General Specifications

GS 36J06B10-01E

Model NTPS200
Exapilot
Operation Efficiency Improvement Package

■ OVERVIEW

One of the major concerns in the plant operations is how to reduce its operation costs so that the profit is optimized. The industrial plant operations are fully automated with process control systems (PCS); however, startup, shutdown, load/grade changes, and other non-routine works are largely done by manual operations. The operation efficiencies can further be improved by automating these non-routine operations as much as possible.

Exapilot operation efficiency improvement package is a tool to help operators create semi-automatic sequences to replace non-routine and manual operations in the plant. Designed easy to use, Exapilot realizes continuous improvements in operating efficiencies. Improvements are applicable to the following areas.

- Reduce operation hours while maintaining product quality
- Save labor cost without disturbing safe plant operations
- Prevent operation errors
- Standardize operating procedures and operation methods regardless of the operator skill levels
- Ensure experienced operators' know-how is maintained
- Provide opportunities for operators to gain further knowledge about the plant and processes.

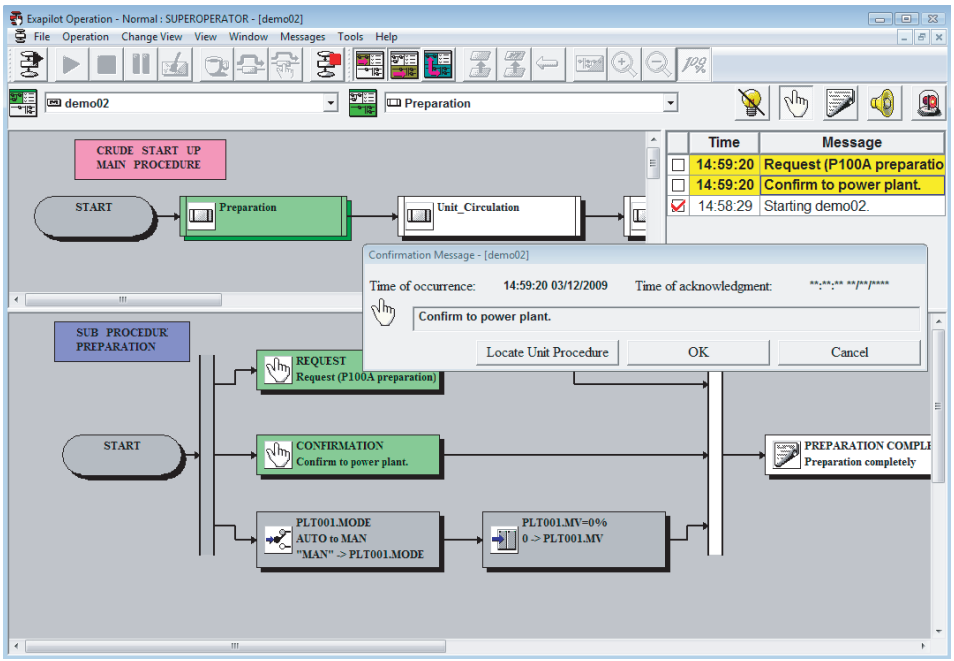
Exapilot runs on a general PC or it coexists on a human interface station (HIS) of the CENTUM production control system. It also connects with other control instruments via open product connectivity (OPC) standard interface.

■ PACKAGE OVERVIEW

Automating manual or non-routine procedures with PCS requires a lot of configuration and engineering work. Even the process is automated, it requires modifications in applications whenever the equipments or production recipes are changed, which adds up to the maintenance cost.

Exapilot is equipped with tools and functions to solve these problems. It is easy to design, configure, modify, and maintain the operating procedures to automate non-routine works.

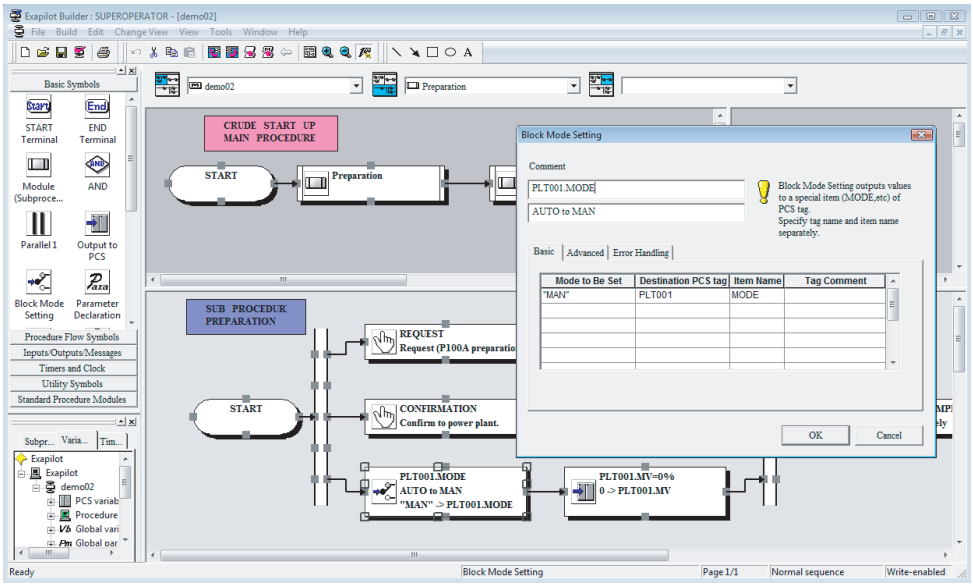
Exapilot's builder functions provides typical procedural components such as pump start/stop, valve positioning, ramp up/down, request field work, pause, wait for a condition, and so on. By linking these components on the screen, an experienced operator is able to create a procedural flow chart that automates the non-routine sequence into semi-automatic one. The created sequence can also be used as a navigation guide on a screen for operations.



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Figure: Exapilot Operation Main Window

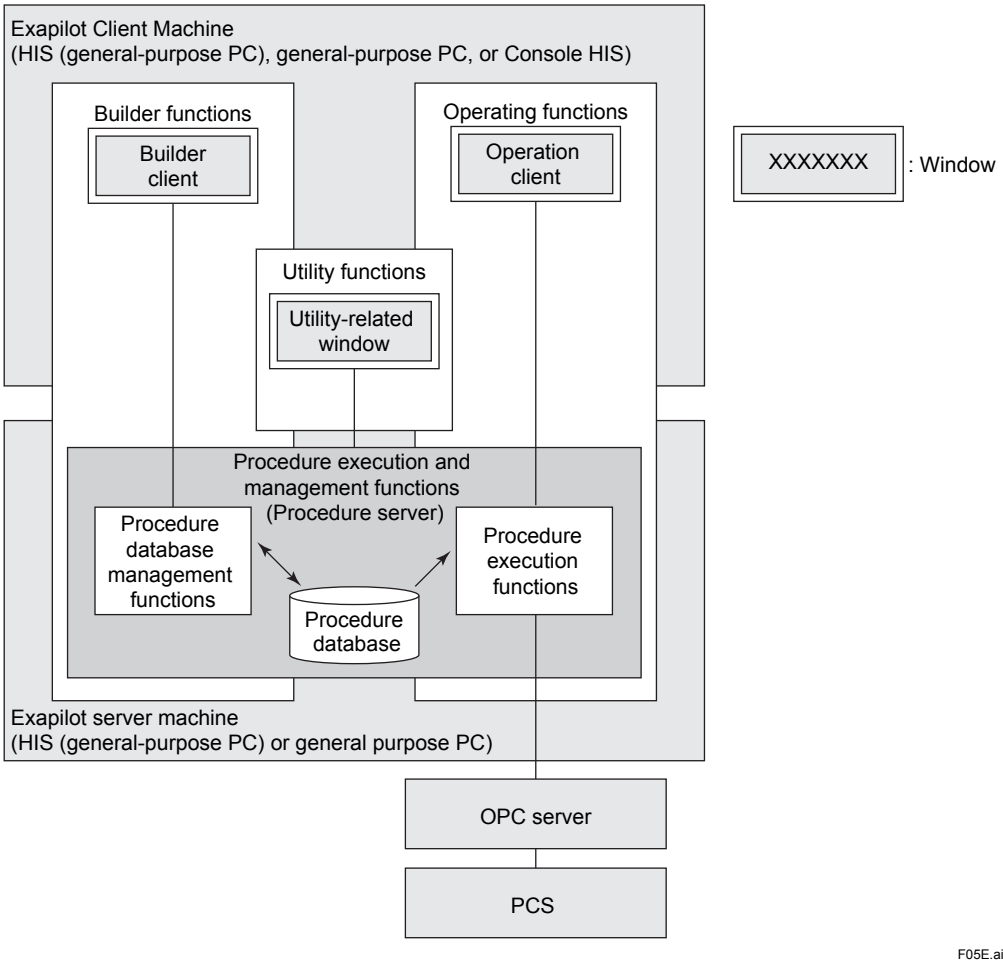
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Figure: Exapilot Builder Main Window

■ FUNCTION OVERVIEW contd.



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Figure: Exapilot Function Overview

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● Builder Functions

Provides an environment easy to create and configure operation procedures.

Procedure builder functions
- Procedure flow builder function
- Procedure flow documentation function
  - Header/footer setting
  - Print out setting
- Character variable functions
- PCS tag existence-checking functions
- Parameter (variable) declaration check functions

Operating procedure parts functions
- Procedural modules
- User-made (with Visual C language) procedural module

● Operating Functions

A procedural flow window to display and a monitor operation status are provided. Operational instructions can be given in details.

Operation monitoring functions
- Operation procedure display
- Operation data display
- Output history display

Operating functions
- Operation start/stop commands
- Detailed operation commands (skip, break, and pause)
- Operation message display

● Procedure Execution and Management Functions

The operation procedures created by the builder functions can be managed and executed.

Procedure execution functions
- Controls procedural flow
- Client/server function
- Multiple procedures execution function
- Offline function
- Test run function
- PCS output confirmation function

Procedure database management functions
- Procedure flow display functions (display data processing, database editing, and syntax check)

● Utility Functions

Provides necessary functions for managing Exapilot software package.

Utility Functions
- Installer function
- System parameter setting function
- Procedure maintenance function
- Multiple OPC servers connecting function
- Security function
- Historical report (message) function
- Historical report (PCS output history) function
- Watchdog notification and operation status monitoring function
- Event record management function

● Tool

- Save/restore procedures tool
- Prepare to run Main Procedures tool
- Variable display tool

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