



**COUNTY OF ERIE  
DIVISION OF PURCHASE  
MEMORANDUM**

**To:** All Using Departments

**From:** Jamie Kucewicz, Buyer

**Date:** February 16, 2022

**Subject:** BUILDING MANAGEMENT SYSTEMS MAINTENANCE

**Bid No.:** 221335-002

**Effective Dates:** January 1, 2022 through December 31, 2024

**Vendor #:** 108965

**Vendor:** SIEMENS INDUSTRY, INC.  
85 Northpoint Parkway, Suite 8  
Amherst, NY 14228  
Contact: Paul Ingham

**Telephone:** 716-568-0983

**Pricing:** per attached document



# COUNTY OF ERIE

MARK C. POLONCARZ  
COUNTY EXECUTIVE  
DIVISION OF PURCHASE  
INVITATION TO BID

Bids, as stated below, will be received and publicly opened by the Division of Purchase in accordance with the attached specifications. FAX bids are unacceptable. Bids must be submitted in a sealed envelope to:

County of Erie  
Division of Purchase  
Attention: JAMES KUCEWICZ, BUYER (716) 858-6336  
95 Franklin Street, Room 1254  
Buffalo, New York 14202-3967

**NOTE:** Lower left hand corner of envelope **MUST** indicate the following:

BID NUMBER: 221335-002

OPENING DATE: JANUARY 13, 2022 TIME: 11:00 AM

FOR: BUILDING MANAGEMENT SYSTEMS MAINTENANCE

NAME OF BIDDER: Siemens Industry Inc.

If you are submitting other Invitations to Bid, each bid must be enclosed in a separate envelope.

Following EXHIBITS are attached to and made a part of the bid specifications, and part of any agreement entered into pursuant to this Invitation to Bid:

- EXHIBIT "A" - Assignment of Public Contracts
- EXHIBIT "B" - Purchases by Other Local Governments or Special Districts
- EXHIBIT "C" - Construction/Reconstruction Contracts
- EXHIBIT "D" - Bid Bond (Formal Bid)
- EXHIBIT "E" - Bid Bond (Informal Bid)
- EXHIBIT "EP" - Equal Pay Certification
- EXHIBIT "F" - Standard Agreement
- EXHIBIT "G" - Non-Collusive Bidding Certification
- EXHIBIT "H" - MBE/ WBE Commitment
- EXHIBIT "IC" - Insurance CLASSIFICATION "A"
- EXHIBIT "P" & EXHIBIT "PBI" - Performance Bond
- EXHIBIT "Q" - Confined Space Program Certification
- EXHIBIT "PW" - NYS Prevailing Wage
- EXHIBIT "V" - Vendor Federal Compliance Certification

(Rev. 1/00)

**County of Erie**  
 DIVISION OF PURCHASE  
NON-COLLUSIVE BIDDING CERTIFICATION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

- (1) the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or any competitor;
- (2) unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and
- (3) no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

**NOTICE**

(Penal Law, Section 210.45)

IT IS A CRIME, PUNISHABLE AS A CLASS A MISDEMEANOR UNDER THE LAWS OF THE STATE OF NEW YORK, FOR A PERSON, IN AND BY A WRITTEN INSTRUMENT, TO KNOWINGLY MAKE A FALSE STATEMENT, OR TO MAKE A FALSE STATEMENT, OR TO MAKE A STATEMENT WHICH SUCH PERSON DOES NOT BELIEVE TO BE TRUE.

**BID NOT ACCEPTABLE WITHOUT FOLLOWING CERTIFICATION:**

Affirmed under penalty of perjury this 13th day of January, 20 22

TERMS NET 30 DELIVERY DATE AT DESTINATION Erie County

FIRM NAME Siemens Industry Inc.

ADDRESS 85 Northpoint Parkway Suite 8

Amherst NY ZIP 14228

AUTHORIZED SIGNATURE 

TYPED NAME OF AUTHORIZED SIGNATURE Paul Ingham

TITLE Branch TELEPHONE NO. 716-568-0983

(Rev. 1/2000)

ERIE COUNTY OFFICE BUILDING, 95 FRANKLIN STREET, BUFFALO, NEW YORK 14202 (716) 858-6336

# County of Erie

DIVISION OF PURCHASE  
BID SPECIFICATIONS

BID NO 221335-002

Ship to: County of Erie  
Attention:  
Address:

Ship Via:  
Date Required at Destination:

ITEM NO.	QUAN-TITY	U/M	CATALOG NO./DESCRIPTION	UNIT PRICE	TOTAL PRICE
			Vendor to provide maintenance of building		
			management systems at various Erie County buildings		
			per the attached specifications		
			The term of the contract will be		
			January 1, 2022 through December 31, 2024.		

**NOTE:** Bid results cannot be given over the phone. All requests for bid results should be submitted in writing or faxed to:

**ERIE COUNTY DIVISION OF PURCHASE**  
Freedom of Information Officer  
95 Franklin Street, Rm. 1254  
Buffalo, NY 14202  
FAX #: 716/858-6465

**NAME OF BIDDER** Siemens Industry Inc.

## Article I – General Information

1001-1 The Department of Public Works Division of Buildings and Grounds requires a custom maintenance service program for Siemens Building Management Systems (BMS) dedicated to the needs of the various Erie County facilities listed in this technical document. The BMS encompasses the APOGEE Building Automation System and the Siemens ALS3 Fire Alarm (FAS) with multiple workstations. Systems reside on the BMS County security network with servers (Located at 45 Elm St.) This will be a Three-year contract for the term January 1, 2022 – December 31, 2024.

1001-2 Any Service to the systems must be performed by factory certified technicians to ensure the integrity and listings of both systems are maintained.

1001-3 the contractor assumes all associated liabilities and risks when performing maintenance to the County Wide Integrated Systems:

1001-4 The County reserves the right to terminate (60 day written notice) at any time, for any reason, or suspend any part of the services described herein when conditions change, operation of a County facility reduced or discontinued or other similar circumstances take place. In the event of such termination suspension, payments for services shall suspend without penalty.

1001-5 The contractor shall provide Full Comprehensive Parts and Labor (Including Emergency Calls) to include All BMS Servers, panels, end devices, input-output modules, temperature sensors, power supplies, controllers, modems, PC Workstations Monitors, Printers, Printer cartridges, software (upgrades) and field panel firmware (upgrades) are to be included.

1001-6 Service on the Siemens APOGEE BAS (Fire Alarm and Network Coverage where noted) and at the following facilities:

- 1 - Youth Detention – 810 East Ferry Street, Buffalo, NY 14211 (Network/BAS and Fire Alarm Services)
- 2 - Rath Building – 95 Franklin Street, Buffalo, NY 14202 (Network/BAS and Fire Alarm Services)
- 3 - Erie County Family Court – 1 Niagara Square, Buffalo, NY 14202 (Network/BAS Services Fire Alarm )
- 4 - Erie County Medical Mall – 1500 Broadway, Buffalo, NY 14212 (Network/BAS Services to be Time and Material)
- 5 - EOC Bunker – 1 Sheriff Drive, Orchard Park, NY 14127 (Network/BAS and Fire Alarm Services)
- 6 - EC Fire Training Center - 3359 Broadway Street, Buffalo, NY 14227 (Network/BAS)
- 7\* - Public Safety Campus - 45 Elm Street, Buffalo, NY 14203 (Network) BAS & Fume Hood Certification) Fire Alarm Services.
- 8 - Alden Correctional – 11581 Walden Avenue, Alden NY 14004 (Network Coverage).
- 9 - County Holding Center – 134 West Eagle Street, Buffalo, NY 14202 (Network Coverage/BAS/Fire Alarm)
- 10 - Erie County Human Services Center – 608 William Street, Buffalo, NY 14206 (Network/BAS and Fire Alarm Services)
- 11 - Botanical Gardens – 2655 South Park Avenue, Buffalo, NY 14218 (Network Coverage BAS and Fire Alarm Services)

## Article II - Qualification of Bidders

2001-1 The contractor shall provide authorized factory trained service specialists and engineering to perform service, maintenance and repairs to the Building Automation System. The Contractor shall provide current documentation of factory training of Service Specialists and Engineers for programming, system troubleshooting, system modification and repair to the Siemens APOGEE BAS. The successful contractor shall have a factory certified field office located within a 75-mile radius of Erie County.

2001-2 The contractor will have successfully completed APOGEE Programming courses and certified to install the latest versions of software and firmware for the BAS. The contractor shall have access to electronic source documentation and Field Support for required software and firmware updates.

2001-3 The contractor shall need to access to Siemens APOGEE controllers, software and firmware from a certified factory. The contractor shall stock essential spare parts and materials (refurbished parts shall not be acceptable) in their local warehouse or on-site at the County facility in the event of emergency needs.

2001-4 The contractor shall a qualified field service organization for a minimum of fifteen years. The contractor shall be

an established, certified building automation agency capable of performing all work described by their full-time employees. No portion of this contract shall be subcontracted to others.

2001-5 The contractor shall have a flawless record with the New York State Department of Labor. Any infractions within the past ten years, specifically regarding prevailing rate will be subject to disqualification of bidder. Note: Prevailing wage labor rate documentation including specialists must accompany quarterly invoices. (New York State Department of Labor Classification)

### Article III – Scope of Services

3001-1 The service specialists shall perform (monthly) reporting and documentation functions that will allow the Contractor to provide the Owner with a detailed service report regarding time, date, location and cause of each critical failure alarm as well as time, date, location and work done for each time the system is tested. On a monthly basis, the Contractor shall provide the Owner with a report as described above for the previous month's service. This report will be given to an owner's representative from Erie County and can be e-mailed.

### WORK INCLUDED

#### 3001-2 Building Automation Software Upgrade

During the term of this agreement the successful contractor shall provide all required hardware, software, engineering and labor for the software upgrade of existing Insight network to Siemens DESIGO CC. The phased migration will occur over the 3-year term of this agreement with specific scopes assigned to the annual schedule as detailed below. The successful bidder shall be capable of operating both Insight and DESIGO CC through the course of this agreement and provide qualified factory support of both systems, including all service response, emergency response, licensing and software and firmware support for issues for both hardware, software, fire alarm management and building controls. All existing alarms, reports and energy dashboards shall be seamlessly migrated to DESIGO and displayed at the appropriate building graphical display. Alarm notifications will continue to alert the existing Erie County personnel via text, email or phone call and in current order of escalation as it is now. All point names within the Insight network will remain unchanged unless instructed to do so by Erie County DPW personnel, if point names are modified the PPCL and alarming will need to be programmed by a Siemens factory certified technician in order to maintain all code, alarms and management. The successful contractor shall provide this software on existing Microsoft server (v. 2019) at the PSC server room on dedicated redundant machines that are capable of running the Erie County BMS/Fire alarm network. All protocol drivers and licensing required for integration into existing Modbus devices, BACnet devices, 3rd party Fire Alarms and building management software shall be provided and installed by successful contractor. The successful bidder shall also be responsible for providing CHW optimization savings reports for the Rath building as the part of an energy performance project which is controlled and monitored by the Siemens BAS. The successful contractor shall also provide and maintain reports for all critical areas currently controlled and monitored by the Siemens BAS. Such reports shall provide time, date, temperature and humidity for these environments as the existing ones do up to and including power management, emergency power monitoring and emergency power supply. During year 1 of the contract term the successful bidder shall provide all licensing for servers and dedicated client machines on the Erie County BAS network. All client licensing shall remain unchanged with permissions and graphical displays available to these dedicated buildings. All user account quantities shall remain the same and building engineers and system users will still have access to their dedicated buildings as it currently resides. Erie County BAS network nodes shall exist independently via Cat 6 Ethernet connectivity and firmware patches and labor to perform the patch will be provided for required BAS panels. The successful contractor shall also provide point displays on DESIGO CC software and load these points onto DESIGO CC display broken out by facility.

During Year 2 of the contract term the successful contractor shall migrate all Erie County BAS graphics onto DESIGO CC. Existing graphics shall continue to reside on Insight network and new updated graphics will be addressed with correlating point name and facility. If new floor plans are available for the Erie County facility locations these updated plans will be included in the graphics migration and modified accordingly. Graphics that are no longer in use or have been divorced from the Erie County BAS will be deleted and/or modified to reflect this change. New graphics will need to be uploaded from Erie County server location and separated by nodes to correlating buildings for engineer account access.

During Year 3 of this agreement the successful contractor shall commission all point names and graphics as

well as any unresolved programming issues. The successful contractor shall also host two (2) instructor led trainings for DESIGO CC at a branch location (located within a 25-mile radius of downtown Buffalo, NY) for the BAS users on staff of the Erie County DPW. These training dates will be held during 2024 and provide the user with a knowledge of the DESIGO CC System including but not limited to: scheduling, alarm management, trending, point editing, graphic editing and troubleshooting of DESIGO CC System.

All materials and labor for this upgrade adhere to New York State Office of General Service (OGS) Contract PT68800 Group 77201 Award 23150. A detailed specification of the DESIGO CC System requirements can be found in the paragraphs below:

## 1) System description

### Management level requirements

#### **General**

All information comes together at the management level. The management level is the graphical, interactive interface for the operator to the automation station and the integrated plants and plant parts. System operation must be based on a simplified approach. The operator can display, query, process, save, or print any plant information via the peripheral units at the management level.

The plants are displayed in synoptic images and the values and states are presented and displayed dynamically. Special programs are used for higher control, optimization functions, maintenance and energy management.

**Specified products:** Siemens / Desigo CC

#### **System Openness**

The control system supports standard protocols used in building technology, including BACnet, OPC DA (Data Access), Modbus, KNX, M-Bus and S7 and S7 Plus.

**Specified products:** Siemens / Desigo CC

#### **Multi-discipline**

The system must be able to handle natively different disciplines in a building: Building Automation, Fire, Industrial PLC's, Access Control, Intrusion, Video... The disciplines must allow distribution across independent servers if required. Scope of access for controlling and monitoring discipline data must allow customization per user in every client station.

Each management station of the system must be able to be assigned one or more disciplines, allowing customizable single or multiple discipline access mode.

**Specified products:** Siemens / Desigo CC

#### **Exchange of data to external system via web service**

The exchange of data (values, events, and trend data) between other building systems, corporate applications, or other supplemental services, must be supported via web services.

**Specified products:** Siemens / Desigo CC

#### **Data exchange via various subsystems**

If several subsystems are used, various data exchanges between automation stations and the field network (outside temperature, demand and coordination signals, etc.) must be supported.

**Specified products:** Siemens / Desigo CC

#### **Automate recurring tasks**

The building automation and control system must take care of recurring tasks to lower the operator's workload.

This includes, for example, cyclical report generation triggering, plant release at various conditions, or automatic adjustment of setpoints or alarm limits.

**Specified products:** Siemens / Desigo CC

#### **Reactions**

The system must allow automatically executable actions to be programmed at the management station

when set conditions are verified.

Conditions can be time-based, event-based, on change of values or on a combination of some or all. When conditions are met, the system shall execute a pre-configured list of commands

**Specified products:** Siemens / Desigo CC

#### **Drafted for use by fire detection and security systems (UL certified)**

The management station must have passed Underwriters Laboratories (UL) performance and environmental tests.

The management station must offer all relevant functions to connect comfort and fire detection systems:

- Display and handle events
- Graphically monitor and control the fire detection system
- Highlight the highest priority events.
- Direct navigation to the element triggering an event.
- Quickly go to user-defined instructions and graphically display event locations.
- Save and query activity data from the fire detection system.
- Distribute fire monitoring and control capabilities.
- Provide operating instruction checklists for operators during stressful situations for handling fire events.
- Send automatic remote messages of impacted device per e-mail.
- Display and plan automatic history reports.

**Specified products:** Siemens / Desigo CC

#### **System-wide self-monitoring**

The system must be capable of monitoring running applications, printers, and all connected subsystems.

The system must report an event in case of an exceptional state.

**Specified products:** Siemens / Desigo CC

#### **System analysis**

Detailed analysis on system and user activities must be available in chronological order.

**Specified products:** Siemens / Desigo CC

#### **Scada Platform**

The management station must be based on a SCADA platform that is compatible with the BACnet B-AWS profile. It must permit integration of any building installation including HVAC and lighting.

**Specified products:** Siemens / Desigo CC

## 2) Operating system for building automation and control system

All data servers, operator stations, etc., for the BAC system must be compatible with the most current, generally available Windows 64-bit operating system.

As a result, the current version of Windows (at least 6 months after release by Microsoft) as well as a minimum of the last Version is supported. Modifications to the customer network must be possible. The BAC system must therefore be installable on any common PC or on tested embedded/industrial hardware and offer a multitasking environment where a user can run multiple applications simultaneously.

**Specified products:** Siemens / Desigo CC

#### **Ecosystem**

The system must provide the means to develop proprietary drivers, not supported by the system natively for communication with 3rd party subsystems and devices, or exchange of data with external applications. The system must also provide possibilities to extend the functionality by adding new libraries containing scripts, graphic symbols, graphic templates or object models to support subsystem integration or optimize automated tasks.

**Specified products:** Siemens / Desigo CC

#### **Long term storage**

The system must be able to store and archive data for a period of more than 10 years, allowing as an option segregation of stored data in different groups that can be tuned individually with different recording frequencies. Remounting of offline archived data must also be allowed.

**Specified products:** Siemens / Desigo CC



### **Validated and critical environments**

The system must allow compliance to regional certifications for validated environments, such as GMP Annex 11, US FDA 21 CFR Part 11 . A special technical document verifying the compliance of the system in critical environments must be available.

**Specified products:** Siemens / Desigo CC

### **Migration**

The system must allow a smooth migration of an existing management station. Via its embedded software utilities, it must be able to accumulate existing graphic pages and Trend Objects or datasets, from a legacy management station to the new software.

**Specified products:** Siemens / Desigo CC

### **Distributed architecture**

The platform must allow a distributed architecture across different systems to enable scalability (up to 500,000 objects) and separation by discipline and / or location.

The distributed architecture must provide a single system image to the end user. The functionality that is available in a single system must be also available in a distributed architecture.

**Specified products:** Siemens / Desigo CC

### **Integration of BACnet Elevators/Escalators**

The system must natively support the integration of BACnet Elevator and Escalator objects with models and graphic libraries to perform the following actions:

- Visualize elevators and escalators state on a floor plan, as well as dynamically generate graphic templates
- Monitor elevator status
- Monitor escalator status

**Specified products:** Siemens / Desigo CC

### **Building Information Modeling (BIM)**

The system must natively support Building Information Modeling (BIM) technology to perform the following actions:

- Display visual and data information from Building Automation components such as room controllers, field devices etc., in a 3D view.
- Display the 3D model of the building:
  - Allow operators to rotate, zoom in and zoom out the mode
  - Allow manual navigation through the 3D model, using the mouse cursor
  - Support simplified navigation with single mouse click to enter through doors, windows, and up/down staircases
  - Allow navigation from a system object via the browser to the associated equipment in the BIM view and vice versa
  - Allow selection of a BIM equipment and provide current (runtime) values and status properties. Commanding of objects shall be supported as well via the operating pane (such as switching on a light)
- Display 2D floor plan(s) of the building
  - Show the selected room in focus (zoom view)
  - Show various room statuses as colored carpets
  - Show current room values (runtime values) directly on the floor plan
  - Allow selection of a room or a segment
- Display\* room status in the 3D building view
  - Display the room operating mode (such as comfort, pre-comfort, etc.)
  - Display the presence detectors statuses
  - Display window states (open or closed) in a clear graphical format
  - Display the temperature status of a room

- Display the lights' state
- Display the positioning state of the blinds
- Provide a summary of all active events that are present on a selected area (such as a floor)
- Show the location of the building in Google maps (where applicable)
- Display the datasheet(s) and/or documentation of the selected equipment or field device, if relevant properties are present in the BIM data.
- Supported Data formats:
  - IFC4
  - IFC2x3

\*Optimized for Desigo Room Automation

**Specified products:** Siemens / Desigo CC

#### **Remote Drivers – Front End Processors (FEP)**

The system must support the separate installation of communication drivers for subsystem communication on a different server.

**Specified products:** Siemens / Desigo CC

#### **Help functions**

The software includes an online help, context sensitive as well as indexed, a glossary, and can be searched by terms or sentences. The help content is structured according to the following format: Engineering or Operating help.

**Specified products:** Siemens / Desigo CC

#### **Product lifecycle**

The system provider must offer a transparent product lifecycle to ensure the required consistency. All equipment offered for this project must be contained in the current product portfolio.

The existing system environment must allow for easy and smooth integration of various devices and extensions.

**Specified products:** Siemens / Desigo System

### 3) Software updates and upgrades

The system must offer the possibility of software upgrades to the latest available version, in order to benefit from new features and from enhanced protection against possible cybersecurity threats.

This can be achieved by enabling a subscription to a software upgrade service, which must offer:

- Permanent protection against cybersecurity threats
- Availability of the latest software features (system and limits upgrade)
- Compatibility with the latest version of supported operating systems
- Support of the latest versions of the integrated subsystems

**Specified products:** Siemens / Desigo System

#### **System continuity**

Products used must have a label for a global standard that ensures interaction with products from various manufacturers. Products with these labels can also be combined if manufactured at intervals of more than 10 years.

**Specified products:** Siemens / Desigo System

## Hardware Requirements

- Embedded Hardware

Special purpose embedded hardware is required for small and / or mid-sized sites. The hardware and software environment must fulfil the following definition:

Type: Embedded

- Processor: Intel Celeron N2930, Intel Atom E3827, Intel Celeron 4CJ1900
- Memory: 8GB
- Hard disk: 100GB SSD
- Network Card: Gigabit speed
- Graphics Card: Onboard graphics adapter with integrated processor
- Minimum Software environment:
- Win10 IOT Enterprise 2016 LTSC
- Microsoft SQL Server 2014 – Express Edition
- Network Requirements:
- Local network
- Single subnet
- 100 Mbps up/down
- Support Wake on LAN
- Defined range
- 1 server
- Max number of objects = 10,000

**Specified products:** SIMATIC Nanobox IPC227E

- = 50,000 (Total: 500,000 in a distributed architecture)

**Specified products:** Siemens / Desigo CC

- Standard Hardware for large plants

(ca. 2000-35,000 data points)

One client/server system is required for large sites. The hardware environment must fulfill the following definitions:

- Type: Server 19" rack
- Processor: Core i7 or equivalent  $\geq 3.2$  GHz
- Cores: 4 per running system
- Memory: 32GB
- Hard Disc: 1 \* 1024GB SSD
- Network card: Gigabit speed
- Graphics card: Mid-range graphics card
- Network requirements
- Backbone Gigabit
- 1000 Mbps up/down
- Latency less than 10 ms
- For the integration of XNET Fire Safety Systems, the server hardware needs to have a PCI slot for the NCC-2F card
- IPV6 supported (NOTE: IPV6 for BACnet networks not supported)
- Standard secure mechanisms for DMZ, such as port forwarding, tunneling and redirection, PAT, NAT supported
- Hosting of the server in DMZ
- Defined range
- 1 server
- Max number of objects = 150,000 (Total: 500,000 in a distributed architecture)

**Specified products:** Siemens / Desigo CC

The software must be compatible with the following virtualization software packages:

- VMware®:

- Virtualization platform: VSphere 6.0, 6.5, 6.7 and 7.0
- High Availability and Fault-tolerant software:
- ESXi 6.0 managed by VCenter Server Appliance v6.0.0
- SXi 6.5 managed by VCenter Server Appliance v6.5.0

- Stratus®:
  - Virtualization platform: KVM for Linux CentOS v7.0
  - High Availability and Fault-tolerant software: EverRun Enterprise 7.5.1, 7.7
  - Storage: Local disks
  
- Microsoft
  - Virtualization platform: Microsoft Hyper-V 2011, 2016 and 2019
  - High Availability software: Microsoft Hyper-V Server 2012, 2016, and 2019
  - Storage: Local disks, Block Storage (iSCSI, Fiber Channel) or Storage Space Direct on server 2019

#### 4) User profiles

##### **Individual views**

Individual, specific or user defined views must be adjustable for the plant overview. The views must cover various electrical and mechanical installations or follow geographic or organizational criteria and permit a customized, hierarchy view that depicts the management station, control systems, plant geographic layout as well as relationship of the mechanical facilities.

**Specified products:** Siemens / Desigo CC

##### **User Privileges**

The building automation and control system must allow users to define, change, or delete predefined reactions as per their user privileges.

**Specified products:** Siemens / Desigo CC

##### **Simplified Operator Interface**

The building automation and control system must allow operators to efficiently maneuver the controlled equipment. The navigation within system applications and components is achieved by thumbnail icons and via grouping of functionalities.

A simplified operator interface must be assigned to system users that require a simplified approach. The interface can be applied to more than one user. The following functionalities must be by default available for the system Operator:

- Managing of System Events (alarm management)
- Operate the installation via graphic application
- Navigate via thumbnails
- Time Scheduler
- Trend Viewer
- Log Viewer
- Report Application
- Document Viewer
- Notification

The operating interface must be documented by a workflow driven documentation that helps the operator to use the management station. The document shall be provided in PDF or online help format.

**Specified products:** Siemens / Desigo CC

##### **Multilingual**

The user interface must support a minimum of 3 languages at the same time.

**Specified products:** Siemens / Desigo CC

## 5) Graphics

### **Operating interface to CAD system**

The user interface must allow users access to various system diagrams and floor plans using graphical depictions, menu selections, and data point assignments.

The graphics software must also permit the import of CAD symbols (DWG, DXF format) or scanned images for use in the system.

**Specified products:** Siemens / Desigo CC

### **Operating messages**

Operating message must be able to be displayed and evaluated on the management level. Graphics must be able to display data point states that are overwritten by a local priority switch. This on data points that were developed to supplying by local override.

**Specified products:** Siemens / Desigo CC

### **Full graphics mode**

A fully graphics-based management level with ergonomic and freely scalable images must be available.

The system must be developed to operating, monitor, optimize, and log all connected automation stations in real time.

**Specified products:** Siemens / Desigo CC

### **Graphics generation**

Operators must be able to add, delete, and edit system graphics and state texts for digital data points from the standard user interface without external or special tools.

**Specified products:** Siemens / Desigo CC

### **Navigation**

A hierarchy tree can support as an option navigation to the various graphic images. Graphic displays must include the ability to dynamically zoom and switch among various layers with different information.

**Specified products:** Siemens / Desigo CC

### **In graphics commanding**

The system must offer graphic objects, which can be used to command or control the system. At a minimum, sliders, buttons, text boxes, dropdown lists and radio buttons must be included

**Specified products:** Siemens / Desigo CC

### **Graphic symbols and standards**

Plant graphics must meet the ergonomic needs of the operator. The displayed graphic symbols must correspond to the generally valid standard for HVAC symbols (DIN EN 62424 (VDE0810-24)) and ASHRAE guidelines. The symbols must be supported as two- and three-dimensional graphics.

The ability is required to create colored floor displays and system diagrams for each mechanical facility including AHU, chilled water plants, hot water boiler systems, and room operator units. Associated print outs of standardized plant images must be added to the bid.

**Specified products:** Siemens / Desigo CC

### **Object-oriented graphics**

The building automation and control system must offer dynamic, high-resolution graphics. The graphics must be object-oriented. Each symbol must be able to display several states in the same, consistent format. At the same time, several views must be able to be open concurrently, and all views must be updated dynamically.

**Specified products:** Siemens / Desigo CC

### **Continuous update and display**

Measured values, setpoints, user settings, and alarms must be displayed immediately and continuously. State changes must be indicated via symbol, e.g. using animation or changing the color, in general, however, graphic presentation, or text.

**Specified products:** Siemens / Desigo CC

### **Room management**

The building automation and control system must provide a dynamic room re-assignment functionality according to the building needs. HVAC, lighting and shading functions can be re-assigned from the management system directly in order to fit the new needs.

The following functionality is provided:

- HVAC functions, such as, FCU, VRV etc.
- Lights/blinds push-buttons
- Brightness/occupancy sensors
- Collision detectors etc.

No other engineering or commissioning tools must be used to finalize the assignments.

**Specified products:** Siemens / Desigo CC

## 6) Energy management

Energy and Power Management (EPMS) must be part of the Building Management System (BMS) software. More specifically:

- Operational and engineering data from EPMS must be in the same database as those of the BMS
- The following functions must use the same workflow, not requiring separate training or additional login:
  - Trending
  - Custom Graphics generation
  - Alarms management
  - Logs
  - User management with various authorization levels
  - Scripting
  - Help

### **Integration of meters**

The EPMS must be capable to integrate any meter or breaker that has a known Modbus registry map. The EPMS must allow the bulk import (integration) of many devices as well as import of individual devices.

The end user or engineer must be able to select for each meter or circuit breaker, which data points should be polled, displayed, achieved. Searching/filtering of the data point list must be available in order help the process above to be more efficient.

For each data point there must be the option to have a high or low limit that will create an alarm if exceeded.

The EPMS must allow the organization of integrated devices in Hierarchical structure with areas and sectors where the devices belong.

### **Dashboards**

The EMPS must have Dashboards that can show real-time data together with processed historical data. For example, real-time power demand and daily energy consumption of the last week on the same page. Each device and each area are must have its own dashboard and premade graphics showing basic characteristics and harmonics (if available from the device).

### **Virtual devices and calculations**

The engineer/user must be able to create virtual objects and assign to them outputs of a calculation of existing datapoints. (For example, add power demand of device A and device B, and assign the output on a virtual point to get the total power demand of those devices.)

### **Hierarchical reporting and Filtering**

The system must allow the creation of a hierarchical structure for report generation. Every element belonging in the selected node must be included in the relevant report.

The system must allow every meter to be assigned into a category (e.g. electricity) and the report generation must allow filtering based on these categories.

**Specified products:** Siemens / Desigo CC

### **Power Quality meters**

The system must allow the integration of power quality meters with the IEC61850 protocol.  
In case a device generates a fault based on the waveform capture, the system must be able to download the file from the device for further analysis and storage.

## 7) Scheduler programs

### **Management via central scheduler programs**

Operate all scheduler programs online from the management level to achieve consistent, transparent operation of all integrated systems and subsystems.

**Specified products:** Siemens / Desigo CC

### **Scheduler programs**

The system must offer the ability to operate schedulers on automation stations as well as support management station-based time scheduling.

Each currently used plant image must offer user-friendly scheduler operation.

**Specified products:** Siemens / Desigo CC

### **Scheduling and override**

Providing calendar type formats to simplify time and data planning and override building operation is required. Time definitions must be located on the PC workstation and building controller to ensure scheduling even if the PC is offline.

Providing override access through menus, graphical mouse, or function keys. Providing the following operations at a minimum:

Comprehensive support of all BACnet objects for scheduler, calendar, and commands.

Daily and weekly schedules

Ability to compile multiple data points into a logical command group to simplify scheduling (e.g.

Building 1 Lighting)

Planning predefined reports.

Ability to plan at least 10 years in advance.

Provide filters for schedulers by name, time, frequency, and schedule.

Provide sorting schedulers by name and schedule type.

**Specified products:** Siemens / Desigo CC

### **Customized scheduler program**

The user can customize the schedule defining the operating mode for each plant. Switching times are defined via weekly schedule. Overriding recurring weekly schedules via local or global exceptions as well as operation via any operator unit must be possible.

**Specified products:** Siemens / Desigo CC

### **Customized calendar**

Local or global calendar exceptions must be able to override the plant-specific weekly scheduler program. Equal calendars must be assigned priority over each other. Calendar operation must be possible via all operator units.

**Specified products:** Siemens / Desigo CC

### **Create calendar online**

Calendar programs must be able to be remotely created online to provide service personnel a high level of flexibility.

**Specified products:** Siemens / Desigo CC

### **Create scheduler online**

Scheduler programs must be able to be remotely created online to provide service personnel a high level of flexibility.

**Specified products:** Siemens / Desigo CC

**Create offline and online trends**

Trend log objects, both offline or online, must be able to be remotely created in order to provide service personnel a high level of flexibility. This action must be performed directly from the management system, without accessing directly the automation layer.

**Specified products:** Siemens / Desigo CC

**Multiple, concurrent users**

Multiple users must be able to work concurrently on various workspaces on the building automation and control system for efficient and comprehensive work. Plants must simultaneously be analyzed and e.g. monitored or operated via a remote station.

**Specified products:** Siemens / Desigo CC

## 8) Security

**Access protection**

Different persons maintain and operate the plant. For this reason, passwords must be assigned to authorized persons to guarantee transparency for tracking or authorization purposes. A minimum of four different rights must be assignable.

Administrator.

Program and graphics creation.

Operation to change or adjust setpoints.

Guest.

**Specified products:** Siemens / Desigo CC

**Windows authentication**

The building automation and control system password management must meet the customer's IT guidelines. In other words, the customer's corporate standard also applies to the BAC system. Therefore, password management and the associated properties must comply with standard Windows log on and "track" the operator on each workstation.

**Specified products:** Siemens / Desigo CC

**Operating functions**

Central setpoint shift

The setpoints in the rooms must be adjustable and can be shifted for effective and clear room operation for the rooms as a whole and individually via the building automation and control system.

**Specified products:** Siemens / Desigo System

**Alarm function**

The automation station contains an image of the physical data points. Each data point must be alarmable. Parameterization via operator units must be possible. The alarms either do not require acknowledgement, i.e. they come and go without acknowledgement, or must be acknowledged or reset and acknowledged.

**Specified products:** Siemens / Desigo System

**Alarm message**

Alarms from the automation station must be displayed on the operator units within 1 second. Alarms must be acknowledged or acknowledged and reset dependent on access rights. Delay times (e.g. feedback supervision, triggering of differential pressure monitor, filter) must be changeable via operator units.

**Specified products:** Siemens / Desigo System

**Alarm suppression**

During commissioning, plant servicing or automation station startup, it must be possible to suppress alarms and events from single objects or from entire plants. The suppression must include corresponding undesired reactions.

The management system shall provide a clear indication in case of an active alarm suppression and it shall easily be possible to list the suppressed objects.

**Specified products:** Siemens / Desigo System



**System safety**

High availability is expected from the building automation and control system. This results in greater data availability, greatly reducing any down times.

**Specified products:** Siemens / Desigo System

**Alarm generation**

The system must be able to generate alarms based on events that are reaching the management station directly from the field level. The system must also provide a functionality for creating management station alarms that are configurable and satisfy the needs of event management, even for devices that are not supporting alarming natively.

**Specified products:** Siemens / Desigo System

**Message handling**

The building management system must support alarms generated at the automation level (substations).

**Specified products:** Siemens / Desigo CC

**Notification of alarms**

It shall be possible to add attachments to notifications sent out via email. The attachments can be static or dynamic. In the case of dynamically attachments, the attachment is dependent of the data point in alarm. For example, if a fire alarm needs to be notified, the corresponding email can have an attached graphic of the ground floor with the fire detector in alarm.

**Specified products:** Siemens / Desigo CC

**Alerting via phones using voice messages**

The system shall allow sending notifications to phones using customers PBX phone system. It shall be possible to acknowledge such voice messages using phone keys, such as "press 1 to acknowledge".

**Specified products:** Siemens / Desigo CC

**Graphical easy buttons to trigger notifications**

The system shall allow to send out notifications manually, using graphical buttons for triggering. These graphical buttons shall be part of normal graphic pages (for example, campus, building and ground floor graphics).

**Specified products:** Siemens / Desigo CC

**Acknowledgment**

Operator units for acknowledgement

All alarms (alarms and faults, errors) must be acknowledgeable after issue of individual rights from all connected workstations. For tracking reason, a time stamp and assignment (based on user account) is required.

This includes:

Local acknowledgement (control cabinet, automation station)

Management level

Remote operating equipment

**Specified products:** Siemens / Desigo CC

**Alarm management strategy**

The software must permit configuration of alarm management strategy for each data point. The editor provides a way to edit data points directly, online via the building management system.

The software for the user interface is also able to make batch changes to data point definitions and attributes to one or more data points selected by the user.

**Specified products:** Siemens / Desigo CC

**Colored display of Alarms and Events**

Incoming alarms must be colored for quick and easy interpretation. Both order and state, as well as alarm priority must be recognizable. The alarm window must be displayed as per operator needs. Alarm window displays must be added to the bid.

**Specified products:** Siemens / Desigo CC

### **Alarm message content**

The message texts must contain all information necessary to allocate and resolve the error. This includes at least the following attributes:

Clear text.

Control cabinet name

Plant name

Priority

Timestamp

Time.

Status (acknowledged, unacknowledged).

Instructions on how to resolve the problem must be available in the background.

### **Informational Text and Object Memo**

For each system object it shall be possible to configure texts with object specific information and instructions that must be displayed in case of an alarm. In addition, a memo can be attached to any system and used as a reminder or a note to operators.

**Specified products:** Siemens / Desigo CC

### **Filter alarms**

The building automation and control system must offer alarm filtering. Filtering must be possible by alarm lists or priorities. Alarms are displayed in popup windows.

Step-by-step instructions on handling each alarm help the building automation and control system operator to find a solution.

**Specified products:** Siemens / Desigo CC

### **Event management**

#### *Event routing and sorting*

Event messages can be displayed on each workstation in a table application and must include the following information: name, value, event time and date, state, priority, acknowledge information, and alarm counter. The system must also be able to send out an audio message appropriate for the event category.

**Specified products:** Siemens / Desigo CC

#### *Event message*

Event messages can be displayed on each workstation in a table application and must include the following information on each event: name, value, event time and date, state, priority, acknowledge information, and alarm counter. Each event must also be able to send out an audio message appropriate for the event category.

**Specified products:** Siemens / Desigo CC

#### *Event acknowledgement*

The user can acknowledge each event directly from the list, suppress the acoustic notification and print or delete it. The interface must also have an option to deleted active, acknowledged events until it is reset to the normal state.

The user must be able to navigate to information associated with a data point, start an associated graphic or trended graphic diagram, or run a report for a data point selected directly from the event list.

**Specified products:** Siemens / Desigo CC

### **Event treatment**

The system must provide multiple alarm-handling options. These are to be configured in alignment the standard operating procedures.

#### **Fast Treatment**

The user must be able to acknowledge each event directly from the event list, suppress the acoustic notification, print or delete it. The interface must also have an option to deleted active, acknowledged events until it is reset to the normal state.

The user must also be able to navigate to information associated with a data point, start an associated graphic or trended graphic diagram, or run a report for a data point selected directly from the event list.

**Investigative Treatment**

From the event list, operators shall have the ability to quickly focus on the source of the event, and all information (live and recorded video streams, recent history, schedules, and so on.) related to the event source.

**Specified products:** Siemens / Desigo CC

**Assisted Treatment with Operating Procedures**

The system shall have the ability to program operating procedures consisting of a sequence of steps or actions, which the operator must perform. For each step of a procedure, the system shall provide instructions and operating tools. With appropriate permissions, a user shall have the ability to create, view, edit, or delete operating procedures.

Each operating procedure shall be composed of steps - some of which may be mandatory - for the user to complete (for example, view the graphic of the object in alarm, view live and recorded video streams, or complete an event handling form) while some others shall have the ability to be configured to be executed automatically by the system (for example, send emails to recipients or print on paper the information of the event).

**Specified products:** Siemens / Desigo CC

## 9) Reports

**Report generation**

Must generation spontaneous or predefined reports to provide important plant data at any time. The reports must be printable and exportable as a PDF file. The data must be able to be edited in other programs (Microsoft Excel or Microsoft Access) for further analysis.

**Specified products:** Siemens / Desigo CC

**Standard report templates**

The system must support templates to generate detailed reports at little effort. At least three different report templates must be available by default.

For example:

- Report of records at given user defined time intervals
- Reports to record alarm and fault states
- Reports to record log entries
- Reports to record plant and control cabinet states.
- List of all current data points in an override state
- List of all disabled data points
- List of alarm strategy definitions
- Overall data point report
- Data point trend data listing
- Initial value report
- User activity report
- Event history report

**Specified products:** Siemens / Desigo CC

**Customized report templates**

The system must permit generated, specific reports as well as individual report templates that may include graphics and trend views.

**Specified products:** Siemens / Desigo CC

## 10) Remote operation

### **User requirements on operation**

The web-based user interface offers the same functionality as those on other workstations including operation and configuration. All user functions be available on clients via browser, installed client console, or Windows desktop App.

User must be able to remotely operate and engineer plants regardless of location. Of course, this openness cannot place the plant security at risk. The client must run on a browser as a full trust client application.

**Specified products:** Siemens / Desigo CC

### **Dedicated Desktop Installed client**

User must be able to remotely operate and engineer plants regardless of location. Of course, this openness cannot place the plant security at risk. The client must operate as a fully installed software installation, locked with a desktop and prevents in this manner software from being minimized or hidden by other applications.

**Specified products:** Siemens / Desigo CC

### **Windows Desktop APP**

User must be able to remotely operate and engineer plants regardless of location. Of course, this openness cannot place the plant security at risk. An App must be loadable by the server PC on the client that operates like an installed application and is automatically updated as soon as new apps are available on the server.

**Specified products:** Siemens / Desigo CC

### **HTML5 Client**

An HTML5 client must be available to operate the management system. The HTML5 client must run in a standard HTML5 web browser and must have no dependency on the device, or the operating system used. The HTML client must be identified on the management, system via certificates. The login mechanism to the management system via the HTML5 client can be done via:

- Integrated user accounts, or
- LDAP users, or
- External OIDC provider(s)

The HTML5 client must provide at least the following functionality for operation:

- Event management supporting fast and investigative treatment
- Notifications about new events or important system messages
- Monitoring and operation via graphic pages
- Creation and analysis of trend data/trend records
- Configure and view schedulers
- View documents of types PDF, RTF, TXT and URLs.
- Commanding object properties

The HTML5 Client must run on different devices, operating systems and browsers supporting keyboard and mouse operation as well as touch operation. User-specific and/or customized workspace settings must be automatically saved per user and for various screen sizes. Those settings must be automatically re-applied at the next session.

**Specified products:** Siemens / Desigo CC

### **Mobile App**

An App, optimized for smart phones and tablets, must be available for the management. The App shall contain tools to see and command events as well as a System Browser to read and command all objects based on the security privileges of the operator as defined at the management station. The App shall be available for both Apple and Android operating systems.

**Specified products:** Siemens / Desigo CC

## 11) Trend data

### **Trend data collection**

The system must support the collection of trend log objects. Logging of those objects must be achieved according to the following principles:

- Using COV (change of value): every time the value is changing, a record is logged into the database
- Using time intervals: the record is logged into the database, given a specific and user defined time parameter (time filter).

The following time parameters must be supported:

- Default (no time filter applied)
- 30 seconds
- 1 minute
- 5 minutes
- 10 minutes
- 15 minutes
- 30 minutes
- 60 minutes
- 24 hours

**Specified products:** Siemens / Desigo CC

### **Simultaneous, multiple trends**

Multiple trend views must be possible simultaneously to provide a comprehensive plant overview. Standard plants from medium to higher complexity (as in this project) require a simultaneous display of up to 10 trend curves on the current page view to assess the plants. Multiple trend curves must thus be recorded at the same time.

**Specified products:** Siemens / Desigo CC

### **Freely assign trend data**

For greatest possible flexibility, operators must be able to assign and thus record max. 4 additional data points individually for each plant.

The assignment must be carried out from the management station.

**Specified products:** Siemens / Desigo CC

### **Decentralized data storage**

None of the trend data may be lost during communications failure to achieve gap-free trend documentation. For this reason, all trend data must be created and saved to the automation station. After communications are restored, all values saved on the management station must be updated automatically.

**Specified products:** Siemens / Desigo CC

### **Record history data, trend**

Vital data points and setpoints must be saved for each building services plant. The polling time is oriented to the signal type, i.e. analog values are recorded cyclically while digital or multistate values are recorded by event.

**Specified products:** Siemens / Desigo CC

### **Intermediate storage of history data**

Trend data are collected in the automation station and transferred to the management level after a specific time has expired or specific amount of data has been recorded. Trend data may not be lost if the management station is unavailable temporarily.

**Specified products:** Siemens / Desigo CC

### **Trend comparison**

The system must offer a time adjusted trend view to run analysis of changed conditions at various times.

**Specified products:** Siemens / Desigo CC

## 12) Communication

### **Interfaces**

The building automation and control system must be extendible to ensure long-term operation and provide all standard interfaces commonly available on today's market.

**Specified products:** Siemens / Desigo System

### **Fire detection system, BACnet-based**

BACnet-based fire detection systems supporting BACnet BIBB AE-LS-B as well as objects LifeSafetyPoint and LifeSafetyZone as per the PICS (Protocol Implementation Conformance Statement) document must be able to be integrated for best deployment of a building automation and control system.

The following functions must be supported:

Alarms and events from the fire detection system must be identified clearly and unambiguously.

Signaling device states must be displayed as per the BACnet standard.

Instruction texts must be able to be added to detectors and zones.

Situational and floor plans as well as dynamic symbols must be used for visualization.

A technical hierarchy, e.g. building, building part, zone, detector, must be provided to the operator for ease of operation.

**Specified products:** Siemens / Desigo System

### **Integrate third-party devices via OPC**

The OPC Foundation must test and certify the system, which must be able to integrate and edit OPC data, and yet supply real time OPC data as an OPC server. System processing must include alarming, trend, scheduler, reporting, and be able to communicate with other devices.

The system must support the OPC specification:

OPC data access (DA)

**Specified products:** Siemens / Desigo CC

### **Integrate via IEC 61850**

A native integration with an electrical power network via IEC 61850 protocol must be supported.

**Specified products:** Siemens / Desigo CC

### **Integrate via Modbus**

The management station must support communication to Modbus TCP/IP devices and sub systems directly from the management station.

**Specified products:** Siemens / Desigo CC

### **KNX**

The management station must support native communication to KNX devices, via KNX/IP protocol through KNX IP Routers, or KNX IP interfaces and gateways.

**Specified products:** Siemens / Desigo CC

### **M-Bus**

The management station must support native communication to meter bus devices, via M-Bus/IP protocol through M-Bus Gateway, or M-Bus Master to Ethernet converter or converters.

**Specified products:** Siemens / Desigo CC

### **Standard BACnet / AMEV**

*B-AWS (management station)*

The required management stations match the BACnet profile B-AWS (advanced management station) as per BTL Listing and ANSI / ASHRE 135 guidelines. They must also support BACnet data points and BACnet personal safety security zone functionality. The BACnet protocol revision must be at least 1.15.

The required management station must support seamless integration of alarming with:

BACnet devices, full support for commanding, writing and COVs to provide control and command functionality

Finally, the system must support discovery and display of BACnet devices and all object types in revision 1.15

**Specified products:** Siemens / Desigo CC

#### *Video Status and Commands*

The management station shall be able to provide video controls with:

- Remote Control of Video Monitors
- VMS triggers for controlling logic in the VMS and triggering reactions in the management system
- Video Events and Video Event Treatment including video tagging with alarm information
- Diagnostic information of Video Devices
- Video as Operating Procedure step

**Specified products:** Siemens / Desigo CC

#### **Building automation and control system – Industrial Devices**

Integration of Simatic systems

A native integration of Simatic (S7 300/400/1200/1500) and S7 PLUS must be supported.

**Specified products:** Siemens / Desigo CC

#### **Northbound Interfaces**

Expose information via OPC

The system must be able to supply real time data from the management layer, as an OPC server, and to integrate with third-party applications when necessary.

The system must support the OPC specification:

OPC data access (DA)

**Specified products:** Siemens / Desigo CC

#### **Expose information via BACnet/IP**

The system must be able to supply real time data from the management layer, as a BACnet/IP server, enabling communication and integration with third-party applications and systems, when necessary.

The following specifications must be met:

- The system must expose a system object as Analog, Binary and Multistate BACnet object
- The system must support of read, write and change of value (COV)
- The system must be able to expose management station trends as BACnet trend log objects

The system must be able to expose BACnet alarms

The system must be able to expose at least 20'000 objects per running server

A BACnet Protocol Implementation Conformance Statement (PICS) must also be available.

**Specified products:** Siemens / Desigo CC

#### **Expose information via SNMP**

The system must be able to supply real time data from the management layer, as SNMP agent, allowing Network Management Systems (NMS) to monitor all Building Automation, Danger Management, Energy and Control System devices connected to the management platform.

The system must support:

- SNMP V2 protocol
- SNMP V3 protocol
- SNMP traps
- SNMP get

**Specified products:** Siemens / Desigo CC

3001-3 During the term of the contract, the Contractor shall provide both online and onsite emergency support 24 hours per day, 7 days per week as described below for the BAS. Response time (online and onsite) shall be two hours from time of call for service.

3001-4 Reno System - During the term of this contract, the Reno alarm notification system to be serviced and maintained and any new points to be added at no additional cost.

3001-5 Remote Support:

In the event of a service call the Contractor shall respond via secure remote access within 2 hours of notification of the event. The contractor shall attempt to resolve any issues and if needed provide on-site service within 2 hours if the situation can't be resolved. All documentation will be provided to the Owner detailing the service call.

#### 3001-6 Onsite Support:

The contractor shall provide this service between scheduled service calls and respond onsite at your facility within 4 hours for critical emergencies, or within 8 hours for non-emergency conditions, Monday through Sunday, 24 hours per day, including Holidays, upon receiving notification of an emergency. Critical emergencies, as determined by your staff, are failures at a system or panel level that would result in the loss of the operation of an entire section of a building or place the facility at high risk.

#### 3001-7 Network Analysis and Optimization:

Two (2) times per year the Contractor shall perform a complete suite of diagnostics on the BAS network. These diagnostics shall include analysis and troubleshooting of network between 45 Elm St. Network Center and each of the Erie County connected facilities.

#### 3001-8 Hardware Support:

The successful contractor shall provide 24-hour support for the BAS servers and associated components throughout the term of this contract. The Contractor shall have access to and be familiar with the serial number and location of each server, client and workstation belonging to the EICN. The specific scope of responsibility for the server hardware and client machines is listed in the paragraphs labeled Network Coverage.

#### 3001-9 Network Preventative Maintenance:

The successful Contractor shall provide certified network technicians to perform preventative maintenance on the servers on a quarterly basis. Documentation of service and location shall be provided and given to the owner

#### 3001-10 Control Loop Tuning:

Control loops drift out of calibration with changes in mechanical efficiency, building use, and climatic conditions. The contractor will ensure control loops for devices such as valves, dampers, actuators, etc.; experience minimized overshooting and oscillatory behavior. The control loops to be included as part of this service, are itemized in the List of Maintained Equipment in this service agreement.

#### 3001-11 Data Protection & Data Recovery Services:

The Contractor will perform scheduled database back-ups of your workstation database & graphics and / or field panel databases and provide safe storage of this critical business information. Should a catastrophic event occur, we will respond onsite (or online service is included in this service agreement) to reload the databases and system files from our stored back-up copy, to restore system operation as soon as possible. All equipment to be included as part of this service.

#### 3001-12 Preventive Maintenance:

Provide preventive maintenance in accordance with a program of routines as determined by facility requirements, equipment application and location. The list of field panels and/or devices, included under this service, is identified in the List of Maintained Equipment in this service agreement. Automation controls can drift out of calibration with changes in HVAC component performance characteristics, building use, and climatic conditions. This service will extend equipment life, reduce energy consumption, and reduce the risk of costly and disruptive breakdowns.

#### 3001-13 Software Upgrades:

The successful contractor will provide you with software and documentation updates to your existing BAS software as they become available (approximately annually). Included is onsite training to familiarize you with the new features and their associated benefits. All gateways and interfaces needed for software upgrades shall be provided by the Contractor and installed prior to software upgrades. If an upgrade to the servers is required than all upgrades shall be in accordance with UL guidelines to ensure the integrity of the system. The Contractor assumes all liability for the Siemens and EICN BAS equipment associated with upgrades to the software.

#### 3001-14 DDC Panel Firmware Upgrades:

The Contractor shall provide and install any new or upgrade panel processor that is released by the Contractor during the course of this agreement. The new or upgrade firmware shall be provided for all installed BAS field panels. Additionally, the Contractor shall provide, at the project site, training detailing the impact of this new process and instructing the County personnel on how to incorporate the new features into the operation of the BAS.

#### 3001-15 Repair and Replacement:

The Contractor shall provide all repair labor and materials to maintain the BAS in operable condition. The intent is to ensure the entire BAS is maintained in operating condition and downtime is limited. The Contractor will be responsible to all controllers, software, sensors, end devices, switches, motors and firmware. Damages to equipment resulting from accidents, fire, water, storm or negligence by the owner for any reason beyond the Contractors control other than normal



wear and tear, shall not be the responsibility of the Contractor. All equipment covered under this service is itemized the Equipment table. This service is also applicable to all Fire Alarm equipment itemized in the Equipment table for the specific facilities listed. Contractor to provide printer cartridges for all facility work station printers.

#### 3001-16 Account Management:

In order to ensure that all of the Contractor's efforts are being delivered in a coordinated manner, and to provide oversight and management of the contractual responsibilities under this agreement, the Contractor shall assign a project manager with full responsibility and authority to act on the Contractor's behalf. The lead service specialist for the project and account executive shall not be accepted as the Account Manager; it must be a member of the Contractor's staff with the responsibility of managing the implementation of this agreement.

#### 3001-17 Fire Alarm Testing:

The Contractor shall inspect, test, clean, adjust and repair or replace all system devices and components to maintain proper system operation and integrity per NFPA 72 Standards. All manual initiated devices shall be activated and alarm verified at the main panel. All automatic sensing devices shall be cleaned and initiated and their alarm signal verified at the main panel. All audible and visual alarm devices shall have their operation verified. Audible devices are to be tested at times to minimize occupant disruptions, coordinate with Facility Stationary Engineers.

3001-18 Underwriters Laboratory Listings: The Contractor shall provide material coverage and certified specialists for work on any product with a UL listing. This includes controllers and workstations at County facilities.

### Article IV Erie County Network Coverage

4001-1 The Erie County Department of Public Works Buildings and Grounds Division require a maintenance contract for the Siemens Building Automation System at the County Operations Center (COC) in Downtown Buffalo, located at 45 Elm Street. The BAS encompasses the entire Erie County system servers and clients at the Operations Center for the Siemens APOGEE BAS. The system is used to monitor fire alarm and temperature control points throughout the County facilities. Any services provided on the system must be performed by authorized factory certified technicians to ensure the integrity of the system is maintained. The BAS at COC is used for central monitoring for the Erie County DPW and is required to be operational at all times. The contractor assumes all associated risk and liability when performing service on the system.

4001-2 The County Network Operations (Located at 45 Elm St) BAS is tied into the Erie County Emergency Information Control Network "Security Network" (EICN). The contractor assumes all risk and liability for the EICN when servicing the BAS and associated systems. All and any upgrades to the BAS will be compatible with the EICN and performed with the coordination of the Erie County DPW. The EICN encompasses the BAS at the following facilities:

Youth Detention – 810 East Ferry Street, Buffalo, NY 14211

Rath Building – 95 Franklin Street, Buffalo, NY 14202

Erie County Family Court – 1 Niagara Square, Buffalo, NY 14202

Erie County Medical Mall – 1500 Broadway, Buffalo, NY 14212

EOC Bunker – 1 Sheriff Drive, Orchard Park, NY 14127

EC Fire Training Center - 3359 Broadway Street, Buffalo, NY 14227

Public Safety Campus - 45 Elm Street, Buffalo, NY 14203

Alden Correctional – 11581 Walden Avenue, Alden NY 14004

County Holding Center – 134 West Eagle Street, Buffalo, NY 14202

Botanical Gardens – 2655 South Park Avenue, Buffalo, NY 14218

Erie County Human Services Center – 608 William Street, Buffalo, NY 14206

Article V Repair and Replacement: The Contractor shall provide all repair labor and materials to maintain the BAS in operable condition. The intent is to ensure the entire BAS is maintained in operating condition and downtime is limited. The Contractor will be responsible to all servers, workstations, clients, monitors, printers and software.

This does exclude the responsibility of program changes to the system at the following locations;

\*Public Safety Campus - 45 Elm Street, Buffalo, NY 14203

\*Rath Building – 95 Franklin Street, Buffalo, NY 14202

\*Erie County Family Court – 1 Niagara Square, Buffalo, NY 14202

Damages to equipment resulting from accidents, fire, water, storm or negligence by the owner for any reason beyond the Contractors control other than normal wear and tear, shall not be the responsibility of the Contractor.

Article VI Payment

Payment for the services is to be made in quarterly installments upon receipt of invoice and attached service reports. Payments will not be released without proper detailed documentation of services and certified payroll required by Department of Labor.

Annual Cost for years 2022 - 2024 as Follows:

Facility #1 Youth Detention	2022	<u>\$48,713</u>	2023	<u>\$51,276</u>	2024	<u>\$52,300</u>
Facility #2 Rath Building	2022	<u>\$72,978</u>	2023	<u>\$76,870</u>	2024	<u>\$78,400</u>
Facility #3 Family Court	2022	<u>\$58,141</u>	2023	<u>\$61,200</u>	2024	<u>\$63,100</u>
Facility #4 Medical Mall	2022	<u>\$26,070</u>	2023	<u>\$27,442</u>	2024	<u>\$28,300</u>
Facility #5 EOC Bunker	2022	<u>\$15,642</u>	2023	<u>\$16,500</u>	2024	<u>\$17,160</u>
Facility #6 EC Fire Training	2022	<u>\$15,642</u>	2023	<u>\$16,500</u>	2024	<u>\$17,160</u>
Facility #7 Public Safety	2022	<u>\$99,069</u>	2023	<u>\$108,205</u>	2024	<u>\$112,620</u>
Facility #8 Correctional Facility (Alden)	2022	<u>\$67,784</u>	2023	<u>\$71,350</u>	2024	<u>\$74,200</u>
Facility #9 Holding Center	2022	<u>\$46,937</u>	2023	<u>\$49,400</u>	2024	<u>\$51,400</u>
Facility #10 608 William	2022	<u>\$41,713</u>	2023	<u>\$43,450</u>	2024	<u>\$45,200</u>
Facility #11 Botanical Gardens	2022	<u>\$43,824</u>	2023	<u>\$46,110</u>	2024	<u>\$48,000</u>
<b>Total</b>	2022	<u>\$536,523</u>	2023	<u>\$568,373</u>	2024	<u>\$587,840</u>

*JK* *JK*

List Hourly Labor Rates for services not covered under this Specification

Regular Rate \$157.<sup>00</sup>    Holiday Rate \$201.<sup>45</sup>    Overtime Rate \$201.<sup>45</sup>

Questions Regarding this Specification Contact: