

Project: Detailed analysis and improvement of the existing P-FMEA – Reverse FMEA
Customer: Global manufacturer of safety elements for vehicles

Project scope: Evaluation of the existing risk analysis of the production processes and applying of current controls for prevention and detection, including error-proofing systems (poka-yoke), to establish the level of implementation of current controls and improve the P-FMEA by adding and handle new potential risks.

Current condition: Potential failure mode and effect analysis was done for the all the production processes (P-FMEA) and reviewed according to the procedures but the internal and external nonconformities appeared proofed the existence of unconsidered failure modes.

Main activities: It was decided to perform a Reverse FMEA for 31 production lines. The activity lasts 6 weeks, without action plan elaboration.

The main stages performed were:

- Defining the teams for Reverse FMEA (multidisciplinary teams, including a member not familiarized with the process - fresh eye)
- Training team members in Reverse FMEA methodology
- Collection of all internal and external complaint data (globally) related to the studied product family
- Preparation of working forms: questionnaire, P-FMEA, list of complaints, list of poka-yoke devices
- Analyzing on-site production processes by evaluating, first, the fault protection systems, then the production phases, starting with P-FMEA's prevention and detection control methods
- Documenting the results

Results: because of the evaluation, 8 systemic risks, 745 additional risks, 186 observations (possibilities for process improvement) were discovered and 192 measures were initiated to improve the error-proofing (poka-yoke) systems.