ONVIF
Profile S Specification

Version 1.0
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CONTENTS

1 Scope

This document defines the mandatory and conditional features required by an ONVIF Device and ONVIF Client that support the Profile S.

2 Normative references

2.1 Normative References

ONVIF Profile Policy
< http://www.onvif.org/imwp/download.asp?ContentID=20983 >
ONVIF Core Specification
< http://www.onvif.org/Documents/Specifications.aspx >
ONVIF Media Service Specification
< http://www.onvif.org/Documents/Specifications.aspx >
ONVIF PTZ Service Specification
< http://www.onvif.org/Documents/Specifications.aspx>
ONVIF Streaming Specification
< http://www.onvif.org/Documents/Specifications.aspx >

3 Terms and Definitions

3.1 Definitions

Profile	See ONVIF Profile Policy.
ONVIF Device	Computer appliance or software program that exposes one or multiple ONVIF Web Services
ONVIF Client	Computer appliance or software program that uses ONVIF Web Services.

4 Overview

An ONVIF device compliant to the Profile S is an ONVIF device that sends video data over an IP network to a client. The Profile S also includes support for PTZ, audio and metadata streaming, and relay outputs if those features are present on the device. For example, a device compliant to the Profile S may be an IP network camera or an encoder device.

An ONVIF client compliant to the Profile S is an ONVIF client that can configure, request, and control streaming of video data over an IP network from an ONVIF device compliant to the Profile S. The Profile S also includes support for control of ptz, receiving audio and metadata stream, and relay outputs if those features are supported by the client.

An ONVIF profile is described by a fixed set of functionalities through a number of services that are provided by the ONVIF standard. A number of services and functionalities are mandatory for each type of ONVIF profile. An ONVIF device and client may support any combination of profiles and other optional services and functionalities.

5 Technical Specification Version Requirement

Implementation of ONVIF Core Specification v1.02 or later is required for conformance to Profile S.

6 Requirement Levels

Each feature in this document has a requirement level for Device and Client that claim conformance to the Profile S and contains a Function List that states the functions requirement level for Device and Client that implement that feature.

The requirement levels are:

- Mandatory = Feature or function that shall be implemented by a device or client.
- Optional = Feature or function that may be implemented by a device or client
- Conditional = Feature or function that shall be implemented by devices and clients if they support that functionality.

Function Lists use the following abbreviations:

- M = Mandatory
- O = Optional
- C = Conditional

All functions shall be implemented as described in corresponding ONVIF service specification document.

7 Profile Mandatory Features (normative)

The Profile Mandatory Features section lists the features that are guaranteed to be supported between a device and client that are both conformant to the profile:

7.1 Video Streaming

- Listing of media profiles
- Streaming of video using RTSP

7.1.1 Device requirements

- Stream URI and profile operations as covered by the media service.
- Media streaming over RTSP as covered by the streaming specification.

7.1.2 Client requirements

- Client shall be able to list media profiles from the device using the GetProfiles operation.
- Client shall be able to get the stream URI for the selected profile using the GetStreamURI operation.
- Client shall be able to stream video on RTP/UDP or RTP/RTSP/HTTP/TCP using the selected profile over RTSP.

7.1.3 Function List for Video Streaming

Function	Service	Device	Client
GetProfiles	Media	M	M
GetStreamUri	Media	M	M
Media Streaming using RTSP	Streaming	M	M

7.2 Video Streaming – MJPEG

- Streaming of MJPEG video using RTSP.
- Sub-feature of 7.1 Video Streaming.

7.2.1 Device requirements

- Device shall declare MJPEG Option in VideoEncoderConfigurationOptions.
- Device shall be able to stream MJPEG according to the Streaming Specification.

7.2.2 Client requirements

- Client shall be able to receive a stream and decode MJPEG video using the selected profile over RTSP.

- Client shall be able to understand RTSP – JPEG RTP header extension.

7.2.3 Function List for Video Streaming – MJPEG

Function	Service	Device	Client
Media Streaming using RTSP - JPEG RTP header extension	Streaming	C	M

7.3 Video encoder configuration

- Listing and modification of video encoder configurations on the device.

7.3.1 Device requirements

- The device shall return its capabilities for the maximum number of concurrent streams in GetGuaranteedNumberOfVideoEncoderInstances response.
- Video encoder configuration operations as covered by the media service.

7.3.2 Client requirements

- Client shall be able to list available video encoder configurations using GetVideoEncoderConfigurations operation.
- Client shall be able to modify video encoder configurations using the, GetVideoEncoderConfiguration, GetVideoEncoderConfigurationOptions and SetVideoEncoderConfiguration operations.
- Client may be able to add video encoder configurations to media profiles using the GetCompatibleVideoEncoderConfigurations and AddVideoEncoderConfiguration operations.
- Client may be able to query maximum number of concurrent stream using the GetGuaranteedNumberOfVideoEncoderInstances operation.
- Client may be able to remove video encoder configurations from media profiles using the RemoveVideoEncoderConfiguration operation.

7.3.3 Function List for Video Encoder Configuration

Function	Service	Device	Client
GetVideoEncoderConfiguration	Media	M	M

GetVideoEncoderConfigurations	Media	M	M
AddVideoEncoderConfiguration	Media	M	O
RemoveVideoEncoderConfiguration	Media	M	O
SetVideoEncoderConfiguration	Media	M	M
GetCompatibleVideoEncoderConfigurations	Media	M	O
GetVideoEncoderConfigurationOptions	Media	M	M
GetGuaranteedNumberOfVideoEncoderInstances	Media	M	O

7.4 User authentication

- WS-Usernametoken using timestamps and nonce
- Http Digest

7.4.1 Device requirements

- Device shall support WS-Usernametoken according to WS-Security as covered by the Core Specification.

7.4.2 Client requirements

- Client shall implement WS-Usernametoken according to WS-security as covered by the core specification.
- Client shall implement HTTP Digest as covered by the core specification.

7.4.3 Function List for User Authentication

Function	Service	Device	Client
WS-Usernametoken Authentication	Core	M	M
HTTP Digest	Core	O	M

7.5 Capabilities

- Querying device for capabilities.

7.5.1 Device requirements

- Capabilities and WSDL URL operations as detailed in the Core Specification.

7.5.2 Client requirements

- Client shall be able to get Capabilities of a device using GetCapabilities.

7.5.3 Function List for Capabilities

Function	Service	Device	Client
GetCapabilities	Device	M	M
GetWsdlUrl	Device	M	O

8 Profile Conditional Features (normative)

The Profile Conditional Features section list the features that shall be implemented if the device or client supports the feature. For instance a PTZ device shall implement the ONVIF PTZ interface and a client that has PTZ support shall implement the ONVIF PTZ interface. The requirements represents the minimum required to be implemented for conformance.

8.1 Video Streaming – MPEG4 (if supported)

- Streaming of MPEG4 video using RTSP.
- Sub-feature of 7.1 Video Streaming.

8.1.1 Device requirements (if supported)

- Device shall declare MPEG4 option in VideoEncoderConfigurationOptions.
- Device shall be able to stream MPEG4 according to the Streaming Specification.
- Device shall send a key frame on-demand upon reception of SetSynchronizationPoint request when streaming MPEG4.

8.1.2 Client requirements (if supported)

- Client shall be able to receive a stream and decode MPEG4 video using the selected profile over RTSP.

8.1.3 Function List for Video Streaming – MPEG4 (if supported)

Function	Service	Device	Client
SetSynchronizationPoint	Media	M	O

8.2 Video Streaming – H264 (if supported)

- Streaming of H264 video using RTSP
- Sub-feature of 7.1 Video Streaming

8.2.1 Device requirements (if supported)

- Device shall declare H264 option in VideoEncoderConfigurationOptions.

- Device shall be able to stream H264 according to the Streaming Specification.
- Device shall send a key frame on-demand upon reception of SetSynchronizationPoint request when streaming H264.

8.2.2 Client requirements (if supported)

- Client shall be able to receive a stream and decode H264 video using the selected profile over RTSP.

8.2.3 Function List for Video Streaming – H264 (if supported)

Function	Service	Device	Client
SetSynchronizationPoint	Media	M	O

8.3 PTZ (if supported)

- Moving and stopping a PTZ device using continuous move.

8.3.1 Device requirements (if supported)

- Device shall return PTZ capabilities in GetCapabilities response.
- Device shall return its PTZ status in GetStatus response.
- Continuous Move and Stop operations, and Continuous Velocity Spaces as covered by the PTZ service.
- Device shall expose all its PTZ Nodes via the GetNodes and GetNode operation.
- PTZ configuration operations as covered by the media service and the PTZ service.

8.3.2 Client requirements (if supported)

- Client shall be able to read PTZ capabilities from a PTZ node using GetNodes or GetNode operations.
- Client shall be able to add a PTZ configuration to a profile using GetConfigurations and AddPTZConfiguration.
- Client shall be able to move a PTZ device using the ContinuousMove operation.
- Client shall be able to stop a PTZ device using the Stop operation.
- Client may be able to query a device PTZ status using the GetStatus operation.
- Client may be able to modify a PTZ configuration using the GetConfiguration, GetConfigurationOptions and SetConfiguration operations.

- Client may be able to remove a PTZ configuration from a profile using RemovePTZConfiguration operation.

8.3.3 Function List for PTZ (if supported)

Function	Service	Device	Client
AddPTZConfiguration	Media	M	M
RemovePTZConfiguration	Media	M	O
GetNodes	PTZ	M	M
GetNode	PTZ	M	M
GetConfigurations	PTZ	M	M
GetConfiguration	PTZ	M	O
GetConfigurationOptions	PTZ	M	O
SetConfiguration	PTZ	M	O
ContinuousMove	PTZ	M	M
Stop	PTZ	M	M
GetStatus	PTZ	M	O

8.4 PTZ – Absolute Positioning (if supported)

- Moving a PTZ device to an absolute position.
- Sub-feature of 8.3 PTZ.

8.4.1 Device requirements (if supported)

- AbsoluteMove operation, Absolute Position and Generic Speed Spaces as covered by the PTZ service.

8.4.2 Client requirements (if supported)

- Client shall be able to move a PTZ device using the AbsoluteMove operation.

8.4.3 Function List for PTZ – Absolute Positioning (if supported)

Function	Service	Device	Client
AbsoluteMove	PTZ	M	M

8.5 PTZ – Relative Positioning (if supported)

- Moving a PTZ device to a relative position.
- Sub-feature of 8.3 PTZ.

8.5.1 Device requirements (if supported)

- RelativeMove operation, Relative Translation and Generic Speed Spaces as covered by the PTZ service.

8.5.2 Client requirements (if supported)

- Client shall be able to move a PTZ device using the RelativeMove operation.

8.5.3 Function List for PTZ – Relative Positioning (if supported)

Function	Service	Device	Client
RelativeMove	PTZ	M	M

8.6 PTZ – Presets (if supported)

- Listing of presets.
- Moving a PTZ device to a preset.
- Sub-feature of 8.3 PTZ.

8.6.1 Device requirements (if supported)

- A PTZ node with the MaximumNumberOfPresets capability set to at least 1.
- Preset operations as covered by the PTZ service.

8.6.2 Client requirements (if supported)

- Client shall be able to list the presets using the GetPresets operation.
- Client shall be able to move a PTZ device to a specific preset using the GotoPreset operation.
- Client may be able to set and remove presets using SetPreset and RemovePreset operations.

8.6.3 Function List for PTZ – Presets (if supported)

Function	Service	Device	Client
SetPreset	PTZ	M	O

GetPresets	PTZ	M	M
GotoPreset	PTZ	M	M
RemovePreset	PTZ	M	O

8.7 PTZ – Home Position (if supported)

- Moving a PTZ device to its home position.
- Sub-feature of 8.3 PTZ.

8.7.1 Device requirements (if supported)

- A PTZ node with the HomeSupported capability set to “true”.
- Home position operations as covered by the PTZ service.

8.7.2 Client requirements (if supported)

- Client shall be able to move a PTZ device to its home position using the GotoHomePosition operation.
- Client may be able to set home position of a PTZ device using the SetHomePosition operation.

8.7.3 Function List for PTZ – Home Position (if supported)

Function	Service	Device	Client
GotoHomePosition	PTZ	M	M
SetHomePosition	PTZ	C	O

8.8 PTZ – Auxiliary Command (if supported)

- Support for PTZ specific auxiliary commands.
- Sub-feature of 8.3 PTZ.

8.8.1 Device requirements (if supported)

- A PTZ node containing a non-empty list of auxiliary commands in the AuxiliaryCommands capability.
- Auxiliary command operation as covered by the PTZ service.

8.8.2 Client requirements (if supported)

- Client shall be able to send auxiliary command to a PTZ device using the SetAuxiliaryCommand operation.

8.8.3 Function List for PTZ – Auxiliary Command

Function	Service	Device	Client
SendAuxiliaryCommand	PTZ	M	M

8.9 Audio Streaming (if supported)

- Streaming of Audio.

8.9.1 Device requirements (if supported)

- Device shall declare G711 option in AudioEncoderConfigurationOptions.
- Device shall be able to stream G711 according to the Streaming Specification.
- Audio source, audio source configuration and audio encoder configuration operations as covered by the media service.

8.9.2 Client requirements (if supported)

- Client shall be able to receive a stream and playback audio in G.711 μ Law (Simplex-Camera Microphone Only, 1ch) codec.
- Client shall be able to configure a media profile for audio streaming using the GetCompatibleAudioSourceConfigurations, AddAudioSourceConfiguration, GetCompatibleAudioEncoderConfigurations and AddAudioEncoderConfiguration operations.
- Client may be able to modify an audio encoder configuration using the GetAudioEncoderConfigurationOptions, GetAudioEncoderConfiguration and SetAudioEncoderConfiguration operations.
- Client may be able to list audio sources using the GetAudioSources operation.
- Client may be able to modify an audio source configuration using the GetAudioSourceConfigurationOptions, GetAudioSourceConfiguration and SetAudioSourceConfiguration operations.

8.9.3 Function List for Audio Streaming (if supported)

Function	Service	Device	Client
GetAudioSources	Media	M	O
GetAudioSourceConfiguration	Media	M	O
GetAudioSourceConfigurations	Media	M	O
AddAudioSourceConfiguration	Media	M	M

Function	Service	Device	Client
RemoveAudioSourceConfiguration	Media	M	O
SetAudioSourceConfiguration	Media	M	O
GetCompatibleAudioSourceConfigurations	Media	M	M
GetAudioSourceConfigurationOptions	Media	M	O
GetAudioEncoderConfiguration	Media	M	O
GetAudioEncoderConfigurations	Media	M	O
AddAudioEncoderConfiguration	Media	M	M
RemoveAudioEncoderConfiguration	Media	M	O
SetAudioEncoderConfiguration	Media	M	O
GetCompatibleAudioEncoderConfigurations	Media	M	M
GetAudioEncoderConfigurationOptions	Media	M	O

8.10 Audio Streaming – G726 (if supported)

- Streaming of G726 audio using RTSP
- Sub-feature of 8.9 Audio Streaming

8.10.1 Device requirements (if supported)

- Device shall declare G726 option in AudioEncoderConfigurationOptions.
- Device shall be able to stream G726 according to the Streaming Specification.

8.10.2 Client requirements (if supported)

- Client shall be able to receive a stream and decode G726 audio using the selected profile over RTSP.

8.10.3 Function List for Audio Streaming – G726 (if supported)

No specific function requirement.

8.11 Audio Streaming – AAC (if supported)

- Streaming of AAC audio using RTSP
- Sub-feature of 8.9 Audio Streaming

8.11.1 Device requirements (if supported)

- Device shall declare AAC option in AudioEncoderConfigurationOptions.
- Device shall be able to stream AAC according to the Streaming Specification.

8.11.2 Client requirements (if supported)

- Client shall be able to receive a stream and decode AAC audio using the selected profile over RTSP.

8.11.3 Function List for Audio Streaming – AAC (if supported)

No specific function requirement.

8.12 Multicast streaming (if supported)

- Streaming video over multicast.
- Sub-feature of 7.1 Video Streaming.

8.12.1 Device requirements (if supported)

- Device shall return Media->Streaming->RTPMulticast capability set to “true” in GetCapabilities response.
- Multicast streaming operations as covered by the media service.

8.12.2 Client requirements (if supported)

- Client shall be able to control multicast streaming using RTSP or the StartMultiCastStreaming and StopMultiCastStreaming operations.
- Client shall be able to receive a multicast stream sent by a device.

8.12.3 Function List for Multicast Streaming (if supported)

Function	Service	Device	Client
StartMulticastStreaming	Media	M	M
StopMulticastStreaming	Media	M	M

8.13 Relay outputs (if supported)

- Listing, configuration and triggering of relay outputs

8.13.1 Device requirements (if supported)

- Device shall return Device->IO->RelayOutputs capability set to at least 1 in GetCapabilities response.
- Relay output operations as covered by the device service.

8.13.2 Client requirements (if supported)

- Client shall be able to list available relay outputs using the GetRelayOutputs operation.
- Client shall be able to set the settings of a relay output using the SetRelayOutputSettings operation.
- Client shall be able to trigger a relay output using the SetRelayOutputState operation.

8.13.3 Function List for Relay Outputs (if supported)

Function	Service	Device	Client
GetRelayOutputs	Device	M	M
SetRelayOutputSettings	Device	M	M
SetRelayOutputState	Device	M	M

8.14 NTP (if supported)

- Synchronization of time using NTP servers.

8.14.1 Device requirements (if supported)

- NTP operations as covered by the device service.

8.14.2 Client requirements (if supported)

- Client shall be able to configure NTP servers on a device using GetNTP and SetNTP operations.

8.14.3 Function List for NTP (if supported)

Function	Service	Device	Client
GetNTP	Device	M	M
SetNTP	Device	M	M

8.15 Dynamic DNS (if supported)

- Configuration of Dynamic DNS.

8.15.1 Device requirements (if supported)

- Device shall return Device->Network->DynDNS capability set to “true” in GetCapabilities response.
- Dynamic DNS operations as covered by the device service.

8.15.2 Client requirements (if supported)

- Client shall be able to configure Dynamic DNS on device using GetDynamicDNS and SetDynamicDNS operations.

8.15.3 Function List for Dynamic DNS (if supported)

Function	Service	Device	Client
GetDynamicDNS	Device	M	M
SetDynamicDNS	Device	M	M

8.16 Zero Configuration (if supported)

- Configuration of Zero Configuration.

8.16.1 Device requirements (if supported)

- Device shall return Device->Network->ZeroConfiguration capability set to “true” in GetCapabilities response.
- Zero Configuration operations as covered by the device service.

8.16.2 Client requirements (if supported)

- Client shall be able to configure Zero Configuration on device using GetZeroConfiguration and SetZeroConfiguration operations.

8.16.3 Function List for Zero Configuration (if supported)

Function	Service	Device	Client
GetZeroConfiguration	Device	M	M
SetZeroConfiguration	Device	M	M

8.17 IP Address Filtering (if supported)

- Configuration of IP Address Filters.

8.17.1 Device requirements (if supported)

- Device shall return Device->Network->IPFilter capability set to “true” in GetCapabilities response.
- IP Address Filter operations as covered by the device service.

8.17.2 Client requirements (if supported)

- Client shall be able to configure, add and remove IP Address Filters on device using GetIPAddressFilter, SetIPAddressFilter, AddIPAddressFilter and RemoveIPAddressFilter operations.

8.17.3 Function List for IP Address Filtering (if supported)

Function	Service	Device	Client
GetIPAddressFilter	Device	M	M
SetIPAddressFilter	Device	M	M
AddIPAddressFilter	Device	M	M
RemoveIPAddressFilter	Device	M	M

9 Device Mandatory Features (normative)

The Device Mandatory Features section list the features that are mandatory for the device and conditional for Client in order to be conformant.

9.1 Discovery

- Discovery of a device on the network.
- Setting of discovery mode.
- Listing, adding, modifying and removing of discovery scopes.

9.1.1 Device requirements

- WS-Discovery as covered by the core specification.
- Discovery configuration and scope operations as covered by the device service.

9.1.2 Client requirements (if supported)

- Client shall be able to discover a device using WS-Discovery as specified in the core specification.
- Client may be able to get and set discovery mode using the operations GetDiscoveryMode and SetDiscoveryMode.
- Client may be able to list, add, modify and remove discovery scopes using the operations GetScopes, AddScopes, SetScopes and RemoveScopes.

9.1.3 Function List for Discovery

Function	Service	Device	Client
WS-Discovery	Core	M	M
GetDiscoveryMode	Device	M	O
SetDiscoveryMode	Device	M	O
GetScopes	Device	M	O

SetScopes	Device	M	O
AddScopes	Device	M	O
RemoveScopes	Device	M	O

9.2 Network Configuration

- Configuration of network settings on the device

9.2.1 Device requirements

- Hostname, DNS, network interface, network protocol and network default gateway operations as covered by the device service

9.2.2 Client requirements (if supported)

- Client shall be able to list and configure the device network interface using the GetNetworkInterfaces and SetNetworkInterfaces operations.
- Client shall be able to list and set the default gateway of the device using the GetNetworkDefaultGateway and SetNetworkDefaultGateway operations.
- Client may be able to set the device hostname using the SetHostName operation.
- Client may be able to list and set the DNS using the GetDNS and SetDNS operations.
- Client may be able to list and configure supported network protocols on the device using the GetNetworkProtocols and SetNetworkProtocols operations.

9.2.3 Function List for Network Configuration

Function	Service	Device	Client
GetHostname	Device	M	O
SetHostname	Device	M	O
GetDNS	Device	M	O
SetDNS	Device	M	O
GetNetworkInterfaces	Device	M	M
SetNetworkInterfaces	Device	M	M
GetNetworkProtocols	Device	M	O
SetNetworkProtocols	Device	M	O

GetNetworkDefaultGateway	Device	M	M
SetNetworkDefaultGateway	Device	M	M

9.3 System

- Configuration of system settings.
- Device information.

9.3.1 Device requirements

- Device information, date and time, factory defaults and reboot operations as covered by the device service.

9.3.2 Client requirements (if supported)

- Client shall be able to get device information such as manufacturer, model and firmware version using the GetDeviceInformation operation.
- Client may be able to get and set time of the device using the GetSystemDateAndTime and SetSystemDateAndTime operations.
- Client may be able to return the device to factory settings using the SetSystemFactoryDefault operation.
- Client may be able to reboot the device using the Reboot operation.

9.3.3 Function List for System

Function	Service	Device	Client
GetDeviceInformation	Device	M	M
GetSystemDateAndTime	Device	M	O
SetSystemDateAndTime	Device	M	O
SetSystemFactoryDefault	Device	M	O
Reboot	Device	M	O

9.4 User handling

- Manage users on the device.

9.4.1 Device requirements

- User handling operations as covered by the device service.

9.4.2 Client requirements (if supported)

- Client shall be able to create, list, modify and delete users from the device using the CreateUsers, GetUsers, SetUsers and DeleteUsers operations.

9.4.3 Function List for User Handling

Function	Service	Device	Client
GetUsers	Device	M	M
CreateUsers	Device	M	M
DeleteUsers	Device	M	M
SetUser	Device	M	M

9.5 Event handling

- Retrieving and filtering of events from a device

9.5.1 Device requirements

- WS-BaseNotification as covered by the event service.
- Event and pull point operations as covered by the event service.

9.5.2 Client requirements (if supported)

- Client shall be able to use at least one way to retrieve events out of the following:
  - "Pull" using the SetSynchronizationPoint, CreatePullPointSubscription and PullMessage operations.
  - "Push" using Notify, Subscribe, Renew and Unsubscribe operations from WS-BaseNotification.
- Client may be able to get information about what filter dialects and what topics are supported by the device using the GetEventProperties operation.
- Client may be able to use filters to select what events to retrieve using MessageContentFilter and TopicFilter.

9.5.3 Function List for Event Handling

Function	Service	Device	Client
Notify	Event	M	M*
Subscribe	Event	M	

Renew	Event	M	
Unsubscribe	Event	M	
SetSynchronizationPoint	Event	M	M*
CreatePullPointSubscription	Event	M	
PullMessage	Event	M	
GetEventProperties	Event	M	O
TopicFilter	Event	M	O
MessageContentFilter	Event	M	O
*Client shall implement one or both groups of event functions to be conformant to the event interface.			

9.6 Media profile configuration

- Creation, retrieval and deletion of media profiles

9.6.1 Device requirements

- Media profile operations as covered by the media service

9.6.2 Client requirements (if supported)

- Client shall be able to list available profiles using GetProfiles or GetProfile operations.
- Client shall be able to create a media profile using the CreateProfile operation.
- Client may be able to delete a media profile using the DeleteProfile operation.

9.6.3 Function List for Media Profile Configuration

Function	Service	Device	Client
GetProfiles	Media	M	M
GetProfile	Media	M	M
CreateProfile	Media	M	M
DeleteProfile	Media	M	O

9.7 Video source configuration

- Listing and modification of video source configurations on the device.

9.7.1 Device requirements

- Video source and video source configuration operations as covered by the media service.

9.7.2 Client requirements (if supported)

- Client shall be able to list the available video source configurations using GetVideoSourceConfigurations operation.
- Client shall be able to modify and add video source configurations using the GetCompatibleVideoSourceConfigurations, GetVideoSourceConfiguration, GetVideoSourceConfigurationOptions and SetVideoSourceConfiguration operations.
- Client may be able to list the available video sources using the GetVideoSources operation.
- Client may be able to remove video source configurations using RemoveVideoSourceConfiguration operation.

9.7.3 Function List for Video Source Configuration

Function	Service	Device	Client
GetVideoSources	Media	M	O
GetVideoSourceConfiguration	Media	M	M
GetVideoSourceConfigurations	Media	M	M
AddVideoSourceConfiguration	Media	M	M
RemoveVideoSourceConfiguration	Media	M	O
SetVideoSourceConfiguration	Media	M	M
GetCompatibleVideoSourceConfigurations	Media	M	M
GetVideoSourceConfigurationOptions	Media	M	M

9.8 Metadata configuration

- Listing and modification of metadata configuration on the device.

9.8.1 Device requirements

- Metadata configuration operations as covered by the media service.

9.8.2 Client requirements (if supported)

- Client shall be able to list metadata configurations using GetMetaDataConfigurations operation.

- Client shall be able to modify metadata configurations using the, GetMetaDataConfiguration, GetMetaDataConfigurationOptions and SetMetaDataConfiguration operations.
- Client may be able to add metadata configurations to media profiles using GetCompatibleMetaDataConfigurations and AddMetaDataConfiguration operations.
- Client may be able to remove metadata configurations from media profiles using RemoveMetaDataConfiguration operation.

9.8.3 Function List for Metadata Configuration

Function	Service	Device	Client
GetMetadataConfiguration	Media	M	M
GetMetadataConfigurations	Media	M	M
AddMetadataConfiguration	Media	M	O
RemoveMetadataConfiguration	Media	M	O
SetMetadataConfiguration	Media	M	M
GetCompatibleMetadataConfigurations	Media	M	O
GetMetadataConfigurationOptions	Media	M	M

10 Device Discovery

An ONVIF device shall implement device discovery as specified in the ONVIF Core Specification.

A device compliant to this specification shall additionally include the specific scope parameter as presented in Table 1: Scope parameters. Apart from this pre-defined parameter, it shall be possible to set any scope parameter as defined by the device owner. Scope parameters can be listed and set through the commands provided by the Device service, defined in the ONVIF Core Specification.

Table 1: Scope parameters

Category	Defined values	Description
Profile	Streaming	The Streaming scope indicates if the device is compliant to the Profile S. A device compliant to the Profile S shall include a scope entry with this value in its scope list.

10.1 Types

Section "Discovery definitions" of the ONVIF Core Specification defines a generic tds:Device for the <d:Types> declaration.

For backward compatibility reason a device compliant to this specification shall also include dn:NetworkVideoTransmitter in the <d:Types> declaration and it may omit tds:Device.