SECTION 25 1500
BUILDING CONTROLS SYSTEM SERVER SOFTWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes software requirements for the Building Controls System Server.

B. Related Work
   1. 25 1119 Building Controls System Server
   2. 25 1223 – Client Server Information Database Integration

1.2 REFERENCES

A. Refer to 25 0000 Integrated Automation

B. Refer to 25 1516 Software For Programming Local Control Unit

1.3 DEFINITIONS

A. Refer to 25 0000 Integrated Automation

B. Refer to 25 1516 Software For Programming Local Control Unit

C. Workbench Tridium’s brand name for the Niagara configuration tool, a Java VM which hosts Niagara plugin components. The Distech-specific brand name for Workbench is EC-NetAX Pro.

D. Programming Interface Tool Software utilized to set up, configure, and program custom control or application logic that is loaded into a Local Control Unit.

E. Web Browser Software application for retrieving and presenting information resources on the World Wide Web or Intranet. In Niagara, any standard web browser such as IE or FireFox, shall function as a Thin Client that hosts one of Niagara’s user interfaces or Alarm Portal.

F. Web Server An information technology that processes requests via HTTP, the basic network protocol used to distribute information on the World Wide Web. The term can refer either to the entire computer system, an appliance, or specifically to the software that accepts and supervises the HTTP requests.

G. WebUI The Niagara-specific name for Web Server.

H. Web Workbench Technology which enables the standard Niagara Workbench to be run in a web browser.

I. Station The main unit of server processing in the Niagara architecture. A station runs the components of the Niagara Framework and provides the access for client browsers to view and control these components. The primary parts of a station include components and services. It is the combination of a database, a web server, and a control engine. The station either runs on a Web Supervisor PC or a JACE controller. Often the term Supervisor or Jace will be used interchangeably with station. Technically the term station describes the component runtime environment common to all platforms, and Supervisor and Jace describe the hosting platform.

J. Supervisor In Niagara, the Supervisor or Supervisor PC is a flexible network server used in applications where multiple Niagara-based stations are networked together. The Niagara Supervisor serves real time graphical information displays to standard web-browser clients and also provides server-level functions such as centralized data logging, archiving, alarming, real time...
graphical displays, master scheduling, and integration with enterprise software applications. Optional SQL and Oracle drivers enable seamless data transfer to these industry standard databases. In addition, the Niagara Supervisor provides a comprehensive, graphical engineering toolset for application development. On the Stanford Building Controls Network Architecture drawing, the Supervisor PC is designated as Building Controls System Server. Common industry generic terms for the Supervisor PC include: Operator Workstation, Front End Computer, Head End Computer, etc.

K. Supervisor Station The station that is running on the Supervisor PC

L. Thin Client A thin client (sometimes also called a lean, zero or slim client) is a computer program that depends heavily on another computer (its server) to fulfill its computational roles. This is different from the traditional fat client, which is a computer designed to take on these roles by itself.

1.4 SYSTEM DESCRIPTION

A. Software shall be furnished and installed on the Building Control System Server to perform the following functions:
   1. Tridium Niagara Workbench
   2. Supervisor Station
   3. Webserver feature (WebUI) shall be licensed
   4. Programming Interface Tool
      a. Shall be Distech Gfx, or approved equal
      b. Additional Programming Interface Tools, as required to configure, program and maintain, vendor specific

1.5 SUBMITTALS

A. Data sheet for software program used.

B. Licenses
   1. Provide a complete set of product licenses for systems and third party software used in system development, including documentation for all applications, databases, browsers, communications software etc.
   2. Stanford University shall be the named license holder of all software.
   3. All Niagara Station software licenses shall have the "accept.station.in="; "accept.station.out="; "accept.wb.in=" and "accept.wb.out=" section of the software licenses. Software features shall include: ui="true" ui.wb="true" ui.wb.admin="true" Contractor shall ensure that the installed products are completely open for future integration, at no additional cost to Owner.
   4. All features shall indicate expiration="never", schedule.limit="none", point.limit="none", history.limit="none", device.limit="none".
   5. The Niagara Supervisor Station software license shall indicate: feature name="niagaraDriver" expiration="never" virtual="true" schedule.limit="none" point.limit="none" history.limit="none" device.limit="100"
   6. The owner shall receive ownership of all job specific software configuration, documentation, data files, and application-level software developed for the project. This shall include all custom, job-specific software code and documentation for all configuration and programming that is generated for a given project and/or configured for use within the controllers, network controllers and/or servers and any related LAN/WAN/Intranet and Internet connected routers and devices.
   7. Any and all required IDs and passwords, including hardware locks for access to any component or software program shall be provided to the owner.
   8. Any software license agreement required by any component of the system shall indicate Stanford University as the license holder. Such license shall grant use of all programs and
application software necessary to maintain the system to Stanford University as defined by the manufacturer’s license agreement. The owner shall be free to direct the modification of any software license, regardless of supplier.

1.6 QUALITY ASSURANCE

A. Provide the latest version of Niagara supported by the Distech but in no case shall be earlier than Niagara 3.7.

PART 2 - PRODUCTS

2.1 BUILDING CONTROLS SYSTEM SERVER – GRAPHICAL USER INTERFACE

A. Basis of Design: Tridium Niagara based Supervisor PC.

B. Any third-party graphics software that requires additional licensing, above and beyond the Niagara license, is no acceptable.

C. Any third-party graphics software that requires Adobe Flash is not acceptable.

D. Graphical User Interface software shall have web access with remote monitoring and editing, minimize operator training through the use of English language prompting, 30 character English language point identification, and on-line help. The software shall provide, at a minimum, the following functionality:
   1. Real-time graphical viewing and control of environment
   2. Scheduling and override of building operations
   3. Collection and analysis of historical data
   4. Alarm reporting, routing, messaging, and acknowledgment
   5. Data trending shall be capable of displaying a minimum of ten points, which can be selected by browsing a point database.
   6. Scheduling reports
   7. Operator Activity Log

E. Provide a graphical user interface that shall minimize the use of keyboard through the use of a mouse or similar pointing device and "point and click" approach to menu selection.

F. User interface shall run on the Microsoft Windows Server 2008 R2 operating system. Full license shall be included.

G. Report and alarm printing shall be accomplished via Windows Print Manager, allowing use of network printers.

2.2 SYSTEM CONFIGURATION & DEFINITION

A. All database changes shall be performed while the Building Controls System Server is on-line without disrupting other system operations. If the Contractor makes any database changes while the Building Controls System Server is on-line, that require the Building Controls System Server to reboot, work shall be coordinated in advance with FESO and any additional users as determined by Owner.

B. At project turnover, the Contractor shall provide an electronic copy of the installed/commissioned database in the Building Controls System Server; Supervisor Station; every network controller; and every Local Control Unit for emergency recovery.

C. System configuration, programming, editing, graphics generation shall be performed on-line.

D. All Local Control Unites and Building Level Controller logic programming shall be accomplished using graphical block logic "wire sheets”. Any controller requiring line code to program is not
acceptable. All programming wire sheets shall be sufficiently annotated to facilitate future maintenance and modification of programming by Owner’s representative.

E. The communication speed between the Building Controls System Server, Supervisor Station, any Building Level Controller or Local Control Unit, and web interface or operator interface devices shall be sufficient to ensure fast system response time under any loading condition. In no case shall delay times between an event, request, or command initiation and its completion be greater than the following: (Contractor shall reconfigure LAN as necessary to accomplish these performance requirements.)

1. Ten (10) seconds between any alarm occurrence and enunciation at Operator GUI, remote station or any Operator Interface.
2. Ten (10) seconds between an operator command via the Operator Interface to change a setpoint and the subsequent change in the Local Control Unit.
3. Five (5) seconds between an operator command via the Operator Interface to start/stop a device and the time the subsequent command is received at the Local Control Unit.
4. Ten (10) seconds between a change of value or state of an input and its update on the Operator Interface.
5. Ten (10) seconds between an operator selection of a graphic and the graphic complete painting of the screen and update of at least 10 real-time data points.

PART 3 - EXECUTION

3.1 SOFTWARE INSTALLATION

A. Contractor shall demonstrate to Owner’s Representative that the copy of Windows operating system on the Building Controls System Server is activated by Microsoft prior to installing any other licensed software. Note that internet connectivity may not be available at the Building Control System Server location at the beginning of the project. To avoid the risk of breaking critical database links, the Owner recommends the Contractor buy the Server with Windows installed and Microsoft activated or to install and activate Windows prior to bringing the Server onsite.

B. The Building Control System Server shall act as a window to view into the control system, but shall not be required for control system operation. All control system programming logic, air handler or other reset logic, and occupancy scheduling logic, shall continue to function correctly, even if Building Control System Server is offline. Only Webserver and Niagara Workbench functionality shall require Building Control System Server to be online.

END OF SECTION