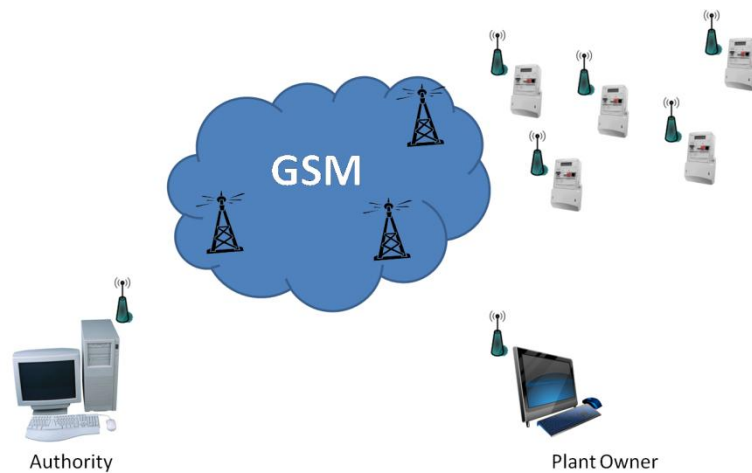


TABELLARIUS

TabellariusS is an innovative GSM-to-LAN gateway designed to optimize the communication framework with the energy meters installed inside photovoltaic, hydroelectric, wind farm and power plants, where multiple energy meters need to be remotely read through GSM.



Classical GSM approach

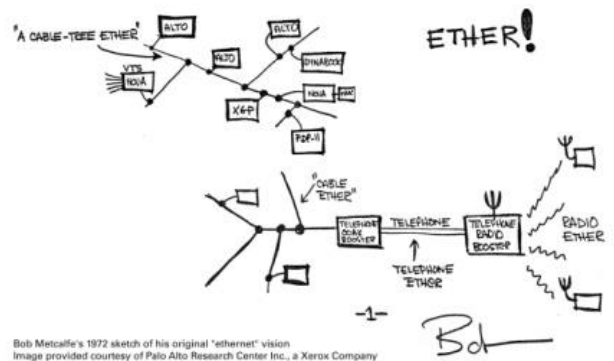
In a typical GSM-based remote meter reading system, each meter is fitted out with a GSM modem, an antenna and a data-enabled SIM card.

It is well known that the GSM signal level and quality on the PV plants is often poor. In order to face this trouble you should go through expensive installation of high gain external antennas without to be sure that the problem can be completely solved.

LAN communication

The need of a real time monitoring of the many components of the system (inverters, solar panel strings, transformers, sensors, webcam surveillance etc.) has contributed to the thick diffusion of TCP/IP networks inside the PV plants.

The electricity meter, both production or grid exchange, is a main components of the plant and strictly belongs to the category of the items to be monitored.



Bob Metcalfe's 1972 sketch of his original "ether" vision
Image provided courtesy of Palo Alto Research Center Inc., a Xerox Company

The TCP/IP communication has a number of advantages over modem communication, but it also introduces some new critical issues.

In effect it is quite common that you must grant meters access to persons or bodies not belonging to the management of the plant, hence not authorized to enter the corporate TCP/IP local area network.

Sede legale

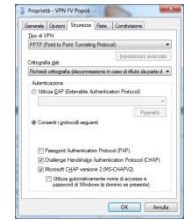
Telematica Sistemi s.r.l.
Corso XXII Marzo, 8 - 20135 Milano
C.F./P.IVA 11141250156 - Reg. Trib. Milano 343061

Sede operativa

Telematica Sistemi s.r.l.
Via Vigentina, 71 - 27010 Zeccone (PV) - tel. 0382 95.50.51 fax 0382.95.58.43
www.telematicasisemi.it

Critical issues:

1. Grant the network access to guests (use of company resources to setup VPNs, routers and firewalls)
2. Difficulty or impossibility for the third parties to setup an automatic meter reading system (you just have to think at the inconvenience to enter each time a different VPN, perhaps with a different client, read the meter and then disconnect from the VPN)
3. Some legacy AMR system could not be able to use TCP/IP communication



without forgetting the inevitable objections of the network security managers !!

Why to preserve the GSM communication

There are still some good reasons to preserve the GSM communication with the meters:



Network Security

Avoid to allow people outside your company to enter your process network

Fault tolerance

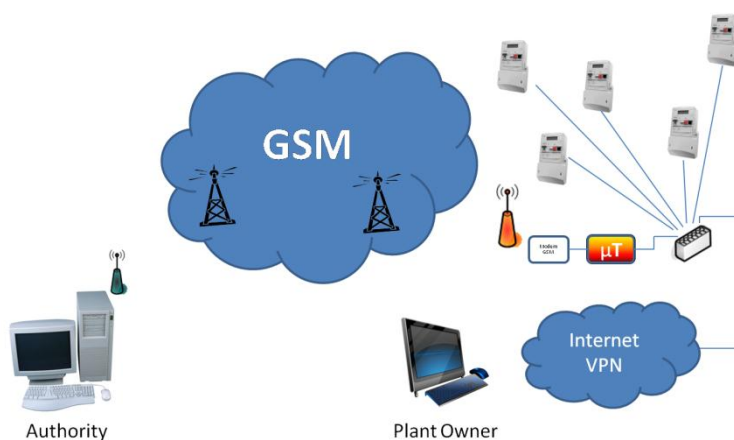
Arrange a secondary backup communication channel

Flexibility

Allow old legacy AMR system to read the meters using classical GSM communication

Tabellarius : the innovative solution

The innovative Tabellarius gateway let you preserve the ability to read the meters using only one GSM modem exploiting the existing local area network in a way completely transparent to the caller.



The installation of only one GSM modem optimizes costs and overall performances and let you select the better location inside the plant where to position an high gain antenna..

Benefits

- ✓ Cost and performance optimization of the GSM communication by means of:
 1. Reduction of the number of GSM modem, antennas and SIM cards
 2. Positioning of the GSM modem on the optimal location inside the plant
- ✓ CallerID controls: only the authorized callers will gain access to the meters
- ✓ No need to setup router and firewall
- ✓ Logbook of the incoming calls, even granted or rejected
- ✓ Arrangement of a secondary (backup) communication channel with the meters

The parameterization of Tabellarius can be done using a common Internet browser.

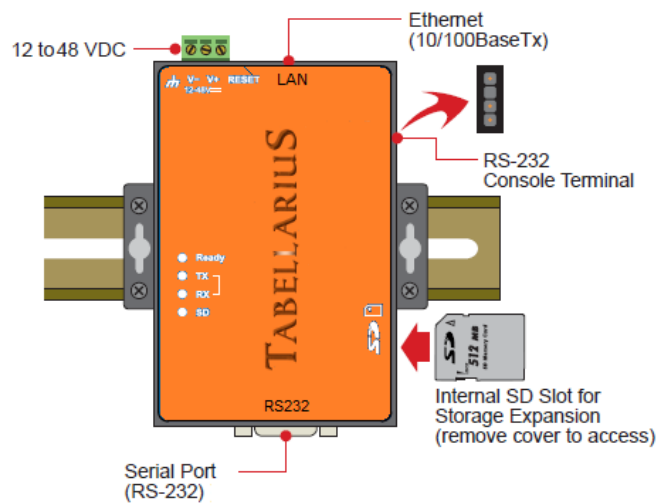
Configurazione Contatori				
Nome	Matricola	IP	Porta	
MT173	62121945	192.168.1.30	10001	⊖
MT831_MK	12345678	192.168.1.32	2000	⊖
MT831_MOXA	35733419	172.24.144.157	2000	⊖

+ Aggiungi Contatore

Association table meter s/n «-» IP address

Technical specifications

- Power supply: 12÷48 VDC
- Consumption: 300 mA
- Dimensions: 100 x 90 x 22 mm
- Serial port: DB9 male connector
- Ethernet port: RJ45 10/100 Mbit
- SD Slot: maximum 1 Gb SD card
- Password protected parameters
- Supported meter protocol: IEC62056-21
- Caller identification/restriction function
- NTP clock synchronization
- Two selectable levels of detail for communication monitoring
- SD card recording of the incoming calls of the last 366 days



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