TCG Infrastructure Working Group Reference Manifest (RM) Schema Specification

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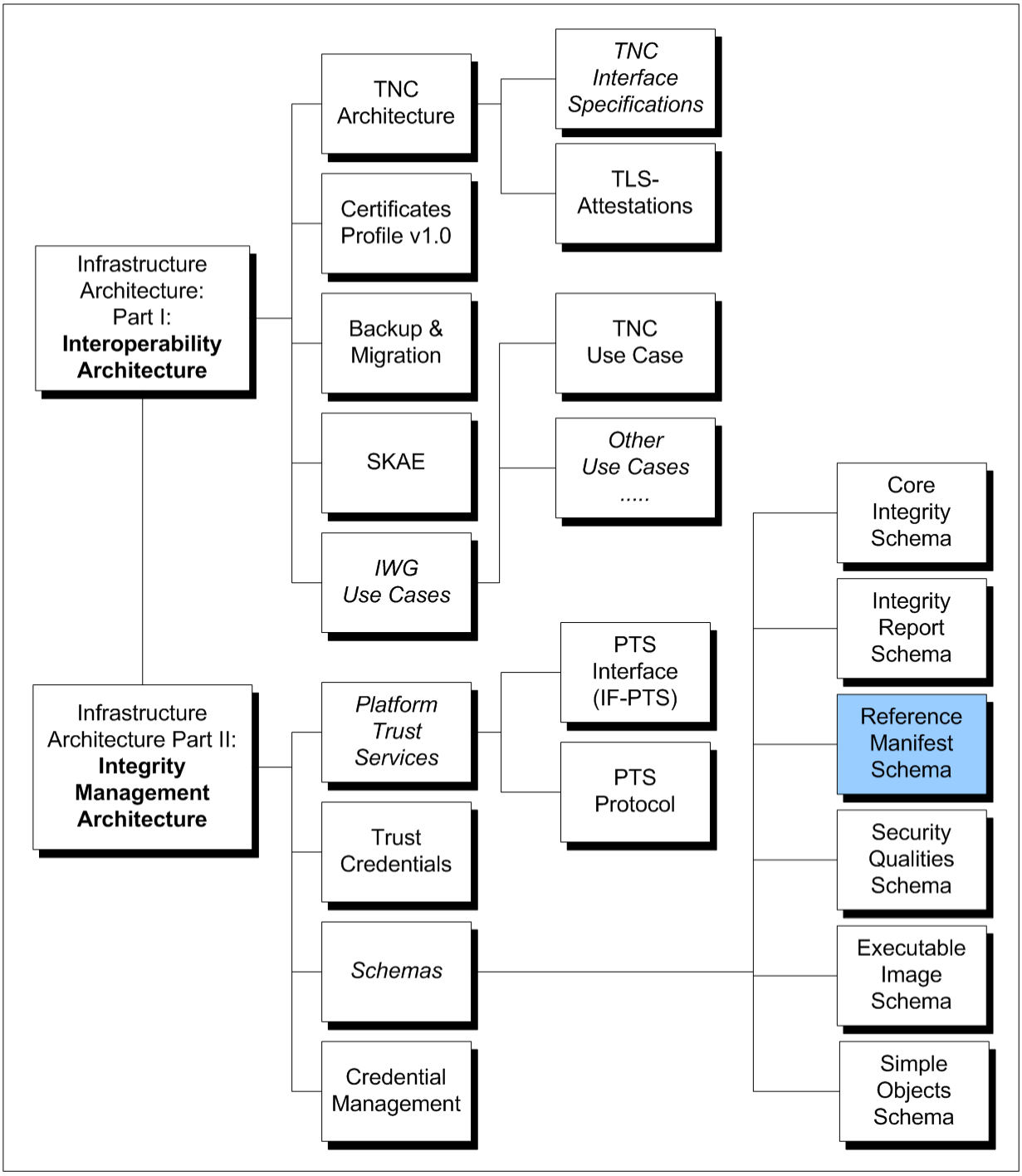

Acknowledgement

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1 Scope and Audience

This specification is integral to the TCG Infrastructure Working Group's (IWG) reference architecture, and is directly related to the TCG's Integrity Management Model. Specifically, the Reference Manifest (RM) XML schema defines the structure with which integrity information is communicated between entities.

Architects, designers, developers, and technologists interested in the development, deployment, and interoperation of trusted systems will find this document necessary in providing a specific mechanism for communicating integrity information.

2 Introduction

The purpose of this document is to provide a detailed description of the TCG Infrastructure Working Group's Reference Manifest (RM) schema, here after referred to as the *RM schema*. The RM schema is derived from the core integrity metadata XML schema [1].

2.1 Schema Version

The RM schema's version number is defined using the `version` attribute of the schema's root-level `schema` element:

```
version="version_number"
```

This document refers to version 2.0 of the RM schema.

2.2 Schema Namespace

The RM schema's namespace is defined using the `targetNamespace` attribute of the schema's root-level `schema` element:

```
targetNamespace="namespace"
```

The schema's namespace reflects the schema version, and is currently defined as follows:

```
http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/rm#
```

2.3 Dependent Schema Definitions

2.3.1 W3C XML Schema Syntax

The RM schema relies upon data structures defined by the World Wide Web Consortium's (W3C) XML-Schema syntax. Consequently, the RM schema imports the W3C's XML schema with the following namespace:

```
http://www.w3.org/2001/XMLSchema
```

The RM schema associates the abovementioned schema with the "xs" namespace prefix.

2.3.2 W3C XML-Signature Syntax

The RM schema relies upon data structures defined by the World Wide Web Consortium's (W3C) XML-Signature digital signature syntax. Consequently, the RM schema imports the W3C's digital signature XML schema with the following namespace:

```
http://www.w3.org/2000/09/xmldsig#
```

The RM schema associates the abovementioned schema with the "ds" namespace prefix.

2.4 Notice Regarding Notation

The current specification document is heavily dependent on the Core Integrity Schema specification [3] since the RM Schema inherits from the Core Integrity Schema. As such, the Core Integrity Schema is the authoritative source regarding the description and definition of elements and attributes inherited from the Core Integrity Schema.

In order to provide ease of readability of the current document and for completeness, in this document any text with gray shading or background (such as here) is denoted as having been obtained from the *Core Integrity Schema* specification [3]. As such, further information regarding such elements or attributes should be found in [3].

3 Reference Manifest (RM) Schema

schema location: http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/rm#
attribute form default: **unqualified**
element form default: **qualified**
targetNamespace: **http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/rm#**

Elements	Complex types
Rimm	**RimmType**

Complex types
AssertionType
ComponentIDType
ComponentRefType
ConfidenceValueType
DigestMethodType
DigestValueType
HashType
IntegrityManifestType
PlatformClassType
SignerInfoType
TransformMethodType
ValueType
VendorIdType

3.1 Complex Types

3.1.1 complexType RimmType

3.1.1.1 Description

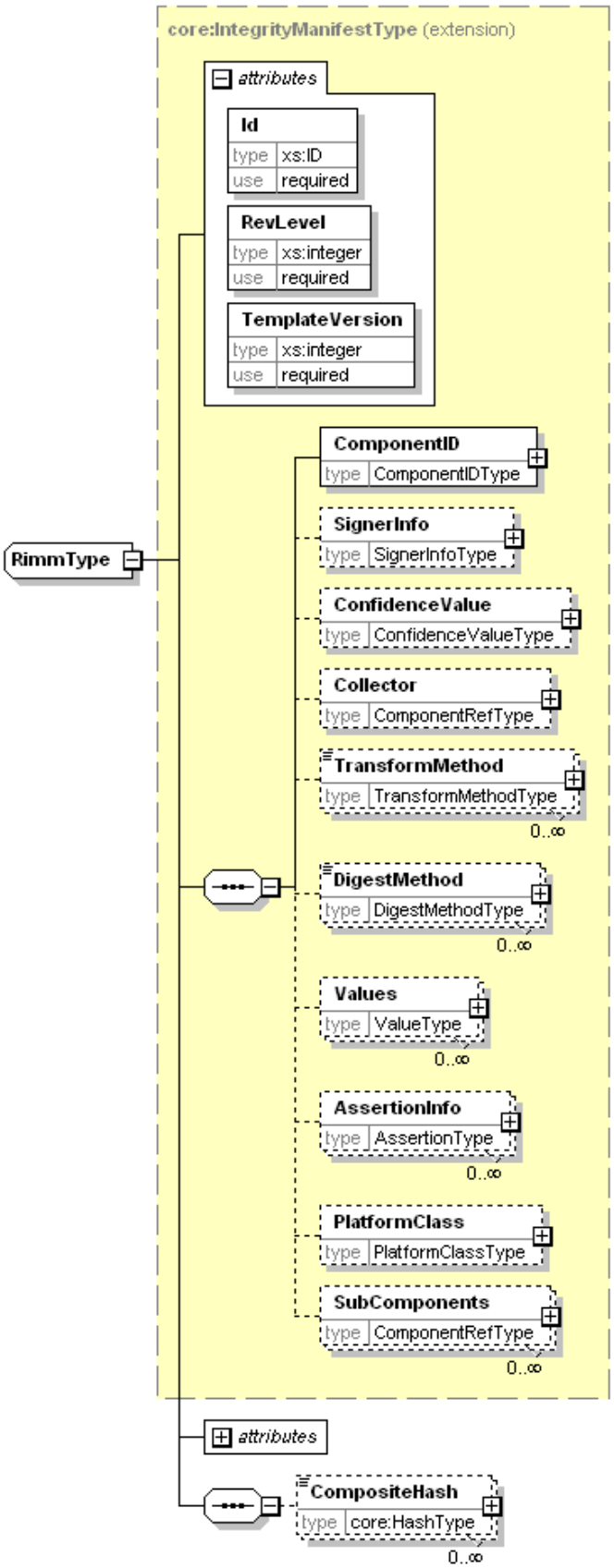
The Reference Manifest (RM) is the representation of a component's reference measurements [1] created by an authoritative party (e.g. vendor, manufacturer, or IT department). The purpose is to support a comparison of an operational environment against known good (Reference) measurements. Each RM describes a single component; however a component may have many subcomponents, each of which may have a corresponding RM.

The RM structure is derived from the Core Integrity Schema [3]. The RM extends the core schema through restriction as defined by xml schema.

The RM relies on domain-specific schemas for describing the metadata of the reference values. Examples domain-specific schemas include the Simple Values Schema and Binary Values Schema.

It is useful to note that RM has attributes that it inherits from the Core Schema, as well attributes that it extends from the Core Schema.

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/rm#

type extension of **core:IntegrityManifestType**

properties base core:IntegrityManifestType

children **ComponentID** **SignerInfo** **ConfidenceValue** **Collector** **TransformMethod** **DigestMethod** **Values** **AssertionInfo** **PlatformClass** **SubComponents** **CompositeHash**

used by element **Rimm**

attributes

Name	Type	Use	Default	Fixed
Id	**xs:ID**	required		
RevLevel	**xs:integer**	required		
TemplateVersion	**xs:integer**	required		
UUID	**xs:NMTOKEN**	required		

3.1.1.2 Attribute Details

Component	Description
ID	This is the RM ID. This is a globally unique identifier (e.g. UUID as defined by …) for the RM structure which can be used to distinguish multiple RM instances describing the same component.
RevLevel	The revision level of the RM covers the cases where the component ID is the same, but the integrity measurement values in the RM instance change. 2 specific cases are as follows: 1) Values change, component ID the same 2) RM xml does not change, but the domain specific xml changes (e.g. instead of simple values, use binary image)
TemplateVersion	TemplateVersion indicates the revision of the structure of this Reference Manifest. All new Reference Manifests should use a 1 in this field and each time the structure of the Reference Manifest changes, this field should be incremented. The structure indicates the organization of component/sub-component hierarchy described by the document. If a new component is added or the sub-component set changes this reflects a different organization of the document. This field is used during attestation to detect when the two parties have the same Reference Manifest so it can be used as the basis for organizing the resulting Integrity Report.
UUID	This is the identifier for the instance of the structure. It needs to be globally unique in order to be able to be used to correlate a snapshot instance and a RM instance.

3.1.1.3 XML

source

```
<xs:complexType name="RimmType">
 <xs:complexContent>
  <xs:extension base="core:IntegrityManifestType">
   <xs:sequence>
    <xs:element name="CompositeHash" type="core:HashType" minOccurs="0" maxOccurs="unbounded"/>
   </xs:sequence>
   <xs:attribute name="RevLevel" type="xs:integer" use="required"/>
   <xs:attribute name="TemplateVersion" type="xs:integer" use="required"/>
   <xs:attribute name="UUID" type="xs:NMTOKEN" use="required"/>
  </xs:extension>
 </xs:complexContent>
</xs:complexType>
```

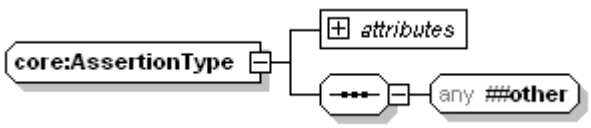
3.1.2 complexType core:AssertionType

3.1.2.1 Description [3]

AssertionType consists of a record identifier and any other element containing assertions expressed in XML. Assertions are specific to a domain of interpretation, hence should be described using an applicable schema definition. AssertionType provides an extensibility feature for incorporating domain-specific assertions into integrity manifest and reporting structures. The TCG Security Qualities [5] schema is an example of an XML schema containing assertions.

3.1.2.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

properties abstract false

used by element core:IntegrityManifestType/AssertionInfo

attributes

Name	Type	Use	Default	Fixed
Id	**xs:ID**			

3.1.2.3 Attribute Detail [3]

Component	Description
ID	Globally unique record instance identifier. ID may be used to distinguish multiple instances of elements of type AssertionType. If the domain-specific schema defines an xs:ID identifier, it should have the same value as ID.

3.1.2.4 XML

source

```
<xs:complexType name="AssertionType" abstract="false">
  <xs:sequence>
    <xs:any namespace="##other" processContents="lax"/>
  </xs:sequence>
  <xs:attribute name="Id" type="xs:ID"/>
</xs:complexType>
```

3.1.3 complexType core:ComponentIDType

3.1.3.1 Description [3]

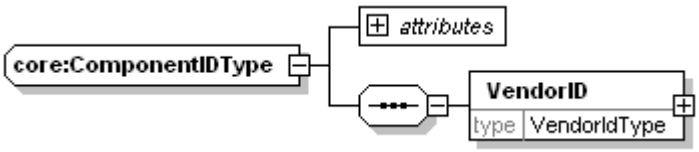
The ComponentIDType complex type represents an atomic integrity element identifying a particular program code or logic (hereafter referred to as a component). The identifier does not try to distinguish multiple instances of the same code or logic. For example, the ComponentType complex type is used within a TCG Reference Manifest (RM) to represent application integrity values derived from a baseline build image. ComponentIDType is also used by the Snapshot complex type in the TCG Integrity Report (IR) schema to capture actual measurements of components that may be extended into PCRs.

ComponentIDType is a set of attributes accommodating a wide range of change management schemes that when combined uniquely identifies a change-controlled item. The package, program code or logic under change management will have processes for ensuring integrity of its image. VendorID must uniquely identify an entity that maintains the change management process. If the VendorID is a GUID, then it is assumed the change management process owner can be obtained some other way (e.g. via database lookup using the GUID as a database key).

Most attributes are optional to ensure applicability across a variety of change management systems. However the vendorID element must be unique with respect to all possible vendors.

Version 2.0 of this specification introduced two new mandatory attributes in order to allow the ComponentIDType to be more useful for attestations. The newly added FunctionalComponentID and ComponentVendorID values are required attributes so MUST be present for any Reference Manifest for use with attestation. These values help identify the specific functional component being measured and the version of the reference manifest schema that is being used. If these values are absent, then the 1.0 reference manifest schema is assumed to be in use.

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

children **VendorID**

used by elements **core:ComponentRefType/ComponentID** **core:IntegrityManifestType/ComponentID**

attributes

Name	Type	Use	Default	Fixed
Id	**xs:ID**	required		
ComponentVendorId	**xs:integer**	required		
FunctionalComponentId	**xs:long**	required		
SimpleName	**xs:normalizedString**	optional		
ModelName	**xs:normalizedString**	optional		
ModelNumber	**xs:normalizedString**	optional		
ModelSerialNumber	**xs:normalizedString**	optional		
ModelSystemClass	**xs:normalizedString**	optional		
VersionMajor	**xs:integer**	optional		
VersionMinor	**xs:integer**	optional		
VersionBuild	**xs:integer**	optional		
VersionString	**xs:normalizedString**	optional		
MfgDate	**xs:dateTime**	optional		
PatchLevel	**xs:normalizedString**	optional		
DiscretePatches	**xs:NMTOKENS**	optional		

3.1.3.2 Attribute Details [3]

Component	Description
Id	Record instance identifier – recommended globally unique
ComponentVendorID	24-bit Integer SMI value for the vendor.
FunctionalComponentID	64-bit Integer ID associated with the functional component itself
SimpleName	String-ified version information for simple compare operations
ModelName	Model name with which the component is marketed
ModelNumber	Alphanumeric model number with which the component is identified
ModelSerialNumber	Alphanumeric model serial number with which the component is identified
ModelSystemClass	Vendor-specific system type or environment with which the component is associated
VersionMajor	Major version number of the component
VersionMinor	Minor version number of the component
VersionBuild	Build number of the component
VersionString	String with which the component's version may be identified
BuildDate	Date on which the component was manufactured
PatchLevel	Patch level of the component
DiscretePatches	Token strings enumerating each discrete patch that has been applied to the component; that is not also represented by PatchLevel or other attributes in ComponentType

3.1.3.3 XML

source

```
<xs:complexType name="ComponentIDType">
  <xs:sequence>
    <xs:element name="VendorID" type="VendorIdType"/>
  </xs:sequence>
  <xs:attribute name="Id" type="xs:ID" use="required"/>
  <xs:attribute name="ComponentVendorId" type="xs:integer" use="required"/>
  <xs:attribute name="FunctionalComponentId" type="xs:long" use="required"/>
```

```
<xs:attribute name="SimpleName" type="xs:normalizedString" use="optional"/>
<xs:attribute name="ModelName" type="xs:normalizedString" use="optional"/>
<xs:attribute name="ModelNumber" type="xs:normalizedString" use="optional"/>
<xs:attribute name="ModelSerialNumber" type="xs:normalizedString" use="optional"/>
<xs:attribute name="ModelSystemClass" type="xs:normalizedString" use="optional"/>
<xs:attribute name="VersionMajor" type="xs:integer" use="optional"/>
<xs:attribute name="VersionMinor" type="xs:integer" use="optional"/>
<xs:attribute name="VersionBuild" type="xs:integer" use="optional"/>
<xs:attribute name="VersionString" type="xs:normalizedString" use="optional"/>
<xs:attribute name="MfgDate" type="xs:dateTime" use="optional"/>
<xs:attribute name="PatchLevel" type="xs:normalizedString" use="optional"/>
<xs:attribute name="DiscretePatches" type="xs:NMTOKENS" use="optional"/>
</xs:complexType>
```

3.1.4 complexType core:ComponentRefType

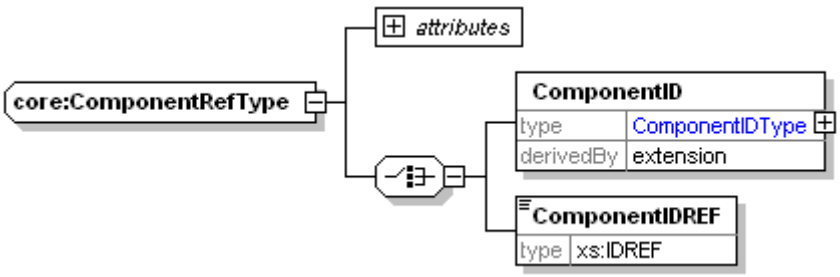
3.1.4.1 Description [3]

The ComponentRefType complexType is used to refer to components in other locations documents or repositories. There are three references that are useful in identifying a component.

- ComponentIDREF – a reference within an XML document.
- ComponentLoc – a reference to a web resource.
- ComponentID element – a ComponentIDType structure whose attributes may be used to perform a database query.

3.1.4.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

children **ComponentID** **ComponentIDREF**

used by
elements **core:IntegrityManifestType/Collector** **core:SignerInfoType/SigningComponent** **core:IntegrityManifestType/SubComponents**

attributes

Name	Type	Use	Default	Fixed
ComponentLoc	**xs:anyURI**	optional		

3.1.4.3 Attribute Detail [3]

Component	Description
ComponentLoc	A URI referencing a document containing an element of type ComponentIDType

3.1.4.4 XML

source

```
<xs:complexType name="ComponentRefType">
 <xs:choice>
  <xs:element name="ComponentID">
   <xs:complexType>
    <xs:complexContent>
```

```
            <xs:extension base="ComponentIDType"/>
          </xs:complexContent>
        </xs:complexType>
      </xs:element>
      <xs:element name="ComponentIDREF" type="xs:IDREF"/>
    </xs:choice>
    <xs:attribute name="ComponentLoc" type="xs:anyURI" use="optional"/>
  </xs:complexType>
```

3.1.5 complexType core:ConfidenceValueType

3.1.5.1 Description [3]

The `ConfidenceValueType` complex type represents the level of confidence (hereafter referred to as a *confidence value*) with which a numerical representation of trust may be given to the assertion with which it is associated. For example, the `ConfidenceValueType` complex type is applied within the `IntegrityMetadataType` complex type to identify the level of confidence with which to trust a single collection of integrity metadata.

Further examples of assertions that may be assigned confidence values include integrity assertions and integrity values (represented using `IntegrityAssertionType` and `IntegrityValueType` complex types, respectively).

A confidence value is a rational number. Two values are integral to the calculation of a confidence value:

- *Score* – The confidence points given to an assertion. The score must be greater than or equal to 0, and less than or equal to the specified basis.
- *Basis* – The maximum number of confidence *points* that may be given to an assertion. The basis must be an integer greater than 0.
- *Authority* – The entity that defines criteria for establishing the Basis is optionally provided in the form of a URI.

An assertion's confidence value is calculated by dividing its score into its basis. For example, given a basis of 100, an assertion whose score is 95 will receive a confidence value of 0.95.

Cooperation between producers and consumers of documents containing ConfidenceValue may establish scoring conventions such that all have a common frame of understanding. This specification does not define such a convention. However, a URI reference to an entity that defines such criteria can be provided.

diagram

namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

used by element **core:IntegrityManifestType/ConfidenceValue**

attributes

Name	Type	Use	Default	Fixed
Score	**xs:integer**	required		
Basis	**xs:integer**	required		
Authority	**xs:anyURI**	optional		

3.1.5.2 Attribute Detail [3]

Component	Description
Score	Confidence points given to an assertion. Greater than or equal to 0, and less than or equal to the specified basis.
Basis	Maximum number of confidence points that may be given to an assertion. Greater than 0.
Authority	Reference to an authoritative source that defines criteria for establishing the Basis value.

3.1.5.3 XML

source

```
<xs:complexType name="ConfidenceValueType">
  <xs:attribute name="Score" type="xs:integer" use="required"/>
```

```
  <xs:attribute name="Basis" type="xs:integer" use="required"/>
  <xs:attribute name="Authority" type="xs:anyURI" use="optional"/>
 </xs:complexType>
```

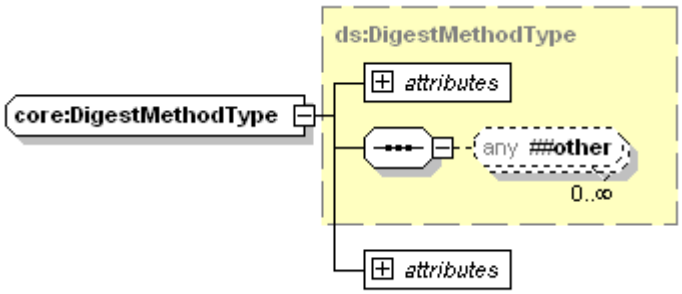
3.1.6 complexType core:DigestMethodType

3.1.6.1 Description [3]

DigestMethodType identifies cryptographic hash algorithms. There may be several different digest algorithms used when generating a Reference Manifest (RM). Instances of elements of type DigestMethodType are referenced using the ID attribute.

3.1.6.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type extension of **ds:DigestMethodType**

properties
- base ds:DigestMethodType

used by
- element **core:IntegrityManifestType/DigestMethod**

attributes

Name	Type	Use	Default	Fixed
Algorithm	**xs:anyURI**	required		
Id	**xs:ID**	required		

3.1.6.3 Attribute Detail [3]

Component	Description
Id	Document unique record instance identifier. Id is used in other parts of the document to reference instances of hash algorithm identifiers.
Algorithm	xs:anyURI defining a well-known digest algorithm. SHA-1 must be implemented as a minimum for interoperability. (e.g. http://www.w3.org/2000/09/xmldsig#sha1)
any##other	Defines other digest algorithms not available through the Algorithm attribute.

3.1.6.4 XML

source

```
<xs:complexType name="DigestMethodType">
 <xs:complexContent>
  <xs:extension base="ds:DigestMethodType">
   <xs:attribute name="Id" type="xs:ID" use="required"/>
  </xs:extension>
 </xs:complexContent>
</xs:complexType>
```

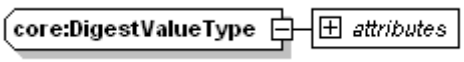
3.1.7 complexType core:DigestValueType

3.1.7.1 Description [3]

DigestValueType is derived by extension from XML Signature schema. It is used as a convenience for deriving other types (such as HashType) that may be extended or restricted with other attributes.

DigestValueType is a xs:base64binary containing the result of a cryptographic digest operation.

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type extension of **ds:DigestValueType**

properties base ds:DigestValueType

used by complexType **core:HashType**

attributes

Name	Type	Use	Default	Fixed
Id	**xs:ID**	required		
AlgRef	**xs:IDREF**	required		
TransformRefs	**xs:IDREFS**			

3.1.7.2 Attribute Detail [3]

Component	Description
Id	Document unique record instance identifier. Id is used to reference instances of hash algorithms that may be in use by a bounding document.
AlgRef	AlgRef refers to a hash algorithm as defined by **DigestMethodType**.
TransformRefs	Refers to transformation functions defined by TransformMethod elements of type **TransformMethodType**.

3.1.7.3 XML

source

```
<xs:complexType name="DigestValueType">
 <xs:simpleContent>
  <xs:extension base="ds:DigestValueType">
   <xs:attribute name="Id" type="xs:ID" use="required"/>
   <xs:attribute name="AlgRef" type="xs:IDREF" use="required"/>
   <xs:attribute name="TransformRefs" type="xs:IDREFS"/>
  </xs:extension>
 </xs:simpleContent>
</xs:complexType>
```

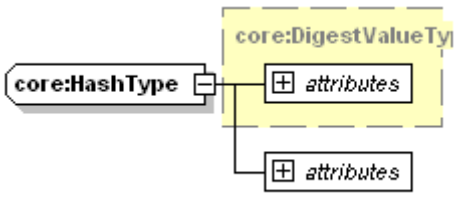
3.1.8 complexType core:HashType

3.1.8.1 Description [3]

HashType extends DigestValueType appending the ExtendOrder attribute. ExtendOrder is used to identify the sequence in which documents are extended (hashed). AlgRef identifies the hash algorithm used. TransformRefs identifies transformation algorithms that are applied to the document prior to applying the hash algorithm.

3.1.8.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type extension of **core:DigestValueType**

properties base DigestValueType

used by element **RimmType/CompositeHash**

attributes

Name	Type	Use	Default	Fixed
Id	**xs:ID**	required		
AlgRef	**xs:IDREF**	required		
TransformRefs	**xs:IDREFS**			
ExtendOrder	**xs:IDREFS**			

3.1.8.3 Attribute Detail

Component	Description
ExtendOrder	ExtendOrder contains an ordered list of xs:IDREF values. Values at the beginning of the list occur before values at the end. Therefore, the first entry in the list would be the first value extended, the last entry would be the last value extended.

3.1.8.4 XML

source

```
<xs:complexType name="HashType">
  <xs:simpleContent>
    <xs:extension base="DigestValueType">
      <xs:attribute name="ExtendOrder" type="xs:IDREFS"/>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
```

3.1.9 complexType core:IntegrityManifestType

3.1.9.1 Description [3]

The IntegrityManifestType complex type can be used to describe integrity attributes of program code, discrete logic and packages of components. Any element that can be placed under change control is a candidate for being described using IntegrityManifestType complex type.

Elements of IntegrityManifestType include:

- ComponentID – is a unique complex identifier linking the component to a change management process.
- SignerInfo – is a signature over the Integrity Manifest. It includes information about the entity that produced the signature. A single signature may be applied.
- ConfidenceValue – contains a score as a single value aggregating several criteria for establishing a degree of assurance (or trust) that the values and assertions made by the manifest are correct.
- Collector – is a reference to the utility (component) used to construct the integrity manifest. A manifest for the Collector may be separately obtained for information relating to the environment that produced *this* integrity manifest. A single collector may be referenced.
- TransformMethod – contains algorithm identifiers for transforms that may have been applied prior to applying a digest method. Multiple transformation methods may be defined.

- DigestMethod – contains algorithm identifiers for hash algorithms that are used to compute message digests. Multiple digest methods may be defined.
- Values – contains integrity measurements (message digests) that pertain to *this* component. It is reasonable (even desirable) that schemas capturing domain specific structure should incorporate a composite hash structure that is incorporated into an instantiation of Integrity Manifest with an element of type HashType. Multiple instances of Values elements may be supplied.
- AssertionInfo – contains domain specific description of attributes affecting quality, assurance or reliability assessments, but where it isn't possible for measurement engines to collect *actual* values. Multiple instances of AssertionInfo elements may be supplied.
- PlatformClass – identifies the type of platform that integrity values pertain to. In particular, the methodology for PCR allocation is specified by platform specific specifications.
- SubComponents – are references to finer grain components that make up *this* component.

3.1.9.2 Diagram

diagram

namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

properties abstract true

children **ComponentID** **SignerInfo** **ConfidenceValue** **Collector** **TransformMethod** **DigestMethod** **Values** **AssertionInfo** **PlatformClass** **SubComponents**

used by complexType **RimmType**

attributes

Name	Type	Use	Default	Fixed
Id	**xs:ID**	required		
RevLevel	**xs:integer**	required		
TemplateVersion	**xs:integer**	required		

3.1.9.3 Attribute Detail [3]

Component	Description
Id	Globally unique record instance identifier. Id may be used by external systems, documents and *this* document to reference an instance of a component structure.

RevLevel	RevLevel is a revision number (increment for more recent revision) to distinguish revisions of an integrity manifest structure. RevLevel applies to instances of integrity manifest structures having the same Id value.
TemplateVersion	TemplateVersion indicates the revision of the structure of this Integrity Manifest. All new Integrity Manifests should use a 1 in this field and each time the structure of the Integrity Manifest changes, this field should be incremented. The structure indicates the organization of component/sub-component hierarchy described by the document. If a new component is added or the sub-component set changes this reflects a different organization of the document. This field is used during attestation to detect when the two parties have the same Integrity Manifest so it can be used as the basis for organizing the resulting Integrity Report.

3.1.9.4 XML

source

```
<xs:complexType name="IntegrityManifestType" abstract="true">
  <xs:sequence>
    <xs:element name="ComponentID" type="ComponentIDType"/>
    <xs:element name="SignerInfo" type="SignerInfoType" minOccurs="0"/>
    <xs:element name="ConfidenceValue" type="ConfidenceValueType" minOccurs="0"/>
    <xs:element name="Collector" type="ComponentRefType" minOccurs="0"/>
    <xs:element name="TransformMethod" type="TransformMethodType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="DigestMethod" type="DigestMethodType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="Values" type="ValueType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="AssertionInfo" type="AssertionType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="PlatformClass" type="PlatformClassType" minOccurs="0"/>
    <xs:element name="SubComponents" type="ComponentRefType" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
  <xs:attribute name="Id" type="xs:ID" use="required"/>
  <xs:attribute name="RevLevel" type="xs:integer" use="required"/>
  <xs:attribute name="TemplateVersion" type="xs:integer" use="required"/>
</xs:complexType>
```

3.1.10 complexType core:PlatformClassType

3.1.10.1 Description [3]

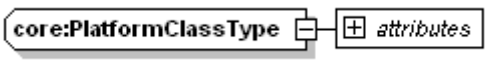
PlatformClassType enumerates platform classifications as determined by the Trusted Computing Group (TCG). Platform classifications can be used to apply platform specific interpretations of integrity values and quality assertions.

PlatformClassType associates a component to a platform family or classification. The association can be used to qualify usage conventions associated with digest creation, the number of allowable digests and semantics for digest association with other components in a system.

A vendor specific classification may be provided by defining a platform identifier based on a vendor specific namespace.

3.1.10.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

used by element **core:IntegrityManifestType/PlatformClass**

attributes

Name	Type	Use	Default	Fixed
Class	**xs:anyURI**	optional		

3.1.10.3 Attribute Detail [3]

Component	Description
Class	A vendor specific platform classification. If the URI does not unambiguously determine the vendor, the VendorID of the ComponentID for the integrity manifest is taken to be the vendor.

TCG defines platform class URIs. They can be used to identify the TCG platform-specific specification that applies to the platform. In particular it can be used to distinguish how Trusted Platform Module (TPM) resources, such as PCRs can be interpreted.

Class Identifiers:

http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#PC_CLIENT_X86_BIOS
Signifyies an x86 based system with BIOS based firmware.

http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#PC_CLIENT_X86_EFI
Signifyies an x86 based system with EFI based firmware.

3.1.10.4 XML

source
```
<xs:complexType name="PlatformClassType">
  <xs:attribute name="Class" type="xs:anyURI" use="optional"/>
</xs:complexType>
```

3.1.11 complexType core:SignerInfoType

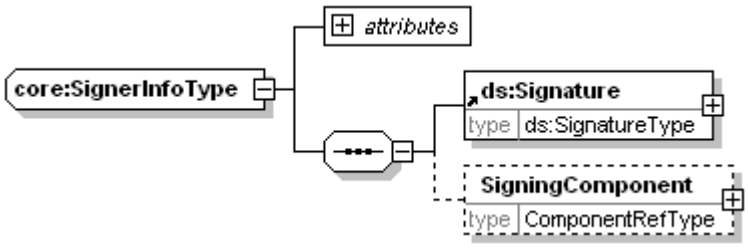
3.1.11.1 Description [3]

Each SignerInfoType structure has the following structure:

- *Digital signature* – Contains the digital signature resulting from signing Integrity Metadata elements. Authority to sign is determined in large part by verifier policies. The structure is represented by the `ds:Signature` element.
- *Confidence value* – Identifies the level of confidence with which trust may be given to the integrity information assumed within the structure. Represented by the `ConfidenceValue` element.
- *SigningComponent* – Identifies the program code or logic responsible for compiling, measuring and formatting, the integrity information contained within the structure. Represented by a ComponentID element.

3.1.11.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

children **ds:Signature** **SigningComponent**

used by element **core:IntegrityManifestType/SignerInfo**

attributes

Name	Type	Use	Default	Fixed
DateTime	**xs:dateTime**			
Nonce	**xs:base64Binary**			

source
```
<xs:complexType name="SignerInfoType">
  <xs:sequence>
    <xs:element ref="ds:Signature"/>
    <xs:element name="SigningComponent" type="ComponentRefType" minOccurs="0"/>
  </xs:sequence>
  <xs:attribute name="DateTime" type="xs:dateTime"/>
  <xs:attribute name="Nonce" type="xs:base64Binary"/>
</xs:complexType>
```

3.1.11.3 Attribute Detail [3]

Component	Description
DateTime	The date and time that the signature was generated. This attribute, if specified, must be included in the signature calculation.
Nonce	A value obtained from a remote party that is included with a signature to guarantee freshness and to avoid replay attack. This attribute, if specified, must be included in the signature calculation.

3.1.11.4 XML

source

```
<xs:complexType name="SignerInfoType">
  <xs:sequence>
    <xs:element ref="ds:Signature"/>
    <xs:element name="SigningComponent" type="ComponentRefType" minOccurs="0"/>
  </xs:sequence>
  <xs:attribute name="DateTime" type="xs:dateTime"/>
  <xs:attribute name="Nonce" type="xs:base64Binary"/>
</xs:complexType>
```

3.1.12 complexType core:TransformMethodType

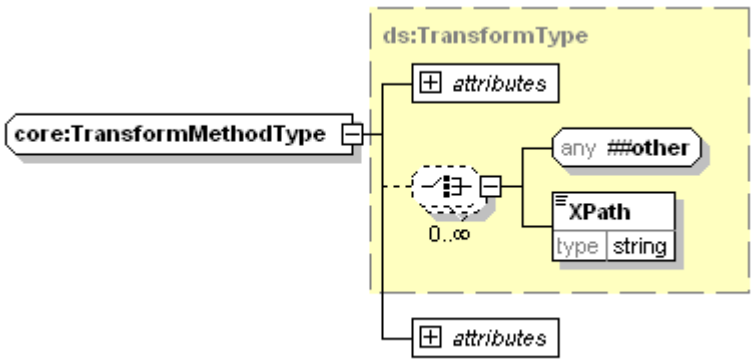
3.1.12.1 Description [3]

The TransformMethodType is used to define an element that identifies a transformation algorithm to be applied prior to a hash computation operation.

The Id attribute is used by other elements that reference one or more transformation algorithms.

3.1.12.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type extension of **ds:TransformType**

properties base ds:TransformType

children **XPath**

used by element **core:IntegrityManifestType/TransformMethod**

attributes

Name	Type	Use	Default	Fixed
Algorithm	**xs:anyURI**	required		
Id	**xs:ID**	required		

3.1.12.3 Attribute Detail [3]

Component	Description
Algorithm	URI pointing to a transformation algorithm identifier
Id	An identifier unique to *this* document

3.1.12.4 XML

source

```
<xs:complexType name="TransformMethodType">
  <xs:complexContent>
    <xs:extension base="ds:TransformType">
      <xs:attribute name="Id" type="xs:ID" use="required"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

3.1.13 complexType core:ValueType

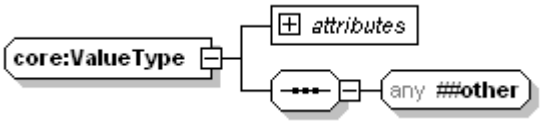
3.1.13.1 Description [3]

ValueType consist of a record identifier and an element **any##other**. It is anticipated that another schema defines integrity measurements to be included in the parent element.

The Id attribute is used to uniquely identify instances of child elements included in *this* document.

3.1.13.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

used by element **core:IntegrityManifestType/Values**

attributes

Name	Type	Use	Default	Fixed
Id	**xs:ID**			

3.1.13.3 Attribute Detail [3]

Component	Description
Id	Record instance identifier of a child element whose schema definition is not in the current namespace. The Id is unique to the parent XML document.

3.1.13.4 XML

source

```
<xs:complexType name="ValueType">
  <xs:sequence>
    <xs:any namespace="##other" processContents="lax"/>
  </xs:sequence>
  <xs:attribute name="Id" type="xs:ID"/>
</xs:complexType>
```

3.1.14 complexType core:VendorIdType

3.1.14.1 Description [3]

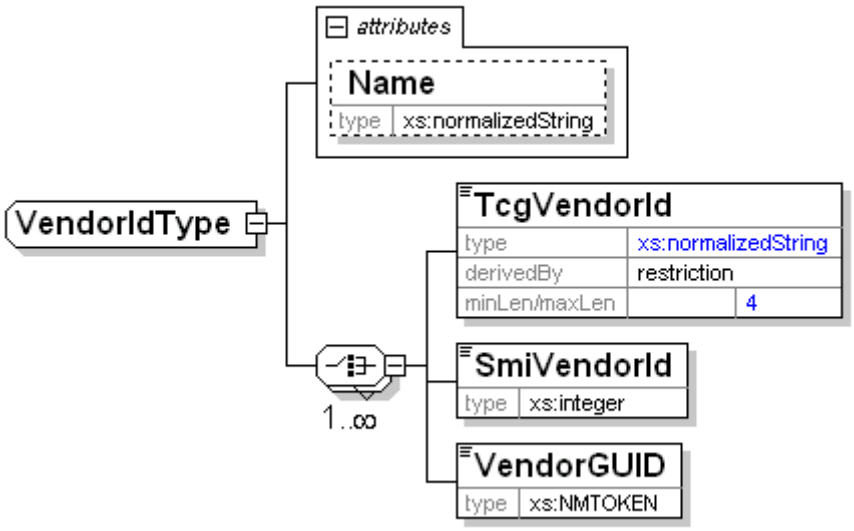
The VendorIdType is used to uniquely identify a vendor, manufacturer or other entity. There are two elements (SmiVendorId and TcgVendorId) that have managed number spaces ensuring uniqueness. VendorGUID uniqueness is derived algorithmically.

Only one form of VendorID element is required by the choice. More than one VendorID elements may be specified.

A familiar name can be specified, but should not be used to establish uniqueness properties.

3.1.14.2 Diagram

diagram



namespace	http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#
children	**TcgVendorId SmiVendorId VendorGUID**
used by	element **core:ComponentIDType/VendorID**

attributes

Name	Type	Use	Default	Fixed
Name	**xs:normalizedString**			

3.1.14.3 Attribute Detail [3]

Component	Description
Name	Familiar name associated with the component manufacturer or vendor

3.1.14.4 XML

source

```
<xs:complexType name="VendorIdType">
 <xs:choice maxOccurs="unbounded">
  <xs:element name="TcgVendorId">
   <xs:simpleType>
    <xs:restriction base="xs:normalizedString">
     <xs:maxLength value="4"/>
    </xs:restriction>
```

```
            </xs:simpleType>
          </xs:element>
          <xs:element name="SmiVendorId" type="xs:integer"/>
          <xs:element name="VendorGUID" type="xs:NMTOKEN"/>
        </xs:choice>
        <xs:attribute name="Name" type="xs:normalizedString"/>
      </xs:complexType>
```

3.2 Elements

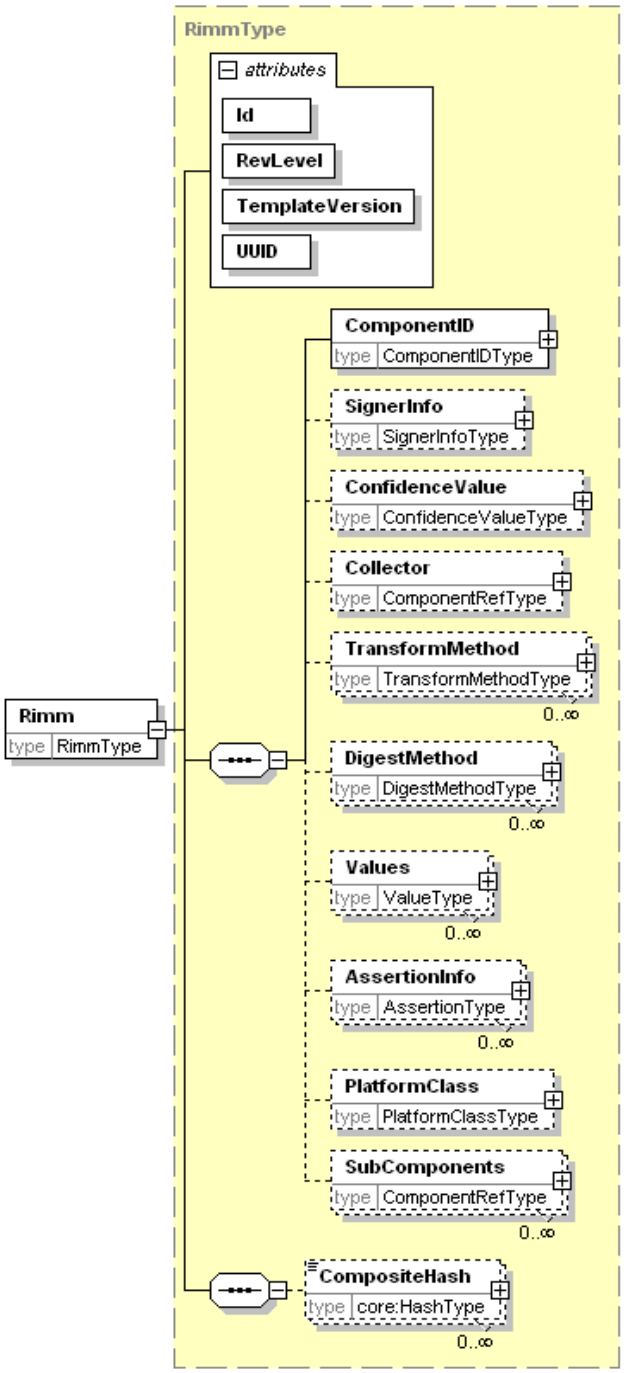
3.2.1 element Rimm

3.2.1.1 Description

See Section 3.1.1.

3.2.1.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/rm#

type **RimmType**

properties content complex

children **ComponentID** **SignerInfo** **ConfidenceValue** **Collector** **TransformMethod** **DigestMethod** **Values** **AssertionInfo** **PlatformClass** **SubComponents** **CompositeHash**

attributes

Name	Type	Use	Default	Fixed
Id	**xs:ID**	required		
RevLevel	**xs:integer**	required		
UUID	**xs:NMTOKEN**	required		
TemplateVersion	**xs:integer**	required		

3.2.1.3 Attribute Details

See Section 3.1.1.

3.2.1.4 XML

source

```
<xs:element name="Rimm" type="RimmType"/>
```

3.2.2 element RimmType/CompositeHash

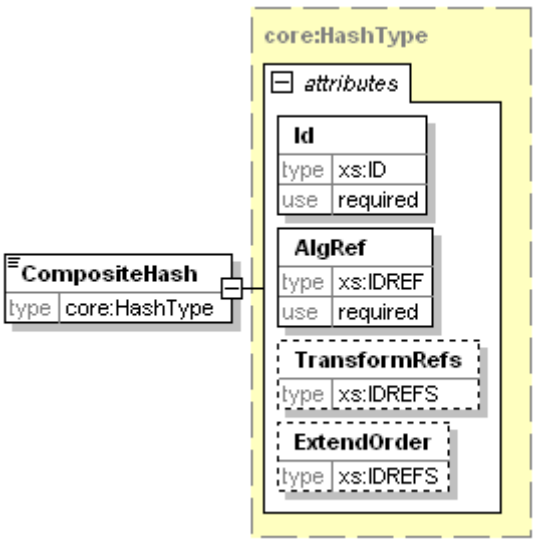
3.2.2.1 Description

CompositeHash is an element of RimmType that is used to contain the RM integrity measurement value. The CompositeHash is the final hash value covering the Values (digests) and assertions obtained from the AssertionInfo structure contained in the RM.

AlgRef refers to the digest algorithm that was used to generate the composite hash. TransformRefs refers to the transformation algorithms and filters used to preprocess the covered values.

3.2.2.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/rm#

type **core:HashType**

properties isRef 0
content complex

attributes

Name	Type	Use	Default	Fixed
Id	**xs:ID**	required		
AlgRef	**xs:IDREF**	required		
TransformRefs	**xs:IDREFS**			
ExtendOrder	**xs:IDREFS**			

3.2.2.3 Attribute Detail

Component	Description
Id	Document unique record instance identifier. Id is used to reference instances of hash algorithms that may be in use by a bounding document.
AlgRef	AlgRef refers to a hash algorithm as defined by **DigestMethodType**.
TransformRefs	Refers to transformation functions defined by TransformMethod elements of type **TransformMethodType**.
ExtendOrder	ExtendOrder contains an ordered list of xs:IDREF values. Values at the beginning of the list occur before values at the end. Therefore, the first entry in the list would be the first value extended, the last entry would be the last value extended.

3.2.2.4 XML

source

```
<xs:element name="CompositeHash" type="core:HashType" minOccurs="0" maxOccurs="unbounded"/>
```

3.2.3 element core:ComponentIDType/VendorID

3.2.3.1 Description [3]

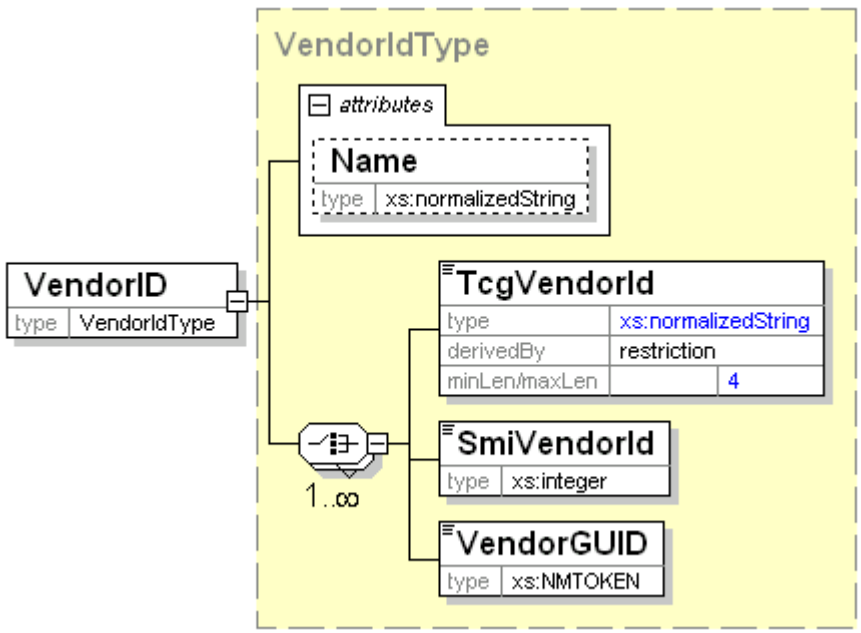
The VendorIdType is used to uniquely identify a vendor, manufacturer or other entity. There are two elements (SmiVendorId and TcgVendorId) that have managed number spaces ensuring uniqueness. VendorGUID uniqueness is derived algorithmically.

Only one form of VendorID element is required by the choice. More than one VendorID elements may be specified.

A familiar name can be specified, but should not be used to establish uniqueness properties.

3.2.3.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **core:VendorIdType**

properties
- isRef 0
- content complex

children **TcgVendorId** **SmiVendorId** **VendorGUID**

attributes	Name	Type	Use	Default	Fixed
	Name	**xs:normalizedString**			

3.2.3.3 Attribute Detail [3]

Component	Description
Name	Familiar name associated with the component manufacturer or vendor

3.2.3.4 XML

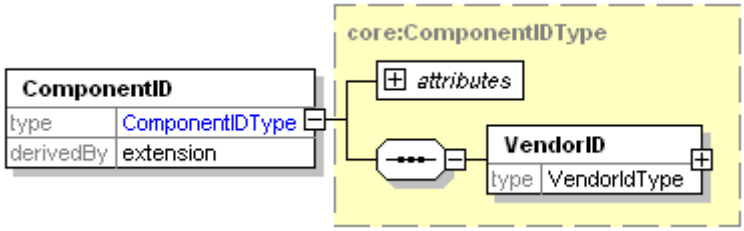
source
```
<xs:element name="VendorID" type="VendorIdType"/>
```

3.2.4 element core:ComponentRefType/ComponentID

3.2.4.1 Description

See Section 3.1.3 for description.

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type extension of **core:ComponentIDType**

properties
- isRef 0
- content complex

children **VendorID**

attributes

Name	Type	Use	Default	Fixed
Id	**xs:ID**	required		
ComponentVendorId	**xs:integer**	required		
FunctionalComponentId	**xs:long**	required		
SimpleName	**xs:normalizedString**	optional		
ModelName	**xs:normalizedString**	optional		
ModelNumber	**xs:normalizedString**	optional		
ModelSerialNumber	**xs:normalizedString**	optional		
ModelSystemClass	**xs:normalizedString**	optional		
VersionMajor	**xs:integer**	optional		
VersionMinor	**xs:integer**	optional		
VersionBuild	**xs:integer**	optional		
VersionString	**xs:normalizedString**	optional		
MfgDate	**xs:dateTime**	optional		
PatchLevel	**xs:normalizedString**	optional		
DiscretePatches	**xs:NMTOKENS**	optional		

3.2.4.2 Attribute Details

See Section 3.1.3 for more attribute details.

3.2.4.3 XML

source
```
<xs:element name="ComponentID">
  <xs:complexType>
```

```
      <xs:complexContent>
        <xs:extension base="ComponentIDType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
```

3.2.5 element core:ComponentRefType/ComponentIDREF

3.2.5.1 Description

ComponentIDREF element is a reference to a ComponentID within the current document.

3.2.5.2 Diagram

diagram

namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **xs:IDREF**

properties
- isRef 0
- content simple

3.2.5.3 XML

source

```
<xs:element name="ComponentIDREF" type="xs:IDREF"/>
```

3.2.6 element core:IntegrityManifestType/ComponentID

3.2.6.1 Description

ComponentID is an element of type RimmType that is used to create RM structures, which in turn hold metadata information pertaining to the component in question.

The ID is actually made-up of the concatenation of the manufacturer, model, number and patch level (in a string format). This allows a verification entity to perform a string-match between an ID found in an Integrity Report against one found in a RM record. Note that both a reporting and verifying entity can still look-up the actual entries in the (optional) fields (eg. ModelName, VersionMajor, etc).

There is a single ComponentID element in an Integrity Manifest [3].

3.2.6.2 Diagram

diagram

namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type core:ComponentIDType

properties
isRef 0
content complex

children VendorID

attributes

Name	Type	Use	Default	Fixed
Id	**xs:ID**	required		
ComponentVendorId	**xs:integer**	required		
FunctionalComponentId	**xs:long**	required		
SimpleName	**xs:normalizedString**	optional		
ModelName	**xs:normalizedString**	optional		
ModelNumber	**xs:normalizedString**	optional		
ModelSerialNumber	**xs:normalizedString**	optional		
ModelSystemClass	**xs:normalizedString**	optional		
VersionMajor	**xs:integer**	optional		
VersionMinor	**xs:integer**	optional		
VersionBuild	**xs:integer**	optional		
VersionString	**xs:normalizedString**	optional		
MfgDate	**xs:dateTime**	optional		
PatchLevel	**xs:normalizedString**	optional		
DiscretePatches	**xs:NMTOKENS**	optional		

3.2.6.3 Attribute Details

See Section 3.1.3.

3.2.6.4 XML

source
```
<xs:element name="ComponentID" type="ComponentIDType"/>
```

3.2.7 element core:IntegrityManifestType/SignerInfo

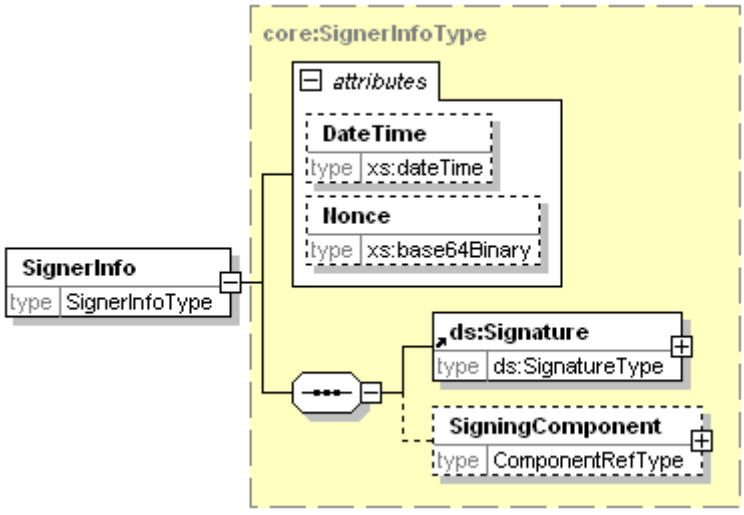
3.2.7.1 Description [3]

The SignerInfo element contains a single signature over the Integrity Manifest. The signer may provide a confidence value and reference the component used to apply the signature.

The signature may also include a timestamp supplied by the signer or a nonce supplied by a verifier.

3.2.7.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **core:SignerInfoType**

properties
isRef 0
content complex

children **ds:Signature SigningComponent**

attributes

Name	Type	Use	Default	Fixed
DateTime	**xs:dateTime**			
Nonce	**xs:base64Binary**			

3.2.7.3 XML

source
```
<xs:element name="SignerInfo" type="SignerInfoType" minOccurs="0"/>
```

3.2.8 element core:IntegrityManifestType/ConfidenceValue

3.2.8.1 Description [3]

The ConfidenceValue element is a score given to the signed manifest describing the level of trust the signer has attributed to integrity values included in the signature.

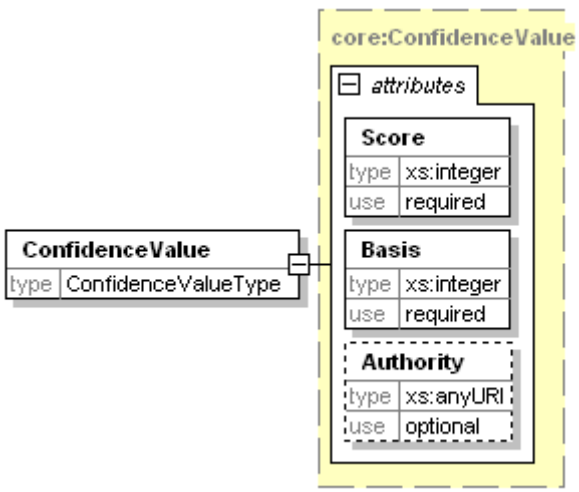
If the signer determines that confidence can be described in terms of levels and there are four possible levels then the first level could have a score of (1) with a basis of (4). Alternatively, a score of (25) would have a basis of (100).

If specified, this value must be included in the signature computation.

Basis values MUST be greater than 0.

3.2.8.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **core:ConfidenceValueType**

properties
isRef 0
content complex

attributes

Name	Type	Use	Default	Fixed
Score	**xs:integer**	required		
Basis	**xs:integer**	required		
Authority	**xs:anyURI**	optional		

3.2.8.3 Attribute Details

See Section 3.1.5.

3.2.8.4 XML

source <xs:element name="ConfidenceValue" type="ConfidenceValueType" minOccurs="0"/>

3.2.9 element core:IntegrityManifestType/Collector

3.2.9.1 Description

The Collector element contains information about the component used to construct the integrity manifest. If the signerInfo/SigningComponent element is the same as the Collector element, the Collector element may be omitted [3].

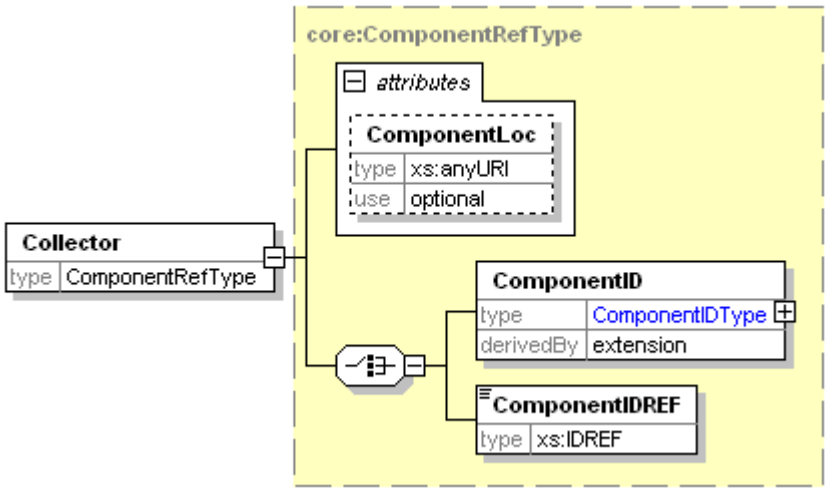
The Collector is the tool (eg. software and hardware) used to collect measurements. The structure is general enough to be used to describe a collecting software at a client (to generate an Integrity Report) – within runtime measurements context -- as well as the software-tool used by a manufacturer or third party to create RM records – within static out-of-band measurements collecting.

It is described as componentRef type since it is described as another ComponentID structure. That is, the tool itself is described as a component type in order to allow is manufacturer information and other metadata to be captured and be made accessible to a verifier entity.

ComponentLoc is an optional URI pointing to en external location of the component structure.

3.2.9.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **core:ComponentRefType**

properties isRef 0
content complex

children **ComponentID** **ComponentIDREF**

attributes

Name	Type	Use	Default	Fixed
ComponentLoc	**xs:anyURI**	optional		

3.2.9.3 XML

source <xs:element name="Collector" type="ComponentRefType" minOccurs="0"/>

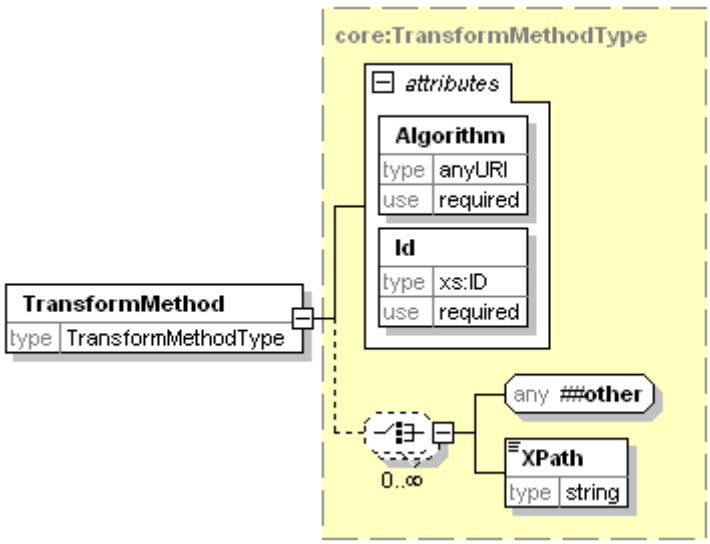
3.2.10 element core:IntegrityManifestType/TransformMethod

3.2.10.1 Description [3]

The TransformMethod element identifies a filtering algorithm applied prior to generating a digest value.

3.2.10.2 Diagram

diagram



namespace	http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#
type	core:TransformMethodType
properties	isRef 0 content complex
children	**XPath**

attributes

Name	Type	Use	Default	Fixed
Algorithm	**xs:anyURI**	required		
Id	**xs:ID**	required		

3.2.10.3 Attribute Details

See Section 3.1.12.

3.2.10.4 XML

source

```
<xs:element name="TransformMethod" type="TransformMethodType" minOccurs="0" maxOccurs="unbounded"/>
```

3.2.11 element core:IntegrityManifestType/DigestMethod

3.2.11.1 Description

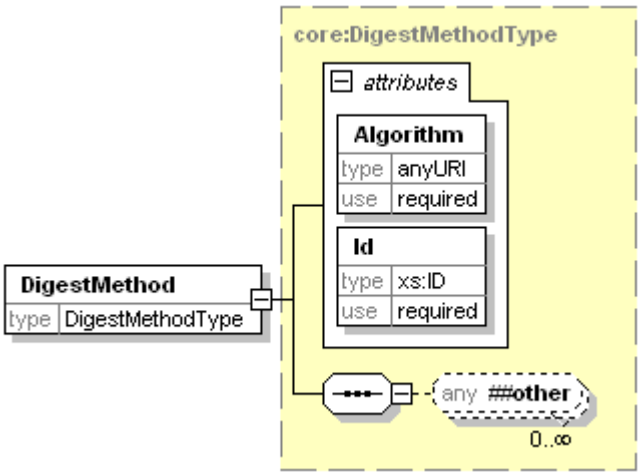
The DigestMethod element is defined by the DigestMethodType complex type [3].

DigestMethod is an element of RimmType that is used to describe the cryptographic hash algorithm that is used to create the RM digests.

RM issuers may capture reference measurements using multiple hash algorithms. Each algorithm used will have a DigestMethod to identify the algorithm. The DigestMethod:Id can be used to reference the algorithm from the CompositeHash structure.

3.2.11.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **core:DigestMethodType**

properties
isRef 0
content complex

attributes

Name	Type	Use	Default	Fixed
Algorithm	**xs:anyURI**	required		
Id	**xs:ID**	required		

3.2.11.3 Attribute Details

See Section 3.1.6.

3.2.11.4 XML

source
```
<xs:element name="DigestMethod" type="DigestMethodType" minOccurs="0" maxOccurs="unbounded"/>
```

3.2.12 element core:IntegrityManifestType/Values

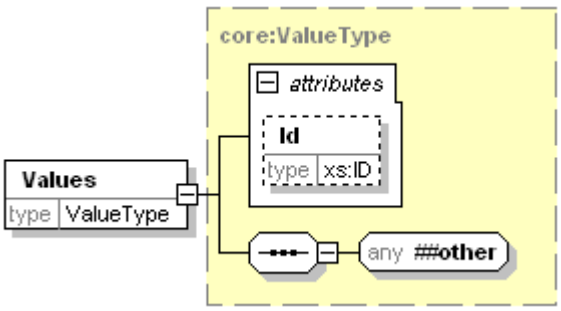
3.2.12.1 Description

The Values element in IntegrityManifestType is defined by ValueType complex type [3].

Values is an element of RimmType that contains the digest value of a measured component‘s objects or images.

3.2.12.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **core:ValueType**

properties
isRef 0
content complex

attributes	Name	Type	Use	Default	Fixed
	Id	**xs:ID**			

3.2.12.3 Attribute Details

See Section 3.1.13.

3.2.12.4 XML

source

```
<xs:element name="Values" type="ValueType" minOccurs="0" maxOccurs="unbounded"/>
```

3.2.13 element core:IntegrityManifestType/AssertionInfo

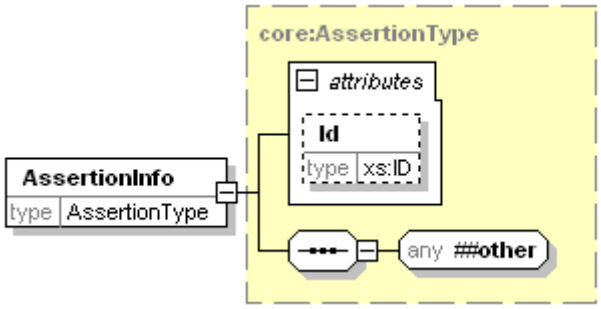
3.2.13.1 Description

The AssertionInfo element in IntegrityManifestType is defined by AssertionInfoType complex type [3].

AssertionInfo is an element of RimmType that contains assertions relating to the components and the values captured in the RM.

3.2.13.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **core:AssertionType**

properties
isRef 0
content complex

attributes	Name	Type	Use	Default	Fixed
	Id	**xs:ID**			

3.2.13.3 Attribute Details

See Section 3.1.2.

3.2.13.4 XML

source

```
<xs:element name="AssertionInfo" type="AssertionType" minOccurs="0" maxOccurs="unbounded"/>
```

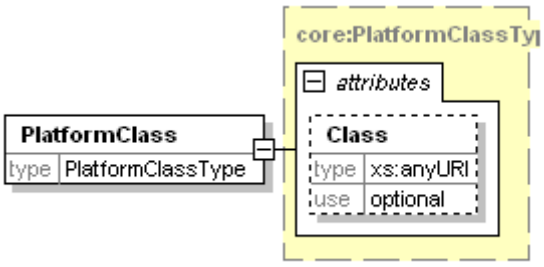
3.2.14 element core:IntegrityManifestType/PlatformClass

3.2.14.1 Description

The PlatformClass element in IntegrityManifestType is of type PlatformClassType [3].

3.2.14.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **core:PlatformClassType**

properties
isRef 0
content complex

attributes

Name	Type	Use	Default	Fixed
Class	**xs:anyURI**	optional		

3.2.14.3 XML

source
```
<xs:element name="PlatformClass" type="PlatformClassType" minOccurs="0"/>
```

3.2.15 element core:IntegrityManifestType/SubComponents

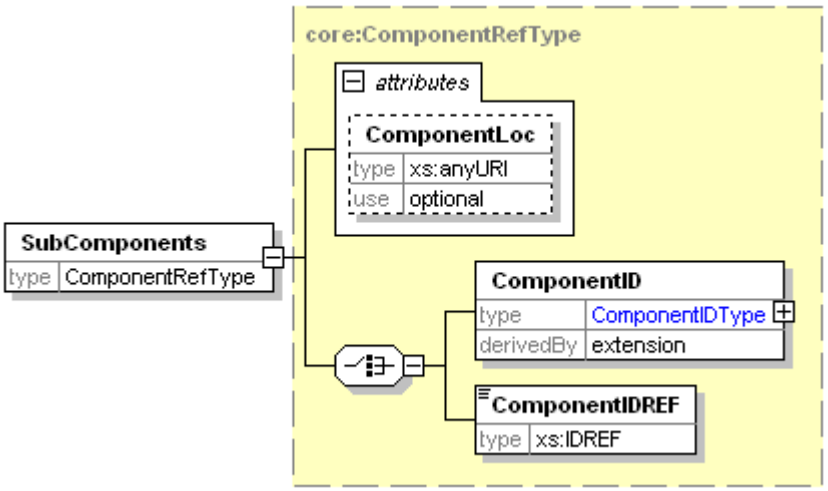
3.2.15.1 Description

The SubComponents element identifies components of a system that are a decomposition of this component. An arbitrary nesting of subcomponents can be described if the referenced subcomponent is itself an element of type IntegrityManifestType [3].

A given component may in fact be composed of more than one identifiable subcomponent. That is, a component (e.g. NIC card) may consist of subcomponents (e.g. TPM within the NIC card). Thus, the RM schema must support the case where this is case. Note that the element points to further ComponentIDs.

3.2.15.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **core:ComponentRefType**

properties isRef 0
content complex

children **ComponentID** **ComponentIDREF**

attributes

Name	Type	Use	Default	Fixed
ComponentLoc	**xs:anyURI**	optional		

3.2.15.3 Attribute Details

See Section 3.1.3.

3.2.15.4 XML

source
```
<xs:element name="SubComponents" type="ComponentRefType" minOccurs="0" maxOccurs="unbounded"/>
```

3.2.16 element core:SignerInfoType/SigningComponent

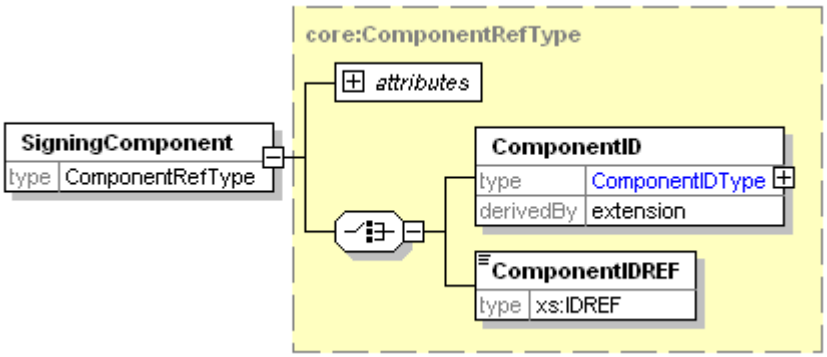
3.2.16.1 Description

The SigningComponent element identifies the tool that was used to generate the signed manifest. The signature over the manifest should include the SigningComponent element. Signing component is a reference to a document that may exist external to *this* document. The integrity values for signing component are not contained in the SigningComponent element.

If specified, this value must be included in the signature computation [3].

3.2.16.2 Diagram

diagram



namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **core:ComponentRefType**

properties isRef 0
content complex

children **ComponentID** **ComponentIDREF**

attributes

Name	Type	Use	Default	Fixed
ComponentLoc	**xs:anyURI**	optional		

3.2.16.3 Attribute Details

See Section 3.1.11.

3.2.16.4 XML

source
```
<xs:element name="SigningComponent" type="ComponentRefType" minOccurs="0"/>
```

3.2.17 element core:VendorIdType/TcgVendorId

3.2.17.1 Description

This is the vendor Id issued by the TCG. It is used to uniquely identify the party responsible for applying change management to the component. Typically this is the component manufacturer or IT.

3.2.17.2 Diagram

diagram

namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type restriction of **xs:normalizedString**

properties
isRef 0
content simple

facets
maxLength 4

3.2.17.3 XML

source

```
<xs:element name="TcgVendorId">
  <xs:simpleType>
    <xs:restriction base="xs:normalizedString">
      <xs:maxLength value="4"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
```

3.2.18 element core:VendorIdType/SmiVendorId

3.2.18.1 Description

This is a vendor Id corresponding to an SMI Network Management Private Enterprise Code issued by the Internet Assigned Number Authority (IANA). It is used to uniquely identify the party responsible for applying change management to the component. Typically this is the component manufacturer or IT.

3.2.18.2 Diagram

diagram

namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **xs:integer**

properties
isRef 0
content simple

3.2.18.3 XML

source

```
<xs:element name="SmiVendorId" type="xs:integer"/>
```

3.2.19 element core:VendorIdType/VendorGUID

3.2.19.1 Description

VendorGUID is used to uniquely identify the party responsible for applying change management to the component. Typically this is the component manufacturer or IT.

3.2.19.2 Diagram

diagram

namespace http://www.trustedcomputinggroup.org/XML/SCHEMA/2_0/core_integrity#

type **xs:NMTOKEN**

properties
isRef 0
content simple

3.2.19.3 XML

source

```
<xs:element name="VendorGUID" type="xs:NMTOKEN"/>
```

4 References

[1] Trusted Computing Group, *Reference Architecture for Interoperability* (Architecture Part I), Specification Version 1.0, TCG Published, June 2005.

[2] Trusted Computing Group, *Integrity Management Architecture* (Architecture Part 2), Specification Version 1.0, TCG Published, September 2006.

[3] Trusted Computing Group, *Core Integrity Schema*, Specification Version 2.0, TCG Published, September 2011.

[4] Trusted Computing Group, *Integrity Report Schema*, Specification Version 2.0, TCG Published, September 2011.

[5] Trusted Computing Group, *Security Qualities Schema*, Specification Version 1.0, TCG Published, September 2006.

[6] Trusted Computing Group, *Simple Object Schema*, Specification Version 1.0, TCG Published, September 2006.

[7] Trusted Computing Group, *Platform Trust Services (PTS),* Specification Version 1.0, TCG Published, September 2006.

[8] Trusted Computing Group, *TPM Specifications v1.2*, October 2003.

[9] Trusted Computing Group, *TSS Specifications v1.1*, August 2003.