![ONVIF logo — Driving IP-based physical security through global standardization](logo)

# ONVIF™

## ONVIF Specification Version 2.1.1
## Release Notes

# 1. Summary

The ONVIF 2.1.1 release incorporates requirement changes corresponding to the introduction of the profile concept plus a number of minor clarifications. The changes themselves are described in detail in the list below.

# 2. Changes

Find below all errata's from Version 2.1 to 2.1.1 in order to improve interoperability.
The numbers correspond to the Change Request ticket numbers and are not necessarily continuous ascending.

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

## 258    Updated VideoOutputToken description

**Change in onvif.xsd from:**

In GetVideoOutputConfiguration:
```
<xs:documentation>Token of the requested VideoOutput configuration.</xs:documentation>
```

In GetAudioSourceConfiguration:
```
<xs:documentation>Token of the requested AudioSource configuration.</xs:documentation>
```

In GetVideoSourceConfiguration:
```
<xs:documentation>Token of the requested VideoSource configuration.</xs:documentation>
```

**to:**

In GetVideoOutputConfiguration?
```
<xs:documentation>Token of the requested VideoOutput?.</xs:documentation>
```

In GetAudioSourceConfiguration?
```
<xs:documentation>Token of the requested AudioSource?.</xs:documentation>
```

In GetVideoSourceConfiguration?
```
<xs:documentation>Token of the requested VideoSource?.</xs:documentation>
```

**Add the following element to VideoOutputConfiguration:**

```
<xs:sequence>
  <xs:element name="OutputToken" type="tt:ReferenceToken">
    <xs:annotation>
      <xs:documentation>Token of the Video Output the
      configuration applies to</xs:documentation>
    </xs:annotation>
  </xs:element>
</xs:sequence>
```

## 259   Add GetRelayOutputOptions

A new method has been introduced to the ONVIF Device IO Specification.

Input is:

> tt:ReferenceToken **RelayOutputToken** [0][1]

Output is:

> tmd:RelayOutputOptions **RelayOutputOptions** [0][unbounded]

The following examples illustrate its usage:

Two examples:

> 1) Device supports PT1S to PT120S:
> ```
> <tmd:RelayOutputOptions token='44'>
>   <tmd:Mode>Monostable</tmd:Mode>
>   <tmd:DelayTimes>1 120</tmd:DelayTimes>
> </tmd:RelayOutputOptions>
> ```
>
> 2) Device supports values PT0.5S, PT1S, PT2s and PT1M:
> ```
> <tmd:RelayOutputOptions token='123'>
>   <tmd:Mode>Monostable</tmd:Mode>
>   <tmd:DelayTimes Discrete='True'>0.5 1 2 60</tmd:DelayTimes>
> </tmd:RelayOutputOptions>
> ```

## 260   Clarify UseCount parameter

Added the following annotation to onvif.xsd:

> "Number of internal references currently using this configuration. This parameter is read-only and cannot be changed by a set request. For example the value increases if the configuration is added to a media profile or attached to a PaneConfiguration."

## 262 Typo: add missing Max to Generic ZoomSpeedSpace example

The description talks about range 0 to 1 and the xsd also contains a Min and Max value while the code snippet in the specification lacks the Max.

**Changed from:**

```
<tt:ZoomSpeedSpace>
  <tt:SpaceURI>
    http://www.onvif.org/ver10/tptz/ZoomSpaces/ZoomGenericSpeedSpace
  </tt:SpaceURI>
  <tt:Xrange>
    <tt:Min>0.0</tt:Min>
  </tt:Xrange>
</tt:ZoomSpeedSpace>
```

**to:**

```
<tt:ZoomSpeedSpace>
  <tt:SpaceURI>
    http://www.onvif.org/ver10/tptz/ZoomSpaces/ZoomGenericSpeedSpace
  </tt:SpaceURI>
  <tt:Xrange>
    <tt:Min>0.0</tt:Min>
    <tt:Max>1.0</tt:Max>
  </tt:Xrange>
</tt:ZoomSpeedSpace>
```

## 263 Clarify time usage in event messages

Add paragraph to section 9.1.2:

> An ONVIF compliant device shall support time values in request parameters that are given in utc with the 'Z' indicator and respond all time values as utc including the 'Z' indicator.

## 264 Clarify keep alive handling in replay

Replace in the ONVIF Streaming Specification

> the client shall not send SET_PARAMETER requests

by

> the client may not be able to receive the response to any request.

## 265   Improve description of Absolute and Relative Move

Added sentence to the annotation:

If an x/y speed value is given it is up to the device to either use  the x value as absolute  resoluting speed vector or to map x and y to the component speed.  If the speed argument is omitted, the default speed set by the PTZConfiguration will be used.

## 266   Correct description of GetStreamUri

Change in the ONVIF Media Service Specificationfrom:
> RTP over RTSP over TCP: StreamType = "RTP_unicast", TransportProtocol = "HTTP"

to:
> RTP over RTSP over TCP: StreamType = "RTP_unicast", TransportProtocol = "RTSP"

## 274   Add definition of valid characters for the media profile token

Optionally the token identifier can be defined by the client. In this case a device shall support at least a token length of 8 characters and characters "A-Z" | "a-z" | "0-9" | "-.".

## 278   Make currentTime mandatory in renew

Added identical requirement as already in place for the SubscribeResponse.

## 280   Align the defined names for userLevel

Replace in chapter 5.12.1.1. "MediaUser" by "User".

## 281   Clarify use of "AutoStart" field and expected multicast behaviour

Add a paragraph to 5.17.1 of the ONVIF Media Service Specification:
> Multicast streaming may stop when the corresponding profile is deleted or one of its
> Configurations is altered via one of the set configuration methods.

Change annotation of the Multicast Autostart property from
> true if the streaming is persistant (shall restart after a reboot)

to
> Read only property signalling that streaming is persistant. Use the methods
> StartMulticastStreaming and StopMulticastStreaming to switch its state.

## 282 Correct RTP packet example

In the ONVIF Streaming Specification
correct in table 4 "length=N+3" to "length=N+4"/

## 283 Fix error in RTSP example

Replace in section 5.2.1.1.2 of the ONVIF Streaming Specification in the example RTSP PLAY
response the line:

   Range: 20100217T143720.257Z-

by

   Range: clock=20100217T143720.257Z-

## 284 Clarify c= field of SDP for multicast streaming

Insert new section to 5.2.1.1 RTSP of the ONVIF Streaming Specification:

   5.2.1.1.4 Multicast streaming

   A device shall include a valid multicast address in the "c=" field of a DESCRIBE response
   according to RFC 4566.
   Remark: the optional dynamic multicast address assignment exception described in appendix
   C.1.7 of RFC 2326 allowing 0.0.0.0 addresses does not apply.

Move example section from

   5.2.1.1.4 RTSP message example

to

   5.2.1.1.5 RTSP message example.

## 287 Add capability for ReversePlayback

Added capability to the ONVIF Replay Service Specification:
ReversePlayback - Indicator that the Device supports reverse playback as defined in the ONVIF
Streaming Specification.

# 289   Define requirement level for several replay features

1) 6.3 RTSP feature tag:

change

> The Replay Server shall accept a SETUP command that includes a Require header containing the onvif-replay feature tag.

to

> The Replay Server shall accept a SETUP and a PLAY command that includes a Require header containing the onvif-replay feature tag.

2) 6.4.1 Range header field

a) add a sentence

> a device shall support this Range header field

b) change:

> The Range field shall be expressed using absolute times only

to:

> The Range field shall be expressed using the utc-range definition:
> ```
> utc-range = "clock" ["=" utc-range-spec]
> utc-range-spec = ( utc-time "-" [ utc-time ] ) / ( "-" utc-time )
> utc-time = utc-date "T" utc-clock "Z"
> utc-date = 8DIGIT
> utc-clock = 6DIGIT [ "." 1*9DIGIT ] yyyymmddTHHMMSS[.MMMMMM]
> ```

3)6.4.2 Rate-Control header field

add a sentence

> a device shall support this RateControl? header field

4) 6.4.3 Frames header field

change:

> The server shall support the Frames header field

to:

> The server shall support the Frames header field and the "all" and "intra" parameter. The "predicted" and "intra/X" are optional. A device shall indicate the support for "minimum interval between successive intra frames" and "Intra frames and predicted frames only" in the Replay capabilities (add a new capability)

5)6.5.1 Packet transmission order

a) change:

> During reverse playback, GOPs are sent in reverse order, but packets within a GOP are sent in forward order.

to:

During reverse playback, GOPs SHALL be sent in reverse order, but packets within a GOP SHALL be sent in forward order.

b) change:

In this case the packets within each frame are again sent in forward order, while the frames themselves are sent in reverse order.

to:

In this case the packets within each frame SHALL be again sent in forward order, while the frames themselves SHALL be sent in reverse order.

6) 6.9 Go To Time

add a sentence:

a device shall support the "immediate" rtsp header field Add recommendation to support I-frame request via RFC 4585

## 290 Make PAUSE required for playback

Change in table 2 of the ONVIF Streaming Specification on page 17 from:

PAUSE    R->T   O    Required to temporarily stop media stream. ...

to:

PAUSE    R->T   Live:O, Playback:M    Required to temporarily stop media playback. ...

## 291 Correct DeviceIO capabilities

Aligned the ONVIF Device IO Specification to the correct wsdl file to:

**VideoSources:**    Number of video sources (defaults to none).

**VideoOutputs:**    Number of video outputs (defaults to none).

**AudioSources:**    Number of audio sources (defaults to none).

**AudioOutputs:**    Number of audio outputs (defaults to none).

**RelayOutputs:**    Number of relay outputs (defaults to none).

## 293  Add Encoding and BitRate capabilities for recording

Add to section 5.20 of the ONVIF Recording Control Service Specification:

**Encoding**         Indication which encodings are supported for recording. The list may contain one or more enumeration values of tt:VideoEncoding and tt:AudioEncoding.

**MaxRate**          Maximum supported bit rate for all tracks of a recording in kBit/s.

**MaxTotalRate**     Maximum supported bit rate for all recordings in kBit/s.

**MaxRecordings**    Maximum number of recordings supported.

## 297  Improve RecordingControl introduction section

Replace

  "For a definition of the storage ..."

by

  "The overview section provides a definition of the ONVIF storage model. This is common for all ONVIF storage related services."

## 315  Clarification for CreateProfile method

Changed in the ONVIF Media Service Specification

   The NVT shall support the creation of media profiles as defined in this standard through the CreateProfile command.

by

   An NVT shall support the creation of media profiles as long as the number of existing profiles does not exceed the capability value MaximumNumberOfProfiles.

## 316  Clarify multicast teardown behavior

Add the following paragraph to section 5.2.1.1.4 of the ONVIF Streaming Specification:

   Chapter 10.7 TEARDOWN of [RFC 2326] states that a device shall stop the stream delivery for the given URI on tear down. This needs to be clarified in case of multicast: for a multicast stream the device shall stop sending packets for a multicast configuration when no more RTSP sessions are using the same multicast configuration nor its AutoStart flag has been set.

## 327 Add recording status Unknown to specification

The specification didn't mention this state which is part of the schema enumeration.
Added it to the specification.

## 328 Clarify recording state changes

Added drawing with defined state changes to the ONVIF Recording Search Specification.

## 329 Mandate qname for Vendor specific Simple & ElementItems

Insert before "It is recommended to use SimpleItems instead of ElementItems whenever applicable, since":

> Vendor specific extensions shall express the SimpleItem and ElementItem Name attribute as qname. This avoids potential name clashes between Vendor specific extensions and future ONVIF extensions.

## 333 JPEG over RTP - Discourage usage of inter-frame optimizations

Add the following paragraph to section "5.1.4.2 Logical decoding specification" of the ONVIF Streaming Specification:

> Implementations should provide for each frame the complete JPEG headers. This holds especially for the width and height information as well as the quantization and Huffman tables. If such important information is not provided for each frame, both playback and multicast streaming may suffer from incomplete JPEG header information.

## 334   Improve definition of the SimpleItem Descriptor

Revise in the ONVIF Core specification 9.5.4:

> The Type attribute of a SimpleItemDescriptor shall match the SimpleElement definition of an XML schema.

with

> The Type attribute of a SimpleItemDescription shall use simple type defined in XML schema (built in simple types), ONVIF schemas, or vendor schemas.

## 335   Correct type attribute specification

Correct in Core 2.10 (Section 9.5.4)

> Type" attribute of SimpleItemDescription and ElementItemDescription specified as "xs:string".

to

> Type" attribute of SimpleItemDescription and ElementItemDescription specified as xs:QName

## 337 Add display extent, refresh rate and aspect ratio to VideoOutput

Change from:
```
<xs:complexType name="VideoOutput">
  <xs:annotation>
    <xs:complexContent>
      <xs:extension base="tt:DeviceEntity">
        <xs:sequence>
          <xs:element name="Layout" type="tt:Layout"/>
          <xs:any namespace="##any" processContents="lax" minOccurs="0"
maxOccurs="unbounded"/>
        </xs:sequence>
        <xs:anyAttribute processContents="lax"/>
      </xs:extension>
    </xs:complexContent>
</xs:complexType>
```

to:
```
<xs:complexType name="VideoOutput">
  <xs:annotation>
    <xs:complexContent>
      <xs:extension base="tt:DeviceEntity">
        <xs:sequence>
          <xs:element name="Layout" type="tt:Layout"/>
          <xs:element name="Resolution" type="tt:VideoResolution" minOccurs="0" />
          <xs:element name="RefreshRate" type="xs:float" minOccurs="0" />
          <xs:element name="AspectRatio" type="xs:float" minOccurs="0" />
          <xs:element name="Extension" type="tt:VideoOutputExtension"
minOccurs="0" />
        </xs:sequence>
        <xs:anyAttribute processContents="lax"/>
      </xs:extension>
    </xs:complexContent>
</xs:complexType>
```

with documentation

| | |
|---|---|
| VideoResolution | - Resolution of the display in Pixel |
| RefreshRate | - Refresh rate of the display in Hertz |
| AspectRatio | - Aspect ratio of the display as physical extent of width divided by height. |

Addition of Extension element as required.

## 342   Add Replay session timeout capability

Add a capability called SessionTimeoutRange to the capabilities of the ONVIF Replay Specificaiton.

## 362   Change the requirement of Notification Streaming Interface

Change from:

The notification streaming via RTP shall be implemented by an ONVIF compliant device.

to:

The notification streaming via RTP shall be implemented by an ONVIF compliant device that supports ONVIF Media service.

## 386   Add maxOccurs="unbounded" for Dot11 NetworkInterface Configuration

Modify the schema to in order to support future systems with multiple wireless interfaces.

```
<xs:complexType name="NetworkInterfaceSetConfigurationExtension">
    <xs:sequence>
        <xs:any namespace="##other" processContents="lax" minOccurs="0"
            maxOccurs="unbounded"/>
        <xs:element name="Dot3" type="tt:Dot3Configuration" minOccurs="0"
            maxOccurs="unbounded"/>
        <xs:element name="Dot11" type="tt:Dot11Configuration" minOccurs="0"
            maxOccurs="unbounded"/>
        <xs:element name="Extension"
            type="tt:NetworkInterfaceSetConfigurationExtension2" minOccurs="0"/>
    </xs:sequence>
</xs:complexType>
```

## 387   Clarify GetSnaphortURI

Added two paragraphs to the method in the ONVIF Media Service Specification:

The image encoding will always be JPEG regardless of the encoding setting in the media profile. The JPEG settings (like resolution or quality) should be taken from the profile if suitable. The provided image shall be updated automatically and independent from calls to GetSnapshotUri.

A device supporting the media service should support this command. A device shall support this command when the SnapshotUri capability is set to true.

Added the following capability to the media service:

SnapshotUri    Indicates the support for GetSnapshotUri.

## 422    Add AnalyticsEngine selector to the configuration

In onvif.xsd add the following elements to the type MetadataConfiguration and add the corresponding extension element:

```
<xs:element name="AnalyticsEngineConfiguration"
            type="tt:AnalyticsEngineConfiguration" minOccurs="0"/>
<xs:element name="Extension" type="tt:MetadataConfigurationExtension"
            minOccurs="0"/><xs:complexType name="MetadataConfigurationExtension">
```

## 424    Definition of the device behavior for SetVideoEncoderConfiguration

Add to section "5.5.4 Get video encoder configuration options" of the ONVIF Media Service Specification the sentence:

Any combination of the parameters obtained using a given profile and configuration shall be a valid input for the corresponding SetVideoEncoderConfiguration command.

Add to section "5.5.5 Modify a video encoder configuration" the paragraph:

A device shall accept any combination of parameters that are returned in the GetVideoEncoderConfigurationOptionsResponse. If necessary the device may adapt parameter values for Quality and RateControl elements without returning an error.

## 433    Add capability for Default Access Policy

Add the following capability description to table 12 of the ONVIF Core Specification and the wsdl file:

| DefaultAccessPolicy | Indicates if the device supports the default access policies as defined in 5.12.1.1. |
|---|---|

## 434  Add capability for fixed or configurable Home position

Add a capability to the PTZ Node in of the ONVIF PTZ Service Specification:

- **FixedHomePosition**    Indication whether the HomePosition of a Node is fixed or it can be changed via the SetHomePosition command.

## 435  Align FindRecording Range

Remove the sentence in section 5.7 of the ONVIF RecordingSearch Specification:

> The entire time range from StartPoint to EndPoint has been searched through.

## 436  Correct namespace

Replace in table 1 of the ONVIF Core Specification

> http://www.onvif.org/ver10/network/wsdl/

by

> http://www.onvif.org/ver10/network/wsdl

## 460  Add analytics service capabilities

Add the attributes for RuleSupport and AnalyticsModuleSupport to the Capabilities complex type definition in analytics.wsdl.

## 493  How to handle SessionTimeout

Add to section 4.21 of the ONVIF Media Service Specification as well as to SetVideoEncoderConfiguration annotation:

> SessionTimeout is provided as a hint for keeping rtsp session by a device. If necessary the device may adapt parameter values for SessionTimeout elements without returning an error.
> For the time between keep alive calls the client shall adhere to the timeout value signaled via RTSP.

## 501 Align 802.11 Priority in specification with schema

Remove from section 8.2.22.3 of the ONVIF Core Specification the sentence:

> If the priority value is missing from the configuration the lowest priority shall be assumed.

## 505 Remove "5.5 Service specific data types" from VideoAnalyticsSpec

Remove the following section:

> This service does reuse the tt:Config data type defined in the ONVIF Event Service Specification.
> It does not introduce own data types for the service itself.

## 512 Update client side discovery requirement

Replace in section 7.1 of the ONVIF Core Specification:

> A client compliant with this specification shall implement the Client role as specified in [WS-Discovery].

by

> If necessary a client compliant with this specification shall implement the Client role as specified in [WS-Discovery].

## 528 Mark NoConfig faults of Media remove methods obsolete

Add the following sentence to the NoConfig fault description of all remove methods:

> *Note: this fault code has become obsolete to respect the behaviour not to return this error.*

## 535 Correct GetServiceCapabilities Payload Description

Replace description of GetServiceCapabilitiesRequest with:

> This is an empty message.

## 536 Correct GetServices Payload Definition

Correct the upper bound of the service list element to:

> "tt:Service [1][unbounded]".

## 537   Remove obsolete sentence from GetServices annotation

Replace

> Description: Returns information about services on the device. Either information about all services or the selected services can be returned.

by:

> Description: Returns information about services on the device.

## 540   Improve GetServiceRequest message description

Replace "The message contains a request for device services and their capabilities" with "The message contains a request for all services in the device and possibly the capabilities for each service"

## 542   Correct soap action of GetGuaranteedNumberOfVideoEncoderInstances

Remove blank.

## 543   Correct XPath Example of Recording Search

Replace in two places of the ONVIF Recording Search Service Specification

> boolean(//Tracks[TrackType = "Video"])

by

> boolean(//Track[TrackType = "Video"])

## 544   Clarify RTP port usage for multicast

Replace in annotation:

> "The multicast port"

by

> "The RTP mutlicast destination port. A device may support RTCP. In this case the port value shall be even to allow the corresponding RTCP stream to be mapped to the next higher (odd) destination port number as defined in the RTSP specification."

## 549  Change Requirement Level of Audio Back Channel

Replace in ONVIF Streaming Specification:

"A device that supports backchannel shall understand the backchannel tag:"

by

"A device that supports backchannel and signals Audio output support via the AudioOutputs capability shall understand the backchannel tag:"

## 551  Bind Audio Requirements to AudioOutputs

Replace in ONVIF Media Service Specification

"An NVT that is able to output audio shall support ..."

by

"A device that signals support for Audio outputs via its Device IO AudioOutputs capability shall support ..."

## 552  Adapt VideoEncoderConfigurationOptions

1. Replace in annotation:

"(Depricated: use Extension)" by "(See also Extension element)"

2. Replace

"Devices prior to ONVIF 2.0 will only return the base encoder settings while devices from 2.0 onwards will respond with both base and extension settings."

by

"For JPEG, MPEG4 and H264 extension elements have been defined that provide additional information. A device must provide the XxxOption information for all encodings supported and should additionally provide the corresponding XxxOption2 information."

## 554  Replace NVT and NVC

Replace in ONVIF Core, PTZ and Media Service Specifications:

"NVT" by "device"

and

"NVC" by "client"

## 555 Change DeviceMgmt IO Requirements

Change from:

> The commands in this section are depricated.

to:

> The commands in ths section are kept for backward compatibility purposes. For a more extensive IO interface please refer to the ONVIF Device IO Specification

## 556 Lower Requirements for GetEndpointReference

Replace in ONVIF Core Specification:

> "The device shall support the GetEndpointReference command .."

by

> "The device should support the GetEndpointReference command .."

## 557 Adjust requirements of RemoteUser handling

Replace in ONVIF Core Specification:

> A device supporting remote user handling shall support this operation.

by

> A device that signals support for remote user handling via the Security Capability RemoteUserHandling shall support this operation.

## 558 Adjust requirement of LoadCertificateWithPrivateKey

Replace in ONVIF Core Specification:

> Lower conditional implementation requirement from "shall" to "should".

# 559  Tie 802.11 and 802.1X requirements to capabilities

1. Replace in ONVIF Core Specification:

"Requirements in this section and subsections is only valid for a device with IEEE 802.11 support,"

by

"Requirements in this section and subsections are only valid for a device that signals IEEE 802.11 support via its Network Dot11Configuration capability."

2. Replace

"The device shall support this command if it supports IEEE 802.1X."

by

"Requirements in this section and subsections are only valid for a device that signals IEEE 802.11 support via its Network Dot11Configuration capability."

# 560  Update Capability Requirements

Update section 8.1 of the ONVIF Core Specification

1. GetCapabilities

Replace

The usage of this command has been deprecated with version 2.1 of the specification and has been replaced by the GetServices command.

by

This method provides a backward compatible interface for the base capabilities. Refer to GetServices for a full set of capabilities.

2. GetServiceCapabilties

Add

The service shall implement this method if the device supports the GetServices method.

3. GetServices

Add

A device shall implement this method if any of the ONVIF compliant services implements the GetServiceCapabilities.

## 561  Remove remaining notion of NVT and NVC

Replace in ONVIF Core Specifications any notion of NVT, NVC and other device type related names. Update Section 4.4 from types to profiles.

## 562  Remove authentication requirements

The basic authentication requirements are now part of the Profile Specifications.

Remove the paragraph:

> "Server (i.e., a device in the ONVIF context) and client shall support both digest authentication as specified in [RFC 2617] and the user name token profile as specified in WS-Security and 5.12.2 and may support any of the other WS-security defined profiles."

## 563  Mark NVT document as deprecated

Introduce a new deprecated section in the html document map containing the NVT specification.

## 564  Update Discovery Scopes

In 7.3.2.2.remove the sentence "For each device type the type specification defines its primary type."

In table 8 replace "type" by "profile".

Remove type scopes from example and add single profile scope.

## 569  Lower requirement for fault (if a service is not supported)

In  Section 5.1.1 of the ONVIF Core specification replace

> If the specific command is not required for that service and the device does not support the command, the device shall respond to a request with the error codes:
>
> env:Receiver,
>
> ter:ActionNotSupported,

by

> If the specific command is not required for that service and the device does not support the command, the device should respond to a request with the error codes:
>
> env:Receiver,
>
> ter:ActionNotSupported,

## 571    Clarify out of range bitrate limit for SetVideoEncoderConfiguration

Incorporate into Media Service Spec:

A device shall adapt an out of range BitrateLimit instead of returning a fault.

## 572    TTL value in MulticastConfiguration

Clarify parameter usage in wsdl annotation. Replace

The TTL value that should be used for the multicast stream

by

In case of IPv6 the TTL value is assumed as the hop limit. Note that for IPV6 and administratively scoped IPv4 multicast the primary use for hop limit / TTL is to prevent packets from (endlessly) circulating and not limiting scope, in these cases the address contains the scope

## 576    GetZeroConfiguration when device has more than one interface

Add an Extension element to onvif.xsd.

Add the following sentence to the method: "Devices supporting zero configuration on more than one interface shall use the extension to list the additional interface settings."

## 581    Additional faults for SetNetworkProtocols

Add the fault code

env:Receiver / ter:ActionNotSupported / ter:EnablingTlsFailed:

The device doesn't support TLS or TLS is not configured appropriately.

to the ONVIF Core Specification.

## 586   Clarify multicast capability

In the ONVIF Media Service Specification replace the RTPMulticast capability description with:

Indication of support of UDP multicasting as described in Section 5.17

Add the following to section 5.17:

An device supporting multicast streaming (indicated by the RTPMulticast capability) shall support:

- The multicast RTSP setup, see GetStreamUri section 5.15
- The web service multicast setup, see StopMulticastStreaming and StopMulticastStreaming

The last sentence of 5.17.1 and 5.17.2 should be removed, i.e.:

An NVT that supports video, audio or metadata multicast streaming shall support ...

## 587   Correct authentication requirements

Apply the following changes to the ONVIF Core Specification.

Add in chapter 5.12:

If server supports both digest authentication as specified in [RFC 2617] and the user name token profile as specified in WS-Security the following behavior shall be adapted.

Replace in chapter 5.12

Note that this behaviour on the server's side differs from earlier versions of this specification, which required for this case an HTTP 400 error on the HTTP level and a SOAP:Fault env:Sender ter:NotAuthorized error on the WS level.

by

Note that this behaviour on the server's side differs from the case of supporting only the user name token profile, which required for this case an HTTP 400 error on the HTTP level and a SOAP:Fault env:Sender ter:NotAuthorized error on the WS level.

Remove in table 12 "Required setting must be true." for http digest and username token.

# 588   Change Dot11 xml comments to annotation

Move the following comment text in onvif.xsd to annotation:

- simple type Dot11PSKPassphrase

  <!-- IEEE802.11-2007 H.4.1: A pass-phrase is a sequence of between 8 and 63 ASCII-encoded characters. -->

  <!-- IEEE802.11-2007 H.4.1: Each character in the pass-phrase must have an encoding in the range of 32 to 126 (decimal),inclusive. -->

- complex type Dot11PSKSet

  <xs:sequence><!-- Either Key or Passphrase SHALL be given, if both are supplied Key SHALL be used by the device and Passphrase ignored -->

  <!-- If Passpharse is supplied the Key SHALL be derived using the algorithm described in IEEE802.11-2007 section H.4 -->

- Dot11AuthAndManagement

  <!-- See IEEE802.11 7.3.2.25.2 for details. -->

- complex type CertificateInformation?

  <!--Validity Range is from "NotBefore?" to "NotAfter?"; the corresponding DateTimeRange? is from "From" to "Until" -->