



City of Clearwater
Procurement

Jay Ravins, Department Director
100 South Myrtle Avenue, Clearwater, FL 33756

[TRIHEDRAL INC] RESPONSE DOCUMENT REPORT

RFP No. 07-25

SCADA System Software

RESPONSE DEADLINE: April 10, 2025 at 10:00 am

Report Generated: Friday, July 18, 2025

Trihedral Inc Response

CONTACT INFORMATION

Company:

Trihedral Inc

Email:

bryan.sinkler@trihedral.com

Contact:

Bryan Sinkler

Address:

7380 West Sand Lake Rd.

Suite 100

Orlando, FL 32819

Phone:

(800) 463-2783

Website:

www.vtscada.com

Submission Date:

Apr 10, 2025 1:21 AM (Eastern Time)

ADDENDA CONFIRMATION

No addenda issued

QUESTIONNAIRE

1. Exceptions*

Pass

Proposers shall indicate any and all exceptions taken to the provisions or specifications in this solicitation document. Exceptions that surface elsewhere and that do not also appear under this section shall be considered invalid and void and of no contractual significance.

Do you have any exceptions to the provisions or specifications?

Yes

EXCEPTIONS TAKEN*

****Special Note – Any material exceptions taken to the City's Terms and Conditions may render a Proposal non-responsive.**

Upload a copy of any exceptions taken to the provisions or specifications in this solicitation.

Trihedral_Response_to_RFP_07-25_SCADA_System_Software_Exceptions.docx

2. Additional Materials*

Pass

Have you included any additional materials?

Yes

DESCRIPTION OF ADDITIONAL MATERIALS*

Provide a brief description of the additional materials included.

Product Information

3. Certified Business*

Pass

Are you a Certified Small Business or a Certified Minority, Woman or Disadvantaged Business Enterprise?

No

4. Vendor Certification*

Pass

By submitting this response, the Vendor hereby certifies that:

- A. It is under no legal prohibition on contracting with the City of Clearwater.
- B. It has read, understands, and is in compliance with the specifications, terms and conditions stated herein, as well as its attachments, and any referenced documents.
- C. It has no known, undisclosed conflicts of interest.
- D. The prices offered were independently developed without consultation or collusion with any of the other vendors or potential vendors or any other anti-competitive practices.
- E. No offer of gifts, payments or other consideration were made to any City employee, officer, elected official, or consultant who has or may have had a role in the procurement process for the commodities or services covered by this contract. The Vendor has not influenced or attempted to influence any City employee, officer, elected official, or consultant in connection with the award of this contract.
- F. It understands the City may copy all parts of this response, including without limitation any documents or materials copyrighted by the Vendor, for internal use in evaluating respondent's offer, or in response to a public records request under Florida's public

records law (F.S. Chapter 119) or other applicable law, subpoena, or other judicial process; provided that the City agrees not to change or delete any copyright or proprietary notices.

- G. It hereby warrants to the City that the Vendor and its subcontractors will comply with, and are contractually obligated to comply with, all federal, state, and local laws, rules, regulations, and executive orders.
- H. It certifies that Vendor is not presently debarred, suspended, proposed for debarment, declared ineligible, voluntarily excluded, or disqualified from participation in this matter from any federal, state, or local agency.
- I. It will provide the commodities or services specified in compliance with all federal, state, and local laws, rules, regulations, and executive orders if awarded by the City.
- J. It is current in all obligations due to the City.
- K. It will accept all terms and conditions as set forth in this solicitation if awarded by the City.
- L. The signatory is an officer or duly authorized representative of the Vendor with full power and authority to submit binding offers and enter into contracts for the commodities or services as specified herein.

Confirmed

5. E-Verify System Certification*

Pass

PER FLORIDA STATUTE 448.095, CONTRACTORS AND SUBCONTRACTORS MUST REGISTER WITH AND USE THE E-VERIFY SYSTEM TO VERIFY THE WORK AUTHORIZATION STATUS OF ALL NEWLY HIRED EMPLOYEES.

The affiant, by virtue of confirming below, certifies that:

- A. The Contractor and its Subcontractors are aware of the requirements of Florida Statute 448.095.
- B. The Contractor and its Subcontractors are registered with and using the E-Verify system to verify the work authorization status of newly hired employees.
- C. The Contractor will not enter into a contract with any Subcontractor unless each party to the contract registers with and uses the E-Verify system.

- D. The Subcontractor will provide the Contractor with an affidavit stating that the Subcontractor does not employ, contract with, or subcontract with unauthorized alien.
- E. The Contractor must maintain a copy of such affidavit.
- F. The City may terminate this Contract on the good faith belief that the Contractor or its Subcontractors knowingly violated Florida Statutes 448.09(1) or 448.095(2)(c).
- G. If this Contract is terminated pursuant to Florida Statute 448.095(2)(c), the Contractor may not be awarded a public contract for at least 1 year after the date on which this Contract was terminated.
- H. The Contractor is liable for any additional cost incurred by the City as a result of the termination of this Contract.

Confirmed

6. Vendor's Proposal*

Pass

Upload a copy of your proposal with the information requested as detailed in the solicitation titled 07-25 SCADA System Software.

Exhibit_A_-_SCADA_Software_Evaluation_Trihedral_Response.xlsx

Exhibit_B_Price_Sheet.pdf

Request_for_Proposal_07-25_SCADA_System_Software_Trihedral_Reponse_.pdf

7. Scrutinized Company Certification*

Pass

Please download the below documents, complete, and upload.

- [SCRUTINIZED COMPANIES AND B...](#)

Scrutinized_Form_1.jpg

Scrutinized_Form_2.jpg

8. Compliance with Anti-Human Trafficking Laws*

Pass

Please download the below documents, complete, and upload.

- [Compliance with 787.06 form...](#)

Anti_Trafficking.jpg

9. W-9*

Pass

Upload your current W-9 form. (available at <http://www.irs.gov/pub/irs-pdf/fw9.pdf>)

W9_2025TINC.pdf

April 10, 2025



Exceptions and Notes to the RFP

- Some T&Cs in sample contract conflict with VTScada Standard Terms and Conditions. This is not uncommon with several municipalities we have worked closely with. In almost every case we have been able to work with our clients to resolve any T&C issues and have never had a legal dispute with any client in our nearly 40 years of making software. In addition, VTScada can be purchased through our VTScada Certified Solutions approved system integrators and partners.
- Multi-year discounts for SupportPlus are available if SupportPlus is pre-purchased.
- If SupportPlus is maintained, annual SupportPlus costs remain fixed year over year for licenses purchased at that time.
- Prices valid until October 1, 2025.

Step 1: Select tag limit.	Step 2: Select a Development Runtime or Runtime as a primary server. Add back-up servers as needed.		Step 3: Add features to a server. Development Runtimes include the Data Sharing Package.		Step 4: Add Thin Clients. Not required on back-up servers. (Ex. 6 Clients = 5-Pack + Single)		
I/O Tags	Development Runtime	Runtime	Alarm Notification Email, SMS, Voice	Data Sharing to 3 rd Party Systems* ODBC Server, OPC Server, WEB Services	Thin Clients Concurrent PC and Mobile connections.		
					Single	5-Pack	Unlimited
1,000	6,195	3,295	1,695	2,095	2,795	8,095	8,695
5,000	8,195	4,195	2,795	2,595	3,295	10,895	16,395
10,000	9,995	5,095	2,795	2,795	4,095	12,495	23,795
25,000	12,095	5,995	4,095	3,195	5,095	16,395	37,395
50,000	14,095	6,995	4,095	3,495	5,895	19,795	58,195
100,000 to Unlimited	Please refer to Enterprise Pricing Sheet						

* Add to the VTScada Runtime license - if required. This specific feature is included with every Development Runtime license.

Support Options - Single Vendor

90 days SupportPlus Technical Support and Product Updates	Included with software purchase
Annual SupportPlus Technical Support and Product Updates	15% of total software purchase price
Annual 24/7 Emergency Product Support. Available as extension of annual SupportPlus	5% (minimum \$1,500)

Integrated Components Included (single installation)		Development Runtime	Runtime
Run and Operate	Application Server - Primary or redundant event-driven execution for any scale	✓	✓
	Runtime Client - Can function as a complete or partial back-up for system operations	✓	✓
	Widgets and Graphics Library - 1,000's for many industries and applications	✓	✓
	Historian - High performance with zero set-up time needed	✓	✓
	Security - Integrated and extensible by both privilege and role-based models	✓	✓
	Network and Computer Resource Monitoring with SNMP Agent - A total system view	✓	✓
	Alarms and Events - Unlimited logging of all user and system actions	✓	✓
	Trending - Automatic and available with no additional set-up	✓	✓
	Reporting - Manual or automatic report creation with extensible options	✓	✓
	Slippy Maps Integration - Available either on-line or off-line with full pan and zoom	✓	✓
I/O Drivers	Electronic Operator Logbooks - Tamperproof recording of noteworthy events	✓	✓
	Common (e.g. Modbus, DF1, CIP/ENIP, Siemens S7, Omron Host Link, OPC)	✓	✓
	Advanced (e.g. DNP3, SNMP, Motorola ACE, CalAmp and MDS radio diagnostics)	✓	✓
	Proprietary (e.g. DataFlow Systems and others)	✓	✓
Develop	DataLogger (e.g. DF1, SCADAPack)	✓	✓
	Automatic Version Control - System-wide disaster recovery and audit tools	✓	✓
	Idea Studio - Efficient development environment on-line, off-line and multi-developer	✓	
	Change Deployment - Remotely update all computers with a single click	✓	
	Scripting and Debugging Tools - Powerful event-driven language of 700+ functions	✓	
	ODBC Server, OPC Server, Web Services - Sharing process data and services with 3 rd party systems	✓	

Prices in effect as of July 1, 2024. Subject to change without notice.

VTScada and the Idea Studio are registered trademarks of Trihedral Engineering Limited. Allen-Bradley, SCADAPack, DataFlow Systems, Modbus, CIP, ENIP, Siemens S7, Omron Host Link, OPC, DNP3, SNMP, Motorola ACE, CalAmp and MDS are trademarks of their respective owners.

Popular Bundles - Small and Medium Systems

		Dual Server Redundant	Dual Server Config	Dual Server Premium
		Two	Two	Unlimited
Run and Operate	Thin Client (PC or Mobile)	✓	✓	✓
	Historian	✓	✓	✓
	Security	✓	✓	✓
	Trending	✓	✓	✓
	Reporting	✓	✓	✓
	Slippy Maps Integration	✓	✓	✓
	Electronic Operator Logbooks	✓	✓	✓
	Widgets and Graphics Library	✓	✓	✓
	Network and Computer Resource Monitoring	✓	✓	✓
		✓	✓	✓
I/O Drivers	Common: e.g. Modbus, DF1, CIP/ENIP, Siemens S7, Omron Host Link, OPC	✓	✓	✓
	Advanced: e.g. DNP3, SNMP, Motorola ACE, CalAmp, MDS radio diagnostics	✓	✓	✓
	Proprietary: e.g. DataFlow Systems and others	✓	✓	✓
	DataLogger: e.g. DF1, SCADAPack	✓	✓	✓
Support Plus	1 st Year: Seamless Version Compatibility and Value Protection	✓	✓	✓
	1 st Year: Unlimited Support and Upgrades	✓	✓	✓
Alarms	Alarms and Events Logging	✓	✓	✓
	Email, SMS, Pager, Voice (text-to-speech) Dial-out/Dial-in	✓	✓	✓
Configuration	Automatic Version Control	✓	✓	✓
	Idea Studio Development Environment	✓	✓	✓
	Change Deployment	✓	✓	✓
	Scripting and Debugging Tools	✓	✓	✓
	ODBC Server, OPC Server, Web Services	✓	✓	✓
	Multiple-plant Support	✓	✓	✓
Redundancy	Back-up Historian	✓	✓	✓
	Back-up Alarms and Events Logging	✓	✓	✓
	Back-up Alarm Notification and Acknowledgement	✓	✓	✓
	Back-up ODBC Server, OPC Server, Web Services	✓	✓	✓
	Back-up Automatic Version Control	✓	✓	✓
	Secondary Idea Studio™ Development Environment		✓	✓
	Back-up Change Deployment		✓	✓
	Multi-user Scripting and Debugging Tools		✓	✓
Bonus: \$1,000 credit toward a regularly scheduled training class			✓	✓
Bonus: 1 st Year: 24/7 Emergency Support				✓

Tag Ranges

1,000 I/O	22,879	24,774	29,728
SPECIAL DISCOUNTED PRICE	16,195	17,195	19,495
SAVINGS	29%	31%	34%
5,000 I/O	30,221	32,784	45,611
SPECIAL DISCOUNTED PRICE	20,695	22,895	27,695
SAVINGS	32%	30%	39%
10,000 I/O	35,227	38,569	58,398
SPECIAL DISCOUNTED PRICE	24,195	27,695	37,095
SAVINGS	31%	28%	36%
25,000 I/O	44,127	48,359	82,113
SPECIAL DISCOUNTED PRICE	29,995	34,695	51,095
SAVINGS	32%	28%	38%
50,000 I/O	49,579	54,589	110,943
SPECIAL DISCOUNTED PRICE	33,595	40,395	76,695
SAVINGS	32%	26%	31%

100,000 - 2,500,000 (unlimited) I/O

Please call Trihedral

Prices in effect as of July 1, 2024. Subject to change without notice. Training credit is only available as long as the bundle remains current in SupportPlus.

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Orlando, Florida
32819

Mobile: 407-403-3785
Office: 407-888-8203
www.trihedral.com

City of Clearwater, FL

Trihedral Response to RFP 07-25, SCADA System Software

Date:	Apr. 9, 2025
Delivered to:	Lori Vogel via Portal Website



April 09, 2025

Tab 1. Letter of Transmittal

Lori Vogel
City of Clearwater
Re: Trihedral Cover Letter, Response to Request for Proposal 07-25, SCADA System Software
April 9, 2025

Dear Ms. Vogel,

Thank you for providing us with the opportunity to provide a response to Request for Proposal 07-25, SCADA System Software.

Trihedral has a 38+ year history in providing SCADA solutions that range from small implementations to large mission-critical systems. We believe that our experience in providing similar SCADA solutions for the Water/Wastewater industry throughout North America may be of interest in your review.

In addition to our work with both large and small Water/Wastewater/Stormwater municipalities such as: Miami Dade, City of Tampa, Union County, NC, City of West Palm Beach, Manatee County, City of Sarasota and many other utilities across the US and North America, we also provide mission critical SCADA for large enterprise systems with demanding installations, such as Chesapeake Bay Tunnel, Niagara Falls power generation at Ontario Power, NavCanada's air traffic management equipment, Duke University Power Distribution, UNC Chapel Hill Chiller Systems, Toyota North America Building and Facilities Automation and many others.

We believe this proven history of product capability, coupled with our 3 US east coast offices and vast network of highly trained system integrators in the state of Florida and North America offers real value for the City of Clearwater.

We look forward to working with you and wish you well in your evaluation process.

Best Regards,

Bryan Sinkler
Technical Sales, Trihedral Inc.
7380 West Sand Lake Rd., Suite 100
Orlando FL, 32819
407.403.3785 - Mobile
407.888.8203 - Office
800.463.2783 - Toll Free
bryan.sinkler@trihedral.com



April 09, 2025

Tab 2. SCADA System Features

Trihedral was founded on the spirit of innovation. What began as an idea for one of the world's first reactive programming languages developed into VTScada, an award-winning all-in-one HMI and SCADA software platform for industrial applications of any size. Our permanent team of programmers and engineers keep VTScada on the cutting-edge with regular updates and industry leading features like integrated version control, real-time configuration, and bi-directional synchronization. Our unique approach to software and service has resulted in growth in sales, installations, and new customers every year for the last 37 years.



Industries of Focus

-Water/Wastewater – Power Generation – Manufacturing – Agriculture – Oil & Gas – Airport Systems – Food & Beverage – Tank Farm Monitoring – Broadcasting – Marine – Flood Control – Power Transmission – Power Distribution

A History of Uninterrupted Growth

Headquartered in North America, Trihedral has grown to nine offices in three countries spanning six time zones and serving customers in over 100 countries. In addition to primary VTScada software development the Bedford office is home to the engineering department that serves customers across North America. In 2015, Trihedral opened an engineering office in Calgary, Alberta, to provide services and support to our oil & gas and water & wastewater customers in western and northern Canada.

Trihedral has two wholly owned subsidiaries. Trihedral UK was incorporated in 1998 in Aberdeen, Scotland. This office provides engineering and integration services to our European customers. Trihedral, Inc. was incorporated in Orlando, Florida in 2007. This office provides engineering and technical sales support for the southeast United States. Since then, Trihedral Inc. has added regional sales offices in Houston, Texas; Birmingham, Alabama; Chicago, Illinois; Dayton, Ohio, San Diego, California and Boston, Massachusetts.

Awards and Recognitions

- 2023 – Frost & Sullivan's Best Practice Award – Global SCADA Solutions Customer Value Leadership Award
- 2023 – [Bronze Winner for Control Engineering Product of the Year – SCADA / HMI Software](#)
- 2023 – Finalist for Plant Engineering Product of the Year – SCADA / HMI Software
- 2023 – Finalist for Consulting and Specifying Engineer Product of the Year – SCADA / HMI Software
- 2022 – [Frost & Sullivan's Global Technology Innovation Leadership Award for SCADA and HMI Systems – Winner](#)
- 2021 – Control Engineering Engineers' Choice Award – HMI Software Category – Winner



April 09, 2025

- 2020 – Plant Engineering 2020 Product of the Year “Automation & Controls” Category – Silver Award
- 2020 – Oil & Gas Engineering Product of the Year – IIoT & Process Control Category – Silver Award
- 2018 – Water’s Next Awards – Project/Technology Drinking Water category from Water Canada – Winner
- 2018 – Named among Canada’s Top Small & Medium Employers, by Canada’s Top 100 Employers
- 2018 – Control Engineering Engineers’ Choice Award, HMI Category – Honorable Mention
- 2017 – Plant Engineering, Product of the Year – Automation and Controls Category – Silver Award
- 2017 – Ernst & Young, Entrepreneurs of the Year, IT Category, Atlantic Canadian Region: Glenn Wadden and Barry Baker
- 2017 – Control Engineering Engineers’ Choice Award, HMI Category – Honorable Mention
- 2017 – Best ISA Whitepaper: Industrial and Automation Communication Protocols in the Age of IIoT – 2nd Prize
- 2016 – Best ISA White Paper: Alarm Management and Reliable Architecture for Utility-wide SCADA Systems – Best Presentation
- 2015 – Control Engineering Engineers’ Choice Award, HMI Category – Winner
- 2015 – Best ISA Whitepaper: All Aboard the SCADA Mothership – Best Presentation,
- 2014 – Best ISA Whitepaper: Managing Complexity Minimizing Risk – Honorable Mention
- 2013 – Best ISA Whitepaper: Reinventing the SCADA Historian – Best Presentation
- 2012 – Best ISA Whitepaper: Asset Tracking Version Control – Honorable Mention
- 2012 to 2013 – Atlantic Canada’s Top Employer
- 2007 to 2013 – Nova Scotia’s Top Employer
- 2007 – Ten Best Employers in the Maritimes

A Commitment to Outstanding Support

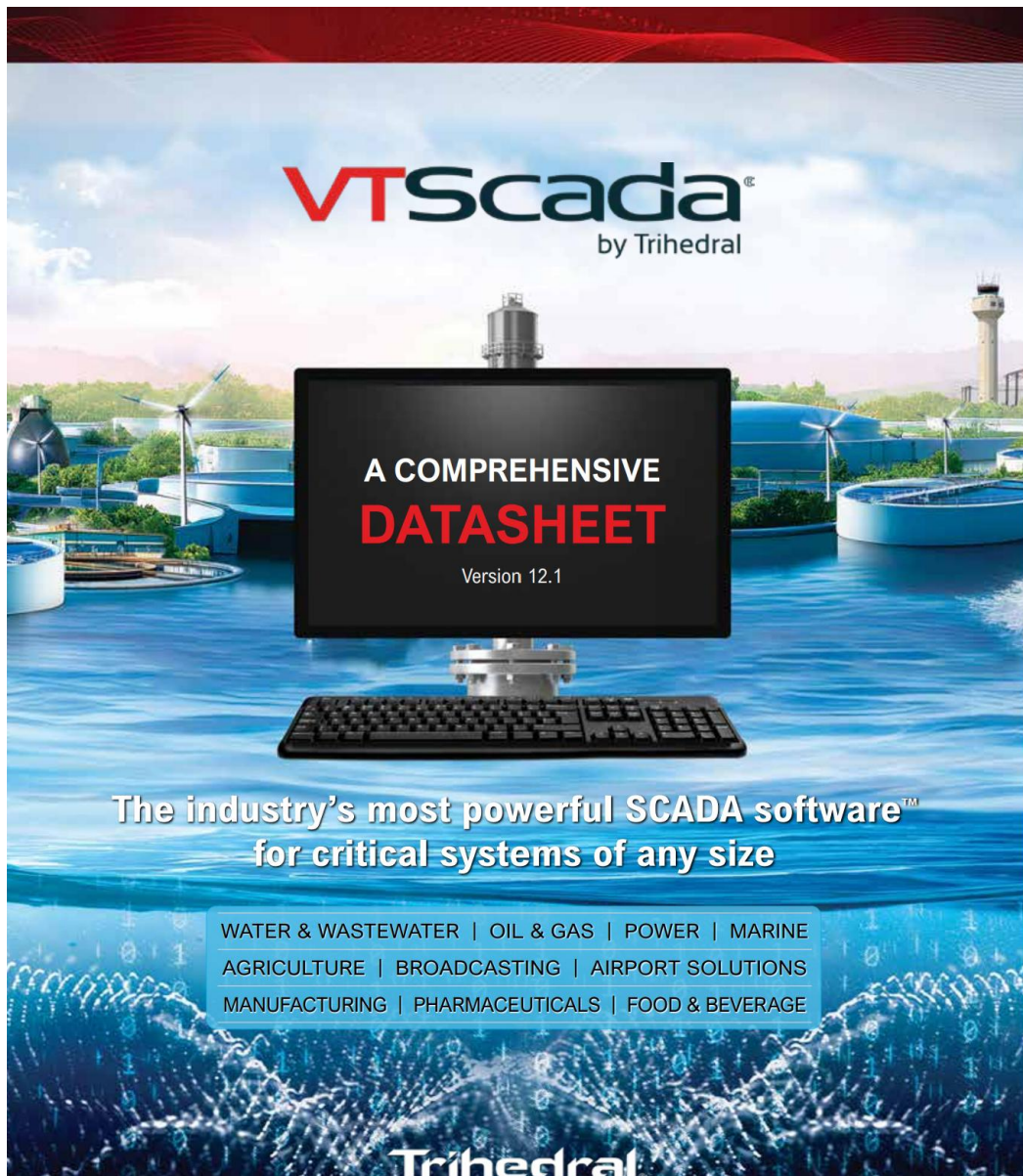
We believe that personal and accessible technical support is an integral component of great HMI and SCADA software. Supervisory Control and Data Acquisition systems are complex and unique to each customer. Therefore, ensuring system uptime often requires timely answers from SCADA professionals with strong knowledge of the automation industry in general and specific knowledge of each customer’s system and needs. Our SCADA support offices are side-by-side with those of our development team. This makes it easy to get to the bottom of even the most difficult technical support questions. It also provides developers with direct feedback from customers to help keep VTScada growing with the needs of industry.

With a yearly support contract in place, access to our friendly support team is just a phone call or email away.

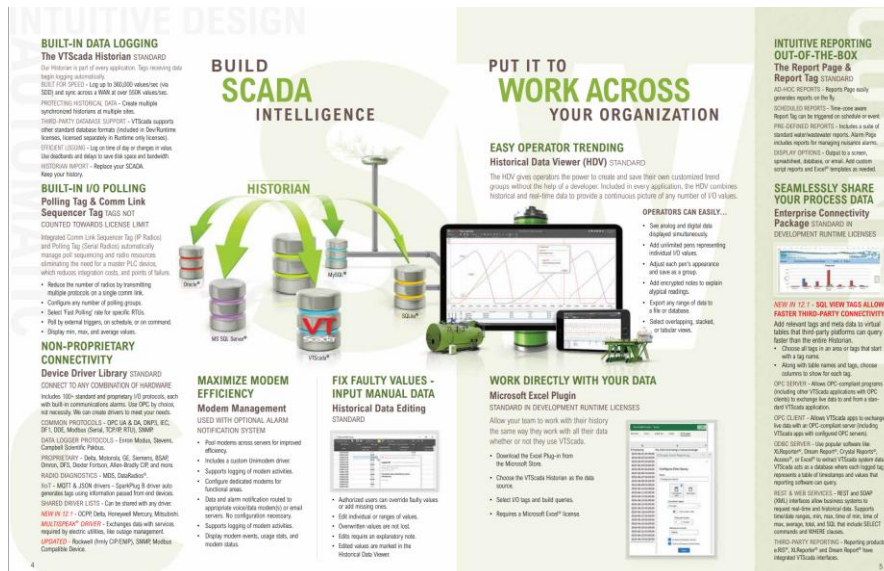
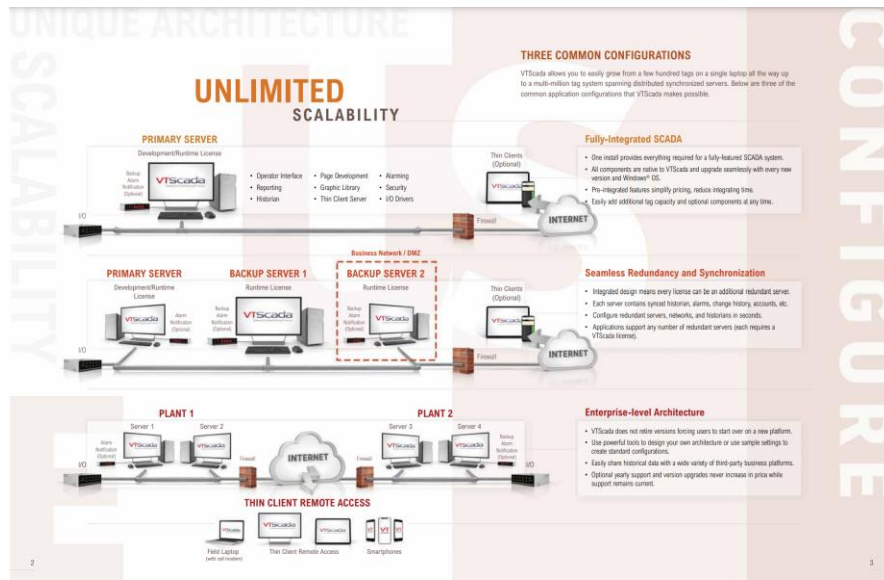
VTScada Offices Worldwide

This corporate philosophy has seen our business grow from one entrepreneur’s vision to a flourishing global company with offices in Bedford, Nova Scotia; Aberdeen, Scotland; Orlando, Florida; Calgary, Alberta; Birmingham, Alabama; Houston, Texas; Chicago, Illinois; Dayton, Ohio; Boston, Massachusetts, and San Diego, California, for a total of ten offices in three countries spanning six time zones, and serving customers in over 100 countries.

April 09, 2025



April 09, 2025



April 09, 2025

SCADA SYSTEM SOFTWARE

EMPOWER OPERATORS

AN INTUITIVE OPERATOR INTERFACE

Graphic Display Pages STANDARD

Every application includes pre-integrated pages for alarms, trends, reports, maps, and this Client monitoring.

- Open pages in full screen or windowed.
- 24-bit (32-M) true color support.
- Desktop monitor support.
- Supports consistent display on all screen resolutions.

Intuitive Page Navigation

- The sub-generated Page Menu lets you move easily through your application.
- Monitor multiple live pages at once using the standard Thin Page Menu (left).
- Change pages with custom hotspots and buttons.
- Users can pin their favorite pages along the bottom.
- Easily provide users: Read-only privileges.

FOR GLOBAL SCADA MARKETS Multi-Language Support STANDARD

- Create translations for any number of languages.
- Users can set a preferred language or change on the fly.
- Add new strings at all times or as needed.
- Transfer standard VTSys system language and custom application strings.
- VTSys recognizes hotkeys.
- VTSys 12 and up includes English and French.
- Other languages are the responsibility of the end user.

MANAGE MULTIPLE APPLICATIONS WITH EASE VTSys Application Manager (VAM) STANDARD



- Create multiple application tabs.
- Run on a Thin Client to manage applications when running VTSys as a service.

NO MORE PAPER LOGBOOKS Encrypted Operator Notes STANDARD

Need to keep a log of users' actions? VTSys includes a searchable electronic operator's notebook.

DISTRIBUTED - Create any number of notebooks. Embed a notebook on multiple pages. Add notes to points on a trend.

SOCIAL - Users can comment on each other's notes, providing a useful dialog across shifts and departments.

TAMPER-PROOF - Notes include timestamps and usernames. Once created, these encrypted files cannot be edited or deleted.

ACCESSIBLE - Authorized users can access notes from any workstation or web client. Search by date. Print any range.

NEW IN 12.1 BUILT-IN BATCH & RECIPE MANAGEMENT When Repeatability and Traceability are Key STANDARD

Batching is critical in industries like food & beverage, manufacturing, and pharmaceuticals.

- Recipe can be collections of supports to be sent to process.
- Create any number of I/O tags representing ingredients, recipes, and Recipe Books.
- All Recipe changes are permanently recorded and distributed across all servers.
- Automatically trigger multiple Recipes in series.
- Authorized users can scale or modify batches to create revisions.
- Recipes can be imported and exported as spreadsheets.
- Municipal utilities can use this functionality to change modes to accommodate adverse weather conditions.

PUT YOUR SYSTEM ON THE MAP VTSys Shipy Maps STANDARD

Navigate sites with a click, box, or scroll, the same way you use online tools like OpenStreetMap®. Embed maps into custom pages or use the standard map page.

PICK A PIN TO SEE A SITE - Pre-charge color based on polling status. Click to open each site. Drag pins into place or position with Lat and Long coordinates.

CACHED MAP TILES - Online applications pull map tiles from providers like OpenStreetMap® and CARTO®. Pre-load tiles for offline applications or load your own custom-made tiles. Use as needed indefinitely.

BULK DOWNLOADERS - Import all tiles for designated areas and elevations for use offline.

LIMIT AREAS AND ZOOM LEVEL - Ensure users stay focused on their operational areas.

NEW IN 12.1.28 LOCK OUT EQUIPMENT OR DESIGNATE A SINGLE OPERATOR

Ensure safe operation and maintenance of critical systems and infrastructure.

Control Lock System - Prevents operation of selected equipment via the VTSys screens.

Control Tabs - Permits only one operator at a time to have control over a tag or set of tags.

TEMPORARY STICKY NOTES BUILD TEAM COMMUNICATION STANDARD

Temporary messages and reminders that co-workers can easily drop on any or all pages.



- Cover control elements to discourage use.
- Easily to create, format, and edit.
- Hide/show all notes with one click.
- ACKNOWLEDGE BOX - Operators can add check marks to existing notes. When checked, acknowledgments are recorded in the Event history.

ON-SCREEN KEYBOARD NEW IN 12.1 - FOR TOUCHSCREEN PCS

VTSys can now seamlessly support the native Windows touchscreen keyboard.

- Easily switch between keyboard layouts.
- Set desired hotkeys on your screen icons.

EMBEDDED VIDEO NEW IN 12.1 - BUILD SAFETY AND TRUST

Drag-and-drop this Widget onto screens in the Data Studio so operators can be sure of what their RMI is telling them.

- Supports MJPEG streams over HTTP.

EMBEDDED BROWSERS NEW IN 12.1 - JUST-IN-TIME RESOURCES

Add supplementary resources like weather maps, YouTube® training videos, online help files, or Thin Clients from other VTSys applications.



ADVANCED SITUATIONAL AWARENESS

ALARM & EVENT MANAGEMENT IN EVERY APPLICATION THE VTSys Alarm Page STANDARD

In the event of an alarm, click the blinking icon in the top corner of every page to open the Alarm Page.

- See current, active, unacknowledged, masked, and shelved alarms.
- See time-stamped events (tag, tagset, instant changes).
- Sort by date/time and filter by functional area or priority.
- Acknowledge, silence, or mute alarms even while configuring.
- Shelve alarms to stop alerts during maintenance or alarm floods.
- Shelve multiple alarms at once.
- Use signatures and highlight views to reduce system.
- Print any range of the alarm or event history.

EFFECTIVELY MANAGE ALARMS ISA 18.2 Compliant Alarm Tools STANDARD

VTSys helps you meet the best practices of the ISA 18.2-2000 Alarm Management Standard.

- Combine text, symbols, color, and sound to easily convey alarm status and priority for each alarm.
- Easily get an alarm log data or open related displays.
- Add encrypted operator notes to alarms.

MULTI-PLANT ARCHITECTURE

Create separate Alarm and Event databases for individual plants and processes for targeted alarm processing.

- All new applications include Alarm and Event databases.
- Add more Alarm Database tags as required.
- Sync distributed databases to prevent history.
- Manage alarm events when disconnected from alarm servers.

MULTI-PLANT ARCHITECTURE

- Easily create alarm tags in the VTSys Tag Browser.
- 10 and Calculations tag includes built-in alarms.
- Extend customized alarm tags into display pages.

CRITICAL ALARMS FIND YOU ANYWHERE Alarm Notification System OPTIONAL

This native component remains tightly integrated for the life of your system. View and acknowledge alarms via SMS text message, email, pager, and text-to-voice phone call. Log on from any phone to check levels, manage alarms, change setpoints, or control equipment.

NEW IN 12.1 - VOIP ALARM ANNUNCIATION, NO MODEM OR INTERNET - Solve the problem of disappearing physical voice modems for voice alarms without exposing your system to the internet. In addition to Asterisk®, a third-party web-based platform (hosted separately), now use Voice Over Internet Protocol over analog telephone adapters (ATA) or existing VoIP phone systems. (21.1.2.1) - Use VoIP Audio, and voice modems as redundant voice call backups. VoIP now allows encrypted call setup and encrypted audio.

NEW IN 12.1 - REWARDED ROSTERS - Rosters are lists of up to 30 users to contact in response with an alarm is acknowledged. Create any number of rosters for the whole application or functional area. Change rosters by events or on schedule (recorded in history).

- Easily monitor Roster Contacts via alarm buttons.
- Set a custom send time for each contact or notify multiple contacts in one "burst".
- Repeat one or more contacts without adding them multiple times.
- Allow users to configure Rosters without the ability to modify tags.

HIGH PERFORMANCE OR HIGH RESOLUTION? YOU DECIDE Built-in Images and Data-Driven Widgets STANDARD

VTSys helps Operators effectively manage ever-growing systems by supporting the design philosophy that best suits your process.

HIGH-RESOLUTION GRAPHICS - Photo-real images and widgets provide operators with vibrant visual depiction of their process.

HIGH-PERFORMANCE GRAPHICS - This design philosophy, outlined in ISA 101, helps operators effectively manage emerging problems using gray-scale backgrounds, data-driven color, and widgets with contextual coding and indicators.

HIGH-PERFORMANCE WIDGETS - Built-in operations, analog indicators, analog bars, and water graphs.

NEW IN 12.1 - DRAG-AND-DROP WIDGETS FOR EMBEDDED BROWSERS AND LIVE VIDEO (p. 7)

THREE THIN CLIENT FORMATS Choose the format that best suits your device and data plan.

VTSys ANYWHERE CLIENT FOR SMARTPHONES, TABLETS, PCS, MACS, LINUX

A full operator workstation experience. ACCESS ANYWHERE - Connect using any device running an HTML5 browser. DRAG OR LINK - Pull technology content inside mobile data. ZERO FOOTPRINT - Nothing to install. No Java required.

VTSys INTERNET CLIENT (VTC) FOR WINDOWS PCS AND LAPTOPS

A complete workstation experience from Windows computers. SECURE REMOTE PORTAL - Log in from any on-line Windows PC. FLEXIBLE INSTALLATION - A simple alternative to installed licenses. SCREEN DEVELOPMENT - Authorized users can embed displays in the Data Studio (p. 15). BROWSELESS LAUNCH - Optionally open VTC sessions from a desktop icon or web link.

MOBILE INTERNET CLIENT (MIC) FOR SMARTPHONES, TABLETS, MACS, LINUX

A tag-and-trend HTML5 interface perfect for smaller screens. Refresh data manually or set a refresh rate that suits your cellular plan.

SECURE MOBILE ACCESS VTSys Thin Clients OPTIONAL

Monitor and control your process from any networked mobile device or computer. Clients are licensed by concurrent users and require one or more Runtime or Development Runtime licenses. Individual and bundled pricing available.

FULLY INTEGRATED INTERNET SERVER - No need for third-party products like Apache® or Microsoft IIS®.

INDUSTRY STANDARD ENCRYPTION - Support for Transport Layer Security (TLS) protects application security data.

CONSIGNEE FROM THIN CLIENTS - Authorized users can edit tags and system settings.

THIN CLIENT MONITOR - Displays and logs Client activity. Manage clients or disconnect logs user IP computer name, screen viewed, session length, and control actions.

NEW IN 12.1 - MULTI-MONITOR SUPPORT

Thin Client users can work more efficiently (MC Only).

April 09, 2025

GET MORE FROM YOUR TAGS

Only 10 Tags Count Against Your License

VTScada uses tags to manage application resources such as I/O, calculations, alarms, and menus. Since version 11, only 10 tags count towards your tag count. This frees you to include any number of menu items, fonts, alarms, and other configuration tags. Right-click individual tags to get data or view pages that reference that value.

MODEL REAL-WORLD OBJECTS

Hierarchical VTScada Tag Browser

STANDARD

Create and edit tags in the intuitive interface. Configure modeling tag structures that model how real-world elements relate. e.g., 48 stations can include multiple pumps, each of which can include I/O and communication drivers.

CLONE WHOLE SUBSYSTEMS - Simply copy the parent tag. Copied tags automatically reference their new scopes.

MULTI-TAG SELECTION - Saves time when copying, modeling, disabling, or deleting tags. Rename and reorganize tags without losing history page references, or alarms.

NEW IN 12.1 - OPERATE PLCs WITHOUT WIDGETS

Developers can quickly and correctly tag to opening a control dialog. This, with visible tag values, turns the Tag Browser into a mini-HMI without adding any Widgets to a screen.

NEW IN 12.1 - FILTER ON TAG ATTRIBUTES

The Tag Quality column allows you to filter on tags tagged as "Questionable" so they can be quickly and thoroughly commissioned.



REUSABLE TEMPLATES - TAGS & GRAPHICS

Combine tag structures with custom graphics to simplify configuration of applications with common assets.

BUILT-IN TEMPLATES - Use pre-defined Page Templates for these Remote Terminal Units (RTU) which have consistent configurations from device to device:

- GROUNDING PUMP CONTROLLER*
- MFE PUMP CONTROLLER* TEMPLATES
- PLENUM MAINTENANCE STATION* NEW IN 12.1

**supports up to nine pumps in two wells.*

Also useful for similar devices or as examples.

TEMPLATES INCLUDE - Alarms, analog & digital inputs, digital controls, analog outputs, counters and timing indicators, data age, alarm link status, latitude/longitude with VTScada Story Maps support, summary start/stop.

HIGH-EFFICIENCY SMART TAG DEVELOPMENT



FLEXIBLE TAG CREATION

Unified I/O & CALCULATION TAG STANDARD

Versions 12 and higher simplify configuration by replacing multiple tag types with a single universal tag type. It includes parameters that add control to auto-generated pages and high-performance widgets. This helps your applications scale by allowing you to later change a tag type without losing its history. Deprecated tag types still work but are hidden by default on new applications.

WORK SMARTER WITH TAGS

CONVERT THIRD-PARTY TAGS - We can save you time by converting tags from your old SCADA software.

PLC TAG SUPPORT - Put tags directly from Allen-Bradley PLCs and OPC New in 12.1 - Import converted tags from OPC UA and ICA servers.

TAG EXPORT - Convert tags to native VTScada via Access*, Excel*, SQL Server*.

MULTI-WRITE TAG - Write up to 32 outputs with one action. Useful for starting MRO or stopping PLC. New in 12.1 - Improve performance by disabling event logging for auto-triggered multi writes.

HISTORY STATISTICS TAG - Displays calculated values.

MANUAL TAG VALUES - Test systems without live I/O.

RATE-OF-CHANGE TAG - Detects input value changes (e.g., a leak) or lack of changes (e.g., a failed pump).

INTEGRATED ALARMS & LOGGING - Built into certain analog and digital tag types.

ADVANCED PUMP STATUS TAGS - Built-in high & low alarms. Detects status changes for minor changes.

LOG ON CHANGE - Only save meaningful data to the database.

QUESTIONABLE PLACES - Flag new I/O while commissioning.

TRIGGER TAG - Initiates actions on time or change.

CUSTOMIZABLE DRAG-&DROP SCREEN DEVELOPMENT

CREATE GREAT SCREENS WITH EASE

The VTScada Idea Studio STANDARD IN DEVELOPMENT RUNTIME LICENSES

This intuitive design environment makes it easy for anyone to start creating sub-windowing displays using a huge library of built-in drag-and-drop elements that are easily selected and aligned. Zoom in to tweak the finest details. No more messy screens and custom API calls to third-party platforms.

HIGH PERFORMANCE

WIDGETS - Drag-and-drop gauges, analog indicators, analog bars, and spider graphs work seamlessly with the VTScada I/O & Calculation Tag.

AUTO ALIGNMENT - Snap Points effortlessly align and space your graphics for you.

LAYER SELECTOR - Easily select one-or-more elements that are stacked on one another.

PHOTO REAL BACKGROUND TILES - Create a consistent look and design pages into functional areas. Drag-and-drop over 100 patterns and simulated lighting effects.

STYLE SETTINGS TAGS - Create consistent display conventions for groups of Widgets (e.g., red for "Off" and green for "On", or vice-versa).

SAMPLE PIPE DRAWING - Connect graphics using 3D pipes with just a few clicks. Use tag values or calculations to change appearance based on calculations or tag values.

BUILD ONCE, VIEW ANYWHERE - Design for multiple monitor resolutions. Choose from full screen or pop-up displays. Thin Clients support full graphics on mobile devices.



SOFT LOGIC CONTROL

Alternative data sources for output controls:

- Dashboard tags with delay and hysteresis.
- Calculation tags with mathematical and logical functions.
- Expression tags with complex scripting logic.

10

11

12

THE MOST RELIABLE, COMPREHENSIVE, & USER-FRIENDLY REDUNDANCY

Redundancy & Automatic Failover

SCADA SERVERS - In seconds, configure any computer running a VTScada license to be a redundant hot backup server that can take over polling and logging the primary copy of the application.

INTERNET SERVERS - If a Thin Client server goes offline, connections seamlessly switch to the next designated server.

HISTORICAL & CONFIGURATION HISTORY - Each server is a separate copy of the application tags, including, inventory settings, scripts, network variables, configuration history, and historical.

ALARM MANAGEMENT - Application users support any number of distributed synchronized Alarm and Event databases.

NO CONNECTIONS - If a common network or I/O fails, VTScada's Driver Middleware can automatically fail over to a backup.

A BETTER WAY TO BACK UP SCADA

Real-Time Full System Backup

REQUIRES MULTIPLE VTScada LICENSES

Integrated architecture and fast networking allow every server to be a real-time copy of the application including:

- The latest configuration history.
- Up-to-the-second historical data.
- Alarm, Event, and Tag databases.

Each distributed server is an off-site disaster backup.

FAIL OVER WITH CONFIDENCE

New in 12.1 - Services Page & Widget

STANDARD

View status of services in multi-server applications. Manually transfer services between backup servers offline.



SEE HARDWARE PROBLEMS COMING

Server and Network Health Monitoring

STANDARD

Monitor and alarm critical hardware & network resources.

SNMP DRIVERS - SNMP time remaining, network switch, and network status.

CONNECTION STATUS - Connection status between computers.

WORKSTATION STATUS - CPU usage, memory, hard disk space.

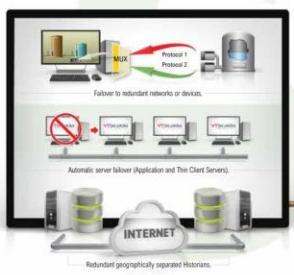
DRIVER MULTITASKING - Be notified of failure to order the network.

NO LOGGED-ON WINDOWS USER REQUIRED

VTScada as a Service STANDARD

- When IT policy forbids unattended logged-on users.
- VTScada service automatically starts with Windows*.

THE INDUSTRY'S BEST RESILIENCY SYSTEM WIDE



Failover to redundant networks or devices.

Automatic server failover (Application and Thin Client Servers).

Redundant geographically separated Historians.

CENTRALIZED MONITORING AND CONTROL OF MULTIPLE SYSTEMS

Master/Subordinate Applications REQUIRES MULTIPLE VTScada LICENSES

Ideal for customers with multiple independent facilities/systems. A Master Application has access to all data, displays, and historical data from sub-applications.

Sub-apps I/O tags not counted twice against your tag count.

Sub-apps can monitor locally if cut off from the master.

Configure Sub-Applications in seconds.

TYPICALLY INCLUDES:

- Summary data views.
- Summary status views (tripped, general alarm indicators).
- Drill down to individual facilities.



MULTI-USER CONFIGURATION MANAGEMENT

WORK ONLINE WITHOUT INTERRUPTING YOUR PROCESS

Real-time Configuration STANDARD

Edit tags, displays, and system properties without stopping the application and disabling alarm management.

OPERATORS CAN EASILY...

- Work with live I/O.
- Apply changes without retooling.
- Multiple users can develop simultaneously.
- No configuration server required.

Conflicts are easily resolved.

- Edit tags via Thin Clients.
- Edit server tags using Runtime Monitor.

DEVELOPERS CAN EASILY...

- Conflicts are easily resolved.
- Edit tags via Thin Clients.
- Edit server tags using Runtime Monitor.

TRACE ANY CHANGE - UNDO ANY CHOICE

Application Version Control (AVC) STANDARD

A native part of VTScada, AVC provides change traceability, enhances application management in networked environments, and greatly improves recovery from unexpected effects of configuration.

- View all changes by all users on all servers.
- See side-by-side recommendations in each version.
- Instantly switch to any previous good version.
- Merge changes in multi-developer environments.
- Undo specific changes at any time in the past without universal rollbacks.
- Change history automatically stored on each synced server.



SERVER 1

SERVER 2

SERVER 3

SERVER 4

12

13

14

April 09, 2025

A REFRESHING APPROACH TO SUPPORT

The VTScada Support Team
OPTIONAL YEARLY RENEWALS

Are you frustrated trying to get help from a major supplier? Our team of developers, programmers, and engineers provide a level of personal support that keeps customers coming back for upgrades, enhancements, and consulting services as their facilities grow and evolve.

EVERY NEW LICENSE INCLUDES 90 DAYS OF SUPPORTPLUS

- Includes phone and email support Monday to Friday, 8 AM - 4 PM (EST) as well as the ability to download and install the latest version any time.
- Optional renewals cost 15% of the original software price per year and will never increase while you continue to renew.
- Covers issues specific to VTScada. Does not include hardware troubleshooting, training, or system design.
- 24/7 and application-specific packages also available.

SYSTEM REQUIREMENTS

Applications require one or more VTScada licenses each installed on separate Windows operating systems.

HARDWARE - Systems (under 10K I/O) typically don't require server-grade computers.

OPERATING SYSTEMS - VTScada supports Windows 7 up to the latest version of Windows.

THIN CLIENTS - Accessible from any device that supports HTML5 - compliant browsers.

Actual requirements depend upon your specific needs. See detailed requirements and recommendations at: VTScada.com/requirements

LICENSE TYPES

	INTEGRATED COMPONENTS INCLUDED (SINGLE INSTALLATION)	RUNTIME	DEVELOPMENT RUNTIME
WIN AND LINUX	Application Server (primary or redundant)	✓	✓
	Runtime Client	✓	✓
	Strings and Graphics Library	✓	✓
	Historian	✓	✓
	Security	✓	✓
	Network and Computer Resource Monitoring with SNMP Agent	✓	✓
	Alarms and Trends Database	✓	✓
	Trending and Reporting	✓	✓
	Edge Relay Integration	✓	✓
	Electronic Operator Logbooks	✓	✓
DEV/TEST	Common (log, Modbus, OPC, OPC Client, Opcua, GSE, Siemens)	✓	✓
	Advanced (log, SNMP, SNMP Error Monitor, RSAP)	✓	✓
	Proprietary (log, Modbus Systems, Opcua Systems, Aquant)	✓	✓
	Proprietary (log, Modbus Scientific, OPC, SCADA/PLC)	✓	✓
	Automatic Version Control (system-wide disaster recovery, audit trails)	✓	✓
	Win/Unix/Linux Development Environment (online, multi-developer)	✓	✓
	Change Deployment	✓	✓
	Scripting and Debugging Tools	✓	✓
	GDSC Server, OPC Server, Web Services	✓	✓

SUPPORT, UPGRADES AND RENEWALS

MODERN SECURITY THAT'S SCALABLE

MORE CONTROL, LESS COMPLEXITY

Built-in Security Management STANDARD
VTScada makes security management simple, scalable, and infinitely configurable. Authorized users can manage security within the standard operator interface, then instantly deploy their changes across the entire system without restarting.

Windows® Security Integration (OPTIONAL)
Configure VTScada to use your Windows log-in account. No need to manage Windows and VTScada accounts.

IEC-62443-4-1-ML 3 CYBERSECURITY CERTIFICATION ISSUED BY EXIDA

All of 12.1, VTScada Development Environment is certified to be compliant with IEC 62443-4-1 Maturity Level 3 Security For Industrial Automation And Control Systems. This defines secure development life cycle (SDL) requirements for industrial automation and control systems.

Proximity Card Readers
Log on the same way you enter a physically secured building.

WORK DIRECTLY WITH YOUR DATA

Each application includes security accounts and settings that control system-wide access to workstations, Thin Clients, and alarm notification. Rather than choosing from an ever-growing list of privileges, VTScada uses 'Rules' and 'Roles' to allow you to quickly generate and manage highly-specialized user accounts.

ROLES - A combination of logs, privileges, and locations that allows you to finely tune what users can do and from where. Grant different users access to different areas without creating new privileges.

ROLES - Combinations of Rules and other Roles that match the duties of specific jobs (e.g., Plant 1 Operator).

UNPARALLELED TRACEABILITY

OPERATIONS - Operator activity such as setpoint changes, log on/off, and security modifications are recorded as events in the Alarm Manager (P.B). This includes actions performed via servers, Thin Clients, and the Alarm Notification System.

CONFIGURATION - Integrated Application Version Control (P.13) automatically tracks all changes on all workstations. It detects manual changes to configuration files made by unauthorized users or malware, and automatically restores them.

REMOTE ACCESS - Thin Client Monitor displays and logs remote activity and allows you to message or disconnect clients. Logs user ID, computer name, screens viewed, and session length.

ADVANCED ENCRYPTION AND NETWORK PROTECTION

INDUSTRY-STANDARD SECURITY - Security Manager complies with industry-standard RFCs for security.

ADVANCED ENCRYPTION - For the Security Database and security credentials passed between clients and servers.

IPV4 AND IPV6 ADDRESSING - IPv4 addresses are running out. IPv6 provides improved performance and security.

ENCRYPTED NOTES - Time-stamped operator and trend notes cannot be deleted or modified.

HASHED USER PASSWORDS - Log-in credentials are never held in a form that anyone can decrypt and recover.

TLS/VPN SUPPORT - Thin Clients support Transport Layer Security (TLS), tunnels, and VPN access.

TLS EMAIL SUPPORT - The Alarm Notification System supports SMTP email servers requiring TLS (e.g., Gmail®).

BLOCKALLOW IP ADDRESSES - Optionally control which IP's may or may not connect to your application.

CODE TAMPERING DETECTION - On startup, VTScada automatically detects unauthorized changes to source files and restores the currently approved files from the tamper-proof repository.

SERVER AND PORT FAILOVER - Easily configure automatic failover for SCADA servers and communication ports.

SINGLE LOG-IN - OpenID Connect lets Thin Client users log in with the same credentials across all Enterprise applications.

SINGLE SIGN-IN & TWO-FACTOR AUTHENTICATION

OpenID Connect®
Permits integration of VTScada Security with third-party authentication servers on VTScada Anywhere Clients.

- SINGLE SIGN-IN** - One password to access many systems.
- TWO-FACTOR AUTHENTICATION** - E.g., Google Authenticator or Apple Touch sensor.

14
15



April 09, 2025

Tab 3. References

FIRM NAME: Hillsborough County Utilities, FL
 ADDRESS: Tampa, FL
 CONTACT PERSON: Brandon Porter TITLE: SCADA Manager
 PHONE NO: 813-468-7065 EMAIL ADDRESS: PorterB@hcfl.gov
 PROJECT START/COMPLETION DATES: August 2020 - Ongoing (Several Plants Complete)
 CONSULTING ENGINEER'S NAME: McKim Creed
 SCOPE OF SERVICES PROVIDED: Large scale Aveva conversion to VTScada. 1K pump station, 22 Water and Wastewater plants. Tag build out will be over 300K tags. Very large project that required 2 system integrators to be solicited for the conversion. Covers the greater Tampa Bay area.

FIRM NAME: Polk County Utilities, FL
 ADDRESS: Bartow, FL
 CONTACT PERSON: Nick Grieves TITLE: SCADA Manager
 PHONE NO: 863-344-2686 EMAIL ADDRESS: NickGreives@polk-county.net
 PROJECT START/COMPLETION DATES: November 2021 to November 2022
 CONSULTING ENGINEER'S NAME: Done By County SCADA Team
 SCOPE OF SERVICES PROVIDED: Large scale iFix conversion and migrated to a VTScada master-subordinate application recently. 100K tag licensed across many water/ww plants and pump stations.

FIRM NAME: Fayetteville Public Works Commission
 ADDRESS: Fayetteville, NC
 CONTACT PERSON: Bobby Jones TITLE: SCADA Tech
 PHONE NO: 910-676-1814 EMAIL ADDRESS: bobby.jones@faypwc.com
 PROJECT START/COMPLETION DATES: June 2022 - Jan 2023
 CONSULTING ENGINEER'S NAME: Piedmont Automation
 SCOPE OF SERVICES PROVIDED: Conversion of Data Flow Systems and iFix systems at all



April 09, 2025

Tab 4. SCADA System Software Options (Appendix A: SCADA Software Evaluation) – See Next Page



April 09, 2025

City of Clearwater
Exhibit A - SCADA Software Evaluation

Primary Topic	Sub-Topics	Possible Points	Answer
1. Software Package	1a. Name and Version of the latest software release	50	VTScada 12.1.64
	1b. Explain where the proposed software is in its lifecycle	50	VTScada is a very mature product and was developed in 1986 and uses a similar model to Apple to constantly
	1c. Upcoming features to be released in the next 3-5 years	30	Version 12.2 is expected to be released by summer of 2025 and Version 13.0 is expected within the next 2 to 3
	1d. Estimated number of installations worldwide of this release	30	Every version of VTScada is regression tested internally for up to 2.5 million tags and then "soaked" internally by staff for approximately a week before being released to
	1e. Describe the development and testing facilities used for the software	20	VTScada Applications can be run on a 64-bit Windows users to
	1f. Ability of the software to provide simulation and/or development	20	See Appendix A: References
	1g. References from current and past users	40	See Appendix A: References
	TOTAL SOFTWARE PACKAGE POINTS POSSIBLE	190	
2. Licensing	2a. Explain how licensing is counted and priced (tags, screens, etc.)	30	VTScada licensing utilizes tags for real I/O, meaning only tags reading data or writing data to and from field devices
	2b. Type of license key (software, hardware, cloud, etc.)	15	VTScada uses a permanent 128 character software key for
	2c. Primary/Backup or Redundant Server licensing strategy	30	VTScada redundancy uses a real time redundant fail over strategy that synchronizes the historians and all other
	2d. Client licensing strategy (concurrent, cloud based, NIC, etc.)	50	licenses are concurrent in VTScada and would be unlimited in the architecture proposed. VTScada requires
	2e. Historian licensing strategy (point count method, user, etc.)	30	An VTScada interface for licenses include a photo of the number of historian tags. The VTScada historian is
	2f. 3rd part app licensing requirements (included in software, etc.)	20	VTScada requires the 3rd party applications, with the exception of WebViewer, which is utilized for feeding live
	2g. I/O Driver licensing requirements (included in software, etc.)	20	Additional client licenses can be added at any time. This
	2h. Process for purchasing additional client licenses	20	VTScada includes unlimited this client
	TOTAL LICENSING POINTS POSSIBLE	215	
3. Drivers	3a. List of I/O drivers that are built into the product	30	Please visit https://www.vtscada.com/device-driver-list/
	3b. Vendor sources of I/O drivers that are not built into the product	20	All drivers required for this project are included in
	3c. List of database connectors/drivers that are built into the product	10	VTScada includes ODBC, OPC and Web Services.
	3d. Vendor sources of database connectors/drivers that are not built into the product	15	VTScada includes database connectors required for this
	3e. Primary/Backup strategy for I/O drivers (hot standby, failover, etc.)	30	All VTScada services will fail over automatically from
	3f. Primary/Backup strategy for database connectors/drivers	15	All VTScada services will fail over automatically from
	TOTAL DRIVERS POINTS POSSIBLE	120	
	TOTAL POINTS POSSIBLE	525	
4. Cost	4a. Server license cost ranges	30	See Appendix B: Price Sheet. Server license and thick
	4b. Thin client license cost ranges	20	See Appendix B: Price Sheet. Server license and thick
	4c. Thin client license cost ranges	20	See Appendix B: Price Sheet
	4d. Historian license cost and ranges	30	See Appendix B: Price Sheet
	4e. Driver license cost ranges	20	VTScada includes a matching historian with every license,
	4f. Annual support cost strategy and details of what is included	50	VTScada supportPlus is 15% of all licenses purchased and can be renewed annually. SupportPlus includes standard tech support Monday to Friday 8 to 5 EST, excluding US and Canadian holidays. If annual SupportPlus is maintained, annual SupportPlus renewal prices will not change annually, assuming no change in licensing. 24x7
	TOTAL COST POINTS POSSIBLE	170	
	TOTAL POINTS POSSIBLE	525	
5. Servers and Clients	5a. Server redundancy strategy (hot standby, failover, redundant, etc.)	70	All VTScada services will fail over automatically from
	5b. Ability to upgrade and develop on servers without requiring downtime	100	VTScada can be upgraded by installing the latest version on top of the old one. Typically this is done by upgrading
	5c. Ability to have a client operate autonomously after loss of connection to the server	100	VTScada client can operate autonomously and
	5d. Server hardware requirements	10	system requirements can be found here,
	5e. Thin client hardware requirements	10	system requirements can be found here,
	5f. Thin client hardware requirements	10	system requirements can be found here,
	5g. 3rd Party software required to be added to your SCADA system	50	VTScada development runtime licenses come with data Sharing option, which allows connection to 3rd party
	5h. Can the server software run as a service	50	Yes.
	5i. Can the client software run as a service	50	Yes.
	5j. Server software supported platforms (Windows, Apple, Linux, etc.)	20	Windows, see system requirements for compatible
	5k. Thin client supported platforms (Windows, Apple, Android, etc.)	20	Windows, see system requirements for compatible
	5l. Thin client supported platforms (Windows, Apple, Android, etc.)	20	Windows, see system requirements for compatible
	5m. SCADA software tag database format	15	The VTScada historian is pre-configured in every application and has a standardized schema. The integrated database is stored in binary files, which results in very compact storage and fast data read/write access. Relational databases can be used as an alternative to file-based databases.
	5n. SCADA software tag naming format	30	VTScada uses a hierarchical tag structure, the tag format
	5o. Describe ability for servers to load share	10	VTScada services can be configured to load share to a number of servers. For example the historian can be a
	5p. Where is development of the application possible (on server, on client, etc.)	50	development can occur on any internet development Runtime server as well as any VTScada Internet Client (VIC) that is connected to a Development Runtime server.
	5q. Does the system support screen printing	10	Yes.
	5r. List limitations on screen or I/O count based on polling	30	no limitation on screens. VTScada limitations on polling are often related to the existing radio/cellular and SCADA network infrastructure/bandwidth, as well as protocol
	5s. Describe tools for monitoring network and system hardware	30	VTScada includes servers to monitor system health as well
	5t. Describe the ability and limitations of the software to interface with other systems	20	VTScada uses a real time master-slave architecture
	5u. Describe the ability and limitations of the software to interface with other systems	20	VTScada can share data between data and history servers, one of which is utilizing the master-subordinate application feature. VTScada can also hand off data using SQL tags or by using the ODBC connector as a write
	TOTAL SERVER/CLIENT POINTS POSSIBLE	725	
	6a. Is the Historian ODBC compliant	70	Yes.
	6b. Databased file format and location of data	40	The VTScada historian is pre-configured in every application and has a standardized schema. The integrated database is stored in binary files, which results in very compact storage and fast data read/write access. Relational databases can be used as an alternative to file-based databases. Microsoft SQL Server and MySQL are
	6c. Strategies for data compression	20	See 6b above.
	6d. Primary/Backup strategy for Historians (hot standby, failover, etc.)	100	All VTScada services will fail over automatically from primary to backup based on an assigned server list. Upon



April 09, 2025

Tab 5. Cost of Software and Support

Based on Trihedral's evaluation of RFP 07-25 SCADA Software Services, Trihedral has submitted an overall price for VTScada HMI Software on this RFP in the amount of **\$172,810.50**. This includes initial software purchase for software licenses for facilities listed below, as well as 1 year of SupportPlus and 24x7 Emergency Support for Year 1. We are proposing that the Master Application could run all applications for collection of data at all facilities if desired. Each plant would have its own application and would run independent of the others. The additional SupportPlus cost for the remaining 9 years if maintained annually would be **\$215,126.25**. If SupportPlus is pre-purchased, a pre-pay discount is eligible. The license structure is as follows:

A. Lift Stations/Master Application

- 50K Dual Server Premium Bundle (Includes
- (2) Development Runtime Servers
- (2) 25K Historians
- (2) Alarm Notification
- (2) Data Sharing
- (1) \$1K Training Credit for VTScada Course
- 24x7 Emergency Support Year One
- SupportPlus Year One
- **Unlimited Thin Clients**

B. East WRF

- (2) 5K Runtime
- (1) 5K Alarm Notification
- (1) 5K Data Sharing
- (2) 5K Historians
- Unlimited Thin Clients Shared From Master App License
- 24x7 Emergency Support Year One
- SupportPlus Year One

C. Marshall Street WRF

- (2) 5K Runtime
- (1) 5K Alarm Notification
- (1) 5K Data Sharing
- (2) 5K Historians
- Unlimited Thin Clients Shared From Master App License
- 24x7 Emergency Support Year One
- SupportPlus Year One

D. Northeast WRF

- (2) 5K Runtime
- (1) 5K Alarm Notification
- (1) 5K Data Sharing
- (2) 5K Historians
- Unlimited Thin Clients Shared From Master App License
- 24x7 Emergency Support Year One
- SupportPlus Year One



April 09, 2025

E. RO 1

- (2) 5K Runtime
- (1) 5K Alarm Notification
- (1) 5K Data Sharing
- (2) 5K Historians
- Unlimited Thin Clients Shared From Master App License
- 24x7 Emergency Support Year One
- SupportPlus Year One

F. RO2

- (2) 5K Runtime
- (1) 5K Alarm Notification
- (1) 5K Data Sharing
- (2) 5K Historians
- Unlimited Thin Clients Shared From Master App License
- 24x7 Emergency Support Year One
- SupportPlus Year One

G. WTP3

- (2) 5K Runtime
- (1) 5K Alarm Notification
- (1) 5K Data Sharing
- (2) 5K Historians
- Unlimited Thin Clients Shared From Master App License
- 24x7 Emergency Support Year One
- SupportPlus Year One

Based on VTScada's unique and powerful redundancy and integrated features, we believe the licensing proposed provides the best value for the City and will help reduce long term support and hardware costs. Based on the RFP requirements, we believe that VTScada can meet and in many cases exceeds the City's SCADA HMI requirements on licensing structures. Please note that all licenses include VTScada's powerful integrated Version Control feature and all drivers at no additional cost.



April 09, 2025

BECOME A VTScada EXPERT

START YOUR SELF-GUIDED JOURNEY... FOR FREE!

Download

VTScadaLIGHT
This free version of our award-winning software never expires. For home and industrial use.

Quick Start Video

Tutorial Video
In minutes, learn to create applications, connect to devices, and add values to screens.

Online Learning

VTScada Academy
Learn what you need at your own pace in this free on-line learning environment.

VTScada.com/START

OR CHOOSE AN IN-PERSON OR REMOTE INTERACTIVE TRAINING COURSE

OPERATION & CONFIGURATION An introduction to VTScada for SIs, OEMs, consultants, operators, maintenance, and IT staff.	ADVANCED CONFIGURATION Customization and configuration using VTScada Script for advanced developers.	SCRIPTING & PROGRAMMING For advanced integrators and OEMs. Custom courses can be created based on specific requirements.
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REGISTER NOW: VTScada.com/TRAINING

MOVING FORWARD

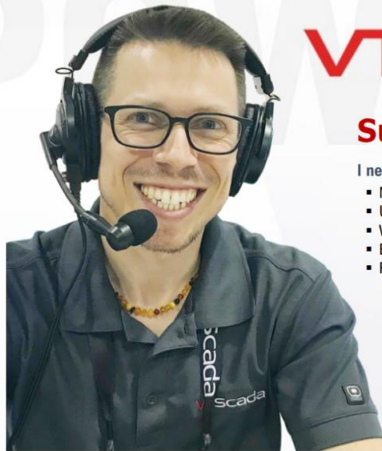
DOWNLOAD OUR PRICELISTS VTScada.com/pricing	SEE SYSTEM REQUIREMENTS VTScada.com/requirements	DOWNLOAD THE DRIVER LIST VTScada.com/drivers
--	--	---

SALES INQUIRIES: info@trihedral.com

NORTH AMERICA 1 (800) 463-2783	WORLDWIDE 1 (902) 835-1575	UNITED KINGDOM +44 (0)1224 258910	ONTARIO 1 (905) 760-9399 Distributor CB Automation	WESTERN CANADA 1 (403) 805-1972 Distributor BettsM Controls
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April 09, 2025



POWERFUL

VTScada®
by Trihedral

SupportPlus FAQ

I need help now! My support is current. How do I contact the support team?

- North America: 1.855.887.2232
- UK: +44 (0) 1224 258910
- Worldwide: 1.902.835.1575
- Email: support@trihedral.com
- Facsimile: 1 (902) 835-0369

How much is SupportPlus Service Annually?

New licenses include three months of SupportPlus Service. Optional renewals are 15% of the original software purchase price per year while your support does not lapse. Multi-year contracts are available. We can adjust contract expiry dates to match your budget year or to align licenses.

What if my SupportPlus Service lapses?

Restoring support is 15% of the current license value per lapsed year, cumulative up to 75%. Subsequent renewals are based on the price at time of re-instatement.

Does SupportPlus Service guarantee response times?

Yes. This service provides next business day responses to inquiries by email, phone, or facsimile.

Does SupportPlus Service cover problems with my application?

This service only covers issues directly associated with VTScada. It does not cover application-specific issues, training, or engineering services.

What if I need support for my application?

As a premium option, we provide a dedicated representative with training in your application. Pricing depends on the application size and selected level of coverage. Requires an up-to-date SupportPlus Service contract.

Does Trihedral provide 24/7 support?

This is another premium option. Pricing is 5% of the license value (min £950.00) in addition to SupportPlus Service pricing (see table on page one).

What kinds of requests does standard SupportPlus Service cover?

- Can you help with an issue that appeared after I upgraded the server to Windows 10?
- I am using standard reports. They worked fine yesterday; now they don't. Can you help?
- Please help me get this new replacement modem working.
- I can't connect to a new type of PLC. I completed the required configuration, but it doesn't communicate!

What kinds of requests are not covered?

- Can you write a custom VTScada script code for me to do something specific in my process?
- I have never used VTScada before, but I need it for a project. Can you tell me how to use it?
- Can you design a system for my three lift stations?
- How do I create a custom report for my customer to run every night at midnight?

A systems integrator installed my application. Who is responsible for renewals?

Annual SupportPlus Service quotes will be sent directly to the integrator(s) who installed your VTScada application. They are responsible for relaying them to you. If you do not receive annual quotes, you can contact Trihedral directly at info@trihedral.com.

Does my integrator provide support or does Trihedral?

If you purchased support directly from Trihedral, then we support you. Otherwise, you need to negotiate a support agreement with your Integrator.

Does Trihedral offer hourly rates?

Yes. If you choose not to renew your support, you may purchase engineering services at our standard hourly rates plus expenses.

How do I download newer versions of VTScada?

You can download the installer for any release directly from our FTP site. The link is provided with your license key at time of purchase. If your support is current, you can install any version. If lapsed, you can install releases created before your support expiry date.

If I upgrade to the latest version of VTScada, do I have to rebuild my application?

In most cases, simply run the new VTScada installer to upgrade to that version (restart required). Though all systems should be tested after an upgrade, applications with custom coding may require additional testing and configuration. Note: Software upgrades do not include new optional features that are licensed separately.

Download a 90-day Trial [VTScada.com/trial](https://www.trihedral.com/trial)

Updated May 27, 2024



April 09, 2025

VTScada Software License Agreement (Standard Conditions) FL

1. In consideration of the development and availability for use of the VTScada Software, including any updates or amendments of the Software and, where applicable, the VTScadaLIGHT and VTS software of Trihedral Engineering Limited (the Software), the Customer and any third party using, or relying upon the operation of the Software pursuant to this Agreement, agree to the following terms and conditions.
2. The Software is licensed by Trihedral, Inc. (Trihedral) to the Licensee (the Customer) named in any associated sales order, or who has downloaded the Software, for possession and use solely in accordance with this VTScada Software License Agreement (Standard Conditions) (this Agreement). The Software is not sold by Trihedral to the Customer. This Agreement contains terms which limit the liability of Trihedral. In any event, installation of the Software upon a computer hardware system by the Customer will constitute irrevocable acceptance of the provisions of this Agreement.
3. Upon acceptance of this Agreement by the Customer, Trihedral grants to the Customer a perpetual, non-exclusive, worldwide license to use the Software in accordance with the provisions of this Agreement and the associated sales order, if any. Where the computer hardware system upon which the Software is installed is configured so as to function as virtual computers or virtual servers, except to the extent expressly authorized by any associated sales order, the license granted hereunder does not include the right to install or run simultaneously the Software on more than one virtual computer or virtual server. The term "virtual computer" includes one or more computers and includes partitioned computer segments, any of which are configured to run the Software concurrently with an operating computer system as a hot backup for failover application.
4. Where the Software has been downloaded by the Customer without monetary consideration to Trihedral, the Customer agrees that the possession and use of the Software is restricted to the operating condition that the maximum number of tags which are concurrently communicable with the Software will not exceed fifty during any period of operation of the Software.
5. Where the Software has been downloaded by the Customer without monetary consideration to Trihedral, the Customer agrees that the possession and use of the Software is restricted to the operating condition that the maximum cumulative number licenses of Software so licensed at facilities of the Customer and facilities of entities which are affiliated with the Customer will not exceed 10, without the written consent of Trihedral.
6. **WITH THE SOLE AND LIMITED EXCEPTION OF THE WARRANTIES EXPRESSLY PROVIDED IN CLAUSES 14 AND 15, TRIHEDRAL EXPRESSLY AND UNEQUIVOCALLY DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, OR BOTH, IN ANY FORM, INCLUDING, BUT NOT LIMITED TO A WARRANTY OR CONDITION AS TO ANY STANDARD OF PERFORMANCE, A WARRANTY OR CONDITION AS TO MERCHANTABILITY AND A WARRANTY OR CONDITION AS TO FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES WITH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT SHALL TRIHEDRAL HAVE ANY LIABILITY TO THE CUSTOMER OR ANY THIRD PARTY ARISING FROM THE FAILURE OF THE SOFTWARE TO MEET ANY STANDARD OF PERFORMANCE OR TO BE FIT FOR ANY PARTICULAR PURPOSE.**
7. The Customer, agrees that the possession and use of the Software is restricted to the extent that such possession or use is in accordance with the specifications of the associated sales order issued by Trihedral, if any, as to scope of use, maximum number of concurrently installed or operating copies of the Software, tag limit, maximum number of communicating channels or remote telemetry devices, features of the Software authorized for activation by the Customer and any other limitations concerning the Software.
8. The Customer and all other persons using or relying upon this Software pursuant to this Agreement agree that the Customer and such other person will not copy, decompile, list or render otherwise than



April 09, 2025

in machine readable form only the Software, provided that the Customer or such other person may make such copies as are reasonably necessary as backup copies for use only on installation on hardware systems as may be expressly authorized by any associated sales order. The Customer and such other party further agree not to permit or acquiesce in conduct on the part of third parties contrary to the provisions of this clause.

9. In the event that the Software, as delivered to the Customer by Trihedral should prove defective by reason of materials or the copying process within a period of one year from the effective date of this Agreement, Trihedral will replace the Software upon return of any physical medium upon which defective Software was delivered, and in all cases, the destruction of all electronically recorded copies of defective Software in the possession, or under the control of, the Customer. Replacement of the defective Software under such circumstances shall be the sole liability of Trihedral. In no event shall replacement be made if a defect in, or non-operability of, the Software is, in the opinion of Trihedral, the result of an attempt to copy, decompile or list in other than machine readable form the Software.
10. With the exception of the warranties expressly provided pursuant to clause 14 and clause 15 of this Agreement, in no event shall Trihedral have any liability to the Customer or any third party for any claims, damages or causes of action other than the replacement of the master copy of the Software in accordance with the provisions of clause 9.
11. The Customer and all other persons using or relying upon the Software pursuant to this Agreement agree that the Customer and such other person will perform such checks and verifications of the operation of the Software as may be reasonably necessary to ensure its proper functioning and that the Customer will exercise due diligence in the operation of the Software and the review of the results of the use of the Software, including the provision of such backup and fail-safe systems as may be required, to avoid loss, injury or damage to the Customer and any third party.
12. Unless otherwise agreed to in writing by Trihedral, and then only to the extent thereby provided, the Customer will ensure that the Software and all copies of the Software, including backup copies of the Software and copies of the Software delivered to sublicensees, where permitted, are labeled on medium and transmittal communication by, and display on screen at startup and during use of the Software, the complete copyright notice of Trihedral and the trademarks of Trihedral as prescribed by Trihedral at the time of delivery of the Software to the Customer, and as may be reasonably revised by Trihedral thereafter.
13. The Customer will forthwith give notice in writing to Trihedral of any claim by a third party arising alleged infringement of intellectual property right with respect to the Software or the use of the Software, and will co-operate with Trihedral in the investigation and defense of such claim.
14. Trihedral warrants that the Software does not infringe the copyright or trade secret rights of a third party. Trihedral will indemnify the Customer against any costs, expenses or damages finally awarded against the Customer in any action in which infringement by Trihedral of copyright or trade secret rights of a third party is established, provided that the Customer has performed completely its covenants in accordance with clause 12 and clause 13 of this Agreement.
15. Trihedral warrants that, to the best of information and belief, the Software does not infringe any patent right of a third party. Trihedral does not provide any other warranty with respect to patent rights in the Software, and with the sole exception of such warranty, Trihedral will have no liability to the Customer for any costs, expenses or damages incurred by the Customer arising from a claim by a third party for infringement of patent rights concerning the Software.
16. In the event that the Software is, or in the opinion of Trihedral is likely to become, subject to a claim or action with respect to an alleged infringement of intellectual property rights of a third party, Trihedral may, at its option:



April 09, 2025

- (a) at the expense of Trihedral, procure the right for the Customer to continue use of the Software in accordance with this Agreement;
 - (b) at the expense of Trihedral, replace or modify the Software so that its use by the Customer in accordance with this Agreement will be non-infringing, provided that substantially the same function is performed by the replacement or modified Software; or,
 - (c) at the expense of Trihedral, contest such claim or action to such extent as Trihedral may in its absolute discretion consider reasonable and appropriate under the circumstances.
17. With respect to any license of the Software by Trihedral hereunder which is exclusive to the Customer, the Customer shall have the right in its sole discretion to bring and prosecute and to answer and defend any claim, action or suit arising from or relating to the Software in the exclusive territory of the Customer, solely in the name of the Customer, upon provision of written notice to Trihedral. In the event that a final judgment is awarded to the Customer as a result of any claim, action or suit prosecuted by the Customer, the Customer shall retain the entire judgment and such participation by the Customer will be at the sole cost and risk of the Customer. If such Customer elects not to bring and prosecute a claim related to the Software forthwith upon written notice from Trihedral to do so, then Trihedral at its sole expense and gain may undertake such legal proceedings as may in its absolute discretion be considered advantageous.
18. In no event shall the liability of Trihedral to the Customer or any other party extend to indirect or consequential damages.
19. To enable certain features of the Software, such as VTScada Slippy Maps, the Customer may choose to download third party data, images and software which are subject to license conditions or agreements governing use by the Customer. Compliance with such licensing and use agreements is strictly the responsibility of the Customer.
20. This Agreement shall be effective from the time of first installation of the Software by the Customer upon any hardware system. This Agreement may be terminated by the Customer at any time by so notifying Trihedral in writing and destroying the Software and all copies of the Software in the possession of the Customer or under the control of the Customer, in every form whatsoever. The license of the Customer to use the Software and any copies thereof terminates forthwith and without notice if there is a failure to comply with any term or condition of this Agreement. Such license may also be summarily terminated by Trihedral upon written notice to the Customer in the event of default of payment of compensation due to Trihedral for the licensing or sublicensing of the Software pursuant to an associated sales order, if any. Upon termination, the Customer and all other persons using or relying upon the Software pursuant to this Agreement shall immediately destroy the Software and all copies thereof.
21. Where the Customer obtains from Trihedral a license to an upgraded version of the Software which is intended to replace the Software licensed hereunder, this license will terminate upon installation and commissioning of such upgrade software, which will be subject to the terms and conditions of the end user license agreement then in effect, as may be designated by Trihedral, from time to time.



April 09, 2025

22. Where the Software has been downloaded by the Customer without monetary consideration to Trihedral, the Customer, this Agreement and the Software may be assigned exclusively or sublicensed exclusively to a third party. This Agreement and the Software may not be otherwise assigned, sublicensed or transferred to another party without the consent in writing of Trihedral.
23. Where the Software is installed on a computer or other device which is accessible by Internet connection, the Customer consents to Trihedral using features of the Software to obtain data concerning usage of the Software by the Customer solely for the purpose of analyzing and improving upon the quality and performance of the Software, and the Customer consents to the modification by Trihedral from time to time by such Internet connection of modules of the Software used to obtain such data. Trihedral will not disclose such data to a third party in any manner which may tend to identify the source or permit the data to be associated with any discrete source.
24. This Agreement shall be binding upon the Customer, any other party using or relying upon the Software, their heirs, administrators, successors and assigns and shall be construed with such changes of gender and number as the context may require.
25. The Customer consents to permit Trihedral at its discretion and expense to undertake from time to time audit of the use of the Software by the Customer or under or through the Customer, to confirm compliance with the terms and conditions of this Agreement, and without cost to Trihedral to co-operate to facilitate such audit. In the event that it is determined by such audit that the Customer is not, or has not been, in compliance with this Agreement, then Trihedral may, in addition to any other remedies to which Trihedral is entitled, terminate the license to possess and use the Software granted by this Agreement, and recover the actual and reasonable cost of the audit from the Customer.
26. Where the Software has been acquired by the Customer without monetary payment to Trihedral, the Customer acknowledges that the provision by Trihedral of any support service with respect to the possession, installation or use of the Software will be at the absolute discretion of Trihedral. In all other cases, the obligation of Trihedral to provide support service with respect to the possession, installation or use of the Software will be in accordance with the provisions of any associated sales order or collateral support services agreement between the Customer and Trihedral.
27. In the event that any provision of this Agreement is determined to be unenforceable, illegal or void by a tribunal of competent jurisdiction, such provisions shall be severed from this Agreement and the remaining provisions shall remain in full force and effect notwithstanding such unenforceability, illegality or invalidity.
28. This Agreement shall be interpreted in accordance with and governed by the laws of the State of Florida and the United States, excepting that the laws of Canada shall apply to any and all claims or causes of action arising out of intellectual property rights including, but not limited to, copyright, trademark rights and patent rights. The Customer consents to jurisdiction over it in the State of Florida and consents that venue for any state action arising under this Agreement will lie solely in the courts located in Orange County, Florida, and for any federal action will lie solely in the United States District Court for the Middle District of Florida, Orlando Division.

VSLASCFL v1.2 – 2018-06-08

August 21, 2024



VTScada Software Standard Support Services Agreement (Standard Conditions)

1. In consideration of the provision by Trihedral, Inc. (Trihedral), of software technical and support services (the Services), which term will include any product of the Services) as specified in any quotation or sales order issued by Trihedral, or requested by the Customer by purchase order or otherwise, the Customer and any third party using, or relying upon the operation of software which is created, modified or adapted by the Services agree to the following terms and conditions of this agreement (the Agreement).
2. Software and software code which is created in the course of the performance of the Services is not sold by Trihedral to the Customer, but is licensed by Trihedral to the Customer named in the associated sales order, for possession and use solely in accordance with the terms and conditions of the VTScada Software License Agreement (Standard Conditions) Florida or other licensing agreement as may be expressly agreed in writing between Trihedral and the Customer.
3. Rights and obligations with respect to the Services are governed exclusively by this Agreement, except to the extent otherwise agreed in writing between Trihedral and the Customer.
4. The compensation payable to Trihedral by the Customer will be in accordance with the applicable Trihedral standard fees for technical support services in effect at the time of request for supply of services by the Customer, except to the extent otherwise stated in a quotation issued by Trihedral in respect of the Services or otherwise agreed in writing between Trihedral and the Customer.
5.
 1. Trihedral warrants to the Customer, subject to the limitations and exclusions of liability provided by this Agreement, that in rendering the Services, Trihedral will perform with a degree of care, skill and knowledge which is in accordance with generally accepted standards for the Services.
 2. In the event that a task comprising the Services is found by the Customer to be unsatisfactory within a 90 day period following completion of such task, and in contravention of the warranty in the preceding subsection, Trihedral will correct the task to enable satisfactory performance, if possible with reasonable commercial effort. Such correction to the extent of reasonable commercial effort will be the sole liability of Trihedral for any breach of warranty in the preceding subsection.
6. The Customer and all other persons using or relying upon the Services rendered pursuant to this Agreement agree that the Customer and such other person will perform such checks and verifications of the operation of the Services as may be reasonably necessary to ensure their proper functioning and that the Customer will exercise due diligence in the operation and the review of the results of the use of the Services, including the provision of such backup and fail-safe systems as may be required, to avoid loss, injury or damage.
7. The Customer will forthwith give notice in writing to Trihedral of any claim by a third party arising from alleged infringement of an intellectual property right with respect to the Services or the use of the Services, and will cooperate with Trihedral in the investigation and defense of such claim.
8. Trihedral warrants that the Services do not infringe the copyright or trade secret rights of a third party. Trihedral will indemnify the Customer against any costs, expenses or damages finally awarded against the Customer in any action in which infringement by Trihedral of copyright or trade secret rights of a third party is established, provided that the Customer has performed completely its covenants in accordance with section 7 of this Agreement.
9. Trihedral warrants that, to the best of information and belief, the Services do not infringe any patent right of a third party, provided that the Customer has performed completely its covenants in accordance with section 7 of this Agreement. Trihedral does not provide any other warranty with respect to patent

August 21, 2024



rights concerning the Services, and with the sole exception of the warranty as limited by this section, Trihedral will have no liability to the Customer for any costs, expenses or damages incurred by the Customer arising from a claim by a third party for infringement of patent rights concerning the Services.

10. In the event that the Services are, or in the opinion of Trihedral are likely to become, subject to a claim or action with respect to an alleged infringement of intellectual property rights of a third party, Trihedral may, at its option:

- (a) at the expense of Trihedral, procure the right for the Customer to continue use of the Software in accordance with this Quote;
- (b) at the expense of Trihedral, replace or modify the Services so that use by the Customer in accordance with this Agreement will be non-infringing, provided that substantially the same function is performed by the replacement or modified Services; or,
- (c) at the expense of Trihedral, contest such claim or action to such extent as Trihedral may in its absolute discretion consider reasonable and appropriate under the circumstances.

11. **WITH THE SOLE AND LIMITED EXCEPTION OF THE WARRANTIES PROVIDED IN SECTIONS 5, 8 AND 9 OF THE AGREEMENT, TRIHEDRAL EXPRESSLY AND UNEQUIVOCALLY DISCLAIMS ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, OR BOTH, IN ANY FORM, INCLUDING BUT NOT LIMITED TO, EXPRESS OR IMPLIED WARRANTIES OF FITNESS. THERE ARE NOT WARRANTIES WHICH EXTEND BEYOND THE FACE HEREOF. IN NO EVENT SHALL TRIHEDRAL HAVE ANY LIABILITY TO THE CUSTOMER OR ANY THIRD PARTY ARISING FROM THE FAILURE OF THE SERVICES TO MEET ANY STANDARD OF PERFORMANCE OR TO BE FIT FOR ANY PARTICULAR PURPOSE.**

12. **IN NO EVENT WILL THE LIABILITY OF TRIHEDRAL TO THE CUSTOMER OR ANY OTHER PARTY EXTEND TO INDIRECT, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES.**

13. **THE AGGREGATE LIABILITY OF TRIHEDRAL IN RESPECT OF ALL CLAIMS WITH RESPECT TO THIS AGREEMENT AND THE SERVICES, INCLUDING CLAIMS BASED IN TORT, IS ABSOLUTELY LIMITED TO THE AMOUNT OF COMPENSATION DUE TO TRIHEDRAL FOR THE PERFORMANCE OF THE SERVICES PURSUANT TO THIS AGREEMENT.**

14. This Agreement may not be assigned, sublicensed or otherwise transferred to another party without the consent in writing of Trihedral.

15. This Agreement shall be binding upon the Customer, any other party using or relying upon the Services, their heirs, administrators, successors and assigns and shall be construed with such changes of gender and number as the context may require.

16. In the event that any provision of this Agreement is determined to be unenforceable, illegal or void by a tribunal of competent jurisdiction, such provisions shall be severed from this Agreement and the remaining provisions shall remain in full force and effect notwithstanding such.

17. This Agreement shall be interpreted in accordance with and governed by the laws of the State of Florida and the United States, excepting that the laws of Canada shall apply to any and all claims or causes of action arising out of intellectual property rights including, but not limited to, copyright, trademark rights and patent rights. The Customer consents to jurisdiction over it in the State of Florida and consents that venue for any state action arising under this Agreement will lie solely in the courts located in Orange County, Florida, and for any federal action will lie solely in the United States District Court for the Middle District of Florida, Orlando Division.

VSSSSASCFL v 1.2 2019-02-26

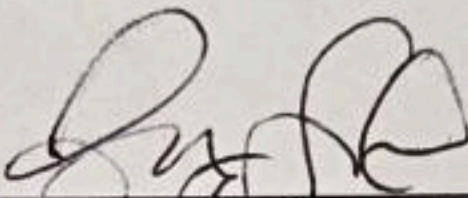
SCRUTINIZED COMPANIES FORMS

SCRUTINIZED COMPANIES THAT BOYCOTT ISRAEL LIST CERTIFICATION FORM

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID/PROPOSAL.
FAILURE TO SUBMIT THIS FORM AS REQUIRED MAY DEEM YOUR SUBMITTAL
NONRESPONSIVE.**

The affiant, by virtue of the signature below, certifies that:

1. The vendor, company, individual, principal, subsidiary, affiliate, or owner is aware of the requirements of section 287.135, Florida Statutes, regarding companies on the Scrutinized Companies that Boycott Israel List, or engaged in a boycott of Israel; and
2. The vendor, company, individual, principal, subsidiary, affiliate, or owner is eligible to participate in this solicitation and is not listed on the Scrutinized Companies that Boycott Israel List, or engaged in a boycott of Israel; and
3. "Boycott Israel" or "boycott of Israel" means refusing to deal, terminating business activities, or taking other actions to limit commercial relations with Israel, or persons or entities doing business in Israel or in Israeli-controlled territories, in a discriminatory manner. A statement by a company that it is participating in a boycott of Israel, or that it has initiated a boycott in response to a request for a boycott of Israel or in compliance with, or in furtherance of, calls for a boycott of Israel, may be considered as evidence that a company is participating in a boycott of Israel; and
4. If awarded the Contract (or Agreement), the vendor, company, individual, principal, subsidiary, affiliate, or owner will immediately notify the City of Clearwater in writing, no later than five (5) calendar days after any of its principals are placed on the Scrutinized Companies that Boycott Israel List, or engaged in a boycott of Israel.



Authorized Signature
BRYAN SINKLER

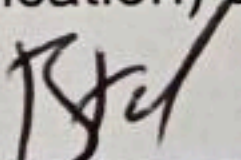
Printed Name
TECHNICAL SALES

Title
TRIHEDRAL INC.

Name of Entity/Corporation

STATE OF FLORIDA
COUNTY OF ORANGE

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization on, this 4 day of April, 2025, by Bry (name of person whose signature is being notarized) as the _____ (title) of _____ (name of corporation/entity), personally known _____, or produced FL 5804-882-74-38-0 (type of identification) as identification, and who did/did not take an oath.



Notary Public
BETHSAMARY FELICIANO

Printed Name

My Commission Expires: 6/19/27
NOTARY SEAL ABOVE



BETHSAMARY FELICIANO
Notary Public
State of Florida
Comm# HH412362
Expires 6/19/2027

SCRUTINIZED COMPANIES FORMS

SCRUTINIZED COMPANIES AND BUSINESS OPERATIONS WITH
CUBA AND SYRIA CERTIFICATION FORM

IF YOUR BID/PROPOSAL IS \$1,000,000 OR MORE, THIS FORM MUST BE COMPLETED AND
SUBMITTED WITH THE BID/PROPOSAL. FAILURE TO SUBMIT THIS FORM AS REQUIRED MAY
DEEM YOUR SUBMITTAL NONRESPONSIVE.

The affiant, by virtue of the signature below, certifies that:

1. The vendor, company, individual, principal, subsidiary, affiliate, or owner is aware of the requirements of section 287.135, Florida Statutes, regarding companies on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaging in business operations in Cuba and Syria; and
2. The vendor, company, individual, principal, subsidiary, affiliate, or owner is eligible to participate in this solicitation and is not listed on either the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Sector List, or engaged in business operations in Cuba and Syria; and
3. Business Operations means, for purposes specifically related to Cuba or Syria, engaging in commerce in any form in Cuba or Syria, including, but not limited to, acquiring, developing, maintaining, owning, selling, possessing, leasing or operating equipment, facilities, personnel, products, services, personal property, real property, military equipment, or any other apparatus of business or commerce; and
4. If awarded the Contract (or Agreement), the vendor, company, individual, principal, subsidiary, affiliate, or owner will immediately notify the City of Clearwater in writing, no later than five (5) calendar days after any of its principals are placed on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Sector List, or engaged in business operations in Cuba and Syria.

Authorized Signature

Printed Name

Title

Name of Entity/Corporation

STATE OF FLORIDA

COUNTY OF ORANGE

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization on, this 9 day of April, 2025, by BETH FELICIANO (title) of AmSat (name of corporation/entity), personally known AmSat, or produced FL 5524-882-74-380 (type of identification) as identification, and who did/did not take an oath.

Notary Public

Printed Name

My Commission Expires:
NOTARY SEAL ABOVE

6/19/2027



BETHSAMARY FELICIANO
Notary Public
State of Florida
Comm# HH412362
Expires 6/19/2027

Compliance with Anti-Human Trafficking Laws

Pursuant to Section 787.06 (13), Florida Statutes, this form must be completed by an officer or representative of a non-governmental entity when a contract is executed, renewed, or extended between the non-governmental entity and the City of Clearwater.

The undersigned, on behalf of the entity listed below ("Entity"), hereby attests under penalty of perjury that:

Entity does not use coercion for labor or services as defined in Section 787.06, Florida Statutes.

The undersigned is authorized to execute this form on behalf of Entity.

Date: APRIL 09, 2025

Signed: _____

Entity: TRIHEDRAL INC.

Name: _____

Title: _____

BRYAN SINKLER

TECH SALES

**Request for Taxpayer
Identification Number and Certification**

Go to www.irs.gov/FormW9 for instructions and the latest information.

**Give form to the
requester. Do not
send to the IRS.**

Before you begin. For guidance related to the purpose of Form W-9, see *Purpose of Form*, below.

Print or type. See Specific Instructions on page 3.	1 Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.) Trihedral, Inc	
	2 Business name/disregarded entity name, if different from above.	
	3a Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only one of the following seven boxes. ☐ Individual/sole proprietor ☒ C corporation ☐ S corporation ☐ Partnership ☐ Trust/estate ☐ LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) _____ Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner. ☐ Other (see instructions) _____	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any) _____ (Applies to accounts maintained outside the United States.)
	3b If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions ☐	
	5 Address (number, street, and apt. or suite no.). See instructions. 7380 West Sand Lake Road, Suite 100	Requester's name and address (optional)
6 City, state, and ZIP code Orlando, FL 32819		
7 List account number(s) here (optional)		

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number									
			-				-		
or									
Employer identification number									
2	6		-	0	4	4	9	4	2 3

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and, generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	Signature of U.S. person 	Date 01/01/2025
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General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they

must obtain your correct taxpayer identification number (TIN), which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid).
- Form 1099-DIV (dividends, including those from stocks or mutual funds).
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds).
- Form 1099-NEC (nonemployee compensation).
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers).
- Form 1099-S (proceeds from real estate transactions).
- Form 1099-K (merchant card and third-party network transactions).
- Form 1098 (home mortgage interest), 1098-E (student loan interest), and 1098-T (tuition).
- Form 1099-C (canceled debt).
- Form 1099-A (acquisition or abandonment of secured property).

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

Caution: If you don't return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding*, later.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued);
2. Certify that you are not subject to backup withholding; or
3. Claim exemption from backup withholding if you are a U.S. exempt payee; and
4. Certify to your non-foreign status for purposes of withholding under chapter 3 or 4 of the Code (if applicable); and
5. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting is correct. See *What Is FATCA Reporting*, later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding. Payments made to foreign persons, including certain distributions, allocations of income, or transfers of sales proceeds, may be subject to withholding under chapter 3 or chapter 4 of the Code (sections 1441–1474). Under those rules, if a Form W-9 or other certification of non-foreign status has not been received, a withholding agent, transferee, or partnership (payor) generally applies presumption rules that may require the payor to withhold applicable tax from the recipient, owner, transferor, or partner (payee). See Pub. 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*.

The following persons must provide Form W-9 to the payor for purposes of establishing its non-foreign status.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the disregarded entity.
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the grantor trust.
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust and not the beneficiaries of the trust.

See Pub. 515 for more information on providing a Form W-9 or a certification of non-foreign status to avoid withholding.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person (under Regulations section 1.1441-1(b)(2)(iv) or other applicable section for chapter 3 or 4 purposes), do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515). If you are a qualified foreign pension fund under Regulations section 1.897(l)-1(d), or a partnership that is wholly owned by qualified foreign pension funds, that is treated as a non-foreign person for purposes of section 1445 withholding, do not use Form W-9. Instead, use Form W-8EXP (or other certification of non-foreign status).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a saving clause. Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if their stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first Protocol) and is relying on this exception to claim an exemption from tax on their scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called “backup withholding.” Payments that may be subject to backup withholding include, but are not limited to, interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third-party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester;
2. You do not certify your TIN when required (see the instructions for Part II for details);
3. The IRS tells the requester that you furnished an incorrect TIN;
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only); or
5. You do not certify to the requester that you are not subject to backup withholding, as described in item 4 under “*By signing the filled-out form*” above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

See also *Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding*, earlier.

What Is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all U.S. account holders that are specified U.S. persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you are no longer tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account, for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

• **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note for ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040 you filed with your application.

• **Sole proprietor.** Enter your individual name as shown on your Form 1040 on line 1. Enter your business, trade, or “doing business as” (DBA) name on line 2.

• **Partnership, C corporation, S corporation, or LLC, other than a disregarded entity.** Enter the entity’s name as shown on the entity’s tax return on line 1 and any business, trade, or DBA name on line 2.

• **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. Enter any business, trade, or DBA name on line 2.

• **Disregarded entity.** In general, a business entity that has a single owner, including an LLC, and is not a corporation, is disregarded as an entity separate from its owner (a disregarded entity). See Regulations section 301.7701-2(c)(2). A disregarded entity should check the appropriate box for the tax classification of its owner. Enter the owner’s name on line 1. The name of the owner entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For

example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner’s name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity’s name on line 2. If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, enter it on line 2.

Line 3a

Check the appropriate box on line 3a for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3a.

IF the entity/individual on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation.
• Individual or • Sole proprietorship	Individual/sole proprietor.
• LLC classified as a partnership for U.S. federal tax purposes or • LLC that has filed Form 8832 or 2553 electing to be taxed as a corporation	Limited liability company and enter the appropriate tax classification: P = Partnership, C = C corporation, or S = S corporation.
• Partnership	Partnership.
• Trust/estate	Trust/estate.

Line 3b

Check this box if you are a partnership (including an LLC classified as a partnership for U.S. federal tax purposes), trust, or estate that has any foreign partners, owners, or beneficiaries, and you are providing this form to a partnership, trust, or estate, in which you have an ownership interest. You must check the box on line 3b if you receive a Form W-8 (or documentary evidence) from any partner, owner, or beneficiary establishing foreign status or if you receive a Form W-9 from any partner, owner, or beneficiary that has checked the box on line 3b.

Note: A partnership that provides a Form W-9 and checks box 3b may be required to complete Schedules K-2 and K-3 (Form 1065). For more information, see the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

If you are required to complete line 3b but fail to do so, you may not receive the information necessary to file a correct information return with the IRS or furnish a correct payee statement to your partners or beneficiaries. See, for example, sections 6698, 6722, and 6724 for penalties that may apply.

Line 4 Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third-party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys’ fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space on line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2).

- 2—The United States or any of its agencies or instrumentalities.
- 3—A state, the District of Columbia, a U.S. commonwealth or territory, or any of their political subdivisions or instrumentalities.
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities.
- 5—A corporation.
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or territory.
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission.
- 8—A real estate investment trust.
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940.
- 10—A common trust fund operated by a bank under section 584(a).
- 11—A financial institution as defined under section 581.
- 12—A middleman known in the investment community as a nominee or custodian.
- 13—A trust exempt from tax under section 664 or described in section 4947.

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
• Interest and dividend payments	All exempt payees except for 7.
• Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
• Barter exchange transactions and patronage dividends	Exempt payees 1 through 4.
• Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5. ²
• Payments made in settlement of payment card or third-party network transactions	Exempt payees 1 through 4.

¹ See Form 1099-MISC, Miscellaneous Information, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) entered on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37).

B—The United States or any of its agencies or instrumentalities.

C—A state, the District of Columbia, a U.S. commonwealth or territory, or any of their political subdivisions or instrumentalities.

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i).

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i).

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state.

G—A real estate investment trust.

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940.

I—A common trust fund as defined in section 584(a).

J—A bank as defined in section 581.

K—A broker.

L—A trust exempt from tax under section 664 or described in section 4947(a)(1).

M—A tax-exempt trust under a section 403(b) plan or section 457(g) plan.

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, enter "NEW" at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have, and are not eligible to get, an SSN, your TIN is your IRS ITIN. Enter it in the entry space for the Social security number. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.SSA.gov. You may also get this form by calling 800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/EIN. Go to www.irs.gov/Forms to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to www.irs.gov/OrderForms to place an order and have Form W-7 and/or Form SS-4 mailed to you within 15 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and enter "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, you will generally have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon. See also *Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding*, earlier, for when you may instead be subject to withholding under chapter 3 or 4 of the Code.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third-party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account ¹
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor ²
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee ¹
b. So-called trust account that is not a legal or valid trust under state law	The actual owner ¹
6. Sole proprietorship or disregarded entity owned by an individual	The owner ³
7. Grantor trust filing under Optional Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))**	The grantor*

For this type of account:	Give name and EIN of:
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity ⁴
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing Form 1041 or under the Optional Filing Method 2, requiring Form 1099 (see Regulations section 1.671-4(b)(2)(i)(B))**	The trust

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name on line 1, and enter your business or DBA name, if any, on line 2. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.)

* **Note:** The grantor must also provide a Form W-9 to the trustee of the trust.

** For more information on optional filing methods for grantor trusts, see the Instructions for Form 1041.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information, such as your name, SSN, or other identifying information, without your permission to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax return preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity, or a questionable credit report, contact the IRS Identity Theft Hotline at 800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 877-777-4778 or TTY/TDD 800-829-4059.

Protect yourself from suspicious emails or phishing schemes.

Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 800-366-4484. You can forward suspicious emails to the Federal Trade Commission at spam@uce.gov or report them at www.ftc.gov/complaint. You can contact the FTC at www.ftc.gov/idtheft or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see www.IdentityTheft.gov and Pub. 5027.

Go to www.irs.gov/IdentityTheft to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and territories for use in administering their laws. The information may also be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payors must generally withhold a percentage of taxable interest, dividends, and certain other payments to a payee who does not give a TIN to the payor. Certain penalties may also apply for providing false or fraudulent information.