Rotating Machinery Control Solutions
DEIC
Integrated Control System for Rotating Machines

- Unit Control Panel (UCP) for large/medium size rotating machines
- Main feature: automation integration, one device to control the driver and the driven machines plus all the auxiliary systems
- Developed because of customer demand
- Potential for becoming a gateway/bridge for other ABB products and solutions
DEIC
Integrated Control System for Rotating Machines

- State of the art
- Several control packages “integrated” together
- Most common suppliers:
  - Allen Bradley
  - Siemens S7
  - HIMA Safety System
  - CCC Anti-surge & Load Sharing
  - Woodward Speed Governor & Overspeed Control
DEIC
Integrated Control System for Rotating Machines
DEIC Hardware

ONE programming tool: Control Builder

- CPU
- HMI & Remote Connection
- Process & Auxiliary Control
- Anti-Surge & Load Sharing
- Safety (ESD)
- Vibration Monitoring
- MCC & VSD Interface
- Speed Governor
- Overspeed Protection
DEIC
Integrated Control System for Rotating Machines

- Technology well known, based on AC800M processor and Control Builder programming software
- Appreciated by OEMs which see a potential reduction in engineering costs for UCP automation and customization
Competitors
HW Architectures – Siemens SCAUT
Competitors
HW Architectures – GE Speedtronic Mk.6e
Infrastructure used to connect together all the different functionalities

Provides functionalities required to all the blocks, such as signal monitoring and IO interfacing

Standardized Interfaces for the most common types of equipment:

- MV drives
- DOL motors
- Industrial Gas Turbines
- Industrial Steam Turbines
- Centrifugal Compressors
- Centrifugal Pumps
- others

The standardized interfaces allow to simplify the programming avoiding variable repetition and garbage-code: the software is lighter and faster.
DEIC
Software - VSD

Developed for Variable Frequency Drives

- Communication with MV drives (via DriveBus, ModBus, Hardwired)
- Master Controller (Torque/Speed/Hybrid Control and SP management)
- Sequencing (Start, Stop, Emergency Stop, Stand-by)
- Drives switch-over Control (N+1 configurations)
- Cos-phi Control (Harmonic Filters) – LCI only
- Cooling Systems Control (Motor Cooling, Water Cooling Unit)
- Lubrication Systems Control (Lube, Jacking Pumps)
DEIC
Software - Compressor

- Performance/Capacity Control (Speed, Suction/Bypass valve, Inlet Guide Vanes)
- Anti-Surge Control (Cold/hot bypass, blow-off)
- Load Sharing Control
- Sequencing (Pressurization, Stand-by, Normal Stop, Pressurized Stop, Depressurized Stop, ESD)
- Dry Gas Seal Control
- Process Protections
- Station Master Control
DEIC Software - Pumps

- Performance/Capacity Control (Speed, Bypass Valve)
- Anti-Cavitation/Minimum Flow Control
- Load Sharing Control
- Sequencing (Pressurization, Stand-by, Normal Stop, Pressurized Stop, Depressurized Stop, ESD)
- Process Protections
- Station Master Control
DEIC
Software – Industrial Turbines (Gas/Steam)

- Speed Governor
- Inlet Pressure Control
- Extraction and/or Exhaust Header pressure
- Turbine Load Sharing
- Protections/Limiters
DEIC
VSD-Compressor control

- Sequencing
- Anti-surge control
- Filter control
- Cooling control
- Performance control
- VSD Sequencing
- VSD Auxiliary Control
- Vibration Monitoring
- Machine Protection (Overspeed, Temperatures limits)
DEIC
Pump control

Load control
Machine Protection (Overspeed, Temperatures limits)

Low flow protection

FILTER CONTROL

Vibration Monitoring

Sequencing

EXISTING PIPELINE / BYPASS

VSD Sequencing

VSD Auxiliary Control

Lubrication and Lube Cooling control