

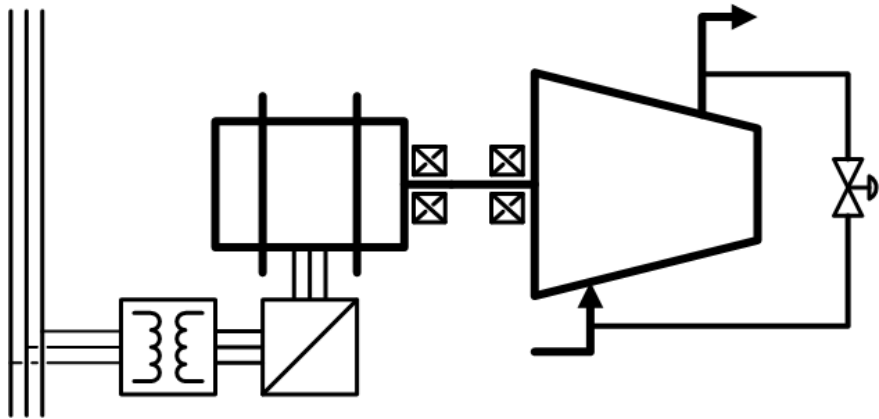


Diego Pareschi – BU PA-IS, A&ES, October 2013

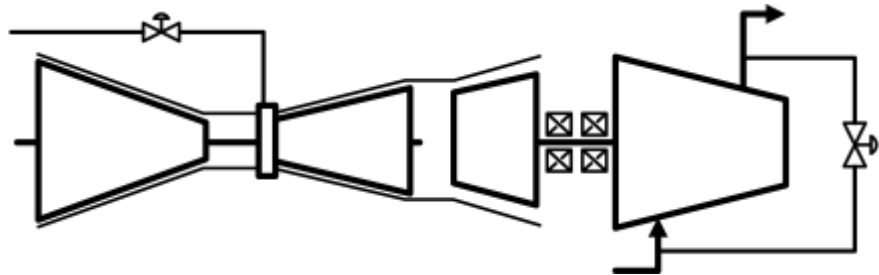
Rotating Machinery Control Solutions

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



Lube Oil &
Other Aux
PLCs

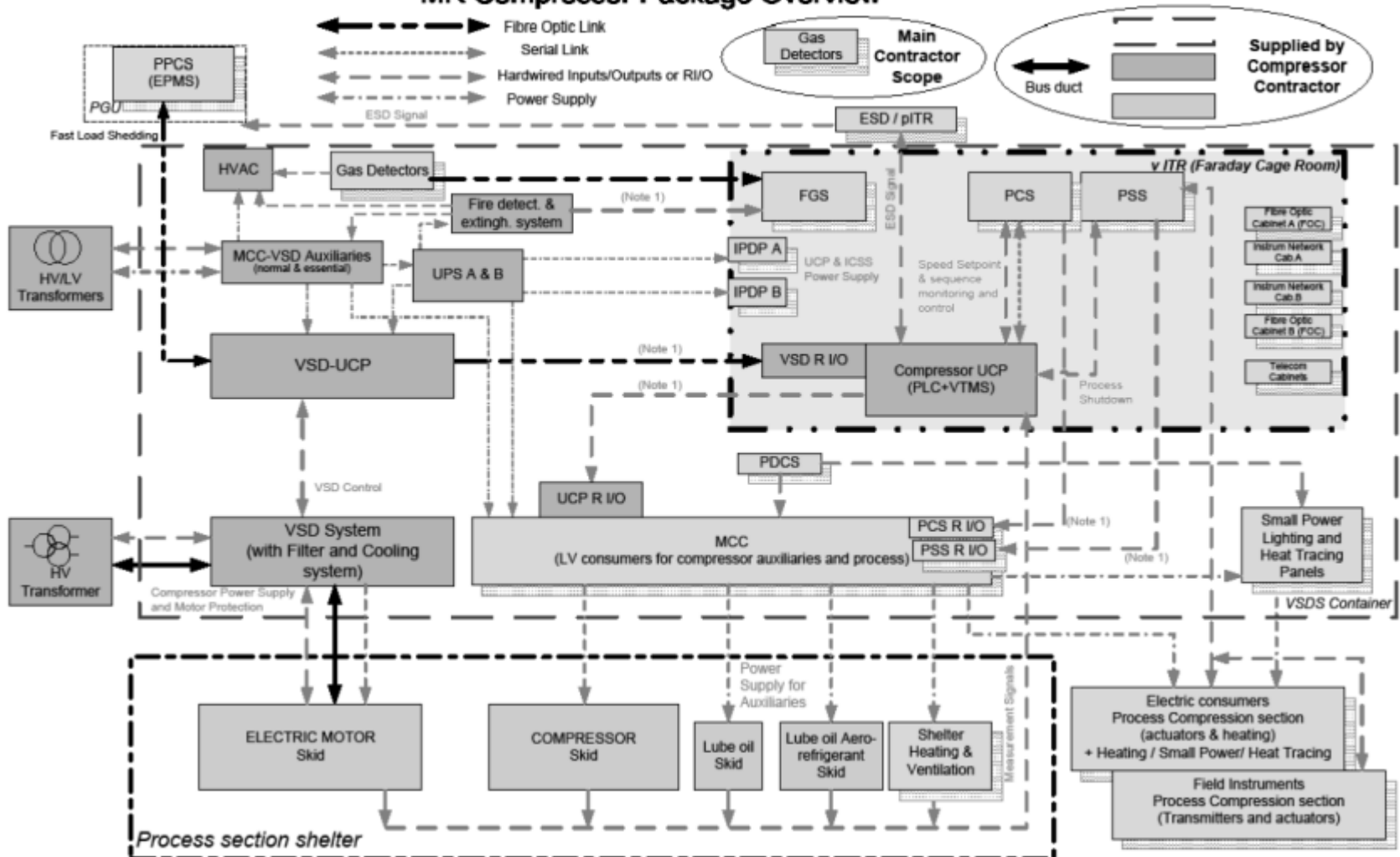
Remote
Connection
Gateway

- 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

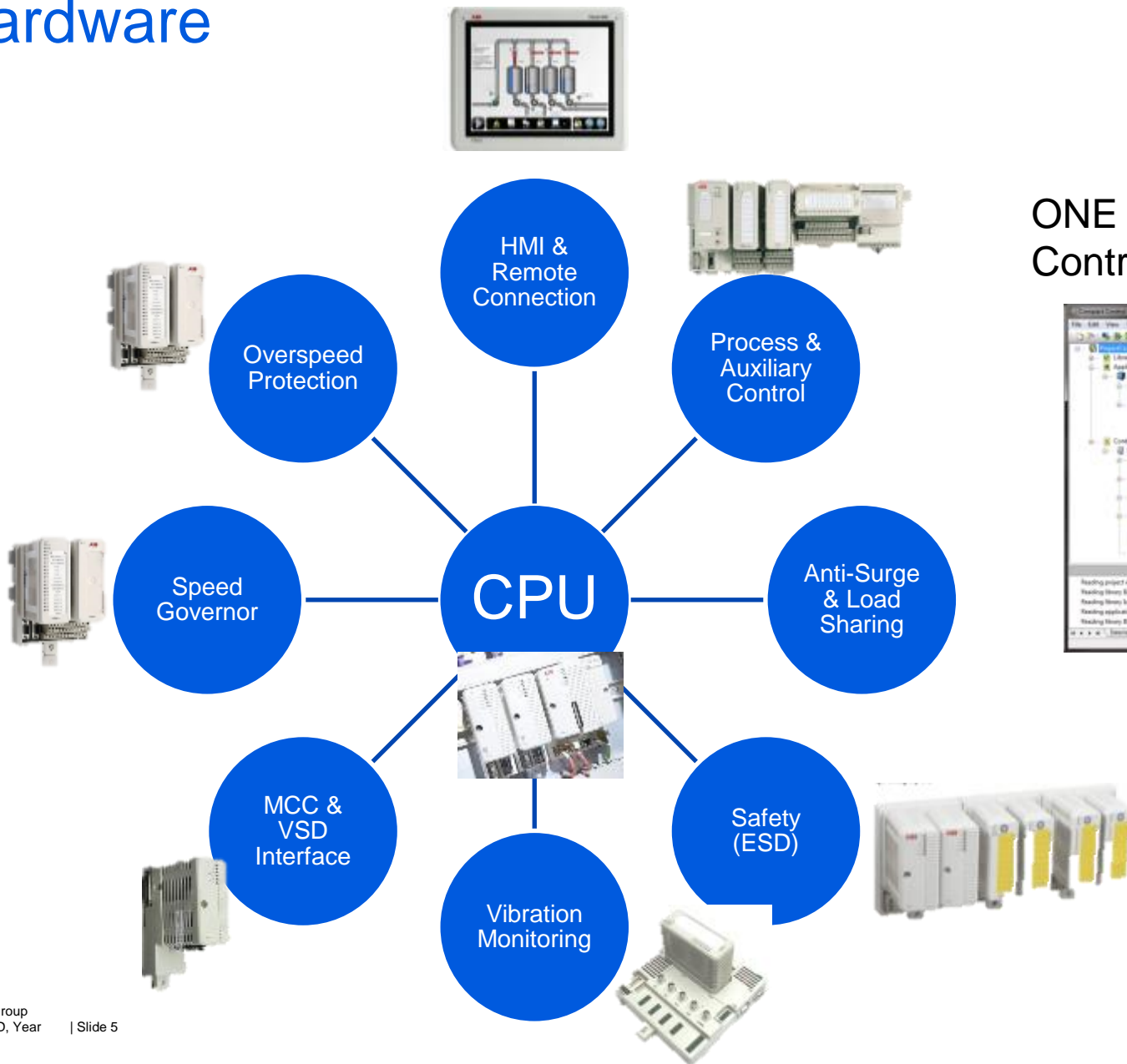
DEIC

Integrated Control System for Rotating Machines

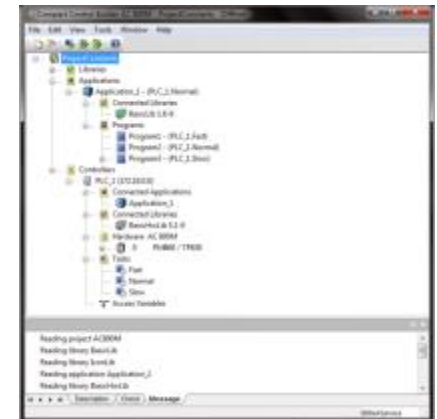
MR Compressor Package Overview



DEIC Hardware



ONE programming tool:
Control Builder



DEIC

Integrated Control System for Rotating Machines



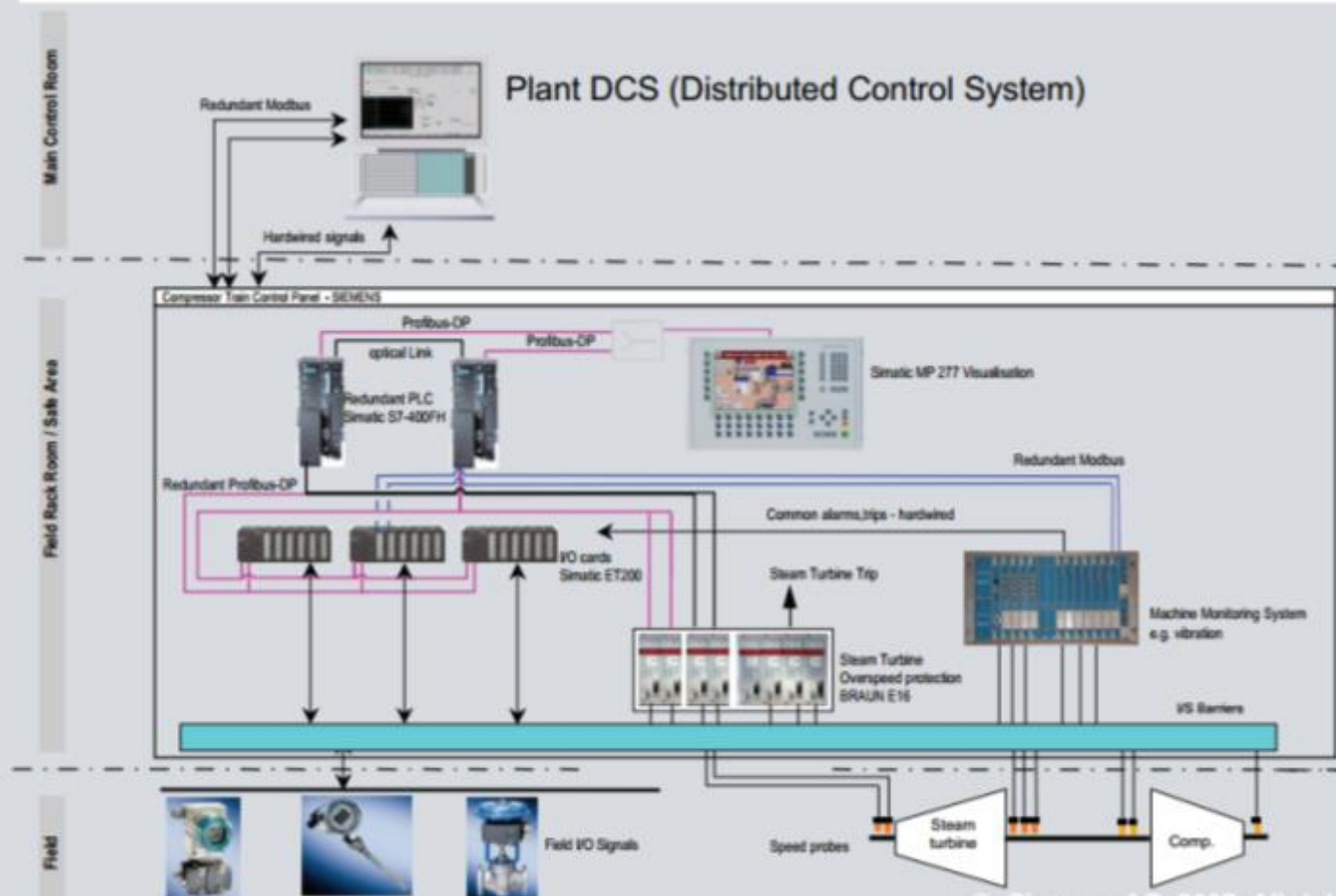
- Technology well know, based on AC800M processor and Control Builder programming software
- Appreciated by OEMs which see a potential reduction in engineering costs for UCP automation and customization

Competitors

HW Architectures – Siemens SCAUT

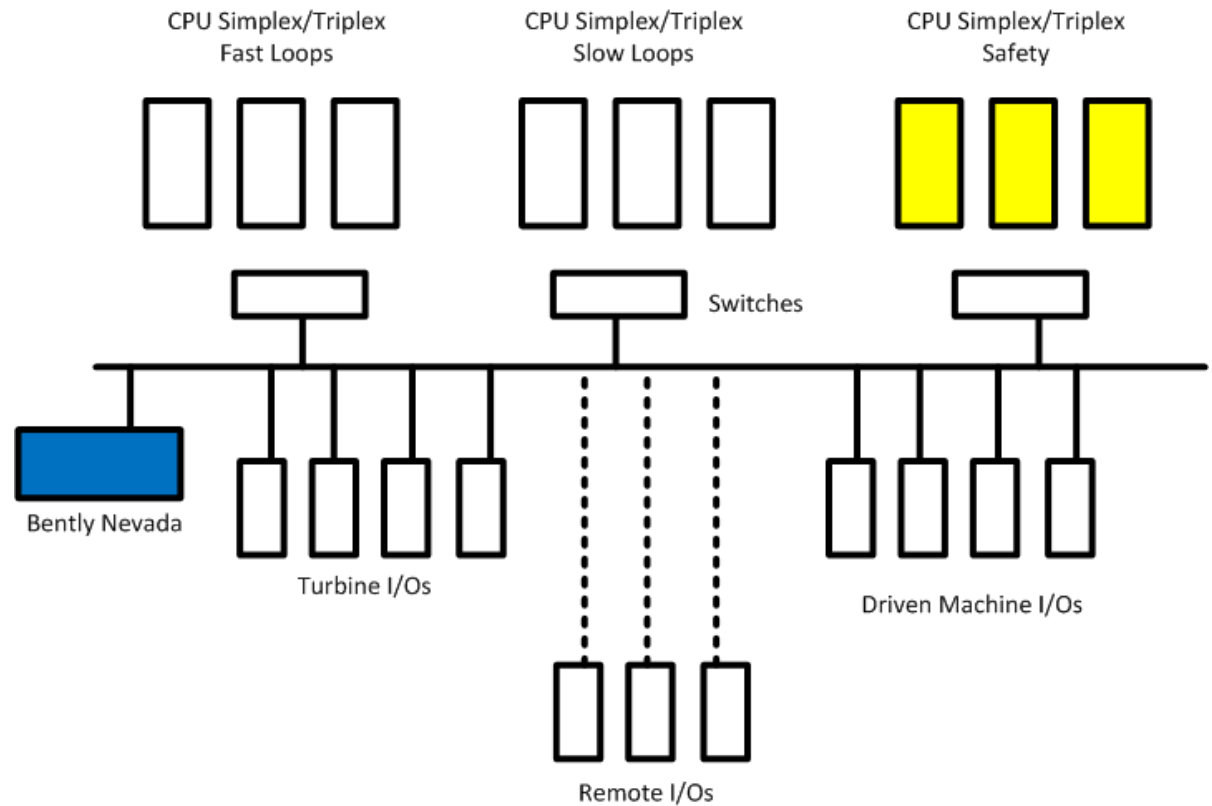
Schematic View Typical for Steam Turbine Driven Trains

SIEMENS



Competitors

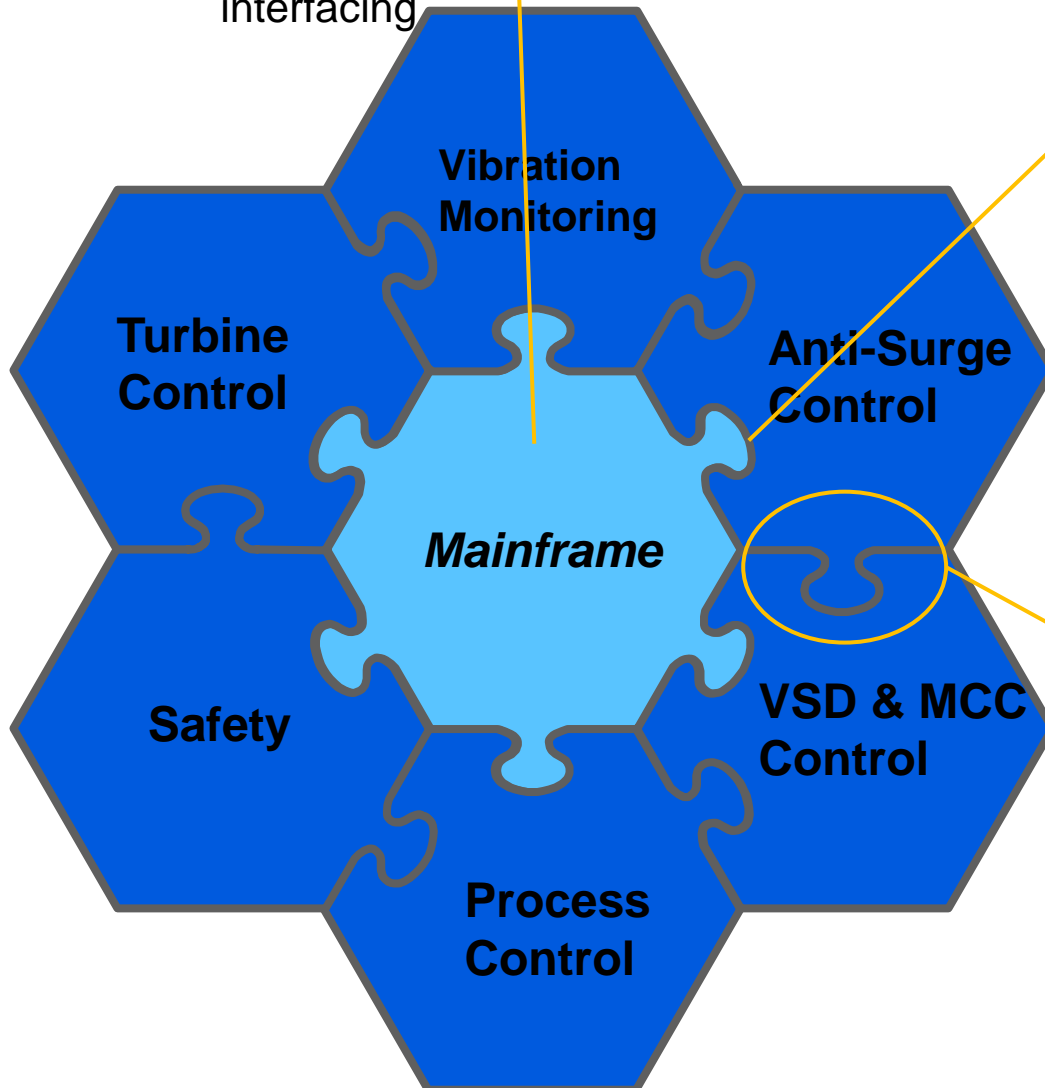
HW Architectures – GE Speedtronic Mk.6e



DEIC Software

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

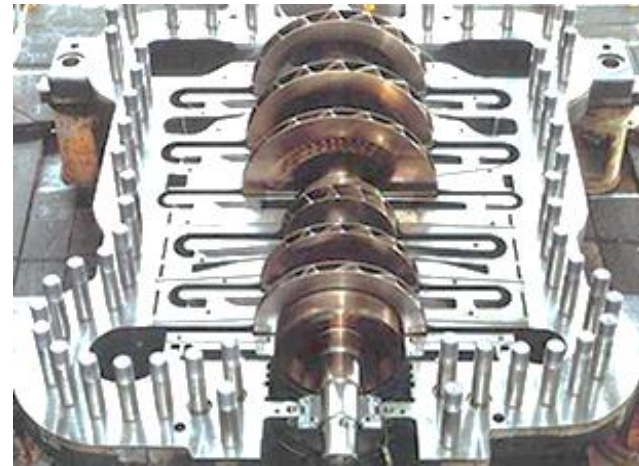
Developed for Variable Frequency Drives

- *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

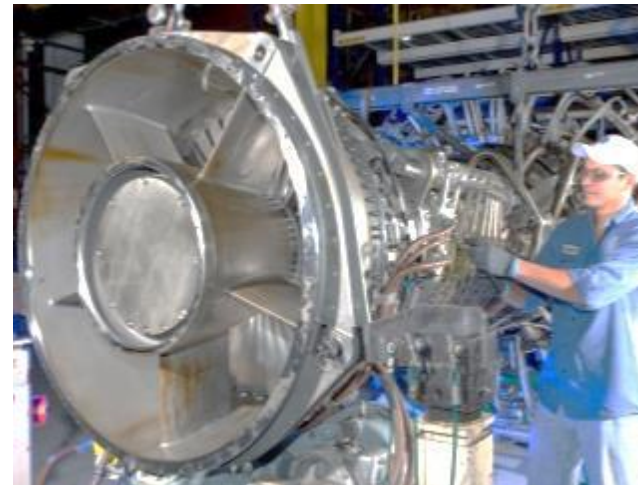
- *Performance/Capacity Control (Speed, Bypass Valve)*
- *Anti-Cavitation/Minimum Flow Control*
- *Load Sharing Control*
- *Sequencing (Pressurization, Stand-by, Normal Stop, Pressurized Stop, Depressurized Stop, ESD)*
- *Process Protections*
- *Station Master Control*



DEIC

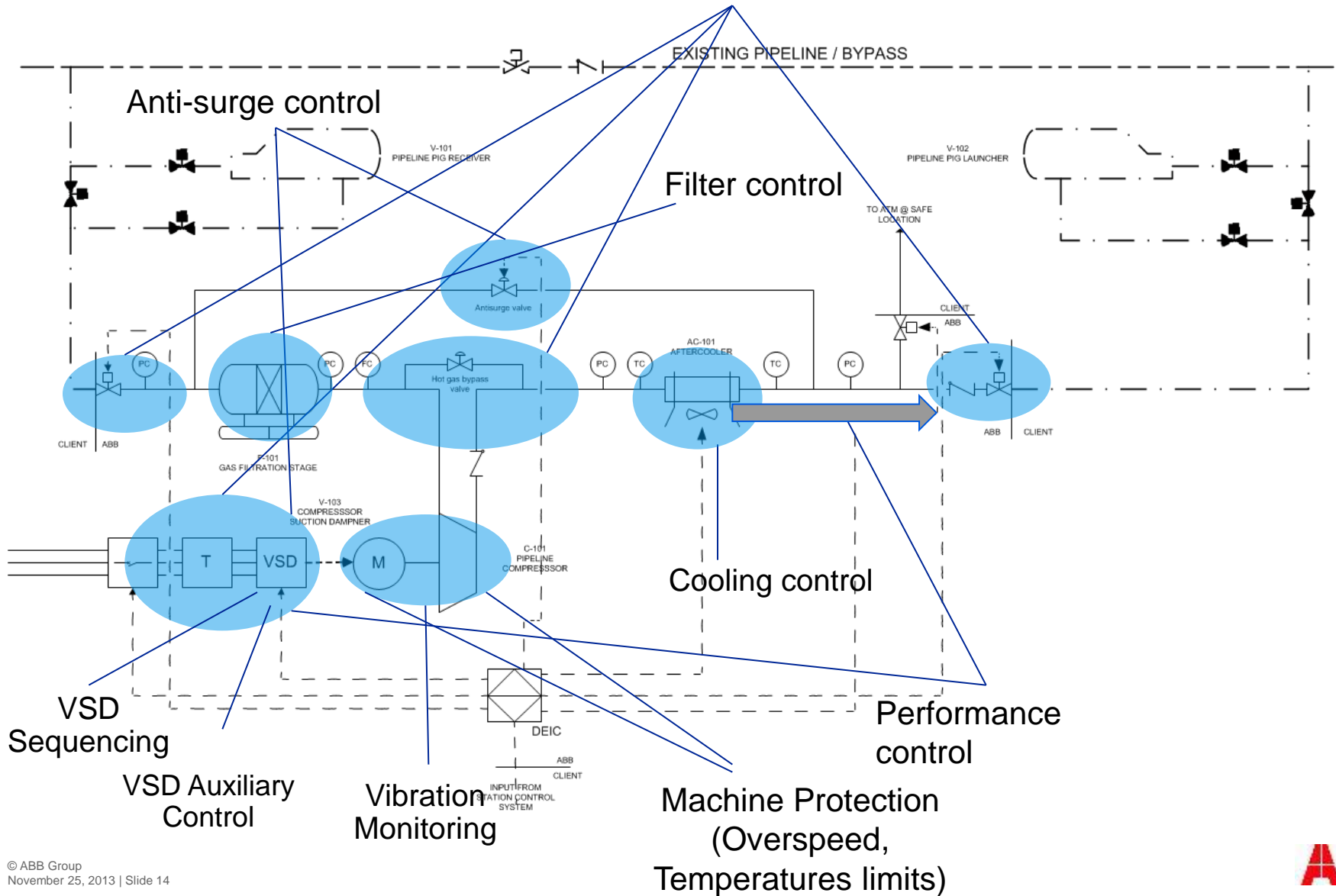
Software – Industrial Turbines (Gas/Steam)

- *Speed Governor*
- *Inlet Pressure Control*
- *Extraction and/or Exhaust Header pressure*
- *Over-speed Protection (2003)*
- *Turbine Load Sharing*
- *Protections/Limiters*

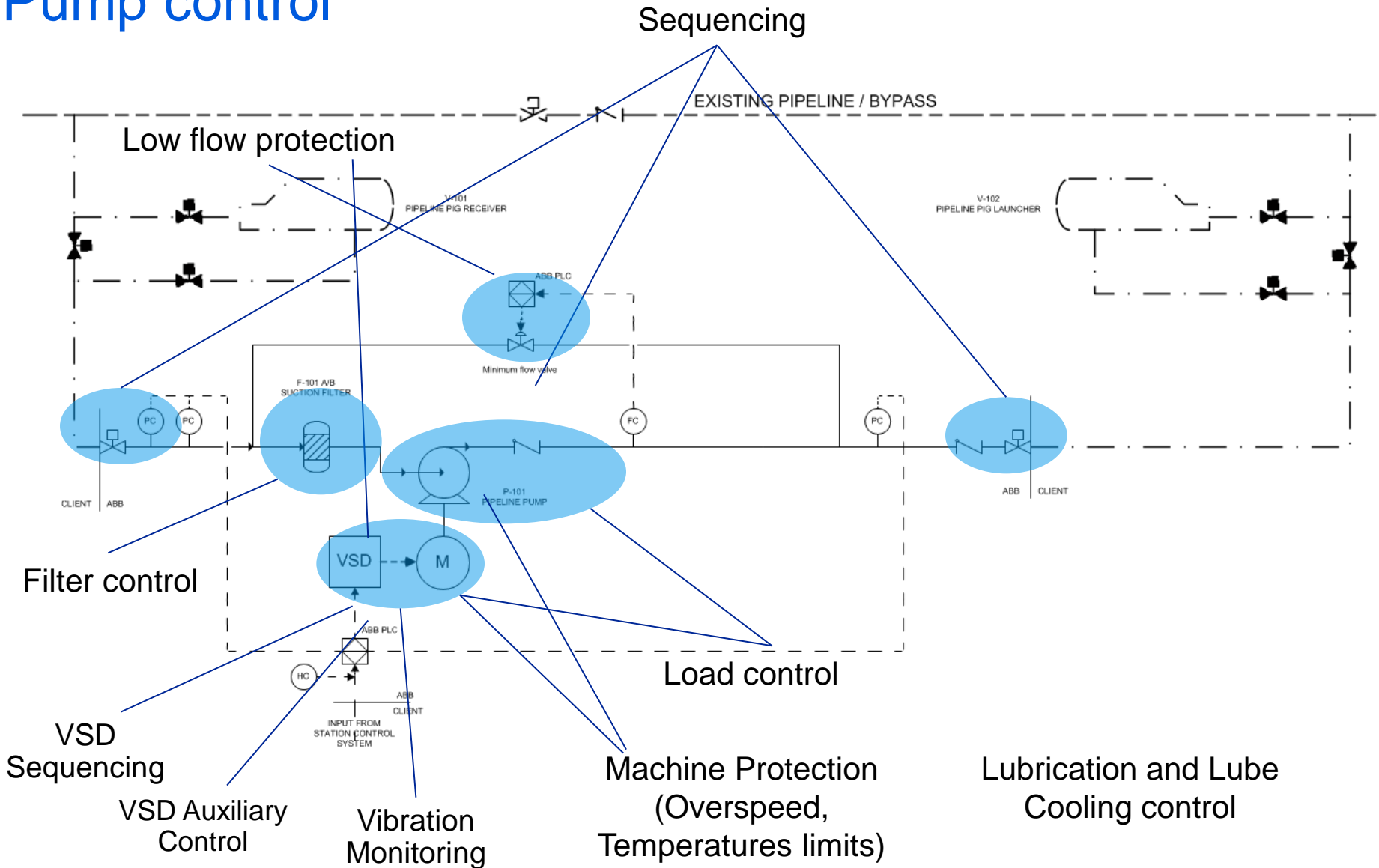


DEIC

VSD-Compressor control Sequencing



DEIC Pump control



Power and productivity
for a better world™

