

4 ID References

487 | There are many motivations for referencing other message elements such as signature
 488 | references or correlating signatures to security tokens. For this reason, this specification defines
 489 | the `wsu:Id` attribute so that recipients need not understand the full schema of the message for
 490 | processing of the security elements. That is, they need only "know" that the `wsu:Id` attribute
 491 | represents a schema type of ID which is used to reference elements. However, because some
 492 | key schemas used by this specification don't allow attribute extensibility (namely XML Signature
 493 | and XML Encryption), this specification also allows use of their local ID attributes in addition to the
 494 | `wsu:Id` attribute and the `xml:id` attribute [XMLID]. As a consequence, when trying to locate an
 495 | element referenced in a signature, the following attributes are considered:

- 496 | • Local ID attributes on XML Signature elements
- 497 | • Local ID attributes on XML Encryption elements
- 498 | • Global `wsu:Id` attributes (described below) on elements
- 499 | • [Profile specific defined identifiers](#)
- 500 | • [Global `xml:id` attributes on elements](#)

501 | In addition, when signing a part of an envelope such as the body, it is RECOMMENDED that an
 502 | ID reference is used instead of a more general transformation, especially XPath [XPATH]. This is
 503 | to simplify processing.

504 | [Tokens and elements that are defined in this specification and related profiles to use `wsu:id`](#)
 505 | [attributes should do so. additional profiles and other elements to be signed may choose to use](#)
 506 | [`xml:id` or `wsu:id`. All receivers MUST be able to identify XML elements carrying either a `wsu:id` or](#)
 507 | [an `xml:id` attribute as representing an attribute of schema type ID and process it accordingly.](#)

4.1 Id Attribute

511 | There are many situations where elements within SOAP messages need to be referenced. For
 512 | example, when signing a SOAP message, selected elements are included in the scope of the
 513 | signature. XML Schema Part 2 [XMLSCHEMA] provides several built-in data types that may be
 514 | used for identifying and referencing elements, but their use requires that consumers of the SOAP
 515 | message either have or must be able to obtain the schemas where the identity or reference
 516 | mechanisms are defined. In some circumstances, for example, intermediaries, this can be
 517 | problematic and not desirable.

518 | Consequently a mechanism is required for identifying and referencing elements, based on the
 519 | SOAP foundation, which does not rely upon complete schema knowledge of the context in which
 520 | an element is used. This functionality can be integrated into SOAP processors so that elements
 521 | can be identified and referred to without dynamic schema discovery and processing.

522 | This section specifies a namespace-qualified global attribute for identifying an element which can
 523 | be applied to any element that either allows arbitrary attributes or specifically allows a particular
 524 | attribute. [In addition, the `xml:id` attribute may be used. Applications MUST NOT specify both a](#)
 525 | [`wsu:ID` and `xml:id` attribute on a single element. this is an XML requirement that only one attribute](#)
 526 | [of type `xsd:ID` be specified on a single element.](#)

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530 **4.2 Id Schema**

531 To simplify the processing for intermediaries and recipients, a common attribute is defined for
532 identifying an element. This attribute utilizes the XML Schema ID type and specifies a common
533 attribute for indicating this information for elements.
534 The syntax for this attribute is as follows:

```
535 <anyElement wsu:Id="...">...</anyElement>
```

536
537
538 The following describes the attribute illustrated above:
539 `.../@wsu:Id`

540 This attribute, defined as type `xsd:ID`, provides a well-known attribute for specifying the
541 local ID of an element.

542 Two `wsu:Id` attributes within an XML document MUST NOT have the same value.

543 Implementations MAY rely on XML Schema validation to provide rudimentary enforcement for
544 intra-document uniqueness. However, applications SHOULD NOT rely on schema validation
545 alone to enforce uniqueness.

546
547 This specification does not specify how this attribute will be used and it is expected that other
548 specifications MAY add additional semantics (or restrictions) for their usage of this attribute.
549 The following example illustrates use of this attribute to identify an element:

```
550 <x:myElement wsu:Id="ID1" xmlns:x="..."  
551 xmlns:wsu="..." />
```

552
553
554 Conformance processors that do support XML Schema MUST treat this attribute as if it was defined
555 using a global attribute declaration. Conformance processors that do not support dynamic XML
556 Schema or DTDs discovery and processing are strongly encouraged to integrate this [attribute](#)
557 definition and that of `xml:id` into their parsers. That is, to treat this attribute information item as if
558 its PSVI has a [type definition] which {target namespace} is
559 "http://www.w3.org/2001/XMLSchema" and which {type} is "ID." Doing so allows the
560 processor to inherently know *how* to process the attribute without having to locate and process
561 the associated schema. Specifically, implementations MAY support the value of the `wsu:Id` as
562 the valid identifier for use as an XPointer [XPointer] shorthand pointer for interoperability with
563 XML Signature references.

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