

INTERNATIONAL STANDARD

Consumer terminal function for access to IPTV and open internet multimedia services –
Part 5-2: Web standards TV profile

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CONSUMER TERMINAL FUNCTION FOR ACCESS TO IPTV AND OPEN INTERNET MULTIMEDIA SERVICES –

Part 5-2: Web standards TV profile

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The text of this International Standard is based on the following documents:

CDV	Report on voting
100/2549/CDV	100/2663/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62766 series, published under the general title *Consumer terminal function for access to IPTV and open Internet multimedia services*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
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INTRODUCTION

The IEC 62766 series is based on a series of specifications that was originally developed by the OPEN IPTV FORUM (OIPF). They specify the user-to-network interface (UNI) for consumer terminals to access IPTV and open internet multimedia services over managed or non-managed networks as defined by OIPF.

IEC 62766-5-2 will be updated over time, as maturity of different standards (now works in progress) increase and/or new web standards are defined.

This document is organized as follows: the main body includes a list of references to specifications upon which the defined profile relies and that are considered necessary to enable an enhanced user experience. Annex A contains instead a detailed list of which features for each specification are considered stable enough and therefore can be safely supported by terminals and used by application developers. Such tables will be updated in future revisions of this document as maturity of the various specifications evolve. Support tables are omitted for those specifications that are required to be fully supported.

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CONSUMER TERMINAL FUNCTION FOR ACCESS TO IPTV AND OPEN INTERNET MULTIMEDIA SERVICES –

Part 5-2: Web standards TV profile

1 Scope

This part of IEC 62766 specifies a profile of HTML5, CSS and other related web technologies for connected TVs. Its goal is to describe a common profile that can be relied on by content and service providers and implemented by manufacturers. It does not describe extensions or modification to any of the referenced technologies but only tries to define a subset of web standards that are suitable and useful for TV deployments and at the same time stable enough to provide a good degree of confidence that real interoperability can be achieved. It may add clarifications and/or additional constraints where these are needed due to the nature of the target deployment environment.

This part of IEC 62766 only describes a minimum subset of web technology that a terminal compliant with this profile is required to support. This does not preclude terminals to support more technologies than the ones described in this profile.

2 Normative references

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The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62766-1, *Open IPTV Forum (OIPF) consumer terminal function and network interfaces for access to IPTV and open Internet multimedia services – Part 1: General*

IETF RFC 6265, *HTTP State Management Mechanism*; Adam Barth, April 2011

IETF RFC 6455, *The WebSocket Protocol*; I. Fette, A. Melnikov, December 2011 including verified errata

W3C Recommendation, *CSS 2.1 Cascading Style Sheets*; Bert Bos, Tantek Çelik, Ian Hickson, Håkon Wium Lie, 7 June 2011. Available from: <http://www.w3.org/TR/2011/REC-CSS2-20110607/>

W3C Recommendation, *CSS Color Module Level 3*; Tantek Çelik, Chris Lilley, L. David Baron, 7 June 2011. Available from <http://www.w3.org/TR/2011/REC-css3-color-20110607/>

W3C Recommendation, *Media Fragments URI 1.0 (basic)*; Raphaël Troncy et al, 25 September 2012. Available from <http://www.w3.org/TR/2012/REC-media-frags-20120925/>

W3C Recommendation, *Media Queries*; Håkon Wium Lie; Tantek Çelik; Daniel Glazman; Anne van Kesteren, 19 June 2012. Available from <http://www.w3.org/TR/2012/REC-css3-mediaqueries-20120619/>

W3C Recommendation, *Selectors API Level 3*; Daniel Glazman et al., 29 September 2011. Available from <http://www.w3.org/TR/2011/REC-css3-selectors-20110929/>

W3C Recommendation, *Web Storage*; Ian Hickson, 30 July 2013. Available from <http://www.w3.org/TR/2013/REC-webstorage-20130730/>

W3C Recommendation, *WOFF File Format 1.0*; Jonathan Kew, Tal Leming, Erik van Blokland, 13 December 2012. Available from <http://www.w3.org/TR/2012/REC-WOFF-20121213/>

W3C, *ECMAScript Language Specification, Edition 5.1*, June 2011. Available from <http://www.ecma-international.org/publications/standards/Ecma-262.htm>

W3C Candidate Recommendation, *CSS Backgrounds and Borders Module Level 3*; Bert Bos, Elika J. Etemad, Brad Kemper, 24 July 2012. Available from <http://www.w3.org/TR/2012/CR-css3-background-20120724/>

W3C Candidate Recommendation, *CSS Image Values and Replaced Content*; Elika J. Etemad, Tab Atkins Jr., 17 April 2012. Available from <http://www.w3.org/TR/2012/CR-css3-images-20120417>

W3C Candidate Recommendation, *CSS Flexible Box Layout Module*, Tab Atkins Jr., Elika J. Etemad, Alex Mogilevsky, 18 September 2012. Available from <http://www.w3.org/TR/2012/CR-css3-flexbox-20120918/>

W3C Candidate Recommendation, *CSS3 Module: Multi-column layout*; Håkon Wium Lie, 12 April 2011. Available from <http://www.w3.org/TR/2011/CR-css3-multicol-20110412/>

W3C Candidate Recommendation, *HTML Canvas 2D Context*; Rik Cabanier, Eliot Graff, Jay Munro, Tom Wiltzius, Ian Hickson, 17 December 2012. Available from <http://www.w3.org/TR/2012/CR-2dcontext-20121217>

W3C Candidate Recommendation, *HTML5*; Robin Berjon, Steve Faulkner, Travis Leithead, Erika Doyle Navara, Edward O'Connor, Silvia Pfeiffer, 6 August 2013. Available from <http://www.w3.org/TR/2013/CR-html5-20130806/>

W3C Candidate Recommendation, *HTML5 Web Messaging*; Ian Hickson, 01 May 2012. Available from <http://www.w3.org/TR/2012/CR-webmessaging-20120501>

W3C Candidate Recommendation, *Server-Sent Events*; Ian Hickson, 11 December 2012. Available from <http://www.w3.org/TR/2012/CR-eventsourcing-20121211/>

W3C Candidate Recommendation, *Web Workers*; Ian Hickson, 01 May 2012. Available from <http://www.w3.org/TR/2012/CR-workers-20120501>

W3C Candidate Recommendation, *The WebSocket API*; I. Hickson, 20 September 2012. Available from <http://www.w3.org/TR/2012/CR-websockets-20120920/>

W3C Working Draft, *CSS3 Basic User Interface Module*; Tantek Çelik, 17 January 2012. Available from <http://www.w3.org/TR/2012/WD-css3-ui-20120117/>

W3C Working Draft, *CSS Animations*; Dean Jackson, David Hyatt, Chris Marrin, Sylvain Galineau, L. David Baron, 19 February 2013. Available from <http://www.w3.org/TR/2013/WD-css3-animations-20130219/>

W3C Working Draft, *CSS Fonts Module Level 3*; John Daggett, 12 February 2013. Available from <http://www.w3.org/TR/2013/WD-css3-fonts-20130212/>

W3C Working Draft, *CSS Text Module Level 3*; Elika J. Etemad, Koji Ishii, 13 November 2012. Available from <http://www.w3.org/TR/2012/WD-css3-text-20121113/>

W3C Working Draft, *CSS Transforms*; Simon Fraser, Dean Jackson, David Hyatt, Chris Marrin, Edward O'Connor, Dirk Schulze, Aryeh Gregor, 11 September 2012. Available from <http://www.w3.org/TR/2012/WD-css3-transforms-20120911>

W3C Working Draft, *CSS Transitions*; Dean Jackson, David Hyatt, Chris Marrin, L. David Baron, 12 February 2013. Available from <http://www.w3.org/TR/2013/WD-css3-transitions-20130212/>

W3C Working Draft, *CSSOM View Module*; Anne van Kesteren, 4 August 2011. Available from <http://www.w3.org/TR/2011/WD-cssom-view-20110804>

W3C Working Draft, *Document Object Model (DOM) Level 3 Events*; Travis Leithead, Jacob Rossi et al, 6 September 2012. Available from <http://www.w3.org/TR/2012/WD-DOM-Level-3-Events-20120906/>

W3C Working Draft, *XMLHttpRequest*; Julian Aubourg et al, 6 December 2012. Available from <http://www.w3.org/TR/2012/WD-XMLHttpRequest-20121206/>

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62766-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1.1

terminal

device running an interactive user-agent (browser) conformant to this document

Note 1 to entry: This is equivalent to the the OITF block as defined in Annex B of IEC 62766-1:2017.

3.1.2

application

interactive software authored using the set of languages defined by this profile and conformant with this profile

3.1.3

authoring tool

software program used to edit applications

3.2 Abbreviated terms

For the purposes of this document, the abbreviated terms given in IEC 62766-1, as well as the following apply.

API	Application Programming Interface
DOM	Document Object Model
CSS	Cascading Style Sheets
HTML	Hypertext Markup Language
URI	Uniform Resource Identifier
XHTML	Extensible HTML
WOFF	Web Open Font Format

4 Overview

4.1 General

This document is aimed at TV terminals that implement a browser-based application environment. Applications running in such environment are authored using a set of languages commonly referred to as "web technologies" or "web standards". This document lists the minimum set of languages that shall be supported by a terminal conforming to this specification. A terminal may support more languages than the ones listed in this document.

To avoid fragmentation and enhance interoperability with other web technologies-based devices and eco-systems, this document tries not to diverge from any of the referenced specifications it relies on. In some exceptional cases though, this document may decide to intentionally diverge from the referenced specifications. Such differences will be noted explicitly throughout this document.

This document references some specifications that are still under development. All features marked as "at risk" in such referenced specifications shall be considered as optional to support, unless this profile explicitly mandates support for them.

Normative clauses of the present document are marked as such. All authoring guidelines, diagrams and examples in the present document are informative.

4.2 Markup

The W3C Candidate Recommendation, HTML5 specification defines conformance requirements for user-agents and documents. Applications and authoring tools shall comply with conformance requirements for documents unless specified otherwise in Clause A.2. Terminals shall comply with conformance requirements for user agents unless specified otherwise in Clause A.2. In particular, a terminal shall support the HTML syntax and the XHTML syntax for HTML documents as defined in the W3C Candidate Recommendation, HTML5.

5 Style

5.1 General

Support for CSS as a whole is not required by HTML5, even though some features are defined in terms of specific CSS requirements. This clause defines requirements for CSS and other style and/or graphic related technologies.

5.2 Basic graphic

Terminals shall support W3C Working Draft, CSS3 Basic User Interface Module, as profiled in A.3.2.

Terminals shall support CSS 2.1 W3C Recommendation, Cascading Style Sheets, level 2 (CSS2) Specification. Although the CSS 2.1 specification includes a "tv" media type, this has not been widely used in practice. Terminals may ignore the "tv" media type and just use the "screen" media type.

Terminals shall support W3C Recommendation, CSS Color Module Level 3.

Terminals shall support W3C Candidate Recommendation, CSS Image Values and Replaced Content, as profiled in A.3.3.

Terminals shall support W3C Candidate Recommendation, CSS Backgrounds and Borders Module Level 3, as profiled in A.3.4.

5.3 Device adaptation, layout and processing

Terminals shall support W3C Recommendation, Selectors API Level 3.

Terminals shall support W3C Recommendation, Media Queries.

Terminals shall support W3C Candidate Recommendation, CSS3 module: Multi-column layout.

Terminals shall support W3C Candidate Recommendation, CSS Flexible Box Layout Module.

Terminals should support W3C Candidate Recommendation, CSS Conditional Rules Module Level 3.

5.4 Text and fonts

Terminals shall support W3C Working Draft, CSS Fonts Module Level 3, as profiled in A.3.5.

Terminals shall support the Web Open Font Format (WOFF) W3C Recommendation, WOFF File Format 1.0. Applications can link to WOFF fonts via a `@font-face` rule (W3C Working Draft, CSS Fonts Module Level 3).

NOTE WOFF packaged fonts may require a significant amount of space. See Clause 9 for some recommendations.

Terminals shall support W3C Working Draft, CSS Text Module Level 3, as profiled in A.3.6.

5.5 Advanced graphic

Terminals shall support W3C Working Draft, CSS Transforms, as profiled in A.3.7.

Terminals shall support W3C Working Draft, CSS Transitions, as profiled in A.3.8.

Terminals shall support CSS Animations, as specified in W3C Working Draft, CSS Animations.

Terminals shall support the W3C Candidate Recommendation HTML Canvas 2D Context as profiled in A.4.3.