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 improve the customer experience, enhance plant operations, and to keep pace with advancements in technology. Refer to GEI-100746 ControlST Release Features for more information.

1. WindBOOST* for Wind DFIGe
   - Application: 1.5 / 1.6 MW Wind ESS Turbines
   - Description: WindBOOST performance enhancement enables increased power capability from 1.5 to 1.6 MW when there is sufficient wind.

2. Wind Pitch 2.5 MW Enhancement
   - Application: 2.5 MW Wind Pitch
   - Documentation:
     - GEH-6735 2.5 MW 30 Nm Wind Pitch System Guide
     - GEI-100731 2.5 MW WEPA Wind Energy Pitch Axis Module Description
   - Description: A CANopen® gateway is added for interface to the Bachmann® programmable logic controller (PLC). The pitch control system is upgraded for larger turbine blades and pitch motors.

3. WindSCADA in WorkstationST Application
   - Application: Wind SCADA
   - Documentation: GEI-100623 WorkstationST Service
   - Description: The existing RT-Core SCADA interface is upgraded to the WorkstationST software platform.

4. Virtual Controller Enhancements
   - Application: Mark VIe control
   - Documentation: GEH-6742 Mark VIe Virtual Controller
   - Description: Adds dynamic binding for Ethernet Global Data (EGD) protocol, diagnostics for fault detection, and a simplified application programming interface (API)

5. ControlST Features for Large Wind Farms
   - Application: Wind
   - Documentation: GEH-6700, 6701, 6702, 6704, 6705, 6706 ToolboxST User Guides
   - Description: Enhancements are added for efficient operation of large wind farms, including:
     - Performance/Resource Requirements
     - System-level (multi-device) scanning and reporting
     - System-level (multi-device) downloads
     - Security enhancements

6. Simulink® to ToolboxST Translator
   - Application: 1.5 MW XLE Wind, Oil & Gas
   - Documentation:
     - GEH-6743 Simulink Translator Tool for Mark VIe Blockware User Guide
     - GHT-200052 How to Use Matrix Blocks in the Mark VIe Control
     - GHT-200054 How to Use the Mark VIe Tools in the Simulink Environment
     - GEI-100682 Mark VIe Control Standard Block Library
   - Description:
     - New matrix math manipulation blocks for Mark VIe control to support 1.5 XLE Wind
     - S-function equivalents and Simulink to ToolboxST translator modifications
7. HMI Integration of Mark V Control

- **Application:** Mark V Turbine Controls
- **Documentation:**
  - GEH-6759 ControlST Mark V Feature System Guide
  - GEH-6757 ControlST GSM 3.0 User Guide
  - GHT-200017 How to Upgrade a Mark VI Component from the Control Systems Solutions (toolbox) Application to the ToolboxST Application
  - GHT-200018 How to Configure the ToolboxST Application to Receive Mark VI Data from a Control System Solutions (toolbox) Application
  - GHT-200013 How to Import Control Systems Solutions (toolbox) Turbine Historian Configurations to the WorkstationST Historian Feature
  - GHT-200014 How to Import Control Systems Solutions (toolbox) Data Historian Configurations to the WorkstationST Recorder Feature
  - GHT-200040 How to Convert a Mark V Component for Use in ControlST Applications
  - GHT-200047 How to Import Control System Solutions (toolbox) Network Interface Configurations to a ToolboxST External Device
- **Description:** Adds Mark V configuration support, including Modbus and GSM protocols for continuity with installed turbine controls

8. Variable Aliasing

- **Application:** Mark VIe Controls
- **Documentation updates to the following:**
  - GEH-6700 ToolboxST User Guide for Mark VIe Control
  - GEI-100620 WorkstationST Alarm Viewer
  - GEI-100624 WorkstationST OPC AE Server
  - GEI-100628 WorkstationST Historian, Modifying Data Collection
  - GEI-100697 WorkstationST CIMPLICITY* Advanced Viewer Integration
  - GHT-200053 How to Configure an Alias for ControlST HMI Applications
- **Description:** This adds name aliasing capability for variables to support both ANSI and KKS naming conventions. It encompasses alarm/event management, dual language, and alarm help files.


- **Application:** Mark VIeS Safety control
- **Documentation:** GEH-6723 Mark VIeS Safety Control Safety Instruction Guide
- **Description:** Adds non-interfering power monitoring capability for non-safety-critical application

10. Proficy* Historian

- **Application:** Historian
- **Documentation:**
  - GEH-6745 ControlST Historian with Proficy System Guide
  - GEI-100628 WorkstationST Historian
  - GEI-100752, Historian Report Configuration Instruction Guide
  - GEI-100753, Historian Report Post Installation Instruction Guide
- **Description:** The Proficy Historian is integrated into the ControlST software suite.

11. New Turbine Model Blocks

- **Application:** Gas turbine models
- **Documentation:** GEI-100690 Mark VIe Control ARES Block Library
- **Description:** New ARES-based model blocks including:
  - 7FA.03 AO (current 7FA+e)
  - 7FA.04 Heat Rate Phase II Extended Turndown
  - 7FA.05 (7FA210)
  - 9FB (PG9371-05A-1108A)

12. New Servo Control Module

- **Application:** Triplex controls with dual or simplex valve actuators
- **Documentation:** GEI-100741 Mark VIe PSVP Servo Control for Steam Turbines Module Description
- **Description:** A new I/O module to enable retention of site wiring to non-redundant servo actuator coils with an upgrade to a redundant control system

13. Turbine Emergency Overspeed Module

- **Application:** Stand-alone or Integrated SIL EOS Module
- **Documentation:**
  - GEI-100738 Mark VIe PPRA Emergency Turbine Protection Module Description
  - GEI-100709 PPRAS1A Emergency Turbine Protection Safety Instruction Guide
- **Description:** A new version of the existing module is certified to IEC 61508 for safety-critical applications

For further assistance or technical information, contact the nearest GE Sales or Service Office, or an authorized GE Sales Representative.