Innovations in V6.5
Consolidation

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IQ Software: Update tutorial

This seminar is to provide the participants with an introduction in the material innovations of version 6.5 compared to the previous version 6, which allow for an even more effective use of the already known software features. For this purpose, it is urgently required for the participants to already have a basic knowledge of how to operate the IQ Software (V6). The tutorial therefore does by no means claim to fully explain the IQ software systems. For further information on the operation of IQ software systems, please refer to the software's help function. Handling of the software's help function in general requires basic knowledge of the IQ Software terminology.

You will find more details on other seminars and workshops on the internet at http://www.apis.de/en/training.

The present document is intended for you to study privately in addition to the seminar. You can take your time to read about the core issues from the seminar and implement them together with what you have already learned in your daily work. It is recommended that you take your own notes during the seminar.

Our lecturers always try to promptly answer questions arising during the seminar. So there will be changes in the course and content represented in the documents, depending on the respective training situation. You should therefore make your own notes as already mentioned.

Should a slide or presentation be illegible or an explanation incomprehensible, please approach your lecturer immediately.

We would like to remind you to retrieve your voicemail messages at the end of each seminar day – we do not want you to miss any important information.

We wish you success and optimal results in this tutorial.

Note:
The male terminology is used for both genders in this tutorial document, simply to improve readability. The wording used is of course intended to equally address the female participants. Thank you for your understanding.

1 New features for consolidation

1.1 Selection of documents to be compared

In version 6, you can compare on the one hand a clone and on the other hand interface documents (structure interface, variant interface, etc.) with the primary document on the consolidation desktop and finally consolidate them. To select the document to be compared, you had to previously to execute the command for the correct type of document (clone, interface type) (see **figure 1**).
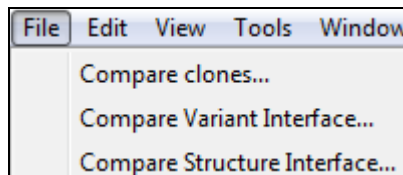
Figure 1: Comparison commands in V6

The IQ Software is now able to automatically recognize the document type. That is why there is just the "central" command called `Open primary document` available (see **figure 2**). When selecting the document to be compared to the selected primary document, the IQ Software automatically recognizes which document types were derived from the primary document and are therefore suited for consolidation.
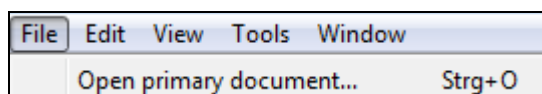
Figure 2: "Central" Comparison command in V6.5

1.2 Display all changes in the consolidation desktop

If you changed an object only in the primary document, but not in the clone or the interface document, these changes were so far not displayed on the `Consolidation desktop`. Now it displays these changes as well (see **figure**).

1.3 Decidable conflicts and filter option

So far, you could decide the two conflicts `Conflicting change in a scalar attribute` and `Deleted object` within the scope of consolidation. As of version 6.5, the deletion of the object (`deleted object`) that was executed in the secondary document **cannot** be prevented by deciding against it.

Regarding the conflict `Conflicting change in a scalar attribute`, the decision is not made via the context menu anymore, but by ticking the respective value in the bottom section of the *Details of differences* view (see **figure**). In the example, the value *S = 5* of the secondary document was chosen by double-clicking on the corresponding checkbox.

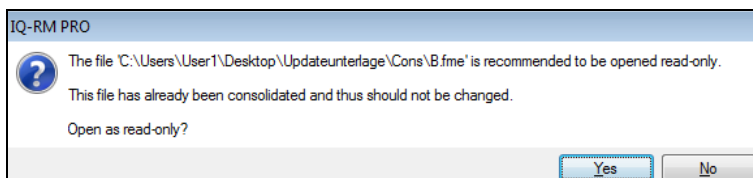| Changes	Cho-sen va-lue	Type of change	Primary document	Cho-sen va-lue	Original value	Cho-sen va-lue	Type of change	Secondary document
					Object comparer			12.07.20
APiS Informationstechnologien GmbH			**Changed object (Failure):** TE **Changed in primary document:** File name: C:\Users\User1\Desktop\Updateunterlage\Cons\B.fme Creation date: 12.07.2013 13:11:54. Modification date: 12.07.2013 13:12:41. **Changed in clone document:** File name: C:\Users\User1\Desktop\Updateunterlage\Cons\B_cloneQXLRXS8KZ8F.fme Creation date: 12.07.2013 13:11:54. Modification date: 12.07.2013 13:12:52.					
(≯) Severity	☐ 🗎		9	☐	10	☒ 🗎		5

When comparing the documents to be consolidated on the `Consolidation desktop`, you should at any rate check whether **decidable** conflicts are available and decide them. To facilitate finding these conflicts, a new checkbox was integrated in the upper toolbar of the `Consolidation desktop`, which contains among others the filter `Show only differences that have to be decided` (see **figure**). This will display the changes on the `Consolidation desktop` to be decided upon.

<No Filter> ▼
<No Filter>
<Show only differences that have to be decided>
<Show conflicts only>
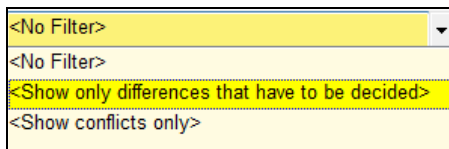
1.4 Read-only recommendation

After the consolidation, the primary document as well as the secondary document (clone, interface) looses its relevance. Both cannot be consolidated with the consolidation result, but furthermore (largely) edited like a normal `fme file`. Thus, there is the risk that a user edits these documents with the purpose of later consolidating them again.

For that reason, version 6.5 automatically sets a so-called *Read-only recommendation* for both documents after the consolidation. When opening the respective document again, the following dialog is displayed (see **figure**).

IQ-RM PRO

❓ The file 'C:\Users\User1\Desktop\Updateunterlage\Cons\B.fme' is recommended to be opened read-only.

This file has already been consolidated and thus should not be changed.

Open as read-only?

[Yes] [No]

When confirming the dialog with `Yes`, the document will be opened with read-only access, i.e. you cannot change it. If you confirm the dialog with `No`, you deliberately override the recommendation and have write access.

1.5   Different strategy when handling certain conflicts

The consolidation behavior was changed for two conflict situations in version 6.5. These changes will be explained in the following.

1.5.1 Inconsistent changes in structure variants

An inconsistent change of a structure variant is available, if the same object of a certain structure variant is deleted in the primary document and assigned with a new attribute value in the secondary document.

In version 6, this object was hidden in the respective structure variant in the consolidation result. Version 6.5 preserves this object with the new attribute value in the respective structure variant.

1.5.2 Exceptions to the principle: Change takes priority over deletion

As regards the consolidation, the general principle still applies in case of conflicts that the change of an object takes priority over its deletion. However, there are now the following exceptional cases, in which the object will be deleted:

- Only an attribute value of an object was deleted (e.g. S-rating).

- A dependent object of an object was deleted (e.g. function of a system element).

- Connections of the respective object were deleted in the net or the graph (e.g. a cause of a failure was deleted).

- Dependent objects were moved from one object to another object (e.g. function moved from *system element 1* to *system element 2*).

1.6   "Consolidation" category in the suggestion list

As already mentioned (see chapter **Additional concept of operation: Suggestion list**), you can enable a suggestion list on the right side of various editors, which lists the available and unavailable commands in different categories. Which categories and which commands are listed, depends on the current focus object. So there is a category called *Consolidation* (see **figure**) to be able to quickly access the respective commands.
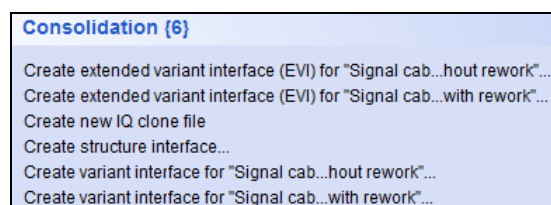

Depending on your data set (e.g. available structure variants) and the selected object, it contains among others the commands `Create new IQ clone file`, `Create structure inter-face`, `Create partial structure interface`, `Create variant interface`, and `Create extended variant interface (EVI)`.

1.7 Extended variant interface (EVI)

If you create a `variant interface` in the previous versions, an `fme file` is created, which contains the respective structure variant **as a structure**. The user cannot see therein, whether an attribute value (e.g. S-rating) originates from the mother structure or is a variant-specific value.

That is why you now have the possibility to create a so-called `extended variant interface (EVI)`. An `fme file` is created, which contains the mother structure with the mother values as well as the corresponding structure variant with the variant-specific values (see **figure**).
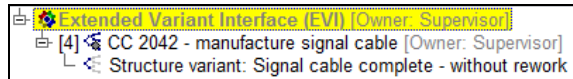
The other structure variants are ignored. It is also impossible to see in the extended variant interface, which structure variants contain a certain object and which do not contain it. The file name of the created secondary document is the name of the structure variant followed by the add-on "(EVI)" in brackets.

If you change attribute values (e.g. S-rating), there are two possibilities with different effects on the consolidation result. If you change the attribute value in the **mother structure of the EVI**, then this value will be passed onto all structure variants that have no variant-specific value for this object. You can thus benefit from the inheritance and save the labor. If you change the attribute value in the **structure variant of the EVI**, then this becomes a variant-specific value without any effect on the mother structure or other structure variants.

Please note that objects that are newly defined in the **mother structure of the EVI** as a result become only content of the mother structure and the structure variant of the EVI, but not content of the other structure variants. This is **different behavior** than in the conventional handling of the variant concept!

1.8 Editing restrictions

Feedbacks from users of consolidation have shown that it is required to revise the editing restrictions of the documents to be consolidated. The following lists the current restrictions for the different documents.

1.8.1 Restrictions for primary and secondary documents with file extension *.fme

- No deletion of a content language

- No changing of the reference language

- No versioning of structures and/or FMEA forms

- It is impossible to generate a clone and an interface document from a primary document *at the same time.* If a primary document already has a clone, other clones can be generated, but will not become interface documents. If a primary document already has an interface

document, other interfaces (for other structures or structure variants) can be generated, but no clones.

- It is impossible to generate a new structure interface for a certain structure, if there is still an open structure interface available for this structure. Similarly, you cannot generate a new variant interface for a certain structure variant, if there is still an open variant interface for this structure variant.

- No new root element in the structure tree

- No export or import of structures (`*.exp`)

- No deletion of an available project, an available structure and/or available structure variant

- No deletion of entries in the following **`Data Manager`** categories: *user-defined attributes*, *machines*, *inspection equipment*, *notes categories*, *function categories*, *categories of action groups*, *symbolic responsibilities* / *symbolic deadlines*

- No merging of types in the catalogs

- No removal of status *Is global action* for a preventive and/or detection action

- No removal of status *Is global failure* for a failure

- No change of set behavior of the **`document settings`** `Initial state must have responsibility person` and `Initial state must have a deadline`

1.8.2 Other restrictions for secondary documents with file extension *.fme

- No change of access rights for individual structures

- No change of owner of a structure

- No change of personal data (e.g. telephone, department, etc.)

- No deletion of persons

- No generation of clones or interfaces

- No change of entries in the Data Manager categories: *Palette for classification*, *Palette for Process Flow Diagram*

- No automatic generation of actions from error detections and/or error responses

1.8.3 Not consolidated changed in secondary document

The following changes in the secondary document are not applied to the consolidation result:

- Changes of available filters and newly created/deleted filters

- Meeting logs

- Changes in the `document settings`

- Changes of entries in the `Data Manager` category *User-defined strings*

1.8.4 Restrictions for interface documents with file extension *.fme

- No creation of unanchored functions and/or failures

- No deletion of available forms (e.g. FMEA form, Process Flow Diagram, control plan)

- Available unanchored objects from the `Function/Failure Analysis` editor cannot be dragged and dropped

- If not all occurrences of a type entry are part of the interface document, you can neither change the *name* nor assign or remove the global status (`Is global action` or `Is global failure`).

1.8.5 Restriction in primary document of a variant interface

- If there is still an open variant interface, it is impossible to remove an object of this structure variant from the variant in the primary document.