[MS-WORDLFF]:
Word (.xml) Co-Authoring File Format in Document Lock Persistence Structure

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Revision Summary

Date	Revision History	Revision Class	Comments
07/13/2009	0.1	Major	Initial Availability
08/28/2009	0.2	Editorial	Revised and edited the technical content
11/06/2009	0.3	Editorial	Revised and edited the technical content
02/19/2010	1.0	Major	Updated and revised the technical content
03/31/2010	1.01	Major	Updated and revised the technical content
04/30/2010	1.02	Editorial	Revised and edited the technical content
06/07/2010	1.03	Editorial	Revised and edited the technical content
06/29/2010	1.04	Editorial	Changed language and formatting in the technical content.
07/23/2010	1.04	No change	No changes to the meaning, language, or formatting of the technical content.
09/27/2010	1.04	No change	No changes to the meaning, language, or formatting of the technical content.
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01/20/2012	1.6	Minor	Clarified the meaning of the technical content.
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11/18/2013	1.7	No change	No changes to the meaning, language, or formatting of the technical content.

Date	Revision History	Revision Class	Comments
02/10/2014	1.7	No change	No changes to the meaning, language, or formatting of the technical content.

Table of Contents

1   Introduction

This document specifies the Word Co-Authoring File Format (.xml) in Document Lock Persistence Structure. This structure enables a protocol client to create and manage authors' presence within regions of a word processing document.

Sections 1.7 and 2 of this specification are normative and can contain the terms MAY, SHOULD, MUST, MUST NOT, and SHOULD NOT as defined in RFC 2119. All other sections and examples in this specification are informative.

1.1   Glossary

The following terms are defined in [MS-GLOS]:

Coordinated Universal Time (UTC)

The following terms are defined in [MS-OFCGLOS]:

friendly name
Session Initiation Protocol (SIP) address
XML schema definition (XSD)

The following terms are specific to this document:

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

1.2   References

References to Microsoft Open Specifications documentation do not include a publishing year because links are to the latest version of the documents, which are updated frequently. References to other documents include a publishing year when one is available.

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.

[ISO/IEC29500-1:2011] ISO/IEC, "Information Technology -- Document description and processing languages -- Office Open XML File Formats -- Part 1: Fundamentals and Markup Language Reference", ISO/IEC 29500-1:2011, 2011, http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=59575

[MS-DOCX] Microsoft Corporation, "Word Extensions to the Office Open XML File Format (.docx) Specification".

[MS-FSSHTTPB] Microsoft Corporation, "Binary Requests for File Synchronization via SOAP Protocol".

[MS-ODRAWXML] Microsoft Corporation, "Office Drawing Extensions to Office Open XML Structure Specification".

[RFC1950] Deutsch, P., and Gailly, J-L., "ZLIB Compressed Data Format Specification version 3.3", RFC 1950, May 1996, http://www.ietf.org/rfc/rfc1950.txt

[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

[XMLSCHEMA1] Thompson, H.S., Beech, D., Maloney, M., and Mendelsohn, N., Eds., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/

[XMLSCHEMA2] Biron, P.V., and Malhotra, A., Eds., "XML Schema Part 2: Datatypes", W3C Recommendation, May 2001, http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/

1.2.2   Informative References

[MS-GLOS] Microsoft Corporation, "Windows Protocols Master Glossary".

[MS-OFCGLOS] Microsoft Corporation, "Microsoft Office Master Glossary".

1.3   Structure Overview (Synopsis)

The file format structure described in this document enables multiple protocol clients to author the same word processing document while communicating information about which regions of the document are being edited and by whom. These regions are hereafter called presence regions.

A protocol client can specify presence regions composed of one or more contiguous paragraphs. These regions will be attributed to an author so that all protocol clients will be aware of who is using that region. For more information, see section 2.3.4.

A protocol client can also specify region identifiers that no protocol client can reuse when specifying new presence regions. Each such region identifier is associated with a time. For more information, see section 2.3.6.

Because the list of IDs that cannot be reused can grow unbounded, a protocol client can specify a time to limit the size of the list. Any region identifier with an associated time before the specified time can again be used. For more information, see section 2.3.7.

1.4   Relationship to Protocols and Other Structures

The persistence format described in this document will be used with word processing documents based on the specification [MS-DOCX] and will be stored within a root cell with cell identifier 6F2A4665-42C8-46C7-BAB4E28FDCE1E32B-00000001 for the document, as described in [MS-FSSHTTPB]. This cell is hereafter called the primary metadata channel. The persistence format described in this document is compressed as described in section 2.5.

1.5   Applicability Statement

This document describes a persistence format for authors' presence regions in a word processing document. This persistence format is applicable when the document content will be saved to a shared location and edited by multiple authors. This persistence format is applicable only when it is contained within the primary metadata channel.

1.6   Versioning and Localization

None.

1.7   Vendor-Extensible Fields

None.

2 Structures

In the following sections, the schema definition might differ from the processing rules imposed by the protocol. The **XSD** in this specification provides a base description of the file format. The text that introduces the XSD specifies additional restrictions that reflect protocol behavior. For example, the schema definition might allow for an element to be **empty**, **null**, or **not present** but the behavior of the protocol as specified restricts the same elements to being **non-empty**, **present**, and **not null**.

2.1 Global Elements

2.1.1 CoAuthoringLocks

Target namespace: http://schemas.microsoft.com/word/2009/7/coauthoring

A CT_CALocks element that specifies the creation and management of authors' presence regions within the document. This is the root element of the Word Co-Authoring File Format.

The following W3C XML Schema ([XMLSCHEMA1] section 2.1) fragment specifies the contents of this element.

```
<xsd:element name="CoAuthoringLocks" type="ca:CT_CALocks">
  <xsd:unique name="LockIdUniqueness">
    <xsd:selector xpath=".//*"/>
    <xsd:field xpath="@LockId"/>
  </xsd:unique>
</xsd:element>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1] section 2.1).

2.2 Global Attributes

None.

2.3 Complex Types

2.3.1 CT_Sync

Target namespace: http://schemas.microsoft.com/word/2009/7/coauthoring

Referenced by: CT_CALocks

Specifies a synchronization request. If the **RevisionID** attribute matches the associated document's base revision identifier (as specified in [MS-FSSHTTPB] section 3.1.1), the associated document's **docId** element (as specified in [MS-DOCX] section 2.6.1.14) MUST be set to the **DocID** attribute value, and the following attributes:

- The **paraId** attribute (as specified in [MS-DOCX] section 2.6.2.3),

- The **anchorId** attribute (as specified in [MS-DOCX] section 2.6.2.1),

- The **anchorId** attribute (as specified in [MS-ODRAWXML] section 2.19.2.1),

- The **editId** attribute (as specified in [MS-ODRAWXML] section 2.19.2.2),

within the associated document MUST be renumbered as specified in the following paragraphs.

The value of the first such attribute encountered MUST be set to the value of the **DocID** attribute. The value of each subsequent attribute is determined by adding 1 to the previous value used. If number 0x7FFFFFFF is used, the next number used MUST be 0x00000001 rather than 0x80000000. If more than one of the attributes appears on the same element, the order of the attributes in the preceding list specifies the order of assigning renumbered values to them.

Renumbered values MUST be assigned in the following order (refer to [ISO/IEC29500-1:2011] section 11.3 for WordprocessingML parts):

1. The Main Document part, excluding text boxes. Advance two values before moving on to the paragraphs in the Comments part.

2. The Comments part.

3. Any paragraph in the Footnotes part that are contained in a **footnote** element (as specified in [ISO/IEC29500-1:2011] section 17.11.10) whose **type** attribute has value "separator" or "continuationSeparator".

4. Any paragraph in the Endnotes part that are contained in an **endnote** element (as specified in [ISO/IEC29500-1:2011] section 17.11.2) whose **type** attribute has value "separator" or "continuationSeparator".

5. Header and Footer parts, excluding text boxes, in the order in which they are referenced in the Main Document part.

6. Any remaining paragraphs in the Footnotes part not already covered by item 3 preceding.

7. Any remaining paragraphs in the Endnotes part not already covered by item 4 preceding.

8. The text boxes of the Main Document part.

9. Header and footer text boxes.

Attributes:

DocID : An ST_LongHexNumber attribute that specifies the document identifier that MUST be applied by other authors whose base **RevisionID** attribute (as specified in [MS-FSSHTTPB] section 3.1.1) matches **RevisionID**. This document identifier is also used as the initial **paraId** attribute (as specified in [MS-DOCX] section 2.4.1) for synchronizing paraId attributes across co-authors. This attribute MUST be present.

NextID : An ST_LongHexNumber attribute that specifies the **paraId** attribute (as specified in [MS-DOCX] section 2.4.1) that follows the last **paraId** attribute used for renumbering the associated document. This attribute MUST be present.

RevisionID : A string, as specified in [XMLSCHEMA2] section 3.2.1, that specifies an identifier for the associated document's base revision identifier (as specified in [MS-FSSHTTPB] section 3.1.1), to which this synchronization request applies. This attribute MUST be present.

The following W3C XML Schema ([XMLSCHEMA1] section 2.1) fragment specifies the contents of this complex type.

```
<xsd:complexType name="CT_Sync">
  <xsd:attribute name="DocID" type="ca:ST_LongHexNumber" use="required"/>
  <xsd:attribute name="NextID" type="ca:ST_LongHexNumber" use="required"/>
```

```
    <xsd:attribute name="RevisionID" type="xsd:string" use="required"/>
  </xsd:complexType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1] section 2.1).

2.3.2 CT_LockOwner

Target namespace: http://schemas.microsoft.com/word/2009/7/coauthoring

Referenced by: CT_ParaLock

Specifies the author data for a presence region.

Attributes:

OwnerID : An ST_Guid attribute that uniquely identifies a particular author on a particular computer. MUST be present.

OwnerName : A string, as specified in [XMLSCHEMA2] section 3.2.1, that specifies the author's **friendly name**. By default, no name is displayed.

OwnerSIPAddress : A string, as specified in [XMLSCHEMA2] section 3.2.1, that specifies the **Session Initiation Protocol (SIP) address** of the author. By default, there is no SIP address.

OwnerEmailAddress : A string, as specified in [XMLSCHEMA2] section 3.2.1, that specifies the e-mail address of the author. By default, there is no e-mail address.

OwnerUserName : A string, as specified in [XMLSCHEMA2] section 3.2.1, that uniquely identifies a particular author. MUST be present.

The following W3C XML Schema ([XMLSCHEMA1] section 2.1) fragment specifies the contents of this complex type.

```
  <xsd:complexType name="CT_LockOwner">
    <xsd:attribute name="OwnerID" type="ca:ST_Guid" use="required"/>
    <xsd:attribute name="OwnerName" type="xsd:string"/>
    <xsd:attribute name="OwnerSIPAddress" type="xsd:string"/>
    <xsd:attribute name="OwnerEmailAddress" type="xsd:string"/>
    <xsd:attribute name="OwnerUserName" type="xsd:string"/>
  </xsd:complexType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1] section 2.1).

2.3.3 CT_Parid

Target namespace: http://schemas.microsoft.com/word/2009/7/coauthoring

Referenced by: CT_ParaLock

Specifies the **paraId**, as specified in [MS-DOCX] section 2.6.2.3 of a single paragraph in the associated document.

Attributes:

Val : An ST_LongHexNumber attribute that specifies the **paraID** (as specified in[MS-DOCX] section 2.6.2.3) of a paragraph in the associated document. MUST be unique within CT_CALocks. MUST NOT be zero. This attribute MUST be present.

The following W3C XML Schema ([XMLSCHEMA1] section 2.1) fragment specifies the contents of this complex type.

```
<xsd:complexType name="CT_Parid">
  <xsd:attribute name="Val" type="ca:ST_LongHexNumber" use="required"/>
</xsd:complexType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1] section 2.1).

2.3.4 CT_ParaLock

Target namespace: http://schemas.microsoft.com/word/2009/7/coauthoring

Referenced by: CT_CALocks

Specifies the presence information about a range of paragraphs. All paragraphs listed MUST be within the same presence region if they exist in the document.

Child Elements:

ParaId : A CT_Parid element that specifies a particular paragraph in the associated document. MUST occur at least once.

Attributes:

LockId : An ST_LongHexNumber attribute that specifies the identity of the region described. MUST be present. MUST be unique in the document. The value of the **LockId** attribute MUST NOT match the value of the **Val** attribute of any **LockId** child of any element of type CT_ReservedIDs in this file. The value of the **LockId** attribute MUST NOT be zero.

OwnerID : An ST_Guid attribute that uniquely identifies a particular author on a particular computer. MUST be present.

OwnerName : A string, as specified in [XMLSCHEMA2] section 3.2.1, that specifies the author's friendly name. By default, no name is displayed.

OwnerSIPAddress : A string, as specified in [XMLSCHEMA2] section 3.2.1, that specifies the Session Initiation Protocol (SIP) address of the author. By default, there is no SIP address.

OwnerEmailAddress : A string, as specified in [XMLSCHEMA2] section 3.2.1, that specifies the e-mail address of the author. By default, there is no e-mail address.

OwnerUserName : A string, as specified in [XMLSCHEMA2] section 3.2.1, that uniquely identifies a particular author. MUST be present.

The following W3C XML Schema ([XMLSCHEMA1] section 2.1) fragment specifies the contents of this complex type.

```
<xsd:complexType name="CT_ParaLock">
  <xsd:complexContent>
    <xsd:extension base="ca:CT_LockOwner">
      <xsd:sequence>
```

```
        <xsd:element name="ParaId" type="ca:CT_Parid" minOccurs="1" maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute name="LockId" type="ca:ST_LongHexNumber" use="required"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1] section 2.1).

2.3.5 CT_LockID

Target namespace: http://schemas.microsoft.com/word/2009/7/coauthoring

Referenced by: CT_ReservedIDs

Specifies a presence region identifier.

Attributes:

Val : An ST_LongHexNumber attribute that specifies the identity of the region described. MUST be present. MUST be unique in the document. MUST NOT be zero.

TimeStamp : A **dateTime** (as specified in [XMLSCHEMA2] section 3.2.7) in Coordinated Universal Time (UTC) that specifies the time associated with this region identifier. MUST be present.

The following W3C XML Schema ([XMLSCHEMA1] section 2.1) fragment specifies the contents of this complex type.

```
<xsd:complexType name="CT_LockID">
  <xsd:attribute name="Val" type="ca:ST_LongHexNumber" use="required"/>
  <xsd:attribute name="TimeStamp" type="xsd:dateTime" use="required"/>
</xsd:complexType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1] section 2.1).

2.3.6 CT_ReservedIDs

Target namespace: http://schemas.microsoft.com/word/2009/7/coauthoring

Referenced by: CT_CALocks

Specifies a collection of presence region identifiers that are reserved. If a CT_ParaLock element appears with a **LockId** attribute equal to a presence region identifier specified in this collection then that CT_ParaLock element MUST be ignored.

Child Elements:

LockId : A CT_LockID element that specifies a presence region identifier that MUST NOT be used within a CT_ParaLock element. MUST occur at least once.

The following W3C XML Schema ([XMLSCHEMA1] section 2.1) fragment specifies the contents of this complex type.

```
<xsd:complexType name="CT_ReservedIDs">
  <xsd:sequence>
```

```
        <xsd:element name="LockId" type="ca:CT_LockID" minOccurs="1" maxOccurs="unbounded"/>
      </xsd:sequence>
    </xsd:complexType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1] section 2.1).

2.3.7 CT_IDPruneTime

Target namespace: http://schemas.microsoft.com/word/2009/7/coauthoring

Referenced by: CT_CALocks

Specifies a time to use to limit the size of the list of reserved region identifiers. For information about how to use this value see the **IDPruneTime** element in section 2.3.8.

Attributes:

TimeStamp : A **dateTime** attribute, as specified in [XMLSCHEMA2] section 3.2.7, used to limit the size of the list of reserved region identifiers. MUST be present.

The following W3C XML Schema ([XMLSCHEMA1] section 2.1) fragment specifies the contents of this complex type.

```
  <xsd:complexType name="CT_IDPruneTime">
    <xsd:attribute name="TimeStamp" type="xsd:dateTime" use="required"/>
  </xsd:complexType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1] section 2.1).

2.3.8 CT_CALocks

Target namespace: http://schemas.microsoft.com/word/2009/7/coauthoring

Referenced by: CoAuthoringLocks

Specifies the creation and management of authors' presence regions within the document.

Child Elements:

Sync : A CT_Sync element that specifies a synchronization request.

Lock : A CT_ParaLock element that specifies the presence information in a region in the document. By default, there are no presence regions in the document.

DeletedLocks : A CT_ReservedIDs element that specifies all presence region identifiers that MUST NOT be used within a CT_ParaLock element. By default, all presence region identifiers are available to be used.

IDPruneTime : A CT_IDPruneTime element that specifies the earliest time for which a removed presence region LockId element MUST be retained. Any LockId element whose associated TimeStamp attribute is earlier than the one specified by this element is eligible for reuse. By default, all removed presence region LockId elements MUST be retained.

The following W3C XML Schema ([XMLSCHEMA1] section 2.1) fragment specifies the contents of this complex type.

```
<xsd:complexType name="CT_CALocks">
  <xsd:sequence>
    <xsd:element name="Sync" type="ca:CT_Sync" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Lock" type="ca:CT_ParaLock" minOccurs="0" maxOccurs="unbounded">
      <xsd:unique name="ParaIdUniqueness">
        <xsd:selector xpath="./ParaId"/>
        <xsd:field xpath="@Val"/>
      </xsd:unique>
    </xsd:element>
    <xsd:element name="DeletedLocks" type="ca:CT_ReservedIDs" minOccurs="0" maxOccurs="1">
      <xsd:unique name="LockValUniqueness">
        <xsd:selector xpath="./LockId"/>
        <xsd:field xpath="@Val"/>
      </xsd:unique>
    </xsd:element>
    <xsd:element name="IDPruneTime" type="ca:CT_IDPruneTime" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1] section 2.1).

2.4 Simple Types

2.4.1 ST_LongHexNumber

Target namespace: http://schemas.microsoft.com/word/2009/7/coauthoring

Referenced by: CT_Sync, CT_Parid, CT_ParaLock, CT_LockID

A **hexBinary**, as specified in [XMLSCHEMA2] section 3.2.15, with a length restriction of 4.

The following W3C XML Schema ([XMLSCHEMA1] section 2.1) fragment specifies the contents of this simple type.

```
<xsd:simpleType name="ST_LongHexNumber">
  <xsd:restriction base="xsd:hexBinary">
    <xsd:length value="4"/>
    <xsd:pattern value="(?!00000000).*"/>
  </xsd:restriction>
</xsd:simpleType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1] section 2.1).

2.4.2 ST_Guid

Target namespace: http://schemas.microsoft.com/word/2009/7/coauthoring

Referenced by: CT_LockOwner, CT_ParaLock

Specified in [ISO/IEC29500-1:2011] section 22.9.2.4.

The following W3C XML Schema ([XMLSCHEMA1] section 2.1) fragment specifies the contents of this simple type.

```
<xsd:simpleType name="ST_Guid">
```

```
    <xsd:restriction base="xsd:token">
      <xsd:pattern value="\{[0-9A-F]{8}-[0-9A-F]{4}-[0-9A-F]{4}-[0-9A-F]{4}-[0-9A-F]{12}\}"/>
    </xsd:restriction>
  </xsd:simpleType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1] section 2.1).

2.5 Compression

The previous sections specify an xml vocabulary for managing authors' presence with regions of a word processing document. This section specifies the format of the binary stream resulting from compressing the xml document specified by the previous sections.

The structure of the stream is specified by the following table.

0	1	2	3	4	5	6	7	8	9	1 0	1	2	3	4	5	6	7	8	9	2 0	1	2	3	4	5	6	7	8	9	3 0	1
signature																															
...																															
data (variable)																															
...																															
reserved																															
size																															

signature (8 bytes): MUST be the following 8 bytes: 0x1A, 0x5A, 0x3A, 0x30, 0x00, 0x00, 0x00, 0x00.

data (variable): An array of bytes resulting from using zlib (as specified in [RFC1950]) to compress the UTF-8 representation (without a byte order mark) of the xml document specified by the previous sections.

reserved (4 bytes): MUST be ignored.

size (4 bytes): An unsigned integer containing the uncompressed size of the UTF-8 representation (without a byte order mark) of the xml document that is compressed as data.

3   Structure Examples

In the following sections, the schema definition might differ from the processing rules imposed by the protocol. The XSD in this specification provides a base description of the file format. The text that introduces the XSD specifies additional restrictions that reflect protocol behavior. For example, the schema definition might allow for an element to be **empty**, **null**, or **not present** but the behavior of the protocol as specified restricts the same elements to being **non-empty**, **present**, and **not null**.

The following XML is an example of a CoAuthoringLocks element.

```
<CoAuthoringLocks xmlns="http://schemas.microsoft.com/word/2009/7/coauthoring">
    <Lock xmlns="" OwnerID="{38A992A1-8CDB-4D8B-B881-7D7E45E06B72}" OwnerName="Claus Hansen"
OwnerSIPAddress="sip:claus@example.com" OwnerEmailAddress="claus@example.com"
OwnerUserName="claus" LockId="76224563">
        <ParaId Val="4F2EB091"/>
    </Lock>
    <Lock xmlns="" OwnerID="{33B5F63F-E6B4-41AA-B64E-552D8127DF2B}" OwnerName="Jeff Hay"
OwnerSIPAddress="sip:jeff@example.com" OwnerEmailAddress="jeff@example.com"
OwnerUserName="jeff" LockId="316786F3">
        <ParaId Val="4D3895E6"/>
        <ParaId Val="0EDB6FA0"/>
    </Lock>
    <DeletedLocks>
        <LockId Val="3F459ACD" TimeStamp="2009-05-14T00:18:14Z"/>
    </DeletedLocks>
</CoAuthoringLocks>
```

The first <Lock …/> element shows that an author named Claus Hansen is present within the region described by <ParaId Val="4F2EB091"/>. This region has the LockId value of "76224563".

The second <Lock …/> element shows that an author named Jeff Hay is present within the region described by the two <ParaId …/> entries. This region has the LockId value of "316786F3".

The <DeletedLocks …/> element indicates that a presence region with the LockId value of "3F459ACD" existed at one time, but that the author who was using it removed his or her presence as of the time given by TimeStamp.

4 Security

4.1 Security Considerations for Implementers

None.

4.2 Index of Security Fields

None.

5 Appendix A: Full XML Schemas

5.1 http://schemas.microsoft.com/word/2009/7/coauthoring

```
<xsd:schema xmlns:odoc="http://schemas.microsoft.com/internal/obd"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="unqualified"
attributeFormDefault="unqualified" blockDefault="#all"
xmlns:ca="http://schemas.microsoft.com/word/2009/7/coauthoring"
targetNamespace="http://schemas.microsoft.com/word/2009/7/coauthoring"
xmlns="http://schemas.microsoft.com/word/2009/7/coauthoring">
  <xsd:simpleType name="ST_LongHexNumber">
    <xsd:restriction base="xsd:hexBinary">
      <xsd:length value="4"/>
      <xsd:pattern value="(?!00000000).*"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:simpleType name="ST_Guid">
    <xsd:restriction base="xsd:token">
      <xsd:pattern value="\{[0-9A-F]{8}-[0-9A-F]{4}-[0-9A-F]{4}-[0-9A-F]{4}-[0-9A-F]{12}\}"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:complexType name="CT_Sync">
    <xsd:attribute name="DocID" type="ca:ST_LongHexNumber" use="required"/>
    <xsd:attribute name="NextID" type="ca:ST_LongHexNumber" use="required"/>
    <xsd:attribute name="RevisionID" type="xsd:string" use="required"/>
  </xsd:complexType>
  <xsd:complexType name="CT_LockOwner">
    <xsd:attribute name="OwnerID" type="ca:ST_Guid" use="required"/>
    <xsd:attribute name="OwnerName" type="xsd:string"/>
    <xsd:attribute name="OwnerSIPAddress" type="xsd:string"/>
    <xsd:attribute name="OwnerEmailAddress" type="xsd:string"/>
    <xsd:attribute name="OwnerUserName" type="xsd:string"/>
  </xsd:complexType>
  <xsd:complexType name="CT_Parid">
    <xsd:attribute name="Val" type="ca:ST_LongHexNumber" use="required"/>
  </xsd:complexType>
  <xsd:complexType name="CT_ParaLock">
    <xsd:complexContent>
      <xsd:extension base="ca:CT_LockOwner">
        <xsd:sequence>
          <xsd:element name="ParaId" type="ca:CT_Parid" minOccurs="1" maxOccurs="unbounded"/>
        </xsd:sequence>
        <xsd:attribute name="LockId" type="ca:ST_LongHexNumber" use="required"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:complexType name="CT_LockID">
    <xsd:attribute name="Val" type="ca:ST_LongHexNumber" use="required"/>
    <xsd:attribute name="TimeStamp" type="xsd:dateTime" use="required"/>
  </xsd:complexType>
  <xsd:complexType name="CT_ReservedIDs">
    <xsd:sequence>
      <xsd:element name="LockId" type="ca:CT_LockID" minOccurs="1" maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="CT_IDPruneTime">
    <xsd:attribute name="TimeStamp" type="xsd:dateTime" use="required"/>
  </xsd:complexType>
  <xsd:complexType name="CT_CALocks">
```

```xml
    <xsd:sequence>
      <xsd:element name="Sync" type="ca:CT_Sync" minOccurs="0" maxOccurs="1"/>
      <xsd:element name="Lock" type="ca:CT_ParaLock" minOccurs="0" maxOccurs="unbounded">
        <xsd:unique name="ParaIdUniqueness">
          <xsd:selector xpath="./ParaId"/>
          <xsd:field xpath="@Val"/>
        </xsd:unique>
      </xsd:element>
      <xsd:element name="DeletedLocks" type="ca:CT_ReservedIDs" minOccurs="0" maxOccurs="1">
        <xsd:unique name="LockValUniqueness">
          <xsd:selector xpath="./LockId"/>
          <xsd:field xpath="@Val"/>
        </xsd:unique>
      </xsd:element>
      <xsd:element name="IDPruneTime" type="ca:CT_IDPruneTime" minOccurs="0" maxOccurs="1"/>
    </xsd:sequence>
  </xsd:complexType>
  <xsd:element name="CoAuthoringLocks" type="ca:CT_CALocks">
    <xsd:unique name="LockIdUniqueness">
      <xsd:selector xpath=".//*"/>
      <xsd:field xpath="@LockId"/>
    </xsd:unique>
  </xsd:element>
</xsd:schema>
```

6 Appendix B: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include released service packs:

- Microsoft Word 2010

- Microsoft Word 2013

Exceptions, if any, are noted below. If a service pack or Quick Fix Engineering (QFE) number appears with the product version, behavior changed in that service pack or QFE. The new behavior also applies to subsequent service packs of the product unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms SHOULD or SHOULD NOT implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that the product does not follow the prescription.

7 Change Tracking

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

8 Index

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