Training Course:
Online Plant Data Validation and Reconciliation (DVR)

22 - 26 June 2025
Dubai (UAE)
Residence Inn by Marriott Sheikh Zayed Road, Dubai

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Training Course code: EN235969 From: 22 - 26 June 2025 Venue: Dubai (UAE) - Residence Inn by Marriott Sheikh Zayed Road, Dubai Training Course Fees: 5300 Euro

Introduction

The Online Plant Data Validation and Reconciliation DVR training program is a specialized course developed by Global Horizon Training Center to provide plant engineers, control professionals, and data analysts with the essential knowledge and tools to ensure data accuracy and reliability in industrial plants.

This course addresses the increasing need for accurate real-time data to support decision-making, control strategies, and optimization in process industries. By focusing on data validation and reconciliation techniques, participants will learn how to detect sensor errors, eliminate noise, and reconcile data to reflect true plant performance. The training integrates theoretical concepts with practical applications using state-of-the-art DVR tools and digital platforms.

Objectives

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

- Understand the principles and importance of data validation and reconciliation in process industries.

- Identify and correct measurement errors and inconsistencies in plant data.

- Implement DVR models to improve the quality of online process data.

- Apply mass and energy balance constraints to enhance data reliability.

- Use DVR outputs to support optimization, performance monitoring, and regulatory reporting.

- Prepare DVR systems for integration with digital twins, APC, and real-time analytics platforms.

Organizational Impact

Organizations adopting DVR methodologies will benefit from:

- Improved accuracy and reliability of plant performance data.

- Better root-cause analysis and troubleshooting capabilities.

- Enhanced control and optimization of energy and material flows.

- Increased trust in KPIs and business intelligence dashboards.

- Regulatory compliance through accurate data reporting.

- Integration of validated data into digital twin and advanced analytics systems.

Target Audience

This course is ideal for:

- Process Engineers and Control Engineers

- Instrumentation and Automation Specialists

- Plant Operations and Reliability Engineers

- Data Analysts and Digital Transformation Teams

- Performance Monitoring and Optimization Engineers

- Professionals responsible for plant reporting and compliance

Outlines

Day 1: Introduction to Data Validation and Reconciliation DVR

- Importance of Accurate Plant Data

- Overview of DVR Concepts and Applications

- Types of Measurement Errors: Random, Gross, and Systematic

- Overview of Process Modeling and Constraints

- Standards and Practices ISO, ISA, and industry frameworks

Day 2: Fundamentals of Process Modeling for DVR

- Building Process Models for DVR Applications

- Mass and Energy Balance Principles

- Sensor and Measurement Network Design

- Introduction to Constraint Equations

- Redundancy and Observability Analysis

- Hands-On Lab: Creating a Simple DVR Model

Day 3: Reconciliation Algorithms and Error Detection

- Mathematical Methods Used in DVR Least Squares Estimation

- Error Detection and Data Filtering Techniques

- Hypothesis Testing for Gross Error Detection

- Confidence Intervals and Data Quality Indicators

- Validation of Reconciled Data

- Case Study: Data Reconciliation in a Refinery Heat Exchanger Network

Day 4: Software Tools, Integration, and Real-Time DVR

- DVR Software Platforms e.g., Aspen Plus, Sigmafine, AVEVA

- Configuration of DVR Systems in Online Mode

- Integration with DCS, SCADA, and Data Historians

- Using DVR Outputs for KPI Monitoring and Reporting

- Interfacing DVR with Digital Twins and AI Analytics

Day 5: Implementation Strategy and Performance Monitoring

- Best Practices for Deploying DVR in Operational Plants

- Project Planning: From Pilot to Full Rollout

- Change Management and Operator Engagement

- Monitoring the Performance of DVR Systems

- Final Assessment: DVR Model Development and Presentation

- Certification, Course Wrap-Up, and Action Planning

Registration form on the Training Course:
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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

Delegate Information

Full Name (Mr / Ms / Dr / Eng): ....
Position: ....
Telephone / Mobile: ....
Personal E-Mail: ....
Official E-Mail: ....

Company Information

Company Name: ....
Address: ....
City / Country: ....

Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): ....
Position: ....
Telephone / Mobile: ....
Personal E-Mail: ....
Official E-Mail: ....

Payment Method

☐ Please find enclosed a cheque made payable to Global Horizon

☐ Please invoice me

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Easy Ways To Register

| Telephone: +201095004484 to provisionally reserve your place. | Fax your completed registration form to: +20233379764 | E-mail to us : info@gh4t.com or training@gh4t.com | Complete & return the booking form with cheque to:Global Horizon 3 Oudai street, Aldouki, Giza, Giza Governorate, Egypt. |