[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.
10/3/2017	3.2	None	No changes to the meaning, language, or formatting of the technical content.
2/22/2018	3.2	None	No changes to the meaning, language, or formatting of the technical content.
3/23/2018	3.2	None	No changes to the meaning, language, or formatting of the technical content.
8/28/2018	3.2	None	No changes to the meaning, language, or formatting of the technical content.

Table of Contents

1   Introduction

This document describes the level of support provided by Microsoft web browsers for the *Timed Text Markup Language (TTML) 1.0* specification [W3C-TTML-1.0], 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. 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] World Wide Web Consortium, "Timed Text Markup Language (TTML) 1.0", 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 [RFC2119].) 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 all variations and clarifications for the Microsoft implementation of [W3C-TTML-1.0].

- Section 2.1 describes normative variations from the MUST requirements of the specification.

- Section 2.2 describes clarifications of the MAY and SHOULD requirements.

- Section 2.3 considers error handling aspects of the implementation.

- Section 2.4 considers security aspects of the implementation.

2.1   Normative Variations

The following subsections describe normative variations from the MUST requirements of [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.

[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**

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 describe clarifications of the MAY and SHOULD requirements of [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 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.

2.3 Error Handling

There are no additional error handling considerations.

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.

4   Index

A

Animation 8

C

Change tracking 10

D

dur 9

G

Glossary 4

I

Informative references 4
Introduction 4

L

Layout 7

M

Metadata 8

N

Normative references 4

P

p 7
Parameter Element Vocabulary (section 2.1.1 6,
       section 2.1.2 6)

R

References
   informative 4
   normative 4

S

Styling 8

T

timeContainer 7
Tracking changes 10

X

xml:lang 7
xml:space 8