



INP Core Competence DCS

Digital Control Systems

Core Competence DCS

Our Services

- Status quo analyses / data acquisition
- Studies and consulting
- Basic and detail engineering
- Commissioning of process control systems
- Turbine controls, turbine and boiler protection
- Interface processing independent of manufacturer/system
- Installation supervision
- International provision of personnel
- Training, service and maintenance
- Test facility

Core Competence DCS Systems

ABB	<ul style="list-style-type: none"> Alfa Laval SattCon. SattLine Elsag Bailey INFI90 Kent Taylor MOD 300 / DCS / TCS / TCL Procontic DP800, K 200, CS 31 Procontrol K Decontic, Decontrol, K200, Contronic 	<ul style="list-style-type: none"> Procontrol P P13, P14, PSR I, PSR II Symphony DCI, Harmony 800xA, Industrial IT, Control IT, Melody AC 870 P, AC 800C/M, AC 31, PEC800 Freelance AC800F Advant, AC110/160, AC 410/450
Allen Bradley	<ul style="list-style-type: none"> PLC 5 	<ul style="list-style-type: none"> SLC 500
Alstom	<ul style="list-style-type: none"> Alspa P320 	
B&R	<ul style="list-style-type: none"> Aprol 	
GE	<ul style="list-style-type: none"> Mark V 	<ul style="list-style-type: none"> Mark VI, Vle
Hima	<ul style="list-style-type: none"> H51, H51q, HIMax 	
Honeywell	<ul style="list-style-type: none"> TDC DDC 	<ul style="list-style-type: none"> FSC
Mitsubishi	<ul style="list-style-type: none"> MELSEC 	
Möller	<ul style="list-style-type: none"> S40 	
Siemens	<ul style="list-style-type: none"> SIMATIC S5, S7 SIMATIC PCS 7 SPPA-T3000 	<ul style="list-style-type: none"> Teleperm M/ME Teleperm XP SPPA-T2000

Core Competence DCS Systems

Vizualization

- ABB Operate IT/ Process Portal B
- ABB 800xA
- ABB DigiVis
- ABB Micro SCADA
- Citect 5
- ETM PVSS II
- Fix Intellution
- Lauer
- Siemens COROS
- Siemens WinCC
- Wonderware InTouch

Engineering

CAX

- AutoCAD
- AUCOPLAN
- CABRIO ®
- Comos-PT/PE
- DDS_C
- EIMaster
- ELCAD
- ELOP II
- EPLAN
- ESP
- 32WIN
- MicroStation
- PRODOK
- SIGGRAPH
- Solid Edge
- Tec4 FDE
- Tec4 Function

Core Competence DCS

References



Basell, Germany
Industrial power plant

Complete migration of the DCS of an industrial power plant (7 STs incl. waste heat boiler and 1 GT)



GKW Dillingen, Germany
Gas-fired power plant

Engineering, delivery, installation and commissioning of the DCS of a gas-fired power plant



Amakhulu, South Africa
Industrial power plant

Engineering, delivery, installation and commissioning of the turbine controller and the generator supervision for an industrial power plant



Provision of Personnel
DCS

DCS specialists for the engineering, installation supervision, commissioning and operation of any kind of power plant worldwide



BASELL

Industrial power plant

Location:	Wesseling, Germany
Client:	Lyondell Basell Industries
System:	Siemens Teleperm XP, HIMA H51q
Project size:	> 4.000.000 €
Duration:	2004 – expected 2014

BASELL

Industrial power plant

Project management and basic engineering

- Data acquisition
- Feasibility study
- Consulting, design and structuring of the plant
- Coordination and project management
- Preparation and maintenance of overall project schedule

Detail engineering

- Unified and integrated automation structure to facilitate diagnosis in the event of failure
- Adaptation of operator displays to customer-specific requirements and operator preferences
- Standardization and revision of existing and new event sequences
- Message suppression to avoid message surges

- Standardized abbreviation of long and short texts, signal states according to VGB standard
- Design and planning of functional modules and control structures
- Design of the E/H assemblies for the overall system
- Division of the overall system into functional areas and technical availability pillars for unbundling of subsystem dependencies.

Functional testing and commissioning

- Control technology with all operator displays and interfaces before functional test (FAT)
- Functional tests (loop check)

Support and training

- Customer support
- Training of operator personnel



GKW Dillingen Gas-fired power plant

Location:	Dillingen, Germany
Client:	AE&E Inova
System:	ABB Melody / 800xA, HIMA H51q
Project size:	> 2.000.000 €
Duration:	2008 - 2010

GKW Dillingen

Gas-fired power plant

Basic engineering

- Basic and detailed engineering for turnkey development of a gas-fired power plant providing a dependable and economical energy supply
- Design of the automation system, of the operator and monitoring interface and of the external system link

Process engineering

- Transfer of functional units to the individual process areas
- Creation of a functional planning structure (start-up concept, sequencers, automatic processes, controls, protection criteria and messages)
- Selection of automation components for Melody / 800xA

Hardware engineering

- Hardware planning for measuring and control equipment, black boxes, switchgear in EPLAN
- Specifications and order guidelines for the required hardware components, control technology and network components
- Cable layout
- Cabling engineering for actuator elements and sensors, as well as cabinet engineering

Software engineering/ Visualization / IMS

- Software creation with Composer engineering tool
- Functional engineering according to VGB R 170 C
- Configuration of operator and monitoring interface 800xA
- Integration of alternate power plant library INP Case Control

GKW Dillingen

Gas-fired power plant

Furnace controls and boiler protection

- Software engineering with HIMA ELOP II for gas furnace and boiler protection as security-oriented control with TÜV-approval
- Delivery of required hardware components for furnace control system and boiler protection, installed pre-wired in equipment cabinets
- Link to main control technology
- Implementation of the alternative power plant library INP Case Control

Functional test and commissioning

- System start-up
- Links to external systems (PROFIBUS, Ethernet, OPC)
- Test bay, TT, FAT
- Functional test of overall cabling (loop check)
- Functional tests (loop check) after switch-over of field devices
- Start-up of boiler system, subsystems and water-steam cycle
- Trial operation
- Training of system personnel



Amakhulu

Turbine monitoring, generator monitoring

Location: Amakhulu, South Africa

Client: Siemens PGI

System: Siemens S7, SIPROTEC

Project size: > 300.000 €

Duration: 2008 - 2009

Amakhulu

Turbinenüberwachung

Our services

- Hardware and cable engineering
- Controls enclosure planning, manufacture, and testing of turbine and generator monitoring enclosures, 24VDC distribution, 110VDC distribution and low-voltage distribution 660VAC
- Programming of turbine controls and turbine protection
- Parameterization and programming of generator protection and synchronization
- Installation supervision and commissioning of the generator protection and synchronization



Foto Dirk Schatz / inp-e.com – GKM

Provision of personnel DCS

Location:	worldwide
Clients:	power plant sector and industry
Systems:	Siemens, Alstom, ABB, Hitachi, GE
Project sizes:	varying
Duration:	since 1989

Provision of personnel

DCS

Our services

- Commissioning of gas and steam turbine controller
- Commissioning of heat recovery and coal fired boilers incl. boiler protection
- Commissioning of balance-of-plant
- Commissioning of hydroelectric and diesel plants
- Training of the operators
- Basic- and detail engineering

Provision of personnel DCS

Types of contract

- Technical staffing, staff augmentation, engineering, service and hardware contracts

Select Projects

- Combined Cycle Power Plant Lingen (Germany), Atlantis (South Africa), Fujairah (UAE), Staythorpe (England)
- Coal Power Plant Zolling (Germany), Matla (South Africa), Maritza (Bulgaria)
- Hydroelectric Plant Merowe (Sudan)
- Gasturbine Power Plant Rio (Brazil), Utra (India)
- Industrial Power Plant Basell (Germany)

Customers

- Alstom Power, Germany, Switzerland, Italy, Great Britain, France, Russia
- Siemens Energy, Germany, Austria, France, India, Syria
- E.ON Anlagenservice, Germany
- Hitachi Power, Germany, South Africa, Japan
- ABB, Germany, Switzerland, South Africa, USA
- Basell, Germany
- GE, France, Germany

Systems

- Siemens PCS 7, T3000, Teleperm XP
- Alstom P320
- ABB Melody, AC 800M, Advant, P14