MERCURY

A Complete Conference in Decision Analysis for Operation & Maintenance Professionals

5 – 16 April 2027
Zanzibar (Tanzania)



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Ref: 8007_1058711 **Date:** 5 – 16 April 2027 **Location:** Zanzibar (Tanzania) **Fees:** 9500 Euro

Introduction

This operation and maintenance decision analysis course delves into the methods and practices of decision analysis, emphasizing a lean approach and responsiveness to customer requirements. Decision-making is an inherent and essential human activity, fundamental to our existence, occurring both consciously and unconsciously.

More than simply selecting the best option, it often involves evaluating a range of alternatives for efficient resource allocation or assessing the impact of changes to initial judgments. Participants in this operation and maintenance decision seminar will be immersed in decision analysis training tailored for operation and maintenance professionals, positioning them to excel in their respective fields.

Enhancements with Decision Analysis

As part of our commitment to provide advanced training in decision analysis to operation and maintenance professionals, this operation and maintenance decision conference will explore the foundations of decision analysis, revealing the benefits and advances in this field.

Participants will uncover the robust decision analysis process, including analytical decision-making tools. They will learn about applied decision analysis in operation research.

In this operation and maintenance decision conference, we aim to highlight the advantages of decision analysis within the operation and maintenance sectors, ensuring attendees understand what decision analysis is and how it can be effective in their daily operations and strategic decisions.

Targeted Groups

- Operation Professionals.
- Maintenance Professionals.
- Reliability Professionals.
- Key Operations Supervisors.
- Internal Improvement Consultants.

Conference Objectives

By the end of this operation and maintenance training conference, participants will have gained the ability to:

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- Enhance productivity by leveraging improved and more timely information.
- Discover how leading organizations address common asset management challenges.
- Optimize resource planning and scheduling.
- Perform detailed failure analyses to identify root causes.
- Reduce equipment failure costs through better asset management planning.
- Develop and implement a pragmatic action plan that integrates these techniques into their operational strategy and tracks measurable benefits.

Targeted Competencies

Upon the end of this operation and maintenance decision conference, the target competencies will be able to:

- Dissect complex problems into manageable components as part of a structured hierarchy.
- Assign significance to alternatives to rank them based on comprehensive criteria effectively.
- Apply Multi-Criteria Decision-Making MCDM tools to practical issues.
- Utilize various operational research and management science methodologies.
- Refine decision-making by aligning goals with specific criteria and illustrating methods to quantify and prioritize these elements.

Conference Content

Unit 1: Introduction to Decision Making

- Understand the scope and critical nature of decision-making.
- Explore the decision-making process.
- Learn about projective analysis to choose between different outcomes.
- Understand decision tree analysis: crafting decision models, evaluating low-probability yet high-consequence events, and determining the value of additional information.
- Monte Carlo Simulation: exploring optimization and acknowledging its advantages and limitations.

Unit 2: Implementing Multiple Criteria Decision Analysis

- Define decision analysis and its relevance.
- Learn about analysis of the common pitfalls leading to poor decision-making.
- What are the drawbacks of traditional decision-making methods?
- Learn how to Set guidelines for robust decision analysis.

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Unit 3: The Analytic Hierarchy Process AHP

- An introduction to what AHP is and its components of decision analysis
- Understanding and Constructing the Comparative Matrix
- Evaluating consistency within AHP
- Engaging in Sensitivity Analysis
- The role of Benefit/Cost Analysis and Resources Allocation
- Real-world applications of AHP, such as the Concorde Case, formulating maintenance strategies and planning for highways

Unit 4: Risk Management through Failure Mode & Effect Analysis FMEA

- Strategies for risk mitigation.
- Delving into Fault Tree Analysis.
- Understand and use the Risk Priority Number.
- Develop the Criticality Matrix and grading equipment criticality.
- Case studies from the Oil and Gas industry, among others.
- Model system reliability, exploring series and parallel systems, and redundancy concepts.

Unit 5: MRP and ERP Systems

- Explore the development and concept of Enterprise Resource Planning ERP.
- Understand Material Requirements Planning MRP and Manufacturing Resource Planning II MRPII systems.
- Learn about the details of planning and control mechanisms.
- Understand the significance of the bill of materials and master production schedule.

Unit 6: Optimum Performance Measure

- Recognize the challenges associated with performance measurement.
- Approach performance measures as a process for continual improvement.
- Identify desirable features in maintenance performance measures.
- Learn about distinctions between best and worst practices in performance measurement.

Unit 7: The Overall Equipment Effectiveness as a Source of Best Practice in Maintenance

- Explore the advantages of Overall Equipment Effectiveness OEE as an improvement program.
- Implement lean maintenance with the help of OEE.
- Analyze the Six Big Losses and their impact on efficiency.

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Unit 8: The House of Quality

- Fundamentals of design evaluation.
- Translate customer feedback into engineering solutions for enhanced design.
- Understand practical applications of the house of quality in real-world scenarios.

Unit 9: Decision Analysis for Optimization of Maintenance Activities

- Maximize the benefits of a Computerized Maintenance Management System CMMS.
- Understanding the range of benefits CMMS offers.
- Make optimal decisions for maintenance policies.
- Address the unfulfilled needs in responsive maintenance.
- Highlight key features of the next generation of maintenance systems.
- Transform data into actionable decisions.