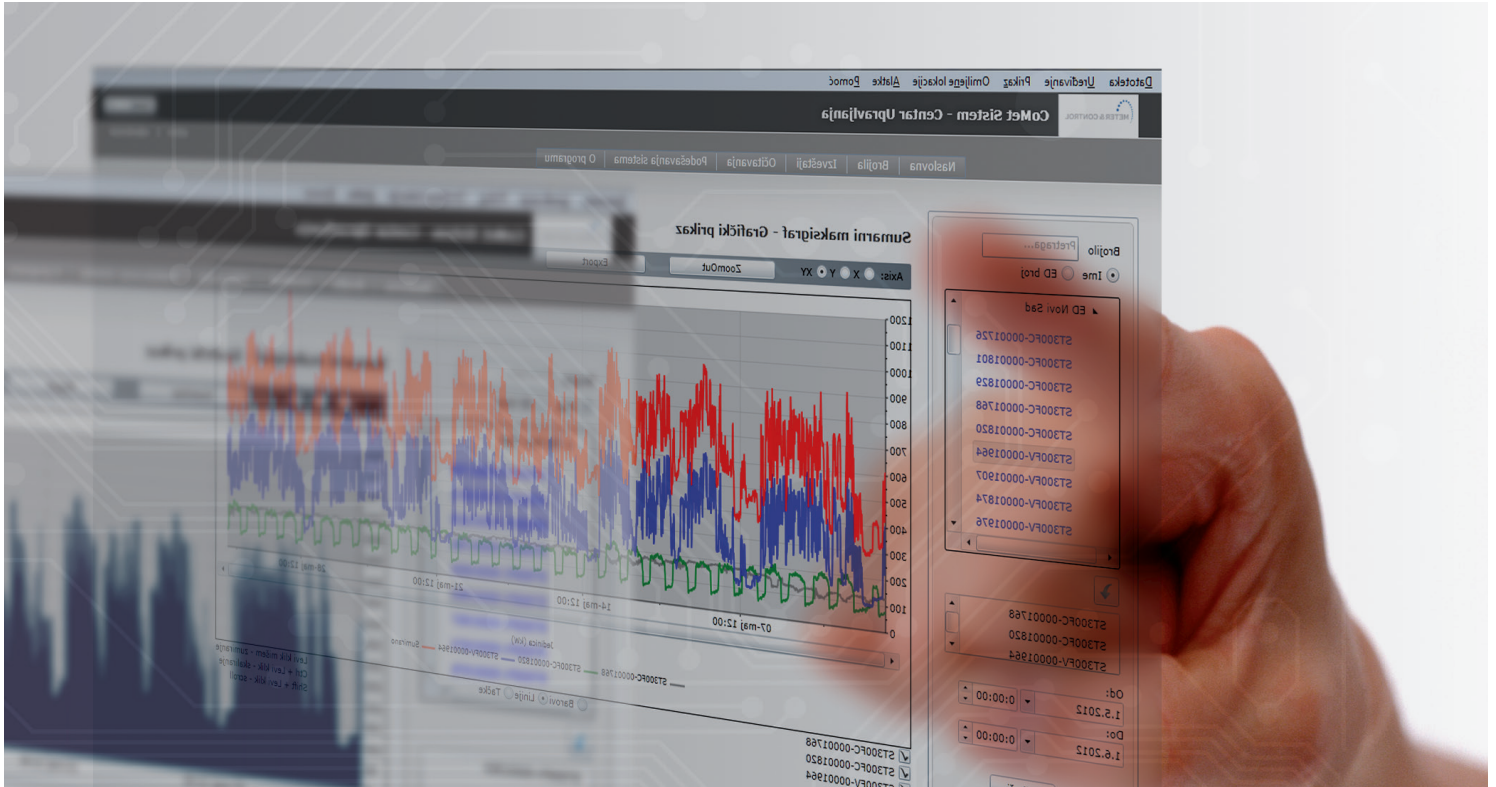# AMI center software
COMET

METER&CONTROL

HES software for remote AMI system reading, parametrization, and load management

COMET is advanced AMI software designed for remote reading, parameterization and management of AMI devices: electronic meters, data concentrators and communication modules. AMI functions can be executed automatically, by pre-scheduling, or on operator's request. Depending on the access rights, the operator can create reports, administer complete AMI system and manage job tickets for installation and amintenance. COMET processes and stores collected data in database. Complete history of communication with AMI devices and actions

executed by the operator is also stored. COMET supports third-party meters and uses web service interface, DLMS/COSEM and IP protocols to communicate with AMI devices. It also provides web service interface to other business applications, such as MDM, Billing, CRM, SAP, GIS and others. AMI center software consists of web service applications, relation databases and data exchange service. Operators access AMI center software through the web service applications using standard web browsers.

Key Features

- Administration
- Data collecting
- Data storing
- Parameterization
- Management
- Job ticket management
- Reports
- History
- Predefined schedule operation

- On-demand operation
- Interface to AMI devices
- Interface to business applications
- Interoperability
- Security
- Scalability

Administration
- Defining users, user groups and access rights
- Inserting and updating meter data, measuring points and customers identification
- Defining meter logical groups and concentrator logical groups, and assigning the task list of AMI center (schedule of automated data collection, AMI devices management and parameterization)
- Inserting and updating concentrators identification data
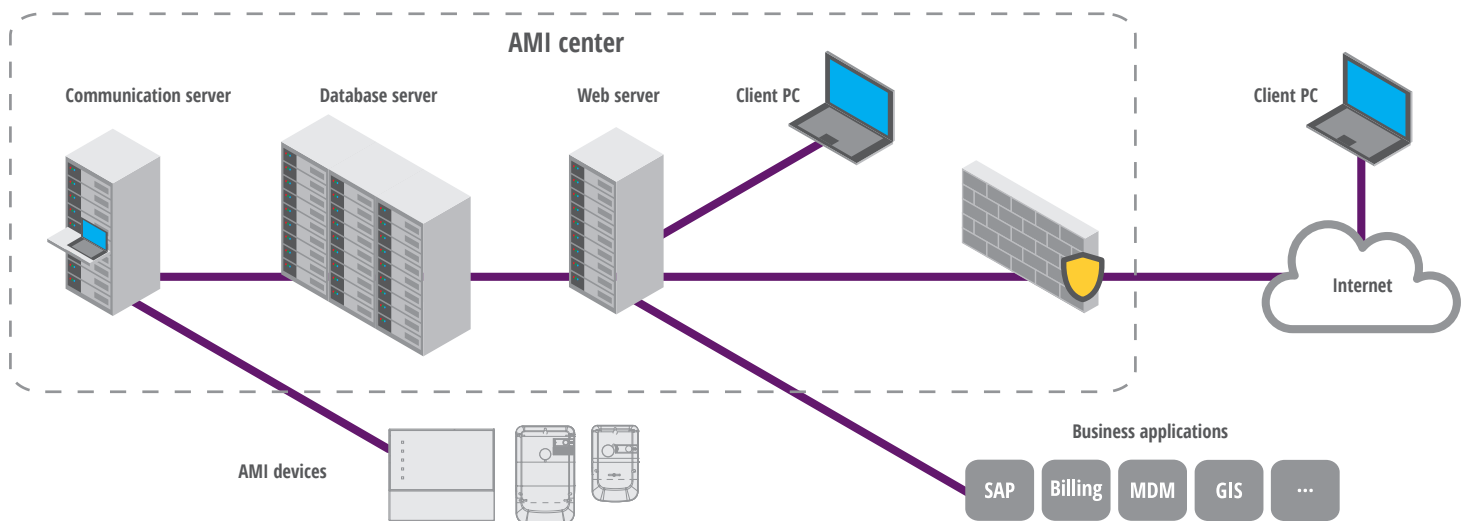- Inserting and updating communication modules identification data

Data collecting
- Collecting all profiles from the meter (billing, daily, load profiles…)
- Collecting all logs from the meter (Standard event log, Fraud event log, Quality event log…)
- Collecting current values of measured values register (voltages, currents, power, phase angles…)
- Reading of all parameters from the meter (tariff programs, status of switching device…)

Data storing
- Centralized MS SQL database is used for data storage

Parameterization
- Adjustment of meter parameters (tariff programs, Maximum demand integration period, power limitation parameters, display sequence, voltage thresholds, communication parameters…)
- Adjustment of load profile, i.e. stored registers and time period of their registrations in profile
- Automatic meter and concentrator Real-Time Clock synchronization
- Meter and concentrator firmware update
- Adjustment of concentrator task list (schedule and priority of automatic meter readings, parameterization and management)
- Adjustment of concentrator communication parameters (GPRS/3G/LTE, Ethernet)

Management
- Remote consumer disconnection / reconnection
- Remote control relay disconnection /reconnection
- Power and current limiting

Reports
- Graphical and tabular reports for single meter or group of meters for a desired time period
- Billing, daily and load profiles reports
- Meter events report
- Consumption reports for single meter and group of meters for a desired time period
- Report on cumulative maximum demand value for custom groups of meters
- Communication Statistics
- Control reports (review of disconnected consumers, review of meter Real-Time Clock synchronization)
- Report export to Excel, DOC, PDF, HTML format, and printing

History
- Review of AMI devices management and parameterization history
- Review of AMI system administration history
- Review of the event logs in AMI center software (user login/logout, breakdown in communication with AMI center…)

Operation according to predefined schedule
- AMI center software automatically performs actions of AMI devices reading, parameterization and management by operator-defined schedule
- AMI center software stores collected data and history of performed actions in the database
- Operator and/or business application can get reports of collected data and history of performed actions in any moment
- Issuing tasks to single meters, group of meters, single concentrators and group of concentrators

On-demand operation
- Upon request by the operator, AMI center software performs reading, parameterization and management of AMI devices
- AMI center software stores collected data and history of performed actions in the database
- Operator and/or business application can get reports off collected data and history of performed actions in any moment
- Issuing tasks to single meters, group of meters, single concentrators and group of concentrators

Interface to AMI devices
- IP protocol
- Web service interface for communication with concentrators
- AMI center software supports operation with both static and dynamic IP meter addresses
- Communication with meters according to DLMS/COSEM, IEC 62056-21protocols

Interface to business applications
- Web service for data exchange between AMI center software and external business applications: MDM, Billing, CRM, SAP, GIS…

Interoperability
- AMI center software supports communication with all third-party meters that operate in accordance with DLMS/COSEM, IEC 62056-21

Security
- Defining users, user groups and access rights to the data system
- Web services for data exchange with other systems require authentication and authorization
- Accurate, automatic data backup

Scalability
- AMI center software's number of meters capacity and system performance is easily expanded by adding hardware resources (CPU power, RAM, storage)
- System operating speed depends mainly on the performance of the communication path between the AMI software, concentrators and meters
- The database design allows historical date archiving, enabling quick access to recent data

Electronic meters
- AMI center software communicates directly with the GPRS/3G/LTE meters through interface to AMI devices, and indirectly through concentrators with PLC meters

Data Concentrators
- AMI center software communicates with concentrators via web service

AMI center
Communication server · Database server · Web server · Client PC · Client PC
Internet
AMI devices
Business applications
SAP · Billing · MDM · GIS · …

Solutions for smart energy management