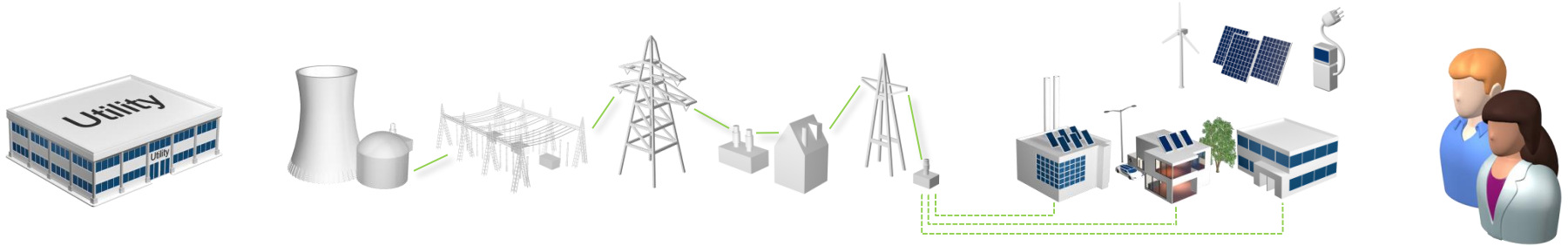
Landis+Gyr
manage energy better

Smart Meter Role Out

Smart Pilot Project

Smart Metering solution



Utility Processes | Two-way comms. | Meter Data Management & STS Prepayment Systems | Two-way comms. | Data Collection & Controls | Two-way comms. | Smart Devices | Two-way comms. | Customer

Utility Systems

Meter Data Management Systems

Utility Systems / 3rd party Systems

Suprima STS Prepayment System

Landis+Gyr AIM System

WAN

Data Concentrator

DC450 G3-PLC

G3-PLC

Smart Prepayment Meters

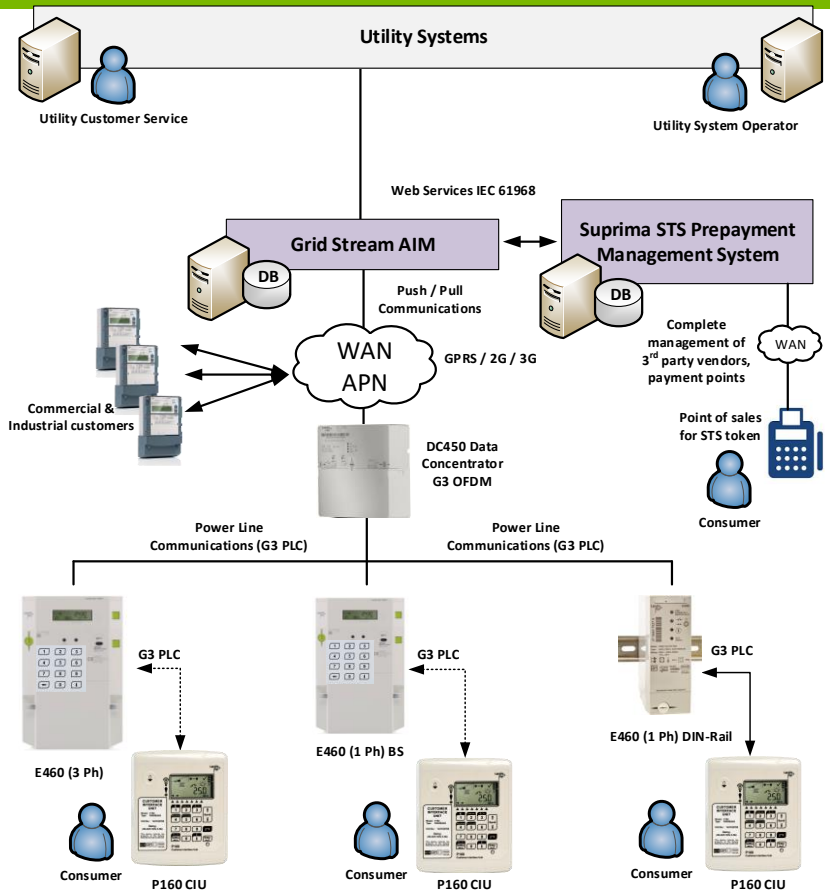
E460 G3-PLC

G3-PLC

Customer Interface Unit

P160 G3-PLC

Lesotho Electricity Smart meter Pilot

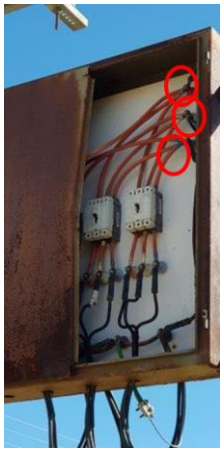


Key elements relating Meter role out

- Discussion relating various **communication mediums**
  - RF, challenges faced in EMEA region relating frequency allocation
  - Point to Point (P2P) GSM (2G/3G/4G/LTE)
  - PLC G3
- **Basic Meter requirements**
  - Post Paid
  - Prepaid
  - Quality of supply (power failures, voltage and current dips, swells etc.)
  - Revenue protection (Tamper, reversal, Magnetic, etc)
  - Load profiles 30 minute values (Minimum kWh, remaining Credit)
  - 12 months billing history
- **Data concentrators (DC)**
  - Communication mediums (GSM. Ethernet)
  - DC placements in the field (number of customers per transformer)
  - What part of the Utility maintains transformers?

Data Concentrator installation

- Install Data concentrator in a separate enclosure,
- DC can be installed at any point on the transformer zone (Transformer installation optional)
- DC installation with circuit breaker
- Check meter install, with CT’s ring fence transformer



Inspection “Reticulation and Metering”

- Types of Meters installed in customer premises
- Multiple customers supplied from one pole
- Example below, eight customers being supplied from the pole
- Consideration must be given to multi box enclosures
  - 1 x way
  - 2 x way
  - 4 x way
  - 6 x way
- These enclosure include breakers



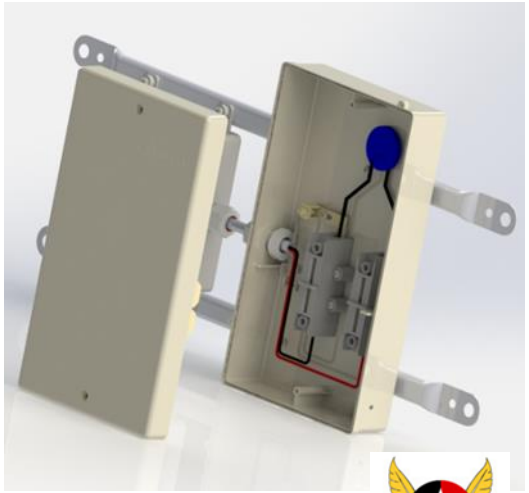

Audits required before ordering

Example of Audit results

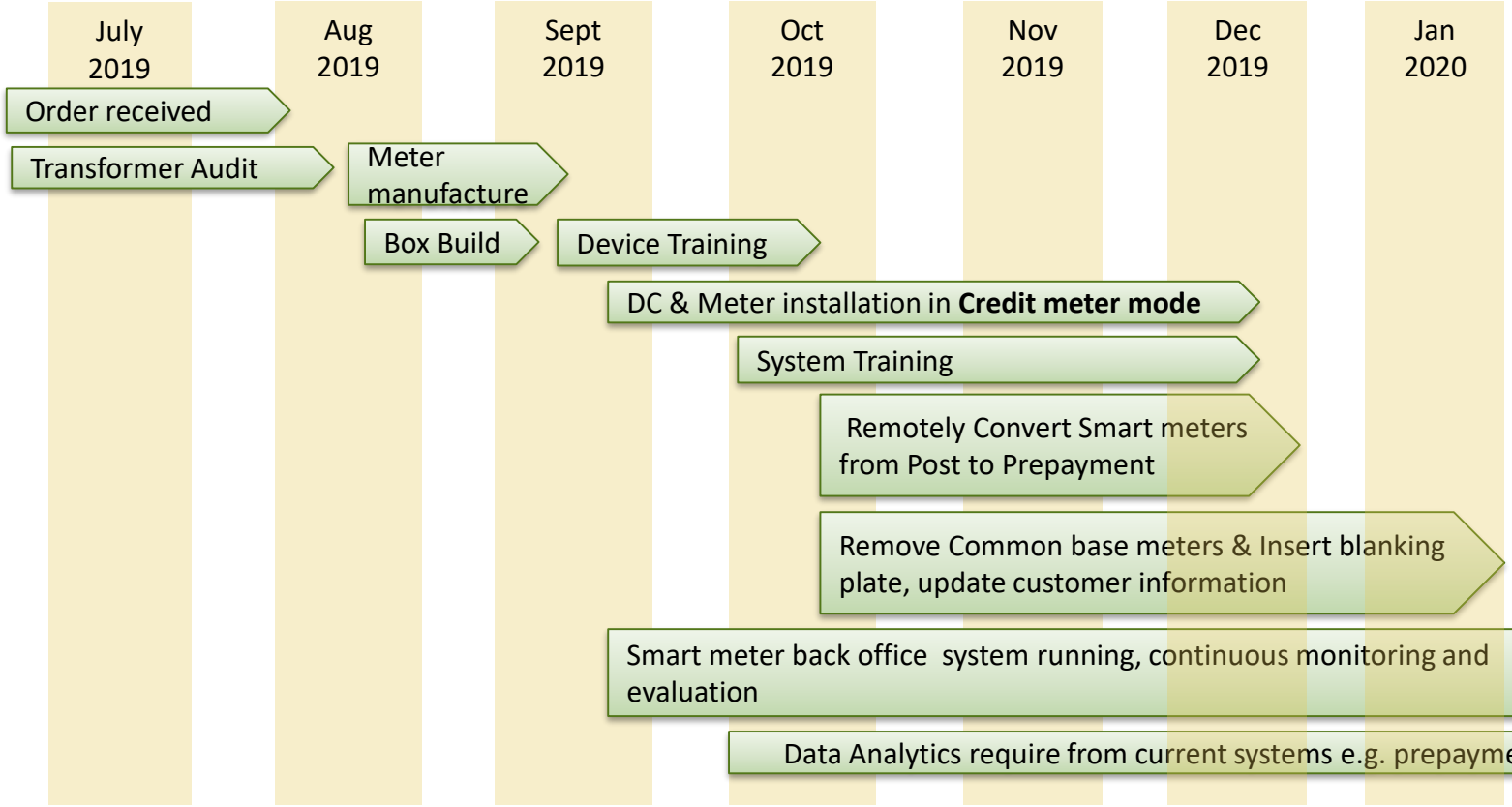
POLE MOUNTED ENCLOSURES	Number of enclosures	Breakers per enclosure	meters required	New Enclosures	Meters per enclosure 6 way	Meters per enclosure 4 way	Meters per enclosure 2 way	Meters per enclosure 1 way	Breakers + Meters per encosure
ENCLOSURE FOR EIGHT SINGLE PHASE METERS ON THE POLE	1	8	8	2		8			8
ENCLOSURE FOR SEVEN SINGLE PHASE METERS ON THE POLE	1	7	7	2		7			7
ENCLOSURE FOR SIX SINGLE PHASE METERS ON THE POLE	3	6	18	3	18	0	0	0	18
ENCLOSURE FOR FIVE SINGLE PHASE METERS ON THE POLE	1	5	5	2		4	0	1	5
ENCLOSURE FOR FOUR SINGLE PHASE METERS ON THE POLE	1	4	4	1		4			4
ENCLOSURE FOR THREE SINGLE PHASE METERS ON THE POLE	12	3	36	12		36			36
ENCLOSURE FOR TWO SINGLE PHASE METERS ON THE POLE	16	2	32	16			32		32
ENCLOSURE FOR ONE SINGLE PHASE METER ON THE POLE	22	1	22	22				22	22
ENCLOSURE FOR ONE THREE PHASE METER ON THE POLE	1	1	1	1		1			1
DC450 with breakers 4 way box				1		0			0
Demo + traning DC450 with breakers				1		4			4
Demo +Training 4 x way box			4	1		4			4
E650 + P42 (including breaker)				1		1			1

Typical Meter Install in LEC

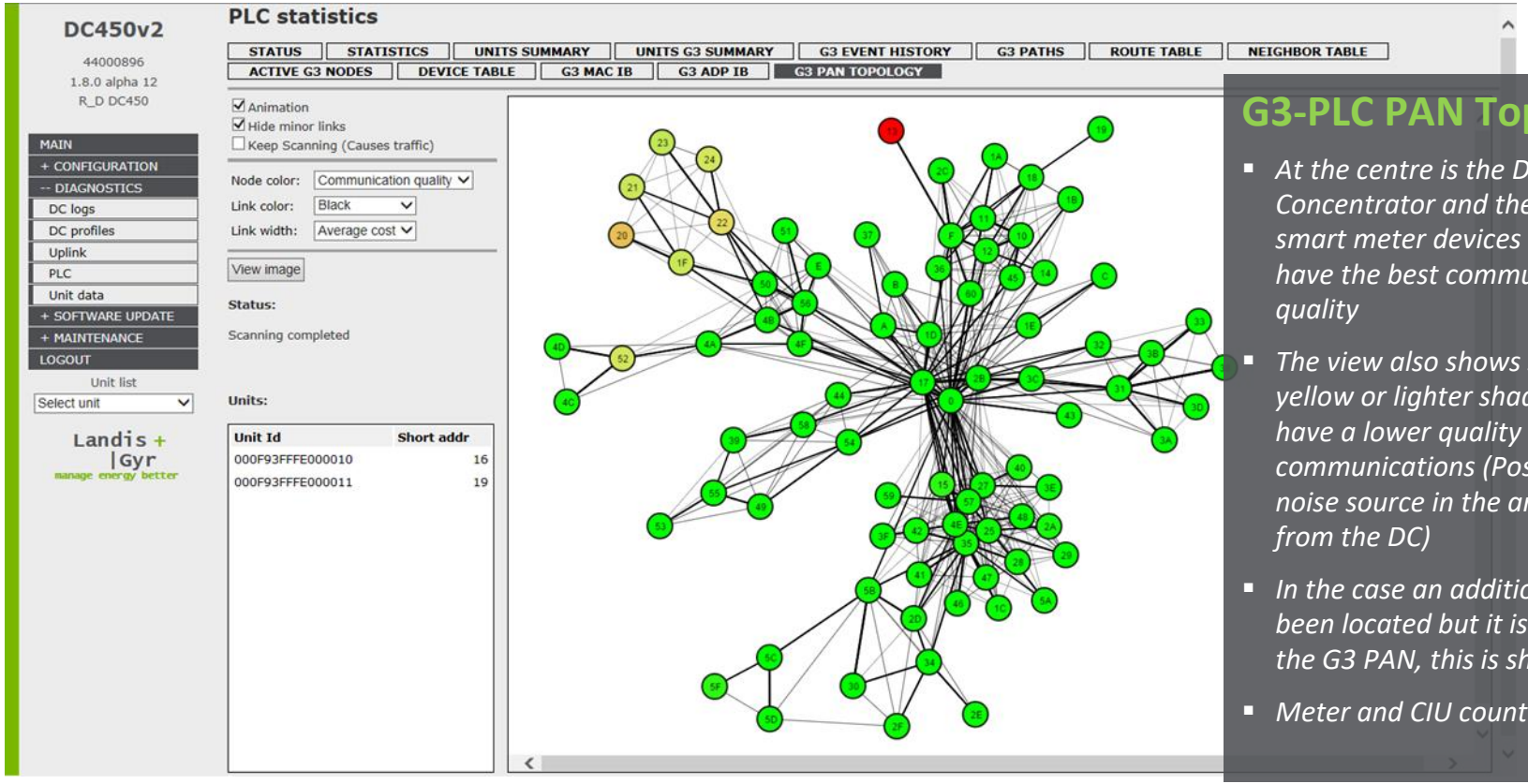
- Current Meter installations in the house, common base meter types
- Blanking plates required when meter is removed
- Quick easy replacements with out having to re-connect supply
- Limit time spent in customer House



LEC Planned Schedule



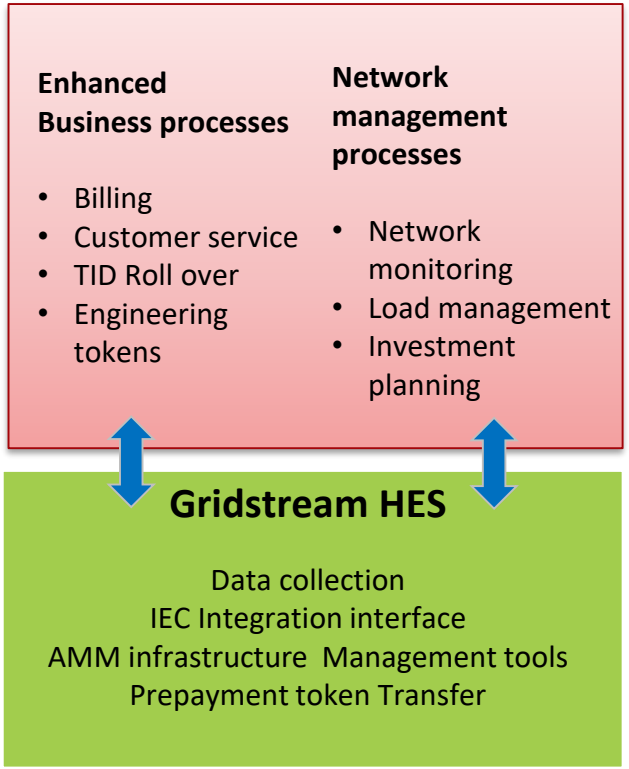
DC Web Interface – G3 PAN Topology “meter count”



G3-PLC PAN Topology

- *At the centre is the Data Concentrator and the view shows G3 smart meter devices in GREEN that have the best communications quality*
- *The view also shows some meters in yellow or lighter shade of green that have a lower quality of communications (Possibly due to a noise source in the area or distance from the DC)*
- *In the case an additional device has been located but it is not able to join the G3 PAN, this is shown in RED*
- *Meter and CIU count confirmed*

Head end System (HES)



Overview

The HES is the communication and data collection layer between the metering data management system and the metering network

Main Functions

Billing Process

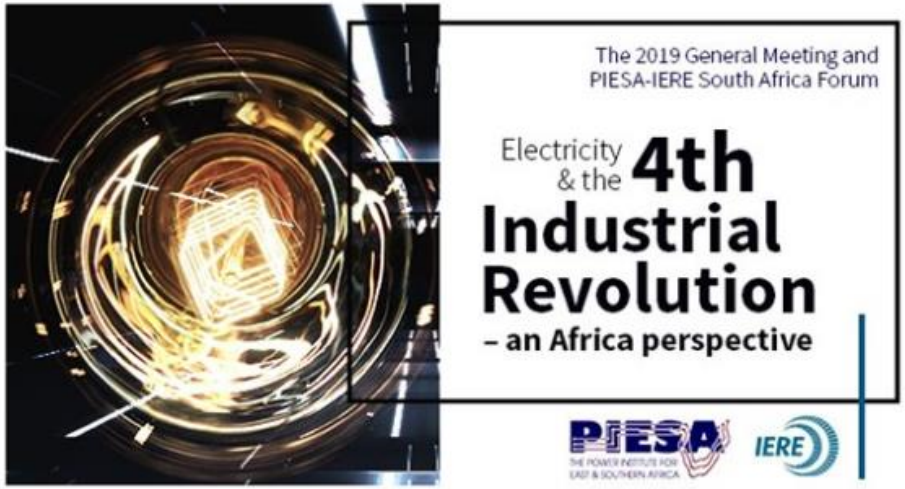
- **Actual consumption** information and automated process
- **Remaining Credit** in meters
- Readings according to pre-defined schedule or on-demand
- Automated re-reading process
- **Remotely disconnection/ reconnection** of energy supply
- Remotely convert Customers from Post Paid to Pre-Paid

Improved customer service

- On-line access to actual metering data for customer service personnel
- On-time consumption information and power quality data as well as meter events for a single meter
- Disconnections /reconnections can be done by service personnel

AIM Dashboard

GO Live report back @



PIESA is pleased to announce that it, together with IERE, will be hosting the **2019 General Meeting and PIESA-IERE South Africa Forum**, from 28-31 October 2019 at **Sun City Resort, South Africa**. We invite all PIESA members and non-members to attend this auspicious occasion.

Smart Meter Role Out / TID implementation

Smart Pilot Project

Smooth role out of Smart meter project

Smart meter rollouts are unique projects that present utilities with a different set of **challenges and complexities**, compared with day-to-day operations. **One that is well-planned and well-executed can save on time, cost and resources.**

- A smart meter rollout requires **replacing hundreds of meters** of existing meters with smart meters within a **specific timeframe**
- The importance of a smooth, efficient installation cannot be underestimated.
- Typically, teams of installers are tasked with installing high volumes of meters in a day, over the course of weeks and months.
- **Procedures and processes need to be clear,** especially in terms of correct set-up to avoid wasting time, and additional site revisits.

Any size of a rollout requires careful planning

Even over a smaller service area smart meter rollout campaigns require **careful planning** to ensure installations can proceed with ease and efficiency.
The overall schedule and installation phases are defined as part of the **deployment strategy and project planning.**

- Ultimately, the key precondition for a **successful site visit is meter access.**
- Good, **proactive communications with end consumers** and property managers cannot be overestimated
- Ensure they can provide **access on the appointed date and time** of the meter swap.
- It starts with **communicating well ahead of the installation** to provide customers with information on the benefits of the new smart meter technology being installed

Formalize the installation process

An efficient and smooth smart meter rollout can only occur when **each process and step of an installation job is clearly defined**. There is no room for improvisation or doing things ‘on the fly’.

- With a **digital WOM system**, the utility can guide the work processes in the field, **minimising issues and errors.**
- **Providing** installers with **step-by-step job procedures** for carrying out the meter installation a smooth change of each device is assured.
- Using Digital WOM, utilities can design work orders according to their **own processes** and **define different workflows** for various types of jobs.
- The **installer interacts** with WOM via their **mobile device**, following the instructions presented**. Only when a mandatory step is complete** can they move onto the next one, ensuring that each critical stage has been completed and reducing the risk of revisits due to incorrect installation or set up.

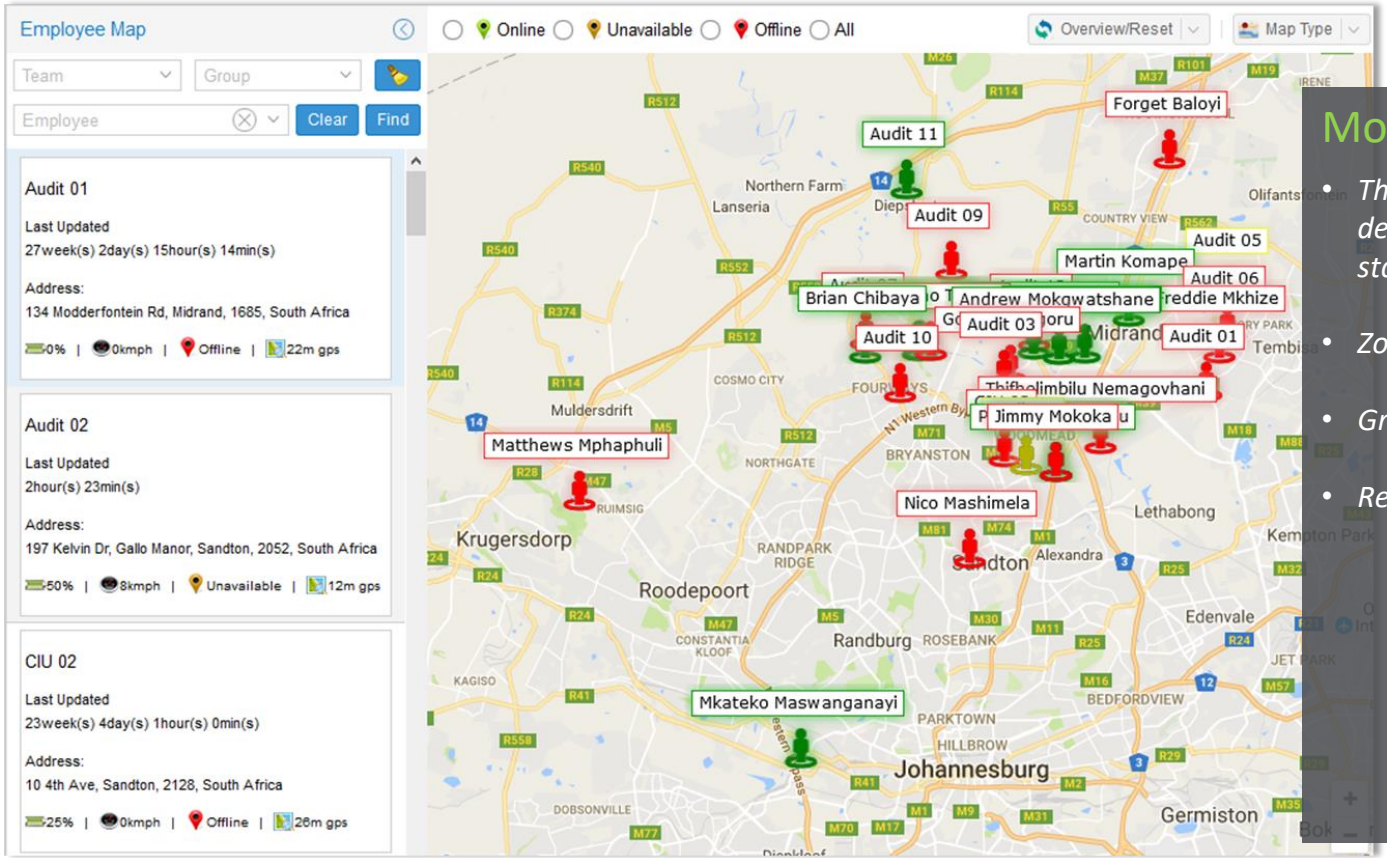
Dashboard installation process

Digitalise data gathering

During a smart meter installation, **data is gathered** from the job itself in addition to retrieval of the data from the **old device** and its transfer to the new system.

- **Manual data collection is prone to human error** and requires verification in the back office that everything has been correctly communicated.
- **WOM digitalises data gathering**, ensuring that information generated by each job is **systematically and consistently recorded** and added to central databases, ensuring all the data is correct and that each installation follows the right procedure.
- This is particularly important for consumption values collected by the meter, so that customers receive **accurate bills after the new installation.**
- The information is **recorded and downloaded quickly**, *compared with the installer filling out pages before delivering these to the back office for personnel to manually upload the information*

Employee Map



Monitor

- *The Employee Map used to obtain details of Mobile users such as Online status, last known location etc.*
- *Zoom in to see more details.*
- *Green on track*
- *Red running behind target*

Securing installer health and safety

When dispatching workers in the field, whether they are own employees or contractors, **utilities are concerned with their health and safety**. WOM enables installers to **report any incident which could potentially cause bodily harm**, so that appropriate measures can be taken to ensure a safe environment for the job to be completed.

WOM's Mobile Application also features a **"lone worker protection"** function, which can immediately **alert someone in the back office** should the installer find themselves in a situation that is risky.

Conclusion

Smart meter projects must never be measured by **“when will the first meter be installed”** (this applies to all other meter projects)

Smart solutions have many elements, the smart meter is the **last element in the puzzle**

Smart meter rollout projects require careful planning to ensure they are carried out efficiently and avoid costly rework.

Landis+Gyr can assist utilities of any size with their rollout strategies.

WOM has been designed specifically to support smooth and cost-effective execution of smart meter rollouts.