



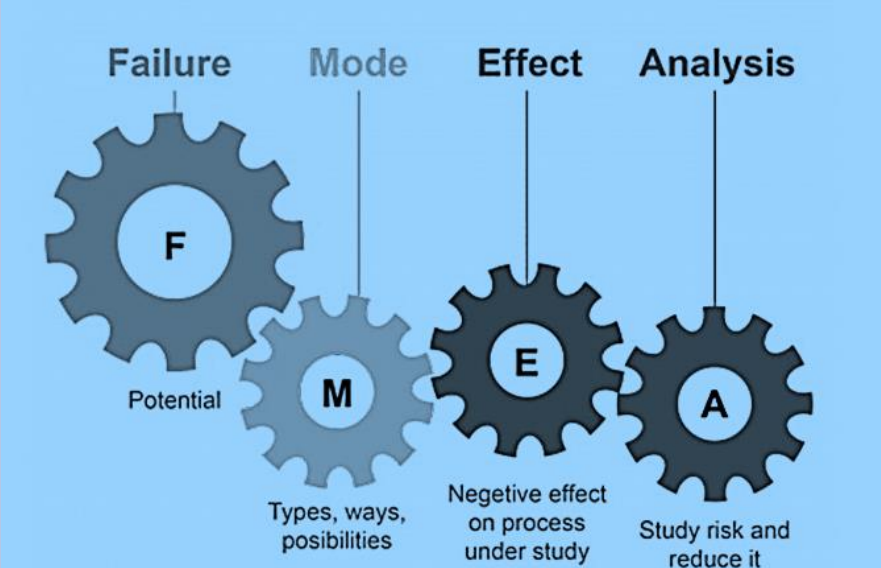
# Design FMEA

*6 insights*



**Based on the discussions during the  
Workshop in MRF - Chennai**

# Design FMEA



*6 insights*

Sharing some of the key discussion points, came out during the Design FMEA workshop for the Young & Energetic Designers of **MRF Tyres, Chennai**



# Design FMEA

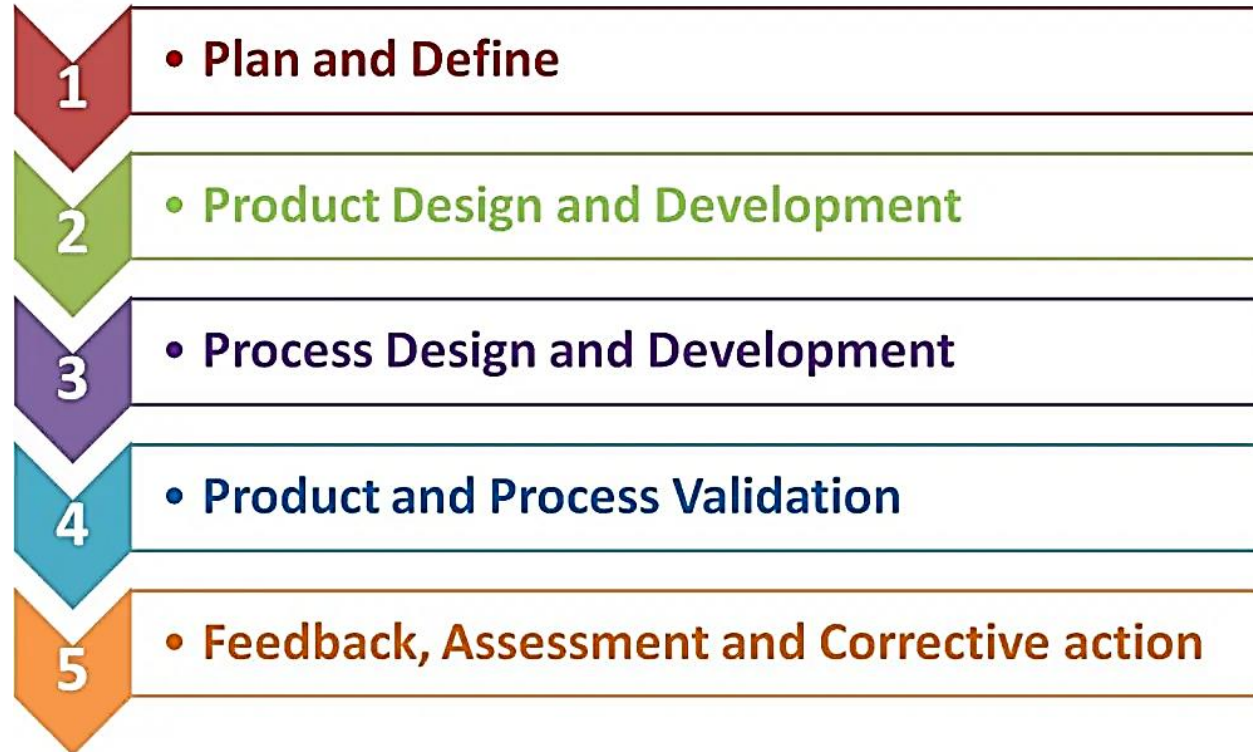
## 6 insights

#	Statement	True	False
1	Mostly, DVP & R will start from phase 2 of APQP only ( refer next slide )		
2	In the new version of FMEA, after “Action priority” column, a provision for FILTER is introduced to prioritize the actions based on the Action priorities		
3	APQP phases are always 5 ( refer next slide )		
4	Failure effects are analysed wrt the primary function(s) of the product in most of the cases		
5	A why-why analysis is <u>not</u> needed for FMEA, while analysing the ( potential ) Failure causes		
6	A Tier 1 organization must consider its product’s ( say Tyre ) interface possibilities, in the Vehicle level too ( one higher level - Vehicle at use )		

# Design FMEA

Point ref. : 1 & 3

## APQP PHASES | IATF 16949 CORE TOOL



**S O P for the Workshop on  
Design FMEA & the changes (as per IATF 16949) AIAG – VDA version**

*Target participants : Engineers & above*

***Program Objectives***

To familiarize the participants to apply the concepts & Practices of Failure Mode & Effects Analysis on Process FMEA, linking to APQP & IATF 16949 standard

To provide the skill sets on Design FMEA approach, identifying the Recommended actions ( Action Priorities ) and improving the manufacturing & assembly processes through structured application of Design FMEA

Also to provide the insights on various changes in the latest FMEA edition.

**Performance Indicators**

Short-term

- Performance during the team presentations
- Qualification Test Marks
- Exercise marks during the Program
- Program feed-back

Long-term

- Implementing the FMEA Methodology
- Better focus on Customer requirements
- Enhanced skill index

***Process***

- ▶▶ Class Room discussions
- ▶▶ Team Exercises ( 18 exercises )
- ▶▶ Group Presentations

Structure :

- ▶▶ Ice Breaking
- ▶▶ Accelerated, Recap & Concept building exercises
- ▶▶ The whole course to cover tall the preparatory tools and Process FMEAs with practical cases
- ▶▶ Evaluation during the sessions
- ▶▶ Situations analysis
- ▶▶ Word puzzle
- ▶▶ Qualification Test & Evaluation
- ▶▶ Verbal Feed Back
- ▶▶ Written Feed Back

***Deliverables***

- New FMEA structure ( 2019 )
- Mapping of FMEA process wrt APQP & IATF 16949
- Linkages between Design FMEA & Process FMEA
- Key concepts of Product Design
- Vital tools ( inputs for ( D FMEA )
  - 5 T analysis
  - Block diagram
  - Structure & Function tree analysis
  - P Diagram
  - Inter-face matrix
  - Robust Checklist
  - DR Checklist
- Real case analysis on Design FMEA
- Changes in the FMEA approach ( 2019 )
- Design Review Based FM analysis ( DRBFM )
- Advanced learning on Design FMEA & sustenance of FMEA



Automotive Industry  
Action Group



Verband der  
Automobilindustrie

*Failure Mode and Effects Analysis*

# ***FMEA Handbook***

Design FMEA

Process FMEA

Supplemental FMEA for Monitoring & System Response

Failure Mode and Effects Analysis – FMEA Handbook

First Edition Issued June 2019

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 1

## **Disclaimer :**

- ❑ The very purpose of this document is to enhance the KNOWLEDGE but not to enhance the COMPETENCE.
- ❑ Competence shall be improved only by Implementing the knowledge gathered from our various initiatives.



***Best wishes !***

# Knowledge test

***Do you want to self-evaluate your knowledge on Design FMEA ?***

Test Your Knowledge

--Choose your course--

- Failure Mode and Effects Analysis
- Process Failure Mode & Effects Analysis ( AIAG - VDA )
- Measurement Systems Analysis
- Design Of Experiments
- Environmental Management System ISO 14001 : 2015
- 8D Problem Solving Methodology
- Auditing the Automotive Core Tools as per IATF 16949
- Advanced FMEA
- APQP & PPAP ( as per IATF 16949 : 2016 )
- DFMEA ( AIAG-VDA )**
- Problem solving methodology

--Choose your stage--

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