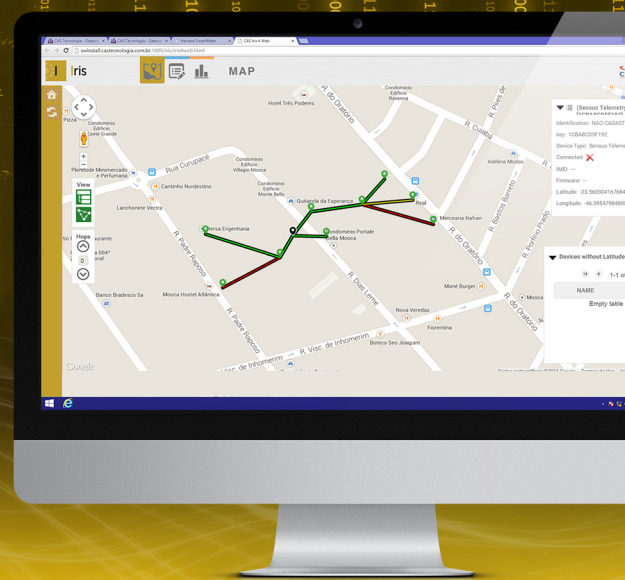# CAS Hemera *Iris*

I Communication Server that offers operational and strategic support, allowing two-way communication with certified metering and automation systems.

Compatible with multiple telecommunication operators and different technologies - 3G, GPRS, Radio, Satellite, Ethernet. It has the capacity to manage thousands of points.

It generates detailed management reports that are important for the telemetry park technical control and supports decision-making. It also optimizes the field equipment operational management.

The use of CAS Hemera Iris allows:

- Data traffic - Gathers and processes the modules data traffic information to cellular communication costs control (mobile operator). Reports of cost prorate distribution for the data network according the use by chip, by application and by client.

- Dual Chip - Manages the communication of dual SIM Card equipment.

- Reports - Administrative, statistical, alarm and disconnection recognition reports for the communication modules, with event logs.

- Multi-manufacturer - Allows integration with third-party communication modules.

- Security - Allows setting of different user access levels.

- Control of connections and commands - Control all connections and disconnections for each managed modules, sending maintenance commands for necessary reconfigurations in order to keep the connection active.

- Zigbee equipment integration - Enables the management of Zigbee equipment associated with a WAN telemetry.

SNMP Protocol

The Simple Network Management Protocol (SNMP) is widely used for network management, especially in networks for real-time data flows, facilitating the network monitoring.

Main benefits:

■ Provides comprehensive network management by monitoring each component performance, as well as identifying and solving eventual failures.

■ The availability of component performance accurate data enables effective actions in field.

COMMUNICATIONS PROTOCOL

Ambiente de Campo

- Medidores
- Transformadores
- Religadores
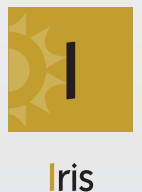- Equipamentos com RS232, RS485, Ethernet

Comunica...

- Internet
- LP
- VPN

- Satélite
- Rádio
- Ethernet
- Rede Celular

DNP3 Front-End Module

This module enables network monitoring in a qualified manner, going beyond the basic physical alarm functions of CAS communication modules installed in field.

The integration between communication modules used for customers metering and supervisory systems (SCADA) allows to the utility enhanced operations ability and added value to the business, since these same telemetries can be used for network analysis and control, outages detection and maintenance decision making.

The system provides the following information to the user:

- Outage events in clients with telemetry.
- Values of magnitude: power, power factor, frequency, voltage and current values with their respective angles.
- Field sensors status.

Main benefits:

■ Each CAS communication module can perform as a network outage sensor, eliminating the installation of new components and boosting the return on telemetry investments.

■ Provides proactive actions to field actions - such as contingency to distribution failures – supporting other areas in the utility like reactive call center service.

Meter Data Management

HEMERA

Communication Server

I

Iris

Customers with RS2000 line communication modules

Servidor de Comunicação

I **Iris**

0101010101

DNP3

0101010101

SNMP

Ambiente de Aplicação

HEMERA

▪ Supervisório SCADA
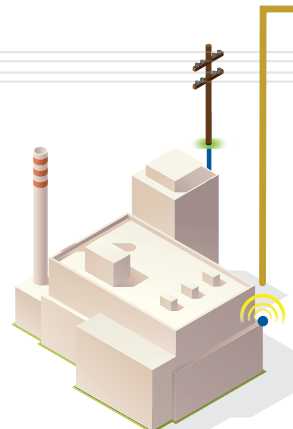
General illustration of communication protocols.

Operation Center

Network Monitoring

SCADA

DNP3

3G GPRS **communication**

Illustration of the DNP3 Front End Module operation with CAS communication modules

Execution of Programmable Scripts

Intelligent functionality used in IRIS Manager to automate telemetry functions, detecting adjustments needs and executing them automatically.

In field, the communication module has, in its configuration, several business rules that able the analysis of metering data and adverse situations presented by the metering system.

Once the detection of the need to update the parameter configuration becomes automated, the process becomes more intelligent and agile.

Main benefits:

■ Protocol, signal level and temperature monitoring. Tasks scheduling and event parameters setting.

■ Agility at work, enhancing business knowledge.

■ Scalability gain and operating costs reduction resulting from unforeseen circumstances that would require field services and maintenance.

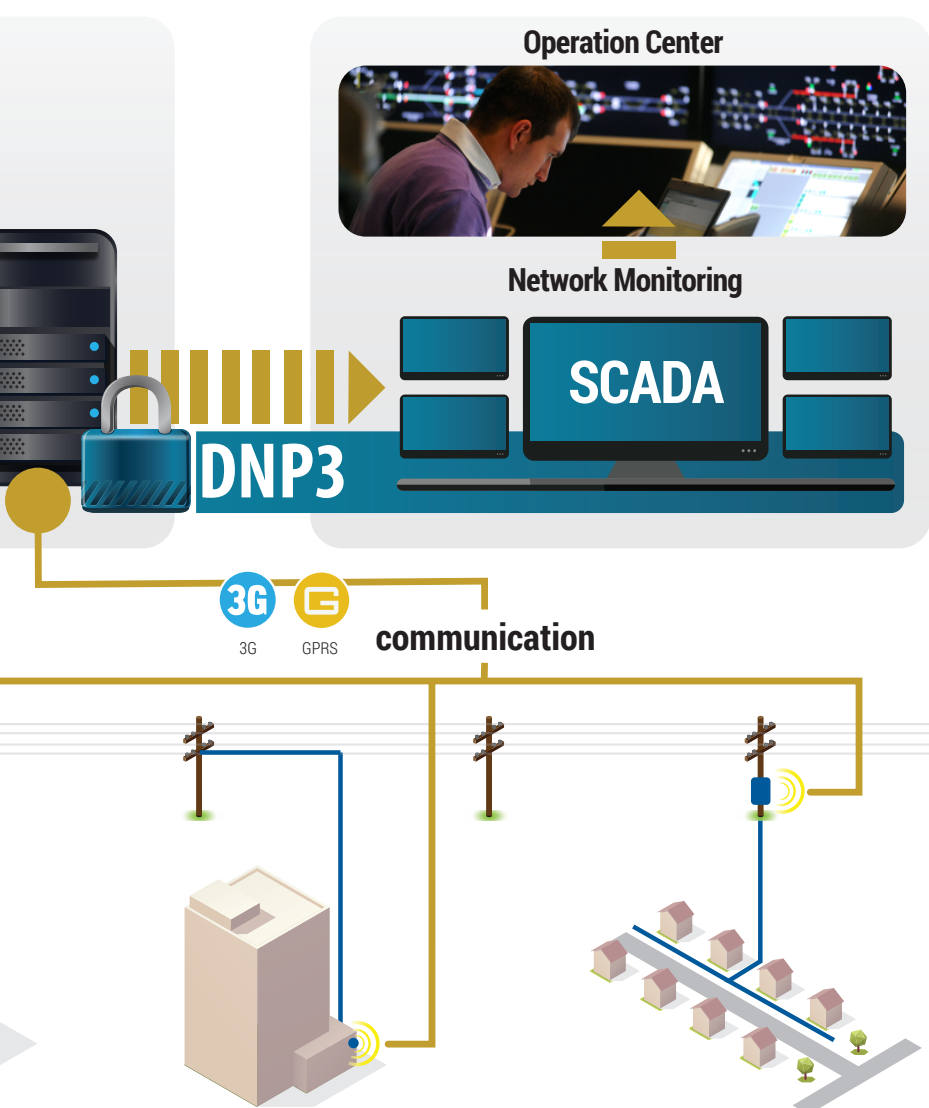■ Integration with CAS Hemera Gauss system for analysis and notes of the executed scripts results.

TCP IP

VPN

Router

IP 192.168.000

Utility's Communications Server

Iris

Guardian Module

TRANSPARENT TO ENERGY CHAMBER

CCEE

Energy Regulatory Agency

Energy Commercialization Compensation Chamber

0 5 6 8 8 8

Field Meter

ABNT
ANSI
IEC

1 Question

2 Passing question Iris Guardian Module for Meter

3 Meter response

4 Passing the Meter response

Port Forward Module

The Port Forward functionality is a mechanism available to the Guardian module users that enables Guardian-inherent Energy Chamber analysis to be performed for meters that do not have telemetry/field communication module.

That is, in scenarios where the utility already has a TCP IP infrastructure straight to the meter, the connection made by the client or by the Energy Chamber is monitored with the traffic protocol and the communication channel to the meter analysis.

Main benefits:

■ Port Forward functionality is valid for ABNT (all national market) and ANSI, IEC (ION, Q1000 and SL7000) meter models.

Contingency and Performance

High data availability and scalability to meet the utility needs due to the telemetry points increase.

▪ *Maintenance easiness in the servers' physical architecture - allowing another one to perform when a server is under maintenance.*

▪ *High storage availability and flexibility using smaller servers with balanced load.*

▪ *Effective improvement in messages processing, speeding up data recovery in unavailability events.*

▪ *Independent processes to allow prioritization of the utility's most critical activities.*

▪ *Compatibility with different operating systems, adaptable to any computational structure.*