

ONVIF[™]

PTZ Device Test Specification

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REVISION HISTORY

Vers.	Date	Description
1.02.4	Jul 29, 2011	First issue of PTZ Test Specification
11.12	Dec 22, 2011	New version numbering scheme has been applied. Requirement level terms have been removed. Term "NVT" is removed in each test case.
12.06	Jun 18, 2012	PTZ Service Capabilities test cases have been added.
12.12	Dec 20, 2012	New test PTZ – HOME POSITION OPERATIONS (USAGE OF FIXEDHOMEPOSITION FLAG) was added.
13.06	June, 2013	The following test cases were updated: GENERIC PAN/TILT POSITION SPACE GENERIC ZOOM POSITION SPACE GENERIC PAN/TILT TRANSLATION SPACE GENERIC ZOOM TRANSLATION SPACE GENERIC PAN/TILT VELOCITY SPACE GENERIC ZOOM VELOCITY SPACE GENERIC PAN/TILT SPEED SPACE GENERIC ZOOM SPEED SPACE
13.12	Dec, 2013	Minor changes
14.06	Feb, 2014	New Note was added in the following test cases: PTZ ABSOLUTE MOVE SET AND GET PRESET GOTO PRESET HOME POSITION OPERATIONS (CONFIGURABLE) HOME POSITION OPERATIONS (FIXED) GENERIC PAN/TILT POSITION SPACE GENERIC ZOOM POSITION SPACE GENERIC PAN/TILT SPEED SPACE GENERIC ZOOM SPEED SPACE
15.06	Jul, 2015	The following test case was updated: SET AND GET PRESET
17.06	Jun 21, 2017	Current document name was changed from PTZ Test Specification to PTZ Device Test Specification.

		The document formatting were updated.
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1 Introduction

The goal of the ONVIF test specification set is to make it possible to realize fully interoperable IP physical security implementation from different vendors. The set of ONVIF test specification describes the test cases need to verify the [ONVIF Network Interface Specs] and [ONVIF Conformance] requirements. In addition, the test cases are to be basic inputs for some Profile specification requirements. It also describes the test framework, test setup, pre-requisites, test policies needed for the execution of the described test cases.

This ONVIF PTZ Device Test Specification acts as a supplementary document to the [ONVIF Network Interface Specs], illustrating test cases that need to be executed and passed. And also this specification also acts as an input document to the development of test tool which will be used to test the ONVIF device implementation conformance towards ONVIF standard. As the test tool performs as a Client during testing, this test tool is referred as ONVIF Client hereafter.

1.1 Scope

This ONVIF PTZ Test Specification defines and regulates the conformance testing procedure for the ONVIF conformant devices. Conformance testing is meant to be functional black-box testing. The objective of this specification is to provide the test cases to test individual requirements of ONVIF devices according to ONVIF PTZ service which are defined in [ONVIF Network Interface Specs].

The principal intended purposes are:

- Provide self-assessment tool for implementations.
- Provide comprehensive test suite coverage for [ONVIF Network Interface Specs].

This specification does not address the following:

- Product use cases and non-functional (performance and regression) testing.
- SOAP Implementation Interoperability test i.e. Web Services Interoperability Basic Profile version 2.0 (WS-I BP2.0).
- Network protocol implementation Conformance test for HTTPS, HTTP, RTP and RTSP protocols.
- Wi-Fi Conformance test

The set of ONVIF Test Specification will not cover the complete set of requirements as defined in [ONVIF Network Interface Specs]; instead it would cover subset of it.

This ONVIF PTZ Test Specification covers core parts of functional blocks in [ONVIF Network Interface Specs]. The following sections describe the brief overview and scope of each functional block.

1.1.1 PTZ Control

PTZ Control covers the test cases for the verification of the PTZ service as mentioned in [ONVIF Network Interface Specs].

Refer to Table 1.1 for PTZ Control Commands Under Test.

Table 1.1. PTZ Control Commands Under Test

Feature	Messages
PTZ Node	GetNodes GetNode
PTZ Configuration	GetConfigurations GetConfiguration GetConfigurationOptions SetConfiguration
Move Operations	AbsoluteMove RelativeMove ContinuousMove Stop GetStatus
Preset operations	SetPreset GetPresets GotoPreset RemovePreset
Home Position operations	GotoHomePosition SetHomePosition
Auxiliary operations	SendAuxiliaryCommand
Predefined PTZ spaces	AbsolutePositionSpaces RelativeTranslationSpaces ContinuousVelocitySpaces

Feature	Messages
	SpeedSpaces



2 Normative references

- [ONVIF Conformance] ONVIF Conformance Process Specification:
<https://www.onvif.org/profiles/conformance/>
- [ONVIF Profile Policy] ONVIF Profile Policy:
<https://www.onvif.org/profiles/>
- [ONVIF Network Interface Specs] ONVIF Network Interface Specification documents:
<https://www.onvif.org/profiles/specifications/>
- [ONVIF Core Specs] ONVIF Core Specifications:
<https://www.onvif.org/profiles/specifications/>
- [ONVIF PTZ Specs] ONVIF PTZ Specifications:
<https://www.onvif.org/profiles/specifications/>
- [ONVIF Media Specs] ONVIF Media Specifications:
<https://www.onvif.org/profiles/specifications/>
- [ONVIF Base Test] ONVIF Base Device Test Specifications:
<https://www.onvif.org/profiles/conformance/device-test/>
- [ISO/IEC Directives, Part 2] ISO/IEC Directives, Part 2, Annex H:
<http://www.iso.org/directives>
- [ISO 16484-5] ISO 16484-5:2014-09 Annex P:
<https://www.iso.org/obp/ui/#iso:std:63753:en>
- [SOAP 1.2, Part 1] W3C SOAP 1.2, Part 1, Messaging Framework:
<http://www.w3.org/TR/soap12-part1/>
- [XML-Schema, Part 1] W3C XML Schema Part 1: Structures Second Edition:
<http://www.w3.org/TR/xmlschema-1/>
- [XML-Schema, Part 2] W3C XML Schema Part 2: Datatypes Second Edition:
<http://www.w3.org/TR/xmlschema-2/>

- [WS-Security] "Web Services Security: SOAP Message Security 1.1 (WS-Security 2004)", OASIS Standard, February 2006.:

<http://www.oasis-open.org/committees/download.php/16790/wss-v1.1-spec-os-SOAPMessageSecurity.pdf>

3 Terms and Definitions

3.1 Conventions

The key words "shall", "shall not", "should", "should not", "may", "need not", "can", "cannot" in this specification are to be interpreted as described in [ISO/IEC Directives Part 2].

3.2 Definitions

This section describes terms and definitions used in this document.

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.
SOAP	SOAP is a lightweight protocol intended for exchanging structured information in a decentralized, distributed environment. It uses XML technologies to define an extensible messaging framework providing a message construct that can be exchanged over a variety of underlying protocols.
Device Test Tool	ONVIF Device Test Tool that tests ONVIF Device implementation towards the ONVIF Test Specification set.
Media 2 Service	Services to determine the streaming properties of requested media streams.
PTZ Service	Services to configure and control PTZ movement.
Pan	Horizontal movement or rotation of a camera or device.
Tilt	Vertical movement or rotation of a camera or device.
Zoom	Adjustment of the focal length of a zoom lens, causing the subject, scene to be brought closer or made to recede.
PTZ	The capability of a camera to pan, tilt, and zoom.
PTZ node	Low-level PTZ entity that maps to the PTZ device and its capabilities.
Media Profile	A media profile maps a video and/or audio source to a video and/or an audio encoder, PTZ and analytics configurations.
Capability	The capability commands allow a client to ask for the services provided by an ONVIF device.
Network	A network is an interconnected group of devices communicating using the Internet protocol.
Proxy Server	A server that services the requests of its clients by forwarding requests to other servers. A Proxy provides indirect network connections to its clients.
Switching Hub	A device for connecting multiple Ethernet devices together, making them act as a single network segment.

Target Service An endpoint that makes itself available for discovery.

3.3 Abbreviations

This section describes abbreviations used in this document.

HTTP Hyper Text Transport Protocol.

WSDL Web Services Description Language.

XML eXtensible Markup Language.

PTZ Pan/Tilt/Zoom.

4 Test Overview

This section describes about the test setup and prerequisites needed, and the test policies that should be followed for test case execution.

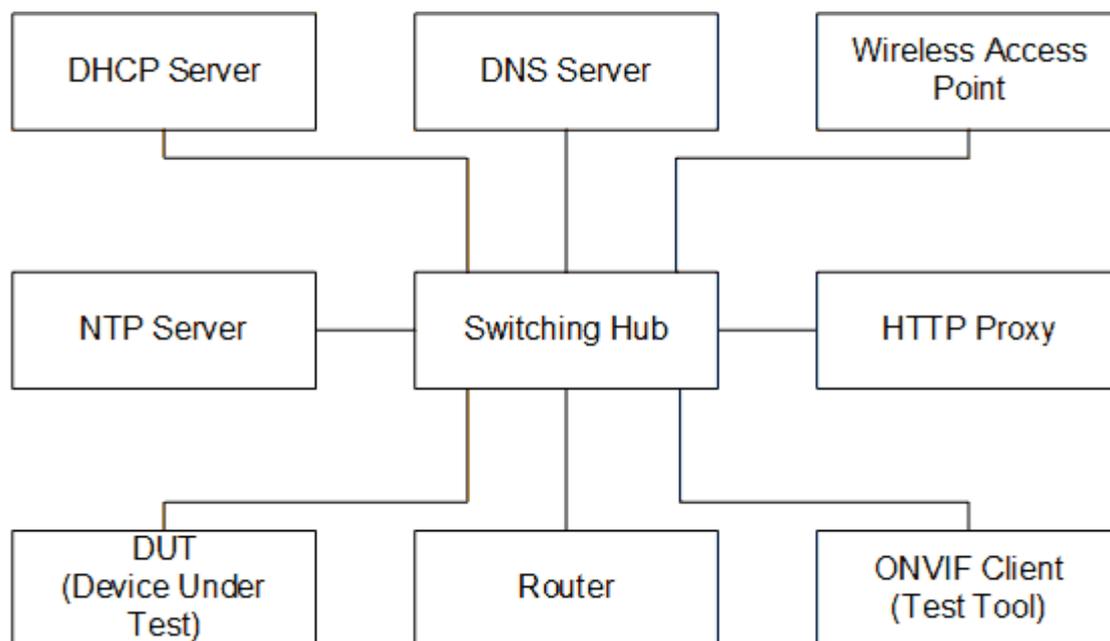
4.1 Test Setup

4.1.1 Network Configuration for DUT

The generic test configuration for the execution of test cases defined in this document is as shown below (Figure 4.1).

Based on the individual test case requirements, some of the entities in the below setup may not be needed for the execution of those corresponding test cases.

Figure 4.1. Test Configuration for DUT



DUT: ONVIF device to be tested. Hereafter, this is referred to as DUT (Device Under Test).

ONVIF Client (Test Tool): Tests are executed by this system and it controls the behavior of the DUT. It handles both expected and unexpected behavior.

HTTP Proxy: provides facilitation in case of RTP and RTSP tunneling over HTTP.

Wireless Access Point: provides wireless connectivity to the devices that support wireless connection.

DNS Server: provides DNS related information to the connected devices.

DHCP Server: provides IPv4 Address to the connected devices.

NTP Server: provides time synchronization between ONVIF Client and DUT.

Switching Hub: provides network connectivity among all the test equipments in the test environment. All devices should be connected to the Switching Hub.

Router: provides router advertisements for IPv6 configuration.

4.2 Prerequisites

The pre-requisites for executing the test cases described in this Test Specification are:

1. The DUT shall be configured with an IPv4 address.
2. The DUT shall be IP reachable [in the test configuration].
3. The DUT shall be able to be discovered by the Test Tool.
4. The DUT shall be configured with the time i.e. manual configuration of UTC time and if NTP is supported by the DUT, then NTP time shall be synchronized with NTP Server.
5. The DUT time and Test tool time shall be synchronized with each other either manually or by common NTP server

4.3 Test Policy

This section describes the test policies specific to the test case execution of each functional block.

The DUT shall adhere to the test policies defined in this section.

4.3.1 PTZ Control

To start with ONVIF Client shall check device capabilities of PTZ. If the DUT doesn't have PTZ capability, this test case will skip.

The device under test shall support at least one media profile with PTZ configuration. Moreover, the DUT shall include video source configuration and video encoder configuration in the same media profile to see the video and to confirm movement. A PTZ configuration shall include a PTZ node.

Poor PTZ performance test is outside the scope of the ONVIF Test Specification.

In certain test cases, ONVIF Client may register new preset position into PTZ configuration. In such cases, the test procedure will delete those modified configuration at the end of the test procedure.

If DUT does not support PTZ Configuration commands (ex. GetConfigurations, **AbsoluteMove** request) then it SHALL respond to the request with SOAP 1.2 fault message (ActionNotSupported).

Please refer to [Section 5](#) for PTZ Configuration Test Cases.

5 PTZ Control Test Cases

5.1 PTZ Node

5.1.1 PTZ NODES

Test Case ID: PTZ-1-1-1

Specification Coverage: GetNodes

Feature Under Test: GetNodes

WSDL Reference: ptz.wsdl

Test Purpose: To verify GetNodes command and return all PTZ Nodes available on the device.

Pre-Requisite: PTZ Service is received from the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetNodes** request to retrieve the list of PTZ nodes supported by DUT.
4. Verify that the DUT returns at least one PTZNode in the **GetNodesResponse** message.
5. Validate PTZNodes of **GetNodesResponse** message (check mandatory element of SupportedPTZSpaces, MaximumNumberOfPresets, and HomeSupported.)

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetNodesResponse** message.
- The DUT did not send a valid **GetNodesResponse** message.
- The DUT did not send **GetNodesResponse** message with at least one PTZNode.

5.1.2 PTZ NODE

Test Case ID: PTZ-1-1-2

Specification Coverage: GetNode

Feature Under Test: GetNode

WSDL Reference: ptz.wsdl

Test Purpose: To verify GetNode command and return the properties of the requested PTZ Node, if it exists.

Pre-Requisite: PTZ Service is received from the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetNodes** request to retrieve a list of the existing PTZNodes.
4. Verify that DUT returns at least one PTZNode in the **GetNodesResponse** message.
5. ONVIF Client will invoke **GetNode** request (NodeToken of existing PTZNode) to retrieve the specific PTZNode
6. Verify that DUT returns a PTZNode in **GetNodeResponse** message.
7. Validate PTZNode of **GetNodeResponse** message (check mandatory element of SupportedPTZSpaces, MaximumNumberOfPresets, and HomeSupported.)

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetNodesResponse** message.
- The DUT did not send a valid **GetNodesResponse** message.
- The DUT did not send **GetNodesResponse** message with at least one PTZNode.
- The DUT did not send **GetNodeResponse** message.
- The DUT did not send a valid **GetNodeResponse** message.

5.1.3 SOAP FAULT MESSAGE

Test Case ID: PTZ-1-1-4

Specification Coverage: GetNode

Feature Under Test: GetNode

WSDL Reference: ptz.wsdl

Test Purpose: To verify that DUT generates a SOAP fault message to invalid GetNode message.

Pre-Requirement: PTZ Service is received from the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetNode** request with invalid NodeToken (not NodeToken of existing PTZNode. For example, NodeToken ReferenceToken = "xyz").
4. The DUT returns **env:Sender/ter:InvalidArgVal/ter:NoEntity** SOAP 1.2 fault.

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT did not send SOAP 1.2 fault message.

- The DUT did not send a correct SOAP 1.2 fault message (fault code, namespace, etc.).

Note: See [Annex A.2](#) for Name and Token Parameters Length limitations.

5.2 PTZ Configuration

5.2.1 PTZ CONFIGURATIONS

Test Case ID: PTZ-2-1-1

Specification Coverage: GetConfigurations

Feature Under Test: GetConfigurations

WSDL Reference: ptz.wsdl

Test Purpose: To retrieve DUT PTZ Configurations setting.

Pre-Requisite: PTZ Service is received from the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetConfigurations** request to retrieve a list of existing PTZConfigurations on the DUT.
4. Verify that the DUT returns at least one PTZConfiguration in the **GetConfigurationsResponse** message.

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetConfigurationsResponse** message.
- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send **GetConfigurationsResponse** message with at least one PTZConfiguration.

5.2.2 PTZ CONFIGURATION

Test Case ID: PTZ-2-1-2

Specification Coverage: GetConfiguration

Feature Under Test: GetConfiguration

WSDL Reference: ptz.wsdl

Test Purpose: To retrieve DUT PTZ Configuration setting.

Pre-Requirement: PTZ Service is received from the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetConfigurations** request to retrieve a list of existing PTZConfigurations.
4. Verify the **GetConfigurationsResponse** message from DUT (a list of existing PTZConfigurations).
5. ONVIF Client will invoke **GetConfiguration** request (PTZConfigurationToken of existing PTZConfiguration) to retrieve requested PTZConfiguration.
6. Verify the **GetConfigurationResponse** message from DUT (PTZConfiguration includes a NodeToken, and at least one parameter (DefaultAbsolutePanTiltPositionSpace, DefaultAbsoluteZoomPositionSpace, DefaultRelativePanTiltTranslationSpace, DefaultRelativeZoomTranslationSpace, DefaultContinuousPanTiltVelocitySpace, DefaultContinuousZoomVelocitySpace, DefaultPTZSpeed, DefaultPTZTimeout, PanTiltLimits, and ZoomLimits)).

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetConfigurationsResponse** message.

- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send **GetConfigurationsResponse** message with at least one PTZConfiguration.
- The DUT did not send **GetConfigurationResponse** message.
- The DUT did not send a valid **GetConfigurationResponse** message.
- The DUT did not send **GetConfigurationResponse** message with NodeToken.
- The DUT did not send **GetConfigurationResponse** message with at least one parameter (excluding NodeToken).

5.2.3 PTZ CONFIGURATION OPTIONS

Test Case ID: PTZ-2-1-3

Specification Coverage: GetConfigurationOptions

Feature Under Test: GetConfigurationOptions

WSDL Reference: ptz.wsdl

Test Purpose: To retrieve returns the list of supported coordinate systems including their range limitations in the DUT PTZ Configuration Options setting.

Pre-Requisite: PTZ Service is received from the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetConfigurations** request to retrieve a list of existing PTZConfigurations on the DUT.
4. Verify the **GetConfigurationsResponse** message from DUT (a list of existing PTZConfiguration).
5. ONVIF Client will invoke **GetConfigurationOptions** request to retrieve PTZConfigurationOptions.
6. Verify the **GetConfigurationsResponse** message from DUT (valid Spaces and PTZTimeout).

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetConfigurationsResponse** message.
- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send **GetConfigurationsResponse** message with at least one PTZConfiguration.
- The DUT did not send **GetConfigurationsResponse** message.
- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send **GetConfigurationsResponse** message with valid Spaces and PTZTimeout.

5.2.4 PTZ CONFIGURATIONS AND PTZ CONFIGURATION CONSISTENCY

Test Case ID: PTZ-2-1-5

Specification Coverage: GetConfigurations, GetConfiguration

Feature Under Test: GetConfigurations, GetConfiguration

WSDL Reference: ptz.wsdl

Test Purpose: To verify the capability to set the DUT PTZ Configuration.

Pre-Requisite: PTZ Service is received from the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client invokes **GetConfigurations** request to retrieve a list of PTZ Configurations from device.

4. The DUT sends **GetConfigurationsResponse** message.
5. ONVIF Client invokes **GetConfiguration** message (ConfigurationToken) to retrieve parameters of PTZ configuration from device.
6. The DUT sends **GetConfigurationResponse** message.
7. Check that all parameters values in **GetConfigurationResponse** message are same as in the **GetConfigurationsResponse** message.
8. Repeat steps 5-7 for all other configurations from the **GetConfigurationsResponse** message.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetConfigurationsResponse** message.
- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send **GetConfigurationsResponse** message with at least one PTZConfiguration.
- The DUT did not send **GetConfigurationResponse** message.
- The DUT did not send a valid **GetConfigurationResponse** message.

5.2.5 PTZ CONFIGURATIONS AND PTZ NODES CONSISTENCY

Test Case ID: PTZ-2-1-6

Specification Coverage: GetNodes, GetConfigurations

Feature Under Test: GetNodes, GetConfigurations

WSDL Reference: ptz.wsdl

Test Purpose: To check that GetConfigurations command and GetNodes command are consistent.

Pre-Requisite: PTZ Service is received from the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client invokes **GetConfigurations** request to retrieve a list of PTZ Configurations from device.
4. The DUT sends **GetConfigurationsResponse** message.
5. ONVIF Client invokes **GetNodes** request to retrieve list of available PTZ nodes from device.
6. The DUT sends **GetNodesResponse** message.
7. Check that parameters for every PTZConfiguration are correct according to **GetNodesResponse** message.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetConfigurationsResponse** message.
- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send **GetNodesResponse** message.
- The DUT did not send a valid **GetNodesResponse** message.
- For at least one PTZConfiguration there is at least one of the following items:
 - NodeToken from PTZConfiguration is not present in **GetNodesResponse** message (PTZNode.token) or is present more than one time.
 - DefaultAbsolutePanTiltPositionSpace from PTZConfiguration is not included in one of SupportedPTZSpaces.AbsolutePanTiltPositionSpace from **GetNodesResponse** message.
 - DefaultAbsoluteZoomPositionSpace from PTZConfiguration is not included in one of SupportedPTZSpaces.AbsoluteZoomPositionSpace from **GetNodesResponse** message.
 - DefaultRelativePanTiltTranslationSpace from PTZConfiguration is not included in one of SupportedPTZSpaces.RelativePanTiltTranlationSpace from **GetNodesResponse** message.

- DefaultRelativeZoomTranslationSpace from PTZConfiguration is not included in one of SupportedPTZSpaces.RelativeZoomTranlationSpace from **GetNodesResponse** message.
- DefaultContinuousPanTiltVelocitySpace from PTZConfiguration is not included in one of SupportedPTZSpaces.ContinuousPanTiltVelocitySpace from **GetNodesResponse** message.
- DefaultContinuousZoomVelocitySpace from PTZConfiguration is not included in one of SupportedPTZSpaces.ContinuousZoomVelocitySpace from **GetNodesResponse** message.
- DefaultPTZSpeed.PanTilt.space from PTZConfiguration is not included in one of PanTiltSpeedSpace.URI section from **GetNodesResponse** message.
- DefaultPTZSpeed.PanTilt.x is not between SupportedPTZSpaces.PanTiltSpeedSpace.XRange.Min and SupportedPTZSpaces.PanTiltSpeedSpace.XRange.Max for appropriate PanTiltSpeedSpace.URI from **GetNodesResponse** message.
- DefaultPTZSpeed.PanTilt.y is not between SupportedPTZSpaces.PanTiltSpeedSpace.XRange.Min and SupportedPTZSpaces.PanTiltSpeedSpace.XRange.Max for appropriate PanTiltSpeedSpace.URI from **GetNodesResponse** message.
- DefaultPTZSpeed.Zoom.Space is not included in one of ZoomSpeedSpace.URI section of **GetNodesResponse** message.
- DefaultPTZSpeed.Zoom.x is not between SupportedPTZSpaces.ZoomSpeedSpace.XRange.Min and SupportedPTZSpaces.ZoomSpeedSpace.XRange.Max for appropriate ZoomSpeedSpace.URI from **GetNodesResponse** message.

5.2.6 PTZ CONFIGURATIONS AND PTZ CONFIGURATION OPTIONS CONSISTENCY

Test Case ID: PTZ-2-1-7

Specification Coverage: GetConfigurations, GetConfigurationOptions

Feature Under Test: GetConfigurations, GetConfigurationOptions

WSDL Reference: ptz.wsdl

Test Purpose: To check that PTZ Configurations and PTZ Configuration Options are consistent.

Pre-Requisite: PTZ Service is received from the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client invokes **GetConfigurations** request to retrieve a list of PTZ Configurations from device.
4. The DUT sends **GetConfigurationsResponse** message.
5. ONVIF Client invokes **GetConfigurationOptions** request (ConfigurationToken) to retrieve options for PTZConfiguration from device.
6. The DUT sends **GetConfigurationsResponse** message.
7. Check that parameters for PTZ configuration are corresponded to PTZConfigurationOptions.
8. Repeat Steps 5-7 for other PTZConfigurations from the **GetConfigurationsResponse** message.

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetConfigurationsResponse** message.
- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send **GetConfigurationOptions** message.
- The DUT did not send a valid **GetConfigurationOptions** message.
- For at least one PTZConfiguration there is at least one of the following items:
 - DefaultAbsolutePanTiltPositionSpace from PTZConfiguration is not included in one of Spaces.AbsolutePanTiltPositionSpace from **GetConfigurationOptions** message.

- DefaultAbsoluteZoomPositionSpace from PTZConfiguration is not included in one of Spaces.AbsoluteZoomPositionSpace from **GetConfigurationOptions** message.
- DefaultRelativePanTiltTranslationSpace from PTZConfiguration is not included in one of Spaces.RelativePanTiltTranlationSpace from **GetConfigurationOptions** message.
- DefaultRelativeZoomTranslationSpace from PTZConfiguration is not included in one of Spaces.RelativeZoomTranlationSpace from **GetConfigurationOptions** message.
- DefaultContinuousPanTiltVelocitySpace from PTZConfiguration is not included in one of Spaces.ContinuousPanTiltVelocitySpace from **GetConfigurationOptions** message.
- DefaultContinuousZoomVelocitySpace from PTZConfiguration is not included in one of Spaces.ContinuousZoomVelocitySpace from **GetConfigurationOptions** message.
- DefaultPTZSpeed.PanTilt.space from PTZConfiguration is not included in one of Spaces.PanTiltSpeedSpace.URI section from **GetConfigurationOptions** message.
- DefaultPTZSpeed.PanTilt.x is not between Spaces.PanTiltSpeedSpace.XRange.Min and Spaces.PanTiltSpeedSpace.XRange.Max for appropriate Spaces.PanTiltSpeedSpace.URI from **GetConfigurationOptions** message.
- DefaultPTZSpeed.PanTilt.y is not between Spaces.PanTiltSpeedSpace.YRange.Min and Spaces.PanTiltSpeedSpace.YRange.Max for appropriate Spaces.PanTiltSpeedSpace.URI from **GetConfigurationOptions** message.
- DefaultPTZSpeed.Zoom.Space is not included in one of Spaces.ZoomSpeedSpace.URI section of **GetConfigurationOptions** message.
- DefaultPTZSpeed.Zoom.x is not between Spaces.ZoomSpeedSpace.XRange.Min and PTZSpaces.ZoomSpeedSpace.XRange.Max for appropriate Spaces.ZoomSpeedSpace.URI from **GetConfigurationOptions** message.
- DefaultPTZTimeout is not between PTZTimeout.Min and PTZTimeout.Max from **GetConfigurationOptions** message.

5.2.7 PTZ SET CONFIGURATION

Test Case ID: PTZ-2-1-9

Specification Coverage: SetConfiguration

Feature Under Test: SetConfiguration

WSDL Reference: ptz.wsdl

Test Purpose: To verify the capability to set the DUT PTZ Configuration.

Pre-Requisite: PTZ Service is received from the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetConfigurations** request to retrieve a list of existing PTZConfigurations.
4. Verify the **GetConfigurationsResponse** message from DUT (a list of existing PTZConfigurations).
5. ONVIF Client will invoke **GetConfigurationOptions** request (ConfigurationToken of existing PTZConfiguration) to retrieve the range of PTZTimeout that can be changed.
6. Verify that DUT returns PTZConfigurationOptions in **GetConfigurationsResponse** message.
7. ONVIF Client will invoke **SetConfiguration** request (DefaultPTZTimeout = [Max or Min of duration value], and force persistence = false). DefaultPTZTimeout will be set to Max of the duration value. If DefaultPTZTimeout of DUT is same value with Max of duration value, this value will be set to Min of the duration value.
8. DUT modifies PTZ Configuration and return with **SetConfigurationResponse** message indicating success.
9. ONVIF Client will verify the modified PTZ configuration by invoking **GetConfiguration** request.
10. Verify that DUT returns the modified PTZ Configuration in the **GetConfigurationResponse** message (DefaultPTZTimeout = [Max or Min of the duration value]).

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetConfigurationsResponse** message.

- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send **GetConfigurationResponse** message.
- The DUT did not send a valid **GetConfigurationResponse** message.
- The DUT did not send equal parameters for one or more PTZConfiguration in the **GetConfigurationResponse** message and in the **GetConfigurationsResponse** message.

Note: See [Annex A.2](#) for Name and Token Parameters Length limitations.

5.2.8 SOAP FAULT MESSAGE

Test Case ID: PTZ-2-1-10

Specification Coverage: SetConfiguration

Feature Under Test: SetConfiguration

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the DUT generates a SOAP fault message if an invalid PTZ Configuration message is sent.

Pre-Requisite: PTZ Service is received from the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **SetConfiguration** request with an invalid Configuration token.
4. The DUT returns **env:Sender/ter:InvalidArgVal/ter:NoConfig** SOAP 1.2 fault.

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT did not send SOAP 1.2 fault message.

- The DUT did not send a correct SOAP 1.2 fault message (fault code, namespace etc).

Note: See [Annex A.2](#) for Name and Token Parameters Length limitations.

5.3 Move Operation

5.3.1 PTZ ABSOLUTE MOVE

Test Case ID: PTZ-3-1-1

Specification Coverage: **AbsoluteMove** request

Feature Under Test: **AbsoluteMove** request

WSDL Reference: ptz.wsdl

Test Purpose: To verify absolute Pan/Tilt or absolute Zoom movements using the DUT PTZ **AbsoluteMove** request operation.

Pre-Requisite: PTZ Service is received from the DUT. Media Service is received from the DUT. Absolute movement is supported by the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client configures and selects a media profile as described in [Annex A.1](#).
4. ONVIF Client will invoke **GetConfigurationOptions** request to retrieve PTZConfigurationOptions.
5. Verify that DUT returns **GetConfigurationsResponse** message with valid Spaces and PTZTimeout, and has the function of Absolute movement.
6. ONVIF Client will invoke **GetStatus** request to get a current PTZStatus.
7. The DUT returns a current PTZStatus in the **GetStatusResponse** message.
8. If Absolute move is supported for 'Pan Tilt', ONVIF Client will invoke **AbsoluteMove** request (ProfileToken, Position:PanTilt = ["x", "y"], Speed:PanTilt = ["x", "y"]). The Speed:PanTilt parameter is added if supported Speed:PanTilt.

9. If ONVIF Client invoked **AbsoluteMove** request for PanTilt, verify that DUT returns **AbsoluteMoveResponse** message indicating success.
10. If Absolute move is supported for 'Zoom', ONVIF Client will invoke **AbsoluteMove** request (ProfileToken, Position:Zoom = ["x"], Speed:Zoom = ["x"]). The Speed:Zoom parameter is added if supported Speed:Zoom.
11. If ONVIF Client invoked **AbsoluteMove** request for Zoom, verify that DUT returns **AbsoluteMoveResponse** message indicating success.
12. ONVIF Client will invoke **GetStatus** request to get a current PTZStatus.
13. Verify that the DUT moves to the specified position by **GetStatusResponse** message.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetConfigurationsResponse** message.
- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send **GetConfigurationsResponse** message with valid Spaces and PTZTimeout.
- The DUT did not send **GetStatusResponse** message.
- The DUT did not send a valid **GetStatusResponse** message.
- The DUT did not send **AbsoluteMoveResponse** message.
- The DUT did not send **GetStatusResponse** message with the specified position after moved by ONVIF Client.

Note: If DUT does not return a current position by **GetStatusResponse** message, the specified position after being moved by ONVIF Client is not checked by ONVIF Client.

Note: PTZ accuracy is out of scope for this Test Specification. Therefore, the position reported by the DUT in the **GetStatusResponse** message does not have to be exactly the same as the position requested by the ONVIF Client in the **AbsoluteMove** request.

Note: If profile selected for test contains PanTiltLimits or ZoomLimits in the PTZConfiguration then these limitations will be taken into account for x, y values of PanTilt or Zoom in **AbsoluteMove** request.

5.3.2 SOAP FAULT MESSAGE

Test Case ID: PTZ-3-1-2

Specification Coverage: **AbsoluteMove** request

Feature Under Test: **AbsoluteMove** request

WSDL Reference: ptz.wsdl

Test Purpose: To verify that DUT generates a SOAP fault message to **AbsoluteMove** request operation with out of bounds values.

Pre-Requirement: PTZ Service is received from the DUT. Media Service is received from the DUT. Absolute movement is supported by the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client configures and selects a media profile as described in [Annex A.1](#).
4. ONVIF Client will invoke **GetConfigurationOptions** request (PTZConfigurationToken).
5. DUT returns existing PTZConfiguration in the **GetConfigurationsResponse** message.
6. ONVIF Client will invoke **AbsoluteMove** request (ProfileToken, PanTilt = ["x (Out of range)", "y (Out of range)"]).
7. The DUT returns **env:Sender/ter:InvalidArgVal/ter:InvalidPosition** SOAP 1.2 fault.

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetConfigurationsResponse** message.
- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send SOAP 1.2 fault message against **AbsoluteMove** request.

- The DUT did not send a correct SOAP 1.2 fault message (fault code, namespace etc) against **AbsoluteMove** request.

5.3.3 PTZ RELATIVE MOVE

Test Case ID: PTZ-3-1-3

Specification Coverage: RelativeMove

Feature Under Test: RelativeMove

WSDL Reference: ptz.wsdl

Test Purpose: To verify relative Pan/Tilt or relative Zoom movements using the DUT PTZ RelativeMove operation.

Pre-Requirement: PTZ Service is received from the DUT. Media Service is received from the DUT. Relative movement is supported by the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client configures and selects a media profile as described in [Annex A.1](#).
4. ONVIF Client will invoke **GetConfigurationOptions** request to retrieve PTZConfigurationOptions.
5. Verify that DUT returns **GetConfigurationsResponse** message with valid Spaces and PTZTimeout, and has the function of Relative movement.
6. ONVIF Client will invoke **GetStatus** request to get a current PTZStatus.
7. DUT returns a current PTZStatus in the **GetStatusResponse** message.
8. If PanTilt of Relative movement is supported (there is a parameter of RelativePanTiltTranslationSpace in PTZConfigurationOptions), ONVIF Client will invoke **RelativeMove** request (ProfileToken, Position:PanTilt = ["x", "y"], Speed:PanTilt = ["x", "y"]). The Speed:PanTilt parameter is added if supported Speed:PanTilt.
9. If ONVIF Client invoked **RelativeMove** request for PanTilt, verify that DUT returns **RelativeMoveResponse** message indicating success.

10. If Zoom Relative movement is supported (there is a parameter of `RelativeZoomTranslationSpace` in `PTZConfigurationOptions`), ONVIF Client will invoke **RelativeMove** request (ProfileToken, Position:Zoom = ["x"], Speed:Zoom = ["x"]). The Speed:Zoom parameter is added if supported Speed:Zoom.
11. If ONVIF Client invoked **RelativeMove** request for Zoom, verify that DUT returns **RelativeMoveResponse** message indicating success.
12. ONVIF Client will invoke **GetStatus** request to get a current PTZStatus.
13. Verify that DUT moves to the specified position by **GetStatusResponse** message.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetConfigurationsResponse** message.
- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send **GetConfigurationsResponse** message with valid Spaces and PTZTimeout.
- The DUT did not send **GetStatusResponse** message.
- The DUT did not send a valid **GetStatusResponse** message.
- The DUT did not send **RelativeMoveResponse** message.
- The DUT did not send **GetStatusResponse** message with the specified position after moved by ONVIF Client.

Note: If DUT does not return a current position by **GetStatusResponse** message, the specified position after being moved by ONVIF Client is not checked by ONVIF Client.

Note: PTZ accuracy is out of scope for this Test Specification. Therefore the position reported by the DUT in the **GetStatusResponse** message does not have to be exactly the same as the position requested by the ONVIF Client in the **RelativeMove** request.

5.3.4 PTZ CONTINUOUS MOVE

Test Case ID: PTZ-3-1-4

Specification Coverage: ContinuousMove

Feature Under Test: ContinuousMove**WSDL Reference:** ptz.wsdl**Test Purpose:** To verify continuous Pan/Tilt or continuous Zoom movements using the DUT PTZ ContinuousMove operation with timeout parameter.**Pre-Requirement:** PTZ Service is received from the DUT. Media Service is received from the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.**Test Configuration:** ONVIF Client and DUT.**Test Procedure:**

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client configures and selects a media profile as described in [Annex A.1](#).
4. ONVIF Client will invoke **GetConfigurationOptions** request to retrieve PTZConfigurationOptions.
5. Verify that DUT returns **GetConfigurationsResponse** message with valid Spaces and PTZTimeout, and has the function of Relative movement.
6. If PanTilt of Continuous movement is supported (there is a parameter of ContinuousPanTiltVelocitySpace in PTZConfigurationOptions), ONVIF Client will invoke **ContinuousMove** request (ProfileToken, Velocity:PanTilt = ["x", "y"], Timeout = PT60S).
7. If ONVIF Client invoked **ContinuousMove** request for PanTilt, verify that DUT returns **ContinuousMoveResponse** message indicating success.
8. If ONVIF Client invoked **ContinuousMove** request for PanTilt, ONVIF Client will invoke **GetStatus** request to get a current PTZStatus after 60 second.
9. If ONVIF Client invoked **ContinuousMove** request for PanTilt, verify that the DUT returns **GetStatusResponse** message with MoveStatus = IDLE or UNKNOWN.
10. If Zoom of Continuous movement is supported (there is a parameter of ContinuousZoomVelocitySpace in PTZConfigurationOptions), ONVIF Client will invoke **ContinuousMove** request (ProfileToken, Velocity:Zoom = ["x"], Timeout = PT60S).
11. If ONVIF Client invoked **ContinuousMove** request for Zoom, verify that DUT returns **ContinuousMoveResponse** message indicating success.

12. If ONVIF Client invoked **ContinuousMove** request for Zoom, ONVIF Client will invoke **GetStatus** request to get a current PTZStatus after 60 second.
13. If ONVIF Client invoked **ContinuousMove** request for PanTilt, verify that the DUT returns **GetStatusResponse** message with MoveStatus = IDLE or UNKNOWN.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetConfigurationsResponse** message.
- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send **GetConfigurationsResponse** message with valid Spaces and PTZTimeout.
- The DUT did not send **GetStatusResponse** message.
- The DUT did not send a valid **GetStatusResponse** message.
- The DUT did not send **ContinuousMoveResponse** message.
- The DUT did not send **GetStatusResponse** message with MoveStatus = MOVING or UNKNOWN after executing Test Procedure 9 and 15.
- The DUT did not send **GetStatusResponse** message with MoveStatus = IDLE or UNKNOWN after executing Test Procedure 11 and 17.

Note: If DUT does not return a current MoveStatus by **GetStatusResponse** message, the MoveStatus is not checked by ONVIF Client.

5.3.5 PTZ CONTINUOUS MOVE & STOP

Test Case ID: PTZ-3-1-5

Specification Coverage: ContinuousMove, Stop

Feature Under Test: ContinuousMove, Stop

WSDL Reference: ptz.wsdl

Test Purpose: To verify continuous Pan/Tilt or continuous Zoom movements using the DUT PTZ ContinuousMove operation without timeout parameter and to stop all ongoing pan, tilt and zoom movements.

Pre-Requirement: PTZ Service is received from the DUT. Media Service is received from the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client configures and selects a media profile as described in [Annex A.1](#).
4. ONVIF Client will invoke **GetConfigurationOptions** request to retrieve PTZConfigurationOptions.
5. Verify that DUT returns **GetConfigurationsResponse** message with valid Spaces and PTZTimeout, and has the function of Relative movement.
6. If PanTilt of Continuous movement is supported (there is a parameter of ContinuousPanTiltVelocitySpace in PTZConfigurationOptions), ONVIF Client will invoke **ContinuousMove** request (ProfileToken, Velocity:PanTilt = ["x", "y"]).
7. If ONVIF Client invoked **ContinuousMove** request for PanTilt, verify that DUT returns **ContinuousMoveResponse** message indicating success.
8. If ONVIF Client invoked **ContinuousMove** request for PanTilt, ONVIF Client will invoke **Stop** request to stop continuous move.
9. If ONVIF Client invoked **ContinuousMove** request for PanTilt, verify that the DUT returns **StopResponse** message indicating success.
10. If ONVIF Client invoked **ContinuousMove** request for PanTilt, ONVIF Client will invoke **GetStatus** request to get a current PTZStatus.
11. If ONVIF Client invoked **ContinuousMove** request for PanTilt, verify that the DUT returns **GetStatusResponse** message with MoveStatus = IDLE or UNKNOWN.
12. If Zoom of Continuous movement is supported (there is a parameter of ContinuousZoomVelocitySpace in PTZConfigurationOptions), ONVIF Client will invoke **ContinuousMove** request (ProfileToken, Velocity:Zoom = ["x"]).

13. If ONVIF Client invoked **ContinuousMove** request for Zoom, verify that DUT returns **ContinuousMoveResponse** message indicating success.
14. If ONVIF Client invoked **ContinuousMove** request for Zoom, ONVIF Client will invoke **Stop** request to stop continuous move.
15. If ONVIF Client invoked **ContinuousMove** request for Zoom, verify that the DUT returns **StopResponse** message indicating success.
16. If ONVIF Client invoked **ContinuousMove** request for Zoom, ONVIF Client will invoke **GetStatus** request to get a current PTZStatus.
17. If ONVIF Client invoked **ContinuousMove** request for PanTilt, verify that the DUT returns **GetStatusResponse** message with MoveStatus = IDLE or UNKNOWN.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT did not send **GetConfigurationsResponse** message.
- The DUT did not send a valid **GetConfigurationsResponse** message.
- The DUT did not send **GetConfigurationsResponse** message with valid Spaces and PTZTimeout.
- The DUT did not send **GetStatusResponse** message.
- The DUT did not send a valid **GetStatusResponse** message.
- The DUT did not send **ContinuousMoveResponse** message.
- The DUT did not send **StopResponse** message.
- The DUT did not send **GetStatusResponse** message with MoveStatus = MOVING or UNKNOWN after executing Test Procedure 9 and 17.
- The DUT did not send **GetStatusResponse** message with MoveStatus = IDLE or UNKNOWN after executing Test Procedure 13 and 21.

Note: If DUT does not return a current MoveStatus by **GetStatusResponse** message, the MoveStatus is not checked by ONVIF Client.

5.4 Preset operations

5.4.1 SET AND GET PRESET

Test Case ID: PTZ-4-1-4

Specification Coverage: SetPreset, GetPresets

Feature Under Test: SetPreset, GetPresets

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the DUT supports the setting of presets using the SetPreset operation and the retrieval of presets using the GetPresets operation.

Pre-Requirement: PTZ Service is received from the DUT. Media Service is received from the DUT. Presets is supported by the DUT. Absolute or Relative movement is supported by the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client configures and selects a media profile as described in [Annex A.1](#).
4. Position the DUT so that it is at PTZPosition X using a move request supported by the DUT (e.g. **AbsoluteMove** request or **RelativeMove** request).
5. Create a new preset using **SetPreset** request (Name = "Test").
6. Verify that the DUT sends a **SetPresetResponse** message and a PresetToken for the preset. The PresetToken will need to be used in the following test steps. The PresetToken can have any valid value but it will be referred to as PresetToken = "A" in this test case.
7. ONVIF Client sends a **GetPresets** request.
8. The DUT sends a list of presets in the **GetPresetsResponse** message.
9. Verify that the **GetPresetsResponse** message has a preset with PresetToken = "A" and with Name = "Test".

10. If the DUT supports absolute Pan/Tilt movement, the ONVIF Client checks that **GetPresetsResponse** message contains PTZPosition.PanTilt field with values that are equal to X.
11. If the DUT supports absolute Zoom movement, the ONVIF Client checks that **GetPresetsResponse** message contains PTZPosition.Zoom field with values that are equal to X.
12. If the DUT does not support absolute Pan/Tilt movement and **GetPresetsResponse** message contains PTZPosition.PanTilt field, the ONVIF Client checks that values of PanTilt that are equal to X.
13. If the DUT does not support absolute Zoom movement and **GetPresetsResponse** message contains PTZPosition.Zoom field, the ONVIF Client checks that values of PanTilt that are equal to X.
14. Position the DUT so that is at PTZPosition Y using a move request supported by the DUT (e.g. **AbsoluteMove** request or **RelativeMove** request).
15. Overwrite the preset using **SetPreset** request (PresetToken = "A").
16. ONVIF Client sends a **GetPresets** request.
17. The DUT sends a list of presets in the **GetPresetsResponse** message.
18. Verify that there is a preset with PresetToken = "A" and with Name = "Test".
19. If the DUT supports absolute Pan/Tilt movement, the ONVIF Client checks that **GetPresetsResponse** message contains PTZPosition.PanTilt field with values that correspond to Y.
20. If the DUT supports absolute Zoom movement, the ONVIF Client checks that **GetPresetsResponse** message contains PTZPosition.Zoom field with values that correspond to Y.
21. If the DUT does not support absolute Pan/Tilt movement and **GetPresetsResponse** message contains PTZPosition.PanTilt field, the ONVIF Client checks that values of PanTilt that correspond to Y.
22. If the DUT does not support absolute Zoom movement and **GetPresetsResponse** message contains PTZPosition.Zoom field, the ONVIF Client checks that values of PanTilt that correspond to X.
23. ONVIF Client sends a **RemovePreset** request (PresetToken = "A") to the DUT and the DUT removes the preset.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT's move operation failed.
- The DUT did not send **SetPresetResponse** message.
- The DUT did not include a PresetToken in the **SetPresetResponse** message.
- The DUT did not send **GetPresetsResponse** message.
- The DUT did not include the correct PTZPosition in the **GetPresetsResponse** message.
- The DUT did not include the correct name (Name = "Test") in the **GetPresetsResponse** message.

Note: There are no specific requirements on what the exact values for PTZPositions X and Y should be used in this test, other than they shall be different positions.

Note: If profile selected for test contains PanTiltLimits or ZoomLimits in the PTZConfiguration then these limitations will be taken into account for x, y values of PanTilt in **AbsoluteMove** request.

Note: PTZ accuracy is out of scope for this Test Specification. Therefore the position reported by the DUT in the GetPresetResponse does not have to be exactly the same as the position of the preset created with the **SetPreset** request.

Note: See [Annex A.2](#) for Name and Token Parameters Length limitations.

5.4.2 GOTO PRESET

Test Case ID: PTZ-4-1-5

Specification Coverage: GotoPreset, SetPreset

Feature Under Test: GotoPreset

WSDL Reference: ptz.wsdl

Test Purpose: To verify that it is possible to go to presets using the GotoPreset operation.

Pre-Requirement: PTZ Service is received from the DUT. Media Service is received from the DUT. Presets is supported by the DUT. Absolute or Relative movement is supported by the DUT. A

ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client configures and selects a media profile as described in [Annex A.1](#).
4. Position the DUT so that it is at PTZPosition X using a move request supported by the DUT (e.g. **AbsoluteMove** request or **RelativeMove** request).
5. Create a new preset using **SetPreset** request (Name = "Test").
6. Verify that the DUT sends a**SetPresetResponse** message and a PresetToken for the preset. The PresetToken will need to be used in the following test steps. The PresetToken can have any valid value but it will be referred to as PresetToken = "A" in this test case.
7. Move the DUT so that it is not at PTZPosition X (e.g. using **AbsoluteMove** request Y).
8. ONVIF Client sends **GotoPreset** request (PresetToken = "A").
9. The DUT goes to the preset PTZ position and sends a **GotoPresetResponse** message.
10. Verify that the DUT is at PTZPosition X. **GetStatus** request (Position) can be used if it is supported; else this will have to be done manually.
11. ONVIF Client sends a **RemovePreset** request (PresetToken = "A") to the DUT and the DUT removes the preset.

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT's move operation failed.
- The DUT did not send**SetPresetResponse** message with a PresetToken.
- The DUT did not go to the correct position after **GotoPreset** request was sent.
- The DUT did not send **GotoPresetResponse** message.

Note: There is no specific requirement on what the exact value for PTZPosition X should be used in this test case.

Note: If profile selected for test contains PanTiltLimits or ZoomLimits in the PTZConfiguration, then these limitations will be taken into account for x, y values of PanTilt in **AbsoluteMove** request.

Note: PTZ accuracy is out of scope for this Test Specification. Therefore the position reported by the DUT in the **GetStatusResponse** message does not have to be exactly the same as the position of the preset created with the **SetPreset** request.

Note: See [Annex A.2](#) for Name and Token Parameters Length limitations.

5.4.3 REMOVE PRESET

Test Case ID: PTZ-4-1-6

Specification Coverage: RemovePreset, SetPreset, GetPresets

Feature Under Test: RemovePreset

WSDL Reference: ptz.wsdl

Test Purpose: To verify that it is possible to remove presets using the RemovePreset operation.

Pre-Requisite: PTZ Service is received from the DUT. Media Service is received from the DUT. Presets is supported by the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client configures and selects a media profile as described in [Annex A.1](#).
4. ONVIF Client creates a new preset using **SetPreset** request (Name = "Test").
5. DUT saves the preset and sends a**SetPresetResponse** message. Verify that the DUT sent a**SetPresetResponse** message and a PresetToken for the preset. The PresetToken will need to be used in the following test steps. The PresetToken can have any valid value but it will be referred to as "PresetToken = "A" in this test case.
6. ONVIF Client sends a **GetPresets** request.

7. DUT sends a list of presets in the **GetPresetsResponse** message.
8. Verify that there is a preset with PresetToken = "A" and Name = "Test".
9. ONVIF Client sends **RemovePreset** request (PresetToken = "A").
10. DUT removes preset and sends a **RemovePresetResponse** message.
11. ONVIF Client sends a **GetPresets** request.
12. DUT sends a list of presets in the **GetPresetsResponse** message.
13. Verify that there is no preset with PresetToken = "A" and Name = "Test".

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- DUT did not send **SetPresetResponse** message with a PresetToken.
- DUT did not send **GetPresetsResponse** message.
- DUT did not remove a preset after **RemovePreset** request was sent.
- DUT did not send **RemovePresetResponse** message.

Note: See [Annex A.2](#) for Name and Token Parameters Length limitations.

5.5 Home Position operations

5.5.1 HOME POSITION OPERATIONS (CONFIGURABLE)

Test Case ID: PTZ-5-1-1

Specification Coverage: GotoHomePosition, SetHomePosition

Feature Under Test: GotoHomePosition, SetHomePosition

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the SetHomePosition and GotoHomePosition operations are correctly implemented.

Pre-Requirement: PTZ Service is received from the DUT. Media Service is received from the DUT. Configurable Home Position is supported by the DUT. Absolute or Relative movement is supported by the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client configures and selects a media profile as described in [Annex A.1](#).
4. Position the DUT so that it is at PTZPosition X using a move request supported by the DUT (e.g. **AbsoluteMove** request or **RelativeMove** request).
5. ONVIF Client sends a **SetHomePosition** request.
6. DUT sets the Home position to the current position and sends a **SetHomePositionResponse** message.
7. Move DUT so that it is not at PTZPosition X (e.g. using **AbsoluteMove** request Y).
8. ONVIF Client sends a **GotoHomePosition** request.
9. DUT goes to the Home PTZ position and sends a **GotoHomePositionResponse** message.
10. Verify that the DUT is at PTZPosition X (**GetStatus** request/Position can be used if it is supported, else this will have to be done manually).

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT's move operation failed.
- The DUT did not send **SetHomePositionResponse** message.
- The DUT did not save the new position as Home position.
- The DUT did not send **GotoHomePositionResponse** message.
- The DUT did not go to Home position.

Note: PTZ accuracy is out of scope for this Test Specification. Therefore, the position reported by the DUT in the **GetStatusResponse** message does not have to be exactly the same as the position of the Home position.

Note: If profile selected for test contains PanTiltLimits or ZoomLimits in the PTZConfiguration then these limitations will be taken into account for x, y values of PanTilt in **AbsoluteMove** request.

5.5.2 HOME POSITION OPERATIONS (FIXED)

Test Case ID: PTZ-5-1-2

Specification Coverage: Capability exchange

Feature Under Test: GetCapabilities

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the SetHomePosition and GotoHomePosition operations are correctly implemented.

Pre-Requisite: PTZ Service is received from the DUT. Media Service is received from the DUT. Fixed Home Position is supported by the DUT. Absolute or Relative movement is supported by the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client configures and selects a media profile as described in [Annex A.1](#).
4. ONVIF Client sends a **GotoHomePosition** request.
5. The DUT goes to the Home position and sends a **GotoHomePositionResponse** message.
6. Note at which PTZPosition the DUT is (**GetStatus** request/Position can be used if it is supported, else this will have to be done manually). This position will be referred to as "PTZPosition A" below.
7. Position the DUT so that is at PTZPosition Y using a move request supported by the DUT (e.g. **AbsoluteMove** request or **RelativeMove** request).
8. ONVIF Client sends a **SetHomePosition** request.

9. DUT responds with "Cannot Overwrite Home" message.
10. ONVIF Client sends a **GotoHomePosition** request.
11. DUT goes to the Home PTZ position and sends a **GotoHomePositionResponse** message.
12. Verify that the DUT is back at PTZPosition A (**GetStatus** request/Position can be used if it is supported, else this will have to be done manually).

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT did not send SOAP Fault message (CannotOverwriteHome).
- The DUT's move operation failed.
- The DUT did not save the new position ("PTZPosition Y") as Home position.
- The DUT did not send **GotoHomePositionResponse** message.
- The DUT did not go to original Home position ("PTZPosition A").

Note: PTZ accuracy is out of scope for this Test Specification. Therefore the position reported by the DUT in the **GetStatusResponse** message does not have to be exactly the same as the position of the Home position.

Note: If profile selected for test contains PanTiltLimits or ZoomLimits in the PTZConfiguration then these limitations will be taken into account for x, y values of PanTilt in **AbsoluteMove** request.

5.5.3 PTZ – HOME POSITION OPERATIONS (USAGE OF FIXEDHOMEPOSITION FLAG)

Test Case ID: PTZ-5-1-3

Specification Coverage: SetHomePosition

Feature Under Test: SetHomePosition

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the SetHomePosition and GotoHomePosition operations are correctly implemented.

Pre-Requirement: PTZ Service is received from the DUT. Media Service is received from the DUT. Absolute or Relative movement is supported by the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client configures and selects a media profile as described in [Annex A.1](#).
4. ONVIF Client invokes **GetNode** request (Node Token) to get PTZ node capabilities.
5. Verify the **GetNodeResponse** message from the DUT. If **GetNodeResponse** message does not contains FixedHomePosition attribute skip other steps and go to the next test.
6. ONVIF Client invokes **SetHomePosition** request message (Profile Token) to get PTZ node capabilities.
7. Verify the **SetHomePositionResponse** message or SOAP 1.2 fault message (Action/CannotOverwriteHome or ActionNotSupported) from the DUT. Verify that **SetHomePositionResponse** message was relieved if FixedHomePosition = "false". Verify that SOAP 1.2 fault message (Action/CannotOverwriteHome or ActionNotSupported) was relieved if FixedHomePosition = "true".

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- DUT did not send **SetHomePositionResponse** message if FixedHomePosition = false.
- DUT did not send a valid SOAP 1.2 fault message if FixedHomePosition = true.

5.6 Auxiliary operations

5.6.1 SEND AUXILIARY COMMAND

Test Case ID: PTZ-6-1-1

Specification Coverage: SendAuxiliaryCommand

Feature Under Test: SendAuxiliaryCommand

WSDL Reference: ptz.wsdl

Test Purpose: To verify that it is possible to send an auxiliary command using the SendAuxiliaryCommand operation.

Pre-Requirement: PTZ Service is received from the DUT. Media Service is received from the DUT. Auxiliary operations is supported by the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client configures and selects a media profile as described in [Annex A.1](#).
4. ONVIF Client sends a **GetNode** request.
5. DUT sends a **GetNodeResponse** message that includes a list of the supported auxiliary commands.
6. Send an Auxiliary command that matches the supported command listed in the PTZ Node, using **SendAuxiliaryCommand** request.
7. Verify that the DUT sends a **SendAuxiliaryCommandResponse** message.

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- DUT did not list the available auxiliary commands in the PTZ Node properties.
- DUT did not send **SendAuxiliaryCommandResponse** message.

Note: It is outside the scope of this test case to verify that the functionality connected to an Auxiliary command works as intended. This should be independently verified by the person executing the test.

5.7 Predefined PTZ spaces

5.7.1 Absolute Position Spaces

5.7.1.1 GENERIC PAN/TILT POSITION SPACE

Test Case ID: PTZ-7-1-3

Specification Coverage: Generic Pan/Tilt Position Space

Feature Under Test: Generic Pan/Tilt Position Space

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the node supports the Generic Pan/Tilt Position Space for AbsolutePanTilt.

Pre-Requisite: PTZ Service is received from the DUT. Media Service is received from the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetNodes** request to retrieve a complete list of PTZNodes.
4. Verify the **GetNodesResponse** message from the DUT.
5. Select the first PTZNode that supports Absolute Pan/Tilt movement. If there is no such PTZNodes skip other steps and go to the next test.
6. Verify that the node's Absolute Position Space description is correctly formed and that the allowed range is specified. Verify that there is Generic Pan/Tilt Position Space description for AbsolutePanTilt.
7. ONVIF Client configures and selects a media profile as described in [Annex A.1](#) for PTZ Configuration that refers to the selected PTZNode.
8. ONVIF Client sends a valid **AbsoluteMove** request using the min XRange/YRange values from the space description and with Generic Pan/Tilt Position Space.

9. Verify that the **AbsoluteMove** request is accepted.
10. ONVIF Client sends a valid **AbsoluteMove** request using the max XRange/YRange values from the space description and with Generic Pan/Tilt Position Space.
11. Verify that the **AbsoluteMove** request is accepted.
12. Repeat test procedure for all PTZNodes available that supports Absolute Pan/Tilt movement in the DUT.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT does not have a Generic Pan/Tilt Position Space description for AbsolutePanTilt.
- The allowed range is not specified.
- A valid **AbsoluteMove** request operation does not succeed.

Note: This test case shall be repeated for all PTZNodes with Absolute Pan/Tilt move support that are available in the DUT.

Note: Absolute Pan/Tilt Move is regarded as supported for PTZNode, if PTZNode contains at least one AbsolutePanTiltPositionSpace tag.

Note: If profile selected for test contains PanTiltLimits or ZoomLimits in the PTZConfiguration then these limitations will be taken into account for x, y values of PanTilt or Zoom in **AbsoluteMove** request.

5.7.1.2 GENERIC ZOOM POSITION SPACE

Test Case ID: PTZ-7-1-4

Specification Coverage: Generic Zoom Position Space

Feature Under Test: Generic Zoom Position Space

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the node supports the Generic Zoom Position Space for Absolute Zoom.

Pre-Requirement: PTZ Service is received from the DUT. Media Service is received from the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetNodes** request to retrieve a complete list of PTZNodes.
4. Verify the **GetNodesResponse** message from the DUT.
5. Select the first PTZNode that supports Absolute Zoom movement. If there is no such PTZNodes, skip other steps and go to the next test.
6. Verify that the node's Absolute Position Space description is correctly formed and that the allowed range is specified. Verify that there is Generic Zoom Position Space description for AbsoluteZoom.
7. ONVIF Client configures and selects a media profile as described in [Annex A.1](#) for PTZ Configuration that refers to selected PTZNode.
8. ONVIF Client sends a valid **AbsoluteMove** request using the max XRange values from the space description and with Generic Zoom Position Space.
9. Verify that the **AbsoluteMove** request is accepted.
10. ONVIF Client sends a valid **AbsoluteMove** request using the min XRange values from the space description and with Generic Zoom Position Space.
11. Verify that the **AbsoluteMove** request is accepted.
12. Repeat test procedure for all PTZNodes available that supports Absolute Zoom movement in the DUT.

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT does not have a Generic Zoom Position Space description for AbsoluteZoom.

- The allowed range is not specified.
- A valid **AbsoluteMove** request operation does not succeed.

Note: This test case shall be repeated for all PTZNodes with Absolute Zoom move support that are available in the DUT.

Note: Absolute Zoom Move is regarded as supported for PTZNode, if PTZNode contains at least one AbsoluteZoomPositionSpace tag.

Note: If profile selected for test contains PanTiltLimits or ZoomLimits in the PTZConfiguration then these limitations will be taken into account for x, y values of PanTilt or Zoom in **AbsoluteMove** request.

5.7.2 Relative Translation Spaces

5.7.2.1 GENERIC PAN/TILT TRANSLATION SPACE

Test Case ID: PTZ-7-2-3

Specification Coverage: Generic Pan/Tilt Translation Space

Feature Under Test: Generic Pan/Tilt Translation Space

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the node supports the Generic Pan/Tilt Translation Space for Relative Pan/Tilt.

Pre-Requisite: PTZ Service is received from the DUT. Media Service is received from the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetNodes** request to retrieve a complete list of PTZNodes.
4. Verify the **GetNodesResponse** message from the DUT.
5. Select the first PTZNode that supports Relative Pan/Tilt movement. If there is no such PTZNodes, skip other steps and go to the next test.

6. Verify that the node's Relative Translation Space description is correctly formed and that the allowed range is specified. Verify that there is Generic Pan/Tilt Translation Space description for RelativePanTilt.
7. ONVIF Client configures and selects a media profile as described in [Annex A.1](#) for PTZ Configuration that refers to selected PTZNode.
8. ONVIF Client sends a valid **RelativeMove** request using the min XRange/YRange values from the space description and with Generic Pan/Tilt Translation Space.
9. Verify that the **RelativeMove** request is accepted.
10. ONVIF Client sends a valid **RelativeMove** request using the max XRange/YRange values from the space description and with Generic Pan/Tilt Translation Space.
11. Verify that the **RelativeMove** request is accepted.
12. Repeat test procedure for all PTZNodes available that supports Relative Pan/Tilt movement in the DUT.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT does not have a Generic Pan/Tilt Translation Space description for Relative Pan/Tilt.
- The allowed range is not specified.
- A valid RelativeMove operation does not succeed.

Note: This test case shall be repeated for all PTZNodes with Relative Pan/Tilt move support that are available in the DUT.

Note: Relative Pan/Tilt Move is regarded as supported for PTZNode, if PTZNode contains at least one RelativePanTiltTranslationSpace tag.

5.7.2.2 GENERIC ZOOM TRANSLATION SPACE

Test Case ID: PTZ-7-2-4

Specification Coverage: Generic Zoom Translation Space

Feature Under Test: Generic Zoom Translation Space

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the node supports the Generic Zoom Translation Space for Relative Zoom.

Pre-Requisite: PTZ Service is received from the DUT. Media Service is received from the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetNodes** request to retrieve a complete list of PTZNodes.
4. Verify the **GetNodesResponse** message from the DUT.
5. Select the first PTZNode that supports Relative Zoom movement. If there is no such PTZNodes skip, other steps and go to the next test.
6. Verify that the node's Relative Translation Space description is correctly formed and that the allowed range is specified. Verify that there is Generic Zoom Translation Space description for RelativeZoom.
7. ONVIF Client configures and selects a media profile as described in [Annex A.1](#) for PTZ Configuration that refers to selected PTZNode.
8. ONVIF Client sends a valid **RelativeMove** request using the max XRange values from the space description and with Generic Zoom Translation Space.
9. Verify that the **RelativeMove** request is accepted.
10. ONVIF Client sends a valid **RelativeMove** request using the min XRange values from the space description and with Generic Zoom Translation Space.
11. Verify that the **RelativeMove** request is accepted.
12. Repeat test procedure for all PTZNodes available that supports Relative Zoom movement in the DUT.

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT does not have a Generic Zoom Translation Space description for RelativeZoom.
- The allowed range is not specified
- A valid RelativeMove operation does not succeed

Note: This test case shall be repeated for all PTZNodes with Relative Zoom move support that are available in the DUT.

Note: Relative Zoom Move is regarded as supported for PTZNode, if PTZNode contains at least one RelativeZoomTranslationSpace tag.

5.7.3 Continuous Velocity Spaces

5.7.3.1 GENERIC PAN/TILT VELOCITY SPACE

Test Case ID: PTZ-7-3-3

Specification Coverage: Generic Pan/Tilt Velocity Space

Feature Under Test: Generic Pan/Tilt Velocity Space

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the node supports the Generic Pan/Tilt Velocity Space for Continuous Pan/Tilt.

Pre-Requisite: PTZ Service is received from the DUT. Media Service is received from the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetNodes** request to retrieve a complete list of PTZNodes.
4. Verify the **GetNodesResponse** message from the DUT.

5. Select the first PTZNode that supports Continuous Pan/Tilt movement. If there is no such PTZNodes, skip other steps and go to the next test.
6. Verify that the node's Continuous Velocity Space description is correctly formed and that the allowed range is specified. Verify that there is Generic Pan/Tilt Velocity Space description for ContinuousPanTilt.
7. ONVIF Client configures and selects a media profile as described in [Annex A.1](#) for PTZ Configuration that refers to selected PTZNode.
8. ONVIF Client sends a valid **ContinuousMove** request using the min XRange/YRange values from the space description and with Generic Pan/Tilt Velocity Space.
9. Verify that the **ContinuousMove** request is accepted.
10. ONVIF Client sends a valid **ContinuousMove** request using the max XRange/YRange values from the space description and with Generic Pan/Tilt Velocity Space.
11. Verify that the **ContinuousMove** request is accepted.
12. Repeat test procedure for all PTZNodes available that supports Continuous Pan/Tilt movement in the DUT.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT does not have a Generic Pan/Tilt Velocity Space description for Continuous Pan/Tilt.
- The allowed range is not specified
- A valid ContinuousMove operation does not succeed

Note: This test case shall be repeated for all PTZNodes with Continuous Pan/Tilt move support that are available in the DUT.

Note: Continuous Pan/Tilt Move is regarded as supported for PTZNode, if PTZNode contains at least one ContinuousPanTiltVelocitySpace tag.

5.7.3.2 GENERIC ZOOM VELOCITY SPACE

Test Case ID: PTZ-7-3-4

Specification Coverage: Generic Zoom Velocity Space

Feature Under Test: Generic Zoom Velocity Space

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the node supports the Generic Zoom Velocity Space for Continuous Zoom.

Pre-Requisite: PTZ Service is received from the DUT. Media Service is received from the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetNodes** request to retrieve a complete list of PTZNodes.
4. Verify the **GetNodesResponse** message from the DUT.
5. Select the first PTZNode that supports Continuous Zoom movement. If there is no such PTZNodes, skip other steps and go to the next test.
6. Verify that the node's Continuous Velocity Space description is correctly formed and that the allowed range is specified. Verify that there is Generic Zoom Velocity Space description for ContinuousZoom.
7. ONVIF Client configures and selects a media profile as described in [Annex A.1](#) for PTZ Configuration that refers to selected PTZNode.
8. ONVIF Client sends a valid **ContinuousMove** request using the max XRange values from the space description and with Generic Zoom Velocity Space.
9. Verify that the **ContinuousMove** request is accepted.
10. ONVIF Client sends a valid **ContinuousMove** request using the min XRange values from the space description and with Generic Zoom Velocity Space.
11. Verify that the **ContinuousMove** request is accepted.
12. Repeat test procedure for all PTZNodes available that supports Continuous Zoom movement in the DUT.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT does not have a Generic Zoom Velocity Space description for ContinuousZoom.
- The allowed range is not specified
- A valid ContinuousMove operation does not succeed

Note: This test case shall be repeated for all PTZNodes with Continuous Zoom move support that are available in the DUT.

Note: Continuous Zoom Move is regarded as supported for PTZNode, if PTZNode contains at least one ContinuousZoomVelocitySpace tag.

5.7.4 Speed Spaces

5.7.4.1 GENERIC PAN/TILT SPEED SPACE

Test Case ID: PTZ-7-4-3

Specification Coverage: Generic Pan/Tilt Speed Space

Feature Under Test: Generic Pan/Tilt Speed Space

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the node supports the Generic Pan/Tilt Speed Space for pan/tilt.

Pre-Requirement: PTZ Service is received from the DUT. Media Service is received from the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetNodes** request to retrieve a complete list of PTZNodes.

4. Verify the **GetNodesResponse** message from the DUT.
5. Select the first PTZNode that supports Speed for Pan/Tilt movement. If there is no such PTZNodes, skip other steps and go to the next test.
6. Verify that the node's Speed Space description is correctly formed and that the allowed range is specified. Verify that there is Generic Pan/Tilt Speed Space description for PanTiltSpeedSpace.
7. ONVIF Client configures and selects a media profile as described in [Annex A.1](#) for PTZ Configuration that refers to selected PTZNode.
8. ONVIF Client sends a valid **AbsoluteMove** request or **RelativeMove** request (depending on which is supported by the PTZNode) using the min XRange/YRange values from the space description for Pan/Tilt position, min XRange/YRange values from the space description for Pan/Tilt speed and with Generic Pan/Tilt Speed Space.
9. Verify that the **AbsoluteMove** request (or **RelativeMove** request) is accepted.
10. ONVIF Client sends a valid **AbsoluteMove** request or **RelativeMove** request (depending on which is supported by the PTZNode) using the max XRange/YRange values from the space description for Pan/Tilt position, max XRange/YRange values from the space description for Pan/Tilt speed and with Generic Pan/Tilt Speed Space.
11. Verify that the **AbsoluteMove** request (or **RelativeMove** request) is accepted.
12. Repeat test procedure for all PTZNodes available that supports Speed for Pan/Tilt movement in the DUT.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT does not have a Generic Pan/Tilt Position Space description for Speed Pan/Tilt.
- The allowed range is not specified
- A valid **AbsoluteMove** request or **RelativeMove** request (depending on which is supported by the PTZNode) does not succeed.

Note: This test case shall be repeated for all PTZNodes with supported Speed for Pan/Tilt move that are available in the DUT.

Note: Speed for Pan/Tilt is regarded as supported for PTZNode, if PTZNode contains at least one PanTiltSpeedSpace tag.

Note: If profile selected for test contains PanTiltLimits or ZoomLimits in the PTZConfiguration, then these limitations will be taken into account for x, y values of PanTilt or Zoom in **AbsoluteMove** request.

5.7.4.2 GENERIC ZOOM SPEED SPACE

Test Case ID: PTZ-7-4-4

Specification Coverage: Generic Zoom Speed Space

Feature Under Test: Generic Zoom Speed Space

WSDL Reference: ptz.wsdl

Test Purpose: To verify that the node supports the Generic Zoom Speed Space for zoom.

Pre-Requirement: PTZ Service is received from the DUT. Media Service is received from the DUT. A ProfileToken that refers to a Media Profile that includes a PTZConfiguration for the PTZNode is required.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetNodes** request to retrieve a complete list of PTZNodes.
4. Verify the **GetNodesResponse** message from the DUT.
5. Select the first PTZNode that supports Speed for Zoom movement. If there is no such PTZNodes, skip other steps and go to the next test.
6. Verify that the node's Speed Space description is correctly formed and that the allowed range is specified. Verify that there is Generic Zoom Speed Space description for ZoomSpeedSpace.
7. ONVIF Client configures and selects a media profile as described in [Annex A.1](#) for PTZ Configuration that refers to selected PTZNode.
8. ONVIF Client sends a valid **AbsoluteMove** request or **RelativeMove** request (depending on which is supported by the PTZNode) using the max XRange values from the space

description for Zoom position, max XRange values from the space description for Zoom speed and with Generic Zoom Speed Space.

9. Verify that the **AbsoluteMove** request (or **RelativeMove** request) is accepted.
10. ONVIF Client sends a valid **AbsoluteMove** request or **RelativeMove** request (depending on which is supported by the PTZNode) using the min XRange values from the space description for Zoom position, min XRange values from the space description for Zoom speed and with Generic Zoom Speed Space.
11. Verify that the **AbsoluteMove** request (or **RelativeMove** request) is accepted.
12. Repeat test procedure for all PTZNodes available that supports Speed for Zoom movement in the DUT.

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT does not have a Generic Zoom Speed Space description for SpeedZoom.
- The allowed range is not specified.

Note: This test case shall be repeated for all PTZNodes with supported Speed for Zoom move that are available in the DUT.

Note: Speed for Zoom is regarded as supported for PTZNode, if PTZNode contains at least one ZoomSpeedSpace tag.

Note: If profile selected for test contains PanTiltLimits or ZoomLimits in the PTZConfiguration, then these limitations will be taken into account for x, y values of PanTilt or Zoom in **AbsoluteMove** request.

5.8 Capabilities

5.8.1 PTZ SERVICE CAPABILITIES

Test Case ID: PTZ-8-1-1

Specification Coverage: Capability exchange

Feature Under Test: GetServiceCapabilities (for PTZ Service)

WSDL Reference: ptz.wsdl

Test Purpose: To verify PTZ Service Capabilities of the DUT.

Pre-Requisite: PTZ Service is received from the DUT. GetServices is supported by the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetServiceCapabilities** request to retrieve PTZ service capabilities of the DUT.
4. Verify the **GetServiceCapabilitiesResponse** message from the DUT.

Test Result:

PASS –

- DUT passes all assertions.

FAIL –

- The DUT did not send a valid GetServiceCapabilitiesResponse.

5.8.2 GET SERVICES AND GET PTZ SERVICE CAPABILITIES CONSISTENCY

Test Case ID: PTZ-8-1-2

Specification Coverage: Capability exchange

Feature Under Test: GetServices, GetServiceCapabilities (for PTZ Service)

WSDL Reference: ptz.wsdl

Test Purpose: To verify Get Services and PTZ Service Capabilities consistency.

Pre-Requisite: PTZ Service is received from the DUT. GetServices is supported by the DUT.

Test Configuration: ONVIF Client and DUT.

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke **GetServices** request (IncludeCapability = true) to retrieve all services of the DUT with service capabilities.
4. Verify the **GetServicesResponse** message from the DUT.
5. ONVIF Client will invoke **GetServiceCapabilities** request to retrieve PTZ service capabilities of the DUT.
6. Verify the **GetServiceCapabilitiesResponse** message from the DUT.

Test Result:**PASS –**

- DUT passes all assertions.

FAIL –

- The DUT did not send a valid **GetServicesResponse** message.
- The DUT did not send a valid **GetServiceCapabilitiesResponse** message.
- The DUT sent different Capabilities in **GetServicesResponse** message and in **GetServiceCapabilitiesResponse** message.

Note: Service will be defined as PTZ service if it will have Namespace element that is equal to "http://www.onvif.org/ver20/ptz/wsdl".

Annex A Helper Procedures and Additional Notes

A.1 Media Profile Configuration for PTZ Control

For the execution of PTZ control test cases, ONVIF Client has to select and configure the media profile as follows:

1. Retrieve media profiles by invoking **GetProfiles** request. Check whether a media profile contains PTZ configuration or not.
2. If no media profile contains PTZ configuration, retrieve PTZ configurations by invoking **GetConfigurations** request.
3. Add PTZ configuration to media profile by invoking **AddPTZConfiguration** request.
4. Get PTZ configuration options for the added PTZ Configuration by invoking **GetConfigurationOptions** request.

A.2 Name and Token Parameters Maximum Length

There are the following limitations on maximum length of Name and Token parameters that shall be used during tests by ONVIF Device Test Tool to prevent faults from the DUT:

- Name shall be less than or equal to 64 characters (only readable characters are accepted).
- Token shall be less than or equal to 64 characters (only readable characters are accepted).

UTF-8 character set shall be used for Name and Token.

Note: these limitations will not be used if ONVIF Device Test Tool re-uses values that were received from the DUT.