Work Instruction

015 Research + Development

SmarTeam Data Exchange Methodology

W_015_006

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1 Purpose

The purpose of this work instruction is to support CATIA V5 / *NX*-SmarTeam users at GRAMMER AG and to present/describe a standardised definition and procedure for the exchange of CAx data with the PLM system SmarTeam.

2 Scope

This work instruction applies to all GRAMMER Group companies as well as to external partners that are part of the GRAMMER Groupôs design/development process and create data for the GRAMMER Group in this context or provide the GRAMMER Group with such data.

This work instruction contains specifications for data generation and management using the *Team Data Management* system SmarTeam in connection with the CAD system*s* CATIA version 5 (CATIA V5) *or NX* in the GRAMMER Groupôs Design department. This work instruction also applies to all departments within the GRAMMER Group that are involved in the PLM process.

Upon entering into force, this work instruction shall replace all previously valid work instructions / directives on this subject. The following applies to the application of the new work instruction and the expiry of the previous work instruction:

- For õongoing old projectsò, the rules specifically defined for that project shall apply. If such rules are missing completely or in part, this work instruction shall apply where necessary.

- If there are definition gaps, in case of doubt the rules applicable up to now as well as implemented methods shall apply in these situations.

3 Terminology

CATIA/*NX*/SmarTeam-specific descriptions of functions are written in italics.

RMB	Abbrev.: **R**ight **M**ouse **B**utton -> to access shortcut menus, for example
LMB	Abbrev.: **L**eft **M**ouse **B**utton -> e.g. for selecting objects
SmarTeam	Software for managing CAx data documents from CATIA V5 *and NX*
PDM	**P**roduct **D**ata **M**anagement System for managing data, e.g. from design

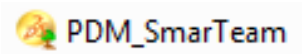
4 Responsibilities

The implementation of and compliance with this work instruction are the responsibility of the vice president R&D; queries should be addressed to the R&D Engineering Services Team.

5 Description

5.1 Prerequisites for data exchange with SmarTeam

In principle, it is only possible to access the data exchange process from a ñcurrentòCATIA/*NX* - SmarTeam session or to launch it with its own SmarTeam session. *If there is no active SmarTeam session, you can start this in the ñCAD start menuò*



5.2 Description of MDTVISION.DEX (DEX)

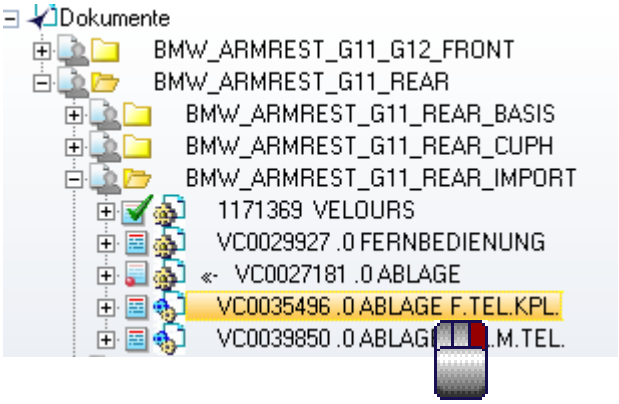
DEX is a tool that is fully integrated into SmarTeam - it is not possible, for example, to define a batch process for this tool outside/without SmarTeam.

DEX can export different formats and import native (Catia/NX/JT) data.

5.3 DEX in SmarTeam

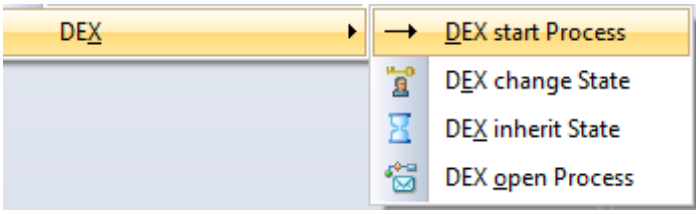
The TPDM Data Exchange toolbar is disabled (greyed out) in the project view of the SmarTeam Editor - functions cannot be launched.

It is only once the document view has been accessed and a document selected that the function buttons are activated.



Here is an example in the Catia V5 structure tree! (Symbols in the NX structure tree are different from the Catia V5 symbols, but the procedure for the DEX process is identically.)

DEX can also be executed using the RMB menu.



Start DEX process Starts the data exchange process

Change DEX status (only DEX Export)

Use this to change the data exchange status of a file. The possible status definitions include the following:

- ñ ñ (no characters in front of the part number) Data is sent only for information. This data **cannot be re-imported**!
- -- Only for drawings so that they are also read out. This icon is automatically deleted after the export.
  (only possible when 3D and 2D have the same part number)
- -->> Data is read out for versioning and is **locked to prevent internal editing**. The data is versioned during the import.

Pass on DEX status

Transfers (inherited) the DEX status from the top product to child documents (only parts and products)

!!! In the case of released data, a change process must be initiated beforehand!!!

Export drawings

All drawings of single parts and subassemblies are also exported for info (identified with ñ-ñ).

!!! Works only if the product is marked!!!

Open DEX process

Opens the view for the last data exchange process that was executed with this document. If DEX has yet to perform a data exchange with the document selected, no window/dialog will open when this button is pressed.

5.4 DEX Export

1. Search for the document in SmarTeam.

2. With the LMB, mark the data set to be exported.

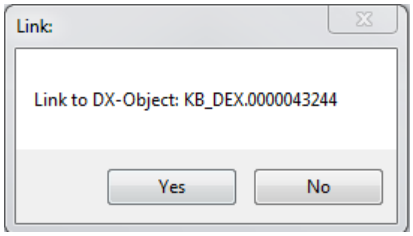
3. Generate the export process with the Arrow function button → from the TPDM Data Exchange workbench or using the RMB.

4. Use the **Change DEX status** function to change the status of the individual documents.

   (The DEX status only needs to be changed when the data is exported for editing.)

 Status: Only the product has been exported as ñchangeableò, the dependent documents (contained in the product) are not to be manipulated.	 Status: The product as well as selected parts contained in the product may be manipulated (red frame). In this example the drawing will not exported. You can change the DEX status and then the drawing will export too.

*If the status of the export data is changed for editing (versioning, **-->>**), the **ñLinkò** dialog window appears.* This must be confirmed by pressing *Yes* otherwise the status will not be changed.

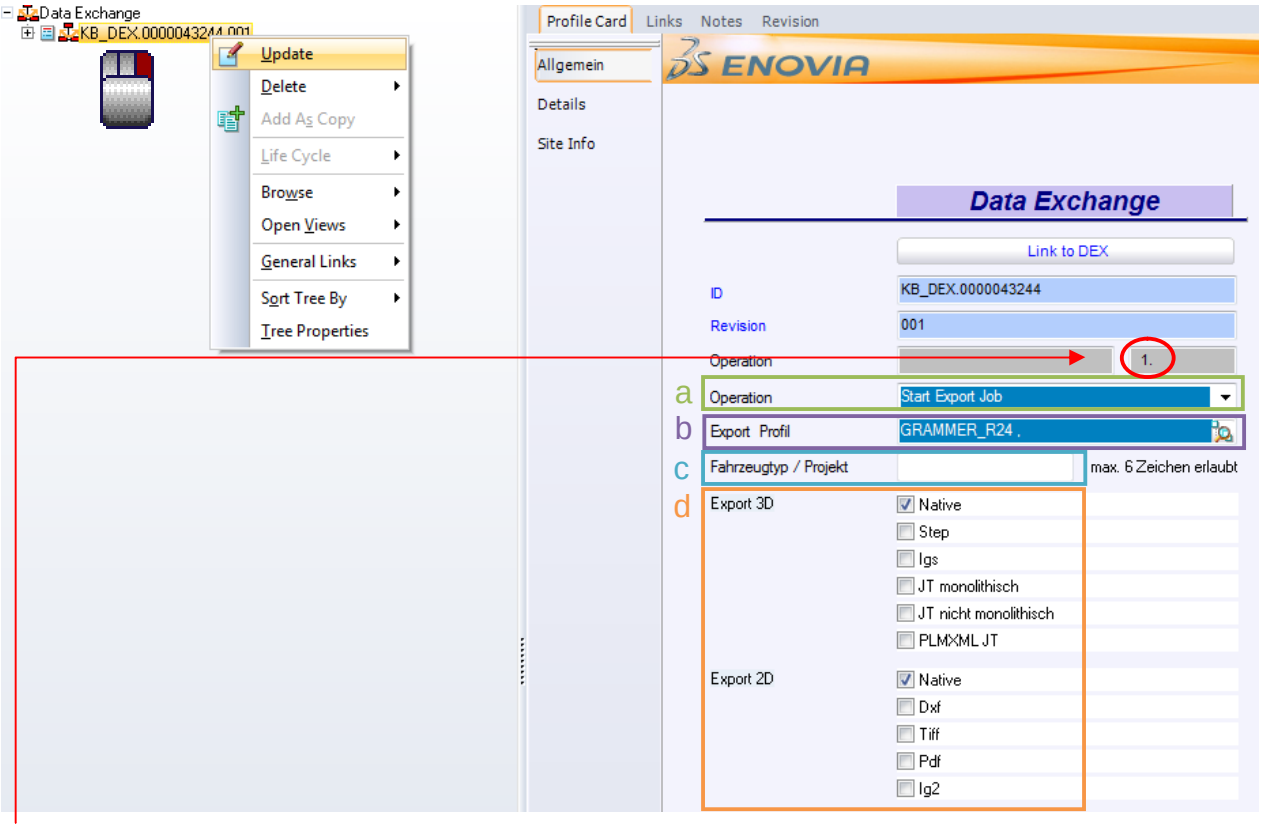


Note:

*If DEX is started by the 3D, the drawing is only automatically exported if the part number of the 3D and 2D are the same and the drawing status is set on information **ñ-ñ** When DEX is started from the drawing, the 3D data will automatically export (only for information).*

5. Activate the export process, right-click on the DEX process and select the *Update* function.

a) Configure Operation to *Start Export Job*
b) Select DEX profile *(e.g. VWKON_X, BMW_X, GRAMMER_X,...)*
c) Enter the project, if applicable
d) Select 3D / 2D export formats
e) Confirm by pressing OK *(bottom right)* → this starts the process



INFO:
This indicates the position that the DEX job is in on the server for processing purposes!
1. = in progress, 2. = in 2nd position, é

JT formats

JT monolithisch → *Product as one JT file*
JT nicht monolithisch → *Assembly and parts each one JT file*
PLMXML JT → *PLMXML with associated JT files (only for Daimler)*

Note:

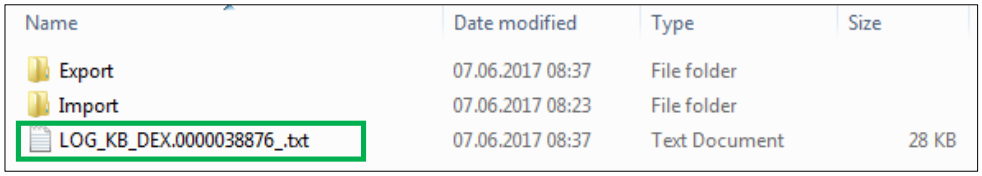
Once the data has been exported, the DEX initiator receives an e-mail notification containing the link to the export data!

\\HASSNAS2\DEX_KB$\KB_DEX.0000038864

Export completion is also now displayed in the ñStatusòfield (can be updated using the F5 key).

It may take some time to run the process.
The length of time is dictated by the volume of data and the number of orders for export and import.

For each DEX job, a log file is stored under "Link to DEX".



Name	Date modified	Type	Size
Export	07.06.2017 08:37	File folder	
Import	07.06.2017 08:23	File folder	
LOG_KB_DEX.0000038876_.txt	07.06.2017 08:37	Text Document	28 KB

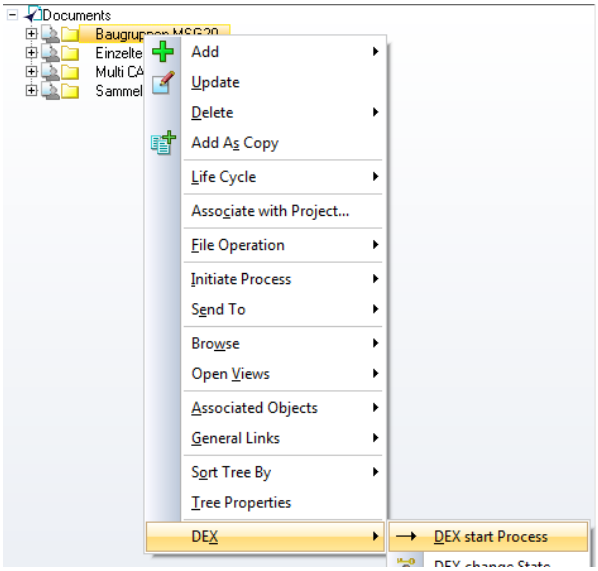
The data exchange process is logged in the "log file". Any errors are entered here. In addition, in case of an error, the DEX initiator will be notified by e-mail.

When you export Catia-, NX- and JT-data, a parameter is automatically written in the models. This is important for the import process. Therefore it may not be copied, deleted or changed.

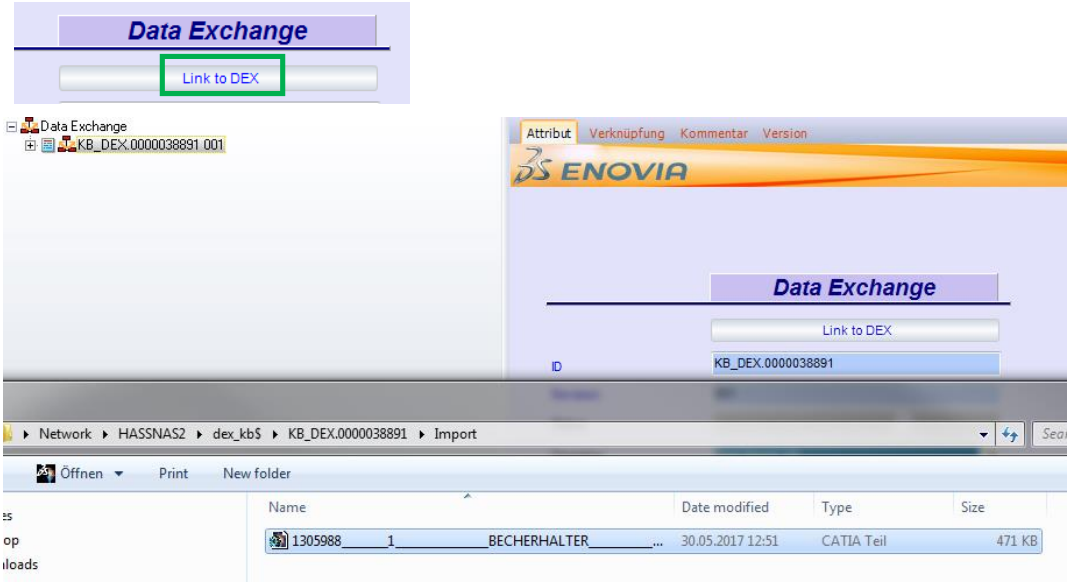
5.5 DEX Import

The import for versioning data only works with data exported by means of an export process with the DEX status ñ->>ò(exported, for editing).
Any import data that does not have this DEX status, they will created new in SmarTeam with a *test number.*

1. *Start empty DEX process. Mark the folder in the project in SmarTeam to which the imported data should be linked automatically.*

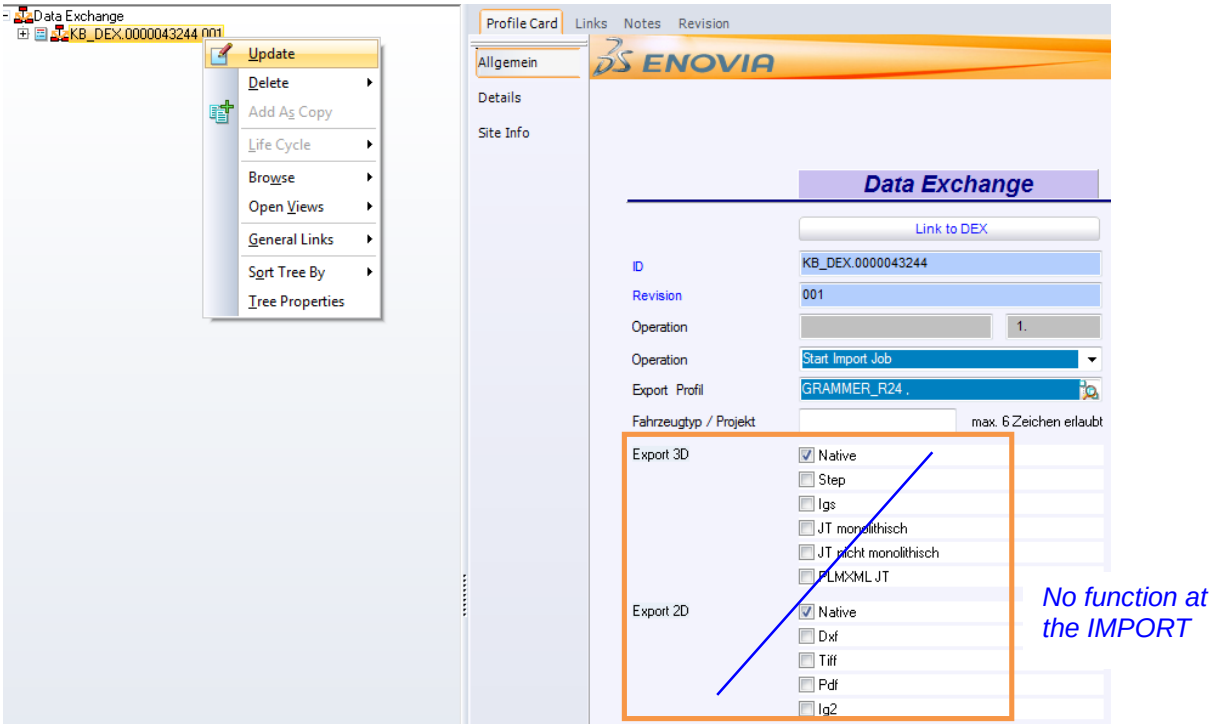


2. Click on "Link to DEX" and save / store the data that you want to import in the import folder.

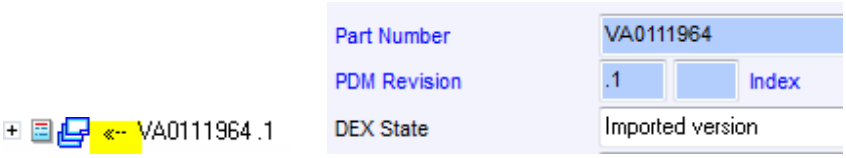


3. ñUpdateòthe DEX process to start the import job.

- Change operation (Start import Job)
- Select DEX profile *(e. g. VWKON, BMW, GRAMMER_XX_Standard, ...)*
- Confirm with OK → The import process starts.



Note:
An e-mail notification reports the successful import!
The DEX status is now switched to "Import Done" (can be updated using the F5 key) *and the data can be edited internally again.*



5.6 Creating start models *(only possible in Catia V5)*

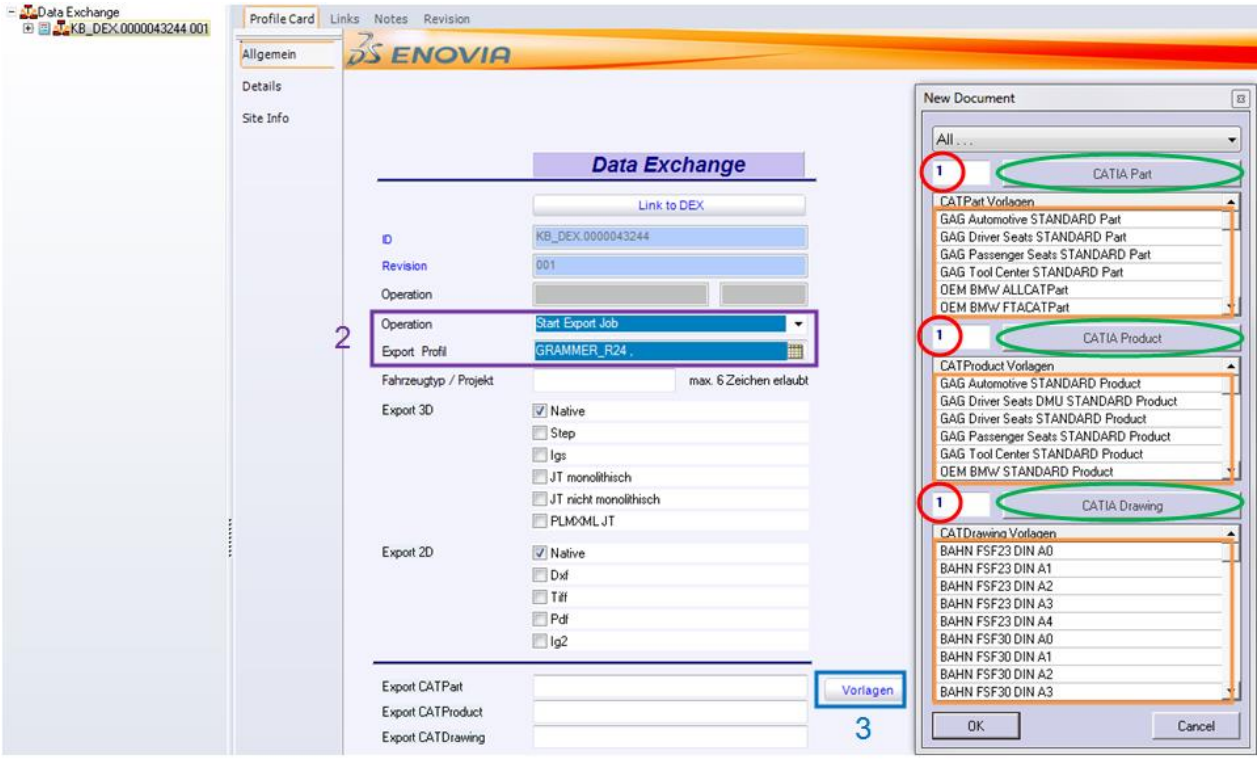
Empty starting models with DEX parameter (ONLY GRAMMER environment):

1. *Start an empty DEX process. Mark the folder in SmarTeam in the project to which the empty start models are automatically to be linked.*

2. ñUpdateñ the DEX process
   - *Change operation (Start Import Job)*
   - *Select DEX profile (GRAMMER_XX_Standard)*

3. Click on ñTemplatesñ

4. In the window ñNew Documentsñ select/mark accordingly *and confirm with òOKñ*
   f) Number of documents
   g) Type of documents
   h) Templates



5. After selection, start the DEX process with ñOKò

After ñExport Doneò, the empty start models are marked in SmarTeam *with the status ñExported for editingò* and can be copied away from the export folder.
The DEX parameter is already entered in the empty models.

The DEX parameter is important to the import process. Therefore it may not be copied, deleted or changed! Also the start models may not be copied!

6 Applicable documents

SmarTeam Basics	*W_015_015*

7 Changes

Document also extended to NX
Contents inserted
Point 5 completely revised
Applicable documents exchanged