



**Iskra MIS**  
Think Energy

Simple and Efficient Control of  
Energy Consumption by  
Means of  
MiSmart Package

Electra Conference, GZS  
Ljubljana, October 2009



## Iskra MIS

## General Data

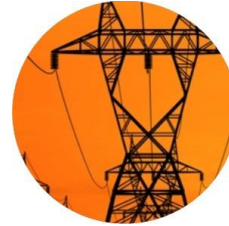
- **Iskra MIS - energy management solutions provider**
- **Producer of low voltage switchgear, electrical measuring instruments**
- **Exporting more than 90% of production**
- **Investing more than 10% of turnover into R&D**
- **More than 60 R&D employees, 5 PhDs**
- **More than 60 years of tradition**
- **Iskra Group member**
- **Sponsor of the Slovenian Olympic Team and Slovenian National Basketball Team**



# Iskra MIS

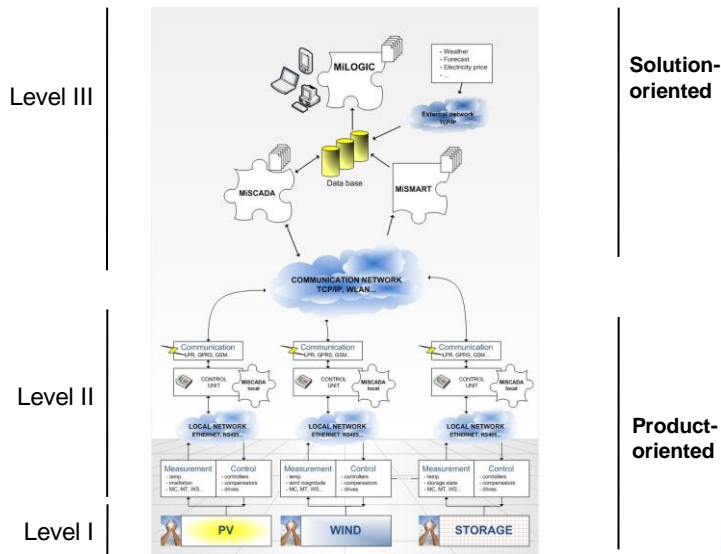
# Strategic Goals

1. **Quality of Electro-energetic Networks and Distributed Resources**
  - Measuring Centres and Transducers
  - Power Factor Correction (PFC) and Harmonic Filters
  - Point of Common Coupling Interface (PCCI)
  - MiSCADA
2. **Smart Metering (AMM), Smart Usage of Energy and Demand Side Management (DSM)**
  - Communication and Concentration Devices
  - Energy Meters
  - MiSMART and MiLOGIC
3. **Smart Installations in Buildings, Infrastructure and Systems**
  - Switchgears
  - Measuring Instruments
  - Overvoltage Protection and Electromagnetic Compatibility (EMC)



# Iskra MIS

# Iskra MIS Approach



**Solution-oriented**

**Product-oriented**



# Iskra MIS *Smart Metering and Smart Grids Infrastructure*

## 1. Measurement

- Measuring Centers and Transducers
- Energy Meters
- PCCI
- Other Third-Party Meters

## 2. Communication and Concentration

- Communication and Concentration Devices
  - Ethernet
  - GSM/GPRS
  - LPR
- Protocols

## 3. Data Storage

- nRT Data Base
- RT Data Base
- Middleware

## 4. Presentation and Analysis

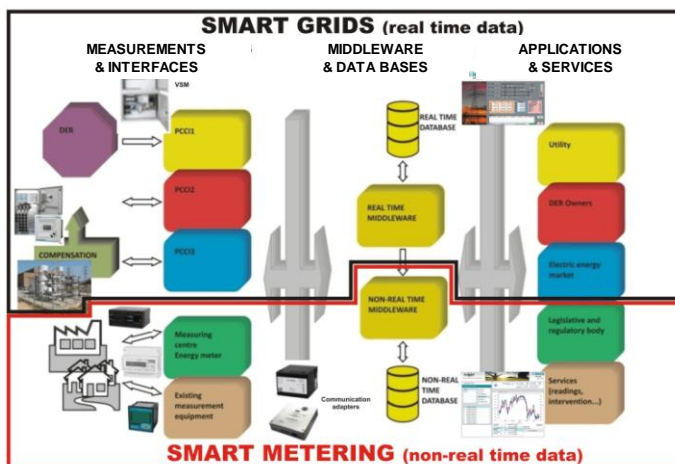
- MiSmart
- MiLogic

## 5. Control

- Switches
- PCCI
- MiSCADA



# Iskra MIS *Iskra MIS Architecture*



## Iskra MIS

## Measurement

- Energy consumption and its quality has to be measured over time and converted into data.
- Because of network unreliability data have to be stored into local memory.
- Instruments need to be connected into the network over physical and logical port.
- Each connection has a set of protocol layers to communicate with other party.
- Some of the instruments have local display for on-site control.
- Instrument setups need to be automated as much as possible.



## Iskra MIS

## Communication

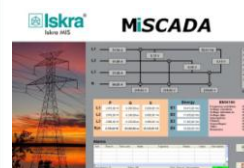
- System can be built only with efficient communications between measured object and control centre.
- Communication devices need to be transparent for data content as much as possible.
- Communication devices should concentrate data from group of devices and transmit them to the data centre in economic way.
- Different communication technologies and media have to be supported
  - Wireline (mostly RS-232, RS-385 and Ethernet)
  - Public Wireless (mostly GSM/GPRS)
  - Dedicated Wireless (ICM band)
- Different protocols have to be accepted.
- Remote control and supervision.



## Data Storage and Presentation

### Iskra MIS

- Data have to be stored before they are analysed.
- Data have to be presented in a proper way before the interpretation.
- Presentation is different for nRT or RT data.
- Analyses have to be done with different tools or on the bases of personal experiences.
- Graphical presentation is the most convenient for personal supervision.
- WEB based technologies are preferred for user and infrastructure.
- Automatic control is limited and sometimes very uncertain. Personal decision and control is mostly desired.



### Iskra MIS

## Smart Usage of Energy

- Relevant and accurate data are the must.
- Data need to be shown in proper and logical way.
- Data need to be collected in proper places.
- Data have to be up-to-date and automatically collected. nRT data are sufficient.
- Personal interpretation is still the most reliable way. Some tools are accepted.
- Personal education and experiences are the best solution for complex decisions.
- Control of energy resources depends on many factors. Final decision is usually done by responsible manager.
- Iskra MIS is the right partner to assure proper infrastructure, applications and components.



## Iskra MIS *SmartGrid Functionality*

- **SmartGrid is mostly very complex system. Proper system and component description is the basis for description of system behavior.**
- **Interfaces between components and system connections have to be defined.**
- **Point of Common Coupling Interface is right approach to define system interfaces and to assure the stability of the grid.**
- **Each PCCI needs local protection functions to ensure the grid functionality.**
- **RT data have to be transferred between connection points and controlling unit (RTU).**
- **Controlling application and infrastructure have to be much more reliable and dynamic.**
- **Iskra MIS is the right partner to assure proper infrastructure, applications and components.**



## Iskra MIS *Think Energy*

