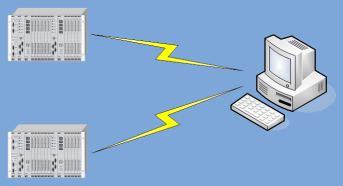


Industrial Communication

Support for Smart Grids by AIS Brno

COMMUNICATION GATEWAYS AND CONVERTERS

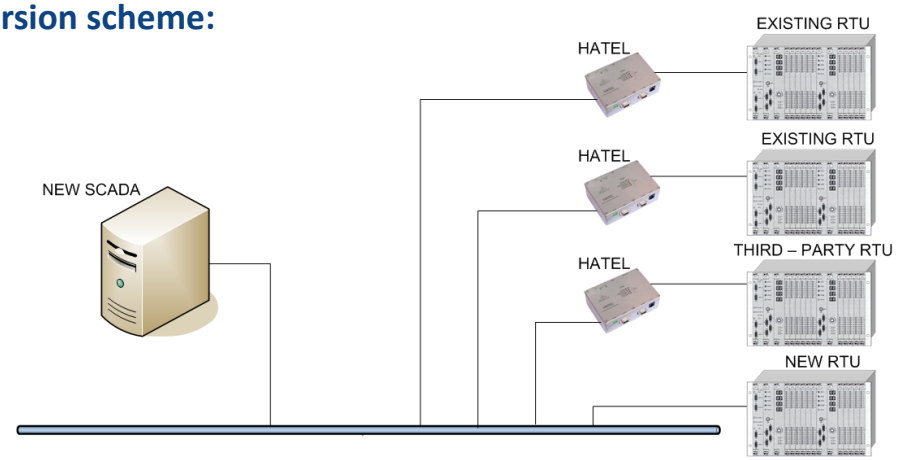
Features:

- Solution of data transfers in the environment of power plants, switching and transforming stations and supervising dispatcher centers.
- Transfer of data via Ethernet, GSM or serial line communication.
- User on-line or off-line parameterization of conversion SW.
- Availability of special devices developed for the purposes of data concentration and protocol conversion.
- Development of special conversion SW according to the user requirements.
- SW development in close cooperation with customer.
- Development of special communication HW on request.
- Wide experience of AIS staff in the field or protocol conversion.

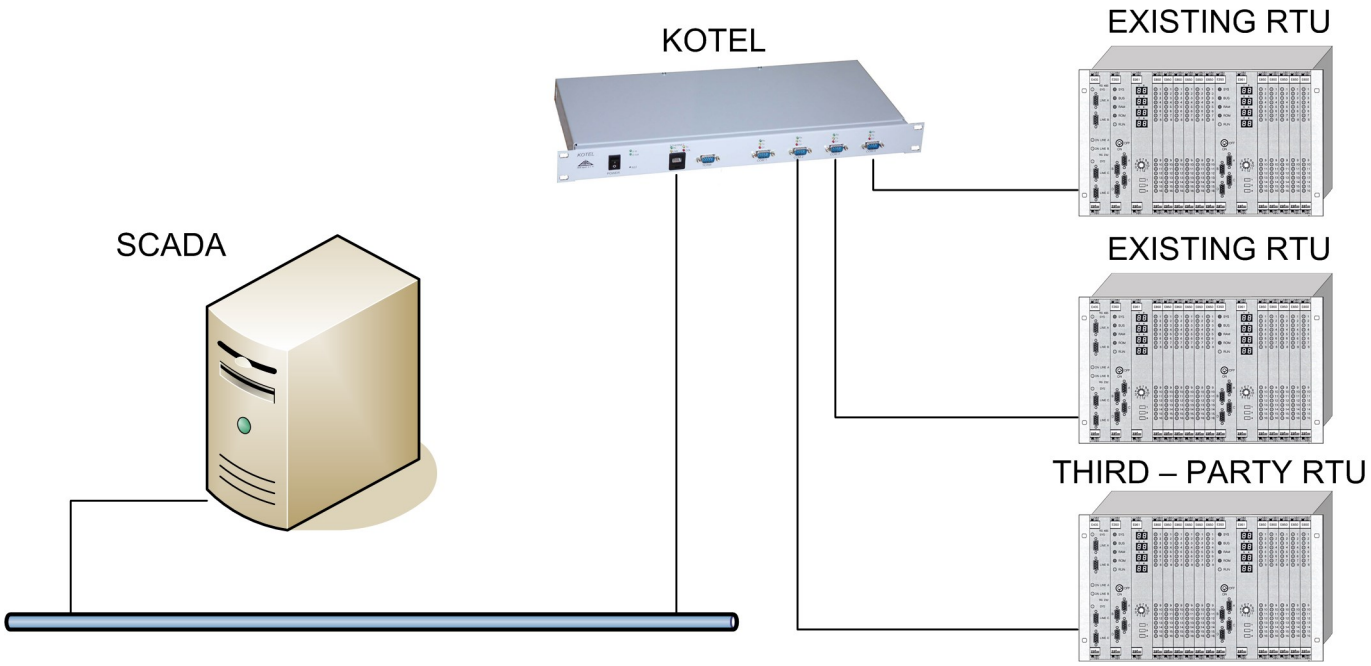
Typical applications:

- Connection of old RTUs to new SCADA or new RTUs to old SCADA.
- Conversion of older or odd communication protocols to IEC101, IEC103, IEC104, IEC61850 standards.
- Data concentration and conversion of various communication protocols to one final protocol.
- Solution of data collection from distributed sources.
- Solution of problems with connection of devices using incompatible ways of communication.
- Conversion on physical layer (e.g. communication media, baud rates etc.)
- Supervising of various devices using the protocols like SNMP etc.
- User-oriented solution.
- Upgrade of user system with utilization of older but working hardware.

Typical conversion scheme:



Typical concentration scheme:



References:

- **AIL Lugano, Switzerland,** conversion of protocols TG065, TG709, RIDAT to IEC870-5-101.
- **Stadtwerke St. Gallen, Switzerland,** conversion of protocol TG709 to IEC870-5-101.
- **ČEPS Praha,** conversion of protocol SPA-BUS to IEC870-5-101.
- **ENEE Tegucigalpa, Honduras,** conversion of protocol FW537 toIEC870-5-101.
- **ACEA Roma, Italy,** conversion of protocols SINAUT 8FW point-point, SIMATIC N to IEC870-5-101.
- **RFL Verona, Italy,** conversion of protocol SINAUT 8FW multipoint to IEC870-5-101.
- **NEK Bulgaria,** conversion of protocol TG709 to IEC870-5-101 balanced, unbalanced.
- **EBERLE, Germany,** conversion of EBERLE regulator communication to IEC870-5-101 balanced, unbalanced and IEC870-5-103.
- **e-on Brno,** data transfer by IEC870-5-104 protocol.
- **LST Austria,** conversion of protocol BC216 to IEC870-5-101 and IEC870-5-104.
- **RITTMEYER, Switzerland,** communication module TG8xx for RIFLEX M1 system.
- **AGC Automotive, Chuderice, Czech Republic,** conversion of protocol Energis to IEC870-5-101.
- **ČEPS Praha,** conversion of protocol TG8xx to IEC870-5-101,
- **FERRANTI, Belgie,** conversion of protocols TG065 and TG8xx to IEC870-5-104,
- **ABB, Belgie,** conversion of protocol Etterbeek to IEC870-5-104,
- **Ceskomoravsky cement, Mokra,** conversion of protocols IEC870-5-103 and MODBUS to IEC870-5-101.

AIS spol. s r.o. background:

- Founded in 1990 in Czech Republic.
- Employees with experience of 40 years in power engineering.
- Czech Republic no. 1 in synchronous measurement - over 700 measured nodes in over 140 electrical substations with AIS terminals.
- Experience staff in the following fields:
  - WAM systems development and implementation.
  - PMU development and programming.
  - Communication equipment development and programming.
  - Concentration of communications and conversion of communication protocols.
  - Data processing.
  - Database and client SW development.

AIS spol. s r.o.
Palackeho tr. 258/73
612 00 BRNO
Czech Republic

phasors@ais-brno.cz
tel.: +420-541248812
fax.: +420-541248814
www.ais-brno.cz