

NX 6 Design Validation Product Update

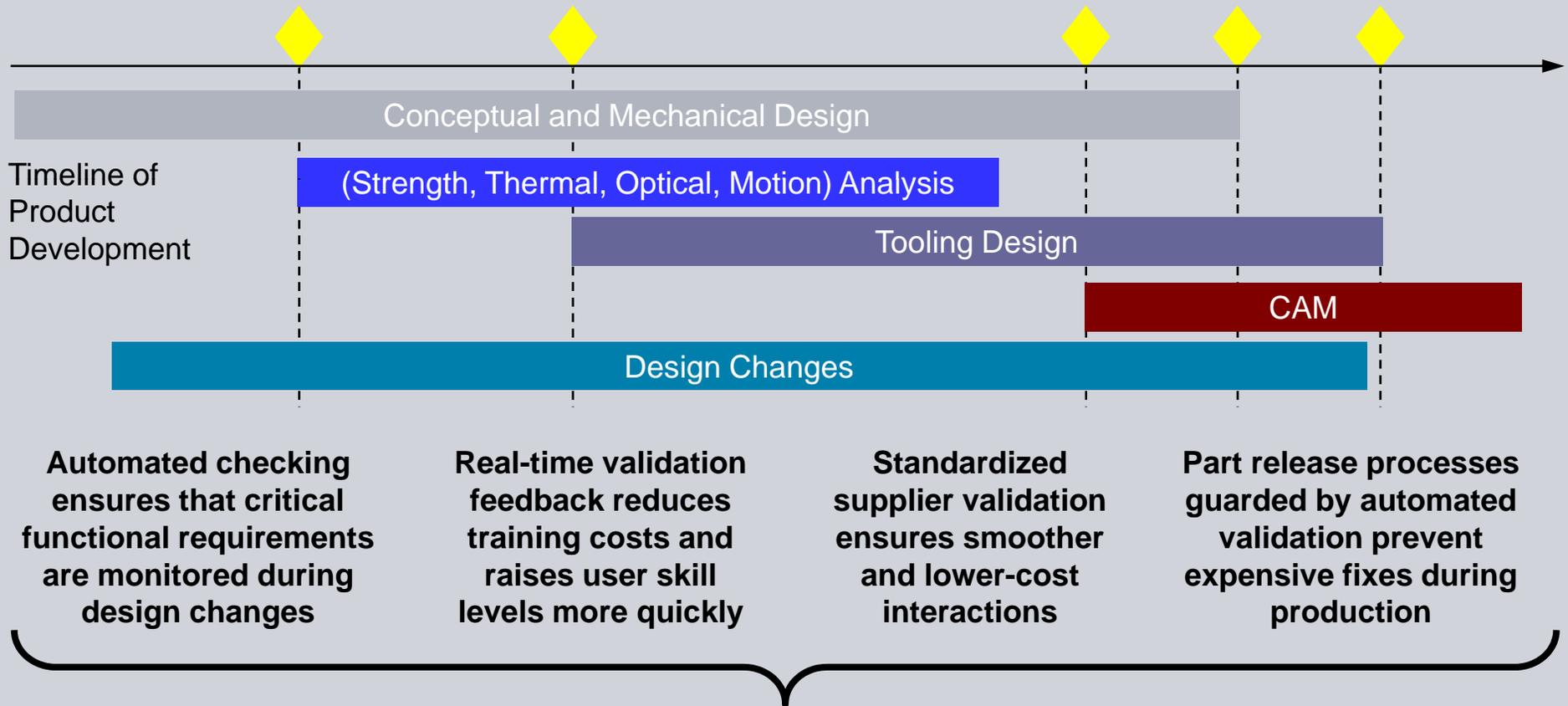
Taylor Anderson
NX Product Manager
(Check-Mate and
Requirements Validation)
Wednesday, June 4th, 2008
UGS Connection Conference



“Validate Early and Validate Often”

Validation Throughout the Product Development Process

Why is constant, consistent validation so valuable?



Results database and reporting tools allow data quality to be mined, measured, and improved.

NX Design Validation Framework

Common Checking Engine (Knowledge Fusion)

Common Data Management (Teamcenter Validation Objects)

Common Reporting Framework (Quality Dashboard)

Check-Mate

Standards Validation

Formatting Standards

Company Standards

General Best Practices

Automatic or manual execution

No Setup of checks against parts

Corrective Action

(Automatically, where it makes sense.)

RDDV

Requirements-Driven Validation

Functional Requirements

Design Targets

Context-Specific Values

Design-specific setup of checks

Fully automatic re-validation

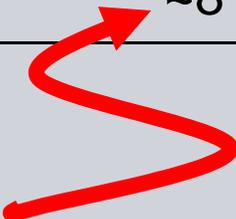
Embedded in automation apps

(Vehicle Packaging Wizards, for instance.)

Check-Mate Coverage Progress

Release	OOTB Checker Classes	OOTB Check-Mate Specific Checking Functions
2.0.5	~130	~170
3.0.4	~210	~430
4.0.1	~220	~460
5.0.2	~250	~530
6.0.0	~280	~810

More than quadruple
the coverage of NX 2.



Reporting Enhancements

NX 6 Project Detail

Capability in NX 6

Check-Mate now includes several new pieces of information in the log files generated for use with the Quality Dashboard tool.

Also, the Quality Dashboard tool now has options to filter results and generate reports based on this new data.

Why is this important to you?

This increases your ability to craft useful, meaningful reports about your validation results data.

The screenshot displays the NX6 Quality Report tool interface. It includes a 'Report Editor' window with fields for Report Title, Description, and a table editor. Overlaid on this are 'Part % Rate Editor' and 'Advanced Settings' dialog boxes. The 'Advanced Settings' dialog shows a filter set to 'TC_Group = Engineering'. Below these is the 'NX6 Quality Report' window, which contains a summary table and a bar chart.

Parts	Checks	Unique Checks
137	2041	58

"Engineering" Group Part Test Results

Part Failure Rate

Part ID	Percentage of Failure
000024/A	6
000014/A	8
000019/A	8
000011/A	9
000013/A	9
000002/A	11
000006/A	11
000026/A	13
000030/A	13
000034/A	21

New Teamcenter Metadata in Check-Mate logs

-Part Attributes

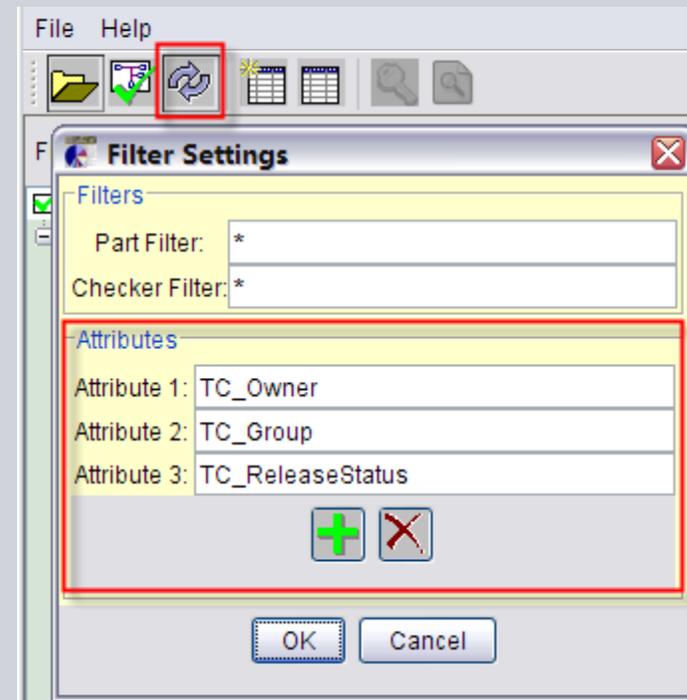
Attributes	checkSum=
DB_PART_NAME	000056
DB_PART_DESC	000056
DB_PART_NO	000056
DB_PART_REV	A
DB_PART_TYPE	Item
TC_PartNumber	000056
TC_PartRevisions	A
TC_ReleaseStatus	
TC_Owner	kelvin (kelvin)
TC_Group	Engineering
TC_DateCreated	15-Apr-2008 14:56
TC_DateReleased	
TC_DateLastModified	15-Apr-2008 15:25

Using Teamcenter Metadata in Quality Dashboard

Step One

Filter Settings

- The new attributes can be added through Filter Settings dialog.
- This will add these attributes into the local results database.
- The attributes can then be used to filter the results.



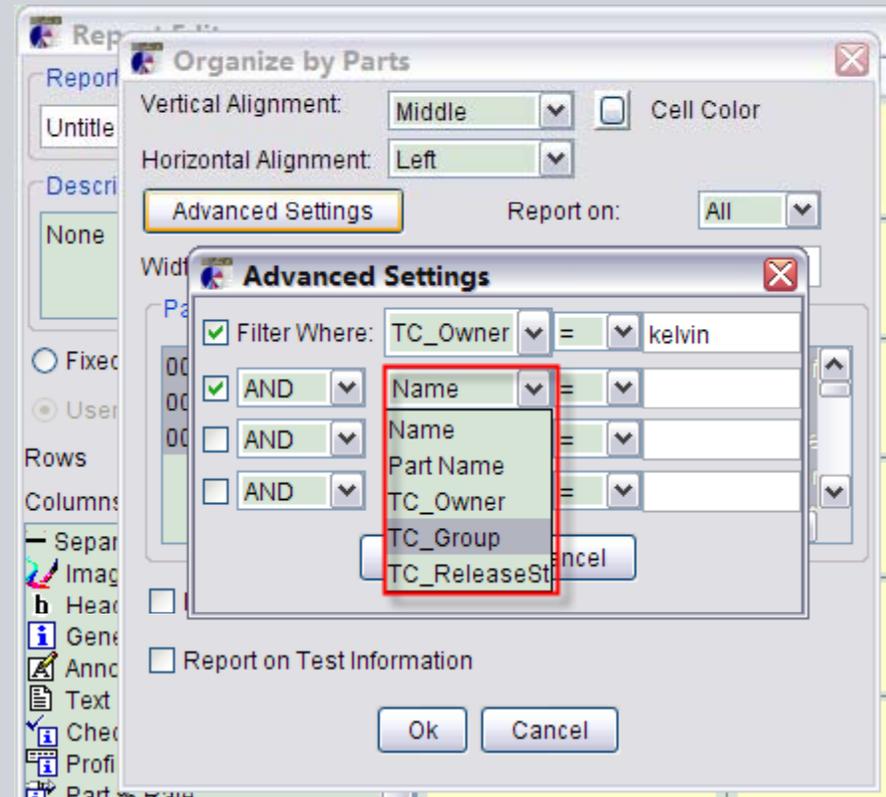
Using Teamcenter Metadata in Quality Dashboard

Step Two



Report Element Advanced Settings

- Attributes added in the Filter Settings can be combined here to further filter the results.
- Choose one or more attributes and set up the filter criteria.
- The report will only display results passing the combined filter settings.



Smart Checking *NX 6 Project Detail*

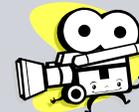
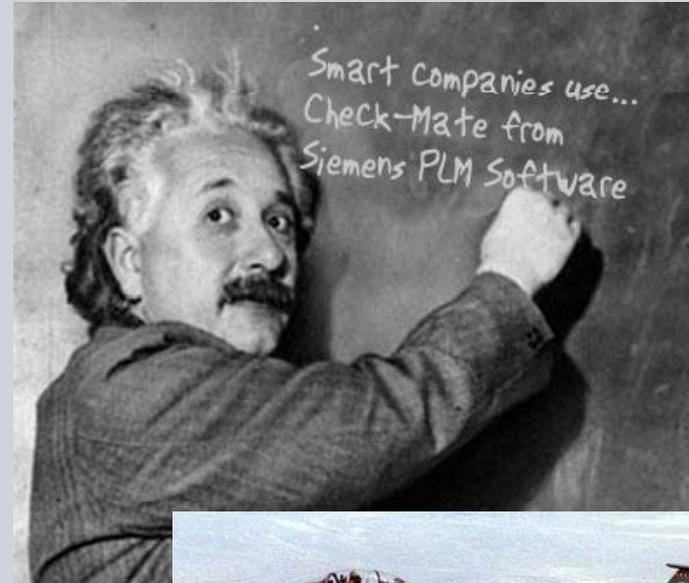
Capability in NX 6

Check-Mate can now (optionally) be set to only re-validate parts that have actually changed since the last time Check-Mate was executed.

Similarly, assembly checks can (optionally) not be re-run if the assembly structure has not changed.

Why is this important to you?

Selectively revalidating parts saves significant time during validation, particularly for larger assemblies.



Validation Results Import with UI

NX 6 Project Detail

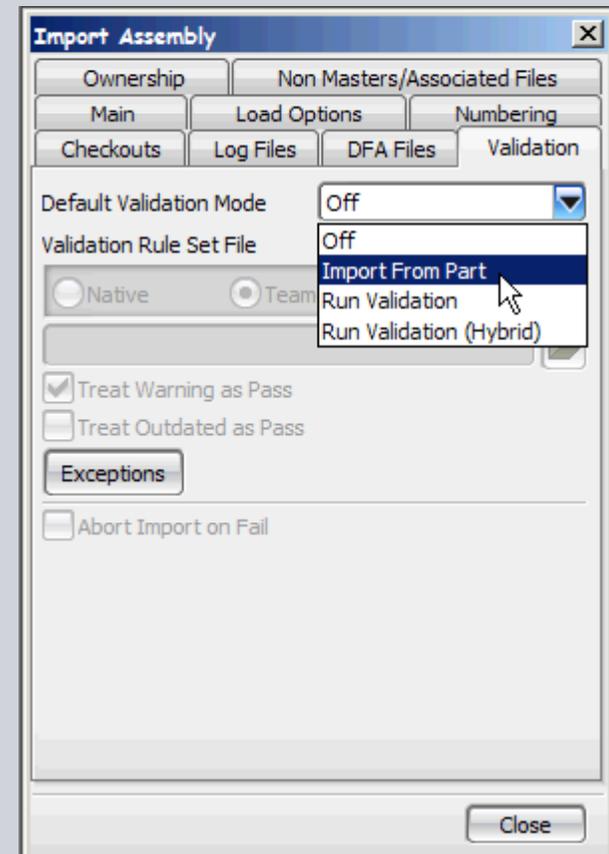
Capability in NX 6

User can use the interactive Import Assembly dialog to automatically validation objects when importing validated NX part files into Teamcenter.

The new “Run validation (Smart)” mode performs validation on un-validated parts, but directly imports stored results from validated parts, without re-validating them.

Why is this important to you?

Users can now access this functionality in interactive mode (not just batch mode), and the new smart mode improves overall validation performance.



Validation Application

TC 2007.1 Project Detail

Capability in TC 2007.1

Validation Application Module and Validation Data Panel have been added.

Validation Data and Validation Result classes have been enhanced to support RDDV.

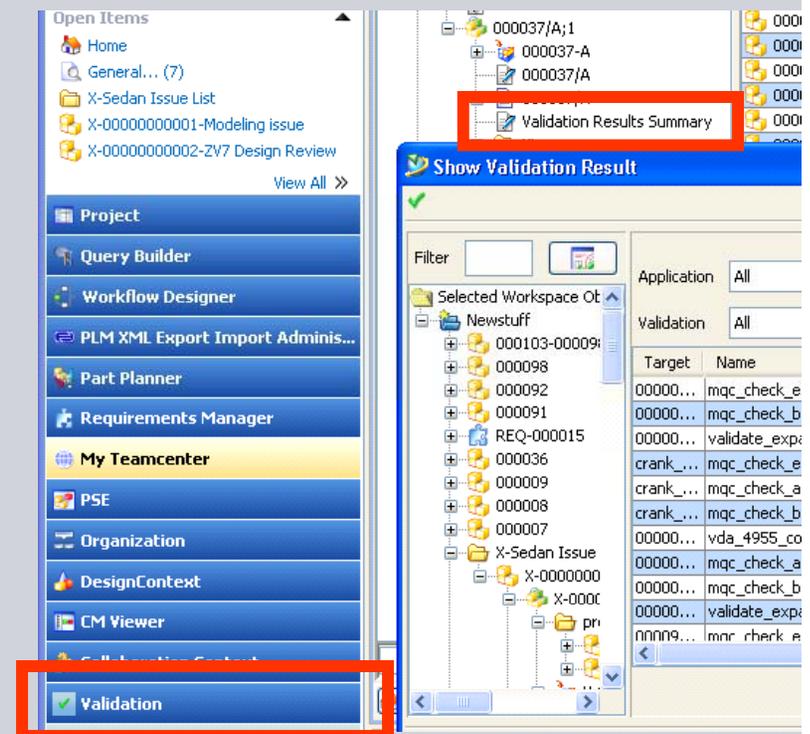
Multi-site support for Import/Export of Validation Results has been added.

Action Handler has been added to set workflow condition task based on Check Validation Results with Rules (*Opel*)

Why is this important to you?

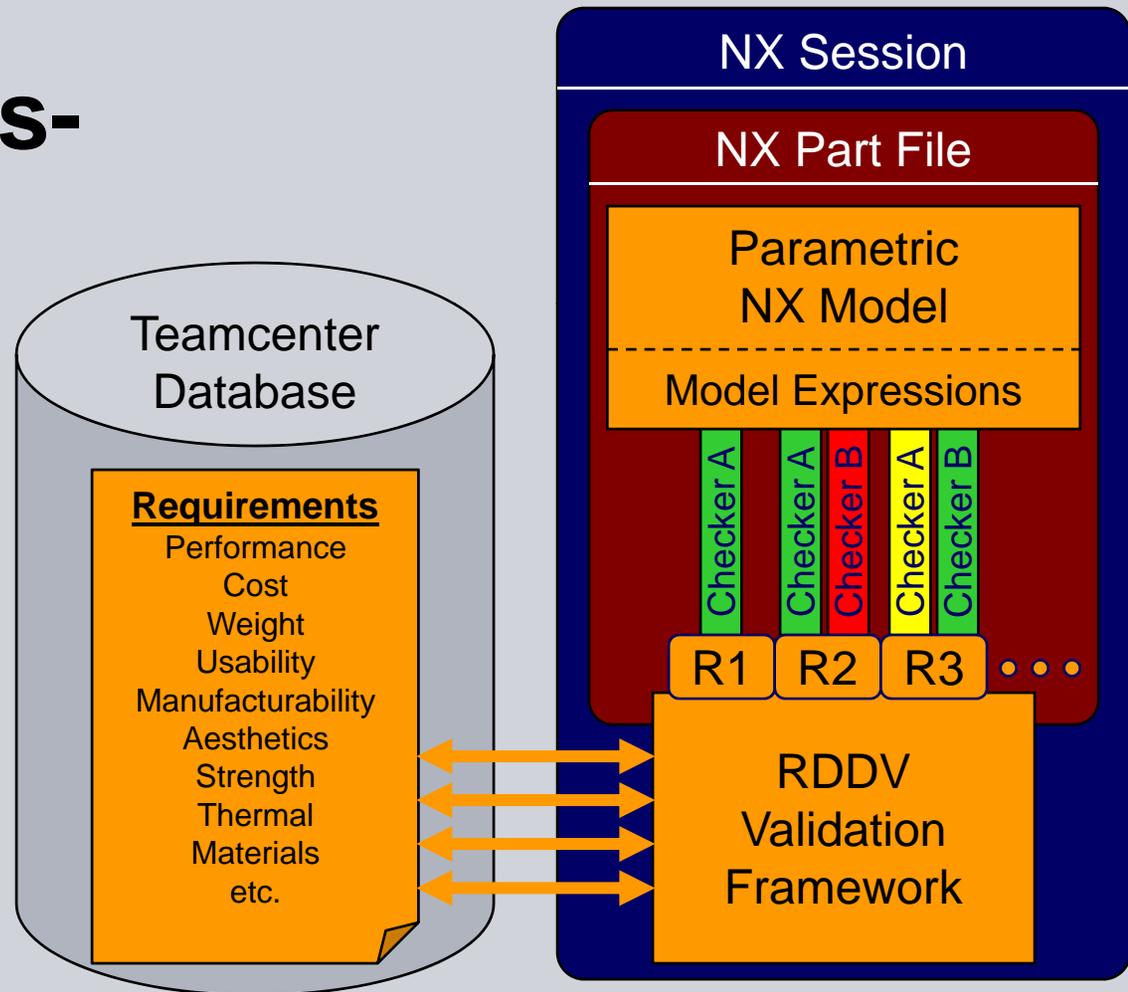
Validation functions have been consolidated under the Validation Application Panel.

Multi-site behavior and workflow behavior have been made significantly more robust.



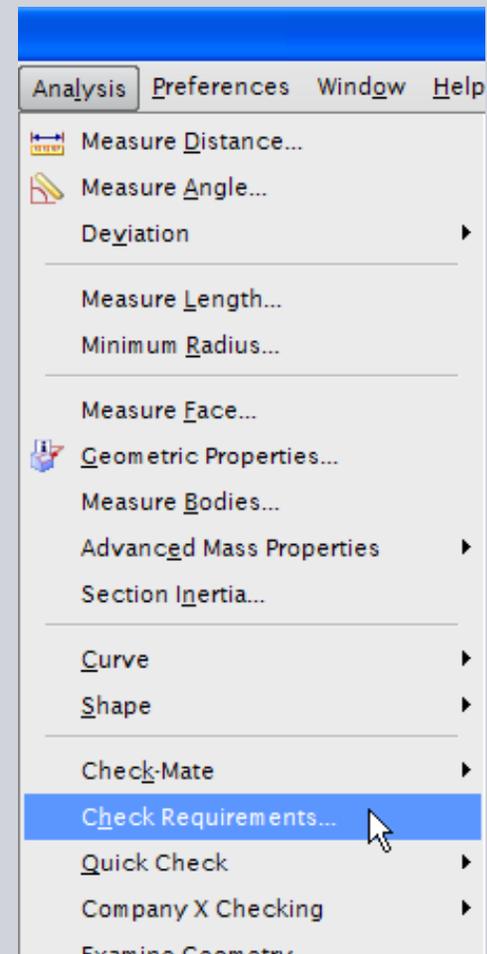
What is RDDV?

Requirements-Driven Design Validation



RDDV Summary:

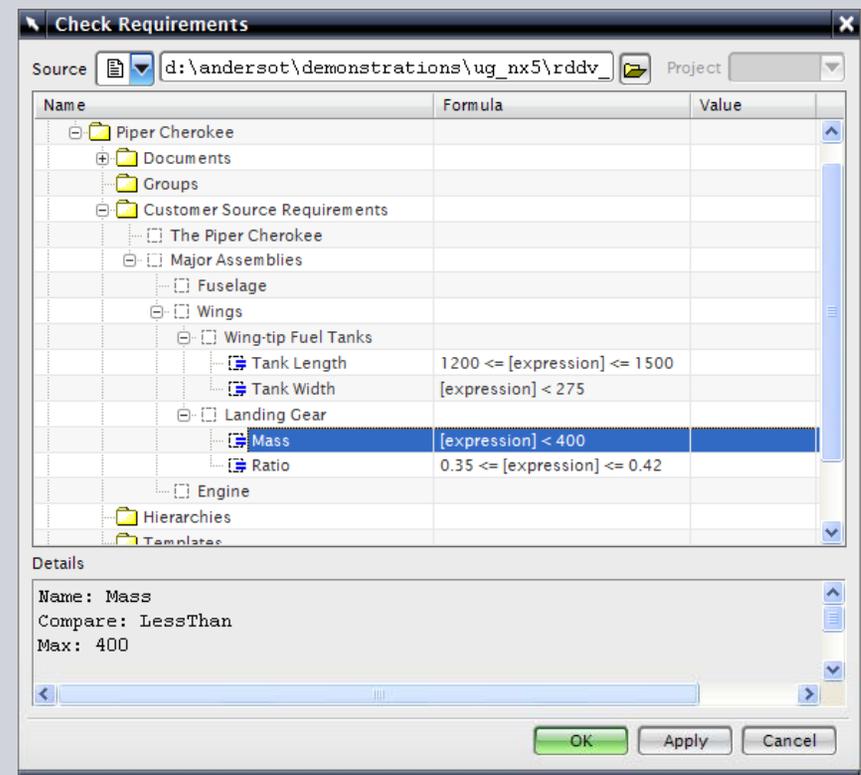
“**Check Requirements**” dialog establishes connection with a source of requirements



RDDV Summary:

“**Check Requirements**” dialog establishes connection with a source of requirements

An NX “**Requirement**” is created, associated to the external requirement

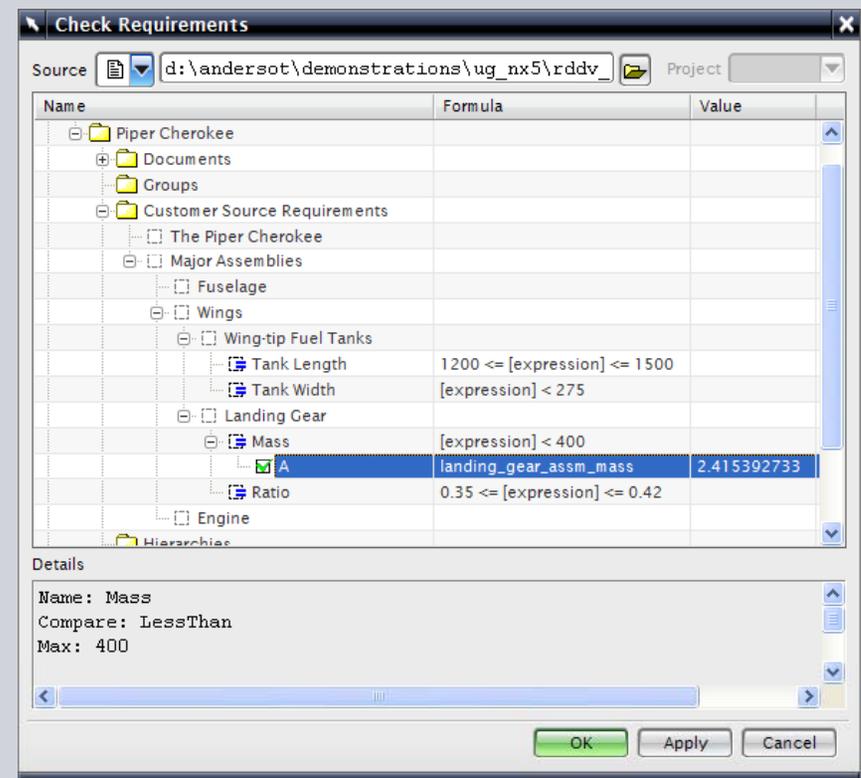


RDDV Summary:

“**Check Requirements**” dialog establishes connection with a source of requirements

An NX “**Requirement**” is created, associated to the external requirement

One (or more) “**Checks**” are created, linking the Requirement to an NX Expression



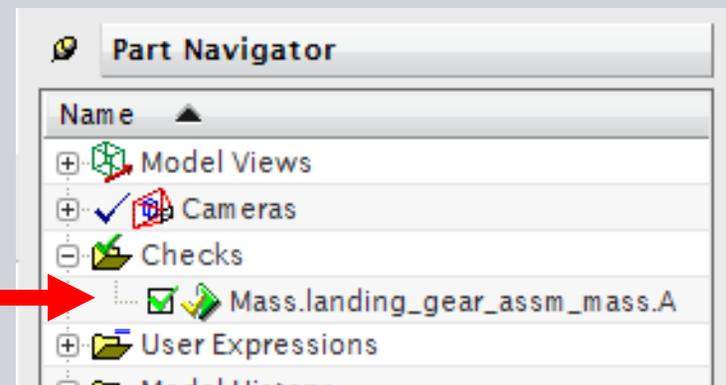
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The RDDV Framework then **continually** watches the model for changes and updates the status of each check.



Requirements Checks NX 5 Measurements Integration

NX 5 style dialogs everywhere

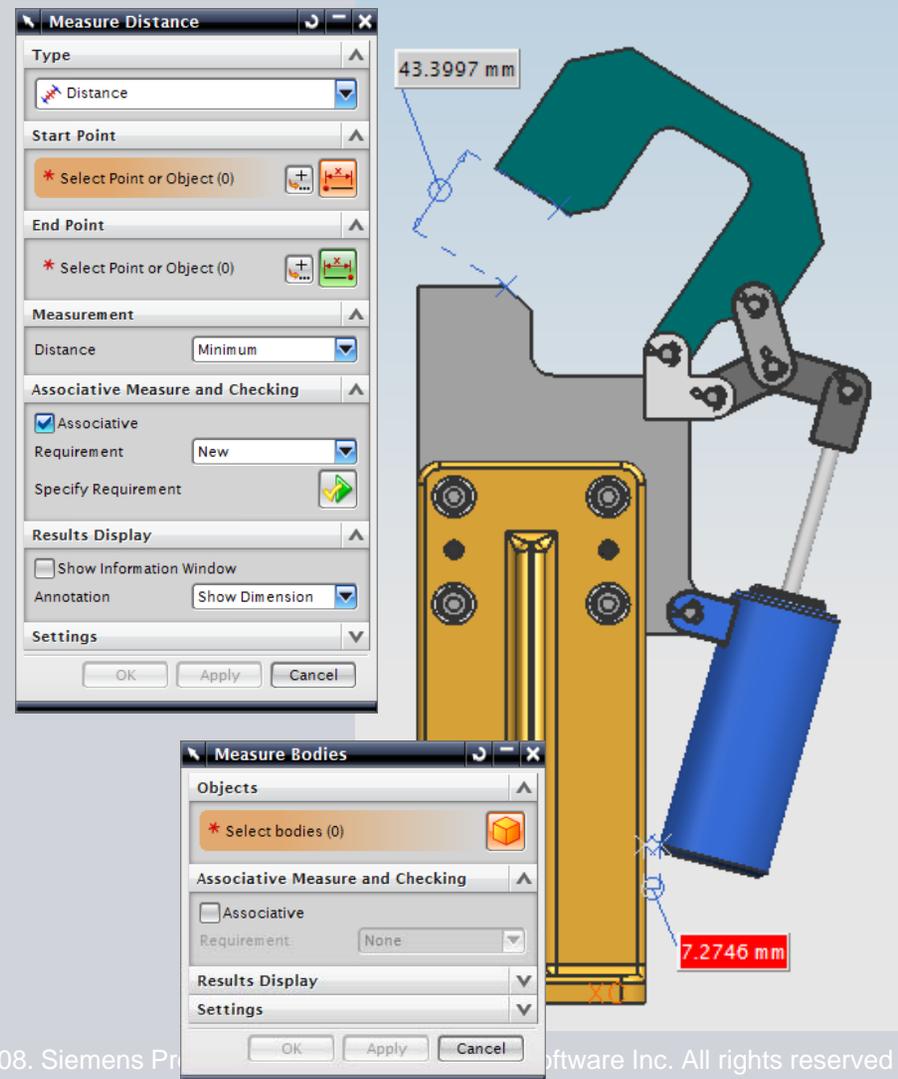
Measurement between components and component sets

Measurements between faceted bodies, including edges and faces

More useful display of measurement annotations

Dynamic update of measurement annotations during motion analysis and assembly repositioning

Color feedback based on the results of validation attached to the measurement



TcEng-TcReq Val. Obj. Integration

NX 6 and TC 8 Project Detail

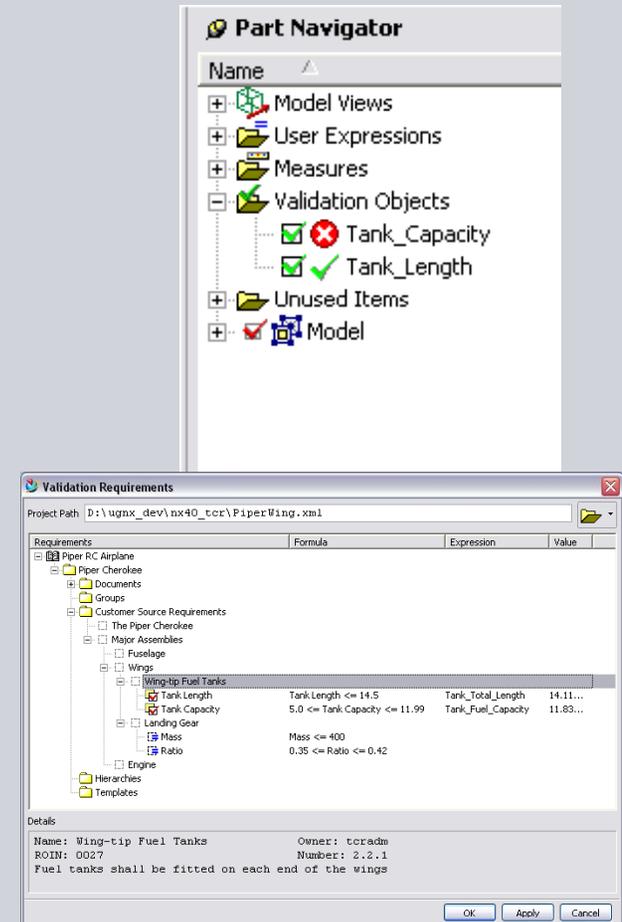
Capability in NX 6 / TC 8

The results of NX Requirements Checks can now be stored directly into Teamcenter Validation Objects.

Why is this important to you?

The results of Requirements Checks performed within NX can be queried and/or used in workflows within Teamcenter without opening the NX parts/assemblies.

This is a key component in closing the loop with Teamcenter Systems Engineering.



Requirement Driven Vehicle Packaging Validation

NX 6 Project Detail



Capability in NX 6

Consolidate validation functions in each wizard and group checker under “Checks” folder in Model Navigator

Validate requirements (standards, etc) stored external to NX (spreadsheet, XML, TCSE and TC) in vehicle packaging study

Provides an easy and consistent interface to access validation results within TC and NX

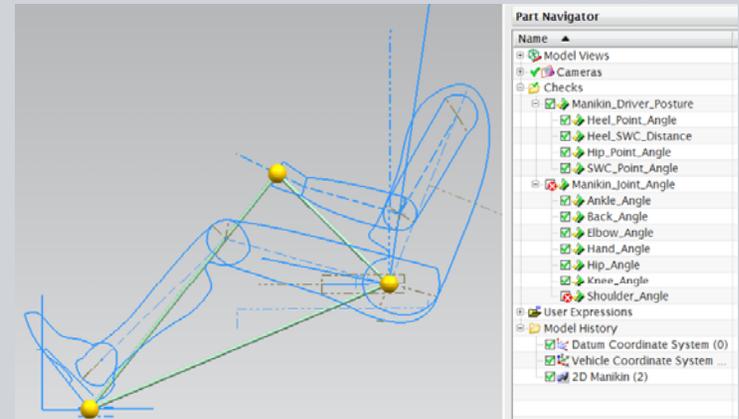
Why is this important to you?

Provide flexible toolkit and consistent requirements in vehicle development process

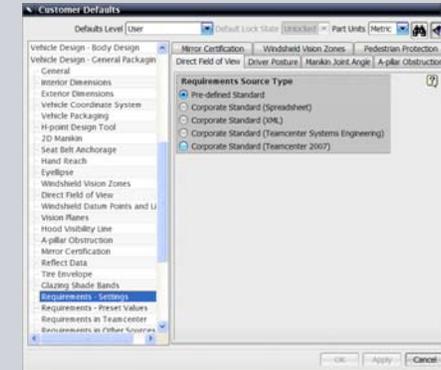
Complete management of knowledge based vehicle packaging study

Make the requirement easy accessible and manageable

NX Checks created in Model Navigator



Define Requirements Source Type in Customer Defaults



Thank you!

