



BAS PROPOSAL FOR:

APUS- Finance Center
393 North Lawrence Street
Charles Town, WV 25414

Attn: Michael Gunia

SITE ADDRESS:

APUS- Finance Center
393 North Lawrence Street
Charles Town, WV 25414

LOCAL OFFICE:

Boland Trane Services, LLC
30 West Watkins Mill Road
Gaithersburg, MD 20878
Office: (240) 306-3000

**LOCAL BOLAND
REPRESENTATIVE(S):**

Jim Bauer – Account Executive
Email: jim.bauer@boland.com
and

James Tucker – Control AE
Email: james.tucker@boland.com

**PROPOSAL ID / AGREEMENT
NUMBER:** 1702042

DATE: March 21, 2017





BOLAND BAS AND CONTROLS RETROFIT

Scope of Services

Boland is pleased to offer this proposal to provide a retrofit Building Automation System (BAS) and controls system integration to the existing Direct Digital Controls, FAS, and electric controls. Energy Management System functions and user friendly interface will improve building comfort and energy performance.

Trane Tracer SC BAS retrofit Benefits:

- The new SC platform provides a user friendly WEB based application that can be accessed through a mobile device such as a smart phone, tablet or laptop. Which will allow remote set-point changes and monitoring of conditions, by using a quick interface.
- Trane Tracer SC is the next generation in BAS, which uses the most advanced technology for long lasting stability well into the future.
- Trane Tracer SC provides ASHRAE compliant strategies in energy management and reporting for current and future energy efficiency documentation.

Tracer SC BAS retrofit Includes:

- Install new Trane Tracer SC building controller and UC controllers
- Connect to existing Trane Intelligent Services (TIS) continuous monitoring & analytics platform
- Customer BAS Migration Plan for the future, system expansion available
- Tracer SC end user training

Boland delivers the value by partnering with you to improve the performance of your Building Automation System. From the day we install the new system, we will be there to make sure your new Tracer SC works as promised and stays up to date with the most current version and capabilities. We will be on-site to make sure that you and your staff know how to use the new operating system successfully, including the new mobile Tracer SC App.

We will provide a flexible migration plan for you so that if additional points of monitoring and control are needed, the system we install today is capable to satisfy your future budget and business needs.

We will actively help you utilize your new investment to make sure your BAS is performing its best. We will address the core building automation system basic control strategies and identify additional opportunities where you can improve performance and save energy.

Thank you for allowing us this opportunity. If you have any questions or concerns, please call me at (240) 306-3000

Sincerely,

James Tucker
Control Account Executive





Scope of Work

System proposal will include a WEB accessible Direct Digital Control panel which will be connected to a Building Automation System network, which is capable of expansion to meet future needs.

Boland proposes to provide services to complete the following Scope of Work:

- 1) Remove the existing JCI Energy Management System. Provide a new Trane Tracer SC open protocol web-based system to streamline facility management without replacing existing DDC components or renovating the entire existing electric control system.
- 2) Integrate existing DDC Controls at RTUs and VRF system into the new BAS. Existing Electric Controls for the exhaust fans will remain in place and operate according to the existing sequence of operations. New BAS will provide; occupied/ unoccupied schedules, nighttime unoccupied set-point overrides, one new space temperature average reference per floor (2 total). Existing RTUs and associated controls will remain as-is in place.
- 3) Remove existing obsolete Johnson Controls DDC controllers and devices at mechanical rooms on each floor and in the main mechanical room. Abandon in place all existing wiring, piping, devices and panels not being utilized for new BAS.
- 4) Provide interlock wiring from new controllers to existing electric control devices that operate HVAC fans and motorized dampers.
- 5) Provide interface with the existing FAS and smoke control system. Provide BAS programming to include the existing sequences of operation as-is.
- 6) Provide and install space temperature sensors (2 total), at existing locations in occupied spaces.
- 7) Utilize existing controls wiring, power wiring for panel, control power, signal wiring and associated EMT conduit. Utilize existing enclosures, panels and junction boxes.
- 8) Provide system check-out and commissioning with Building Operating Engineer to assure proper operation.
- 9) Utilize existing desktop windows operator workstation (OWS) to access Trane Tracer SC software. Additional mobile phone applications are available for remote monitoring and control, which are included as part of the new BAS if applicable. Mobile phone and associated fees are not included.
- 10) Provide training of four hours on site. Provide additional training opportunities at our main office as regularly scheduled by our service department.





11) Provide one year warranty on those products and services provided by Boland Trane.

a. INSPECTIONS (Onsite)

- i. Quarterly inspection includes 4 (four) physical onsite inspections
- ii. Full System Backup, Software Service Pack Updates
- iii. Inspection of control hardware and physical wiring connections
- iv. Review of alarms, overrides and sequences of operation to find areas in need of revision
- v. Emergency On-Site – Respond to emergency service requests with physical or remote presence at the facility. This is 2 hours per visit after the first 2 hours it will be T&M

b. ALARM NOTIFICATION

- i. Route alarms to Cloud Server for distribution
- ii. Meet with customer to establish alarm levels for notification and response protocols
- iii. Provide weekly test alarm to verify connection
- iv. Provide alarms via email or text to customer

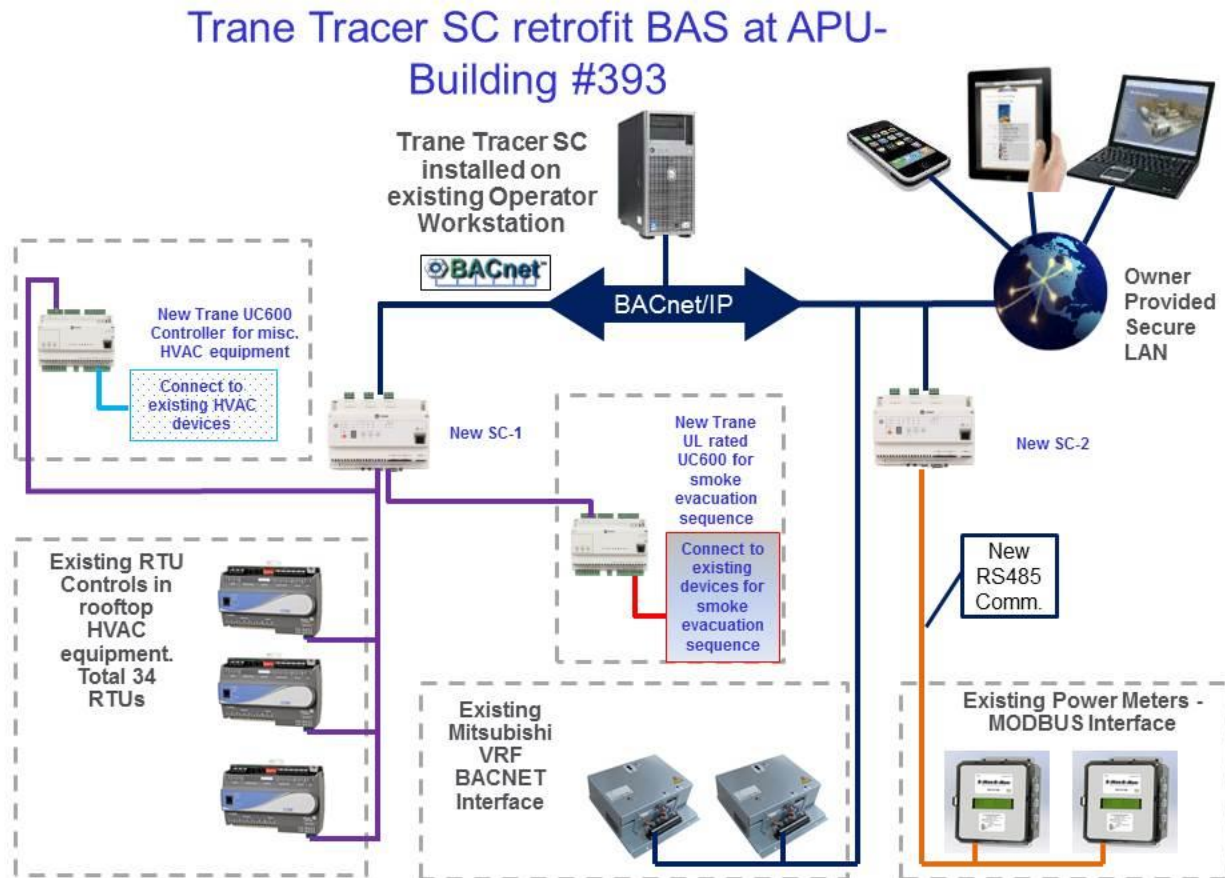
c. BUILDING PERFORMANCE ANALYSIS (ongoing analysis with streaming data)

- i. Map system and equipment data points into cloud-based analytics system
- ii. Trend data for pattern analysis
- iii. Identify and evaluate potential causes of underperforming systems or devices
- iv. Quarterly consult with customer on analysis results and improvement recommendations
- v. Provide repair quotes for any item not addressed by the customer





Figure-1 Trane Tracer SC System Architecture



(Note: Graphics above and below are for illustration purposes only)

System Overview

Tracer SC

Tracer SC is at the heart of a Tracer building automation system. Tracer SC provides a web-based front end for your facility that can be accessed with most PCs, tablets and smart phones. Tracer SC includes





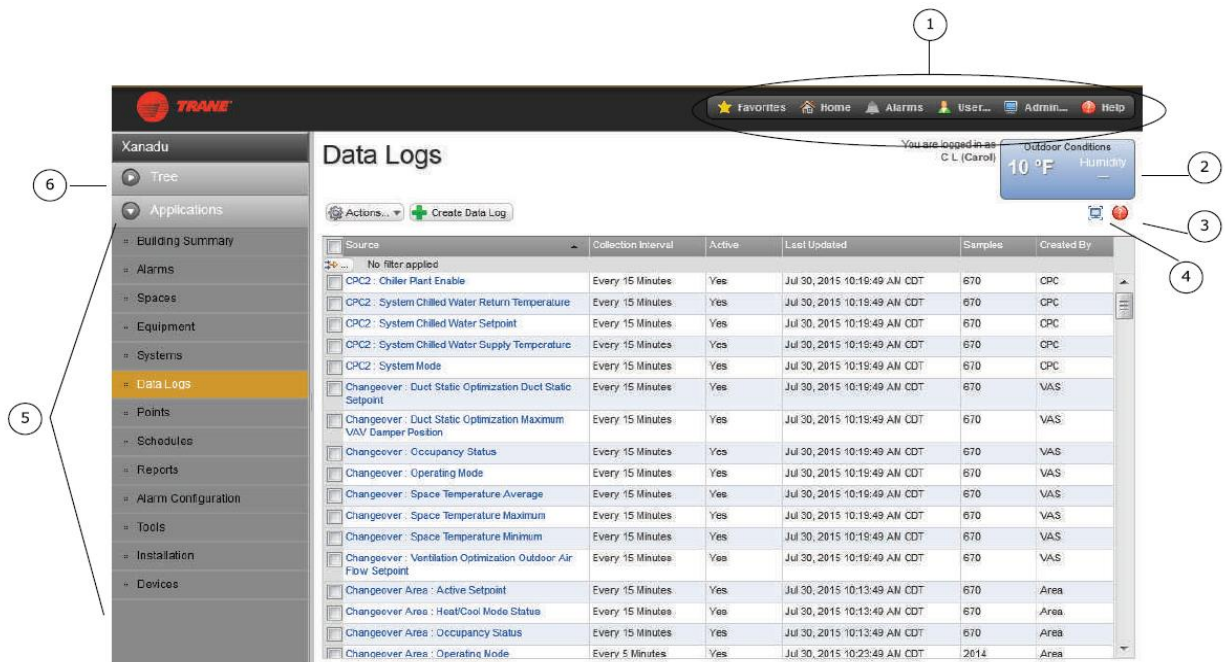
We Are Not Comfortable Until You Are

powerful, factory-engineered applications that are designed to provide the perfect balance of energy efficiency and user comfort. Tracer SC communicates with a variety of Trane and non-Trane controllers using open, standard protocols, including BACnet and LonTalk.



The Tracer SC user interface provides an easy way for building operators to set up, operate, and modify a building automation system. The home page (*Figure-2*) contains system status information and links to navigate to all areas of the system. The main features of the user interface are described in this section.

Figure-2 Tracer SC user interface



- 1 **Global Navigation Bar:** Contains shortcuts to the home page, alarm and event log, user preferences, administrative functions, and the entire Tracer SC help system.
- 2 **Outdoor Air Conditions:** This information area displays the current air temperature outside of your facility.
- 3 **Context Sensitive Help:** Click to open a help topic exclusive to the page in which are you are viewing.
- 4 **Screen Expansion Icon:** Click to temporarily hide the left navigation menu. Click again to return to the default view.
- 5 **Left Navigation Menu:** Contains a list of Tracer SC applications and equipment.
- 6 **Navigation Tree:** This component contains the logically ordered and grouped content of all the elements of your HVAC system. It is a complex component that is built dynamically based on a number of variables and dependencies related to the configuration of a facility, the content of the HVAC, and other systems operating in the facility.





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Tracer SC™ Connected and Mobile

- **Support for popular web browsers and devices**
 - Internet Explorer, Firefox, Chrome, Safari
 - Apple & Android tablets and phones
 - **Tracer BAS Operator Suite**
 - Available for Apple & Android devices
 - Optimized tasks for phone
 - **Remote Alarming**
 - Receive alarms via email
 - Any email capable device
 - Customized by severity & time of day





Clarifications

- 1) Required: TCP/IP compatible Ethernet network, static IP addresses and secure internet service. Network administration, security, infrastructure and internet service will be provided by the customer.
- 2) Work to be completed during normal business hours.
- 3) Utilize existing plenum cable in ceiling and concealed accessible places and EMT in Mechanical/Electrical rooms.
- 4) Davis Bacon (Wage scale) not included.
- 5) Laptop, Smartphone, iPad and other similar digital devices not included.
- 6) Excluded any material and field labor beyond scope above.
- 7) Excluded extraordinary circumstances. Where the following extraordinary circumstances are encountered Boland will notify the client and provide a quote on a case-by-case basis prior to proceeding:
 - Providing access doors or openings in hard ceilings
 - Providing a mechanical lift for ceiling access
 - Removal of materials deemed to be of a hazardous nature
 - Reworking of any existing code violations
 - Reworking of any existing unforeseen deficiencies not mentioned above
 - Cutting, Patching, or Painting
- 8) This proposal is valid for 30 days.





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Owner Coordination and Requirements



The following action steps, procedures and coordination/ collaboration with APUS Management are required to accomplish the BAS integration:

- *Owner must provide Boland with an available IP address on existing TCP/IP network.*
- *APUS Management and Boland will define all alarm notifications, pictorial graphics and user interface options prior to system programming.*
- *Joint configuration, testing and verification will be performed by APUS Management and Boland. Final configuration and security protocol will be completed by APUS Management.*
- *Validate end to end solution.*
- *Provide training on new system.*

.WORK PROVIDED BY OTHERS:

- *Provide TCP/IP internet connectivity at main SC panel, static IP address, connectivity to operator workstation.*
- *Provide washroom facilities, parking and access to all work areas.*

EXCLUSIONS:

- *Existing electric control devices that operate FCUs, HVAC fans, chiller, pumps and motorized dampers..*
- *FCU controls are existing electric control type.*
- *Suggested additional work, repair of existing systems or electric controls.*
- *CHW Pipe work, additional temperature wells or pressure taps, insulation repairs.*
- *After hours work.*

Unless otherwise noted above, the following applies:

1. *a) Owner to provide free & clear access. b) Excludes Cutting, patching, painting. c) Excludes Cost of Permits, if required. d) Excludes work outside normal business hours (M-F 7:30 am-4:00 pm).*
2. *Boland's standard warranty applies; see the attached General Terms and Conditions.*
3. *Wiring will be installed in conduit in exposed areas and plenum rated cable will be used where permitted by local code.*
4. *"Extraordinary and or unusual failures are not covered unless specifically stated in this proposal. If Boland Services encounters latent defects and/or unusual failures etc., we will stop work and advise you of our recommendations."*





ADD OPTIONS:

- A) Provide integration of five (5) existing EMON power meters (all meters must be MODBUS or BACNET compatible). Provide; network communications wiring, programming, standard Trane pictorial energy graphics and basic database for energy consumption.
 - a. **Add Price: \$10,086.00**
- B) Provide network communications wiring to any new power meter, programming and pictorial graphics, integrate to BAS &TIS.
 - a. **Add Price: \$1,888.00 per additional meter.**

ALL QUOTATIONS ARE SUBJECT TO APPLICABLE STATE & LOCAL TAXES AT TIME WORK IS COMPLETED.

BOLAND BAS AND CONTROLS RETROFIT

Pricing and Acceptance

WE PROPOSE hereby to furnish material & labor - in accordance with above specifications, for the sum of:

Thirty Nine Thousand Six Hundred Thirty-Seven Dollars (\$39,637.00)

(Applicable taxes are included.)

I appreciate the opportunity to earn your business, and look forward to helping you with all of your service needs. Please contact me if you have any questions or concerns.

Sincerely,

Jim Bauer
Account Executive

James Tucker
Control Account Executive

Boland Trane Services, LLC
30 West Watkins Mill Road
Gaithersburg, MD 20878
Office: (240) 306-3000





This Agreement is subject to Customer's acceptance of the attached Boland Terms and Conditions.

Submitted By: James Tucker _____	Office: (240) 306-3000 Proposal Date: March 21, 2017
CUSTOMER ACCEPTANCE _____	BOLAND ACCEPTANCE Boland _____
Authorized Representative _____	Authorized Representative _____
Printed Name _____	Title _____
Title _____	Signature Date _____
Purchase Order _____	License Number: _____
Acceptance Date _____	





Terms and Conditions

1. Boland Services will complete all work in a workmanlike manner according to standard trade practices and will guarantee our technical service for 90 days from completion, subject to the exclusions and conditions set out below.
2. All Trane parts supplied by Boland Services are warranted for a period of one year from date of purchase to be free from defects in material and workmanship, provided that no warranty is made against corrosion or deterioration, or with respect to suitability of substitute materials used because of government regulations.
 - a. Provided further, no warranty, parts or labor, is made, unless the A/C system has been properly "cleaned up" and checked out before start up in accordance with Boland Services' recommendations and instructions and/or unless Trane compressor is rebuilt according to the Trane Company instructions and specifications.
 - b. The owner/operator has the responsibility and obligation to supply proper and adequate power to the equipment covered by this warranty and to operate it properly according to the manufacturer's instructions. This part or labor warranty does not apply if failure is caused by power deficiency, lightning, single phasing, phase reversal, negligent operation or maintenance, or circumstances beyond Boland Services' control.
3. No liability whatever shall attach to Boland Services until the products or services have been paid for and then said liability shall be limited to the purchase price. Payment terms for services or materials provided hereunder will be under 30 days unless contrary terms appear on the face hereof or unless otherwise expressly agreed in writing by Boland Services. Boland Services reserves the right to add to any accounts outstanding for more than 30 days a service charge of 1.5% per month, an annual rate of 18%.
4. THIS WARRANTY AND LIABILITY SET FORTH IN THE PRIOR PARAGRAPHS ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES EXPRESSED OR IMPLIED IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR PARTICULAR USE.
5. Return of Materials – Returned parts or materials must be accompanied by the delivery ticket and when so returned buyer agrees to pay Boland Services a restocking charge.
6. Asbestos Rider – This proposal is conditioned on the inclusion of the following contract language: 1. The work shall not include the detection, abatement, encapsulation or removal of asbestos or products or materials or equipment containing asbestos. 2. This clause shall govern over any conflicting or inconsistent clause of the General Contract, general conditions of the contract. Special conditions, technical conditions, plans or specifications. 3. In the event that Boland Services encounters any asbestos product or material in the course of performing its work the contractor shall have the right to discontinue its work and remove its employees from the project, or that portion of the project wherein such product or materials, and any hazards connected therewith are abated, encapsulated or removed and/or it is determined that no hazard exists; further, Boland Services shall receive an extension of time to complete its work and compensation for delays encountered and compensation for any change in the sequence or method of its work occasioned as a consequence of said encounter.
7. Boland Services does not warrant or compensate the owner for refrigerant. If the owner wants a refrigerant charge removed from the job site, Boland Services will attempt to recycle for an additional cost. If the gas is non-recyclable, owner will be responsible for final disposition.

