

ELECTRONIC DOCUMENT TIPS & TECHNIQUES GUIDE - Version 43.0

Status of this version: The recommendations of the JTC1 ad-hoc group meeting on Strategy & Implementation of Information Technology held in London 30 Sep. - 2 Oct. 1996 requested the editor of the Tips & Techniques Guide to produce a revised version of JTC1 N 4185 taking into account the instructions to the editor contained in JTC 1 N 4241, Attachment 2. This document is now forwarded to JTC1 National Bodies and Subcommittees for study and comment into the JTC1 meeting in Paris, 10-13 December 1996. Version 3 of this document Resolution 32.2 of the JTC1 meeting held in Sydney in March 1996 instructed the editor of the Tips & Techniques Guide to produce a revised version of JTC1 N 3819 (Version 2) and provide supplementary information according to the instructions to the editor contained in JTC 1 N 4055, Attachment 2. It was the editor's understanding, as explained to the Sydney JTC1 ad-hoc meeting on Implementation of Information Technology, that candidate text for several of the items in JTC1 N 4055 Attachment 2 would be supplied by National Bodies and/or experts. As no contributions have been received, this version, with one exception, contains relatively minor updates from JTC1 N 3819: (JTC1 N 4185). The exception is included, as Annex A, to this document. It is the then latest available version of a substantial contribution from CEN/CENELEC sources setting out techniques to be used in the preparation of WordPerfect 5.x documents that wshould increase the likelihood of a document being converted to Word 2 and/or Word 6 without loss of information. The Tips & Techniques Editor is currently trying to locate the latest version of this document and will make it available to JTC1 in due course. Meanwhile, readers are referred to Annex A to JTC1 N 4185 if they wish to make reference to the previous version. Many of its sections contain considerations which are equally valid in other Word processor situations. Comments on this version are sought for the JTC1 meeting on Implementation of Information Technology to be held in BSI, London from September 30 - October 2, 1996 as authorized by Resolution 32.6 of the JTC1 meeting held in Sydney, Australia in March 1996.

1. Scope

This "Electronic Document Tips & Techniques Guide" has been developed as an aid to those involved in the electronic document distribution activities within JTC1 and its subcommittees in an attempt to minimize the impact of problems experienced in the process. This document will exist as JTC1 Standing Document (SD) for the information and advice of all parties involved in the electronic document activities of JTC1. Any participant can, and is encouraged to, contribute tips and information. The information contained herein is furnished on a "best efforts" basis. Any errors or omissions are regretted. Where reference is made to a product or name to which copyright or a trade mark applies, the appropriate reference, where known, is made on the first occurrence of that term in the text of this document.

2. References

- ISO/IEC JTC1 N4028: Contribution from the JTC1 Secretariat Staff on Document Classification/Type and Sample Templates, March 1996 (Classifications adopted with modification by JTC1 in Resolution 32A of the March 1996 JTC1 Sydney meeting).
- ISO/IEC JTC1 N4246054: Revised JTC1 Policy on Electronic Document Distribution, October March 1996. (for review and comment prior to the adopted immediate effect by JTC1 December 1996 Paris plenary in Resolution 32.1 of the March 1996 JTC1 Sydney meeting).
- ISO/IEC JTC1 N4321: Proposed Table of Recommended File Formats (as authorized by Rec. Policy 2 of the JTC1 ad-hoc group meeting on Strategy & Implementation of Information Technology held in London 30 Sep. - 2 Oct. 1996)

3. Definitions

- 3.1.1 **platform** a particular computer environment for which a specific version of software is required (e.g. IBM Personal Computer (PC), Apple Macintosh, Unix, etc.).

4. Abbreviations

IPS	Internet Protocol Suite
PDF	Portable Document Format
RTF	Rich Text Format

6. General Considerations for Electronic Document Distribution

5.1 Minimizing change in the distribution process

In order to minimize change in the distribution process and thus increase the chances of error-free distribution of documents, the following aspects should be observed:

- a) Submit the document in the word processing package, platform and release version in which it was originally prepared, provided that the format is one of the permitted formats.
- b) When submission in another platform, release or word-processing package is necessary, then minimize the number of such changes and attempt to make them in the following order of preference:
 - Change the computer platform whilst keeping the word processor and equivalent release level the same
 - Change the release version of the word processor package
 - Change the word processor package
- c) Where possible, submit the document using one of the provided templates (Word)/ styles (Word Perfect). For many document types, a suitable template or sample document is to be found in JTC 1 N 4028.

In instances where a sample document is insufficient, change can be minimized by maintaining the original document in the form submitted by the originator and generating a separate cover page at the secretariat. To assist in this process, the document originator should supply their own template/style with the document. File naming considerations for this approach are documented in 4.4.2 of ISO/IEC JTC1 N4054: JTC1 Policy on Electronic Document Distribution, March 1996. Several examples, covering both simple and complicated cases, are contained in Annex B to JTC 1 N 4054. It is important to note that the ability to leave the submitter's document unchanged will often outweigh the disadvantage of a document being a composite of more than one file.

5.2 Information to be provided by the originator of a document

Document originators should provide any relevant information they consider might be useful to the recipient of a document in order to enhance the recipient's chances of viewing the document in the way intended by the originator. Examples of information that might be of value to the recipient includes:

- a) Word processing package and version used for creation of the document (e.g. Microsoft Word for Macintosh Version 5.1)
- b) Operating system and version
- c) Hardware platform
- d) Graphics usage
- e) Language version, if more than one involved.

This information should be added to the cover sheet of the document.

Editor's note: Although the cover page placement was the agreement at the London meeting, JTC1 may wish to reconsider this proposal in the light of the desire to limit the cover page information so that it will fit readily into both human- and machine-readable indexes. Perhaps the very first paragraph or page of the document could contain this type of undoubtedly useful information.

5.3 Font Guidance

There are many factors which result in discrepancies from the originator's layout being experienced by a receiver of a document. One contributory factor is the occurrence of font substitution in the recipient's machine environment. Font substitution results in different kerning and vertical spacing characteristics being used which upsets the original document format. In order to limit the occurrence of this phenomenon, it is recommended wherever possible, that the usage of fonts be limited to those shown in the table below:

Font Type	Apple Macintosh™ and other environments ¹	Microsoft Windows™ environment
Non-serif	ITC Helvetica	Arial TT (TrueType _{__})

Fixed pitch font	Courier	Courier New TT
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Note 1. Other environments means any environment where Adobe Type Manager (for example IBM PC/DOS or equivalent) or Apple TrueType fonts are used.

It is recognized that observation of this recommendation may not always be possible in complex documents with specific font requirements (e.g. use of ASN.1 or test notations).

~~For further information see also the Draft JTC1 Tips and Techniques document (SC6-N-9863).~~

5.4 Page-size considerations

5.5 — Page-size considerations

Adherence to the common printable area of A4 and 8.5" x 11". defined in Annex A of ISO/IEC JTC1 N4054: JTC1 Policy on Electronic Document Distribution will reduce, but not necessarily eliminate, difficulties caused by the use of different paper sizes in North America from the ISO 216 standard sizes elsewhere. Particular attention needs to be paid to page layout in landscape format to ensure that the common area is utilized.

Particular care needs to be taken in the preparation of documents which require both portrait and landscape orientation. In order not to inconvenience recipients who may have widely different printing environments, the use of separate sections in a document for each orientation should be utilized. If, for some reason, this can not be accomplished, consideration should be given to making the parts of the document with separate orientations into separate documents.

Editor's Note: ~~More needs to be said on landscape considerations.~~

6. Graphics

As defined in ISO/IEC JTC1 N4054: JTC1 Policy on Electronic Document Distribution, March 1996 draft, simple graphics may be embedded in revisable documents provided they are editable by the graphics applications of the accepted word processing packages. For other graphics the following approach should be considered:

In general, figures in documents (of certain types, especially developing standards) should be developed as separate files, using whatever application software is available and appropriate for the task.

Then, final figures should be converted into files using ISO/IEC10918-1 (JPEG). Finally, the individual files are inserted into the word processing document at the appropriate points using, for example, Word's JPEG filter.

There are several reasons for this approach.

- a) Most commercial publication firms prefer separate text and figures files. This also can ease the conversion of the document to other formats.
- b) There is a wide variety of application software for generating graphical figures. This approach allows the most appropriate software to be used for each figure, and yet requires that the figures in the final deliverable form will not require support of more than one standard file format. It must be emphasized that JPEG files can be very compact representations of bitmaps, but are still bitmaps. So the original files in the native format of the production application should be kept for future maintenance editing.
- c) The figures and the text document can be worked by different editors in parallel. Having text place-holders in the document instead of the inserted figures can make the text editing task easier, since the file is smaller and graphics do not need to be rendered. The figures can be inserted only when a draft must be presented for consideration.

(There is a possibility of using other file formats during the transition: TIFF and GIF and EPSF are generally acceptable.)

Editor's Note: JTC 1 N 4055 Attachment 2, item 8, requests enhanced guidance on graphics usage. Contributions are sought.

7. Word Processor Considerations

7.1 Rich Text Format (RTF) considerations

RTF is the format of choice as defined in ISO/IEC JTC1 N 4054: JTC1 Policy on Electronic Document Distribution, March 1996 draft. Care should be taken to ensure that the content of the document is such that fidelity of transfer can be expected when the document is transferred in RTF form. If the document contains aspects which are unlikely to be transferred with integrity in RTF, then distribution in a permissible word-processor should be considered. Examples of technical aspects which may not be transferred with integrity in RTF are:

- a) The use of revision marking such as the strike-out and underline approach for deleted and inserted text respectively. The strikeout and underlining may be lost in RTF, rendering the document unreadable.
- b) The use of other than trivial graphics. For guidance see the section on Graphics.

Another aspect to be aware of when RTF is used as a transfer format is the possibility of losing space characters in the text. Many gateways, usually for performance reasons, are configured so that trailing blanks (i.e. space characters) at the end of each line are treated as nulls and stripped off before forwarding. This has no effect on transfer of ordinary ISO 646 data streams but can cause the loss of space characters between words in RTF data streams. As RTF data streams are a composite of control and text characters, the omitted spaces may occur anywhere in the document. If a user frequently

Since RTF can be processed by many word processors, it is highly desirable to avoid the use of features which may not translate directly in another (or possibly the same) word processor environment. Examples of such features are:

- a) The use of printer's quotes (known as smart quotes in Microsoft Word)
- b) Bullets, en- and em-dashes
- c) The *Symbol* character set
- d) ~~†~~—tbs

7.2 Microsoft Word™ specific section

7.2.1 General Word considerations

The following are areas which may affect the ability to reproduce a document with content and layout fidelity:

- a) ~~a)~~—When moving between different platforms, font substitution may take place. Since this may result in the substitution of a font with different kerning characteristics, reformatting and re-pagination may well take place. This is particularly true when Macintosh fonts such as New York and Monaco are present in the incoming document. Word set-up can be varied to select a more appropriate font.
- b) ~~b)~~—Similar to font substitution, style formatting alterations may take place. A typical problem is the substitution of 18-point for the "spacing before" paragraph attribute instead of the more typical settings of "single-space", zero point, or a point size equal to the point size being used in the paragraph. A global change to the document will help.
- c) ~~c)~~—Submitters should try, wherever possible, to limit the size of an object such as a table or a diagram to a size which is equal to or less than the size of the common printable area of A4 and 8.5" x 11". The dimensions of this area are defined in ISO/IEC JTC1 N4054: JTC1 Policy on Electronic Document Distribution, March 1996 draft. It is important to note that the sensitivity of word processors to changes in a document is such that changes of as little as 0.3mm can be sufficient to cause re-pagination of the document. Attempts to keep within the common printable area may therefore not be sufficient to prevent re-pagination taking place. If it is deemed to be of great importance to maintain the same pagination over different paper sizes, then consideration should be given to using the PDF file format as specified in 4.1 of JTC 1 N 4054.

7.2.2 Word for the Macintosh 5.1 considerations

Preparers of documents using Word for the Macintosh 5.1 should pay specific attention to the following points in order to increase the probability of trouble-free document distribution to other environments.

- a) Word for the Macintosh 5.1 contains a filter which enables pictures generated on a MAC to be saved in PC Word format. The equivalent filter is not present in Word for Windows 2 or Word 6 in a PC Windows environment. Accordingly MAC Word 5.1 documents containing MACDRAW graphics should be saved as Word for Windows documents before attempting to export them to a PC environment.
- b) Fonts used in drawing objects may not be preserved when moving from a MAC to a PC platform. Although it may be possible to edit the drawing and change the fonts, doing so on a PC may cause links to be lost. This difficulty can be minimized by a judicious choice of fonts at drawing creation time (see Section 5.35-35.3). There is a TrueType (TT) font for the MAC which is identical (from an identifier standpoint) to the Windows fonts (e.g. Arial TT). The easiest way of ensuring, in a MAC environment, that font conversion problems are minimized is to use the MAC version of the Windows fonts. These fonts are distributed with PowerPoint , but may also be purchased separately.
- c) If conversion cannot be avoided, then the non-graphics fonts convert as defined in Section 5.35-35.3, but the fonts in pictures convert to printer fonts which may well cause editing difficulties where Adobe Type Manager is not used. Printing difficulties may also occur where the printer fonts (PostScript Type 1 or 2) are not available.

7.3 WordPerfect™ specific section

Annex A contains ~~the latest~~ draft of a report generated by the CEN/CENELEC AGC Project Team 1, entitled "Originating documents: Keep it simple". When completed, it is the aim of the CEN/CENELEC AGC group to submit the final document into the ISO/IEC process via the ITSCG. The latest draft (March 1996) is included for information.

The aim of this guide is to provide recommendations on the preparation of documents intended to be used on different word processors. Primarily it applies to documents created in WordPerfect 5.x (5.1, 5.2 or 5.2+) and imported into Word 2 and Word 6. This guide has four main sections covering:

- a) text attributes;
- b) tables;
- c) formulae;
- d) graphics.

There are comprehensive tables at the end of the document which set out the character sets which can be successfully translated from and to WordPerfect and Word. These common sets cover ASCII, Multinational 1 & 2, Box Drawing, Iconic Symbols, Math/Scientific Basic and Extension sets and Greek characters.

The annex gives recommendations that should increase the likelihood of a document being converted from WordPerfect 5.x to Word 2 and Word 6 without loss of information and with the presentation preserved as far as possible and with the format preserved as far as possible. Many of the general observations in the areas of fonts, tables and margin and tab settings are also useful in other word-processing environments.

7.4 Text format considerations

When documents are intended to be distributed in text format, particular attention should be paid to the following considerations:

- a) Preservation of layout may mean that the text should be saved with line breaks to prevent wrapping from destroying the layout
- b) Tab characters may not be preserved with fidelity
- c) Quote marks and lists should utilize ordinary characters available in the intended character set

8. Page Image Considerations

8.1 Portable Document Format (PDF)™ specific section

8.2 Acrobat™ specific section

Adobe Acrobat software permits access to documents in their original form, independent of computer platform. With the Acrobat Reader, it is possible to view, navigate, print and present any Portable Document Format (PDF) file.

Acrobat Reader is distributed as a no-charge, licensed product and the latest version (2.1 at time of writing), maybe accessed from the Adobe homepage on the World-Wide-Web at <http://www.adobe.com>

It is permissible to re-distribute the Acrobat Reader program provided that the Read-Me file containing the license agreement is also re-distributed. The Read Me file contains installation instructions and product information for the Acrobat Reader program. There is also an On-line Guide (help_r.pdf) which provides essential information to help a user to begin using Acrobat Reader 2.1.

If redistributing Acrobat Reader, users should place the Read Me file standalone in the directory with the acroread.exe file to assist the end user with installation of the program. This file contains the following topics:

- New features in Acrobat Reader 2.1
- Installing Acrobat Reader
- System requirements
- Using the Weblink tool with Acrobat Reader
- Known Problems

- Electronic End User License Agreement

It should be noted that the ability to create PDF documents (in contrast to viewing and printing) requires the use of other at-a-charge software available from Adobe Systems Inc. More information can be found on the Adobe homepage at <http://www.adobe.com>

9. Compression and encoding

9.1 General

Compression may be used on diskettes in order to reduce the amount of space needed. Both compression and encoding may be employed in on-line transmission and encoding may well have to be utilized when sending documents in a binary format such as Word or WordPerfect documents. These considerations apply to documents allowable as the E form (e-mail) method of transmission as defined in ISO/IEC JTC1 N4054: JTC1 Policy on Electronic Document Distribution, March 1996.

9.2 Recommended Compression/ De-Compression approach

The recommended Compression/ De-Compression mechanism is to use PKZIP or PKZIP-compatible software. An uncompressed file or message should state which files are compressed and to indicate if any optional aspects of PKZIP have been used.

9.3 Encoding techniques

When electronic document transfer takes place using an Internet Protocol Suite (IPS) software stack, the recommended encoding technique is to use UUENCODE and UUDECODE or compatible products. Many e-mail products enable easy encoding in UUENCODE and automatic de-coding on receipt (e.g. Eudora by Qualcomm Inc. and Microsoft Mail by Microsoft Inc.). A number of gateways are not capable of associating more than one attachment with a message, so it is desirable to limit the number of attachments to one. Similarly, care should be taken by a document originator to test whether a file is actually sent as an attachment to a message or whether embedding within the message takes place. This avoids the recipient looking for non-existent attachments.

9.4 Useful software for encoding/decoding

The following software packages, in addition to those mentioned above, have been found to be of use for encoding/decoding in a Windows environment.

9.4.1 Wincode™

Wincode encodes and decodes files in the following formats:

- a) UUENCODING
- b) XXENCODING, which can be of particular value when national characters are used in Latin character sets
- c) Mime Base 64
- d) Binhex, or
- e) User-defined

Wincode can also be customized to link to and from PKZIP/UNZIP software. The latest known version of this freeware package is 2.6.1. The on-line help file is available at a charge. For further information contact: Snappy_Inc. at George.Silva@wadsworth.org

9.4.2 WinZip™

[WinZip](http://www.winzip.com) will zip and unzip files in the usual PKZIP form but also in LZH and ARJ formats. It is available in 16 or 32-bit versions (latest known is 6.42) and more information is available from the WinZip home page: <http://www.winzip.com>.

The mail address is Nico Mak Computing, Inc., P.O. Box 919, Bristol, CT 06011, U.S.A..

10. National considerations

When using national versions of word processing software in fixed set layouts, etc. text in the national language could be passed on, for instance, in headers or footers.

Document originators should also pay attention to whether the text preparation software uses any national characters as control characters, etc. as their use can produce unexpected formatting results.

11. Acknowledgements

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Annex A to JTC1 N ttv4 Tips & Techniques Version 4

Originating documents: Keep it simple!
CEN/CENELEC AGC Project team 1
March 1996 - Edition 2

Version 3 of this document (JTC1 N 4185), included, as Annex A, the then latest available version of a substantial contribution from CEN/CENELEC sources setting out techniques to be used in the preparation of WordPerfect 5.x documents that would increase the likelihood of a document being converted to Word 2 and/or Word 6 without loss of information. The Tips & Techniques Editor is currently trying to locate the latest version of this document and will make it available to JTC1 in due course. Meanwhile, readers are referred to Annex A to JTC1 N 4185 if they wish to make reference to the previous version.