



RISK AND RELIABILITY ENGINEERING ANALYSIS

Astrimar is able to support challenging designs and developments using **effective** risk and reliability **management** to help mitigate the **inherent technical risks** and **manage uncertainty**.

Common Cause Failure Analysis (CCFA) - to identify and assess components at risk of (near) simultaneous failure from a common event.

Event Tree Analysis (ETA) - to describe how failure events propagate through a system and determine likely consequences.

Failure Mode, Effects and Criticality Analysis (FMEA/FMECA) - to identify system, design or process failure modes for assessing and managing the risk.

Fault Tree Analysis (FTA) - to identify the technical cause of specific unwanted events and predict reliability performance.

Reliability Availability Maintainability (RAM) analysis - to quantify a system's ability to remain in an operational state.

Reliability Centred Maintenance (RCM) - to optimise maintenance based on potential failure mode criticality, supported by data to mitigate risk.

Astrimar uses a range of **reliability, availability** and **risk management techniques** to support both project design decisions and operating philosophies to **maximise uptime**.

Reliability Value Analysis (RVA) - to understand cost and consequences of failure and identify the value of improvement opportunities.

Risk Based Decision Making (RBDM) - to support complex project and engineering decisions at each stage, accounting for uncertainty.

Root Cause Failure Analysis (RCFA) - to resolve problems affecting reliability by assessing facts relating to a failure or event at root cause.

Structural Reliability Analysis (SRA) - to predict design reliability when physical prototypes and qualification tests are impossible.

Technology Readiness Level (TRL) - to assess current level of readiness of technology for project use, based on qualification maturity.

Technical Risk Categorisation (TRC) - to assess what is new or changed from previous projects, that introduces uncertainty or risk to reliability.



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