
Introduction to Reliability (IT-40)

An *Attendance Certificate* shall be issued to each participant

Duration	3 days
Prerequisites	None
Language	Italian or English
Training material	English

Programme

DAY 1: Introduction to reliability

- Availability
- Definition of reliability
- MTBF and MTTF calculation
- MIBF and failure rate
- Reliability's characteristics
- Failure during life
- Statistics
- Exponential and Gaussian distribution
- How reliability is calculated
- Physics of failure
- Failure rate in electronic
- Redundancy
- Quality Control
- Additional factors
- Operating condition and environment
- Reliability in manufacture
- Burn-in
- Stages in producing

DAY 2: Mechanical reliability, System reliability, HW reliability

- Mechanical reliability
  - Mechanical failures and failure causes
  - Installation and Operability
- *System reliability*
  - Reliability in complex systems
  - Calculation of parallel - serial item
  - Calculation of serial connection
  - Calculation of parallel connection
- *HW reliability*
  - Assessment procedure summarize
  - Analysis of a practical case
- Example 1 - *Bosch 2B Anti-lock Braking System*
- Example 2 - *Car Brake System (CBS)*

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DAY 3: Test for reliability and Maintainability

- Test for Reliability
  - Confidence level
  - Estimators
  - Confidence Intervals
  - The CHI-SQUARE formula
- Maintainability
  - Introduction to Maintainability
  - Test equipment
  - Maintenance
  - Reporting failure
  - Cost of reliability
- Exam, correction and revision of the concepts related to the wrong answers