

METHODS IMPROVING PLANT AVAILABILITY USING RELIABILITY BLOCK DIAGRAMS

RBD101 or AWB301

Extend your knowledge to increase the complexity of the modelling to more closely replicate the actual plant reality. Start your growth of RAM (Reliability, Availability, Maintainability) modelling using powerful software (Isograph's Availability Workbench™ AvSim module). Learn what a Reliability Block Diagram is used for and how to construct the logic to replicate a plant or system process. Acquire the skills to calculate system availability and capacity (throughput) figures over a lifetime. Build the model at a high level, or low level and capture maintenance task data, spares usage data and perform spares holding cost optimisation.

Format

Duration: 15 hours **Schedule:** 2 Day(s) **Delivery:** Classroom

Who should attend

Those who:

- Have a new greenfield site and want to know how the design will perform from an Availability and Capacity viewpoint using Reliability based data.
- Have a design change to an existing plant or system and want to understand the impact to Availability and Capacity.
- Have an existing site and want to understand which assets in the plant are causing most loss of Availability.
- Want to model a plant shutdown / turnaround and understand differing scenarios to optimise intervals and durations.
- Want to perform a high-level RAM study to trigger more detail analysis of specific bad actor assets or areas.
- Have a need to optimize spares due to significant downtime, unnecessary spending but unsure how to plan.

Objectives

- Engage in RAM (Reliability Availability Maintainability) modelling to drive plant improvements.
- Learn how to perform system availability simulation modelling using Reliability Block Diagrams (RBDs).
- Leverage powerful reliability software to create RBDs quickly and efficiently with multiple features to replicate reality.
- Perform numerous interactive real world exercises to fully understand the key factors in availability calculation and drive improvements to your system and plant performance.

Program Outline

Day 1

- Introduction to System Availability Analysis
- Types of Reliability Block Diagram modelling
- Creating Reliability Block Diagrams; Series vs Parallel
- How to represent Capacity or Throughput
- The Process; including Consequences & Simulation
- Alternate Scenario Analysis
- Interactive Exercises to Build-up the RBD complexity

Day 2

- RBD Software Exposure
- Adding Failure Modes & Maintenance
- Increasing Complexity with Nodes & Phases
- Interactive Exercises to Build-up RBD Skills
- Non Linear Capacity Loss
- Putting it all together
- Importing Data to Accelerate Model Building

Day 3 (Optional)

- Further learning by building an RBD as a group using a client system

Next Steps:

- FMECA101 – Failure Mode, Effects and Criticality Analysis
- RCM201 – Maintenance Strategy Development

