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## **ANSA Phase III**

# **Document Support Tools**

**Rob van der Linden, Ed Oskiewicz, Owen Rees**

### **Abstract**

This document describes the document support tools.

It describes the documentation procedures that set the requirements for the tools, the user interface to the tools, and the process by which old ANSA documents can be converted to the new style.

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## **Document Support Tools**





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Rob van der Linden, Ed Oskiewicz, Owen Rees

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# 1 Overview

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## 1.1 Requirements and Procedures

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Chapter 2 *Requirements and Procedures* describes the various document procedures, and the support requirements

Note: The following text is the abstract from RC.454, the body of which forms Chapter 2 of this document.

This document is intended as the basis upon which document support tools will be designed. Specifically, we seek support for document related activities, such as creation, upgrading, approval, filing, accessing, searching and removing of documents. There is a growing realisation that more automated support should be available for these activities to drive down the number of errors and to make these activities more user friendly.

This proposal describes the processes and procedures we already have and identifies the fields in a document which can be used to support the required automation.

This document (together with RC.122, RC.440 and RC.448) is part of the Quality Plan for Phase III.

## 1.2 Graphical User Interface

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This chapter explains the Graphical User Interface to the document tools.

The description is structured in terms of actions that a typical user might wish to perform.

Note: This chapter needs to be updated to reflect the new features that have been added to the GUI.

## 1.3 Converting old documents

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This chapter explains how to convert old documents.



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## 2 Requirements and Procedures

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### 2.1 Introduction and scope

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The idea is to have a document database with full support for version management (replacing allocator and many of the things Doc does by hand). This database has carefully designed check-in and check-out procedures, which can be operated by all project members from their own workstation desktop.

The database is also to support

- the storage of all document categories and classes, for all projects, no matter how generated (Frame, LaTeX, WordPerfect, Word, etc.)
- printing documents (replacing printdoc)
- FTP (and e-mail) access by sponsor companies and other parties
- automatic generation of the current document list and other lists by project, document category, date, etc., with or without abstracts.

#### 2.1.1 Why this document?

This document is intended as the basis upon which document support tools will be designed. Before any tools are built, it is important that we understand the processes and procedures by which documents are handled (created, reviewed, approved, upgraded, filed, accessed, searched, removed, etc.).

We already follow these procedures every day. By writing them down, we can not only improve the process by adding quality control at strategic points, but also provide consistent automated support.

If all goes to plan, then dealing with documents should be easier and prone to fewer errors. As project members we should not need to know much about the infrastructure which supports document related activities.

#### 2.1.2 Who should read this document?

All those working at APM (on Phase III and other projects) will have an interest in the procedures, and your comments are extremely welcome: if we get this right, the tools will be easier to get right as well.

This document is also targeted at those who will provide the technology to automate the document related activities.

#### 2.1.3 Other documents

Related documents are:

- RC.122 Document writing guide, helps you plan the writing process and gives hints regarding linguistic style
- RC.440 Document Archive, describes what we are going to keep in an organised fashion in Phase III

- RC.448 Document Classification, helps you decide what category of document to pick once you know what you are going to write and for whom.

This and the documents cited above are part of the Quality Plan for Phase III.

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## 2.2 Procedures

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### 2.2.1 Document life cycle

1. Documents go through four stages, reflected in the status of the document<sup>1</sup>:
  - (i) Draft
  - (ii) Approved
  - (iii) Archived
  - (iv) Cancelled.
2. Documents are NOT upgraded from one category to another. A document in one category may of course be used as the basis for a new document in another category. (Document categories are defined in RC.448.)
3. Formally, and in Phase III, the Chief Architect and/or Project Director have the authority to change the status of a document, usually upon recommendation by a review team.
4. All documents start as Draft.
5. Draft documents are subject to review, the outcome of which is a recommendation to:
  - (i) leave the status as Draft
  - (ii) upgrade the status to Approved
  - (iii) change the status to Archived
  - (iv) change the status to Cancelled.
6. Approved documents may be reviewed from time to time, resulting in a recommendation to:
  - (i) update the document (i.e. retain the current issue and allow new versions in the run-up to a new issue)
  - (ii) change the status to Archived or Cancelled
  - (iii) cancel the current issue and change the status to Draft in the run-up to a new issue.
7. Archived documents are reviewed from time to time, resulting in a recommendation to:
  - (i) remain Archived
  - (ii) change the status to Cancelled

---

1. Access to the documents and responsibility for their content may change as the status of the document changes. This is explained below.

8. Cancelled documents remain cancelled. It is permitted to use information in a cancelled document in a new draft document if you think you can get that through a review.
9. Any Draft document may be archived or cancelled:
  - (i) by the author(s)
  - (ii) by the Chief Architect.
10. Architecture Reports, Technical Reports, Marketing and Contractual documents, Project Management documents and Briefing Papers follow all the above rules. (Document categories are defined in RC.448.)
11. External Papers and Standards Contributions start as Draft and then become Approved. Such publications can be archived, but cannot be cancelled (because they leave our sphere of control).
12. Request for Comments documents cannot become Approved but may get archived or cancelled, when superseded by other documents.
13. Architecture Reports are created only as a result of Phase III activities.
14. Some Project Management documents are special:
  - (i) time sheets and monthly reports are not subject to change
  - (ii) document reviews are filed (paper or electronic) and referenced from the document which was reviewed
  - (iii) Paper copies of TC and MC agendas and minutes are kept in the Project Archive.
15. Some Marketing and Contracts documents are special:
  - (i) Contracts are under change control of the Management Committee
  - (ii) Plans are under change control of the Technical Committee

### **2.2.2 Responsibility for content**

The following rules apply:

1. The contents of a Draft document are the responsibility of the author(s).
2. The contents of an Approved document are the responsibility of the author, the review team and the person who authorised the status change.
3. The content of an Archived or Cancelled document ceases to be the responsibility of anyone. (Copyrights and IPRs are not affected by this and remain in force.)
4. In Phase III, a review team may consist of:
  - (i) ANSA Team members only
  - (ii) ANSA Team members and TC members
  - (iii) TC members only
5. The review team make recommendations to the Chief Architect to change document status.

### **2.2.3 Document numbering**

Document version control mechanisms will manage all numbering. Authors should not change or be involved in changes to any part of these.

1. A document number consists of three parts

- (i) document number (unique in the context of APM)
  - (ii) issue number (unique for each new issue to the outside world)
  - (iii) version number (for “internal” version control)
2. All changes are managed by the version control system (see below).
3. The definition of “internal” and “the outside world” will be dependent on the project within which the document is produced.
  - (i) For Phase III: “internal” means the ANSA team and the Review Team members drawn from the Technical Committee.

#### **2.2.4 Access to documents:**

1. Three reasons for access exist:
  - (i) access for printing a document
  - (ii) access for reference (to allow access to electronic versions of a document, for re-using text for instance)
  - (iii) access for modification (see section 2.5 on Version Control).
2. The following levels of access exist:
  - (i) access to issued documents only
  - (ii) access to all current issues and versions of documents
  - (iii) access to all documents
  - (iv) access to documents associated with a particular project only
  - (v) access to documents of a specific category only
3. Access may be
  - (i) from within Poseidon House:
    - all levels of access are possible
  - (ii) by remote ftp and/or e-mail:
    - access is to the last filed version of a document only
    - access is to compressed uuencoded postscript.
4. Document catalogues are prepared periodically from the database and access to these is granted to selected interested parties, to help them locate relevant documents.
5. Two types of document catalogue are useful (see e.g. DEC SRC): - an index catalogue (title, author(s), no. of pages) - an abstracts catalogue (title, author(s), no. of pages, abstract)
6. Separate catalogues must be created for different levels of access.

#### **2.2.5 Document version control**

1. Documents can be checked in and out of the document file store.
  - (i) A document may be checked out for:
    - reference (the same document cannot be checked in after this)
    - modification (all the rules about checking in apply).
2. A document which has been Archived or Cancelled cannot be checked out for modification.

3. A document which has been checked in may not be checked in again.
4. A document which has been checked out for modification, may not be checked out for modification again.
5. A log is kept of what documents have been checked in and out, by whom and when. (This allows us to see how many documents are out, how long they have been out, etc.)
6. When a new document is started, it is checked out as a new document:
  - (i) a document number is allocated (issue=0, version=1)
  - (ii) a template document with the currently valid styles results in which all known information is filled in (project name, title, authors if known, date, document category, document status)
7. When an existing document is checked out for modification:
  - (i) the original document remains in the store
  - (ii) the issue number of the copy being checked out remains unaltered
  - (iii) the version number is incremented
  - (iv) warnings about out of date formats are generated if appropriate
8. If an attempt is made to check out a document which has already been checked out, a message saying who has checked out the document, and when will result. The attempt will be logged.
9. When a document is checked in as a new version:
  - (i) the version number is compared with the last checked out version
  - (ii) the document database is updated (see field definitions below)
10. When a document is approved:
  - (i) authorisation for the operation is sought
  - (ii) the issue number is incremented
  - (iii) the version number is removed (or set to 0)
  - (iv) the document database is updated (see field definitions below)
11. When a document is Archived:
  - (i) the issue and version numbers do not change
  - (ii) the document database is updated (see field definitions below)
12. It is not possible to reverse the approval of a document other than by archiving or cancelling it.
13. The action of checking out a document may be undone after the event (e.g. when it is decided that no changes are to be made, or no document is to be written after all):
  - (i) an existing document reverts back to its previous VERSION number
  - (ii) the number of a new document will NOT be recycled
14. All issues of a document need to be kept for reference, since queries can be expected from outside the project.
15. All versions after the current issue need to be kept for reference by the author and review team, and for audit.

### 2.2.6 Document cross referencing

1. Support for cross reference maintenance amongst documents in the database is not expected. However, to enable such support in the future, the following rules must be adhered to.
2. The basic rule is: Do not reference a document which is not accessible to all the authorised readers.
3. The cross references between Architecture Reports and Technical Reports are managed and maintained by hand and by the authors (at least within Phase III), such that consistency is achieved over the current issues of the documents.
4. External papers, Architecture Reports and Technical Reports may only refer to other External Papers, Architecture Reports and Technical Reports, not to Request for Comment or Standards Contributions. (Standards Contributions and Request for Comments documents are transitory in nature.)
5. Request for Comments documents may refer to any document.
6. Standards Contributions should refer as little as possible to other project documents.
7. Only cross reference open documents of other projects. (Anything more elaborate is difficult and expensive to maintain.)

### 2.3 Document fields

---

1. Project results\_in Document
2. Project\_Document has<sup>1</sup>:
  - (i) +\* Project-name
  - (ii) +\* Title
  - (iii) +\* Number
  - (iv) +\* Date (check-in date)
  - (v) +\* Classification
  - (vi) +\* Status
  - (vii) \* Supersedes
  - (viii) \* Superseded-by
  - (ix) +\* Distribution
  - (x) +\* Author(s)
  - (xi) +\* Abstract
  - (xii) + Copyright-statement
  - (xiii) + Revision-history
  - (xiv) Acknowledgement
  - (xv) + Body-text

---

1. + indicates a mandatory field on all documents; \* indicates a field used for database entry generation.



- (xvi)+\* Number-of-sheets
- (xvii)Review-information
3. Project\_Document\_Project-name
    - (i) format: Text
  4. Project\_Document\_Title
    - (i) format: Text
  5. Project\_Document\_Number
    - (i) format:  
APM/<document number>.<issue number>.<version number>
  6. Project\_Document\_Date
    - (i) format: Current\_Date\_Long
  7. Project\_Document\_Classification
    - (i) One of the following sentences is to appear in this field (for Phase III):
      - Project Management (confidential to ANSA consortium for 2 years)
      - Marketing and Contracts
      - Architecture Report
      - Technical Report
      - Briefing Note
      - Standards Contribution
      - External Paper
      - Request for Comments (confidential to ANSA consortium for 2 years)
    - (ii) format: Text
  8. Project\_Document\_Status
    - (i) One of the following three words is to appear in this field:
      - Draft
      - Approved
      - Archived
      - Cancelled
    - (ii) format: Text
  9. Project\_Document\_Supersedes
    - (i) optional list of which documents are superseded by this document
    - (ii) format of each entry APM/ <document number>. <issue number>
  10. Project\_Document\_Superseded-by
    - (i) optional list of which documents are supersede this document
    - (ii) format of each entry APM/ <document number>. <issue number>
  11. Project\_Document\_Distribution
    - (i) for Phase III:
      - for all licensable and restricted documents (PM, AR, TR, RC)

- for all open documents with draft status for all documents “sponsors” MUST be in this field.
  - (ii) for other projects: as appropriate
  - (iii) format: Text
12. Project\_Document\_Author(s)
- (i) add your name if you improve/extend a document started by someone else
  - (ii) format: first names followed by surname
13. Project\_Document\_Abstract
- (i) format: Text
  - (ii) size limit: 15 lines of text (approx. 200 words)
14. Project\_Document\_Copyright-statement
- (i) for Phase III:  
Copyright (c) YYYY Architecture Project Management Limited  
The copyright is held on behalf of the sponsors for the time being of the ANSA Workprogramme.
  - (ii) for other projects: as defined for that project.
  - (iii) format: Text
15. Project\_Document\_Revision-history
- (i) for each change: <date> <issue number> <version number> <brief description of change>
  - (ii) format: Text
16. Project\_Document\_Acknowledgement
- (i) format: Text
  - (ii) The following template is suggested:  
The authors acknowledge the valuable contributions made by all the members of the ANSA Team, in particular Joe Bloggs, seconded to the ANSA Team by The ABC Computer Corporation, and Fred Nerk, assigned to the Team by Architecture Projects Management Ltd.
17. Project\_Document\_Body-text
- (i) format: Text
  - (ii) style:
    - for Phase III defined by {to be specified}
    - for other projects: as defined by those projects
18. Project\_Document\_No-of-sheets
- (i) format: Integer
19. Project\_Document\_Review-information
- (i) optional reference to documents concerning the review of the document (reference to electronic and paper based materials in the project archive)
  - (ii) format: Text

## **2.4 Remaining issues**

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### **2.4.1 Other projects**

The structure proposed here has been driven mostly by the requirements envisaged for Phase III. It has however been kept fairly general and it can therefore be anticipated that other projects will fit in without too many alterations.

### **2.4.2 Document classes**

Should there be a class for: Presentations (open)? Not all presentations will carry the same confidentiality. Keep presentations in the category in which they best fit?

### **2.4.3 Keeping old documents**

The current proposal requires us to keep all issues and all versions after the last issue. If a document is at issue 2, then all versions needed to get to issues 1 and 2 could be deleted.

Technology will place a bound on the number of documents we can keep. All issues of a document need to be kept as a minimum. It would be nice if we could keep all versions as well, so we could trace the review process (essential in ISO 9000 QA). An optical file-store would help here.



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## 3 Graphical User Interface

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A graphical user interface to the document tools is provided on all the machines at APM. The GUI provides facilities to:

1. Create a new document
2. Check in a document
3. Check out a document for updating
4. Make a copy of a document for reference
5. Print a document or take a copy of its PostScript file
6. Look up a document in the database
7. Convert old format documents to the new format
8. Approve or cancel a document

### 3.1 Starting the GUI

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The GUI can be started by issuing the following command:

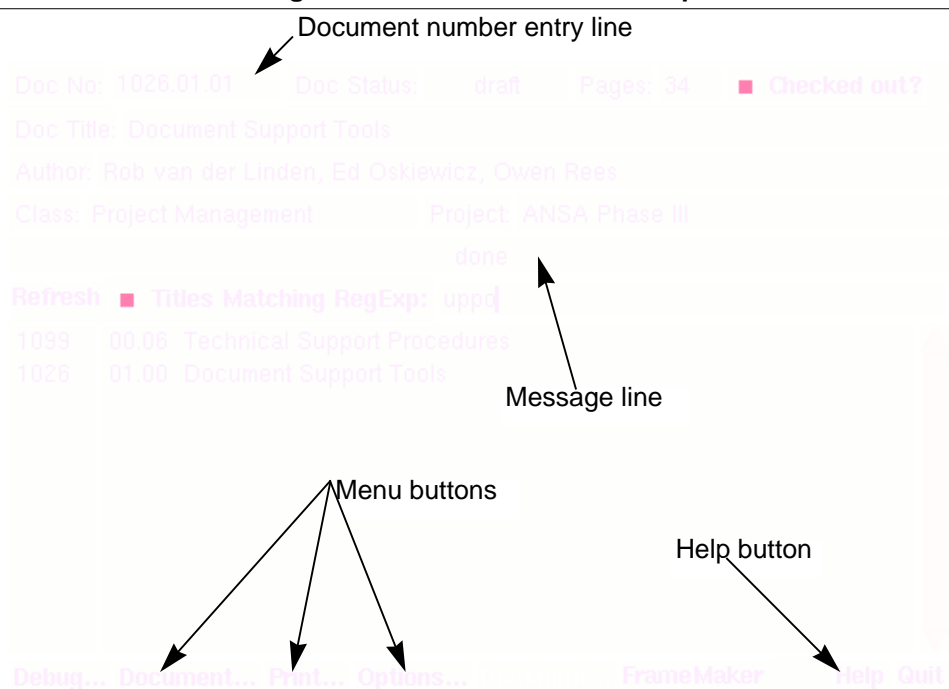
```
% doc&
```

The initial state of the GUI window is shown in Figure 3.1.

---

**Figure 3.1: GUI window on startup**

---



The window has fields into which text may be entered and menus that appear when the menu buttons are pressed. The use of these fields and buttons is described in online documents that are available by pressing the Help button. This will start a Mosaic browser which will take you on a tour round the functions on offer.

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## 4 Converting to the new document format

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Conversion is largely an automatic process but there is an element of manual correction for those cases which cannot be second-guessed by the scripts.

Conversion should be done a book at a time, these instructions are oriented towards the conversions of entire books.

It is essential that the conversion is done in the sequence described here. This is because there are cross references between certain documents which become invalid if documents are upgraded in the wrong order. If cross references become botched during the conversion process there is no recovery other than starting again from the beginning - you have been warned.

### 4.1 Preparation

---

Ensure you have a printed copy of the original document to refer to during the hand correction phase of the conversion process (see §4.5).

Start up the GUI and create a new book directory by using the **Document:New**<sup>1</sup> dialogue, it is important that you specify the precise current document title as this will be recorded in the document database.

Note: All conversion tasks will be performed in the new book directory.

Now start up FrameMaker and open up both the old and new book files. Using the shell copy all body chapters from the old book directory to the new one.

Note: Do not copy the cover page, the frontispiece, the table of contents or the references.

In the new book file use the **(book):Add File** dialogue to add the existing chapters in the correct order and position and use the **(book):Rearrange Files** dialogue to delete **Chapter1.doc**.

Select the first chapter and then use **(book):Set Up File** dialogue to make it's page numbering **Restart at 1**. Save the new book file.

### 4.2 Converting the cover page

---

Now open the old cover page and new **cover.doc**. As text is being copied from the old to the new documents in this stage it is essential that character and paragraph formats are not corrupted in the process. Ensure this by changing the character formats in the old document before copying text over. This is done as follows:

- Place the mouse in the new abstract and select **(DBM):Copy Para Format**

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1. The notation **Name:Function** means choose **Function** from the **Name** menu. The notations **(book):entry** and **(DBM):entry** are shorthand for choosing **entry** from the book menu or document background menu (press the right mouse button).

- Select the whole of the old abstract by triple clicking the first abstract paragraph and shift left clicking the last paragraph
- Select **(DBM):Paste**
- Select **(DBM):Copy**
- Select the existing instructions in the new abstract by using double click first word/shift click last word, select **(DBM):Paste**

Do not copy over any cross reference tags during this process. Now type in the author names and tidy up, e.g. delete the empty paragraph at the end of the abstract so that it is properly centred.

Save **cover.doc** and close both documents, it is not necessary to save changes to the old cover document.

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### 4.3 Converting the references document

---

Open **references.doc** in the new book and open the references from the old book. Go to the old references and place the cursor in a references paragraph. Choose **Edit>Select All In Flow** and then select **(DBM):Copy**.

Place the cursor before the end of flow character in **references.doc** and select **(DBM):Paste**. Tidy up by deleting unwanted paragraph after the title.

Correct the appearance by selecting **File:Use Formats**, using all formats from **Current**.

Save **references.doc** and close all open documents and book files.

---

### 4.4 Converting all body chapters

---

Because of the size of the tools used, this phase of the conversion is very memory intensive. You are advised to exit all non-essential applications (in particular FrameMaker) while running the converter.

#### 4.4.1 Running the converter

Note: Do not run the convertor on **cover.doc**, **frontispiece.doc**, the table of contents or **references.doc**.

Start up the document GUI and for each chapter in the book do the following:

- select the chapter name using the file browser and then select **Document:Convert**
- when the dust settles you will be mailed a conversion report detailing any character, paragraph, cross reference and table tags or formats which could not be converted (because they were not a part of the old document standard and therefore illegal). These should be investigated and fixed during the next stage.

When you have converted all chapters then quit the GUI, print out all the conversion reports and start up FrameMaker.

---

### 4.5 Tidying up the conversion by hand

---

The conversion process is not perfect and some hand correction is necessary.



- The old style two paragraph chapter title will cause the chapter title to appear in the wrong paragraph
- font changes may not have been applied
- illegal paragraph/font/table/cross reference tags will be unrecognised
- some obsolete reference formats (especially to figures) included words like “figure” and may need to be corrected
- tables and diagrams may be too wide to fit the new size column
- diagrams may not conform to the new standard (a diagram is contained inside a single cell table).

For each chapter one or more of the following may be necessary.

#### 4.5.1 Chapter title misplaced

Correct font of the title using a procedure similar to that in §4.2 and then copy it into the title paragraph. Delete the spurious paragraph character.

#### 4.5.2 Font changes have been lost

Note: EO is interested in dropped font changes as it may be possible to improve the converter and/or standard template.

Identify these by referring to the printed copy of the manual and apply a font change by hand **using the character menu**. If you have a font change which is not in the menu this may be a bug in the menu or you may be using an inappropriate font.

#### 4.5.3 Unrecognised tags have been reported

Note: Beta testers should refer all reported tags (except for the **ChapterTitle** paragraph) to EO as the converter and/or standard template may have holes in them.

These will be listed in the mail message sent by the converter. Use the search command (CTRL-S) and an appropriate **Search For** type to locate them in your document. Again, change them to one of the standard formats.

#### 4.5.4 Obsolete references result in missing words

Use the **Edit:Search** dialogue to search for **Any Cross-Reference** and go through the whole document and check each cross reference, some common errors to look out for are:

- words like *figure* appear to be missing, type them in by hand
- References to sections should be of the form *see §x.y* rather than *see section x.y* or *see x.y*; these should be corrected by using the **§SecRef** cross reference format
- the reference may appear to be invisible, this is often a reference to the paragraph number of an un-numbered paragraph — either delete this reference or replace by a reference to a correct chapter
- References to cited text which are collected in **references.doc** should be in 9 point text, if this is not the case then double click the erroneous reference and replace it by one with a **Reference (9 pt)** cross reference format

#### 4.5.5 Tables and diagrams are too large

Tables and diagrams now have a maximum width of 14 cm. If they are wider than this then they will overhang the text column.

##### 4.5.5.1 Resizing tables

Quick resizing of tables is easy, select the leftmost column by left clicking inside a cell, then shift left click a cell in the rightmost column. Now select **Table:Resize Columns**. Enter 14.0 cm inside the **By Scaling to Widths Totalling** box and click **OK**.

Hand adjustment of column widths may produce a more aesthetic result.

##### 4.5.5.2 Resizing diagrams

This is much more complicated and is best dealt with on a case-by-case basis. If it is too much trouble to resize a diagram then appearance is best sacrificed in the interests of saving time.

The simple case is where the frame is oversized, in this case group all elements inside the frame, now select the frame and scale it to 14 cm using the **(graphics control panel):Scale** dialogue. Now select the contents and center in the frame using the **(graphics control panel):Align** dialogue.

It may also be possible to reduce the width of the diagram by moving items closer together or by reducing the width of captions.

#### 4.5.6 Diagrams not in a table

The standard for figures is to place them inside a one cell table. This ensures that the title is tagged correctly and standardises cross reference names. If you have any free anchored frames they must be converted to table form. Unfortunately this gets a bit tedious because it causes cross references to the old figure to get broken and so they must be regenerated by hand.

This process can be made easier by using the following procedure for each non-compliant figure.

- resize the frame if it is wider than 14.0 cm
- choose a suitable anchor point and use **Table:Insert Table** to insert a **Figure**
- copy the anchored frame to the **Figure** cell
- copy the text of the title to the title of the **Figure**
- delete the original figure
- At this stage existing cross references to the figure have been broken and must be regenerated. The broken references can be identified by
  - selecting the **Special:Cross Reference:Update** dialogue and specifying **Internal Cross References**, click **OK**
  - use the **Edit:Search** dialogue and select **Search For Unresolved Cross Reference**, to highlight broken references
  - double click this reference and use the menus to select the correct **FigTitle** and title (it will have the same number as the broken reference) then select **Replace**
  - Continue this until no more unresolved references are found

#### 4.6 Tidying up

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Select **(book):Generate Update Files** and deal with any error messages (typically missing files and unresolved cross references). Check the table of contents to ensure that all chapters have been converted in the correct sequence.

Delete all backup files.

***You have now finished.***

