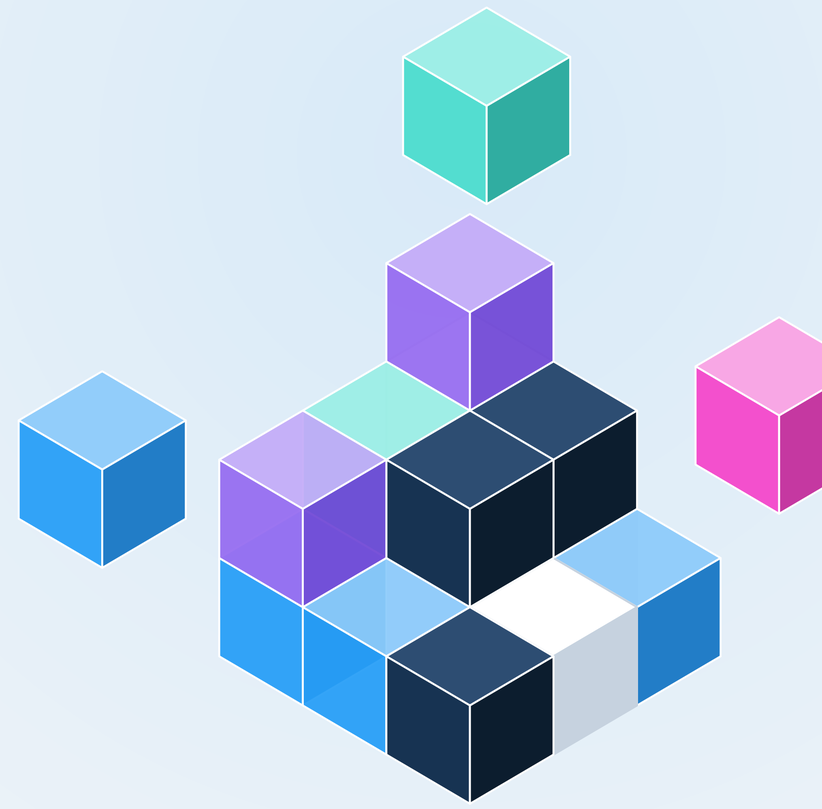
QUALITY MANAGEMENT

FMEA Risk Prioritization



Failure mode and effects analysis (FMEA) lists how a product or process could fail, rates each failure for severity, occurrence and detection, and drives actions on the highest risks.

01 THE CORE MODEL

RISK TABLE · SEVERITY, OCCURRENCE, DETECTION

FAILURE MODE	EFFECT	S	O	D	RPN	ACTION
Seal missing	Oil leak in the field	9	3	4	**108**	Add presence sensor
Wrong torque	Loose joint	8	4	3	**96**	Torque-controlled tool
Label unreadable	Traceability lost	6	2	5	**60**	Camera check
Scratch on cover	Cosmetic complaint	4	6	2	**48**	Protective tray

Severity (S)

How serious the effect is for the customer, rated 1 to 10.

Occurrence (O)

How likely the cause is to happen, rated 1 to 10.

Detection (D)

How well current controls catch it, 1 means almost certain detection.

02 PRIORITIZING RISK

Severity first: a severe failure needs action even if rare.

RPN RANKING — ACTION PRIORITY

RANKING BY RPN ONLY

- − Equal RPNs hide very different risks
- − Scores tweaked to drop below a limit
- − Severe but rare failures slip through

SEVERITY-LED PRIORITY

- + High severity is always reviewed
- + AIAG-VDA action priority tables
- + Actions tracked to a re-scored risk

03 WORKED EXAMPLE

GEARBOX ASSEMBLY PROCESS FMEA · ONE LINE · ILLUSTRATIVE

FAILURE MODE
Seal missing
at assembly station 4

→

SCORE
S 9 · O 3 · D 4
RPN = 9 × 3 × 4 = 108

→

ACTION
Presence sensor
stops the line if absent

→

RE-SCORE
D from 4 to 2
RPN from 108 to 54

04 MANAGEMENT TAKEAWAYS

01 — Build it cross-functionally

Design, process, quality and operators each see different failure modes.

02 — Act on severity

Treat safety and legal effects first, whatever the total score.

03 — Keep it alive

Update the FMEA after every complaint, change and new failure.

05 COMMON MISTAKE

LIMITATION

A one-time customer document

An FMEA filed for approval and never updated misses the failures that actually occur.