



# The latest Triconex innovations

Delivering safety for life

When the safety and protection of your most valuable assets is critical to the success of your business, you can rely on Triconex™. For more than 30 years we have been delivering safety for life, protecting people and keeping equipment and production operating safely and continuously for the life of the asset.





# The latest Triconex innovations

Triconex is the world's leading supplier of safety instrumented systems for high-hazard industries. There are more than 15,000 Triconex systems installed worldwide in more than 80 countries, operating for approximately 1 billion hours. We are dedicated to delivering safety for life, protecting people, and keeping plants and production operating safely and continuously for the life of the asset.

## What's new from Triconex at a glance

- New Tricon version 11.2
- New TriStation™ version 4.14
- New TriStation Emulator version 1.6.0
- New Enhanced Diagnostic Monitor version 2.11
- New Triconex Safety Validator application version 1.0
- New Safety View version 1.1
- New DDE Server version 4.6.0
- New Triconex Report generator version 4.14
- New Triconex safety template object version 1.1.0
- New Triconex SOE recorder version 4.5.0
- New Triconex TSAA DI Object version 1.3.0
- New enterprise safety calculation and life cycle management software
- New functional safety education and learning services

## Continuously innovating for enhanced performance

At Triconex we are proud of our pedigree, passion, and focus on safety. We continue to innovate as demonstrated by decades of technology breakthroughs and industry recognition. Never satisfied, we believe in finding new ways to make our clients safer and more successful, working closely to ensure that every aspect of the safety life cycle is addressed, leaving no stone unturned or opportunity for improvement uncovered.

## Triconex highlights

- More than 15,000 systems in operation
- More than 650 dedicated safety engineers
- More than 1 billion hours of safe operation

## Benefits

Some of the many benefits of the latest Triconex offerings include:

- Enhanced operational efficiency
- Increased plant uptime
- Reduced downtime costs
- Lower investment costs
- Lower life cycle costs
- Improved productivity



## Tricon version 11.2

### Online upgrade starts here

The latest release of the Tricon Main Processor module (3009) now provides the ability to upgrade from a Tricon 10.3, 10.4, or 10.5 system with 3008 Main Processors to a Tricon 11.2 system with model 3009 Main Processors, while the system is online.

New features of the latest Tricon release include:

- Ability to seamlessly upgrade from a Tricon 10V.3,x - V10.5 system with 3008 Main Processors to a Tricon V11.2 system with model 3009 Main Processors while the system is online (module swap process).
- When only Tricon Communication Modules (TCMs) are installed, the maximum number of tagnames is now approximately 29,000 (previous versions supported a maximum of approximately 13,000 tagnames) with a corresponding increase in bin sizes.
- Ability to make changes to the SOE and peer-to-peer configuration, and increase the I/O memory allocation, while in the Download Changes state.
- Improved, more secure versions of the TSAA and TriStation protocols.
- Addition of extended module information for the Main Processor and TCM.



## TriStation version 4.14

### Powering productivity

The latest release of TriStation delivers an improved, easier-to-use interface for configuring, developing, and testing Triconex systems and applications. New tabular layouts simplify configuration and data management, increasing productivity and efficiency.

New features of the latest TriStation release include:

- New improved graphical user interface (GUI) providing easier-to-use functionality and navigation for configuring modules and editing/creating tagnames.
- Support for Tricon system version 11.2.
- Support for an increased number of tagnames in Tricon 11.2 systems using the model 8120E Enhanced Performance Main Chassis. The maximum number of tagnames is now approximately 29,000 (previous versions supported a maximum of approximately 13,000 tagnames).
- Embedded upgrade wizard to support the new online system upgrade functionality.
- Ability to automatically save a TriStation 1131 project file (.pt2) at a user-defined time interval.
- Improved build and download verification times.
- Addition of new function blocks



### TriStation Emulator version 1.6

#### Avoid application errors

The TriStation emulator allows you to emulate, execute, and test Triconex applications without the need for a physical controller. Applications can be tested in an offline environment without exposing your online process to potential application errors.

New features of the latest TriStation Emulator version include:

- Support for Tricon system version 11.2.
- Support for an increased number of tagnames with a corresponding increase in bin sizes in Tricon 11.2 and later systems with only TCMs installed. The maximum number of tagnames is now approximately 29,000 (previous versions supported a maximum of approximately 13,000 tagnames).
- When emulating a Tricon 11.2 and later system with a TCM installed, the new extended alias number ranges are supported when using the Modbus TCP and TSAA protocols or communicating with the DDE Server.



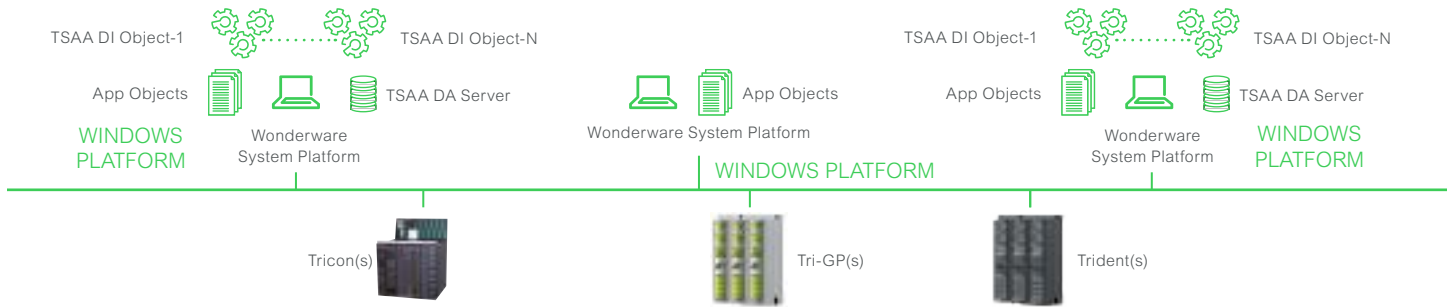
### Triconex Safety Validator version 1.0

#### The easiest and quickest way to test Triconex application logic

The TÜV certified Triconex Safety Validator application provides powerful and easy-to-use automated logic testing. It validates that the application logic running in your Tricon controller functions as intended. Triconex Safety Validator automatically documents the results, saving effort, time, and money.

Triconex Safety Validator delivers value on new projects as well as when executing periodic proof testing.

- TÜV certified.
- Automatically test and document Tricon application logic.
- Easy-to-create test procedures.
- Easy-to-understand test procedures by all parties involved in testing.
- Quick and easy-to-use test, test cases, and test scripts.
- Run a single test, set of tests, or subset of tests.
- Tests can run on TriStation TS1131 emulator or Tricon controller.
- Single step or continuous test execution.
- Self-documenting test results.



## DDE Server version 4.6

### Connectivity made easy

The Triconex Dynamic Data Exchange (DDE) Server is a Windows®-based application that enables DDE clients to request data from Triconex controllers and, if allowed, to change data in a TriStation TS1131 application.

New features of the latest DDE Server include:

- Support for Tricon system version 11.2.
- Support for an increased number of tagnames with a corresponding increase in bin sizes in Tricon 11.2 and later systems with only TCMS installed. The maximum number of tagnames is now approximately 29,000 (previous versions supported a maximum of approximately 13,000 tagnames).

## Triconex Safety Template Object version 1.1

### Software integration made quick and easy

The Triconex Safety Template Object allows you to integrate Triconex safety controller configuration and runtime information into the Wonderware™ ArchestrA™ platform. Controller configuration information can be imported from a TriStation 1131 project or XML file, and made available for use by a distributed control system via the ArchestrA Galaxy. Each Safety Template Object is a user-defined object derived from one of the following base templates:

- \$Tricon
- \$Trident
- \$Tri-GP

## TSAA DI Object version 1.3

### Software integration made simple

The Triconex System Access Application (TSAA) Device Integration Object (DI Object) is a software means of integrating physical Triconex controllers with the Wonderware ArchestrA system platform for exchange of live data and SOE data retrieval and message multicasting.

Each DI Object represents a physical Triconex controller (Tricon, Trident, or Tri-GP) using the TSAA protocol for communication with a one-to-one relationship between one Triconex TSAA DI Object and its respective physical controller.

Up to 254 controllers (nodes) are supported through the simultaneous execution of multiple Triconex TSAA DI Objects.

New features of the latest TSAA DI object include:

- Support for Tricon system version 11.2.
- Support for an increased number of tagnames with a corresponding increase in bin sizes in Tricon 11.2 and later systems with only TCMS installed.
- The maximum number of tagnames is now approximately 29,000 (previous versions supported a maximum of approximately 13,000 tagnames).



### Enhanced Diagnostic Monitor version 2.11

#### Enhancing maintenance productivity

The Triconex Enhanced Diagnostic Monitor software program monitors the hardware, communication, and application health and status of Triconex controllers. It provides easy diagnostics for status and fault analysis. Information is automatically available in the diagnostic monitor for quick and easy analysis — no special training is required.

New features of the latest Enhanced Diagnostic Monitor include:

- New updated GUI supporting the use of NAMUR 107 symbology to provide greater detail and visual awareness.
- Addition of new reports to view node status.
- Support for Tricon system version 11.2.
- Improved event collection performance.
- Support for periodic data collection.
- Ability to view events offline without connecting to a node.
- Improved, easier-to-use interface for viewing and sorting events.



### Sequence Of Event (SOE) Recorder version 4.5

#### SOE retrieval and analysis

The Triconex Sequence of Event Recorder software application retrieves the detailed SOE data from the Triconex controllers for display and analysis.

New features of the latest SOE application include:

- Support for Tricon system version 11.2.
- Support for an increased number of tagnames with a corresponding increase in bin sizes in Tricon 11.2 and later systems with only TCMs installed.
- The maximum number of tagnames is now approximately 29,000 (previous versions supported a maximum of approximately 13,000 tagnames).



## Triconex Report Generator version 4.14

### Reporting made easy

The Triconex report generator allows you to quickly and easily generate reports for one or more Triconex controllers based on the configuration information contained in input files opened in the report generator.

Information from multiple controllers can be combined into a single report. Default reports are available as standard for peer-to-peer function block usage, peer-to-peer configuration, and tagnames cross reference. Custom reports can be created for any data available in the report generator database.

New features of the latest report generator include:

- Addition of a new report that lists duplicate send and receive identifiers used in the peer-to-peer function blocks in a TriStation 1131 project file (.pt2).
- Ability to automatically create the test project (.tsvproj) and configuration (.tscfg) files required by Triconex Safety Validator.
- Ability to open TriStation 1131 and Triconex Safety Validator project files directly from Report Generator.
- Removed the ability to import project information from XML files.



## SafetyView version 1.1

### Manage priority alarms with confidence

SafetyView 1.1 puts priority alarms front and foremost to the plant operators, enhancing their efficiency and effectiveness in responding to critical situations. Certified by TÜV for use in safety-related applications, SafetyView provides a superior alternative to traditional hard-wired annunciator panels. It provides operators with increased situational awareness and prevents critical alarms going unnoticed or left in bypass inadvertently.

New features of the latest SafetyView include:

- New flexible human-machine interface (HMI) designer for constructing safety-related HMI elements.
- New HMI functions: Alarm Process Values, Bypass Area, Multiview faceplates, Global Acknowledge, ESD capabilities.
- Status for Health/Alarm block for link health.
- TSAA Protocol Configuration.





In partnership with



## aeFacilitator

### Evergreen Risk Assessment

aeFacilitator is a tool for process risk management that enables users to facilitate and effectively execute HAZOP and LOPA studies.

aeFacilitator centralizes process safety information, consolidates the numbers of tools used throughout the life cycle, and optimizes data accessibility across the organization.

Compliance with safety standards can be time consuming and costly when you do not have the right system in place. aeFacilitator minimizes the time, cost, and effort required to be compliance with standards while providing you with quick and easy access to information across various units, plants, and facilities.

Features of the aeFacilitator include:

- Process Hazard Analysis (PHA)
- Layer of Protection Analysis (LOPA)
- Allocation of risk to protection layers
- Simple Management Of Change of hazardous scenarios
- Standards and library data sets for consistent use across the enterprise
- Database-driven reporting
- Web-based and desktop application
- Gap closure tracking

## aeShield

### Enterprise safety lifecycle management

aeShield Safety Life Cycle Management System is a comprehensive platform for executing a sustainable risk management program through automation of the process safety life cycle. The system provides a complete solution by maintaining relationships among the risk reduction targets, design verification calculations, inspection and test plans for integrity management, and actual historical data. aeShield tracks and analyzes PSI, providing alerts and reports on process safety health in real time, facilitating compliance with ISA84.00.01/IEC 61511 and the related requirements of OSHA 1910.119

Features of the aeShield include:

- SIS design and SIL engine
- Safety Requirement Specification
- Cause and Effect diagrams
- Proof tests plans
- Functional Test procedures
- Management Of Change
- Cause and demand tracking
- Bypass analysis
- Failure data collection
- Key performance indicators and monitoring
- Management Of Change and status reporting

### About aeSolutions

aeSolutions is a process safety consulting, engineering, and automation company that provides process safety life cycle solutions and tools.

Formed in 1998, aeSolutions have facilities in Greenville, South Carolina (head office), Anchorage, Alaska, and Houston, Texas.

aeSolutions and Triconex formed an alliance in 2014 to provide coverage of the entire safety life cycle.

By combining the core competencies of each company — Schneider Electric Triconex safety instrumented systems and global delivery resources and aeSolutions' process safety engineering services and safety life cycle software, aeShield and aeFacilitator — the alliance will deliver solutions and expertise to customers who seek safe, continuous operations for the life of their plants and strive to achieve operational excellence anywhere in the world.

Customers will benefit by having an automating infrastructure that can close the loop on the safety life cycle, bridging the gaps between design integrity and operational integrity of their plants.



### Functional safety training for managers

#### Enhancing the skills and competencies of managers

This one-day instructor-led course is designed for people accountable and involved with safety-related systems but who are not directly involved in “hands-on” engineering work. This course focuses on management of safety rather than on detailed calculations and design issues.

#### Learning outcomes

The outcome of the workshop will be an understanding of how to manage activities related to the safety life cycle in accordance to the functional safety international standard IEC 61511. The workshop will look at the requirements of each stage of the life cycle and how they may be applicable to process industry projects today.



### Functional safety training for technicians

#### Enhancing the skills and competencies technicians

This one-day instructor-led course provides an overview of functional safety specifically for technicians with a focus on the maintenance related activities of IEC 61511/61508.

This course will provide operator or maintenance technicians an overview of activities in the safety life cycle and the importance of each stage of design and assessment, implementation, operation, and maintenance. During the class real applications and examples will be used to cover areas that are often missed in the different stages of the life cycle.

#### Learning outcomes

Upon completion of the course, delegates will have a better understanding of the operation and maintenance stage of IEC 61511 safety life cycle and activities related to it.



### Functional safety training for turbomachinery control

#### Enhancing the skills and competencies of managers

This two-day training course (with a four-hour exam on day 3) is designed to provide owners and operators with an understanding of the framework of the relevant standards such as API 670, IEC 62061, IEC 61508, IEC 61511, ISO 21789, and other relevant standards. An exam follows providing a competency assessment and certification for designers, operators, and maintainers of turbine controls.

This course is intended for designers, maintainers, and operators of turbines and associated rotating equipment controls. The training is focused on real-world application of functional safety life cycle concepts to the operation of turbomachinery, and is presented by instructors with decades of practical field experience.

#### Learning outcomes

Upon completion of the course, delegates will have a clear understanding of relevant international standards and how they can be applied in practice to rotating equipment.



### Functional safety training for burner management

#### Enhancing the skills and competencies of engineers and technicians

This two-day course will provide a general overview of burner management systems (BMS). The course is intended for engineers and technicians who are new to burner management, or those who want to gain a better understanding of the standards and subsequent design path they need to follow to implement a safety-related system for a burner.

#### Learning outcomes

Upon completion of the course, delegates will recognize when a BMS is required, identify a possible noncompliant BMS, understand the relevant standards for BMS, and identify potential possible improvements.

