GRANTA
MATERIAL INTELLIGENCE

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How RUAG Space manages its materials information to enable lightweighting projects

RUAG Space is a leading independent supplier of products for the space industry in Europe, with a portfolio consisting of launcher structures and separation systems, satellite structures and instruments, digital electronics, and communication equipment. It has more than 1,200 employees in Switzerland, Sweden, Austria, Finland, and the United States who develop, test, and manufacture a wide range of innovative products.

It uses a wide range of materials – metals, plastics, composites, and adhesives, including special materials incorporating high-modulus fibers – to meet the demands for lightweight, thermally-stable satellite structures. Lightweighting is one of the company's main targets – it recently built a 40cm aluminium antenna support for an Earth observation satellite that is half the weight of the original component, and stronger.

RUAG Space has implemented the GRANTA MI™ system and created a single, reliable, company-wide source for all its materials data, capturing inspection data on the performance of materials from the production phase, along with proprietary data and external reference data. Key objectives are consistency and time-saving. As Ulrich Krähenbühl, Manager for Materials & Processes at RUAG Space, explained: "The system ensures that we use the same design data, company-wide, and can easily find these data in a quick way."

This includes data from many sources: the company's own inspections; manufacturers' data sheets; and The Metallic Materials Properties Development and Standardization (MMPDS) database, an authoritative reference on aerospace alloys. Data can be made accessible to design engineers and analysts through their familiar engineering software. Access to the database is provided from within various CAD, CAE, and PLM systems, including the CATIA® Computer-Aided Design (CAD) software, and the Siemens NX® Computer-Aided Engineering (CAE) software.

The first stage of the project ensured one consistent, accurate 'gold source' of design data, which is regularly updated. As well as capturing data, the company can capture valuable corporate 'knowledge' – for example, experience about how materials are applied. Further steps include the introduction of knowledge-tracking, and to log incoming inspection results on composites and adhesives.