



## **IBM® Rational® DOORS® Requirements Management Framework Add-on (RMF) 6.1.0.3**

June 14<sup>th</sup>, 2013

Some previous versions of this product were delivered by Telelogic as an Asset named DOORS T-REK.

Any previous installed version (either of DOORS T-REK or RMF) must be uninstalled before installing IBM® Rational® DOORS® Requirements Management Framework Add-on 6.1.0.3.

Whenever RCM was used, please remove all the RCM triggers before uninstalling DOORS T-REK.

The FLEXLM feature required to execute IRDRMFAO is different from the DOORS T-REK license feature. The new feature is "IRDRMFAO" (instead of "DTREK").

### **Corrections implemented in RMF 6.1.0.3**

| <b>Component</b>        | <b>APAR</b> | <b>Description</b>  |
|-------------------------|-------------|---|
| Create/Tag a RMF Module |             | The synchronization of a module may hang while copying a view containing a very complex filter. This issue also exists in the command "RMF > Tools > Copy Views".   |
|                         |             | The new function API_CreateTagModule is available in addins\irdrmfao\includes\api.inc and documented in the "RCM & PFM API" manual.   |
| Dashboard               |             | Enable to export the DXL based metrics (called "data").   |
|                         |             | The exported Excel file is not closed (regression introduced in RMF 6.1.0.2).   |
| DOC                     |             | A new script is provided to demonstrate how to generate all the master modules of a RMF/DOC document version by script (without using the 'manage documents' USER INTERFACE) (addins\irdrmfao\misc\wexp\docwexp.inc).   |
|                         |             | The "Generate" window now opens faster as the master modules are not loaded beforehand anymore.   |
|                         |             | In the "Generate" window, the WEXP parameters of a master module sometimes are not recorded. It can happen if slave modules are in the list of the modules of the document before the master module and if the modules after the master module are not checked in the list of master modules. |
| Exchange                |             | The import of a view throws a DXL error (null Array) if there are no columns in the view.   |
| lib_no_irdrmfao.zip     |             | Prevent errors due to RMF persistent triggers when editing, without RMF, some modules created using RMF. (This is the purpose of the file lib_no_irdrmfao.zip which is available in   |

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|               |  | /irdrmfao/misc/addins).   |
| Miscellaneous |  | The command "Tools > Save link attribute" makes DOORS 9.2 crash if the attribute selected already exists but is not a module attribute. This issue does not exist with higher versions of DOORS.  |
|               |  | The script "show-inlinks.inc" may sometimes not display some incoming links.<br>This script is useful to quickly create a layout column displaying some incoming links. It is available both in addins\irdrmfao\layout and irdrmfao\libviews\traceability_column.   |
| RCM           |  | New usercallout functions RCM_UC_createObject and RCM_UC_modifyObject called when creating a new controlled object or a new version of a controlled object respectively (defined in addins\irdrmfao\startup\usercallout\rcmusercallouts.inc).   |
|               |  | The usercallout function RCM_UC_deleteObject now preserves the OLE and rich text formatting when striking the text (and semantic attributes) of a new deleted version of a controlled object.   |
|               |  | Whenever a descendant of a composite object in reference has been moved, the RCM check now moves it back correctly. Since version 6.0.0.3, it used to moved it after the root object instead of below.  |
|               |  | In the "suspect links" management USER INTERFACE, the command "File > Display log" may display an empty list when the log file is too big.  |
|               |  | Two improvements on the management of suspect links :<br>1) keep the item selected in the explorer after running the command 'create new version' and warn the user that a new version is created only for the selected object.<br>2) record a message in the log when the modification are saved or rejected (by closing the module without saving). |
|               |  | If the RCM check is run when opening a module (which occurs if the module was previously closed using the command RCM > Close), then a message « no modifications on the composite objects have been detected during the check » may be displayed even though the check actually repaired some composite objects.                                     |
| WEXP          |  | Faster export, especially during repagination, and the default values of the advanced parameters have changed to speed up the export.   |
|               |  | Change in the advanced options: the option "OLE objects are compatible with DOORS 5 data format" has been removed and it is now possible to specify the "number of objects after which to save Word document" (this option replaces the option "Save Word document during generation").   |
|               |  | It is now possible to place the tags <<OLE Object>> and <<Picture Object>> in a table within an object template.  |
|               |  | Some DOORS tables may sometimes not be autofit to the page width correctly.   |
|               |  | New object attribute "WEXP OLE as WMF Picture" enabling to export an isolated OLE contained in the "object text" as a WMF   |

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|  |  | <p>Picture on a per object basis. This attribute overrides the global options.<br/>It complements the already existing object attribute "WEXP OLE Inline".</p>   |
|  |  | <p>The export may stop at the very beginning if the "Protected View" security option is enabled in MS Word and the template is not on a local drive.</p>   |
|  |  | <p>If the option "Export isolated OLE objects as Inline data" is enabled then the tables contained in isolated MS Word OLEs are now autofit (using the setting for inserted views).</p>                                  |
|  |  | <p>Let the value of the attribute "WEXP Export Style" override the option "Export inserted views in table format as RTF files by default" so that one table can be exported directly though the default mode is RTF.</p> |

## Corrections implemented in RMF 6.1.0.2

| Component                          | APAR    | Description   |
|------------------------------------|---------|---|
| Compare Module / Transfer Analysis |         | The option "add dynamic history column" should be disabled if the user does not have the required access right to create an attribute in the module.  |
| Dashboard                          |         | The dashboard does not export the right baselines when selecting the baselines to be exported according to their date of creation (using the option "Select by date" in the baseline tab).  |
|                                    |         | The sub-menu "RMF > dashboard" is not visible in a new dashboard just after its creation. The module has to be closed down and reopen for the sub-menu to be visible.   |
|                                    |         | After having edited an export definition, it may disappear from the list of export definitions.   |
| Data model                         |         | Support background coloring by attribute in columns (new feature in DOORS 9.4) when synchronizing a module with its template.   |
| DOC                                |         | Ability to discard the hidden Change Requests when generating the history of the modifications made between two DOC baselines.  |
|                                    |         | DOC now enables to define document properties based on attributes of any type (not just string or text). Besides the references to a document property (<<document property>>) are now case insensitive.  |
| Manage Objects                     |         | Enable to enter a rationale when creating a new controlled object and record this text in the attribute "RCM Justification" of the impact object in the CR.   |
|                                    |         | New usercallout function called when clicking a button in the manage objects dialog which enables to prevent the related operation. This new function is named UC_preClickButtonManageObject and defined in addins\irdrmfao\startup\usercallout\usercallouts.inc. |
| Migration Rules                    |         | The new rules SETOBJRICHATTR and SETMAINOBJRICHATTR preserve formatting (bold, underlined,...).   |
|                                    |         | When some pieces of text are concatenated using the rules SETOBJATTR and SETMAINOBJATTR, a line break should be used as a separator if the attribute type is "Text".  |
| Miscellaneous                      | PM78512 | Installation of RMF can result in bad performance when opening the Manage Users dialog.   |
|                                    |         | RMF commands should not generate a DXL error whenever the definition of an attribute, type or view cannot be modified due to restricted access rights.  |
| RCM                                |         | When the status of a CR changes from "completed" to "in progress", the controlled objects impacted that was "suppressed" are then no longer flagged as "suppressed". They should remain "suppressed".   |
|                                    |         | If the project is configured to enable links toward objects in working to be suspect, then such a link should be suspect again if the object  |

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|      |  | has been modified after the link was created or after its suspicion has been cleared.   |
|      |  | The "RCM suspect links" user interface now enables to select several suspect links and to process them in batch (clearing, transferring or duplicating them). It also records all the actions taken into a log and displays the differences between the current target of a suspect link and the new version(s): modification of the attributes (semantic or not) and creation / deletion of links.           |
|      |  | When a CR is synchronized, the attribute 'Object Text' of the impact objects is now updated to reflect the possible change of the PUID of the impacted object.  |
| WEXP |  | Do not change the orientation (to "landscape") of all the sections at the end of the document if the last section generated is set up to the orientation "landcape".  |
|      |  | Objects configured to be exported as a table row (by setting the name of a view in the attribute "WEXP View Name") should not be exported if they are not displayed in this view.<br>Furthermore, if the attribute "WEXP View Filter" is also set (with the name of another view), then WEXP should check if the objects are visible in this other view instead and export only the objects that are visible. |
|      |  | The WEXP spooler fails to launch a job if the pathname where RMF is installed contains accented characters.   |
|      |  | When inserting a section break and changing the page orientation, WEXP does not preserve the top and bottom margin.   |
|      |  | Sometimes index are not correctly updated.  |
|      |  | Ability to include shapes in object templates.  |
|      |  | The spooler sometimes aborts the export job for no reason.  |
|      |  | The spooler should check the actual status of a job before sending a notification as it sometimes sends a notification with the status "SUCCEED" instead of "FAILED".   |
|      |  | The bullets exported by WEXP on DOORS 9.5 do not have the usual look.   |

### Corrections implemented in RMF 6.1.0.1

| Component         | APAR | Description  |
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| Configure Project |      | The Project Configuration fails if at least one of the custom attribute types "RCM Control Mode", "RCM Repair Link Modification" or "RCM Suspicion Actions" are missing in the Project Profile with the error -R-E- DXL: <addins/irdrmfao/menu calls/project/config_p.dxl:477> unassigned variable (err).  |
| Dashboard         |      | The metrics of type "Evolution" and "Stability" should take into account the objects created as a copy.  |
|                   |      | The metrics of type "Count Links" and "Count Linked Objects" do not take into account the incoming links from modules that are not open.   |
|                   |      | An error may occur when creating a view if the inserted metric has just been created.  |
| Data model        |      | Update the generic datamodel so that the PUID DXL column do not generate an error if the attribute IE PUID is missing.   |
| DOC               |      | The export of several modules to MS Word may stop with a DOORS diagnostic log.   |
|                   |      | Reduce the time needed to start the command "RMF > Manage Documents" on big projects.  |
|                   |      | Reduce the time needed to start the command "RMF > Manage Documents" and make updates for big document indexes by reducing the time to compute checksums.<br>PLEASE NOTE that the existing document index modules MUST BE UPGRADED by a user with the role DOC Admin. To do so, please either run the command "RMF > Manage Documents" and browse all the document index modules one after another or run the script %RMFHOME%\irdrmfao\misc\migration\migrate-doc-index.dxl |
|                   |      | When exporting a module from DOC, the RCM filter chosen is not taken into account if the user has selected "Load from module" then clicked the button "module parameters" and then clicked "OK".   |
|                   |      | Record the document versions that each RCM controlled object belongs to in a new attribute "IE DOC Versions" each time a document is baselined.  |
|                   |      | Before deleting a document, DOC should make sure that the user has the required power (manage database) to delete a baseline. If not, DOC shall warn the user and let them decide whether to delete the document without deleting the baselines or abort.  |
|                   |      | Add two new usercallouts, one called before and the other after baselining a document. These functions are defined in the new file addins\irdrmfao\plm\includes\doc\docusercallouts.inc.   |
|                   |      | Prevent the history of doc index modules from growing disproportionately by not recording the modifications of the attribute "DOC View Descriptions" in the history any more and by automatically baselining a doc index when it contains more than 1000 history entries.  |

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|                        |  | Make the action "Refresh References" (in the Administration window) more efficient by updating the checksum of only the objects that have been modified.   |
|                        |  | The command "Generate History of Document" now also enables to ignore the modification whose Change Request is hidden.   |
| Exchange               |  | Do not "restore folders" when loading the header file but when actually importing the modules.   |
|                        |  | When importing, the objects containing OLE should not be flagged as modified when the OLE have not changed.  |
|                        |  | Exchange may update enumerated attribute incorrectly if the order of the labels in the enumeration is different in the module as compared to the XML.  |
|                        |  | Exchange does not update an attribute type if its name is not the same as in the XML.  |
|                        |  | Errors such as "ERR:attributeDefinition 'Absolute Number' error in creating attribute definition" may be reported in the log while importing. Those errors can be discarded as the import is correct anyway. They occur on system attributes whenever the locale of those attributes is different in the source database.                      |
| Install /<br>uninstall |  | If Office 2010 64 bits is installed, RMF fails to copy the file irdrmfao.dot in the startup directory of Office and displays the error message "irdrmfao.dot error - Couldn't locate MS Office".   |
| Miscellaneous          |  | Whenever the access rights configuration changes on a project, some users might experience a DXL error (R-W- DXL: <addins/irdrmfao/startup/tpi.inc:1213> no access to read attribute 'Object Heading').<br>This error will not occur with a Project Index module created with this Fix Pack (using the command 'RMF > Explore > Manage Index). |
| Patch-puid.dxl         |  | The script patch-puid.dxl may incorrectly modify the PUID DXL column if it is run several times on the same module.  |
| RCM                    |  | Display the "Manage RCM" user interface faster on big projects.  |
|                        |  | The Project Index module is left unsaved and open in the background when setting or unsetting a module of a sub-project under RCM control.   |
|                        |  | When changing the status of a Change Request, the following error may occur: -R-E- DXL: <addins/irdrmfao/plm/gui/crgui.inc:430> unassigned variable (RCM_ManageCR_ListDbe).  |
|                        |  | Make it possible to create a new version after a version "tagged as suppressed". This new version is created as a copy of the version just before the "suppressed" one.  |
|                        |  | If a CR is not assigned, make sure that anyone has sufficient access rights (RMCD) to work on the CR.  |
|                        |  | New callbacks called before and after changing the status of a Change Request (defined in addins\irdrmfao\startup\usercallout\rcmusercallouts.inc).  |

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|                    | PM65534 | The RCM check now fully supports the modification of a composite object in reference by a RCM Administrator except the purge of a child object which is still not handled. You can add, move in, move out, reorder or, delete child objects.   |
| WEXP               |         | The export of an inserted view in book mode may fail on MS Word 2010.  |
|                    |         | When exporting a big module, it is recommended to enable the option "Save Word document during generation". WEXP now also closes and reopens the exported document periodically when this option is enabled to prevent MS Word from generating errors. You can change the period (number of objects exported) by editing the file addins\irdrmfao\wexp\include\userdefs.inc. |
|                    |         | Small DOORS tables are sometimes not autofitted when using the [Autofit table to width of page] setting.   |
|                    |         | The command "Extract words from OLE" leaves the temporary Word document open if the option "Process only the current object" is checked.   |
|                    |         | WEXP may export a text with two bullets if the style applied already features a bullet.  |
| WEXP               |         | The traces displayed by the WEXP spooler on the server side are now recorded in the log file as well (to read the log file, please run "RMF > Manage WEXP Jobs" as a WEXP spooler admin and then click "Monitor" first and then "Log").  |
| Word import macros |         | Faster conversion of tables into OLE.  |

## Corrections implemented in RMF 6.1

| Component | APAR | Description   |
|-----------|------|---|
| Dashboard |      | A DXL error may occur in the file dashboard/layout/statusAlarm.dxl at line 58 using RMF 6.0.0.4 when displaying a view that shows alarms. A workaround consists in running the command "Configure Dashboard" once.  |
|           |      | At the end of an export, Excel is sometimes not refreshed.  |
|           |      | The computation of a metric of type "Evolution" may be incorrect if the ending date is not specified.   |
|           |      | Many baselines may be opened while collecting metrics of type evolution or stability, and therefore it may take a long time if the system runs out of memory. To prevent this, only one baseline is open at a time. |
| DOC       |      | The script "Generate doc history" is not restricted to master modules any more.   |
|           |      | An error may occur when clicking the "Module Parameters" button in the "Generate" window : -R-E- DXL:<br><addins\irdrmfao\plm\gui\DocWexplnit.inc:1156> null Module parameter was passed into argument position 1   |
| Exchange  |      | An error may occur when importing a module with readonly access rights : addins\irdrmfao\startup\exchange\xmldefs.inc:2469> An unexpected error has occurred  |
| PFM       |      | When a new configuration is created, the value of its parameters is empty. They should be equal to those of the previous version instead.   |
| RCM       |      | Changing the status of a Change Request to "Cancelled" fails if at least one impacted object is not composite (has no descendants) with the following error :<br>"addins\irdrmfao\startup\rcm\rcmimpact.inc:977     |
|           |      | When changing the status of a CR to "Cancelled", RCM should check also if the descendants of the impacted object have incoming links and display an error message easier to understand if so.                       |
|           |      | When a non-privileged user runs the command "set to be reviewed" in "manage CR" and does not confirm the action, then the CR is left open in edit mode and not visible.   |
|           |      | When changing the status of a CR check if the CR has been opened in exclusive edit mode successfully.   |
|           |      | To change the status of a CR from "to be reviewed" to "in progress", the "CR manager" role is sufficient: do not require the "RCM admin" as well.   |
|           |      | When changing the status of a CR from "in progress" to "to be reviewed", do not open the impacted modules (in exclusive edit mode) as it is useless.  |

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|      |  | When changing the status of a CR, if an impacted modules cannot be opened in exclusive edit mode, do not display an error message for as many times as there are impacted objects, but only once.   |
|      |  | When changing the status of a CR, make sure first that the impacted modules and the CR are not modified so that they can be closed down to abort the transaction should an error occur. If such a module is modified, let the user decide wether saving it or aborting. |
|      |  | When an error occur while changing the status of a CR, close down all the modified modules without saving in all cases.   |
|      |  | Whenever the status of a CR has changed in another session, RCM may not be aware of it and therefore may not prevent a user from modifying an object whose CR is now "to be reviewed" for instance.   |
|      |  | The RCM check may fail with a DXL error message "null LockRef".   |
|      |  | Let CR modules be resilient to a change in the name of the impacted modules to prevent error when displaying view "11. Delta highlights".   |
|      |  | The code of the RCM triggers can now be edited. It is available in the file startup/usercallout/rcmusercallouts.inc.  |
|      |  | If the user double-clicks a column displaying a semantic attribute (not the main column) and a new version is created, then the value of the semantic attribute is reset for the new version. The RCM triggers need to be deleted and recreated to fix this issue.      |
| WEXP |  | The UI "Manage WEXP jobs" now displays detailed information about the jobs that are inconsistent and allow to delete them instead of simply displaying the error "Some errors occurs when extracting data on waiting/in progress/completed jobs".                       |
|      |  | When the export is sent to the spooler, WEXP should close the process winword.exe spawned when starting up WEXP.  |

## Enhancements implemented in RMF 6.1

### 1) PFM (Product Family Management)

PFM is a solution to manage requirements in a Product Line Engineering context. PFM enables to create a generic definition of a product (or system) with optional parts, alternatives and configurable requirements, and then to derive the actual products (or systems) from it.

PFM also manages parallel developments and synchronization between the generic definition of the product and the actual products.

This version includes the following enhancements :

- Formal Change management over configurable requirements
  - Parameters can optionally be under change control
  - The modification requiring a Change Request are :
    - creation,
    - deletion,
    - modification of the name, value or unit
  - The change requests used must be accepted (or rejected) before a package version can be baselined.
- Business logic exceptions
  - Some consistency check errors can now be discarded by creating exceptions for more flexibility :

| <i>Type</i>  | <i>Property</i> | <i>message</i>   |
|--------------|-----------------|--|
| Criterion    | Constraint      | "violated constraint"  |
| Criteria set | Mandatory ?     | "at least one criterion must be selected"  |
|              | Multi-valued ?  | "at most one criterion can be selected"  |
| Parameter    | Values          | "<value> is not a valid value for the parameter <name> because the condition of the range <range> is not true" |

- Those exceptions are duly managed:
  - the person, date, rationale, error description are recorded
  - exceptions are automatically deleted whenever the related errors disappear
- Reporting the differences between configurations
  - Creates a report showing the differences between two configurations or more
  - The result of the comparison is a MS Excel report, displaying:
    - The objects that are used in one configuration and not the other(s), and
    - a matrix showing (for all the configurations)

- the status of the criteria, and
  - the value of the parameters
- Some metrics (number of RMF objects per type in each module of each package)
- Renaming tool
  - As modules can contain references to Criteria and Parameters, PFM now offers to update those references whenever a Criterion or a Parameter is renamed
    - scans the modules that may contains references
    - displays a report listing all the references found, that can be exported to MS Excel.
    - optionally updates the references. At the end, the report displays a status for each reference, with an error message if the update failed.
- new command “Edit > Move” in the PFM Browser enabling to move items from one package version to another easily :
  - criteria
  - criteria sets (new)
  - parameters
- Performances
  - PFM browser :
    - the PFM browser starts up faster when many data are loaded
    - the window comparing two configurations is displayed faster when many data are displayed
    - for performance reason, parameters are no longer displayed in the treeview but only in the right list when selecting the node “Parameters”. The ‘Properties’ window must be opened to display all the properties of the selected parameter.
  - when modifying parameters from outside the PFM browser (using the PFM info GUI), the changes are saved faster.

## 2) RCM

- When entering in edition mode, RCM now warns that the modification of a semantic attribute will be rejected only if the user has double-clicked a column that actually displays a semantic attribute.  
**NB: You need to delete and recreate the RCM triggers to benefit from this improvement**
- In the previous versions, only semantic links could be suspect. It is now possible to define links in the Project Profile so that they are not semantic but can be suspect though. (Please refer to the user manual §7.3.4 “Add a new relationship” for more details)

## **Known limitations**

- Explorer
  - The explorer is not able to manage a RMF project with too many items inside. The display of projects with more than 500 items will take too many time and memory resources. To cope with this limitation in the context of big projects, you should use the Scope concept to limit the size of the Explorer database, according to the part of the project you want to display.
  - The object graph view may need a large amount of memory and time resources to be processed. You should use this feature only after having filtered the visible items to limit the number of objects to process.
  - The explorer is not dynamically refreshed when database modifications (item creation, deletion, renaming, moving) are done outside of the tool.
  
- Exchange
  - The XML format processing used by Exchange is not very efficient because of the use of DXL script programming and not compiled code. The import operation may take a lot of time and memory resources to process the dataset. For example, the processing of 5000 objects to import will take several hours.
  
- Word generation
  - Because of the architecture of the DOORS to Word generation operation, that needs an instance of Word to process the data, the export of large amount of data may take a lot of time and resources. The amount of resources used is also dependent of the used formats. In case of memory or time limit, you should process incrementally by exporting several smaller dataset.
  
- RCM
  - You should avoid putting under RCM control too many modules within the same operation, because this operation may use a lot of memory. 10 modules should be a maximum, except if you can test before that you may supersede this limit without any trouble.
  - RCM is not able to control table elements (tables, rows, columns or cells), even in “All objects” mode. The only supported case is when a table is a part of a composite RMF object.
  - RCM is not able to control heading objects, even in “All objects” mode or if embedding of RMF objects is allowed.
  
- PFM
  - When creating an insulated package version, the inner traceability links (as opposed to the links with other packages) may be recorded in the same link modules (instead of a copy located in the new workspace) if those link modules are not located in the hierarchy of the package version

- Merge
  - Contextual attributes are not handled
  - Child objects (of composite objects) are not handled