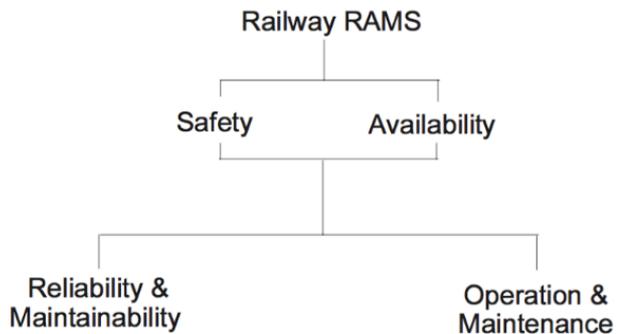




What is it?

Rail System RAMS is Reliability, Availability, Maintainability and Safety. The RAMS of a system can be characterised as a qualitative and quantitative indicator of the degree that the system, or the sub-systems and components comprising the system, can be relied upon to function as specified and to be available and safe.

RAMS is a characteristic of a system's long term operation and is achieved by the application of established engineering concepts, methods, tools and techniques throughout the system lifecycle.



Why is it important?

The goal of a rail system is to achieve a defined level of rail traffic in a given time, safely. Undertaking Rail System RAMS allows us to describe and demonstrate the confidence with which we can claim that our rail system is going to achieve this goal. Rail System RAMS has a clear influence on the quality of service delivered to the customer and is a high priority for any operator concerned with happy customers, be they passengers or clients.

Starting with clear and specific RAMS requirements is fundamentally important to any new or significantly changed rail system. Designing these requirements into the rail system through lifecycle verification and validation activities is the only way we can create a rail system with the necessary confidence that it will achieve its defined level of traffic in a given time, safely.

What we do

- Define project RAM and safety strategy
- Hazard identification and analysis, deriving RAM and safety requirements
- Safety Integrity Level derivation and assessment
- Safety Case construction, Goal Structuring Notation
- RAMS programme preparation
- Hazard log management
- Implementation of RAMS Verification and Validation through the lifecycle

Our work

CRA has considerable experience in Rail System RAMS. We can undertake individual RAMS tasks or a combination of tasks within an integrated management process. Some examples are:

- Channel Tunnel Rail Link (CTRL) - Monitored RAMS activities for the Mechanical and Electrical contract on the CTRL Project to assess the adequacy of engineering safety management processes and emerging documents (incl. Contractors' Safety Case documentation);
- Failure Modes Effect and Criticality Analysis on a touch-screen ticket machine to calculate the Mean Time To Repair and the Mean Time Between Failures;
- Review and comment on Preliminary Hazard Analysis, Failure Modes Effects Analysis and RAM reports for the replacement of a signalling control panel;
- Fault Tree Analysis as part of an assessment of the evacuation procedures for the KCR in Hong Kong;
- CRA is a leader in the analysis of failure data in the UK nuclear industry, having provided numerous component reliability reviews for EDF Energy Generation Limited;
- Lead for Waratah intercar door emergency access panel hazard and operability workshop;
- Lead for multi-disciplinary hazard identification workshop-based review of train control system function Safety Integrity Levels in line with CENELEC EN-50128;
- Independent Verification of Central Business District Smoke Management System;
- Independent Verification of MerMec (RAMS) Mechanised Track Patrol Vehicle for RailCorp;
- Independent Verification of unsignalled operation of Wollongong Yard SAR.