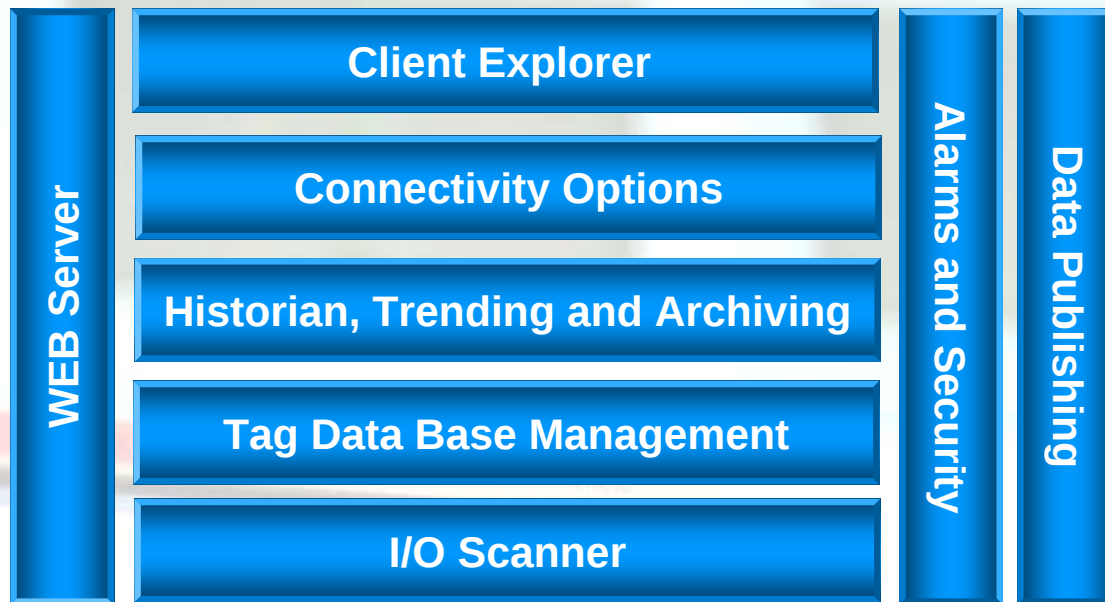


Industrial^{IT} for Power Generation

Power Generation PortalTM Version 4.1



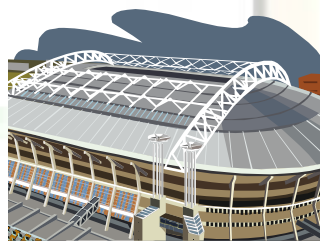
PGP - Functional Overview



Product History



Architecture



End



PGP - Tag Data Base Management

- Online Database Configuration
 - Most Changes can be done on-line
 - Changes are synchronized
 - Changes are immediate
 - Can be done from any client
- Offline Database Configuration
 - Supports Excel, Dbase, XML and Text Files
 - Supports incremental and total changes

The screenshot shows a software window titled "14_F_FeedPmpARaw" with a blue title bar and a close button. The window contains a tabbed interface with the following tabs: Output, Network, PV General, Alarm Levels, Alarm Options, Conversions, General (selected), Process, Alarm Process, Alarm Comments, Application, and Totalizers. The "General" tab is active, displaying a form with the following fields:

General	
Index	10
Name	14_F_FeedPmpARaw
Description	FW-COPacity Pump A (crude)
Extended Description	FW - capacity pump Feeding A (grezza)
Plant Tag Name	
Uid	2DEB8D5F-975D-4D8E-B632-326BBCC0B662

Below the General section, there are three more sections:

Type	
Type	CALCANG
Source	CALC

Security	
Security Group	0
Security Level	0
Plant Unit	No Plant Unit

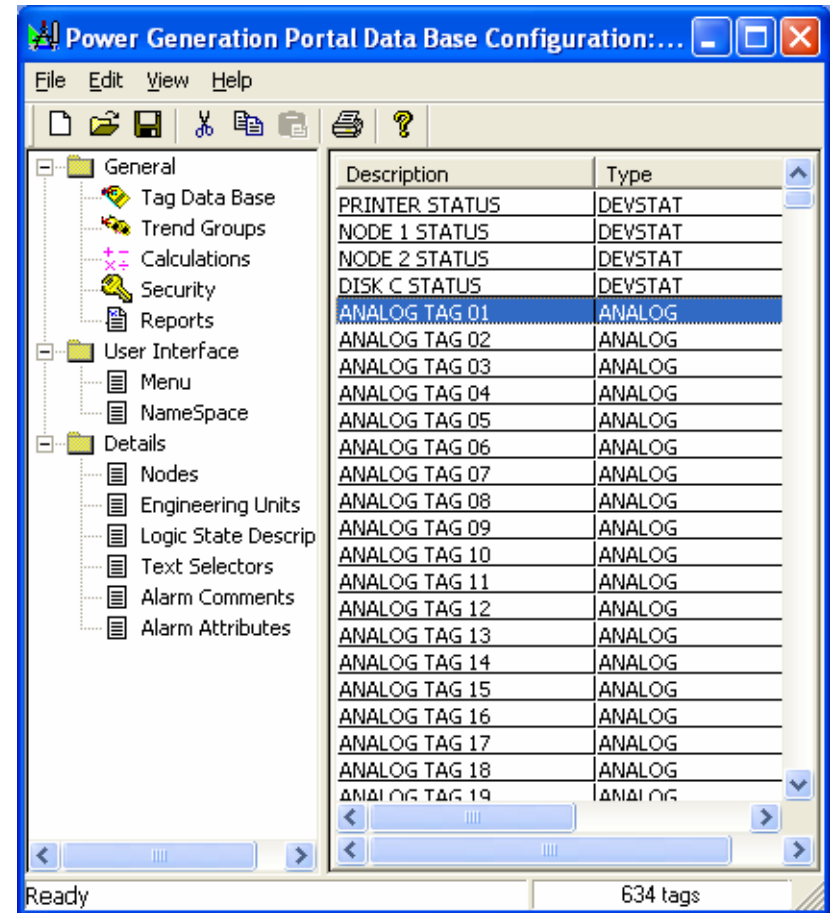
Presentation	
Primary Display	
Object Path	

At the bottom right of the window, there are two buttons: "OK" and "Cancel".

PGP - Tag Data Base Management

■ Tag Types

- Up to 512,000 tags configurable per server
 - 256,000 Boolean
 - 256,000 Non Boolean
- Tag Types Include:
 - Analog
 - Digital
 - Calculated
 - User Configurable
 - Bit Arrays
 - Text
 - LAB (manual entry)



PGP - Tag Data Base Management

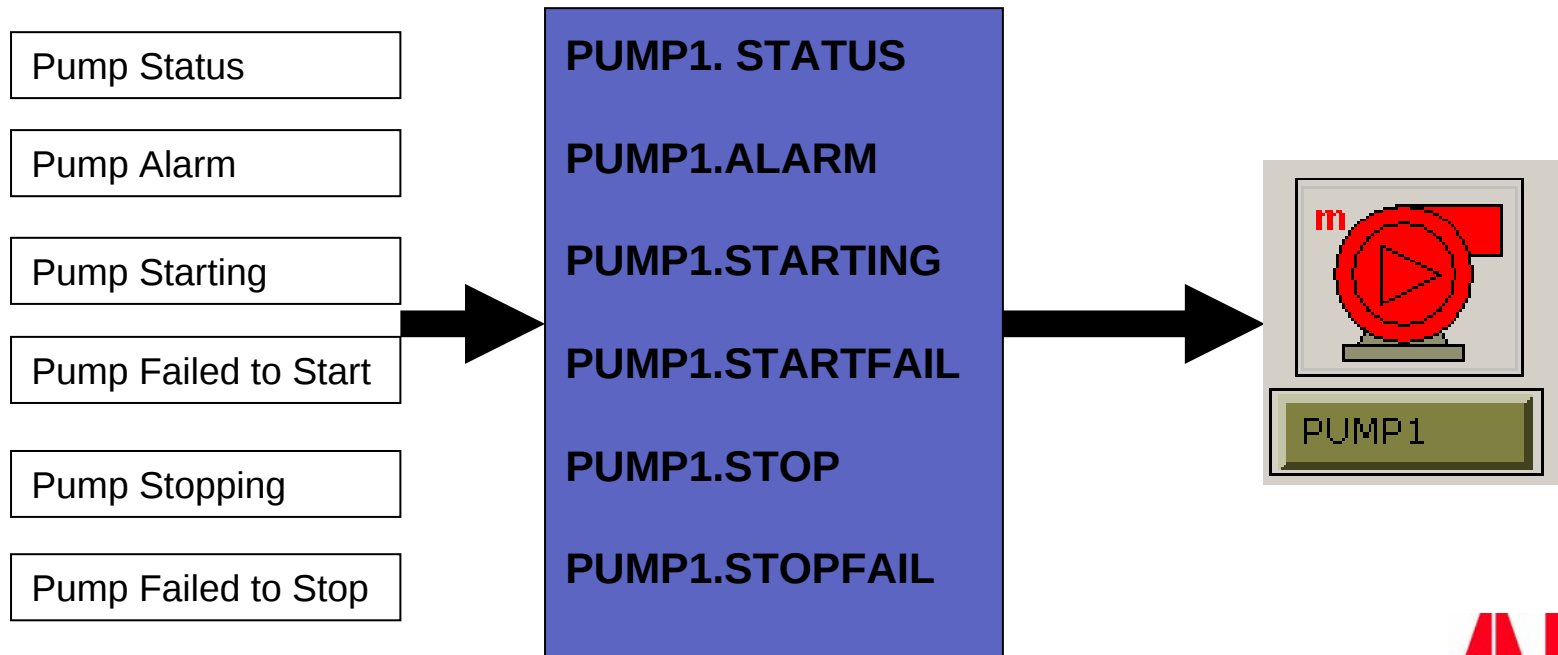
■ User Configurable Tags

- Multiple I/O connection are Combined to 1 Tag
- Link between Logic Macros, Database and Display Symbols

Pump 1 I/O Signals

Tagname: PUMP1

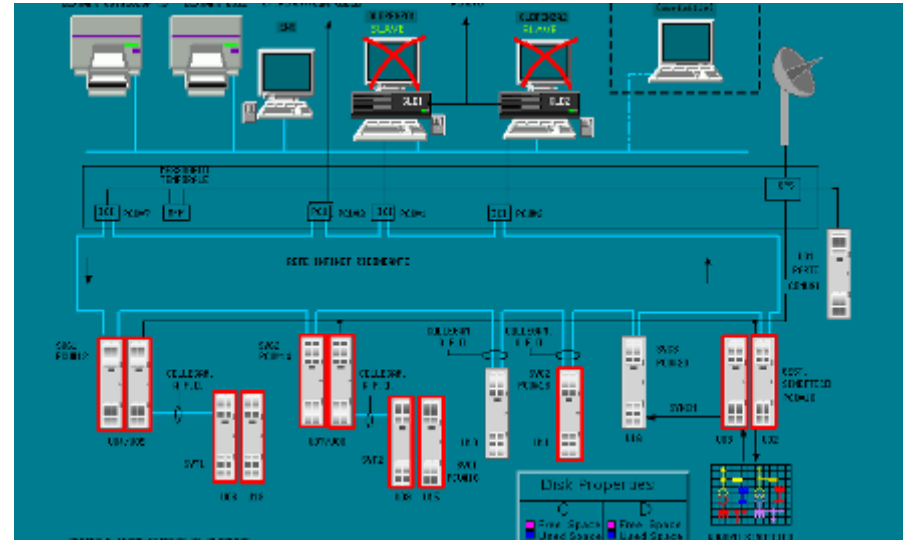
Display Symbol



PGP - Tag Data Base Management

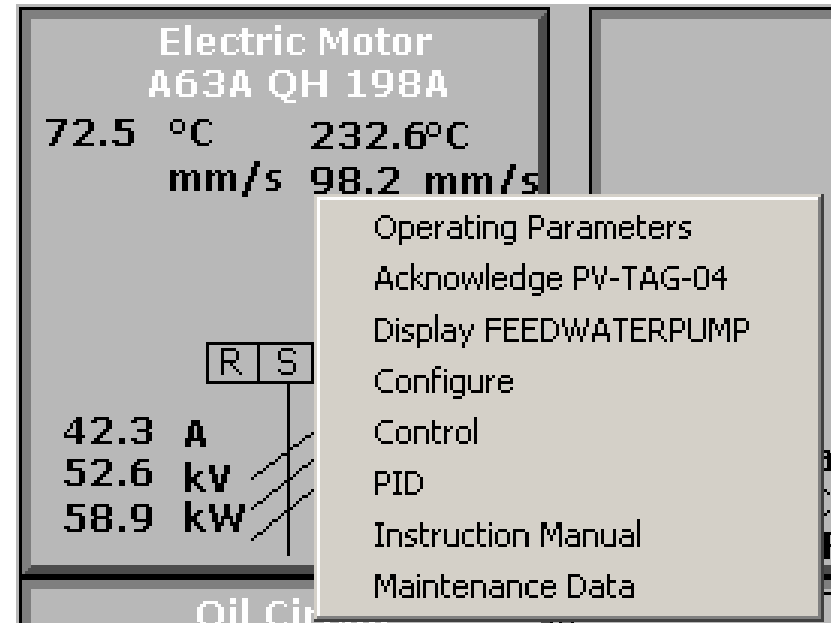
■ Special Tags

- Monitor all network nodes (including switches)
- Monitor Printers
- Monitor any Window's Parameter
- Monitor remote PC's hard drive space



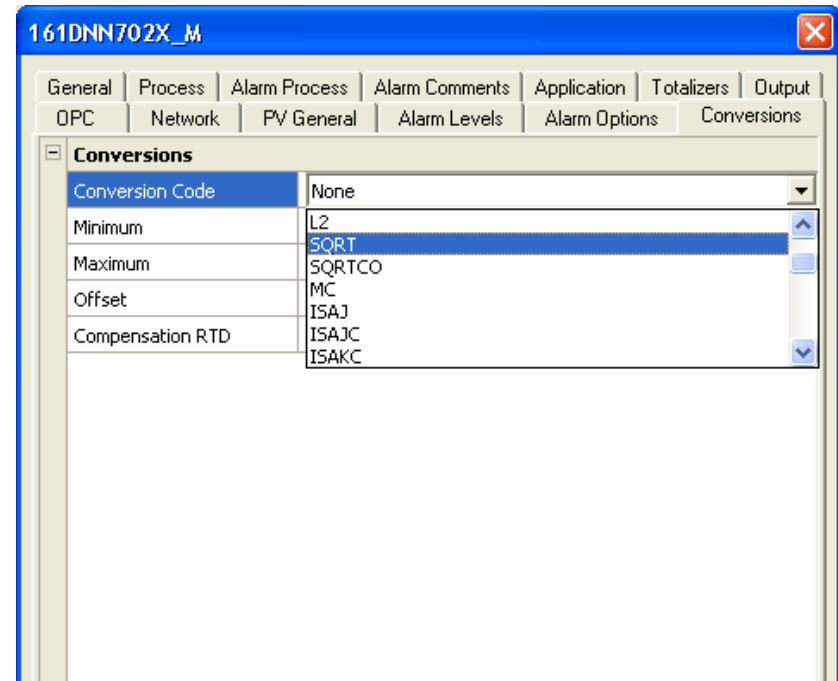
PGP - Tag Data Base Management

- Aspect Links (Right Click)
 - Tags can have links to other Applications
 - Links are customizable per tags
 - Links could include:
 - P&ID drawings
 - Instruction Manuals
 - Maintenance Packages
 - Operator Notes



PGP - Tag Data Base Management

- Input Conversions
 - Scaling and Biasing of inputs is supported
 - Special and custom conversions are available
 - Square Root
 - RTD



BACK



PGP - I/O Scanner

- Common Infrastructure
- Available Plug-in Drivers
 - Harmony/INFI (semAPI, included)
 - Harmony/DCI (OPC)
 - Freelance 800F (OPC)
 - 800xA AC800M (OPC)
 - AC870P (OPC)
 - Procontrol P13 (OPC) – *January 2008*
 - OPC and ODBC Client
 - Modbus, Modbus TCP
 - SPABUS
 - IEC 870-5-101/103/104
 - DNP 3.0
 - Text
 - Siemens Teleperm (XU device)
 - General Electric GSM (Mark V/VI) (GE Standard Messages, GSM)
- Quick implementation of new drivers

CHATILLONAA - ScanMonitor

File View Configuration Driver Tools Help

IEC 101 IEC 104 MOD BUS SPA DRV OPC MR DRV DRV DRV

Driver name	Thread ID	Tags	Life cycle	Status
GRN	0x618	0	0	Driver i
STCE_001_ARTAN...	0x1424	58	17156	Driver i
STCE_002_AYSE	0x162C	0	0	Driver i
STCE_003_AYMAV...	0x1578	159	17155	Driver i
STCE_004_BARD	0x160C	128	17157	Driver i
STCE_005_BARD...	0x15E4	88	17155	Driver i
STCE_006_BEUR...	0x1688	101	17155	Driver i
STCE_007_BIELCI...	0x1664	64	13017	Driver i
STCE_008_BRU55ON	0x1674	152	17157	Driver i
STCE_009_BUTHIER	0x1688	82	17158	Driver i
STCE_010_BY	0x1604	39	17156	Driver i
STCE_011_CHAMP...	0x11C8	229	17156	Driver i
STCE_012_CHAMP...	0x1624	0	0	Driver i
STCE_013_CHATIL...	0xFC4	221	17157	Driver i
STCE_014_CHAVO...	0x1184	360	17125	Driver i
STCE_015_CIGNANA	0x16A4	81	17154	Driver i
STCE_016_COVALOU	0x14FC	406	17158	Driver i
STCE_017_COVAL...	0x1634	22	17158	Driver i
STCE_018_DIGHET...	0x1694	106	17156	Driver i
STCE_019_FENILLE	0x163C	77	17157	Driver i
STCE_020_GABIEI	0xAB8	0	0	Driver i
STCE_021_GIGNOD	0x10D4	24	17156	Driver i
STCE_022_GOILLET	0x1090	92	17155	Driver i
STCE_023_GRAND...	0xA70	63	17155	Driver i

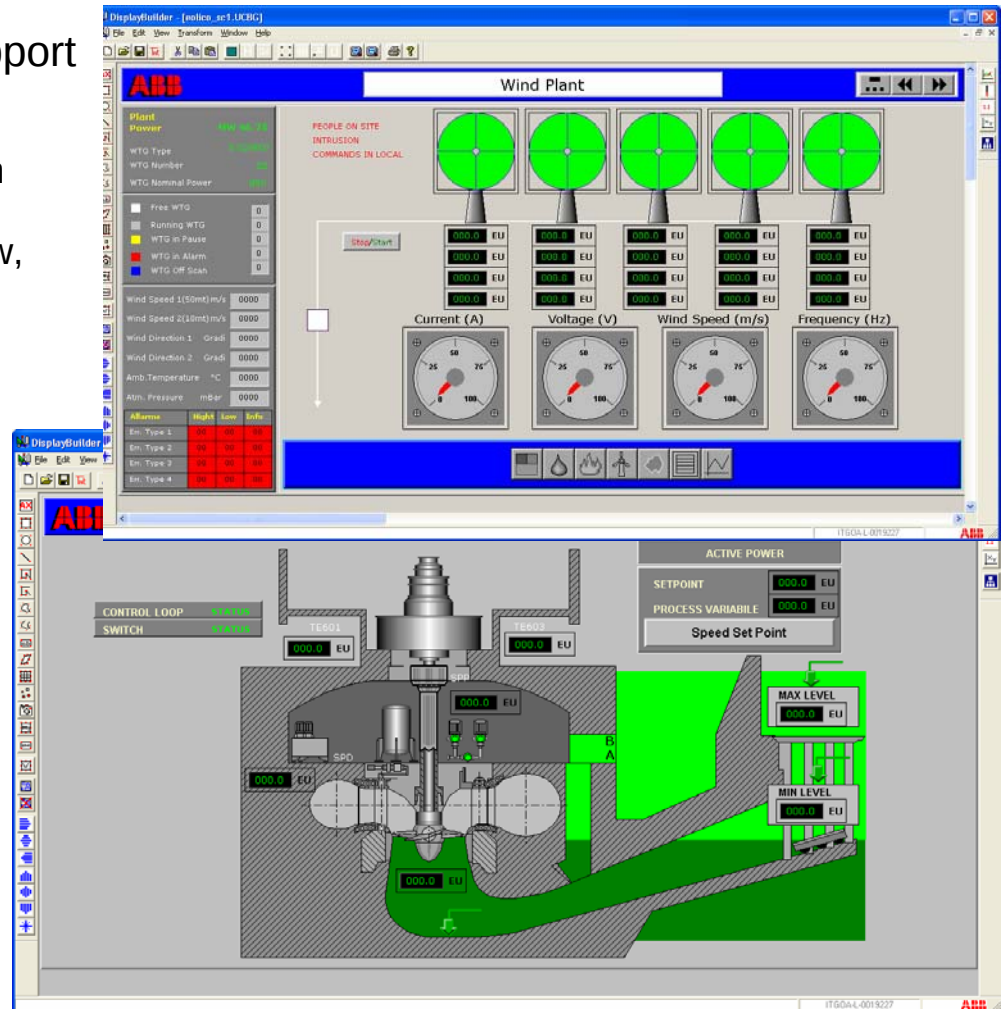
Connected to the scanner shared area.

BACK



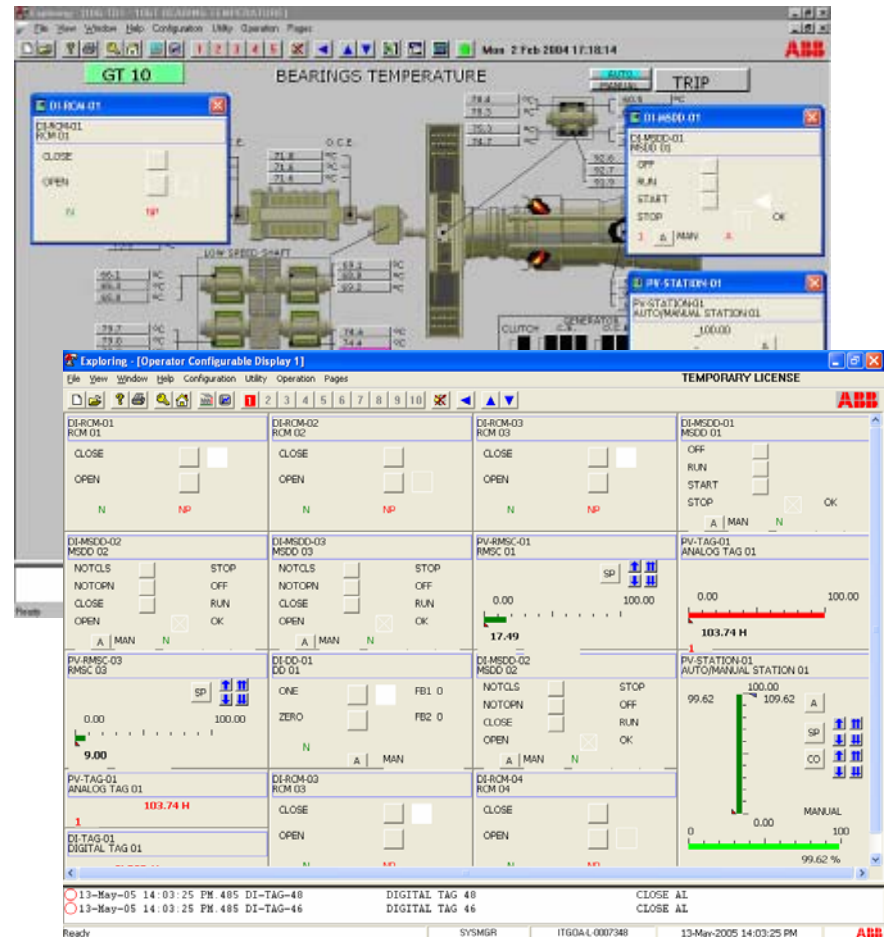
PGP - Client Explorer

- Unicode-based Multilanguage Support
 - English by default
 - Other languages available through local ABB organizations (Italian, French, Spanish, Chinese, Hebrew, Russian)
- Up to 10,000 Pages supported
- Graphical pages can include:
 - Pictures (GIF or JPEG)
 - Basic graphical objects
 - Complex objects from libraries
- Object behavior and appearance linked to plant variables
- Client Explorer
 - Up to 16 Independent Windows
 - Explorer Panel Supports Display Hierarchy
- Client access to multiple servers



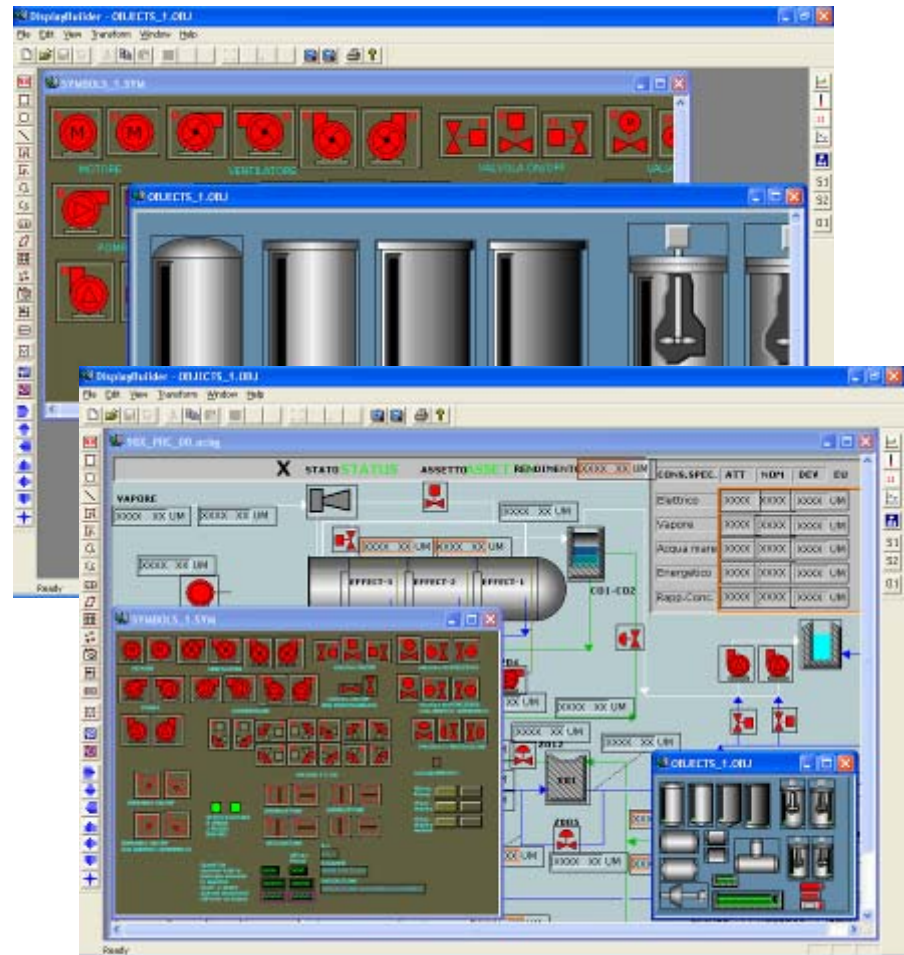
PGP - Client Explorer

- Pop-up Controls
 - Pop-up Faceplates to Control Process from Graphic Pages
 - Multiple Pop-up Faceplates on the Same Graphic Page for Simultaneous Control of Multiple Field Elements
 - Pop-up Pegboards



PGP - Client Explorer

- Display Builder
 - State of the art display builder
 - Templates
 - Symbol Libraries
 - ActiveX
 - Pictures (GIF and JPEG)
 - Drag and Drop support
 - Support link of object classes with instances



BACK



PGP - Data Publishing

- OPC Server
 - DA, AE, HDA
- ODBC
 - Support mirroring
- OLE-DB
 - PGP available as OLE-DB provider
- HTTP
 - Integrated Web Server for pure thin client technology
- API
 - For application development
 - Available for Visual Basic and Visual C++, also as a COM object



BACK



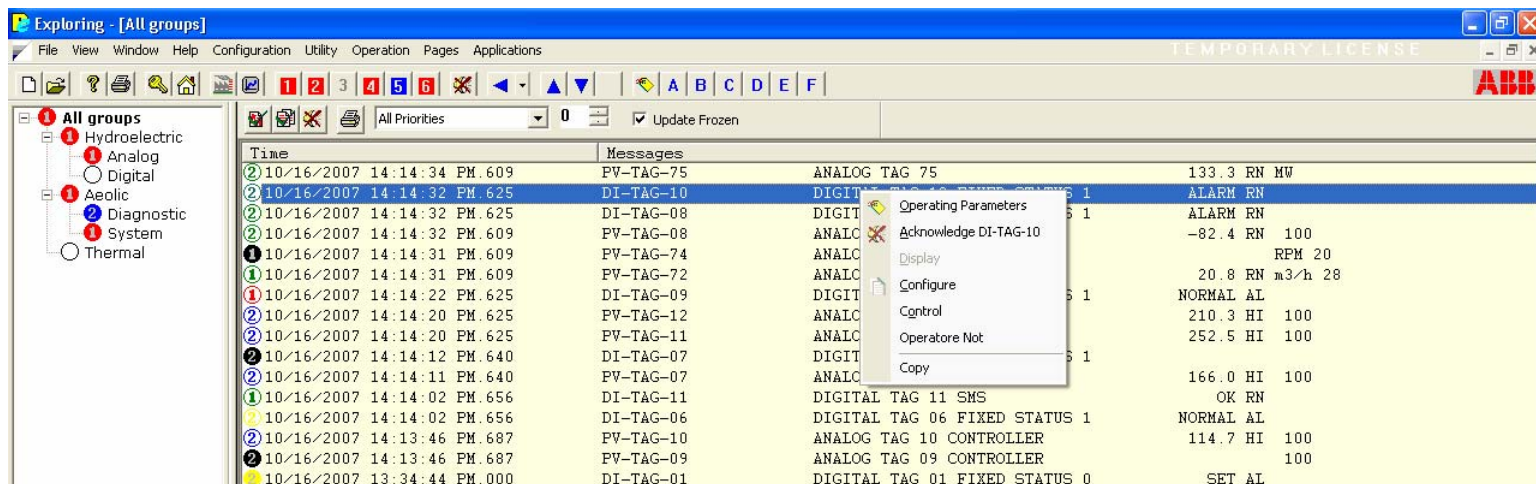
PGP - System Management – Alarms

■ General Alarming

- 8 Alarm Priorities
- 16 Alarm Groups
 - 16 Sub-Groups
 - 256 total Groups

■ Alarm Buttons

- Alarms at the Bottom of Screen
- Supports Remote Alarming
 - OPC AE Server & Client



Time	Messages				
10/16/2007 14:14:34 PM.609	FV-TAG-75	ANALOG TAG 75	133.3 RN MW		
10/16/2007 14:14:32 PM.625	DI-TAG-10	DIGIT TAG 10	ALARM RN		
10/16/2007 14:14:32 PM.625	DI-TAG-08	DIGIT TAG 08	ALARM RN		
10/16/2007 14:14:32 PM.609	FV-TAG-08	ANALC TAG 08	-82.4 RN 100		
10/16/2007 14:14:31 PM.609	FV-TAG-74	ANALC TAG 74	RPM 20		
10/16/2007 14:14:31 PM.609	FV-TAG-72	ANALC TAG 72	20.8 RN m3/h 28		
10/16/2007 14:14:22 PM.625	DI-TAG-09	DIGIT TAG 09	NORMAL AL		
10/16/2007 14:14:20 PM.625	FV-TAG-12	ANALC TAG 12	210.3 HI 100		
10/16/2007 14:14:20 PM.625	FV-TAG-11	ANALC TAG 11	252.5 HI 100		
10/16/2007 14:14:12 PM.640	DI-TAG-07	DIGIT TAG 07			
10/16/2007 14:14:11 PM.640	FV-TAG-07	ANALC TAG 07	166.0 HI 100		
10/16/2007 14:14:02 PM.656	DI-TAG-11	DIGIT TAG 11 SMS	OK RN		
10/16/2007 14:14:02 PM.656	DI-TAG-06	DIGIT TAG 06 FIXED STATUS 1	NORMAL AL		
10/16/2007 14:13:46 PM.687	FV-TAG-10	ANALOG TAG 10 CONTROLLER	114.7 HI 100		
10/16/2007 14:13:46 PM.687	FV-TAG-09	ANALOG TAG 09 CONTROLLER	100		
10/16/2007 13:34:44 PM.000	DI-TAG-01	DIGITAL TAG 01 FIXED STATUS 0	SET AL		



PGP - System Management – Alarms

- Tag Alarm Options
 - 8 Levels of Alarms
 - Rate of Change Alarms
 - Variable Alarm Limits
 - Alarm Inhibit Tags
 - Alarm Comments
 - Variable Alarm Sounds
 - Select Printer
 - Print State Changes
 - Alarm Deadbands
 - Broadcast Alarm Acknowledge
 - Trigger programs

The image displays two screenshots of the PGP System Management software interface, specifically the 'Alarm Options' configuration windows for two different tags.

DI-TAG-10 Alarm Options:

- General:** Alarm Group: Diagnostic
- Alarm Priority:** Hydroelectric
- Categorize by Priority:** Analog, Digital, Aeolic, Diagnostic (selected), System, Thermal
- Display Alarms:** [checked]
- Print Alarms:** [checked]
- Archive Alarms:** [checked]
- Activate Audible Alarm:** [checked]
- Alarms at Bottom o...:** [checked]

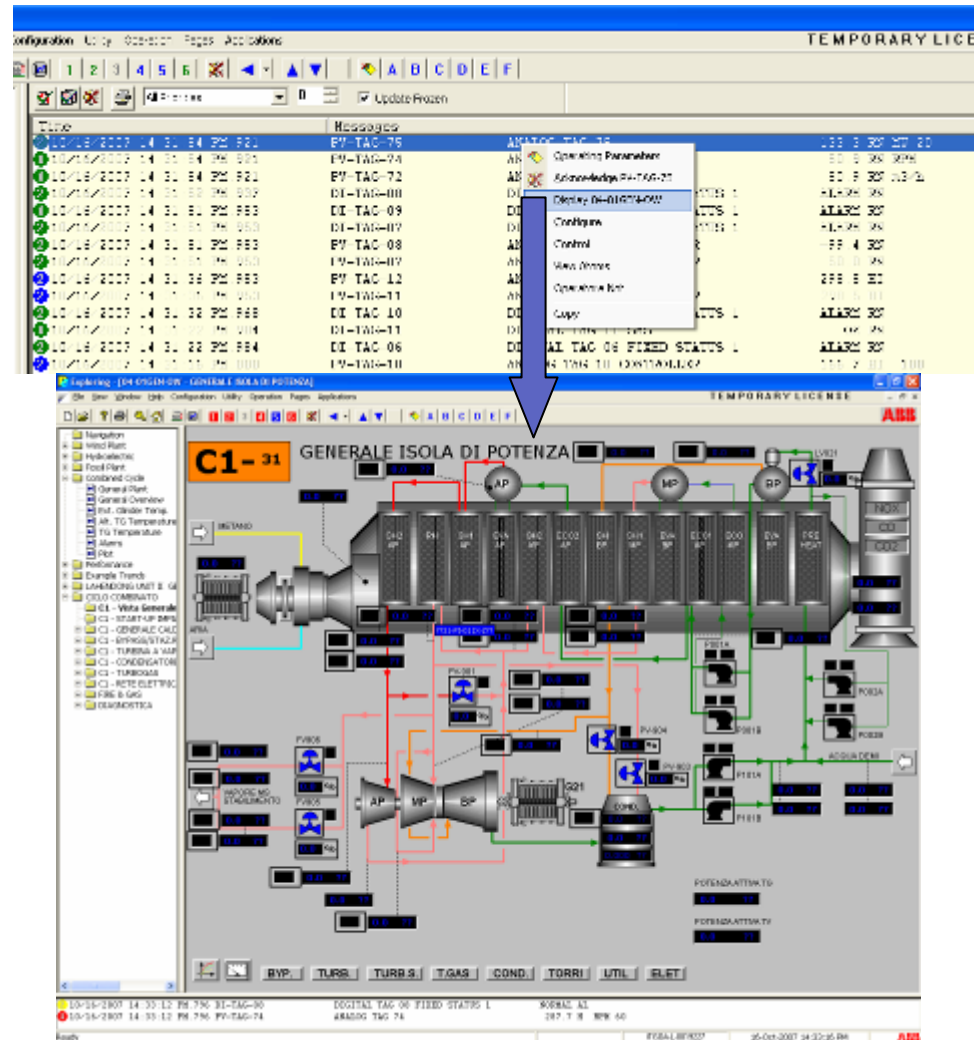
PV-TAG-74 Alarm Options:

- High Instrument Limit:**
 - Value: 100.000000
 - Priority: 0
 - Active: [unchecked]
 - Act. Program: [unchecked]
- 3-High Alarm Limit:**
 - Value: 80.000000
 - Priority: 0
 - Active: [unchecked]
- 2-High Alarm Limit:**
 - Value: 70.000000
 - Priority: 0
 - Active: [unchecked]



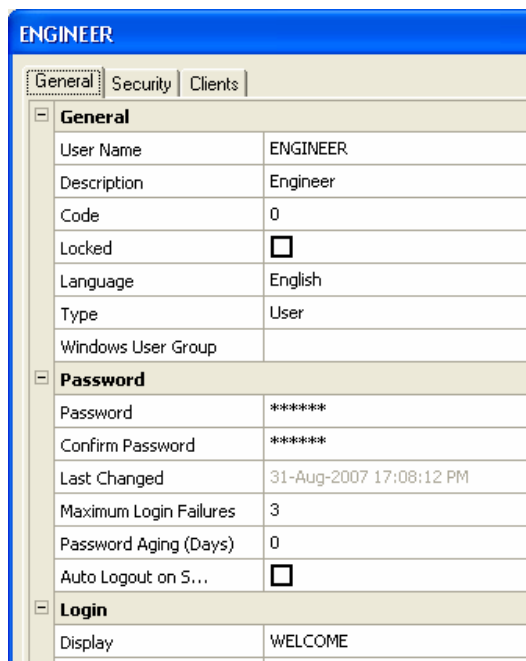
PGP - System Management – Alarms

- Alarm Filtering
 - On Groups and Priorities
 - On Wild Cards
 - Historical Searches
 - Archive Searches
 - Save to Excel
- Alarms and Displays
 - Jump from an Alarm Summary to a Display
 - Show Detailed Alarm Status on a Display
 - Acknowledge Alarms from a Display



PGP - System Management – Security

- Security principles
 - Identification of users through user ID and password (may use Windows users)
 - Use of Windows can be inhibited
- Each user has a security profile, which defines:
 - Functional privileges (what the user can do)
 - Area privileges (where can he/she do it), based on Plant Units and Workplaces
 - User preferences (Menus and Toolbars, Home Page, Language)



ENGINEER

General Security Clients

General

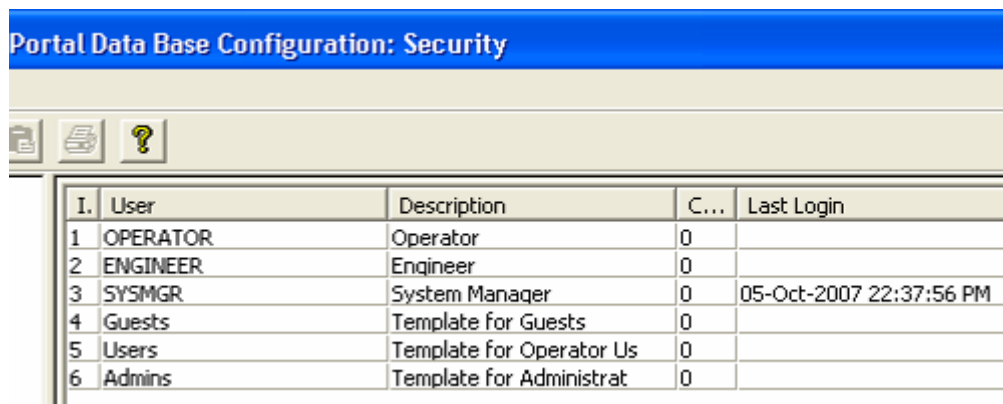
User Name: ENGINEER
Description: Engineer
Code: 0
Locked: ☐
Language: English
Type: User
Windows User Group:

Password

Password: *****
Confirm Password: *****
Last Changed: 31-Aug-2007 17:08:12 PM
Maximum Login Failures: 3
Password Aging (Days): 0
Auto Logout on S...: ☐

Login

Display: WELCOME

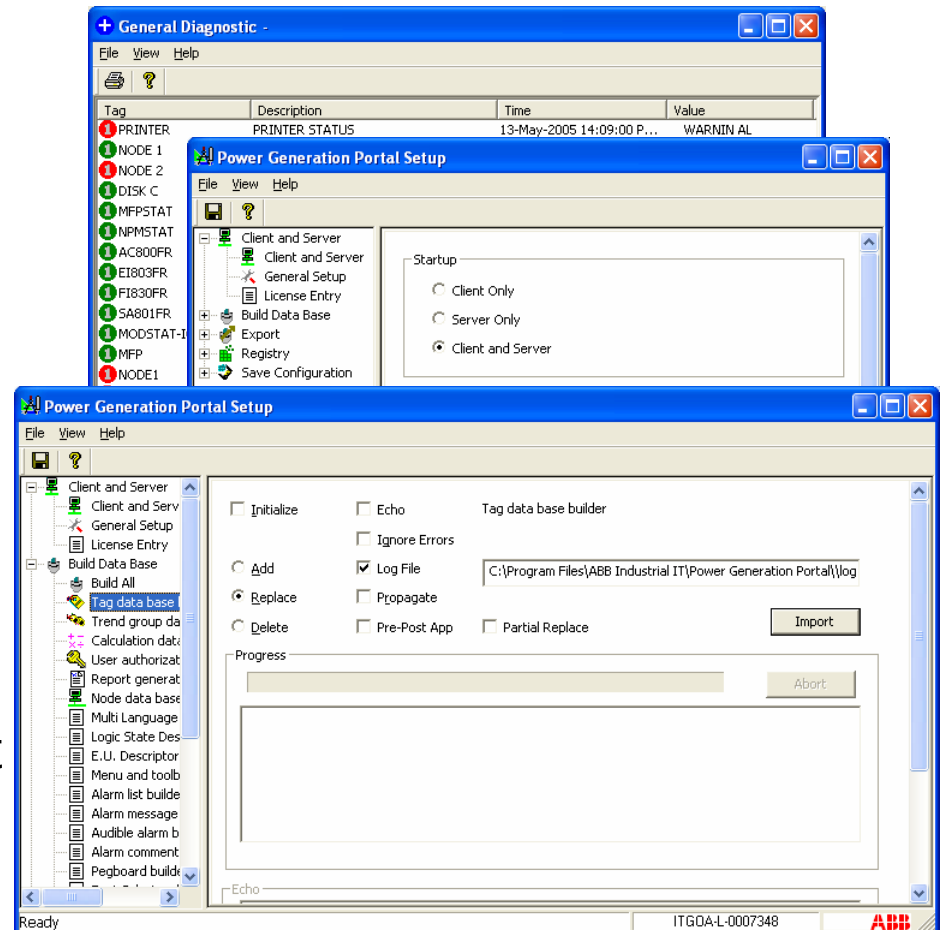


Portal Data Base Configuration: Security

I.	User	Description	C...	Last Login
1	OPERATOR	Operator	0	
2	ENGINEER	Engineer	0	
3	SYSMGR	System Manager	0	05-Oct-2007 22:37:56 PM
4	Guests	Template for Guests	0	
5	Users	Template for Operator Us	0	
6	Admins	Template for Administrat	0	

PGP - System Management

- Diagnostics and System Management
 - Fast overview by usage of symbols
 - Easy navigation through a tree structure
 - Output of the analysis in a log file
 - User-friendly system and configuration management



BACK



PGP - Connectivity Options

- HMI add-ons extend the Power Generation Portal platform with all the tools for effective plant control
- Each add-on includes:
 - Support for DCS-specific tags and function blocks
 - Support for import of DCS configuration
 - Pop-up faceplates for common function blocks
 - System Management and Diagnostics
- Available add-ons:
 - Symphony/Harmony, INFI90, Network90
 - Control^{IT} AC800F, Freelance 2000, Freelance 800F
 - Control^{IT} AC800M
 - Control^{IT} AC870P
 - Procontrol P13 – January 2008



BACK



PGP for Harmony

■ Supported Function Blocks

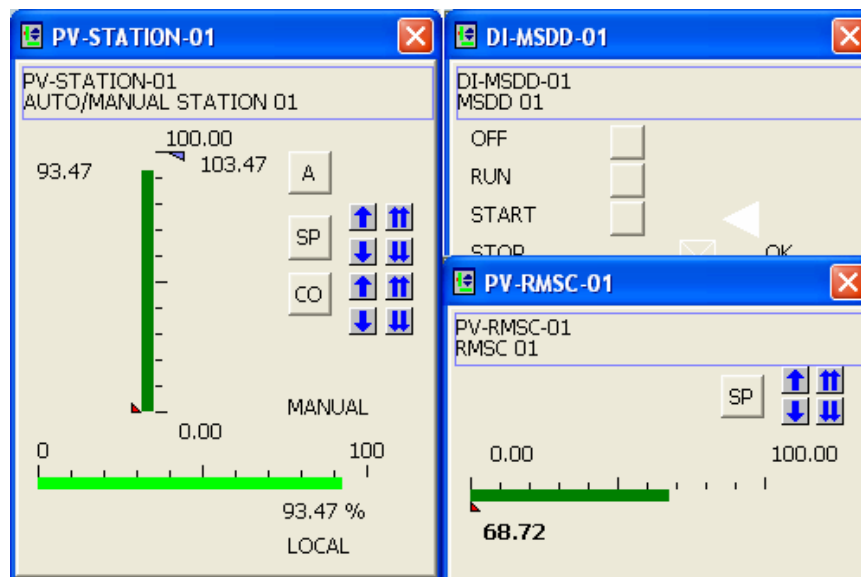
- | | | |
|-----------|-----------|-------------|
| ■ ANALOG | ■ MSDD | ■ ANGRPT |
| ■ CLIF | ■ N90STA | ■ DIGRPT |
| ■ DAANALG | ■ RCM | ■ LABANG |
| ■ DADIG | ■ RMCB | ■ LABDIG |
| ■ DADIGTL | ■ RMSC | ■ CALCANG |
| ■ DAANG | ■ STATION | ■ CALCDIG |
| ■ DD | ■ TEXT | ■ APMSTA |
| ■ DEVSTAT | ■ TEXTSTR | ■ NODESTA |
| ■ DIGITAL | ■ UNDEF | ■ BITMASK |
| ■ INTANG | ■ EXTANG | ■ COMPOSITE |
| ■ INTDIG | ■ EXTDIG | ■ INTEGER |



PGP for Harmony

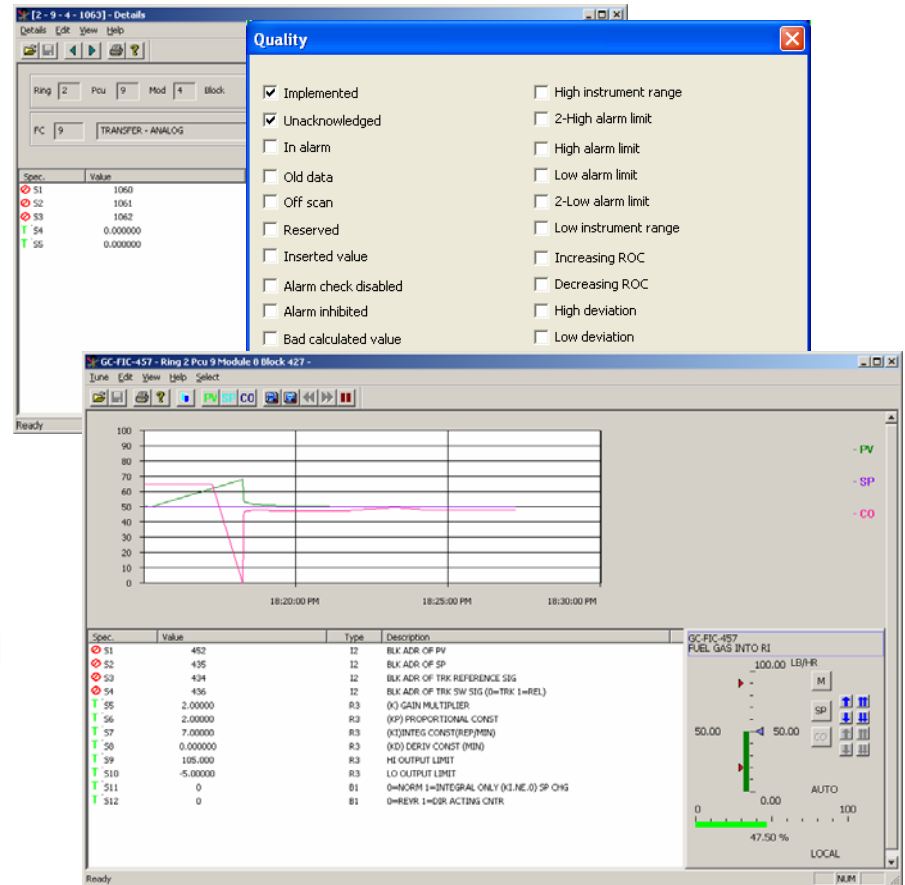
■ Faceplates

- DCS: Digital Control Stations
- DD: Device Driver
- MSDD: Multi-state Device Driver
- PV: Analog Control Station
- DI: Digital Input
- RCM: Remote Control Memory
- RMCB: Remote Motor Control Block
- RMSC: Remote Manual Set Constant
- TEXTSTR: Text Selector
- DAANG: Data Acquisition - Analog



PGP for Harmony

- System Management and Diagnostics
 - Block Details
 - Tune Block
 - System Diagnostics
 - Module status and module problem reports
 - Point quality inspection
 - Time synchronization
 - Time Master, synchronizes all other modules
 - Time Slave, receives time from other modules
- Configuration data import from Composer



BACK



PGP for Freelance 800F

■ Supported Function Blocks (each with faceplate)

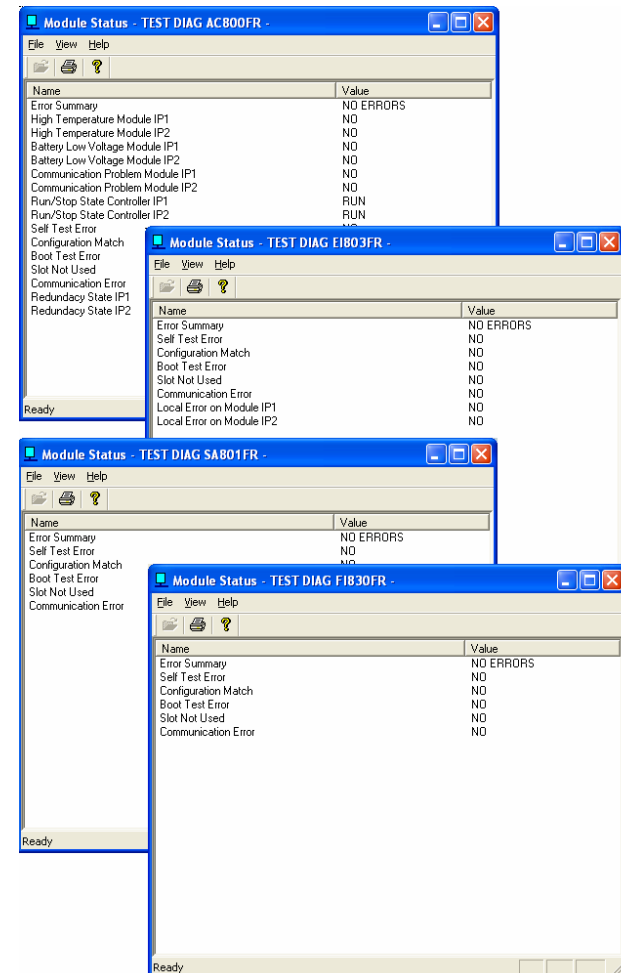
- Analog
 - C_ANA Set Point Controller
 - CT_ANA Counter With Analog Input
- Binary
 - M_BOUT Binary Output
 - CT_P Pulse Counter
 - CTUD Up/Down Counter
 - TOUCH Touch Button
 - MONOF Monoflop
 - TONOF Timer, switch-on/switch-off delay
 - TON Timer, switch-on delay
 - TOF Timer, switch-off delay
 - TS Time Scheduler
 - CTT Timer Counter
 - CT_LT Operating Time Counter
- Monitoring
 - M_ANA Analog Monitoring
 - M_BIN Binary Monitoring
 - M_BAV Binary Monitoring of Antivalence
 - M_GEN General Monitoring
 - EVENT Event Message
- Controller
 - C_CU Continuous Controller, Universal
 - C_CR Continuous Controller, Ratio
 - C_CS Continuous Standard Controller
 - C_SS Standard Step Controller
 - C_SU Step Controlled Universal
 - C_SR Ratio Step Controlled
- Open Loop Control
 - IDF_1 IDF for unidirectional units
 - IDF_2 IDF for bi-directional units
 - IDF_A IDF for actuators
- Constant
 - CSTRE Real Constant
 - CSTBO Input of False or True
 - CSTDI Input of double integer word with sign
- Macro[^]
 - Breakers control
 - Sequence control
 - Group Control

[^]Developed by ITTES



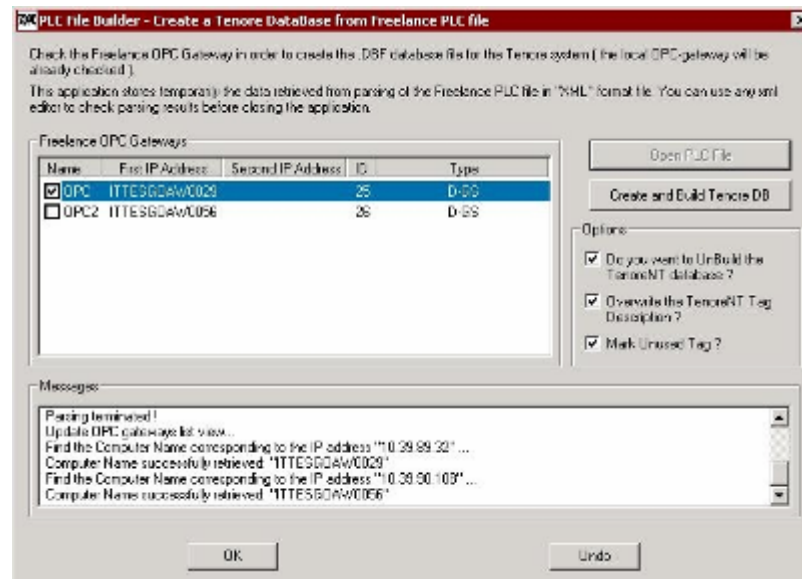
PGP for Freelance 800F

- System Management and Diagnostics
 - Support for Diagnostic Function Blocks
 - AC800FR
 - EI803FR
 - FI803FR
 - SA801FR
 - Support for Profibus Diagnostics
 - PROFI_S_DEV: Profibus Slave Object
 - PROFI_M_DEV: Profibus Master Object



PGP for Freelance 800F

- Support for DCS configuration import
 - Automatic import of controller configuration
 - Support for partial import after controller configuration changes
 - Import driven by selected OPC server



BACK



PGP for 800xA AC800M

■ Supported Control Builder libraries

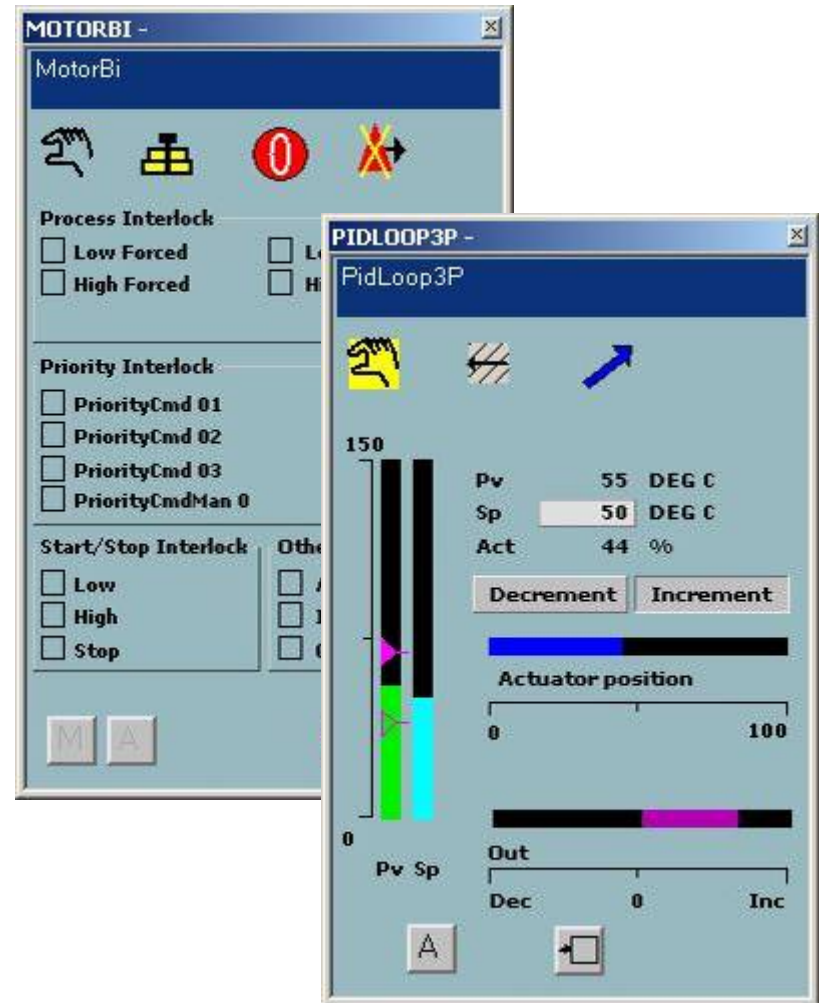
- AlarmEventLib
- BasicLib
- BatchLib
- COMLICommLib
- CommunicationLib
- ControlAdvancedLib
- ControlBasicLib
- ControlExtendedLib
- ControlFuzzyLib
- ControlSimpleLib
- ControlStandardLib
- ControlSupportLib
- FFH1CommLib
- FFHSECommLib
- FireGasLib
- GraphicTemplateLib
- GroupStartLib
- IconLib
- INSUMCommLib
- MB300CommLib
- MMSCommLib
- ModBusCommLib
- ModemCommLib
- ProcessObjBasicLib
- ProcessObjDriveLib
- ProcessObjExtLib
- ProcessObjInsumLib
- S3964CommLib
- SattBusCommLib
- SeqStartLib
- SerialCommLib
- SerialLib
- SignalAllocation
- SignalLib
- SupervisionLib
- SupportLib
- System
- VMTLib



PGP for 800xA AC800M

■ Supported Faceplates

- PidLoop (ControlBasicLib library)
- PidLoop3P (ControlBasicLib library)
- Uni (ProcessObjExtLib library)
- Bi (ProcessObjExtLib library)
- ValveUni (ProcessObjExtLib library)
- MotorUni (ProcessObjExtLib library)
- MotorBi (ProcessObjExtLib library)
- SignalInReal (SignalLib library)
- SignalReal (SignalLib library)
- SignalInBool (SignalLib library)
- SignalBool (SignalLib library)



PGP for 800xA AC800M

- System Management and Diagnostics
 - Offline AC800M Management and Diagnostics through Control Builder M
 - Online AC800M Management and Diagnostics
 - Import tool provided with PGP (AC800MBuilder) generates a set of pre-configured diagnostics objects based on the hardware configuration of the project
 - These objects provide AC800M on-line diagnostic information to PGP
 - AC800M programs available for:
 - Power Failures Information
 - Memory Usage
 - Time Management
 - Restart



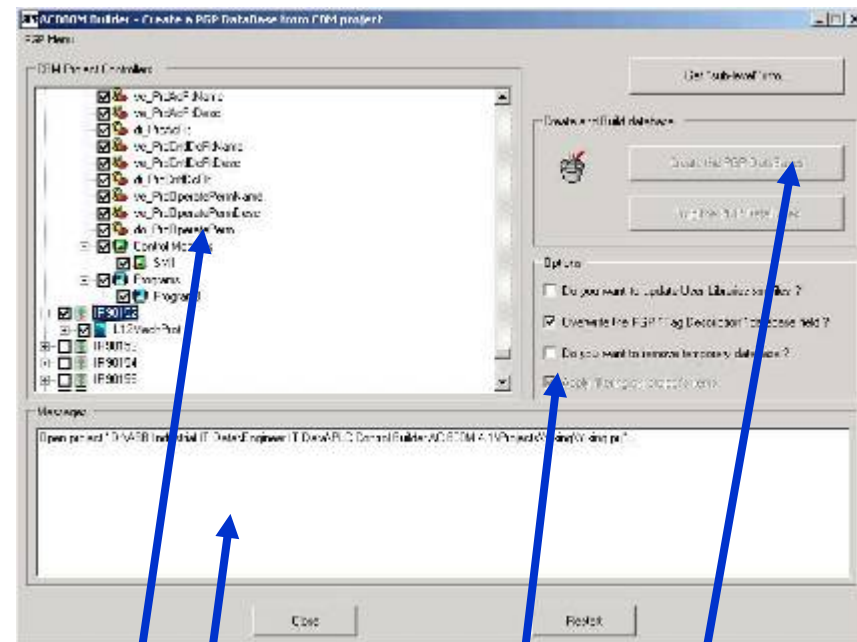
PGP for 800xA AC800M

- Support for DCS configuration import

- AC800M Builder provided with PGP

- Main functions:

- Access Control Builder M projects (full or partial)
- Create PGP database starting from CBM projects
- Import database



Controllers

Options

Messages

BACK

Actions



PGP for AC870P

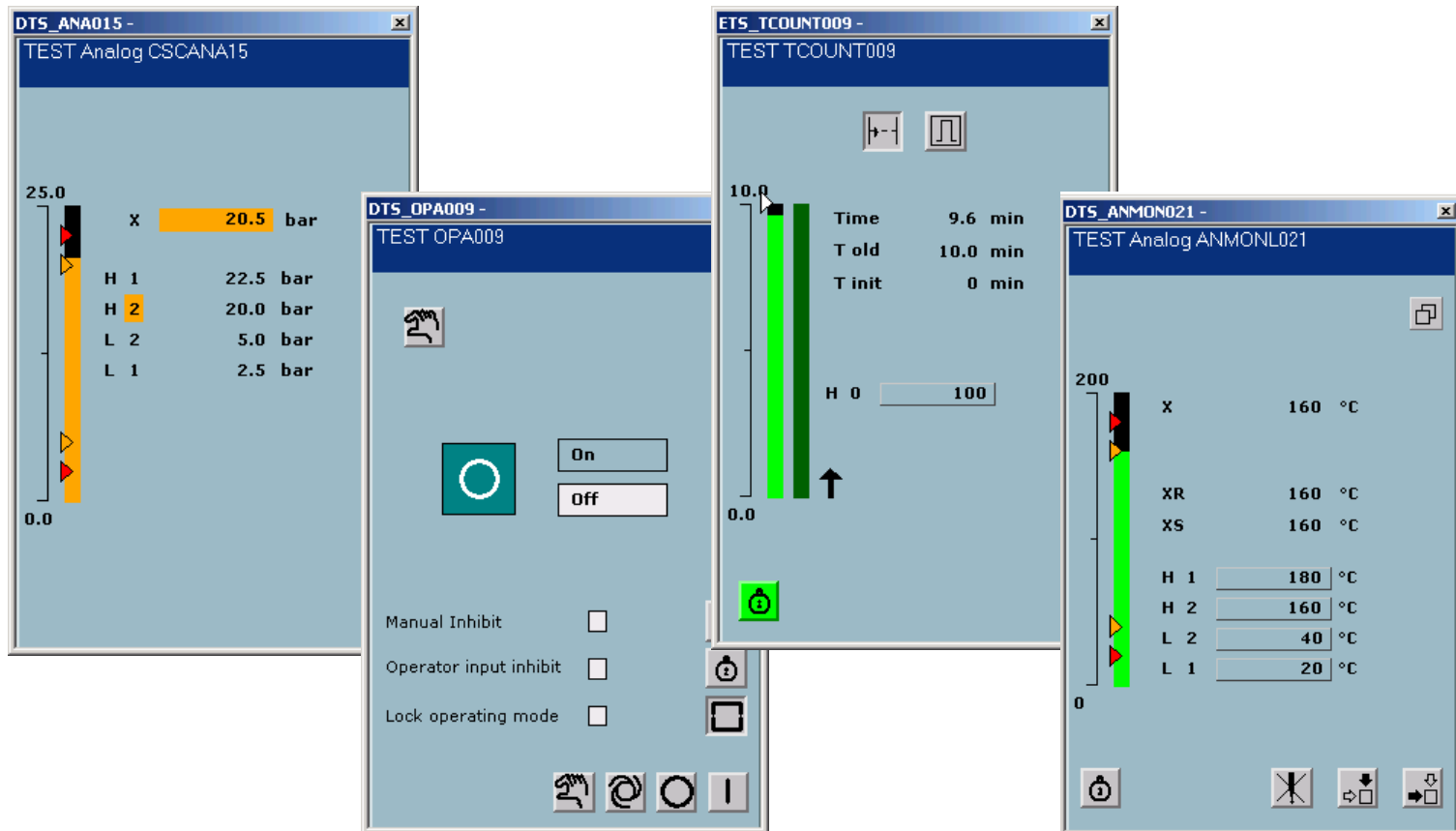
■ Support for Melody Automation Classes

- Analog Monitoring
 - *Melody Analog*
 - *Melody AnMon*
- Analog Output
 - *Melody AnOut*
- Loop Control
 - *Melody APID controller*
- Block Flag
 - *Melody BFlagB*
 - *Melody BFlagC*
 - *Melody BFlagD*
 - *Melody BFlagI*
 - *Melody BFlagL*
 - *Melody BflagP*
 - *Melody BflagR*
- Single Flag
 - *Melody SFlagB*
 - *Melody SFlagC*
 - *Melody SFlagD*
 - *Melody SFlagI*
 - *Melody SFlagL*
 - *Melody SFlagP*
 - *Melody SFlagR*
- Binary
 - *Melody Binary*
 - *Melody OPA*
 - *Melody SEL*
- Calendar and Timing
 - *Melody SwClock*
- Controllers
 - *Melody CLC*
 - *Melody CLCD*
 - *Melody CLCM*
 - *Melody IDF (individual control)*
 - *Melody DOS (dosing circuit)*
 - *Melody COA (change-over auto)*
- Counters
 - *Melody Count*
 - *Melody Tcount*
 - *Melody Total*



PGP for AC870P

- Each Automation Class has a faceplate associated



PGP for AC870P

- Support for DCS configuration import
 - AC870P Synchronizer provided with PGP
 - Main functions:
 - extract configuration changes
 - convert changes into XML
 - validate the changes with the OPC server
 - store changes in the PGP database
 - actualize changes on the target servers
- On line configuration changes supported

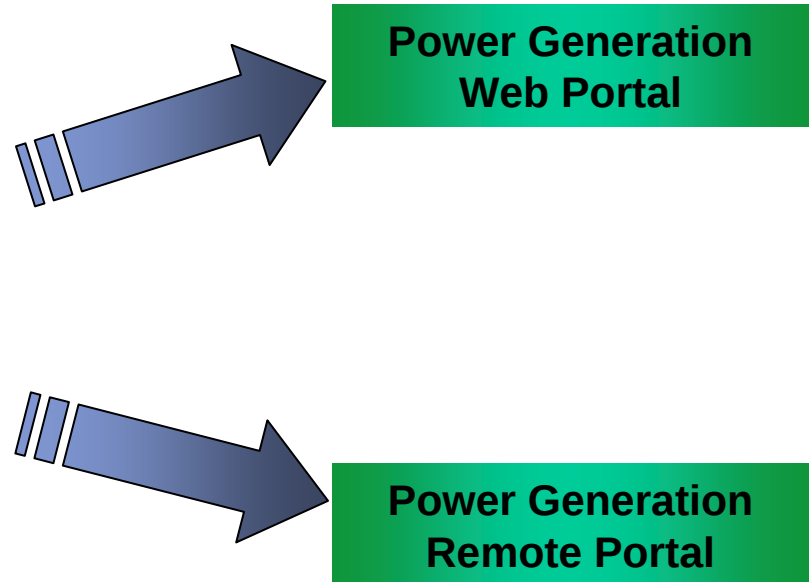
PROGID	TABLNAME	SECGROUP	TAGNAME	TAGDESC	DATA_PROC	LINS_LIMIT
Melody_Analog	MelAnalog	05db077-ce17-1...	FTS_ANA023	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	FTS_ANA024	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	FTS_ANA031	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	FTS_ANA033	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	FTS_ANA037	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	FTS_ANA004	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	BTS_ANA009	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	BTS_ANA020	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	BTS_ANA019	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	BTS_ANA018	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	BTS_ANA003	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	FTS_ANA021	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	BTS_ANA008	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	BTS_ANA007	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	BTS_ANA006	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	BTS_ANA005	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	BTS_ANA004	TEST Analog CS...	AC870P.BLOCK...	0
Melody_Analog	MelAnalog	05db077-ce17-1...	BTS_ANA002	TEST Analog CS...	AC870P.BLOCK...	0

BACK



PGP for the Internet

- Different solutions are available, depending on
 - Required level of access to plant operations
 - Only supervision
 - Supervision and Control
 - Number of users
 - Available bandwidth
 - Low speed, less than 64 Kbit/sec
 - Medium speed, less than 10 Mbit/sec
 - High speed, 10 Mbit and higher
 - Job functions of users
 - Technical personnel
 - Engineering personnel
 - Managers



PGP for the Internet: Web Portal (PGwP)

■ Technology

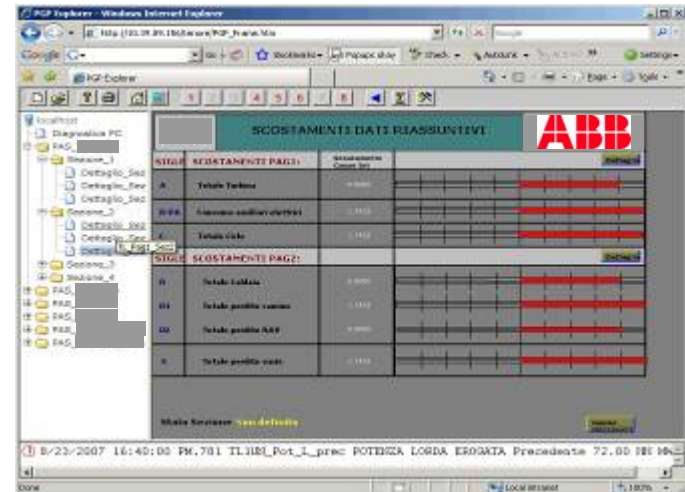
- Based on a web server embedded in the PGP server
- Web clients connect using http protocol
- Web clients use standard Internet Explorer (thin client)

■ Features

- Web pages are automatically configured based on the PGP client frame layout
- Same graphic pages are used in PGP standard client and Web client, no additional configuration required
- Display of pre-defined trend groups and user-defined trend pages
- Access to alarm and event displays and logs
- Supervision only

■ Application guidelines

- Level of access to plant operations: Supervision
- Required bandwidth: Suitable for all bandwidths
- Type of users: Suitable for all users
- Number of users: May support large number of users



PGP for the Internet: Remote Portal (PGrP)

■ Technology

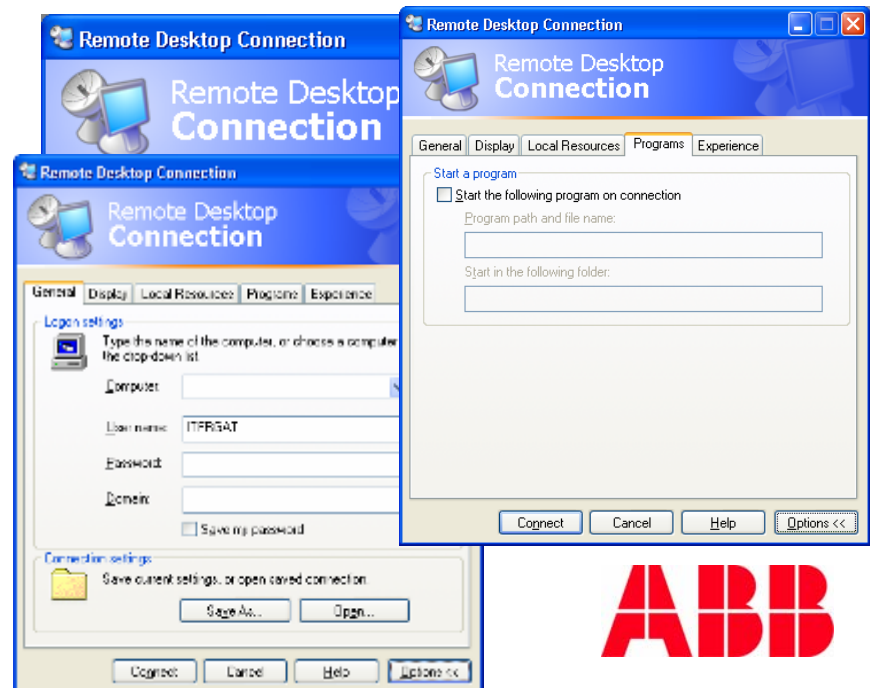
- Based on Windows Remote Desktop
- Remote clients connect using TCP/IP
- Remote clients use standard Windows facilities
- Client CPU load is on the server

■ Features

- Standard Windows technology
- Provides unlimited access to PGP operating environment, limited by user security profile
- User experience is equivalent to sitting locally in front of a PGP workplace

■ Application guidelines

- Level of access to plant operations: Supervision and Control
- Required bandwidth: at least 64 kbit/sec
- Type of users: Technical Users, familiar with PGP
- Number of users: limited by load on server, usually 32 concurrent users

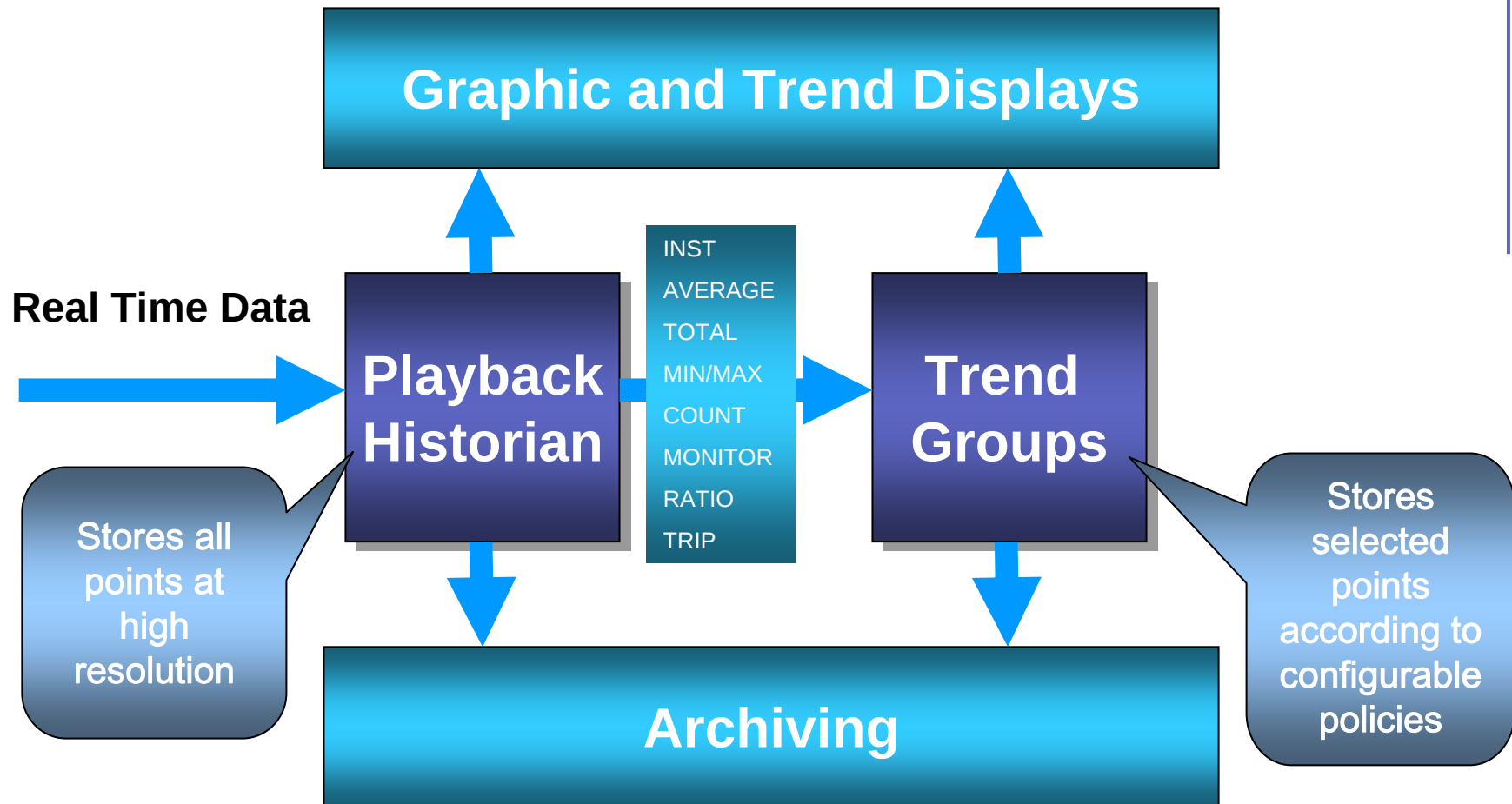


BACK



PGP – Historian, Trending and Archiving

■ Historian Architecture - 2 Stage



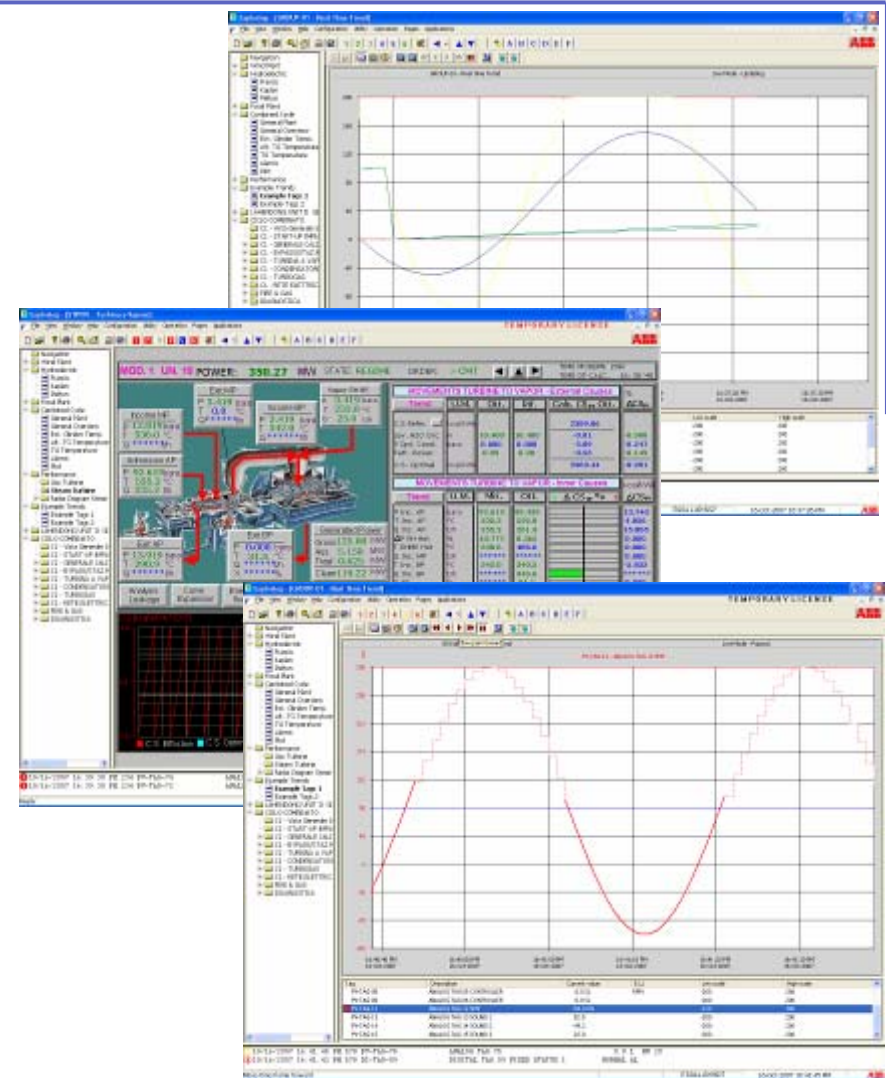
PGP – Historian, Trending and Archiving

- Historian Overview
 - Multiple Historians can be Synchronized
 - Back Filling of Data
 - Real Time Historian
 - Alarm Log Historian
 - Sequence of Events / Trip Historian
 - Operator Actions Historian
 - Operator Notes Historian
- How to Use Historical Data
 - Trend Displays
 - Excel Reports
 - Calculation Package
 - Maintenance Counters
 - Exports to 3rd Party Databases (OPC, ODBC, OLE-DB)



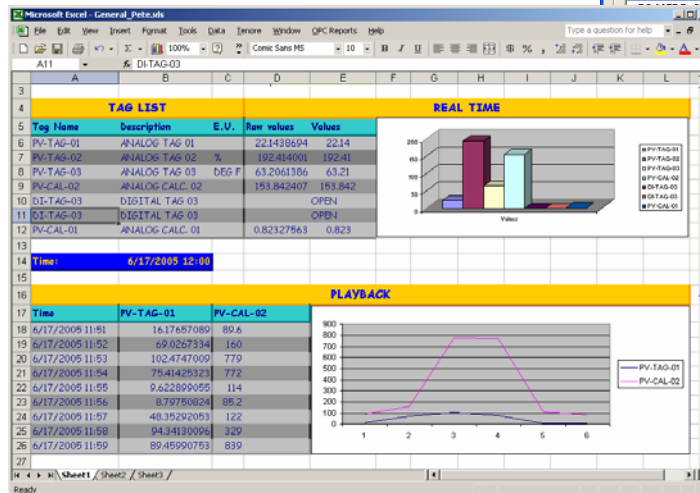
PGP – Historian, Trending and Archiving

- Trend Displays – Auto-generated
 - Operating Parameters
 - Trend Groups
- Trend Displays – User Configured
 - On Operator Graphics
 - On Web Pages
- Trend Displays – Show Alarms
 - Alarms are integrated into Trends
 - line change show alarm condition



PGP – Historian, Trending and Archiving

- Excel Reports
 - User Configurable Reports
 - Pre-Canned Reports
 - Scheduled Report Printing
 - Trip Report Printing



The Report Manager dialog box displays the following properties:

- Reports folder: DEMO
- Report file: Demo-Rpt.xls
- Sheet index: 1
- Description: Report Example
- Scheduling frequency: 1, Scheduling unit: Hour
- Scheduling offset: 0, Offset unit: Sec
- Enable Print: ☐
- Enable Archive: ☒

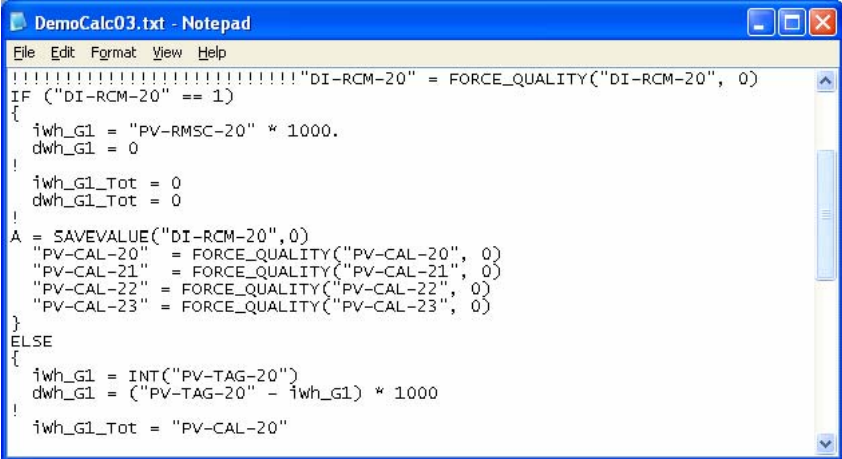
The PGP - Add Tag Wizard dialog box shows the following configuration:

- Select Tags: msdd in Tag Name Find
- Tags to Show: PV-TAG-01 -> ANALOG TAG 01, PV-TAG-06 -> ANALOG TAG 06, PV-TAG-10 -> ANALOG TAG 10, PV-TAG-23 -> ANALOG TAG 23, DI-TAG-05 -> DIGITAL TAG 05, DI-TAG-10 -> DIGITAL TAG 10, DI-TAG-22 -> DIGITAL TAG 22, DI-MSSD-02 -> MSSD 02, DI-MSSD-05 -> MSSD 05, DI-MSSD-09 -> MSSD 09
- Fields to Show: Tag Name, Description, Value, Units, Quality, Status
- Buttons: Write, Clear Cells, Close



PGP – Historian, Trending and Archiving

- Calculation Package
 - Access to Real Time and Historical Values and Qualities
 - Support for Advanced Functions
 - Also a VB and VC++ Interface

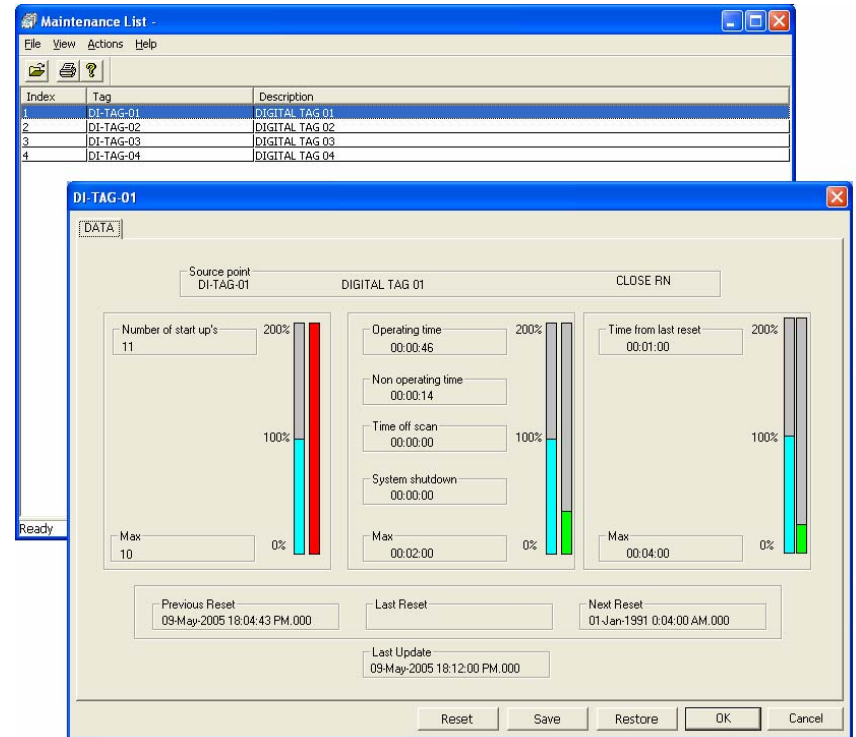


```
File Edit Format View Help
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!"DI-RCM-20" = FORCE_QUALITY("DI-RCM-20", 0)
IF ("DI-RCM-20" == 1)
{
  fwh_g1 = "PV-RMSC-20" * 1000.
  dwh_g1 = 0
  !
  fwh_g1_Tot = 0
  dwh_g1_Tot = 0
  !
  A = SAVEVALUE("DI-RCM-20",0)
  "PV-CAL-20" = FORCE_QUALITY("PV-CAL-20", 0)
  "PV-CAL-21" = FORCE_QUALITY("PV-CAL-21", 0)
  "PV-CAL-22" = FORCE_QUALITY("PV-CAL-22", 0)
  "PV-CAL-23" = FORCE_QUALITY("PV-CAL-23", 0)
}
ELSE
{
  fwh_g1 = INT("PV-TAG-20")
  dwh_g1 = ("PV-TAG-20" - fwh_g1) * 1000
  !
  fwh_g1_Tot = "PV-CAL-20"
```

PGP – Historian, Trending and Archiving

■ Maintenance Counters

- Continuous counting of switching cycle, operation hours and quantity values
 - storage of temporary values in case of power failure
 - automatic or manual reset
 - manual correction of the counter value (preset)



PGP – Historian, Trending and Archiving

Explore - Alarm Group 11

Historical Alarms -

File View Help

Retrieved Alarms list

13-May-05 14:18:34 PM.492 PV-TAG-30	ANALOG TAG 30	6
13-May-05 14:18:34 PM.492 PV-TAG-31	ANALOG TAG 31	3
13-May-05 14:18:34 PM.492 PV-TAG-34	ANALOG TAG 34	101
13-May-05 14:18:34 PM.492 PV-TAG-41	ANALOG TAG 41	7
13-May-05 14:18:34 PM.492 PV-TAG-48	ANALOG TAG 48	6
13-May-05 14:18:34 PM.492 DI-TAG-01	DIGITAL TAG 01	CL
13-May-05 14:18:34 PM.492 DI-TAG-13	DIGITAL TAG 13	OL
13-May-05 14:18:34 PM.492 DI-TAG-18	DIGITAL TAG 18	CL
13-May-05 14:18:34 PM.492 DI-TAG-20	DIGITAL TAG 20	CL
13-May-05 14:18:34 PM.492 DI-TAG-30	DIGITAL TAG 30	CL
13-May-05 14:18:34 PM.492 DI-TAG-31	DIGITAL TAG 31	CL
13-May-05 14:18:34 PM.492 DI-TAG-36	DIGITAL TAG 36	OL
13-May-05 14:18:34 PM.492 DI-TAG-37	DIGITAL TAG 37	CL
13-May-05 14:18:34 PM.492 DI-TAG-38	DIGITAL TAG 38	OL
13-May-05 14:18:34 PM.492 DI-TAG-39	DIGITAL TAG 39	CL
13-May-05 14:18:34 PM.492 DI-TAG-48	DIGITAL TAG 48	CL
13-May-05 14:18:34 PM.492 DI-TAG-49	DIGITAL TAG 49	CL
13-May-05 14:18:34 PM.492 DI-TAG-50	DIGITAL TAG 50	CL
13-May-05 14:18:34 PM.492 PV-DAANG-05	DAANG 05	11.1
13-May-05 14:18:34 PM.492 PV-DAANG-13	DAANG 13	3.1
13-May-05 14:18:34 PM.492 PV-DAANG-20	DAANG 20	14.1
13-May-05 14:18:34 PM.492 DI-MSDD-03	MSDD 03	OL
13-May-05 14:18:34 PM.492 DI-MSDD-03	MSDD 03	10001

2000 alarm messages found

ITGOA-L-0007348

ABB

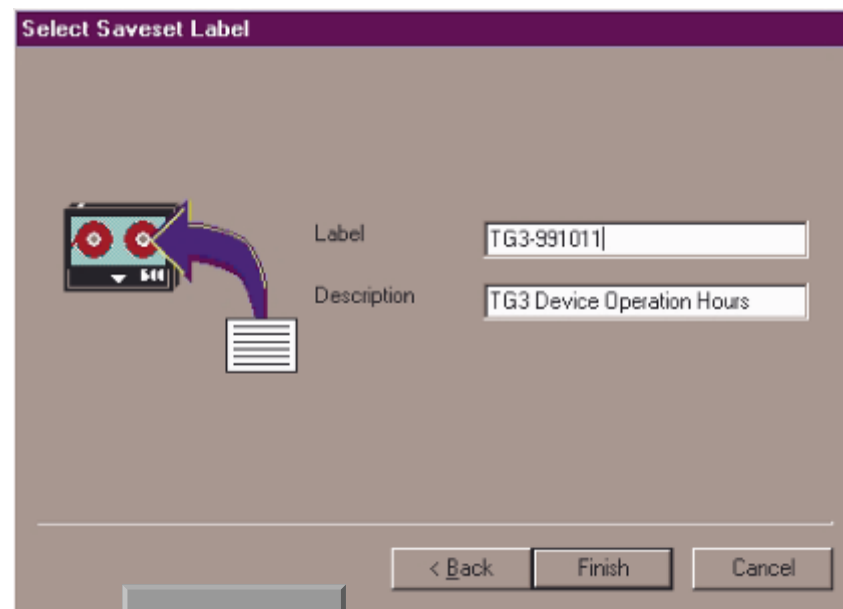
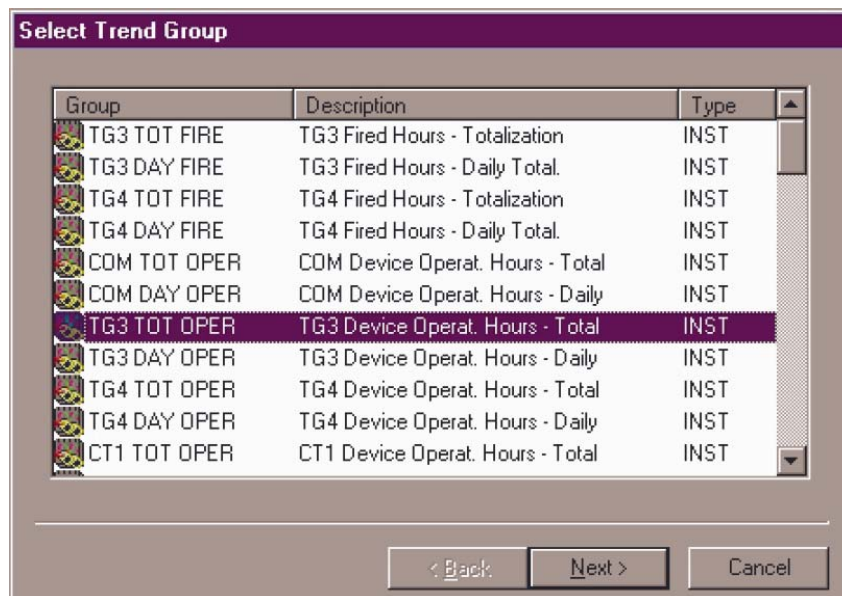
Logs



PGP – Historian, Trending and Archiving

■ Archiving

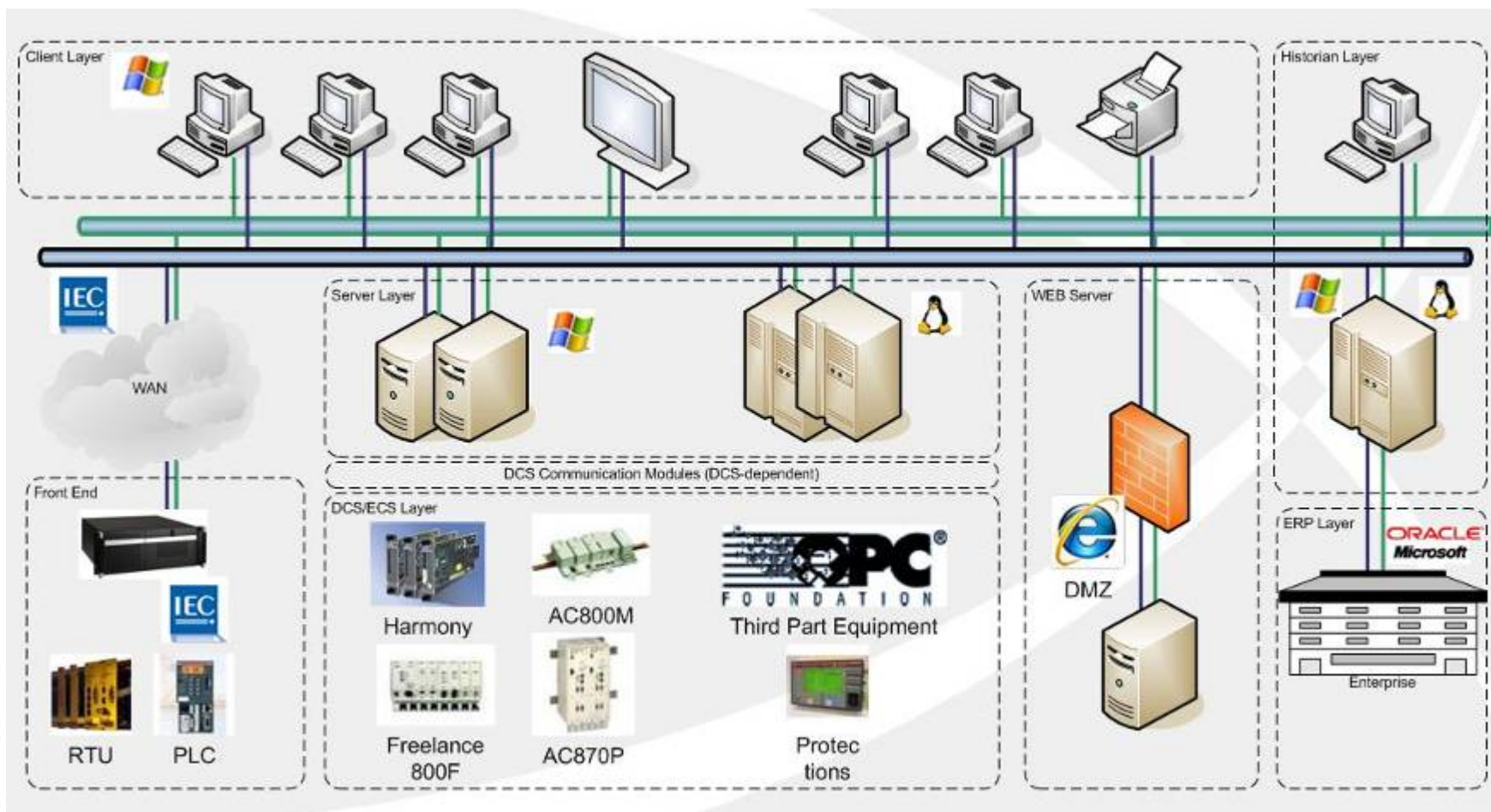
- Custom archives can be created
- Any Window's devices is supported (DVD, optical etc.)
- Full system saves are also supported



BACK



PGP – System Architecture Overview



PGP - System Architecture Concepts

- [Multi-master Redundancy](#)
- Database Distribution
 - [Segregated architecture](#)
 - [Composite architecture](#)
 - [Hierarchical architecture](#)
- [Linux-based server](#)

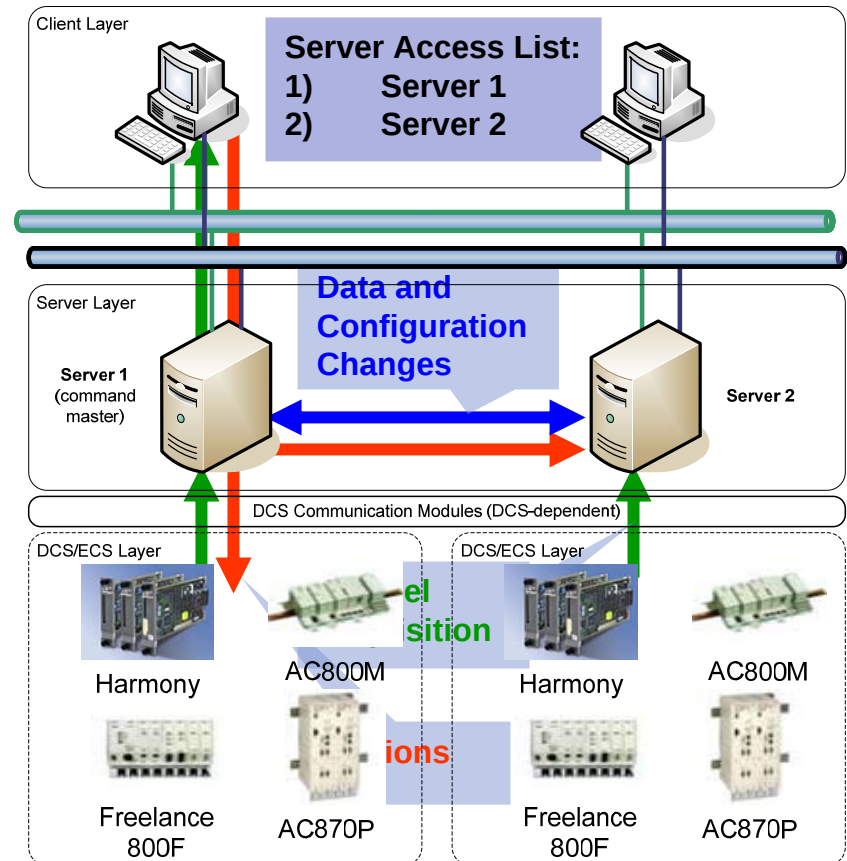


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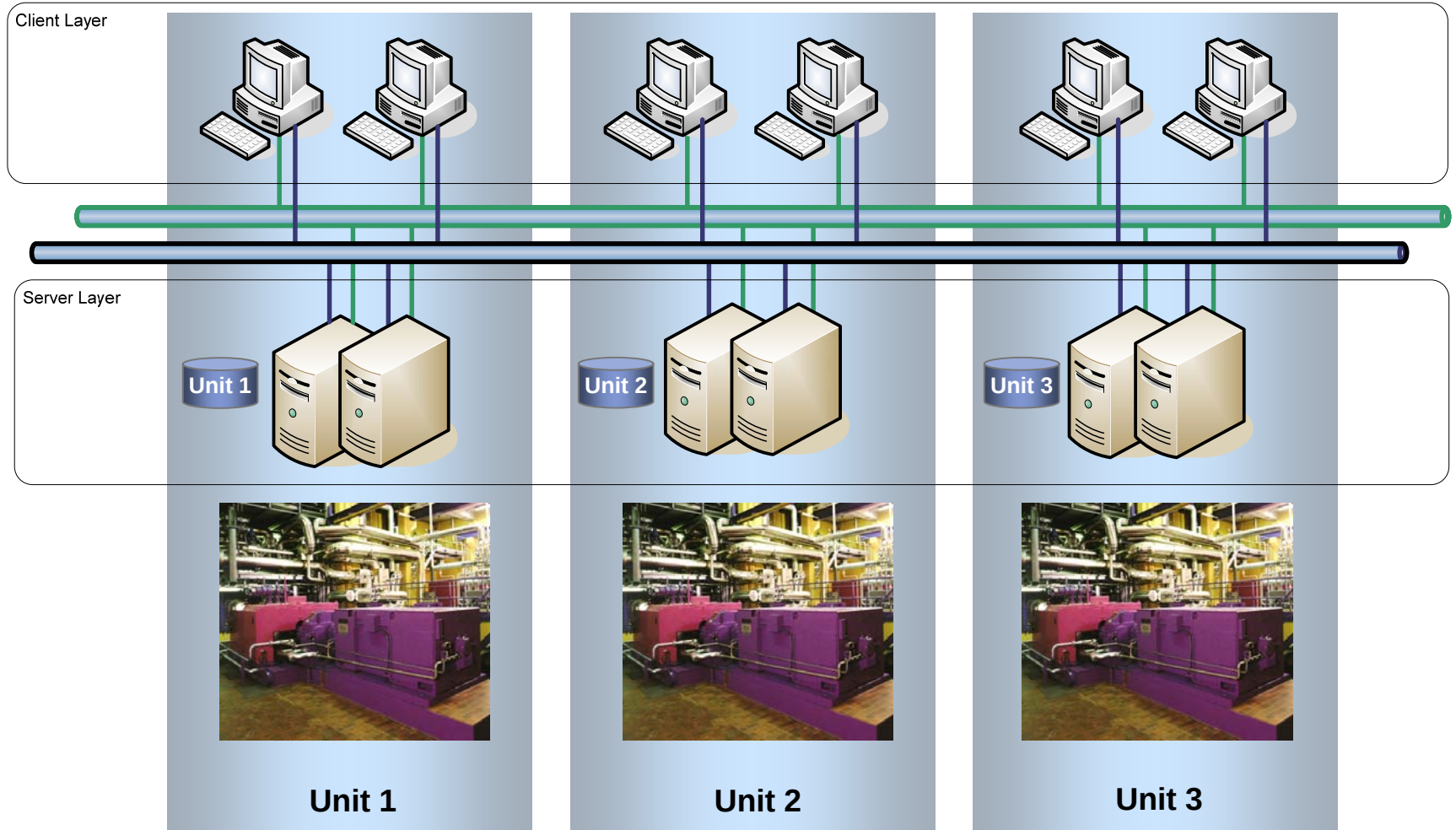
PGP - Multi-master Redundancy

- Clients have a Server Access List: if communication with a server is lost, the client re-connect to the next server
- Each server can acquire data in parallel, or, if parallel paths not available, from other servers
- One server is the designated master for actions on the field
- Backfill of data and configuration changes
- Only available if Client/Server network is at least 10 Mbit/sec



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PGP - Segregated architecture



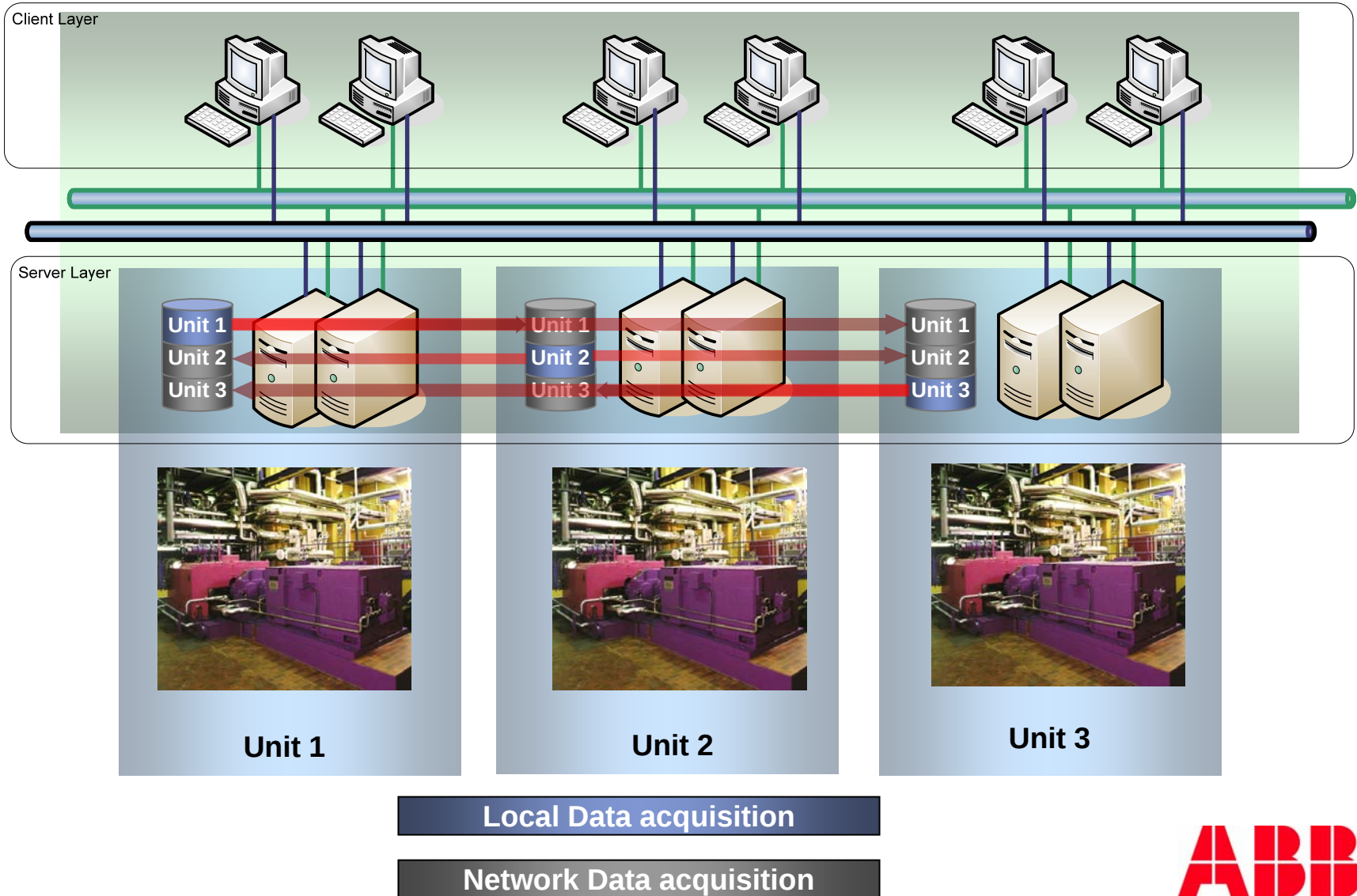
PGP - Segregated architecture

- Solutions when independent servers are required for plant areas (e.g. separate groups)
- Each server only acquires and maintains data from the related plant area
- Clients are logically connected to one server, but graphical pages can include tags from other servers
 - Client 1 is logically connected to Server Unit 1
 - If tags are addressed by name only (e.g. TIC401), its value will be the one available in the connected server (Server Unit 1)
 - If tags are addressed by a fully qualified name (e.g. Server Unit 2\TIC401), its value will be fetched on Server 2 by Server 1 and made available to the client

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PGP - Composite architecture



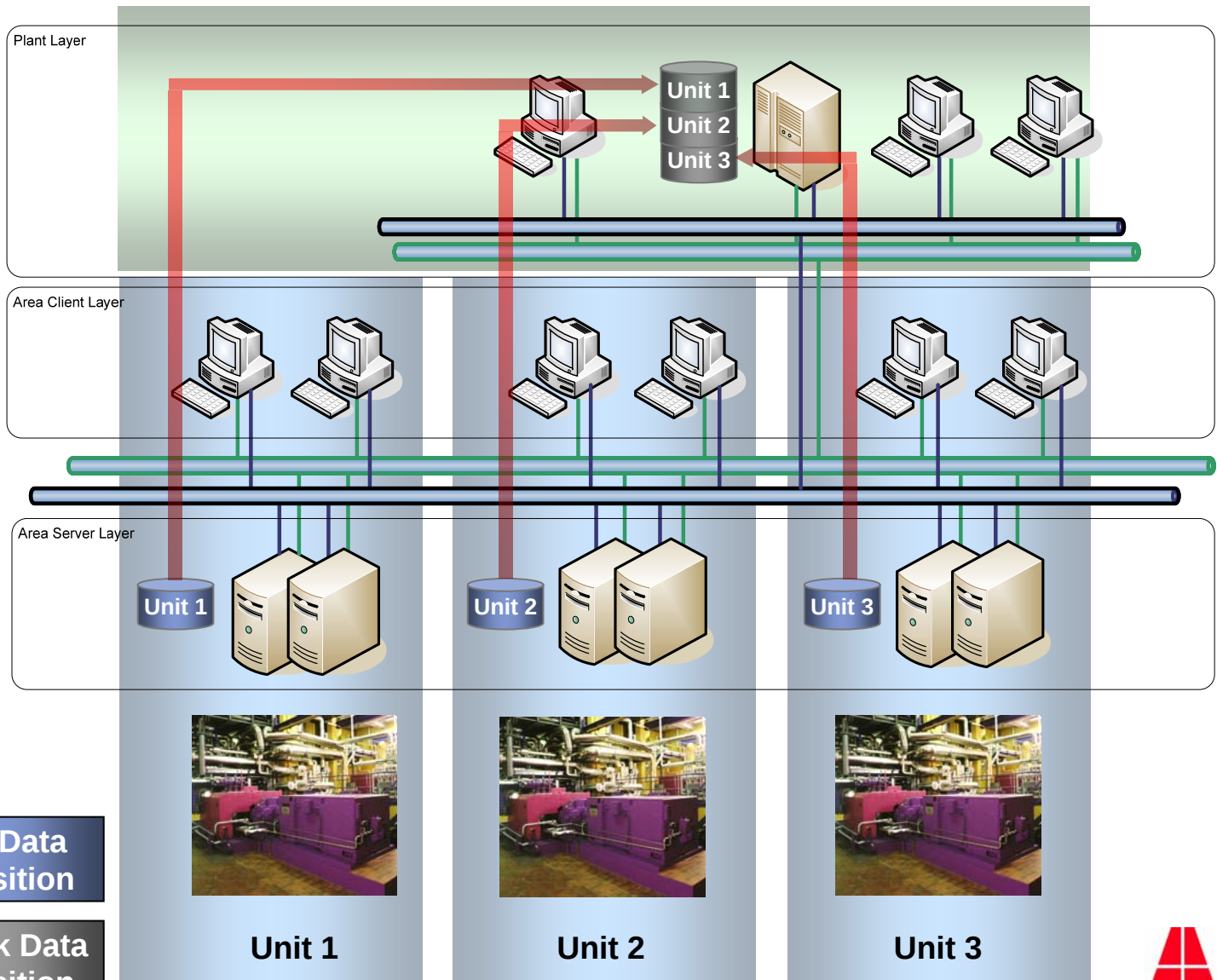
PGP - Composite architecture

- Solutions when servers are required to maintain a complete database
- Each server acquires data from the related plant area through the connected controllers. Tags from other plant areas are acquired through the network
- Clients are logically connected to one server, and from that server they can see tags for all plant areas
- Only available if Client/Server network is at least 10 Mbit/sec. For large number of tags (> 5000) 100 Mbit/sec recommended

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PGP - Hierarchical Architecture



Local Data
acquisition

Network Data
acquisition



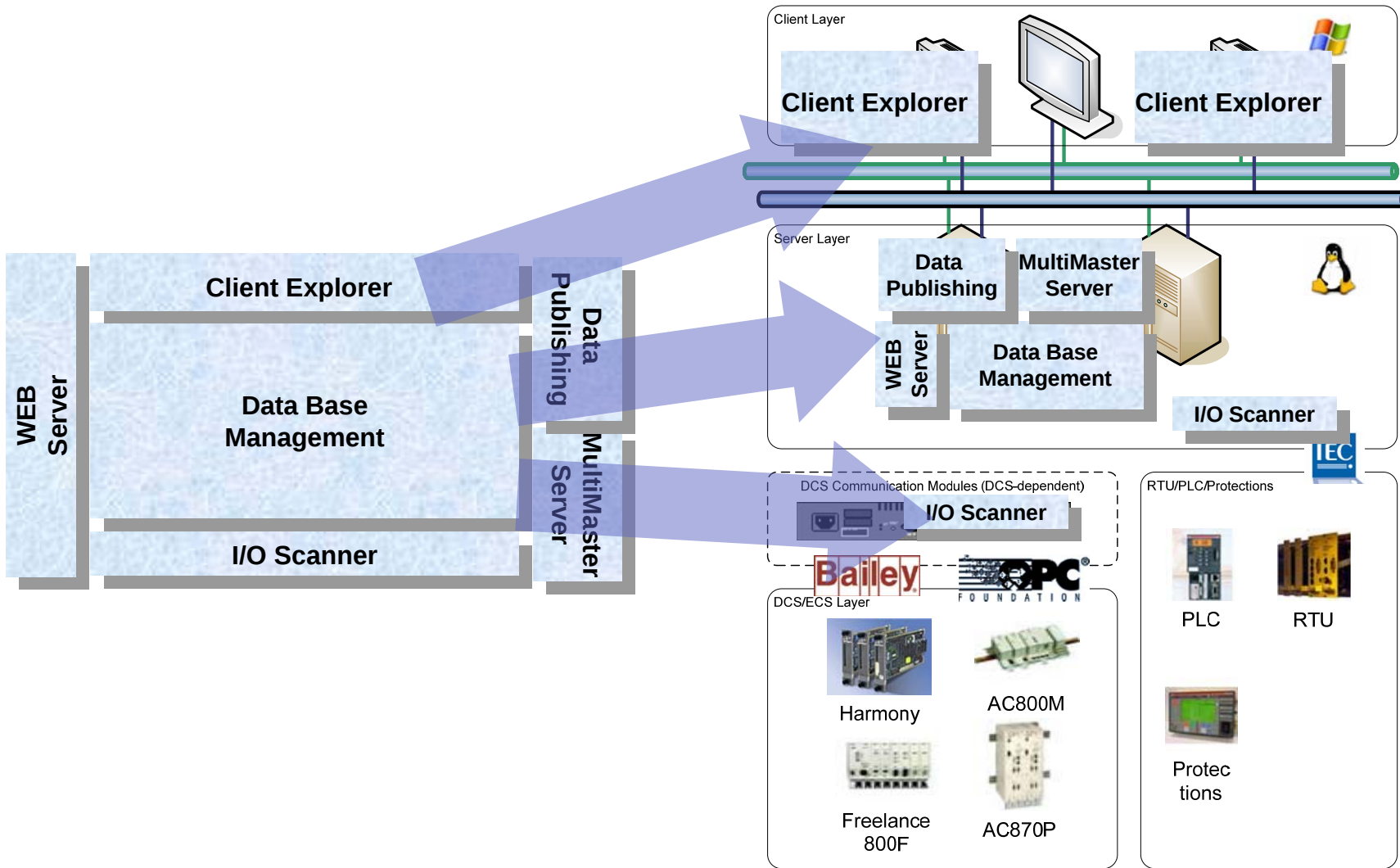
PGP - Hierarchical Architecture

- Solutions when plant areas need dedicated servers and/or workstations, and there is a central control room with access to whole plant
- Each area server acquires data from the related plant area through the connected controllers. Central plant server acquires tags from area servers through proprietary InterServer protocol
- Area clients are logically connected to the corresponding area server
- Plant clients are logically connected to the plant server, and have access to tags from the whole plant

BACK



PGP Linux



PGP Linux

■ PGP Linux for DCS systems

- PGP Linux for DCS is structured in a 3-tier architecture
 - PGP Clients based on Windows to provide a common look and feel to users regardless of the server platform
 - The complete set of server functions is based on Linux
 - Data access is embedded in DCS-specific communication modules, based on industrial hardware, operating in the background and requiring no human interaction

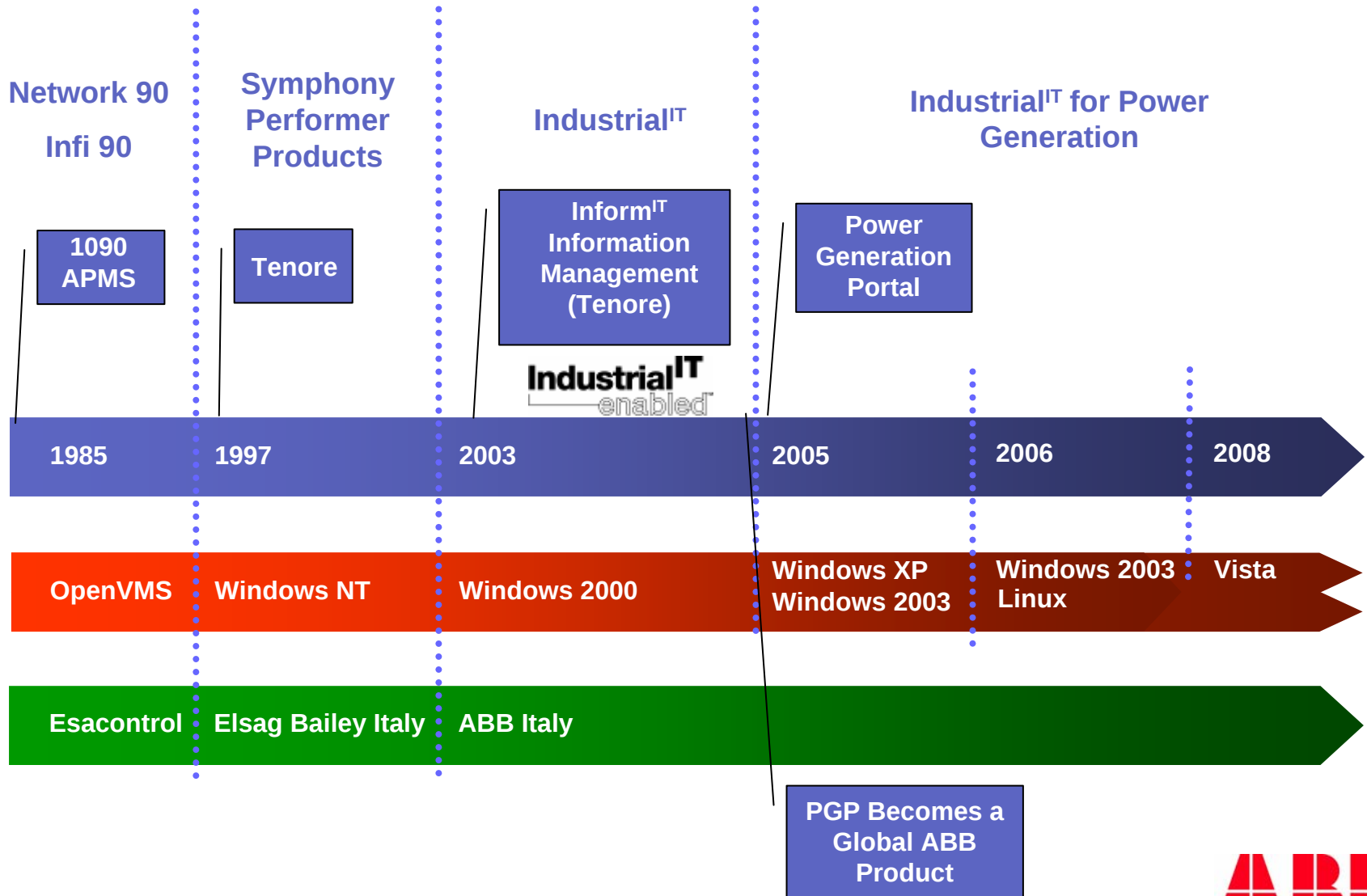
■ PGP Linux for SCADA systems

- PGP Linux for SCADA is structured in a 2-tier architecture
 - PGP Clients based on Windows to provide a common look and feel to users regardless of the server platform
 - The complete set of server and data access functions is based on Linux for the following protocols:
 - Modbus, Modbus TCP
 - SPABUS
 - IEC 870-5-101/103/104
 - Text
 - Siemens Teleperm (XU device)
 - General Electric GSM (Mark V/VI) (GE Standard Messages, GSM)

BACK

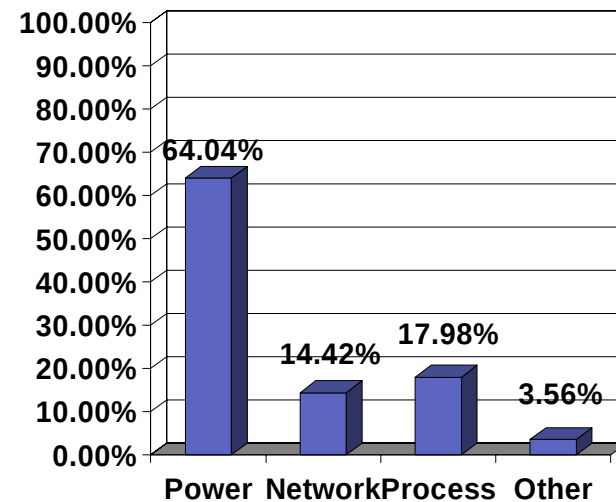
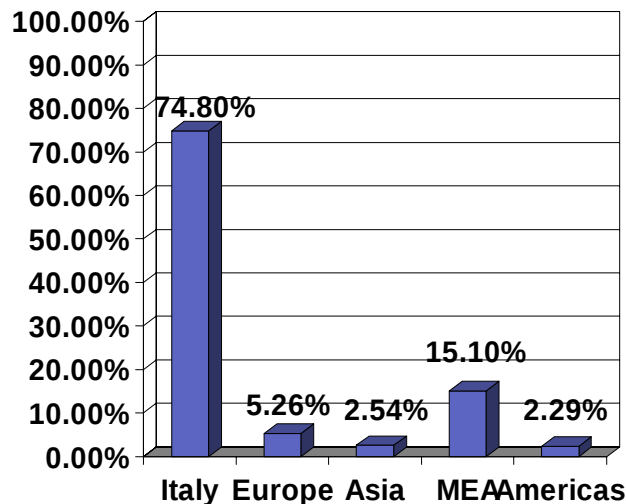


PGP - Product History and Roadmap



Product History – Installed Base – 1998-2004

- 1179 servers, 1434 clients
- 534 systems



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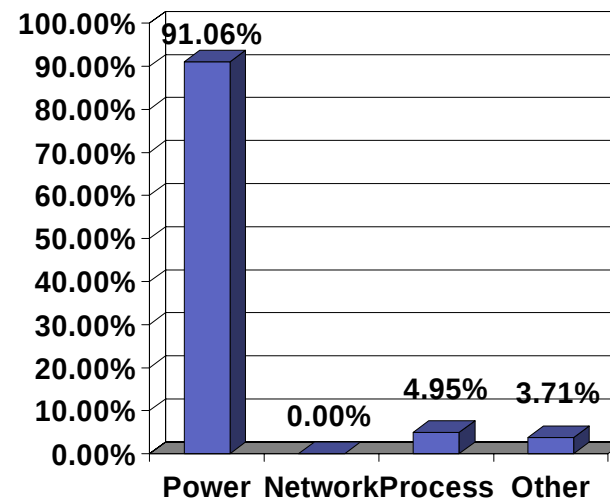
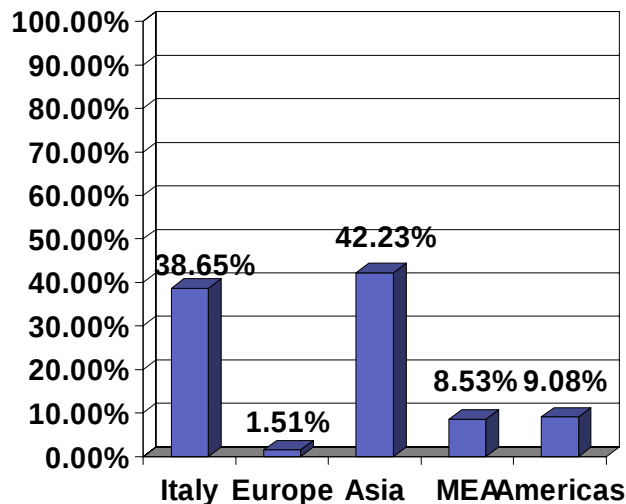


Product History – Installed Base – 2005-2007

- 1798 servers, 3248 clients
- 838 systems

Total Installed Base

■ Server	2977
■ Clients	4682
■ Licenses	7659
■ Systems	1372



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