**[MS-TTML]:**

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

Intellectual Property Rights Notice for Open Specifications Documentation

* **Technical Documentation.** Microsoft publishes Open Specifications documentation (“this documentation”) for protocols, file formats, data portability, computer languages, and standards support. Additionally, overview documents cover inter-protocol relationships and interactions.
* **Copyrights**. This documentation is covered by Microsoft copyrights. Regardless of any other terms that are contained in the terms of use for the Microsoft website that hosts this documentation, you can make copies of it in order to develop implementations of the technologies that are described in this documentation and can distribute portions of it in your implementations that use these technologies or in your documentation as necessary to properly document the implementation. You can also distribute in your implementation, with or without modification, any schemas, IDLs, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications documentation.
* **No Trade Secrets**. Microsoft does not claim any trade secret rights in this documentation.
* **Patents**. Microsoft has patents that might cover your implementations of the technologies described in the Open Specifications documentation. Neither this notice nor Microsoft's delivery of this documentation grants any licenses under those patents or any other Microsoft patents. However, a given Open Specifications document might be covered by the Microsoft [Open Specifications Promise](http://go.microsoft.com/fwlink/?LinkId=214445) or the [Microsoft Community Promise](http://go.microsoft.com/fwlink/?LinkId=214448). If you would prefer a written license, or if the technologies described in this documentation are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting iplg@microsoft.com.
* **Trademarks**. The names of companies and products contained in this documentation might be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights. For a list of Microsoft trademarks, visit [www.microsoft.com/trademarks](http://www.microsoft.com/trademarks).
* **Fictitious Names**. The example companies, organizations, products, domain names, email addresses, logos, people, places, and events that are depicted in this documentation are fictitious. No association with any real company, organization, product, domain name, email address, logo, person, place, or event is intended or should be inferred.

**Reservation of Rights**. All other rights are reserved, and this notice does not grant any rights other than as specifically described above, whether by implication, estoppel, or otherwise.

**Tools**. The Open Specifications documentation does not require the use of Microsoft programming tools or programming environments in order for you to develop an implementation. If you have access to Microsoft programming tools and environments, you are free to take advantage of them. Certain Open Specifications documents are intended for use in conjunction with publicly available standards specifications and network programming art and, as such, assume that the reader either is familiar with the aforementioned material or has immediate access to it.

**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. |

Table of Contents

[1 Introduction 4](#_Toc477342729)

[1.1 Glossary 4](#_Toc477342730)

[1.2 References 4](#_Toc477342731)

[1.2.1 Normative References 4](#_Toc477342732)

[1.2.2 Informative References 4](#_Toc477342733)

[1.3 Microsoft Implementations 4](#_Toc477342734)

[1.4 Standards Support Requirements 5](#_Toc477342735)

[1.5 Notation 5](#_Toc477342736)

[2 Standards Support Statements 6](#_Toc477342737)

[2.1 Normative Variations 6](#_Toc477342738)

[2.1.1 [W3C-TTML-1.0] Section 6.1, Parameter Element Vocabulary 6](#_Toc477342739)

[2.1.2 [W3C-TTML-1.0] Section 6.2, Parameter Element Vocabulary 6](#_Toc477342740)

[2.1.3 [W3C-TTML-1.0] Section 7.1.5, p 7](#_Toc477342741)

[2.1.4 [W3C-TTML-1.0] Section 7.2.2, xml:lang 7](#_Toc477342742)

[2.1.5 [W3C-TTML-1.0] Section 9, Layout 7](#_Toc477342743)

[2.1.6 [W3C-TTML-1.0] Section 10.2.4, timeContainer 7](#_Toc477342744)

[2.1.7 [W3C-TTML-1.0] Section 11, Animation 8](#_Toc477342745)

[2.1.8 [W3C-TTML-1.0] Section 12, Metadata 8](#_Toc477342746)

[2.2 Clarifications 8](#_Toc477342747)

[2.2.1 [W3C-TTML-1.0] Section 7.2.3, xml:space 8](#_Toc477342748)

[2.2.2 [W3C-TTML-1.0] Section 8, Styling 8](#_Toc477342749)

[2.2.3 [W3C-TTML-1.0] Section 10.2.3, dur 9](#_Toc477342750)

[2.3 Error Handling 9](#_Toc477342751)

[2.4 Security 9](#_Toc477342752)

[3 Change Tracking 10](#_Toc477342753)

[4 Index 11](#_Toc477342754)

# 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.

## Glossary

**MAY, SHOULD, MUST, SHOULD NOT, MUST NOT:** These terms (in all caps) are used as defined in [[RFC2119]](http://go.microsoft.com/fwlink/?LinkId=90317). All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

## 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](http://msdn.microsoft.com/en-us/library/dn781092.aspx).

### 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. 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](http://go.microsoft.com/fwlink/?LinkId=90317)

[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/](http://go.microsoft.com/fwlink/?LinkId=236020)

### Informative References

None.

## 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 ModeIE11 Mode |
| Internet Explorer 11 for Windows 10  | IE10 ModeIE11 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)*

## Standards Support Requirements

To conform to [[W3C-TTML-1.0]](http://go.microsoft.com/fwlink/?LinkId=236020) 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]](http://go.microsoft.com/fwlink/?LinkId=90317).)

## 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 [[RFC2119]](http://go.microsoft.com/fwlink/?LinkId=90317).) 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](#Section_17f34d0d001b4b20a40676b99d3b0db9).

# Standards Support Statements

This section contains a full list of variations, clarifications, and extension points in the Microsoft implementation of [[W3C-TTML-1.0]](http://go.microsoft.com/fwlink/?LinkId=236020).

* Section [2.1](#Section_fe7927ae8b594233a375b41af3f762c9) includes only those variations that violate a MUST requirement in the target specification.
* Section [2.2](#Section_f727be2e50034179bee9e87725aac611) describes further variations from MAY and SHOULD requirements.
* Section [2.3](#Section_c78d7f9d1af64abd93e079e5538e7276) identifies variations in error handling.
* Section [2.4](#Section_8fac32e5f286431aa757e1d42681db84) identifies variations that impact security.

## Normative Variations

The following subsections detail the normative variations from MUST requirements in [[W3C-TTML-1.0]](http://go.microsoft.com/fwlink/?LinkId=236020).

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

V0001:

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

| [MS-JPEG]: Internet Explorer ISO 10918-1 Image Compression and Encoding Standards Support | 8aea05e3-8c1e-4a9a-9614-31f71e679461.dxml |
| --- | --- |

*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**

### [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.

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

V0003:

The specification states:

1. 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.

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

V0004:

The specification states:

1. 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.

### [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.

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

V0009:

The specification states:

1. 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.

### [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.

### [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.

## Clarifications

The following subsections identify clarifications to recommendations made by requirements in [[W3C-TTML-1.0]](http://go.microsoft.com/fwlink/?LinkId=236020).

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

C0002:

The specification states:

1. The xml:space attribute is used as defined by
2. [XML 1.0], §2.10, White Space Handling.
3. 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.

### [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.

### [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 theend 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.

## Error Handling

There are no additional considerations for error handling.

## Security

There are no additional security considerations.

# Change Tracking

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

# Index

A

[Animation](#section_950682f4e9434ad7a87463bdc7ec4db7) 8

C

[Change tracking](#section_1635ec19aac44e27a6639fc1f288ba57) 10

D

[dur](#section_4f8569e24d32490a95f1cfe797fce090) 9

G

[Glossary](#section_f287f38132c84a7fb780660e665bb135) 4

I

[Informative references](#section_594f64009ea647c2babd8744e907dd27) 4

[Introduction](#section_5ad45ebf50d24f0694fb1f8ddf61b91b) 4

L

[Layout](#section_a8d4b2f4d44c4b05bae347c34cc2cdb1) 7

M

[Metadata](#section_9cb9517db62343a1b4d3e8e3faad06f7) 8

N

[Normative references](#section_89c8487765404ff0b0dd930e38963c3f) 4

P

[p](#section_ccb2af1f05874b959fb95b040d379af4) 7

Parameter Element Vocabulary ([section 2.1.1](#section_f3c36a59c87a41ec93c891052285b247) 6, [section 2.1.2](#section_978acfed74014d6fa0746ab11ae1d897) 6)

R

References

 [informative](#section_594f64009ea647c2babd8744e907dd27) 4

 [normative](#section_89c8487765404ff0b0dd930e38963c3f) 4

S

[Styling](#section_49d6dabfdc8d4cb2af739ce2c8f3cd43) 8

T

[timeContainer](#section_abdbd653a2404fe18e2e2f3d6fe124e4) 7

[Tracking changes](#section_1635ec19aac44e27a6639fc1f288ba57) 10

X

[xml:lang](#section_d9f50a6d02f24971a11da1b08eacc067) 7

[xml:space](#section_14613ca7ac174b8b973f2be07d5a6c70) 8