

Special session on *Case Studies on Predictive Reliability: an Industrial Perspective*

Description

In today's competitive industrial landscape, accurate reliability predictions are crucial for optimizing the phase of product validation, and minimizing the cost associated to field warranty returns. The special session aims to present hands-on case studies illustrating modern methods and tools employed to perform reliability predictions within the industrial environment.

Main topics of the session would include:

- Statistics analysis of final users (users mission profiling)
- Strategies for extended warranty period
- Development of more representative accelerated validation tests
- Life data analysis of accelerated life tests
- Pitfalls of product validation (during planning, execution and analysis of accelerated life tests)
- Digitalized product validation
- Data Science applied to predictive reliability
- Warranty data treatment

Motivation

The digital transformation of manufacturing and production is rapidly shaping modern industry, with some sectors particularly exposed (energy, aerospace, transportation). From a reliability perspective, new challenges are faced also for every-day use products (from smartphones to electrical cars): from the one hand highly reliable products are in progressive demand among end-users; on the other hand the emergence of highly competitive worldwide markets results in tight profit margins, while extended warranty periods impose more severe validation specifications. In the framework, the importance of reliability predictions during early design phases and throughout the life cycle is a key part of product validation and risk assessment. Modern industry has to adapt to this new scenario, and be able to effectively deploy state of the art methods and tools to perform such predictions.

Objective

This special session is dedicated to foster discussion over the state of the art of reliability predictions (methods, tools, models, best practice and lesson learnt) commonly performed on the industry.

The objective is to gather applied case studies of such predictions performed by all industrial actors: product manufacturers, tier 1 suppliers, software suppliers, consulting firms, etc.

Organizer

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