

UPnP Editing Guide

for

ISO/IEC Conformance

May 31, 2014

Last updated for:

UPnP Ribbon v 0.61

Service Template v 3.0 β-2014-05-31

Device Template v 3.0 β-2014-05-31

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No table of figures entries found.

In your document, select the words to include in the table of contents, and then on the Home tab, under Styles, click a heading style. Repeat for each heading that you want to include, and then insert the table of contents in your document. To manually create a table of contents, on the Document Elements tab, under Table of Contents, point to a style and then click the down arrow button. Click one of the styles under Manual Table of Contents, and then type the entries manually.

(Beginnings of) Document Element Index

1 Scope	7, 12	3 Terms, definitions,	7, 14	Annex A Theory of operation	7
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Essential information

Installation

Word templates

The isolated, uncapitalized word “template” in this document always means a Microsoft Word template, never a UPnP Service or Device Template

When referring to a UPnP Service or Device Template, the word “Template” is always capitalized.

Two Word templates are required for UPnP documents

- `upnp4iec.dot` holds all styles
- `upnp4iecAdjunct.dotm` contains the UPnP ribbon and all programmatic support

IMPORTANT Both templates *must* be read-only

Where to install templates:

- `upnp4iec.dot`
 - “User templates” folder *OR*
 - “Workgroup templates” folder
- `upnp4iecAdjunct.dotm`
 - Word “Startup” folder

Word templates (cont.)

How to locate template folders

- Navigate to the *Options Advanced* tab:
 - in Word 2007, select the *Office Button > Word Options > Advanced* tab
 - in Word 2010, select the *File tab > Options > Advanced* tab
- On the *Advanced* tab, scroll down to the **General** section and click the **File Locations...** button (tip: click the **Modify** button to see full path names)

System Requirements

Operating System

Windows XP thru Windows 7

- Untested on Windows 8
- *Will not work on OS X*

Microsoft Word

Word 2007, Word 2010

- Untested on Word 2013
- Untested on Office 365
- *Will not work on Word 2003 or earlier*

Essential information

Style Usage

Formatting with approved styles

IMPORTANT To prepare UPnP documents for ISO/IEC publication, formatting is restricted to *approved*, *named* paragraph and character styles from either of:

- the “standard” [IEC style set](#)
- the [UPnP extended style set](#)

Direct formatting is not allowed

Applying approved styles

All approved styles are available from the UPnP ribbon tab (see “Contents of UPnP Ribbon Tab”, p. 8; “Approved character styles”, p. 24; “Approved paragraph styles”, p. 25)

Usage guidance for ribbon operations is given in tooltips—shown by hovering over the ribbon entries

Enforcement of approved styles

For UPnP editors, style restrictions are enforced with Word’s “Restrict Formatting and Editing” control

IMPORTANT These restrictions disable:

- applying unapproved styles
- direct formatting
- Some common Word operations that use direct formatting:

Home tab > Font > *any*

Home tab > Paragraph > *any*

Page Layout tab > Paragraph > *any*

If absolutely necessary, restrictions can be disabled temporarily (UPnP tab > Miscellaneous > UnRestrict), but they will be re-enabled with the next operation initiated from the UPnP ribbon tab

IEC style set

ISO and IEC share a common set of style requirements for all of their published standards [1]

To support these requirements, IEC has defined a fixed set of named Word styles, which are used for most UPnP document content:

- Headings
- Lists
- Basic table cells
- Figure and table titles (captions) and footnotes
- Terms and definitions
- Notes and Examples

UPnP extended style set

The IEC style set is not sufficient to convey all UPnP content meaning, so UPnP has created an extended set of named styles for

- UPnP defined names ([arch](#), [forum](#), ...)
- Code — both XML and HTTP
- Enhanced table cells
- Hierarchical documentation for XML & HTTP
- Many other uses (see “Approved character styles”, p. 24, and “Approved paragraph styles”, p. 25)

Essential information

Terminology and structural changes for ISO/IEC, YES

Structural terms

Clause—first level numbered subdivision of main body (1, 2, ...) or annex (A.n, B.n, ...)

Subclause—numbered subdivision of a clause or subclause

Annex—supplemental material following the main body; may be either normative or informative

Do not use the terms chapter, section, subsection or appendix

Provisioning terms

Provisioning terms are those that define conformance, and permissibility, or declare possibility and capability. See “Verbal forms for the expression of provisions”, p. 22, for important detail.

There are no upper/lower case distinctions in ISO/IEC. Provisioning terms have only one meaning, regardless of capitalization or context.

Most frequently used provisioning terms:

ISO/IEC	Former equivalent (RFC 2119)
shall	MUST
required	REQUIRED
should	SHOULD
recommended	RECOMMENDED
may	MAY
permitted, allowed	OPTIONAL
can, could, might	(non-normative) may
must (see p. 22)	<i>no prior equivalent</i>

Standard document elements

Clauses 1 (Scope), 2 (Normative references), and 3 (Terms, definitions, ...) are ISO/IEC required and have specific content requirements

Clauses 2 and 3 have ISO/IEC formatting requirements

Clause 4 (Notations and Conventions) is a new standard UPnP clause, with content from pre-ISO/IEC clause 1 (Overview and Scope)

Content of *all* numbered clauses is *always* normative. Therefore, “Theory of operation”, which has always been informative, is now an annex

For more detail, see

“Document structure and content”, p. 12

“Service specification detail”, p. 16

“**Error! Reference source not found.**”, p. 19 (*not available yet*)

Contents of UPnP Ribbon Tab

All menu entries and buttons, and most menus, on the UPnP Ribbon tab have tooltips, which will display by hovering over the item.

Info

- Style** ▼ Display and change character or paragraph style of selection when the style is homogeneous
- Font** ▼ Disabled when restrictions are active
- Font size** ▼ Disabled when restrictions are active

Paragraph Styles

- Headings** ▼ Styles for main body or annex headings
- Hdgs (rare)** ▼ Styles for rarely used heading types
- Title page** ▼ Styles for UPnP title and subtitle
- Terms** ▼ Styles that are unique to clause 3, “Terms, ...”
- Code** ▼ Styles for XML and HTTP code
- The rest** ▼ The remainder of the approved paragraph styles that are not specific to lists, figures or tables.

List Styles

- a)** ▼ Styles “List Number *n*”
- ▼ Styles “List Bullet *n*”
- ▼ Styles “List Dash *n*”
- List** ▼ Styles “List *n*”
- ...** ▼ Styles “List Continue *n*”
- Doc’n** ▼ Styles for documentation:
 - “Doc Xcode *n*”
 - “Doc Text *n*”
 - “Doc Bullet *n*”
 - “Doc Ncode *n*”

Level Adjust

Each level adjust operation applies to the subset of paragraphs in the current selection with styles appropriate to the operation. Other paragraphs are ignored, without notification.

- ↑ Hdg ↓** ↑ Promote (↓ demote) heading level to the next higher (lower) level in the hierarchy, when that level exists.
- ← List →** ← Promote, or unindent, (→ demote, or indent) list level to the next higher (lower) level in the hierarchy, when that level exists.
- ← Code →** ← Remove (→ add) one tab character to reduce (increase) the indentation level of each selected code line.

Character Styles

- B I U** Toggle the bold, italic or underline character property of the selected text using UPnP-extended-set character styles.
- for a v** Apply *forum*, *arch*, or *vendor* style, respectively
- Code** ▼ Styles for inline XML and HTTP code
- The rest** ▼ Remaining approved character styles
- CLEAR** Clears all added character styling, leaving the selection styled according to its paragraph style

Tables & Figures

- Table** ▼ Operations for table captions, footnotes and notes, and table-specific styles
- Figure** ▼ Operations for figure captions and figure-specific styles
- Captions** ▼ Operations to add captions or verify formatting of all captions

Contents of UPnP Ribbon Tab

Miscellaneous

- Update** ▼ Update and verify all Word fields, including hyperlinked cross-references
- Verify** ▼ Operations to verify conformance of *all* cross-reference and references
- Insert** ▼ Operations to:
 - Insert a reference (Normative or Bibliography)
 - Insert a new annex
 - Insert a new table of contents
 - Perform *safe* paragraph insertions that prevent corruption of bookmarks used for cross-references. These are safe for both user-defined and hidden Word bookmarks.
- UnRestrict** *** USE WITH EXTREME CAUTION ***
Temporarily disables formatting and editing restrictions.
Restrictions will be re-enabled when the next ribbon operation is invoked.

Conversion

- Old LowerCase...**
Pre-ISO/IEC documents used ALL CAPS to signify normative terms.
This operation walks the user through all lower case terms that had, or appeared to have, an ordinary English language meaning before conversion, but that now have a normative or other provisioning meaning according to ISO/IEC definitions.

“How to ...”

Initialize Service/Device Type and Version

ServiceType and *ServiceVersion* are bookmarked for consistent name referencing throughout each spec

To preserve the bookmark, go to Clause 1, first sentence, and replace the text "ServiceType" with the service type name, *without* deleting the leading and trailing underscores. Then, *after* the name is in place, delete the underscores.

Repeat the same steps to enter the ServiceVersion number.

Add a figure or table caption

Place the cursor in a table, or select a figure.

Select UPnP tab > Tables & Figures > Captions > Add

Add a reference

To add a reference in either of the “Normative references” clause or the “Bibliography” annex:

- Place the cursor on the line *before* where you want the new reference to be added
- Invoke the UPnP ribbon operation
UPnP tab > Miscellaneous > Insert > Reference...

- You will be prompted for a bookmark name.

The preferred convention is to begin each bookmark name with “ref_”, which groups all reference entries together for cross-referencing

- For reference content details, see “Reference entries, ISO 690 conformance”, p. 21

IMPORTANT Use of this ribbon operation prevents *the most common* problem of manual entry—corruption of the bookmarks used for cross-referencing

Format state variable & action subclause titles

Each level 3 subclause title comprises the variable/action name, followed by it provisioning status in parentheses.

To format the title, do the following

- Apply *forum* style to the variable or action name (UPnP tab > Character Styles > *for*)
- Apply **charBold** style to the provisioning text (UPnP tab > Character Styles > **B**).

The net effect of applying the bold style to provisioning text is to *negate* the heading’s default bold style.

Document XML structures

Use (only) the styles “Doc ... 1” thru “Doc ... 7”

For the name of each XML element, use style “Doc Xcode *n*”, where *n* is the element’s level in the XML document.

Typing return at the end of the line automatically sets the following ¶ style to “Doc Text *n*” for the description

Document each property or attribute of an element at level *n*+1, prefixing the property/attribute name with the @ sign.

When an element has both attributes and subelements, document all attributes before any of the subelements.

Single-level bulleted lists are also enabled at each element level using style “Doc Bullet *n*”, with “Doc Text *n*”.

Finally, for hierarchical elements of HTTP or other “network” code, use the styles “Doc Ncode *n*”, with the corresponding description styles, “Doc Text *n*” and “Doc Bullet *n*”.

“How to ...”

Avoid corruption of bookmarks and cross-references

Every heading paragraph, caption paragraph and external reference paragraph has a bookmark at its start that can be corrupted when entering new text before it.

Many of these also have bookmarks that end at the end of the paragraph. These bookmarks can be corrupted when entering new text at the end of the paragraph

Any list paragraph or other paragraph that is the target of a cross-reference also has such a corruptible bookmark

Two new entries in the UPnP ribbon can prevent these corruptions. To use either, place the cursor in the paragraph before or after which you want to add the new text, then select the appropriate ribbon operation:

UPnP tab > Miscellaneous > Insert > ...before

UPnP tab > Miscellaneous > Insert > ...after

Document structure and content

Introductory document elements

Table 1 — Introductory document elements

Element type	Elt. #	Title	Content (publisher differences in bold)
Informative Required (U, I)	–	Title page (Title is document specific)	UPnP: “Traditional” UPnP content, using ISO/IEC and UPnP-specific styles. UPnP title page is not used by ISO/IEC. ISO/IEC: Written by ISO/IEC. No reused UPnP content.
Informative Required (U, I)	–	Table of contents	Identical: Per ISO/IEC requirements, includes levels 1-3 in the normative body, and only level 1 for annexes.
Informative Required (I) Excluded (U)	–	Foreword	ISO/IEC: Only in ISO/IEC, written by ISO/IEC.
Informative Allowed (U, I)	–	Introduction	UPnP: When needed, content should be what will be submitted to ISO/IEC. <i>Rare in UPnP documents.</i> ISO/IEC: Explains why this document is needed, either because the subject matter is not covered by other international specifications, or because of limitations or omissions in those specifications.
Normative Required (I) Excluded (U)	–	Title	ISO/IEC: Only in ISO/IEC, written by ISO/IEC.
Normative Required (U, I)	1	Scope	This clause is normative, but shall not contain requirements. It shall be <i>succinct</i> , so that it can be used as a summary for bibliographic purposes.

Document structure and content

Table 1 — Introductory document elements

Element type	Elt. #	Title	Content (publisher differences in bold)
Normative Required (U, I)	2	Normative references	<p>IMPORTANT <i>Do not change the wording of the introductory paragraph in the Template. The existing wording is required by ISO/IEC.</i></p> <p>Common: Always include the version(s) of the UDA that this spec conforms to. For services with XML schemas, include one reference for each schema. Be sure schemas are named according to [6].</p> <p>Contains only normative, not informative, references. Informative references shall be entered in the Bibliography annex.</p> <p>Every entry shall be referenced in the document. If it's not referenced in the document, it belongs in the Bibliography.</p> <p>UPnP: Most, not necessarily all, references to UPnP documents will be to the UPnP-published version.</p> <p>ISO/IEC: All references to UPnP documents should be to the ISO/IEC-published version.</p>

Document structure and content

Core document elements

Table 2 — Core document elements

Element type	Elt. #	Title	Content (no publisher differences)
Normative Required (U, I)	3	Terms, definitions, symbols and abbreviated terms	<p>IMPORTANT <i>Do not change the wording of the introductory paragraph in the Template, except for including definition sources in addition the UPnP Device Architecture. The existing wording is required by ISO/IEC.</i></p> <p>Directly contains, and/or references other document(s) that contain, all terms, symbols and abbreviated terms used in the current document that are necessary for its understanding (see also TBS)</p> <p>IMPORTANT <i>Retain the abbreviated terms “A”, “R” and “X”, instead of repeating them in table footnotes. Remove the conditional terms and abbreviations only if not used in the current document.</i></p>
Normative Required (U, I)	4	Notations and conventions	<p>Explain here any notations, such as a shorthand mechanism for describing comma-separated-value list, or conventions, such as the use of italics to denote names with special meaning.</p> <p>When the same notations and conventions are used for multiple related specifications, put them in one spec only and reference it in the others. Candidates for the sole-source spec include, a device spec, a central service spec or an architecture spec.</p> <p>Model for referencing the source spec (where [n] is the reference for the source document):</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>4 Notations and conventions See [n], clause 4, for notations and conventions used in this document</p> <p>5 ...</p> </div> <p>IMPORTANT Working Committees are <i>strongly urged</i> to use this single-source referencing method.</p>
Normative Required (U, I)	5	Service/Device model	See Table 4 for Service model details, Table 5 for Device model details
Normative Required (U, I)	6	XML service/device description	Contains the service <code>scpd</code> XML document or the device <code>root</code> XML document.
Normative Required (U, I)	7	Test	Contains description of all tests defined for this service or device.

Document structure and content

Supplementary document elements

Table 3 — Supplementary document elements

Element type	Elt. #	Title	Content (publisher differences in bold)
Informative Required (U, I)	A	Theory of operation	Same content as when it was a main body subclause. <i>In document sets, such as AV, with long-established conventions for annex ordering, “Theory of operation” need not be Annex A. However, for new document sets, or new documents that do not need to conform to such a pattern, “Theory of operation” should always be Annex A, for consistency across UPnP.</i>
Normative or Informative Allowed (U, I)	B, C, ...	Additional annexes	Zero or more annexes, as needed Mixture of informative and normative ISO/IEC expect annexes to appear in order according to their first reference in the document. <i>However, for multi-document groups, such as AV, that use annexes consistently among multiple specs, ordering consistency within the group is more important than ordering by reference.</i>
Informative Allowed (U, I)		Bibliography	IMPORTANT <i>Do not change the wording of the introductory paragraph in the Template. The existing wording is required by ISO/IEC.</i> UPnP: Most, not necessarily all, references to UPnP documents will be to the UPnP-published version. ISO/IEC: Most, not necessarily all, references to UPnP documents should be to the ISO/IEC-published version.

Service specification detail

Service model clause

Table 4 — Service model subclauses

Elt. #	Title	Content
5	Service model	Parent clause for the normative definition of the service
<i>n.1</i>	Service type	<p>IMPORTANT Working Committee editors should not modify this subclause. It is automatically “filled” when the service type and service version are properly entered in their bookmarked locations in Clause 1, “Scope”.</p> <p>Declares the service’s unique identifying URN.</p> <p>Gives the unversioned name by which this service version is referred to in the current document.</p>
<i>n.2</i>	Service architecture	<p>Normative description of the service architecture and its basic functionality.</p> <p><i>Informative descriptions of operation and usage belong in the “Theory of operation” annex.</i></p>
<i>n.3</i>	State variables	<p><i>n.3.1</i> Summary</p> <ul style="list-style-type: none"> • High-level introduction to the state variables and service state(s) that they represent • “State variables” table. <p>All <i>virtual</i> state variables (named <i>A_ARG_TYPE</i> ...) are listed after all non-virtual state variables</p> <p><i>n.3.2</i>... <i>VariableName</i> (required allowed conditionally required conditionally allowed)</p> <p>One subclause per state variable, in the same order as in the “State variables” table.</p> <p>The subclause title is the state variable name (in <i>forum</i> character style), followed by its provisioning status in parentheses.</p> <p>The subclause contains a description of the state variable—its syntax and semantics. For conditional variables, describe the condition. Do not include the behavior of related actions—describe that in the appropriate action definitions.</p> <p>In addition to syntax and semantics, there are specific clause content requirements that depend on the state variable and its allowed value set. See “State variable subclauses”, p. 18, for details.</p> <p><i>n.3.last</i> Relationships among state variables</p> <p>Optional subclause describing any inter-dependencies of state variables that were not included in individual state variable descriptions.</p>

Service specification detail

Table 4 — Service model subclauses

Elt. #	Title	Content
n.4	Eventing and moderation	<p>n.4.1 Summary</p> <p>Contains “Eventing and moderation” table, which shall include every non-<i>virtual</i> state variable (excludes those named A_ARG_TYPE...).</p> <p>In the “Criteria” column, for each evented variable:</p> <ul style="list-style-type: none"> • Enter simple moderation criteria directly in the table • For complex criteria, add a level 3 subclause for the state variable to describe the moderation criteria. Enter a cross-reference to that subclause in the “Criteria” column. <p>n.4.2... Eventing of <i>VariableName</i></p> <p>Add a subclause for each evented variable that needs more description than is in the eventing table.</p> <p><i>When no variables need more description (there is no subclause n.4.2) delete the n.4.1 heading before the eventing table.</i></p>
n.5	Actions	<p>n.5.1 Summary</p> <p>Contains “Actions” table</p> <p>n.5.2... <i>ActionName</i> (required allowed conditionally required ...)</p> <p>One subclause per action, in the same order as in the “Actions” table.</p> <p>Subclause title is action name, followed by its provisioning status. See TBS for content detail.</p> <p>n.5.x Relationships among actions</p> <p>Describe all functional relationships among actions that were not described in individual action subclauses, or that are more appropriately included here.</p> <p>Briefly mention relationships that <i>were</i> described in individual action subclauses.</p> <p><i>If every action is completely independent of every other, enter: “None.”</i></p> <p>n.5.x+1 Error code summary</p> <p>Contains “Error code summary” table</p>
n.6	Service behavioral model	<p>There is currently no guidance from the TC on the content of this subclause, other than it has two suggested subclauses. Their individual content is suggested by their titles.</p> <p>If there are no state diagrams, remove the second subclause, and remove the “General” subclause heading paragraph.</p> <p>n.6.1 General</p> <p>n.6.2 State diagrams</p>

Service specification detail

State variable subclauses

Summary

Brief (1-2 lines) description of state variable, including the condition for conditional variables

For *virtual* state variables

If the set of actions using this variable as an argument data type is small, list the actions here,
Otherwise, enter “for various actions and arguments”, and defer the details to the “Description” subclause

Description

Detailed description of the state variable. If necessary, elaborate on the condition for conditional variables.

DO NOT include behavior of related actions. Put that in the action’s definition.

DO NOT include eventing behavior. Put that in the “Eventing and Moderation” subclause.

For *virtual* state variables list the actions that use this variable if not given in the “Summary” subclause

For documenting, there are four kinds of state variables:

- “Unconstrained” of any type
- Range-valued of any numeric type
- Discrete-valued of type string
- XML-valued of type string

According to kind, include the following in the “Description”:

“Unconstrained”

Include the variable’s default value. If the service specification does not define a default value, indicate whether it is undefined or vendor-defined.

Range-valued

Include an allowed value table of the following form:

Table x — allowedValueRange for *varName*

Subelement	Value	R/A
minimum	<u>3</u>	<u>R</u>
maximum	<i>Vendor-defined</i>	<u>R</u>
step	<u>2</u>	<u>A</u>
default	<u>9</u>	<u>R</u>

Discrete-valued

Include an allowed value table of the following form:

Table y — allowedValueList for *varName*

Value	R/A
<u>“Value1”</u>	<u>R</u>
<u>“Value2”</u> (DEFAULT)	<u>R</u>
<u>“Value3”</u>	<u>A</u>
<i>Vendor-defined</i>	<u>X</u>

XML-valued

Include:

- The general description
- Either the XML schema for the variable or a reference to the schema document
- A description of all elements and attributes, in hierarchical form. See “Document XML structures”, p. 10

Service specification detail

Individual action subclauses

Action subclause title (level 3)

Formatted as:

ActionName() (provisioningStatus)

For how to format, see “Format state variable & action subclause titles”, p. 10

Description (level 4)

Describe the action’s behavior completely

When the action is conditionally required or conditionally allowed, also describe the condition

Arguments (level 4)

Contains the arguments table

Argument descriptions (level 4)

Include one level 5 subclause for each argument

Each subclause title consists solely of the argument name, formatted as: ***ArgName***

Each subclause describes its argument’s meaning to, and use by, both the action and the action’s caller

Service requirements for ***ActionName()***

If there are requirements on the service, enter them here.

Otherwise, enter: “None.”

Control point requirements for calling ***ActionName()***

If there are requirements on the control point when calling this action, enter them here.

Otherwise, enter: “None.”

Dependence on service state

If the behavior or result of this action depends on the service state in any way, explain it here.

Be sure to describe:

- dependence on state variables
- dependence on prior invocations of this or other actions
- dependence on service internal state that might not otherwise be visible

Otherwise, enter:

“None.”

Effect on service state

If invoking this action changes the service state in any way, describe it here.

Be sure to describe:

- all immediately affected state variables
- any state change that could affect a state variable later
- any state change that could affect the operation of another action

Otherwise, enter:

“None.”

Errors

Contains the table of error codes for the individual action

Device specification detail

Device model clause

Table 5 — Device model subclauses

Elt. #	Title	Content
5	Device model	Parent clause for the normative definition of the device
<i>n.1</i>	Device type	IMPORTANT Working Committee editors should not modify this subclause. It is automatically “filled” when the device type and service version are properly entered in their bookmarked locations in Clause 1, “Scope”. Declares the device’s unique identifying URN. Gives the unversioned name by which this device version is referred to in the current document.
<i>n.2</i>	Device architecture	Normative description of the device architecture and its basic functionality. <i>Informative descriptions of operation and usage belong in the “Theory of operation” annex.</i>
<i>n.3</i>	Embedded services and devices	Contains a very brief description of the embedding requirements and the table that lists and shows the structure of the embeddings
<i>n.4</i>	Embedded services	Contains one subclause for each embedded service, and a final subclause that describes the relationships among the embedded services
<i>n.5</i>	Embedded devices	Contains one subclause for each embedded device, and a final subclause that describes the relationships among the embedded devices

Conformance requirements — detail

Reference entries, ISO 690 conformance

UPnP now uses numbered designators—one of the formats allowed by ISO 690—to identify reference entries.

This is a change from the prior convention of textual designators.

A *dated reference* indicates that this document complies only with the specific version of the reference indicated by the date.

- The "Available from:" URI for a dated reference shall refer to the specific dated version.
- *DO NOT* add "Latest: <URI>" to a dated reference unless it is always guaranteed to reference a document with only editorial, not technical, changes from the original reference.
- For dated references use one of the following date forms:
 - 2008
 - October 2008
 - 15 October 2008

An *undated reference* indicates that this document complies with the latest version of the reference, regardless of changes to the reference since this document was published.

Conformance requirements — detail

Verbal forms for the expression of provisions (complete contents of [1], Annex H)

Annex H (normative)

Verbal forms for the expression of provisions

NOTE Only singular forms are shown.

The verbal forms shown in Table H.1 shall be used to indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted.

Table H.1 — Requirement

Verbal form	Equivalent expressions for use in exceptional cases (see 6.6.1.3)
shall	is to is required to it is required that has to only is permitted it is necessary
shall not	is not allowed [permitted] [acceptable] [permissible] is required to be not is required that be not is not to be
<p>Do not use “must” as an alternative for “shall”. (This will avoid any confusion between the requirements of a document and external statutory obligations.)</p> <p>Do not use “may not” instead of “shall not” to express a prohibition.</p> <p>To express a direct instruction, for example referring to steps to be taken in a test method, use the imperative mood in English.</p> <p>EXAMPLE “Switch on the recorder.”</p>	

The verbal forms shown in Table H.2 shall be used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.

Table H.2 — Recommendation

Verbal form	Equivalent expressions for use in exceptional cases (see 6.6.1.3)
should	it is recommended that ought to
should not	it is not recommended that ought not to
In French, do not use “devrait” in this context.	

The verbal forms shown in Table H.3 shall be used to indicate a course of action permissible within the limits of the document.

Table H.3 — Permission

Verbal form	Equivalent expressions for use in exceptional cases (see 6.6.1.3)
may	is permitted is allowed is permissible
need not	it is not required that no is required
<p>Do not use “possible” or “impossible” in this context. Do not use “can” instead of “may” in this context.</p> <p>NOTE 1 “May” signifies permission expressed by the document, whereas “can” refers to the ability of a user of the document or to a possibility open to him/her.</p> <p>NOTE 2 The French verb “pouvoir” can indicate both permission and possibility. For clarity, the use of other expressions is advisable if otherwise there is a risk of misunderstanding.</p>	

Conformance requirements — detail

The verbal forms shown in Table H.4 shall be used for statements of possibility and capability, whether material, physical or causal.

Table H.4 — Possibility and capability

Verbal form	Equivalent expressions for use in exceptional cases (see 6.6.1.3)
can	be able to there is a possibility of it is possible to
cannot	be unable to there is no possibility of it is not possible to
NOTE See Notes 1 and 2 to Table H.3	

Approved character styles

Table 6 — Approved character styles

Character style ^a	Used for:
arch	UDA-defined names and symbols
charBold	<i>Named</i> styles for character formatting
charBoldItalic	
charBoldItalicUnderline	
charBoldUnderline	
<i>charItalic</i>	Always use B , I , U on the ribbon UPnP tab
<i>charItalicUnderline</i>	
charUnderline	
charNcode	Do not use direct formatting (B , I , and U on the ribbon Home tab, or Ctl-B, Ctl-I, Ctl-U from the keyboard)
charXcode	“networking”-related names and symbols embedded in differently formatted text
<i>Descriptor</i>	code names and symbols embedded in differently formatted text
	Working Committee-defined identifiers other than names of state variables, actions, arguments and properties—items such as <i>EPG feature</i> (from AV) and <i>Phone Data Model</i> (from Telephony)

Character style ^a	Used for:
Footnote Reference	superscripts that reference footnotes
<i>forum</i>	Working Committee-defined names and symbols
gena	GENA (General Event Notification Architecture)-defined names and symbols
Page Number	only for page numbers in Header or Footer
SMALL CAPS	small caps
<i>soap</i>	SOAP-defined identifiers
<i>ssdp</i>	SSDP-defined identifiers
text _{SUBscript}	subscripts
text ^{SUPERscript}	superscripts
<i>VARIABLE</i>	variable names in equations and formulae
<i>vendor</i>	vendor-defined names and symbols
^a Gray shaded cells contain IEC-defined styles. Unshaded cells contain UPnP-defined styles.	

Approved paragraph styles

Table 7 — Approved paragraph styles

Paragraph style ^a	Used for:
AMD-heading1 AMD-heading2	amendment headings
ANNEX_title	annex title
ANNEX-heading1 / 2 / 3 / 4 / 5	annex clause and subclause headings
Doc Bullet 1 / 2 / 3 / 4 / 5 / 6 / 7	documenting hierarchically structured code
Doc Ncode 1 / 2 / 3 / 4 / 5 / 6 / 7	
Doc Text 1 / 2 / 3 / 4 / 5 / 6 / 7	
Doc Xcode 1 / 2 / 3 / 4 / 5 / 6 / 7	
EBNF	EBNF syntax productions
FIGURE	all figures—to center them
FIGURE-title	self-explanatory
Footer	document page footer
Footnote text	standard Word footnotes <i>Not</i> used for figure & table footnotes—see “TAB_FIG_footnote” below.
FOREWORD	<i>Not used by UPnP</i>
Formula	equations and formulas Left-justified; indented, with hanging indent, like “List 2”; but has a right-tab at the right margin for the equation or formula number
Header	document page header
Heading 1 / 2 / 3 / 4 / 5 / 6	numbered clauses & subclauses of main body

Paragraph style ^a	Used for:
HEADING(Nonumber)	unnumbered introductory clauses, such as Foreword, Introduction, (Table of) CONTENTS
List, List 2 / 3 / 4 / 5	unordered, unmarked lists with hanging indent
List Bullet List Bullet 2 / 3 / 4 / 5	unordered, bulleted lists—same bullet all levels
List Continue List Continue 2 / 3 / 4 / 5	continuation paragraphs for any other list type
List Dash List Dash 2 / 3 / 4	unordered, dashed lists—same dash all levels NOTE: Stops at level 4, unlike other “List ...” styles.
List Number List Number 2 / 3 / 4 / 5	numbered lists, sequence values: a) lower case English alphabet 1) Arabic numerals i) lower case Roman numerals a) lower case English alphabet 1) Arabic numerals sequence. Sequence restart rules: Level 1 sequencing only restarts after “Heading ...” or “ANNEX...” styles. Prevents ambiguous references—there can be only one paragraph numbered 3.4 a), no matter how many disjoint numbered lists there might be in subclause 3.4.
MAIN-TITLE	<i>Not used by UPnP</i>
ncode	“network” code, such as HTTP headers Uses the proportionally spaced font “Arial”. If a monospaced font is needed for clarity, use the style “xocde” below.
NOTE	all notes should also be used for EXAMPLES

Approved paragraph styles

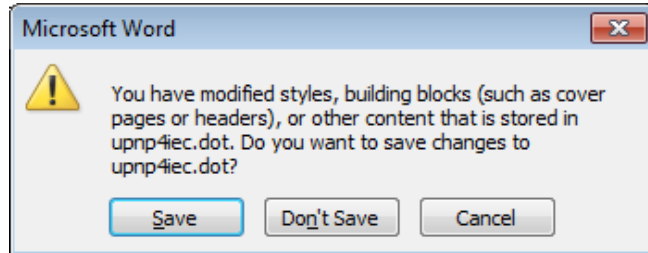
Paragraph style ^a	Used for:
Numbered PARA (level 2) Numbered PARA (level 3)	numbered headings that are kept out of the Table of Contents These styles produce numbering identical to that of Heading 2 and Heading 3. If they are interspersed with Heading 2 and Heading 3 elements, the Heading elements will still appear in the Table of Contents, but with gaps in their numbering sequences.
PARAGRAPH	normal document body text—justified Used where “Normal” or “Body text” might be used in other documents. Never use styles “Normal” or “Body text”
PARAGRAPH_Left	external reference entries—left justified variant of PARAGRAPH
PropertyTypeLine	property descriptions in AV documents supports lines of the form: NS: srs PDT: xsd:string MV: <u>NO</u> where: NS = Namespace PDT = Property Data Type MV = Multi-Valued
TAB_FIG_footnote	table and figure footnote text
Table of Figures	auto-generated tables of Tables and Figures
TABLE-cell	default for all table cells except column headings—left justified
TABLE-cell-bullet	single level bulleted list in tables
TABLE-cell-list	single level unlabeled list in tables
TABLE-centered	centered variant of “TABLE-cell”
TABLE-col-heading	table header cells—centers and bolds text

Paragraph style ^a	Used for:
TABLE-row-heading	column 1 table cells when they act as header labels for rows—centers and bolds text
TABLE-title	Self-explanatory.
TERM	term name(s) in Clause 3
TERM-definition	term definition in Clause 3
TERM-number	first-level term elements in Clause 3 Numbers like “Heading 2”, but produces no entry in table of contents.
TERM-number 3	second-level term elements in Clause 3 Numbers like “Heading 3”, but produces no entry in table of contents.
Title	title on ISO/IEC cover page Not used by UPnP
Toc 1 / 2 / 3 / 4 / 5 / 6	auto-generated table of contents
xcode	XML code, or any other monospaced code-like text Replaces old “code” and “SCPD” styles, which no longer exist. Indentation levels are controlled manually with tabs. Do not attempt to adjust left margin, hanging indent or first line indent to control indentation of code.
xcodeGray	gray background variant of “xcode” to highlight code segments
xcode compact	compact variant of “xcode” with smaller text and tighter tab spacing to allow more text on indented lines.
xcodeGray compact	gray variant of “xcode compact”
^a Gray shaded cells contain IEC-defined styles. Unshaded cells contain UPnP-defined styles.	

Known problems and issues

`upnp4iec.dot` or `upnp4iecAdjunct.dotm` has been modified ...

Some users, on saving documents or quitting Word have had the following alert pop up:



Always click "Cancel" if this occurs with either of these templates.

`upnp4iec.dot` and `upnp4iecAdjunct.dotm` should always be marked Read-only on your system. These Word templates should never be changed except by a knowledgeable developer in a controlled environment.

References

[1] ISO/IEC Directives, Part 2:2011, *Rules for the structure and drafting of International Standards*, 6th edition.

Available from http://www.iec.ch/members_experts/refdocs/

[2] ISO 690 *Information and documentation — Guidelines for bibliographic references and citations to information resources*.

Available from: <http://iso.org>

[3] IECSTD TEMPLATE, INSTALLATION AND USER GUIDE, *IECSTD template version 4 — for Microsoft Word 2002, 2003 (and Word 2007 — in Compatibility mode)*.

Available from

http://www.iec.ch/standardsdev/resources/draftingpublications/layout_formatting/IEC_template/.

[4] *IEC standard template, Version 4, iecstd.dot*, in English. International Electrotechnical Commission.

Available from

http://www.iec.ch/standardsdev/resources/draftingpublications/layout_formatting/IEC_template/.

[5] *Drafting IEC publications*. IEC.

Available from:

<http://www.iec.ch/standardsdev/resources/draftingpublications/>.

[6] *UPnP Technical Committee Naming Conventions*. UPnP Forum.

Available from: <https://members.upnp.org/>, in the “Resources for Working Committees” folder of the “Documents & Resources” section.

References

DO NOT PRINT

this page or following.

Background

Background

Eventual ISO/IEC publication

As an ISO/IEC approved standards creation body, all UPnP Forum specifications are expected to be published by ISO/IEC. Each specification is first published by UPnP, then submitted to IEC editors for ISO/IEC publication.

ISO/IEC conformance

There will always be a small set of differences between the content of UPnP- and ISO/IEC-published documents. But, with two minor exceptions explained later (see **Error! Reference source not found.**), there are no essential differences between UPnP and ISO/IEC requirements in the entire body of numbered clauses and annexes. Therefore, except for essential differences, all UPnP documents should follow ISO/IEC requirements, so as to minimize the changes needed for ISO/IEC publication. These requirements include terminology, structure, layout, styles and some items of content.

The primary reference for ISO/IEC structural and *appearance* conformance **Error! Reference source not found.**s [1], but the requirements for *achieving* that conformance in MS Word are defined by the IEC in [3] and in related online content accessible from [5].