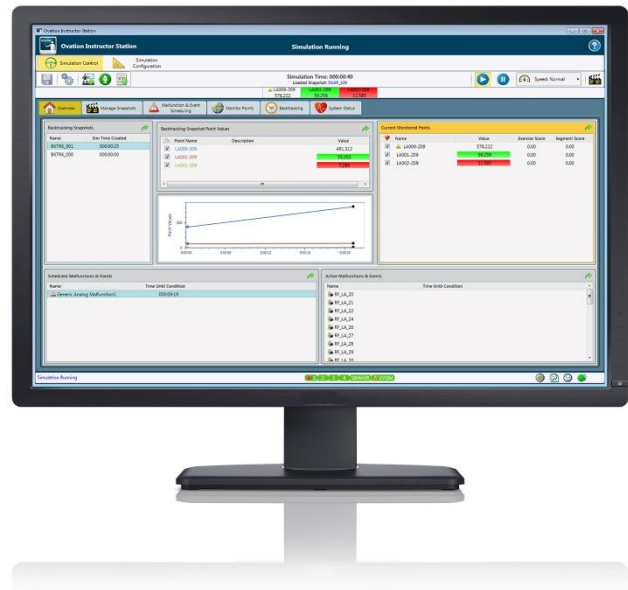# Ovation™ Digital Twin Instructor Station

Features

- Designed for focused digital twin training without extraneous or redundant functions

- Complete range of tools for controlling and monitoring the digital twin and for creating custom automated training exercises

- Provides simplified configuration and triggering of digital twin events based on time or process values

- Intuitive, user-friendly interface to all digital twin functions and training features

- Screen color coding provides quick recognition of the Instructor Station status

- Dedicated display indicates the status of configured simulation assets such as drops and simulation applications

- Easy access to Ovation point information, trends, signal diagrams, and alarm pages

- System-wide snapshots of initial conditions

Overview

Emerson's Ovation™ Digital Twin provides scalable, engineered solutions to assist customers with:

- Operator training and certification programs
- Procedure development and validation
- Control logic testing and verification
- Engineering test bed scenarios for plant process improvements

The Ovation Digital Twin Instructor Station is a Microsoft® Windows® based application that provides the instructor with complete control of digital twin training.

User-friendly tools enable the instructor to initiate new digital twin training sessions and to implement pre-programmed training exercises with predefined plant conditions and events.

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Modes of Operation

The Ovation Instructor Station can be operated in either control or configuration modes.

The Instructor Station control mode provides the tools needed to conduct Ovation Digital Twin training. In this mode, the instructor has complete control of the digital twin operation, including functions such as:

- Run and freeze
- Capture and load snapshots of plant conditions
- Backtrack to previous conditions
- Trigger and cancel malfunctions and other events
- Monitor relevant Ovation points
- Change the digital twin speed
- Record and replay trainee and instructor events
- Load and run preprogrammed training exercises
- Generate transcripts of training performance scores

The Instructor Station configuration mode provides the instructor with complete tools for creating and modifying digital twin training exercises, malfunctions and other types of events, and Ovation point groups.

Operational Features

The Ovation Instructor Station is equipped with a comprehensive set of features that include the following functions:

- Snapshots and backtracking
- Malfunctions and events
- Points and point groups
- Event recording and transcript replay
- Training exercises and performance results

Snapshots and Backtracking

Ovation Digital Twin snapshots contain data that represents the state of the Ovation Digital Twin system at a moment in time. Snapshots are easily captured by the instructor and can be loaded at any time to establish the initial plant conditions for digital twin training.

The Ovation Digital Twin backtracking function automatically captures snapshots at set intervals over a defined period of time. Backtracking through the snapshots is similar to rewinding through past events, which enables both the instructor and trainee to easily return to a previous plant condition to repeat an operation.

Malfunctions and Events

Ovation Digital Twin events duplicate real situations in the plant process. The events supported by the Ovation Instructor Station include:

- **Malfunctions -** simulate abnormal plant conditions that arise during a training exercise such as equipment problems and emergency situations.
- **Remote functions –** simulate process components being operated outside of the control room, such as manually operated valves and locally started pumps.
- **External parameters –** simulate the effects of environmental conditions on the process components such as ambient air temperature or river water temperature.
- **Digital Twin control events -** scheduling Instructor Station control functions, such as changing the running speed of the Ovation Digital Twin or switching to a different group of process points for monitoring.

Ovation Digital Twin malfunctions and events can be easily scheduled for automatic triggering based on simulation time or process point values.

Points and Point Groups

The Instructor Station control mode enables the instructor to load groups of Ovation points that are relevant for monitoring the plant process during a training exercise.

The Instructor Station configuration mode enables the instructor to collect and save groups of points for use during training exercises by dragging and dropping points from Ovation operator graphics to the Instructor Station. The instructor can also set limits for each point that can be used to score trainee performance during a training exercise.

Event Recording and Transcript Replay

The Ovation Instructor Station enables the instructor to record events that occur during digital twin training, such as the triggering of malfunctions and the operation of plant equipment by the trainee.

The recorded events can be saved in a transcript that the instructor can view, load, and replay. During transcript replay, the recorded events recur at the digital twin time that they were recorded.

Training Exercises and Trainee Performance Reporting

The Instructor Station control mode enables the instructor to load and run a preprogrammed training exercise. Running an exercise:

- Automatically triggers scheduled malfunctions and other digital twin events.
- Records the digital twin events and trainee operations.
- Continuously compares the trainee performance to predefined point limits and target scores.

Complete automation of a training exercise enables the instructor to focus attention on the trainee operating the plant process. Additionally, the instructor can still run and freeze the digital twin, trigger and cancel malfunctions and other events, rewind the training exercise by loading a backtracking snapshot and continuously monitor relevant process data.

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When a training exercise concludes, the instructor can save, view, load, and replay a transcript of the exercise. Exercise transcripts include detailed reports of trainee performance based on defined process point limits.

The Instructor Station configuration mode provides all the tools that the instructor needs to create and edit training exercises, as well as easily organize the exercises and transcripts for convenient use.

Requirements

The Ovation Instructor Station requires the following for operation:

- A new or existing Microsoft® Windows® based workstation on the digital twin network
- Ovation 3.6 or higher
- Ovation Digital Twin Instructor Station license