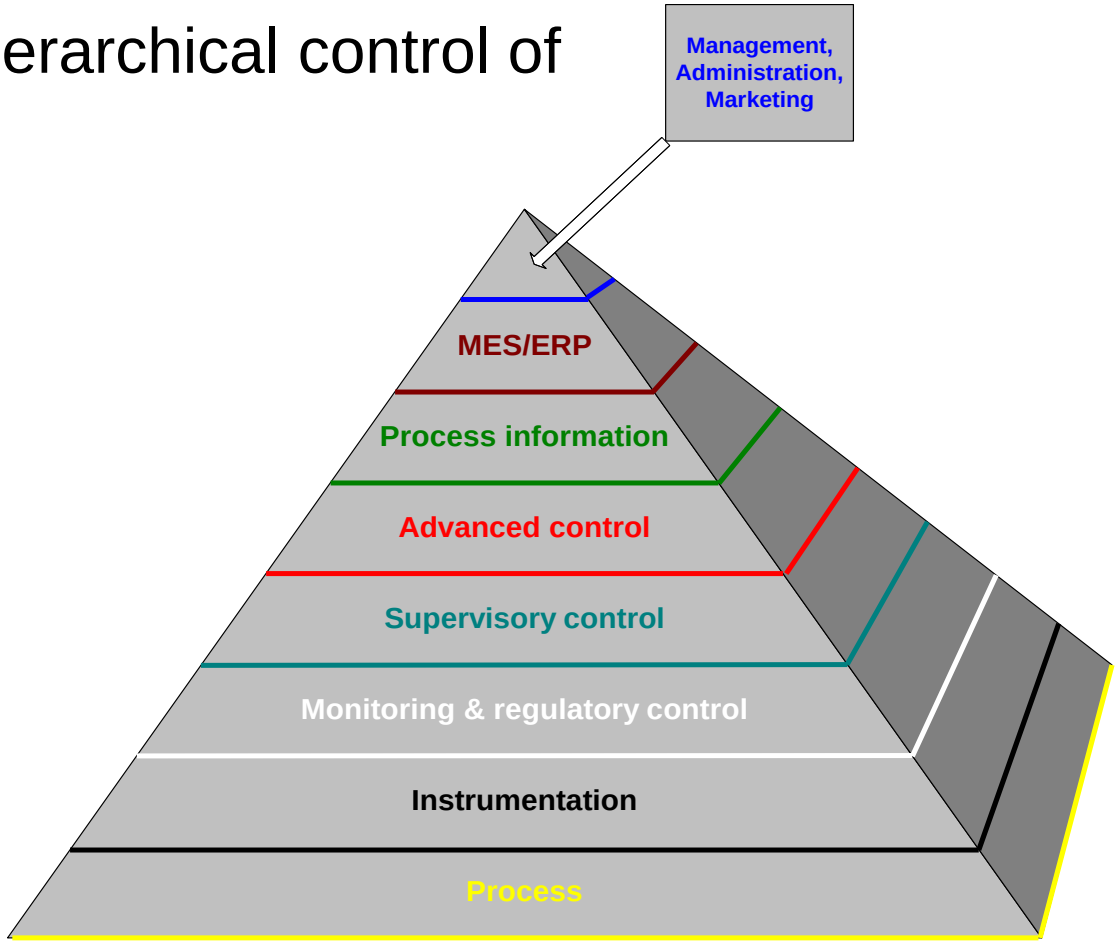
S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

SIND GROUP

S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Open architectures for hierarchical control of industrial process

- Hierarchical control
- Control system structures
- Control system basics
- Control system design
- Advanced Control
- Process control optimization



Control Hierarchy

S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

- Robots programming and linear axis
- Artificial vision and image processing
- Complex industrial automation
- SCADA system and GPRS remote control
- Energy recovery machine ORC
- Distributed control system in petrochemical plant
- Open architectures and industrial protocols
- Plant information system
- Automation projects
- Electrical Projects

S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Robots programming and linear axis

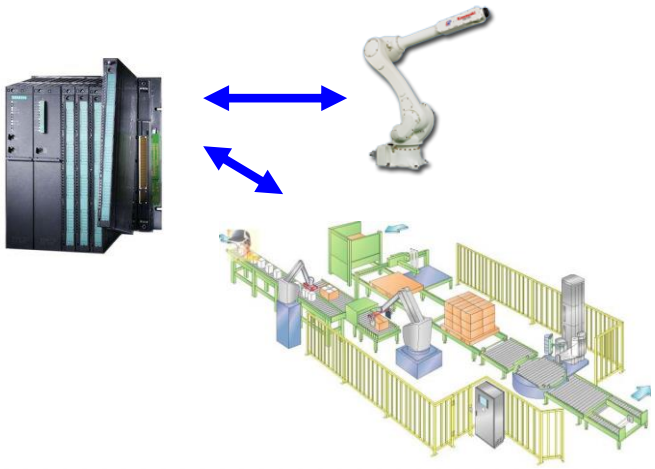
- Solution for robots integration in flexible manufacturing systems
- Support design, biding plates, gripper fingers
- Direct experience in Adept, Kawasaki robots and Yamaha linear axis programing

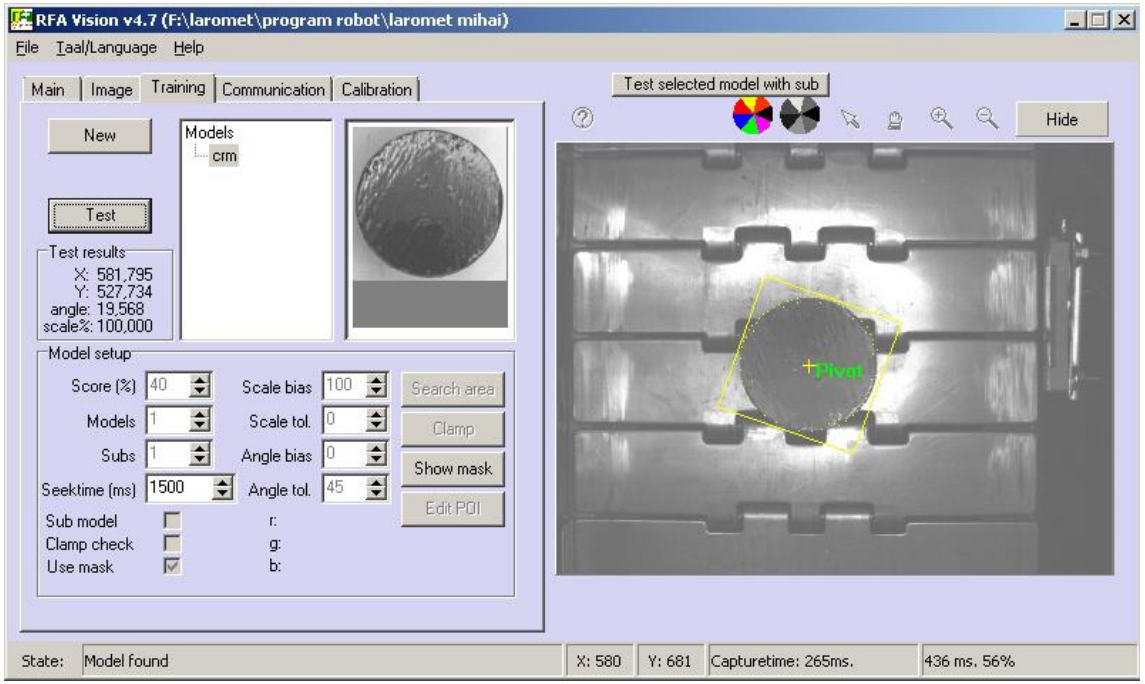
S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Artificial vision

- Fixed and mobile parts grabbing based on artificial vision

- Robot integration in the complex production flux controlled by the PLC

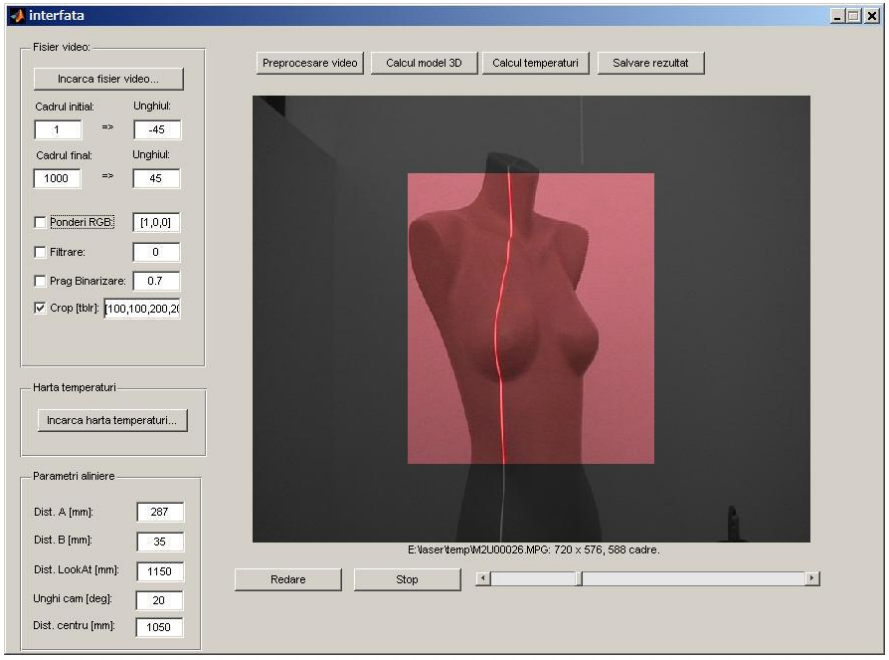


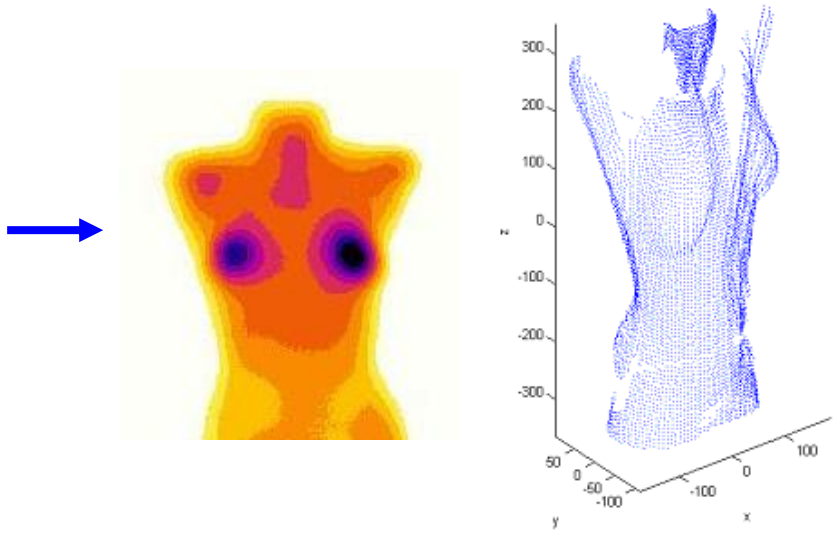


S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Image processing

•Infrared image processing in order to obtain temperature distribution or working with laser beans for obtaining 3D map



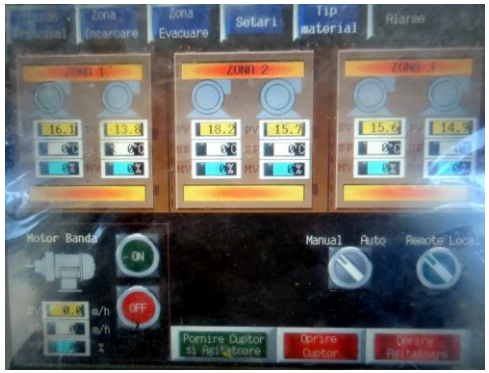


S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Processes based on discrete and continuous events

- Terminal treating heater

Speed control, temperature control, treating diagram following

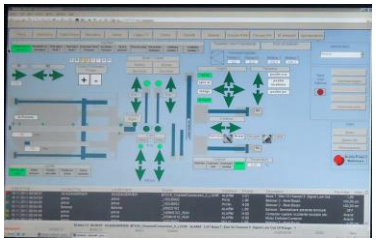


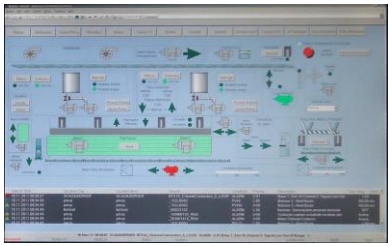
S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Laromet

•2500Tf forge

• Automation solution rebuild
• Dead time reducing with 16s per cycle
• Continuous speed control of coils



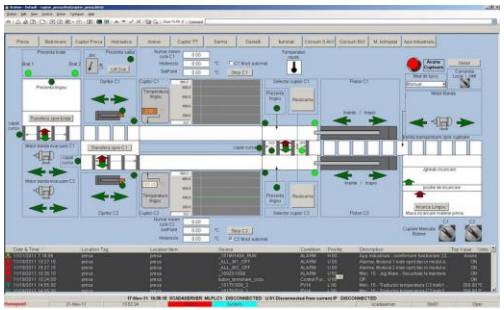


S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Metallurgical Industry

- Induction heaters

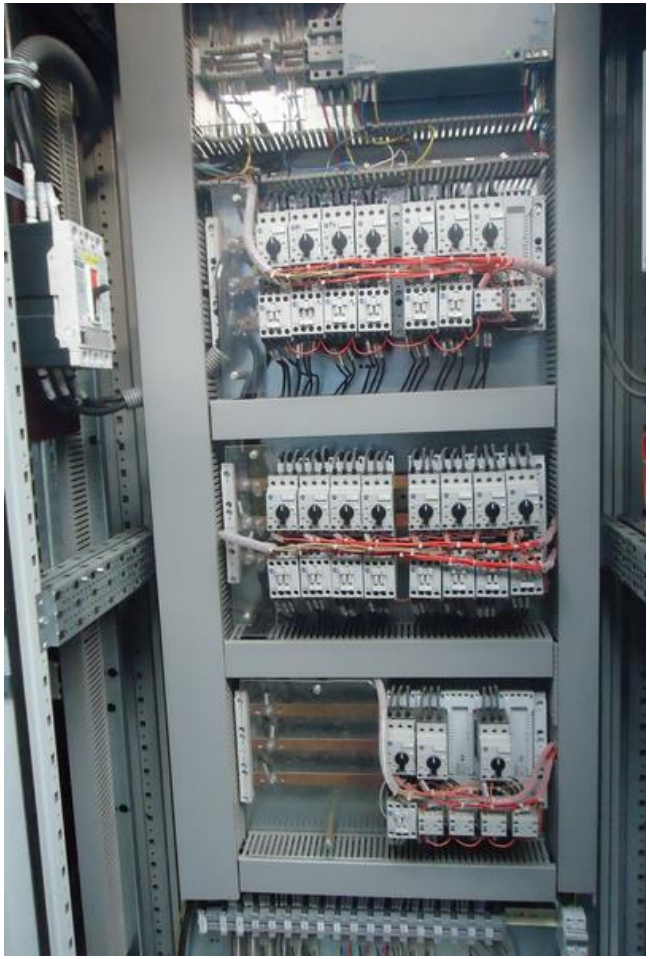
Automation and integration in production flow.



S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

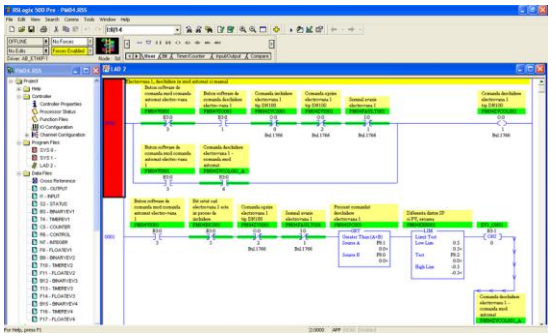
Automation cabinets

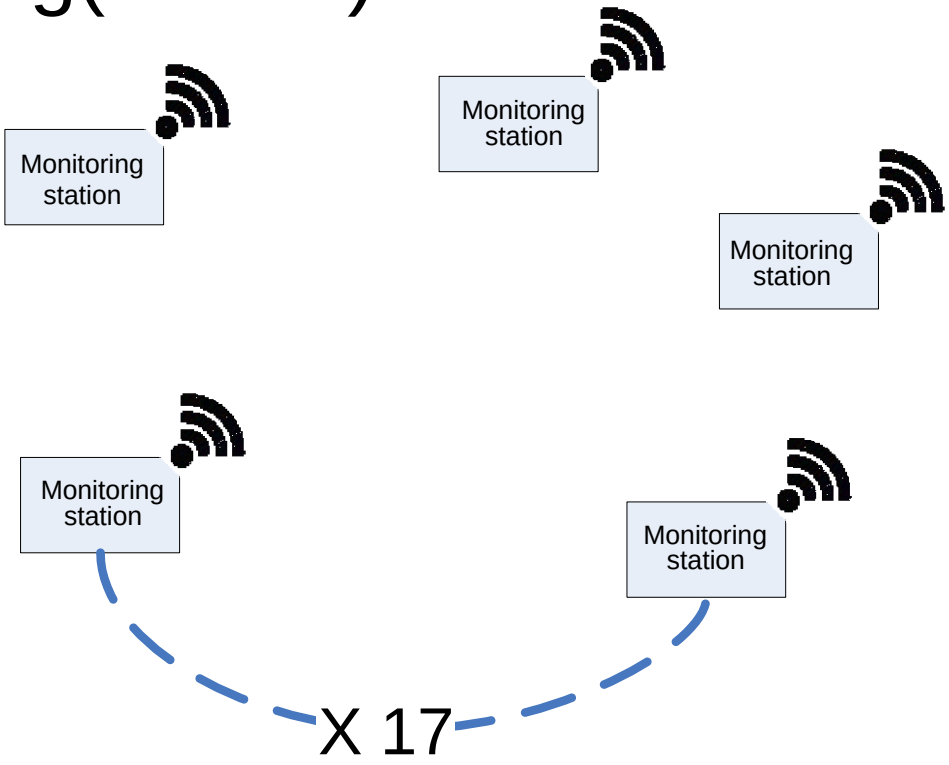
- Execution
- Design



S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

SCADA systems, potable water feeding(GPRS) remote control



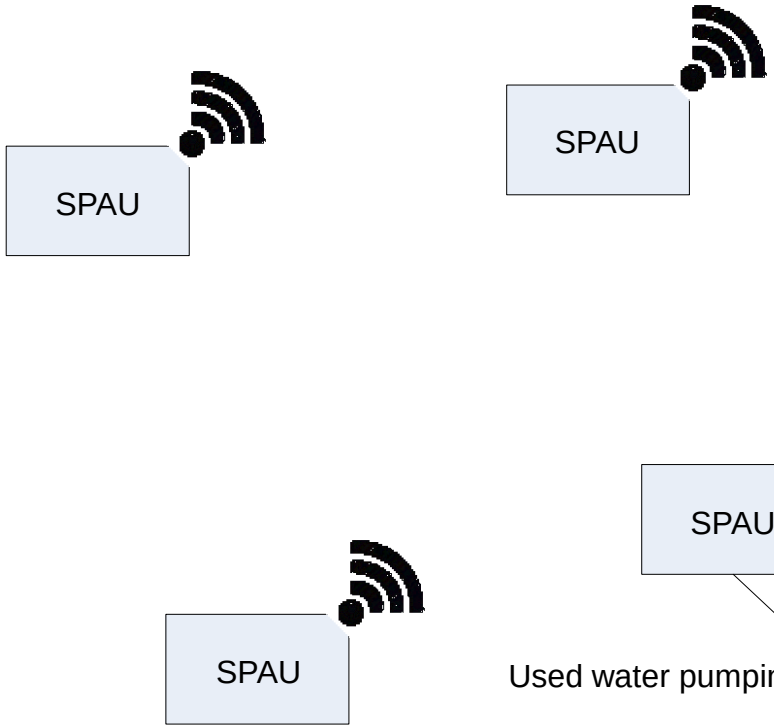


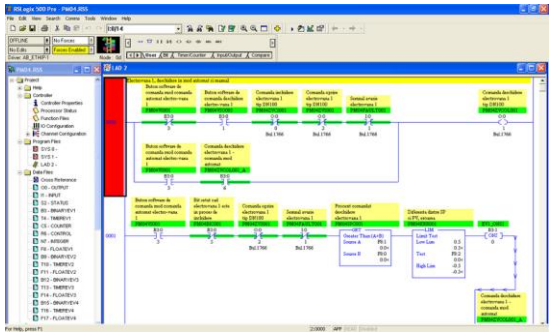
Control room

- Flow reading
- Temperature reading
- Chlorine level reading

S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

SCADA systems, used water pumping(GPRS) remote control





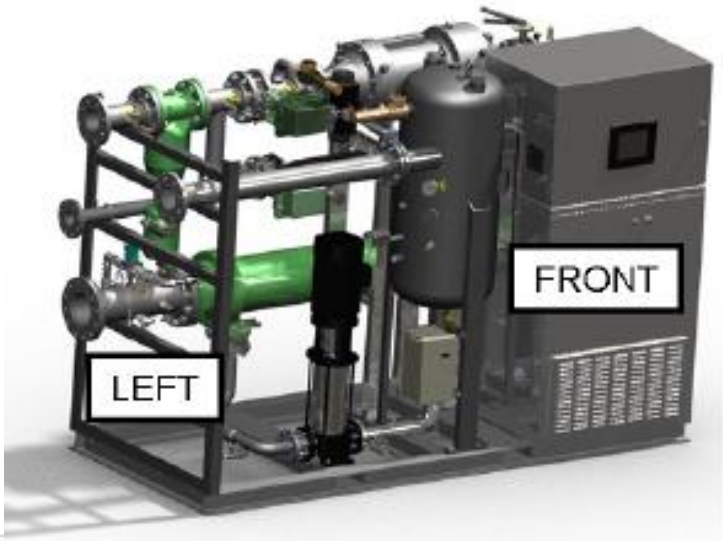
Dispecerat

- Start/Stop Comand
- Parameters reading
- Working schedule

S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Green Energy

Supervising start-up Energy recovery machine from burned gas using Rankin cycle ORC



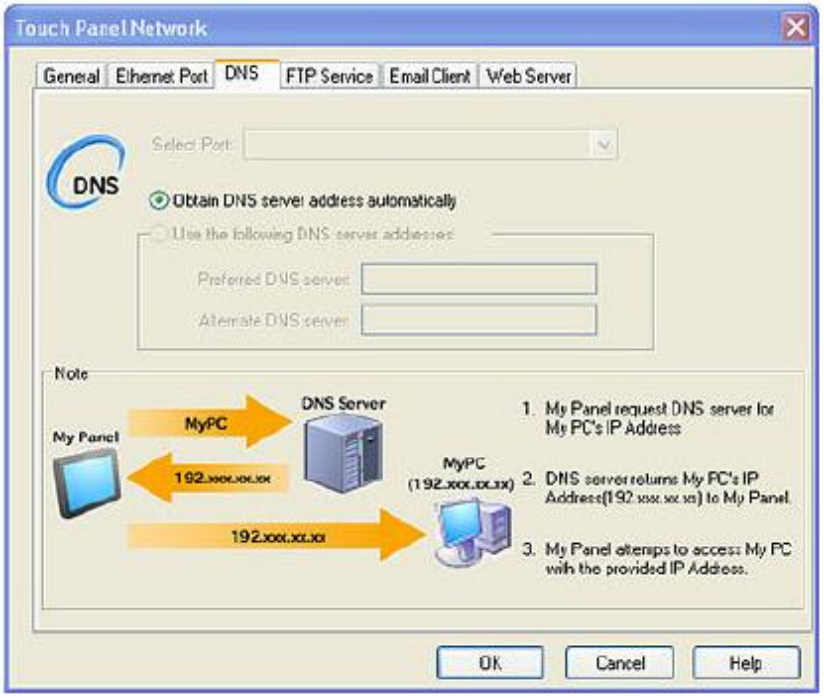
S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

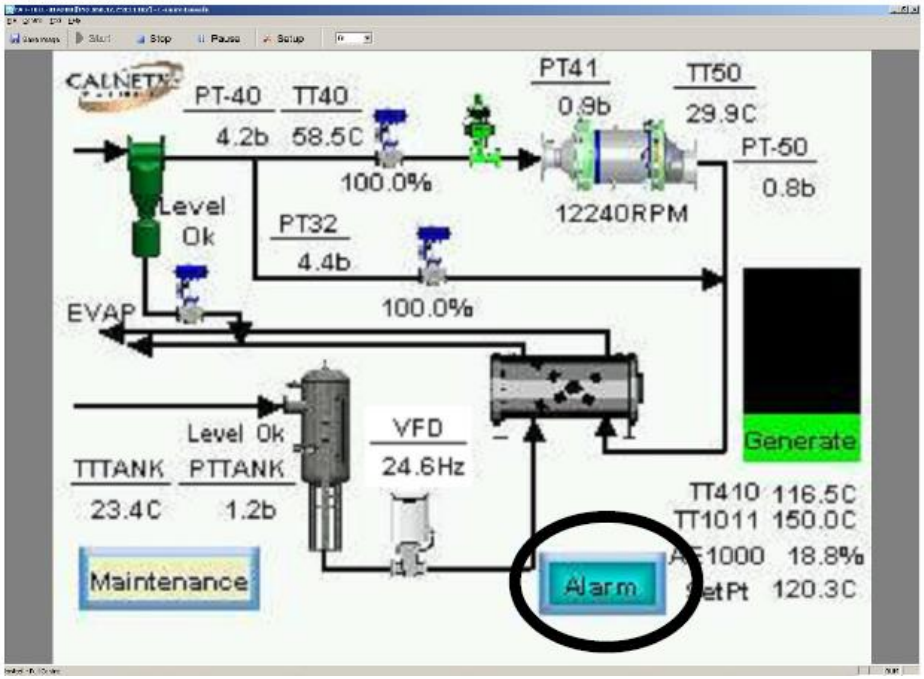
Recoverable energy solutions through Rankine cycle based machines

Installation consultancy
Machine maintenance ORC
Machine exploitation ORC

S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Remote control and periodic maintenance ORC machine.

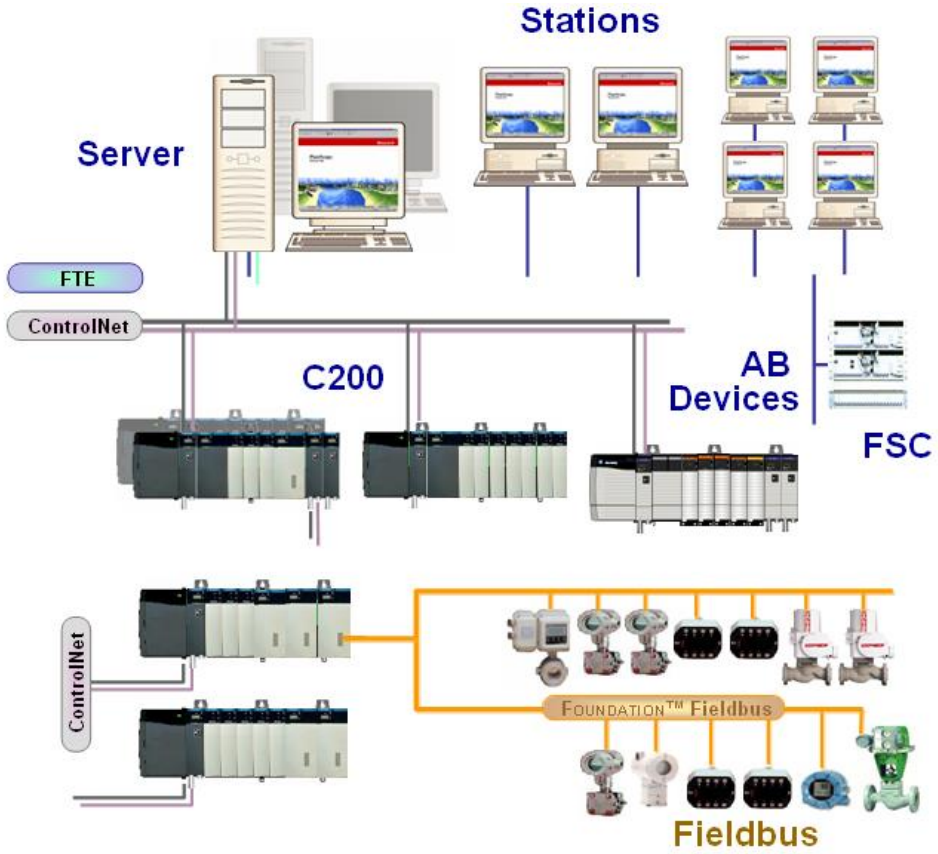




S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Distributed control systems (DCS) in Refineries

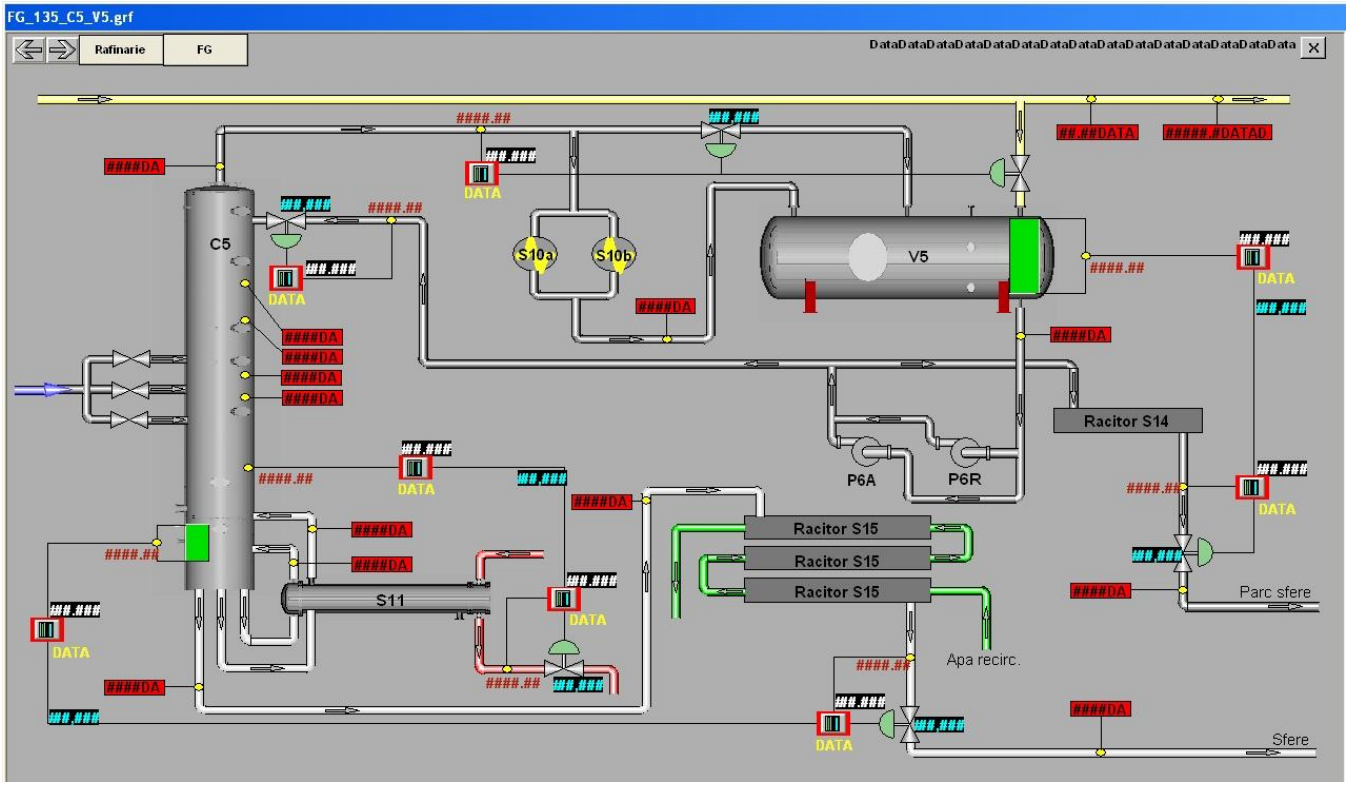
Control system architecture



S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Distributed control systems (DCS) - RomPetrol

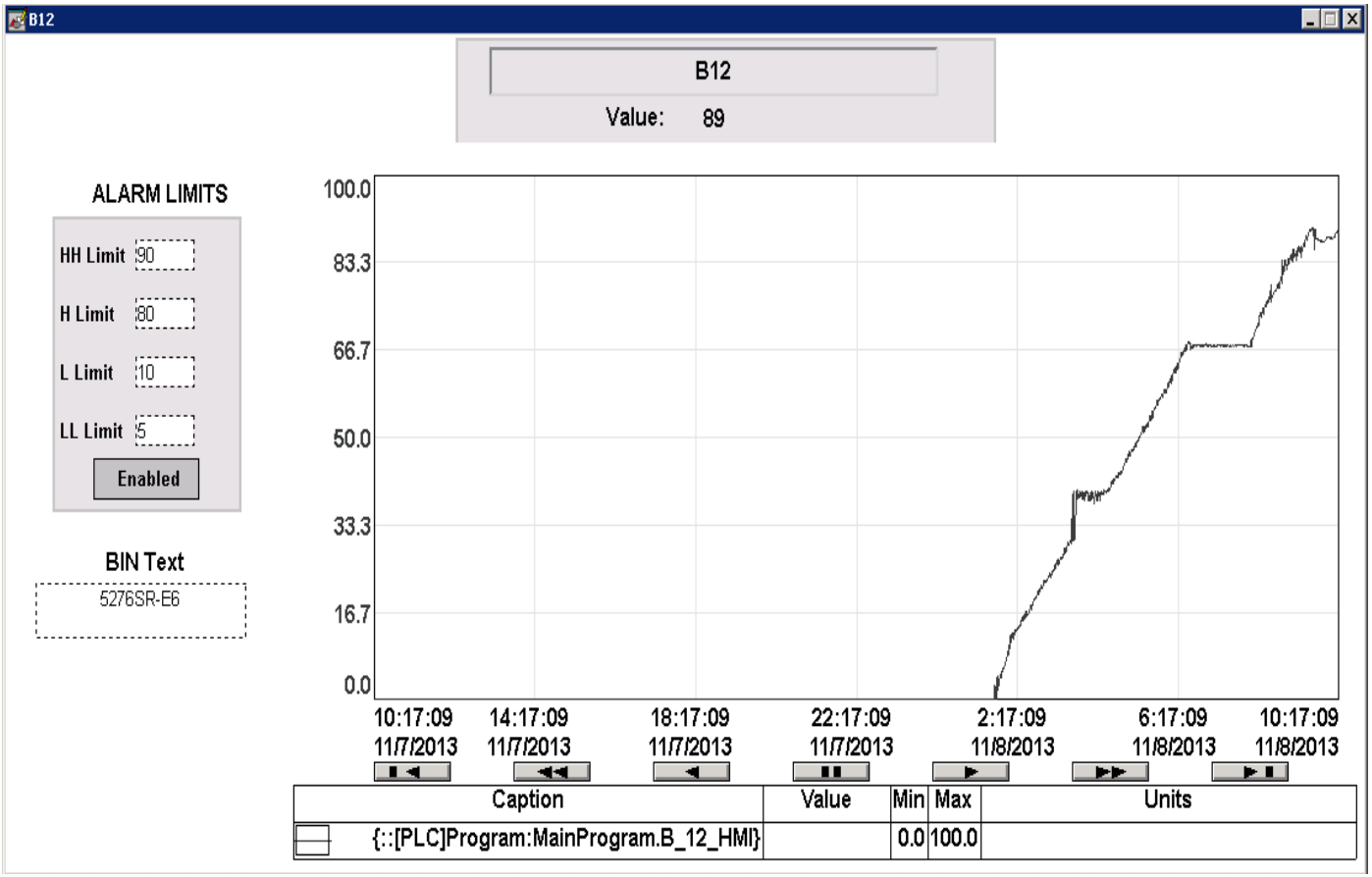
Human Machine Interface (HMI) - example



S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Distributed control systems (DCS)

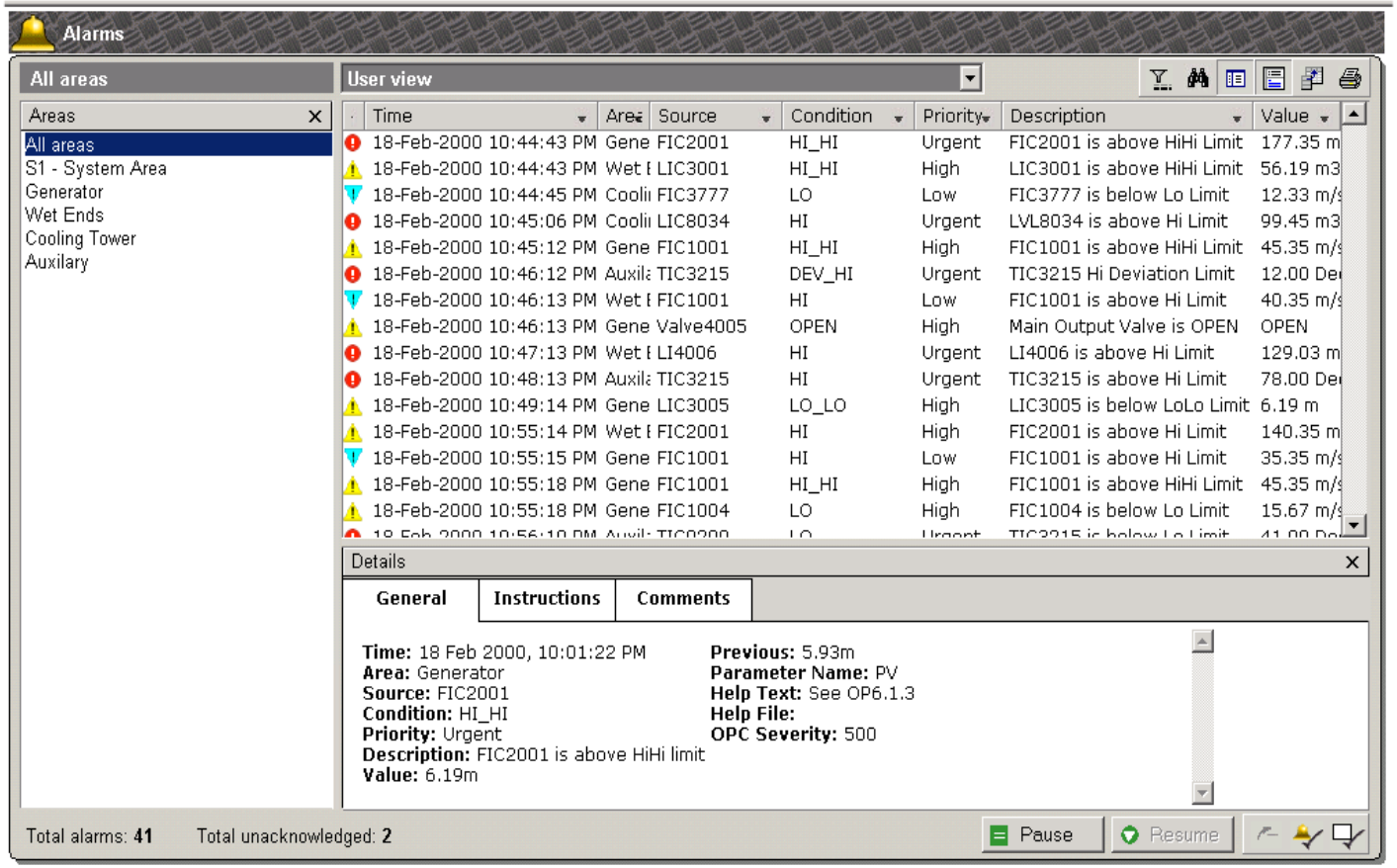
Continuous Historical trends



S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Distributed control systems (DCS)

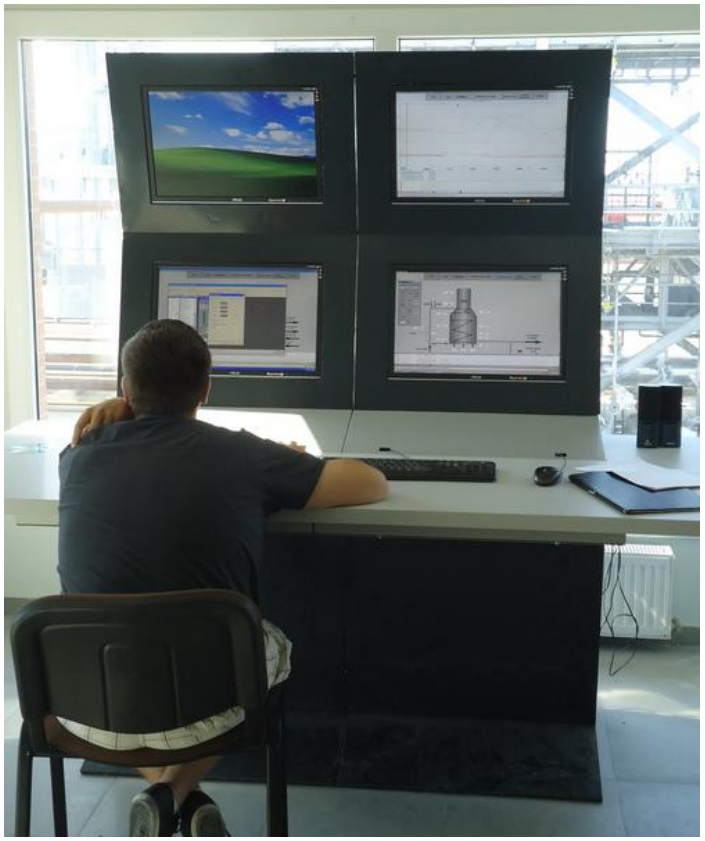
Alarms, Events recording definitions and showing



S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Distributed control systems (DCS)

- Automation of a distillation column
- Continuous control of process values



S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Distributed control systems (DCS)

Automation cabinet and system characteristics:

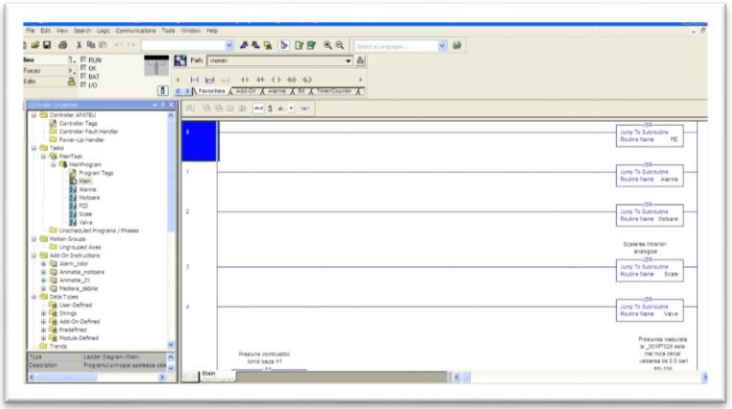
- DCS design
- Control strategies implementation
- HMI operation
- ESD systems
- Compressors control systems

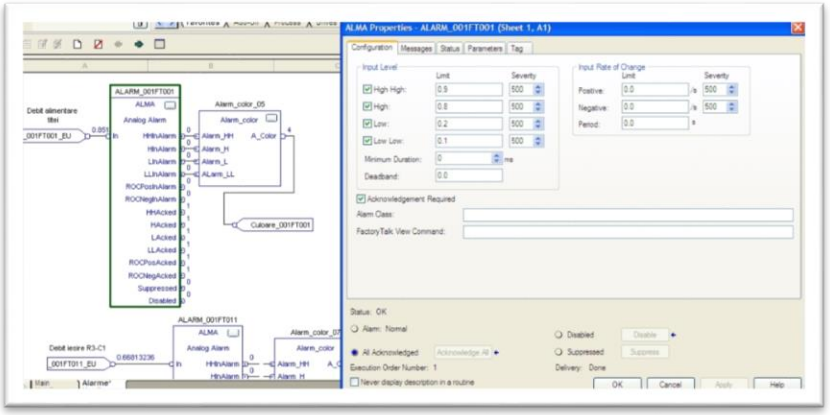
S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Distributed control systems (DCS)

Implementation routines:

- Alarms
- Scaling
- PID
- Motor control
- Valve control



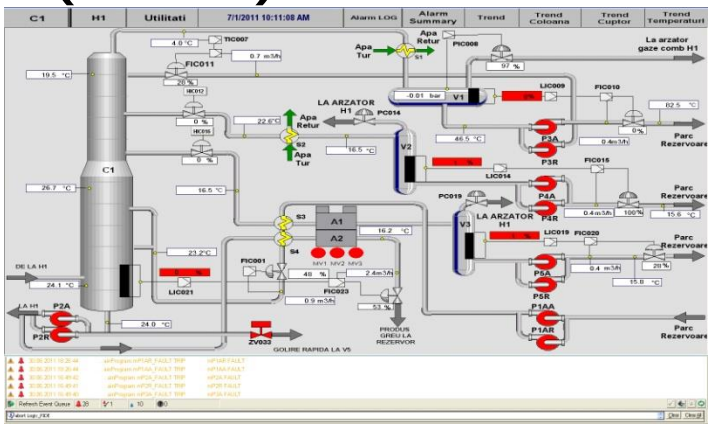


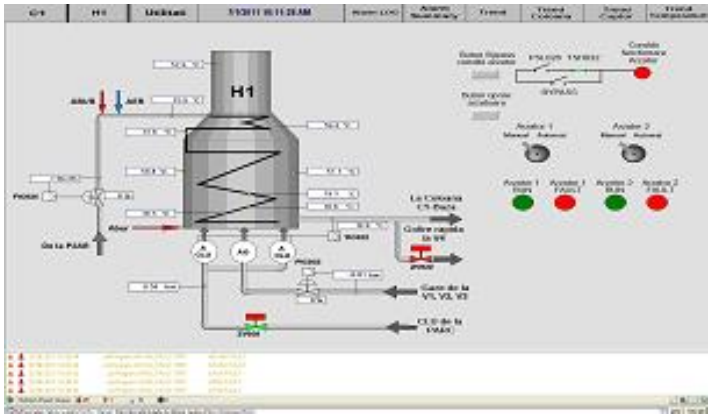
S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Distributed control systems (DCS)

User interface:

- Synoptic schemes
- Alarms Faceplate, PID-s
- Alarms Banner (ACK possibility, reset etc)
- Color animation (în caz de avarie etc.)
- Fill Animation for tanks and analogic valves command

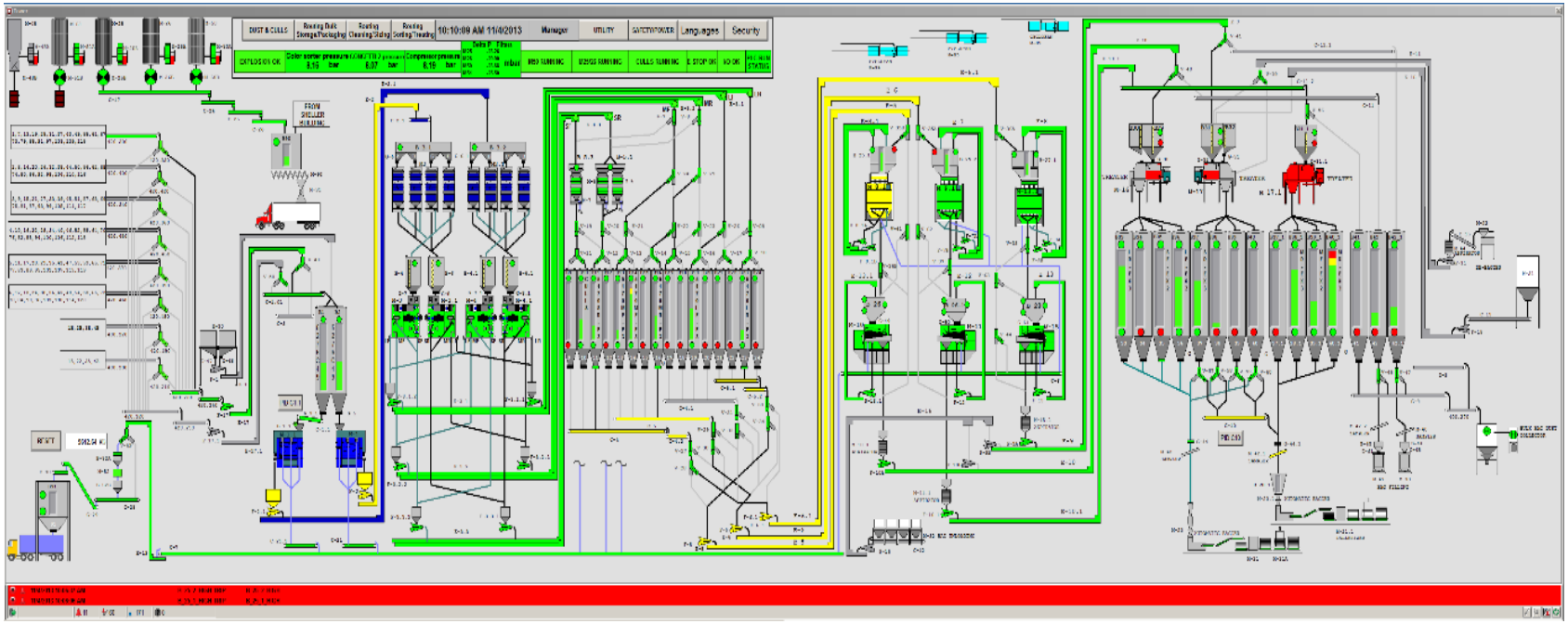




S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Distributed control systems

Calibration and treatment tower Monsanto Romania

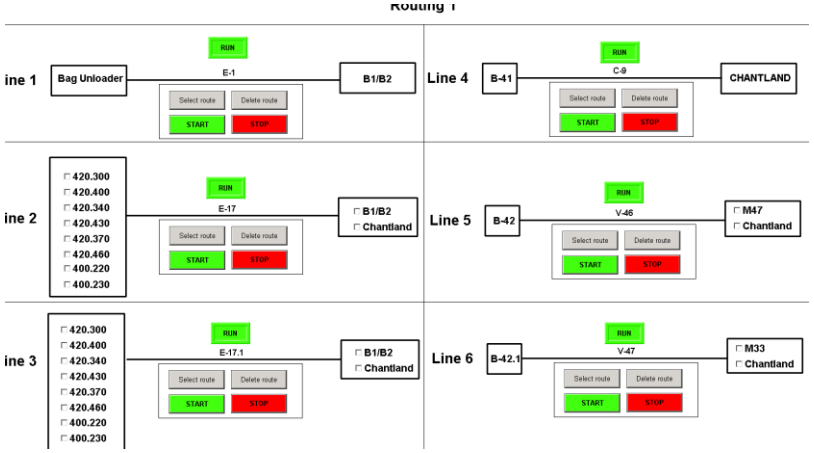


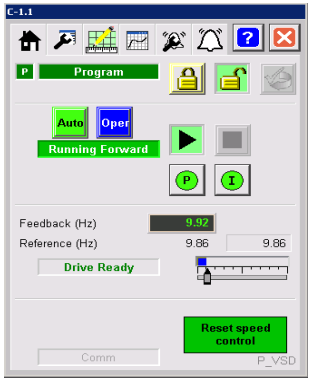
S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Distributed control systems

Calibration and treatment tower Monsanto Romania

- Saftey controller for emergency shutdown;
- Communication redundancy by fiber optic ring;
- Remote I/O for each level of the tower with redundant communication port;
- SCADA server with 2 clients for redundancy;
- Automatic routing from feeding lines to bagging lines;
- PID regulators for seed bunkers;
- Multilanguage SCADA application;

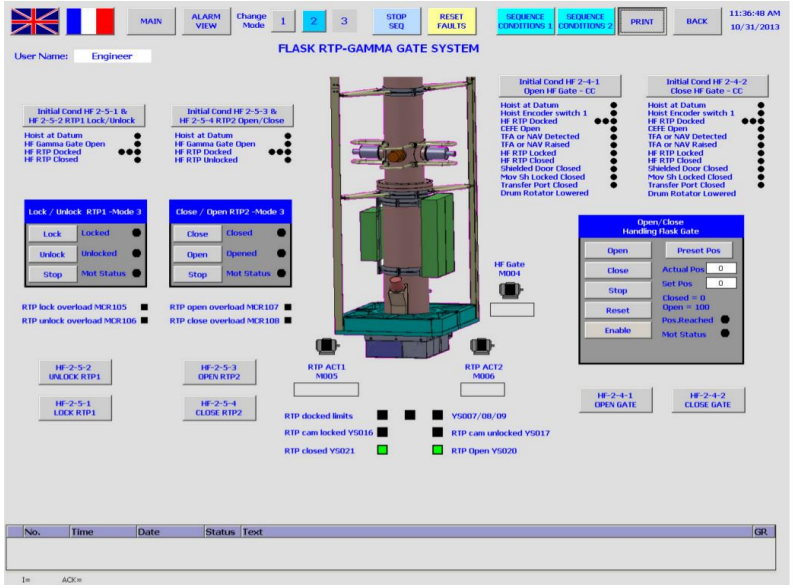




S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Control station for decommissioning of nuclear power station at Brennilis France

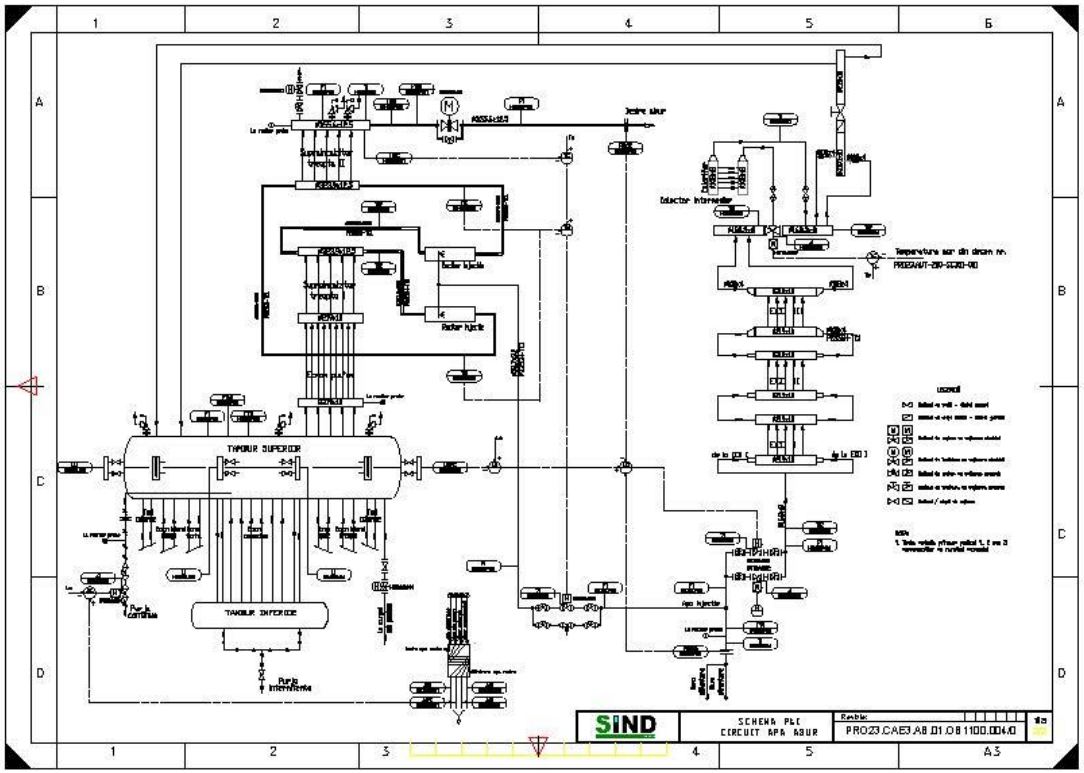
- Removal, processing and disposal of used fuel rods from reactor;
- Precise motor control – both speed and position with the help of Encoders, counters and VSDs
- Multiple control stations across different height levels, using ProfiNet and Wireless communication architecture



S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Control System Design and Implementation

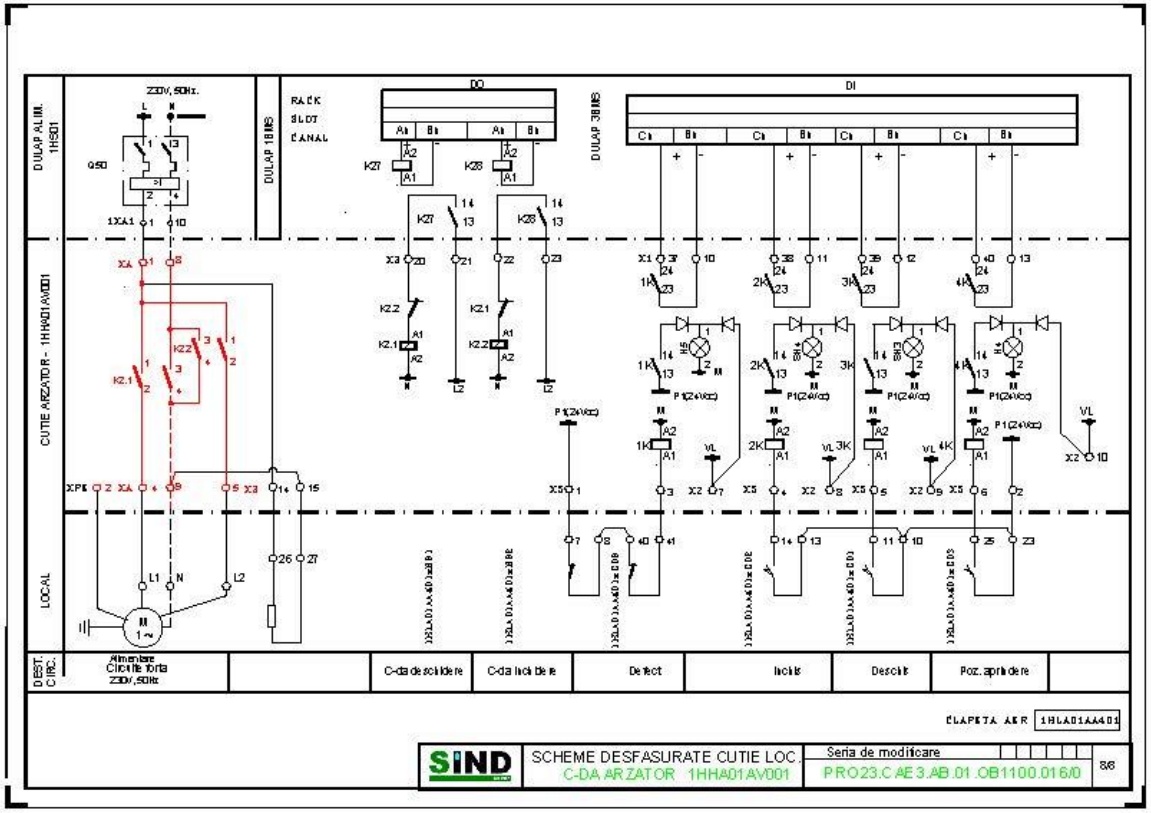
❖**P&I drawing with all instrumentation and controls**



S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Control System Design and Implementation

- **Wiring planning:**
  - **JB'S**
  - **Marshalling rack**
  - **I/O card arrangement**



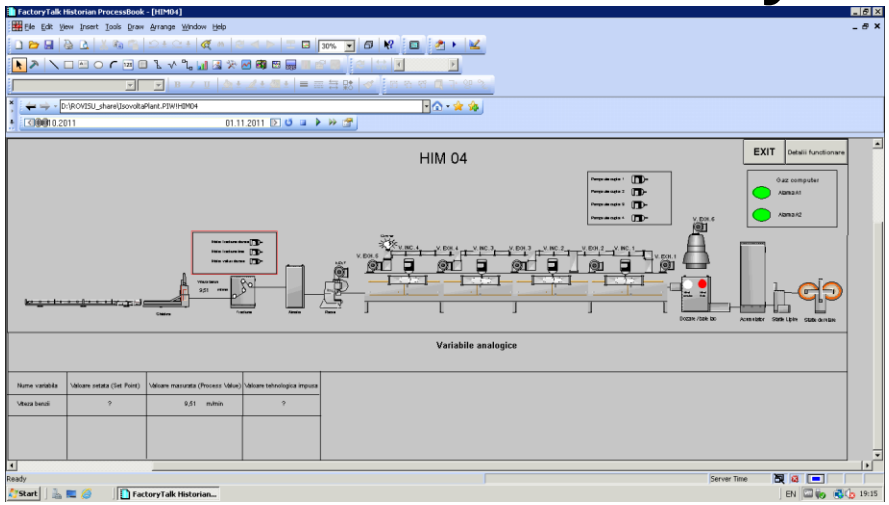
S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Plant information systems

• Energy consumption management (terminal and electrical energy)
• Plant-Information redundant Sistem (FactoryTalk Historian)
• OPC server data acquisition from various manufacturers (Kepware, Endress+Hauser, etc)
• Various devices interconnections: PLCs, Electrical and Terminal Energy counter etc.

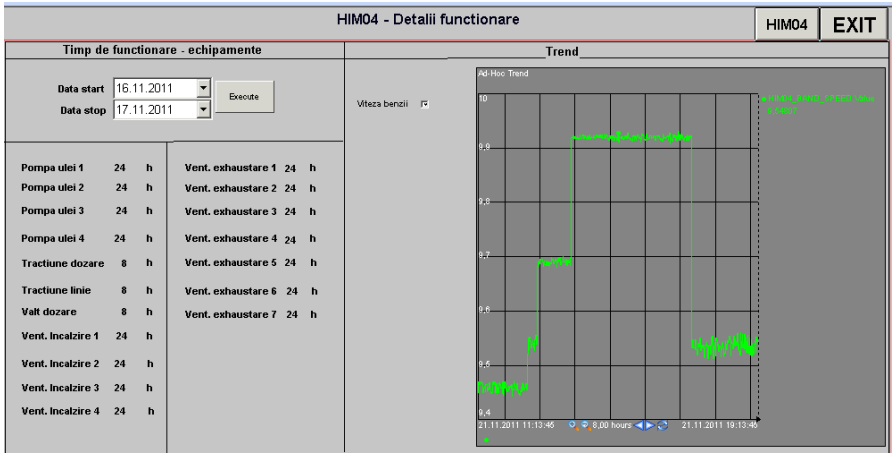
S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Distributed control systems (DCS)



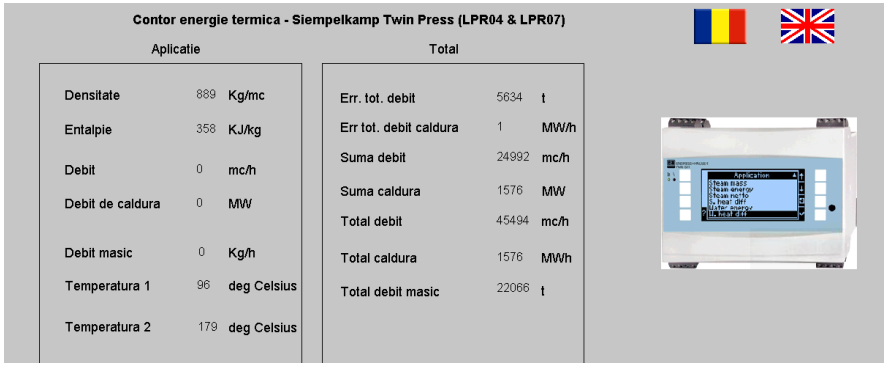
- User display configuration using ProcessBook with digital and analogic parameters presentation

- Equipment's working hours contabilisations and visualizations



S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Energy consumption management, data reconciliations



- Instantaneous value display of recorded counters values

- Detailed reports regarding consumption, working hours etc. using Datalink (Excel Add-on)

Hot water counters - Total consumption between period of time

Date	START DATE	07.11.2011
	END DATE	15.11.2011

CC	Type	Description	Actual Index	Value (MW)
63201	Consumption	Phenol Resins R5	197,1799927	0,380004883
	Consumption	Phenol Resins R1	5408,680176	0,919921875
63042	Consumption	Pagnoni 3000	95774,39063	65,24121094
63056	Consumption	Siempelkamp 4000 (LPR01)	9332,620117	99,98925781
63143	Consumption	Siempelkamp 2x1 (LPR02)	6155,299805	7,99609375
63056	Consumption	Siempelkamp 5000 (LPR03)	571079,75	0
63158	Consumption	Siempelkamp Twin Press (LPR 07)	1576	0,050048828
63151	Consumption	Siempelkamp Twin Press (LPR 04)		

S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Industrial communication Protocols

- Ethernet/IP
- ModBus
- ProfiBus
- MBus
- DeviceNet

S_IND PROCESS CONTROL SRL
Tel. +40 730511211 Fax. +40 372870246
Mail: office@s-ind.eu
Bucharest, Romania

Clients Portfolio

- Rompetrol
- Laromet
- EcoAqua
- ElectraTherme
- Germino
- Agrisol
- Metitex
- Isovolta
- Vest Petrol Rafinare
- Oltina
- Conpet