setup

Setting up companies and assigning users with various levels of access and information is really simple.
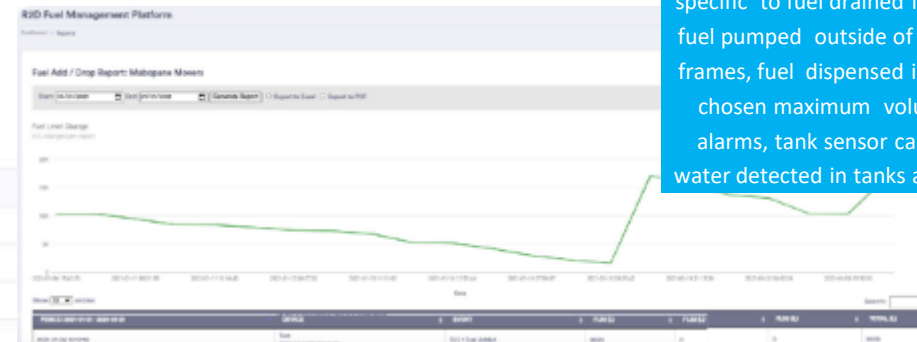
Remote device setup

All setting and adjustments can be handled remotely by administrator. Instantly add or delete user button tags. Remotely lock or unlock device in emergencies

Instant Notification

Setup the NEOCOM controller to SMS nominated personnel with notifications specific to fuel drained from main tanks, fuel pumped outside of authorized time frames, fuel dispensed in excess of your chosen maximum volume, low level alarms, tank sensor cable detection, water detected in tanks and many more.

Management Tools

It is great to have a consumer solution that has extensive reporting structures, however if it does not integrate into your existing company, IT structure it is not going to be utilised to its full potential. NEOCOM has a full suite API to integrate into existing systems. We have the experience and services to assist with data availability and access to the right level of audience.

Smart Inverter Air Conditioner Functions

- TCP Communication
  - Direct communication via Transmission backbone
  - Fully set-point customisation remotely
  - Performance data remotely

- AC & DC Operation
  - AC powered; With load shedding operating DC with energy safe profile
  - Build in free cooling with customized set-points for various conditions

- Preventative Alarms
  - In advance warnings for maintenance on all system components like filter and compressor

- Event Alarms
  - Soft alarms fully customised

- Temperature alarms
  - Internal, External, container and ambient data

- Power consumption
  - Report on actual power consumption

Smart Inverter Air Conditioner VS Standard

	Invertor Window Unit	Smart Invertor Window Unit
Energy Saving	66-76% energy savings compared to legacy on/off technology	87% energy saving compared to legacy on/off technology
Communication	No communication to air conditioner	TCP/IP communication interface to the air conditioner CPU with read and write functions
Alarms	Alarms generated from site controller	Warning, maintenance and fault soft alarms relayed via communication link
Predictive Maintenance	No remote evaluation	Maintenance algorithms providing in depth analysis on individual components and condition
Remote Optimization	None	Setting and operational modes can be adjusted remotely via communication link
Reporting	No Reporting	Health, performance and load performance reporting
Dual Powered	AC Only	AC & DC

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Power To The Antenna (PTTA)

Power to the antenna solutions can offer several advantages, especially in the context of networking and communication systems.

Simplified Installation: Eliminates the need for separate power lines for devices like wireless access points or antennas. This simplifies the installation process, reduces costs, and makes it easier to deploy devices in various locations without worrying about proximity to power outlets.

Flexibility and Scalability: With PTTA, it's easier to add or relocate antennas or access points since they aren't reliant on traditional power sources. This enhances the flexibility and scalability of the network infrastructure, allowing for adjustments or expansions as needed.
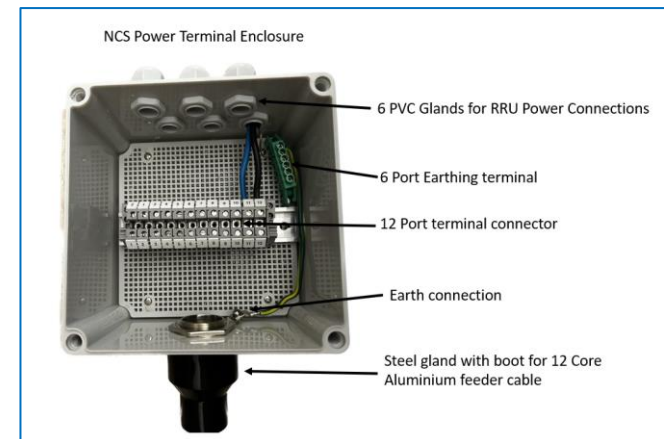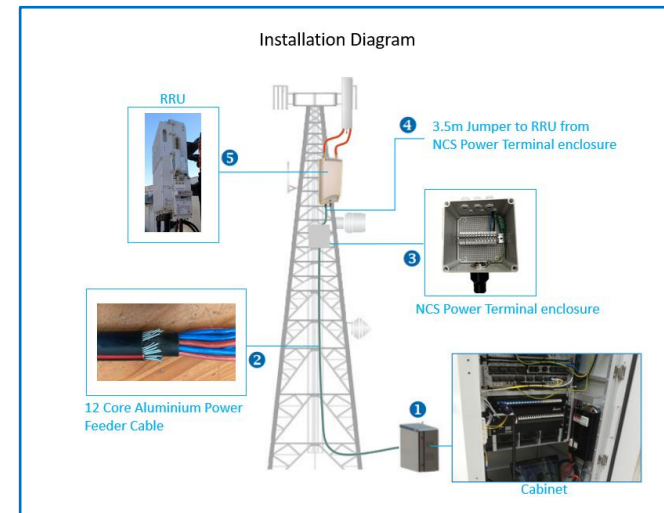
Cost-Efficiency: Implementing PTTA reduces the overall cost of cabling, vandalism and theft. This can result in significant savings in cabling, installation, and maintenance costs.

Reliability and Redundancy: PTTA systems can provide reliable power to critical devices. Moreover, in some cases, redundant power supplies can be implemented, ensuring continued operation even if one power source fails.

Energy Efficiency: PTTA systems can incorporate power-saving features, such as intelligent power management, to optimize energy consumption. Devices can be powered down or put into low-power modes when not in use, contributing to overall energy efficiency.

Safety and Standards Compliance: PTTA systems adhere to industry standards, ensuring compatibility and safety. The Power Distribution Box (PDB) is a pre-configured enclosure designed for use in the external environment with an IP rating of IP65.

Various cable options are available for the power feed cable: 10x6 LH Plain Copper, 10x6 LH Tin Copper, 16x6 LH Plain Copper, 16x6 LH Tin Copper, 16x6 Aluminum and 25x6 Aluminum.

Installation Diagram

RRU

④ 3.5m Jumper to RRU from NCS Power Terminal enclosure

⑤

③

NCS Power Terminal enclosure

12 Core Aluminium Power Feeder Cable

②

①

Cabinet

NCS Power Terminal Enclosure

6 PVC Glands for RRU Power Connections

6 Port Earthing terminal

12 Port terminal connector

Earth connection

Steel gland with boot for 12 Core Aluminium feeder cable

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Fiber To The Antenna (FTTA)

FTTA has become increasingly popular in the deployment of cellular networks, especially for technologies like 4G and 5G. Its ability to efficiently handle high-speed data transmission and maintain signal integrity over longer distances makes it a preferred choice in modern wireless communication infrastructure.

High-Speed Data Transmission: FTTA enables high-speed data transmission between the base station and the antenna unit using optical fiber. Fiber optics offer significant advantages over traditional copper cables, such as higher bandwidth and immunity to electromagnetic interference.
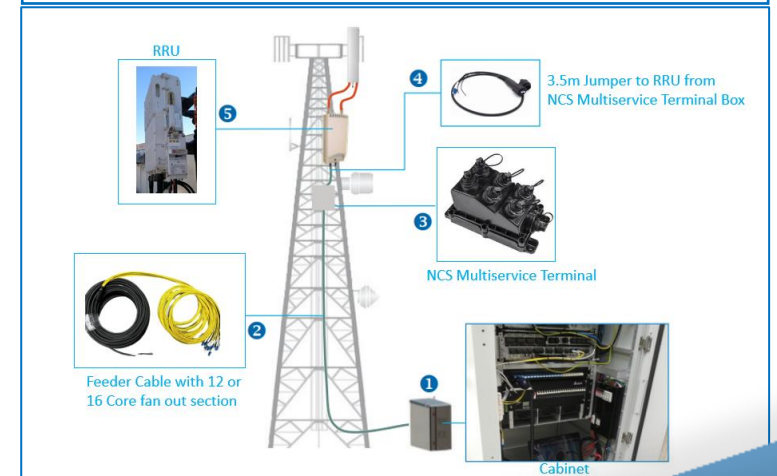
Reduced Signal Loss: Fiber optic cables experience less signal loss compared to copper cables over long distances. This means that FTTA setups can maintain signal integrity over extended lengths between the base station and the antenna, which is crucial for reliable wireless communication.

Remote Radio Heads (RRH): FTTA often involves the use of Remote Radio Heads, which are essentially radio transceivers located at the top of cell towers or in close proximity to antennas. These RRHs are connected to the baseband unit (BBU) through optical fibers and handle radio signal processing and transmission.

Deployment Flexibility: FTTA offers flexibility in deploying and managing antennas because the optical fiber allows for longer cable runs without compromising signal quality. This flexibility in deployment locations can optimize network coverage and performance.

Performance and Reliability: The use of fiber optics enhances the overall performance and reliability of the wireless network. It provides greater capacity for data transmission and is less susceptible to environmental factors or electromagnetic interference.

Ease of Maintenance: Fiber optic cables are known for their durability and reliability. FTTA setups often require less maintenance compared to traditional copper-based systems, reducing downtime and operational costs.

RRU

3.5m Jumper to RRU from NCS Multiservice Terminal Box

NCS Multiservice Terminal

Feeder Cable with 12 or 16 Core fan out section

Cabinet

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Thank You

RMS Hardware Specifications for Telco

TAG N GO — Delivering hardware at the edge.

Suppliers of market-leading **hardware solutions**, we have developed and partnered with an award winning hardware platform.

Our solutions are designed for situations where speed, quality and efficiencies matter.

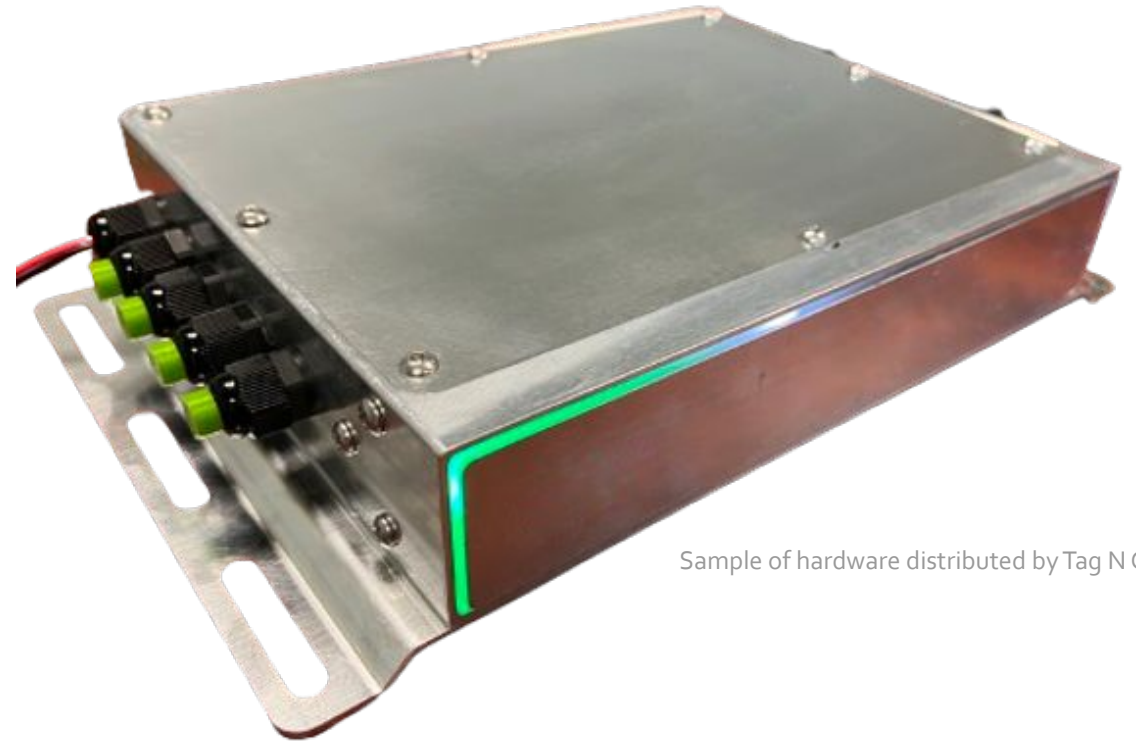Sample of hardware distributed by Tag N Go.

Tag N Go for Telco

An innovative RMS solution with an on-site Virtual Technician.

Discover operational issues and make changes to the required parts of your system without any human intervention.

Sample of hardware distributed by Tag N Go.

Tag N Go allows for dynamic control of Power Assets through Smart Algorithms

Smart Hybrid control

Expected direct savings: $230k per 100 sites per year

Smart Autonomous Recovery

Expected direct savings: $51.5k per 100 sites per year

Dynamic Power Balancing

68% reduction in site downtime due to generator failure

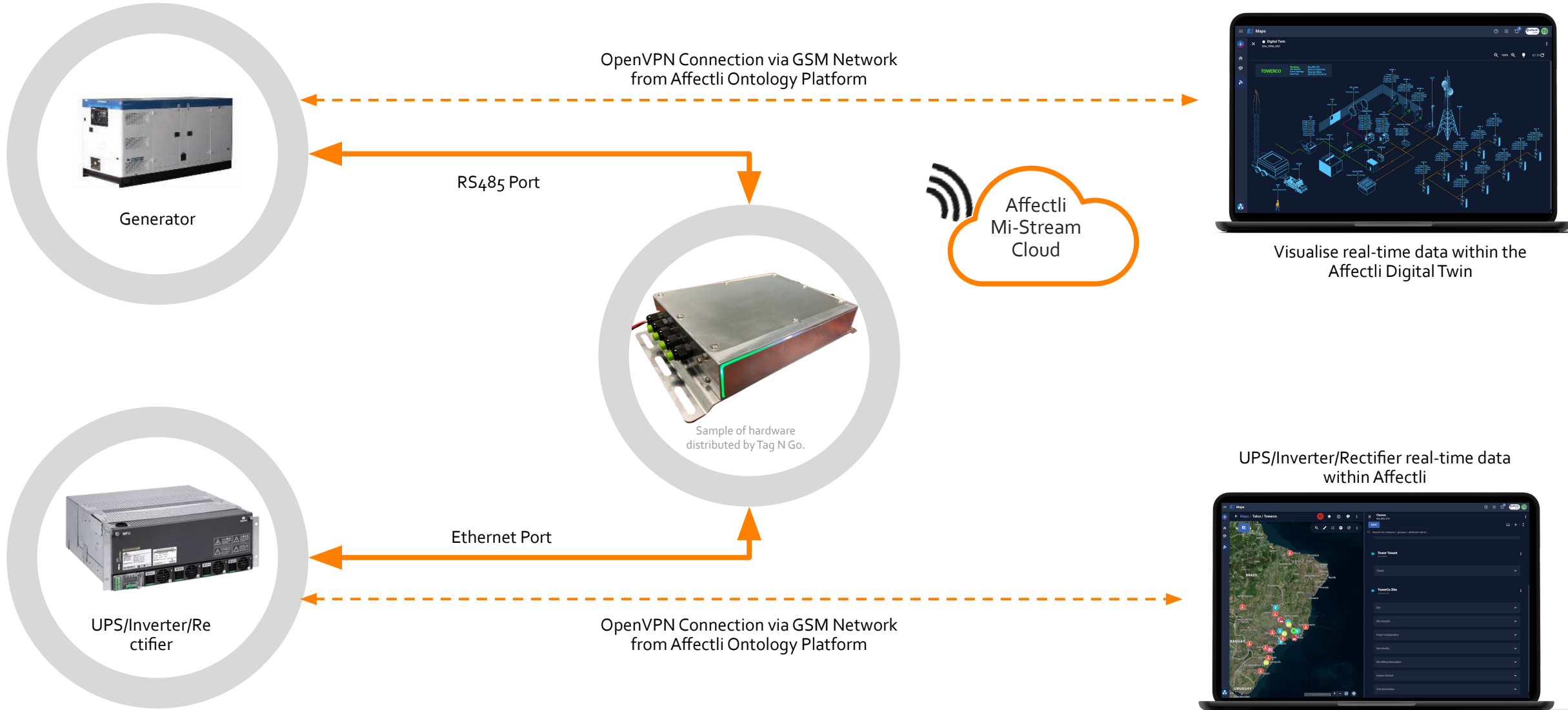| PROBLEM	SOLUTION
PHASE 1	
Due to crude or basic hybrid controls for the energy mix on site, voltage parameters are typically used for determining prioritisation of energy source to be used which results in energy and cost inefficiencies. This results in greater diesel usage and potential for shorter asset life.	Through the smart hybrid control algorithms, the sophistication of the prioritisation matrix of the energy source leads to greater efficiency of power production, leading to lower diesel usage and asset life longevity.
PHASE 2	
Often, field technicians, to minimise site downtime, circumvent standard recommended operating procedures while restoring power at sites, resulting in significant damage to other equipment, particularly to battery storage.	Automated recovery process programmed within the IQM, following standard operating procedures, to allow for shortest possible restoration time, minimizing downtime without damage to equipment.
Due to ageing, lack of maintenance, battery charge current limiting response time and higher installed rectifier capacity than diesel generator capacity, diesel generators overload on start-up unable to sustain or provide the power demand	Diesel generator vitals monitoring and trending, by IQM controller software, anticipates potential reduction in power production capacity of diesel generator and makes micro adjustments to rectifier, inverter and battery BMS (in case of Li-ION batteries) settings thus preventing engine stalling and downtime.

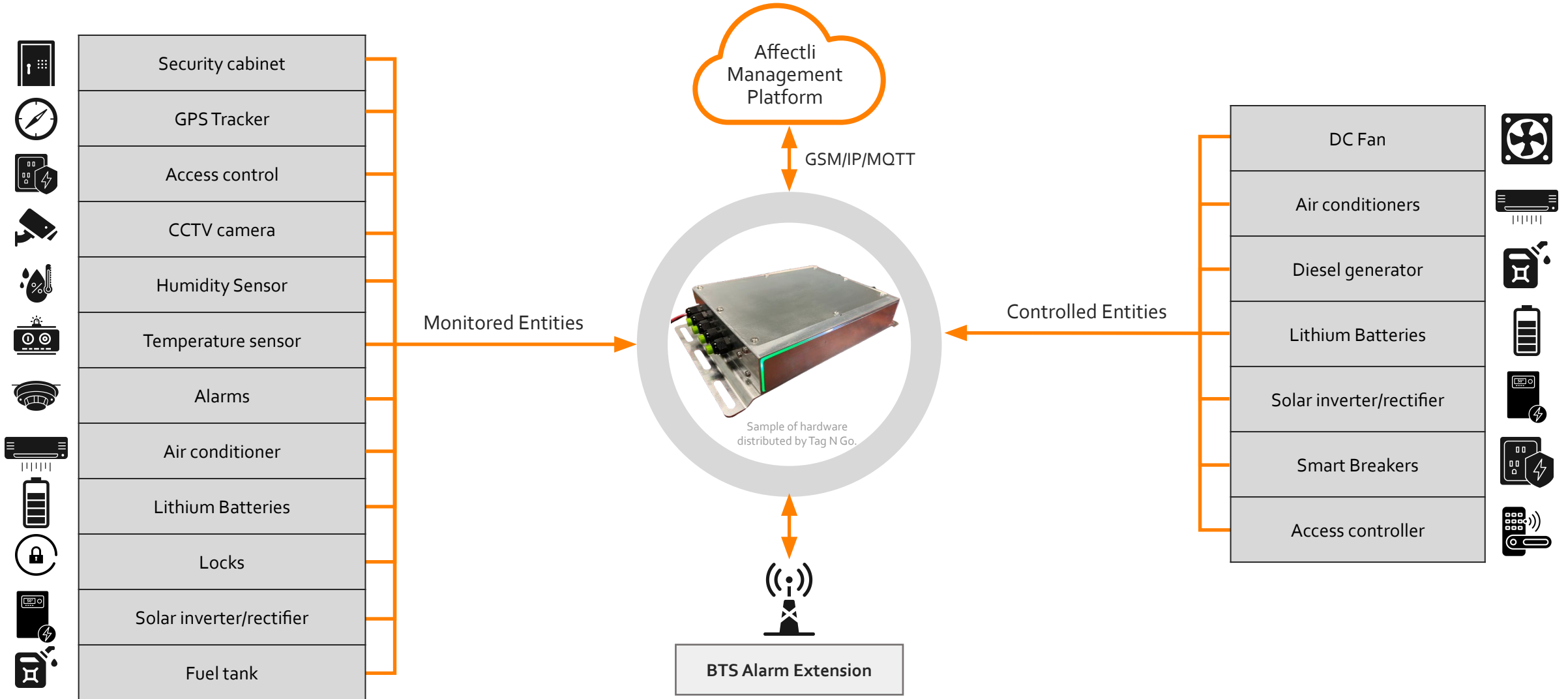# Supported 3rd Party Intelligent Controllers & Peripherals

... and many more currently in progress

Established in 2012

Pass-through or Cut-through Operation

Generator

RS485 Port

OpenVPN Connection via GSM Network
from Affectli Ontology Platform

Affectli
Mi-Stream
Cloud

Sample of hardware
distributed by Tag N Go.

Visualise real-time data within the
Affectli Digital Twin

UPS/Inverter/Rectifier real-time data
within Affectli

Ethernet Port

UPS/Inverter/Rectifier

OpenVPN Connection via GSM Network
from Affectli Ontology Platform

Application
Equipment Remote Monitoring & Control for Residential, Commercial & Industrial and Telecommunications

Affectli Management Platform

GSM/IP/MQTT

Monitored Entities

- Security cabinet
- GPS Tracker
- Access control
- CCTV camera
- Humidity Sensor
- Temperature sensor
- Alarms
- Air conditioner
- Lithium Batteries
- Locks
- Solar inverter/rectifier
- Fuel tank

Sample of hardware distributed by Tag N Go.

Controlled Entities

- DC Fan
- Air conditioners
- Diesel generator
- Lithium Batteries
- Solar inverter/rectifier
- Smart Breakers
- Access controller

BTS Alarm Extension

Specifications: Node

Processor Module:
ARM® Cortex with embedded Linux
Data storage MicroSD Card Slot 8 to 32GB
RTC – SupaCap 48 Hour backup time

Communication Protocols:
Modbus Compliant on RS485 and Ethernet ports
CANBUS IDs (Messages)
SNMP on Ethernet port
Northbound TCP/IP with MQTT

Communication Ports:
Ethernet – 1x 10/100 Mbit/s port
RS485 – 2x ports
RS485 (isolated) – 1x port
CANBUS – 2x ports
1-Wire port – Supports Humidity and Temperature sensors
USB – 1x Device port & 1x Host port
Wi-Fi & Bluetooth optional

Expansion Headers:
Plugin modules supporting various functions

General Purpose IO:
8x – Digital Inputs
4x – Digital Outputs (Open-Drain MOSFET)
1x – Relay

GSM Modem:
Optional 3G or LTE GSM Modem Plugin module

Power Supply:
Nominal 12, 24 & 48Vdc Range 9 -
60Vdc 30W Maximum
Output: 12Vdc 200mA max on RS485
& RS232 port connectors

Temperature & Humidity:
Operating Range -5 to +55°C
Storage Range -20 to +80°C
Humidity 95% Non-condensing

Dimensions:
245 x 125 x 38mm with mounting flanges
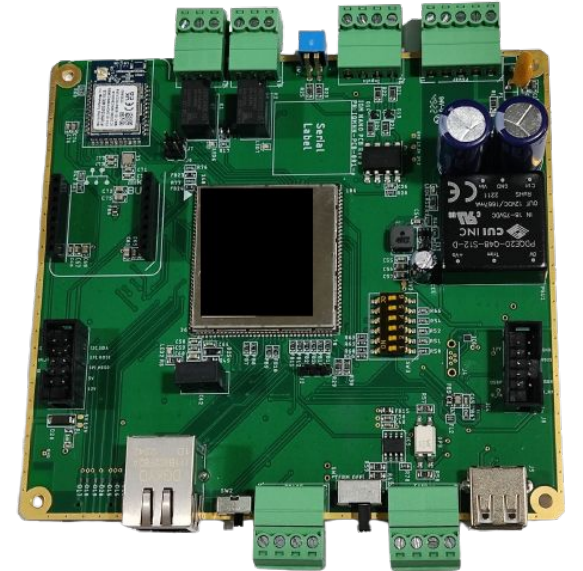205 x 125 x 38mm without mounting flanges

Certification:
Safety: IEC 62368-1:2018 / SANS 62368-1
EMC Emissions: SANS 232/CISPR 32 - Radiated & Conducted Emissions
EMC Immunity: SANS/IEC 61000-4-2 Criterion B, SANS/IEC 61000-4-3/4/5/6 Criterion A

Enclosure:
Metal – Suitable for indoor applications, not weatherproof
Optional Metal outdoor enclosure available
Optional Indoor 19" Rack-mount shelf available
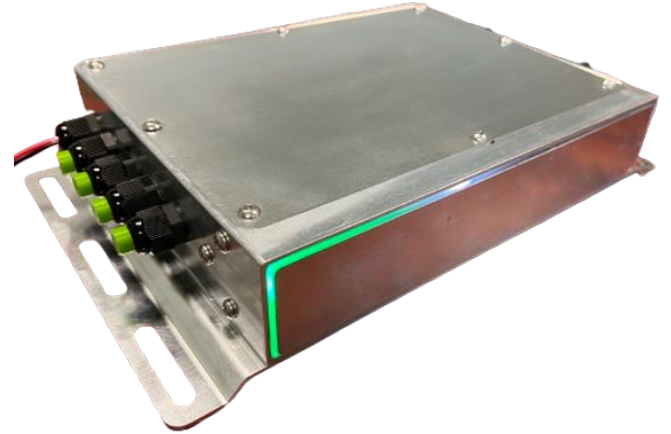
Sample of hardware distributed by Tag N Go.

Specifications: Nano

Processor Module:
ARM® Cortex embedded with Linux
Data storage MicroSD Card Slot 8 to 64GB
RTC – SupaCap 100hrs backup time

Communication Protocols:
Modbus Compliant on RS485 and Ethernet ports
CANBUS IDs (Messages)
SNMP on Ethernet port
Northbound Communication TCP/IP with MQTT

Communication Ports:
Ethernet – 1x 10/100 Mbit/s port
RS485 – 1x port
CANBUS – 1x port
USB – 1x port
OPTIONAL - Bluetooth Low Energy (BLE) v5.0 and b/g/n WiFi

Expansion Headers:
Plugin modules supporting various functions

GSM Modem:
Optional 3G/LTE/5G GSM Modem Plugin module

Power Supply:
Nominal 12, 24 & 48Vdc Range 9 -
60Vdc 20W Maximum
Output: 12Vdc 200mA max on RS485
port connector

Temperature & Humidity:
Operating Range -5 to +55°C
Storage Range -20 to +80°C
Humidity 95% Non-condensing

Dimensions:
165 x 125 x 38mm with mounting flanges
140 x 125 x 38mm without mounting flanges

Certification:
Safety: IEC 62368-1:2018 / SANS 62368-1
EMC Emissions: SANS 232/CISPR 32 - Radiated & Conducted Emissions
EMC Immunity: SANS/IEC 61000-4-2 Criterion B, SANS/IEC 61000-4-3/4/5/6 Criterion A
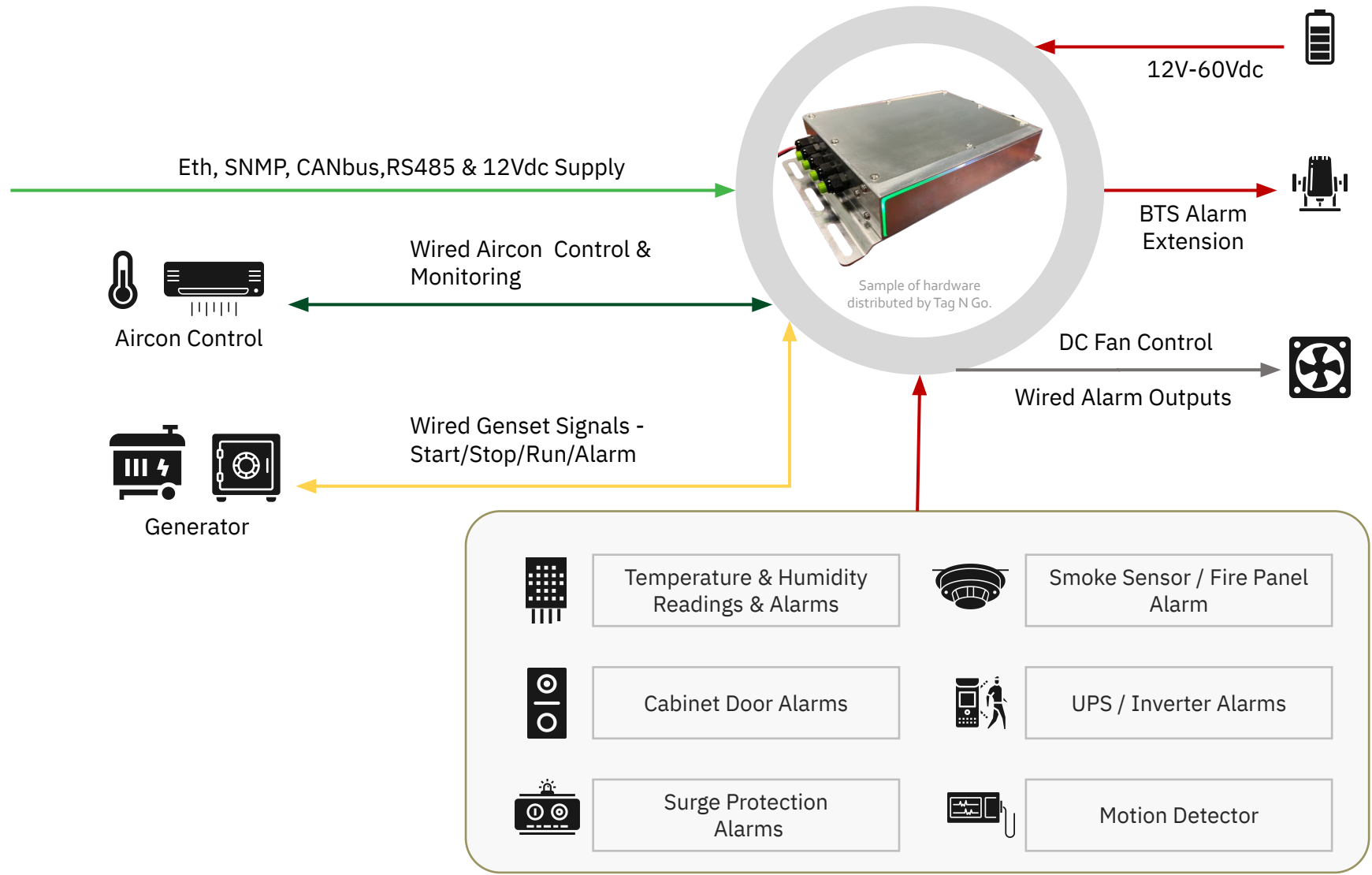
Enclosure:
Metal – Suitable for indoor applications, not weatherproof
Optional Weatherproof outdoor enclosure available
Optional Indoor 19" Rack-mount shelf available

Wired Peripherals & Sensors for Typical Telecom Application

Power Conversion Systems

Site Battery DPP Voltage & Current

Solar Power DPP
Current & Energy

Tenant DC Load
DPP Current & Energy

Lithium Ion
Batteries BMS

AC Supply/Load Voltage & Current
Power & Energy

IP Camera

Gate/Door Access Control

Diesel Tank Fuel Level Sensor

12V-60Vdc

Eth, SNMP, CANbus, RS485 & 12Vdc Supply

BTS Alarm
Extension

Sample of hardware
distributed by Tag N Go.

Wired Aircon Control &
Monitoring

Aircon Control

DC Fan Control

Wired Alarm Outputs

Wired Genset Signals -
Start/Stop/Run/Alarm

Generator

Temperature & Humidity
Readings & Alarms

Smoke Sensor / Fire Panel
Alarm

Cabinet Door Alarms

UPS / Inverter Alarms

Surge Protection
Alarms

Motion Detector

TAG N GO

Contact Us

Email

contact@tagngo.com