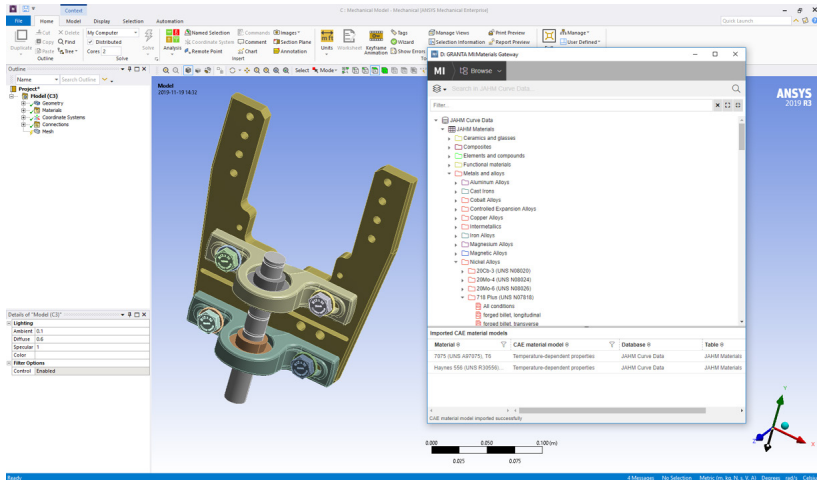




# ANSYS GRANTA MI for Simulation

ANSYS® GRANTA MI™ enables users to manage the full materials data lifecycle – from test to simulation – ensuring traceability throughout.



MI: Materials Gateway access to materials data from within a CAE application (ANSYS Mechanical).

Save time and cost in simulation with fast access to the materials data that analysts need, directly from within leading CAE software. Ensure accuracy and avoid error with tools to support and control data analysis. Protect investments in simulation and increase confidence in simulation results.

## The problem

Simulation is now a standard component within the product development process. But good simulation is not possible without good materials data. Engineering organizations need to find this data or derive it from test data. This derivation can be complex, requiring analysis of large volumes of test data in order to provide a strong statistical basis for properties across a full range of relevant conditions. This is followed by manipulation of the results to generate the parameters and coefficients that populate the materials cards recognized by CAE software.

Users need tools to make this process efficient and avoid error. It is important to perform these tasks in a systematic and managed way to avoid repeat analyses and to easily trace simulation inputs to their source. Once the best possible simulation data is available, it must be provided to simulation analysts quickly and easily. GRANTA MI meets these challenges.



## Key benefits

- Save time and cost through fast and easy access to the data that is needed – including direct access within ANSYS, Abaqus™, ANSA, HyperMesh™ and NX™.
- Support and control data analysis, avoiding errors and maximizing simulation accuracy.
- Ensure traceability for simulation data and repeatability for simulation process.
- Protect investments in simulation and increase confidence in simulation results.

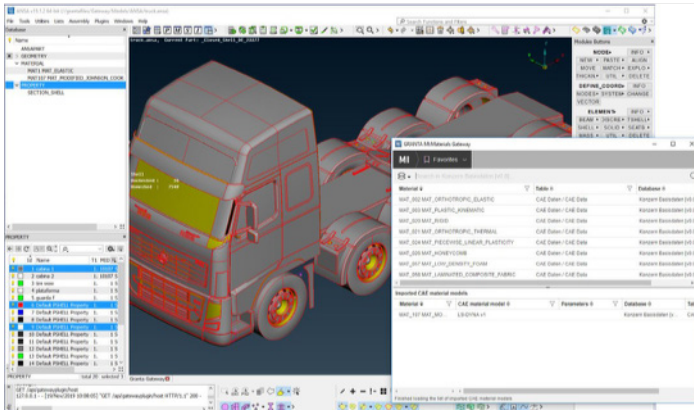
## Case studies

PSA Peugeot Citroën has selected the GRANTA MI software to support its materials information management requirements, with a key focus on delivering reliable, traceable materials data for input to simulation and analysis.

## Materials Information

### Efficient, accurate derivation of simulation data from tests

GRANTA MI is the leading system for materials information management in engineering enterprises, used by top manufacturers to manage materials data from testing, research, simulation and design. Users capture data from test programs, assembling the complete dataset needed to derive accurate simulation inputs. Users can then apply analysis tools for curve smoothing, averaging and model fitting using the GRANTA MI:Mat Analyzer app. Alternatively, they can integrate in-house analysis tools with the Granta Services team or leverage their own Matlab or Python programmers using the GRANTA MI:Scripting Toolkit. To help calibrate models and validate analyses, users can compare test data and simulation results. To ensure that analyses are performed in a consistent and repeatable manner, users can control the inputs and algorithms applied. The GRANTA MI database captures the results for use in simulation or for further analysis.



MI:Materials Gateway for ANSA—one of many integration options

### Fast access to simulation data, when and where users need it

MI:Materials Gateway™ enables instant access to approved materials data for simulation directly within leading CAE software. Users open windows within Abaqus/CAE, ANSA, ANSYS Workbench, HyperMesh, or NX and connect to their corporate GRANTA MI database. Users can also search and browse the available materials, view datasheets and import applicable CAE materials models directly to the CAE environment, complete with full traceability information. These tasks are performed interactively with no risk of error due to data transfer. For CAE systems not yet supported by MI:Materials Gateway, integration is still fast and error-free — export materials cards from GRANTA MI to use within software such as LS-DYNA®, Nastran®, PAM-CRASH®, PAM-STAMP®, Patran®, and RADIOSS®.

### Guaranteed traceability gives users added confidence

From test data to simulation software, GRANTA MI ensures data and results remain fully traceable. Test data can be captured with its full pedigree — for example, tensile test results can be linked to data about the material batches from which they were derived. This data remains linked to simulation models that are used to create, enabling users to trace the whole history of the data and analyses that fed into a simulation. This gives confidence in simulation results, makes it easier to run further analyses later and protects the vital corporate IP embodied in simulation work.

## Data library

GRANTA MI provides access to a comprehensive library of materials reference data. Examples include:

**MaterialUniverse:** delivers Granta data on engineering, cost and eco properties for the full range of materials.

**JAHM Curve Data:** widely respected materials input data for simulation.

**M-Base:** data covering thousands of plastics grades, including property data suitable for simulation.

**MMPDS:** authoritative US data on aerospace alloys, including temperature dependent properties.

### What do you buy?

**GRANTA MI - Enterprise Server** is the core database system, including data import, export and analysis tools. MaterialUniverse and JAHM Curve Data are included.

**GRANTA MI - User** enables users to access, query and use the data via web apps or via MI:Materials Gateway.

**Advanced Materials data bundles** enable you to add more reference data options.

**GRANTA MI - Services** are available to help users implement GRANTA MI and integrate with in-house tools and data sources.



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