Aveva Plant SCADA - Situational Awareness & Alarm-Centric HMI Development

Course Objectives:

By the end of this course, participants will be able to:

- Understand the architecture and workflow of AVEVA SCADA Situational Awareness projects
- Configure equipment, alarms, navigation, and faceplates using best-practice HMI principles
- Design intuitive, standards-based operator interfaces aligned with ISA-101 concepts
- Implement alarms, interlocks, events, and security for reliable plant operations
- Build dashboards, trends, and reports for real-time and historical analysis

Target Audience:

- SCADA / HMI Engineers
- Automation & Control Engineers
- System Integrators
- Electrical & Instrumentation Engineers
- Maintenance Engineers involved in SCADA systems
- Engineering students or professionals transitioning to AVEVA SCADA

Course Outcomes:

After completing the course, learners will be able to:

- Create and manage Situational Awareness–based SCADA projects
- Configure equipment models and reusable HMI objects
- Implement alarm management strategies effectively
- Develop Level-1 and Level-2 HMI pages with navigation and popups
- Configure trends, events, reports, and security
- Deliver a structured, operator-friendly SCADA application

Course Outline: The course comprises **32-hours** of theory and labs and is divided into **16** different Modules. Each chapter will be followed by hands-on lab exercises to reinforce learning and gauge understanding of the topics covered.

Table of Contents:

Module 5: Add Library Objects to Pages

- SA_Library Include Project
- Composite Genies
- Common Library Elements
- Binding Library Objects to Equipment Items
- How to Paste Composite Genies on a Page
- Navigation Genies

Module 6: Configure and Manage Alarms

- Alarm management fundamentals
- Alarm lifecycle and states
- Creating and configuring alarms
- Alaram Indicators, Border & Flags
- Alarm States
- Genies & Alarms
- Alaram Pages

Module 7: Associate Faceplates with Equipment

- Faceplate concept and usage
- Standard vs custom faceplates
- Linking faceplates to equipment
- Navigation between graphics and faceplates
- Improving operator interaction
- Drive Template Components

Module 8: Add Content to a Level-2 Page

- Purpose of Level-2 detail pages
- Displaying equipment-level information
- Add Charting Tools
- Configure MEOs for a Group Object
- Add Multiple Meter Objects

Module 9: Interlocks

- Understanding interlocks in automation
- Types of interlocks (process & safety)
- Equipment References
- Category
- Configuring interlock logic

Module 10: Popup Pages

- When and why to use popup pages
- Designing effective popup dialogs
- Faceplate popups vs information popups
- Triggering popups from objects
- Dynamic Association & Association Syntax
- Full & Partial Dynamic Association
- Popup Page Cicode Functions

Module 11: Devices and Events

- What are Devices and Events
- Types of Devices
- Setup Devices
- Device History Files
- How to Define Events
- How to Enable Events

Module 12: Types & Categories of Alarms

- Alarm Types
- Digital Alarms
- Type Stamped Alarms
- Analog Alarms
- Advanced Alarms
- Multi-Digital Alarms

- Times Stamped Digital & Analog Alarms
- Hardware Alarms
- Configure Alarms
- Alarm Cause & Response
- How to Use Equipment Types to Define Alarms
- Alarm Categories & Configuration
- Configure Display Properties for an Alarm Priority
- Alarm Priorities, Indicators & States

Module 13: Process Analyst

- Trend Types & History Files
- Trend Tags
- Define Trend Tag Using the Equipment Editor
- Re-configure History Files
- Backup & Restore Trends
- Process Analyst
- Configure Trend Graphs
- Default Trend Page in SA Project
- Add Pens to the Process Analyst
- Pen Types – Analog Pens, Digital Pens, Alarm Pens

Module 14: Menu Configuration

- Content Pages
- Page Content Area
- Content Types
- Navigation Menu
- Level – 1,2,3 Menu Entries
- Target Page
- Menu Command
- Enable Navigation Zone Alarm Counts

Module 15: Reports

- Defining a Report
- Two Stages of Report
- How to Configure & Format a Report
- How to View a Text Report & RTF Report

Module 16: Security

- Defining Security Levels
- Roles
- User Privilage
- Areas & Privilages
- Implementing Privilages
- How to Assign an Area to a Page
- How to Assign an Area &/or Privilege to a Page Keyboard Command, Object, Object Keyboard Command
- Disable Style for an Object
- Project Level Security