

STATEMENT OF WORK

A. GENERAL INFORMATION

Title of Project: Convert Building 6, 10, 17, 18, 22, 24, 106, and 136 from Johnson Metasys to Delta Controls.

Scope of Work: Contractor shall provide a Delta Controls open protocol direct digital control building automation system and tie into the existing Delta Controls system. The contractor shall provide engineering, design, graphics, installation and materials to replace all DDC controls of Building's 6, 10, 17, 18, 22, 24, 106, and 136 existing HVAC equipment that resides on the M3 Johnson Controls system. The work shall include removing existing Johnson Metasys equipment and replacing with the specified Delta Controls equipment. Any necessary changes to the system to accommodate the Delta Controls equipment shall be provided and performed by the contractor.

Background: Johnson Controls no longer manufactures Metasys Controllers and is no longer supported on the Windows 7 platform.

Performance Period: The contractor shall complete the work required under this SOW in 120 calendar days or less from date of award, unless otherwise directed by the Contracting Officer (CO). If the contractor proposes an earlier completion date, and the Government accepts the contractor's proposal, the contractor's proposed completion date shall prevail. The work shall begin within 30 calendar days of award, unless otherwise specified. Notify the Contracting Officers representative (COR) for permission to work after business hours, weekends, and holidays.

Type of Contract: Firm-Fixed-Price.

B. CONTRACT AWARD MEETING

The contractor shall not commence performance on the tasks in this SOW until the CO has conducted a kick off meeting, or has advised the contractor that a kick off meeting is waived.

B. GENERAL REQUIREMENTS

The Building Automation System (BAS) shall be direct digital control (DDC) for providing lower operating costs and ease of operation. Microprocessor PID controllers monitor and adjust building systems to optimize their performance and the performance with other systems in order to minimize overall power and fuel consumption of the facility. The sequence of operations shall be developed in coordination with Lebanon VA Medical Center AC shop staff to maximize operating efficiency, energy efficiency and comfort utilizing the existing equipment (including existing inputs/outputs).

The system shall consist of a series of direct digital controllers interconnected by a local area network. BAS system shall be accessible through a web browser. The system shall have a graphical user interface and must offer trending, scheduling, downloading memory to field devices, real-time "live" graphic programs, parameter changes of properties, set point adjustments, alarm/event information, confirmation of operators, and execution of global commands.

The contractor shall provide Delta Controls open protocol direct digital control building automation system with Firmware Option 3.33 and tie into the existing Delta Controls system.

The contractor shall provide engineering, design, graphics, installation and materials to replace all the DDC controls of Building's 6, 10, 17, 18, 22, 24, 106 136 existing HVAC equipment that resides on the M3 Johnson Controls system. In addition, new MS/TP communication buses shall be run to new Delta Controllers.

Fan Coil Units (Building 17 & 18)

- Replace Johnson Metasys controls with Delta Controllers
- Replace existing electronic to pneumatic transducers
- Install new electronic to pneumatic transducer for cooling command
- Install new temp sensor for supply air temp
- Install new current sensor for supply fan status
- Install new H-O-A RIB for supply fan command on Fan Coil Units (FCU).

| Fan Coil Units (Building 17 & 18) | | |
|--|---------------|------------|
| Description | Part | Qty |
| Application Controller | DAC-322 R3 | 196 |
| Fan Coil Controller | DFC-322R3-240 | 2 |
| BACstat Network Sensor | DNS-24L | 198 |
| Duct temp probe for SA-T | | 198 |
| 2 Port EP Transducer | EP8000-2 | 392 |
| Current sensor for SF-S | RIBXGA | 198 |
| H-O-A RIB for SF-C | RIBU1S | 198 |

VAV Boxes (Building 136)

- Replace Johnson Metasys controls with Delta Controllers
- Install new temp sensor for supply air temp

| VAV Boxes (Building 136) | | |
|---------------------------------|--------------|------------|
| Description | Part | Qty |
| VAV Controller | DVC-V322AF-B | 7 |
| VAV Controller | DVC-V304AF-B | 1 |
| BACstat Network Sensor | DNS-24L | 8 |
| Duct temp probe for SA-T | | 8 |

Reheat Coils (Building 18 and 22)

- Replace Johnson Metasys controls with Delta Controllers
- Replace existing electronic transducers with pneumatic transducers
- Install new temp sensor for supply air temp

| Reheat Coils (Building 18 and 22) | | |
|--|-------------|------------|
| Description | Part | Qty |
| BACstat Thermostat | DNT-T221 | 34 |
| 2 Port EP Transducer | EP8000-2 | 35 |
| Duct temp probe for SA-T | | 34 |

Air Handling Units (AHUs) (Building's 18, 22, 24, 106 and 136)

- Replace Johnson Metasys controls with Delta Controllers
- Replace existing temp or temp/humidity sensors as required
- Install new temp sensor for supply air temp
- Install new current sensor for supply fan status
- Install wiring upgrades for proper fire alarm safety shutdown circuits to AHU's being converted to Delta where necessary.

| Air Handling Units (AHUs) (Building's 18, 22, 24, 106 and 136) | | |
|---|-------------|------------|
| Description | Part | Qty |
| System Controller w/Ethernet | DSC-1616E | 5 |
| Field Module | DFM-1600 | 1 |
| Application Controller w/Ethernet | DAC-1146E | 4 |
| Application Controller | DAC-633-R3 | 4 |
| Duct temp probe | | 18 |
| Averaging temp sensor | | 14 |
| Duct temp/humidity sensor | | 9 |
| Outside air temp/humidity sensor | | 1 |
| BACstat Network Sensor | DNS-24L | 7 |
| BACstat Network Sensor w/humidity | DNS-H24LB | 1 |
| Current sensor for SF-S | RIBXGA | 2 |

Hydronic Water Systems (Building's 6, 10, 17, 18, 22, 24, 106, 136)

- Replace Johnson Metasys controls with Delta Controllers
- Replace existing temperature or temperature/humidity sensors as required on hydronic water systems (HW-SYS/CW-SYS) and miscellaneous systems.

| Install Delta Controllers on Hydronic Water and Miscellaneous Systems | | |
|--|-------------|------------|
| Description | Part | Qty |
| Application Controller | DAC-633 R3 | 5 |
| System Controller w/Ethernet | DSC-1616E | 9 |
| Delta field module | DFM-404 | 4 |
| Application Controller w/Ethernet | DAC-1146E | 2 |
| Application Controller | DAC-322 R3 | 1 |
| Well sensor | | 23 |
| BACstat Network Sensor | DNS-24L | 4 |
| Zone temp sensor | | 3 |
| Zone temp/humidity sensor | | 2 |
| Duct temp probe | | 2 |
| BACstat Thermostat | DNT-T221 | 7 |

Gas Meters, Fuel Oil Meters, Steam Meters, Temperature Monitoring (Building 10)

- Install gas meters and associated wiring on supply lines to all boilers. Meters shall be tied into the DDC system for monitoring purposes.
- Tie existing steam meters supplying facility supply line, utility plant supply line, and laundry supply line into the DDC system for monitoring purposes.

- Provide temperature monitoring from feed water supply into DA tank and condensate return into the surge tank. Readings to be sent to data center and computer.

| Meters and Monitoring (Building 10) | | |
|--|-------------|------------|
| Description | Part | Qty |
| Gas Meter (Natural Gas) | | 3 |
| Fuel Oil Meter | | 3 |
| Temp Sensor | | 2 |

Contractor shall provide a One Year Warranty on all services and materials.

For every task, the contractor shall identify in writing all necessary subtasks (if any), associated costs by task, and along with associated sub-milestone dates. The contractor's subtask structure shall be reflected in the technical proposal and detailed work plan.

All written deliverables shall be phrased in layperson language. Statistical and other technical terminology shall not be used without providing a glossary of terms.

Where a written milestone deliverable is required in draft form, the VA will complete their review of the draft deliverable within 10 calendar days from the date of receipt. The contractor shall have 10 calendar days to deliver the final deliverable from date of receipt of the Government's comments.

All work shall be completed per the Lebanon VA Medical Center's Standards / Regulations and the US Department of Veterans Affairs Office of Construction & Facilities Management, Standards for Construction <http://www.cfm.va.gov/til/index.asp>.

All work shall meet building codes and standards governed by local and state laws.

Follow guidelines in Section 01 01 11 – Medical general Requirements.

Exclusions

- Licenses, Fees and Permits
- Service Agreement
- Any additional network drops to new system level controllers. Reuse network drops to existing N30's.