CAS Hemera Residential

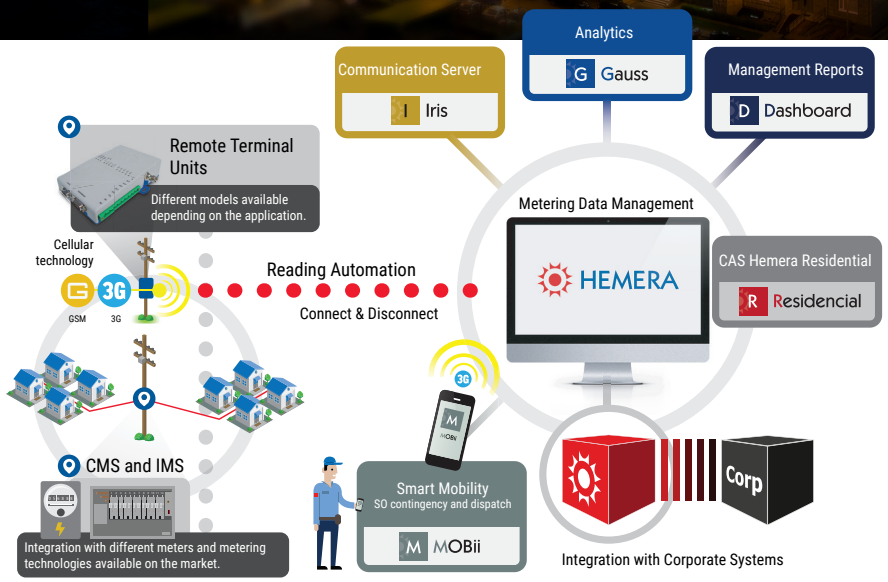
Focused on Energy Metering Management via telemetry, Hemera Residential provides efficiency and holds a large volume of data.

It promotes the identification and resolution of failures related to billing, energy balance, connect & disconnect, analysis and utility losses. From remote controls, it allows metering and operation centers to optimize their efforts in the field.

Metering Management

Based on a multi-protocol architecture and prepared to support different meters and SMI or SMC technologies and with smart meters available in the market for low voltage, the system enables reading process automation for billing and connect & disconnect, providing greater reliability in online data delivery.

The System implements customized and differentiated by technology physical field vision mapping. Metering Systems technologies implement different alarms and events. Hemera Residential allows the utilities to fully exploit the functions of each technology in a standardized manner in a single system. It also allows field equipment commands, from each technology, to be sent to configuration, maintenance or on-demand reading functions.



Hemera Residential reading automation flow.

IMS Individualized Metering Systems.	Landis&Gyr (Gridstream) Elster (Mesh) Itron (Mesh) CAS (Backpack)	Eletra (Backpack) Elo (Backpack) Nansen (Backpack)	Multiprotocol
CMS Centralized Metering Systems.	Itron (Aurum) CAM (Complaint) Nansen	Landis&Gyr (SGP+M) Elster (Garnet) Ecil	
CRMS Centralized Reading Metering System.	Landis&Gyr (RS485 or Zigbee) Eletra (RS485 or Zigbee) CAS (Backpack)	Itron/Actaris (Euridis) Elo (RS485 or Zigbee) Nansen (RS485 or Zigbee)	

ABILITY TO INTEGRATE WITH NEW TECHNOLOGIES.

Energy Balance Analysis

Intelligence to establish a set of pre-configured rules for energy balance automated analysis from statistical processes that identify the consumer units that most contribute to zone unbalance, helping in loss identification and recovery.

Balance analysis rules can be activated or deactivated according to the needs of each application environment. The analyses' results are presented in full reports and graphs that help identify losses and detect potential target customers.

Z-Smart Solution

Backpack with remote operation for reading, connect & disconnect and reducing losses processes at low voltage costumers.

Conventional electronic meters can become "smart meters" with the possibility of remote communication and connect & disconnect actions, regardless of the meter's supplier.

Advanced Features

Exclusive functionality of differential current monitoring and phase and current sensing, collaborating with electric power utilities' efforts in loss prevention and diagnosis.

Field Environment Protection

Intruder phase sensing. Service quality for the utility, benefiting the final consumer's protection. Notification to the utility in case of voltage identification in cut customers.

Data Access

Independence, flexibility and convenience in metering data availability. Data is obtained by scheduling and also on demand, including Mass Memory registered by Z-Smart Backpack.

CAS Embedded Intelligence

RS2000 Z-Smart Backpack

- Remote Terminal Units functionalities for ABNT meters with connection via optical port or serial port.
- Modules for single-phase, two-phase and three-phase direct metering meters.
- Remote reading with scheduling.
- Remote Connect & Disconnect up to 100 A.
- Zigbee Communication.
- Remote firmware update.

Alarm monitoring, detection and generation for:

- Differential current.
- Intruder phase.
- Meter self-reconnection.
- Communication failure between the backpack and the meter.
- Overcurrent.
- Metering inconsistency.
- Phase exchange.
- External meter replacement.
- No phase voltage.
- Presence of current without metering feedrate.

CAS RS2000 – Backpack:

Z-MONO SMART

Z-MONO Universal

Z-TRI Customer and Trafo

Z-TRI BALANCE Trafo

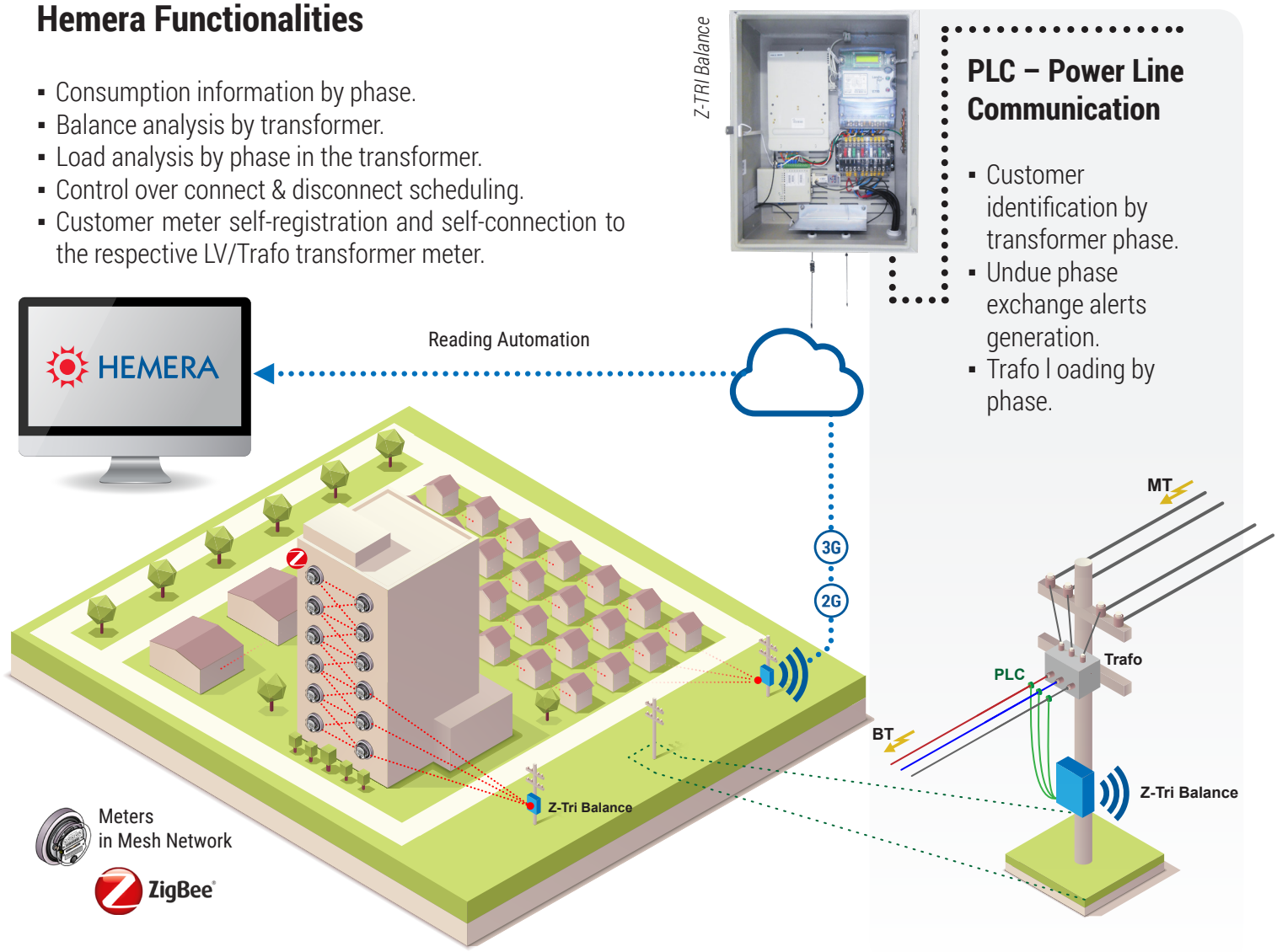
Z-ABNT

Z-REPETIDOR and Z – SERIAL

Several models available by accessing ***catalogo.castecnologia.com.br***

Hemera Functionalities

- Consumption information by phase.
- Balance analysis by transformer.
- Load analysis by phase in the transformer.
- Control over connect & disconnect scheduling.
- Customer meter self-registration and self-connection to the respective LV/Trafo transformer meter.



Z-Smart Solution advantages

Low cost communication.

Scalability to high density regions.

Adaptability and flexibility for implementation in mixed regions of single-phase, two-phase and three-phase customers.

Easy asset configuration and control in the field.

Multi-manufacturer approach: freedom of meter choice, with remote connect & disconnect.

Self-manageable grid: one device acts as a repeater for others, extending the communication range safely and dynamically.

Single platform to manage Residential Customers, C&I, Free Customers and Border.

Guaranteed integrity of the customers' meters registration by Trafo.

Centralized and personalized support, avoiding attrition with suppliers.

Open API for integrations with legacy systems.

Technical staff qualified in the utilities' business.

Agility and flexibility in the development of new features for the product and integrations with new meters.

Encrypted grid.

Flexibility and convenient access to metering information.

End to End Solution.
Collection, communication, analysis, asset management, billing and energy balance.

Native integration with Hemera Platform.

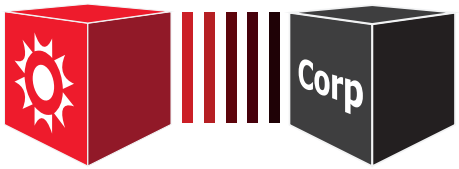
Processing Capacity Certificate

Hemera processing capacity:
Up to 16 million messages – 6h:40m
Approx. 40 thousand messages/min.

Integration with Corporate Systems

CAS systems can be integrated with other utility's systems, allowing the following:

- Information sharing, creating new applications for data processed by CAS platforms, ensuring data integrity.
- Potentialization of corporate systems' benefits already incorporated into the utilities' routine.
- Addition of value to the business from functionalities' availability resulting from the integration.



- SAP
- AJURI
- CBILL
- CS
- SIFAR
- USEAL

CAS Hemera Platform Integrations

- **Commercial Systems:** billing and connect & disconnect process automation.
- **Services in the Field:** customer services automation.

Connect & Disconnect associated with the Commercial System

It allows the sending of connect & disconnect requests to be remote and automatic, offering greater agility and reliability to the process, in addition to complete monitoring reports and request history.

Field events monitoring

It informs the events occurred in the monitored elements, alerting about physical and logical conditions related to the metering point. Through event analysis, analysts are able to infer on the existence of situations that require field inspections or regularizations.

Advanced Tools

Scheduling allows activity automation, among them: billing, reporting, reading, parameterization and connect & disconnect.

Generation and exporting of managerial reports to study customer behavior, asset management and monitoring of Remote Terminal Units' connectivity and meters in operation.

Meter's geographic location visualization through Google Maps, helping the work of field teams.

User administration and access with privilege levels. Recording users' actions for the purposes of auditing and monitoring the commands sent, documenting all the actions taken in the meter.

Contingency and Performance

High data availability and scalability.

- Easy maintenance in the servers' physical architecture – allowing one server to take over the services of another when it is under maintenance.
- It allows the use of smaller servers with load balancing, enabling high availability and flexibility in storage.
- Effective improvement in message processing capacity, accelerating data recovery in case of unavailability.
- Process independence, allowing prioritization of the utilities' business' most critical activities.
- Compliance with several **operating systems**, adapting to any computational structure.