SECTION 25 15 00
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 00 00 Integrated Automation

B. Refer to 25 15 16 Software For Programming Local Control Unit

1.3 DEFINITIONS

A. Refer to 25 06 11 Integrated Automation Definitions

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
   a. The Tridium Niagara software on the server must be a Vykon-branded License. Any other brand of Tridium Niagara software on the server, other than Vykon, is not acceptable.
   b. Contractor assumes all responsibility for all costs and labor to ensure that the Tridium Niagara software on the server shall be fully compatible and capable of being updated the same day that Tridium releases any Major and Minor software updates.
   c. Any delay of time for the ability to update the Tridium Niagara software on the server on the same day that Tridium releases any Major and Minor software updates is unacceptable to Owner.
   d. Any delay of time for the ability to update the Tridium Niagara software on the server because of compatibility issues with any brand of Tridium Niagara software on the server that is not Vykon, is unacceptable to Owner.
   e. Each copy of Tridium Niagara software shall include a 5 year Niagara Software Maintenance Agreement.
   f. Niagara Software Maintenance Agreement shall provide all Major and Minor software releases at no cost to the Owner.
   g. Contractor is only responsible for providing labor to install all Major and Minor software releases at no cost to the Owner, during the Warranty period.

2. Supervisor Station

3. Webserver feature (WebUI) shall be licensed

4. Only Modules (JAR files) published by Tridium or Distech, or furnished by Owner, are permitted to be installed on Building Control System server.

5. Server Software
   a. As a courtesy to the contractor, Stanford FAC will provide the latest Vykon workbench installer and sample station with the VM assigned to the project. These files will be located on the virtual machine. The contractor is responsible for ensuring that the final station and database conform to the standards defined in Div. 25 specification sections.
6. 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). Niagara Supervisor station license shall be sized for the maximum number of devices and maximum point core for the devices connected to the Supervisor plus 25% spare capacity of both devices and point core. For example, if 100 devices were connected to the Supervisor with a total maximum point count of 5,000, the Supervisor license would require a minimum of 125 devices and a minimum of 6,250 points.

   a). Maximum number of devices, as calculated in the previous paragraph, shall include 3 mandatory Stanford University devices: Campus Master Supervisor, Campus DDC Critical Alarm Console, and 25Live Driver.

   b). In no case will Supervisor station license niagaraDriver device limit be less than 25.

   c). In no case will Supervisor station license globalCapacity device limit be less than 25.

2. 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.

3. Stanford University shall be the only named license holder of all software.

4. 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.

5. All features, except niagaraDriver and globalCapacity shall indicate expiration="never", schedule.limit="none", point.limit="none", history.limit="none", device.limit="none".

6. The Niagara Supervisor Station software license shall indicate: feature name="niagaraDriver" expiration="never" virtual="true" schedule.limit="none" history.limit="none"

7. 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.

8. Any and all required IDs and passwords, including hardware locks for access to any component or software program shall be provided to the Owner, at no additional cost to Owner.

9. 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 Tridium but in no case shall be earlier than Niagara 4.6.
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 not 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 2012 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 FAC 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.

C. Contractor to ensure that Niagara Supervisor Station is configured with a minimum of 8 GB of Heap memory. Heap memory must be configured in all instances of the nre.properties file.