How ALSTOM Uses ALD's RAM Commander to Meet Its Reliability, Availability, Maintenance and Safety Requirements

The Goal: Making the appropriate design, maintenance, and operational choices, in order to reach reliability and availability targets, while maintaining the lowest cost possible. Nowadays, ALSTOM's customer base increasingly consists of private operators, which impose higher performance targets, prominently in reliability and availability. In addition, many operators subcontract activities such as maintenance. As a result, ALSTOM has evolved from being a manufacturer only to becoming a system designer, integrator, and maintainer, while technical solutions increasingly rely on advanced technology.

The Challenge: Whether ALSTOM's customers are public or private, performance requirements are increasingly demanding in terms of service quality, availability, and reliability. Railways regulatory authorities worldwide give ever more emphasis to Safety and Reliability, and the required standards (e.g. IRIS - International Railway Industry Standard) are respectively higher than in the past. This, together with the growing complexity of rail transport systems' technology, creates challenges for ALSTOM in meeting RAMS requirements from both its customers and railway authorities.

The Solution: ALSTOM has chosen ALD's Reliability and Safety toolkit – **RAM Commander**, as a comprehensive solution and consistent methodology to meet the RAMS requirements of its customers and railway authorities' standards. As the leading company in the field of Reliability Engineering and Analysis, Safety Analysis and Safety Management, its established experience and professional engineering team allow ALD to provide ALSTOM with the necessary tools to stay ahead of the competition and continuously supply its customers with reliable, sustainable and safe products.

RAM Commander is an extensive software tool for Reliability and Maintainability Analysis and Prediction, Spares Optimization, FMEA/FMECA, Testability, Fault Tree Analysis, Event Tree Analysis and Safety Assessment. RAM Commander constitutes a central RAMS database, which supports International standards (IRIS, IEC 61508, EN 50128, EN 50129, EN 50126, IEC 62380). It also helps ALSTOM contain and mitigate incidents and failures from the early design stage all the way through test, manufacturing, operation and maintenance.

ALSTOM Transport develops and markets a range of systems, equipment and services in the railway sector, including "turnkey" solutions for rolling stock, signaling and infrastructure. With the growing need for sustainable mobility solutions, ALSTOM develops ecologically and economically efficient products and services to its customers in Europe, North America, Latin America, and Asia Pacific.