

A framework for sustainability

Teamcenter Substance Compliance and Integrated Material Management

Agenda

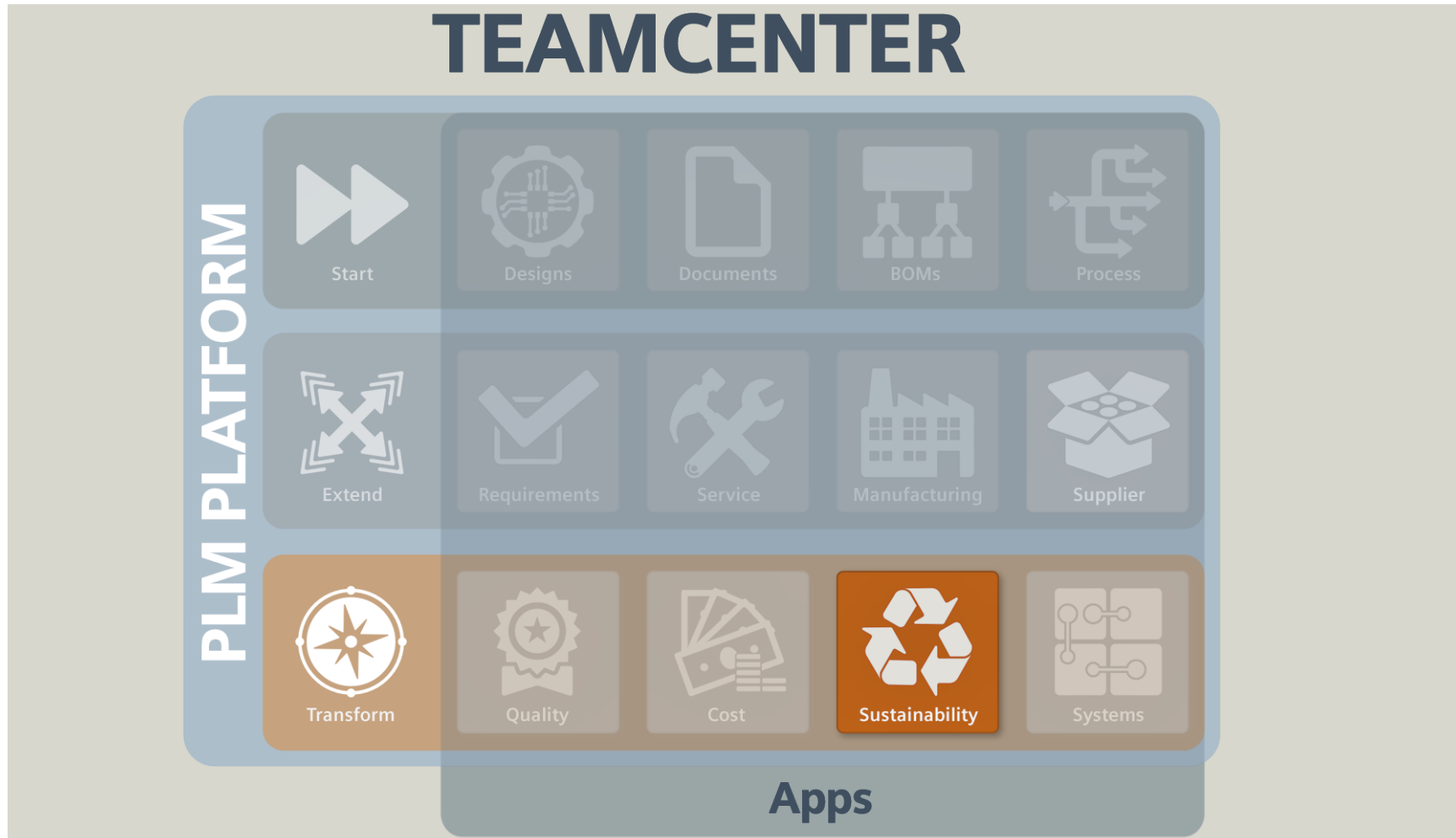


- Teamcenter substance compliance overview
- Teamcenter integrated material management overview
- Summary

Teamcenter

Substance Compliance

SIEMENS



Sustainability and Business

In the past, the term sustainability tended to be simply a marketing ploy. Now, the integration of 'green' products and business processes has positioned sustainability as a decisive element in global competition. Looking forward, another shift in mentality will push sustainability into the heart of strategies for the development and survival of organisations. The ability for an organisation to successfully transform current business models into sustainable practice will determine their continued existence.

<http://www.eea.europa.eu/events/sustainability-2.0-from-green-to-blue>



Sustainability and Compliance Considerations



- More Regulations
 - Energy use in Products
 - Carbon Emissions
 - End of Life
 - Data Center Energy Management
- Scarce Exotic Chemicals and Substances
- Design for Environment (DfE)
- Sustainable Manufacturing
- Lifecycle Extension
- Consolidated Sustainability and Financial Reporting
- **Competitive Advantage**

Why do we need Substance Compliance?

Product Recycling

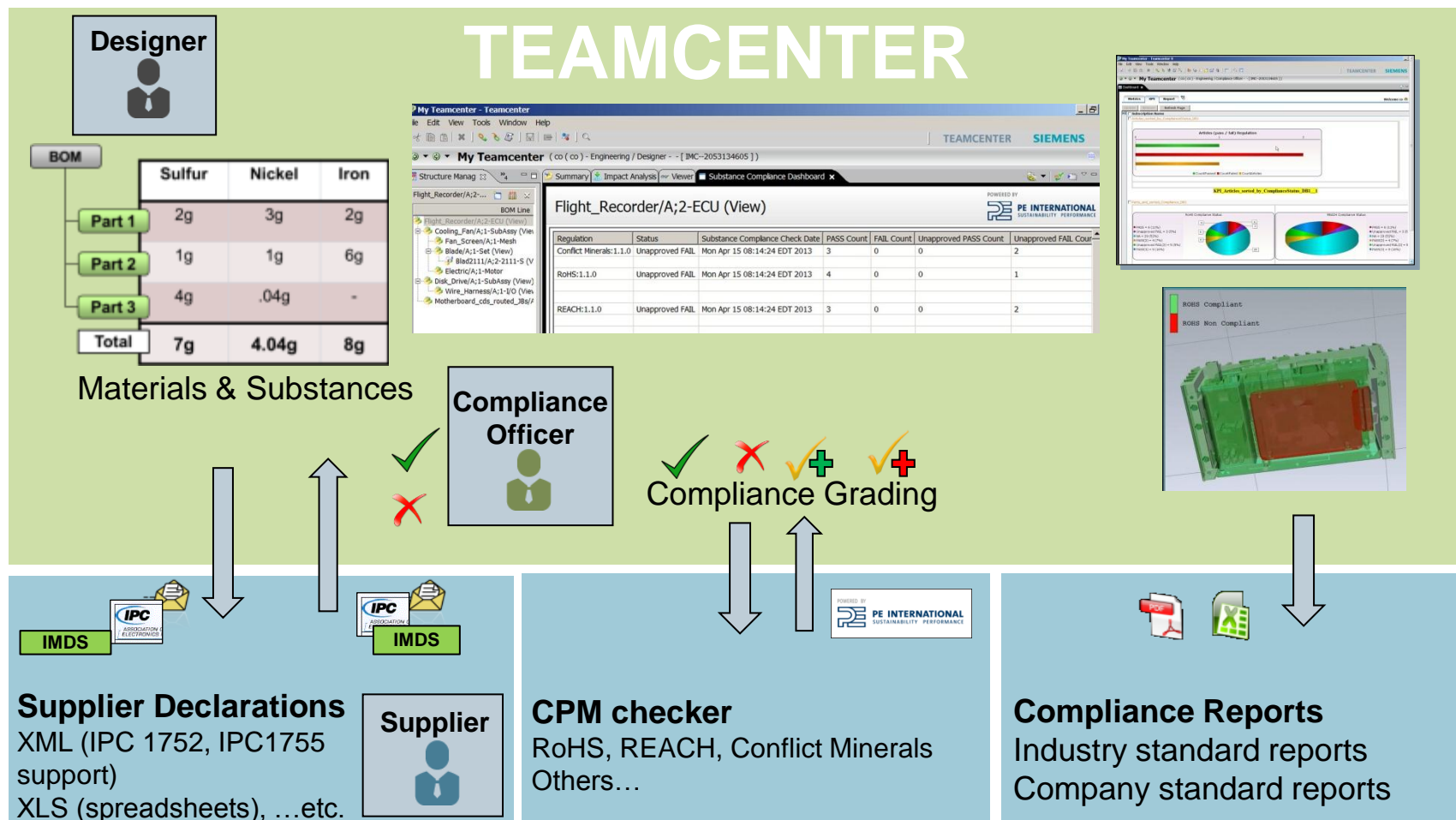
Customer Safety

Occupational Health and Safety

Environmental Protection

Teamcenter Substance Compliance

Compliance process

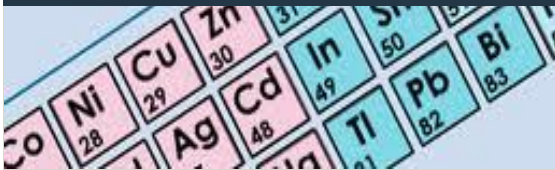


Teamcenter Substance Compliance

Key components

Full product traceability and transparency to reduce risk

Material and Substance Management



- Holistic materials management
- Aggregate material and substance amounts across a product structure
- Integrate with 3rd party material sources
- DfE framework

Supplier Disclosure Automation



- Automate process to gather supplier material and substance declarations
- Supplier data managed along with product structure
- Industry standard support (IPC-1752, IPC-1755)

Compliance Grading and Reporting



- Compliance grading
- Pre-configured rule sets
- Rules editor for custom regulations
- Dashboard views
- Expertise in sustainability and materials management with PE INTERNATIONAL partnership

Automate the exchange of declaration forms with suppliers

- Route industry standard (IPC-1752) declaration forms to suppliers to request material and substance disclosure
- Automatic processing of material substance declaration data from suppliers
- Archive supplier declarations and relate directly to the product structure
- Process templates to support supplier collaboration

The image shows two overlapping screenshots. The top one is a PDF of an IPC-1752 Material Composition Declaration form. The bottom one is a web interface titled 'Request Substance Declaration'.

IPC-1752 Material Composition Declaration Form:

Requester Information	
Company Name *	Siemens
Contact Name *	icsadmin
Contact Phone *	555-555-5555
Contact Email *	icsadmin@tct10eap

Request Substance Declaration Web Interface:

Request substance declaration?	Vendor Part	Vendor Name	Vendor Location	Vendor Email Id(s)
<input checked="" type="checkbox"/>	Edison Platters 4.5X 30C90	Edison	Millford	saurabh.kumar@siemens.com
<input checked="" type="checkbox"/>	Dura Head 23C	Duracell	PUNE	mahesh.todlage@siemens.com
<input checked="" type="checkbox"/>	Edison Motor 10W	Edison	Millford	saurabh.kumar@siemens.com

Manufacturing Process Information:

Requester Item Number	Mfr Item Number	Mfr Item Name	Effective Date	Version	Manuf
000758	VP56	VP56			

The image shows a screenshot of the 'Review Substance Declaration' web interface. It displays a table of substances and their material usage.

Material Name	Material Desc	Unit Of Measure
000012 Lead Material		Gram

Substance Declaration Table:

Substance Name	Substance Desc	Unit Of Measure
1102351 Lead Material		1.25gram
274942 1 Lead		1.25gram

Process Description:

Approve Material Substance Declaration From Supplier - IPC-1752 report

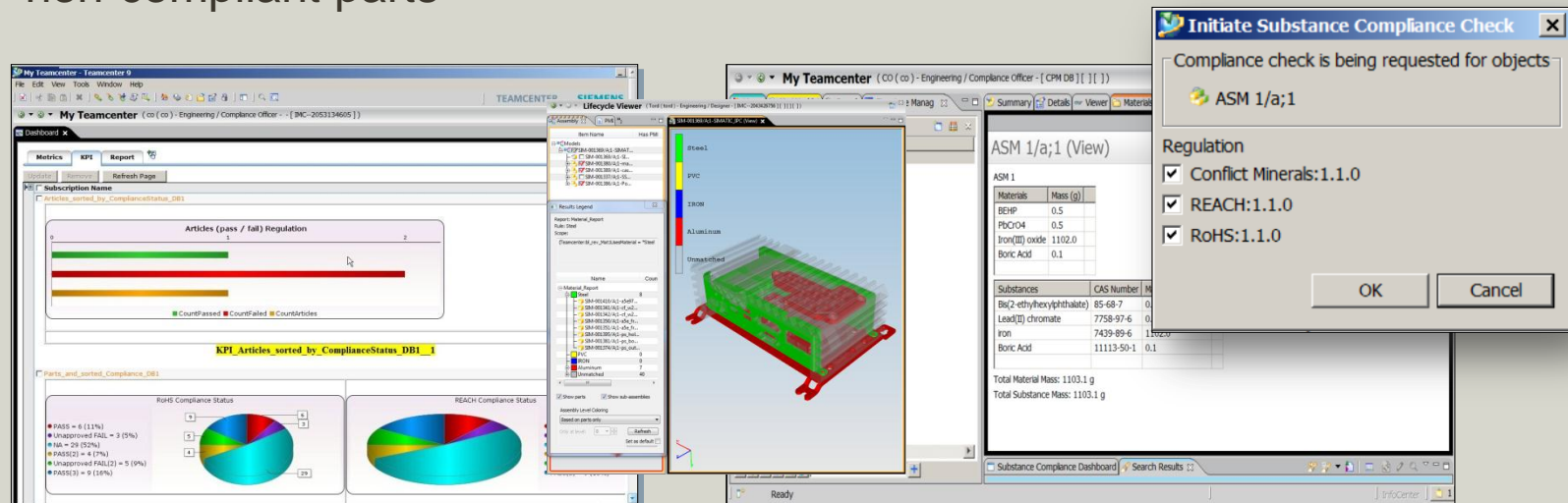
Comments: Okay

Done: Complete

Compliance Grading and Reporting Capabilities

Grading and reporting to demonstrate compliance or non-compliance

- Compliance grading with preconfigured rule sets address standard industry regulations such as REACH, RoHS and Conflict Minerals
- Configurable rules editor for customer specific regulations
- Compliance dashboards, dynamic queries and reporting for compliant and non-compliant parts



Link to
[Compliance MSD Nanobox.mp4](#)
(this shows supplier material
disclosure) and
[compliance_grd1.avi](#) (this shows
grading and reporting)

Teamcenter Substance Compliance

What's new and what's coming

What's New

- IMDS Integration
- Rules editor
- Enhanced supplier MSD automation
- Additional pre-configured regulatory rule sets
- Integrated material management

What's Coming

- Conflict minerals
- Active workspace
- Enhanced support for multi-sourcing



International Material Data System (IMDS)

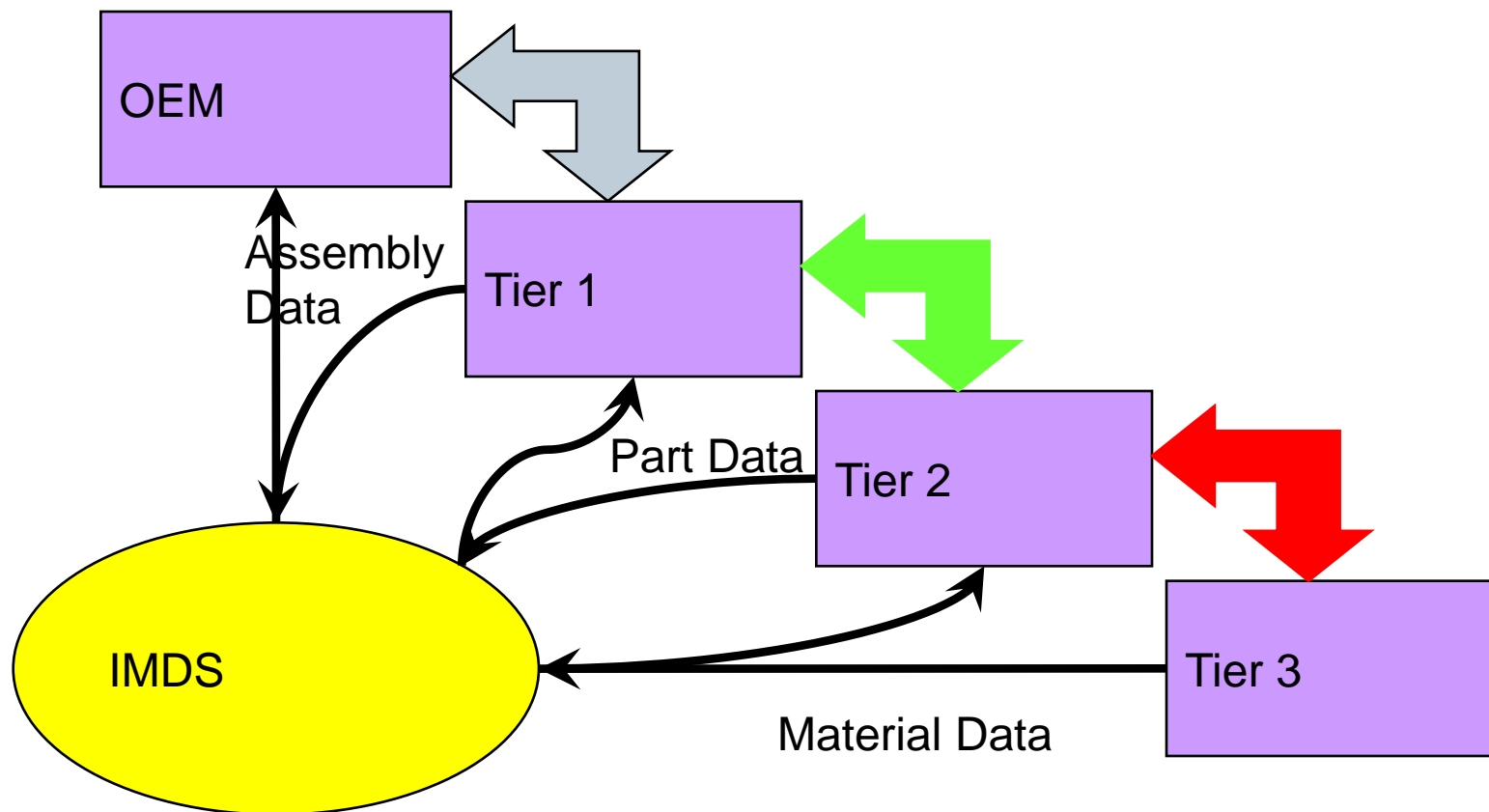
Automotive standard for supplier material disclosure

- Registered Companies ~124,000
- Registered Users ~320,000
- Active Users ~90,000
- Material Data Sheets ~48,317,000

-January 2014



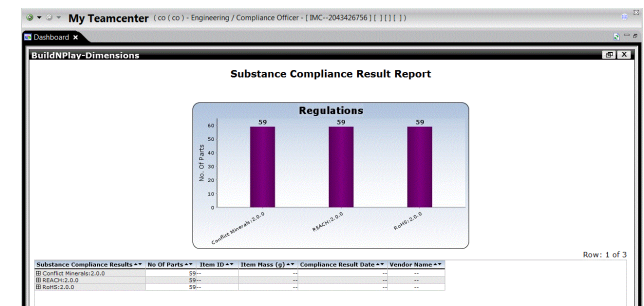
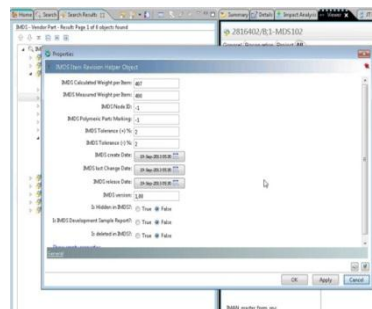
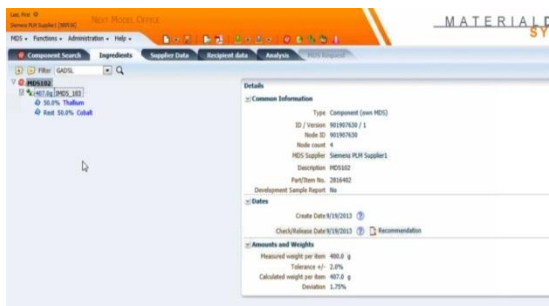
Gathering Data from your suppliers in IMDS



IMDS Integration

Allows companies using Teamcenter to aggregate material disclosure data to their product structure from IMDS and push material disclosure data to IMDS using a single user interface

- Aggregate material and substance disclosure information into Teamcenter from the IMDS
- Submit Teamcenter MDS to the IMDS
- Single intuitive user interface to manage the MDS process



Teamcenter Substance Compliance Demonstration

Link to
[IMDS to Tc.mp4](#)
[Tc to IMDS.mp4](#)

Rules Editor

Create custom specifications to meet business objectives and future directives

- Build, edit, and test regulations
- Adapt quickly to changing and future regulations
- Complete visibility and control of how products are graded for compliance
- Easily transfer rules to Teamcenter and CPM



Rules Editor

Capabilities

- Create rule sets that work just like the rule sets built by PE INTERNATIONAL
- Build, edit, and test rule sets by specifying: Substances, Thresholds, Compliance results, Exemptions
- Rules Editor works independent of Teamcenter and CPM

Back Delete Edit

Rule Set

Name: Conflict Minerals

Version: 2.0.0

Identifier: com.pe-international.cpm.regulation.conflictminerals

Structure: ☒ Part List ☐ Flat

Substance Group Checks:

Requirement	Threshold	Result
No Conflict Min...	0 %	Unapproved Fail

Rules Editor Exemptions Grading Substance Groups Administration

Substances

Import Substances: Select substances file.

Import Export

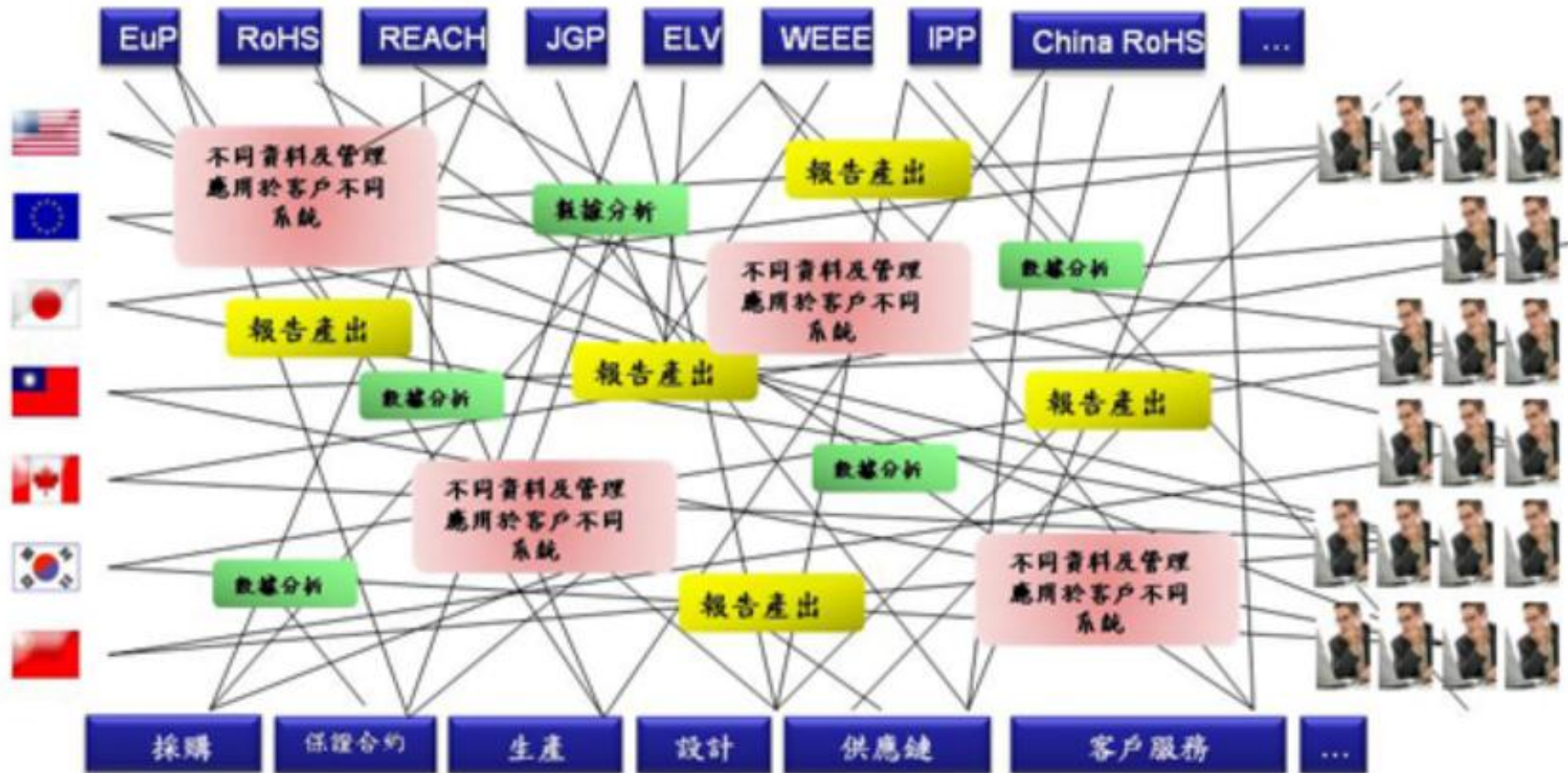
Rulesets

Export Rule Set: Select rule set ...

Import Rule Set: Conflict Minerals
Conflict Minerals Europe
Radioactive materials ban

Import: REACH
RoHS

Enterprise is Facing Many Rules



Pre-configured Rule Sets

- Several rule sets added since initial release
- PE INTERNATIONAL will continue to create / update rule sets as regulations and directives change or are created



- REACH Authorisation
- REACH Candidate
- REACH Restriction
- EU RoHS
- China RoHS
- Korea RoHS
- Conflict Minerals
- IEC 62474
- GADSL
- EU Battery Directive
- EU Packaging

Active Workspace

Catalyst coming Q3 FY15

Intuitive user experience

The screenshot displays the Siemens Teamcenter Active Workspace interface for a 'Motor Assembly'. The interface is divided into several sections:

- Left Panel:** Contains icons for 'CHANGES', 'HOME FOLDER', 'SEARCH', and 'INDEX'.
- Top Bar:** Shows the 'SIEMENS' logo and 'Motor Assembly' workspace name.
- Navigation Tabs:** Overview, Viewer, Where Used, Attachments, History, Relations, Vendor Parts, Compliance, and Materials (selected).
- Materials Table:**

OBJECT	SUBSTANCE DETAILS	STATUS	MASS (G)
Gold Alloy	Gold(7440-57-5)90% Formaldehyde(9003-36-5)10%	Approved	10
Gold Mix	Gold(7440-57-5)80% UNKNOWN(0000-00-0)20%	Approved	9
Unknown	UNKNOWN(0000-00-0)100%	Approved	5
- Substances Table:**

OBJECT	CAS NUMBER	MASS (G)	COMPOSITION %
Gold	7440-57-5	18.24	76
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	0.72	3
Unknown	0000-00-0	5	20.833
- Right Panel:** Shows 'Overview' and 'Exemptions' sections. The 'Exemptions' section lists two items: 'REACHRestrictions18a.Mercury' and 'REACHRestriction62Phenylmercur yacetate', both with 'Status: Approved' and 'Date Expiring: 27-Oct-2017'.

- IT friendly platform providing identical experience on any device with no client or plugin installation
- Web-intuitive, touch-enabled, configurable interface
- Embeddable components within familiar applications

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Teamcenter Integrated Material Management

Background

Together with our OEM partner PE International, we introduce Teamcenter Integrated Material Management (internally referred to as IMM)

PE International has acquired the MDS solution from HD Solutions. MDS is the product that was re-branded into Integrated Material Management

The HD Solutions team (now PE team) has many years of experience implementing Teamcenter. MDS (now Teamcenter integrated material management) offers fully integrated material management with Teamcenter, NX and other CAD and 3rd party systems (LS-Dyna)

Release information

Currently compatible TC9.1.x and TC10.1.x and beyond

We can start selling this solution NOW

- Available on GTAC

Teamcenter or Teamcenter Rapid Start / Windows 64 /
Integrations_and_Solutions / IntegratedMaterialManagement

- Available in [price book](#)

TC030505 TC Integrated Material Management (IMM)

Our original Teamcenter materials management solution will no longer be sold.

Existing customers will be grandfathered into new solution.

Why Do We Care About Material Management?

Product Recalls

www.news.google.com

or

<http://www.recalls.gov>

or

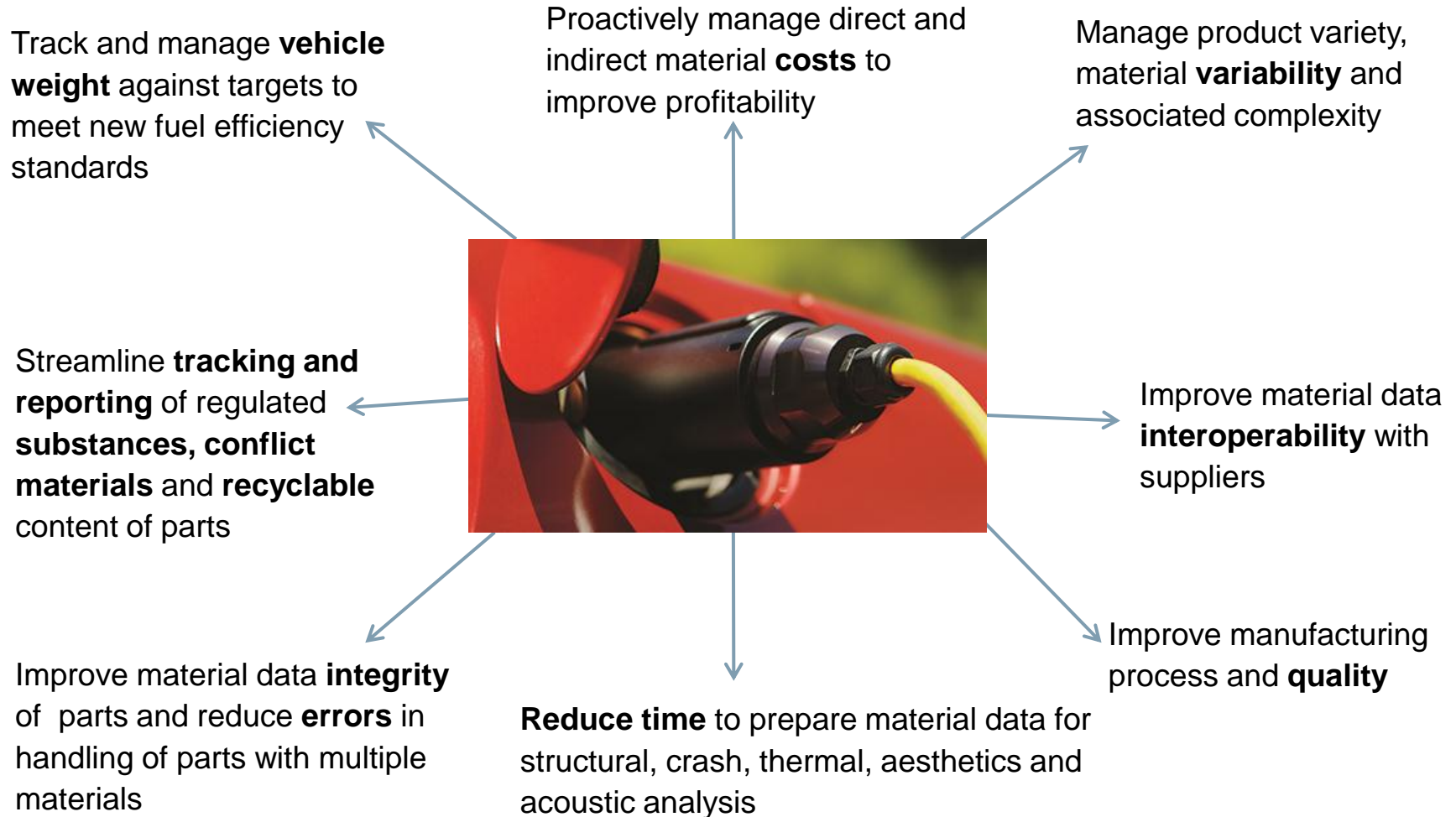
<http://www.cpsc.gov>

Many products fail
because of misuse or
mistreatment of **materials**



Business Drivers

Automotive example



Current Situation

Material management as we know it today

A photograph of several large, white, cylindrical industrial silos or storage tanks, arranged in a row and viewed from a low angle looking up towards a blue sky with scattered white clouds.

Multiple material data silos

A close-up photograph of a computer screen displaying a web interface. The text 'New Message' is visible, along with a blurred 'Add' button, suggesting a messaging or notification system.

Inefficient tracking mechanisms

A photograph showing several white cardboard boxes stacked together. The boxes have printed labels with technical specifications, including '1,5 kg CO₂' and '1,3 kg CO₂', indicating material weight and carbon footprint data.

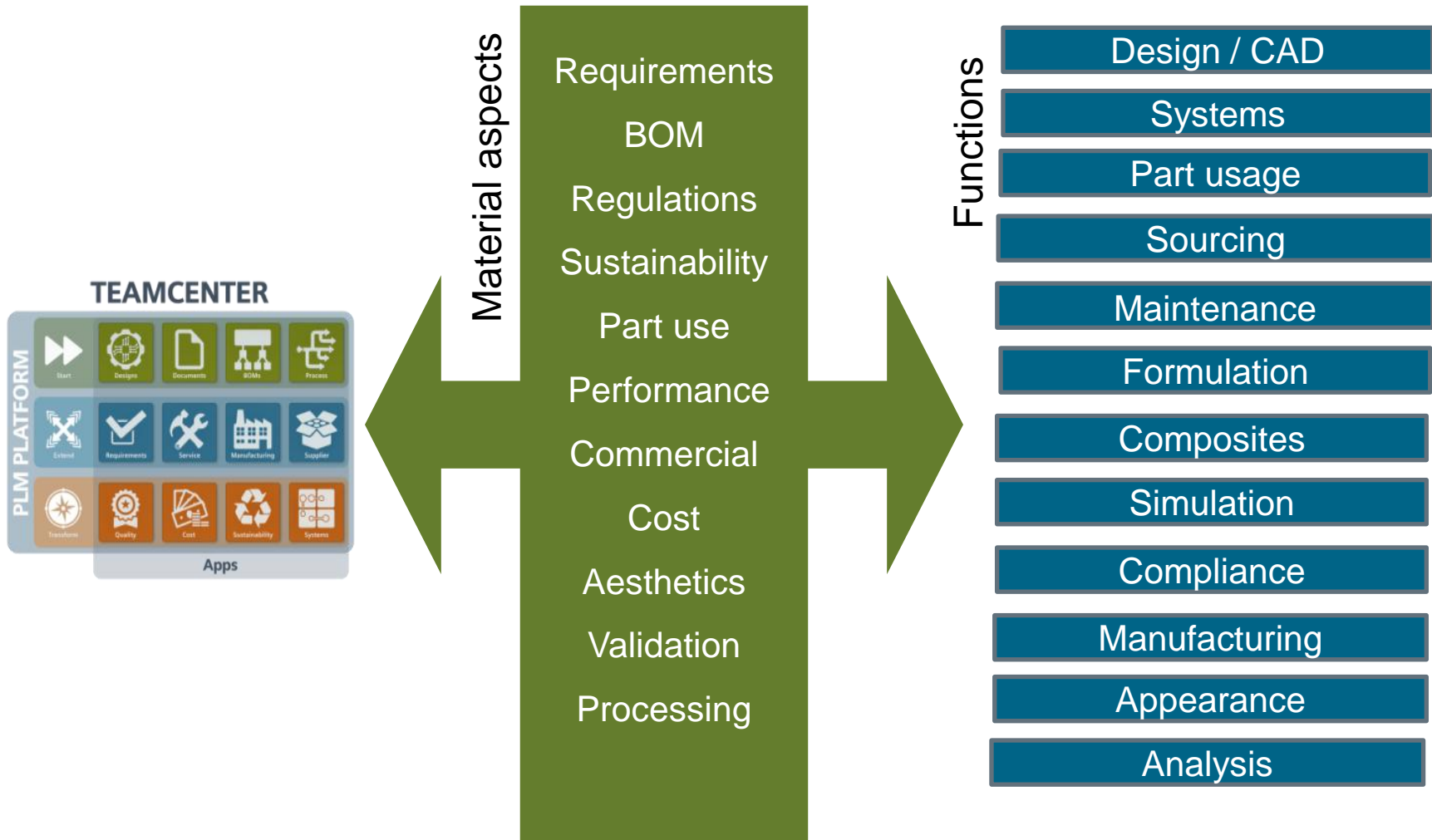
Duplicate material definitions

A solid dark teal rectangular block with the text 'Increased Risk' centered in white, representing a high-level summary or consequence of the issues shown in the other images.

Increased Risk

Integrated Material Management

Span multiple material aspects and functions



Integrated Material Management

Target roles

Understand impact of my material selections on the product

Product Designer

Know if I am within the mass target limits of my new program

Program Manager

Know which material model to use for my crash analysis

Simulation Specialist

Materials Engineer

Select the right material to meet new program requirements

System Architect

Leverage new composite material to improve the system performance

Manufacturing Engineer

Understand the impact of new material on current manufacturing process

Sourcing Manager

Ability to reduce material costs through supplier consolidation

Environmental Specialist

Have the required data to assess the impact of changes for regulations on the new program



Link to

[imm_search_compare_nx.wmv](#)

Integrated Material Management

Validate and optimize product design

- Provide a single source of material properties and substances
- Compare material on scalar and table values
- Show multiple curves in one plot
- Data interoperability across SPLM applications
- Material usage is tracked through selections, assignments, refinements and declarations
- Streamline rollup of material data driven product strategic parameters such as mass, cost, and environmental impact



Agenda

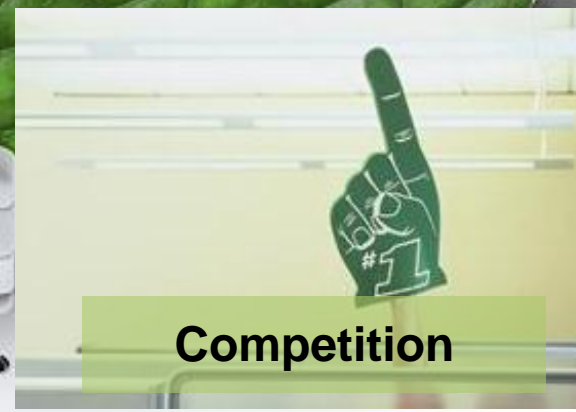


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How Material Management Fits with Sustainability

IMM + TcSC

Sustainable products a top priority for most corporate leaders



Teamcenter Substance Compliance and Integrated Material Management

Framework for sustainable product design

- Reduce risk of noncompliance by tracking and reporting substances of concern that are used in a product
- Minimize errors and rework costs by automating the material and substance declaration request process with suppliers
- Support Design for Environment (DfE) initiatives by providing a sustainability framework with holistic material management



Why should we start selling these solutions?

- Extend Teamcenter footprint
 - Integrated environment
 - Keep competition out
- Bringing product compliance team into the fold
 - Quality products
 - Consistent across domains
- Domain expertise
 - Ably supported by domain experts (PE)



Where To Find Collateral Substance compliance

<https://sales.industrysoftware.automation.siemens.com/sell/teamcenter/products/sustainability/>

Customer facing presentations

Product demonstrations

Internal FAQ

Competitive Analysis

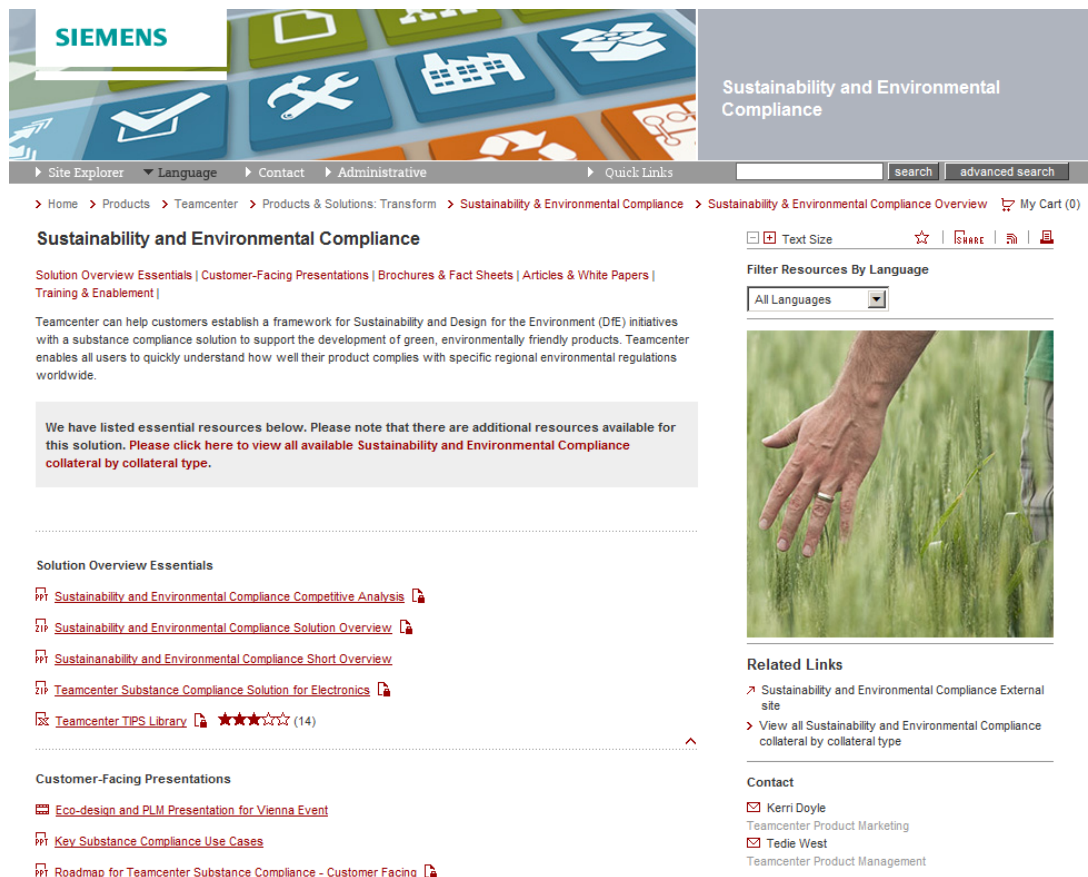
Sales Playbook

Fact sheet

White Papers

Training

...



Sustainability and Environmental Compliance

Site Explorer | Language | Contact | Administrative | Quick Links | search | advanced search

Home > Products > Teamcenter > Products & Solutions: Transform > Sustainability & Environmental Compliance > Sustainability & Environmental Compliance Overview | My Cart (0)

Sustainability and Environmental Compliance

Solution Overview Essentials | Customer-Facing Presentations | Brochures & Fact Sheets | Articles & White Papers | Training & Enablement |

Teamcenter can help customers establish a framework for Sustainability and Design for the Environment (DfE) initiatives with a substance compliance solution to support the development of green, environmentally friendly products. Teamcenter enables all users to quickly understand how well their product complies with specific regional environmental regulations worldwide.

We have listed essential resources below. Please note that there are additional resources available for this solution. [Please click here to view all available Sustainability and Environmental Compliance collateral by collateral type.](#)

Solution Overview Essentials

- [Sustainability and Environmental Compliance Competitive Analysis](#)
- [Sustainability and Environmental Compliance Solution Overview](#)
- [Sustainability and Environmental Compliance Short Overview](#)
- [Teamcenter Substance Compliance Solution for Electronics](#)
- [Teamcenter TIPS Library](#) (14)

Customer-Facing Presentations

- [Eco-design and PLM Presentation for Vienna Event](#)
- [Key Substance Compliance Use Cases](#)
- [Roadmap for Teamcenter Substance Compliance - Customer Facing](#)

Filter Resources By Language

All Languages

Related Links

- [Sustainability and Environmental Compliance External site](#)
- [View all Sustainability and Environmental Compliance collateral by collateral type](#)

Contact

- [Kerri Doyle](#)
Teamcenter Product Marketing
- [Tedie West](#)
Teamcenter Product Management

Where To Find Collateral

Integrated material management

<https://sales.industrysoftware.automation.siemens.com/sell/teamcenter/products/integrated/>

Customer facing presentation

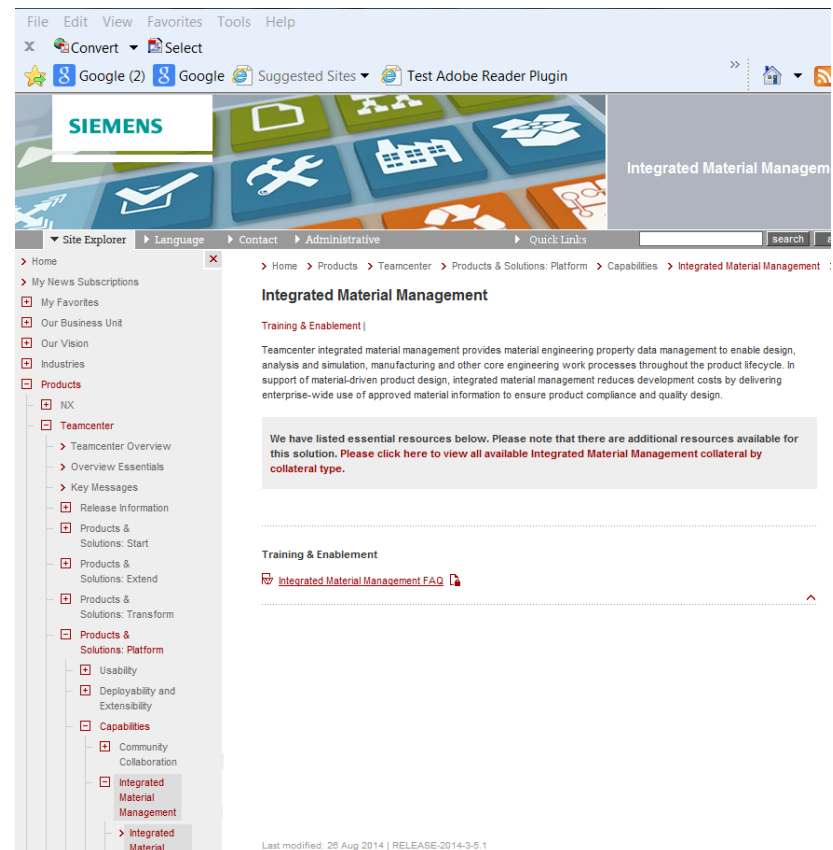
Product demonstration movie with script

Internal FAQ

Fact sheet

White Paper

...



A framework for sustainability

Thank You!