



Rolls-Royce implementation of GRANTA MI for enterprise materials information management

Leading aerospace engine manufacturer Rolls-Royce is a long-term user of Granta solutions. In presentations at Granta seminars and webinars, Amandeep Mhay, project leader of the enterprise materials information management project at Rolls-Royce, has assessed the multi-million-dollar benefits of deploying the GRANTA MI system.

Rolls-Royce faced challenges including large quantities of legacy data scattered across disparate sources, and the management of complex workflows to capture, analyze, and use new data generated by testing, QA, and research. Without a systematic approach to these challenges, tests were duplicated and 40% of all generated test data was not re-used after initial analysis, although in many cases it may have had applications on other projects. When “every data point costs £1,000s”, this represents a large expense.

Another key issue was traceability – the objective of ensuring that the pedigree of every material and the data behind every engineering decision was easily available. Having fast, reliable access to all relevant materials information is also important for Rolls-Royce engineers who need accurate and statistically-valid property data as they seek to push materials to their limits in a highly-regulated, safety-conscious environment.

Rolls-Royce responded with a systematic program to manage and apply its corporate materials information. The overall program has now been running for more than 10 years, and global financial benefits due to the project have been certified at £6.9m (approx \$10m) per annum. The GRANTA MI materials information management system is an essential part of the program, providing a ‘single source of truth’ for verified materials information to over 2,000 engineers and maximizing the value of that data by ensuring that it is consistent, accurate, and accessible by the authorized people who need it, when they need it. Costs are avoided, errors are reduced, more value is extracted from legacy data, version-controlled data becomes fully traceable, and Rolls-Royce engineers have fast access to reliable data for design and simulation.



Objectives

- Gold-standard materials information management
- Improve on 60% rate of re-use for test data
- Save time and reduce cost (“every data point costs “1,000s”)
- Ensure traceability and maximize value from critical materials IP
- Help materials teams meet regulations, e.g., on restricted substances

Solution

- All materials data in a single system, GRANTA MI
- Not just IT—needs the right process & policies
- Share globally with appropriate access control

Result

The overall program has now been running for more than 10 years, and global financial benefits due to the project have been certified at £6.9m (approx. \$10m) per annum.

In addition to the core enterprise materials information management project, Rolls-Royce has also worked with Granta to implement a best practice strategy for minimizing restricted substance risk. This is a major issue for aero engine manufacturers, since regulations such as the European Union's REACH can render vital materials and processes obsolete or cause supply chain problems. The solution is to connect corporate materials data to data on affected substances and relevant regulations, enabling fast assessment of risks as regulations change.

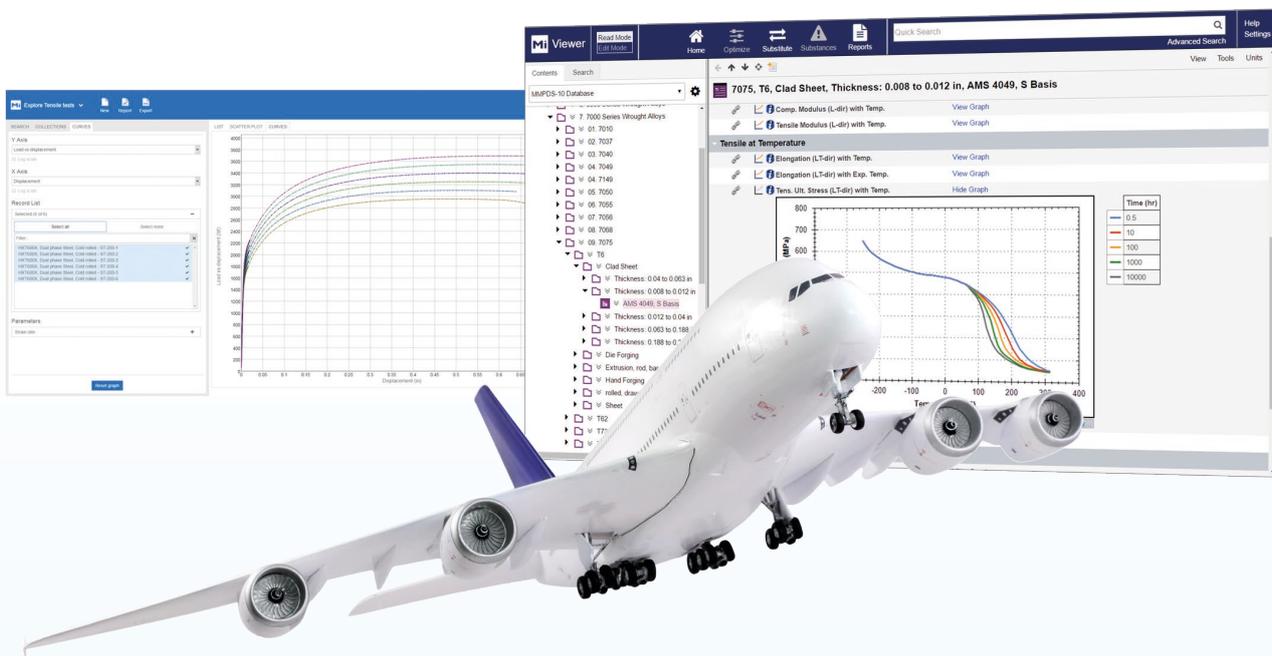
Rolls-Royce has been an active member of the Environmental Materials Information Technology (EMIT) Consortium, which has helped to develop new GRANTA MI capabilities to meet this requirement. Andy Clifton, Manager of Sustainable Development and Health and Safety in Design, presenting at an EMIT seminar, commented "EMIT provides a wide user base of companies all working towards practical ways of managing materials data issues. The structure of EMIT allows for a quick turnaround on 'working demonstrators' that turn your requirements into a practical solution."

Rolls-Royce has always been an engineering pioneer. Extending this approach to materials information technology as an early adopter has delivered tangible benefits to the organization. With tools such as GRANTA MI now mature and widely-adopted, such benefits are increasingly accessible to other engineering enterprises, in aerospace and beyond.

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Global financial benefits have been certified at approximately \$10M per annum...”

Amandeep Singh Mhay of Rolls-Royce, Granta Seminar



Comparing test results in a simple GRANTA MI web app (left), and browsing aerospace handbook data (right).

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