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FMnotes – enhance, convert footnotes, insert sidenote

Overview v2.2

This set of scripts enhances footnotes with a hyper link. Footnotes can be converted to end-notes and the insertion of side-notes is automated.

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Note: *Any operation performed by script can not be undone¹! Best practice is to save the document before performing script actions on it. Only scripts which do not modify document contents (e.g. creating a new document) are safe in this respect.*

1 This must not necessarily be the case for plug-ins represented as dll's.

Introduction

Why this set of scripts?

- With the experience from the Web we expect references to be links. Hence footnote references should be hypertext. This could also leverage the (FM) problem of references to footnotes on the next page. The hypertext would greatly enhance the value of footnotes in PDFs and of course also in FM when in zoomed view^{...2)} or in longer tables where the footnotes are most of the time on another page.
- There should be a commonly known short cut for the Go Back function.
- My scholarly friends have asked me often for a mechanism to convert footnotes to endnotes. In a single document they should be collected at the end under a specific heading. In a book these should be collected in an own chapter document.
- I would like to see a template mechanism to insert side notes. This should create an anchored frame (outside of text frame) with a text frame in it at the ‘current location’.

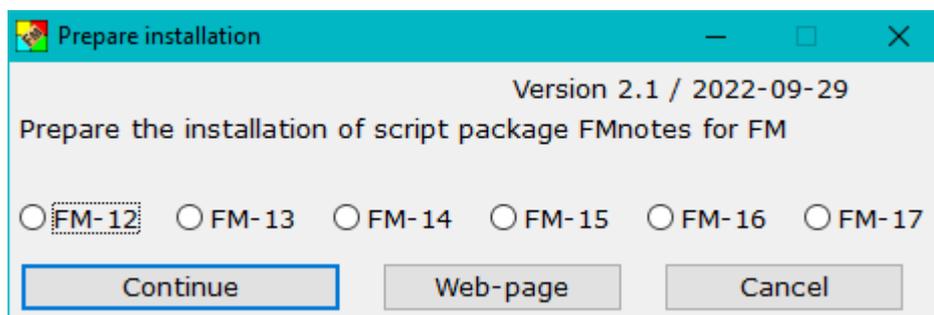
Script installation

- 1 Close FrameMaker if necessary.
- 2 Download the ZIP from the [website](#) and expand it to a location of your liking.
- 3 Execute the file PrepareInstallation.exe (run as Administrator)

Note: *Windows Defender may react to this program with a virus warning. This is a false positive. You may check this with an [upload to Virustotal](#). See [Avoid Windows Defender intervention](#) on page 3.*

The language of the installation dialogues adapts to the UI language of your current FM installation (de, en, fr).

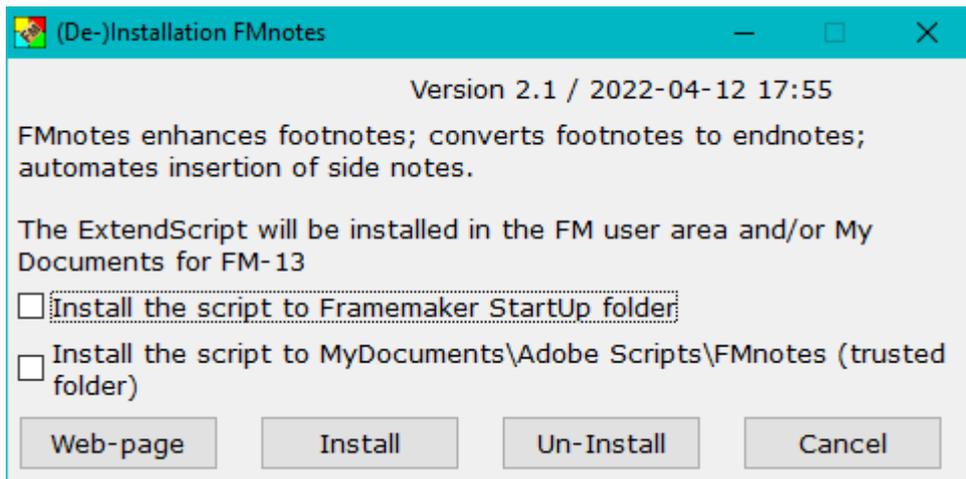
- 4 The last six FM-versions present in your %appdata%/Adobe/FrameMaker/ are listed in the dialogue (on your system there may be only one).



- 5 Select the version for which you want to install the script.

2 Well, unfortunately the Go Back function does not go back to the point where we left, but only to the top of that page. And cross-documents it does not work at all...

- Use **Continue Installation**. This opens the installation program.



- Select the appropriate option(s):
 - Use the first option to start the script automatically at FM-start.
 - Use the second option if you wish to start the script on demand from a trusted source. You can define the script in `File > Scripts ... > Cataloge (Script Library)` as Favourite: use the **Add** button and navigate to `My Documents\Adobe Scripts\FMnotes\FMnotes.jsx`.
- With **Install** the script and associated files will be transferred into the relevant locations.
- A message indicates the end of the installation. The desktop icons will be removed.

Predefined values

Some global variables need to be adapted to the user environment. In particular these are formats for paragraphs, characters and cross references. See [Adaptation of global variables](#) on page 13.

French localisation

Traduction française avec l'aide de <https://www.deepl.com/> translator.

Avoid Windows Defender intervention

- In Windows settings navigate to **Windows Security > Virus & Threat protection settings > Manage Settings**
- Go to **Exclusions**
- Add the folder you need to exclude:
`C:\Users\username\AppData\Roaming\D+DD`

Details of the D+DD script installation

- Unpacking creates a program (`Prepinstallation.exe`) and a directory (`InstallThis`).
- `Prepinstallation.exe` should be executed with admin rights (right-click and select), otherwise a message will appear indicating this.

- Preinstallation adds the information about the current directory (e.g. C:\Users\Klaus\Desktop\InstallThis) and the installation directory of the selected FM version to the InstallThis\config.ini file.
- Then InstallThis\Inst-FMnotes.exe is executed, which creates a directory D+DD\FMnotes in the Windows Start directory and copies everything from InstallThis there. In addition, a short cut is created to this directory.
- This directory contains Inst-FMnotes.exe, which is now executed and the unpacked files that are no longer used (e.g. on the desktop) are deleted.
- Inst-FMnotes.exe asks where the script should be copied to (Startup folder or MyDocuments\Adobe Scripts\FMnotes). The selected option must also be selected during a de-installation in order to de-install at the correct location.
- The script consists of the main module FMmarkers.jsx and the modules in the FMnotes directory.
- Various scripts (e.g. the installation of the tool bars) also write something in the maker.ini in the user area in the section [D+DD].

Script invocation

Menu entries

The menu is inserted in the **Format** menu, because this is also available when a book is active.

Unfortunately ExtendScript does not allow to define a position for the menu – it always appears at the end of the parent menu item (Format) — bug FRMAKER-2752.

Document menu

Format		Short cut	See
Footnotes and Endnotes v1.0	Documentation	ESC q n d	
	Enhance Footnotes	ESC q n f	page 6
	Convert to Endnotes	ESC q n e	page 8
	Insert Endnote	ESC q n i	page 11
	Back to Insert Point	ESC q n b	page 11
	Insert Sidenote	ESC q n s	page 12

Book menu

Format		Short cut	See
Footnotes and Endnotes v1.0	Documentation	ESC q n d	
	Enhance Footnotes	ESC q n f	page 6
	Convert to Endnotes	ESC q n e	page 8

Documentation

No UnDo of script operations

This pdf is displayed with your PDF viewer.

It is too complicated to provide an **UnDo** for script operations. Hence none of the D+DD scripts save changed documents.

In case of an error or change of Your mind you can simply Revert to Saved for the pertinent document.

All function of FMnotes may create paragraph formats, character formats or cross-reference formats. These are of course lost if you revert to saved.

Enhance footnotes

Note: **Enhance Footnotes** acts on all footnotes, that is also on table footnotes and footnotes in text frames which are in an anchored frame.

Invoking the script

Start the script by **Format > Footnotes and Endnotes > Enhance Footnotes** or ESC q n f.

Prerequisites

This function requires a set of formats:

- Cross reference format zfnref-FMnotes
- Character format super
- Character format hypertext

If such a format does not exist in the document when **Enhance Footnotes** is used in a document, then these formats are created. You get an according message.

Created ¶ formats are based on the Body format.

If you want to change the format names and string definitions, you should not do that just in the document. Change it in the global definitions before you first run **Convert to Endnotes**.

See [Adaptation of global variables](#) on page 13.

Function of this script

- The footnote references of a document are collected in an array and then they are worked off from back to front³⁾.
- At the beginning of a footnote a cross reference marker is inserted.

- 1) ¶ This footnote has no special fo
- 2) ¶ Here we have something **bold** a
- 3) ¶ Before or after a footnote refero
be at least one something betw

- Just before the footnote reference a cross reference to the footnote is inserted.

ne of Lorem
mar...³⁾.



- The cross reference format zfnref-FMnotes does not contain any variable text as with ordinary cross references. It just gives some space for the sensitive area (hotspot): <super>...
- The hypertext function is indicated by the character format hypertext (blue text) and is applied to the whole construct.

³ This is to keep the locations intact for all but the currently handled footnote reference.

- The footnote reference itself is not touched by this mechanism. It does not show the hypertext property, although the character format is applied to the whole construct.

Shortcut for Go Back

Although there is an escape sequence (**ESC v P**) to come back from a cross reference users want to use the same short cuts as known from PDF, the web etc.: **ALT+←** and **ALT+→**. This however would make it impossible to nudge objects by 1 pixel.

Hence I decided to use **ESC ←** and **ESC →** for the back- and forward jumps.

Avoid footnote and reference on different pages

With the cross reference to the footnote this requirement became less important. The major drawback of the footnote on the following page is minimised by the link and possibility of Go Back by the installed short cut.

Update document

After applying the cross references to the footnotes it is common that a document update will receive additional footnotes.

Just run **FMnotes > Enhance Footnotes** again.

Starting in book

When a book is active and **FMnotes > Enhance Footnotes** is run, then all FM files (except generated ones such as TOC, Index) are handled.

Special cases

In documents like this one where footnote mechanisms are explained, **Enhance Footnotes** may create some unwanted results: inserting a cross reference where it should not.

In this case You need to remove the inserted cross reference and the corresponding marker:

- Removing the cross reference in front of the footnote reference also removed the marker in the footnote.
- You may want to set the footnote reference to its default appearance by applying character format `Default ¶` Format.

Convert Footnotes to Endnotes

Note: **Convert to Endnotes** acts only on ordinary footnotes, not on table footnotes and footnotes in text frames which are in an anchored frame.

Shortcut for Go Back

Although there is an escape sequence (**ESC v P**) to come back from a cross reference users want to use the same short cut as known from PDF, the web etc.: **ALT+←**. FMnotes implements this.

Invoking the script

Start the script by **Format > Footnotes and Endnotes > Convert to Endnotes** or **ESC q n e**.

Prerequisites

This function requires a set of formats:

- Paragraph formats zent-FMnotes, zen-FMnotes and zenc-FMnotes⁴.
- Cross reference format zenref-FMnotes
- Character format super
- Character format hypertext

If such a format does not exist in the document when **Convert to Endnotes** is used in a document, then these formats are created. You get an according message.

Created ¶ formats are based on the Body format.

If you want to change the format names and string definitions, you should not do that just in the document. Change it in the global definitions before you first run **Convert to Endnotes**.

See [Adaptation of global variables](#) on page 13.

Function of this script

- The standard footnotes of the document are collected in an array with their local formatting.
- At the end of the document a title paragraph is inserted.
- After this title all footnotes are now inserted getting a new paragraph format with autonumber.
- At the original places of the footnote references cross references to the now endnotes are inserted. The local character formatting is preserved.

Update document with endnotes

After converting the footnotes to endnotes *do not use the original footnote mechanism any more*, but the menu item **Insert Endnote**. See [Insert Endnote](#) on page 11.

Starting in book

When a book is active and **FMnotes > Convert to Endnotes** is run, then all FM files (except generated ones such as TOC, Index) are handled.

⁴ For the explanation of the names see [Adaptation of global variables](#) on page 13.

After collecting the relevant footnotes in an array a new document is created, named Endnotes.fm.

Note: *Whether the numbering of footnotes in the book start anew in each file or are numbered continuously has no influence on the collection for the endnotes. These are always number continuously.*

A title paragraph is inserted and after this the footnotes are placed with a new paragraph format. The local character formatting is preserved.

Example footnotes

- 1.) Just a footnote with *some* local **formatting**.
- 2.) With a trick this can be inserted. This footnote contains a line break and hence this should be present also in the Endnote.
- 3.) Another one following **immediately**.
- 4.) Heck, this is the fourth one with a [hyperlink](#).

Example endnotes

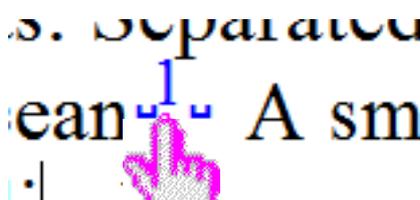
From the example footnotes the following endnotes will be created:

- Endnotes**
- 1.) Just a footnote with *some* local **formatting**.
Did you know that a footnote can have more than one paragraph
This is the third and last paragraph in this footnote.
 - 2.) With a trick this can be inserted. This footnote contains a line break and hence this should be present also in the Endnote.
 - 3.) Another one following **immediately**.
 - 4.) Heck, this is the fourth one with a [hyperlink](#).

References to endnotes

Depending on the specification for the footnote references you may not see much difference after processing. The only recognisable difference is the hypertext feature of the new references - they are ordinary cross references. These change the cursor image to a hand symbol when hovering over while pressing the **ALT + CTRL** keys.

To get a larger hotspot for the hypertext function, the cross reference format uses two required blanks before and after the reference figure.



Formatting

FMnotes creates only the functional necessary formatting, if no corresponding ¶ formats are provided in the document. Created ¶ formats are based on the Body format.

Insert Endnote

After converting the footnotes to endnotes the user must not use the original footnote mechanism any more⁵⁾, but the menu item **Insert Endnote**.

Note: *Inserting Endnotes requires that there is at least one cross reference to an existing endnote. This cross reference is required to determine whether the endnotes are in the same file or in a separate file.*

Inserting an endnote

Invoking the script

- 1 Set the insertion point where the endnote reference shall appear (similar to inserting a footnote).
- 2 Start the script by **Format > Footnotes and Endnotes > Insert Endnote** or ESC q n i.
- 3 The script determines the 'location' among the existing endnotes, inserts a new empty note and places a cross-reference marker.
- 4 At the place where the reference shall appear (the user's location of step 1) a cross reference with the appropriate format is inserted.
- 5 The script then jumps to the empty endnote and places the cursor behind the marker.
- 6 You can now type the new endnote.

Back to insert point

Invoking the script

After typing the endnote text at the provided location you may want to verify the location where you started the insert.

Use menu **Back to Insert Point** or ESC q n b to go to that point⁶⁾.

You will get an open dialogue **Update References**.

- If you are working on a single file (not part of a book) just cancel this dialogue (References are updated already).
- If you are working on a book file, select the topmost check box (All Cross References) and use button Update.⁷⁾

5 Of course common footnotes can serve as a separate apparatus.
 6 The standard command Go to previous View (ESC v P) does not work for an XRef inserted by a script. It works of course, if you use the inserted XRef by ALT+click on it.
 7 ExtendScript function UpdateXRefs does not update XRefs in book files!

Insert Sidenote

What is a sidenote?

According to my reference H. Hiller, *Wörterbuch des Buches*, 4th ed. Frankfurt am Main: Klostermann, 1980:

Marginal notes at the outer margin of the individual pages of a book, especially in the case of scientific works. In the manner of running titles, they are intended to indicate the content of individual text passages, paragraphs or pages.

This is a side note with format zsn-FM-notes. The font is the same as from tl-table-left, but font size is 8pt.

Prerequisites

This function requires a set of formats:

- Paragraph format `zsn-side-note`
- Colour for filling the side note text frame. This must be a user defined colour (standard colour names are localised and thus create problems).

If such a format does not exist in the document when **Insert Sidenote** is used in a document, then these formats are created. You get an according message.

A created ¶ format is based on the Body format and gets size 8pt.

If you want to change the format names and string definitions, you should not do that just in the document. Change it in the global definitions before you first run **Insert Sidenote**.

See [Adaptation of global variables](#) on page 13.

Inserting a sidenote

Invoking the script

- 1 Set the insertion point where the sidenote shall be anchored.
- 2 Start the script by **Format > Footnotes and Endnotes > Insert Siednote** or ESC q n s.
- 3 At the current location an anchored frame of type Outside Text Frame is inserted. Default height is 4cm.
- 4 The location of the frame is determined:
 - From the global setting specifying which side
 - From the available space in the margins.
- 5 Within the anchored frame a text frame is established. It may be filled with a user defined colour.
- 6 The properties of the anchored frame are taken from global settings. See [Adaptation of global variables](#) on page 13

Modify appearance

It is your turn to adapt the height of the text frame to its contents. More fiddling (e.g. new placement) is necessary for notes which are placed to low on the page.

Modify appearance

When modifying the width and location of the text frame locally (not in the master page) these properties are observed by the script.

Hence you can narrow the text Frame to give more room for side notes on individual pages. Do so before you insert the sidenote!

Known issue

The message concerning missing ¶ format `zsn-side-note` may appear twice, even if you write something into the first note.

This is a side note has its anchor in the very last paragraph of this page..

Implementation considerations

The script checks for existence of the necessary character and paragraph formats. If one does not exist in the catalogue, then it is created with the default names (see the Global variables) and the minimum required properties.

Adaptation of global variables

Module `FMnotes_Globals.jsx` define variables which may be set by the user to adapt to his document environment.

Global value	Purpose	Default	Example user setting
Enhance footnotes			
<code>FmtSuper^a</code>	Character format for superscripting	"super"	"sup"
<code>FmtHypertext^b</code>	Character format indicating hypertext	"hypertext"	"link"
<code>goFno.FmtXRefName</code>	Name of the cross-reference format of the hypertext to the footnote	"zfnref-FMnotes"	"footnote-ref"
<code>goFno.FmtXRefContents</code>	Contents of the cross reference format ^c	"<super>..."	"!!"
Convert footnotes to Endnotes, Insert Endnotes			
<code>FmtSuper^d</code>	Character format for superscripting	"super"	"sup"
<code>FmtHypertext^e</code>	Character format indicating hypertext	"hypertext"	"link"
<code>goFno.FmtEnTitle</code>	¶ format of title to the endnotes	"zent-FMnotes"	"endnote-title"
<code>goFno.FmtEn^f</code>	¶ format for the endnotes	"zen-FMnotes"	"endnote"
<code>goFno.FmtEnCont^g</code>	¶ format for continue paragraphs (a footnote may comprise multiple ¶s)	"zenc-FMnotes"	"endnote-cont"
<code>goFno.FmtEnRef</code>	Cross-reference format to the end-note	"zenref-FMnotes"	"endnote-ref"
<code>goFno.FmtEnRefContents</code>	Contents of the cross reference format The required spaces enlarge the hotspot area.	"<hypertext><super>\ <\$paranumonly>\ "	"<super><\$paranumonly>)"
Insert Sidenotes			
<code>goFno.SideNoteLocation</code>	undefined> in larger margin; true: in inner margin; false: in outer margin	undefined	false
<code>goFno.FmtSideNote</code>	¶ format for the side note text	"zsn-FMnotes"	"sidenote"
<code>goFno.SideNoteMinWidth</code>	Minium width [cm]	1.6	
<code>goFno.SideNoteOffset</code>	Space between text frame / page frame and the inserted anchored frame [cm]	0.2	
<code>goFno.SideNoteHeight</code>	Default height of anchored frame [cm]	4.0	
<code>goFno.FmtSideNoteBackGr^h</code>	Background colour in side note area	"frame-0"	""

- Required properties: all ASIS + superscripting
- Required properties: all ASIS + some indication, e.g colour Blue
- The indicating symbol providing the sensitive area for the hypertext must exist in the paragraph font. Hence there is only limited choice: ellipsis or underscore.
- Required properties: all ASIS + superscripting
- Required properties: all ASIS + some indication, e.g colour Blue
- Required properties: Similar to Body, with numbering. The numbering (<\$paranumonly>) is used for reference.
- Required properties: no numbering, same indentation as `FmtEn`.
- This must be a user defined colour, because standard colours get localised names.

Cross reference to Footnote

It is not possible to combine the two objects Footnote (Fn) and Cross reference (XRef) into one. The only possible solution is to add a cross reference in front or after the footnote reference.

Cross reference

I wanted to have some sort of graphic indication of the hyper-text area (a hot spot). But a solution with a special font may be...⁸⁾ contra-productive ⁹⁾.

To avoid a too complicated definition of the cross references format (requiring a number of character formats) I decided:

- The indicating symbol providing the sensitive area for the hypertext must exist in the paragraph font.
- Hence there is only limited choice: ellipsis or underscore.
- I decided for the ellipsis, because this is somewhat wider than the underscore (superscripting scales to 70%).
- The character format for hypertext is applied across both the cross-reference symbol and the footnote reference.

ne of Lorem
mar...³⁾


Cross reference marker

The contents of the cross reference marker must be unique. I decided to combine two IDs: that of the cross reference and that of the footnote paragraph, for example
419606586:1351136

Short cut for Go Back

The installation routine adds a line to the `menus.cfg` file...¹⁰⁾, if ETB (Enhanced Tool Bars) are not already installed:

```
<Modify GotoPreviousView <KeySequence ~/Left>  
<KeySeqLabel Alt+«->>.
```

Avoid footnote and reference on different pages

For this function we need to increase...¹¹⁾ for this paragraph the Widow/Orphan lines to the number of lines in the paragraph. Then the whole paragraph goes to the next page where the footnote already is.

A reasonable procedure would set this value to n with n being the number of lines in the paragraph up to the line with the footnote reference.

IMHO this requirement became less important with the hyper-text capability and the common **Go Back** short cut.

8 Just by footnote definitions.

9 Wingdings n with character formats super and hypertext.

10 Only UnStructured\WYSIWYGview in the user area is considered.

11 In most templates this set to about 2.

Convert Footnotes to Endnotes

There is a 1 by 1 correspondence between footnotes and endnotes. Both can have multiple continuation paragraphs, which also correspond in number. This becomes recognisable in a book when the documents restart the footnote numbering.

Endnotes in a document

At the end of the document a paragraph `endnote-title` is inserted. This has normally the property *Start on new page*.

2022-09-29

E:_DDDprojects\FM-Notes\Docu\FMnotes.fm

Procedure overview

Doc

Some text with footnote¹⁾
Another paragraph with a footnote²⁾.
And here the last para with footnote³⁾.

1 Doc1: this is footnote one.
2 Doc1: This footnote
Has multiple paragraphs with individual format.
3 Doc1: Last footnote.

Doc, last page

Endnotes

1 Doc1: this is foontoe one.
2 Doc1: This footnote
Has multiple paragraphs with individual format.
3 Doc1: Last footnote.

Endnotes in a book

The endnotes are copied into an own new document named `endnotes.fm`. The last FM document in the book is taken as template. A paragraph `endnote-title` is inserted before the endnotes are copied.

Procedure overview

Doc1

Some text with footnote¹⁾
Another paragraph with a footnote²⁾.
And here the last para with footnote³⁾.

1 Doc1: this is footnote one.
2 Doc1: This footnote
Has multiple paragraphs with individual format.
3 Doc1: Last footnote.

Doc2

Some text with footnote¹⁾
Another paragraph with a footnote²⁾.
And here the last para with footnote³⁾.
Last one⁴⁾.

1 Doc2: this is footnote one.
2 Doc2: This footnote
Has multiple paragraphs with individual format.
3 Doc2: Another footnote.
4 Doc2: Last footnote.

Doc3

Some text with footnote¹⁾
Another paragraph with a footnote²⁾.
And here the last para with footnote³⁾.
Last one⁴⁾.

1 Doc3: this is footnote one.
2 Doc3: This footnote
Has multiple paragraphs with individual format.
3 Doc3: Not the last footnote.
4 Doc3: The very last

Endnotes

1 Doc1: this is foontoe one.
2 Doc1: This footnote
Has multiple paragraphs with individual format.
3 Doc1: Last footnote.
4 Doc2: this is foontoe one.
5 Doc2: This footnote
Has multiple paragraphs with individual format.
6 Doc2: Another footnote.
7 Doc2: Last footnote.
8 Doc3: this is footnote one.
9 Doc3: This footnote
Has multiple paragraphs with individual format.
10 Doc3: Not the last footnote.
11 Doc3: The very last

The a 1 by 1 correspondence between number of footnotes and endnotes allows to get all necessary information for the insertion of the endnotes and creation of the cross references during the collection of the footnotes. This information is stored in a structure

```
function oDocProps (oDoc, sName, nFns, jEnFirst,
jEnLast) {
  this.Doc      = oDoc;           // Document object
  this.Name     = sName;         // Document full path
  this.FnCount  = nFns;         // # foot notes in it
  this.ENfirst  = jEnFirst;     // # first Endnote
  this.ENlast   = jEnLast;     // # last Endnote
}
```

The items `jEnFirst` and `jEnLast` are indices in ancillary arrays:

```
aoFNcollected // Footnote objects
aoEndNoteTL   // Text location Start of
EN
```

Endnotes in a book (or single document)

The basic procedure is this:

- Save current doc and location.
- Fill the array `aoBkDocsCollected` with the book components. (For a single document just one item is stored).
- Create the endnote document with title (or the endnote title at the end of a single document).
- Loop over the documents in `aoBkDocsCollected`:
 - Open book component.
 - Accumulate the footnote object in `aoFNcollected`.
 - Define `ENfirst` and `ENlast` in `aoBkDocsCollected[j]`.
 - `CreateEndnotes` using `ENfirst` and `ENlast` as loop bounds.
 - `ReplFnByRefs` using `ENfirst` and `ENlast` as loop bounds.
- Restore current doc and location.