

ELECTRICAL AND AUTOMATION SYSTEMS



- Pre-engineering studies • Project management •
- Electrical Design • Plant automation design • Instrumentation •
- Procurement and manufacturing of electrical equipments •
- Electrical Installation works • Site supervision • Commissioning and start-up •
- Electrical room arrangement, design and installation of auxiliary systems (HVAC, Fire detection, CCTV)



Prezentare Generală



IMSAT: Delivering full product lifecycle of Electrical and Automation Projects

From basic studies to plant operation



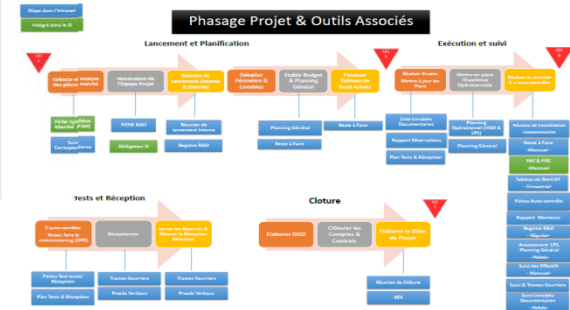
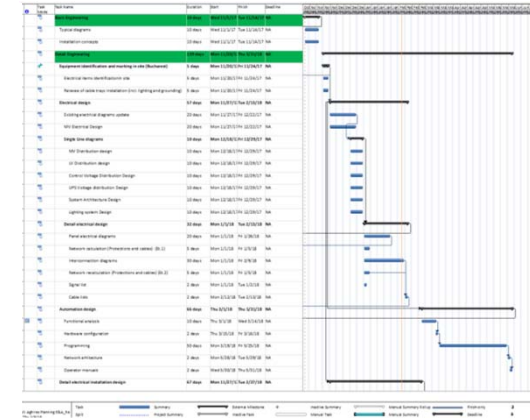
Project Management

Agencies ■
Sites ▲



Reference Projects:

- LH VOLSK (Russia)
- LH Mbeya (Tanzania)
- BMIC (Egypt)
- LH EWKORO (Nigeria)
- CB (Reunion Island)
- CRH (Slovakia)



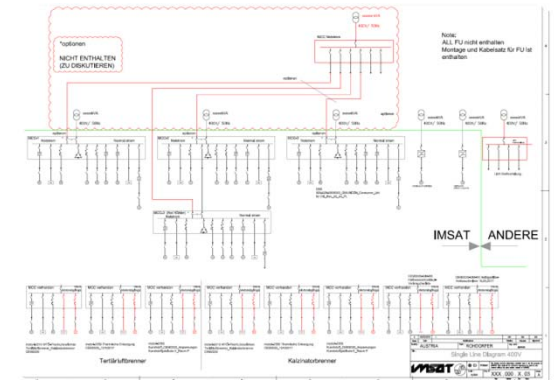
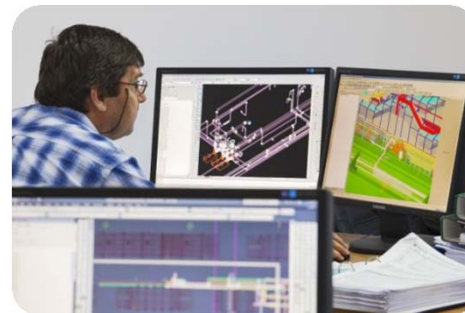
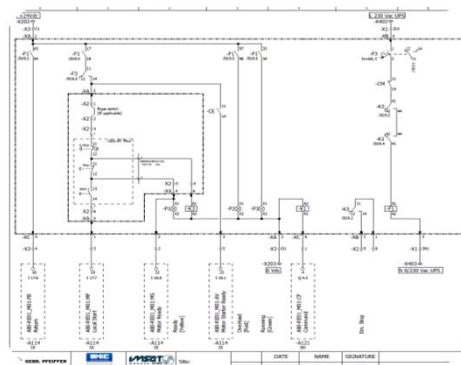
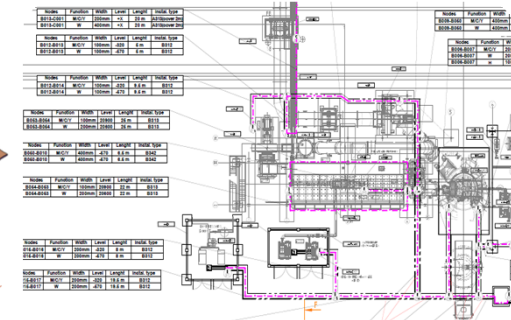
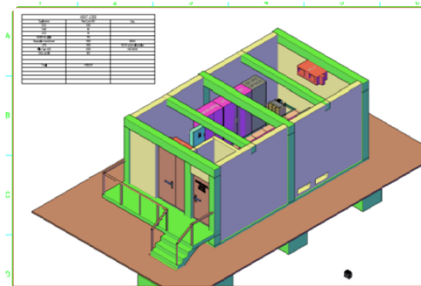
Prezentare Generală



Complete Engineering Services

Experience in delivering complete engineering services:

- Basic engineering studies
- Detailed engineering studies
- Calculations
- Interdisciplinary engineering (electrical, automation, process)
- Electrical design
- Automation design
- Cabling & Installation design
- Lighting, grounding and lightning protection
- Special requirements design (ATEX, GOST)



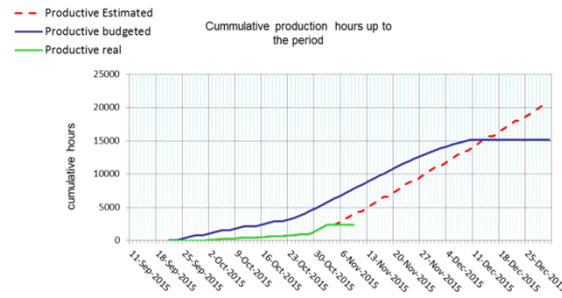
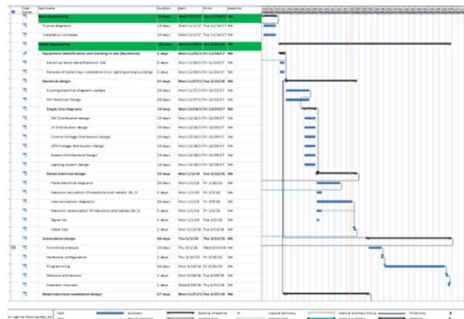
Prezentare Generală



Complete site supervision services

Experience in delivering complete site services:

- Site administration
- Works supervision
- Safety management
- Logistics and site administration
- Planning, Scheduling and Quality control



Prezentare Generală



Electrical Design, Procurement and Installation-High voltage distribution substations



Systems

- Schneider
- SIEMENS
- ABB
- OEM

Competences

- Engineering and Network calculation
- Equipment Design
- Procurement
- Installation
- Commissioning and start-up



Prezentare Generală



Electrical Design, Procurement and Installation-Medium voltage distribution substations



References

- LafargeHOLCIM VOLKS (Rusia)
- BMIC Egypt
- CEMROM Constanta
- HOLCIM Campulung

Systems

- Schneider
- SIEMENS
- ABB
- OEM

Competences

- Engineering and Network calculation
- Equipment Design
- Procurement
- Installation
- Commissioning and start-up



Prezentare Generală



Electrical Design, Procurement and Installation-Low voltage distribution systems



References

- LafargeHOLCIM VOLKS (Russia)
- BMIC Egypt
- EWEKORO Nigeria
- PLN (France)
- HOLCIM (Romania)

Systems

- Withdrawable (Schneider, Siemens, Kubik, Eaton, ABB)
- Fixed systems
- Main distribution panels
- Auxiliary distribution panels
- Frequency drives

Competences

- Engineering and Network calculation
- Equipment Design
- Procurement
- Installation
- Commissioning and start-up



Prezentare Generală



Plant automation-Hardware design



Systems

- SIEMENS
- ROCKWELL
- SCHNEIDER

Competences

- Control and automation panel equipment Design
- Industrial Networks
- Process computers
- Control rooms
- Commissioning and start-up



Prezentare Generală



Plant automation-Hardware design



Systems

- SIEMENS
- ROCKWELL

Competences

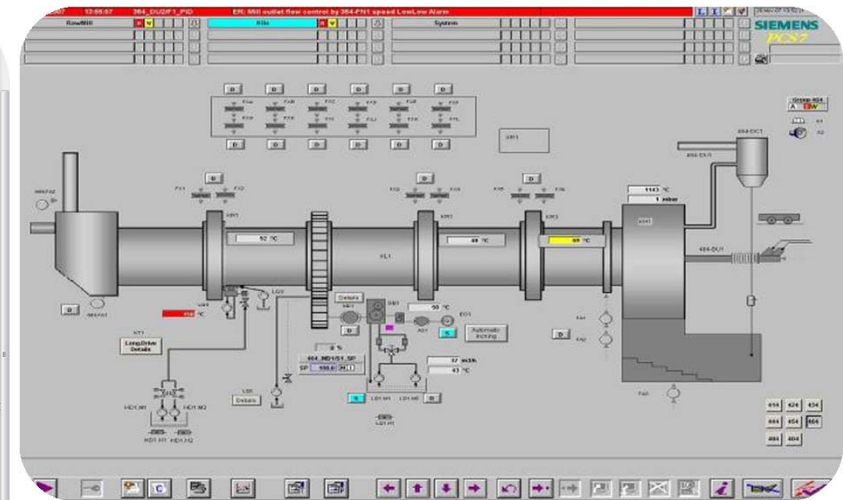
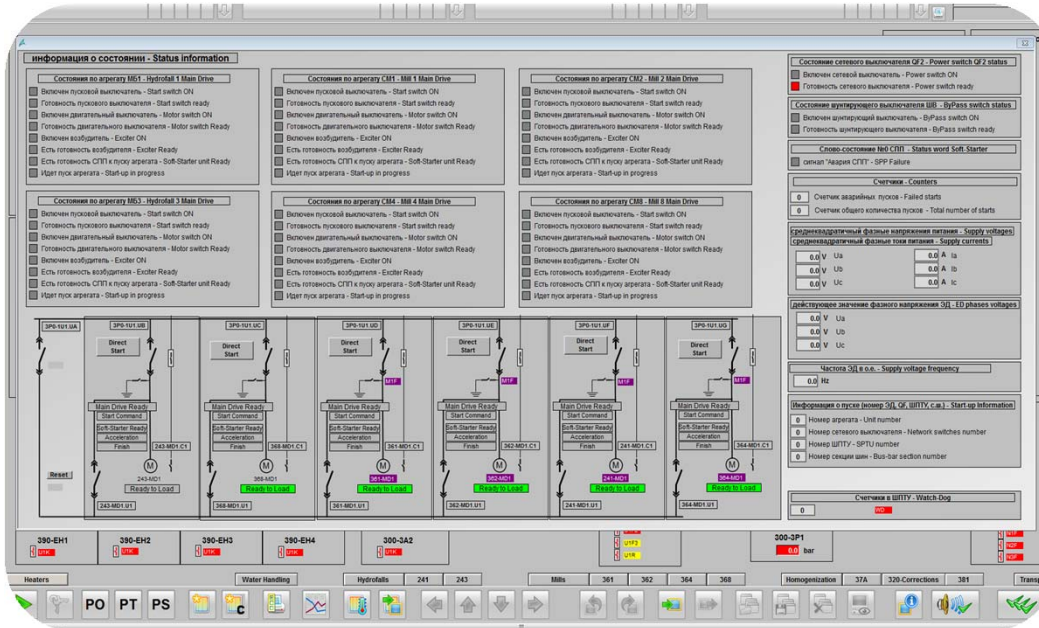
- Control and automation panel equipment Design
- Industrial Networks
- Process computers
- Control rooms
- Commissioning and start-up



Prezentare Generală



Plant automation-software design



Platforms:

- SIEMENS (WinCC, Step7, PCS7, TIA)
- ROCKWELL Allen Bradley

Competences

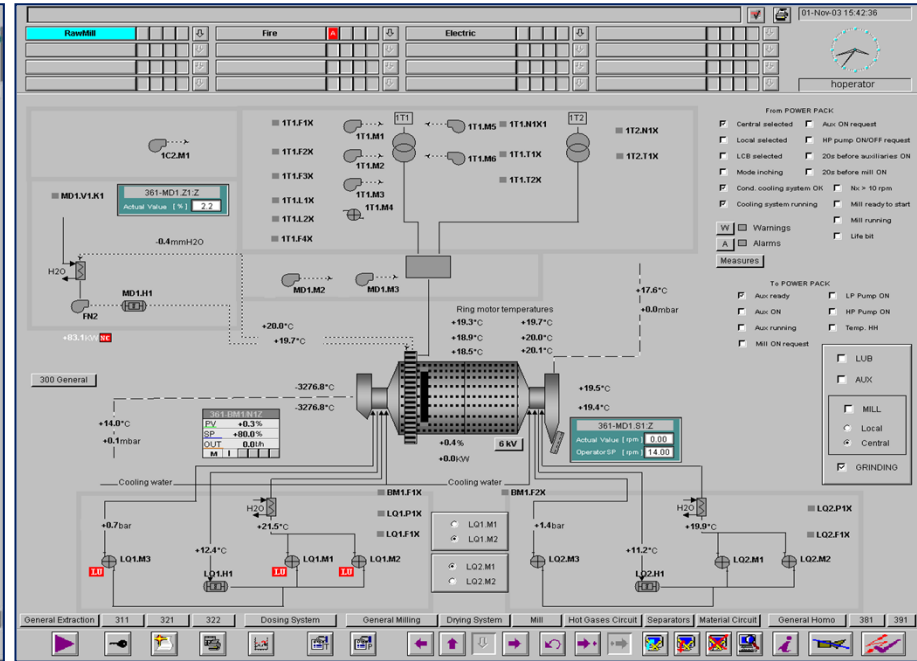
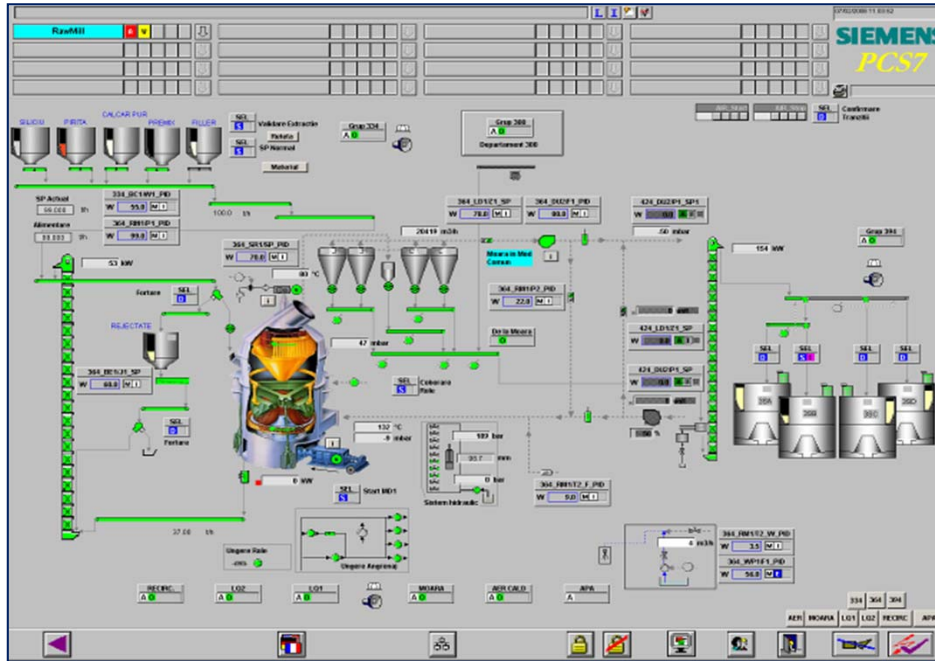
- Configuration and programming
- Process optimization
- Process SCADA
- Electrical SCADA
- Commissioning and start-up



Prezentare Generală



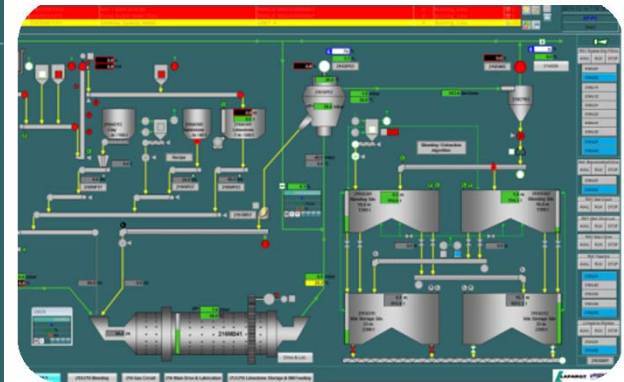
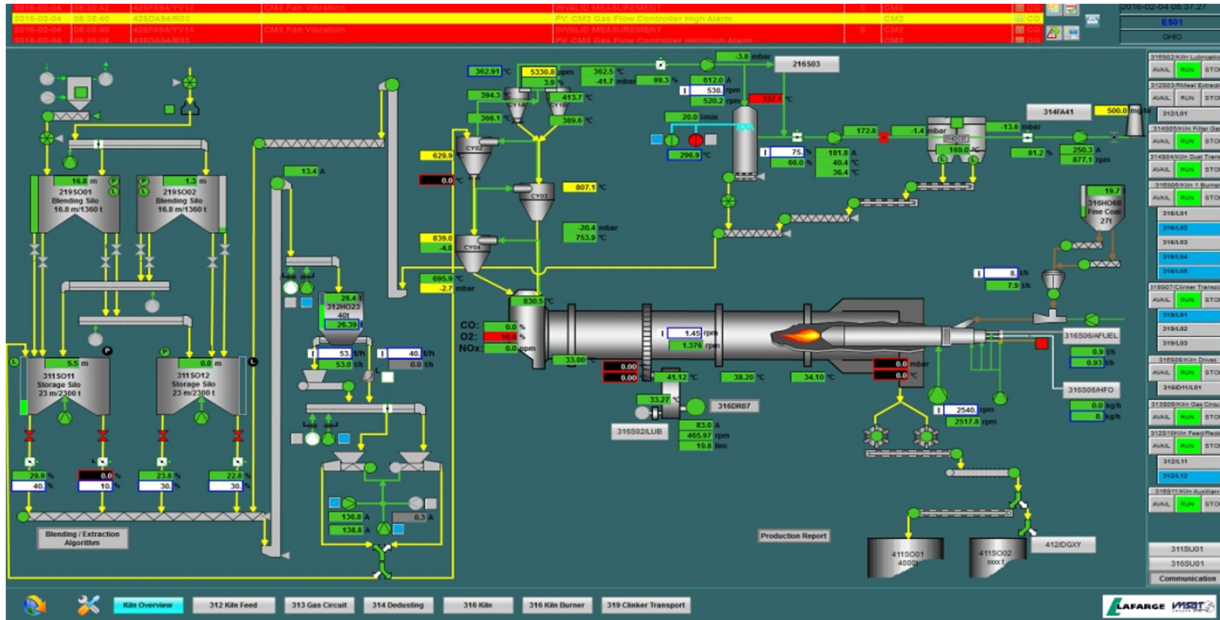
Plant automation-software design



Prezentare Generală



Plant automation-software design



Prezentare Generală



Plant automation-software design

434_BE1/M1 Elevator cu cupe

Start Stop
Local Manual

Analag Alama Start

Diagnostic Info Start

Cuvert interata

- EEVG: Conditie pornire
- EEVC: Interblocaie operare
- PEM1: Interblocaie protectie
- PEM2: Interbl.prot.(ignor.LOCAL)
- ESPO: Sporadic ON/OFF
- PEM3: Confirmare proces

Permisie mod local
Invalizarea mod local
Mod stand-by
Permisie pas cu pas

Parametru proces

Intarziere pornire (s) 0
Intarziere oprire (s) 20
Temp cont contactor (s) 4
Temp avert.la pornire (s) 10

Fara intarz ON/OFF active 0

Camp parametru

- R: Permis complet
- K: Disp electrica
- T: Suprasarcina
- U: Izolator local
- S: Stop local
- P: START local
- D: Comanda pornire

Temp functionare Nr. operati

Reset 01.01.1970 02 h 304 7 h 35

Module lesire / Start

- EVS: Semnal interblocaie
- EST: Avarie dinamica
- SST: Avarie
- HORN: Avertizare pornire
- EVS: Memoria comanda
- EVSP: Interbl. Semnal aspr. ON
- SIM: Simulare ON
- OND: Intarziere pornire
- OFFD: Intarziere oprire
- LOCAL: Mod Local

Permis

Perm avert pornire in local

Avarie

- RA: Contactor
- KA: Disp electrica
- TA: Suprasarcina
- UA: Izolator local
- PIA: Interblocaie protectie
- SA: STOP local
- SUB: Avarie gen subcontrol

Start

Parametri inertizare

| | Limite in automat | | Unit |
|---|-------------------|------------|------|
| | OPRIRE | INERTIZARE | |
| Temperatura lesire moara L61-RM1.T1 | 110 | 115 | °C |
| Temperatura intrare filtru L61-BF1.T1 | 100 | 105 | °C |
| Temperatura lesire filtru L61-BF1.T2 | 100 | 105 | °C |
| Temperatura buncar filtru L61-BF1.T3/T4 | 140 | 145 | °C |
| Temperatura lesire filtru L61-2K1.Q1 | 4000 | 4100 | ppm |
| Nivel O2 lesire filtru (*) L61-2K1.Q2 | 22.0 | 23.0 | % |
| Nivel O2 lesire filtru (**) L61-2K1.Q2 | 16.0 | 23.0 | % |
| Nivel CO siloz L91-3B1 L91-2K1.Q1 | 4000 | 4100 | ppm |
| Nivel O2 siloz L91-3B1 (*) L91-2K1.Q2 | 22.0 | 23.0 | % |
| Nivel O2 siloz L91-3B1 (**) L91-2K1.Q2 | 16.0 | 23.0 | % |
| Temp. siloz L91-3B1 sus L91-3B1.T1 | 95 | 100 | °C |
| Temp. siloz L91-3B1 jos L91-3B1.T2 | 95 | 100 | °C |
| Nivel CO siloz L91-3B2 L91-2K2.Q1 | 4000 | 4100 | ppm |
| Nivel O2 siloz L91-3B2 (*) L91-2K2.Q2 | 22.0 | 23.0 | % |
| Nivel O2 siloz L91-3B2 (**) L91-2K2.Q2 | 16.0 | 23.0 | % |
| Temp. siloz L91-3B2 sus L91-3B2.T1 | 95 | 100 | °C |
| Temp. siloz L91-3B2 jos L91-3B2.T2/T3 | 95 | 100 | °C |

(*) - moara oprita (**) - moara merge

Timpi de intarziere intr:

Moara pornita - activare limita O2 filtru 45.0 min
Moara pornita - activare limita O2 siloz L91-3B1 25.0 min
Moara pornita - activare limita O2 siloz L91-3B2 25.0 min
Indeplinire conditie oprire - oprire efectiva 3 sec
Indeplinire conditie inertizare - inertizare efectiva 3 sec
Activare avarie gaz - alarma 30 sec
Oprire grup L91 - oprire grup INERT 60 sec

Durata inertizari / Timpi ramasi (min) (timpi nemodificabili)

Moara 3 0.0 Siloz L91-3B1 sus 23 0.0
Teava 12 0.0 Siloz L91-3B1 jos 10 0.0
Filtru 32 0.0 Siloz L91-3B2 sus 32 0.0
Filtru 32 0.0 Siloz L91-3B2 jos 18 0.0

Pauze/Timpi ramasi intre doua inertizari succesive (min) (timpi nemodificabili)

Moara 9 0.0 Siloz L91-3B1 sus 10 0.0
Teava 9 0.0 Siloz L91-3B1 jos 9 0.0
Filtru 10 0.0 Siloz L91-3B2 sus 10 0.0
Filtru 10 0.0 Siloz L91-3B2 jos 9 0.0

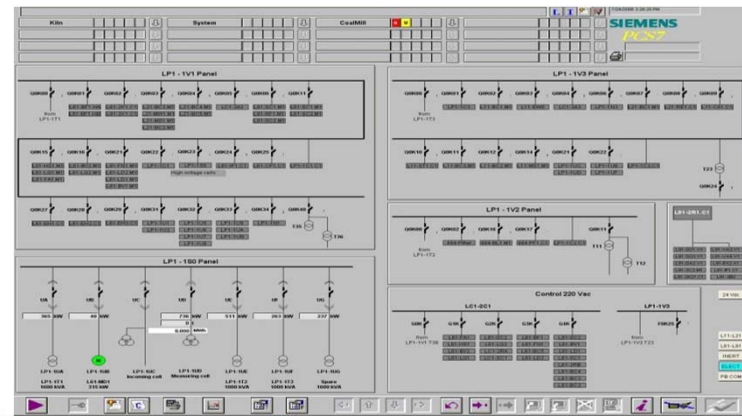
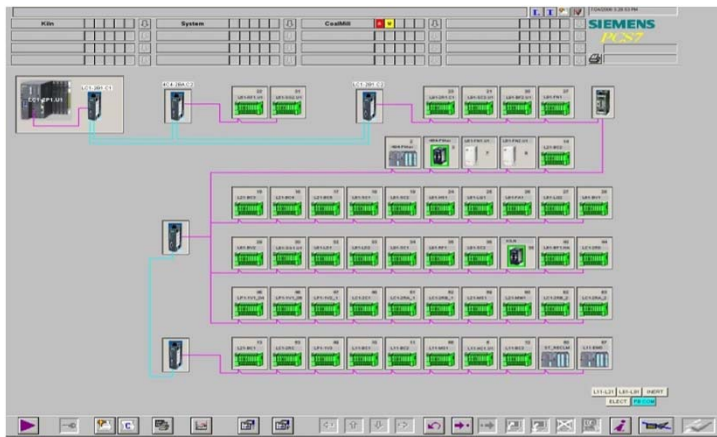
Corelatie CO - O2

L612K1 CO(ppm) O2(%)
1600 12
4000 10
9000 9

L912K1 CO(ppm) O2(%)
1600 12
4000 10
9000 9

L912K2 CO(ppm) O2(%)
1600 12
4000 10
9000 9

SEL



Prezentare Generală



GRUPE SNE

Electrical installation works



Business areas

- Industry
- Oil & Gas
- Marine (oil platforms)
- Nuclear
- Automotive

Ability to perform all site activities with own qualified personnel !

Competences

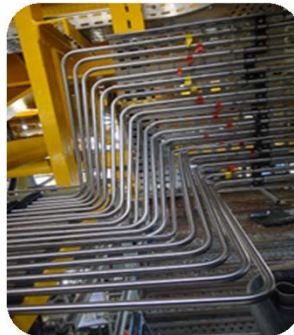
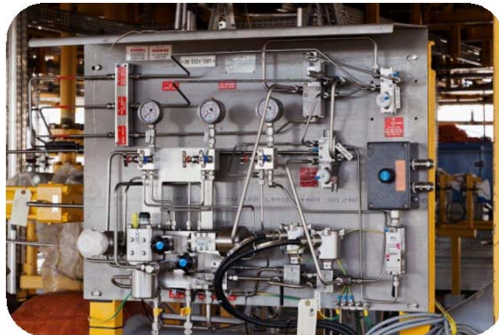
- Electrical equipment installation
- Cable installation
- Instrumentation installation
- Tests, Commissioning and start-up



Prezentare Generală



Special Installation works



Business areas

- Industry
- Oil & Gas
- Marine (oil platforms)
- Nuclear
- Automotive

Ability to perform specialized installation in high quality demand projects (nuclear, oil&gas, marine)

Competences

- Instrumentation installation
- Process connection (Instrument piping)
- Wiring, tests and calibration



Prezentare Generală



Special equipments design and manufacturing (E-Room Containers)



Business areas

- Industry
- Oil & Gas
- Marine (oil platforms)

Ability to deliver customized solutions for special applications!

Competences

- Mechanical design
- Fabrication
- Integration of electrical equipment
- Logistics



Prezentare Generală



Auxiliary equipments for industrial facilities



Business areas

- Industry
- Commercial
- Public buildings

Plant design is completed up to the auxiliary systems.

Competences

- Engineering and design of HVAC Systems
- Engineering and design of Fire detection systems
- CCTV
- Access control



Prezentare Generală



Electrical room arrangement



- Business areas
- Industry

Plant design is completed up to the auxiliary facilities

- Competences
- Engineering for Electrical Rooms and control Rooms



Prezentare Generală



Relevant projects in chemical industry

Project : Refinery DGO5 - TOTAL RN - Le Havre, France

Pictures from site erection period:

Key figures

| Description | U.M. | Quantity |
|---------------------------------|------|----------|
| Erection cable tray | Km | >3.9 |
| Erection of piping and tubing | Km | >4 |
| Connections of pipings | pcs. | >1000 |
| Installing of EI devices | pcs. | >250 |
| Installing of electrical ground | m | >3000 |
| | pcs | >2800 |
| Laying Cables | m | >1000 |
| Cable connections | pcs. | >1450 |



Prezentare Generală

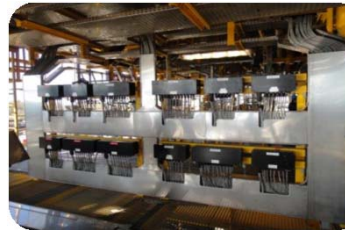


Relevant projects in chemical industry

Project : Platform offshore AGMN for Anguille – GABON (EIFFAGE) Pictures from site

Key figures

| DESCRIPTION | M.U. | QUANTITY |
|---|------|----------|
| *Cable trays stainless steel | m | 3.300 |
| * Laying Cables | m | 55.000 |
| * Cable connections | pcs | 2.928 |
| * Instrumentation devices | pcs. | 525 |
| * Lighting fixtures | pcs. | 107 |
| * Alarm system | pcs | 24 |
| * System fire and gas | pcs | 36 |
| * Communication system | pcs | 5 |
| • Tubing systems • (hydraulic, gas-lift and injection) | m | 9.500 |



Prezentare Generală



Relevant projects in chemical industry

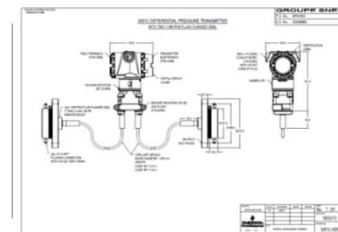
Project : Platform offshore OFQ for OFON2 – NIGERIA (EIFFAGE)

Pictures from site



Key figures

| DESCRIPTION | M.U. | QUANTITY |
|------------------------------|------|----------|
| *Cable trays stainless steel | m | 8.066 |
| * Laying Cables | m | 65.325 |
| * Cable connections | pcs | 1.669 |
| * Instrumentation devices | pcs. | 525 |
| * Lighting fixtures | pcs. | 1.141 |
| * Communication system | pcs | 6 |
| * Electrical devices | pcs | 426 |



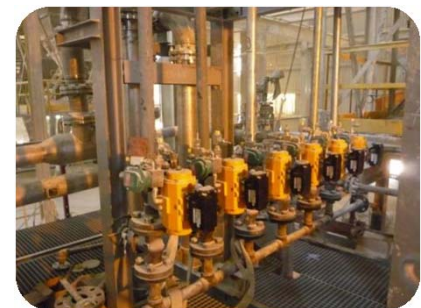
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Relevant projects in chemical industry

Project : Phosphate Mines Co., Jordan (SNC Lavalin)

Pictures from site erection period:



Prezentare Generală



Relevant projects in chemical industry

Project : Arpechim Pitesti, Romania

Pictures from site erection period:



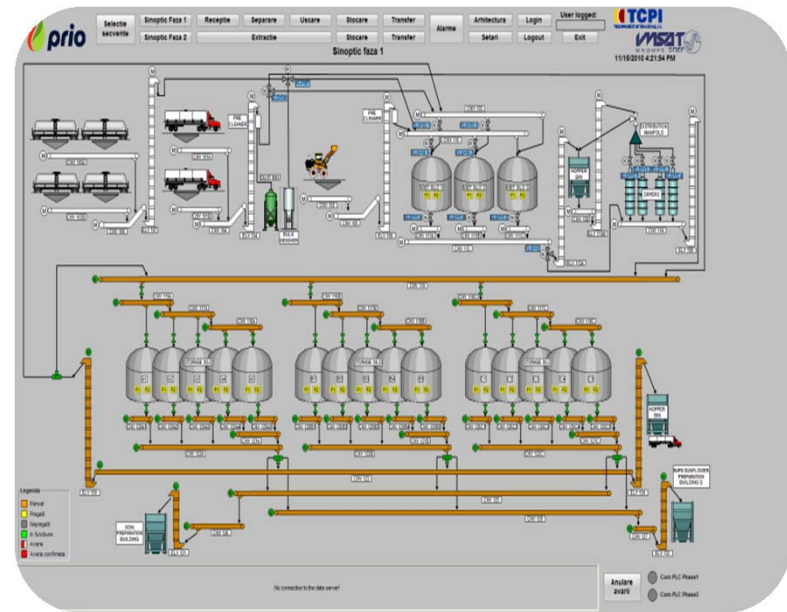
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Relevant projects in chemical industry

Project : Biodiesel Plant – TCPI Lehliu – Romania

Pictures from site erection period:



Prezentare Generală



Relevant projects in chemical industry

Project : Platform Ponticelli-Nigeria
Pictures from site erection period:



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Relevant projects in chemical industry

Project : Wet Flue Gas Desulphuration ROMANIA



Prezentare Generală



References



Prezentare Generală



Key figures



+55

Years of history



+1160

employees



+30

Agencies and headquarters



~70

Mil. Euros
Turnover (2017)



+1000

customers



Prezentare Generală



Certifications

- ISO 9001 – from 1999



- ISO 14001 – from 2004
- OHSAS 18001 – from 2004
- SA 8000 – from 2015



- ISO/CEI 27001 – from 2009



Others



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