IEC 61850 GOOSE SNIFFER

GOOSEMeter ONE

- ✔ NO CONFIGURATION
- ✔ READ ONLY
- ✔ SIZE

SMC

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- ✔ NO CONFIGURATION
  Save time
- ✔ READ ONLY
  Test in service
- ✔ SIZE
  Handheld instrument, reach everywhere

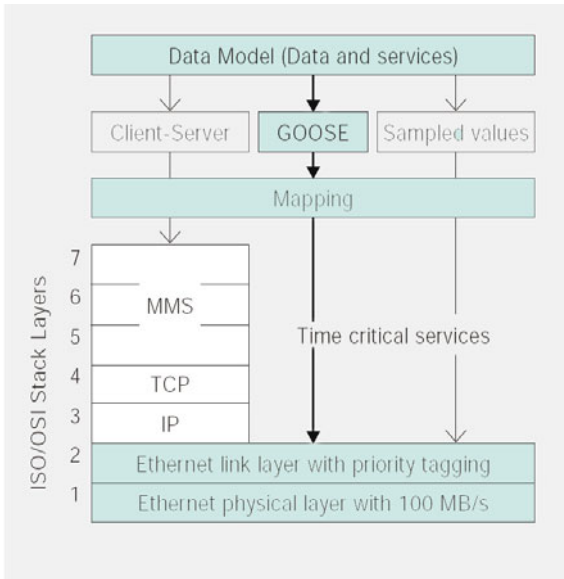
APPLICATION SCOPE

With the increasing applications of new technologies to the Electrical Power Systems, such as the IEC-61850 standard, demands new technical tools to make easier for engineers and technicians involved in the commissioning and testing process, to check these new installations.

One of the most important tasks to be performed is the checking of the correct broadcasting of the GOOSE messages to the whole IED's installed in the substation, making sure that there are no problems either in the IED, switching hardware, or the interconnection cables between them, assuring the correct communication in the entire system.

These tasks may involve a large number of Datasets and GOOSE messages, which by definition are (to say the less) cryptic and difficult to read, difficult to identify the exact origin, the issued time and the information contained, difficult to know the status, etc.

For this reason, it is very important that the test instrument is able to assign "electrical names" to the different GOOSE messages, by means of corresponding name templates, as well as, indicators of different type, avoiding the need to interpret them from the raw information inside the GOOSE message. This makes the task easier to the user and it is free of interpretation errors.



ISO/OSI stack structure

The need to physically connect to the cables ends which connects to the IED's and switches located inside the panels that have a difficult and limited access in most occasions, makes necessary a Handheld device as the GOOSEMeter ONE, with an easy and dedicated control, along with the ability to easily fit in very reduced spaces, exactly as a classic multimeter does. There is also another very important reason to use a dedicated test instrument instead of a computer: The GOOSEMeter ONE is totally risk free to write or to change any configuration in the network, a risk that is very evident using a non dedicated system.

DESCRIPTION

The GOOSEMeter ONE, as a general purpose IEC-61850 GOOSE sniffer and dataset monitoring instrument, meets and responds to the above mentioned applications and tasks, making them easy to be performed and more efficient.

The GOOSEMeter ONE is basically designed to be a bridge between the code world and the electrical world, converting code data to familiar light indicators and status changes.

Furthermore, the equipment works as a USB storage, so that it is possible to download to a computer the saved tests and templates, through the application GOOSESync. The properties and dataset changes of the historical lists saved in the GOOSEMeter, are sorted by date and time, can be analyzed in the computer, and also stored in CSV format databases. The user can also edit the templates of the GOOSEMeter connected to the PC, for later use in the field.

The GOOSEMeter ONE is a very light handheld device that provides an intuitive and user-friendly interface, thanks to its TFT display, the Touch Panel with Stylus, the Wheel & click encoder, and the high performance of Windows CE operating system. The GOOSEMeter ONE has one RJ-45 connector, and a USB port to connect with an external computer.

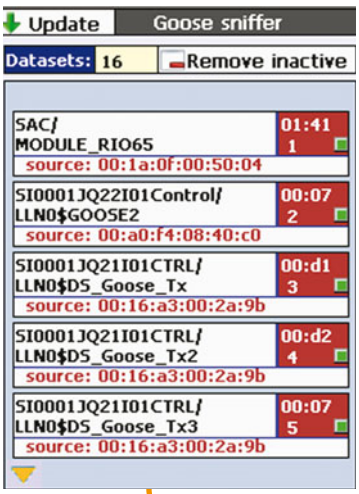
The GOOSEMeter ONE dimensions are 110 x 185 x 26 mm and a weight of only 0.4 Kg; it is developed with an ergonomic design optimized for correct handheld use, and nonslip laterals for better protection and grip.

THE IEC 61850 "MULTIMETER"

The GOOSEMeter is connected to the IEC 61850 substation bus (or directly to the Ethernet port of the relay) and is achieved as follows:

1. Choose the dataset
2. Select the GOOSE message to follow
3. Check the GOOSE status and changes, see the history, save in memory, and create templates.

FUNCTIONAL DESCRIPTION



Initial window IEC 61850 Publisher dataset detection

Detects and shows the reference code of all the Datasets that are being published in the IEC-61850 network. The GOOSE messages are automatically detected by scanning the substation network.

Each dataset has associated a reference code, an order number, a source and destination MAC address, along with a LED color status indicator. The different colors indicate:

White: The instant a GOOSE message was published.

Green: a GOOSE message that was published short time ago and the correlating sequence is correct.

Grey: There are no new GOOSE messages (Inactive).

Red: There is an error in the GOOSE message sequence in this dataset. In case the sequence is restored externally, the indicator will go to Green.

The **"Remove Inactive"** button serves to remove from the screen the datasets that have no activity.

The **"Update"** button serves to update the unit software from EuroSMC servers.

To analyze the content of the messages from a dataset (its data and time) the user only needs to subscribe by selecting it with a click.

GOOSE messages explorer

Here it is shown the information of the last GOOSE message into the selected dataset. The following information is available:

Event Time: Time of the last event, with a resolution in micro seconds.

Seq: Sequential number of the last GOOSE message containing the same information, no change in the status until the actual moment. It will reset to zero when the message brings a change in status or information.

State: Indicates the number of changes which have occurred in the information or status of the GOOSE message.

Data_1, data_2...: All the data contained in the GOOSE message. Each have an associated LED type color indicator which, when in BLUE, indicates active status. It can be assimilated to a N.O. contact open (white) or a N.O. contact close (Blue).

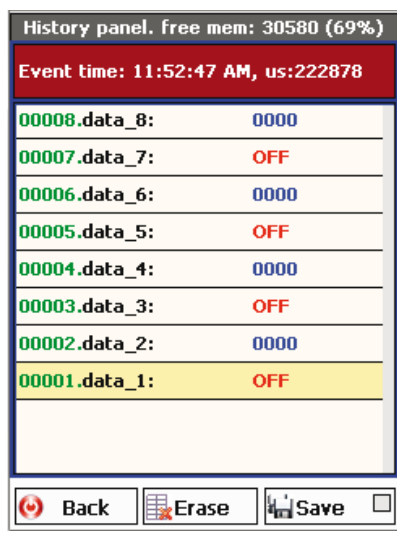
Filter: The user can filter by the selected data with the rotary encoder, both in the data screen and in the History, and apply this filter with this button.

Edit: The edit button shows an screen with a keypad which allows giving to each data a desired name by the operator, for easy identification. Once the user has assigned new names to the data desired, it may be saved into a Template which will remain in the instrument memory for further use.

Template: Allows access to the possibility to create name template for each data contained in a defined dataset.

History Panel window

History Panel shows a list of changes in the GOOSE message. The last change appears in the upper part of the list. There is also information about the time when the change occurred and the data that was changed. This Historic can be saved for posterior analysis.



All this performance allows to the engineer to easily identify the GOOSE message sent by an IED in the substation and checking the GOOSE messages that changes its status among the many ones that have not changed. For example, injecting a fault into the specific IED, monitoring the GOOSE messages of interest, and checking the IED trip operation.

TECHNICAL SPECIFICATION

CONTROL

Display	Transflective high definition color TFT with resistive Touch Panel, 54x71 mm (5,7")
Wheel	Rotary Encoder (Wheel and click)
LEDs	GOOSE activity (Red); Ethernet connection (Blue); memory (Yellow)

COMUNICATIONS

PC	USB 1.1.
IEC-61850	RJ-45 Ethernet 10/100 Mbps
Firmware Updates	RJ-45 Ethernet 10/100 Mbps
	Powered by Windows CE

GENERAL

RAM	Acquisition capacity up to 32 MB of GOOSE messages in every test
FLASH	Storing capacity up to 12 MB of compressed tests.
Power supply	100-260 Vac, 50/60 Hz, power adapter 5 Vdc (1 Adc)
Compliance	The instrument is intended for use in high-voltage substations and industrial environments. All EuroSMC products have conformity to CE-marking directives, complies with IEC and international standards, and are designed and manufactured in accordance with the requirements of the ISO-9001 Quality Standard
Working Temperature	0-50°C
Storing Temperature	0-70°C
Weight	0,4 Kg
Dimensions	110x185x26/35 mm
Case	High quality injection-moulded ABS, strong and ergonomic design, edge surfaces protected with TPE non-slip material

GOOSESync for PC

CHARACTERISTICS

- No configuration, plug & run
- Test in service
- Read-only instrument
- Not PC dependent
- USB storage
- Handheld device to use in reduced spaces
- Substation's cabling verification
- GOOSE message contents analysis
- GOOSE monitoring with online indication of the status change
- Event time, with microsecond´s resolution, of the last event
- Identification and checking of GOOSE messages status, along with the historical list of changes
- Shows in detail the list of data contained in the GOOSE message
- Real-time inspection of IEC-61850 dataset lifecycle
- GOOSE Filtering capability for monitoring only the selected data of interest
- Templates editor, enables to personalize a data name for better recognition
- Discriminates datasets with different destination MAC address
- Shows datasets with more than 64 data
- Firmware can be updated by internet
- High definition Touch Screen
- GOOSESync for PC: Connectivity with an external computer, through USB, for downloading and analysis of historic, and quick edition of templates

APPLICATIONS

- Field Testing
- Commissioning
- Troubleshooting
- Laboratory
- IED development

SUPPLIED ACCESSORIES

Transport and protection soft bag
Standard Ethernet RJ-45 cable (L:2m, 6 ft)
USB cable (L:2m, 6 ft.)
Touch Stylus pen (Nintendo DS Standard)
Universal Power supply adapter (European plug)
Instruction Manual
Warranty and Product registration instructions
CD with GOOSESync software

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