

ONVIF™

ONVIF Specification Version 16.12 Release Notes

© 2008-2016 by ONVIF™ All rights reserved.

Recipients of this document may copy, distribute, publish, or display this document so long as this copyright notice, license and disclaimer are retained with all copies of the document. No license is granted to modify this document.

THIS DOCUMENT IS PROVIDED "AS IS," AND THE CORPORATION AND ITS MEMBERS AND THEIR AFFILIATES, MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR TITLE; THAT THE CONTENTS OF THIS DOCUMENT ARE SUITABLE FOR ANY PURPOSE; OR THAT THE IMPLEMENTATION OF SUCH CONTENTS WILL NOT INFRINGE ANY PATENTS, COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS.

IN NO EVENT WILL THE CORPORATION OR ITS MEMBERS OR THEIR AFFILIATES BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, ARISING OUT OF OR RELATING TO ANY USE OR DISTRIBUTION OF THIS DOCUMENT, WHETHER OR NOT (1) THE CORPORATION, MEMBERS OR THEIR AFFILIATES HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR (2) SUCH DAMAGES WERE REASONABLY FORESEEABLE, AND ARISING OUT OF OR RELATING TO ANY USE OR DISTRIBUTION OF THIS DOCUMENT. THE FOREGOING DISCLAIMER AND LIMITATION ON LIABILITY DO NOT APPLY TO, INVALIDATE, OR LIMIT REPRESENTATIONS AND WARRANTIES MADE BY THE MEMBERS AND THEIR RESPECTIVE AFFILIATES TO THE CORPORATION AND OTHER MEMBERS IN CERTAIN WRITTEN POLICIES OF THE CORPORATION.

1. Summary

The ONVIF 16.12 release incorporates a number of major enhancements and minor clarifications for better interoperability among ONVIF conformant clients and devices. The changes themselves are described in details in the list below chapters 2 and 3.

2. Additions

This release adds the following functionality to the set of ONVIF Network Interface Specifications:

2.1 Motion Region Detection

Add option API and well defined schema and related documentation for motion region detection to ONVIF Analytics Service Specification.

Extensions have been applied to:

- <http://www.onvif.org/ver20/analytics/wsd/analytics.wsd>
- <http://www.onvif.org/ver20/analytics/wsd/rules.wsd>
- Analytics Service Specification
 - 5.2.3.6 Get Rule Options
 - Annex C. Motion Detection

2.2 Privacy Masking

Add privacy mask definition to the ONVIF Media2 Service Specification.

Extensions have been applied to:

- <http://www.onvif.org/ver20/media/wsd/media.wsd>
- Media2 Service Specification
 - 5.10 Privacy Masks
 - 5.11 Capabilities

2.3 Streaming with WebSocket

Add streaming via web sockets to the ONVIF Media2 Service Specification, the ONVIF Replay Service Specification as well as the ONVIF Streaming Specification.

Extensions have been applied to:

- <http://www.onvif.org/ver20/media/wsd/media.wsd>
- <http://www.onvif.org/ver10/replay.wsd>
- Media2 Service Specification

- 5.11 Capabilities
- Replay Service Specification
 - 5.4.1 Capabilities
- Streaming Specification
 - 5.1.1.5 RTP/RTSP/TCP/WebSocket
 - 7 WebSocket transport for RTP/RTSP/TCP

2.3 Geo Location

Enhancement Device Management service for Geo Location.

Extensions have been applied to:

- <http://www.onvif.org/ver10/device/wsd/devicemgmt.wsd>
- <http://www.onvif.org/ver10/schema/onvif.xsd>
- ONVIF Core Specification
 - 8.1.2.3 GetServiceCapabilities
 - 8.3.20 Get geo location information
 - 8.3.21 Set geo location information
 - 8.3.22 Remove geo location information

2.4 Provisioning Service Specification

This specification defines the web service interface for integration with video security systems. This includes provisional PTZ commands for targeting only during device setup.

The following new items have been added:

- <http://www.onvif.org/ver10/provisioning/wsd/provisioning.wsd>
- Provisioning Service Specification

2.5 Scene Orientation

Scene Orientation support has been added to the ONVIF Media2 Service Specification.

Extensions have been applied to:

- <http://www.onvif.org/ver10/schema/onvif.xsd>
- Media2 Service Specification
 - 5.2.2 Video source configuration

3. Changes

Find below all errata from Version 16.06 to 16.12 in order to improve interoperability. The numbers correspond to the Change Request ticket numbers and are not necessarily continuously ascending.

If not noted otherwise the changes refer to the Core specification.

Note that the `GetServiceCapabilities` method of the Media2 service contains a backward incompatible fix. For details see change 1988 below.

1641 Security updates

Deprecate the 'Security' section in ONVIF Core Specification as it is replaced by the Advanced Security Specification.

Replace a sentence to delete words in INTRODUCTION section, as

Security Section: Defines the transport and message level security requirements on ONVIF compliant implementations.

With

Security Section: Defines the message level security requirements on ONVIF compliant implementations.

Add remarks 'deprecated' to some functions and hand over to Advanced Security Service in section *4.5.7 Security*

- Handle HTTPS server certificates (deprecated).
- Enable/disable HTTPS client authentication (deprecated).
- Key generation and certificate download functions (deprecated).
- Handle IEEE 802.1X supplicant certificate (deprecated).
- Handle IEEE 802.1X CA certificate (deprecated).
- IEEE 802.1X configuration (deprecated).

The deprecated functions were handed over to Advanced Security Service.

Delete whole section *4.7 Security*.

Replace a reference to security section in section *5.12.1 Authentication*

Both digest authentication and the user name token profile give only a rudimentary level of security. In a system where security is important, it is recommended to always configure the device for TLS-based access (see 10.1).

With

Both digest authentication and the user name token profile give only a rudimentary level of security. In a system where security is important, it is recommended to always configure the device for TLS-based access (see Advanced Security Service).

Move service capabilities for TLS1.0, TLS1.1, TLS1.2 and OnboardKeyGeneration to Annex D
Create section *D.2 Security in Annex D Deprecated Interfaces*, with listing deprecated APIs which are defined at section 8.4.7-8.4.20.

Section 8.2.22.4 "Security configuration" has been removed.

Related to this change the following sections have been updated:

2	Normative references	(some items should be removed)
3.1	Definitions	(some items should be removed)
3.2	Abbreviations	(some items should be removed)

1746 Integrate PTZ spaces into specification

The PTZ spaces whitepaper has been integrated the ONVIF PTZ Specification.
Those needed as normative have been integrated into chapter 5.7 PTZ Spaces.
The informative ones have been moved to Annex A.
The PTZ Coordinate Spaces is obsolete and removed from the public website..

1777 Update WS-I Basic profile 2.0 requirements

Replace the xml schema 1.0 references

W3C XML Schema Part 1: Structures Second Edition

<<http://www.w3.org/TR/xmlschema-1/>>

W3C XML Schema Part 2: Datatypes Second Edition

<<http://www.w3.org/TR/xmlschema-2/>>

With 1.1 references

W3C XML Schema Definition Language (XSD) 1.1 Part 1: Structures

<<http://www.w3.org/TR/xmlschema11-1/>>

W3C XML Schema Definition Language (XSD) 1.1 Part 2: Datatypes

<<http://www.w3.org/TR/xmlschema11-2/>>

1793 VideoEncoder*ConfigurationOptions QualityRange type

Revert an element type “tt:FloatRange” to “tt:IntRange” of ComplexType
“VideoEncoderConfigurationOptions / QualityRange” in onvif.xsd.

As replace

```
<xs:complexType name="VideoEncoderConfigurationOptions">
  <xs:sequence>
    <xs:element name="QualityRange" type="tt:FloatRange">
```

With

```
<xs:complexType name="VideoEncoderConfigurationOptions">
  <xs:sequence>
    <xs:element name="QualityRange" type="tt:IntRange">
```

1871 Align AnalyticsConfiguration naming

Generalize the analytics for not only video.

Add a sentence before last paragraph of section 4 *Overview* in Analytics Service Spec.

Note that the Media 1 Service Specification uses the name VideoAnalyticsConfiguration for historic reasons which maps to the same entity as the AnalyticsConfiguration.

Replace paragraphs in sectioni 4 *Overview*

A video analytics configuration can be attached to a Media Profile if the ONVIF Media Service is present. In that case the video analytics configuration becomes connected to a specific video source.

For server based analytics the ONVIF Analytics Device Service provides for the necessary configuration commands to bundle single analytic algorithm configurations represented as VideoAnalyticsConfiguration to engines or application like processing chains (e.g. all algorithms and rules necessary to build a “lost baggage detector”).

With

An analytics configuration can be attached to a Media Profile if the ONVIF Media Service is present. In that case the analytics configuration becomes connected to a specific source.

For server based analytics the ONVIF Analytics Device Service provides for the necessary configuration commands to bundle single analytic algorithm configurations represented as AnalyticsConfiguration to engines or application like processing chains (e.g. all algorithms and rules necessary to build a “lost baggage detector”).

Replace paragraphs in section 5.1.3.2 *Object Tree*

When two objects come too close to each other, such that the video analytics can no longer track them individually, an object Merge should be signalled by adding a merge node to the ObjectTree node of the frame node. The merge node contains a From node listing the

merging ObjectIds and a To node containing the ObjectId. The merged object is used in future frames as the tracking ID. If the video analytics algorithm detects that one object is occluding the others and is able to track this object further, the occluding object should be put in the To node. The separation of objects is indicated by a Split node. In this case, the From node contains a single ObjectId representing the object which is split in the current frame. The objects separating from this split object are listed in the To node. The ObjectId of the From node can reappear in the To node, if this object did occlude the others and the video analytics algorithm was able to track this object during the occlusion.

An object does not need to be involved in a merge operation in order to be part of a split operation. For example, if an object is moving together with a person, and the person leaves the object somewhere, the object might be detected the first time by the video analytics when the person moves away from the object left behind. In such cases, the first appearance of the object can be combined with a Split operation.

When a merged object reappears as an object node in a later frame without a split indication, then this object is implicitly split. The video analytics algorithm, however, could not determine where the split object came from.

A video analytics algorithm can track and remember a limited number of objects. In order to indicate that a certain object has been removed from the memory of the algorithm and therefore never appear again, the Scene Description can contain a Delete node within the ObjectTree node. If the video analytics algorithm can not decide during a Split operation the identity of an object, it should use a new ObjectId. When the algorithm has collected sufficient evidence for the identity of this object, it can change the ObjectId via the Rename operation. The Rename operation can also be used when an object reenters the scene and the true identity is discovered after some time.

With

When two objects come too close to each other, such that the analytics can no longer track them individually, an object Merge should be signalled by adding a merge node to the ObjectTree node of the frame node. The merge node contains a From node listing the merging ObjectIds and a To node containing the ObjectId. The merged object is used in future frames as the tracking ID. If the analytics algorithm detects that one object is occluding the others and is able to track this object further, the occluding object should be put in the To node.

The separation of objects is indicated by a Split node. In this case, the From node contains a single ObjectId representing the object which is split in the current frame. The objects separating from this split object are listed in the To node. The ObjectId of the From node can reappear in the To node, if this object did occlude the others and the analytics algorithm was able to track this object during the occlusion.

An object does not need to be involved in a merge operation in order to be part of a split operation. For example, if an object is moving together with a person, and the person leaves the object somewhere, the object might be detected the first time by the analytics when the person moves away from the object left behind. In such cases, the first appearance of the object can be combined with a Split operation.

When a merged object reappears as an object node in a later frame without a split indication, then

this object is implicitly split. The analytics algorithm, however, could not determine where the split object came from.

An analytics algorithm can track and remember a limited number of objects. In order to indicate that a certain object has been removed from the memory of the algorithm and therefore never appear again, the Scene Description can contain a Delete node within the ObjectTree node. If the analytics algorithm can not decide during a Split operation the identity of an object, it should use a new ObjectId. When the algorithm has collected sufficient evidence for the identity of this object, it can change the ObjectId via the Rename operation. The Rename operation can also be used when an object reenters the scene and the true identity is discovered after some time.

Replace a sentence in section 5.2.3.3 *Create rules*

The following operation adds rules to a VideoAnalyticsConfiguration. If all rules can not be created as requested, the device responds with a fault message.

With

The following operation adds rules to an AnalyticsConfiguration. If all rules can not be created as requested, the device responds with a fault message.

Replace a sentence in section 5.3.3.3 *CreateAnalytics Modules*

The following operation adds analytics modules to a VideoAnalyticsConfiguration. If all analytics modules can not be created as requested, the device responds with a fault message.

With

The following operation adds analytics modules to an AnalyticsConfiguration. If all analytics modules can not be created as requested, the device responds with a fault message.

1873 Clarify MaximumNumberOfProfiles

Add sentences below into section 5.3.5 *Get video encoder instance information* in Media2 service specification.

The total sum of video encoder instances over all video sources of a device shall not exceed the value signaled via MaximumNumberOfProfiles.

For example, if a device has two VideoSourceConfigurations and if the first allows a total of two concurrent instances and the second allows only one instance, this device shall allow creation of at least three media profiles.

Replace a clarification of the MaximumNumberOfProfiles at section 5.10 *Capabilities*,

MaximumNumberOfProfiles: The maximum Number of MediaProfiles the device supports.

By

MaximumNumberOfProfiles: The sum of fixed and dynamic MediaProfiles supported by the device.

1875 Clarify the effect of the Rotate parameter on the coordinate system

Add a following sentence into section 5.2.2 *Video source configuration* in Media2 Service Specification.

All coordinate systems (e.g. Privacy Masks in the Media2 Service and Motion Regions in the Analytics service) that apply to a video source configuration are based on the resulting image after applying the Bounds and Rotate to the source image.

And remove a following sentence from section 5.12.10 *Rotate*

OSDs shall be unaffected by the Rotate parameters.

1876 WS Basic Profile 2.0 support

Replace a sentence at section 5 *Web Services framework* in Onvif Core Specification.

The devices and the clients shall follow the guidelines in the WS-I Basic Profile 2.0 [WS-I BP 2.0].
The service descriptions in the ONVIF specification follow the WS-I Basic Profile 2.0.

With

The devices and the clients shall follow the guidelines in the WS-I Basic Profile 2.0 [WS-I BP 2.0],
except for Requirement R2729 (ONVIF defines some shared response wrapper names) and Requirement R2801 (ONVIF references XML Schema 1.1 rather than XML Schema 1.0).

1879 Annotation of tt:OnvifVersion Minor on version scheme change

Replace an annotation about *tt:OnvifVersion / Minor* In *onvif.xsd*.

<xs:documentation>Two digit minor version number (e.g. X.0.1 maps to "01" and X.2.1 maps to "21" where X stands for Major version number).</xs:documentation>

With

<xs:documentation>

Two digit minor version number.

If major version number is less than "16", X.0.1 maps to "01" and X.2.1 maps to "21" where X stands for Major version number.

Otherwise, minor number is month of release, such as "06" for June.

</xs:documentation>

1883 Clarify requirements for PullMessagesFaultResponse

Replace a condition description about sending *PullMessagesFaultResponse* at section 9.1.2 *Pull messages* in ONVIF Core Specification

The command shall at least support a Timeout of one minute. In case a device supports retrieval of less messages than requested it shall return these without generating a fault.

With

The device shall support a Timeout of at least one minute. The device shall not respond with a *PullMessagesFaultResponse* when the *MessageLimit* is greater than the device supports. Instead, the device shall return up to the supported messages in the response.

And replace at *Table 78: PullMessages command*

PullMessagesFaultResponse	<p><i>The Timeout exceeds the upper limit supported by the device. The Fault Message shall contain the upper limits for both parameters.</i></p> <p>xs:duration MaxTimeout[1][1] xs:int MaxMessageLimit[1][1]</p>
---------------------------	---

With

PullMessagesFaultResponse	<p><i><u>Only when the Timeout exceeds the upper limit supported by the device. Not sent when the MessageLimit is exceeded. The Fault Message shall contain the upper limits for both parameters.</u></i></p> <p>xs:duration MaxTimeout[1][1] xs:int MaxMessageLimit[1][1]</p>
---------------------------	--

1886 Clarify requirement in the Streaming Specification

Replace a paragraph for removing a unclear expressional sentence at section 6.2 *RTP header extension* in Streaming Specification.

The replay header extension shall be present in the first packet of every access unit (e.g. video frame). It MAY NOT be present in subsequent packets of an access unit.

By

The replay header extension shall be present in the first packet of every access unit (e.g. video frame).

1888 Add missing definition in the Streaming Specification

Add a definition of term "Access Unit" at section 3 *Terms and Definitions* in Streaming Specification.

Access Unit One or more frames or samples of audio, video, or metadata which are contained in a group of RTP packets having the same presentation time.

1889 Correct schema of tt:ColorOptions

Remove a redundant `<xs:sequence>` tag from `tt:ColorOptions` complexType in `onvif.xsd`.

Change from

```
<xs:complexType name="ColorOptions">
  <xs:annotation>
    <xs:documentation>Describe the option of the color supported. Either list each color or define
the range of color value. The following values are acceptable for Colourspace
attribute.<ul><li>http://www.onvif.org/ver10/colourspace/YCbCr - YCbCr colourspace</li>
  <li>http://www.onvif.org/ver10/colourspace/CIELUV - CIE LUV</li>
  <li>http://www.onvif.org/ver10/colourspace/CIELAB - CIE 1976 (L*a*b*)</li>
  <li>http://www.onvif.org/ver10/colourspace/HSV - HSV colourspace</li></ul>
</xs:documentation>
</xs:annotation>
  <del><xs:sequence>
    <xs:choice>
      <xs:element name="ColorList" type="tt:Color" maxOccurs="unbounded">
        <xs:annotation>
          <xs:documentation>List the supported color.</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="ColourspaceRange" type="tt:ColourspaceRange"
maxOccurs="unbounded">
        <xs:annotation>
          <xs:documentation>Define the rang of color supported.</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:choice>
  </del></xs:sequence>
  <xs:anyAttribute processContents="lax"/>
</xs:complexType>
```

To

```
<xs:complexType name="ColorOptions">
  <xs:annotation>
```

```

    <xs:documentation>Describe the option of the color supported. Either list each color or define
the range of color value. The following values are acceptable for Colourspace
attribute.<ul><li>http://www.onvif.org/ver10/colourspace/YCbCr - YCbCr colourspace</li>
    <li>http://www.onvif.org/ver10/colourspace/CIELUV - CIE LUV</li>
    <li>http://www.onvif.org/ver10/colourspace/CIELAB - CIE 1976 (L*a*b*)</li>
    <li>http://www.onvif.org/ver10/colourspace/HSV - HSV colourspace</li></ul>
    </xs:documentation>
</xs:annotation>
<xs:choice>
    <xs:element name="ColorList" type="tt:Color" maxOccurs="unbounded">
        <xs:annotation>
            <xs:documentation>List the supported color.</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ColourspaceRange" type="tt:ColourspaceRange"
maxOccurs="unbounded">
        <xs:annotation>
            <xs:documentation>Define the rang of color supported.</xs:documentation>
        </xs:annotation>
    </xs:element>
</xs:choice>
<xs:anyAttribute processContents="lax"/>
</xs:complexType>

```

1890 Clarify reverse playback

Update section 6.5.1 Packet transmission order of the ONVIF Streaming Specification.

Add two figures to section 6.2.1 to clarify the location of the E-bit during forward and reverse playback.

1928 Correct a typo "xs:String" in imaging.wsdl

Replace an attribute type “xs:**String**” to “xs:**string**” of ComplexType “*ImagingPreset / type*” in imaging.xsd, as

```
<xs:attribute name="type" type="xs:String" use="required">
```

With

```
<xs:attribute name="type" type="xs:string" use="required">
```

1931 Improve VideoEncoder2ConfigurationOptions GovLenghtRange annotation

Replace an annotation of *VideoEncoder2ConfigurationOptions / GovLenghtRange* to clarify the usage in onvif.xsd

```
<xs:attribute name="GovLenghtRange" type="tt:IntAttrList">
```

```
<xs:annotation>
```

```
<xs:documentation>Lower and Upper bounds for the supported group of Video frames length.
```

```
This value typically corresponds to the I-Frame distance.</xs:documentation>
```

With

```
<xs:attribute name="GovLenghtRange" type="tt:IntAttrList">
```

```
<xs:annotation>
```

```
<xs:documentation>Exactly two values, which define the Lower and Upper bounds for the supported group of Video frames length. These values typically correspond to the I-Frame distance.</xs:documentation>
```

And replace the description at section 5.12.17 *VideoEncoder2ConfigurationOptions* in Media2 Service Specification

- **GovLenghtRange**

Lower and Upper bounds for the supported group of Video frames length. This value typically corresponds to the I-Frame distance.

With

- **GovLenghtRange**

Attribute list which shall contain exactly two values, defining the Lower and Upper bounds, respectively, for the supported group of Video frames length. These values typically correspond to the I-Frame distance.

1938 Fix typo PTZonfiguration

Correct a typo at description of operation *GetConfiguration* in *ver20/ptz/wsdl/ptz.wsdl*.

```
<wsdl:operation name="GetConfiguration">  
  <wsdl:documentation>Get a specific PTZonfiguration from the device, identified by its reference  
  token or name.
```

By

```
<wsdl:operation name="GetConfiguration">  
  <wsdl:documentation>Get a specific PTZconfiguration from the device, identified by its  
  reference token or name.
```

1944 Separate metadata schema

The schema file *onvif.xsd* is split into three separate files

- *common.xsd* contains types that are needed for streaming and wsdl
- *onvif.xsd* includes *common.xsd* for full wsdl backward compatibility
- *metadastream.xsd* contains types needed for metadata streaming

Additionally schema 1.1 extension points have been added to *metadastream.xsd* for future use.

1951 Correct the names for GetConfigurations and GetConfigurationOptions commands

Replace response message name of *AddConfiguration* API at Section 5.1.3 *Add one or more configurations to a profile* Table 4 *AddConfiguration* command in Media2 Service specification,

```
AddVideoSourceConfigurationResponse
```

With

```
AddConfigurationResponse
```

Replace request message name of *GetConfigurations* API at Section 5.3.2 *Get configurations* Table 7 *Get<entity>Configurations* command

```
GetConfigurationsRequest
```

With

```
Get<u>entity
```

And correct a typo for response message name

```
Get<enttity>ConfigurationsResponse
```

With

```
Get<entity>ConfigurationsResponse
```

Replace request message name of GetConfigurationOptions API at Section 5.3.4 *Get configuration options* Table 9 *Get<entity>ConfigurationOptions command*

GetConfigurationsRequest

With

Get<entity>ConfigurationOptionsRequest

1952 Update WSDL overview section

Revise WSDL description on section 5.2 *WSDL overview* in ONVIF core specification as replace,

- port – Specifies an address for a binding.
- service – Used to group a set of related ports.

With

Note that both the port and service definitions are not used since the ONVIF interface is not bound to a concrete server instance.

Since the release of WSDL 1.1 the underlying XML schema reference has underwent two major revisions. This specification defines that the relaxation of the Unique Particle Attribution rule of XML Schema 1.1 may be used for schema extensibility.

1955 Make PassphraseAttribute extension optional

Replace in wsdl of ver10/advancedSecurity/wsd/advancedsecurity.wsdl

```
<xs:any maxOccurs="unbounded" namespace="##any" processContents="lax"/>
```

by

```
<xs:any minOccurs="0" maxOccurs="unbounded" namespace="##any"  
processContents="lax"/>
```

1957 GetMediaAttributes for H.265

In onvif.xsd replace type tt:VideoEncoding as well as tt:AudioEncoding by xs:string.

Add the following annotation:

Video encoding of the track. Use values from tt:VideoEncoding for JPEG, MPEG4 and H264. Otherwise use type definitions as defined by <http://www.iana.org/assignments/media-types/media-types.xhtml> >IANA.

and

Audio encoding of the track. Use values from tt:AudioEncoding for G711, G726, AAC. Otherwise

use type definitions as defined by [IANA](http://www.iana.org/assignments/media-types/media-types.xhtml).

1978 Correct fix for #1797

Remove a mistaken extension point from the *ElementItem* part of the *ItemList* complex type in *onvif.xsd*.
As replace

```
<xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded">  
<!-- first Vendor then ONVIF -->
```

With

```
<xs:any namespace="##any" processContents="lax">
```

1983 MediaService2: GetProfiles Analytics datatype

Change the datatype of *Analytics* element In *ConfigurationSet* complex type in *ver20/media/wsd/media.wsdl*.

The change replaces

```
<xs:element name="Analytics" type="tt:ConfigurationEntity" minOccurs="0">
```

With

```
<xs:element name="Analytics" type="tt:VideoAnalyticsConfiguration" minOccurs="0">
```

In *ver20/media/wsd/media.wsdl* and in the datatype description at section 5.12.2 *ConfigurationSet* in *Media2 Service Specification*.

1985 Deprecate methods duplicates in Device IO

Deprecate duplicated methods between Device IO and Media services, from Device IO service specification.

Remove a reference to Media service specification in section 2 *Normative references*

[ONVIF Media Service Specification](#)

<http://www.onvif.org/specs/srv/media/ONVIF-Media-Service-Spec-v220.pdf>

Remove corresponding items in the section 4 *Overview*. As replace

The DeviceIO service supports the configuration of the following device interfaces:

- VideoOutputs
- VideoSources
- AudioOutputs

- AudioSources
- RelayOutputs
- DigitalInputs
- Send and/or Receive serial data communication

With

The DeviceIO service supports the configuration of the following device interfaces:

- VideoOutputs
- RelayOutputs
- DigitalInputs
- Send and/or Receive serial data communication

And replace

For VideoOutputs, VideoSources, AudioOutputs and AudioSources the following commands are supported:

- Set<device name>Configuration – Modifies the configuration of a specific interface.
- Get< device name >Configuration – Gets the configuration of a specific interface.
- Get< device name >ConfigurationOptions – Gets the supported property values for a specific interface.

With

For VideoOutputs the following commands are supported:

- Set<device name>Configuration – Modifies the configuration of a specific interface.
- Get< device name >Configuration – Gets the configuration of a specific interface.
- Get< device name >ConfigurationOptions – Gets the supported property values for a specific interface.

Remove a following paragraph in section 5 *Service*.

Some functionality of this service overlaps with functionality that is defined in the Media Service. If a device (e.g. a NVT) needs to implement both services it should use the commands that are defined in this service to configure its audio in- and outputs or its video sources.

Remove Section 5.4, 5.6 and 5.8 media configuration related APIs.

Remove a description of reference to media configuration change event in section 5.10 *Events*

For the definition of configuration change events see also the Event section of the ONVIF Media Service Specification.

Create section *A.1 Configuration of media source and output* in *Annex A Deprecated Interfaces*, with listing deprecated APIs which were defined at section 5.4, 5.6 and 5.8.

1986 Add missing CreateOsd error codes

Apply two additional service specific error codes to *CreateOSD* of Media2 service as the followings into section 5.9.2 *CreateOSD* Table 18: *CreateOSD* command.

env:Sender ter:InvalidArgVal ter:NoConfig	<i>The requested OSD does not exist</i>
env:Sender ter:InvalidArgVal ter:ConfigModify	<i>The configuration parameters are not possible to set.</i>

1988 Correct Media2 GetServiceCapabilitiesResponse

Change the response element name of *GetServiceCapabilities* in WSDL file for Media2 service : *ver20/media/wsdll/media.wsdll*.

As replace

```
<xs:element name="GetServiceCapabilitiesResponse2">
```

With

```
<xs:element name="GetServiceCapabilitiesResponse">
```

And replace

```
<wsdl:part name="parameters" element="tr2:GetServiceCapabilitiesResponse2"/>
```

with

```
<wsdl:part name="parameters" element="tr2:GetServiceCapabilitiesResponse"/>
```

1989 Correct Media2 response types

Correct the response element name of various *Set<Entity>Configuration* in WSDL file for Media2 service : *ver20/media/wsdll/media.wsdll*.

Replace

```
<xs:element name="SetConfigurationResponse">  
  <xs:sequence/>  
</xs:element
```

by

```
<xs:complexType name="SetConfigurationResponse">  
  <xs:sequence/>  
</xs:complexType>  
<xs:element name="SetVideoSourceConfigurationResponse"  
  type="tr2:SetConfigurationResponse" />  
<xs:element name="SetVideoEncoderConfigurationResponse"  
  type="tr2:SetConfigurationResponse" />  
...
```

1990 Remove senseless description from RemoveConfiguration

Remove a useless sentence from the documentation at WSDL operation declaration of *RemoveConfiguration* in ver20/media/wsdl/media.wsdl.

As replace

```
<wsdl:documentation>This operation removes the listed configurations from an existing media profile. If the media profile does not contain one of the listed configurations that item shall be ignored. <br/> Note that the token is only required for the OSD items.</wsdl:documentation>
```

With

```
<wsdl:documentation>This operation removes the listed configurations from an existing media profile. If the media profile does not contain one of the listed configurations that item shall be ignored.</wsdl:documentation>
```

1991 GetServiceCapabilities and H265

Replace in Recording Control Service specification and corresponding wsdl

Indication which encodings are supported for recording. The list may contain one or more enumeration values of tt:VideoEncoding and tt:AudioEncoding. If device does not support audio recording tt:AudioEncoding shall not be listed.

by

Indication which encodings are supported for recording. The list may contain one or more enumeration values of tt:VideoEncoding and tt:AudioEncoding. For encodings that are neither defined in tt:VideoEncoding nor tt:AudioEncoding the device shall use the IANA definitions <http://www.iana.org/assignments/media-types/media-types.xhtml>. Note, that a device without audio support shall not return audio encodings.

1992 Replace audio by video in onvif xsd

Replace the word "audio" by "video" in the annotation of the VideoEncoder2Configuration.

1995 Improve annotation of mask SingleColor option

In media.wSDL replace the annotation of MaskOptions SingleColor element

Information that all polygon of a VideoSource have the same color.

by

Indicates the device capability of change in Color of privacy mask for one video source configuration will automatically be applied to all the privacy masks associated with the same video source configuration.

2011 Additional error codes for CreateProfile

Add to table 2 of the Media2 Specification the following two error codes:

- **ter:NoConfig**
One of the provided Configurations indicated by their configuration token does not exist.
- **ter:ConfigurationConflict**
Other configurations of the media profile conflicts with the one to add and adding it would cause a conflicting media profile.