



Matterhorn Protocol

PDF/UA Conformance Testing Model

PDF Association, PDF/UA Competence Center | Document Version 1.02 | April 30, 2014

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Document History

Version	Date	Change
1.0	2013-08-07	Initial release
1.0	2013-10-10	Editorial and typographical corrections.
1.01	2014-02-11	Changed two “Machine” checks to “Human”, updated the description on page 2, formatting changes to improve maintenance, added headings and a Table of Contents to improve navigability.
1.02	2014-04-30	Minor editorial and formatting corrections, moved 08-003 to 01-007.

Background

PDF is the electronic document format found worldwide in every corner of almost every organization that uses computers. The value of PDF may be stated in terms of the capacity to deliver a *stable and trustworthy representation of a document*.

Accordingly, PDF implementers have a special responsibility to ensure reliability and consistency in PDF processing by following clear, specific and detailed industry and normative standards in the development of PDF creation, modification and viewing software.

About PDF/UA

Ensuring content is accessible to users with disabilities presents broad and complex challenges in any technology. ISO 14289-1 (PDF/UA-1) specifies technical requirements for PDF files to ensure a high-quality and consistent reading experience when used by a variety of PDF/UA-conforming processors.

Introduction to the Matterhorn Protocol

Templates and document production processes can automate many aspects of accessibility but the range of necessary checkpoints is extensive and human judgment is required in many areas.

Organizations committed to providing accessible electronic documents require a cost-effective means of ensuring their document’s accessibility features are adequate.

Intended for software developers and document testers, the Matterhorn Protocol is designed to foster PDF/UA adoption by specifying a common set of tests to facilitate the exchange of detailed information on PDF/UA conformance.

NOTE: The concepts of “partial conformance” and “severity of non-conformance” are intentionally not addressed in this document.

Matterhorn Protocol Checkpoints

The Matterhorn Protocol is a set of 31 checkpoints comprised of 136 failure conditions encompassing file format requirements specified in PDF/UA-1. 87 failure conditions can be determined by software alone, 47 failure conditions usually require human judgment. 2 failure conditions have no specific tests (23-001 and 27-001). Some failure conditions pertain to the document, some to the page and most to individual objects such as tags, tables or annotations.

Key to the Headers in the Failure Conditions Tables

Index	A numerical identifier for individual failure conditions within a given Checkpoint.
Failure Condition	Non-conforming condition present in the PDF file. NOTE: Pathological software behavior (such as “flickering” by using a script to cause animation effects via a series of actions) is not addressed.
Section	A reference to the relevant section in PDF/UA on a paragraph level. “UA1” refers to the PDF/UA-1 standard. The point-separated numbers after the colon refer to a clause in PDF/UA-1. The digits following the hyphen identify a specific paragraph within the clause.
Type	The nature of the tested item. Possible values are <i>Doc</i> for aspects of the document as a whole, <i>Page</i> for pages inside the document, <i>Object</i> for individual data objects, <i>JS</i> for JavaScript embedded in the document and <i>All</i> where all aspects of the document are affected.
How	While not determinative the value of How generally indicates the realistic best-practice approach at the present time. Some checkpoints may <i>always</i> be decided by <i>Machine</i> , some <i>usually</i> or <i>probably</i> require <i>Human</i> interaction.
See	Certain failure conditions are covered in full by other failure conditions. Such cases are indicated by an index reference in this column.

Additional Reading

- [AIIM](http://www.aiim.org/Research-and-Publications/standards/committees/PDFUA/) (www.aiim.org/Research-and-Publications/standards/committees/PDFUA/)
 - PDF/UA-1 Technical Implementation Guide: Understanding ISO 14289-1 (PDF/UA-1)
 - Achieving WCAG 2.0 with PDF/UA
- [PDF Association](http://www.pdfa.org) (www.pdfa.org)
 - PDF/UA in a Nutshell

PDF/UA-1 Failure Conditions

Checkpoint 01: Real content tagged

Index	Failure Condition	Section	Type	How	See
01-001	Artifact is tagged as real content.	UA1:7.1-1	Object	Human	-
01-002	Real content is marked as artifact.	UA1:7.1-1	Object	Human	-
01-003	Content marked as Artifact is present inside tagged content.	UA1:7.1-1	Object	Machine	-
01-004	Tagged content is present inside content marked as Artifact.	UA1:7.1-1	Object	Machine	-
01-005	Content is neither marked as Artifact nor tagged as real content.	UA1:7.1-2	Object	Machine	-
01-006	<p>The structure type and attributes of a structure element are not semantically appropriate for the structure element. All of the following structure types must be taken into account:</p> <p>Document, Part, Art, Sect, Div, BlockQuote, Caption, TOC, TOCI, Index, NonStruct, Private, P, H, H1, H2, H3, H4, H5, H6, L, LI, Lbl, LBody, Table, TR, TH, TD, THead, TBody, TFoot, Span, Quote, Note, Reference, BibEntry, Code, Link, Annot, Ruby, Warichu, RB, RT, RP, WT, WP, Figure, Formula, Form.</p> <p>NOTE 1: Structure type is not semantically appropriate if the nature of the content inside the structure element does not match the structure type of the structure element.</p> <p>NOTE 2: For any non-standard structure types, the standard structure type to which the type is role-mapped shall be used for validation.</p> <p>NOTE 3: Tables are regular when the number of logical cells is equal in each row after accounting for rowspan and colspan attributes.</p> <p>While PDF/UA-1 does not prohibit irregular tables, irregular tables are almost always a strong indicator of improper table structure. It may be a good idea to raise a warning when such tables are encountered, but it is not required by the Matterhorn Protocol.</p> <p>NOTE 4: The value of table cell attributes is a function of the cell's semantic role in the table's structure. Therefore, a TH cell may not include a Scope attribute with an inappropriate value.</p>	UA1:7.1-2	Object	Human	-
01-007	Suspect entry has a value of true.	UA1:7.1-11	Doc	Machine	-

Checkpoint 02: Role Mapping

Index	Failure Condition	Section	Type	How	See
02-001	One or more non-standard tag's mapping does not terminate with a standard type. NOTE: Although PDF/UA defines the nomenclature for heading levels above H6 (Hn), these are not standard structure types (as defined in ISO 32000-1) and therefore Hn tags must (PDF/UA-1 7.1, paragraph 1) be role-mapped to a standard structure type. According to PDF/UA-1, PDF/UA-conforming processors are expected to ignore such mappings and respect the heading level.	UA1:7.1-3	Doc	Machine	-
02-002	The mapping of one or more non-standard types is semantically inappropriate.	UA1:7.1-3	Doc	Human	-
02-003	A circular mapping exists.	UA1:7.1-3	Doc	Machine	-
02-004	One or more standard types are remapped.	UA1:7.1-4	Doc	Machine	-

Checkpoint 03: Flickering

Index	Failure Condition	Section	Type	How	See
03-001	One or more Actions lead to flickering.	UA1:7.1-5	Page	Human	-
03-002	One or more multimedia objects contain flickering content.	UA1:7.1-5	Object	Human	-
03-003	One or more JavaScript actions lead to flickering.	UA1:7.1-5	JS	Human	-

Checkpoint 04: Color and Contrast

Index	Failure Condition	Section	Type	How	See
04-001	Information is conveyed by contrast, color, format or layout, or some combination thereof but the content is not tagged to reflect all meaning conveyed by the use of contrast, color, format or layout, or some combination thereof.	UA1:7.1-6	Object	Human	-

Checkpoint 05: Sound

Index	Failure Condition	Section	Type	How	See
05-001	Media annotation present, but audio content not available in another form. NOTE 1: An example of another form is a transcript.	UA1:7.1-7	Object	Human	-
05-002	Audio annotation present, but content not available in another form. NOTE 2: An example of another form is a transcript.	UA1:7.1-7	Object	Human	-
05-003	JavaScript uses beep function but does not provide another means of notification.	UA1:7.1-7	JS	Human	-

Checkpoint 06: Metadata

Index	Failure Condition	Section	Type	How	See
06-001	Document does not contain XMP metadata stream	UA1:7.1-8	Doc	Machine	-
06-002	The metadata stream in the Catalog dictionary does not include the PDF/UA identifier.	UA1:5	Doc	Machine	-
06-003	Metadata stream does not contain dc:title	UA1:7.1-8	Doc	Machine	-
06-004	dc:title does not clearly identify the document	UA1:7.1-8	Doc	Human	-

Checkpoint 07: Dictionary

Index	Failure Condition	Section	Type	How	See
07-001	ViewerPreferences dictionary of the Catalog dictionary does not contain DisplayDocTitle key.	UA1:7.1-9	Doc	Machine	-
07-002	ViewerPreferences dictionary of the Catalog dictionary contains DisplayDocTitle key with a value of false.	UA1:7.1-9	Doc	Machine	-

Checkpoint 08: OCR Validation

Index	Failure Condition	Section	Type	How	See
08-001	OCR-generated text contains significant errors.	UA1:7.1-10	Page	Human	-
08-002	OCR-generated text is not tagged	UA1:7.1-10	Page	Human	01-006

Checkpoint 09: Appropriate Tags

Index	Failure Condition	Section	Type	How	See
09-001	Tags are not in logical reading order.	UA1:7.2-1	Doc	Human	-
09-002	Structure elements are nested in a semantically inappropriate manner. (e.g., a table inside a heading).	UA1:7.2-1	Object	Human	-
09-003	The structure type (after applying any role-mapping as necessary) of a structure element is not semantically appropriate.	UA1:7.2-1	Object	Human	01-006
09-004	A table-related structure element is used in a way that does not conform to the syntax defined in ISO 32000-1, Table 337.	UA1:7.2-1	Object	Machine	-
09-005	A list-related structure element is used in a way that does not conform to Table 336 in ISO 32000-1.	UA1:7.2-1	Object	Machine	-
09-006	A TOC-related structure element is used in a way that does not conform to Table 333 in ISO 32000-1.	UA1:7.2-1	Object	Machine	-
09-007	A Ruby-related structure element is used in a way that does not conform to Table 338 in ISO 32000-1.	UA1:7.2-1	Object	Machine	-
09-008	A Warichu-related structure element is used in a way that does not conform to Table 338 in ISO 32000-1.	UA1:7.2-1	Object	Machine	-

Checkpoint 10: Character Mappings

Index	Failure Condition	Section	Type	How	See
10-001	Character code cannot be mapped to Unicode.	UA1:7.2-2	Object	Machine	-

Checkpoint 11: Declared Natural Language

Index	Failure Condition	Section	Type	How	See
11-001	Natural language for text in page content cannot be determined.	UA1:7.2-3	Object	Machine	-
11-002	Natural language for text in “Alt”, “ActualText” and “E” attributes cannot be determined.	UA1:7.2-3	Object	Machine	-
11-003	Natural language in the Outline entries cannot be determined.	UA1:7.2-3	Object	Machine	-
11-004	Natural language in the “Contents” entry for annotations cannot be determined.	UA1:7.2-3	Object	Machine	-
11-005	Natural language in the TU key for form fields cannot be determined.	UA1:7.2-3	Object	Machine	-
11-006	Natural language for document metadata cannot be determined.	UA1:7.2-3	Doc	Machine	-
11-007	Natural language is not appropriate.	UA1:7.2-3	All	Human	-

Checkpoint 12: Stretchable Characters

Index	Failure Condition	Section	Type	How	See
12-001	Stretched characters are not represented appropriately.	UA1:7.2-4	Object	Human	-

Checkpoint 13: Graphics

Index	Failure Condition	Section	Type	How	See
13-001	Graphics objects other than text objects and artifacts are not tagged with a Figure tag.	UA1:7.3-1	Object	Human	-
13-002	A link with a meaningful background does not include alternative text describing both the link and the graphic’s purpose.	UA1:7.3-1	Object	Human	-
13-003	A caption is not tagged with a Caption tag.	UA1:7.3-2	Object	Human	-
13-004	Figure tag alternative or replacement text missing.	UA1:7.3-3	Object	Machine	-
13-005	Actual text used for a Figure for which Alternative text is more appropriate.	UA1:7.3-4	Object	Human	-
13-006	Graphics objects that possess semantic value only within a group of graphics objects is tagged on its own.	UA1:7.3-5	Object	Human	-
13-007	A more accessible representation is not used.	UA1:7.3-6	Object	Human	-

Checkpoint 14: Headings

Index	Failure Condition	Section	Type	How	See
14-001	Headings are not tagged.	UA1:7.4-1	Doc	Human	01-006
14-002	Does use numbered headings, but the first heading tag is not H1.	UA1:7.4.2-1	Doc	Machine	-
14-003	Numbered heading levels in descending sequence are skipped (Example: H3 follows directly after H1).	UA1:7.4-1	Doc	Machine	-
14-004	Numbered heading tags do not use Arabic numerals.	UA1:7.4.3-1	Object	Human	01-006
14-005	Content representing a 7 th level (or higher) heading does not use an “H7” (or higher) tag.	UA1:7.4.3-1	Object	Human	01-006
14-006	A node contains more than one H tag.	UA1:7.4.4-1	Object	Machine	-
14-007	Document uses both H and H# tags. NOTE: In weakly-structured documents, headings always take the form “Hn” (e.g., H1, H2, Hn) without intervening whitespace or numerical separators.	UA1:7.4.4-3	Doc	Machine	-

Checkpoint 15: Tables

Index	Failure Condition	Section	Type	How	See
15-001	A row has a header cell, but that header cell is not tagged as a header.	UA1:7.5-1	Object	Human	-
15-002	A column has a header cell, but that header cell is not tagged as a header.	UA1:7.5-1	Object	Human	-
15-003	In a table not organized with Headers attributes and IDs, a TH cell does not contain a Scope attribute.	UA1:7.5-2	Object	Machine	-
15-004	Content is tagged as a table for information that is not organized in rows and columns.	UA1:7.5-3	Object	Human	-
15-005	A given cell's header cannot be unambiguously determined.	UA1:7.5-2	Object	Human	01-006

Checkpoint 16: Lists

Index	Failure Condition	Section	Type	How	See
16-001	List is an ordered list, but no value for the ListNumbering attribute is present.	UA1:7.6-1	Object	Human	-
16-002	List is an ordered list, but the ListNumbering value is not one of the following: Decimal, UpperRoman, LowerRoman, UpperAlpha, LowerAlpha.	UA1:7.6-1	Object	Human	-
16-003	Content is a list but is not tagged as a list.	UA1:7.6-2	Object	Human	01-006

Checkpoint 17: Mathematical Expressions

Index	Failure Condition	Section	Type	How	See
17-001	Content is a mathematical expression but is not tagged with a Formula tag.	UA1:7.7-1	Object	Human	01-006
17-002	Formula tag is missing an Alt attribute.	UA1:7.7-1	Object	Machine	-
17-003	Unicode mapping requirements are not met.	UA1:7.7-2	Object	Machine	10-001

Checkpoint 18: Page Headers and Footers

Index	Failure Condition	Section	Type	How	See
18-001	Headers and footers are not marked as pagination artifacts.	UA1:7.8-1	Object	Human	-
18-002	Header or footer artifacts are not classified as Header or Footer subtypes.	UA1:7.8-1	Object	Human	-

Checkpoint 19: Notes and References

Index	Failure Condition	Section	Type	How	See
19-001	Footnotes, endnotes, note labels are not tagged as Note.	UA1:7.9-1	Object	Human	-
19-002	References are not tagged as Reference.	UA1:7.9-1	Object	Human	-
19-003	ID key of the Note tag is not present.	UA1:7.9-2	Object	Machine	-
19-004	ID key of the Note tag is non-unique.	UA1:7.9-2	Object	Machine	-

Checkpoint 20: Optional Content

Index	Failure Condition	Section	Type	How	See
20-001	Name entry is missing or has an empty string as its value in an Optional Content Configuration Dictionary in the Configs entry in the OCProperties entry in the Catalog dictionary.	UA1:7.10-1	Object	Machine	-
20-002	Name entry is missing or has an empty string as its value in an Optional Content Configuration Dictionary that is the value of the D entry in the OCProperties entry in the Catalog dictionary.	UA1:7.10-1	Object	Machine	-
20-003	The AS key appears in an Optional Content Configuration Dictionary.	UA1:7.10-2	Object	Machine	-

Checkpoint 21: Embedded Files

Index	Failure Condition	Section	Type	How	See
21-001	The file specification dictionary for an embedded file does not contain F and UF keys.	UA1:7.11-1	Object	Machine	-

Checkpoint 22: Article Threads

Index	Failure Condition	Section	Type	How	See
22-001	Article threads do not reflect logical reading order.	UA1:7.12-1	Object	Human	-

Checkpoint 23: Digital Signatures

Index	Failure Condition	Section	Type	How	See
23-001	No test specific to digital signatures is required, however other provisions apply (form fields).	UA1:7.13-1	--	--	01-006

Checkpoint 24: Non-Interactive Forms

Index	Failure Condition	Section	Type	How	See
24-001	Non-interactive forms are not tagged with the PrintFields attribute.	UA1:7.14-1	Object	Human	-

Checkpoint 25: XFA

Index	Failure Condition	Section	Type	How	See
25-001	File contains the dynamicRender element with value "required".	UA1:7.15-1	Object	Machine	-

Checkpoint 26: Security

Index	Failure Condition	Section	Type	How	See
26-001	The file is encrypted but does not contain a P key in its encryption dictionary.	UA1:7.16-1	Object	Machine	-
26-002	The file is encrypted and does contain a P key but the 10 th bit position of the P key is false.	UA1:7.16-1	Object	Machine	-

Checkpoint 27: Navigation

Index	Failure Condition	Section	Type	How	See
27-001	No tests specific to navigation are required; use appropriate semantics.	UA1:7.17-1	--	--	01-006

Checkpoint 28: Annotations

Index	Failure Condition	Section	Type	How	See
28-001	An annotation whose hidden flag is not set and whose rectangle is not outside the crop-box is not in correct reading order.	UA1:7.18.1-2	Object	Human	-
28-002	An annotation, excluding annotations of subtype Widget, Popup or Link, is not nested within an Annot tag.	UA1:7.18.1-2	Object	Machine	-
28-003	An annotation whose hidden flag is not set and whose rectangle is not outside the crop-box is used for visual formatting but is not tagged according to its semantic function.	UA1:7.18.1-3	Object	Human	-
28-004	An annotation other than annotations of type Link, Widget or Popup whose hidden flag is not set and whose rectangle is not outside the crop-box and does not have a Contents key does not have an alternative description (in the form of an Alt entry in the enclosing structure element).	UA1:7.18.1-4	Object	Machine	-
28-005	A form field whose hidden flag is not set and whose rectangle is not outside the crop-box and does not have a TU key does not have an alternative description (in the form of an Alt entry in the enclosing structure element).	UA1:7.18.1-4	Object	Machine	-
28-006	An annotation with subtype undefined in ISO 32000 does not meet 7.18.1.	UA1:7.18.2-1	Object	Machine	28-001, 28-002, 28-003, 28-004
28-007	An annotation of subtype TrapNet exists.	UA1:7.18.2-2	Object	Machine	-
28-008	A page containing an annotation does not contain a Tabs key.	UA1:7.18.3-1	Object	Machine	-
28-009	A page containing an annotation has a Tabs key with a value other than S.	UA1:7.18.3-1	Object	Machine	-
28-010	A widget annotation is not nested within a Form tag.	UA1:7.18.4-1	Object	Machine	-
28-011	A link annotation is not nested within a Link tag.	UA1:7.18.5-1	Object	Machine	-
28-012	A link annotation does not include an alternate description in the Contents Key.	UA1:7.18.5-2	Object	Machine	-
28-013	The IsMap key is present with a value of true but the functionality is not provided in some other way.	UA1:7.18.5-3	Object	Human	-
28-014	CT key is missing from the media clip data dictionary.	UA1:7.18.6.2-1	Object	Machine	-
28-015	Alt key is missing from the media clip data dictionary.	UA1:7.18.6.2-1	Object	Machine	-
28-016	File attachment annotations do not conform to 7.11.	UA1:7.18.7-1	Object	Machine	21-001
28-017	A PrinterMark annotation is included in logical structure.	UA1:7.18.8-1	Object	Machine	-
28-018	The appearance stream of a PrinterMark annotation is not marked as Artifact.	UA1:7.18.8-2	Object	Machine	01-002, 01-005

Checkpoint 29: Actions

Index	Failure Condition	Section	Type	How	See
29-001	A script requires specific timing for individual keystrokes.	UA1:7.19-1	Object	Human	-

Checkpoint 30: XObjects

Index	Failure Condition	Section	Type	How	See
30-001	A reference XObject is present.	UA1:7.20-1	Object	Machine	-
30-002	Form XObject contains MCIDs and is referenced more than once.	UA1:7.20-2	Object	Machine	-

Checkpoint 31: Fonts

Index	Failure Condition	Section	Type	How	See
31-001	A Type 0 font dictionary with encoding other than Identity-H and Identity-V has values for Registry in both CIDSystemInfo dictionaries that are not identical.	UA1:7.21.3-1	Object	Machine	-
31-002	A Type 0 font dictionary with encoding other than Identity-H and Identity-V has values for Ordering in both CIDSystemInfo dictionaries that are not identical.	UA1:7.21.3.1-1	Object	Machine	-
31-003	A Type 0 font dictionary with encoding other than Identity-H and Identity-V has a value for Supplement in the CIDSystemInfo dictionary of the CID font that is less than the value for Supplement in the CIDSystemInfo dictionary of the CMap.	UA1:7.21.3.1-1	Object	Machine	-
31-004	A Type 2 CID font contains neither a stream nor the name <i>Identity</i> as the value of the CIDToGIDMap entry.	UA1:7.21.3.2-1	Object	Machine	-
31-005	A Type 2 CID font does not contain a CIDToGIDMap entry.	UA1:7.21.3.2-1	Object	Machine	-
31-006	A CMap is neither listed as described in ISO 32000-1:2008, 9.7.5.2, Table 118 nor is it embedded.	UA1:7.21.3.3-1	Object	Machine	-
31-007	The WMode entry in a CMap dictionary is not identical to the WMode value in the CMap stream.	UA1:7.21.3.3-1	Object	Machine	-
31-008	A CMap references another CMap which is not listed in ISO 32000-1:2008, 9.7.5.2, Table 118. NOTE 1: For more information see ISO 32000-1 9.7.5.3, UseCMap entry.	UA1:7.21.3.3-2	Object	Machine	-
31-009	For a font used by text intended to be rendered the font program is not embedded. NOTE 2: A glyph is used for rendering if the text render mode is not equal 3 (text render mode 3 is used for invisible text).	UA1:7.21.4.1-1	Object	Machine	-
31-010	A font program is embedded that is not legally embeddable for unlimited, universal rendering.	UA1:7.21.4.1-2	Object	Human	-

Index	Failure Condition	Section	Type	How	See
31-011	For a font used by text the font program is embedded but it does not contain glyphs for all of the glyphs referenced by the text used for rendering. NOTE 3: A glyph is used for rendering if the text render mode is not equal to 3 (text render mode 3 is used for invisible text).	UA1:7.21.4.1-3	Object	Machine	-
31-012	The FontDescriptor dictionary of an embedded Type 1 font contains a CharSet string, but at least one of the glyphs present in the font program is not listed in the CharSet string.	UA1:7.21.4.2-1	Object	Machine	-
31-013	The FontDescriptor dictionary of an embedded Type 1 font contains a CharSet string, but at least one of the glyphs listed in the CharSet string is not present in the font program.	UA1:7.21.4.2-2	Object	Machine	-
31-014	The FontDescriptor dictionary of an embedded CID font contains a CIDSet string, but at least one of the glyphs present in the font program is not listed in the CIDSet string.	UA1:7.21.4.2-3	Object	Machine	-
31-015	The FontDescriptor dictionary of an embedded CID font contains a CIDSet string, but at least one of the glyphs listed in the CIDSet string is not present in the font program.	UA1:7.21.4.2-4	Object	Machine	-
31-016	For one or more glyphs, the glyph width information in the font dictionary and in the embedded font program differ by more than 1/1000 unit.	UA1:7.21.5-1	Object	Machine	-
31-017	A non-symbolic TrueType font is used for rendering, but none of the cmap entries in the embedded font program is a non-symbolic cmap .	UA1:7.21.6-1	Object	Machine	-
31-018	A non-symbolic TrueType font is used for rendering, but for at least one glyph to be rendered the glyph cannot be looked up by any of the non-symbolic cmap entries in the embedded font program.	UA1:7.21.6-2	Object	Machine	-
31-019	The font dictionary for a non-symbolic TrueType font does not contain an Encoding entry.	UA1:7.21.6-3	Object	Machine	-
31-020	The font dictionary for a non-symbolic TrueType font contains an Encoding dictionary which does not contain a BaseEncoding entry.	UA1:7.21.6-4	Object	Machine	-
31-021	The value for either the Encoding entry or the BaseEncoding entry in the Encoding dictionary in a non-symbolic TrueType font dictionary is neither <i>MacRomanEncoding</i> nor <i>WinAnsiEncoding</i> .	UA1:7.21.6-5	Object	Machine	-
31-022	The Differences array in the Encoding entry in a non-symbolic TrueType font dictionary contains one or more glyph names which are not listed in the Adobe Glyph List.	UA1:7.21.6-6	Object	Machine	-
31-023	The Differences array is present in the Encoding entry in a non-symbolic TrueType font dictionary but the embedded font program does not contain a (3,1) Microsoft Unicode cmap .	UA1:7.21.6-7	Object	Machine	-
31-024	The Encoding entry is present in the font dictionary for a symbolic TrueType font.	UA1:7.21.6-8	Object	Machine	-
31-025	The embedded font program for a symbolic TrueType font contains no cmap .	UA1:7.21.6-9	Object	Machine	-

Index	Failure Condition	Section	Type	How	See
31-026	The embedded font program for a symbolic TrueType font contains more than one cmap , but none of the cmap entries is a (3,0) Microsoft Symbol cmap .	UA1:7.21.6-10	Object	Machine	-
31-027	A font dictionary does not contain the ToUnicode entry and none of the following is true: <ul style="list-style-type: none"> - the font uses MacRomanEncoding, MacExpertEncoding or WinAnsiEncoding - the font is a Type 1 or Type 3 font and the glyph names of the glyphs referenced are all contained in the Adobe Glyph List or the set of named characters in the Symbol font, as defined in ISO 32000-1:2008, Annex D - the font is a Type 0 font, and its descendant CIDFont uses Adobe-GB1, Adobe-CNS1, Adobe-Japan1 or Adobe-Korea1 character collections - the font is a non-symbolic TrueType font 	UA1:7.21.7-1	Object	Machine	-
31-028	One or more Unicode values specified in the ToUnicode CMap are zero (0).	UA1:7.21.7-2	Object	Machine	-
31-029	One or more Unicode values specified in the ToUnicode CMap are equal to either U+FEFF or U+FFFE.	UA1:7.21.7-3	Object	Machine	-
31-030	One or more characters used in text showing operators reference the .notdef glyph.	UA1:7.21.8-1	Object	Machine	-