# DATA ACQUISITION SYSTEM (BETA VERSION)- OVERVIEW

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# DATA ACQUISITION SYSTEM (BETA VERSION)- OVERVIEW

Vigo Meeting

## CONTENT

1. Introduction, description of the monitoring and datalogger system
2. Overview of the radio devices (zigbee, mesh network)
3. Overview of the BMS, “BUILDING MANAGEMENT SYSTEM”
4. Live demo of the system

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# INTRODUCTION, MONITORING SYSTEM


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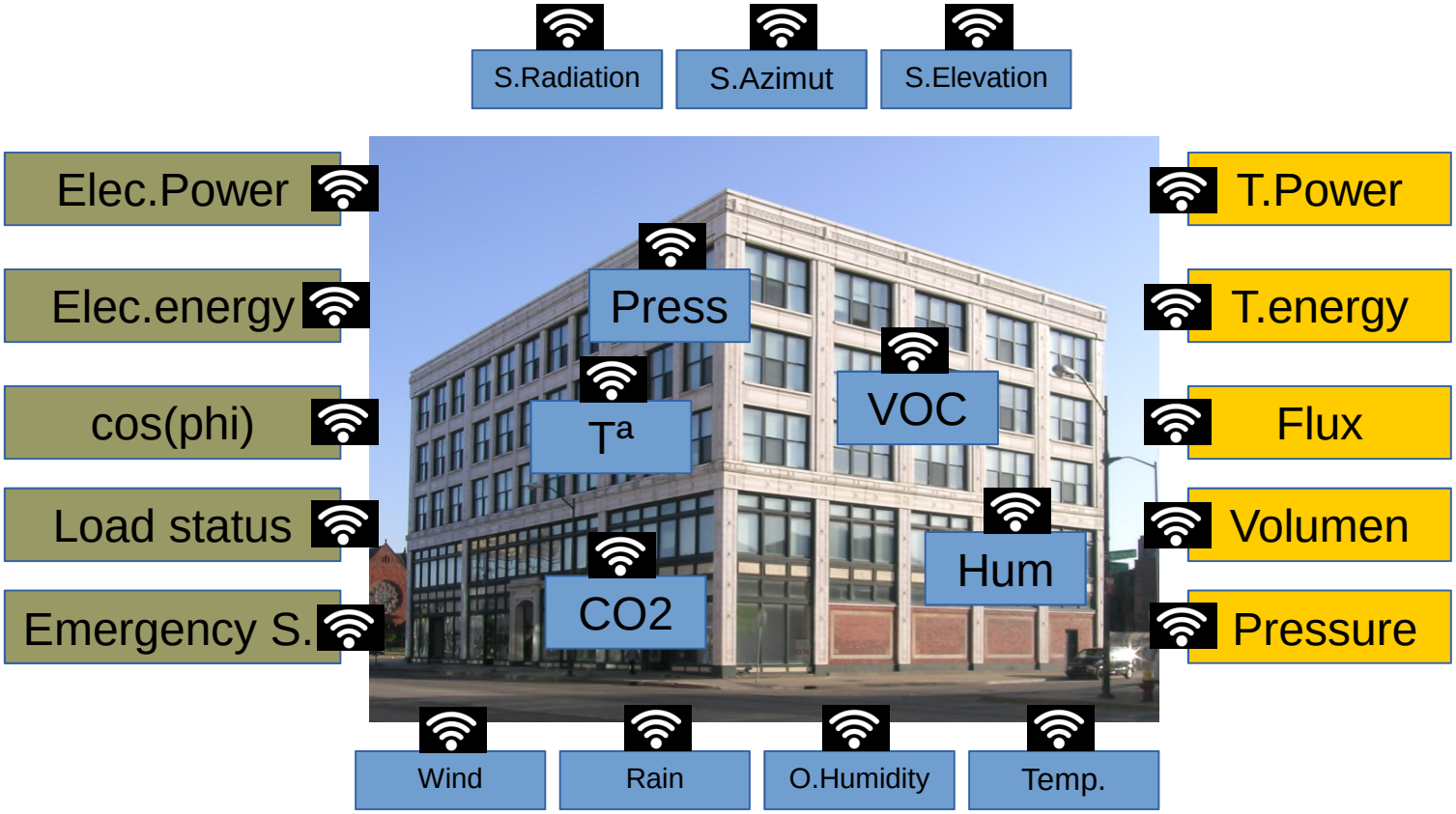
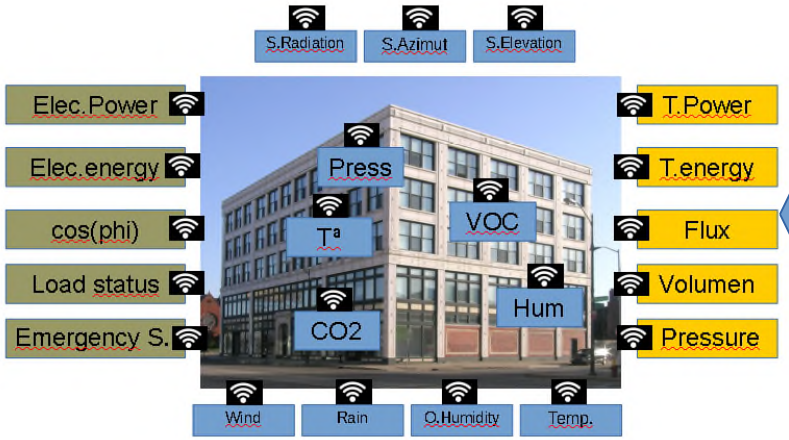
# MONITORING SYSTEM

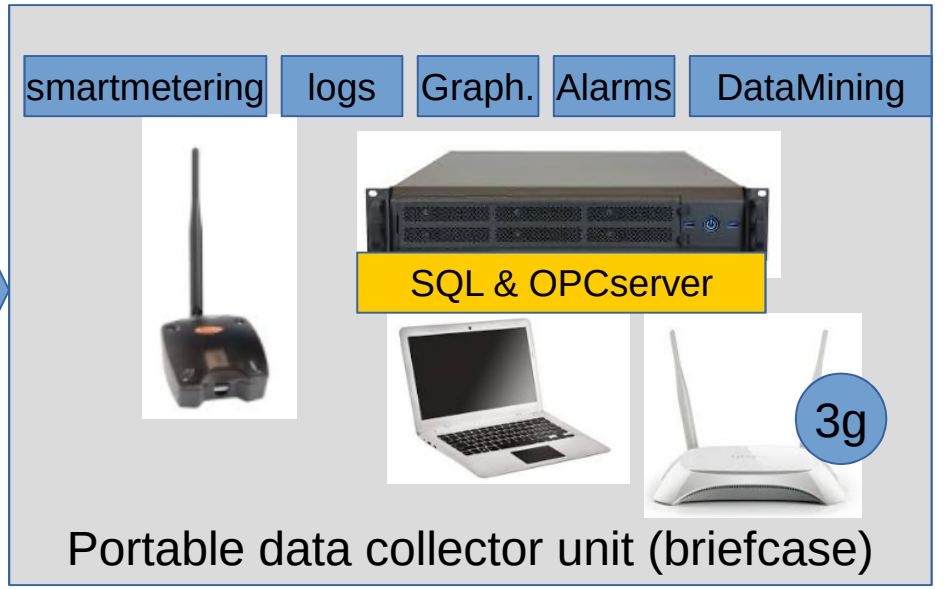
**Building characterization Fase 1**: Sensor network deployment & Integration of present measurement devices

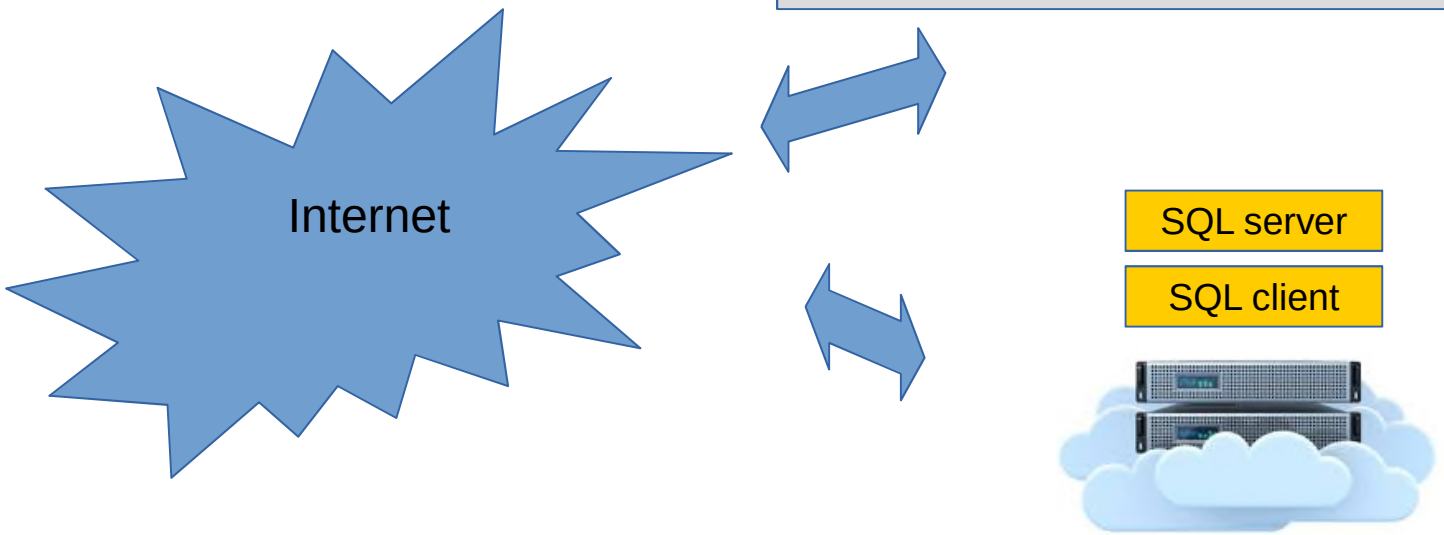


# MONITORING SYSTEM

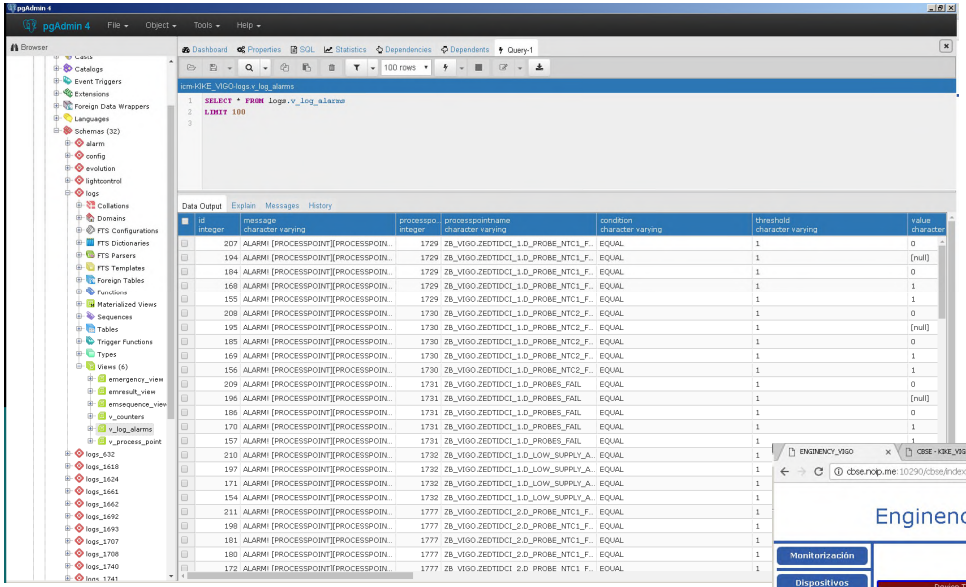
## Building characterization Fase 2: Data collector unit



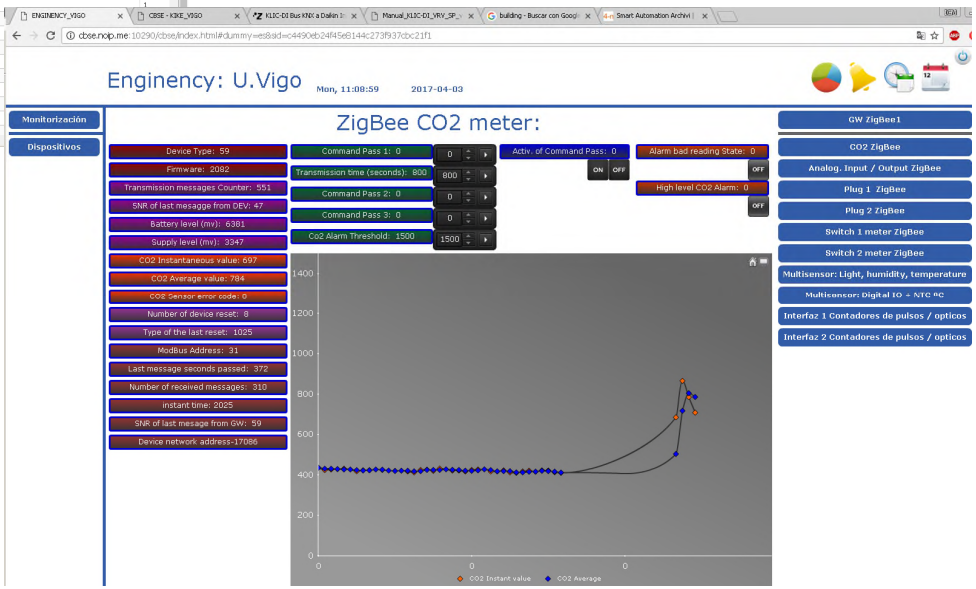
# MONITORING SYSTEM How TO ... access data:




SQL request

OPC client


WebServer



# DEVICES - OVERVIEW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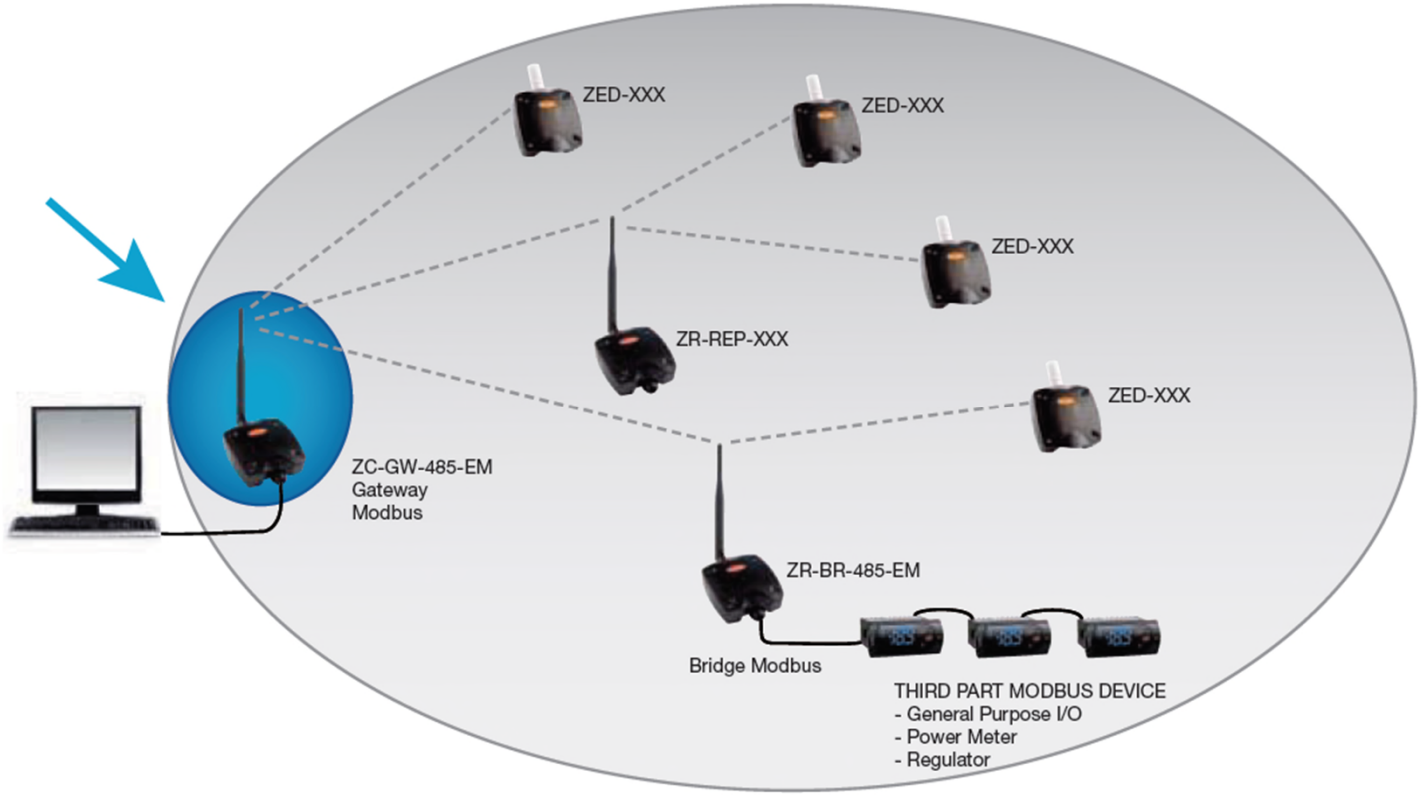
# INTRODUCTION

**Building characterization** using radio sensors. In this example, Zigbee:

## System elements

### Gateway

### Repeater



# INTRODUCTION

## Building characterization using radio sensors:

### Sensors (End of system)

- Measurement Dual Wavelength NDIR
- Autocalibration
- Long term stability and accuracy
- Internal antenna
- Slim size
- Routing function
- Sampling and transmission rates are configurable
- Wall mounting

- Temperature, humidity and light measurements for indoor/outdoor use
- Alarm thresholds
- Sampling and transmission rates are configurable
- Battery powered
- Long life battery
- Internal antenna

# INTRODUCTION

## Building characterization using radio sensors:

### Actuators (With repeater function)

· 1 analogical input for voltage signal reading between 0 and 10 Vdc
· 1 analogical output 0-10 Vdc
· 1 digital input with pulse counting functionality
· 1 NTC thermal resistor input
· 12-24 Vdc/Vac supply
· RF power amplifier: 10 mW
· Routing function
· External antenna

· Real Time Electricity Active Power Measurement up to 2,5 kW
· Electricity Energy Counter
· Remote switch up to 2,5kW
· Stand-by killer
· Override push-button
· ModBus profile on ZigBee platform
· Router function

· Real Time Electricity Active Power Measurement up to 2,5 kW
· Electricity Energy Counter
· Remote switch up to 2,5 kW
· Stand-by killer
· Override push-button
· Pass-Through Socket for many countries available
· ModBus profile on ZigBee platform
· Router function

# INTRODUCTION

## Building characterization using radio sensors:

## Pulse counter (With repeater function)

· LED pulse counter of electricity and energy meter settable from 1 to 99 Wh/pulse
· It manages electricity and energy meter in Wh
· Digital input for remote alarms
· Compatible with ENEL energy meter (single phase/three phase); other European energy meters under development

# INTRODUCTION

## Building characterization using radio sensors:

## Energy meter (With repeater function)

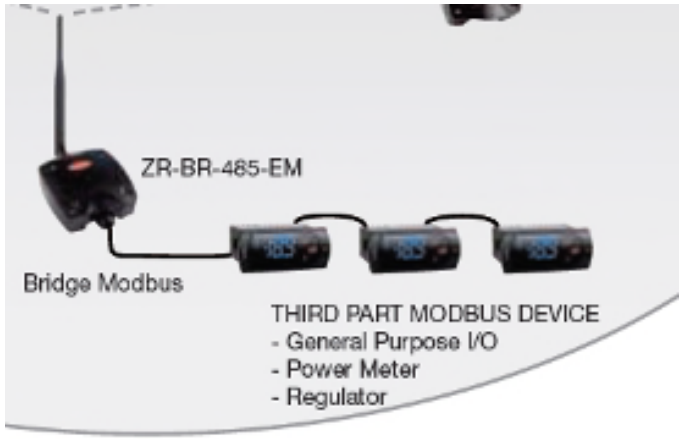

· Real Time three phase Electricity Active Power or six single phase Electricity Active Power
· Measurement up to100A by phase with external CT included
· ModBus profile on ZigBee platform
· Supply 230 Vac
· Star configuration only
· External antenna
· Diagnostic led
· Din rail mounted

# INTRODUCTION

## Building characterization using radio sensors:

## Bridge (With repeater function) for the integration of existing measurement devices

- Connecting Modbus devices to the ZigBee network
- Using Modbus/RTU protocol and RS485 interface
- Routing function
- RF power 1mW
- External antenna



# BMS OVERVIEW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# BMS INPUTS:
# KNX, MODBUS, BACNET, ZIGBEE AND OTHERS (VIA GW)


ASHRAE BACnet™

Modbus

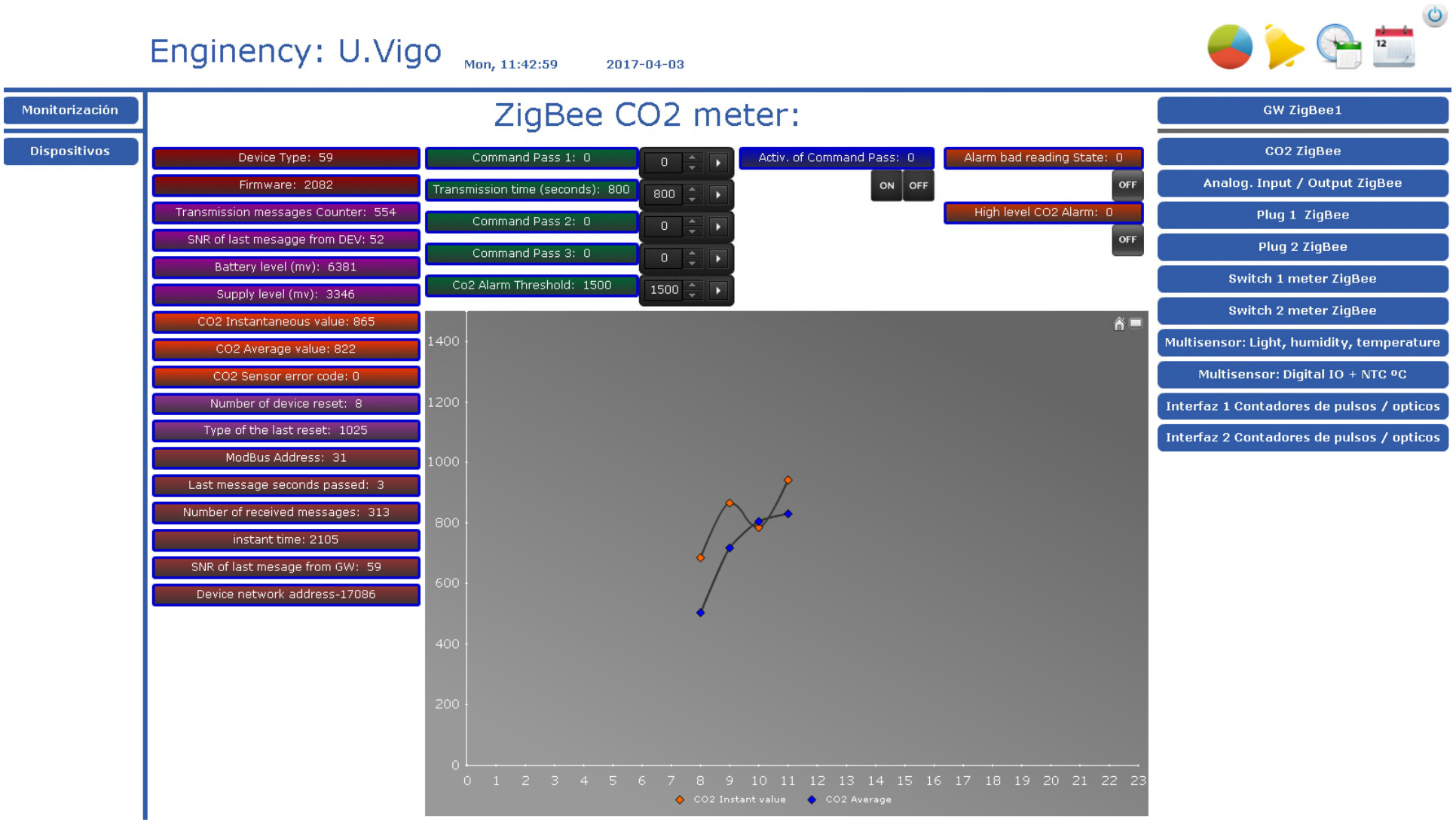
Via Gateway

ZigBee®
Control your world

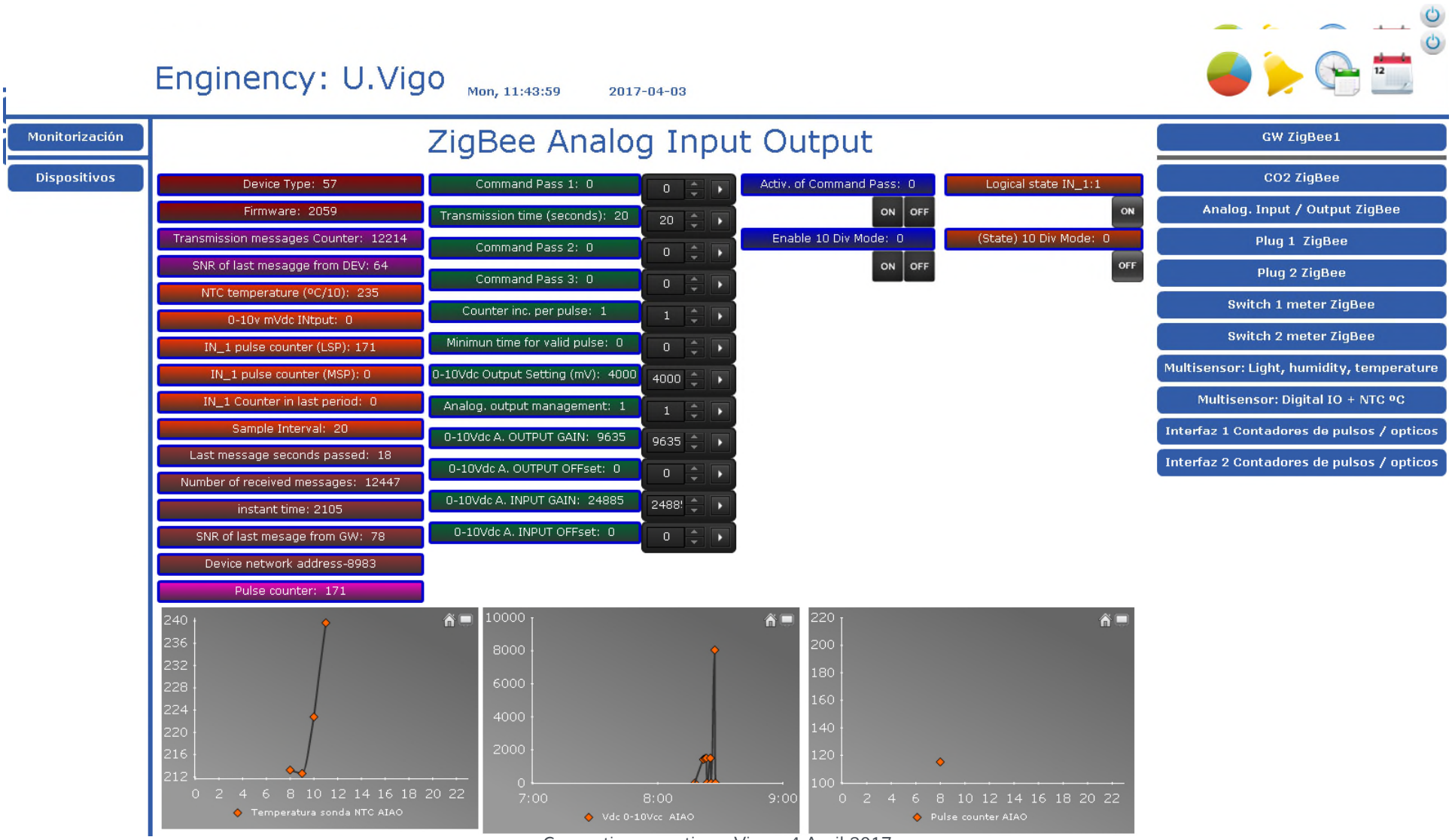
Via Gateway:
Other systems

# BMS OUTPUTS:
# WEBSERVER, SQL SERVER AND OPC SERVER

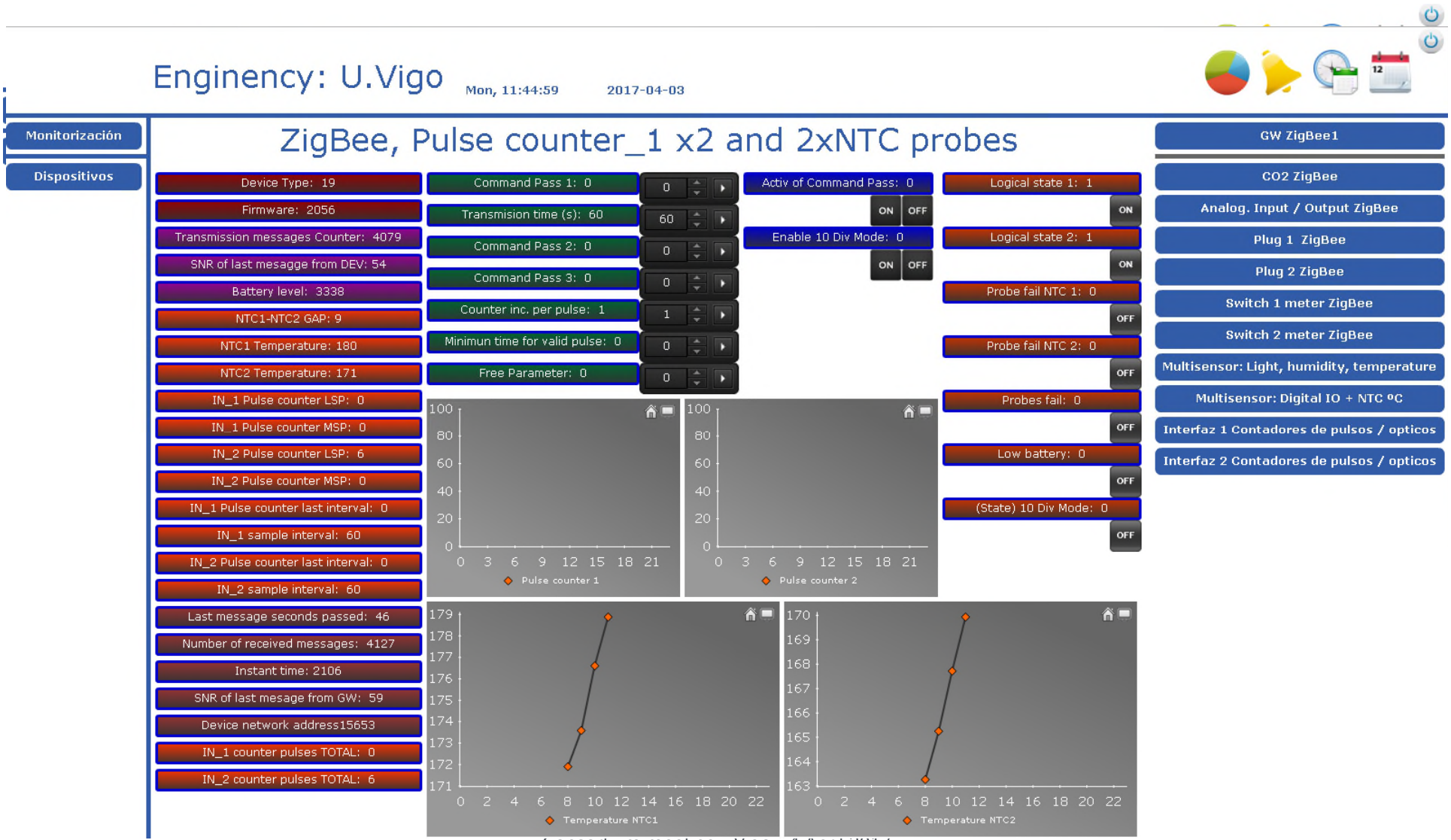
# BMS INPUT: WEBSERVER CO2 PROBE



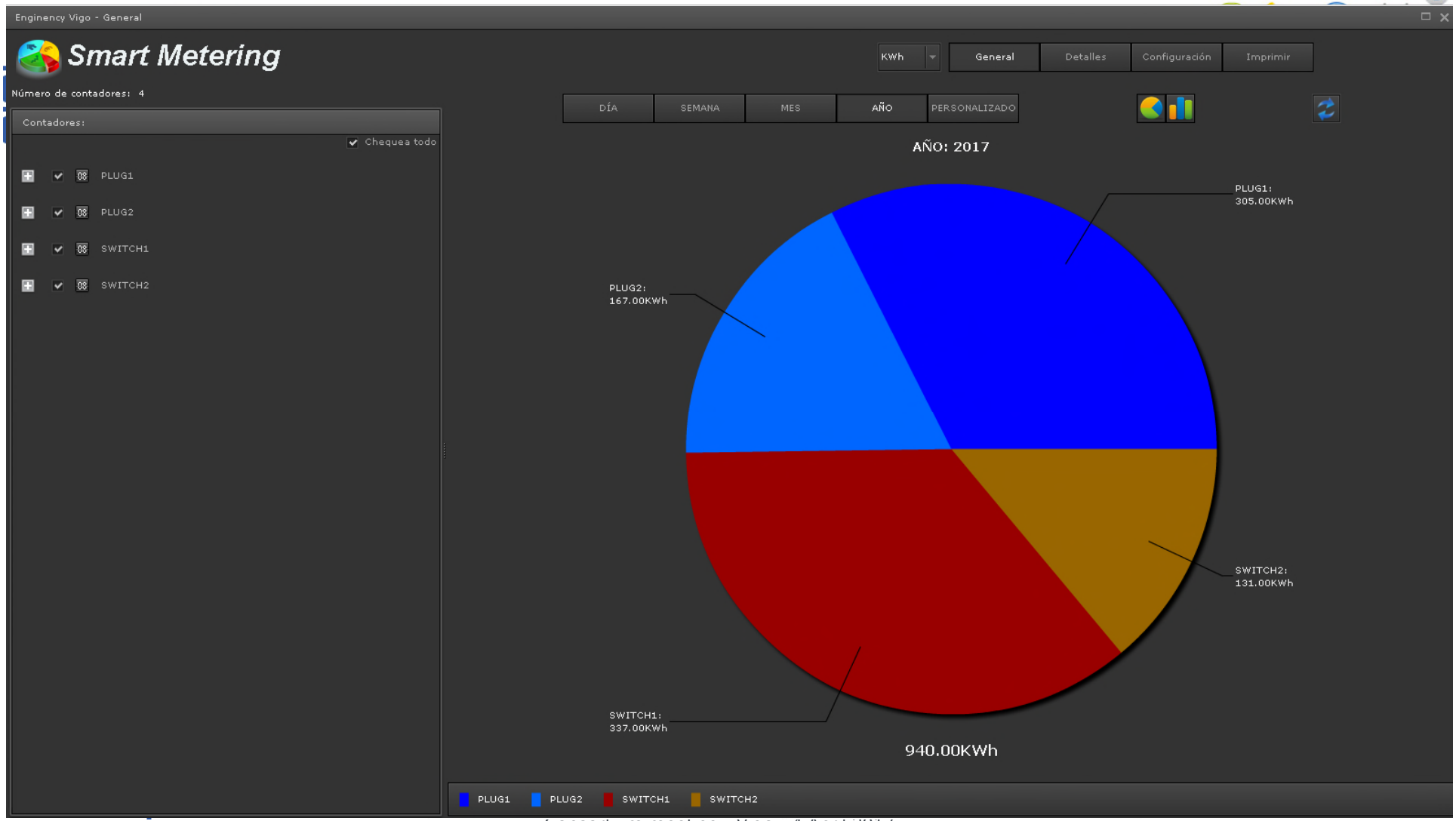
# BMS INPUT: WEBSERVER, MULTISENSOR PROBE



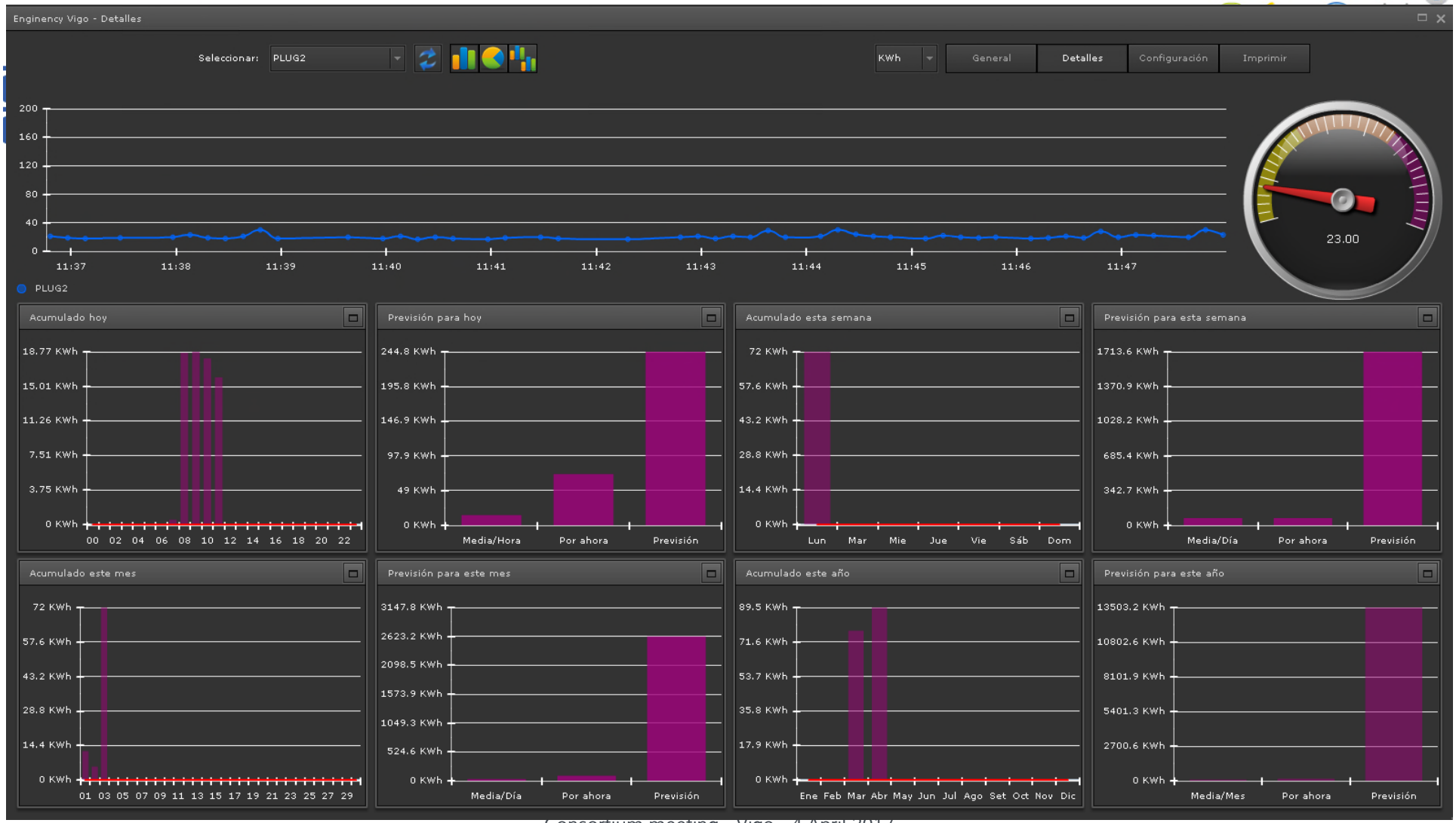
# BMS INPUT: WEBSERVER, ENERGY METER



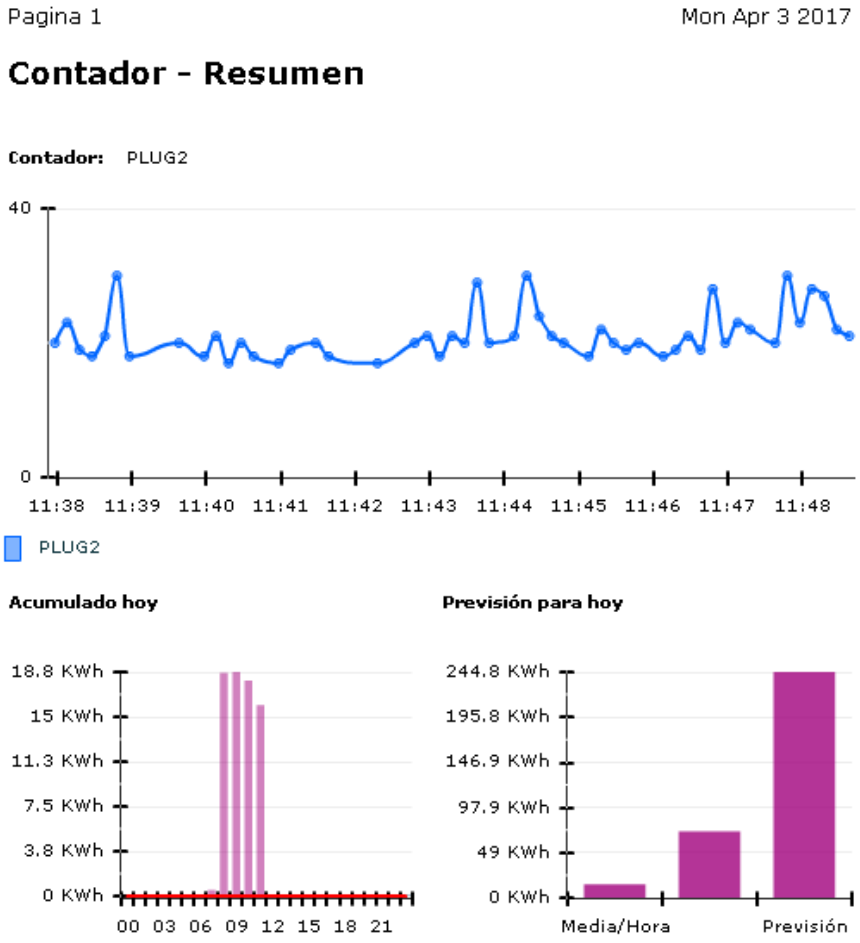
# BMS OUTPUT: SMARTMETERING COMPARATIONS

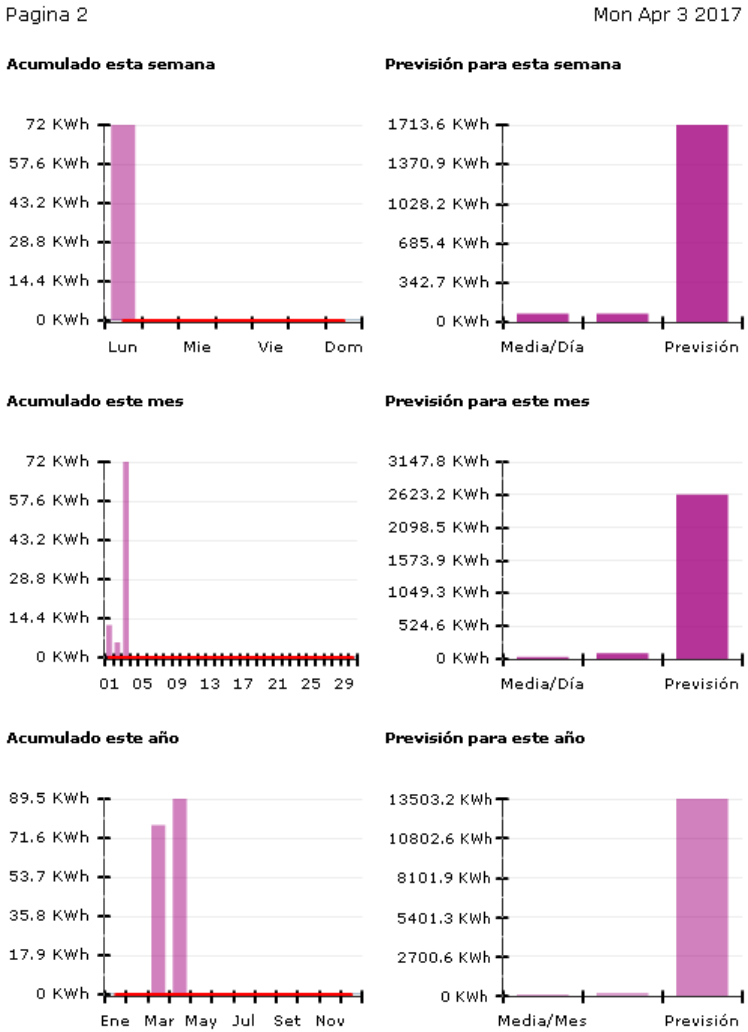


# BMS OUTPUT: WEBSERVER, SMARTMETERING DETAILS

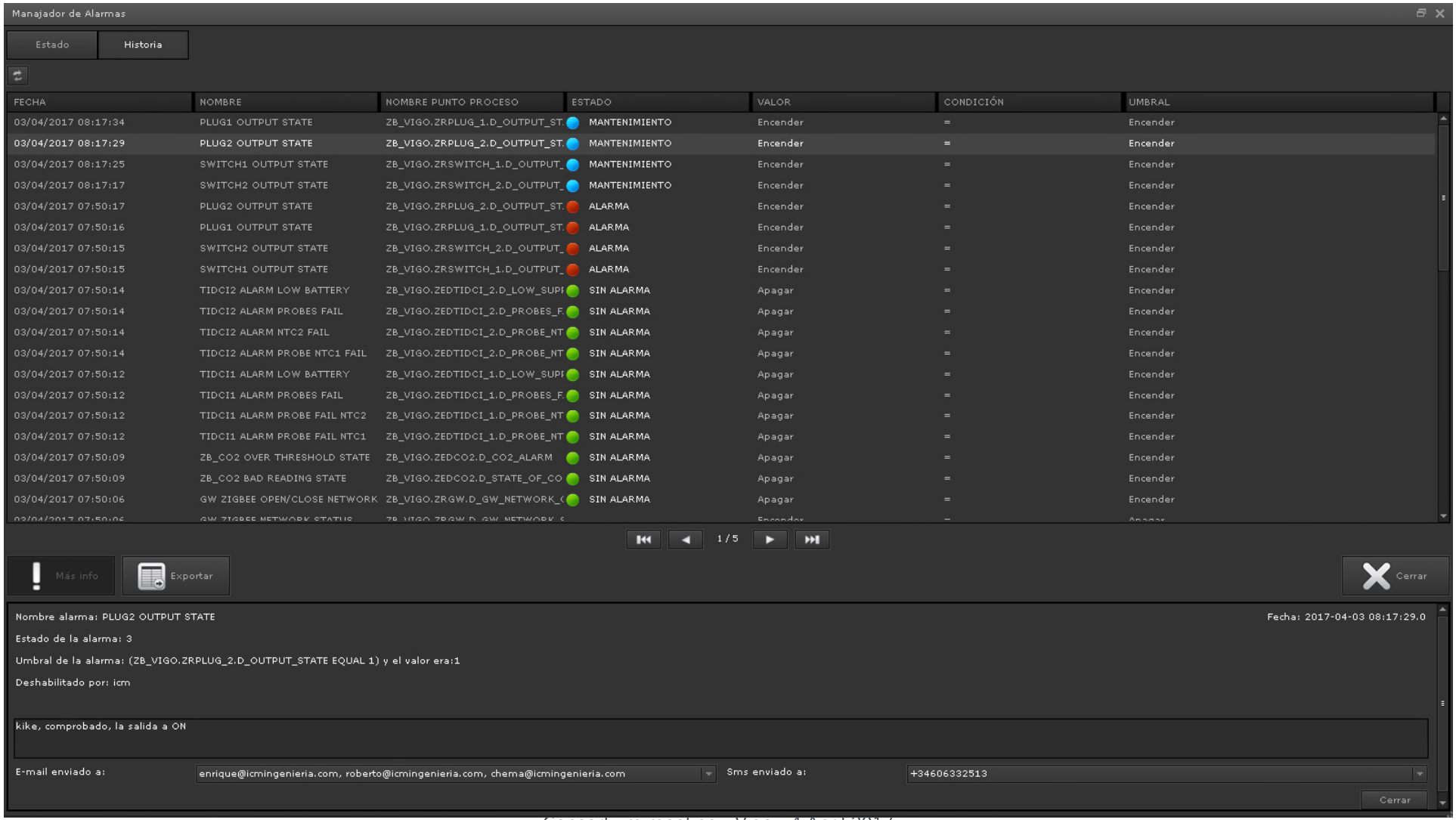


# BMS OUTPUT: SMARTMETERING REPORTS

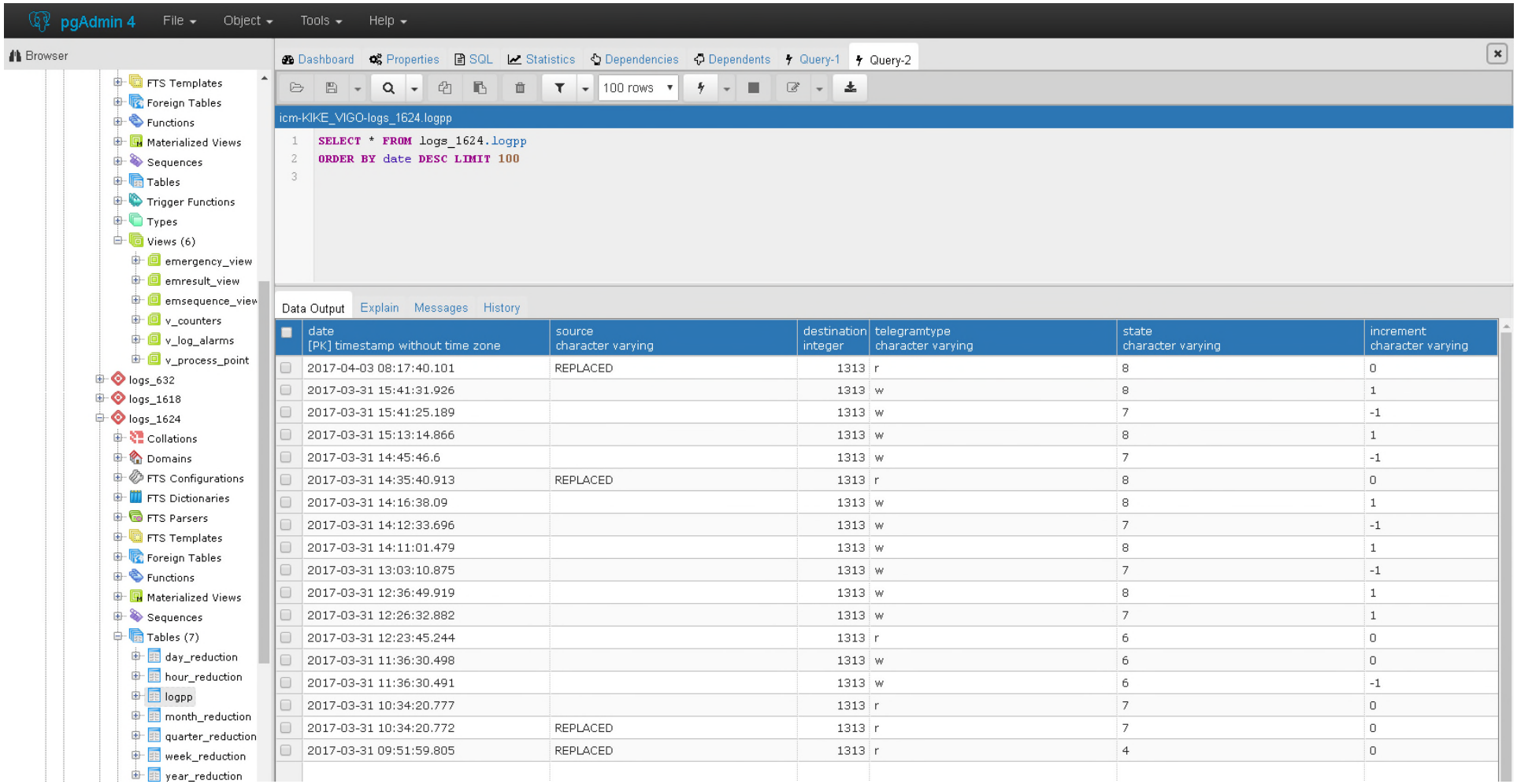


# BMS OUTPUT: ALARMS



# BMS OUTPUT: SQL SERVER

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# COLOPHON


4/4/2017

Consortium meeting, Vigo

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Version 1



PROGRAMME [illegible]

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