

## **IBM® Rational® Rhapsody® Gateway Add On**



## **FrameMaker Coupling Notes**



***Rhapsody<sup>®</sup>***

**IBM<sup>®</sup> Rational<sup>®</sup> Rhapsody<sup>®</sup>  
Gateway Add On**

**FrameMaker Coupling Notes**



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# Contents

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<b>Contents .....</b>	<b>5</b>
<b>Introduction .....</b>	<b>7</b>
<b>FrameMaker Analysis .....</b>	<b>9</b>
FrameMaker Versions Supported .....	9
Selecting the FrameMaker Files .....	9
Selecting the FrameMaker File.....	9
Selecting the FrameMaker Book .....	10
Specific Parameters of a FrameMaker Based Type .....	10
Adding a Cover.....	11
<b>Requirements Traceability .....</b>	<b>13</b>
Traceability Information in FrameMaker .....	13
Intermediate File .....	13
FrameMaker Files .....	14
FrameMaker Books.....	15
Conditional Tags.....	15
Conditional Texts.....	16
FrameMaker Tables .....	16
Customized Type Definition .....	17
New Type Creation .....	17
Defining your Own Type of Analysis .....	18
<b>Troubleshooting.....</b>	<b>19</b>
Connection Problems for FrameMaker 8 .....	19
Using a Specific FrameMaker Version .....	20



# Introduction

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This technical note describes how to capture the traceability information of requirements from Adobe FrameMaker using Rhapsody Gateway.

Some standard operations, such as FrameMaker books or files import or navigation in the Rhapsody Gateway tool, require the FrameMaker tool to be installed.

Refer to the *Customization Guide* and run the Coupling example for more information about what is described in this technical note.



# FrameMaker Analysis

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This chapter describes how Rhapsody Gateway captures information items from FrameMaker and how these information items are analyzed to be used as requirements or references to higher level requirements.

This chapter covers the following topics:

- ◆ Getting the information items from FrameMaker.
- ◆ Configuring Rhapsody Gateway according to the traceability information in FrameMaker.



## FrameMaker Versions Supported



Rhapsody Gateway supports FrameMaker from version 6 to 10 versions.

## Selecting the FrameMaker Files

### Selecting the FrameMaker File



To insert a FrameMaker file, follow these steps:






1. In the Project editor, click on the **Add a document**  button to insert a new document into the Traceability Description Area.
2. Select a **Type of Analysis** based on FrameMaker.
3. Click on the **File or Directory** field then on the **Browse**  button to select a FrameMaker file (with the `.fm` extension) from the Rhapsody Gateway selection window.

Details   Modification Files   Covers			
	Name	Type of Analysis	File or Directory
	Requirements	 FrameMaker	FrameMaker Demo.fm

## Selecting the FrameMaker Book

To insert a FrameMaker document, follow these steps:

1. In the Project editor, click on the **Add a document**  button to insert a new document into the Traceability Description Area.
2. Select a **Type of Analysis** based on FrameBook.
3. Click on the **File or Directory** field then on the **Browse**  button to select a FrameMaker book (with the `book` extension) from the Rhapsody Gateway selection window.

<div><div>Details</div><div>Modification Files</div><div>Covers</div></div>				
	Name	Type of Analysis	File or Directory	lg
	Requirements Book	 FrameBook	FrameBook Demo.book	

## Specific Parameters of a FrameMaker Based Type

When you select a type of analysis defined to capture information from FrameMaker (either a default type or a customized one), you have the opportunity to define additional parameters:

- ◆ **With attributes**—this option allows you to get FrameMaker attributes in the intermediate files.
- ◆ **Show conditions matching**—this option allows you to use FrameMaker Conditional Texts to display paragraphs or not depending on conditions. Conditions written in the Value field are regular expressions.
- ◆ **With conditional tags**—this option allows you to get FrameMaker conditional tags in the intermediate files.

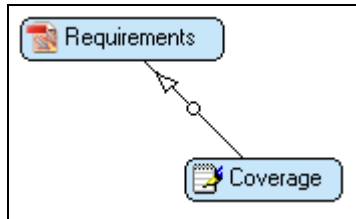
To get attributes, activate the option in the **Value** field.

<div>Details</div> <div>Modification Files</div> <div>Covers</div>								
	Name	Type of Analysis	File or Directory	lg...	In...	Bl...	Variable	Value
	Requirements	FrameMaker	FrameMaker Demo.fm	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	With attributes	<input checked="" type="checkbox"/>

## Adding a Cover

To define traceability, add a cover between the covering document and the covered document.

The Rhapsody Gateway project looks like the following:



Now the traceability analysis of the project can be performed.



# Requirements Traceability

---

There are many ways to enter traceability information in FrameMaker.

## Traceability Information in FrameMaker

Default configuration of the FrameMaker type of analysis considers:

- ◆ Requirements:
  - use the FrameMaker paragraph style “Requirement\_ID”
  - are written using the syntax `<ID> : <requirement label>`. In this circumstance, `<ID>` is the requirement ID and `<requirement label>` is the “title” of your requirement. The title is usually written using natural language. Use a colon to separate ID and Label. If you do not use this colon, all information will be captured as an ID. The label is optional.
- ◆ References:
  - Syntax is `[Covers: <requirements>]`. Use the string `[Covers:...]`, in which `<requirements>` are your requirement ID(s). If you list several requirement IDs, insert a `'` or a `,` between them. For example, use `[Covers: REQ1]` or `[Covers: REQ1,REQ2,REQ3]`
  - If you want, you can create your references in a FrameMaker document already managed by Rhapsody Gateway to cover your higher level document containing requirements. Select a requirement in this document, right-click the requirement and select **Copy For > Coverage** in the contextual menu.

## Intermediate File

Rhapsody Gateway creates an intermediate file called `<document_name>.txt`, containing the information extracted from FrameMaker.

You can consider the FrameMaker file `FrameMaker demo.fm`, used in the Coupling FrameMaker demo example, to analyze how the converter works.

This intermediate file is usually deleted at the end of the conversion process. By activating the option in the Project Editor, you can helpfully keep this intermediate file available for training or customization purpose.

Details   Modification Files   Covers					
	Name	Type of Analysis	File or Directory	Ignor...	Intermediate file
	Requirements Book	FrameBook	FrameBook Demo.book	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## FrameMaker Files

The following picture shows an extract of the contents of a FrameMaker file:

<b>2</b>	<b><u>DEMO REQUIREMENTS</u></b>
	<b><i>REQ1 : Capture</i></b>
	<i>The tool shall be able to capture semi-automatically and/or in a model. 'Semi-automatic' means the tool or another dedicated tool.</i>
	<b>Allocated to : John Doe</b>
	<b>Priority Level : High</b>
	<b><i>REQ2 : Update information when source changes</i></b>
	<i>The tool shall take into account the successive update automatically the traceability information.</i>
	<b>Allocated to: Tim Jones</b>
	<b>Priority Level : High</b>
	<b><i>REQ3 : Multiple requirements definition</i></b>
	<i>The tool shall be able to consider several requirements, for example, if Safety requirements, Functional requirements...</i>

The corresponding intermediate file is created in the **intermediate** sub-directory of the project directory. This file should look like the following description:

```

Heading 1      2 Demo Requirements
Requirement_ID REQ1 : Capture
Requirement_Text      The tool shall be able to capture
Normal  Allocated to : John Doe
Normal  Priority Level : High
Normal
Requirement_ID REQ2 : Update information when source changes
Requirement_Text      The tool shall take into account
Normal  Allocated to: Tim Jones
Normal  Priority Level : High
Normal
Requirement_ID REQ3 : Multiple requirements definition
Requirement_Text      The tool shall be able to consider
Normal  Allocated to: John Doe
Normal  Priority Level : Medium

```

In general, a line of the intermediate file should look like:

```
<Style><Numbering><Text of your FrameMaker document>
```

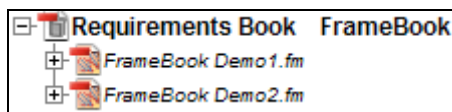
A numbering example is presented in the screenshot above for Heading 1 style.

## FrameMaker Books

The intermediate file is equivalent to the file produced for files, except that an additional line:

```
ActualFilename=<path>/<filename>.fm
```

is inserted before the information produced during the conversion of each file of the book. This line allows the user to define a section and to present the files underneath the book:



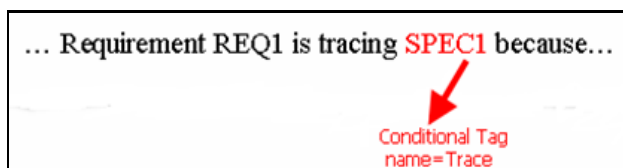
## Conditional Tags

FrameMaker allows the definition of conditional tags on a word or a word group.

As explained in the Parameters section, you need to activate the **With conditional tags** option if you want the converter to generate this information.

Details   Modification Files   Covers								
	Name	Type of Analysis	File or Directory	Ig...	In...	Bl...	Variable	Value
	Requirements	FrameMaker	FrameMaker Demo.fm	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	With conditional tags	<input checked="" type="checkbox"/>

For instance, for a Conditional Tag associated with SPEC1 in a FrameMaker document such as:



the corresponding intermediate file contains the following line:

```
body Requirement REQ1 is tracing SPEC1 because
Trace SPEC1
```

## Conditional Texts

FrameMaker allows the definition of conditional texts on a paragraph in order to show it or not.

As explained in the Parameters section, you need to activate the **Show conditions matching** option if you want show specific marked paragraphs.

Details			Modification Files			Covers		
Name	Type of Analysis	File or Directory	Ign...	Inte...	Bloc...	Variable	Value	
Requirements Book	FrameBook	FrameBook Demo.bc	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Show conditions matching	(?;iov31 iov32)	

## FrameMaker Tables

The following is an example combining use of default styles, customized styles, tables, character styles, etc.

Table 1:		
Text in Table, Row 1, Column 1, Paragraph1, 'Normal' style <i>Text in Table, Row 1, Column 1, Paragraph2, 'My_Style' style</i>	<i>Text in Table, Row 1, Column 2, Paragraph1, 'My_Style' style</i> Text in Table, Row 1, Column 2, Paragraph2, 'Normal' style	Text in Table, Row 1, Column 3, Paragraph1, 'Normal' style Text in Table, Row 1, Column 3, Paragraph2, 'Normal' style
Text in Table, Row 2, Column 1, Paragraph1, 'Normal' style <i>Text in Table, Row 2, Column 1, Paragraph2, 'My_Style' style</i>	Text in Table, Row 2, Column 2, Paragraph1, 'Normal' style Text in Table, Row 2, Column 2, Paragraph2, 'Normal' style	Text in Table, Row 2, Column 3, Paragraph1, 'Normal' style Text in Table, Row 2, Column 3, Paragraph2, 'Normal' style

The corresponding intermediate file looks like:

```
|1 Normal      Text in Table, Row 1, Column 1, Paragraph1, 'Normal'
style|1 My_Style Text in Table, Row 1, Column 1, Paragraph2,
'My_Style' style|2 My_Style      Text in Table, Row 1, Column 2,
Paragraph1, 'My_Style' style|2 Normal Text in Table, Row 1, Column 2,
Paragraph2, 'Normal' style|3 Normal Text in Table, Row 1, Column 3,
Paragraph1, 'Normal' style|3 My_Style Text in Table, Row 1, Column 3,
Paragraph2, 'My_Style' style
|1 Normal      Text in Table, Row 2, Column 1, Paragraph1, 'Normal'
style|1 My_Style Text in Table, Row 1, Column 1, Paragraph2,
'My_Style' style|2 Normal Text in Table, Row 2, Column 2, Paragraph1,
'Normal' style|2 Normal Text in Table, Row 1, Column 2, Paragraph2,
'Normal' style|3 Normal Text in Table, Row 2, Column 3, Paragraph1,
'Normal' style|3 My_Style Text in Table, Row 1, Column 3, Paragraph2,
'My_Style' style
|1 Normal      |2 Normal      |3 Normal
```

In general, the intermediate file contains information for tables as follows:

```
|<column number><style> Your text
```

If several paragraphs are inserted in the same column, as in the above screenshot, all paragraphs are presented on the same line before switching to the next column. For example, if you have 2 paragraphs in column 1, an intermediate file line will be:

```
|1<style> 1st paragraph|1<style> 2nd paragraph|2<style> Second
column...
```

## Customized Type Definition

### New Type Creation

As FrameMaker manages text with properties, and Rhapsody Gateway expects requirements, it is necessary to specify how properties can be captured as requirements or references to higher level requirements. This capture can be performed using the definition of Types of Analysis, which also contains the definitions of Attributes, Text, etc.

This work can be performed by Application Engineers or the Support team, but also by advanced users thanks to this *Coupling Note* and the *Customization Guide*.

Select **File > Edit Types** to launch the Type Editor and select a FrameMaker based type in the office folder.

Duplicate this type in order to create your own. In order to do so, right click the FrameMaker type in the Type Editor, and select **Duplicate**.

You can find helpful information by using the FrameMaker example.

## Defining your Own Type of Analysis

- ◆ For requirements, you have to define the **requirement** element(s) of your new type.
- ◆ For coverage information, define the **reference** element(s) of your new type.
- ◆ For attributes, define the **attribute** element(s) of your new type.

Refer to the *Customization Guide* to learn more about this customization.

# Troubleshooting

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The tasks in this section can help you solve the most common problems with FrameMaker usage.

## Connection Problems for FrameMaker 8

The user may encounter troubles during his conversion or navigation to a FrameMaker file or book. In this case it is recommended to check the log file of the current project which is accessible by using the **Open Project Directory** option.

If the "Error: No connection" error is present in the log file, one solution is to include an additional timing delay for the FrameMaker actions. This allows you to specify either in the global (<path\_to\_Rhapsody Gateway>\bin.w32) or in the user (%USERPROFILE%\Application Data) rg.ini a "Delay" parameter in [FM8] section as follows:

```
[FM8]
Delay=5000
```

As an example, the delay value is set to 5 seconds. If this correction solves your problem you will be able to adapt this amount to the most suitable value that works with your installation. This allows you to order to reduce the FrameMaker delay of execution.

If the above proposal does not solve the problem or if you need help for other problems do not hesitate to contact the Support Team.

## Using a Specific FrameMaker Version

The user may encounter problems to use a specific version of FrameMaker when several FrameMaker versions are installed on his computer.

To specify the used version, define an environment variable named `FMVERSION` to set the version.

The possible values of this variable are:

- ◆ `FM72` to use Framemaker7.2 registry information
- ◆ `FM80` to use Framemaker8 registry information
- ◆ `FM9` to use Framemaker9 registry information
- ◆ `FM10` to use Framemaker10 registry information
- ◆ any other value will cause the usage of the default Framemaker registry information

For Unix, if `FMVERSION` is used with `FM80` or `FM9` value, then the user can also define a `FMHOME8` environment variable to set the path of home directory of FrameMaker, otherwise the default `FMHOME` will be used.