HEXAGON | Xstream ENGINEERING

MaterialCenter

MSC Software solution for materials lifecycle management

MaterialCenter

MaterialCenter is an enterprise-scalable system that manages materials data and processes. The intuitive web-based interface allows engineering organizations to upload materials data or capture it as the by-product of materials or engineering processes and then disseminate it in a secure manner in product design teams. Whether virtualizing material or part behavior, MaterialCenter has the integration framework that enables accurate transmission of materials data to simulation and the auto-capture of results for comparison, confidence and certification - all with complete traceability.

## Interactive tools for searching, plotting, and viewing material data

Interactively and visually analyze complex datasets to expedite the material down-selection process for better, smarter, and higher quality decisions. Utilize MaterialCenter's web-based interface for quick and easy access to material information in engineering enterprises.

Integrate with excel or third-party CAE applications

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Work requests and project overviews

Issue work requests that can be collated into actionable task lists, assigned to various individuals, and executed in a traceable manner. The statuses of pending and completed tasks are tracked (with degree of completion and quality indicators) and can be displayed in a dashboard view for managerial oversight. Email notifications ensure that responsible parties are up to date on the status of the work requests.
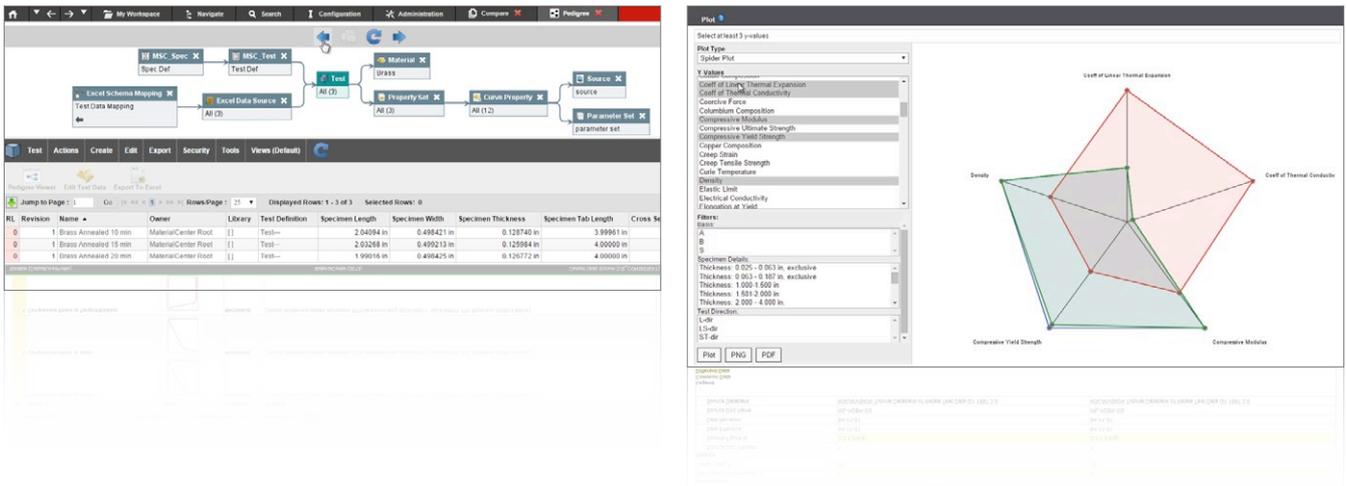
Approval workflows

In addition to work requests, further enforce best practices in an organization through built-in approval features in MaterialCenter. Organizations typically rely on manual approval processes or external applications to manage data quality. MaterialCenter supports approval activities that requires expert review of material data to determine its readiness for use in projects and applications. Configurable approval workflows enable composite logic such as multiple approvers and mandatory or optional approvers.

Advanced security configuration and application

Protect proprietary engineering data with multi-level security mechanisms. Ensure that data can be shared on an as-needed basis with customers and suppliers, across projects or divisions, without fear of integrity loss, corruption, or breach of confidentiality. Properties and individual instances of information may be secured for discreet control on access and visibility.

Navigate

Navigate through material data using the interactive web-based interface
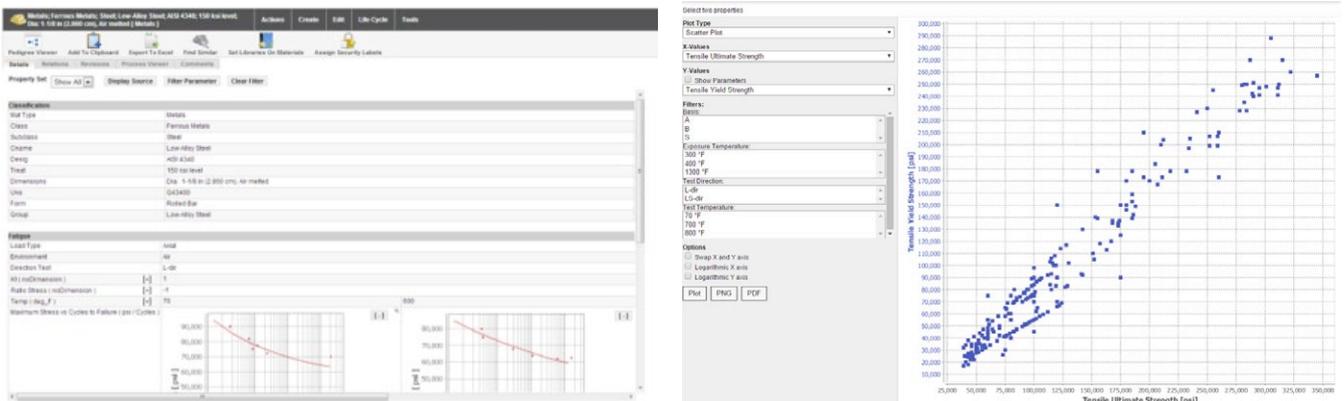
Material and property detailed views

- Use tree selection to navigate easily through tables of information

- Sort and filter the data to narrow down to specific classes of materials

- Create and save private views catered to various users

- View source and parameter details of individual properties

- Export selected tables of data directly to Excel

- Quickly change the displayed unit system across the entire database

- Manage all revisions made to a specified property or material record

- Compare multiple records of data by simply right clicking your selections

Enhanced 2D plotting

- Plot hundreds of material records on various plot types for visual comparison

- Evaluate complex graphical and functional data using integrated curve tools

- Apply mathematical operations of sets of curve data for further analysis

- Collapse or expand curves to superimpose multiple sets of curves or to view curves individually

> **MaterialCenter allows users to quickly and easily navigate through complex collections of material data for design and analysis"**

Search

Use graphical, interactive search capabilities to quickly extract key information
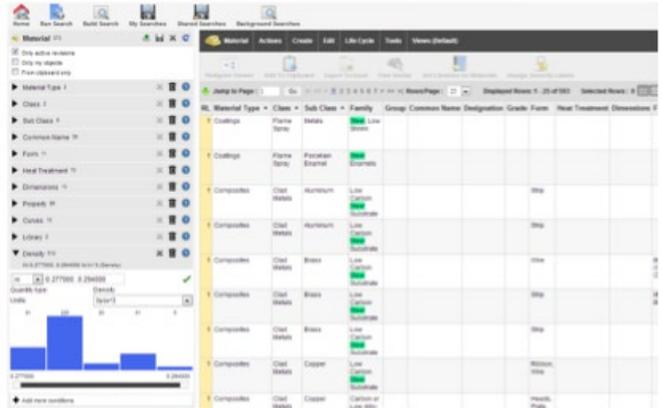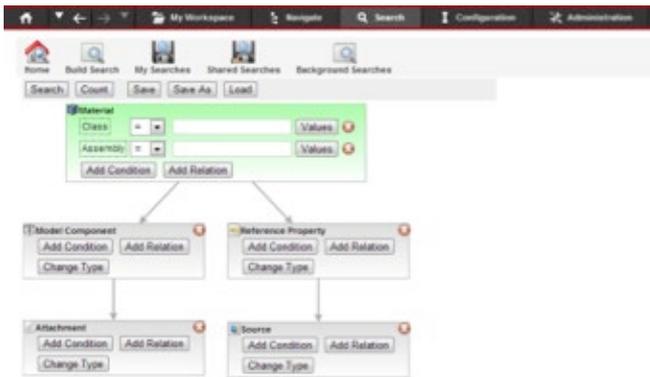
Basic search

- Find materials or properties by keywords, data types, or relationships to other materials

- Use any of the following methods to find the information you need

- Easy search by text string or wild cards

- Category search, including materials, properties, approval request, source etc.

- Build a search template with specific criteria

- Locate records with predefined conditions

- Apply filters to narrow the results to a specific class of materials

Advanced search's

- Construct detailed, complex queries and save them for later use

- Apply conditions and relationships to other objects

- Share your search templates with other users

- Save any search the search template for future use

> **MaterialCenter enables users to quickly find the information they need and when they need it with an easy-to-use interface"**

Configuration and administration

Control accessibility and user permissions on material libraries or individual properties

Role based administration

- Utilize project hierarchies to provide organizational structure to material libraries

- Assign groups of users to individual projects for access and visibility

- Grant users' roles and profiles with access to certain features

- Track user statistics, login sessions, and database activity in the Administration workspace

- Edit or create material records through the web-interface

Security labels

- Control access to data in MaterialCenter with key words and "lock and key" security labels

- Set control to several different data types, including material schemas, databanks, materials, properties, and libraries

- Assign security labels to materials and/or related properties

- Assign one or more security labels to a user

Flexible database support

- Compatible with Oracle, PostgreSQL or Microsoft SQL servers

- Deploy from a local computer or in enterprise environment, including private or public cloud

- Supports additional authentication mechanisms such as LDAP and SSO to satisfy security requirements

Import and export material data

Import and export materials data in various formats

Bi-directional data migration

- Import Mvision Databanks for seamless access to legacy data

- Export Library to Enterprise Mvision for organization-wide access

- Define custom Excel mapping templates to publish or retrieve material records

- Bi-directional support for XML and text formats

Excel add-in

- Publish and retrieve material directly within Microsoft Excel

- Interactively create mapping templates to translate cell values to schema attributes

- Validate Excel files against mapping templates prior to publishing data to ensure data integrity
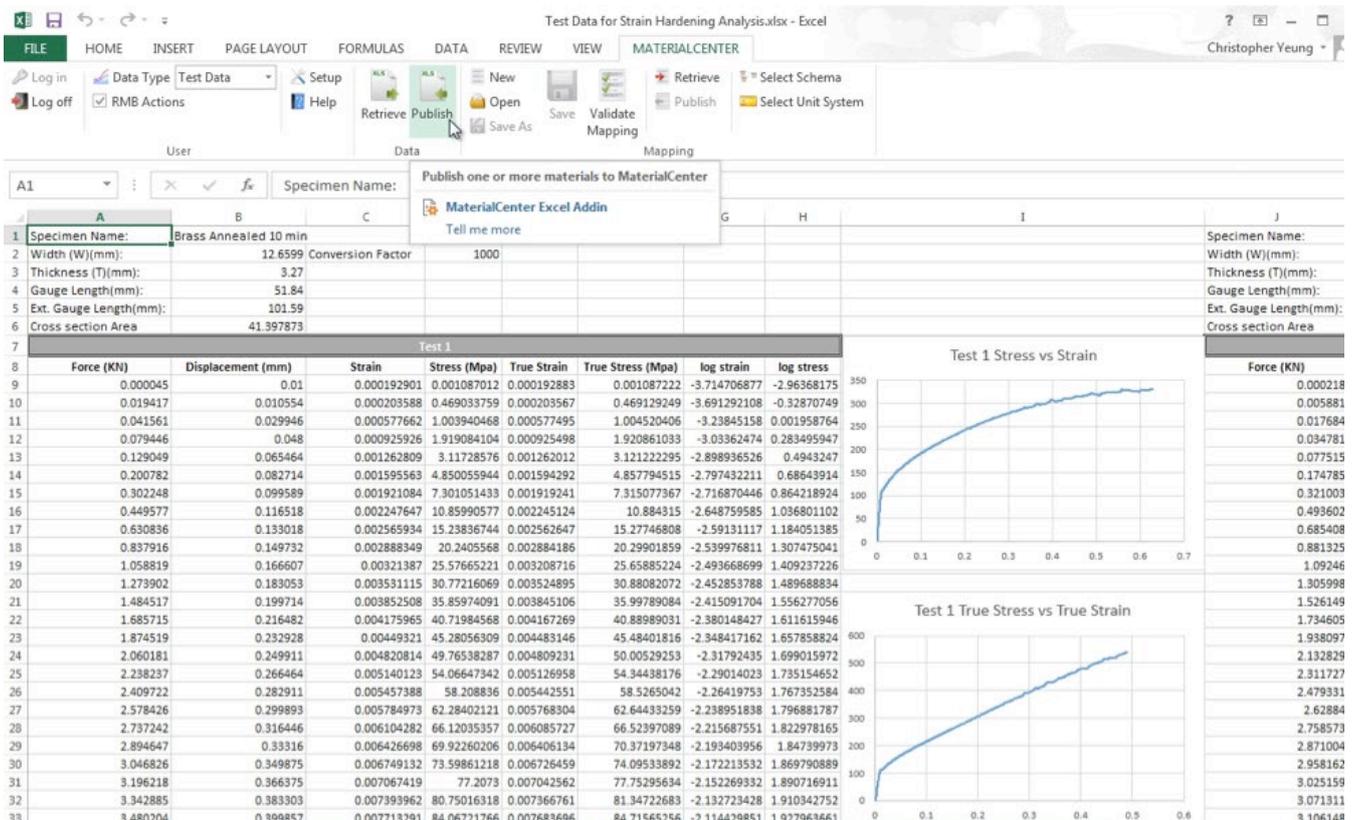
> **By publishing and retrieving material data within Microsoft Excel, engineers can leverage the tools in Excel alongside MaterialCenter's data processing capabilities"**

Workflow tools

Manage workflow in engineering teams for improved efficiency

Work requests

- Initiate, assign, and track tasks in MaterialCenter with complete traceability

- Create and assign Work Requests directly to team members

- Update the status of tasks and work requests and send automatic email notifications

Approval process

- Maintain traceable mechanism for releasing materials to the engineering community

- Define required and optional approvers in a single or multiple step approval process

- Gain insight into the status of the approval process

- Capture the interchange of discussions and comments in the approval process

> **With MaterialCenter, organizations can implement traceable mechanisms to manage the complete lifecycle of material systems and protect intellectual data"**

Integration and scalability

Achieve efficiency through integrations with external applications

Integration

- Improve communication between MaterialCenter and other MSC applications, and 3rd party application with bi-directional API

- Achieve more efficient materials data processing with deep integration with Microsoft Excel

- Capture all data transactions automatically

- Gain higher productivity with proven rapid deployment methodologies

Scalability

- Achieve very high scalability with Integrated Computational Materials Engineering (ICME) capable framework adopted by industry leaders in automotive, aerospace, consumer goods, electronics, shipbuilding and other industries

- Support thousands of users globally with proven performance

- Integrate with queuing and HPC (High Performance Computing) for demanding ICME needs
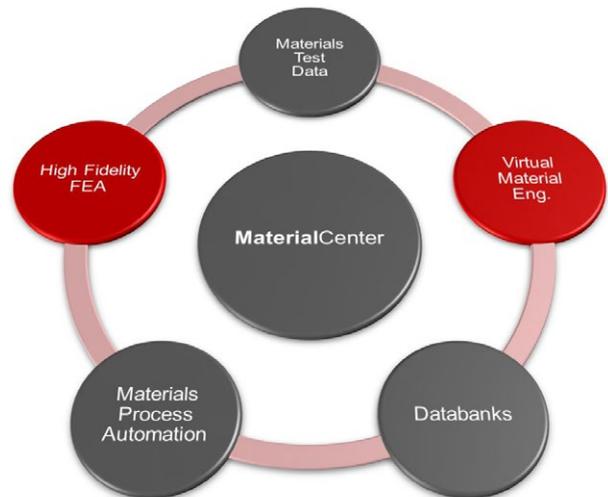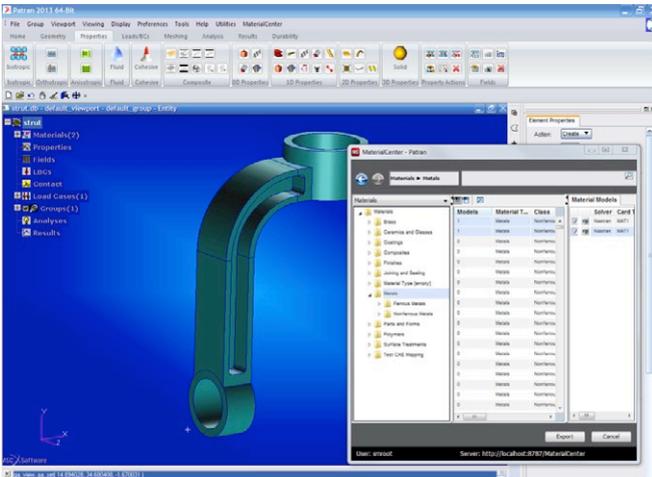
MaterialCenter key benefits
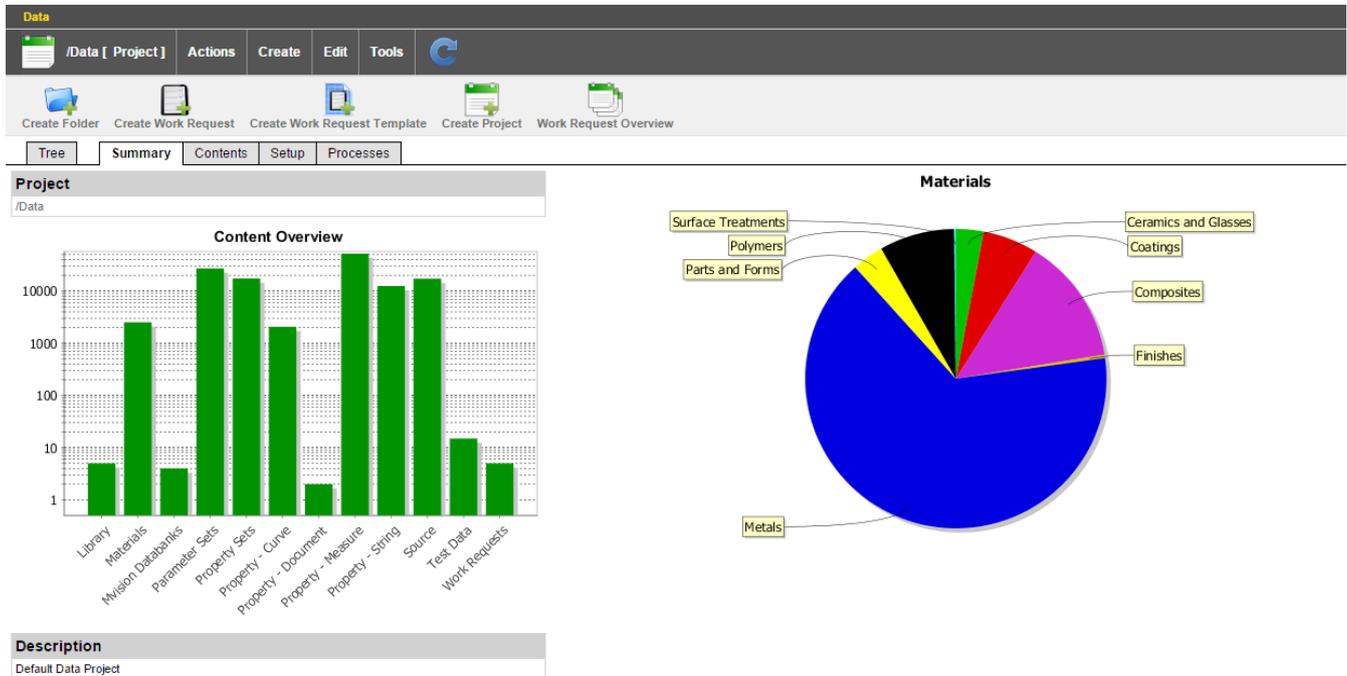
- Manage large amounts of materials data from a central location

- Find the information you need fast, with traceability and accountability

- Improve communication

- Streamline the product development process

- Increase productivity

- Standardize on best practices

- Collaborate effectively

- Reduce product development times

- Accelerate process and product innovation

- Improve consistency and reliability

- Improve efficiency of materials related workflow

- Secure confidential data with controlled access

- Reduce errors and improve compliance

Product overview

MSC Software makes products that enable engineers to validate and optimize their designs using virtual prototypes. Customers in almost every part of manufacturing use our software to complement, and in some cases even replace the physical prototype "build and test" process that has traditionally been used in product design.

Senvol Database™ Databank

The Senvol Database™ is the first and most comprehensive database of industrial additive manufacturing (AM) machines and materials. The database contains data on over 1,000 AM machines and over 3,000 compatible AM materials. Included AM materials span polymers, metals, composites, ceramics, sand, and wax.

AM machine data includes information on:

- Manufacturer

- AM process

- Build envelope size

- Price range

- Compatible materials

AM material data includes information on:

- Material type (including similar materials)

- Material properties (including mechanical, thermal, and physical properties)

- Results for different machine modes

- Results for different post-processing conditions

- Compatible machines

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ENGINEERING

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

e-Xstream engineering, part of Hexagon's Manufacturing Intelligence division, provides Integrated Computational Materials Engineering (ICME) solutions to innovate and optimise product performance using the right materials and manufacturing process for the right application. Learn more at e-Xstream.com. Hexagon's Manufacturing Intelligence division provides solutions that utilise data from design and engineering, production and metrology to make manufacturing smarter.

Learn more about Hexagon (Nasdaq Stockholm: HEXA B) at hexagon.com and follow us @HexagonAB.