JDF and XJDF Specification Editing

# Change Log

Next Date Author

Description

V1.2 10th January 2017 Graham Mann

Updated directory structure to reflect how examples and graphics are used.

V1.1 29thSeptember 2016 Graham Mann

Revised build instructions to accommodate modified templates. The new templates resolve the following:

* Unwanted 'dots' due to over and under lining bars in the 'Change\_Flag' character design
* Added better variables for the document title, running header and version

Original 6th September 2016 Graham Mann

These notes were created by amalgamating and editing other instruction found in the 'readme' and other directories. The primary motivation is to update the build instructions for creating the PDFs and are written assuming the use of Dropbox to synchronize files between authors and CIP4's servers.

In addition have a single readme to rule them all seems reasonable.

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# Source Layout

## File Naming

Framemaker uses files of type 'book' as a main editing resource. These contain or reference multiple documents of type 'fm'. Each book can reference the same documents and care should be taken (e.g. when updating) when making global changes not to affect other book files.

In addition as part of the editing process Framemaker creates a number of housekeeping files for locking and backup. These are created in the main source directory and are thus normally copied to all uses via Dropbox. Files named like xxx.fm.lck are lock files for the source document xxx.fm; those named like xxx.backup.fm are working backups and those named xxx.recover.fm cropy up after a problem/crash etc. These and other files are used by Framemaker in a (usually fruitless) attempt to recover. These should be purged often.

Framemaker is capable of importing and flowing other types of document into its layout and this is used extensively for examples, diagrams and graphics.

## Directory structure

The source for the specifications is organized into the following arbitrary structure

* JDFspec-2015 Root directory
  + ArtOriginals Container for subdirectories
    - ?? Directory name roughly follows 'technology' used
  + builds Automated build results (nightly?) i.e. PDF's
  + FrameMaker Book, document and template source files (\*book and \*.fm)
    - Examples Source for examples imported into \*.fm documents
    - generated Auto-generated examples. See 1.2.1 Examples below
    - Graphics Source for graphics imported into \*.fm documents
  + readme Notes and instructions

### Examples

With versions JDF1.6 and XJDF2.0, examples have been 'moved' to a separate repository; this is responsible for unit testing to ensure the accuracy of the examples. It is also responsible for creating the rtf file for inclusion into the document. As part of the build process for this repository, the auto-generated rtf files are copied to a working directory for use by framemaker and use the common included items directory structure:

* generated
  + examples
    - jdf
      * <included items> See 1.2.3 Included items directories
    - xjdf
      * <included items> See 1.2.3 Included items directories

### Graphics

With versions JDF1.6 and XJDF2.0, graphics are being updated to use illustrator scalable graphics to improve rendering in the final document. The source ai files are in the following location and use the common included items directory structure:

* Graphics
  + jdf
    - <included items> See 1.2.3 Included items directories
  + xjdf
    - <included items> See 1.2.3 Included items directories

### Included items directories

Text and graphic items are imported into the text flow by reference. The source directory for these follows the same naming structure with one directory for each framemaker document. As chapters numbers are not constant, varying for each book, these are based upon the chapter title (and not the framemaker document file name).

* introduction
* overview
* lifecycle
* messaging
* processes
* intents
* resources
* subelements
* capabilities
* building
* AP\_encoding
* AP\_schema
* AP\_supportedstrings
* AP\_supportederrors
* AP\_coloradjustment
* AP\_mediaweights
* AP\_mediasizes
* AP\_mimetypes
* AP\_generatingstrings
* AP\_pagination
* AP\_resolvingrunlists
* AP\_references
* AP\_holepatterns
* AP\_filespecattributes
* AP\_examples
* AP\_deprecated

## Templates

These are special fm documents that are used to contain notes and more importantly formatting and setup values. They are used to globally set things such as character styles, spelling variations etc prior to updating a book and producing a PDF. They can and should be edited albeit with care using Framemaker to effect changes to the various styles, done this way they will be propagated to all books.

It would be good if these were hierarchical - starting from a common root. As this is not the case changes must be manually made to all templates where necessary.

When changing the templates to modify the viewing condition this is done in the 'Show/Hide Conditional Text' pod of Framemaker. Move the various conditional flags to the required 'Show' or 'Hide' panes and don't forget to click on the 'Apply' button and save the template prior to using it.

### TemplateForFinal.fm

Misnomer - this is the template used to set the editing condition. Turns on all (default) 'Conditional Text' and the 'Show Condition Indicators'

### TemplateForFinalAllBlackJDF1x.fm

For PDF creation. Sets the 'Conditional Text' for JDF 1.x and turns off the 'Show Condition Indicators'

### TemplateForFinalAllBlackJDF2x.fm

For PDF creation. Sets the 'Conditional Text' for XJDF 2.x and turns off the 'Show Condition Indicators'

### TemplateForFinalBOTH.fm

For PDF creation, for the TSC working document. Shows both sets of text but hides comments etc. However, it does turn on the 'Show Condition Indicators'.

## Variables

Framemaker has a number of system variable that can be used when generating a final version, e.g. the current date used on the cover. In addition there are user defined variables used to set content such as titles and running headers. Typically these are set in each template and applied to all the documents as part of the build.

The following variables are used on the cover - Current Date (Long), "Cover Title", "Cover Version", "Cover Banner 1" and "Cover Banner 2". The variable "Running Title" is used as a header at the top right of all odd pages. With the exception of "Current Date" which is a system variable and shouldn't be modified, these variable can be set in the template prior to importing to all documents.

# Conventions

This section list the various editing conventions and styles.

## Spelling

The templates are capable of modifying the language of the underlying character styles.

When you run spell checking, maximize the checking to all but straight quote by depressing the “Options” button and then in the options dialog box:

* Check each box in the “find” options except “straight quotes”
* Leave all “ignore” options unchecked.

Depress the “Dictionaries” button and select the “Mark all paragraphs for rechecking” so that Framemaker checks all spelling. Otherwise, Framemaker silently ignores test that it shouldn’t.

Finally depress the “Start Checking” button The spell checking should find absolutely no errors unless some changes have introduced some errors. Spell checking should be run after a series changes to keep it as a useful tool that finds only a few problems each time it is run.

### Dictionary

The file **user.dct** (in ArtOrginals/user.dct) has all JDF terms and should be installed in the appropriate directory as the dictionary for a particular user, probably “Documents and Settings”/*username*/“Application Data”/Adobe/ FrameMaker/7.0/user.dct. The “learn” button in the spell checking dialog boxes adds words to this dictionary. The “Allow in Document” button adds the word to the dictionary within the actual Framemaker file.

Two caveats:

1. To avoid adding misleading plurals of JDF terms to the spelling dictionary, JDF terms should NOT use an “s” suffix to form a plural. For example, do NOT use QueueEntrys. Instead, use “QueueEntry elements”. Version 1.2 has an erroneous QueueEntries which was intended to mean “QueueEntry elements”. There are a few cases whether singular and plural JDF terms do exist, such as DevCap and DevCaps. The phrase “DevCap elements” is clearer than DevCaps because DevCaps is likely to be confused with DevCaps. The font change on the “s” is too subtle, and there are frequent cases in the specification where the “s” is in the same font as the JDF term by mistake.
2. Framemaker is unable to spell check words that exceeds about 25 characters (seems to be exactly 30 characters including hyphens for hyphenation points). Framemaker truncates the word in the dictionary and in the spell checker dialog box, Framemaker shows the suggested correct spelling as the truncated word followed by a blank and then the remaining letters of the word.

## Formatting conventions

The following is a list of formatting conventions

* Prefer the use of lower case letters in the body text  
  Words such as 'resource', 'element', 'sheet' etc
* Maintain a flat heading listing for child elements, but preserve the hierarchy  
  If an item, e.g. a resource such as Layout, has multiple child elements, which in turn have children, then all of the elements are to be at the same heading level.   
  Element X.1 Alpha  
  Element X.2 Alpha One  
  Element X.3 Alpha Two  
  Element X.4 Beta  
  Element X.5 Gamma  
  Element X.6 Gamma One  
  Element X.7 Gamma One Une

## Styles

The following sections describe the character, paragraph and table styles. In theory, no styles are overridden. In practice, some have been overridden, sometimes to make things fit and sometimes to avoid creating a new style.

The templates documented above have an example of all the styles used, refer to them for a definitive list. However, the following section show important styles and how they should be used.

### Character Styles

These styles are uses within a paragraph to highlight text of a particular type. Use with cross referencing to differentiate between references to resources, elements, messages etc.

**AnchorCalloutXXX:** used as a location for a box to hold bits of text surrounded by the XXX color

**Attribute:** a JDF attribute

**Bold:** makes text bold and disallows spell checking

**Bold\_italics:** makes text bold-italics and disallows spell checking

**Change\_Flag:** for blue text that specifies whether a feature is new, modified or deprecated feature - JDF 1.x only

**Change\_Flag\_XJDF:** for blue text that specifies whether a feature is new, modified or deprecated feature - XJDF 2.x only

**ConformWord:** for all conformance words, such as MUST, SHOULD and MAY. The style forces the word to display in upper case

**crossRef:** not used.

**Element:** a JDF element

**Enumeration:** a JDF enumeration or value for an attribute

**EnumValuesAre:** used as a lead in to the paragraph detailing enumerations in tables

**Italics:** makes text italics and disallows spell checking

**Link\_External:** blue text for URLs

**Link\_XXX:** Many other types of character styles when cross referencing within the spec. The XXX is fairly self explanatory. If not add a note here

**Message:** a JDF message

**NoSpell:** sets language to “none” to prevent spelling checking from occurring, such as for “ ?” in the Name column and various other spelling anomalies

**NoteLeadIn:** start of a Note: highlights and bolds the character

**Process:** a JDF process

**Resource:** a JDF resource

**Sample\_Emphasis:** hardly used at all should be replaced with something else. Currently used to change JDF sample text to a color of “medium green”

**smallSize:** used to change text to 9pts in a few places to squeeze long words in to small spaces

**XPath:** used to format an XPath expression. This should be removed as it is mostly replaced by using combinations of Element and Attribute and Enumeration from above

### Paragraph Styles

**AnchorFigure:** used by Framemaker to make the insert point of figures. Deleting these can lead to format issues

**AnchorOnlySmall:** used for paragraphs that contain only anchors (for tables or figures). The paragraph is 2 pts so that it doesn’t take up much space. These paragraph are either in the main text and anchor a table or they are in a table and anchor a figure

**AnchorTable:** as for AnchorFigure but for tables

**AnchorTabularData:** as for AnchorFigure but for other stuff. These anchors appear to be used indiscriminately

**Body:** for second and subsequent paragraphs in the main text flow. Always preceded by a Body\_open\_paragraph paragraph

**Body\_open\_paragraph:** first paragraph after a section head or table

**Bullets:** bulleted paragraph that is flush left with body paragraphs

**BulletsN:** bulleted paragraph that is indented N levels from body paragraphs

**CalloutTitleReference:** title paragraph in boxed text; next to a Reference graphic

**CalloutTitleSummary:** title paragraph in boxed text; next to an Executive graphic

**CalloutTitleThought:** title paragraph in boxed text; next to a Thought graphic

**Callout\_paragraph:** paragraphs in boxed text

**Caption\_Figure:** style of each caption for a figure; always in a table of style Graphics

**Caption\_Table:** style of each caption for a table, always in a table of style Standard Table

**CellBody:** style of each cell of a Standard Table except for the header rows

**CellBody XXX:** same as CellBody, except that text has formatting XXX applied

**CellHeading:** style of each cell of a Standard Table header row

**CellHeadingRow:** style of a cell of a table that is important (bold); typically for cells in the leftmost column

**ChapTitle:** for the title of each chapter

**EnumDef:** for each paragraph that defines an enumeration; has a hanging indent

**EnumHeader:** introduces enumeration lists 'Values are:' type of thing

**FM\_Header:** for the title of each front matter chapter, such as the Preface. Also used heavily in the References appendix

**FM\_Ref:** used in describing references to other documents, such as in the References Appendix

**Footnote:** for footnotes

**HeadingN:** Nth section heading 2<=N<=7

**HeadingNOfElement:** Nth element section heading 2<=N<=7. Used for 'private' elements declared locally inside resources, messages etc. Automatically starts with word “Element”; allows for cross reference for element name in a table

**HeadingOfAttribute:** header for table specifically for the declaration of attribute values. Automatically starts with word “Attribute”; allows for cross reference for attribute name in a table

**HeadingOfExample:** introduces an example

**Heading\_Sub-head:** header without numbering; used in various places. Sometimes it seems arbitrary whether this style is used or a numbered subheading is used

**Numbered:** numbered list

**Numbered1:** first item of a numbered list

**Resource\_Body:** for Resource Properties (of a resource definition); second part and not bold

**Run-in-Head\_ResourceRef:**

for Resource Properties (of a resource definition), initial part. Each line in the Resource Properties consists of two parts: a paragraph whose style is Run-in-Head\_ResourceRef and a second paragraph (which appears on the same line, but tabbed to the right) whose type is eitherResource\_Body or Resource\_body. Even though the latter two styles are identical except for the latter being bold, they seem to be used in an arbitrary fashion with much overriding in use. The two styles should be merged into one and the overrides fixed

**Run\_in\_Header:** Not used - should be deleted  
used as run-in header in a various places; its use seems about as random asHeading\_Sub-head**.** Probably should have a more consistent use of headers

**Sample\_code:** for JDF examples; spell checking is turned off

**Sample\_codeNN:** for JDF examples; spell checking is turned off. Indented NN times

**TableFootnote:** some tables and figures have a footnote (usually spanning all columns)

### Table and Figure Styles

**Figure (was Graphics?):**A style for figures which defaults to one column and two rows, the first for the drawing and the second for a line of paragraph style Caption\_Figure. The rules are turned off. The use of the table to enclose the drawing and captions ensures that the two remain on the same page

**Standard Table:** A style for defining JDF elements, which defaults to one header row and a few body rows. The number of columns is usually either 2 or 3. The rules are dark blue and the header row has a dark blue shading. The table also has a title above the table with a style of Caption\_Table. Each such caption must include a “Section M of N” variable which conditionally displays when the table occupies more than one page

**Tabular Data:** A style for showing tabular data in a few parts of the spec. The rules are turned off

**Untitled Table:** Was used in the appendix for deprecated elements - now unused and not an option in Framemaker

#### Table Column Widths

The table column widths vary considerably, but always sum to 6.5”.

The strategy for column widths is described by the following rules:

1. The name column must be wide enough for all names to fit without a line break. Otherwise, (if they break) they are usually not searchable by Acrobat
2. The data type column must be wide enough for all names to fit without a line break. Otherwise, (if they break) they are usually not searchable by Acrobat
3. The Description column should be as wide as possible in order to keep the table as short as possible

For many tables, these three rules can be honored by using the widths of 1.4”, .85” and 4.25” (or something close to this) for the Name, Data Type and Description columns, respectively. For some tables, if rules 1 and 2 are honored, the Description column becomes very narrow and the table very long. The specification uses two work-arounds.

1. The data type column is made wide enough for most data types (.9” to accommodate NMTOKENS, but not for longer data types, such as IntegerRange­List, which needs 1.1”
   1. When names are extremely long, the name extends into the data type column (as a straddle), and the data type appears below in a separate cell. This results in a ruling override in the name column so that the name cell is shaped like an upside-down “L”. The tables with this work-around are:  
      LayoutPreparationParams, Media, PageList, PageData, StrippingParams and Document Properties

#### Table Row Heights

Sometimes table rows are quite long. Because Framemaker doesn’t break rows across pages, a large row can cause a large amount of white space on the page preceding the large row. Large rows are mostly caused by Attributes with a large number of values. When a large row would cause a large amount of white space, the Attribute values have been moved to a separate table with one value per row. The table row contains a reference to the attribute-value table and attribute is a hot link to the table as well.

# Importing Content

This includes graphics, text and examples.

Content is created in another package, word, html, pdf whatever. For Framemaker to import it however requires that it is in a suitable format.

## Examples

Examples are managed and controlled in a separate repository. The generates and copies rtf files into the directory structure as described above. The rtf files are formatted correctly so FM need do nothing. However, FM has a conflict between importing by reference (which examples are) and conditional flags. These are turned off for the imported text when an update happens. To resolve this issue all examples are imported into a new table of type 'Example'. This table has no heading, and only a single full width column. Examples are imported into a table cell and the appropriate conditional text flag is applied to the cell and not to the imported text.

## Graphics

For Illustrator ai files, graphics can be imported directly into a table of type 'Figure'. Conditional flags are applied to the table cell and not to the imported graphic.

Illustrator files should use a suitable canvas with no excess whitespace border. No title should be included as this will be added as part of framemakers 'Figure' and then indexed properly.

### Original instructions

Here are the original instructions for importing graphics.

...

See the file ArtOriginals/ListOfFigures.doc for a list of all figures in the spec and the corresponding original art file.

Here are the rules for creating graphics in the JDF spec

1. Create the graphic in some format, such as Visio. MS Word or Adobe Illustrator This width should be a bit less that 6.5” or 165mm, i.e. about 6.4” or 162mm. This sizing avoid scaling in the spec and the resulting reduction in size of text
2. Save the graphic in the appropriate subfolder of "Art originals". The appropriate subfolders of Visio. MS Word or Adobe Illustrator are "Visio", "Word\_Art\_Conversion\_Source" and "AI", respectively. The "unknown" folder contains 2005 drawings in Visio that come from some unknown format
3. Create a png or jpg file from the original – png is best for anything that is not a photo. The file has the following characteristics
   1. It has the same name as the original except for the “png” or “jpg” suffix
   2. It is saved in the folder “Framemake 1.x/Graphics”, a parallel structure to the one in “Art originals”.When saving the png files, the following settings must be used:
      1. **Resolution:** set to "custom" with value of 150x150 dpi
      2. **Size:** set to “source”
   3. When saving the jpeg files, the following settings must be used:
      1. **Quality:** set to 90%
      2. **Resolution:** set to "custom" with value of 150x150 dpi
      3. **Size:** set to "source" if size would be about 6.5” or less or scaling in Framemaker is acceptable. Otherwise, click to “screen” and back so “source” to see actual dimension in “custom”. Then set the custom width to the desired size, e.g. a bit less that “6.5” and set the height to preserve the aspect ratio
4. In Framemaker, use the “files/import/file…” and select “import by reference”. Select a dpi of 150 dpi. This ensures that Framemaker doesn’t scale the 150-dpi-created jpeg. If necessary some adjustment may be require for fitting and/or quality

Note: some existing drawings have a larger jpeg drawing and allow Framemaker to do the scaling. The png drawings are all at the same scale as used by Framemaker.

# Build Instructions

Or how to create the PDFs. These instructions use Framemaker 2015 and source documents from Dropbox.

All versions (JDF, XJDF & Both) use a common subset of Framemaker's document files, depending upon which chapters are to be included in the final output. Framemaker struggles with formatting and automatic header numbering if an entire document is conditionally removed from the book. The XJDF version cannot exclude the Capabilities chapter using conditional text alone - it is easier to have a separate book and not to include this chapter at all.

**Note:** Currently the JDF version includes all chapters and thus contains all the chapters for the Both build. If ever XJDF is required to have a private chapter then a new book for Both needs to be created. See below.

The build instructions require setting some conditional text view options for the book as a whole - this will change those conditionals in the underlying fm documents, and thus effectively for other books that include those documents. For automatic builds this is not a problem as the source is copied to a private work area first. However, if a manual build is required using a public directory (i.e. Dropbox) then the user SHOULD restore the normal editing context settings.

## Creating a new 'book'

This can start with a copy of an existing book - but be warned Framemaker will then have issues with automatically generated files - TOC, LOF etc. This is how I did it

1. Copy an existing book
2. Delete and automatically generated files, TOC, LOF, LOT, LOE.
3. Use Framemaker 'Add' menu
   1. Add 'Create Standalone TOC...' for TOC
   2. Add 'List Of >' and select Figures for LOF
   3. Add 'List Of >' and select Tables for LOT and LOE (changing the suffix appropriately)
4. Then for each of the four new files right click and select the 'Set up...' (it'll be Table or List of Figures etc depending). This will present you with the choice of headings to be used when creating the fm documents. Make sure these match the original.
5. At this point I thought I was home and dry - but the existing book has nice formatting in the TOC which I simply couldn't replicate in the new TOC etc. So for each one
   1. Copy the original book's TOC fm document - JDF1TOC1.fm
   2. Delete the new book's TOC fm documents (if they exist) - say XDFTOC.fm
   3. Rename the original copy to the new book's name
   4. Perform an update on the new book

## Restoring Editing Context

This requires some of the steps from the PDF build procedure to restores the required viewing conditions for editing. Essentially re-applying the editing template. This is shown in the following "Set the Show Condition Indicators" section below.

## PDF

These are general instructions to create a PDF. Any specifics for a particular version is noted in the text and succeeding sections.

This is the complete list for the automatic build, some steps can be omitted if not required for your build. Don't forget to reset the editing version if operating on the live source; at least 'Apply the correct template' from step 2 below.

If building either JDF or XJDF then repeat these instruction for Both and do this last. This will reset the 'Show/HIde Conditional Text' view for editing.

1. Update the Cover and Running Header.  
   This is accomplished by setting appropriate values for the user variables in the template.  
   It is required to ensure that the correct book cover text is used for each version to be produced and also sets the running header. This can be used to make sure that each PDF is uniquely identified and at very least the "Running Title" should be set to assist the editing and review process. Variables are (with an example of typical values)  
    Cover Title XJDF Specification  
    Cover Version Version 2.0  
    Cover Banner 1 IP Review  
    Cover Banner 2 Vancouver Face to Face  
    Running Title XJDF Specification Version 2.0 - IP Review  
   Note that the current date is automatically added to the cover. In addition the 'fields' that contain these variables have a limited length - use wisely.
2. Apply the correct template  
   This is required to ensure the correct conditional views are set, all variables are set (used for running header and version etc), and the character catalog is updated. All three of these items differ between templates.  
   The conditional view specifically is required prior to the updating of the TOC and LOF otherwise the tables and lists will include unnecessary content, breaking both numbering and formatting. It is also required prior to checking for broken cross references (if the 2.x spec references an item that is in 1.x only then for normal editing the references will not show as broken, however they will be broke in the final PDF).  
   Updating the character catalog is required to change the underlining of the change flags - FM has a rendering issue that outputs unwanted dots from hidden text that is under/over lined.
   1. Using Framemaker, open the book from the source directory and ensure all fm documents are closed
      1. JDF JDF1.book
      2. XJDF XJDF.book
      3. Both JDF1.book
      4. Editing JDF1.book
   2. Open the template document from source in Framemaker
      1. JDF TemplateForFinalAllBlackJDF1x.fm
      2. XJDF TemplateForFinalAllBlackJDF2x.fm
      3. Both TemplateForFinalBOTH.fm
      4. Editing TemplateForFinal.fm
   3. Select all fm documents in the book
   4. Perform "File/Import/Formats..." to set and select the required conditional text.  
      This opens the 'Import Formats' dialog.
      1. Check the dialog settings
         1. Import from Document
            1. Check it contains the correct template
         2. Import and Update check boxes - only the following checked
            1. Character Formats
            2. Variable Definitions
            3. Conditional Text Settings
         3. While Updating, Remove check boxes all unchecked (default)
      2. 'Import'  
         If there are any errors (e.g. old lock files) these will be shown in a 'Book Error Log' files. Fix and repeat.
3. Update book contents  
   This is required to regenerate the TOC and LOF etc correctly and to refresh any text imported from external source. It is also required prior to checking for broken cross references
   1. Select the book opened in the previous step
   2. Perform "Edit/Update Book..." to update the TOC, LOF etc  
      This will open the 'Update Book' dialog.
      1. Check dialog settings are correct
         1. Select all check boxes
         2. Ensure "Apply Master Pages" is unchecked.
         3. The "Generate" box should list the four automatically generated documents, namely
            1. JDF JDF1TOC.fm, JDF1LOF.fm, JDF1LOT.fm and JDF1LOE.fm
            2. XJDF XJDFTOC.fm, XJDFLOF.fm, XJDFLOT.fm and XJDFLOE.fm
      2. 'Update'  
         Any errors should be fixed, however for 'Error Message: Inconsistent Numbering Properties', select the 'Skip Remaining Inconsistent Numbering Properties Messages' check box to ignore and continue
4. Fix any broken references  
   A necessary and laborious step prior to producing any release version. In addition to normal broken references, Framemaker seems to have a bug whereby it can set a reference to the correct place, but represent it with blank text. It should be noted that Framemaker slows down and takes tens of seconds with large fm documents such as Resources.fm to populate the 'Cross-References' pod.
   1. For truly broken references locate and fix them
      1. Open the first fm document - usually 'Cover.fm'
      2. Use the 'Find/Change' pod with
         1. 'Find' options selection set to 'Unresolved Cross-References'
         2. Select 'Book' from the 'Look in' item
         3. Remainder to be blank.
      3. Repeatedly use the 'Find' button to locate the next broken reference  
         Note that once a document has opened you can use the 'Cross-References' pod and select 'Unresolved Cross-References' from the 'References' selector.
   2. For empty references
      1. Open each fm document in turn
      2. In the 'Cross-References' Pod select 'All Cross-References' from the 'References' selector
      3. In the results window ensure that the displayed references are sorted by 'Cross-Reference' in ascending order
      4. Any empty references will be at the top of the list without any text
5. Create the PDF  
   The object of the exercise after all.
   1. Select the fm book
   2. From the file menu select
      1. 'Save as PDF...'
         1. Choose PDF from the 'Save as Type' selector
         2. Choose a suitable name and location for the PDF. Do not drop these into a Dropbox location without a good reason.  
            Typical examples are
            1. JDF CIP4-JDF-Spec-{V.V}-{DRAFT}\_{yymmdd}.pdf
            2. XJDF CIP4-XJDF-Spec-{V.V}-{ DRAFT }\_{yymmdd}.pdf
            3. Both CIP4-BOTH-Spec-{V.V}-{ DRAFT }\_{yymmdd}.pdf
         3. Leave all PDF creation options as the default and continue to create the PDF

## Retired Build Steps

These are instructions can be deleted when the above process is confirmed by the TSC.

1. Update the Cover (This step is now retired)   
   This is required to change the title, date and version on the front cover.  
   These are edited in a word document, which is used to create a pdf file which in turn Framemaker includes in Cover.fm. The 'Update' step will refresh this.
   1. Update the source document in ArtOriginal/MSWord
      1. JDF **Cover\_Art\_1.6.doc**
      2. XJDF **Cover\_Art\_2.0.doc**
      3. Both N/A
   2. Save as a PDF in FrameMaker/Graphics folder
      1. JDF **Cover\_Art\_1.6.pdf**
      2. XJDF **Cover\_Art\_2.0.pdf**
      3. Both N/A

## HTML

This section has not be verified for Framemaker 2015

### With Save As

1. Open the book file with Framemaker
2. Open each document and do a “Save As”. Select appropriate html folder and then select “htm” file and change suffix to “html”  
   **Note**: Framemaker 9 has a bug whereby a Wingding conversion of “l” and “n” code points to special characters in Framemaker becomes pervasive for all fonts and thus turns all “l” and “n” code points to the special symbol even though the letter is not intended for normal fonts. For example the following are “and” and “all”: “a&#9632d” “a&#9679&#9679”.  
   **Note**: Framemaker supports “Save As” for a book. However, the JDF book is so big that Framemaker crashes before completing the conversion.
3. Using previous version as source and new html folder as target do the following
   1. copy index.html (main file)
   2. copy JDF.css
      1. it adds lines for putting colored borders around callouts
      2. It changes left margins for number (2), bullets (3) and ResourceBody
4. Using Framemaker folders:
   1. copy Cover\_Art.png from ArtOriginals\MSWord. The png file is produced by opening Cover\_Art.pdf with Adobe Acrobat and saving it as a png file
5. Run script fixHTMLDocs.bash (copied from previous version of html files)
   1. The script changes the style line to reference JDF.css
   2. check for correct conversion with compareHTMLDocs.bash
6. Edit Cover.html as follows:
   1. The “Save as” operation doesn’t include the pdf cover art and the Cover-1.png is too narrow.
      1. Change: <img src="Cover-1.png">  
         To  
         <img src="Cover\_Art.png" style="border: none;" alt="Cover\_Art.png" width="602"   
          height="785" border="0" />  
         <p><img src="Cover-1.png" style="border: none;"  
          alt="Cover-1.png" width="602" border="0"/></p>
7. Main file is index.html

### With RoboHelp

1. Select JDF1.book and start RoboHelp
2. Create new project. Current is JDF1.4a
3. Import Framemaker JDF1.book into new folder (htmlA2 currently)
4. Import files: JDF1LOF.fm, JDF1LOT.fm, JDF1LOE.fm and CoverBack.fm.
   1. Note: probably don’t have to do a Generate before this step, but didn’t try
5. In upper left pane, drag files under “HTML Files” into JDF1 folder
6. Edit file JDF1.4a/JDF1.4a.hhc by adding XML item Elements for Cover at beginning and for JDF1LOF, JDF1LOT, JDF1LOE and CoverBack at the end, using another item as a template or a previous version. These last two steps add the files to the HTML TofC
   1. Note: there is a similarly named file JDF1.4a\!SSL!\WebHelp\_Pro/JDF1.4a.hhc that the menu item Generate builds, apparently from the JDF1.4a/JDF1.4a.hhc file. There doesn’t appear to be a way to build this file via RoboHelp
7. Select properties of Layouts (lower left pane)
   1. Output should be within directory selected for import
   2. In Condition Build Expression field, exclude CaptionWContinued and CaptionWSheet so that table caption don’t have the continuation information for the case where the table is split across multiple pages
   3. Select Table of Contents as name of project, e.g. JDF1.4a
   4. Make default topic be “Cover.htm”
8. In RoboHelp pane, edit Cover.htm by copying previous versions cover, but add Cover\_Art.png which is missing because RoboHelp ignore referenced PDF files
9. Select “WinHelp”
   1. On right menu: Set as Primary Layout
   2. On right menu: Generate
10. Copy JDF.css from previous version into WebHelp\_Pro/JDF1
11. Run ‘fixHTMLDocs.bash’ which is a script that
    1. creates an “old” directory for source files of command run in this script file
    2. changse style references with ‘fixHTMLStyles.bash \*/\*.htm’
    3. checks if just style changed to “../JDF.css” with ‘compareHTMLDocs.bash \*/\*.htm’
    4. fixes overline errors in change flags with ‘fixHTMLDecoration.bash \*/\*.htm’
    5. fixes offset of a callout that has a large negative margin with fixIntroduction.bash
    6. fixes WingDings in the Hole appendix with fixHoleSymbols.bash
12. Remove “old” folder which has files before running above fixHTMLDocs.bash script
13. Move 9 files: Resources/Resources00203.jpg to Resources/ Resources00211.jpg from previous version to new version. The file generated by RoboHelp are wrong. These files came from the first version of html and then doubled in size to 1.6 x 1.1
14. Main file is “<project name>.htm”, e.g., JDF1.4a.htm: