GE Energy

ControlST* Software V04.01
Release Features (July 2010)

The ControlST software suite is used for Mark* VIe Integrated Control System (ICS) products. It is applied on unit and plant controls for wind, thermal, gasification, safety, nuclear, and other applications. This flexible suite provides a user-friendly set of tools to enhance plant operation and maintenance. It includes the WorkstationST* HMI and Historian software, the ToolboxST* configuration and diagnostics software, and third-party software packages.

New and enhanced features to existing applications, as well as entirely new applications, are continually added to the ControlST software release. This improves the customer experience, enhances plant operations, and keeps pace with advancements in technology. Refer to GEI-100746, ControlST Release Features for a list of recent releases.

1. ARTEMIS Simulation Enhancements
   - **Application:** IGCC Operator Training Simulator (OTS)
   - **Description:** Modifications to Trender and LiveView for operator training features in conjunction with ARTEMIS
   - **Documentation:** GEH-6700, ToolboxST User Guide for Mark VIe Control
   - **Description:** Modifications to the virtual Mark VIe and Mark VIeS controllers for operator training features in conjunction with ARTEMIS
   - **Documentation:**
     - GEH-6742, Mark VIe Virtual Controller User Guide
     - GEH-6739, ARTEMIS User Guide

2. CANopen® Interface for Pressure Sensors
   - **Application:** Mark VIe Controls
   - **Description:** Qualification of GE Sensing DPS 4000 pressure sensors (15 max) from existing PCNO CANopen Gateway Module
   - **Documentation:**
     - GEH-6700, ToolboxST User Guide for Mark VIe Control, Chapter 13, Special I/O Functions
     - GEH-6721, Mark VIe Control, Volume II System Hardware Guide
     - GEH-6721, Mark VIe Control, Volume III Diagnostics and Troubleshooting Guide
     - GEI-100737, Mark VIe PCNO CANopen® Master Gateway Module Description

3. New Power Distribution Board
   - **Application:** Mark VIe Dual Redundant Controls
   - **Description:** ControlST software supports the new JPDI power distribution board for control and wetting power.
   - **Documentation:**
     - GEH-6721, Mark VIe Control, Volume II System Hardware Guide
     - GEH-6721, Mark VIe Control, Volume III Diagnostics and Troubleshooting Guide
     - GEI-100613, Mark VIe Control Power Distribution Modules (PDM)

4. Redundant Controller-to-Controller Communications
   - **Application:** Mark VIe Controls
   - **Description:** Direct and redundant controller-to-controller communications on a private high-speed network, the Control Data Highway (CDH)
   - **Documentation:**
     - GEH-6700, ToolboxST User Guide for Mark VIe Control
     - GEH-6721, Mark VIe Control, Volumes I System Guide
     - GEH-6721, Mark VIe Control, Volume II System Hardware Guide
     - GEH-6721, Mark VIe Control, Volume III Diagnostics and Troubleshooting Guide
     - GEI-100665, Mark VIe Controllers UCCx and UCSx

ControlST Enhancements for IGCC Operator Training Simulator

fact sheet
5. Advanced Load Control Support
   - Application: 1.5 MW Wind turbines
   - Description: Adds advanced load control support for the WindExtend feature. Two additional digital proximity sensors provide index pulses for the Low Speed Shaft (LSS) and Yaw positions.

6. Sonic Wind Sensors for 1.5 MW Turbines
   - Application: 1.5 MW Wind turbines
   - Description: Adds RS-485 support for FT Technologies sonic wind sensor. In addition, support for the previously un-implemented Thies sonic wind sensor has changed from 4-wire RS-422 full duplex to 2-wire half duplex to allow for sensor interchangeability.
   - Documentation: GEI-100733, Wind Energy Top Box Board (WETA) Instruction Guide

7. EGD Routing for Wind Pitch Control
   - Application: Wind turbines with Bachmann® PLCs
   - Description: Enable routing of Ethernet Global Data (EGD) messages from the controller to a device (Bachmann® PLC) that is not directly connected to the same Ethernet subnet.

8. External Device Replication
   - Application: General
   - Description: ToolboxST software support for duplicating external devices, such as wind turbines
   - Documentation: GEH-6700, ToolboxST User Guide for Mark VIe Control, Chapter 2 System Configuration

9. New Global Script Option
   - Application: General
   - Description: A new global script option has been added to WorkstationST Advanced Viewer to browse for a variable
   - Documentation: GEI-100697, WorkstationST / CIMPLICITY* Advanced Viewer Integration Instruction Guide

10. LiveView Enhancements
    - Application: General
    - Description: LiveView enables the graphical illustration of live data, such as a bar chart display of pressure. Enhancements include:
      - LiveView added as a standalone application for installation with the HMI viewer and with the configuration tools
      - New control types: circle, rectangle
      - New animation controls: pushbutton, switch control
      - New behavior properties: momentary or toggle
    - Documentation:
      - GEH-6700, ToolboxST User Guide for Mark VI Control
      - GEH-6701, ToolboxST User Guide for Power Conversion Control
      - GEH-6702, ToolboxST User Guide for EX2100ST Excitation Control
      - GEH-6704, ToolboxST User Guide for Mark VI Control
      - GEH-6705, ToolboxST User Guide for Mark VIeS Control

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