

## [MS-TTML]:

# Internet Explorer Timed Text Markup Language (TTML) 1.0 Standards Support Documentation

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## Revision Summary

Date	Revision History	Revision Class	Comments
2/22/2012	0.1	New	Released new document.
7/25/2012	1.0	Major	Significantly changed the technical content.
6/26/2013	2.0	Major	Significantly changed the technical content.
3/31/2014	2.0	None	No changes to the meaning, language, or formatting of the technical content.
1/22/2015	3.0	Major	Updated for new product version.
7/7/2015	3.1	Minor	Clarified the meaning of the technical content.
11/2/2015	3.1	None	No changes to the meaning, language, or formatting of the technical content.
1/20/2016	3.2	Minor	Clarified the meaning of the technical content.
3/22/2016	3.2	None	No changes to the meaning, language, or formatting of the technical content.
11/2/2016	3.2	None	No changes to the meaning, language, or formatting of the technical content.
3/14/2017	3.2	None	No changes to the meaning, language, or formatting of the technical content.

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# 1 Introduction

This document describes the level of support provided by Microsoft web browsers for the *Timed Text Markup Language (TTML) 1.0* specification, published November 18, 2010.

## 1.1 Glossary

**MAY, SHOULD, MUST, SHOULD NOT, MUST NOT:** These terms (in all caps) are used as defined in [\[RFC2119\]](#). All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

## 1.2 References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the [Errata](#).

### 1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com). We will assist you in finding the relevant information.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, <http://www.rfc-editor.org/rfc/rfc2119.txt>

[W3C-TTML-1.0] Dolan, M., Freed, G., Hayes, S., et al., "Internet Explorer Timed Text Markup Language (TTML) 1.0 Standards Support Documentation", W3C Recommendation 18 November 2010, <http://www.w3.org/TR/2010/REC-ttaf1-dfxp-20101118/>

### 1.2.2 Informative References

None.

## 1.3 Microsoft Implementations

The following Microsoft web browser versions implement some portion of the TTML specification:

- Windows Internet Explorer 10
- Internet Explorer 11
- Internet Explorer 11 for Windows 10
- Microsoft Edge

Each browser version may implement multiple document rendering modes. The modes vary from one another in support of the standard. The following table lists the document modes in each browser version that support the TTML specification.

Browser Version	Document Modes Supported
Internet Explorer 10	IE10 Mode
Internet Explorer 11	IE10 Mode IE11 Mode

Browser Version	Document Modes Supported
Internet Explorer 11 for Windows 10	IE10 Mode IE11 Mode
Microsoft Edge	EdgeHTML Mode

For each variation presented in this document there is a list of the document modes and browser versions that exhibit the behavior described by the variation. All combinations of modes and versions that are not listed conform to the specification. For example, the following list for a variation indicates that the variation exists in three document modes in all browser versions that support these modes:

*IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)*

## 1.4 Standards Support Requirements

To conform to [\[W3C-TTML-1.0\]](#) a user agent must implement all required portions of the specification. Any optional portions that have been implemented must also be implemented as described by the specification. Normative language is usually used to define both required and optional portions. (For more information, see [\[RFC2119\]](#).)

## 1.5 Notation

The following notations are used in this document to differentiate between notes of clarification, variation from the specification, and extension points.

Notation	Explanation
C####	Identifies a clarification of ambiguity in the target specification. This includes imprecise statements, omitted information, discrepancies, and errata. This does not include data formatting clarifications.
V####	Identifies an intended point of variability in the target specification such as the use of MAY, SHOULD, or RECOMMENDED. (See <a href="#">[RFC2119]</a> .) This does not include extensibility points.
E####	Identifies extensibility points (such as optional implementation-specific data) in the target specification, which can impair interoperability.

For document mode and browser version notation, see section [1.3](#).

## 2 Standards Support Statements

This section contains a full list of variations, clarifications, and extension points in the Microsoft implementation of [\[W3C-TTML-1.0\]](#).

- Section [2.1](#) includes only those variations that violate a MUST requirement in the target specification.
- Section [2.2](#) describes further variations from MAY and SHOULD requirements.
- Section [2.3](#) identifies variations in error handling.
- Section [2.4](#) identifies variations that impact security.

### 2.1 Normative Variations

The following subsections detail the normative variations from MUST requirements in [\[W3C-TTML-1.0\]](#).

#### 2.1.1 [W3C-TTML-1.0] Section 6.1, Parameter Element Vocabulary

V0001:

The specification describes elements that are defined in the TT Parameter Namespace.

<b>[MS-JPEG]: Internet Explorer ISO 10918-1 Image Compression and Encoding Standards Support</b>	<b>8aea05e3-8c1e-4a9a-9614-31f71e679461.dxml</b>
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*IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)*

The following elements are not supported:

- **ttp:profile**
- **ttp:features**
- **ttp:feature**
- **ttp:extensions**
- **ttp:extension**

#### 2.1.2 [W3C-TTML-1.0] Section 6.2, Parameter Element Vocabulary

V0002:

The specification describes attributes that are defined in the TT Parameter Namespace.

*IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)*

The following attributes are not supported:

- **ttp:cellResolution**
- **ttp:clockMode**
- **ttp:dropMode**
- **ttp:frameRate**

- **ttp:frameRateMultiplier**
- **ttp:markerMode**
- **ttp:pixelAspectRatio**
- **ttp:profile**
- **ttp:subFrameRate**
- **ttp:timeBase**

**Note:** The **ttp:tickRate** attribute is supported.

### **2.1.3 [W3C-TTML-1.0] Section 7.1.5, p**

V0003:

The specification states:

If no `timeContainer` attribute is specified on a `p` element, then it must be interpreted as having parallel time containment semantics.

*IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)*

The **timeContainer** attribute is ignored.

### **2.1.4 [W3C-TTML-1.0] Section 7.2.2, xml:lang**

V0004:

The specification states:

The `xml:lang` attribute must be specified on the `tt` element and may be specified by an instance of any other element type in the core vocabulary catalog.

*IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)*

The **xml:lang** attribute is ignored when selecting a track to display.

### **2.1.5 [W3C-TTML-1.0] Section 9, Layout**

V0007:

The specification describes the layout matter of the core vocabulary catalog.

*IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)*

The **layout** element is not supported.

The **region** element is not supported.

### **2.1.6 [W3C-TTML-1.0] Section 10.2.4, timeContainer**

V0009:

The specification states:

The `timeContainer` attribute is used to specify a local temporal context by means of which timed child elements are temporally situated.

### *IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)*

The **timeContainer** attribute is not supported.

## **2.1.7 [W3C-TTML-1.0] Section 11, Animation**

V0010:

The specification describes the animation matter of the core vocabulary catalog.

### *IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)*

Animation is not supported.

## **2.1.8 [W3C-TTML-1.0] Section 12, Metadata**

V0011:

The specification describes the metadata matter of the core vocabulary catalog.

### *IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)*

Metadata is not supported.

## **2.2 Clarifications**

The following subsections identify clarifications to recommendations made by requirements in [\[W3C-TTML-1.0\]](#).

### **2.2.1 [W3C-TTML-1.0] Section 7.2.3, `xml:space`**

C0002:

The specification states:

The `xml:space` attribute is used as defined by [XML 1.0], §2.10, White Space Handling.  
The `xml:space` attribute may be used with any element in the core vocabulary catalog.

### *IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)*

The **xml:space** attribute is ignored. Whitespace is ignored.

### **2.2.2 [W3C-TTML-1.0] Section 8, Styling**

C0003:

The specification states:

Styling attributes are included in TTML to enable authorial intent of presentation to be included within a self-contained document. This section describes the semantics of style presentation in terms of a standard processing model. TTML Processors are not required to



present TTML documents in any particular way; but an implementation of this model by a TTML Presentation Processor that provides externally observable results that are consistent with this model is likely to lead to a user experience that closely resembles the experience intended by the documents' authors.

### *IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)*

Styling is not supported.

### **2.2.3 [W3C-TTML-1.0] Section 10.2.3, dur**

C0004:

The specification states:

The semantics of the `dur` attribute are those defined by [SMIL 2.1], § 10.4.1, while taking into account any overriding semantics defined by this specification.

Note:

In the context of the subset of [SMIL 2.1] semantics supported by this specification, the active duration of an element that specifies both `end` and `dur` attributes is equal to the lesser of the value of the `dur` attribute and the difference between the value of the `end` attribute and the element's `begin` time.

### *IE10 Mode, IE11 Mode, and EdgeHTML Mode (All Versions)*

If both **`dur`** and **`end`** attributes are defined, then the **`dur`** attribute is ignored.

## **2.3 Error Handling**

There are no additional considerations for error handling.

## **2.4 Security**

There are no additional security considerations.

### **3 Change Tracking**

No table of changes is available. The document is either new or has had no changes since its last release.

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