

FAILURE MODES & EFFECTS ANALYSIS (FMEA)

One-day workshop

1. Introduction to FMEA

Developed by reliability engineers in the 1950's, FMEA is a team-based risk assessment approach that strives to identify all possible failure modes of a product or process, and to eliminate or mitigate the impact of those failure modes. It involves the establishment of a table of risks in priority order, and the execution of tasks and projects to (i) eliminate the risk, or (ii) reduce the probability or the risk occurring, or (iii) reduce the impact of the outcome of the risk if it does occur. FMEA is most effective when done at the design phase of a product or process.

The Cordatus workshop is facilitated with a cross functional team of product or process experts (and occasionally an outside pair of eyes) working on an actual organisation product or process.

The product FMEA involves inputs such as regulatory requirements, product specifications and drawings, raw material specifications, manufacturing instructions, product prototypes and samples, and evidence (written, photographs, site visit) of how and where the product will be used by the customer.

The process FMEA involves inputs such as process operating procedures, flowcharts and process maps, site visits, interviews with process users, regulatory requirements, and evidence (written, photographs, site visit) of how and where the process output will be used by the customer. If the company wishes, we can facilitate the workshop using a video of a sample process, rather than a company process.

In both product and process FMEAs the outcome is twofold (i) a table with a ranked order of risks, and (ii) an action plan to mitigate the risks.

2. Learning Objective

At the end of the workshop candidates will:

- understand FMEA and its significance in product or process design
- understand when to use FMEA
- understand the cross functional nature of the exercise
- be enabled to draft a FMEA table, and
- be enabled to draft an action plan following the completion of the FMEA table.

3. Preparation & Follow-up

The Cordatus facilitator will provide guidance over the phone, or in a preparatory meeting, on the following issues, as required:

- FMEA policy within the organisation and relevant procedures
- Selecting the topic of the FMEA – a key product or processes
- Selecting the cross-functional team for training
- Communication with senior management & sponsors

4. Workshop agenda

Time	Content	Format
08.30	Introductions Introduction to FMEA Review of product or process – the subject of the FMEA - Specifications, process map, site visits and video review Failure mode identification and RPN calculation	PowerPoint & Discussion Company process documentation <u>or</u> sample process video Group exercise
12.45	Lunch	
13.30	Failure mode identification and RPN calculation (cont'd) RPN ranking: urgent vs important Mitigating actions plans & owners Communication plan with snr management Next steps	Group exercise Proposal for action, responsibilities & timing
16:30	Review & close	

Following completion of the FMEA, the Cordatus facilitator will provide guidance on the following issues, as required:

- Programme management of FMEA outputs - segregating the urgent from the important
- Interrelationship between FMEA projects and other projects in the organisation
- Repeating the FMEA: Why and how often?

5. Who Should Attend?

The course is designed for a cross functional team of people who know the product or process well, and who will have responsibility for implementing the actions required to mitigate the risks identified during the exercise.

Senior sponsors, who will be required to understand and approve the follow-on project work, are invited to attend a presentation on the last hour of the day. In that way, they are engaged in the FMEA process and are motivated to sponsor the resulting work.

6. Contact

Bernie Rushe, Managing Director and Consultant,
 Lean Ireland Ltd, Galway Technology Centre, Mervue Business Park, Galway
 Tel. +353 91 870708, +353 87 2837810, email: Bernie@LeanIreland.ie, web: www.LeanIreland.ie