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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

IPTV multimedia services and applications for IPTV –  
IPTV multimedia application frameworks

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## Cascading style sheets for IPTV services

Recommendation ITU-T H.763.1



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ITU-T H-SERIES RECOMMENDATIONS  
AUDIOVISUAL AND MULTIMEDIA SYSTEMS

|                                                                               |                    |
|-------------------------------------------------------------------------------|--------------------|
| CHARACTERISTICS OF VISUAL TELEPHONE SYSTEMS                                   | H.100–H.199        |
| INFRASTRUCTURE OF AUDIOVISUAL SERVICES                                        |                    |
| General                                                                       | H.200–H.219        |
| Transmission multiplexing and synchronization                                 | H.220–H.229        |
| Systems aspects                                                               | H.230–H.239        |
| Communication procedures                                                      | H.240–H.259        |
| Coding of moving video                                                        | H.260–H.279        |
| Related systems aspects                                                       | H.280–H.299        |
| Systems and terminal equipment for audiovisual services                       | H.300–H.349        |
| Directory services architecture for audiovisual and multimedia services       | H.350–H.359        |
| Quality of service architecture for audiovisual and multimedia services       | H.360–H.369        |
| Supplementary services for multimedia                                         | H.450–H.499        |
| MOBILITY AND COLLABORATION PROCEDURES                                         |                    |
| Overview of Mobility and Collaboration, definitions, protocols and procedures | H.500–H.509        |
| Mobility for H-Series multimedia systems and services                         | H.510–H.519        |
| Mobile multimedia collaboration applications and services                     | H.520–H.529        |
| Security for mobile multimedia systems and services                           | H.530–H.539        |
| Security for mobile multimedia collaboration applications and services        | H.540–H.549        |
| Mobility interworking procedures                                              | H.550–H.559        |
| Mobile multimedia collaboration inter-working procedures                      | H.560–H.569        |
| BROADBAND, TRIPLE-PLAY AND ADVANCED MULTIMEDIA SERVICES                       |                    |
| Broadband multimedia services over VDSL                                       | H.610–H.619        |
| Advanced multimedia services and applications                                 | H.620–H.629        |
| IPTV MULTIMEDIA SERVICES AND APPLICATIONS FOR IPTV                            |                    |
| General aspects                                                               | H.700–H.719        |
| IPTV terminal devices                                                         | H.720–H.729        |
| IPTV middleware                                                               | H.730–H.739        |
| IPTV application event handling                                               | H.740–H.749        |
| IPTV metadata                                                                 | H.750–H.759        |
| <b>IPTV multimedia application frameworks</b>                                 | <b>H.760–H.769</b> |
| IPTV service discovery up to consumption                                      | H.770–H.779        |

*For further details, please refer to the list of ITU-T Recommendations.*

# Recommendation ITU-T H.763.1

## Cascading style sheets for IPTV services

### Summary

Recommendation ITU-T H.763.1 describes cascading style sheets (CSS) for IPTV. The CSS profile presented in this Recommendation provides the means for describing the presentation style of documents relative to IPTV terminal devices. This profile is based on CSS 1, a part of CSS 2 and a number of extended properties required for IPTV services. CSS is human readable and writable, and expresses style in common desktop publishing terminology.

### History

| Edition | Recommendation | Approval   | Study Group |
|---------|----------------|------------|-------------|
| 1.0     | ITU-T H.763.1  | 2010-09-13 | 16          |

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## CONTENTS

|                                                                | <b>Page</b> |
|----------------------------------------------------------------|-------------|
| 1 Scope .....                                                  | 1           |
| 2 References.....                                              | 1           |
| 3 Definitions .....                                            | 1           |
| 3.1 Terms defined elsewhere .....                              | 1           |
| 3.2 Terms defined in this Recommendation.....                  | 1           |
| 4 Abbreviations and acronyms .....                             | 1           |
| 5 Introduction .....                                           | 2           |
| 6 Syntax and basic data types .....                            | 2           |
| 7 Selectors.....                                               | 2           |
| 7.1 Universal selector .....                                   | 2           |
| 7.2 Type selectors .....                                       | 2           |
| 7.3 Class selectors .....                                      | 3           |
| 7.4 ID selectors .....                                         | 3           |
| 7.5 The dynamic pseudo-classes: ':active' and ':focus' .....   | 3           |
| 8 Properties .....                                             | 3           |
| 8.1 Assigning property values, cascading, and inheritance..... | 3           |
| 8.2 Box model .....                                            | 4           |
| 8.3 Visual formatting model.....                               | 7           |
| 8.4 Visual formatting model details .....                      | 9           |
| 8.5 Visual effects .....                                       | 10          |
| 8.6 Colours and backgrounds .....                              | 11          |
| 8.7 Fonts .....                                                | 14          |
| 8.8 Text.....                                                  | 16          |
| 8.9 Extended properties for IPTV .....                         | 17          |
| Annex A – Colour index for common colours.....                 | 21          |
| Annex B – Default style sheet .....                            | 25          |



# Recommendation ITU-T H.763.1

## Cascading style sheets for IPTV services

### 1 Scope

This Recommendation describes cascading style sheets to provide interoperability and harmonization among IPTV multimedia application frameworks. To provide global standard IPTV services, it is foreseeable that a combination of different standard multimedia application frameworks will be used. Therefore, this Recommendation describes cascading style sheets, as one of those standard multimedia application frameworks, to provide interoperable use of IPTV services.

### 2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- [ITU-T H.762] Recommendation ITU-T H.762 (2009), *Lightweight interactive multimedia environment (LIME) for IPTV services*.
- [CSS1] World Wide Web Consortium (W3C) (1996), *Cascading Style Sheets, level 1*.
- [CSS2] World Wide Web Consortium (W3C) (1998), *Cascading Style Sheets, level 2 CSS2 Specification*.

### 3 Definitions

#### 3.1 Terms defined elsewhere

None.

#### 3.2 Terms defined in this Recommendation

None.

### 4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

|      |                               |
|------|-------------------------------|
| BML  | Broadcasting Markup Language  |
| CLUT | Colour Look-Up Table          |
| CSS  | Cascading Style Sheets        |
| HTML | HyperText Markup Language     |
| N/A  | Not Applicable                |
| SVG  | Scalable Vector Graph         |
| UA   | User Agent                    |
| URI  | Universal Resource Identifier |

\*\*\*\*\*

|     |                            |
|-----|----------------------------|
| W3C | World Wide Web Consortium  |
| XML | Extensible Markup Language |

## 5 Introduction

CSS is a style sheet language specified by W3C that is used to describe the presentation (e.g., fonts, colours and spacing) of a document written in a markup language. CSS is human readable and writable, and expresses style in common desktop publishing terminology. CSS has been in use since October 1995 using the media type text/css without registration. A CSS can be either linked to a document through a URI or included in the document. CSS does not constitute by itself a multimedia framework, but is used with some markup languages such as the one defined in [ITU-T H.762].

This Recommendation gives the core functionalities of CSS for IPTV services.

## 6 Syntax and basic data types

The syntax for cascading style sheets is described in Appendix B of [CSS1]. The default style sheet describing the features of the profile specified in this Recommendation is given in Annex B herein.

## 7 Selectors

In CSS, selectors are patterns used in pattern matching rules that determine which style rules apply to elements in the document tree. Selectors may range from simple element names to rich contextual patterns. If all conditions in the pattern are true for a certain element, the selector matches the element.

Table 7-1 summarizes the selector syntax of this Recommendation:

**Table 7-1 – The syntax of selectors**

| Pattern             | Meaning                                                        | Described in clause    |
|---------------------|----------------------------------------------------------------|------------------------|
| *                   | Matches any element.                                           | Universal selector     |
| E                   | Matches any E element (i.e., an element of type E).            | Type selectors         |
| E:active<br>E:focus | Matches E during certain user actions.                         | Dynamic pseudo-classes |
| DIV.warning         | Language specific (in HTML, the same as DIV[class~="warning"]) | Class selectors        |
| E#myid              | Matches any E element with ID equal to "myid".                 | ID selectors           |

### 7.1 Universal selector

The universal selector, written "\*", matches the name of any element type. It matches any single element in the document tree. If the universal selector is not the only component of a simple selector, the "\*" may be omitted.

### 7.2 Type selectors

A type selector matches the name of a document language element type. A type selector matches every instance of the element type in the document tree.

### 7.3 Class selectors

The period (.) notation may be used for HTML as an alternative to the ~=" notation when representing the class attribute. Thus, for HTML, `div.value` and `div[class~="value"]` have the same meaning. The attribute value must immediately follow the "period" (.). UAs may apply selectors using the period (.) notation in XML documents if the UA has namespace specific knowledge that allows it to determine which attribute is the "class" attribute for the respective namespace.

### 7.4 ID selectors

An ID attribute can be used to uniquely identify its element, regardless of the document language, e.g., HTML or XML. In HTML all ID attributes are named "id"; XML applications may name ID attributes differently. In any document language, no two attributes of type ID can have the same value.

The ID attribute of a document language allows authors to assign an identifier to one element instance in the document tree. CSS ID selectors match an element instance based on its identifier. A CSS ID selector contains a "#" immediately followed by the ID value, which must be an identifier.

### 7.5 The dynamic pseudo-classes: ':active' and ':focus'

Interactive user agents sometimes change the rendering in response to user actions. CSS provides two pseudo-classes for common cases:

- The `:active` pseudo-class applies while an element is being activated by the user. For example, between the times the user presses the mouse button and releases it.
- The `:focus` pseudo-class applies while an element has the focus (accepts keyboard events or other forms of text input).

## 8 Properties

The following is the list of properties defined in this Recommendation.

|                          |                       |                       |
|--------------------------|-----------------------|-----------------------|
| <b>@media</b>            | <b>padding-right</b>  | <b>border-width</b>   |
| <b>left*</b>             | <b>height*</b>        | <b>display</b>        |
| <b>background-image</b>  | <b>font-size</b>      | <b>letter-spacing</b> |
| <b>margin</b>            | <b>padding-bottom</b> | <b>border-style</b>   |
| <b>top*</b>              | <b>z-index</b>        | <b>visibility</b>     |
| <b>background-repeat</b> | <b>font-weight</b>    | <b>white-space</b>    |
| <b>padding-top</b>       | <b>padding-left</b>   | <b>position</b>       |
| <b>width*</b>            | <b>line-height</b>    | <b>overflow</b>       |
| <b>font-family</b>       | <b>text-align</b>     |                       |

NOTE – For property values with "\*", the elements `<input>`, `<object>`, `<div>`, and `<p>` must have these property values. The elements `<br>`, `<a>`, `<span>` must not have these property values.

### 8.1 Assigning property values, cascading, and inheritance

#### 8.1.1 Media types

One of the most important features of style sheets is that they specify how a document is to be presented on different media: on the screen, on paper, with a speech synthesizer, with a Braille device, etc.

Certain CSS properties are only designed for certain media (e.g., the 'page-break-before' property only applies to paged media). On occasion, however, style sheets for different media types may

share a property, but require different values for that property. For example, the 'font-size' property is useful both for screen and print media. The two media types are different enough to require different values for the common property; a document will typically need a larger font on a computer screen than on paper. Therefore, it is necessary to express that a style sheet, or a section of a style sheet, applies to certain media types.

### 8.1.1.1 The @media rule

An @media rule specifies the target media types (separated by commas) of a set of rules (delimited by curly braces). The @media construct allows style sheet rules for various media in the same style sheet:

```
@media print {  
  body { font-size: 10pt }  
}  
@media screen {  
  body { font-size: 13px }  
}  
@media screen, print {  
  body { line-height: 1.2 }  
}
```

## 8.2 Box model

The CSS box model describes the rectangular boxes that are generated for elements in the document tree and laid out according to the visual formatting model.

### 8.2.1 Margin properties: 'margin'

Margin properties specify the width of the margin area of a box. The 'margin' shorthand property sets the margin for all four sides while the other margin properties only set their respective side. These properties apply to all elements, but vertical margins will not have any effect on non-replaced inline elements.

**Table 8-1 – The 'margin' property**

|                        |                                                                                                        |
|------------------------|--------------------------------------------------------------------------------------------------------|
| <i>Value:</i>          | <margin-width>0                                                                                        |
| <i>Initial:</i>        | See individual properties                                                                              |
| <i>Applies to:</i>     | All elements except elements with table display types other than table-caption, table and inline-table |
| <i>Inherited:</i>      | No                                                                                                     |
| <i>Percentages:</i>    | Refer to width of containing block                                                                     |
| <i>Media:</i>          | Visual                                                                                                 |
| <i>Computed value:</i> | See individual properties                                                                              |

The 'margin' property is a shorthand property for setting 'margin-top', 'margin-right', 'margin-bottom', and 'margin-left' at the same place in the style sheet.

If there is only one value, it applies to all sides. If there are two values, the top and bottom margins are set to the first value and the right and left margins are set to the second. If there are three values, the top is set to the first value, the left and right are set to the second, and the bottom is set to the third. If there are four values, they apply to the top, right, bottom, and left, respectively.

### 8.2.2 Padding properties: 'padding-top', 'padding-right', 'padding-bottom', 'padding-left'

The padding properties specify the width of the padding area of a box. The 'padding' shorthand property sets the padding for all four sides while the other padding properties only set their respective side.

The properties defined in this section refer to the padding-width value type, which may take one of the following values:

#### **length**

Specifies a fixed width.

#### **percentage**

The percentage is calculated with respect to the width of the generated box's containing block.

Unlike margin properties, values for padding values cannot be negative. Like margin properties, percentage values for padding properties refer to the width of the generated box's containing block.

**Table 8-2 – The 'padding-top', 'padding-right', 'padding-bottom' and 'padding-left' property**

|                        |                                                                                                                                                                                                                          |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Value:</i>          | <padding-width> (integer value in the unit of px, or 0.)                                                                                                                                                                 |
| <i>Initial:</i>        | 0                                                                                                                                                                                                                        |
| <i>Applies to:</i>     | All elements except table-row-group, table-header-group, table-footer-group, table-row, table-column-group and table-column. For div element, object element, form element, and img element, operated as a fixed value 0 |
| <i>Inherited:</i>      | No                                                                                                                                                                                                                       |
| <i>Percentages:</i>    | Refer to width of containing block                                                                                                                                                                                       |
| <i>Media:</i>          | Visual                                                                                                                                                                                                                   |
| <i>Computed value:</i> | The percentage as specified or the absolute length                                                                                                                                                                       |

These properties set the top, right, bottom, and left padding of a box.

### 8.2.3 Border properties

The border properties specify the width, colour, and style of the border area of a box. These properties apply to all elements.

#### 8.2.3.1 Border width: 'border-width'

The border width properties specify the width of the border area.

The border's thickness has an explicit value. Explicit border widths cannot be negative.

Widths must be constant throughout a document.