

AutoMatIC Member Update: General Motors

3rd AutoMatIC Meeting Hosted by Jaguar Land Rover, Gaydon, UK

21st/22nd October, 2015



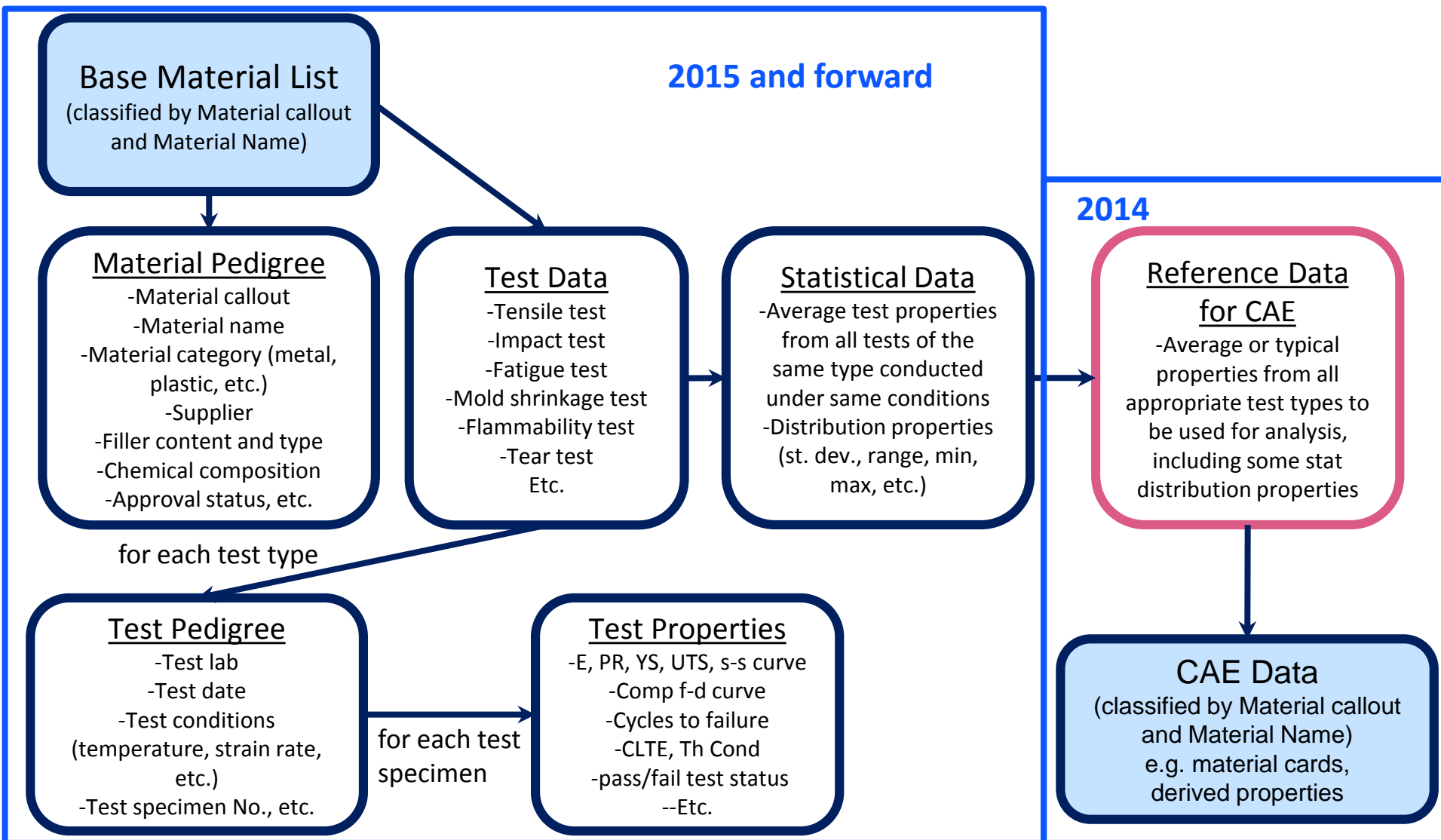
GRANTA
MATERIAL INTELLIGENCE

www.grantadesign.com

Implementation Summary

- GM implementation:
 - Databases No commercial databases, all GM internal
ex: Approved Material list Database, Appearance Database, Properties Database, etc.
 - Servers Production and Pre-Production
 - Users GM – 15,000 Suppliers 4200
 - Read only Engineers, Design Engineer, Purchasing, Legal, etc.
 - Edit Material Engineers, CAE Subject Matter Experts
 - Admin Material Engineers, CAE

Implementation Status

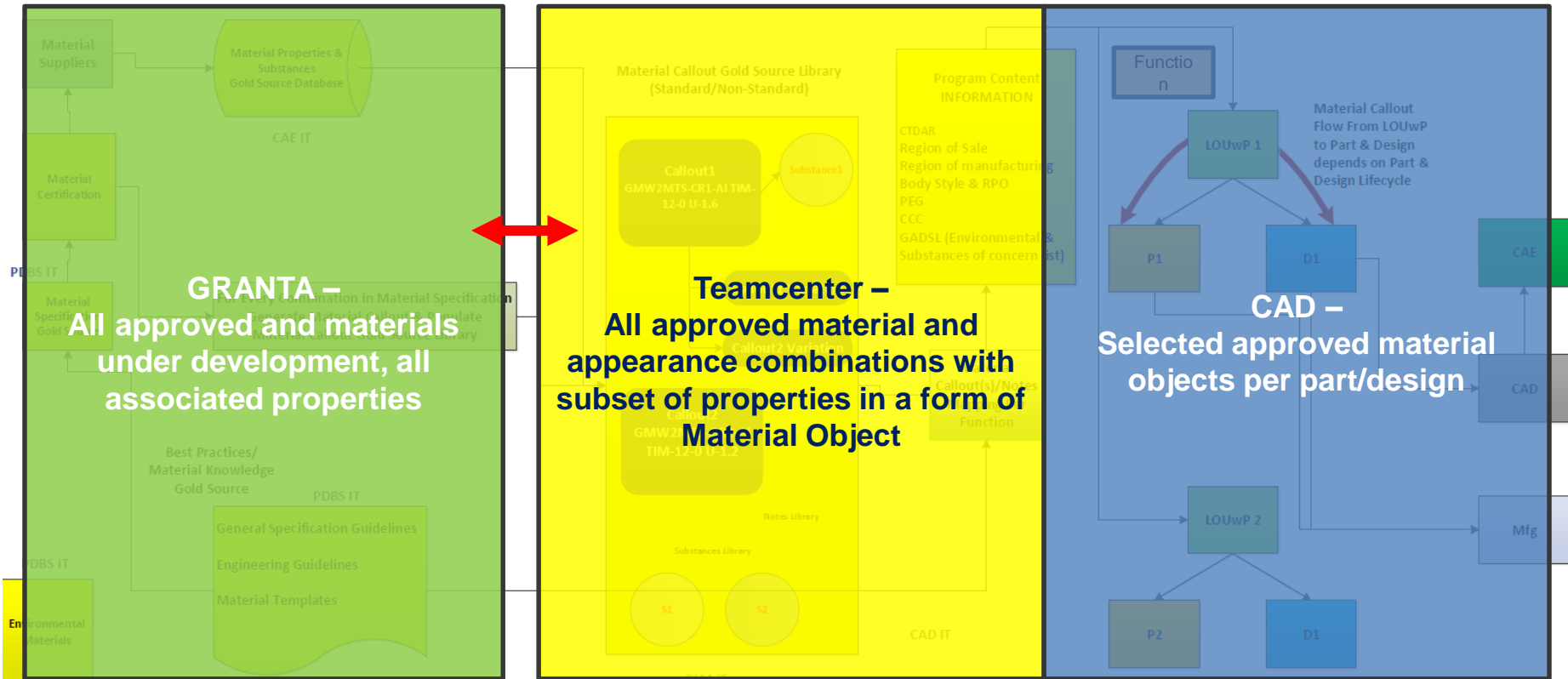


Implementation Status

Material Information- As Is -Many Material Sources

Material Information- To Be - Consumption Gold Source

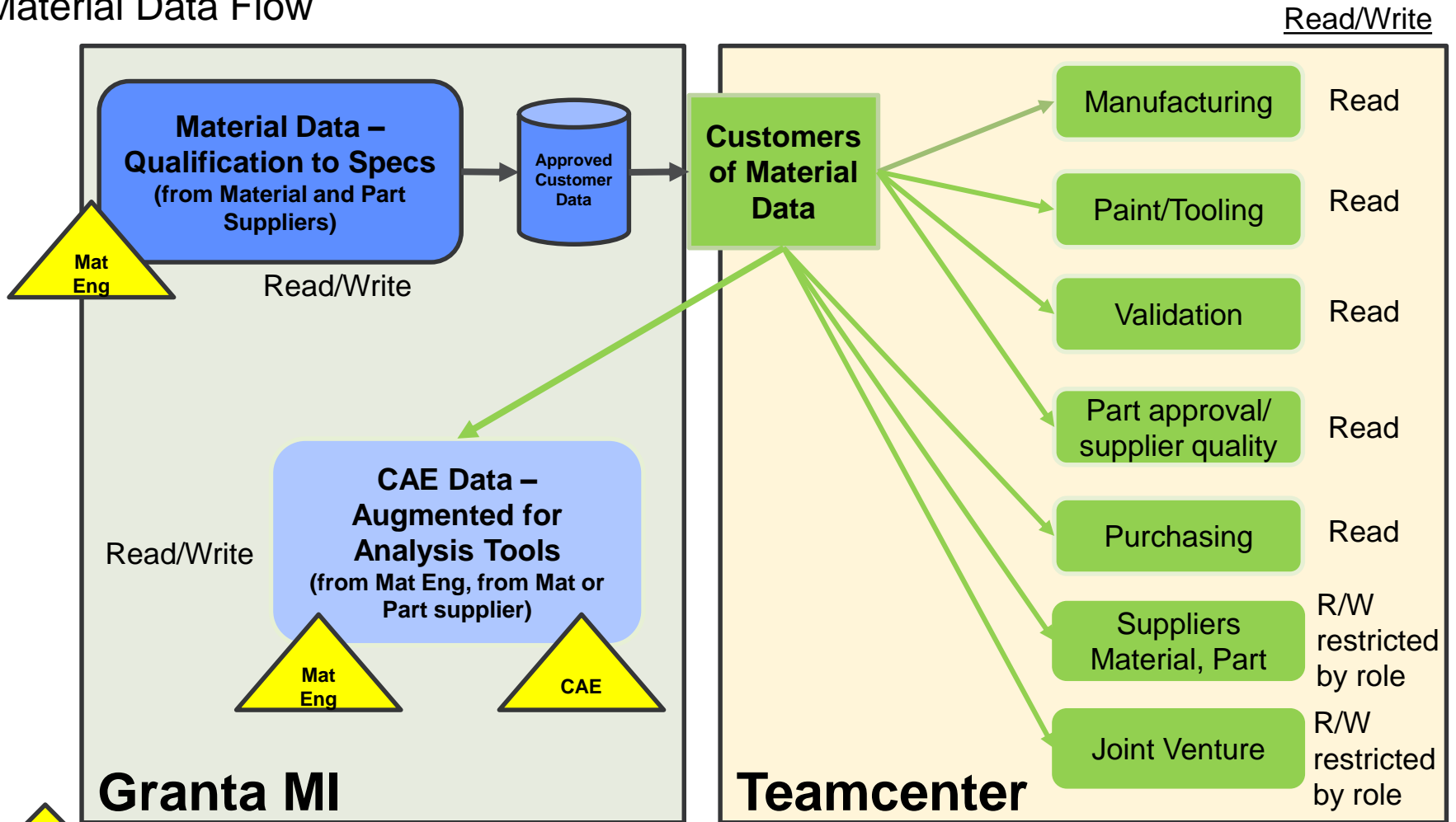
Material Information- To Be – Material Callout on LOU/Part/Design




Expected completion 2016/2017







Implementation Status

Material Data Flow



Implementation Status

Read Mode
Edit Mode

Quick Search Advanced SearchHelp
Settings
Admin

Tools

Contents

- GMMPD - Vehicle Design Data
 - Subset:Design Data (Default)
 - Acoustic-Absorber
 - Adhesive
 - Composite
 - Fluid
 - Foam
 - Glass
 - Metal
 - Non Standard
 - Other
 - Plastic
 - Road Surface
 - Rubber
 - Sealer
 - Textile
 - Wood
 - Z To delete
- GMMPD - Data Owners
- GMMPD - ILM Data
- CCRW Sheet metal + Coating list
- Requests, Test Data Lookup, Useful Links
 - Subset:Useful Links (Default)
 - _GMMPD Request Forms
 - GM Engineering Standards
 - GM TCI (India) Matl Test Lab
 - GMNA Matl Test Lab
 - Test Data Lookup
 - Useful Links

General Motors Material Properties Database

Home Map Example Excel Templates Tutorials

The General Motors Material Properties Database is designed to help with material property data management, storage and analysis.

To get started, browse the tree in the left-hand pane or search for a Material Callout or Specification or within the entire database using the relevant search box below.

To watch the tutorials on basic functionalities of the software, click on the 'Tutorials' tab.

[Link to Database Map](#)



[View Map](#)

Links: [Granta Design Ltd](#)

100%

Implementation Status

- In 2014
 - Migrated CAE Material Property Database
 - Imported CAE material cards (stored as files)
- In 2015
 - Developed exporters for Nastran, NX (transient solution), Radtherm, GM internal tools
 - Developed Master Material File exporter
 - Developed import templates for fatigue CAE data, legacy fatigue test data, elastomer test data
 - Migrated PT CAE Material Property Database
 - Developing schemas for migration of Material Approval and Appearance databases
- 2016 forward
 - Migration of Material Approval and Appearance databases
 - Workflow implementation in Granta MI (approvals, requests, development, etc.)
 - Material PLM through GM-Granta MI-TC implementation

Experience with Granta MI and from projects

- **Ease of use** - All users are overall pleased with the ease of navigation, search, and update capabilities in MI Viewer
- **Licensing model** - Managing users through Windows groups becomes a huge task for large organizations with a large number of users. Managing precise number of licenses through a user list is also difficult as there is no 'hard stop' when the number of purchased licenses is reached.
- **Enhancements** - Main issues consider searching by parameter and by columns of tabular attributes, as well as searching within tables, tabular attribute editing and formatting, equation plotting using multi-valued attributes, etc.
- **Project requirements** – 'Flexible' requirements can be expected from new customers without full grasp of tool capabilities and solution space, and for large projects where multiple solutions can and should be explored. They are also a standard practice in IT. Statement of project work should provision for time and effort required to adjust to the changing requirements.
- **Off- and on-site support** - Important to have on-site work done, especially early in the project when schema implementations are being decided; it speeds up decision making and eliminates rework due to different interpretations and specific terminology used by different companies. Encourage Granta to consider Detroit based support.
- **Documentation** - This is critical, especially for deliverables for which the ownership and maintenance is transferred to customers. Much room for improvement.

Consortium Interests

- **Spot-welding test data template** – In progress; can we get a preliminary copy?
- **PLM Integration** – We would like to explore options for material data management from development to end of life in an automated fashion. We would also like to track the usage of material in programs globally with easy reporting of regulated substances. Can we learn from each other?
- **Workflow** – Are there common workflows that can be built and shared? Is it possible to build a common template (or set of templates) that is easily customized by consortium members?
- **CAE shared exporter development** – Is this possible to develop a generic exporter that is configurable according to different member schemas?
- **Standardization of data** – Can we approach suppliers with a standardized set of properties that we need to ease their (and our) cost burden?
- **Simulation data management** – How can we more easily track material assignment across simulation models/tools/review gates?
- **License management** – Can license management and access control be separated? Would that ease the burden of license/access control management in large organizations?
- **Best practices** – How can we best share experiences without compromising proprietary information?
- **Granta MI security groups/roles** – How can we better control/separate access to server applications (IT) and data (Engineering Org)? Large organizations have strict rules about access to production software.