ONVIF™

ONVIF Specification Version 17.12
Release Notes
1. Summary

The ONVIF 17.12 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

2.1 View Mode
The view mode parameter has been added to the Media2 Service for device to declare the view mode through video source configuration.

2.2 OSD Image Upload
The OSD image upload definition has been added to clarify the procedure of uploading image file for on-screen display.

2.3 Geo Move Positioning Space
Added informative annex to the ONVIF PTZ Service describing how a client can check whether a geo located point can be reached by a PTZ device.

3. Changes

Find below all errata from Version 17.06 to 17.12 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.

2024 Deprecate password derivation

Remove a whole section 5.12.3.1 Password derivation in ONVIF Core specification.

Remove a normative reference to SHA.

FIPS 180-2, SECURE HASH STANDARD

Remove an abbreviation of SHA
SHA Secure Hash Algorithm

Remove a part of phrase from following sentence in section 8.4.4 Create users.

ONVIF compliant devices are recommended to support password length of at least 28 bytes, as clients may follow the password derivation mechanism which results in 'password equivalent' of length 28 bytes, as described in 5.12.3.1.

Replace sentences in section 8.4.7 Get remote user and 8.4.8 Set remote user.

The algorithm to use for deriving the password is described in section 5.12.3.1.

With Password derivation is outside of the scope of this specification.

Remove in section 8.4.8 Set remote user
The user is only valid for the WS-UserToken profile or as a HTTP / RTSP user.
The password that is set shall always be the original (not derived) password.

If UseDerivedPassword is set password derivation shall be done by the device when connecting to a remote device. The algorithm to use for deriving the password is described in section 5.12.3.1.

2124 Clarity on the MaximumNumberOfProfiles / Create profile in Media2

Add an attribute parameter “MaximumNumberOfProfiles” as following into VideoSourceConfigurationOptions in onvif.xsd.

```xml
<xs:attribute name="MaximumNumberOfProfiles" type="xs:int">
    <xs:annotation>
        <xs:documentation>Maximum number of profiles.</xs:documentation>
    </xs:annotation>
</xs:attribute>
```

2143 Mismatch normative reference

Replace a reference at section 1.1 Normative references in Schedule Service specification

- RFC 2445, Internet Calendaring and Scheduling Core Object Specification (iCalendar)
  https://www.ietf.org/rfc/rfc2445.txt

with

- RFC 5545, Internet Calendaring and Scheduling Core Object Specification (iCalendar)
  https://www.ietf.org/rfc/rfc5545.txt
2147 Incorrect fault code for non supported exemptions

Replace following specific fault code at section 4.2.6 CreateCredential command, 4.2.7 ModifyCredential command and 4.2.15 SetCredentialIdentifier command in Credential Service specification.

<table>
<thead>
<tr>
<th>env:Sender</th>
<th>Exempt from authentication is not supported by the device. See the SupportedExemptionType capability.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ter:InvalidArgVal</td>
<td></td>
</tr>
<tr>
<td>ter:ExemptFromAuthenticationSupported</td>
<td></td>
</tr>
</tbody>
</table>

With

<table>
<thead>
<tr>
<th>env:_sender</th>
<th>Specified exemption type is not supported by the device. See the SupportedExemptionType capability.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ter:CapabilityViolated</td>
<td></td>
</tr>
<tr>
<td>ter:SupportedExemptionType</td>
<td></td>
</tr>
</tbody>
</table>

2149 Clarification of 'without any response'

Replace a description of section 4.2.16 DeleteCredentialIdentifier command in Credential Service specification.

However, if the identifier type name doesn’t exist in the device, it will be silently ignored without any response.

With

However, if the identifier type name doesn’t exist in the device, it will be silently ignored (no fault is generated).

Replace a description of section 4.2.19 DeleteCredentialAccessProfiles command

However, if no matching credential access profiles are found, the corresponding access profile tokens are silently ignored without any response.

With

However, if no matching credential access profiles are found, the corresponding access profile tokens are silently ignored (no fault is generated).

2152 Clarification required for "All" string input "tr2:ConfigurationEnumeration"

Insert a following sentence into description for REQUEST : configuration part at section 5.1.1 Create media profile in Media2 Service Specification.

Optional list of configurations to be added to the new profile. List entries with tr2:ConfigurationEnumeration value "All" shall be ignored.
Insert a following sentence into description for REQUEST : configuration part at section 5.1.3 Add one or more configurations to a profile.

Optional list of configurations to be added to the profile. List entries with tr2:ConfigurationEnumeration value "All" shall be ignored.

Insert following sentences into the first description paragraph at section 5.1.4 Remove one or more configurations from a profile.

This operation removes one or more configurations from an existing media profile. Tokens appearing in the configuration list shall be ignored. Presence of the "All" type shall result in an empty profile. Removing a non-existing configuration shall be ignored and not result in an error. A device supporting the Media2 service shall support this command.

Replace the description of ConfigurationsSupported at section 5.11 Capabilities.

ConfigurationsSupported: Enumerates the configurations supported by the device as defined by tr2:ConfigurationEnumeration.

With ConfigurationsSupported: The configurations supported by the device as defined by tr2:ConfigurationEnumeration. The enumeration value "All" shall not be included in this list. A device implementing this service shall provide this capability.

And apply above changes into appropriate documentation parts of ver20/media/wsdl/media.wsdl.

2159 Typo: Namespace of VideoSourceMode
Correct a namespace prefix of RESPONSE: VideoSourceMode type at section 5.8.1 GetVideoSourceModes in Media2 Service specification.

• VideoSourceMode - unbounded [tt:VideoSourceMode]
With
• VideoSourceMode - unbounded [tr2:VideoSourceMode]

2165 Need capability for AudiobackChannel Multicast
Add a following note on the end of section 5.3.3 Multicast Streaming in Streaming specification.

Note that multicast streaming for Audio Backchannel is outside of the scope of this specification.
2167 Missing space in Access rules spec
Non contextual, typographic change.

2168 Minor editorial fixes in Schedule spec
Replace a following sentence of description for ExtendedRecurrenceSupported at section 4.1.1.1 Service Capabilities in Schedule Service specification.

If ExtendedRecurrenceSupported = false, only weekly recurrence shall be supported for schedules (according to section 0) and no recurrence shall supported for special days.

With

If ExtendedRecurrenceSupported = false, only weekly recurrence shall be supported for schedules (according to section 3.2.2) and no recurrence shall be supported for special days.

Insert a word ‘than’ at section 4.2.5 GetScheduleList command.

The number of items returned shall not be greater than the Limit parameter.

Insert a word ‘than’ at section 4.3.5 GetSpecialDayGroupList command.

The number of items returned shall not be greater than the Limit parameter.

2169 Minor editorial fixes in Credential spec
Non contextual, typographic change.

2170 Tracking is turned on in Access Control Spec
Non contextual, typographic change.

2171 Changes in term definitions in Access Control spec
Revise several descriptions at section 3.1 Terms and definitions in Access Control Service specification.

Remove the last word from the description of Credential.

logical object holding related credential identifiers for a credential holder. E.g. if a PIN is associated with a specific credential number, then both of these identifiers are stored in one credential. Note that the PIN is normally not stored in the physical credential token.
Remove the last word from the description of Credential Holder.

A person holding a credential token.

Replace the description of Credential Identifier.

Information either memorized or held within a credential token. Could be a credential number, PIN, biometric information, etc., that can be validated in an access point.

With

Information either memorized or held within a physical credential. Could be a credential number, PIN, biometric information, etc., that can be validated in an access point.

Replace the description of Credential Number.

A sequence of bytes uniquely identifying a credential token at an access point.

With

A sequence of bytes uniquely identifying a physical credential at an access point.

Remove the whole term definition of Credential Token.

**Credential Token**

Portable device containing a readable unique credential number that can be associated with the credential holder's data and access rules stored within the electronic access control system.

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2172 Minor (but many) editorial changes in Door Control spec

Non contextual, typographic change.

2173 Formatting of Terms and Definitions in Door Control spec differs from the other PACS specs

Non contextual, typographic change.

2176 Improve wording

Remove a following sentence at section 5.9.2 CreateOSD in Media2 Service specification.

When creating a OSDTextConfiguration, if the IsPersistentText attribute is missing, device shall assume IsPersistentText attribute as true.
Add a following note after the command dedescription in same section.

Note: an OSDTextConfiguration without the IsPersistentText attribute shall be interpreted by the device as persistent.

2177 Fix error code name

Replace a fault code name at section 5.3.3.6 GetAnalyticsModuleOptions in Analytics Service specification.

• env:Sender - ter:InvalidArgVal - ter:RuleNotExistent
With
• env:Sender - ter:InvalidArgVal - ter:TypeNotExistent

2178 Minor updates to the 2061 and 2063 fixes

Remove a sentence from section 5.21 ExportRecordedData in Recording Control Service specification.

The device shall implement ExportRecordedData command when the optional SupportedExportFileFormats capability returns a list of supported export file formats.

Replace the description of RESPONSE: FileNames

List of exported file names. The device can also use AsycronousOperationStatus event to monitor the progress of ExportRecordedData operation.
With
List of exported file names. A client can also use AsycronousOperationStatus event to monitor the progress of ExportRecordedData operation.

2179 5.4 CreateRecording - Strange part

Remove following sentence from first paragraph of section 5.4 CreateRecording in Recording Control Service specification.

The new recording shall be created with a track for each supported TrackType see section 5.21.

2180 Wrong reference

Replace a following sentence at section 6.5 Initiating Playback in Streaming specification.
The ReversePlayback capability defined in the ONVIF Streaming Specification signals if a device supports reverse playback.

With

The ReversePlayback capability defined in the ONVIF Replay Control Service Specification signals if a device supports reverse playback.

2181 Clarify Range header requirement

Replace a following paragraph at section 6.5.1 Range header field in Streaming specification

The Range field shall be expressed using absolute times only; the other formats defined by [RFC 2326] shall NOT be used by ONVIF replay clients. Servers may choose to support other formats also. Absolute times are expressed using the utc-range from [RFC 2326].

With

A device shall support the Range field expressed using absolute times as defined by [RFC 2326]. Absolute times are expressed using the utc-range from [RFC 2326].

2185 Remove requirement to create three tracks

Replace a sentence which is just after the command definition at section 5.4 CreateRecording in Recording Control Service specification.

When successfully completed, CreateRecording shall have created three tracks with the following configurations

With

When successfully completed, the device shall have created one or more tracks with the following configurations

2187 Name mismatch : WebSocket capability

Replace a capability name about WebSocket streaming at section 5.11 Capabilities in Media2 Service specification.

RTSPOverWebSocket:

With

RTSPWebSocketUri:

2193 Remove duplicate token from mask

Replace an annotation of ConfigurationToken element that is a part of Mask complex type in
ver20/media/wsd1/media.wsdl.

```xml
<xs:element name="ConfigurationToken" type="tt:ReferenceToken">
  <xs:annotation>
    <xs:documentation>Unique identifier of this mask configuration.</xs:documentation>
  </xs:annotation>
</xs:element>
```

With

```xml
<xs:element name="ConfigurationToken" type="tt:ReferenceToken">
  <xs:annotation>
    <xs:documentation>Token of the VideoSourceConfiguration the Mask is associated with.</xs:documentation>
  </xs:annotation>
</xs:element>
```

Remove an attribute VideoSourceConfiguration that is a part of Mask complex type.

```xml
<xs:attribute name="VideoSourceConfiguration" type="tt:ReferenceToken">
  <xs:annotation>
    <xs:documentation>Token of the VideoSourceConfiguration the Mask is associated with.</xs:documentation>
  </xs:annotation>
</xs:attribute>
```

2194 Correct annotation for Entity in LocationEntity

Replace an annotation of Entity attribute that is a apart of LocationEntity complex type in onvif.xsd.

```xml
<xs:attribute name="Entity" type="xs:string">
  <xs:annotation>
    <xs:documentation>Entity type the entry refers to as defined in tds:Entity.</xs:documentation>
  </xs:annotation>
</xs:attribute>
```

With

```xml
<xs:attribute name="Entity" type="xs:string">
  <xs:annotation>
    <xs:documentation>Entity type the entry refers to, use a value from the tt:Entity enumeration.</xs:documentation>
  </xs:annotation>
</xs:attribute>
```
2196 Improve property event definition
Sections 9.4 and 9.5 of the ONVIF Core Specification have been consolidated into section 9.4. By first describing the notification structure and then introducing the property event this part of the specification should be easier to read. The editorial update intends no functional or semantic changes.

2197 Fix typo in Media2 service specification
Replace the following paragraph at section 5.3.5 GetVideoEncoderInstances 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.

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

2202 Ambiguity in media2 getprofiles
Replace documentation for parameter conditions of GetProfiles operation in ver20/media/wsdl/media.wsdl.

<wsdl:operation name="GetProfiles">
  <wsdl:documentation>Retrieve the profile with the specified token or all defined media profiles. <ul>
    <li>If no configuration types are defined only the profile names and token are returned.</li>
    <li>In case of provided configuration types all information regarding these types is returned.</li>
    <li>Otherwise the requested list of configurations shall for each profile include the associated configurations present as Type.</li>
  </ul></wsdl:documentation>
</wsdl:operation>
2203 Media2 Specification clarification required for add/remove dependent entities to media profile

Remove following paragraphs from section 5.1.4 *Remove one or more configurations from a profile* in Media2 Service specification.

A device shall return an error if a client attempts to remove VideoSourceConfiguration from the Profile when a VideoEncoderConfiguration is present. To avoid this error condition, a client may first remove the VideoEncoderConfiguration, or may remove the VideoSourceConfiguration and VideoEncoderConfiguration together in a single RemoveConfiguration command.

A device shall return an error if a client attempts to remove AudioSourceConfiguration from the Profile when an AudioEncoderConfiguration is present. To avoid this error condition, a client may first remove the AudioEncoderConfiguration, or may remove the AudioSourceConfiguration and AudioEncoderConfiguration together in a single RemoveConfiguration command.

Add following paragraphs in the end of section 5.2.1 *General* instead.

Certain configurations in a media profile are dependent on other configurations. In such cases, the required configuration shall be present before adding the dependent configuration. It shall also be possible to add both configurations in a single AddConfiguration request if they are compatible. Similarly, the required configuration shall not be removed unless the dependent configuration is removed first. Both configurations shall also be removable in a single RemoveConfiguration command. The dependencies are as follow:

- VideoEncoderConfiguration depends on VideoSourceConfiguration
- AudioEncoderConfiguration depends on AudioSourceConfiguration
- PTZConfiguration depends on VideoSourceConfiguration
- AudioDecoderConfiguration depends on AudioOutputConfiguration

If a dependency is violated in an AddConfiguration or RemoveConfiguration request, a *ConfigurationConflict* fault should be returned in the response.

2204 Fix radiometry publication error

Add an item of namespace definition “ttr” for Radiometry at section 3.3 *Namespaces* in Analytics Service specification.

| ttr | http://www.onvif.org/ver20/analytics/radiometry | XML schema descriptions for Radiometry |

Add a description for radiometry schema file as a last part of section 4 *Overview.*
Radiometry types, modules and rules are defined in the RADIOMETRY Schema file http://www.onvif.org/ver20/analytics/radiometry.xsd.

Update Annex D. Radiometry with the brand-new document.

**2206 Improve misleading description**

Replace sentences described relation reference at section 5.1.1.3 RTP/RTSP/TCP in Streaming specifiction

This protocol shall conform to [RFC 2326] Section 10.12.

With

This protocol shall conform to [RFC 2326] Section 10.12 (Embedded [Interleaved] Binary Data).

And section 5.1.1.4 RTP/RTSP/HTTP/TCP

This protocol shall conform to [RFC 2326] (RTSP Section 5.2.1.1: Embedded [Interleaved] Binary Data).

With

This protocol shall conform to [RFC 2326] Section 10.12.

**2207 Re-add command names to Media2 Service Specification sections**

In the Media2 Service Specification, make the following changes:

In Section 5.1.1, replace title Create media profile with CreateProfile
In Section 5.1.2, replace title Get media profiles with GetProfiles
In Section 5.1.3, replace title Add one or more configurations to a profile with AddConfiguration
In Section 5.1.4, replace title Remove one or more configurations from a profile with RemoveConfiguration
In Section 5.1.5, replace title Delete media profile with DeleteProfile
In Section 5.3.2, replace title Get configurations with Get/entity>Configuration
In Section 5.3.3, replace title Modify a configuration with Set<entity>Configuration
In Section 5.3.4, replace title Get configuration options with Get<entity>ConfigurationOptions
In Section 5.4.1, replace title Request stream URI with GetStreamUri
In Section 5.5.1, replace title Request snapshot URI with GetSnapshotUri
In Section 5.6.1, replace title Start multicast streaming with StartMulticastStreaming
In Section 5.6.2, replace title Stop multicast streaming with StopMulticastStreaming
In Section 5.7.1, replace title Set synchronization point with SetSynchronizationPoint
In Section 5.10.2, replace title Create Mask with CreateMask
In Section 5.10.3, replace title Delete Mask with DeleteMask
In Section 5.11, replace title Capabilities with GetServiceCapabilities

2210 NTP timestamps for B-Frames

Replace whole paragraph of section 6.3.1 NTP Timestamps in Streaming specification

The NTP timestamps in the RTP extension header shall increase monotonically over successive packets within a single RTP stream. They should correspond to wallclock time as measured at the original transmitter of the stream, adjusted if necessary to preserve monotonicity.

With

The NTP timestamps in the RTP extension header shall correspond to the wallclock time as measured at the original frame grabber before encoding of the stream.

For forward playback of I and P frames the NTP timestamps in the RTP extension header shall increase monotonically over successive packets within a single RTP stream.

2212 Clarify new state for DigitalInputs

Replace a description about digital input logical state at section 5.10.1 DigitalInput State Change in Device IO Service specification

Digital Input LogicalState can be either set at "true" to represent the circuit in the closed state or set at "false" to represent the circuit in the open state.

With

If a device supports SetDigitalInputConfigurations, the Digital Input LogicalState can be either set at "true" to represent the input in the active state or set at "false" to represent the input in the idle state.

If a device does not support SetDigitalInputConfigurations, the Digital Input LogicalState can be either set at "true" to represent the circuit in the closed state or set at "false" to represent the circuit in the open state.

2213 Typo: DigitalInputOptions type name

Replace type name of DigitalInputOptions at section 5.7.2 GetDigitalInputConfigurationOptions in Device IO Service specification

- DigitalInputOptions - optional, unbounded [tt:DigitalInputOptions]

With

- DigitalInputOptions - optional, unbounded [tt:DigitalInputConfigurationOptions]

And at deviceio.wsdl
<xs:complexType name="DigitalInputConfigurationInputOptions">

With

<xs:complexType name="DigitalInputConfigurationOptions">

And

<xs:element name="GetDigitalInputConfigurationOptionsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="DigitalInputOptions" type="tmd:DigitalInputConfigurationInputOptions"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

With

<xs:element name="GetDigitalInputConfigurationOptionsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="DigitalInputOptions" type="tmd:DigitalInputConfigurationOptions"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

**2228 Mandatory extension in GeoLocation**

Replace incomplete extension points of GeoLocation members in onvif.xsd

<xs:any minOccurs="0" maxOccurs="unbounded"/>

with

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