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**APM**

## **APM Document Management Procedures**

**Chris Mayers**

### **Abstract**

The APM document management system requires extensions to support PC and Macintosh formats. This document specifies these requirements, and proposes a design to satisfy them, and procedures for the use of the extended system.

[Note: this version of the document also acts as a holding document for other information on document preparation and use of APM presentation equipment. This information should be transferred elsewhere.]

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# 1 Introduction

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## 1.1 Audience

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This document is intended for those involved in the implementation of changes to the APM document system.

## 1.2 Scope

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The document covers changes to the APM document system, including support for Unix, Macintosh, and Windows 3.x environments.

It does not cover support for Windows NT and Windows 95 environments. (Support for these environments has been studied briefly.)

It does not cover support for FrameMaker documents stored in the old document system, nor support for external documents (originating from outside APM).

It does not cover integration between the APM document management system and the APM internal Web system. This is TBD.

## 1.3 Status

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This is a working document.

Note: The version of the document is also a 'holding' document containing material that is to be transferred to other procedures. This is to ensure that the material does not get lost.

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## 2 Requirements for changes to the APM document system

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### 2.1 Overview

---

The APM document system ([APM.1022],[APM.1024], [APM.1026]), currently provides adequate support for the mangement of version-controlled FrameMaker documents. However, our customers now require deliverable documents in PC and Macintosh formats, and these must be subject to at least the same controls as FrameMaker documents. This is also required for ISO 9000 compliance.

PC and Macintosh users also require access to the APM document system itself.

Other requirements are also spelt out in the following sections. Potentially useful facilities for which no requirement can be justified are also listed.

APM have no current plans to replace the APM document system with an off-the-shelf document management system. However, these requirements have been aligned to some extent with the [DMA Requirements].

### 2.2 Document formats

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#### 2.2.1 Source formats

The APM document system only supports control of source documents in FrameMaker format. We have to supply documents to customers in other formats; currently such documents are not under formal configuration control.

1. The APM document system must support control of source documents in the following formats:
  - FrameMaker 3.0
  - Microsoft Word for Windows 6.0
  - Microsoft Word for Macintosh 5.1a
  - Microsoft PowerPoint for Windows 4.0
  - Microsoft PowerPoint for Macintosh 3.0
  - Microsoft PowerPoint for Macintosh 4.0
  - Microsoft Project for Windows 4.0
  - Microsoft Project for Macintosh TBD
  - WordPerfect for Windows 6.1a
  - HTML version 2.0

Note: There are no plans to support other formats, for example LaTeX

Note that filename extensions do not determine source formats (for example both FrameMaker and Microsoft Word use the .doc file extension).

### 2.2.2 Target formats

The APM document system automatically generates Postscript and HTML files from FrameMaker source. These target formats are also needed corresponding to the other source formats.

2. The APM document system must support storage of target files in the following formats:

- PostScript
- HTML version 2.0 (note that this is also a source format)
- Adobe Acrobat Portable Document Format (PDF)

In some cases a document is edited in one format, but shipped to the customer in a backwards-compatible format (for example, edited as a Word 6.0 document, then saved as Word 2.0 document which is then sent to the customer. In this case the Word 6.0 document is the source format, and the Word 2.0 document is a target format. Both must be stored in the APM document system, since the APM document system cannot itself generate the Word 2.0 file from the Word 6.0 file.)

3. The APM document system must support storage of target files in any format that can be saved from a source format (for example, RTF, or plain text.)

The APM document system automatically generates a source file when a new document is created. This is inappropriate when documents are available in target form only (for example PostScript). Such files may still need to be checked in again if they are revised, but it does not make sense to check out copies of the target files for editing.

4. The APM document system must support storage of target files without corresponding source files

Note: Is this a requirement? Is this an issue only for external documents?

The APM document system can automatically generate PostScript files from FrameMaker source. It would be impractical to do this for document formats for which filters are not available for Unix.

5. The APM document system must, for each particular source format:

- automatically generate target files from source files, or
- verify that target files are of the correct format, and were generated from the corresponding versions of the source files. (The exact checks are TBD), or
- allow unverified storage of target files, and log the details of the source files and target files for management administrative verification

6. The APM document system must store target files unmodified if it cannot automatically generate them

Note: Also need to support multiple targets of the same format (for example, presentations with and without speaker notes)?

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## 2.3 Document source file control

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### 2.3.1 Document file naming

To support document interchange between Microsoft Windows 3.x and other supported environments:

7. The APM document system must check that source filenames conform to DOS filename rules, except for FrameMaker documents

There is no similar requirement to enforce this for target filenames, as target files do not need to be edited.

The DOS filename rules also apply to directories; also inhibit using the current scheme including version numbering (for example APM.1234.00.01- is not a legal DOS directory name).

Note: This rule is painful, particularly since both Windows NT and Windows 95 now support long filenames compatible with Unix and Macintosh. However, customers will continue to use Windows 3.x for a long time, and we need to enforce this for document distribution to them, as well as for our own Windows 3.x users.

### 2.3.2 Multiple source files

The APM document system supports documents consisting of multiple files, namely FrameMaker books.

There is an equivalent requirement for non-FrameMaker documents. (It is a practical necessity for large Microsoft Word documents.)

8. The APM document system must support documents consisting of multiple files of the same format (for example a Microsoft Word master document and its subdocuments), in the same directory

Note that the APM document system is not required to be aware of the relationships or dependencies between such documents. (The APM document system does do this for FrameMaker documents using information in the FrameMaker book file.)

In general, the relationships and dependencies are reflected in the filenames of documents in an application-specific way. (For example, Microsoft Word by default derives the names of subdocuments from the headings in the master document.) However, the APM document system needs to be able to distinguish which file is the master document.

Note: It is TBD how the master document is distinguished.

Note: There may be practical difficulties in using Microsoft Word master documents; for example, subdocuments can't refer to fields in master document.

There is no current requirement to support documents consisting of multiple source formats within one document. (This would be useful, for example to support documents that are linked with Microsoft's Object Linking and Embedding (OLE.) It would also be useful for a set of PowerPoint presentations plus a playlist .LST file.)

### 2.3.3 Shared source files

There is no current requirement to be able share source files between documents. (This would be useful for building a large-scale presentation from individual source files that already exist; this is often the case for training presentations.)

Shared source files are difficult to handle because of:

- version control of the entire document, as well as version control of individual shared source files
- cross-platform compatibility of Microsoft OLE object linking technology (it is supported on the various Windows platforms, and also on MacOS)

## **2.4 Document control**

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### **2.4.1 Document versions and control information**

Control information for documents is held:

- within the APM document system database
- within the APM cover page of each FrameMaker document

The APM document system automatically updates fields in the cover page of FrameMaker documents, and automatically overwrites the frontispiece, if present. This happens when documents are created, checked in and checked out. This is not an appropriate automatic action for other document formats. It relies on knowledge of the structure and content of FrameMaker files.

Several possibilities have been considered:

- storing the document control information in a separate HTML file. This is potentially attractive because the information is already output in this form for browsing on our World Wide Web site. This possibility has been rejected because:
  - we have no GUI tools for editing HTML; it is too easy to make mistakes
  - users would have to maintain consistency between the HTML file and the document itself manually; there is no way to refer to HTML fields from a separate document (or vice-versa)
- using the document control information supported by the specific document formats (for example the Summary Information supported by Microsoft applications)
- entering the document control information into the document database when a document is created, but not automatically keeping it consistent thereafter

The latter two possibilities are relevant. The requirement is therefore as follows:

9. For non-FrameMaker source formats, the APM document system must automatically update the document database from the Summary Information (or other control information) in the source files when a file is checked in. This applies to the following source formats:
  - Microsoft Word for Windows 6.0
  - Microsoft PowerPoint for Windows 4.0
  - Microsoft Project for Windows 4.0
  - HTML version 2.0 (Microsoft Summary Information extensions)
  - others TBD (including Macintosh)

10. If document control information is not available for a particular document format, the information in the document database must be left unchanged. (Note that the APM document system must be able to interpret document file formats to extract document control information)

The APM document system automatically updates the document index when documents are checked in. This ensures that the document index is consistent with the contents of the documents. This must be done for other non-FrameMaker documents too.

11. The APM document system must update the document index and document abstract with information from the document when it is checked in

The control information supported by non-FrameMaker documents depends on the document format.

12. The following document control information mapping is required:

**Table 2.1: Document Control Information for Microsoft Word for Windows 6.0, PowerPoint for Windows 4.0, and Excel for Windows 5.0**

Document Database Field	Summary Information Field	Comments
Document Number	(not available)	Leave database unchanged on check-in
Document Version	(not available)	Increment on check-in
Title	Title	
Author	Author	
Class	(not available)	Leave database unchanged on check-in
Project	Subject	(Maybe use for something else?)
Status	(not available)	See §2.9.2 <i>Approve</i>
Date	TBD	
Abstract	Comments	

The information stored in the document database must be truncated if the information in the Summary Information field is longer. (The document database restricts Title and Author to 80 characters.)

Mappings for other Windows document formats are TBD.

Note: WordPerfect 6.1a has a configurable set of Document Information. So does Microsoft Office '95 (Word, Excel, PowerPoint, Access). Microsoft Project 4 has additional Company and Manager fields).

Mappings for Macintosh document formats are TBD.

The APM document system does not support keywords for searching. There is no requirement to add such support within the APM document system itself (Note that the Microsoft Summary Information does allow for keywords, and users can search on these within these applications - see §2.7.1 *Searching*.)

The APM document system records other control information when documents are created or checked in; the date, action, version and user name. Since these functions do not require information from the document itself, and are only available from Unix, there are no new requirements here.

#### 2.4.2 Document templates

The APM document system allows the user to select a FrameMaker document template when creating a new document. The APM document system fills in the FrameMaker cover page file from the document template with the



document control information. This approach is impractical for other document formats.

Definition of the templates themselves is outside the scope of this document. However, such templates must allow for the document control information or version information in their cover page or master (for example, for document version in the form nn.mm/vv). This is TBD.

There is no current requirement to allow the user to select a template for other document formats. Instead, users select a template from within the application, and fill in the document control information there. The requirement is therefore:

13. A shared directory must be provided that stores templates for non-FrameMaker APM document formats.

There is no current requirement for the automatic management of versions of the templates themselves. (This is not provided for FrameMaker templates.) However:

14. The procedures for creating a new template and applying new templates to existing documents, and so, must be documented

#### 2.4.3 Document security

Documents created by APM have confidentiality needs, both for commercially-sensitive and other needs. These needs must be reflected in:

- restrictive markings in the text of the document header and footer, created and maintained automatically
- security access control on file storage (potentially storage on separate servers)
- which documents are to be included in indexes
- document distribution flow via APM's ftp and WWW servers
- document attachment to e-mail

Requirements here are TBD; it also affects the rules in [APM.1024].

#### 2.4.4 Document classification

Refer to [APM.1024].

Note: Refer specifically to the control matrix here; TBD.

The Request for Comments (RC) document classification is no longer useful. There is no function for archiving them. Other documents may refer to them, but the distribution rules mean that ANSA Associates do not have access to them.

The following actions are required. (These do not entail software changes.)

15. The Request for Comments (RC) classification must be disabled so that no new RC documents can be created.
16. Useless RCs must be cancelled (by administrative action)
17. Useful RCs must be converted to TR/AR/PM/EP as appropriate (by administrative action).

The Briefing Note classification is only to be used for Training and APM Business Unit documents.

18. [APM.1024] must be updated accordingly.

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## 2.5 Document distribution

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### 2.5.1 Document distribution via APM's ftp server

There are no new requirements here.

### 2.5.2 Document distribution via APM's WWW server

There are no new requirements here.

### 2.5.3 Document distribution via e-mail

There is no requirement to support document distribution via e-mail, either for delivery to customers, or for internal review (for example, via an application's Add Routing Slip function).

### 2.5.4 Collective document distribution

Currently there is no way of gathering together a set of documents for collective distribution, for example:

- multiple source files for several presentations to be placed on a portable machine
- multiple documents to be placed on the APM ftp server in a tar archive
- multiple documents to be sent as e-mail attachments

There is no requirement to support collective document distribution.

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## 2.6 Document conversion

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Conversion between source formats (for example, FrameMaker to Microsoft Word) would allow more reuse of source text. This is best done by off-the-shelf filters and tools.

19. [APM.1026] should be updated with details of the available filters and tools, procedures for their use, and their limitations.

Note: Add as an appendix here, for now?

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## 2.7 Document retrieval

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### 2.7.1 Searching

The APM document system does not provide a document search function (using keywords, or otherwise).

However, most applications have their own search facilities (for example, Microsoft applications have a Find File function; WordPerfect has a similar function). These search facilities use the document control information stored within the documents themselves.

The requirement is therefore:

20. A read-only directory tree containing copies of (uncompressed) source files of the most recent checked-in versions of each document must be available

The Find File function in some Microsoft applications will only search 200 directories. There is no requirement to alleviate this problem,

Support for Macintosh document formats is TBD.

Advanced searching facilities via the APM document abstracts or indexes using WWW browsers is TBD.

### 2.7.2 Viewing

The APM document system does not provide a function to allow the user to view a document. The only way is to use the “Copy source” function to obtain a copy of the source files, then edit the source files.

This requirement will mainly be satisfied by the read-only directory tree (see §2.7.1 *Searching*). Viewing older versions of source files can be achieved through the “Copy source” function.

There is no requirement for viewing target formats (for example, to support viewing of PostScript or PDF.)

Advanced viewing facilities using WWW browsers are TBD. (This could exploit WWW links to the read-only directory tree.)

Viewing a document’s control information is available in the APM Document Manager; there is no new requirement here.

Viewing a document’s abstract is available via a WWW browser in the APM internal WWW server; there is no new requirement here.

### 2.7.3 Reusing source files (cut-and-paste)

The requirement for cut-and-paste from existing documents is achieved the same way as for viewing (see §2.7.2 *Viewing*).

### 2.7.4 Retrieving target files

The APM document system PSfile function allows retrieval of PostScript.

Note: Are any printing options applied? Since it is in the Print... menu, one would expect so  
21. The APM document system should provide support for retrieval of other supported target formats (for example PDF)

Note: A “Copy target” function would be sufficient.

### 2.7.5 Printing

Although the APM document system only currently supports FrameMaker documents, it has been used to store non-FrameMaker documents, along with corresponding PostScript generated by that applications

However, printing options currently do not always work on these PostScript files:

- printing PostScript generated from Microsoft PowerPoint and Microsoft Word for Macintosh with the APM document system “Handout 2-up” and “Handout 4-up” options gives “ERROR: child process exited abnormally”.
- printing PostScript generated from Microsoft Word for Macintosh with the APM document system 2, 4, and 9 pages per side options give “ERROR: typecheck”, “OFFENDING COMMAND: setlinewidth” in the printed output.
- printing ranges of pages does not always work correctly

- PostScript that has been generated for A4 paper will not print correctly on Letter size paper

Note: The APM document system may need to post-process the PostScript for clean printing, also to make it printable on letter paper. If we do this, we probably also want to store the original PostScript, just in case.

It should also be noted that PostScript generated from Microsoft Windows applications for HP Laserjet printers may contain an HP PJI initial line that switches from PCL mode to PostScript mode.

There are therefore requirements:

22. The APM document system must support all printing options for PostScript generated from all supported source formats (even if such PostScript does not always conform to the Adobe specification)
23. The APM document system must not modify the stored form of PostScript to support all these printing options.

The APM Document Manager has more separate printing options that are necessary, and these do not always have the expected effect. There is no requirement to simplify the printing options.

Note: How does the print function avoid printing the cover page for presentations when printing to some printers (e.g. rainbow)?

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## 2.8 User interface

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### 2.8.1 Host system support

The APM Document Manager has a GUI based on tcl. This is only available on Unix workstations (and X terminals), not on PCs. For Macintoshes it is available via X emulation. It is impractical to provide all functions on all platforms.

Existing functions will be provided as before; a subset will be provided via WWW browsers. (This is TBD; it will probably include Print and View.)

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## 2.9 Document management

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### 2.9.1 Cancel check-out

There are no new requirements here.

### 2.9.2 Approve

The APM document system approve function changes the status of the document, and its version number accordingly.

This updates the document itself (and entails regenerating postscript and HTML). It is unclear how this can be done for anything other than FrameMaker documents.

The possibilities considered for non-FrameMaker documents were:

- the approve function would only update the status within the document database. This would not be reflected in the document itself; therefore, the document must not include the version number or status, because it would be incorrect

- Note: The problem here is that Approve increments the first part of the version, as well as setting the second part to 0
- as above, but the status is included in the PostScript via the 'watermark' function of the Windows PostScript driver. This possibility has been rejected because:
    - it only handles the status, not version
    - it does not handle other target formats (for example, PDF)
    - it is only available for Windows

- Note: True?
- it requires a manual step to regenerate the PostScript, with risk of mistakes
  - it might interfere with the APM doc system print function

- Note: To be tested, if necessary
- the approve function would only update the status within the document database. This would not be reflected in the document itself. The user would then
    - check out the document again
    - edit it to modify only the version number and status
    - reprint PostScript and other target files
    - check it in again.

The approve function would then be invoked again, and would only update the status within the document database

All of these possibilities would be implemented the same way by the APM document system; the only difference is in the procedure for using the approve function.

The requirement is therefore:

24. For FrameMaker documents, the approve function must have the same effect as currently. For non-FrameMaker documents, this function must only update the status in the document database.

### 2.9.3 Archive

The APM document system archive function changes the status of the document.

This updates the document itself (and entails regenerating postscript and HTML). It is unclear how this can be done for anything other than FrameMaker documents. This is a similar issue to §2.9.2 *Approve*, but only affects document status, not document version. Since the archive function puts the document into its final state, it would be acceptable for the document itself not to show archived status. (It would certainly be unacceptable to have to edit the document and regenerate the Postscript and other target formats merely for the document status.)

The requirement is therefore:

25. For FrameMaker documents, this function must have the same effect as currently. For non-FrameMaker documents, the archive function must only update the status in the document database.

This requirement is consistent with §2.9.2 *Approve*.

#### **2.9.4 Regenerate PostScript and HTML**

26. For FrameMaker documents, this function must have the same effect as currently. For non-FrameMaker documents, this function must have no effect

#### **2.9.5 Regenerate HTML**

27. For FrameMaker documents, this function must have the same effect as currently. For non-FrameMaker documents, this function must have no effect

#### **2.9.6 Mirror WWW**

This function has never been implemented.

#### **2.9.7 Cancel document**

There are no new requirements here.

---

### **2.10 Other requirements**

---

#### **2.10.1 Off-line working**

Users may be working on documents away from APM. While working away, at home, or customer sites they may need to:

- create new documents
- edit documents
- print documents

28. Procedures for off-line working must be documented. This must include use of fonts, templates, and so on

Further requirements are TBD.

#### **2.10.2 Performance**

The user and management functions of the APM document system are slow.

29. The APM document system database must be replaced with a faster storage mechanism.

Note: Is this a high-priority requirement?

#### **2.10.3 Technology dependence (legacy)**

The APM document system is dependent on the following technologies which are only available on specific platforms, and are expensive to maintain:

- perl
- tcl/expectk
- specific database interface

There is no current requirement to move to industry-standard interfaces to replace these.

**2.10.4 Demonstration of APM technologies**

We could use the APM document system to exploit our own technologies:

- CORBA/IIOP (ANSAware/RT, Jet)
- ANSAweb/Jade
- Java

There is no current requirement to do so.

**2.11 Requirements**

It is proposed that the requirements be implemented in phases as follows:

- Phase 0: the current system
- Phase 1: support for multiple source formats
- Phase 2: support for multiple target formats
- Phase 3: WWW user interface

**Table 2.2: Requirements roadmap**

Requirement	Phase 0	Phase 1	Phase 2	Phase 3
Source formats - FrameMaker	yes	yes	yes	yes
Source formats - non-FrameMaker	no	yes	yes	yes
Target formats - PostScript	yes	yes	yes	yes
Target formats - HTML	yes	yes	yes	yes
Target formats - other	no	yes	yes	yes
User interface - user functions	Unix only	Unix only	Unix only	WWW browser
User interface - management functions	Unix only	Unix only	Unix only	Unix only

The remainder of this specification only covers the design and implementation for phase 1.

Note: Add effort estimates to the above table

---

## 3 Proposed user interface for the APM document system

---

### 3.1 Overview

---

The user interface specified here is for Phase1 of the improvements to the APM document system. The existing APM Document Manager user interface (running under Unix) is preserved, but this now supports PC and Macintosh document formats, as well as FrameMaker; those who only use FrameMaker will see no change to the users interface.

Non-Framemaker users will still require access to Unix for the APM document system for:

- lookup and history
- creating, checking out, and checking in documents
- printing checked-in documents

Phase 2 of the improvements to the APM document system will support a new user interface based on HTML forms via a WWW browser. This has not yet been specified, but will eliminate the need for access to Unix for the above functions.



Support for PC and Macintosh means that the working directory (destination directory) must be accessible via NFS:

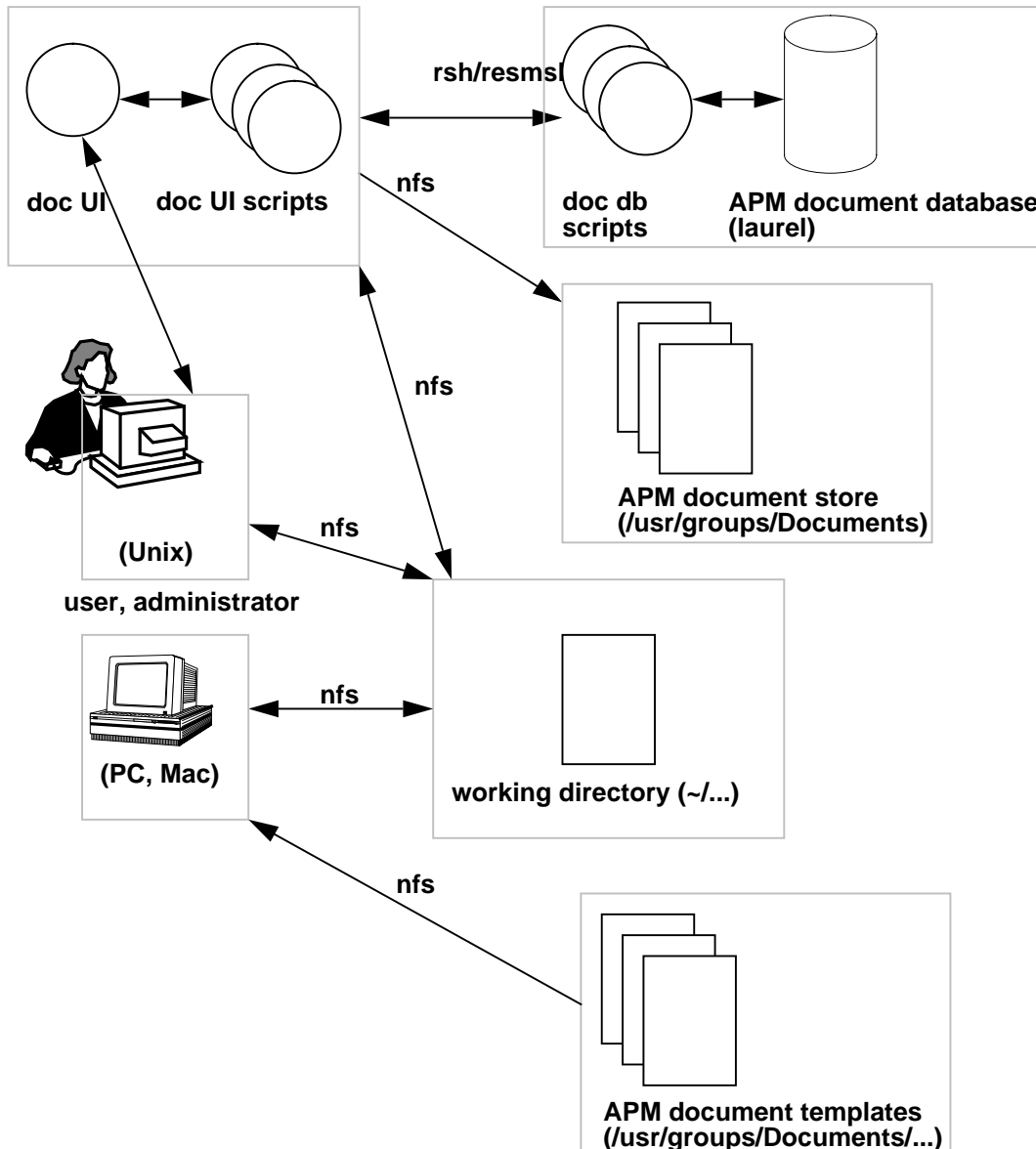


Figure 3.1: APM document system - user view

### 3.1.1 Use from PC

Support for Windows 95 and Windows NT users is TBD.

#### 3.1.1.1 Drive letter assignments

Windows users should use the following drive letters:

Note: Need to show how these are set up (at PC/TCP login?) There appears to be no way to set up user-specific drive assignments with PC/TCP (e.g. for your home directory).

**Table 3.1: Windows drive letters**

Drive letter	Use	Comments
A	First floppy drive	
B	Second floppy drive	
C	First hard disk (partition)	
D	Second hard disk (partition)	Or CD-ROM
E	Third hard disk (partition)	
F	Fourth hard disk (partition)	
G		
H	Primary user's home directory	Currently used by Sage
I	Secondary user's home directory	
J		
K		
L		
M		
N		
O		
P		
Q		
R	Latest versions of documents	Read-only. See §3.6 <i>Viewing a document</i>
S		
T	Workgroup templates	Read-only. See §3.2 <i>Creating a new document</i>
U		
V		
W		
X		
Y		
Z		

**3.1.2 Access from Macintosh**

TBD.

**3.2 Creating a new document**

Follow these steps.

1. On Unix, start the APM Document Manager
2. Select the Document.../New... dialogue
3. If you are creating a FrameMaker document, fill in the document information as usual.

Otherwise:

4. Fill in the document information as follows:
  - in the destination, fill in the name of a working directory that is accessible from a PC or Macintosh

Note: Default directory? Options?

- fill in the Template, Class, Project, and Title as usual. Keep a note of this information
- 5. Go to the PC or Macintosh, and start up the application.
- 6. Ensure that the application's options are set to refer to the shared directory containing the Workgroup Templates
  - for PowerPoint for Windows, this is the last directory selected by Format/Presentation Template
  - for Excel for Windows, this is TBD
  - for Word for Windows, this is set in Tools/Options/File Locations
- 7. Select the application's New... dialogue, and select the appropriate template

Note: Add a table of the template names when ready.

- 8. Select the application's Summary Info... dialogue and fill in the Summary Information to match that in the APM Document Manager:

**Table 3.2: Summary information for PowerPoint 4.0, Word 6.0, and Excel 5.0**

Field	Usage	Example
Title	As APM document system	ANSAwise - Introduction to CORBA
Subject	Project as in APM document system	ANSA Phase III
Author	E-mail username	cmm@ansa.co.uk (Chris Mayers)
Keywords	TBD	TBD
Comments	Abstract as in APM document system	This document ...

Note: May be better to leave author just as name for consistency with FrameMaker?

Note: Equivalentents for WordPerfect and other formats are TBD.

Note: Check this is consistent with Macintosh.

- 9. Edit the document's cover page/master page to include the APM document number, class, and status.

Note: More information needed here per template

- 10. Edit the document itself.
- 11. Save the document in the directory created above.
- 12. Repeat the above 3 steps for each file in the document.

### 3.3 Checking out an existing document for editing

If you are checking out a FrameMaker document, proceed as usual.

Otherwise:

- 1. On Unix, start the APM Document Manager
- 2. Select the Document.../Check out for editing dialogue
- 3. Fill in the document information as follows:
  - in the destination, fill in the name of a working directory that is accessible from a PC or Macintosh
- 4. Go to the PC or Macintosh, and start up the application.
- 5. Select the application's Summary Info... dialogue and edit it as in §3.2 *Creating a new document*.

6. Edit the document's cover page/master page to update the APM document number, class, and status, as necessary (see §3.2 *Creating a new document*)
7. Edit the document.
8. Repeat the above 3 steps for each file in the document.

### 3.4 Checking in a document

---

If you are checking in a FrameMaker document, proceed as usual.

Otherwise, you must:

- save your document
- create a PostScript file corresponding to this saved state

Note: This does not cater for multiple Postscript files, for example from PowerPoint with and without audience notes. This is a future enhancement, potentially needed for FrameMaker too.

- optionally, create a PDF file corresponding to this saved state

#### 3.4.1 Checking in a Windows document

Follow these steps:

1. Select the application's Save dialog to save the document in the directory created above. (Do not make any further changes to the document before checking in.)

Note: Maybe recommend using the application to set the document read-only?

2. Select the "TBD on FILE:" printer. When prompted for the output filename, enter the drive letter, full pathname and extension (for example, H:\1234000.AP-\1234.PS); all of these are required. The name of the .PS file must be the APM document number.

Note: Need to recheck TBD which is the best Windows PostScript driver to use.

(Do not use the printer driver's Print to Encapsulated Postscript File option. This will not have the desired effect.)

Note: Might be worth checking if the application's Print to File option does the right thing, as it may be rather more convenient. For Windows applications, Excel 5 and Project 4 do not have this; Word 6 and PowerPoint 4 do; WordPerfect 6.1a et al to be checked.

Note: Drag and Drop to the Print Manager works from File Manager for Excel 5, but not for Word 6. Not clear why not.

Note: WordPerfect 6.1a's special printer handling may also need documenting.

3. Close the file
4. Repeat the above process for each file in the directory
5. If a PDF file is required for a FrameMaker file follow the procedure in §7.3.5 *Generating a PDF file using FrameReader*.
6. From the Windows File Manager, or otherwise, delete any files in the directory that should not be stored in the document system, for example:
  - any FrameMaker files (for example, those generated at document creation)
  - any temporary or working files created by your application

Note: There is no way that the Document Manager can determine which files are part of the document and which are not. Backup files

7. Under Unix, use the Check In dialogue in the Document Manager.

Note: Add error messages here for:

- no corresponding Postscript document
- Postscript document with no source document
- Postscript inconsistent with source document
- more than one Postscript document
- others?

### 3.4.2 Checking in a Macintosh document

TBD.

---

## 3.5 Printing a document

To print a checked-in document, use the Print menu in the APM Document Manager as currently. For non-FrameMaker documents this will use the PostScript file that was checked in during §3.4 *Checking in a document*.

You can control printing options with the Options/Printing... for both FrameMaker and non-FrameMaker documents.

---

## 3.6 Viewing a document

To view the latest version of a checked-in document, simply open the copy in the read-only directory tree.

Note: More sophisticated viewing capability may be possible with integration with WWW browsers; this is TBD.

---

## 3.7 Searching for documents

### 3.7.1 Searching in Windows

To search for documents, use the searching function of your application on the read-only directory tree. Refer to your application's on-line help or manuals for the searching options.

For Microsoft PowerPoint, Excel, and Word, this is Find File. The Find File function can be selected from the File... menu, or from the Open dialog. In these applications, the Find File function will search a maximum of 200 directories.

The Microsoft Office toolbar also provides a Find File function. This also will search a maximum of 200 directories.

Microsoft Project does not have a Find File function.

For WordPerfect, this is QuickFinder File Indexer.

Adobe Frame Reader does not have a Find File function.

### 3.7.2 Searching in MacOS

Searching for documents in MacOS is TBD.

### **3.7.3 Searching in Unix**

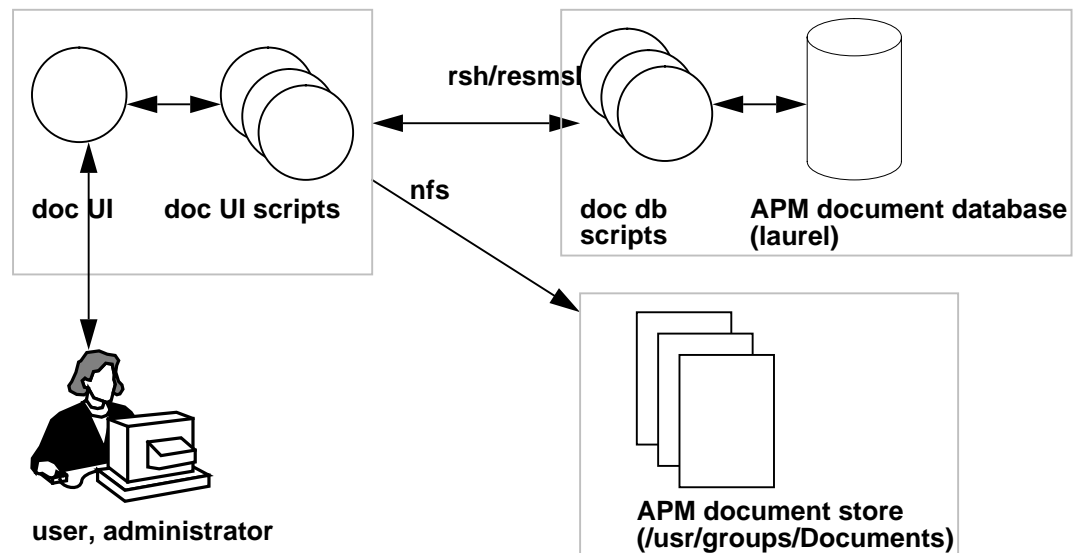
To search for documents in Unix, use the APM Document Manager Titles Matching RegExp, or the Find function of your WWW browser in the appropriate internal page of the APM WWW server.

**Note:** More sophisticated searching capability may be possible with integration with WWW browsers; this is TBD.

## 4 Current design of the APM document system

### 4.1 Overall system structure

Figure 4.1: Current APM document system structure



Note that this figure does not show the interactions between the APM document system and the APM ftp server and WWW servers (or the WWW browsing system).

Note: These details should be added

### 4.2 Structure of the Document Manager user interface

The doc UI scripts and doc UI are currently tied together by the tcl/tk and expectk framework; the interface between them is not specified. (There is no real encapsulation boundary to exploit here.)

The doc UI scripts need the following implicit context:

- the name of the logged-in user. This could be passed explicitly
- the permissions of the logged-in user. This is not so easy; it may not be possible to set-uid to the logged-in user, and their password would be needed anyway for the setuid
- the UI variables. This is needed to update the doc UI itself (to pass back results).

The doc UI scripts are a mixture of perl and tcl scripts, and make extensive use of the FrameMaker fmbatch command for updating FrameMaker files, and also for printing.

---

### 4.3 Structure of the document store

---

This has a complex directory structure rooted at /usr/groups/Documents.

The document store does not use a version control system (Unix rcs or sccs).

The document store includes:

Note: Where are the control files (classby project), maintained by hand, stored?

#### 4.3.0.1 *The admin directory*

This is TBD.

Note: There are several log files in here, but all dated 1995. Is this still in use?

#### 4.3.0.2 *The ftp directory*

This contains one subdirectory per project, each containing the .ps.gz files and some text index files.

Note: These “projects” are not the projects as checked-in with the doc system itself?

#### 4.3.0.3 *The html directory*

This contains the abstract from each document (from the cover page), and indexes to the abstracts, all in HTML format.

- ps: one ps.gz file for each checked-in version, and approved version of each document
- sources: one tar file for each checked-in version, and approved version of each document

Note: Owen said there was a second copy of each of these, where?

- templates: FrameMaker files used as templates

#### 4.3.0.4 *The work directory*

There is one subdirectory per user

Note: How are these used?

#### 4.3.0.5 *The www directory*

This is TBD (html stuff for server, similar structure to the ftp directory).

Note: internal, external, or both? Only documents and their abstracts end up on the WWW server via this route, currently.

#### 4.3.0.6 *Encapsulation issues for the doc database*

The rsh/remsh interface to the doc db scripts has a specified command line interface.

Note: Specified where?

The document database is encapsulated by the doc db scripts. The doc db scripts do status checking. (The doc UI does this too.)

The document database is not a server.



## 5 Proposed design of the APM document system

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### 5.1 Overview

---

The following changes are proposed to meet the above Phase 1 requirements.

### 5.2 Overall system structure

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#### 5.2.1 Structure of the document store

No changes are

#### 5.2.2 Read-only directory tree

The location of the read-only directory tree is TBD. (It will require a fair amount of disk space.

#### 5.2.3 Template directory

The location of the template directory is TBD.

Note: This wouldn't necessarily be the place that FrameMaker stores its default templates.

### 5.3 System functions

---

#### 5.3.1 Distinguishing between FrameMaker and non-FrameMaker documents

The logic is as follows:

- if the directory contains a .book file, the document is a FrameMaker document. The contents of the document are determined from the book file as currently
- if the directory is empty, error
- otherwise, the document is a non-FrameMaker document

#### 5.3.2 Extracting document control information from non-FrameMaker documents

The logic is in two parts:

- determining which file contains the document control information
- extracting the document control information from that file

##### 5.3.2.1 *Determining which file contains the document control information*

The APM document system will search the directory for the files nnnn.???, where nnnn is the document number. It will select the file according the following precedence order, highest precedence first:

- nnnn.DOC (Microsoft Word or WordPerfect)
- nnnn.PPT (Microsoft PowerPoint)
- nnnn.XLS (Microsoft Excel)

Note: This logic is rather crude. Is there a better approach?

Note: How can the APM document system better distinguish source files from target files? By a predefined list of extensions, and corresponding File MIME type rules like WWW browsers? What about document types that are both source and target?

#### 5.3.2.2 *Extracting the document control information*

This entails that the APM document system understand at least some part of the document formats.

Microsoft have legally protected their file formats. To obtain details of the file formats, one can ask Microsoft as described in Q78070; they might choose to give us this information - or they might not.

The situation is unknown for other file formats.

Under EU legislation it may be permissible to reverse engineer these file formats; this is TBD. It might be practical to do so, given that we only require the Summary Information.

It is recommended that for Phase 1, no attempt be made to extract document control information from document files.

If document control information cannot be extracted from the file, the current information in the document database will be used. The following information used for HTML generation, but is not held in the document database, and will be set as follows:

- Abstract: "Abstract not available"
- Page count: ""

If there are target files only (for example, Postscript), the information must be extracted from the target files - but seems hardly to be worth it; the quality of information in the %%Title lines is so poor.

---

## 5.4 Document Manager

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### 5.4.1 User functions - Document menu

#### 5.4.1.1 *Lookup*

No change required

#### 5.4.1.2 *Copy source*

This requires the following changes to the APM document system:

- if the document is a FrameMaker document, copy files to the destination directory as currently
- if the document is not a FrameMaker document, then copy all (source and target) files in the document to the destination directory.

Note: This may make the function "Copy source" seem misleading, since it actually copies all the files that were checked in. Perhaps change the function to "Copy"?

#### 5.4.1.3 *History*

No change required

#### 5.4.1.4 *New*

This requires the following changes to the APM document system.

Alter the effect of the New dialogue so that it

- creates the directory nnnn0001.ap- as a subdirectory of the specified destination

Note: This change of directory naming convention may annoy existing users?

(Note that this will always place a FrameMaker document in the directory. The user must delete this if a non-FrameMaker document.)

#### 5.4.1.5 *Check out for editing*

This requires the following changes to the APM document system.

Alter the effect of the Check out for editing dialogue so that it

- creates the directory nnnnmmmm.ap- as a subdirectory of the specified destination

Note: This change of directory naming convention may annoy existing users?

- if the document is a FrameMaker document, copy files to the destination directory as currently
- if the document is not a FrameMaker document, then copy all (source and target) files in the document to the destination directory.

Note: Target files should not be copied, but there is no simple way for the APM document system to distinguish source files from target files.

#### 5.4.1.6 *Check in*

This requires the following changes to the APM document system:

Alter the effect of the Check in dialogue so that it:

- if the document is a FrameMaker document, check in as currently
- if the document is not a FrameMaker document
  - checks that all files in the directory are valid DOS filenames
  - checks that the PostScript file nnnn.PS exists and is valid

Note: Any further validity checks are TBD, for example:

- date and time of the PostScript file itself
- the %%Creation Date
- the %%Title line, which sometimes, but not often, has the right information in it
- %%Page Order: Ascending
- %%Document Data: Clean8Bit
- %%Language Level: 1

These will have to work for both Windows and Macintosh printer drivers

- extracts document control information from the document as described in §5.3.2 *Extracting document control information from non-FrameMaker documents*
- updates the document database accordingly
- copies all the files into the document store

#### 5.4.1.7 *Convert old document*

No changes required.

### 5.4.2 **User functions - Print menu**

#### 5.4.2.1 *Print*

The only changes to the APM document system are to correct the problems identified in §3.5 *Printing a document*.

#### 5.4.2.2 *PSfile*

TBD

#### 5.4.2.3 *Print document list*

No changes required.

#### 5.4.2.4 *Write document list to file*

No changes required.

### 5.4.3 **User functions - Options menu**

No changes required to any of these functions.

### 5.4.4 **Management functions - DocMgmt menu**

#### 5.4.4.1 *Cancel check-out*

No changes required.

#### 5.4.4.2 *Approve*

This requires the following changes to the APM document system:

- if the document is a FrameMaker document, approve as currently
- if the document is not a FrameMaker document
  - set the status in the document database to Archived
  - regenerate the HTML (but not the PostScript)

#### 5.4.4.3 *Archive*

This requires the following changes to the APM document system:

- if the document is a FrameMaker document, archive as currently
- if the document is not a FrameMaker document
  - set the status in the document database to Archived
  - regenerate the HTML (but not the PostScript)

#### 5.4.4.4 *Regenerate PostScript and HTML*

This requires the following changes to the APM document system:

- if the document is a FrameMaker document, regenerate PostScript and HTML as currently
- if the document is not a FrameMaker document, then display the error message:

“Cannot regenerate PostScript for this document type”

#### 5.4.4.5 *Regenerate HTML*

This requires the following changes to the APM document system:

- if the document is a FrameMaker document, regenerate HTML as currently
- if the document is not a FrameMaker document, then regenerate HTML from the document control information in the document as described in §5.4.1.6 *Check in*

#### 5.4.4.6 *Mirror WWW*

This function has never been implemented. No changes required.

#### 5.4.4.7 *Cancel document*

No changes required.

---

## 6 FrameMaker administration

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### 6.1 The License server

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There is a command

```
/usr/site/bin/framelicense
```

This command should run on any machine that can run `doc`. You may need to

```
nfs site
```

first to make it accessible.

#### 6.1.1 If the license server is not running

`framelicense` will attempt to start the license server

#### 6.1.2 If the license server is apparently running normally

`framelicense` tells you on which host, and as which processes the license server is running. It also tells you who has a license at the moment.

```
4% framelicense
Frame License server running on plato PIDs 1256 1257
3 licenses in use
13:55 njh@abbot.ansa.co.uk
13:47 rtor@plato
12:23 cmm@wormwood
5%
```

If this turns out to be false, or...

#### 6.1.3 If the license server is apparently running but abnormally

`framelicense` should tell you which processes on which host appear to be running as the license server.

To restart the license server, kill those processes, and then run the command again to start the license server.

*(This has not yet been tested.)*

**Note:** There is scope for more automation here, but the license server does not get confused often enough to justify the effort.

## 7 Preparing your presentation

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### 7.1 Selecting your application and delivery mechanism

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#### 7.1.1 Electronic presentation or viewfoils/acetates

Electronic presentations can be delivered from a PC or Macintosh, but not from Unix. The software required to deliver the presentations is free of charge.

If you are presenting at APM, you should plan to use electronic presentation (see §8.1 *Using the Epson EMP-3000 LCD projector*), because:

- it costs less than printing viewfoils/acetates
- it appears more professional
- it provides more facilities for the future (builds, transition effects, audio, animation, integrated software demonstrations, Peter Cochrane effects)
- it requires less effort, once you are familiar with the process

If you are presenting elsewhere in the country you should similarly use electronic presentation with the EMP-3000 LCD projector. There is one possible exception; although we have purchased a flight case for the EMP-3000, it is not recommended for transport via plane. It is also rather too bulky to transport via train or taxi. (On the other hand, if you are transporting a day's worth of viewfoils/acetates, there may be little difference.)

If you are presenting elsewhere in the world, or if the EMP-3000 is already booked, consider asking the customer for the use of their CRT projector, LCD projector, or LCD panel. This may also allow you to prepare or modify presentations during your visit. You should take a laptop PC or Macintosh with you. Refer to §8.4 *Using LCD panels with an overhead projector* to determine whether it will be suitable.

Only if all the above fail should you consider using viewfoils/acetates. (It may of course be wise to take along viewfoils/acetates as a fallback.)

#### 7.1.2 Source format

Most APM presentation material is currently in FrameMaker 3.0 format; some is in PowerPoint 4.0 for Windows, and some in PowerPoint 4.0 for Macintosh and PowerPoint 3.0 for Macintosh.

Conversion between the various PowerPoint formats is reasonably straightforward.

Conversion between FrameMaker and PowerPoint (and vice-versa) is not. It is possible to convert the raw text for reformatting, but not diagrams. If you are experienced with the process, converting a 1-hour presentation and redrawing its diagrams takes roughly 1 effort-day. If you are not experienced, allow at least 1 extra effort-day.

Much of the APM presentation material in FrameMaker 3.0 format was intended for presentation on viewfoils/acetates rather than electronically.

FrameMaker 3.0 presentations cannot directly be presented electronically. They must be converted to PDF format, and be presented via Acrobat Reader. This conversion process is semi-manual and must be carried out on a PC.

Furthermore, as explained below, these FrameMaker 3.0 presentations will require at least minor editing for electronic presentation.

Therefore, create the presentation in PowerPoint 4.0 format; only use FrameMaker 3.0 format instead if all the following apply:

- the presentation requires reuse of much material in FrameMaker format (particularly diagrams)
- the presentation is at least 1 hour long
- you are unfamiliar with PowerPoint
- you are unfamiliar with the conversion process from FrameMaker 3.0 to PDF, or will be delivering on viewfoils/acetates
- you have very limited time available to prepare the presentation

It is APM policy to standardize on PowerPoint 4.0 format for future presentations.

One other possibility is for presentations delivered via the Internet in HTML format using the Mosaic browser. This is TBD.

Refer to TBD for a detailed checklist.

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## **7.2 Preparing your PowerPoint presentation**

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### **7.2.1 Converting an existing presentation**

#### *7.2.1.1 Converting from FrameMaker 3.0*

TBD

#### *7.2.1.2 Converting from PowerPoint 3.0*

TBD

### **7.2.2 Creating a new presentation**

Before starting, refer to §9 *Using text in presentations*, §10 *Using colour in presentations*, and §11 *Using graphics in presentations*.

Note: More guidance needed here about use of audience notes, builds, transition effects, and hidden slides

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## **7.3 Preparing FrameMaker 3.0 presentations for Adobe Acrobat Reader**

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### **7.3.1 Overview**

You will need to follow these steps:

- Install the PC software to convert FrameMaker to PDF format (unless this has already been done)



- Prepare or modify the FrameMaker 3.0 file for electronic presentation
- Check the FrameMaker presentation into the APM document system in the usual way
- Copy the FrameMaker presentation for access from Windows
- Generate a PDF file for Acrobat Reader using Frame Reader
- Present the PDF file using Acrobat Reader

Direct conversion of FrameMaker format to PDF is offered by FrameMaker 5 (all these products are now all owned by Adobe). We have no plans to upgrade to FrameMaker 5, and there appears to be no filter separately available for FrameMaker 3.

### 7.3.2 Installing PC software to convert FrameMaker format to PDF

The PC must run Windows 3.1 or Windows 3.11 for Windows.

**Note:** Windows NT has not been tried. It is not known if PDFWriter is compatible with Windows NT.

You must install the following components, if not already installed:

- WIN32S extensions, version 1.30A or later
- Frame Reader, version 5.0.1 or later
- Acrobat Exchange PDFWriter 'printer' driver 2.0.1 or later (the other components of Acrobat Exchange 2.1 are not required, and should not be installed)
- Acrobat Reader, version 2.1 or later

Of these, all the components are free of charge and can be installed on any APM machine, except for the PDFWriter driver, which is only licensed for a single machine. The free components are held in the [APM PC Archives] directory.

Adobe Type Manager is not required. If installed, it should be deactivated, using the ATM Control Panel.

Install the above components.

**Note:** Total disk space required is very roughly 30 Mbytes.

Using Print Manager, configure the PDFWriter printer driver as follows:

- Page Size: Custom 9 by 12 inches

**Note:** This gives the correct aspect ratio of 4x3 for 640x480 resolution. It's not clear if there is a better way of doing this.

- Orientation: Landscape
- Resolution: 600 dpi
- Scaling: 100%
- Compression: Defaults
- Fonts: (default)
  - Embed All Fonts: No
  - Always Embed List: None
  - Never Embed List: None

### 7.3.3 Modifying Framemaker 3.0 presentations for electronic presentation

Edit the presentation to avoid all of these restrictions, then check in the presentation to the APM document system in the usual way.

#### 7.3.3.1 *Single file*

If the presentation is a FrameMaker book consisting of several presentations, these files must be merged into a single slide.doc file

#### 7.3.3.2 *View settings*

Any view settings (borders, text symbols, rulers or grid) will be displayed electronically. Make sure all these view settings are off.

#### 7.3.3.3 *Imported graphics*

The PDF output file will contain the image as it appears on screen in FrameMaker. If it appears as a gray rectangle in FrameMaker, that is what will be displayed electronically. Replace any imported graphics that:

- are EPSI format
- are imported by reference (the references will not be accessible from the PC); this includes the ANSA logo on the master page

#### 7.3.3.4 *Fonts*

Use only the following paragraph styles:

- B Bullet
- BS SubBullet
- FigCode
- FigText
- Headline
- Headstyle
- Label
- SpeakerNotes

Avoid using character formats.

If you are modifying an existing presentation, and this presentation does not use the current APM template, modify the presentation to use the current APM template.

Refer also to §9 *Using text in presentations*.

#### 7.3.3.5 *Colour*

Refer to §10 *Using colour in presentations*.

#### 7.3.3.6 *Graphic patterned fills*

Refer to §11 *Using graphics in presentations*.

### 7.3.4 Copying the FrameMaker presentation

1. In the APM document system, use Copy source to copy the FrameMaker files into a directory accessible from a PC.
2. Start up FrameMaker under Unix, open slide.doc and confirm that:

- all images appear correctly
- no borders, text symbols, rulers or grid are shown. If so, return to §7.3.3 *Modifying Framemaker 3.0 presentations for electronic presentation.*

### 7.3.5 Generating a PDF file using FrameReader

1. On the PC, use the PC/TCP command `idls -m` to find the DOS name of the directory
2. On the PC, use Print Manager to set the Default Printer to Acrobat PDFWriter on DISK:
3. On the PC, start up FrameReader, and Open the FrameMaker slide.doc file in the directory

If this message is given:

“Cannot display some imported graphics. The images will appear as gray boxes”

this is because one or more graphics have been imported by reference. The ANSA logo on the FrameMaker master page may be the cause. You must check out the original FrameMaker document, edit it to copy the graphic into the document, and check it back in again.

If this message is given:

“Document named slide.doc uses unavailable fonts. To reformat the document using available fonts, click OK.”

click on OK. Use Ctrl+Esc to switch to the Frame Reader Console window, and examine the messages displayed. They will be of the form:

“The font Helvetica is not available. It will be mapped to Arial”.

or

“The font <Helvetica, Regular, Regular, Regular > is not available. It will be mapped to < Arial, Regular, Regular, Regular >”

Confirm that the only messages displayed are for

- <Helvetica, Regular, Regular, Regular> mapped to <Arial , Regular, Regular, Regular>
- <Courier, Regular, Regular, Regular> mapped to <Courier New, Regular, Regular, Regular>
- <Times, Regular, Regular, Regular> mapped to <Timer New Roman, Regular, Regular, Regular>

If any other font error message is given, you must check out the original FrameMaker document, edit it replace the font used, and check it back in again.

**Note:** Enabling Adobe Type Manager will remove some errors displayed on the Frame Reader Console. Butt he PostScript fonts supplied with ATM are inadequate; Courier, Helvetica, Symbol, Times, ZapfDingbats. In many cases the mappings are right anyway. So enabling ATM has no advantage. It's not clear whether using ATM to include Type 1 fonts makes any difference to the font rendition. Acrobat Reader falls back to True Type fonts anyway. Type 1 fonts are not supported on Windows NT. And is not clear where Acrobat Reader looks for its Type 1 fonts.

If this message is given:

“slide.doc contains unresolved cross-references”

check that the APM document number is displayed correctly. If it is not, this may be because the cover.doc file is inaccessible. Otherwise, ignore this message.

Note: Sometimes this message is given spuriously; perhaps a side-effect of missing fonts? Or imported graphics?

4. Confirm that:

- all images appear correctly, free from dithering and scaling artifacts

Note: The current ANSA logo on the master page of the APM presentation template suffers from this problem; this needs to be worked round

- no borders, text symbols, rulers or grid are shown. If so, you must check out the original FrameMaker document, edit it, and check it back in again
- text is not displayed using serif fonts. If it is, this may be because the PDFwriter ‘printer’ driver was selected from Print Setup within FrameReader. Exit from Frame Reader, use Print Manager to set the Default Printer to Acrobat PDFWriter on DISK, and start Frame Reader again

5. From the File menu, select Print. Check that the options are as follows:

- Print Page Range: All
- Odd Numbered Pages: Yes
- Even Numbered Pages: Yes
- Registration Marks: No
- Collate: No
- Skip Blank Pages: No
- Last Sheet First: No
- Low-Resolution Images: No
- Spot Color as Black/White: No
- Thumbnails: No
- Print Only to File: No
- Printer Acrobat PDFWriter

Click on Print.

6. In the Save PDF File As dialog:

- select the directory for the PDF file. It is recommended that you fill in the File Name as APMnnnn.PDF, where nnnn is the document number.
- Prompt for Document Info: Yes
- View PDF File: No

7. In the Acrobat PDF Writer Document Information dialog:

- Title: as appears in the APM document system
- Subject: APM document number as APMnnnn.mm
- Author: as appears in the APM document system

— **Keywords: leave blank**

**Note:** The Microsoft Find File function does not use this information, unfortunately. Acrobat Search would do, but we have no plans to purchase it.

If this message is given:

“Cannot print some imported images”

you must correct the original FrameMaker file.

The PDF file will now be generated. This takes a few seconds per page.

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## 8 Projecting your presentation

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Note: Maybe split this chapter into two: installing software (off-site) and projecting (on-site)?

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### 8.1 Using the Epson EMP-3000 LCD projector

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LCD projectors are not complicated to use, but time spent in familiarization is time well spent. If the audience is distracted by your slides or equipment their concentration is not where it should be - on you.

The EMP-3000 has the capability for audio and recorded video. We have not explored these capabilities, and the hardware and connectors that this would require.

#### 8.1.1 Before you start - safety warning

**WARNING:** never look into the projector lens when the lamp is turned on; the bright light can damage your eyes.

You must warn your audience likewise.

#### 8.1.2 What you will need

Book this equipment in advance, as soon as possible.

The following should be in the flight case:

- Epson EMP-3000 LCD projector with lens cap
- Epson EMP-3000 Owner's Manual
- Epson EMP-3000 Y-shaped VGA cable
- UK-EIA power cable
- RS-232 serial cable,
- RS-232C serial cable adapter for Macintosh
- Macintosh adapters labelled VGA and MONITOR
- Epson EMP-3000 remote control handset

The following will not be in the flight case:

- Compatible laptop PC or Macintosh with external video output (see below), and sufficient free disk space
- Epson EMP-3000 remote control software (if required); see §8.1.4 *Installing the remote control software*
- Application to display the presentation
- Your presentation files
- External VGA monitor (if required)

- Power cords for all the above
- VGA extension cables (not yet available)
- Serial port extension cable (not yet available)
- Spare bulb (not yet available)
- Sticky tape etc.

If you are planning to use a Macintosh, you will need:

- VGA convertor

Note: Needed?

- a docking station with VGA output (if using a Duo - not yet available)

Note: Any other Mac connectors?

### 8.1.3 Controlling your presentation

You can control your presentation:

- from the PC or Macintosh keyboard
- from a mouse
- from the EMP-3000's remote control handset

Controlling your presentation from the PC or Macintosh keyboard gives you access to all the functions of your presentation software. However, you need to stand near the keyboard, which probably requires a VGA extension cable to connect the EMP-3000 to the PC or Macintosh (not yet available). It also restricts your freedom of movement.

Controlling your presentation from a mouse is not recommended. You have at most the two mouse buttons to step forwards and backwards (Acrobat Reader only supports the left mouse button, to step forwards). Use this only as a last resort.

Controlling your presentation from the EMP-3000's remote control handset gives you access to some of the functions of your presentation software via 5 programmable keys. However, you still need access to the PC or Macintosh keyboard to start the presentation software, and you also need to install the EMP-3000 utility on the PC or Macintosh. This is described below.

**Table 8.1: Epson EMP-3000 supported systems**

Systems	Supported	Comments
Microsoft Windows 3.1.x	yes	Remote control software
Microsoft Windows 95	yes	No remote control software
Microsoft Windows NT	yes	No remote control software
MacOS	yes	Remote control software
Unix	no	Cannot drive screen in 640x480 resolution

If there is demand, we shall try to obtain remote control software for Windows 95 and Windows NT.

Note: It is possible that the Windows 3.1.x remote control software also works on Windows 95, but this has not been tried

Another way of controlling your presentation would be from a compact numeric keypad on a long cable, which can be connected to many laptops

(socket often shared with an external keyboard). We have no plans to obtain one of these (in this case you would still probably want to use the EMP-3000 remote control handset as well).

Note: (Acrobat Reader is apparently not compatible with HP-UX 9.01; 9.03 is required. No other versions of Unix have been tried.)

### 8.1.4 Installing the remote control software

The EMP-3000 is supplied with two utilities; the ELP Remote Programmer, and the ELP Link. The installation procedure installs both of them.

The ELP Link utility allows you to control the EMP-3000 from the PC or Macintosh; this is not useful -it is easier to use the EMP-3000's remote control handset.

The ELP Remote Programmer utility allows you to control the PC or Macintosh from the EMP-3000's remote control handset; this is useful. Only 5 keys can be programmed to simulate keyboard presses and/or mouse clicks; the Prev/< and Next/> keys at the top, and the +, Drag, and - keys at the bottom. Refer to the EMP-3000 Owner's Manual.

#### 8.1.4.1 ELP Remote Programmer Templates

For Windows, the ELP Remote Programmer utility is supplied with templates that program the 5 buttons on the handsets for various presentation applications, including PowerPoint.

For Windows we have produced a custom template (APM.TPT) that:

- supports both PowerPoint and Acrobat Reader reasonably well in one template. (ELP Remote Programmer supports only one template active at once)
- programs the keys for more natural use
  - the + and - keys (rather than the < and > keys) have the effect of Next Slide and Previous Slide, as they are nearer your thumb; since the trackball on the handset is not in practice usable as a mouse, there is no point in reserving these keys for mouse buttons
  - the + and - keys are reversed compared to normal use as mouse buttons

**Table 8.2: APM.TPT key mappings for Windows**

Key	Mapping	PowerPoint	Acrobat Reader	Notes
Prev/<	Home	First Slide	First Slide	May wish to disable this mapping
Next/>	End	Last Slide	Last Slide	May wish to disable this mapping
-	Left Arrow	Previous Slide	Previous Slide	
Drag/Menu Select	H	(Unhide) Next Slide	[None]	If you use PowerPoint hidden slides
+	Right Arrow	Next Slide	Next Slide	

Refer to *Remote Control of the Computer* in the EMP-3000 Owner's Manual if you wish to customise your own template.



Refer to §8.1.7 *Using the remote control handset - more information* for use of the other keys on the handset.

Templates for the Macintosh are TBD.

#### 8.1.4.2 *Installing for Windows 3.1.x*

Refer to *Remote Control of the Computer* in the EMP-3000 Owner's Manual.

1. Confirm that the RS-232C serial cable is connected between the PC's serial port and the EMP-3000.
2. Confirm that the serial port is not reserved by another application (for example, for a modem.)
3. Confirm that the PC has 2 Mbytes of free disk space.
4. Place the ELP Utilities Software for EMP-3000 in the floppy drive, and use the Run command in the Windows Program Manager or File Manager to run A:\SETUP.
5. Copy APM.TPT (from TBD) into C:\ELP\_UTIL\ELPREMOT.
6. Open the ELP Utility program group, then double-click the ELP Remote Programmer icon.
7. Select File/Open and select APM.TPT.
8. Select Special/Serial Port 1 or 2 as appropriate.
9. Select Special/Mouse Speed to Fastest.
10. Type Ctrl+A to activate APM.TPT. Wait for the PC to beep acknowledgement
11. Type Ctrl+T to start the button test. Press each of the 5 buttons and confirm the correct responses are given. Type Esc to exit the button test.
12. Copy ELP Remote Programmer into the Windows StartUp program group. Select this icon, and in the Program Manager, select File/Properties and select Run Minimized.
13. Restart Windows and your presentation software and check that the remote control keys still work.

#### 8.1.4.3 *Installing for MacOS*

TBD.

### 8.1.5 **Setting up the projector**

The EMP-3000, like all LCD projection technology, projects an image that is much crisper than an ordinary overhead projector. The eye is rather sensitive to this.

The instructions in the EMP-3000 Owner's Manual will give a legible image. The instructions below, to be read in conjunction with the EMP-3000 Owner's Manual will give a much more comfortable image for no extra effort.

#### 8.1.5.1 *Positioning the projector*

The quickest way to set up the projector is this:

1. Draw any room blinds or curtains.
2. Place the screen in a position all the audience can see.

3. Place the EMP-300 roughly 4 metres from the screen, central and perpendicular to it. Note that the EMP-3000 has a narrower angle lens than an overhead projector; you will need to place it roughly twice as far from the screen as an overhead projector. Refer to *Setting Up the Projector* in the *Installation* chapter of the EMP-3000 Owner's Manual for a table of recommended distances.

You will probably need to place it on the flight case on a table amongst the audience; this will require one VGA extension cable to connect to the PC or Macintosh, and another VGA extension cable to connect to an external monitor (if required). Make sure there is enough room on the table for external monitor et al.

If you need to set up both the EMP-3000 and an overhead projector, fold the overhead projector's arm out of the way, if possible.

4. Release the EMP-3000 feet.
5. Connect the EMP-3000 to the PC or Macintosh, and to the external VGA monitor, and connect the remote control serial cable if required. Refer the EMP-3000 Owner's Manual for details.

Note: Check this switch-on order. Add step for remote control cable.

6. Push the power cord firmly into the EMP-3000 (it is rather stiff and tends to drop out).
7. Switch on the external VGA monitor, if connected
8. Remove the lens cap, and switch on the EMP-3000. Wait for the test pattern to appear at full brightness.
9. Adjust the zoom, and adjust the feet to align the test image squarely with the edges of the screen. Tilt the screen forward, to avoid keystone distortion if necessary. Avoid disturbing the EMP-300 or screen from this point onwards; even slight movements will throw it out of alignment.
10. Focus the image.
11. Adjust the room lighting. It will probably be necessary to dim or switch off the lights nearest the screen.

#### 8.1.5.2 *Configuring the PC or Macintosh*

12. Switch on the PC or Macintosh and check that it is set up for 640x480 (Windows) or TBD (Macintosh) resolution with the maximum number of colours available in that resolution. Check that any virtual screen mode is disabled.
13. If necessary, enable the PC or Macintosh external video output. Refer to your PC or Macintosh instruction manual.
14. Start Windows/MacOS. If you have installed the remote control software, confirm that the mouse responds to movement of the trackball on the remote control handset.
15. Check that any PC or Macintosh screen saver is disabled.
16. Check that any PC or Macintosh power saving mode is disabled (for example, Suspend On Lid Close)

#### 8.1.5.3 *Calibrating the EMP-3000 for your PC or Macintosh*

The EMP-3000 can be controlled from buttons on the LCD projector itself, from the remote control handset, and even (using the ELP Link utility

supplied) from the PC or Macintosh. You can do all the setup from the remote control handset; do not bother with the other methods.

On a PC, make sure Windows is running before following these steps. The calibration will be inaccurate if done whilst a DOS screen is displayed.

Refer to *Using the Menus* in the EMP-3000 Owner's Manual before following these steps. Follow the steps in the order described here:

17. Press the Menu key, and select the Computer menu if not shown.
18. Adjust the Brightness to mid-scale.
19. Adjust the Contrast to mid-scale.
20. Adjust the Red, Green, and Blue to mid-scale. Do not bother attempting to adjust the colour controls to compensate for the colour rendition from your PC or Macintosh; it may well make matters worse.
21. Adjust the Tracking so that any vertical bars disappear, and the image is centred above the menu. The Tracking value is highly dependent on display output from the particular PC or Macintosh. A single click, changing the tracking value by 1, makes a noticeable difference.

**Table 8.3: Tracking values for APM machines**

Machine	Tracking
Solidisk 486/33	832
IBM Thinkpad 350 486SLC/25	800
Compaq	TBD
Amstrad ALT-386SX	800
Macintoshes	TBD

22. Adjust the Sync until any horizontal bars disappear, and any shimmering is minimized. (The Sync + and - keys on the remote control handset have no effect while the menus are displayed; you must use the + and - keys next to the trackball instead.) The pattern that seems to be sensitive to shimmering is the gray window background in PowerPoint; you can create a similar colour in Windows Paintbrush with the RGB values (160, 160, 160) for test purposes.
23. Select the Display menu.
24. Adjust the Horizontal position to display the full screen image (check the left-hand edge of the image); this may increase shimmering again - you may need to compromise between some shimmering and not showing the entire image.
25. Adjust the Vertical position to display the full screen image (check the top edge of the image).
26. Select Blank to Black.
27. Select the Custom menu.
28. Select Blank.
29. Press the Menu button to return to computer display

#### 8.1.5.4 Checking the remote control functions

30. Press the Custom key to check that this blanks the screen.

### 8.1.5.5 Installing your presentation

31. Copy your presentation files onto the hard disk of the PC or Macintosh. (Do not attempt to run a presentation off a floppy disk. It will be far too slow.)
32. Set up an icon to run each presentation. For Windows, you can associate PowerPoint files with either PowerPoint or PowerPoint Viewer. You will probably want to place these icons in a separate Windows program group.

### 8.1.6 Using the external VGA monitor

If you plan to use an external VGA monitor, the EMP-3000 must be switched on, or the monitor will remain blank (the EMP-3000 has an active loop-through.)

This means that you must use the EMP-3000 Standby facility to blank the projector while the external monitor is on.

### 8.1.7 Using the remote control handset - more information

The EMP-3000 has two infra-red sensors for the remote control on the front and rear of the projector. In practice you can also bounce the signal off the screen; this is useful if you are standing to the side. Ambient lighting and distance from the screen may affect this, so check it works in your environment. Refer to *Remote Control Information* in the *Introduction* of the EMP-3000 Owner's Manual.

The handset takes some practice to get comfortable with.

The following table shows the functions that you will need after initially setting up the EMP-3000.

**Table 8.4: EMP-3000 remote control handset functions (using APM template)**

Function	Key	Comments
Next Slide	+	
Next (hidden) Slide	Drag/Menu Select	PowerPoint only
Previous Slide	-	
First Slide	Prev/<	
Last Slide	Next/>	
Blank Screen	Custom	
Test Pattern	Video	Assuming no video
Freeze Screen	Freeze	
Handset Backlight	Light	
Projector Standby	Standby	
Handset Wakeup	Mute	Assuming no audio

Note: Confirm this is correct for the Macintosh too.

#### 8.1.7.1 Moving to the next slide

Press the + key next to the trackball on the handset (assuming the standard APM remote control template is active).

#### 8.1.7.2 *Moving to the next hidden slide (PowerPoint only)*

Press the Drag/Menu Select key on the handset (assuming the standard APM remote control template is active).

#### 8.1.7.3 *Moving to the previous slide*

Press the - key next to the trackball on the handset (assuming the standard APM remote control template is active).

#### 8.1.7.4 *Moving to the first slide*

Press the Prev/< key on the handset (assuming the standard APM remote control template is active).

#### 8.1.7.5 *Moving to the last slide*

Press the Next/> key on the handset (assuming the standard APM remote control template is active).

#### 8.1.7.6 *Blanking the screen*

Press the Custom key on the handset to blank the screen. If the screen goes white or blue, or the test pattern appears, someone has reassigned the Custom key; refer to §8.1.5.2 *Configuring the PC or Macintosh* to assign this key to blank the screen.

Press the Custom key again to display the computer image.

#### 8.1.7.7 *Freezing the screen*

Press the Freeze key on the handset. Press the Freeze key again to update the computer image.

#### 8.1.7.8 *Displaying the test pattern*

Press the Video key on the handset. Press the Video key again to display the computer image.

#### 8.1.7.9 *Illuminating the handset backlight*

Press the Light key on the handset to illuminate its backlight for 10 seconds.

#### 8.1.7.10 *Saving power with the EMP-3000 standby function.*

Press the Standby key on the handset.

After you switch off the projector, the fan may remain on for a few minutes to dissipate heat from the lamp. Always wait 10 to 60 seconds before switching the projector back on. If you switch on the projector immediately after switching it off, the lamp may be too hot and the projector will not turn on.

Press the Standby key on the handset to redisplay the computer image. The test pattern will be displayed for a few seconds before the computer image appears; it does not seem to be possible to suppress this, unfortunately. It takes about 20 seconds from pressing the Standby key until the computer image appears at full brightness.

#### 8.1.7.11 *The remote control handset trackball*

You need to use the trackball on the handset to calibrate the EMP-3000 for your PC or Macintosh, as explained above.

But do not bother attempting to use the trackball to simulate the PC or Macintosh mouse remotely. It skips badly, and would require a lot of practice to be usable even merely as an on-screen pointer.

Note: It's not clear whether this is a problem with the driver, the serial port bandwidth, the infra-red link, or something else.

The remote control handset becomes idle when it is not used for 15 minutes. The trackball is disabled. Press any button (for example the Mute button) to exit sleep mode.

#### 8.1.7.12 *If the remote control handset does not seem to work*

First, refer to the *Troubleshooting* section of the EMP-3000 Owner's Manual.

Check that the red LED at the top of the handset flashes when a key is pressed; this indicates the signal has been sent by the handset.

Check that the green LED at the side of the projector flashes when a key is pressed; this indicates that the signal has been received by the projector.

Note: It sometimes seems to take a while for the handset to start working after the projector comes out of standby. This is TBD

If the PC is not responding to remote control keys, this may be because:

- the remote control software is not active
- the serial port is in use by another application (for example a modem dialup), or is reserved by Windows
- the PC has been placed in power standby mode

This causes the PC to lose contact with the EMP-3000. The serial port must be reset; follow these steps:

- (i) Press the Freeze key
- (ii) Ctrl+Esc to REMOTWIN.EXE
- (iii) Select the Special menu, then Serial port. This will reset the serial port
- (iv) Ctrl+Esc back to your presentation
- (v) Press the Freeze key again, move the trackball and confirm that the cursor responds

Note: Do not know if the Macintosh is similarly affected

#### 8.1.7.13 *Using the remote control handset with rear projection*

It is possible to set up the EMP-3000 for rear projection behind a translucent screen. To use the remote control handset would then require a special optional cable to connect the remote control handset directly to the PC or Macintosh.

We have not purchased this cable and have no plans to do so.

Note: It looks like it might simply be a 3.5mm plug-to-plug connector, which would be easy to make up

### 8.1.8 **Starting the presentation**

1. Press the Custom button on the handset to blank the screen
2. Start the presentation application
3. Put the presentation application into full-screen mode

#### 4. Press the Custom button on the handset

##### 8.1.8.1 Using PowerPoint from the PC keyboard

To put PowerPoint for Windows into full-screen mode, select Slide Show from the View menu, or the Slide Show icon at the lower left of the PowerPoint window. Unfortunately there does not seem to be a single key to put PowerPoint into full-screen mode. (PowerPoint Viewer starts up automatically in full-screen mode).

Appendix C of Microsoft PowerPoint User's Guide gives a table of Slide Show keyboard and mouse controls for Windows and Macintosh. This table is incomplete. The following table contains the useful keys:

**Table 8.5: PowerPoint for Windows keys**

Function		Alternative keys
First Slide	Home	
Previous Slide	PgUp	Up arrow, left arrow, Shift +Enter, Shift+Tab, Backspace, P
Next (hidden) Slide	H	
Next Slide	PgDn	Down arrow, Right arrow, Enter, Tab, Space, N
Last Slide	End	
End Show	Esc	
Go to slide <N>	<N> Enter	

You can use the W or comma (",") key to white/unwhite the screen. This is not useful with the EMP-3000, but might be useful with an LCD panel that does not have such a function built in. Similarly you can use the B or period/full stop key (".") to black/unblack the screen. On the EMP-3000, use the Custom key on the remote control handset instead - see §8.1.7.6 *Blanking the screen*.

The following Slide Show features are not of practical use for presentations:

- automatic show
- screen annotations
- slide timings

##### 8.1.8.2 Using PowerPoint Viewer from the PC keyboard

The keys for PowerPoint Viewer are the same as PowerPoint.

If PowerPoint Viewer is associated with the .PPT extension, and an icon is set up for the .PPT extension, PowerPoint Viewer will sometimes go directly into the presentation in full screen mode. However, sometimes it will not, and will display a dialog box prompting you for the file name. This appears to be a bug in PowerPoint 4.0c.

If the machine only has PowerPoint Viewer installed, you need to be aware of any transition effects, builds, and hidden slides, as PowerPoint Viewer does not have a Slide Sorter mode for you to preview this.

Note that you cannot print from PowerPoint Viewer.

##### 8.1.8.3 Using Acrobat Reader from the PC keyboard

Acrobat Reader 2.1 has been tested successfully on Windows 3.1, Windows for Workgroups 3.11, and Windows NT 3.51. The forthcoming 'Amber' version of Acrobat (expected to be version 3) has been tested in an alpha version; it appears to work, but has no new useful features.

**Note:** Although the 'Amber' version works as a plug-in for Netscape, Netscape still does not support full screen mode. Mosaic, which does have full screen mode unfortunately does not seem likely to support the Netscape plug-in interface. Even if it did, there would be no real advantage in displaying presentations from within a browser

Unlike earlier versions of Acrobat Reader for Windows, Adobe Type Manager need not be installed. When presenting, the only software required is Acrobat Reader for Windows itself.

Configure Acrobat Reader for Windows using Edit Preferences, as follows:

- General Preferences
  - Display Large Images: Yes
  - Use Page Cache: Yes
  - Smooth Text: No
  - Greek Text Below 8 Pixels
- Full Screen Preferences
  - Change Pages with Keyboard
  - Background Colour Black

The effect of the above settings is to:

- greek the APM document number, so it is displayed as a gray bar
- suppress anti-aliasing (Smooth Text), as it looks worse in 640x480 resolution

You will need to use the following keys:

**Table 8.6: Acrobat Reader for Windows keys**

Function		Alternative keys
First Page	Ctrl+1	Home
Prev Page	Ctrl+2	PgUp, Up arrow, left arrow, Shift +Enter, Shift+Tab
Next Page	Ctrl+3	PgDn, Down arrow, Right arrow, Enter, Tab
Last Page	Ctrl+4	End
End Show	Esc	
Go Back	Ctrl+-	

To put Acrobat Reader for Windows into full-screen mode, press Ctrl+Shift+L. It does not seem to be possible to configure Acrobat Reader for Windows to start up in full screen mode.

When Acrobat Reader for Windows is in full-screen mode, Alt+Esc has no effect. To switch to another Windows task, use Ctrl+Esc.

Acrobat Reader for Windows also supports Next Page as left mouse button click, but not Prev Page as right mouse button click.

Acrobat Reader for Windows also supports Goto Page as Ctrl+5, but this cannot be used from the remote control handset because it has no numeric keys to enter the page number.

If you do not wish the cursor to be visible in full-screen mode, move it off the bottom edge of the screen.

Acrobat Reader can take up to a minute to display a page with complicated graphics (for example, one containing several pieces of FrameMaker clip art). Check your presentation in advance. Acrobat Reader does have a page cache



which sometimes avoids this effect; however, this does not always seem to be take action.

#### 8.1.8.4 *Using PowerPoint from the Macintosh keyboard*

TBD

#### 8.1.8.5 *Using Acrobat Reader from the Macintosh keyboard*

TBD

Note: Macintosh has not been tried.

### 8.1.9 **When in use**

Don't leave the projector unattended; it is an expensive piece of equipment.

### 8.1.10 **Packing up the projector**

Wait for the projector to cool down before packing in the flight case.

Note: There is no mention of this in the instruction manual, but it seems a wise precaution. How long to wait; 5 minutes enough?

When you leave, don't forget:

- the leads
- the remote control handset
- the lens cap!

Turn the keys on the flight case to ensure the lid is latched.

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## 8.2 **Using a VGA to TV convertor with large-screen TVs**

APM do not have this technology

Details are TBD.

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## 8.3 **Using CRT projectors**

APM do not own a CRT projector ('Barco').

Details of their use are TBD.

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## 8.4 **Using LCD panels with an overhead projector**

APM do not own an LCD panel, and have no plans to do so. Generally speaking LCD panels give much inferior results to the EMP-3000.

This section gives notes in case you ever end up borrowing or using one.

You will need to take the same cables with you as for the EMP-3000; in particular, take VGA extension cables with you.

Follow the same general setup procedure as for the EMP-3000,

### 8.4.1 **Using an overhead projector with an LCD panel**

LCD panels require a high-power overhead projector. Check this in advance.

High-power overhead projectors generate a lot of heat. If you need to place the PC nearby, make sure it is clear of the projector ventilation.

#### **8.4.2 General advice on LCD panels**

Check the LCD panel model type. APM keep data sheets on the popular LCD panels. If we do not have a data sheet, ask the owner for the details.

You may also be able to find information from the manufacturer's World Wide Web site. There does not seem to be any newsgroup on presentation hardware.

If offered a monochrome LCD panel, decline. The rendition will probably be miserable. Fall back to using acetates instead.

LCD panels offering only 16 colours are probably of obsolescent design. The rendition will probably be miserable. Fall back to using acetates instead.

LCD panels offering only 256 colours or 512 colours may be of obsolescent design, with poor colour rendition (often merely shades of magenta). However, 256 colours are perfectly adequate, provided rendition is good.

#### **8.4.3 Proxima Ovation 820**

The instruction manual does not mention the need to switch off the projector if the LCD panel is switched off, to avoid overheating the LCD panel - but this would be a wise precaution.

Brightness, saturation, and contrast are poor. Shaded/patterned fills and dotted/dashed lines fade out completely.

Colour rendition is otherwise satisfactory. This LCD panel supports various colour modes, but the rendition is not noticeably better in any of them (except for 8-colour mode, in which shading completely disappears - avoid this mode).

This LCD panel has an intensity control, but this only works when connected to a VCR input, so is not useful.

The remote control handset does have a key to blank the screen; this of course blanks it to white, not black; you need to switch off the overhead projector to black out the screen.

The remote control handset works when the signal is bounced off the screen.

This LCD panel has remote control software to drive a PC, but it is not shipped with the panel, and in any case you are unlikely to have the time to install it. You will therefore need to operate the presentation from the keyboard.

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### **8.5 Using acetates with an overhead projector**

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TBD.

## 9 Using text in presentations

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### 9.1 General use of text in presentations

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It is generally good advice to minimise text in presentations.

This is greatly eased if you are planning to use audience notes, as the bulk of the text can be included in the audience notes. (This is not practicable with FrameMaker, only with PowerPoint.)

### 9.2 General use of fonts

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#### 9.2.1 Font compatibility

Note: Much the same issues arise for using fonts in documents (for example, Microsoft Word between Macintosh and Windows). Maybe split this out as a separate document?

It is likely that a presentation will be prepared on one machine, and delivered on another machine. We need to allow for font compatibility between:

- different types of machines: PCs and Macintoshes
- different machine font types: Postscript and TrueType
- different printer languages: PostScript and PCL5

Furthermore, different machines can have different sets of TrueType fonts installed.

We also need to store a Postscript form of each presentation in the APM document system. This Postscript form will be much smaller if it uses only standard Postscript fonts.

Note: Cross-reference earlier section on Print to File and the APM document system

To avoid font compatibility problems:

- Use only TrueType fonts in PowerPoint presentations
  - do not use printer fonts (Postscript fonts)
  - do not use screen fonts

- Use only the following TrueType fonts; these are installed on every APM machine, and have preconfigured Postscript substitutions

**Table 9.1: Compatible fonts**

TrueType font	Standard PostScript substitution	True Type font supplied with
Century Gothic	Avant Garde	Microsoft Office
Bookman Old Style	Bookman	Microsoft Office
Courier New	Courier	Windows
Arial	Helvetica	Windows
Arial Narrow	Helvetica Narrow	Microsoft Office
Century Schoolbook	New Century SchlBk	Microsoft Office
Book Antiqua	Palatino	Microsoft Office
Symbol	Symbol	Windows
Times New Roman	Times	Windows
Monotype Corsiva	Zapf Chancery	Microsoft Office
Monotype Sorts	Zapf Dingbats	Microsoft Office

Because we will be preparing presentations on both Windows and Macintosh, these rules apply to both platforms.

In practice even fewer of these fonts are actually usable for presentations; see §9.4 *Using fonts*.

### 9.2.2 Non-compatible fonts

Avoid using other TrueType fonts supplied with Microsoft Office (for example, Arial Rounded MT Bold, MS Line Draw). These do not have a PostScript substitution, and must be downloaded.

Avoid using TrueType fonts with similar names to those in the above table (for example, Arial MT Black). These may cause License Restriction problems, or result in the wrong font being substituted when used on a different machine.

Avoid using TrueType fonts bundled with other applications (for example, WP Iconic Symbols from WordPerfect, or Bassoon from Corel Draw). These may cause License Restriction problems, or result in the wrong font being substituted when used on a different machine.

If you really must use another font (for example, a mathematical font like Lucida Bright Math Extensions, or a foreign language font):

- when saving the presentation, select Save As, and select Embed TrueType Fonts
  - if any fonts are flagged as License Restricted check the appearance of the presentation on a machine which does not have the font installed; then resave the presentation without Embed TrueType Fonts
  - if any fonts are flagged as Not TrueType (for example PostScript fonts) replace them with equivalent TrueType fonts
  - if the Save As succeeds, check the performance of the presentation saved with Embed TrueType Fonts. It will be a much larger file, and may display much more slowly

### 9.2.3 Character mappings

It seems that unexpected character mapping may occur when transferring between PowerPoint for Macintosh and PowerPoint for Windows. This is TBD; check carefully if using unusual characters.

Note: This happened with the not-equals character; check with jab.

## 9.3 Problems with using fonts in presentations

Refer to [Using Color and Text].

The following additional problems arise when using an LCD panel or the EMP-3000 LCD projector, because of the sharpness of pixels compared to CRT technology, the relatively low resolution (640x480), and lower contrast:

- Serif fonts are hard to read
- Some character pairs in some fonts touch, making words hard to read, even at 14pt. Narrow fonts (for example, Arial Narrow) are generally useless for this reason, except at the largest sizes
- Italic styles are hard to read
- Bold styles often do not appear bolder, and merely take up more space
- Effects (underlining, shadowing, embossing) make text much harder to read
- The legibility of small size fonts (12pt or less) depends crucially on the font size and font concerned; slightly larger fonts are not necessarily easier to read
- The rendition of small size fonts is different between Slide Show and Normal view, and also depends on whether the Slide Setup is for On Screen Show, or for a particular paper size; fonts are scaled to fit the 4x3 aspect ratio of the 640x480 screen

## 9.4 Using fonts

It has therefore been necessary to test each potentially useful font, style, and size individually. The following are recommended:

**Table 9.2: Recommended fonts for PowerPoint**

Font	Font Style	Size	Comments
Arial	Bold	36pt	Title on first slide
Arial	Bold	24pt	Title on subsequent slides
Arial	Bold	18pt	First and second level (Bullet and sub-bullet)
Arial	Regular	12pt	Label on slide master; clearly legible
Arial	Regular	10pt	Better caps than 9pt, but takes much more space
Arial	Regular	9pt	Smallest tolerable. Somewhat distorted at 800x600
Times New Roman	Italic	14pt	Single pixel width

For reference, the standard templates shipped with PowerPoint use 44pt titles, 32pt first-level text, and 28-pt second-level text for the Bulleted List layout. This allows for a total of 7 bullets and sub-bullets, or 3 bullets and 5

sub-bullets. The 2 Column Text layout allows for 8 bullets of 28 point text. The Text over Object and Object over Text layouts allow for 4 bullets of 28pt text.

Note: Recheck this; the default seems to give 7 bullets of 16pt Times New Roman? This doesn't look too bad?

Note: The APM template seems not to have a fixed Object Area for AutoLayouts, unlike the standard PowerPoint templates. It is not clear why.

The standard PowerPoint templates mainly have titles in Times New Roman, with a few in Book Antiqua and Arial.

#### 9.4.1 Using effects

Avoid underling for emphasis. Use italics for emphasis, even though it is harder to read. Do not use colour alone for emphasis; it will not be apparent when printed.

Avoid using (drop) shadows; they make text harder to read because of inadequate contrast.

Note: Drop shadows can look good on large fonts (for example the Microsoft 44pt titles). It seems to depend crucially on the font, the text colour, the shadow colour, and the background colour. Black drop shadows look too stark.

Do not use embossing. It is impossible to read.

#### 9.4.2 Using bullets

##### 9.4.2.1 Using bullets in PowerPoint

Special bullets are a good way to add emphasis. Bullets are characters (in some font), not bitmap graphics.

To format a bullet use Format/Bullet, and select Bullets From. Use the fonts for bullets as follows:

**Table 9.3: Fonts for bullets - usage**

Font	Type	Use for	Comments
[Normal Text]		Unlikely to be useful	
CommonBullets	TrueType	DO NOT USE - License Restricted	Supplied with Corel Draw
Monotype Sorts	TrueType	Dingbats - generally useful	
Symbol	TrueType	Mathematical and Greek	
Wingdings	TrueType	Dingbats - use only if not in Monotype Sorts	No Postscript equivalent; must be downloaded
ZapfDingbats	Printer (PostScript)	DO NOT USE - use Monotype Sorts	Postscript substitution for Monotype Sorts
others		DO NOT USE	§9.2.1 <i>Font compatibility</i>

So, in practice, Monotype Sorts and (if necessary) Wingdings are the only useful bullet characters fonts

PowerPoint (unlike FrameMaker and Microsoft Word) does not support numbered bullets. The Monotype Sorts font has dingbat characters for the digits 1 to 9.

PowerPoint does allow you to set the colour for bullets separately from the text (but each bullet can only be a single colour).

Note: Add reference to colour scheme usage here.

PowerPoint does not allow you to set justification for bullets separately from the text (unlike Microsoft Word.) Use left alignment justification, and PowerPoint will insert reasonable spacing after the bullet.

PowerPoint does allow you to set text styles including bullets on the Slide Master. Different master pages can be used within the same presentation. It is however, because PowerPoint does not support bullet numbering, each heading level can only have one bullet character. So editing bullets on master pages is only useful when setting up a new template.

Do not use dingbat bullets with fonts smaller than 18pt; they cannot easily be understood.

Also be aware of the cultural implications of particular dingbat symbols when presenting to an international audience.

#### *9.4.2.2 Using bullets in FrameMaker*

TBD

### **9.4.3 Using non-bulleted text**

#### *9.4.3.1 Non-bulleted text in PowerPoint*

TBD

Note: Need information here about laying out code fragments in PowerPoint. Also usage of Courier New for code.

#### *9.4.3.2 Non-bulleted text in Framemaker*

TBD.

### **9.4.4 Checking spelling**

#### *9.4.4.1 Checking spelling in PowerPoint*

Effective spelling checking would require an APM-specific dictionary. It is unlikely that we will ever do this.

#### *9.4.4.2 Checking spelling in FrameMaker*

Effective spelling checking would require an APM-specific dictionary. It is unlikely that we will ever do this.

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## 10 Using colour in presentations

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### 10.1 General use of colour

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Study *Working with Color* in [Looking Good in Print].

### 10.2 Problems with using colour in presentations

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Colour is recommended for presentations. Unfortunately it is hedged about with technical issues, and must be used with care.

Study [Using Color and Text]. It should be noted that even these rules for handling colour are not comprehensive; on top of all the issues mentioned in that paper, we must also cope with:

- media-dependent colour rendition; printed colour, and colour displayed on CRT, and displayed on LCD all look different from other, yet we wish to use only a single source file
- device-dependent colour: the same presentations can appear different when viewed on a different monitor, or driven from a different PC; some colours look particularly bad in particular combination on particular devices
- device-dependent restrictions: 16, 256, 65536, or 16.8 million colours supported
- application-dependent restrictions: FrameMaker 3 supports only 8 colours

### 10.3 Using colour in presentations

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#### 10.3.1 Using colour in PowerPoint

TBD

Note: Add notes on background colour here.

#### 10.3.2 Using colour in FrameMaker

FrameMaker 3 only supports 8 colours:



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**Table 10.1: FrameMaker colour usage**


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Colour	Use for Text
Black	yes - Headline
White	no - invisible
Red	yes - selectively
Green	no - too faint
Blue	yes - bulleted text
Cyan	no -too faint
Magenta	yes - emphasis
Yellow	no

However, FrameMaker does allow different fill patterns (“screens”). These fill patterns can be used to simulate shades of these colours.

Note: Add FrameMaker colour test pages here

Do not use shaded fill patterns of black. These appear as shades of gray, which the EMP-3000 LCD projector does not handle well (they appear muddy, and aggravate shimmering.)

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#### **10.4 The ANSA logo**

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TBD

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# 11 Using graphics in presentations

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## 11.1 Using bitmap graphics

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Display and printing technology have improved considerably in the last few years. This means that defects such as inconsistent colour, scaling jaggedness, scanning artifacts, and dithering are clearly visible, both on-screen and when printed. (Attempting to disguise this by defocusing the projector just makes the image blurred, which looks worse.)

If you use bitmaps, you will probably have to correct these by redrawing and retouching the bitmap by hand. This is time-consuming; allow at least 2 hours for a simple customer corporate logo, assuming you are already familiar with a bitmap editor. This effort will have to be repeated for each size of bitmap.

Bitmaps also increase the size of presentation files and make them much slower to print.

Therefore, bitmaps should only be used for:

- photographs
- scanned images with complex graphics

Note: This really doesn't cover use of images as a background (full-bleed, covering the entire slide, as in Owen's E2S slides).

- documents intended for automatic conversion to HTML (since browsers do not support any inline vector graphics formats, and automatic conversion may be impractical)

Note: Which bitmap format and resolution to recommend?

Conversion between bitmap formats is TBD.

Note: Some presentations still use an ANSA bitmap logo. This will be replaced eventually

## 11.2 Using vector graphics (diagrams, line-art)

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Again, defects such as inconsistent line widths, inaccurate alignment, asymmetry, scaling errors, and cropping are clearly visible. Take the time to correct these when editing someone else's diagram.

We do not yet have a reasonable set of diagrams for ANSA object line-and-blob diagramming.

### 11.2.1 Vector graphics in PowerPoint

Note: Need to describe .WMF and .PCS (the only two PowerPoint vector import formats), as well as the PowerPoint diagramming itself here.

The best layout for graphics is the Object autolayout. This creates an area in which you can draw directly using the PowerPoint drawing facilities. An icon appears with the message "Double click to add object", but you do not need to

do so unless you wish to add clip art, for example. If you accidentally move the title or object area, Format/Slide Layout allows you to reapply it.

Avoid using shadows on graphics for the same reason as shadows on text.

#### 11.2.1.1 Lines

The PowerPoint line widths (in Format/Colors and Lines) are as follows. Note that there is no way of drawing 2-pixel lines:

**Table 11.1: Line widths at 640x480 resolution on screen**

Line Style	Width in pixels
First	1
Second	3
Third	4
Fourth	TBD
Fifth	TBD

Avoid using near-horizontal, near-vertical, or near-diagonal lines; these emphasise pixellation.

Avoid using dashed lines. They can be hard to recognize and fade out when projected.

#### 11.2.2 Vector graphics in FrameMaker

TBD

### 11.3 Using graphs (charts)

#### 11.3.1 Graphs in PowerPoint

PowerPoint allows you to create graphs in two kinds of ways:

- as Graphs (in Microsoft Graph, part of PowerPoint)
- as Excel charts (in Excel)

Both offer very flexible formatting, but seem to require much memory, and are very slow to edit and display. Using Excel appears to offer no real advantages here.

The easiest way to create a graph slide is via the graph autolayout.

Note: Need more information here about graphs on the EMP-3000 (colour, formatting, and so on).

If you use graphs, Microsoft Graph (or Excel) must be installed both on the machine you edit the PowerPoint presentation, and on the machine you present it.

Note: Not yet clear how well graphs will interchange with PowerPoint for Macintosh.

PowerPoint also has a separate Organization Chart object. This is unusably slow to edit.

### **11.3.2 Graphs in FrameMaker**

FrameMaker provides no support for drawing graphs. They must be drawn as ordinary vector graphics; even a simple pie chart or X/Y chart is difficult. (The latest version, FrameMaker 5, still has no such support.)

Graphs in FrameMaker are best avoided. If you really need one, it may be best to edit one from an existing presentation (or, better, use PowerPoint).

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## 12 Using tables in presentations

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Tables in presentations are generally best avoided; they look dull.

### 12.1 Tables in PowerPoint

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Tables in PowerPoint are implemented as Microsoft Word. These are unusably slow

### 12.2 Tables in FrameMaker

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FrameMaker has excellent support for tables. However, choose table fonts carefully. (The table fonts in the APM template are far too small.)



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