Driving IP-based physical security through global standardization

ONVIF™

Recording Search Test Specification

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Driving IP-based physical security through global standardization

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Revision History

Ver.	Date	Description
12.12	20th/Dec, 2012	First version of Recording Search Test Specification
13.06	Jun, 2013	The following test was updated: FIND EVENTS – FORWARD AND BACKWARD SEARCH (SEARCH ENDPOINTS INSIDE RECORDING ENDPOINTS
13.12	Dec, 2013	The following test was added: GET MEDIA ATTRIBUTES – PTZ MEDIA ATTRIBUTES
14.06	Jun, 2014	The following tests were updated with IDs changing: GET RECORDING SEARCH RESULTS AND GET RECORDINGS CONSISTENCY FIND EVENTS – FORWARD AND BACKWARD SEARCH (SEARCH ENDPOINTS OUTSIDE RECORDING ENDPOINTS) GET RECORDING SEARCH RESULTS AND GET RECORDING INFORMATION CONSISTENCY test was added The following Annex was removed: Annex A.3 GetRecordingsResponse.RecordingItem.Tracks and list of Tracks form GetRecordingSearchResultsResponse.ResultList.RecordingInformation.Track consistency The following Annex was added: Annex A.10 Check GetRecordingInformationResponse.RecordingInformation and GetRecordingSearchResultsResponse.ResultList.RecordingInformation consistency
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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. Also 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 Recording Search Test Specification acts as a supplementary document to the [ONVIF Network Interface Specs], illustrating test cases need to be executed and passed. Also, this specification 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. This test tool is referred as ONVIF Client hereafter.

1.1 Scope

This ONVIF Recording Search Test Specification defines and regulates the conformance testing procedure for the ONVIF conformant devices. Conformance testing is meant to be a 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 core services which are defined in [ONVIF Network Interface Specs].

The principal intended purposes are:

1. To provide self-assessment tool for implementations.
2. To provide comprehensive test suite coverage for [ONVIF Network Interface Specs].

This specification does not address the following.

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

This ONVIF Recording Search Test Specification covers ONVIF Recording Search service which is a functional block of [ONVIF Network Interface Specs]. The following sections give a brief overview and scope of each functional block.

1.1.1 Capabilities

Capabilities test cases are covered for verification to get Recording Search Service capabilities. It means that GetServices and GetServiceCapabilities commands are covered by this test case.

1.1.2 Recording Search

Recording Search covers the test cases needed for the verification of recording search features as

mentioned in [ONVIF Network Interface Specs]. Recording Search section defines different recording search scenarios defined by different search options.

1.1.3 Event Search

Event Search covers the test cases needed for the verification of event search features as mentioned in [ONVIF Network Interface Specs]. Event Search section defines different event search scenarios defined by different search options.

1.1.4 Metadata Search

Metadata Search covers the test cases needed for the verification of metadata search features as mentioned in [ONVIF Network Interface Specs]. Metadata Search section defines different metadata search scenarios defined by different search options.

1.1.5 PTZ Search

PTZ Search covers the test cases needed for the verification of PTZ search features as mentioned in [ONVIF Network Interface Specs]. PTZ Search section defines different PTZ search scenarios defined by different search options.

2 Terms and Definitions

1.1 Definitions

This section defines terms that are specific to the ONVIF Recording Search Service and tests. For the list of applicable general terms and definitions, please see [ONVIF Base Test].

Track	An individual data channel consisting of video, audio, or metadata. This definition is consistent with the definition of track in [RFC 2326]
Metadata	All streaming data except video and audio, including video analytics results, PTZ position data and other metadata (such as textual data from POS applications).
Recording	A container for a set of audio, video and metadata tracks. A recording can hold one or more tracks. A track is viewed as an infinite timeline that holds data at certain times.

1.2 Abbreviations

This section describes abbreviations used in this document.

DUT	Device Under Test
HTTP	Hyper Text Transport Protocol
RTCP	RTP Control Protocol
RTSP	Real Time Streaming Protocol
RTP	Real-time Transport Protocol
SDP	Session Description Protocol
TCP	Transport Control Protocol
UTC	Coordinated Universal Time
UDP	User Datagram Protocol
URI	Uniform Resource Identifier
WSDL	Web Services Description Language
WS-I BP 2.0	Web Services Interoperability Basic Profile version 2.0
XML	eXtensible Markup Language

3 Test Overview

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

3.1 Test Setup

3.1.1 Network Configuration for device under test

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

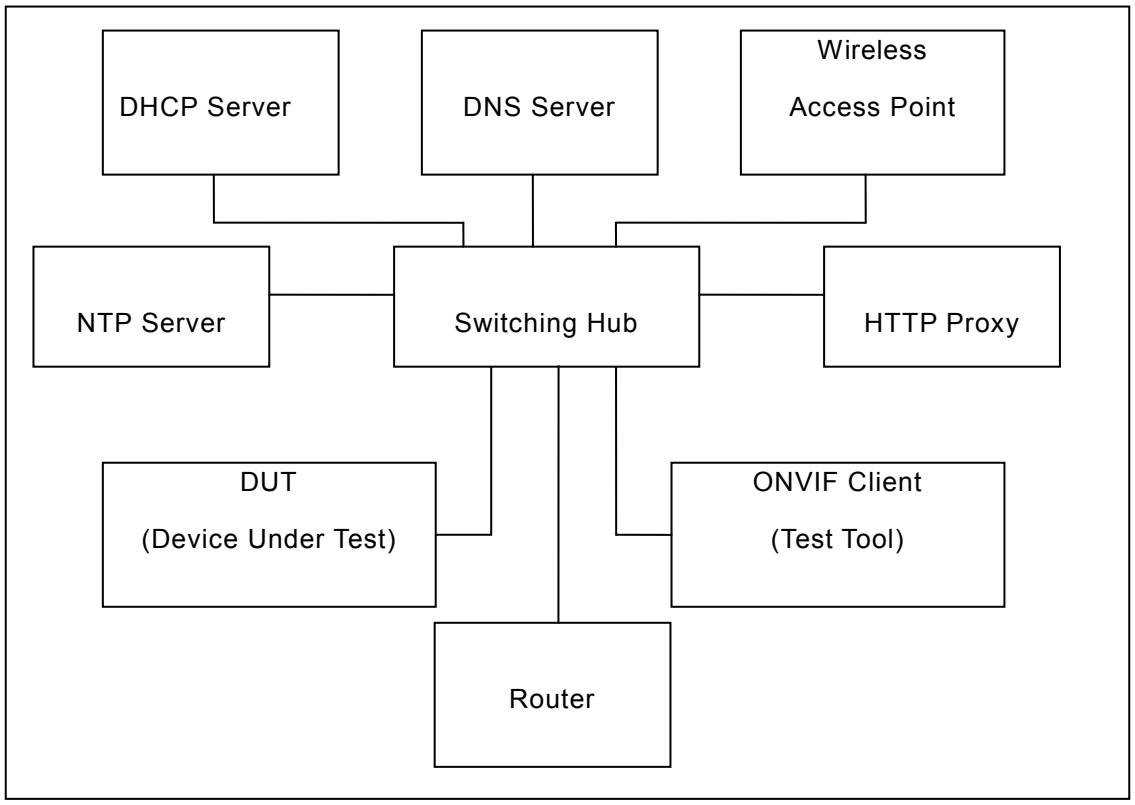

Figure 1: Test Configuration for DUT

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 behaviour of the DUT. It handles both expected and unexpected behaviour.

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

3.2 Prerequisites

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

- The DUT shall be configured with an IPv4 address.
- The DUT shall be IP reachable [in the test configuration].
- The DUT shall be available for being discovered by the ONVIF Client Test Tool.
- The DUT shall be configured with the time i.e. manual configuration of UTC time and if NTP is supported by DUT then NTP time shall be synchronized with NTP Server.
- The DUT time and client Test tool time shall be synchronized with each other either manually or by common NTP server.

3.3 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.

3.3.1 Capabilities

The device under test shall demonstrate recording search service capability both in GetServices and GetServiceCapabilities responses. A DUT that does not display recording search service capability constitutes failure of test procedure.

Please refer to Section 4.1 for Capabilities Test Cases.

3.3.2 Recording Search

Recording search test case execution would need the recording with video track. So device shall have at least one recording with video track. ONVIF Client shall explicitly specify the recording token for them.

DUT shall give the Recording Search Service entry point by GetServices command.

Please refer to Section 4.2 for Recording Search Test Cases.

Please refer to Annex A.1 for Recording Environment Pre-Requisite.

3.3.3 Event Search

Event search test case execution would need the recording with events. So device shall have at least one recording with events. ONVIF Client shall explicitly specify the recording token for them.

DUT shall give the Recording Search Service entry point by GetServices command.

Please refer to Section 4.3 for Event Search Test Cases.

Please refer to Annex A.1 for Recording Environment Pre-Requisite.

3.3.4 Metadata Search

Metadata search test case execution would need the recording with metadata and metadata search support. So device shall have at least one recording with metadata and device shall support metadata search capability. ONVIF Client shall explicitly specify the recording token for them.

DUT shall give the Metadata Search Service entry point by GetServices command.

Please refer to Section 4.4 for Metadata Search Test Cases.

Please refer to Annex A.1 for Recording Environment Pre-Requisite.

3.3.5 PTZ Search

PTZ search test case execution would need the recording with PTZ metadata and PTZ search support. So device shall have at least one recording with PTZ metadata and device shall support PTZ search capability. ONVIF Client shall explicitly specify the recording token for them.

DUT shall give the PTZ Search Service entry point by GetServices command.

Please refer to Section 4.5 for PTZ Search Test Cases.

Please refer to Annex A.1 for Recording Environment Pre-Requisite.

3.3.6 Authentication method selection as a testing framework

According to later version of [ONVIF Network Interface Specs], it requires ONVIF client to support both HTTP digest and WS-UsernameToken functionality as authentication functionality. Therefore, ONVIF Client (ONVIF Device Test Tool in this context) as a testing framework shall properly select authentication method between the two based on the response from DUT toward a specific request. The following is the deterministic procedure on which authentication method is to be selected.

Procedure:

1. ONVIF Client invokes a specific command which is under testing without any user credentials (no WS-UsernameToken, no HTTP digest authentication header).
2. If DUT returns correct response, then ONVIF Client determines that DUT does not require any user authentication toward the command according to the configured security policy.

3. If DUT returns HTTP 401 Unauthorized error along with WWW-Authentication: Digest header, then ONVIF Client determines that DUT supports HTTP digest authentication. ONVIF Client shall provide with the proper level of user credential to continue the test procedure.

4. If DUT returns SOAP fault (Sender/NotAuthorized) message, then ONVIF Client determines that WS-UsernameToken is supported by DUT. ONVIF Client shall provide with the proper level of user credential to continue the test procedure.

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4 Recording Search Test Cases

4.1 Capabilities

4.1.1 RECORDING SEARCH SERVICE CAPABILITIES

Test Label: Recording Search Capabilities Verification.

Test Case ID: SEARCH-1-1-1

ONVIF Core Specification Coverage: Capability exchange

Command under test: GetServiceCapabilities (for Recording Search Service)

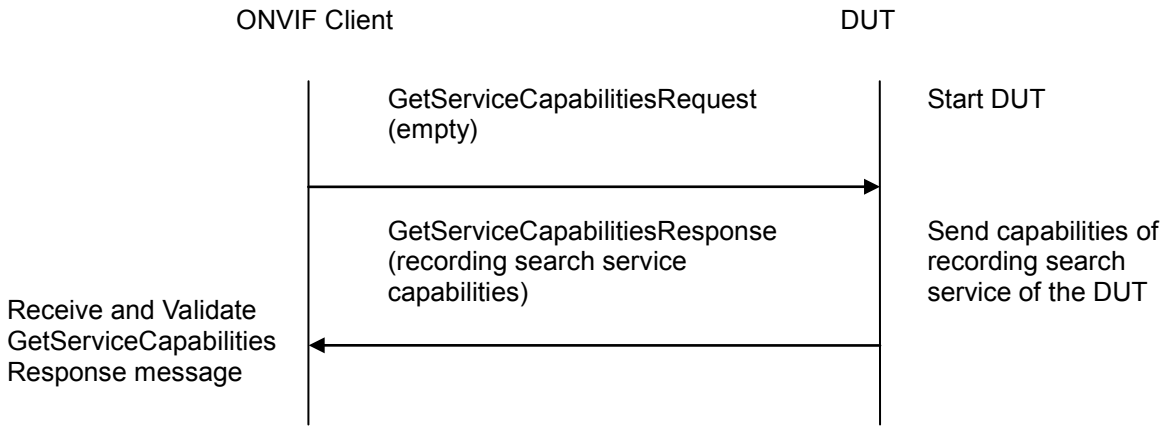
WSDL Reference: search.wsdl

Test Purpose: To verify Recording Search Service Capabilities of the DUT.

Pre-Requisite: Recording Search Service was received from the DUT.

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke GetServiceCapabilitiesRequest message to retrieve recording search service capabilities of the DUT.
4. Verify the GetServiceCapabilitiesResponse from the DUT.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send valid GetServiceCapabilitiesResponse.

4.1.2 GET SERVICES AND GET RECORDING SEARCH SERVICE CAPABILITIES CONSISTENCY

Test Label: Get Services and Recording Search Service Capabilities Consistency Verification.

Test Case ID: SEARCH-1-1-2

ONVIF Core Specification Coverage: Capability exchange

Command under test: GetServices, GetServiceCapabilities (for Recording Search Service)

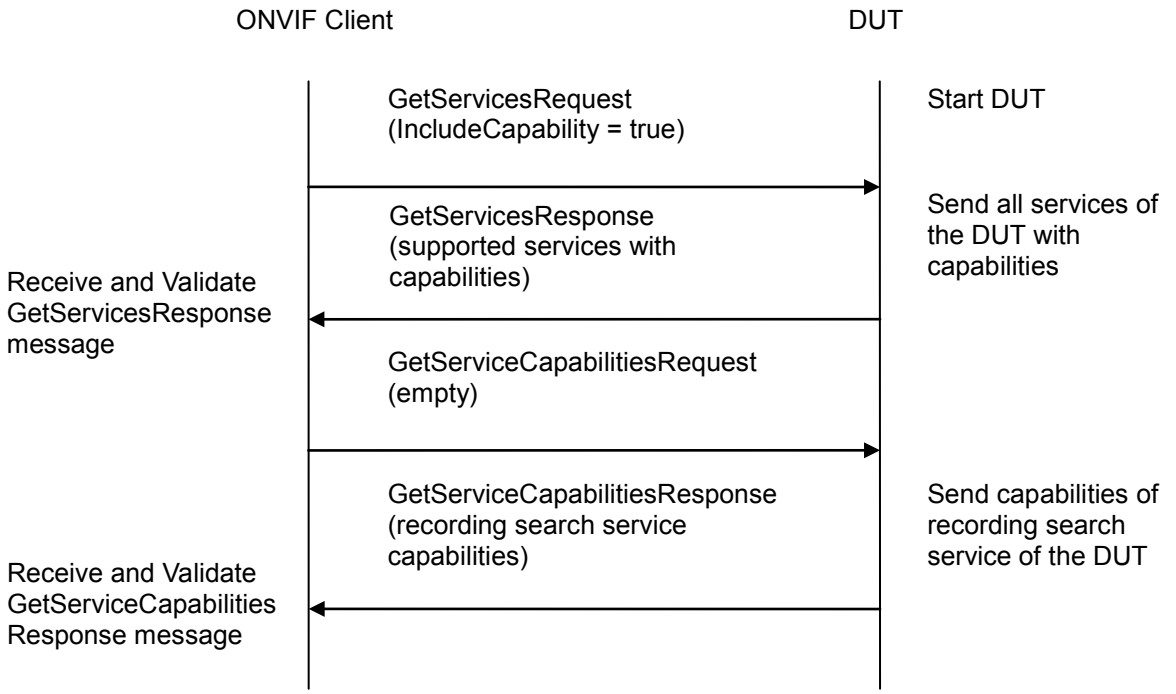
WSDL Reference: devicemgmt.wsdl, search.wsdl

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

Pre-Requisite: None.

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke GetServicesRequest message (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 GetServiceCapabilitiesRequest message to retrieve Recording Search service capabilities of the DUT.
6. Verify the GetServiceCapabilitiesResponse message from the DUT.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send valid GetServicesResponse message.

The DUT did not send valid GetServiceCapabilitiesResponse message.

The DUT sent different Capabilities in GetServicesResponse message and in GetServiceCapabilitiesResponse message.

Note: Service will be defined as Recording Search service if it will have Namespace element that is equal to “http://www.onvif.org/ver10/search/wsdl”.

4.2 Recording Search

4.2.1 GET RECORDING SUMMARY

Test Label: Get Recording Summary Verification.

Test Case ID: SEARCH-4-1-1

ONVIF Core Specification Coverage: GetRecordingSummary

Command under test: GetRecordingSummary

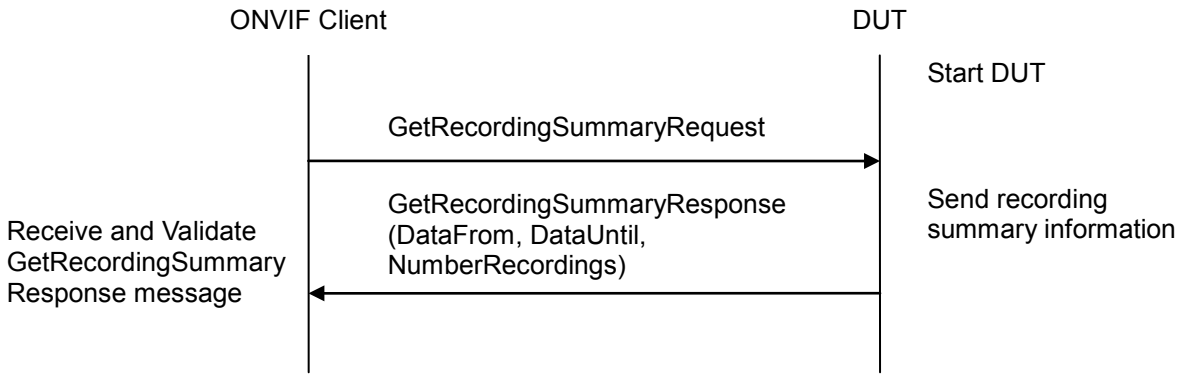
WSDL Reference: search.wsdl

Test Purpose: To verify GetRecordingSummary command.

Pre-Requisite: None.

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke GetRecordingSummaryRequest message to retrieve summary information about recordings on the DUT.
4. Verify the GetRecordingSummaryResponse message from the DUT.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingSummaryResponse message.

The DUT sent GetRecordingSummaryResponse message with DataUntil less than DataFrom.

4.2.2 GET RECORDING SEARCH RESULTS WITH MINRESULTS

Test Label: GetRecordingSearchResult Command with MinResults.

Test Case ID: SEARCH-2-1-3

ONVIF Core Specification Coverage: FindRecordings, GetRecordingSearchResult

Command under test: FindRecordings, GetRecordingSearchResult

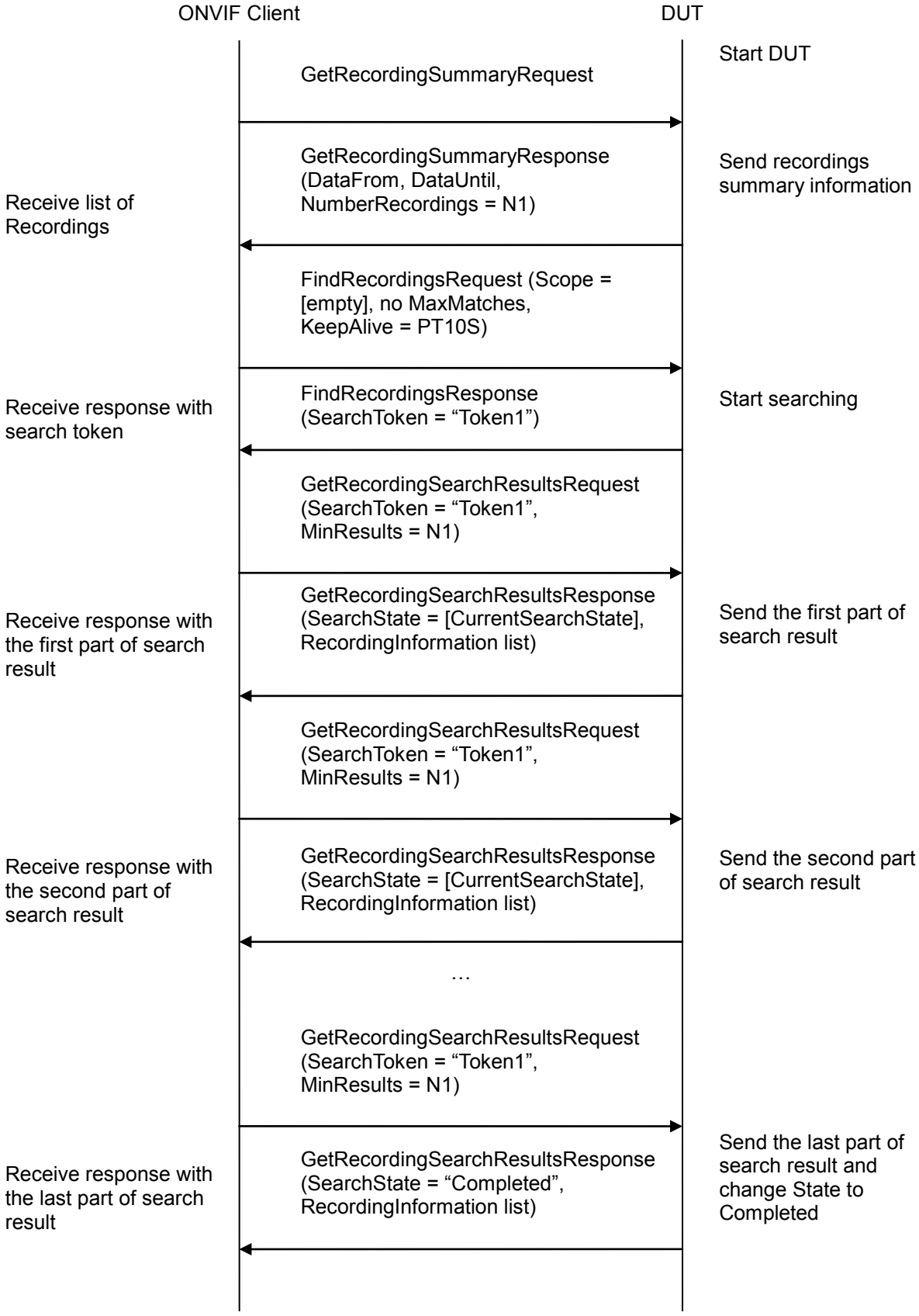
WSDL Reference: search.wsdl

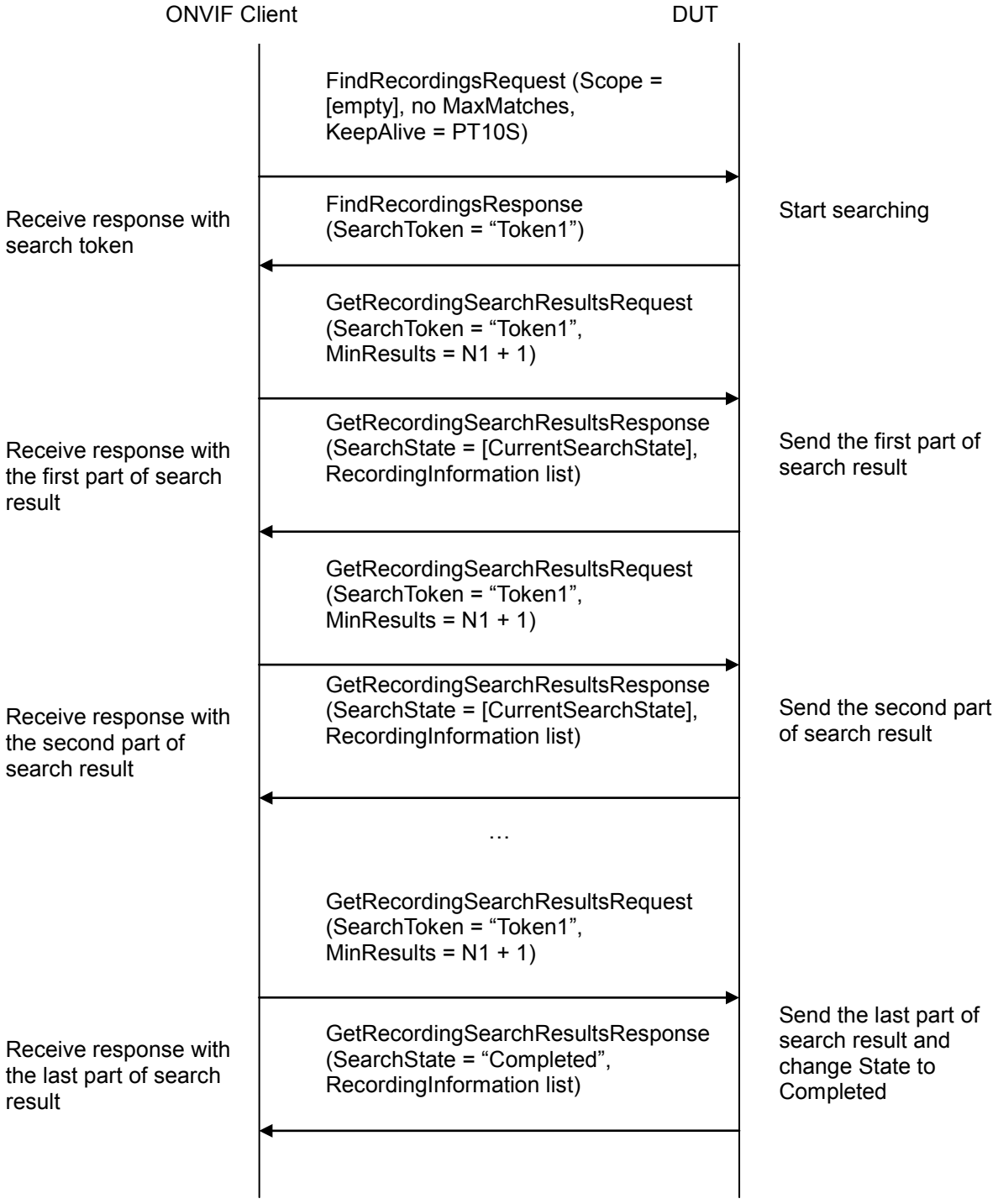
Test Purpose: To verify that GetRecordingSearchResult command accepts any MinResults.

Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingSummaryRequest
GetRecordingSummaryResponse (DataFrom, DataUntil, NumberRecordings = N1)
Send recordings summary information
Receive list of Recordings
FindRecordingsRequest (Scope = [empty], no MaxMatches, KeepAlive = PT10S)
FindRecordingsResponse (SearchToken = “Token1”)
Start searching
Receive response with search token
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MinResults = N1)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the first part of search result
Receive response with the first part of search result
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MinResults = N1)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the second part of search result
Receive response with the second part of search result
…
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MinResults = N1)
GetRecordingSearchResultsResponse (SearchState = “Completed”, RecordingInformation list)
Send the last part of search result and change State to Completed
Receive response with the last part of search result



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get current number of recordings **N1** from the DUT (see Annex A.4).

4. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], no MaxMatches, KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
5. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
6. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1", MinResults = N1**) to get current search result and search state.
7. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list which contains current results of the search with at least the following information for each recording on the list: RecordingToken, Source, Content, Track list, RecordingStatus**) from the DUT.
8. Repeat steps 6-7 until SearchState is equal to Completed.
9. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], no MaxMatches, KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
10. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
11. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1", MinResults = N1+1**) to get current search result and search state.
12. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list which contains current results of the search with at least the following information for each recording on the list: RecordingToken, Source, Content, Track list, RecordingStatus**) from the DUT.
13. Repeat steps 11-12 until SearchState is equal to Completed.
14. Verify that sets of recordings from GetRecordingSearchResultsResponse messages for the first (steps 4-8) and the second (steps 9-13) recording search session are the same.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingSearchResultsResponse message.

The DUT did not send a valid FindRecordingsResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned an invalid RecordingInformation.EarliestRecording (e.g. there was no Track for this Recording where Track.DataFrom was equal to RecordingInformation.EarliestRecording or there was at list one Track for this Recording where Track.DataFrom was less than RecordingInformation.EarliestRecording).

The DUT returned an invalid RecordingInformation.LatestRecording (e.g. there was no Track for this Recording where Track.DataTo was equal to RecordingInformation. LatestRecording or there was at list one Track for this Recording where Track.DataTo was greater than RecordingInformation.LatestRecording).

The DUT returned a different set of recordings from GetRecordingSearchResultsResponses for steps 7 and 12 (see Annex A.5).

4.2.3 GET RECORDING SEARCH RESULTS WITH MAXRESULTS

Test Label: GetRecordingSearchResult Command with MaxResults.

Test Case ID: SEARCH-2-1-4

ONVIF Core Specification Coverage: FindRecordings, GetRecordingSearchResult

Command under test: FindRecordings, GetRecordingSearchResult

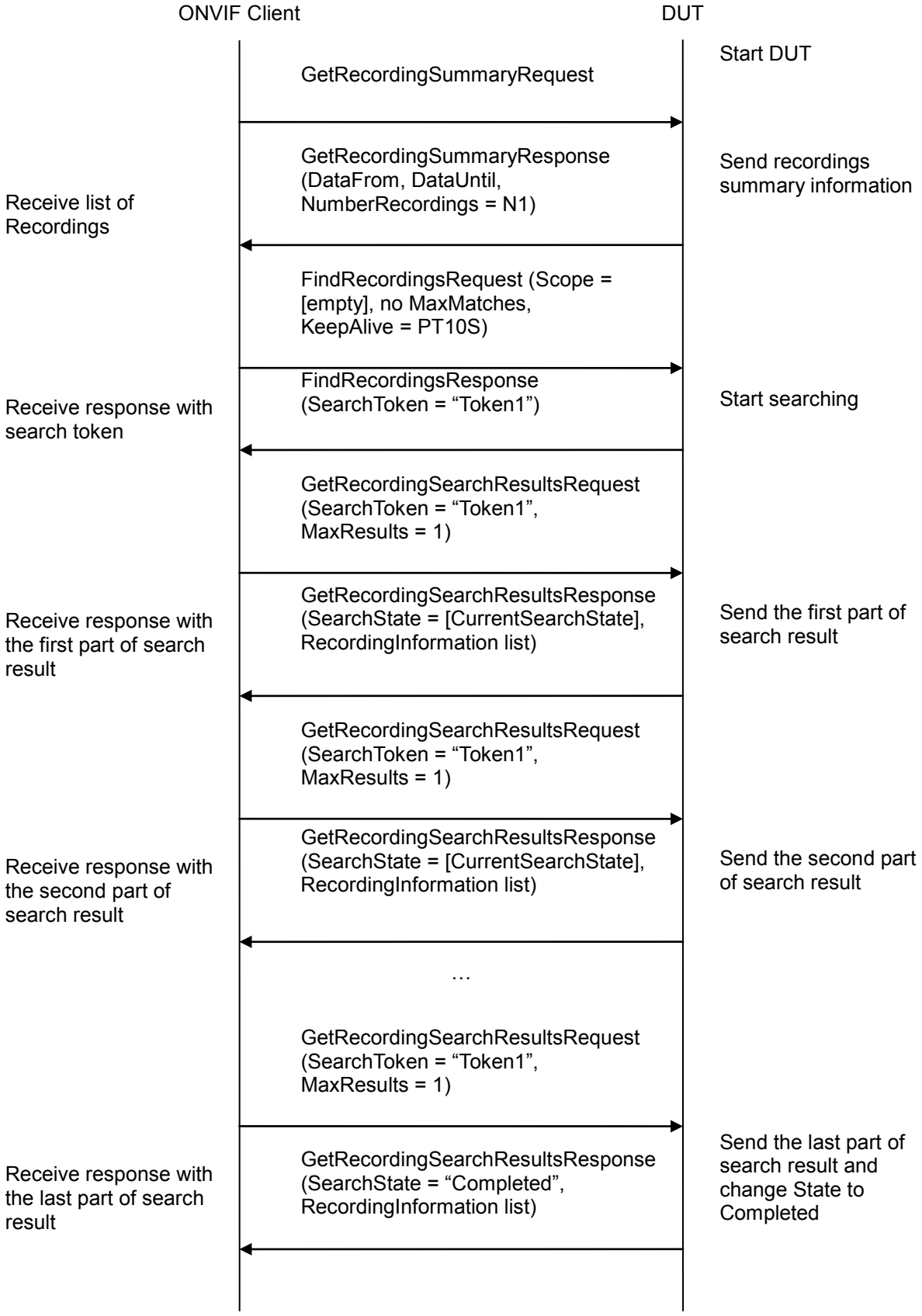
WSDL Reference: search.wsdl

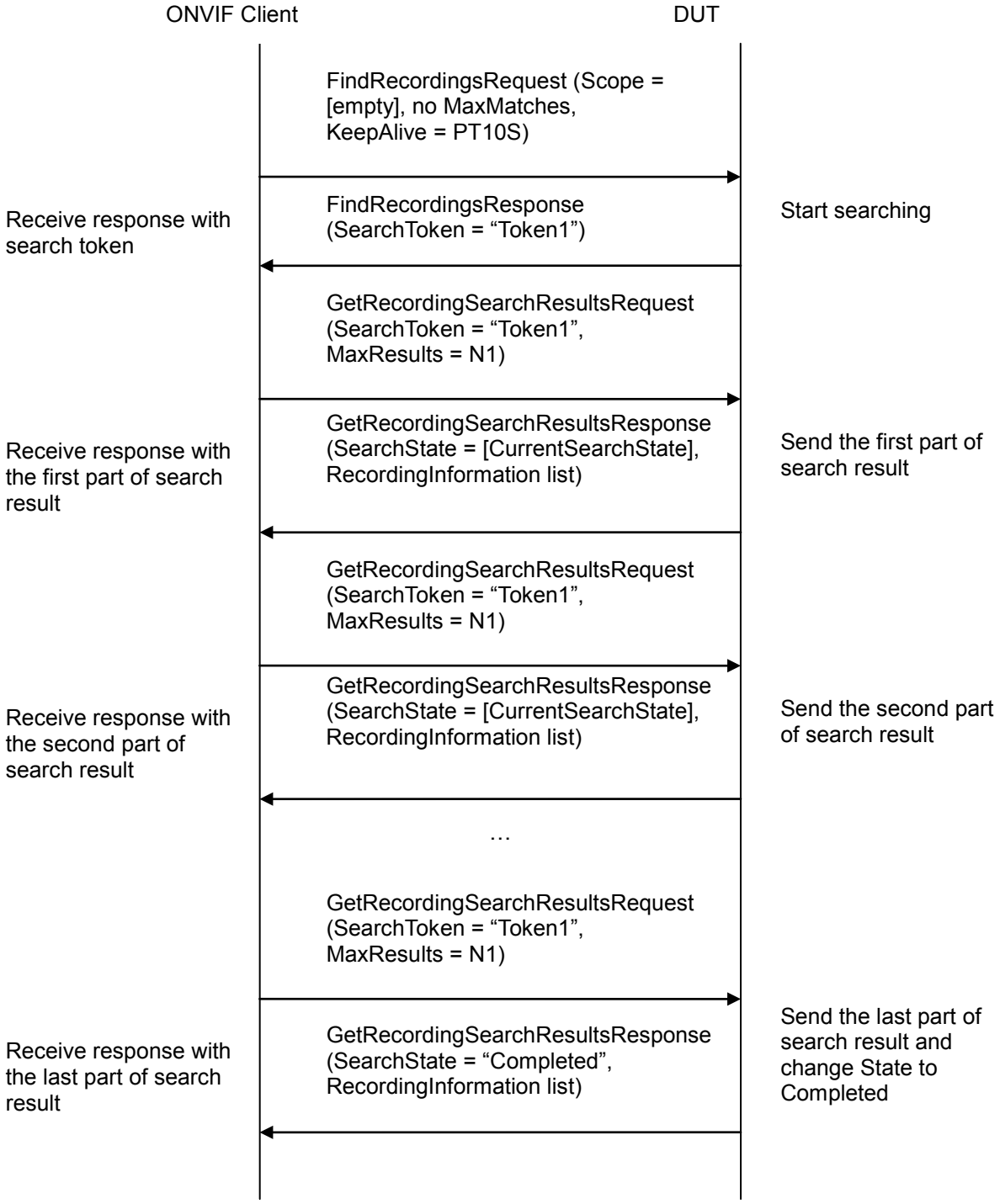
Test Purpose: To verify that GetRecordingSearchResult command accepts any MaxResults and handles MaxResults parameter correctly.

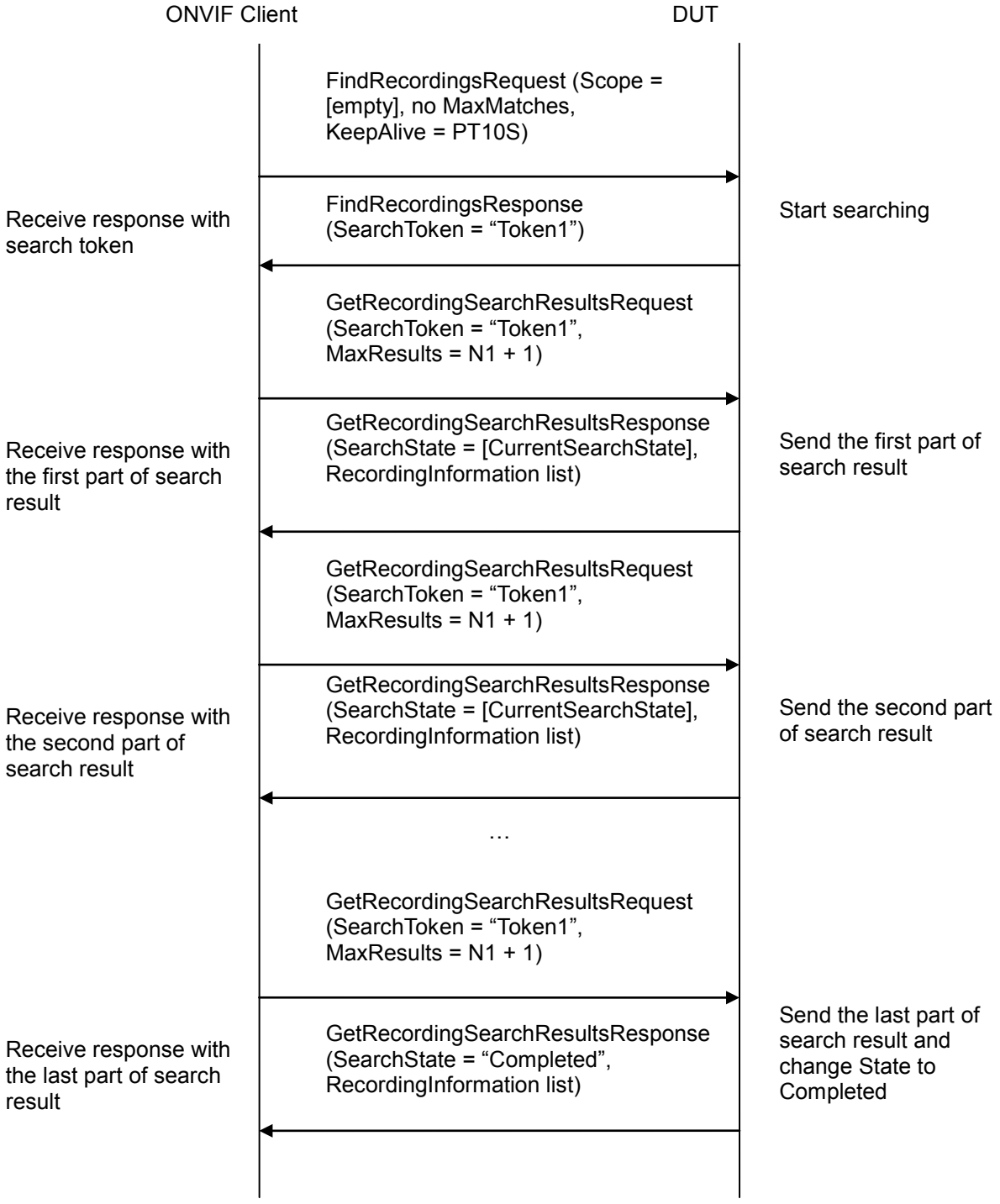
Pre-Requisite: At least one recording exists on the DUT (see annex A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingSummaryRequest
GetRecordingSummaryResponse (DataFrom, DataUntil, NumberRecordings = N1)
Send recordings summary information
Receive list of Recordings
FindRecordingsRequest (Scope = [empty], no MaxMatches, KeepAlive = PT10S)
FindRecordingsResponse (SearchToken = “Token1”)
Start searching
Receive response with search token
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MaxResults = 1)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the first part of search result
Receive response with the first part of search result
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MaxResults = 1)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the second part of search result
Receive response with the second part of search result
…
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MaxResults = 1)
GetRecordingSearchResultsResponse (SearchState = “Completed”, RecordingInformation list)
Send the last part of search result and change State to Completed
Receive response with the last part of search result


ONVIF Client
DUT
FindRecordingsRequest (Scope = [empty], no MaxMatches, KeepAlive = PT10S)
FindRecordingsResponse (SearchToken = “Token1”)
Start searching
Receive response with search token
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MaxResults = N1)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the first part of search result
Receive response with the first part of search result
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MaxResults = N1)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the second part of search result
Receive response with the second part of search result
…
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MaxResults = N1)
GetRecordingSearchResultsResponse (SearchState = “Completed”, RecordingInformation list)
Send the last part of search result and change State to Completed
Receive response with the last part of search result



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get current number of recordings **N1** from the DUT (see Annex A.4).

4. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], no MaxMatches, KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
5. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
6. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1", MaxResults = 1**) to get current search result and search state.
7. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list which contains current results of the search with at least the following information for each recording on the list: RecordingToken, Source, Content, Track list, RecordingStatus**) from the DUT.
8. Repeat steps 6-7 until SearchState is equal to Completed.
9. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], no MaxMatches, KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
10. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
11. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1", MaxResults = N1**) to get current search result and search state.
12. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list which contains current results of the search with at least the following information for each recording on the list: RecordingToken, Source, Content, Track list, RecordingStatus**) from the DUT.
13. Repeat steps 11-12 until SearchState is equal to Completed.
14. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], no MaxMatches, KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
15. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
16. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1", MaxResults = N1+1**) to get current search result and search state.
17. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list which contains current results of the search with at least the following information for each recording on the list: RecordingToken, Source, Content, Track list, RecordingStatus**) from the DUT.
18. Repeat steps 16-17 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingSearchResultsResponse message.

The DUT did not send a valid FindRecordingsResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned an invalid RecordingInformation.EarliestRecording (e.g. there was no Track for this Recording where Track.DataFrom was equal to RecordingInformation.EarliestRecording or there was at least one Track for this Recording where Track.DataFrom was less than RecordingInformation.EarliestRecording).

The DUT returned an invalid RecordingInformation.LatestRecording (e.g. there was no Track for this Recording where Track.DataTo was equal to RecordingInformation.LatestRecording or there was at least one Track for this Recording where Track.DataTo was greater than RecordingInformation.LatestRecording).

The DUT returned more results in GetRecordingSearchResultsResponse than specified in the MaxResults field in GetRecordingSearchResultsRequest message.

4.2.4 GET RECORDING SEARCH RESULTS WITH WAITTIME

Test Label: GetRecordingSearchResult Command with WaitTime.

Test Case ID: SEARCH-2-1-5

ONVIF Core Specification Coverage: FindRecordings, GetRecordingSearchResult

Command under test: FindRecordings, GetRecordingSearchResult

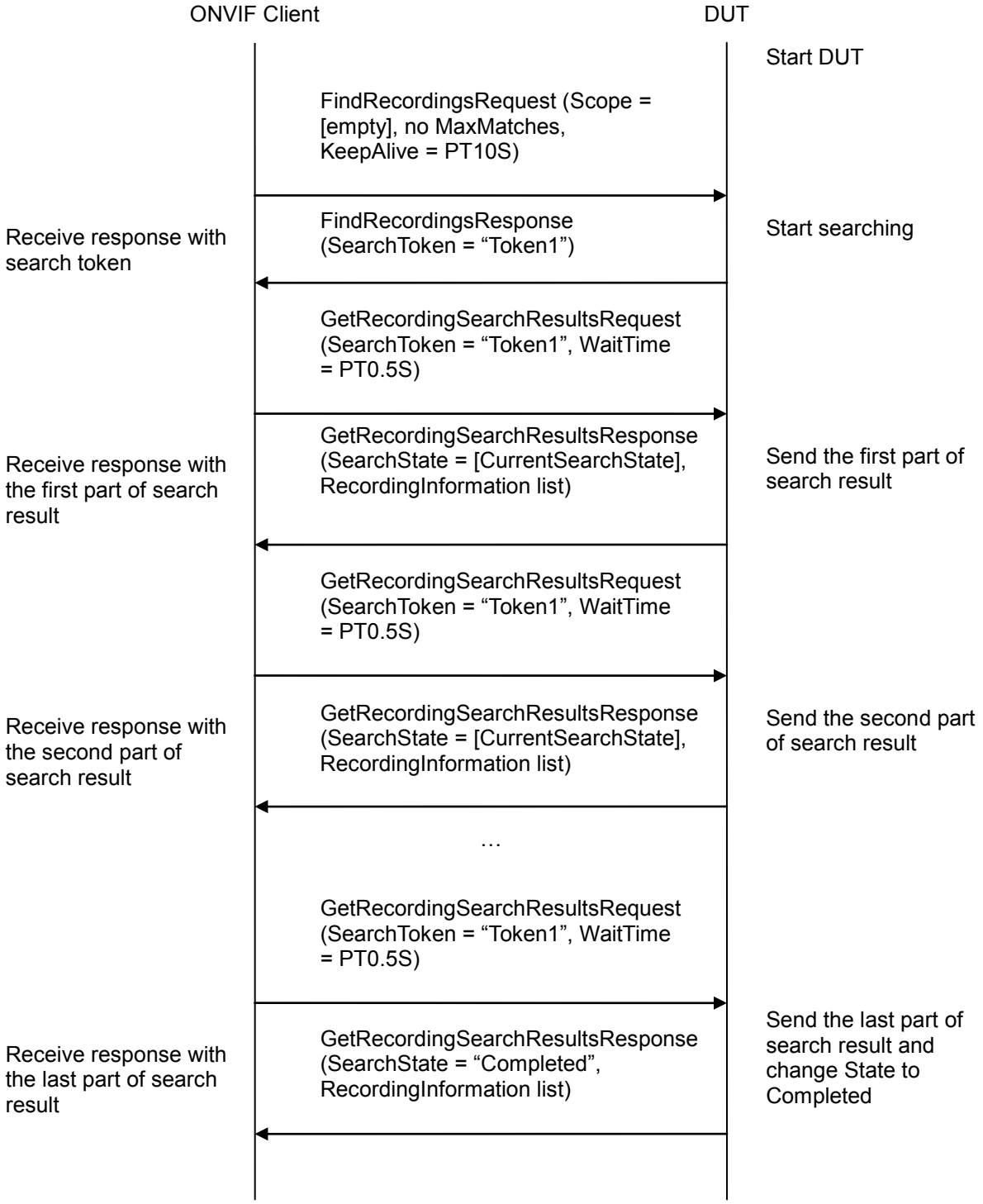
WSDL Reference: search.wsdl

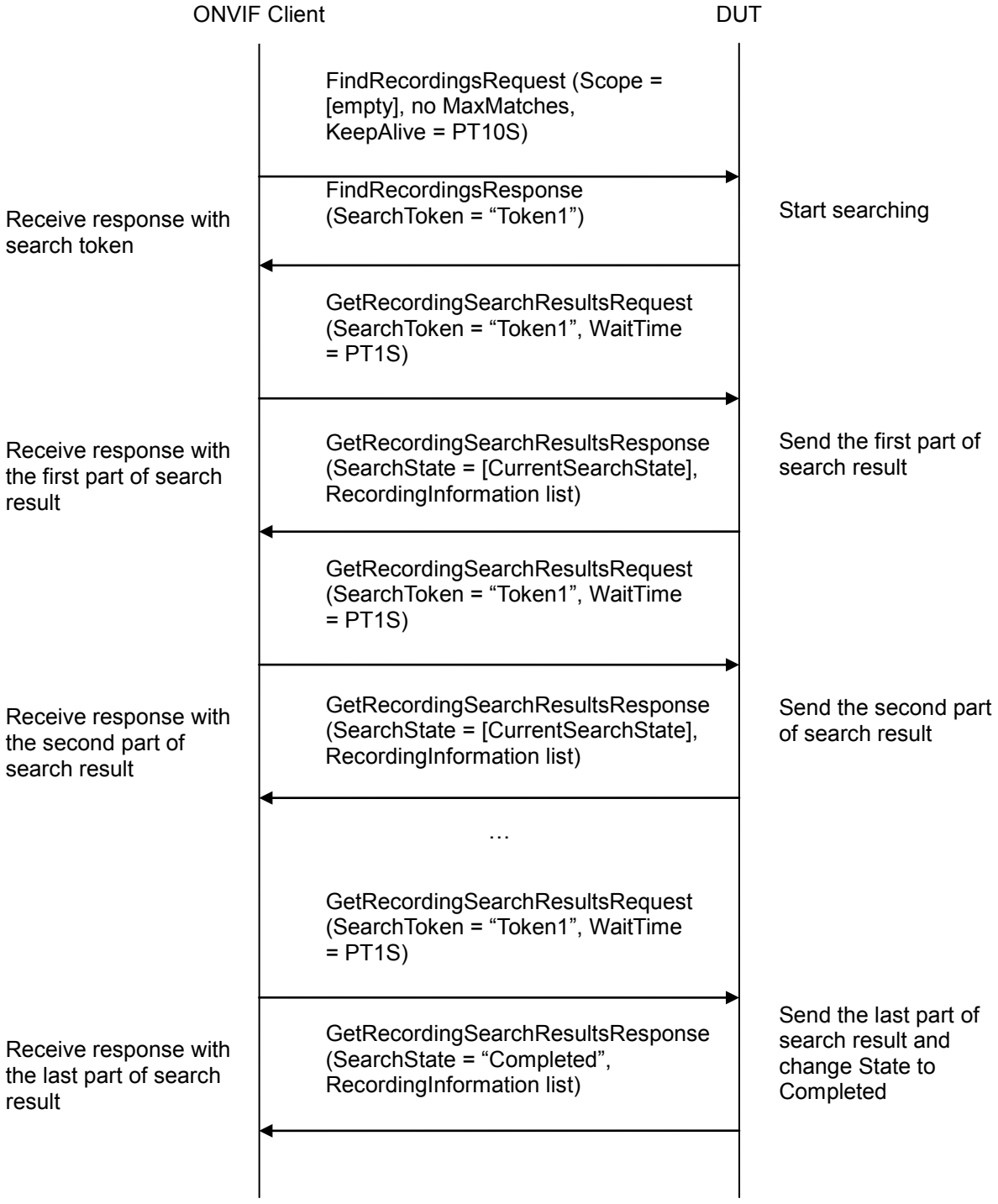
Test Purpose: To verify that GetRecordingSearchResult command accepts and honors any WaitTime.

Pre-Requisite: At least one recording exists on the DUT (see annex A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
FindRecordingsRequest (Scope = [empty], no MaxMatches, KeepAlive = PT10S)
FindRecordingsResponse (SearchToken = “Token1”)
Start searching
Receive response with search token
GetRecordingSearchResultsRequest (SearchToken = “Token1”, WaitTime = PT0.5S)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the first part of search result
Receive response with the first part of search result
GetRecordingSearchResultsRequest (SearchToken = “Token1”, WaitTime = PT0.5S)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the second part of search result
Receive response with the second part of search result
…
GetRecordingSearchResultsRequest (SearchToken = “Token1”, WaitTime = PT0.5S)
GetRecordingSearchResultsResponse (SearchState = “Completed”, RecordingInformation list)
Send the last part of search result and change State to Completed
Receive response with the last part of search result



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.

3. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], no MaxMatches, KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
4. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
5. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1", WaitTime = PT0.5S**) to get current search result and search state.
6. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list which contains current results of the search with at least the following information for each recording on the list: RecordingToken, Source, Content, Track list, RecordingStatus**) from the DUT.
7. Repeat steps 5-6 until SearchState is equal to Completed.
8. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], no MaxMatches, KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
9. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
10. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1", WaitTime = PT1S**) to get current search result and search state.
11. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list which contains current results of the search with at least the following information for each recording on the list: RecordingToken, Source, Content, Track list, RecordingStatus**) from the DUT.
12. Repeat steps 10-11 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingSearchResultsResponse message.

The DUT did not send a valid FindRecordingsResponse message.

The DUT did not reach the Completed state for the search session.

The DUT did not return GetRecordingSearchResultsResponse message in 1 second after specified WaitTime exceeded.

The DUT returned an invalid RecordingInformation.EarliestRecording (e.g. there was no Track for this Recording where Track.DataFrom was equal to RecordingInformation.EarliestRecording or there was at least one Track for this Recording where Track.DataFrom was less than RecordingInformation.EarliestRecording).

The DUT returned an invalid RecordingInformation.LatestRecording (e.g. there was no Track for this Recording where Track.DataTo is equal to RecordingInformation.LatestRecording or there was at least one Track for this Recording where Track.DataTo was greater than RecordingInformation.LatestRecording).

4.2.5 FIND RECORDINGS WITH MAXMATCHES

Test Label: Find Recordings Command with MaxMatches.

Test Case ID: SEARCH-2-1-7

ONVIF Core Specification Coverage: FindRecordings, GetRecordingSearchResult

Command under test: FindRecordings, GetRecordingSearchResult

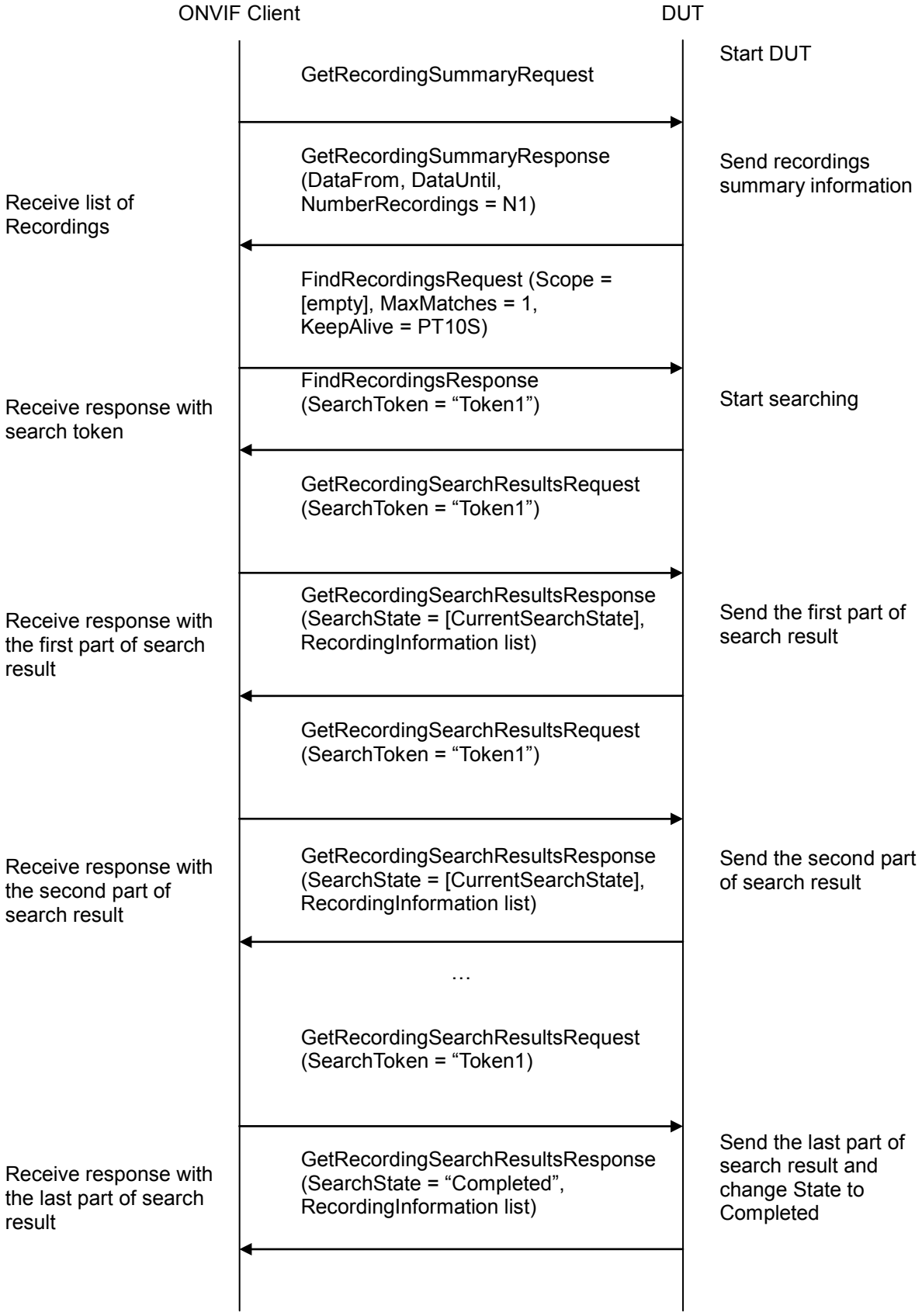
WSDL Reference: search.wsdl

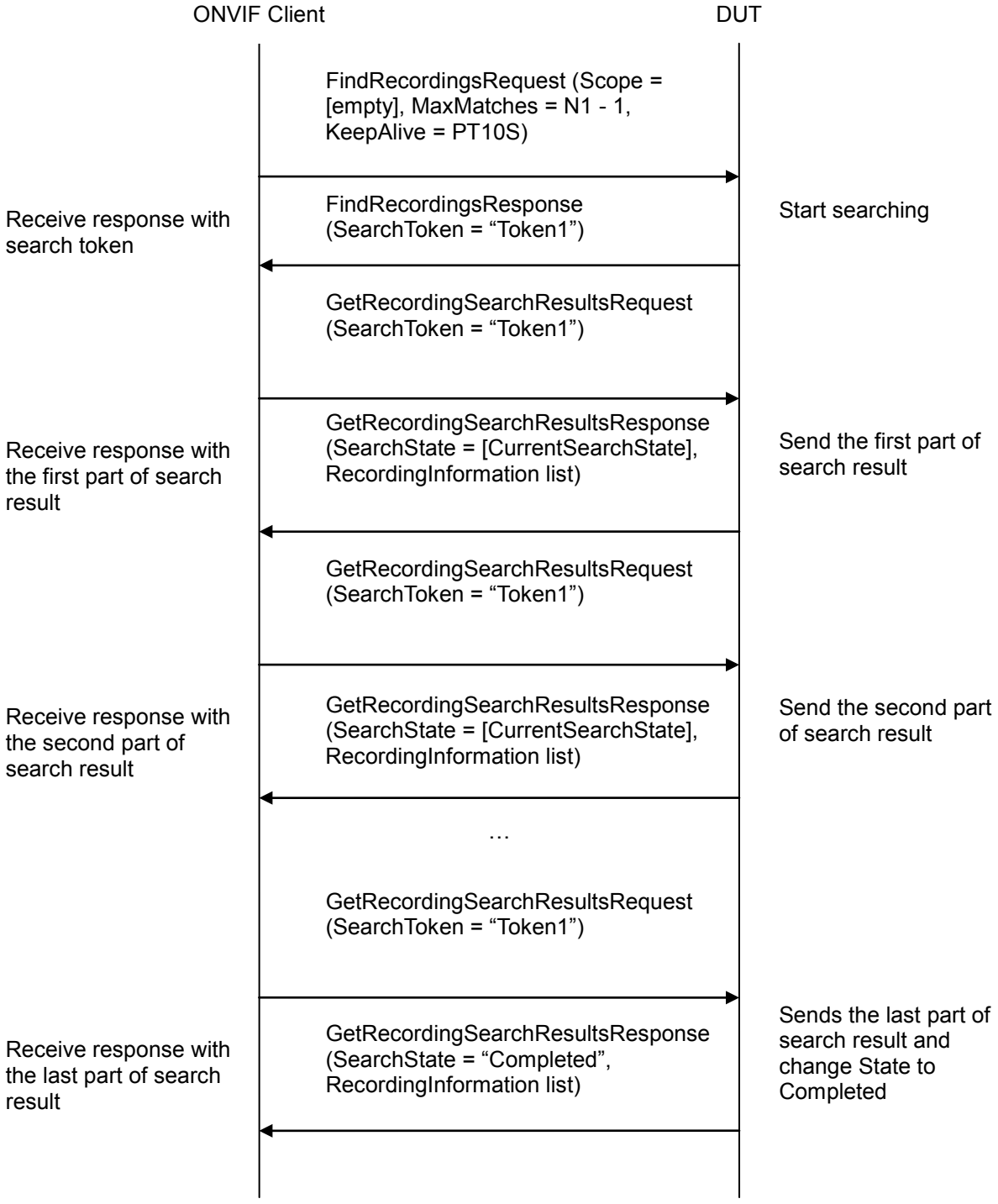
Test Purpose: To verify FindRecordings with specified MaxMatches.

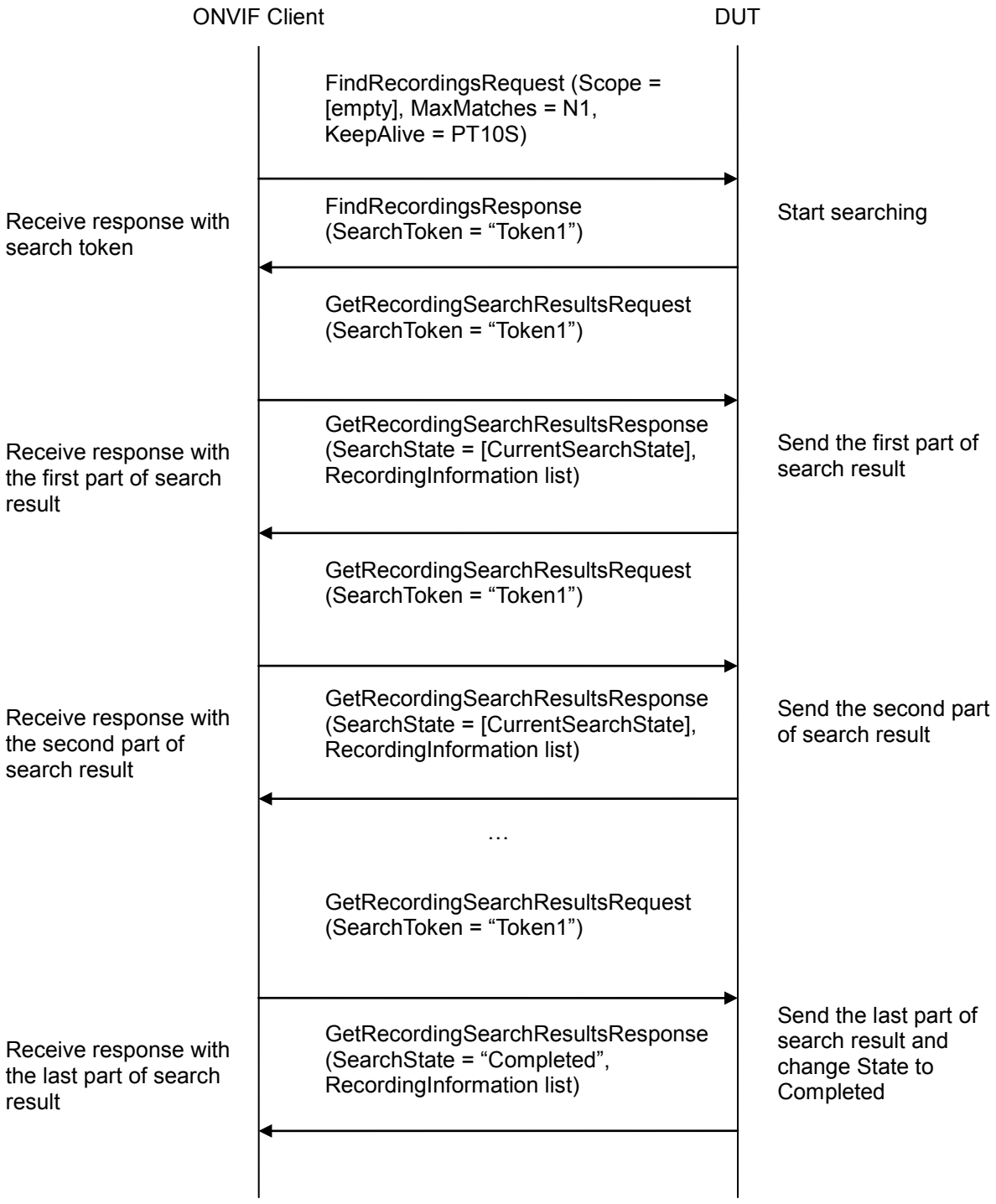
Pre-Requisite: At least one recording exists on the DUT (see annex A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingSummaryRequest
GetRecordingSummaryResponse (DataFrom, DataUntil, NumberRecordings = N1)
Send recordings summary information
Receive list of Recordings
FindRecordingsRequest (Scope = [empty], MaxMatches = 1, KeepAlive = PT10S)
FindRecordingsResponse (SearchToken = “Token1”)
Start searching
Receive response with search token
GetRecordingSearchResultsRequest (SearchToken = “Token1”)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the first part of search result
Receive response with the first part of search result
GetRecordingSearchResultsRequest (SearchToken = “Token1”)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the second part of search result
Receive response with the second part of search result
…
GetRecordingSearchResultsRequest (SearchToken = “Token1)
GetRecordingSearchResultsResponse (SearchState = “Completed”, RecordingInformation list)
Send the last part of search result and change State to Completed
Receive response with the last part of search result


ONVIF Client
DUT
FindRecordingsRequest (Scope = [empty], MaxMatches = N1 - 1, KeepAlive = PT10S)
FindRecordingsResponse (SearchToken = “Token1”)
Start searching
Receive response with search token
GetRecordingSearchResultsRequest (SearchToken = “Token1”)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the first part of search result
Receive response with the first part of search result
GetRecordingSearchResultsRequest (SearchToken = “Token1”)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the second part of search result
Receive response with the second part of search result
…
GetRecordingSearchResultsRequest (SearchToken = “Token1”)
GetRecordingSearchResultsResponse (SearchState = “Completed”, RecordingInformation list)
Sends the last part of search result and change State to Completed
Receive response with the last part of search result



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get current number of recordings **N1** from the DUT (see Annex A.4).

4. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], MaxMatches = 1, KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
5. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
6. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1"**) to get current search result and search state.
7. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list**) from the DUT.
8. Repeat steps 6-7 until SearchState is equal to Completed.
9. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], MaxMatches = N1 - 1, KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
10. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
11. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1"**) to get current search result and search state.
12. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list**) from the DUT.
13. Repeat steps 11-12 until SearchState is equal to Completed.
14. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], MaxMatches = N1, KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
15. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
16. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1"**) to get current search result and search state.
17. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list**) from the DUT.
18. Repeat steps 16-17 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingSearchResultsResponse message.

The DUT did not send a valid FindRecordingsResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned an invalid RecordingInformation.EarliestRecording (e.g. there was no Track for this Recording where Track.DataFrom was equal to RecordingInformation.EarliestRecording or there was at list one Track for this Recording where Track.DataFrom was less than RecordingInformation.EarliestRecording).

The DUT returned invalid RecordingInformation.LatestRecording (e.g. there was no Track for this Recording where Track.DataTo was equal to

RecordingInformation.LatestRecording or there was at least one Track for this Recording where Track.DataTo was greater than RecordingInformation.LatestRecording).

The DUT returned total number of Recordings in result greater than specified in MaxMatches for FindRecordingsRequest message.

Note: Steps 9-18 will be skipped if total number of recordings on the DUT equal to 1. Steps 9-13 will be skipped if total number of recordings on the DUT equal to 2.

4.2.6 FIND RECORDINGS WITH RECORDING INFORMATION FILTER (ONLY VIDEO)

Test Label: Find Recordings Command with Recording Information Filter (Only Video).

Test Case ID: SEARCH-2-1-8

ONVIF Core Specification Coverage: FindRecordings, GetRecordingSearchResult

Command under test: FindRecordings, GetRecordingSearchResult

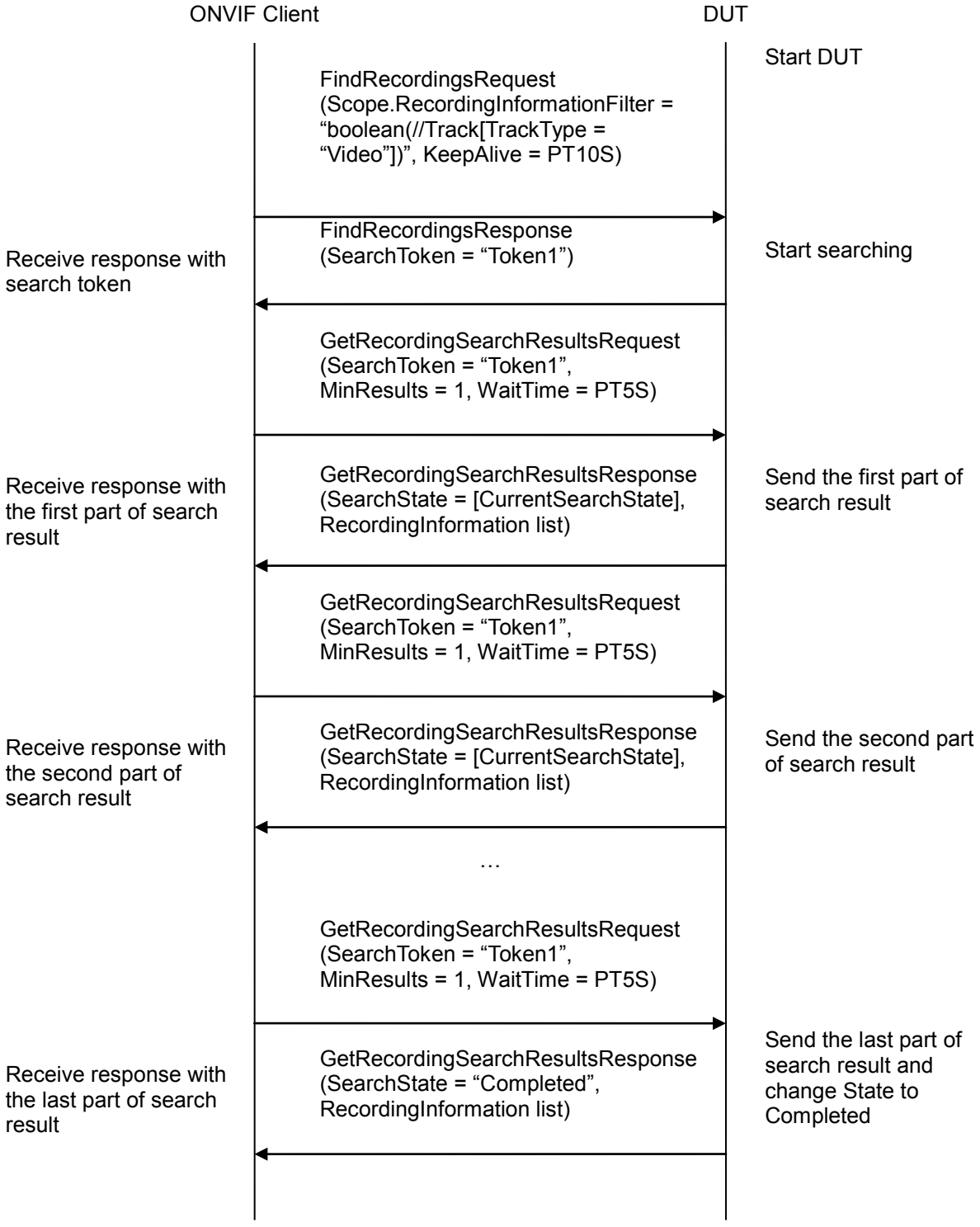
WSDL Reference: search.wsdl

Test Purpose: To verify FindRecordings with specified RecordingInformationFilter (filter to fined only recordings with video track).

Pre-Requisite: At least one recording with video track exists on the DUT (see annex A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.

3. ONVIF Client will invoke FindRecordingsRequest message (**Scope.RecordingInformationFilter = "boolean(//Track[TrackType = "Video"])", KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
4. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
5. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1", MinResults = 1, WaitTime = PT5S**) to get current search result and search state.
6. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list with recordings, that contains track with video**) from the DUT.
7. Repeat steps 6-7 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingSearchResultsResponse message.

The DUT did not send a valid FindRecordingsResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned an invalid RecordingInformation.EarliestRecording (e.g. there was no Track for this Recording where Track.DataFrom was equal to RecordingInformation.EarliestRecording or there was at least one Track for this Recording where Track.DataFrom was less than RecordingInformation.EarliestRecording).

The DUT returned an invalid RecordingInformation.LatestRecording (e.g. there was no Track for this Recording where Track.DataTo was equal to RecordingInformation.LatestRecording or there was at least one Track for this Recording where Track.DataTo was greater than RecordingInformation.LatestRecording).

The DUT returned Recordings without Track's with TrackType equal to "Video".

4.2.7 GET RECORDING SEARCH RESULTS WITH INVALID SEARCHTOKEN

Test Label: Get Recordings Search Result with Invalid SearchToken.

Test Case ID: SEARCH-2-1-10

ONVIF Core Specification Coverage: GetRecordingSearchResult

Command under test: GetRecordingSearchResult

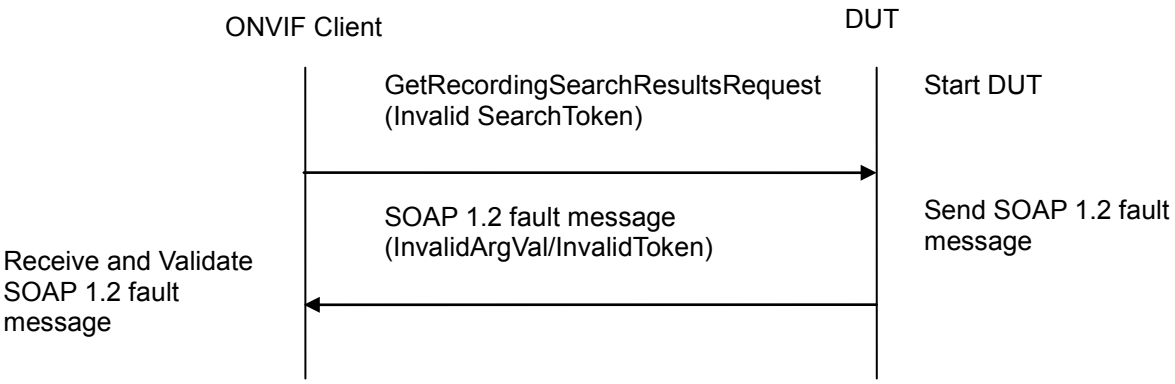
WSDL Reference: search.wsdl

Test Purpose: To verify Get Recording Search Result with Invalid Search Token.

Pre-Requisite: None

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke GetRecordingSearchResultsRequest message **(invalid SearchToken**).
4. The DUT will generate SOAP 1.2 fault message (**InvalidArgVal/InvalidToken**).

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send SOAP 1.2 fault message.

The DUT sent an incorrect SOAP 1.2 fault message (fault code, namespace, etc.).

Note: Other faults than specified in the test are acceptable, though the specified are preferable.

4.2.8 END SEARCH WITH INVALID SEARCHTOKEN

Test Label: End Search with Invalid SearchToken.

Test Case ID: SEARCH-2-1-11

ONVIF Core Specification Coverage: EndSearch

Command under test: EndSearch

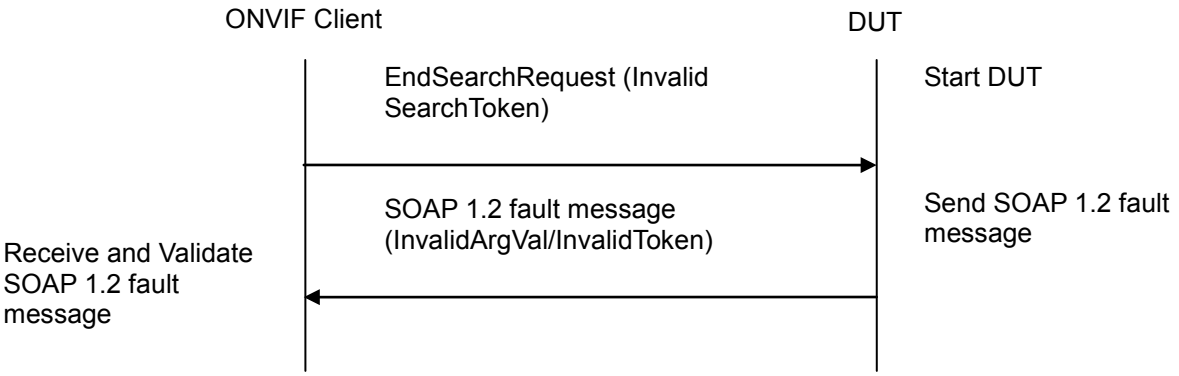
WSDL Reference: search.wsdl

Test Purpose: To verify End Search with Invalid Search Token.

Pre-Requisite: None

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke EndSearchRequest message **(invalid SearchToken**).
4. The DUT will generate SOAP 1.2 fault message (**InvalidArgVal/InvalidToken**).

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send SOAP 1.2 fault message.

The DUT sent an incorrect SOAP 1.2 fault message (fault code, namespace, etc.).

Note: Other faults than specified in the test are acceptable, though the specified are preferable.

4.2.9 GET RECORDING SEARCH RESULTS AFTER END OF SEARCH (ENDSEARCH COMMAND WAS INVOKED)

Test Label: Get Recordings Search Result after End of Search (EndSearch Command).

Test Case ID: SEARCH-2-1-12

ONVIF Core Specification Coverage: FindRecordings, GetRecordingSearchResult, EndSearch

Command under test: FindRecordings, GetRecordingSearchResult, EndSearch

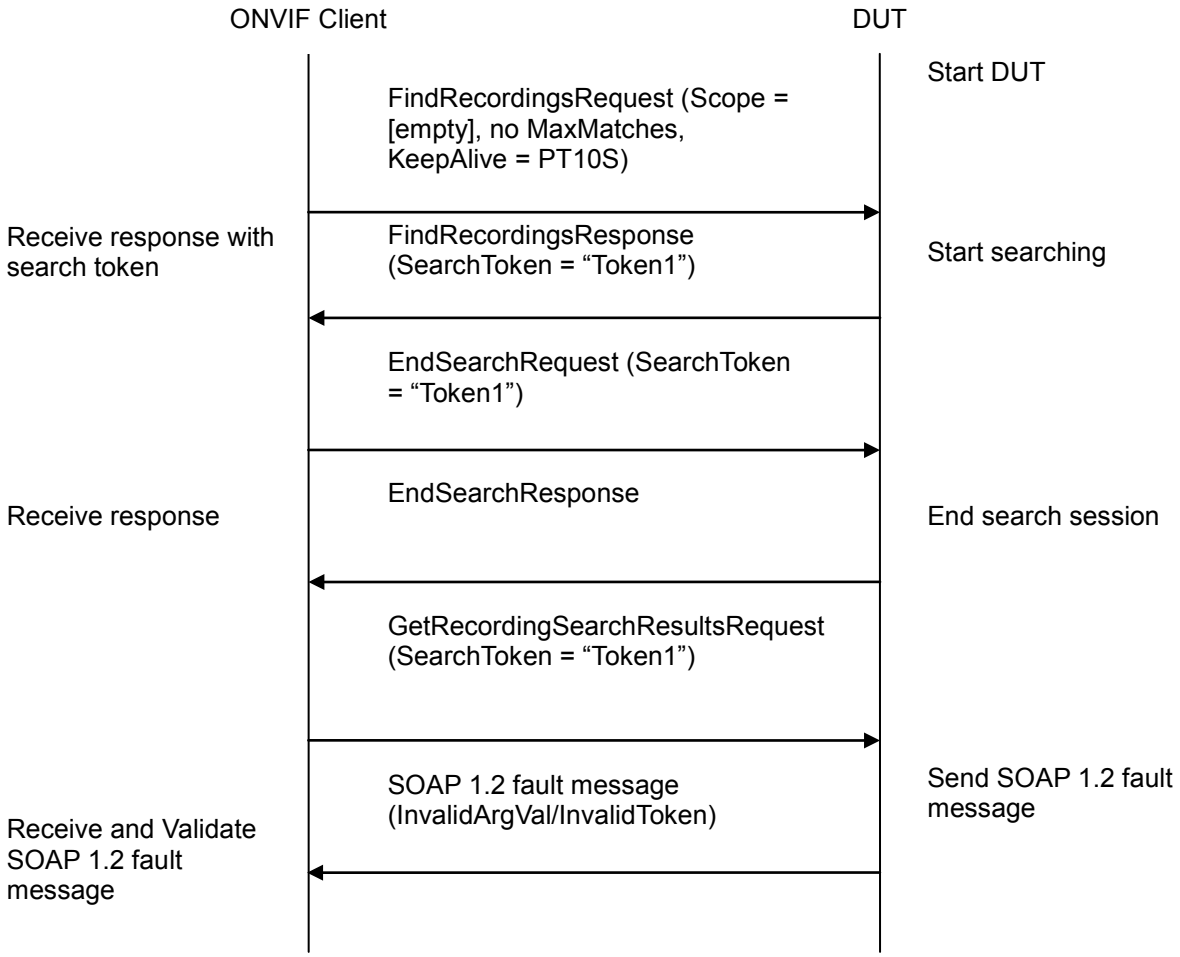
WSDL Reference: search.wsdl

Test Purpose: To verify end of Recording Search session after invoking EndSearch command.

Pre-Requisite: At least one recording exists on the DUT (see annex A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], no MaxMatches, KeepAlive = PT10S**).
4. Verify the FindRecordingsResponse message (**SearchToken = “Token1”**) from the DUT.
5. ONVIF Client will invoke EndSearchRequest message (**SearchToken = “Token1”**).
6. Verify the EndSearchResponse message from the DUT.
7. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = “Token1”**).

8. The DUT will generate SOAP 1.2 fault message (**InvalidArgVal/InvalidToken**).

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid FindRecordingsResponse message.

The DUT did not send a valid EndSearchResponse message.

The DUT did not send SOAP 1.2 fault message.

The DUT sent an incorrect SOAP 1.2 fault message (fault code, namespace, etc.).

Note: Other faults than specified in the test are acceptable, though the specified are preferable.

4.2.10 FIND RECORDINGS WITH RECORDING INFORMATION FILTER (ONLY AUDIO)

Test Label: Find Recordings Command with Recording Information Filter (Only Audio).

Test Case ID: SEARCH-2-1-13

ONVIF Core Specification Coverage: FindRecordings, GetRecordingSearchResult

Command under test: FindRecordings, GetRecordingSearchResult

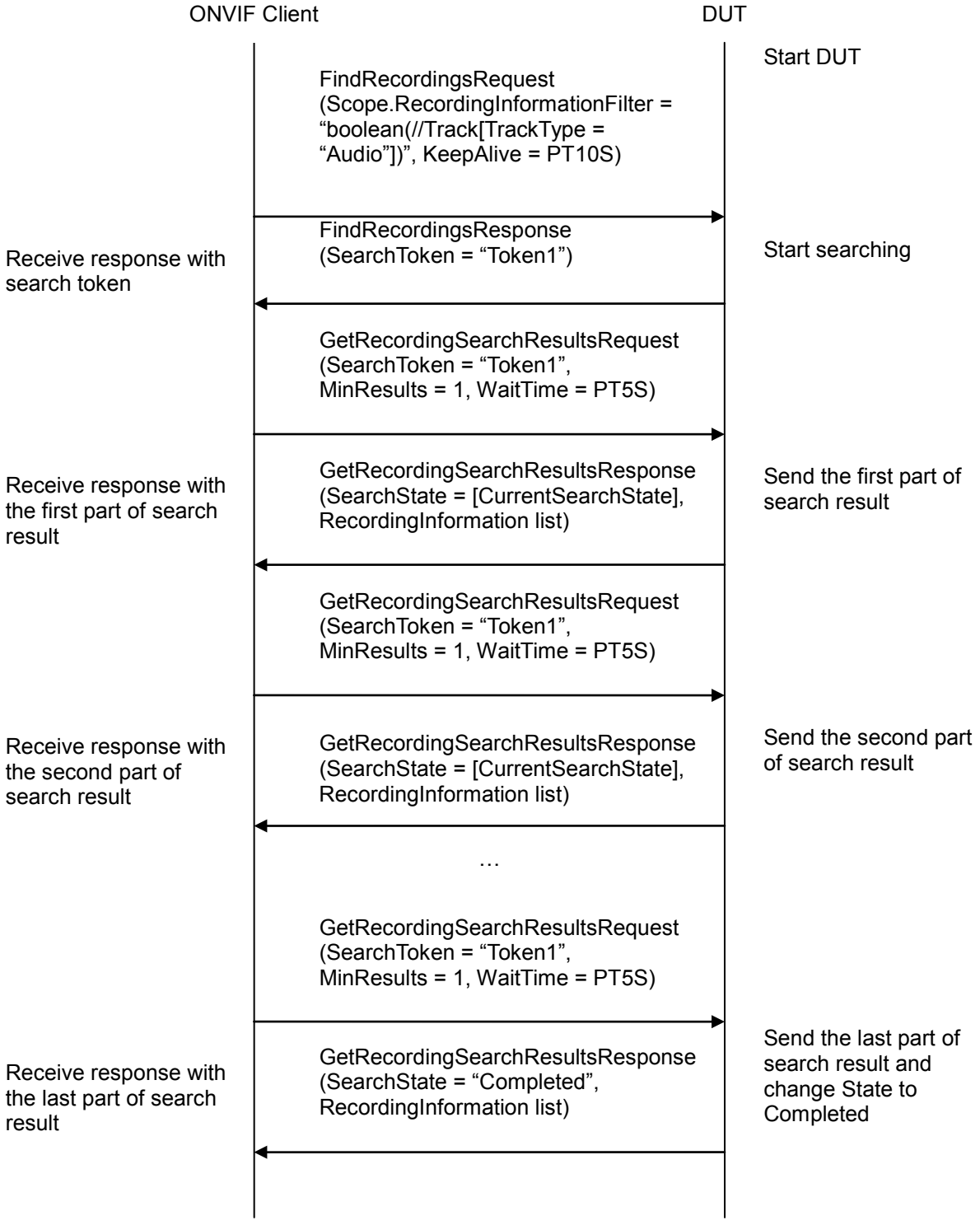
WSDL Reference: search.wsdl

Test Purpose: To verify FindRecordings with specified RecordingInformationFilter (filter to find only recordings with audio track).

Pre-Requisite: None

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.

3. ONVIF Client will invoke FindRecordingsRequest message (Scope.RecordingInformationFilter = “boolean(//Track[TrackType = “Audio”])”, KeepAlive = PT10S) to start recording search session and retrieve SearchToken.
4. Verify the FindRecordingsResponse message (SearchToken = “Token1”) from the DUT.
5. ONVIF Client will invoke GetRecordingSearchResultsRequest message (SearchToken = “Token1”, MinResults = 1, WaitTime = PT5S) to get current search result and search state.
6. Verify the GetRecordingSearchResultsResponse message (SearchState = [CurrentSearchState], RecordingInformation list with recordings, that contains track with audio) from the DUT.
7. Repeat steps 6-7 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingSearchResultsResponse message.

The DUT did not send a valid FindRecordingsResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned an invalid RecordingInformation.EarliestRecording (e.g. there was no Track for this Recording where Track.DataFrom was equal to RecordingInformation.EarliestRecording or there was at least one Track for this Recording where Track.DataFrom was less than RecordingInformation.EarliestRecording).

The DUT returned an invalid RecordingInformation.LatestRecording (e.g. there was no Track for this Recording where Track.DataTo was equal to RecordingInformation.LatestRecording or there was at least one Track for this Recording where Track.DataTo was greater than RecordingInformation.LatestRecording).

The DUT returned Recordings without Track’s with TrackType equal to “Audio”.

The DUT did not return at least one Recording in search results if Audio Recording is supported.

Note: The DUT could return no results if Audio is not supported.

4.2.11 FIND RECORDINGS WITH RECORDING INFORMATION FILTER (ONLY METADATA)

Test Label: Find Recordings Command with Recording Information Filter (Only Metadata).

Test Case ID: SEARCH-2-1-14

ONVIF Core Specification Coverage: FindRecordings, GetRecordingSearchResult

Command under test: FindRecordings, GetRecordingSearchResult

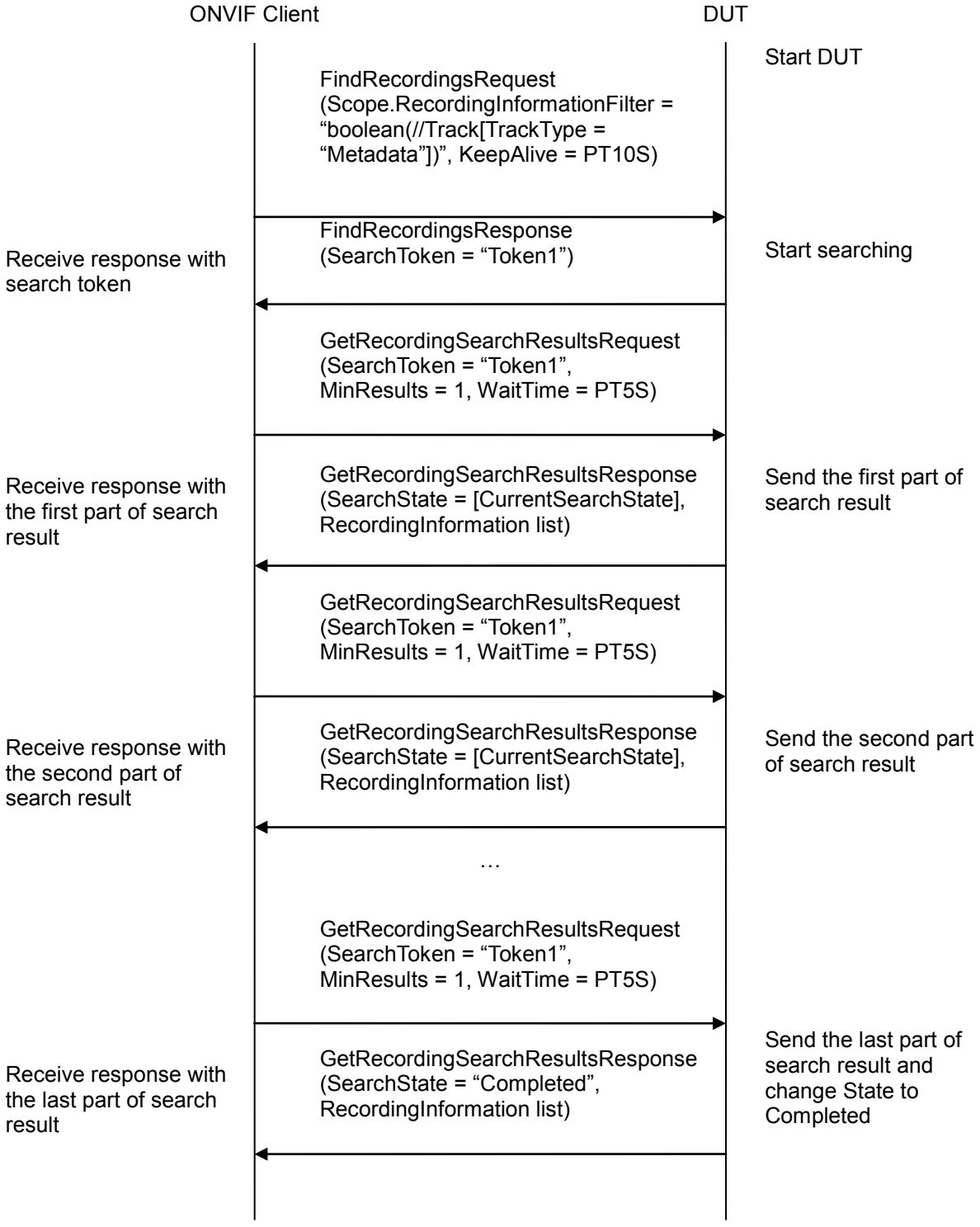
WSDL Reference: search.wsdl

Test Purpose: To verify FindRecordings with specified RecordingInformationFilter (filter to find only recordings with metadata track).

Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.

3. ONVIF Client will invoke FindRecordingsRequest message (**Scope.RecordingInformationFilter = "boolean(//Track[TrackType = "Metadata"])", KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
4. Verify the FindRecordingsResponse message (**SearchToken = "Token1**") from the DUT.
5. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1", MinResults = 1, WaitTime = PT5S**) to get current search result and search state.
6. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list with recordings, that contains track with metadata**) from the DUT.
7. Repeat steps 6-7 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingSearchResultsResponse message.

The DUT did not send a valid FindRecordingsResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned an invalid RecordingInformation.EarliestRecording (e.g. there was no Track for this Recording where Track.DataFrom was equal to RecordingInformation.EarliestRecording or there was at least one Track for this Recording where Track.DataFrom was less than RecordingInformation.EarliestRecording).

The DUT returned an invalid RecordingInformation.LatestRecording (e.g. there was no Track for this Recording where Track.DataTo was equal to RecordingInformation.LatestRecording or there was at least one Track for this Recording where Track.DataTo was greater than RecordingInformation.LatestRecording).

The DUT returned Recordings without Track's with TrackType equal to "Metadata".

The DUT did not return at least one Recording in search results in case Metadata Recording is supported.

4.2.12 FIND RECORDINGS WITH RECORDING INFORMATION FILTER (VIDEO AND AUDIO)

Test Label: Find Recordings Command with Recording Information Filter (Video and Audio).

Test Case ID: SEARCH-2-1-15

ONVIF Core Specification Coverage: FindRecordings, GetRecordingSearchResult

Command under test: FindRecordings, GetRecordingSearchResult

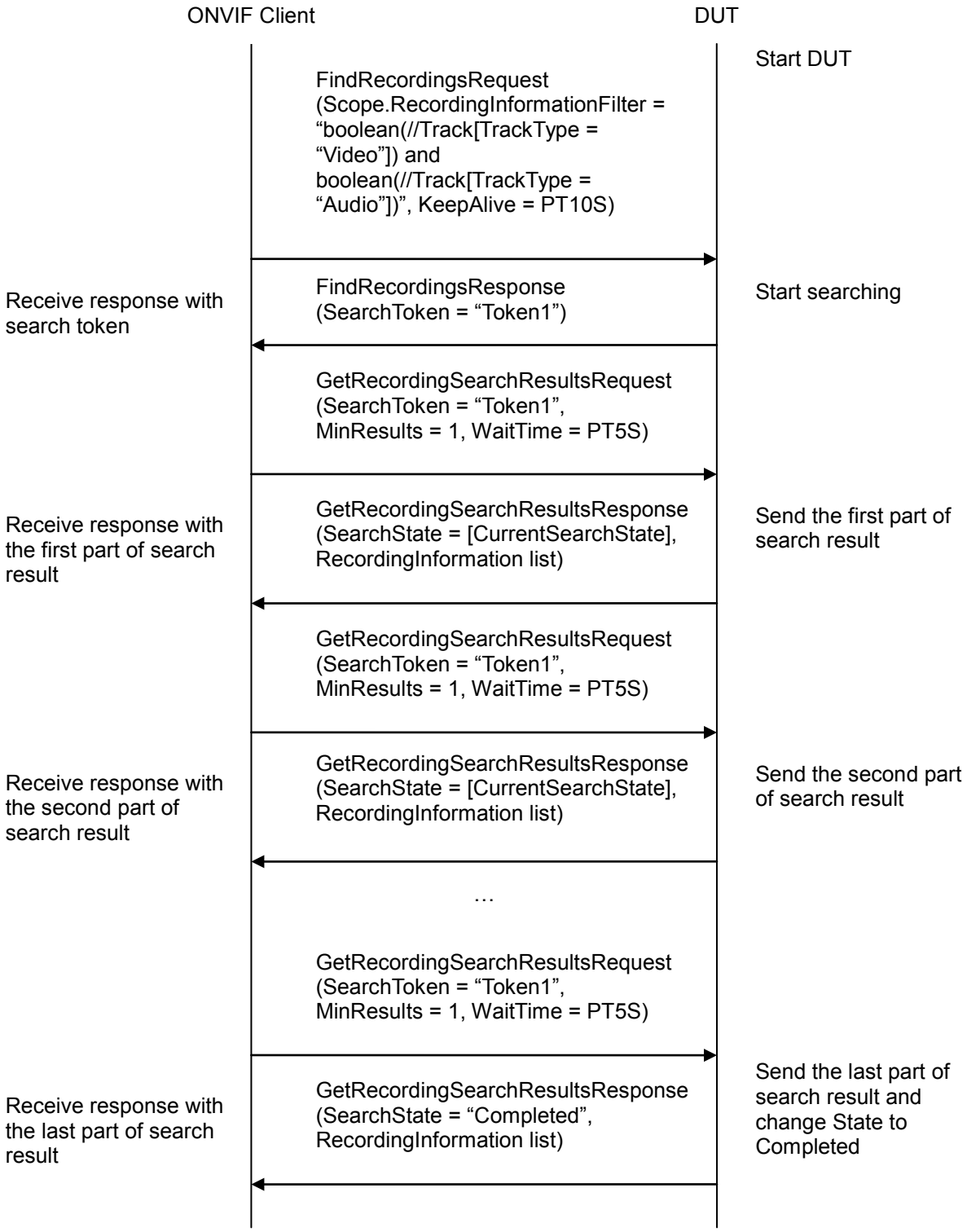
WSDL Reference: search.wsdl

Test Purpose: To verify FindRecordings with specified RecordingInformationFilter (filter to find recordings with video and audio track).

Pre-Requisite: At least one recording exists on the DUT (see annex A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke FindRecordingsRequest message (**Scope.RecordingInformationFilter = "boolean(//Track[TrackType = "Video"]) and boolean(//Track[TrackType = "Audio"])", KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
4. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
5. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1", MinResults = 1, WaitTime = PT5S**) to get current search result and search state.
6. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list with recordings, that contains track with video and audio**) from the DUT.
7. Repeat steps 6-7 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingSearchResultsResponse message.

The DUT did not send a valid FindRecordingsResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned an invalid RecordingInformation.EarliestRecording (e.g. there was no Track for this Recording where Track.DataFrom was equal to RecordingInformation.EarliestRecording or there was at least one Track for this Recording where Track.DataFrom was less than RecordingInformation.EarliestRecording).

The DUT returned an invalid RecordingInformation.LatestRecording (e.g. there was no Track for this Recording where Track.DataTo was equal to RecordingInformation.LatestRecording or there was at least one Track for this Recording where Track.DataTo was greater than RecordingInformation.LatestRecording).

The DUT returned Recordings without Tracks that have TrackType equal to "Video" and "Audio".

The DUT did not return at least one Recording in search results if Audio Recording is supported.

Note: The DUT could return no results if Audio is not supported.

4.2.13 FIND RECORDINGS WITH RECORDING INFORMATION FILTER (VIDEO AND METADATA)

Test Label: Find Recordings Command with Recording Information Filter (Video and Metadata).

Test Case ID: SEARCH-2-1-16

ONVIF Core Specification Coverage: FindRecordings, GetRecordingSearchResult

Command under test: FindRecordings, GetRecordingSearchResult

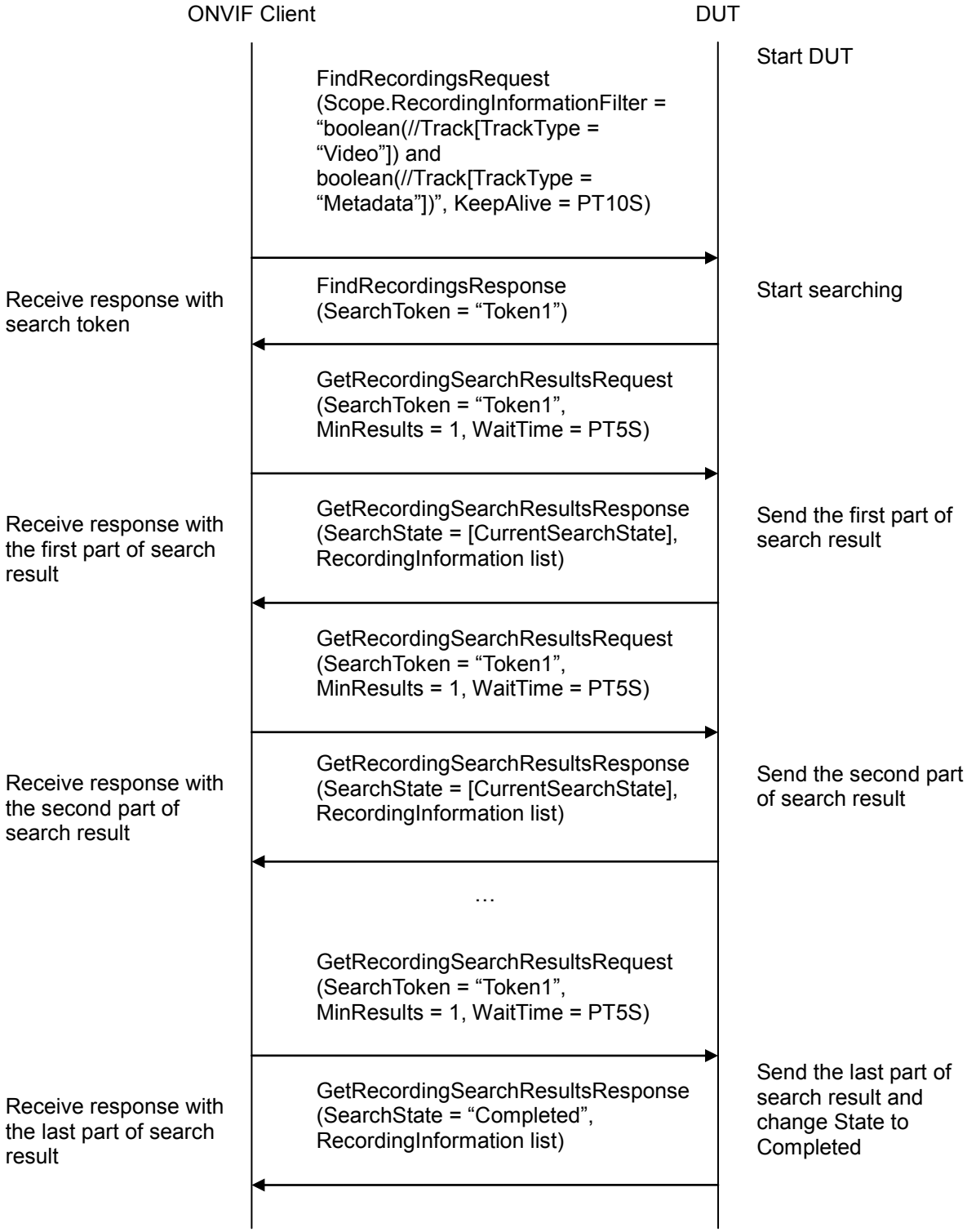
WSDL Reference: search.wsdl

Test Purpose: To verify FindRecordings with specified RecordingInformationFilter (filter to find recordings with video and metadata track).

Pre-Requisite: At least one recording exists on the DUT (see annex A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.

3. ONVIF Client will invoke FindRecordingsRequest message (**Scope.RecordingInformationFilter = "boolean(//Track[TrackType = "Video"]) and boolean(//Track[TrackType = "Metadata"])", KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
4. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
5. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1", MinResults = 1, WaitTime = PT5S**) to get current search result and search state.
6. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list with recordings, that contains track with video and metadata**) from the DUT.
7. Repeat steps 6-7 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingSearchResultsResponse message.

The DUT did not send a valid FindRecordingsResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned an invalid RecordingInformation.EarliestRecording (e.g. there was no Track for this Recording where Track.DataFrom was equal to RecordingInformation.EarliestRecording or there was at least one Track for this Recording where Track.DataFrom was less than RecordingInformation.EarliestRecording).

The DUT returned an invalid RecordingInformation.LatestRecording (e.g. there was no Track for this Recording where Track.DataTo was equal to RecordingInformation.LatestRecording or there was at least one Track for this Recording where Track.DataTo was greater than RecordingInformation.LatestRecording).

The DUT returned Recordings without Tracks that have TrackType equal to "Video" and "Metadata".

The DUT did not return at least one Recording in search results if Metadata Recording is Supported.

4.2.14 GET RECORDING SEARCH RESULTS AND GET RECORDINGS CONSISTENCY

Test Label: GetRecordings Command and GetRecordingSearchResults Command Consistency Validation.

Test Case ID: SEARCH-2-1-17

ONVIF Core Specification Coverage: FindRecordings, GetRecordingSearchResults, GetRecordings

Command under test: FindRecordings, GetRecordingSearchResult, GetRecordings

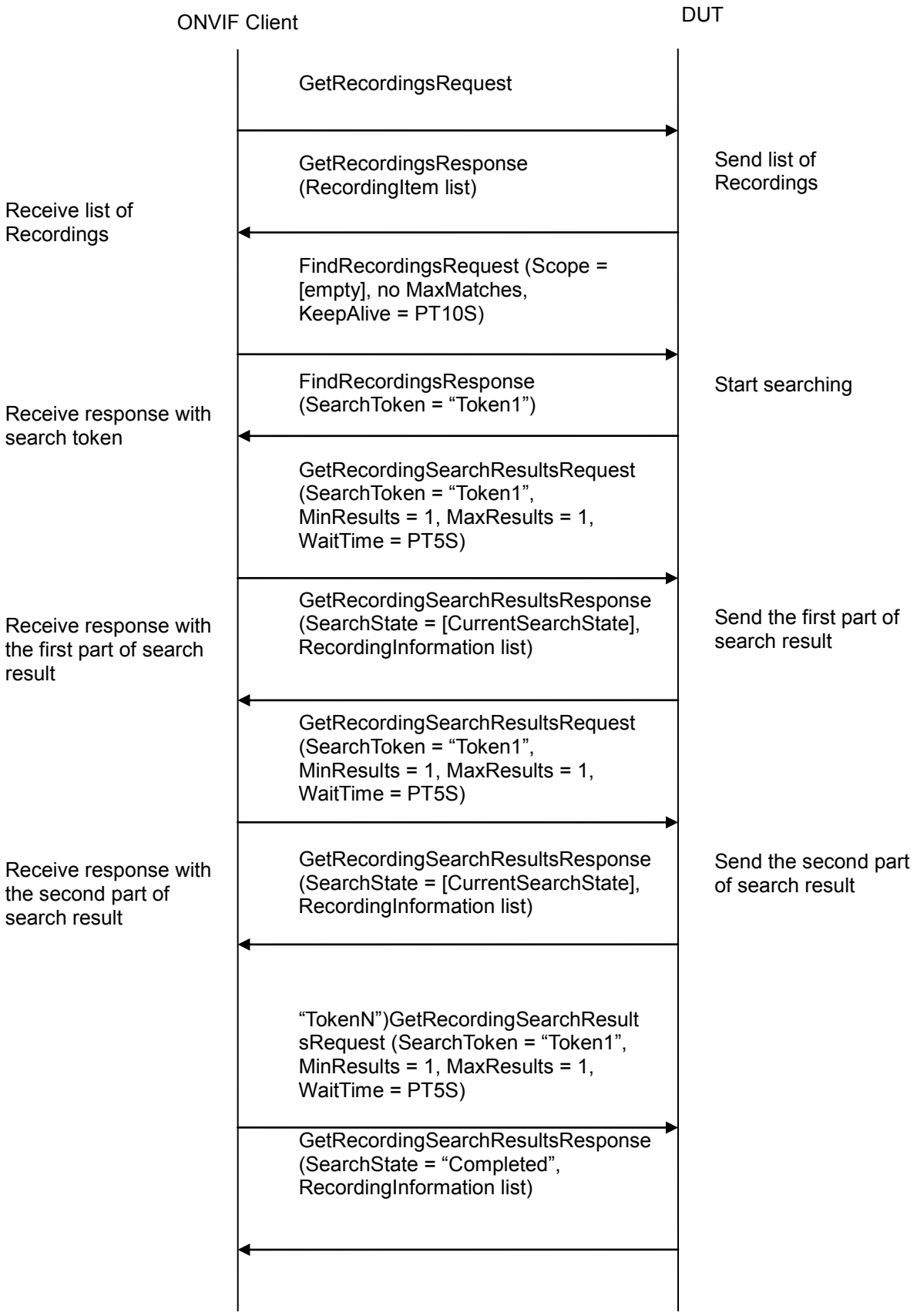
WSDL Reference: search.wsdl, recording.wsdl

Test Purpose: To verify Get Recording Search Result and Get Recordings consistency.

Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
GetRecordingsRequest
GetRecordingsResponse (RecordingItem list)
Send list of Recordings
Receive list of Recordings
FindRecordingsRequest (Scope = [empty], no MaxMatches, KeepAlive = PT10S)
FindRecordingsResponse (SearchToken = “Token1”)
Start searching
Receive response with search token
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MinResults = 1, MaxResults = 1, WaitTime = PT5S)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the first part of search result
Receive response with the first part of search result
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MinResults = 1, MaxResults = 1, WaitTime = PT5S)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the second part of search result
Receive response with the second part of search result
“TokenN”)GetRecordingSearchResultsRequest (SearchToken = “Token1”, MinResults = 1, MaxResults = 1, WaitTime = PT5S)
GetRecordingSearchResultsResponse (SearchState = “Completed”, RecordingInformation list)

Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke GetRecordingsRequest message to retrieve list of Recordings.
4. Verify the GetRecordingsResponse message (RecordingItem list) from the DUT.
5. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], no MaxMatches, KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
6. Verify the FindRecordingsResponse message (**SearchToken = "Token1"**) from the DUT.
7. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = "Token1", MinResults = 1, MaxResults = 1, WaitTime = PT5S**) to get current search result and search state.
8. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list**) from the DUT.
9. Repeat steps 7-8 until SearchState is equal to Completed.
10. Verify that list of Recordings from GetRecordingsResponse and list of Recordings from GetRecordingSearchResultsResponses are consistent.

Test Result:

PASS –

The DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingsResponse message, if GetRecordingsRequest was invoked.

The DUT did not send a valid FindRecordingsResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned invalid RecordingInformation.EarliestRecording (e.g. there was no Track for this Recording where Track.DataFrom was equal to RecordingInformation.EarliestRecording or there was at least one Track for this Recording where Track.DataFrom was less than RecordingInformation.EarliestRecording) in GetRecordingSearchResultResponse.

The DUT returned invalid RecordingInformation.LatestRecording (e.g. there was no Track for this Recording where Track.DataTo was equal to RecordingInformation.LatestRecording or there was at least one Track for this Recording where Track.DataTo was greater than RecordingInformation.LatestRecording) in GetRecordingSearchResultResponse.

The DUT returned list of Recordings from GetRecordingsResponse and list of recordings from GetRecordingSearchResultsResponses that were inconsistent (see Annex A.2).

The DUT returned the Recording with the same token twice in one or several GetRecordingSearchResultsResponse messages or in GetRecordingsResponse message.

4.2.15 GET RECORDING SEARCH RESULTS AND GET RECORDING INFORMATION CONSISTENCY

Test Label: GetRecordingInformation Command and GetRecordingSearchResults Command Consistency Validation.

Test Case ID: SEARCH-2-1-18

ONVIF Core Specification Coverage: FindRecordings, GetRecordingSearchResult, GetRecordingInformation

Command under test: FindRecordings, GetRecordingSearchResults, GetRecordingInformation

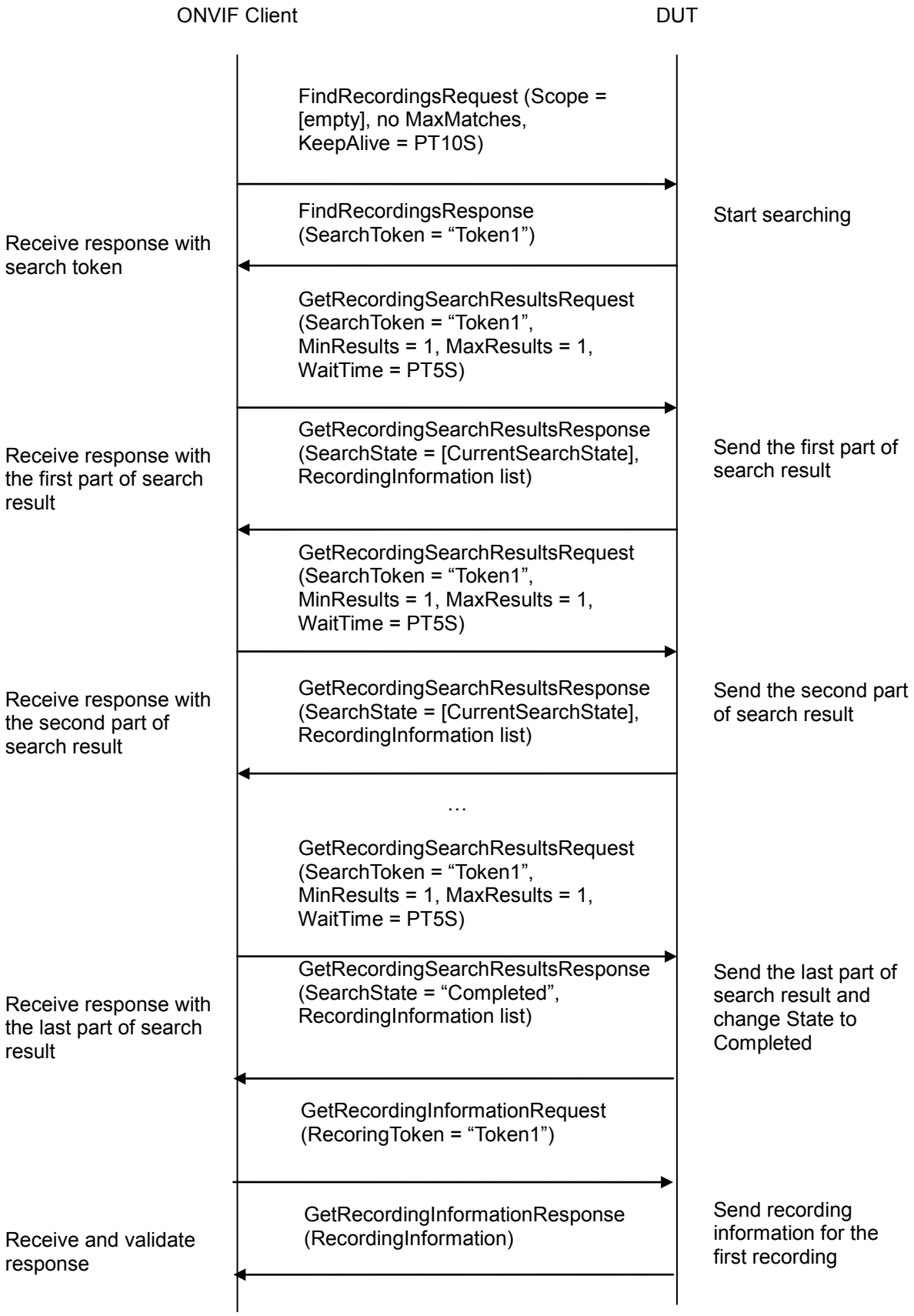
WSDL Reference: search.wsdl

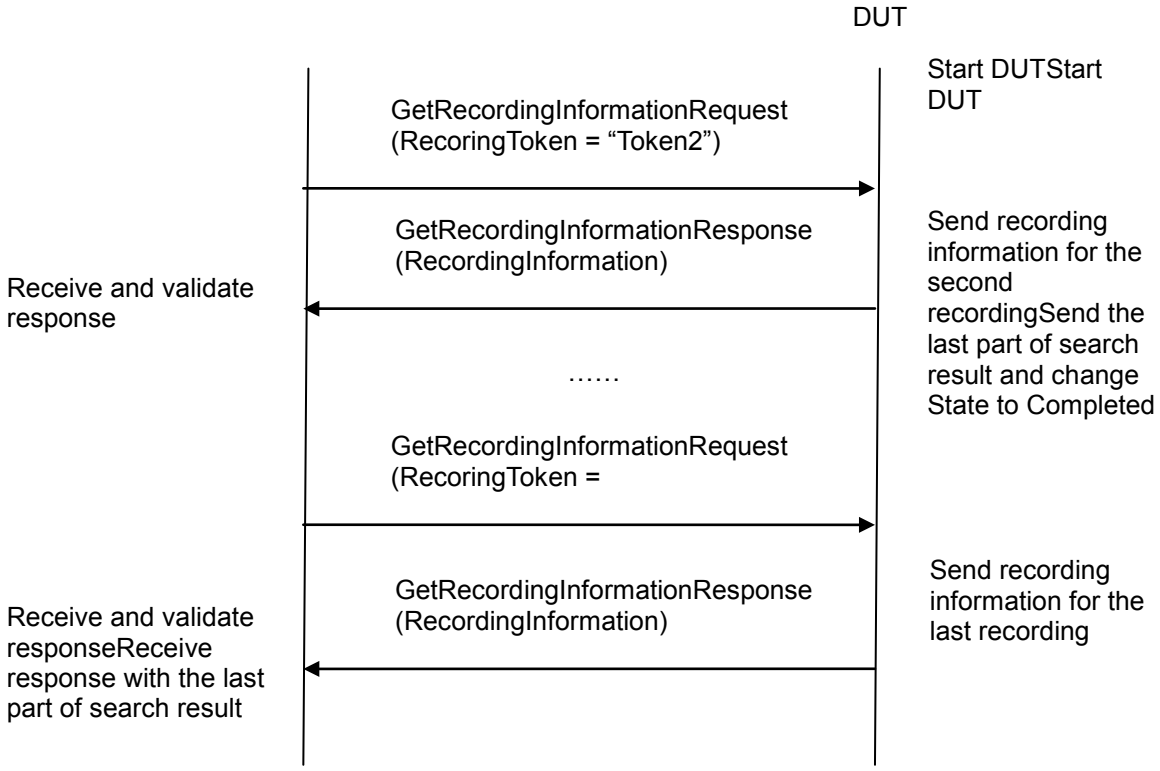
Test Purpose: To verify Get Recording Search Result and Get RecordingInformation consistency.

Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
FindRecordingsRequest (Scope = [empty], no MaxMatches, KeepAlive = PT10S)
FindRecordingsResponse (SearchToken = “Token1”)
Start searching
Receive response with search token
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MinResults = 1, MaxResults = 1, WaitTime = PT5S)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the first part of search result
Receive response with the first part of search result
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MinResults = 1, MaxResults = 1, WaitTime = PT5S)
GetRecordingSearchResultsResponse (SearchState = [CurrentSearchState], RecordingInformation list)
Send the second part of search result
Receive response with the second part of search result
…
GetRecordingSearchResultsRequest (SearchToken = “Token1”, MinResults = 1, MaxResults = 1, WaitTime = PT5S)
GetRecordingSearchResultsResponse (SearchState = “Completed”, RecordingInformation list)
Send the last part of search result and change State to Completed
Receive response with the last part of search result
GetRecordingInformationRequest (RecoringToken = “Token1”)
GetRecordingInformationResponse (RecordingInformation)
Send recording information for the first recording
Receive and validate response



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke FindRecordingsRequest message (**Scope = [empty], no MaxMatches, KeepAlive = PT10S**) to start recording search session and retrieve SearchToken.
4. Verify the FindRecordingsResponse message (**SearchToken = “Token1”**) from the DUT.
5. ONVIF Client will invoke GetRecordingSearchResultsRequest message (**SearchToken = “Token1”, MinResults = 1, MaxResults = 1, WaitTime = PT5S**) to get current search result and search state.
6. Verify the GetRecordingSearchResultsResponse message (**SearchState = [CurrentSearchState], RecordingInformation list**) from the DUT.
7. Repeat steps 5-6 until SearchState is equal to Completed.
8. ONVIF Client will invoke GetRecordingInformationRequest message for the first recording from GetRecordingSearchResultsResponse.
9. Verify GetRecordingInformationResponse message from the DUT. Compare RecordingInformation structure received in GetRecordingSearchResults and in GetRecordingInformation response according Annex A.10.
10. Repeate steps 8-9 for all other recording from GetRecordingSearchResultsResponse.

Test Result:

PASS –

The DUT passed all assertions.

FAIL –

The DUT did not send a valid FindRecordingsResponse message.

The DUT did not send a valid GetRecordingInformationResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned invalid RecordingInformation.EarliestRecording (e.g. there was no Track for this Recording where Track.DataFrom was equal to RecordingInformation.EarliestRecording or there was at least one Track for this Recording where Track.DataFrom was less than RecordingInformation.EarliestRecording) in GetRecordingSearchResultResponse.

The DUT returned invalid RecordingInformation.LatestRecording (e.g. there was no Track for this Recording where Track.DataTo was equal to RecordingInformation.LatestRecording or there was at least one Track for this Recording where Track.DataTo was greater than RecordingInformation.LatestRecording) in GetRecordingSearchResultResponse.

The DUT returned the Recording with the same TrackToken twice in one or several GetRecordingSearchResultsResponse messages.

The DUT returned GetRecordingInformationResponse message with RecordingToken not equal to RecordingToken in GetRecordingInformationRequest message.

The DUT returned RecordingInformation structure in GetRecordingInformationResponse different from RecordingInformation structure in GetRecordingSearchResultResponse for corresponding recording token (see Annex A.10).

4.3 Event Search

4.3.1 FIND EVENTS (MAXMATCHES = 1)

Test Label: Find Event- Forward and Backward Search (MaxMatches = 1).

Test Case ID: SEARCH-3-1-5

ONVIF Core Specification Coverage: FindEvents, GetEventSearchResult, GetRecordingInformation

Command under test: FindEvents, GetEventSearchResult, GetRecordingInformation

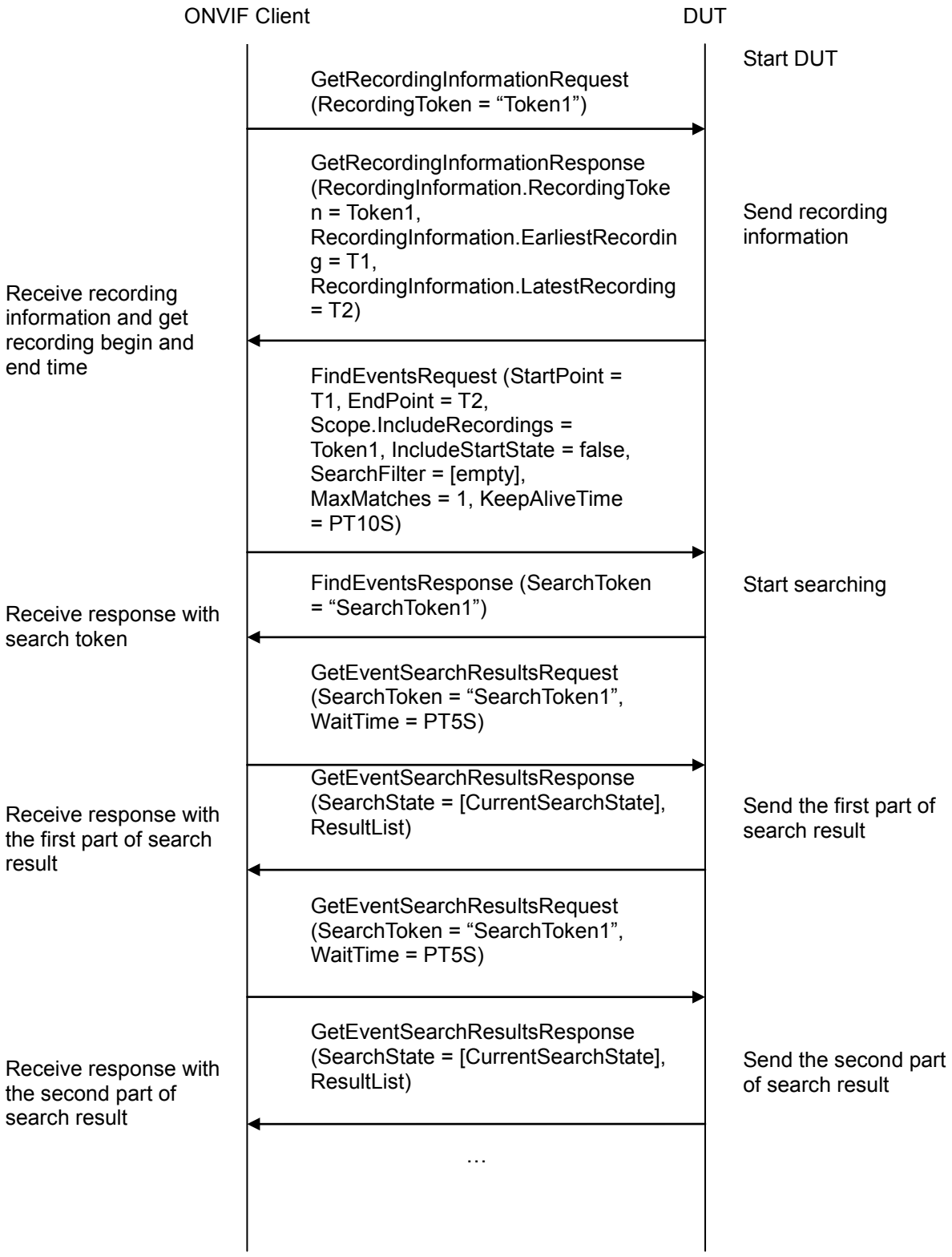
WSDL Reference: search.wsdl

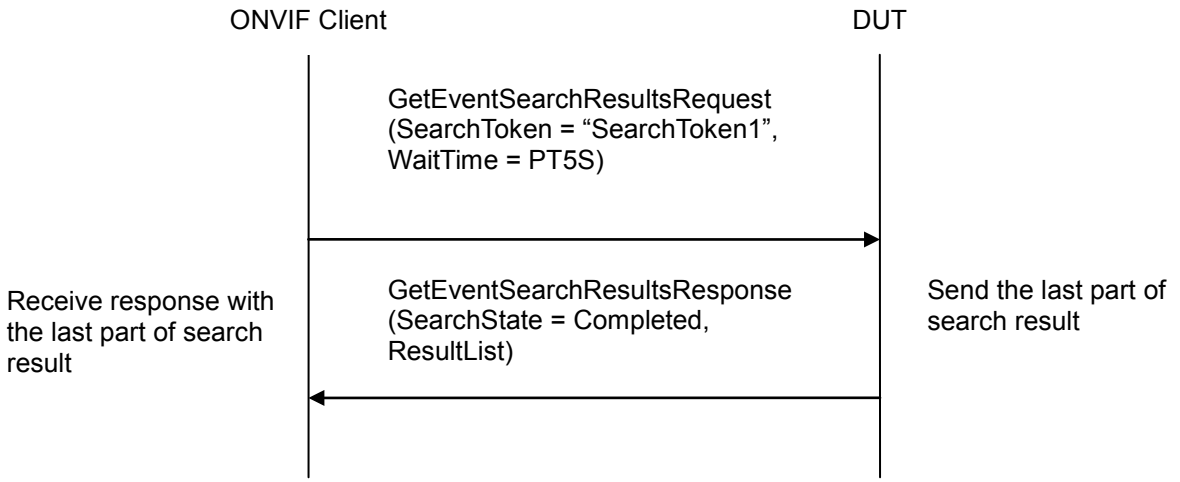
Test Purpose: To verify event forward and backward search in case MaxMatches = 1.

Pre-Requisite: At least one recording exists on the DUT (see annex A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:





Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token **Token1** of recording which contains at least one track with data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = "Token1"**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke FindEventsRequest message (**StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, IncludeStartState = false, SearchFilter = [empty], MaxMatches = 1, KeepAliveTime = PT10S**) to start event search session and retrieve SearchToken.
7. Verify the FindEventsResponse message (**SearchToken = "SearchToken1"**) from the DUT.
8. ONVIF Client will invoke GetEventSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
9. Verify the GetEventSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT.
10. Repeat steps 8-9 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetEventSearchResultsResponse message.

The DUT did not send a valid FindEventsResponse message.

The DUT did not reach the Completed state for the search session after one event was returned in GetEventSearchResultsResponse.

The DUT returned more than one event in the results.

Note: If RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse message, then minimum value of Track.DataFrom will be used as **T1**.

Note: If RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message, then maximum value of Track.DataTo will be used as **T2**.

4.3.2 GET EVENT SEARCH RESULTS WITH INVALID SEARCHTOKEN

Test Label: Get Event Search Result with Invalid SearchToken.

Test Case ID: SEARCH-3-1-10

ONVIF Core Specification Coverage: GetEventSearchResult

Command under test: GetEventSearchResult

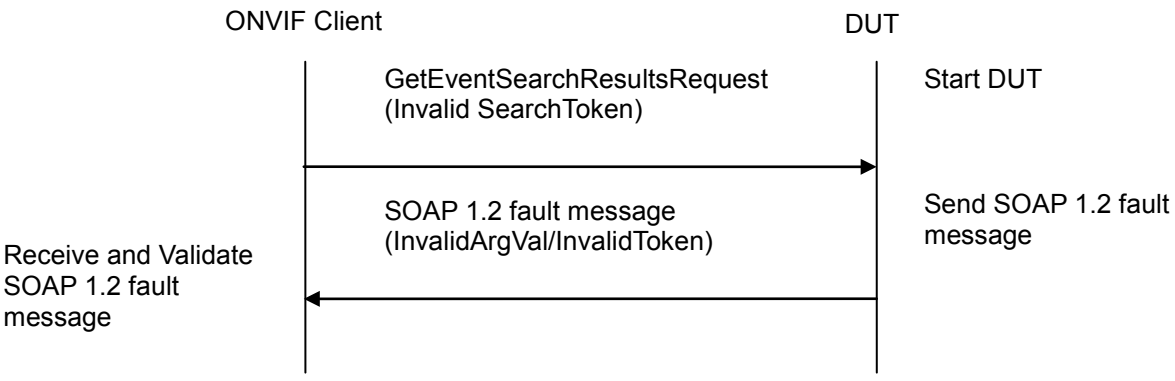
WSDL Reference: search.wsdl

Test Purpose: To verify Get Event Search Result with Invalid Search Token.

Pre-Requisite: None

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.

3. ONVIF Client will invoke GetEventSearchResultsRequest message **(invalid SearchToken**).
4. The DUT will generate SOAP 1.2 fault message (**InvalidArgVal/InvalidToken**).

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send SOAP 1.2 fault message.

The DUT sent an incorrect SOAP 1.2 fault message (fault code, namespace, etc.).

Note: Other faults than specified in the test are acceptable, though the specified are preferable.

4.3.3 FIND EVENTS – FORWARD AND BACKWARD SEARCH (SEARCH ENDPOINTS INSIDE RECORDING ENDPOINTS)

Test Label: Find Event- Forward and Backward Search (Search Endpoints Inside and Outside Recording Endpoints).

Test Case ID: SEARCH-3-1-11

ONVIF Core Specification Coverage: FindEvents, GetEventSearchResult, GetRecordingInformation

Command under test: FindEvents, GetEventSearchResult, GetRecordingInformation

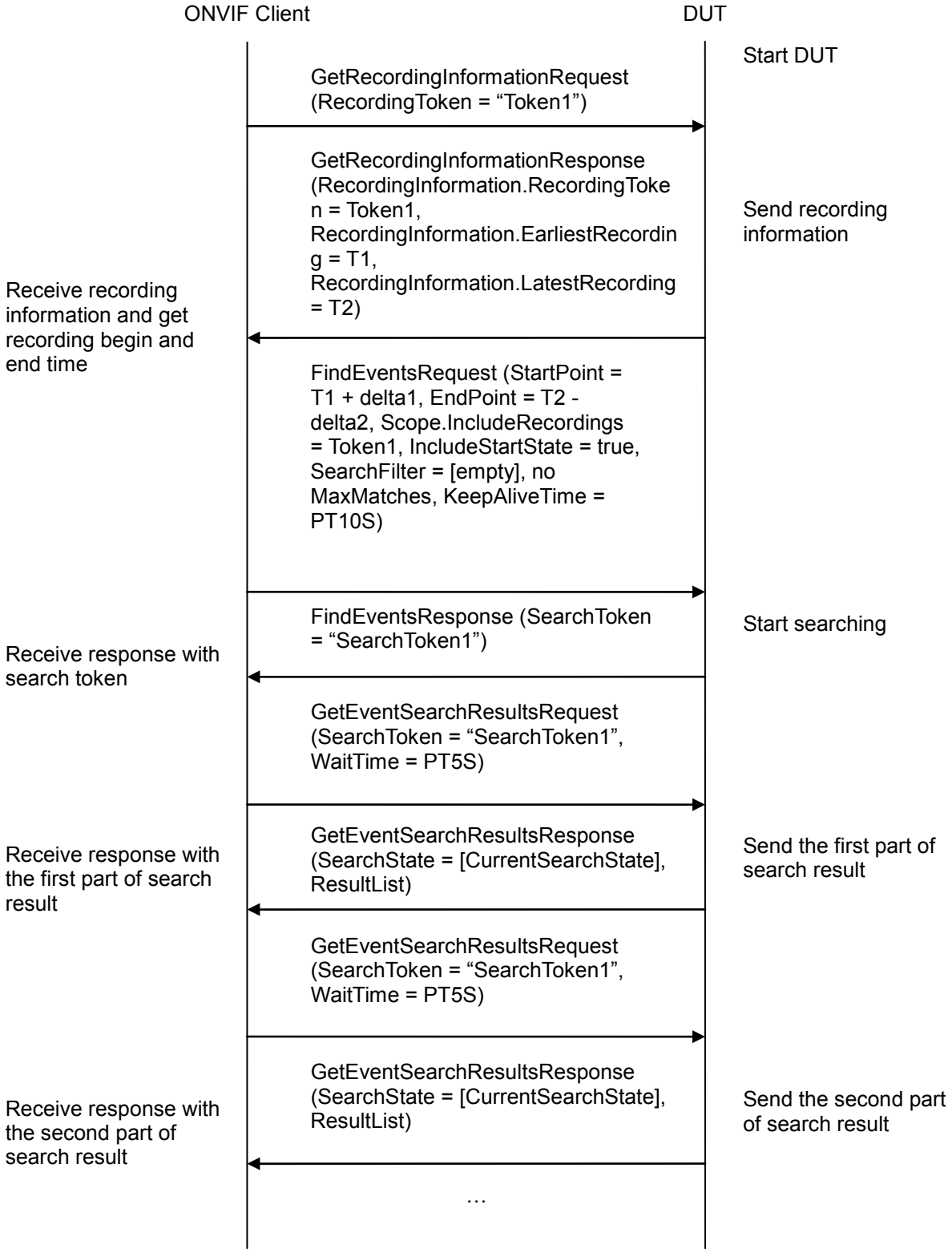
WSDL Reference: search.wsdl

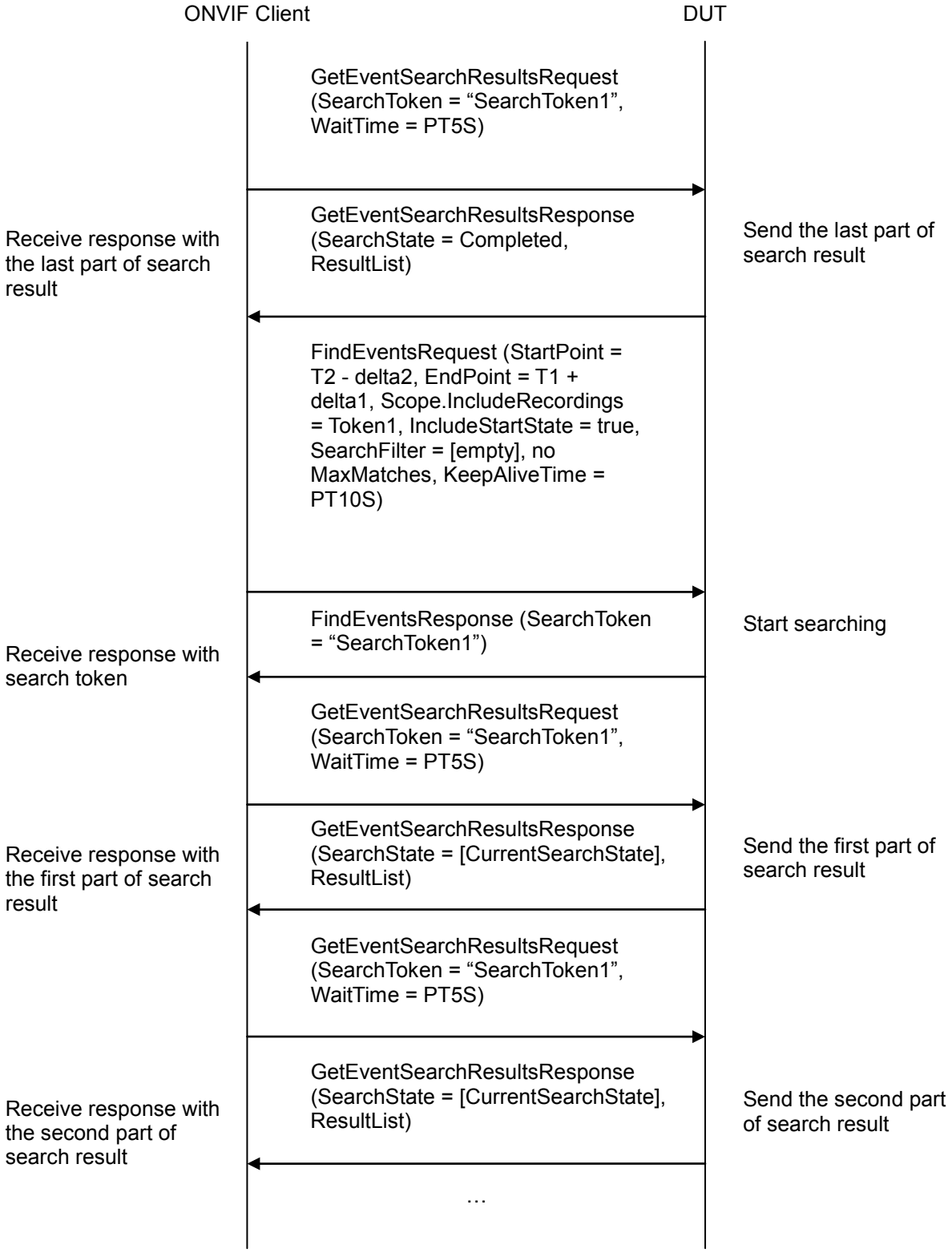
Test Purpose: To verify event forward and backward search in case the search endpoints are inside the recording endpoints.

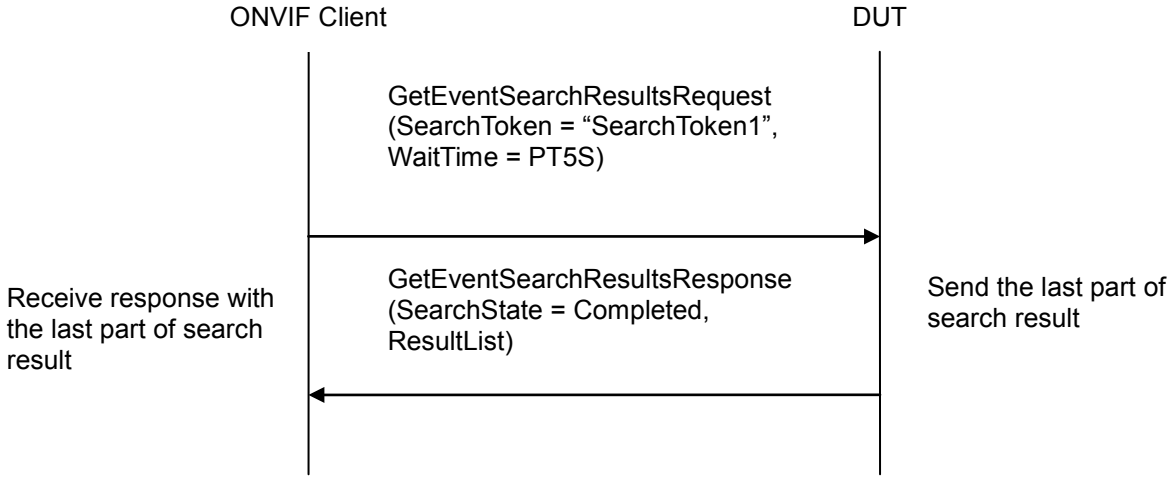
Pre-Requisite: At least one recording exists on the DUT (see annex A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
FindEventsRequest (StartPoint = T1 + delta1, EndPoint = T2 - delta2, Scope.IncludeRecordings = Token1, IncludeStartState = true, SearchFilter = [empty], no MaxMatches, KeepAliveTime = PT10S)
FindEventsResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…


ONVIF Client
DUT
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = Completed, ResultList)
Receive response with the last part of search result
Send the last part of search result
FindEventsRequest (StartPoint = T2 - delta2, EndPoint = T1 + delta1, Scope.IncludeRecordings = Token1, IncludeStartState = true, SearchFilter = [empty], no MaxMatches, KeepAliveTime = PT10S)
FindEventsResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Receive response with the first part of search result
Send the first part of search result
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Receive response with the second part of search result
Send the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token **Token1** of recording which contains at least one track with data from the DUT.
4. ONVIF Client will invoke GetEventPropertiesRequest message to retrieve all events supported by the DUT.
5. Verify the GetEventPropertiesResponse message from the DUT.
6. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = “Token1”**) to retrieve information about Recording.
7. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
8. ONVIF Client will invoke FindEventsRequest message (**StartPoint = T1 + delta1, EndPoint = T2 - delta2**, **Scope.IncludeRecordings = Token1, IncludeStartState = true, SearchFilter = [empty], no MaxMatches, KeepAliveTime = PT10S**) to start event search session and retrieve SearchToken.
9. Verify the FindEventsResponse message (**SearchToken = “SearchToken1”**) from the DUT.
10. ONVIF Client will invoke GetEventSearchResultsRequest message (**SearchToken = “SearchToken1”, WaitTime = PT5S**) to get current search result and search state.
11. Verify the GetEventSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT.
12. Repeat steps 10-11 until SearchState is equal to Completed.
13. Verify that DUT sends virtual events for StartPoint time point with the following topics: "tns1:RecordingHistory/Recording/State" for recording with RecordingToken = Token1.

14. Verify that DUT sends virtual events for StartPoint time point with the following topics: "tns1:RecordingHistory/Track/State" for each track in recording with RecordingToken = Token1.

15. Verify that DUT sends virtual events for StartPoint time point with the following topics: "tns1:RecordingHistory/Track/VideoParameters" for each video track in recording with RecordingToken = Token1, if such event is supported by the DUT.

16. Verify that DUT sends virtual events for StartPoint time point with the following topics: "tns1:RecordingHistory/Track/AudioParameters" for each audio track in recording with RecordingToken = Token1, if such event is supported by the DUT.

17. ONVIF Client will invoke FindEventsRequest message (**StartPoint = T2 - delta2, EndPoint = T1 + delta1, Scope.IncludeRecordings = Token1, IncludeStartState = true, SearchFilter = [empty], no MaxMatches, KeepAliveTime = PT10S**) to start event search session and retrieve SearchToken.

18. Verify the FindEventsResponse message (**SearchToken = "SearchToken1"**) from the DUT.

19. ONVIF Client will invoke GetEventSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.

20. Verify the GetEventSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT.

21. Repeat steps 19-20 until SearchState is equal to Completed.

22. Verify that DUT sends virtual events for StartPoint time point with the following topics: "tns1:RecordingHistory/Recording/State" for recording with RecordingToken = Token1.

23. Verify that DUT sends virtual events for StartPoint time point with the following topics: "tns1:RecordingHistory/Track/State" for each track in recording with RecordingToken = Token1.

24. Verify that DUT sends virtual events for StartPoint time point with the following topics: "tns1:RecordingHistory/Track/VideoParameters" for each video track in recording with RecordingToken = Token1, if such event is supported by the DUT.

25. Verify that DUT sends virtual events for StartPoint time point with the following topics: "tns1:RecordingHistory/Track/AudioParameters" for each audio track in recording with RecordingToken = Token1, if such event is supported by the DUT.

26. Verify that DUT sends virtual events for EndPoint time point with the following topics: "tns1:RecordingHistory/Recording/State" for recording with RecordingToken = Token1.

27. Verify that DUT sends virtual events for EndPoint time point with following topics: "tns1:RecordingHistory/Track/State" for each track in recording with RecordingToken = Token1.

28. Verify that DUT sends virtual events for EndPoint time point with the following topics: "tns1:RecordingHistory/Track/VideoParameters" for each video track in recording with RecordingToken = Token1, if such event is supported by the DUT.

29. Verify that DUT sends virtual events for EndPoint time point with the following topics: "tns1:RecordingHistory/Track/AudioParameters" for each audio track in recording with RecordingToken = Token1, if such event is supported by the DUT.

30. Verify that sets of results from GetEventSearchResultsResponse messages for the first (steps 8-12) and the second (steps 17-21) event search session are the same except virtual events.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetEventSearchResultsResponse message.

The DUT did not send a valid FindEventsResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned a non-virtual events with topic "tns1:RecordingHistory/Track/State" with invalid Recording token, Track token, and IsDataPresent value (IsDataPresent value shall be alternated from true to false for each Track if any of "tns1:RecordingHistory/Track/State" events exists for this Track).

The DUT did not return a valid virtual events with topic "tns1:RecordingHistory/Recording/State" for selected recording for StartPoint or EndPoint. (For EndPoint events are required only for backward search).

The DUT did not return a valid virtual events with topics "tns1:RecordingHistory/Track/State" for each track of selected recording for StartPoint or EndPoint. (For EndPoint events are required only for backward search).

The DUT did not return a valid virtual events with topics "tns1:RecordingHistory/Track/VideoParameters" for each video track of selected recording for StartPoint or EndPoint. (For EndPoint events are required only for backward search).

The DUT did not return a valid virtual events with topics "tns1:RecordingHistory/Track/AudioParameters" for each audio track of selected recording for StartPoint or EndPoint. (For EndPoint events are required only for backward search).

The DUT did returned a non-virtual events with topic "tns1:RecordingHistory/Recording/State" with invalid Recording token, and IsRecording value (IsRecording value shall be alternated from true to false).

The DUT returned an invalid Recording token or invalid Track token for events with following topic if they were present in search results: "tns1:RecordingHistory/Track/State", "tns1:RecordingHistory/Recording/State", "tns1:RecordingHistory/Track/VideoParameters", and "tns1:RecordingHistory/Track/AudioParameters".

The DUT did not return events in ascending order for steps 8-12 (Time of previous result was less than for the next one).

The DUT did not return events in descending order for steps 17-21 (Time of previous result was greater than for the next one).

The DUT did not return the same set of results (excluding virtual events) for steps 8-12 and for steps 17-21 (see Annex A.7).

Note: If RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse message, then minimum value of Track.DataFrom will be used

as **T1**.

Note: If RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message, then maximum value of Track.DataTo will be used as **T2**.

Note: Events are supposed to be virtual events if StartStateEvent flag is equal to true.

4.3.4 FIND EVENTS – FORWARD AND BACKWARD SEARCH (SEARCH ENDPOINTS EQUAL TO RECORDING ENDPOINTS)

Test Label: Find Event – Forward and Backward Search (Search Endpoints Equal to Recording Endpoints).

Test Case ID: DRAFT-SEARCH-3-1-13

ONVIF Core Specification Coverage: FindEvents, GetEventSearchResult, GetRecordingInformation

Command under test: FindEvents, GetEventSearchResult, GetRecordingInformation

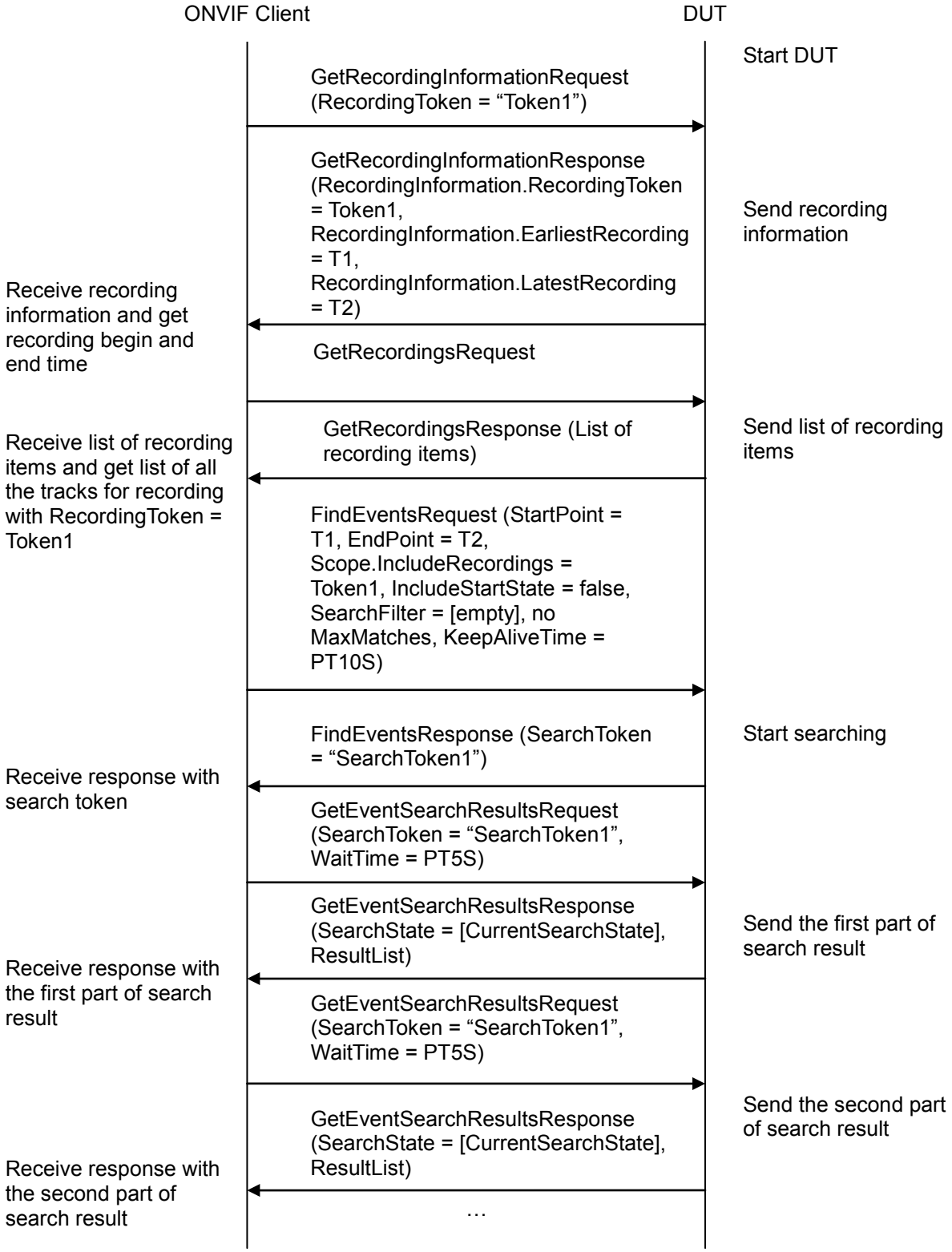
WSDL Reference: search.wsdl

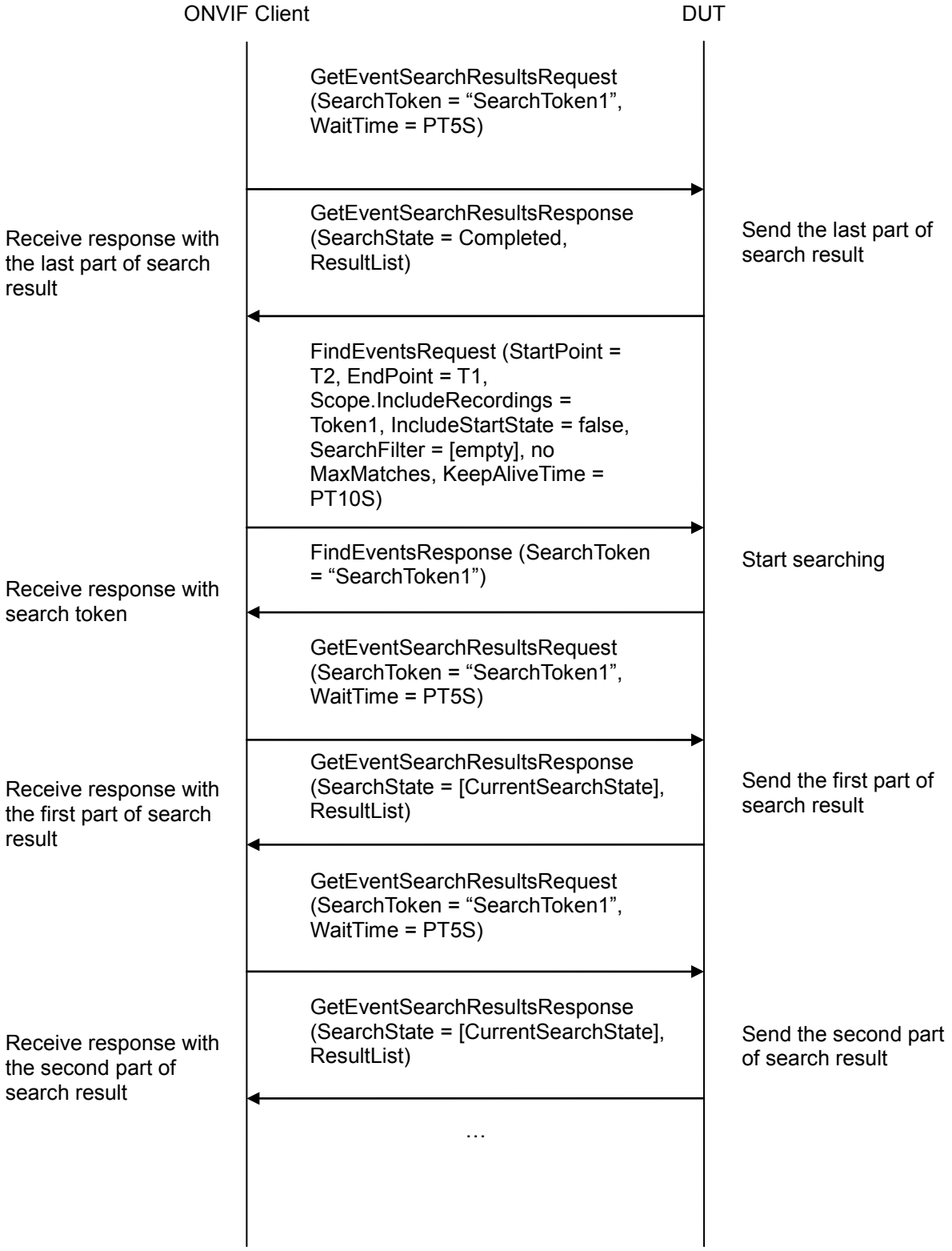
Test Purpose: To verify event forward and backward search in case the search endpoints are equal to the recording endpoints.

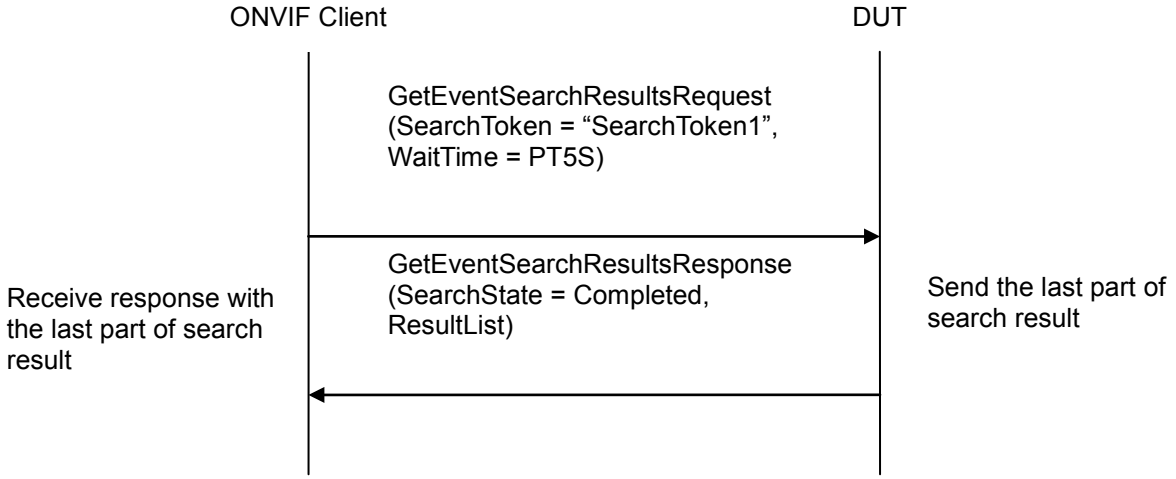
Pre-Requisite: At least one recording exists on the DUT (see annex A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
GetRecordingsRequest
GetRecordingsResponse (List of recording items)
Send list of recording items
Receive list of recording items and get list of all the tracks for recording with RecordingToken = Token1
FindEventsRequest (StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, IncludeStartState = false, SearchFilter = [empty], no MaxMatches, KeepAliveTime = PT10S)
FindEventsResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…


ONVIF Client
DUT
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = Completed, ResultList)
Receive response with the last part of search result
Send the last part of search result
FindEventsRequest (StartPoint = T2, EndPoint = T1, Scope.IncludeRecordings = Token1, IncludeStartState = false, SearchFilter = [empty], no MaxMatches, KeepAliveTime = PT10S)
FindEventsResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Receive response with the first part of search result
Send the first part of search result
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Receive response with the second part of search result
Send the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token **Token1** of recording which contains at least one track with data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = "Token1"**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke GetRecordingsRequest message to retrieve list of all the tracks of recording with RecordingToken = Token1.
7. Verify the GetRecordingsResponse message.
8. ONVIF Client will invoke FindEventsRequest message (**StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, IncludeStartState = false, SearchFilter = [empty], no MaxMatches, KeepAliveTime = PT10S**) to start event search session and retrieve SearchToken.
9. Verify the FindEventsResponse message (**SearchToken = "SearchToken1"**) from the DUT.
10. ONVIF Client will invoke GetEventSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
11. Verify the GetEventSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT.
12. Repeat steps 10-11 until SearchState is equal to Completed.
13. ONVIF Client will invoke FindEventsRequest message (**StartPoint = T2, EndPoint = T1, Scope.IncludeRecordings = Token1, IncludeStartState = false, SearchFilter = [empty],**

no MaxMatches, KeepAliveTime = PT10S) to start event search session and retrieve SearchToken.

14. Verify the FindEventsResponse message (**SearchToken = "SearchToken1"**) from the DUT.
15. ONVIF Client will invoke GetEventSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
16. Verify the GetEventSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT.
17. Repeat steps 15-16 until SearchState is equal to Completed.
18. Verify that sets of results from GetEventSearchResultsResponse messages for the first (steps 8-12) and the second (steps 13-17) event search session are the same.

Test Result:

PASS –

The DUT passed all assertions.

FAIL –

The DUT did not send valid GetRecordingInformationResponse message.

The DUT did not send valid GetRecordingsResponse message.

The DUT did not send a valid GetEventSearchResultsResponse message.

The DUT did not send a valid FindEventsResponse message.

The DUT did not reach the Completed state for the search session.

The DUT did not return at least two events with topic "tns1:RecordingHistory/Track/State" with valid Recording token, Track token, and IsDataPresent value for each track with data (IsDataPresent value shall be alternated from true to false for each Track if any of "tns1:RecordingHistory/Track/State" events exists for this Track and event with the smallest time for each Track shall have value of IsDataPresent equal to true).

The DUT did not return at least two events with topic "tns1:RecordingHistory/Recording/State" with valid Recording token, and IsRecording value (IsRecording value shall be alternated from true to false and event with the smallest time shall have value of IsRecording equal to true).

The DUT returned an invalid Recording token or invalid Track token for events with following topic if they were present in search results: "tns1:RecordingHistory/Track/State", "tns1:RecordingHistory/Recording/State", "tns1:RecordingHistory/Track/VideoParameters", and "tns1:RecordingHistory/Track/AudioParameters".

The DUT did not return events in ascending order for steps 8-12 (Time of previous result was less than for the next one).

The DUT did not return events in descending order for steps 13-17 (Time of previous result was greater than for the next one).

The DUT did not return the same set of results for steps 8-12 and for steps 13-17 (see Annex A.7).

Note: RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse

message then minimum value of Track.DataFrom will be used as **T1**.

Note: RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message then maximum value of Track.DataTo will be used as **T2**.

4.3.5 FIND EVENTS – FORWARD AND BACKWARD SEARCH (SEARCH ENDPOINTS OUTSIDE RECORDING ENDPOINTS)

Test Label: Find Event- Forward and Backward Search (Search Endpoints Outside Recording Endpoints).

Test Case ID: DRAFT-SEARCH-3-1-14

ONVIF Core Specification Coverage: FindEvents, GetEventSearchResult, GetRecordingInformation

Command under test: FindEvents, GetEventSearchResult, GetRecordingInformation

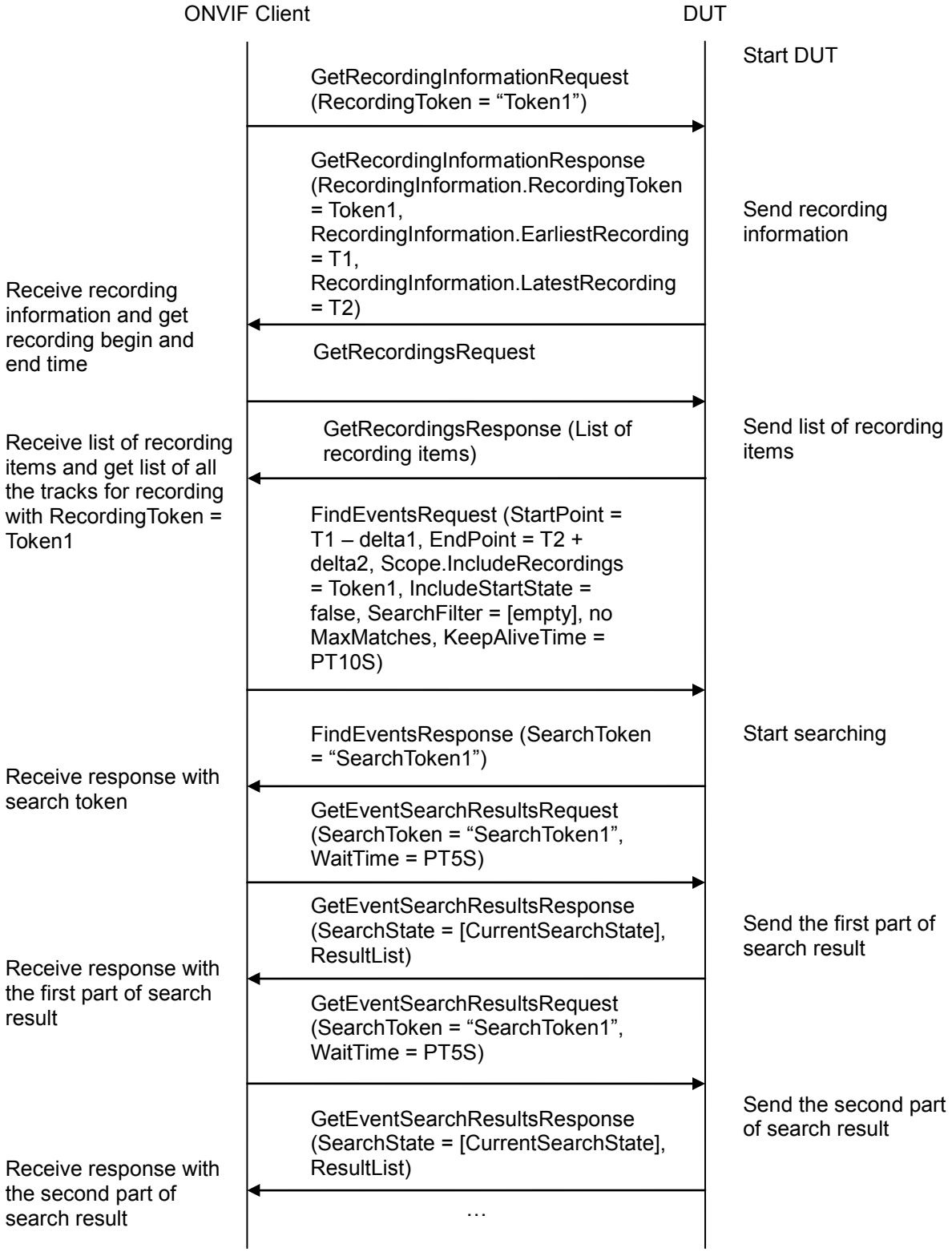
WSDL Reference: search.wsdl

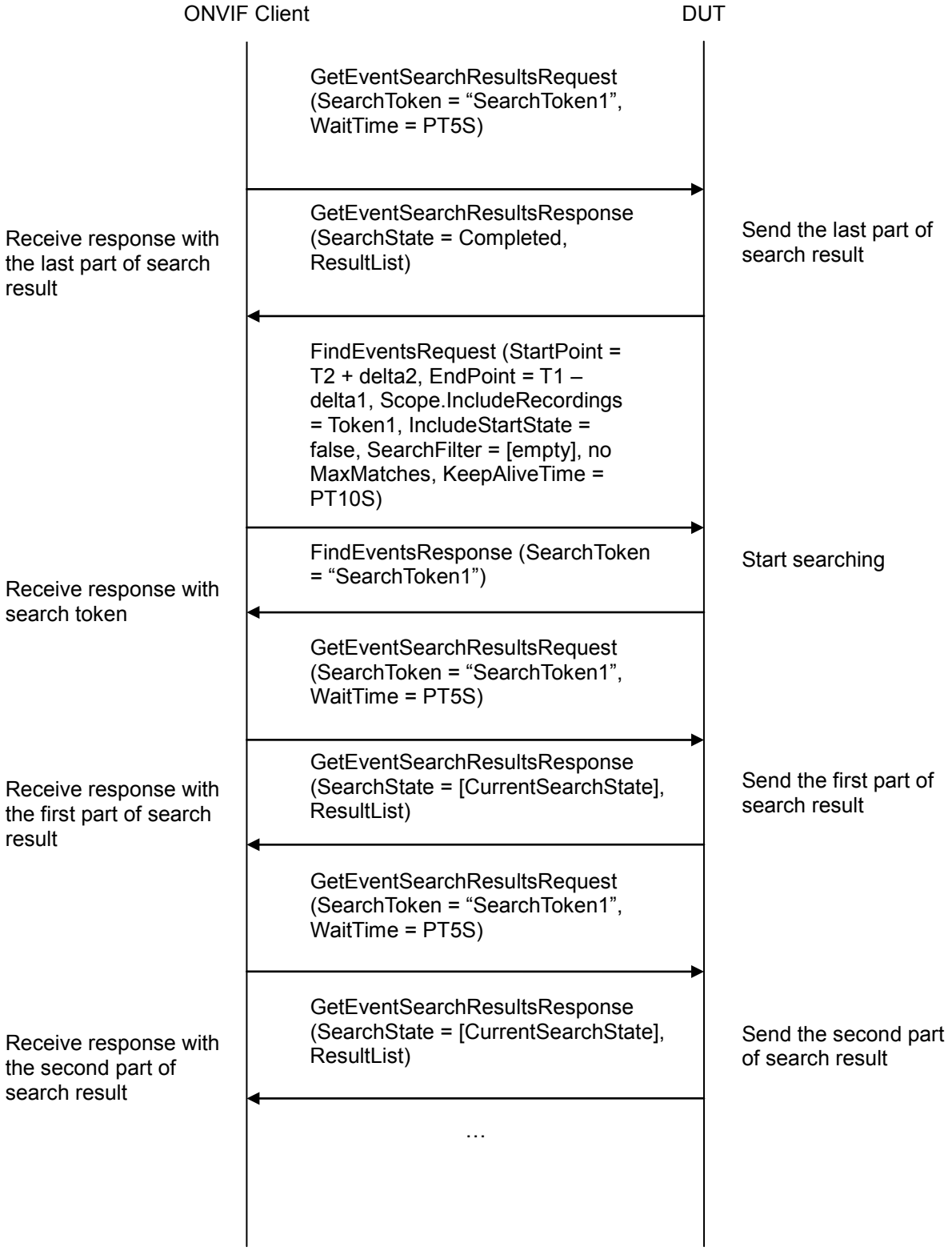
Test Purpose: To verify event forward and backward search in case the search endpoints are outside the recording endpoints.

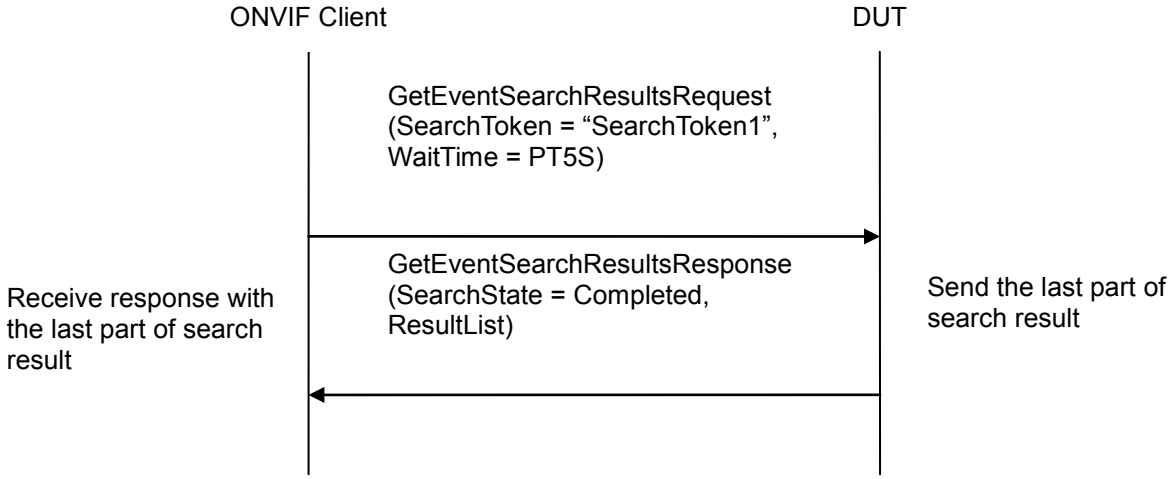
Pre-Requisite: At least one recording exists on the DUT (see annex A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
GetRecordingsRequest
GetRecordingsResponse (List of recording items)
Send list of recording items
Receive list of recording items and get list of all the tracks for recording with RecordingToken = Token1
FindEventsRequest (StartPoint = T1 – delta1, EndPoint = T2 + delta2, Scope.IncludeRecordings = Token1, IncludeStartState = false, SearchFilter = [empty], no MaxMatches, KeepAliveTime = PT10S)
FindEventsResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…


ONVIF Client
DUT
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = Completed, ResultList)
Receive response with the last part of search result
Send the last part of search result
FindEventsRequest (StartPoint = T2 + delta2, EndPoint = T1 – delta1, Scope.IncludeRecordings = Token1, IncludeStartState = false, SearchFilter = [empty], no MaxMatches, KeepAliveTime = PT10S)
FindEventsResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Receive response with the first part of search result
Send the first part of search result
GetEventSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetEventSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Receive response with the second part of search result
Send the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token **Token1** of recording which contains at least one track with data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = "Token1"**) to retrieve information about Recording and tracks with data.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke GetRecordingsRequest message to retrieve list of all the tracks of recording with RecordingToken = Token1.
7. Verify the GetRecordingsResponse message.
8. ONVIF Client will invoke FindEventsRequest message (**StartPoint = T1 – delta1, EndPoint = T2 + delta2**, **Scope.IncludeRecordings = Token1, IncludeStartState = false, SearchFilter = [empty], no MaxMatches, KeepAliveTime = PT10S**) to start event search session and retrieve SearchToken.
9. Verify the FindEventsResponse message (**SearchToken = "SearchToken1"**) from the DUT.
10. ONVIF Client will invoke GetEventSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
11. Verify the GetEventSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT.
12. Repeat steps 9-10 until SearchState is equal to Completed.
13. ONVIF Client will invoke FindEventsRequest message (**StartPoint = T2 + delta2, EndPoint = T1 – delta1, Scope.IncludeRecordings = Token1, IncludeStartState = false,**

SearchFilter = [empty], no MaxMatches, KeepAliveTime = PT10S) to start event search session and retrieve SearchToken.

14. Verify the FindEventsResponse message (**SearchToken = "SearchToken1"**) from the DUT.
15. ONVIF Client will invoke GetEventSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
16. Verify the GetEventSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT.
17. Repeat steps 15-16 until SearchState is equal to Completed.
18. Verify that sets of results from GetEventSearchResultsResponse messages for the first (steps 8-12) and the second (steps 13-17) event search session are the same.

Test Result:

PASS –

The DUT passed all assertions.

FAIL –

The DUT did not send valid GetRecordingInformationResponse message.

The DUT did not send valid GetRecordingsResponse message.

The DUT did not send valid GetEventSearchResultsResponse message.

The DUT did not send valid FindEventsResponse message.

The DUT did not reach Completed state for the search session.

The DUT did not return at least two events with topic "tns1:RecordingHistory/Track/State" with valid Recording token, Track token, and IsDataPresent value for each track with data (IsDataPresent value shall be alternated from true to false for each Track if any "tns1:RecordingHistory/Track/State" event exist for this Track).

There was event for at least one Track with topic "tns1:RecordingHistory/Track/State" with the smallest time which had 'Changed' property operation and value of IsDataPresent equal to false.

The DUT did not return at least two events with topic "tns1:RecordingHistory/Recording/State" with valid Recording token, and IsRecording value (IsRecording value shall be alternated from true to false).

Event with topic "tns1:RecordingHistory/Recording/State " with the smallest time had 'Changed' property operation and value of IsRecording equal to false.

The DUT returned invalid Recording token or invalid Track token for events with following topic if they were present in search results: "tns1:RecordingHistory/Track/State", "tns1:RecordingHistory/Recording/State", "tns1:RecordingHistory/Track/VideoParameters", and "tns1:RecordingHistory/Track/AudioParameters".

The DUT did not return events in ascending order for steps 8-12 (Time of previous result was less than for the next one).

The DUT did not return events in descending order for steps 13-17 (Time of previous result was greater than for next one).

The DUT did not return the same set of results for steps 8-12 and for steps 13-17 (see Annex A.7).

Note: RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse message then minimum value of Track.DataFrom will be used as **T1**.

Note: RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message then maximum value of Track.DataTo will be used as **T2**.

4.4 Metadata Search

4.4.1 FIND METADATA – FORWARD AND BACKWARD SEARCH (SEARCH ENDPOINTS EQUAL TO RECORDING ENDPOINTS)

Test Label: Find Metadata - Forward and Backward Search (Search Endpoints Equal to Recording Endpoints).

Test Case ID: SEARCH-5-1-1

ONVIF Core Specification Coverage: FindMetadata, GetMetadataSearchResults, GetRecordingInformation

Command under test: FindMetadata, GetMetadataSearchResults, GetRecordingInformation

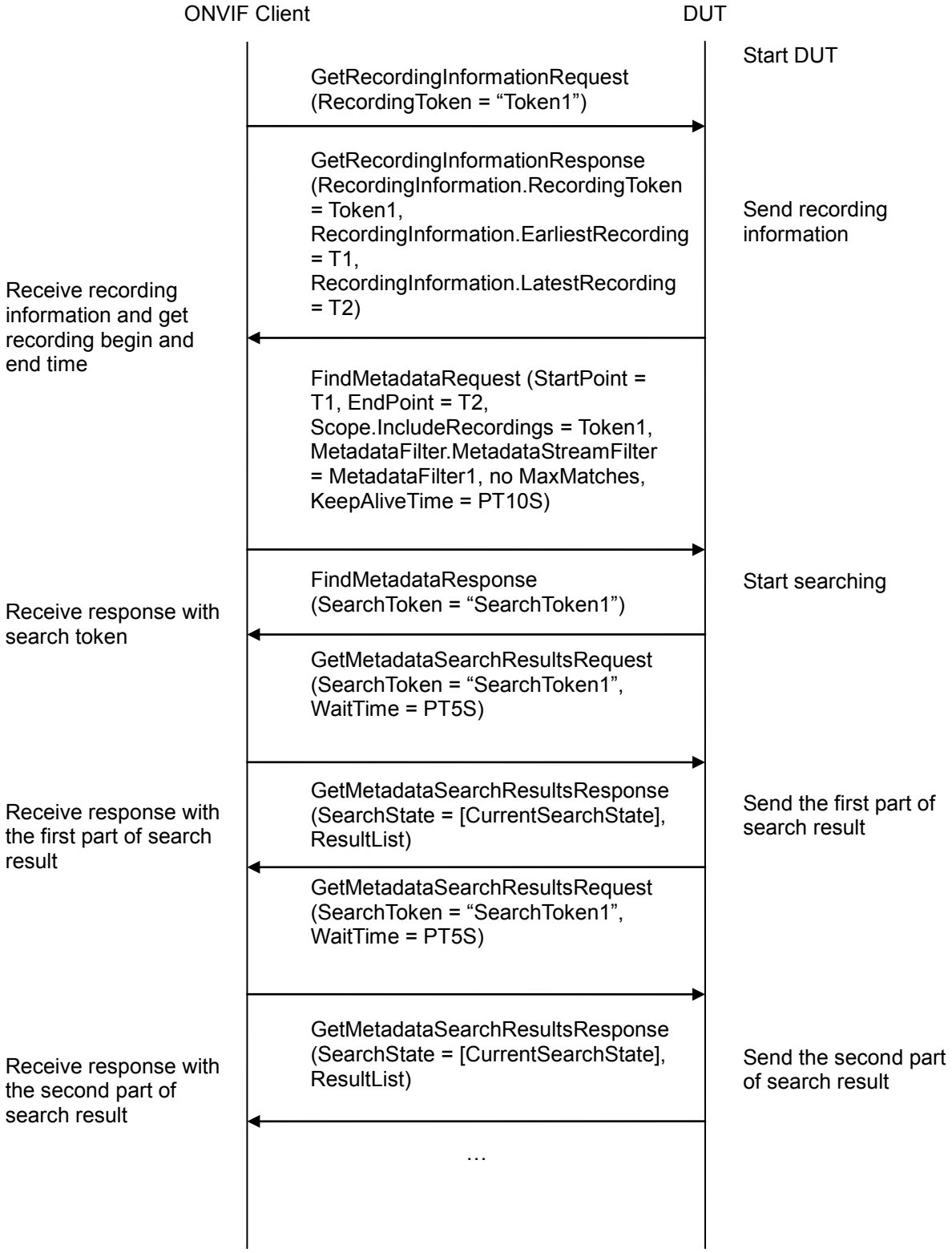
WSDL Reference: search.wsdl

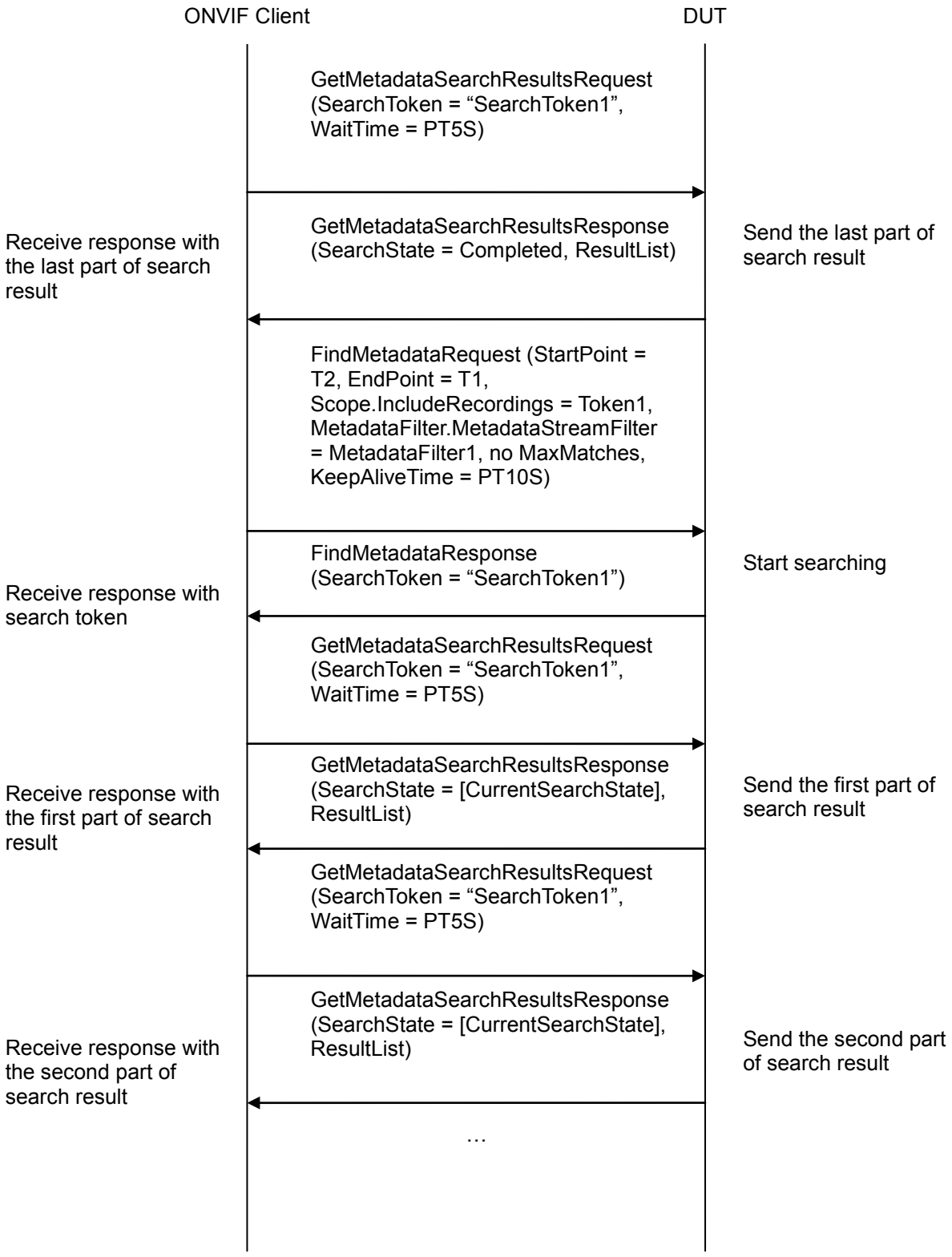
Test Purpose: To verify metadata forward and backward search in case the search endpoints are equal to the recording endpoints.

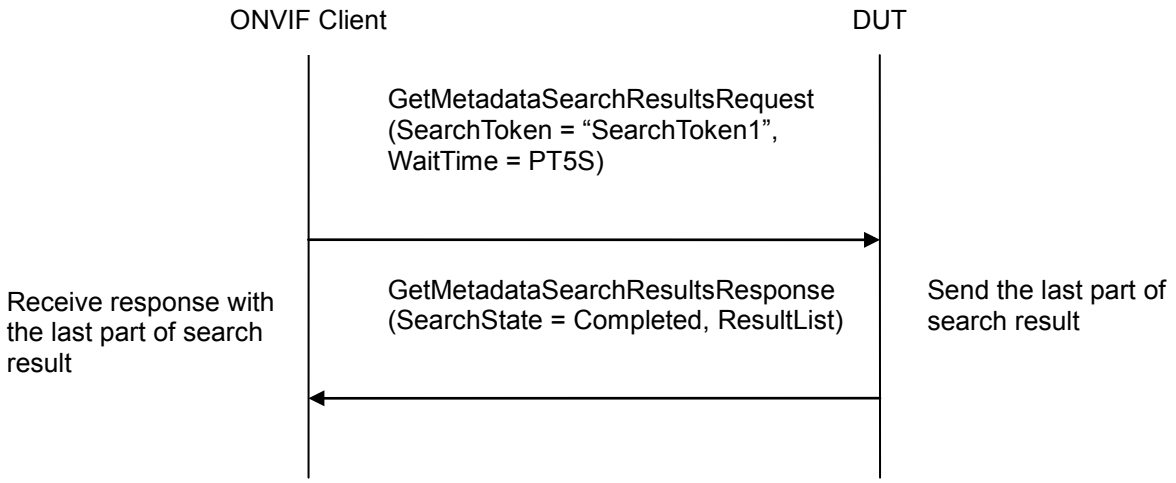
Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details). The recording shall contain metadata.

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
FindMetadataRequest (StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = MetadataFilter1, no MaxMatches, KeepAliveTime = PT10S)
FindMetadataResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…


ONVIF Client
DUT
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = Completed, ResultList)
Receive response with the last part of search result
Send the last part of search result
FindMetadataRequest (StartPoint = T2, EndPoint = T1, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = MetadataFilter1, no MaxMatches, KeepAliveTime = PT10S)
FindMetadataResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Receive response with the first part of search result
Send the first part of search result
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Receive response with the second part of search result
Send the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token Token1 of recording which contains at least one track with metadata from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = "Token1"**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke FindMetadataRequest message (**StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = MetadataFilter1, no MaxMatches, KeepAliveTime = PT10S**) to start metadata search session and retrieve SearchToken.
7. Verify the FindMetadataResponse message (**SearchToken = "SearchToken1"**) from the DUT.
8. ONVIF Client will invoke GetMetadataSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
9. Verify the GetMetadataSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList) from the DUT. Check that time (ResultList.Result.Time**) of the search result is inside the search endpoints that were defined in FindMetadataRequest message at step 6.
10. Repeat steps 8-9 until SearchState is equal to Completed.
11. ONVIF Client will invoke FindMetadataRequest message (**StartPoint = T2, EndPoint = T1, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = MetadataFilter1, no MaxMatches, KeepAliveTime = PT10S**) to start metadata search session and retrieve SearchToken.

12. Verify the FindMetadataResponse message (**SearchToken = "SearchToken1"**) from the DUT.
13. ONVIF Client will invoke GetMetadataSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
14. Verify the GetMetadataSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList)** from the DUT. Check that time (**ResultList.Result.Time**) of the search result is inside the search endpoints that were defined in FindMetadataRequest message at step 11.
15. Repeat steps 13-14 until SearchState is equal to Completed.
16. Verify that sets of results from GetMetadataSearchResultsResponse messages for the first (steps 6-10) and the second (steps 11-15) metadata search session are the same.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetMetadataSearchResultsResponse message.

The DUT did not send a valid FindMetadataResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned metadata search results with invalid time (Time is not inside the search endpoints).

The DUT returned an invalid Recording token or invalid Track token for metadata search results.

The DUT did not return metadata search results in ascending order for steps 6-10 (Time of previous result was greater than for the next one or equal to it).

The DUT did not return metadata search results in descending order for steps 11-15 (Time of previous result was less than for the next one or equal to it).

The DUT did not return the same set of results for steps 6-10 and for steps 11-15 (see Annex A.8).

Note: If RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse message, then minimum value of Track.DataFrom will be used as **T1**.

Note: If RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message, then maximum value of Track.DataTo will be used as **T2**.

Note: MetdataFilter1 is specified by user and assigned to data that is contained in the recording with token = Token1.

4.4.2 FIND METADATA – FORWARD AND BACKWARD SEARCH (SEARCH ENDPOINTS

OUTSIDE RECORDING ENDPOINTS)

Test Label: Find Metadata - Forward and Backward Search (Search Endpoints Outside Recording Endpoints).

Test Case ID: SEARCH-5-1-2

ONVIF Core Specification Coverage: FindMetadata, GetMetadataSearchResults, GetRecordingInformation

Command under test: FindMetadata, GetMetadataSearchResults, GetRecordingInformation

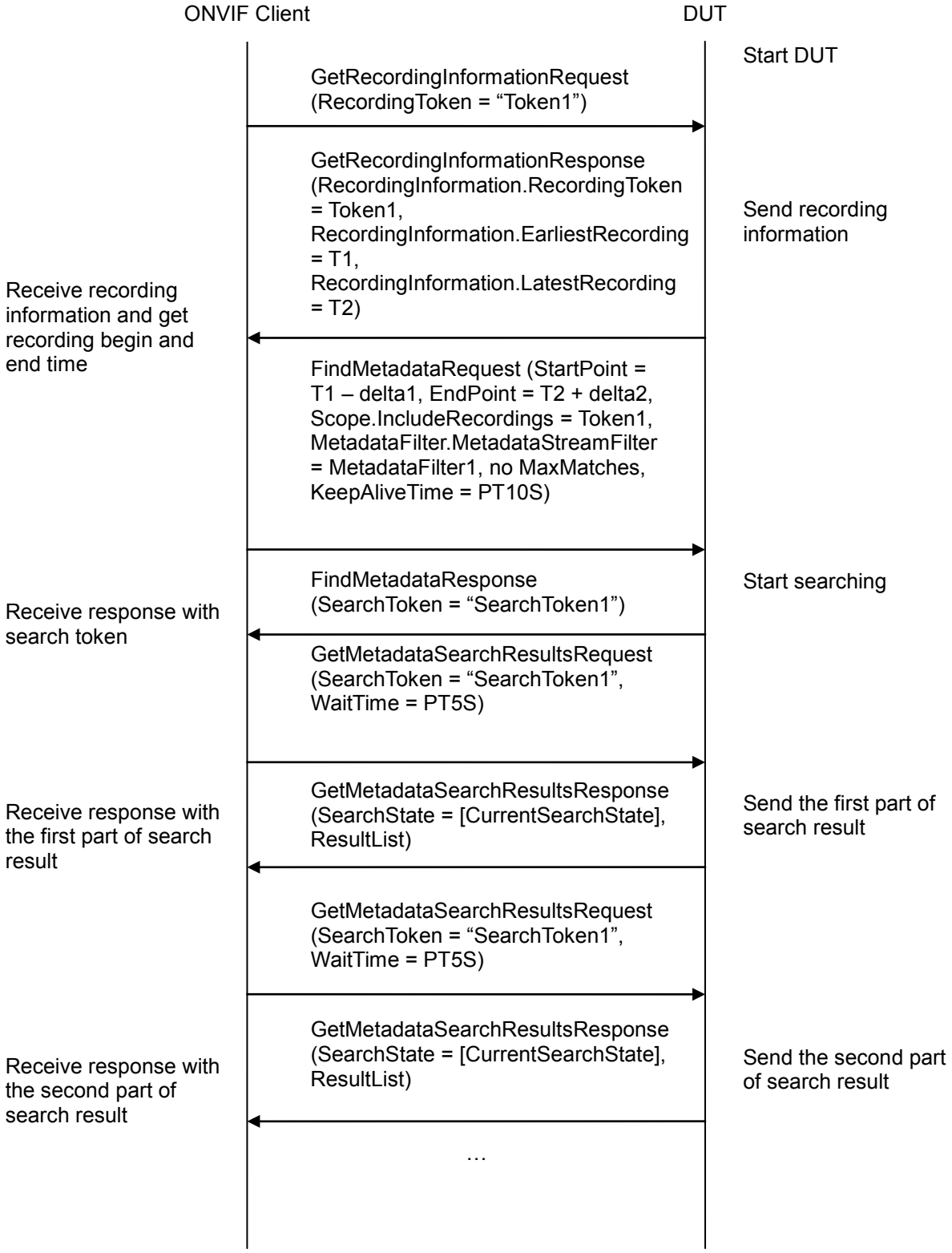
WSDL Reference: search.wsdl

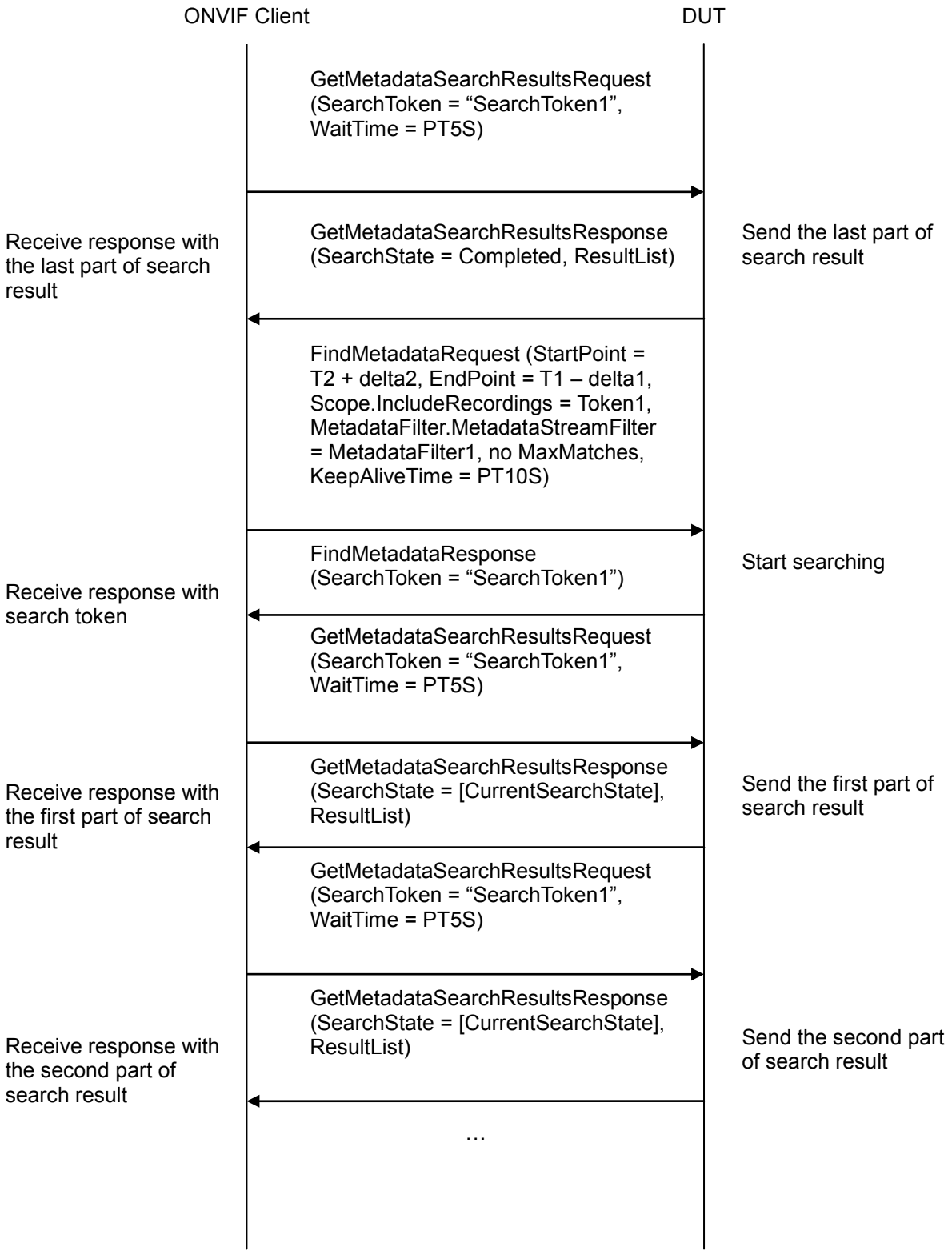
Test Purpose: To verify metadata forward and backward search in case the search endpoints are outside the recording endpoints.

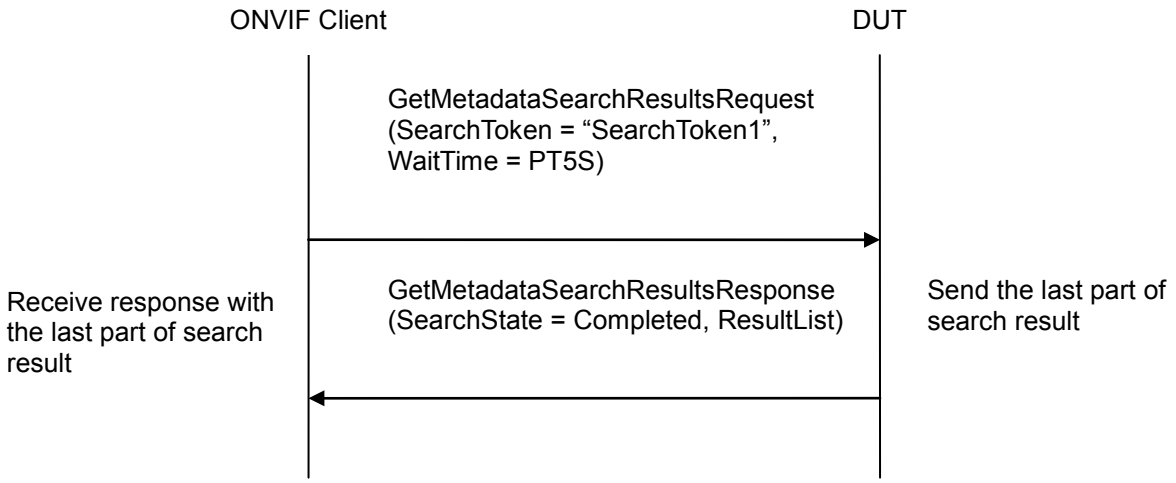
Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details). The recording shall contain metadata.

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
FindMetadataRequest (StartPoint = T1 – delta1, EndPoint = T2 + delta2, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = MetadataFilter1, no MaxMatches, KeepAliveTime = PT10S)
FindMetadataResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…


ONVIF Client
DUT
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = Completed, ResultList)
Receive response with the last part of search result
Send the last part of search result
FindMetadataRequest (StartPoint = T2 + delta2, EndPoint = T1 – delta1, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = MetadataFilter1, no MaxMatches, KeepAliveTime = PT10S)
FindMetadataResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Receive response with the first part of search result
Send the first part of search result
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Receive response with the second part of search result
Send the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token Token1 of recording which contains at least one track with metadata data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = "Token1"**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke FindMetadataRequest message (**StartPoint = T1 – delta1, EndPoint = T2 + delta2, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = MetadataFilter1, no MaxMatches, KeepAliveTime = PT10S**) to start metadata search session and retrieve SearchToken.
7. Verify the FindMetadataResponse message (**SearchToken = "SearchToken1"**) from the DUT.
8. ONVIF Client will invoke GetMetadataSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
9. Verify the GetMetadataSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList)** from the DUT. Check that time (**ResultList.Result.Time**) of the search result is inside the recording endpoints that were defined in GetRecordingInformationResponse at step 5.
10. Repeat steps 8-9 until SearchState is equal to Completed.
11. ONVIF Client will invoke FindMetadataRequest message (**StartPoint = T2 + delta2, EndPoint = T1 – delta1, Scope.IncludeRecordings = Token1,**

MetadataFilter.MetadataStreamFilter = MetadataFilter1, no MaxMatches, KeepAliveTime = PT10S) to start metadata search session and retrieve SearchToken.

12. Verify the FindMetadataResponse message (**SearchToken = "SearchToken1"**) from the DUT.
13. ONVIF Client will invoke GetMetadataSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
14. Verify the GetMetadataSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT. Check that time (**ResultList.Result.Time**) of the search result is inside the recording endpoints that were defined in GetRecordingInformationResponse at step 5.
15. Repeat steps 13-14 until SearchState is equal to Completed.
16. Verify that sets of results from GetMetadataSearchResultsResponse messages for the first (steps 6-10) and the second (steps 11-15) metadata search session are the same.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetMetadataSearchResultsResponse message.

The DUT did not send a valid FindMetadataResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned metadata search results with invalid time (Time is not inside the recording endpoints).

The DUT returned invalid Recording token or invalid Track token for metadata search results.

The DUT did not return metadata search results in ascending order for steps 6-10 (Time of previous result was greater than for the next one or equal to it).

The DUT did not return metadata search results in descending order for steps 11-15 (Time of previous result was less than for the next one or equal to it).

The DUT did not return the same set of results for steps 6-10 and for steps 11-15 (see Annex A.8).

Note: If RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse message, then minimum value of Track.DataFrom will be used as **T1**.

Note: If RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message, then maximum value of Track.DataTo will be used as **T2**.

Note: MetdataFilter1 is specified by user and assigned to data that is contained in the recording with token = Token1.

4.4.3 FIND METADATA – FORWARD AND BACKWARD SEARCH (SEARCH ENDPOINTS INSIDE RECORDING ENDPOINTS)

Test Label: Find Metadata - Forward and Backward Search (Search Endpoints Inside Recording Endpoints).

Test Case ID: SEARCH-5-1-3

ONVIF Core Specification Coverage: FindMetadata, GetMetadataSearchResults, GetRecordingInformation

Command under test: FindMetadata, GetMetadataSearchResults, GetRecordingInformation

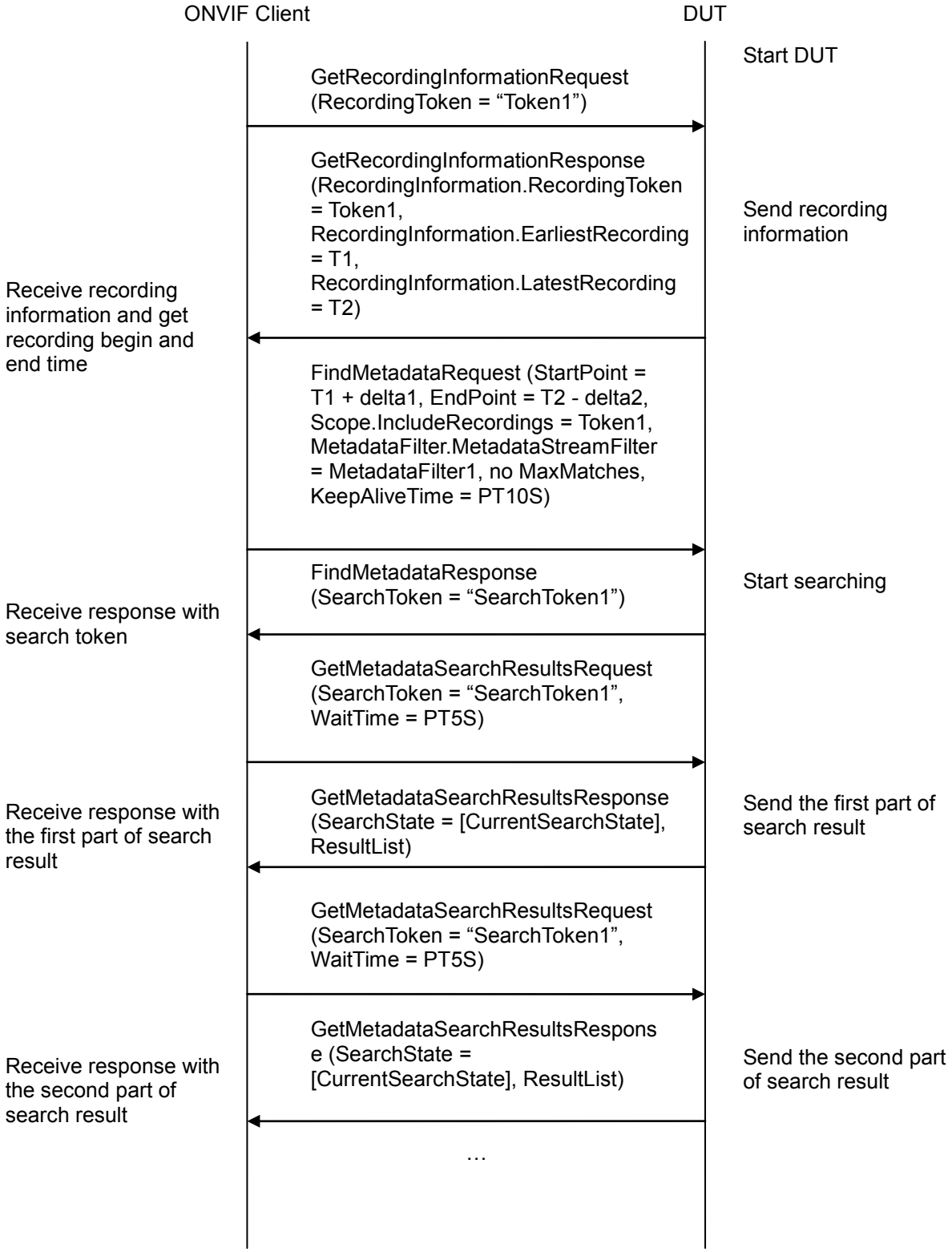
WSDL Reference: search.wsdl

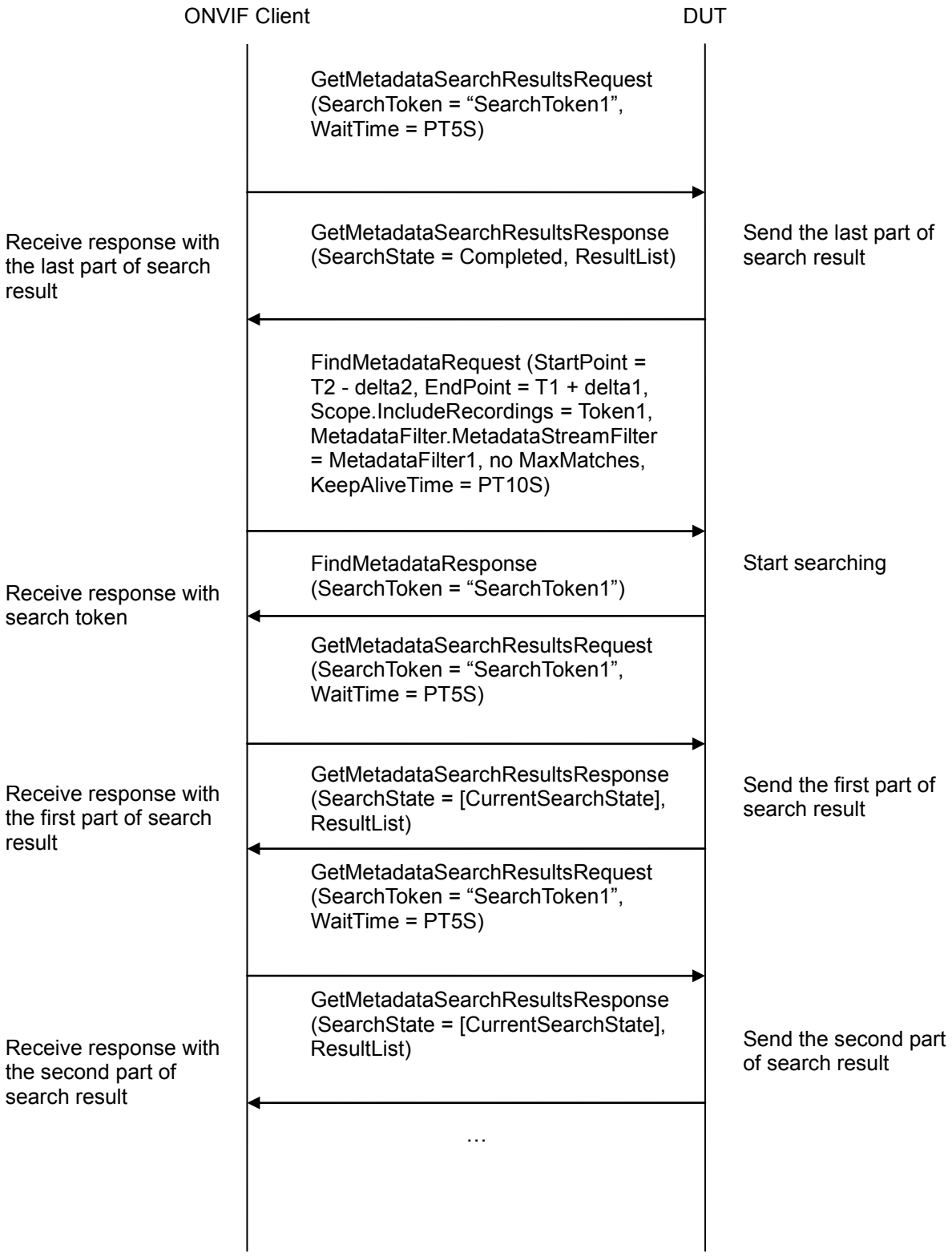
Test Purpose: To verify metadata forward and backward search in case the search endpoints are inside the recording endpoints.

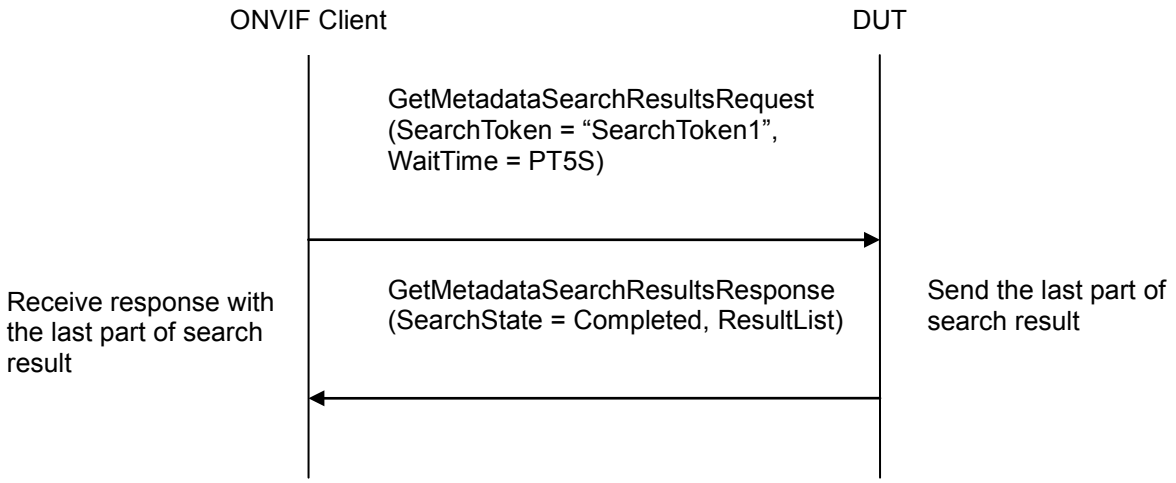
Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details). The recording shall contain metadata.

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
FindMetadataRequest (StartPoint = T1 + delta1, EndPoint = T2 - delta2, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = MetadataFilter1, no MaxMatches, KeepAliveTime = PT10S)
FindMetadataResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsRespons e (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…


ONVIF Client
DUT
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = Completed, ResultList)
Receive response with the last part of search result
Send the last part of search result
FindMetadataRequest (StartPoint = T2 - delta2, EndPoint = T1 + delta1, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = MetadataFilter1, no MaxMatches, KeepAliveTime = PT10S)
FindMetadataResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Receive response with the first part of search result
Send the first part of search result
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Receive response with the second part of search result
Send the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token Token1 of recording which contains at least one track with metadata data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = “Token1”**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke FindMetadataRequest message (**StartPoint = T1 + delta1, EndPoint = T2 - delta2, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = MetadataFilter1, no MaxMatches, KeepAliveTime = PT10S**) to start metadata search session and retrieve SearchToken.
7. Verify the FindMetadataResponse message (**SearchToken = “SearchToken1”**) from the DUT.
8. ONVIF Client will invoke GetMetadataSearchResultsRequest message (**SearchToken = “SearchToken1”, WaitTime = PT5S**) to get current search result and search state.
9. Verify the GetMetadataSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT. Check that time (**ResultList.Result.Time**) of the search result is inside the search endpoints that were defined in FindMetadataRequest message at step 6.
10. Repeat steps 8-9 until SearchState is equal to Completed.
11. ONVIF Client will invoke FindMetadataRequest message (**StartPoint = T2 - delta2, EndPoint = T1 + delta1, Scope.IncludeRecordings = Token1,**

MetadataFilter.MetadataStreamFilter = MetadataFilter1, no MaxMatches, KeepAliveTime = PT10S) to start metadata search session and retrieve SearchToken.

12. Verify the FindMetadataResponse message (**SearchToken = "SearchToken1"**) from the DUT.
13. ONVIF Client will invoke GetMetadataSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
14. Verify the GetMetadataSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT. Check that time (**ResultList.Result.Time**) of the search result is inside the search endpoints that were defined in FindMetadataRequest message at step 11.
15. Repeat steps 13-14 until SearchState is equal to Completed.
16. Verify that sets of results from GetMetadataSearchResultsResponse messages for the first (steps 6-10) and the second (steps 11-15) metadata search session are the same.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetMetadataSearchResultsResponse message.

The DUT did not send a valid FindMetadataResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned metadata search results with invalid time (Time is not inside the search endpoints).

The DUT returned invalid Recording token or invalid Track token for metadata search result.

The DUT did not return metadata search results in ascending order for steps 6-10 (Time of previous result was greater than for the next one or equal to it).

The DUT did not return metadata search results in descending order for steps 11-15 (Time of previous result was less than for the next one or equal to it).

The DUT did not return the same set of results for steps 6-10 and for steps 11-15 (see Annex A.8).

Note: If RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse message, then minimum value of Track.DataFrom will be used as **T1**.

Note: If RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message, then maximum value of Track.DataTo will be used as **T2**.

Note: MetdataFilter1 is specified by user and assigned to data that is contained in the recording with token = Token1.

4.4.4 FIND METADATA (MAXMATCHES = 1)

Test Label: Find Metadata - MaxMatches = 1.

Test Case ID: SEARCH-5-1-4

ONVIF Core Specification Coverage: FindMetadata, GetMetadataSearchResults, GetRecordingInformation

Command under test: FindMetadata, GetMetadataSearchResults, GetRecordingInformation

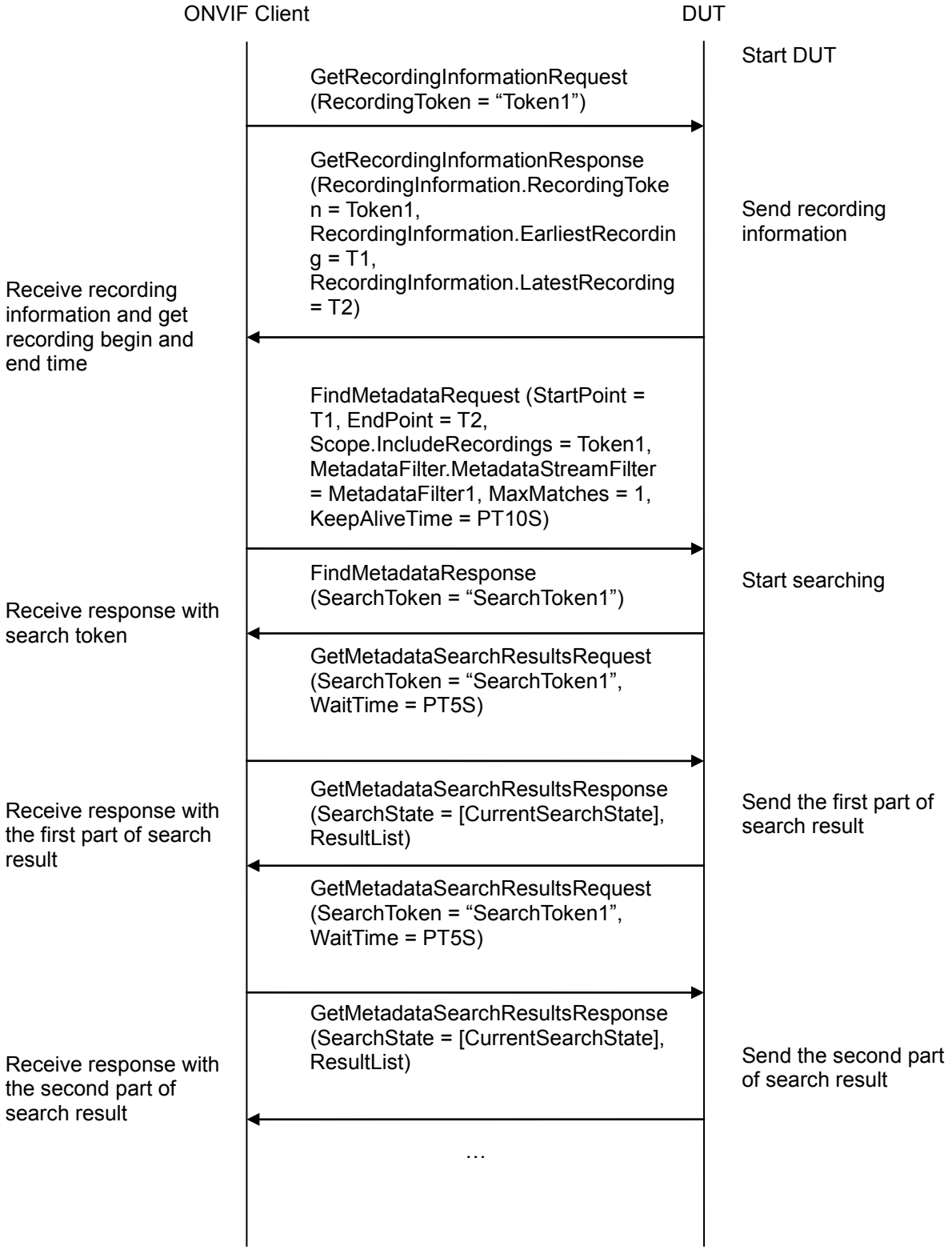
WSDL Reference: search.wsdl

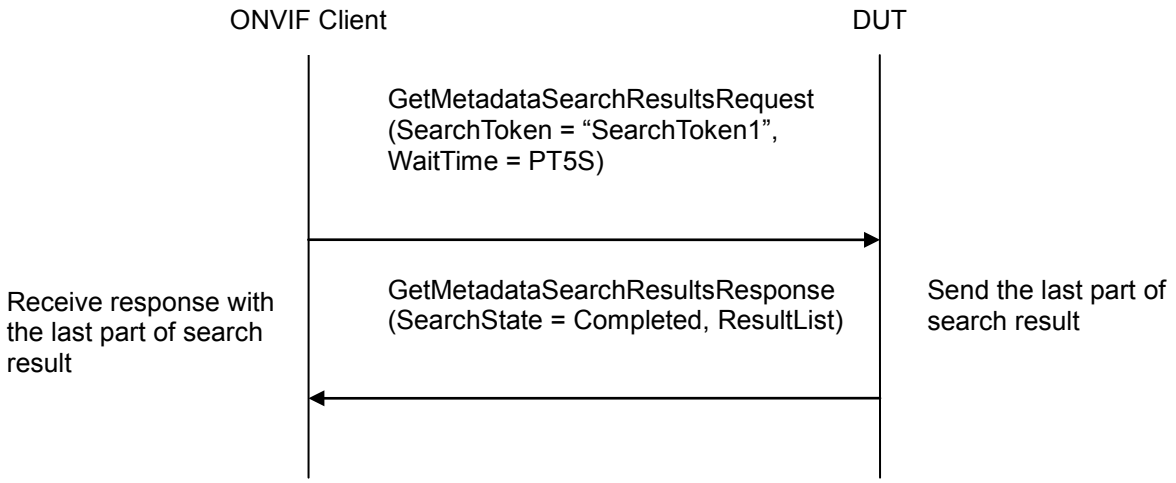
Test Purpose: To verify metadata search in case MaxMatches = 1.

Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details). The recording shall contain metadata.

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
FindMetadataRequest (StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = MetadataFilter1, MaxMatches = 1, KeepAliveTime = PT10S)
FindMetadataResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token Token1 of recording which contains at least one track with metadata data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = “Token1”**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke FindMetadataRequest message (**StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = MetadataFilter1, MaxMatches = 1, KeepAliveTime = PT10S**) to start metadata search session and retrieve SearchToken.
7. Verify the FindMetadataResponse message (**SearchToken = “SearchToken1”**) from the DUT.
8. ONVIF Client will invoke GetMetadataSearchResultsRequest message (**SearchToken = “SearchToken1”, WaitTime = PT5S**) to get current search result and search state.
9. Verify the GetMetadataSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList) from the DUT. Check that time (ResultList.Result.Time**) of the search result is inside the search endpoints that were defined in FindMetadataRequest message at step 6.
10. Repeat steps 8-9 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetMetadataSearchResultsResponse message.

The DUT did not send a valid FindMetadataResponse message.

The DUT did not reach the Completed state for the search session after one metadata was returned in GetMetadataSearchResultsResponse.

The DUT returned more than one metadata in results.

Note: If RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse message, then minimum value of Track.DataFrom will be used as **T1**.

Note: If RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message, then maximum value of Track.DataTo will be used as **T2**.

Note: MetdataFilter1 is specified by user and assigned to data that is contained in the recording with token = Token1.

4.4.5 FIND METADATA (NO RESULTS)

Test Label: Find Metadata - No Results.

Test Case ID: SEARCH-5-1-5

ONVIF Core Specification Coverage: FindMetadata, GetMetadataSearchResults, GetRecordingInformation

Command under test: FindMetadata, GetMetadataSearchResults, GetRecordingInformation

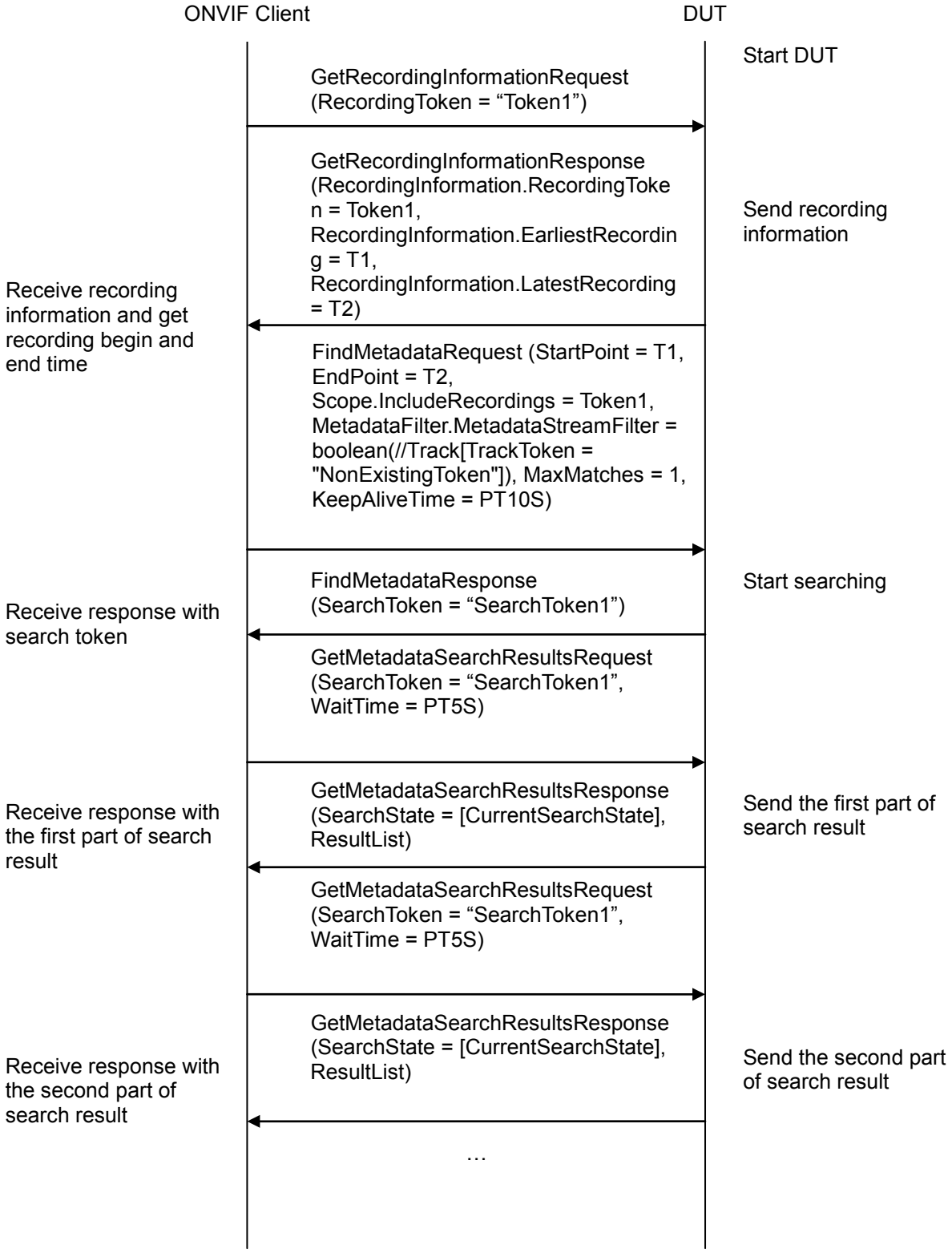
WSDL Reference: search.wsdl

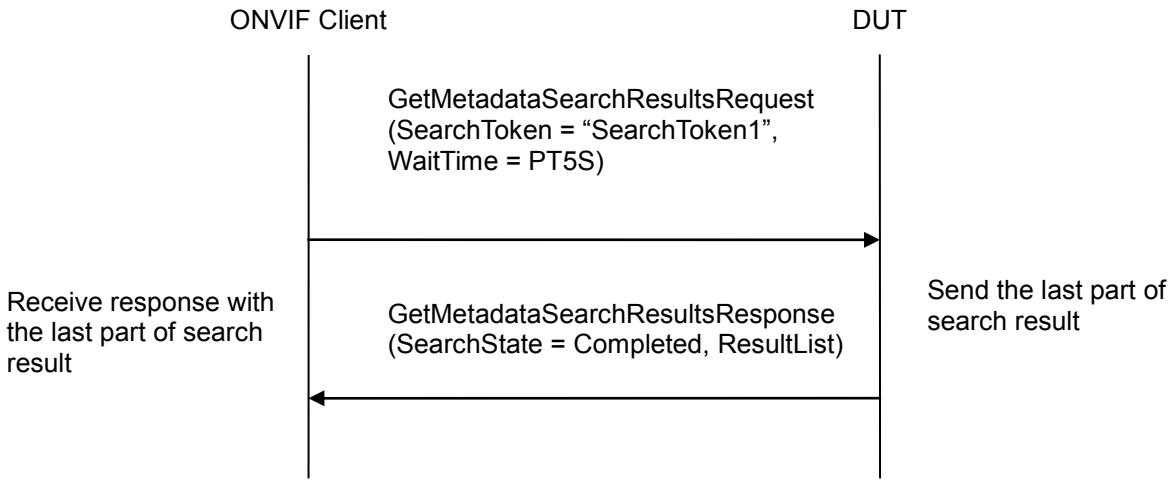
Test Purpose: To verify metadata search in case no results for the specified filter exist.

Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details).

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
FindMetadataRequest (StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = boolean(//Track[TrackToken = "NonExistingToken"]), MaxMatches = 1, KeepAliveTime = PT10S)
FindMetadataResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetMetadataSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetMetadataSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token Token1 of recording which contains at least one track with metadata data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = “Token1”**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke FindMetadataRequest message (**StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, MetadataFilter.MetadataStreamFilter = “boolean(//Track[TrackToken = "NonExistingToken"])”, MaxMatches = 1, KeepAliveTime = PT10S**) to start metadata search session and retrieve SearchToken.
7. Verify the FindMetadataResponse message (**SearchToken = “SearchToken1”**) from the DUT.
8. ONVIF Client will invoke GetMetadataSearchResultsRequest message (**SearchToken = “SearchToken1”, WaitTime = PT5S**) to get current search result and search state.
9. Verify the GetMetadataSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT.
10. Repeat steps 8-9 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetMetadataSearchResultsResponse message.

The DUT did not send a valid FindMetadataResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned at least one metadata in results.

Note: If RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse message, then minimum value of Track.DataFrom will be used as **T1**.

Note: If RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message, then maximum value of Track.DataTo will be used as **T2**.

4.4.6 GET METADATA SEARCH RESULTS WITH INVALID SEARCHTOKEN

Test Label: Get Metadata Search Result with Invalid SearchToken.

Test Case ID: SEARCH-5-1-6

ONVIF Core Specification Coverage: GetMetadataSearchResults

Command under test: GetMetadataSearchResults

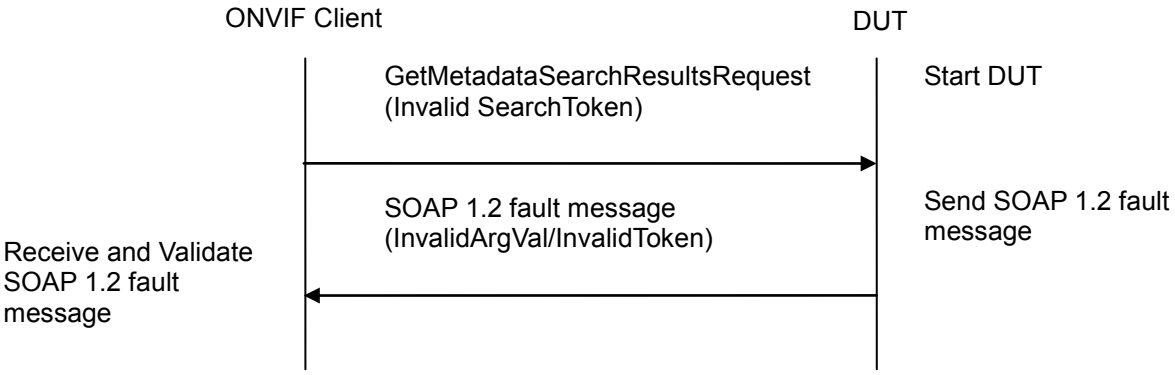
WSDL Reference: search.wsdl

Test Purpose: To verify Get Metadata Search Result with Invalid Search Token.

Pre-Requisite: None

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.

3. ONVIF Client will invoke GetMetadataSearchResultsRequest message (invalid SearchToken).
4. The DUT will generate SOAP 1.2 fault message (**InvalidArgVal/InvalidToken**).

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send SOAP 1.2 fault message.

The DUT sent an incorrect SOAP 1.2 fault message (fault code, namespace, etc.).

Note: Other faults than specified in the test are acceptable, though the specified are preferable.

4.5 PTZ Search

4.5.1 FIND PTZ POSITION – FORWARD AND BACKWARD SEARCH (SEARCH ENDPOINTS EQUAL TO RECORDING ENDPOINTS)

Test Label: Find PTZ Position - Forward and Backward Search (Search Endpoints Equal to Recording Endpoints).

Test Case ID: SEARCH-6-1-8

ONVIF Core Specification Coverage: FindPTZPosition, GetPTZPositionSearchResults, GetRecordingInformation

Command under test: FindPTZPosition, GetPTZPositionSearchResults, GetRecordingInformation

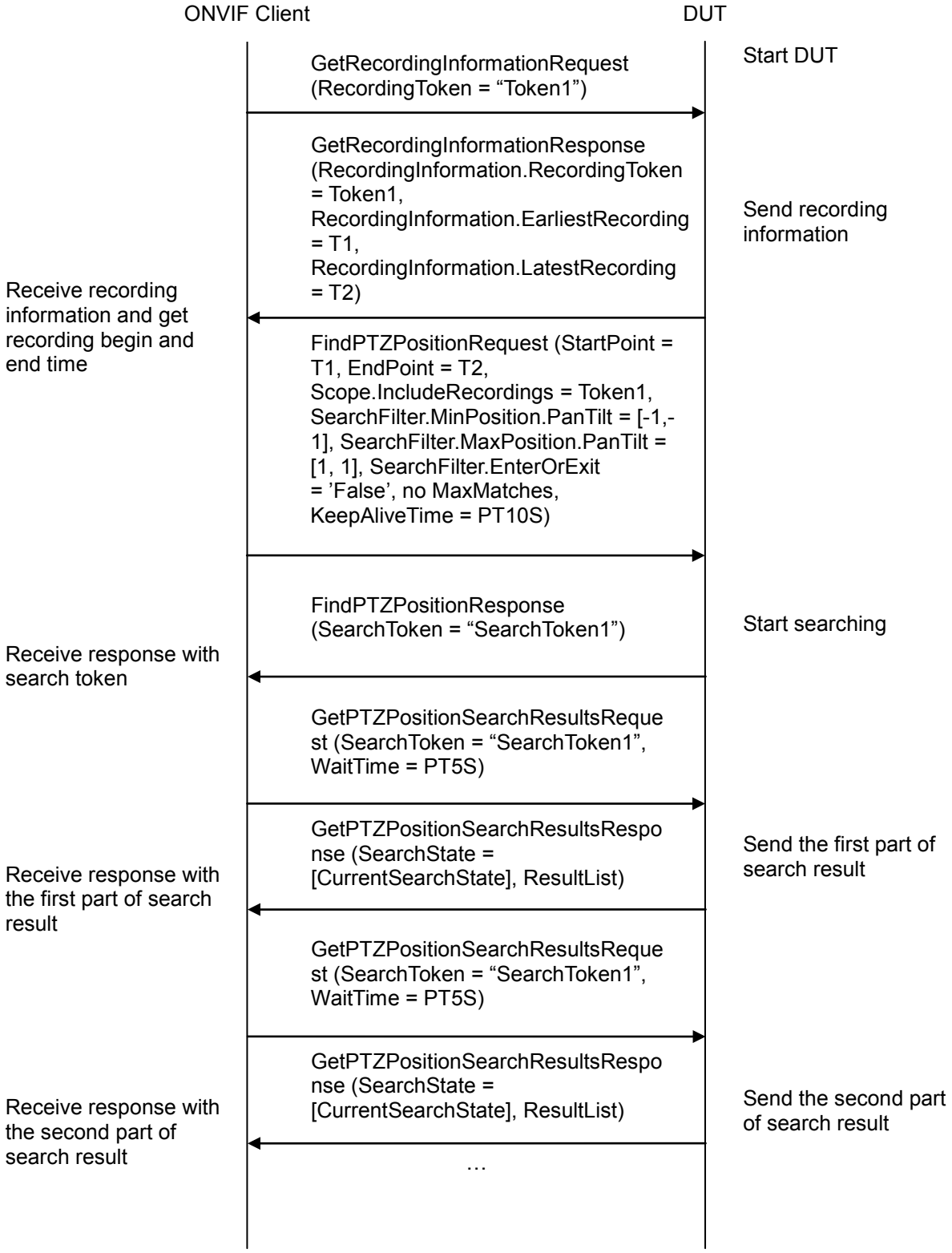
WSDL Reference: search.wsdl

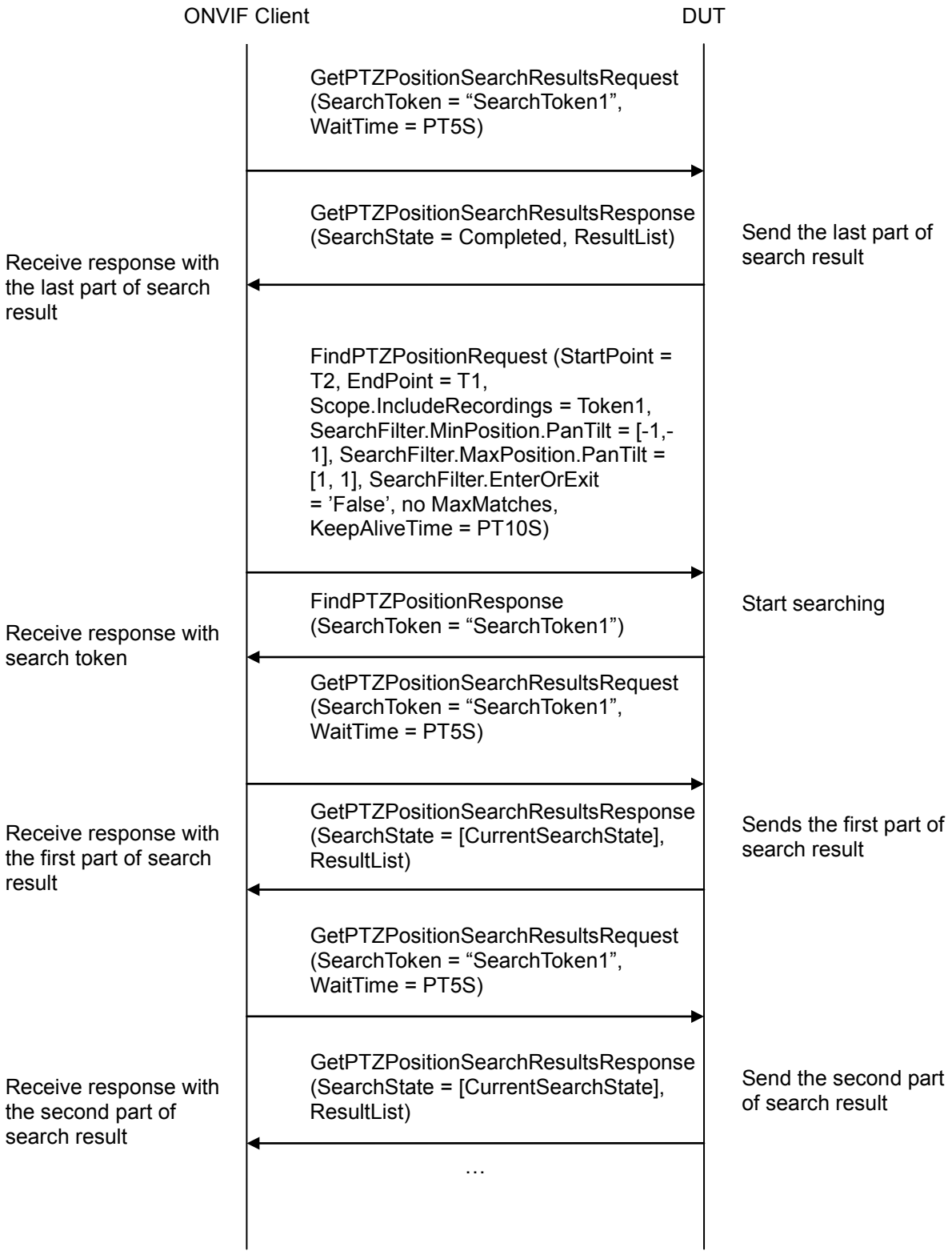
Test Purpose: To verify PTZ position forward and backward search in case the search endpoints are equal to the recording endpoints.

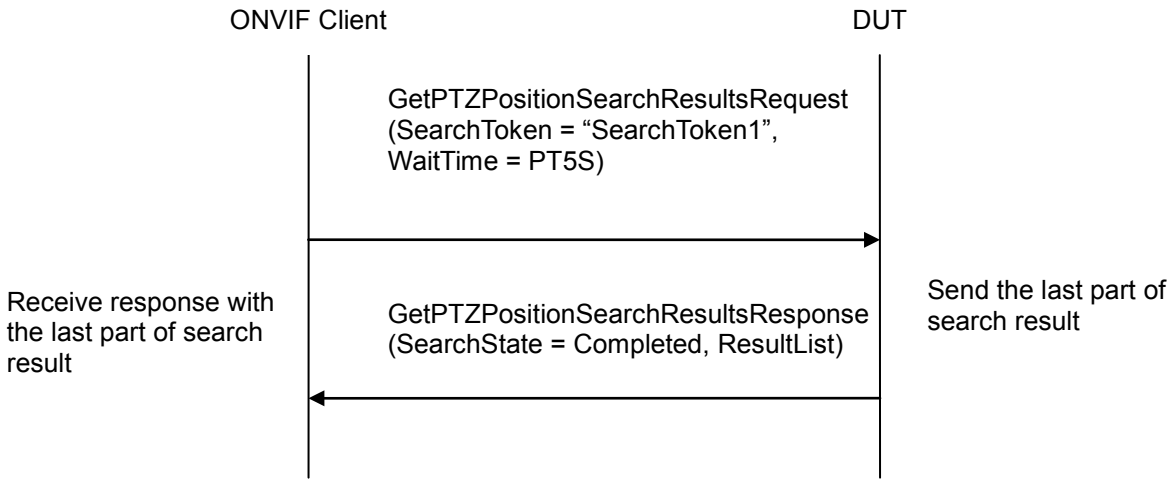
Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details). The recording shall contain PTZ metadata and that the matching PTZ search criterion is present in the recording.

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
FindPTZPositionRequest (StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, no MaxMatches, KeepAliveTime = PT10S)
FindPTZPositionResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…


ONVIF Client
DUT
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = Completed, ResultList)
Send the last part of search result
Receive response with the last part of search result
FindPTZPositionRequest (StartPoint = T2, EndPoint = T1, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, no MaxMatches, KeepAliveTime = PT10S)
FindPTZPositionResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Sends the first part of search result
Receive response with the first part of search result
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token Token1 of recording which contains at least one track with PTZ position data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = “Token1”**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke FindPTZPositionRequest message (**StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, no MaxMatches, KeepAliveTime = PT10S**) to start PTZ positions search session and retrieve SearchToken.
7. Verify the FindPTZPositionResponse message (**SearchToken = “SearchToken1”**) from the DUT.
8. ONVIF Client will invoke GetPTZPositionSearchResultsRequest message (**SearchToken = “SearchToken1”, WaitTime = PT5S**) to get current search result and search state.
9. Verify the GetPTZPositionSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT. Check that time (**ResultList**.**Result**.**Time**) of the search result is inside the search endpoints that were defined in FindPTZPositionRequest message at step 6.
10. Repeat steps 8-9 until SearchState is equal to Completed.
11. ONVIF Client will invoke FindPTZPositionRequest message (**StartPoint = T2, EndPoint = T1, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1],**

SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = 'False', no MaxMatches, KeepAliveTime = PT10S) to start PTZ positions search session and retrieve SearchToken.

12. Verify the FindPTZPositionResponse message (**SearchToken = "SearchToken1"**) from the DUT.
13. ONVIF Client will invoke GetPTZPositionSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
14. Verify the GetPTZPositionSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT. Check that time (**ResultList.Result.Time**) of the search result is inside the search endpoints that were defined in FindPTZPositionRequest message at step 11.
15. Repeat steps 13-14 until SearchState is equal to Completed.
16. Verify that sets of results from GetPTZPositionSearchResultsResponse messages for the first (steps 6-10) and the second (steps 11-15) PTZ position search session are the same.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetPTZPositionSearchResultsResponse message.

The DUT did not send a valid FindPTZPositionResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned PTZ position search results with invalid time (Time is not inside the search endpoints).

The DUT returned invalid Recording token or invalid Track token for PTZ position search results.

The DUT did not return PTZ position search results in ascending order for steps 6-10 (Time of previous result was greater than for the next one or equal to it).

The DUT did not return PTZ position search results in descending order for steps 11-15 (Time of previous result was less than for the next one or equal to it).

The DUT did not return the same set of results for steps 6-10 and for steps 11-15 (see Annex A.9).

Note: If RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse message, then minimum value of Track.DataFrom will be used as **T1**.

Note: If RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message, then maximum value of Track.DataTo will be used as **T2**.

Note: If GetPTZPositionSearchResultsResponse contains responses with Position.PanTilt out of requested range, ONVIF Device Test Tool will report it as warning.

4.5.2 FIND PTZ POSITION – FORWARD AND BACKWARD SEARCH (SEARCH ENDPOINTS OUTSIDE RECORDING ENDPOINTS)

Test Label: Find PTZ Position- Forward and Backward Search (Search Endpoints Outside Recording Endpoints).

Test Case ID: SEARCH-6-1-9

ONVIF Core Specification Coverage: FindPTZPosition, GetPTZPositionSearchResults, GetRecordingInformation

Command under test: FindPTZPosition, GetPTZPositionSearchResults, GetRecordingInformation

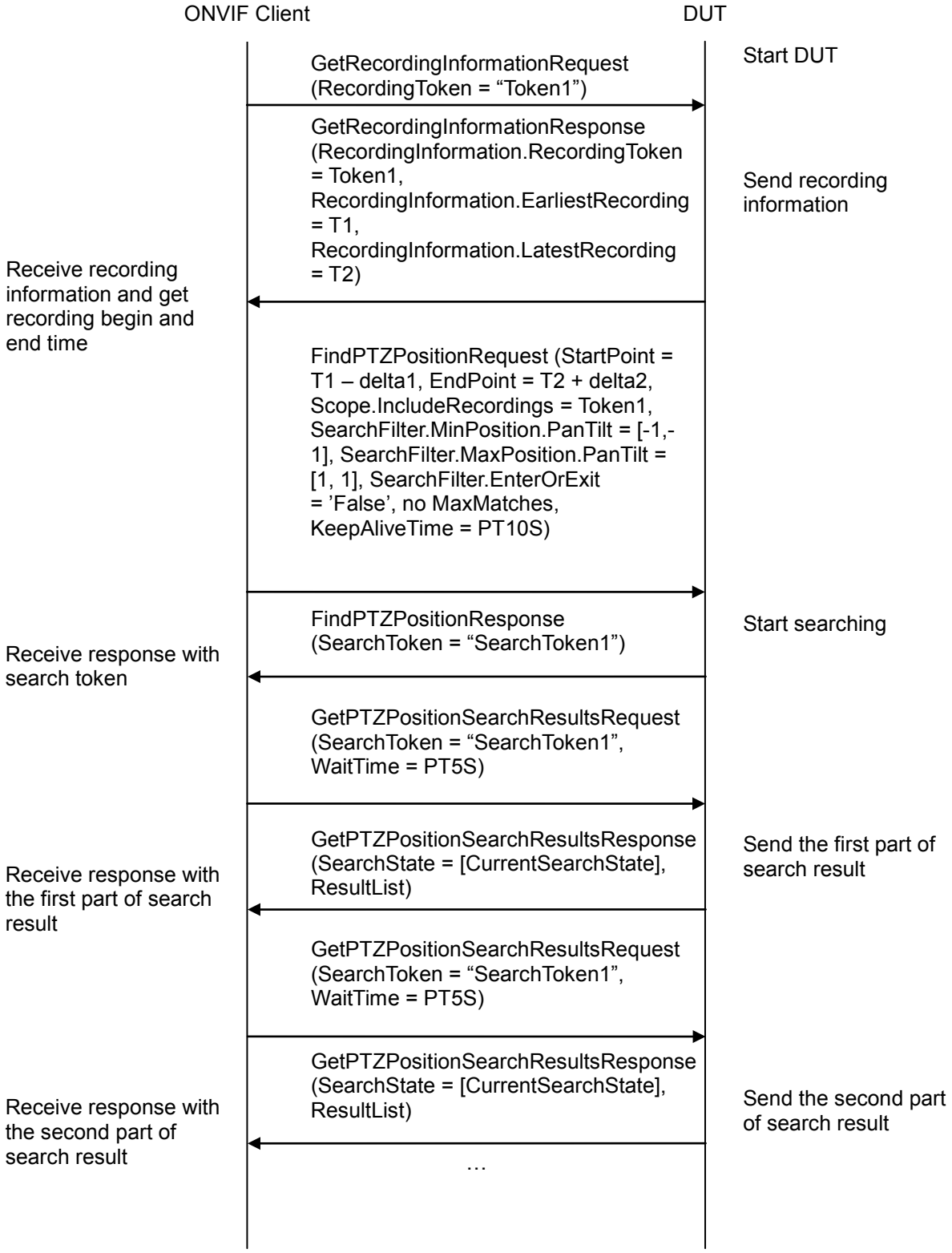
WSDL Reference: search.wsdl

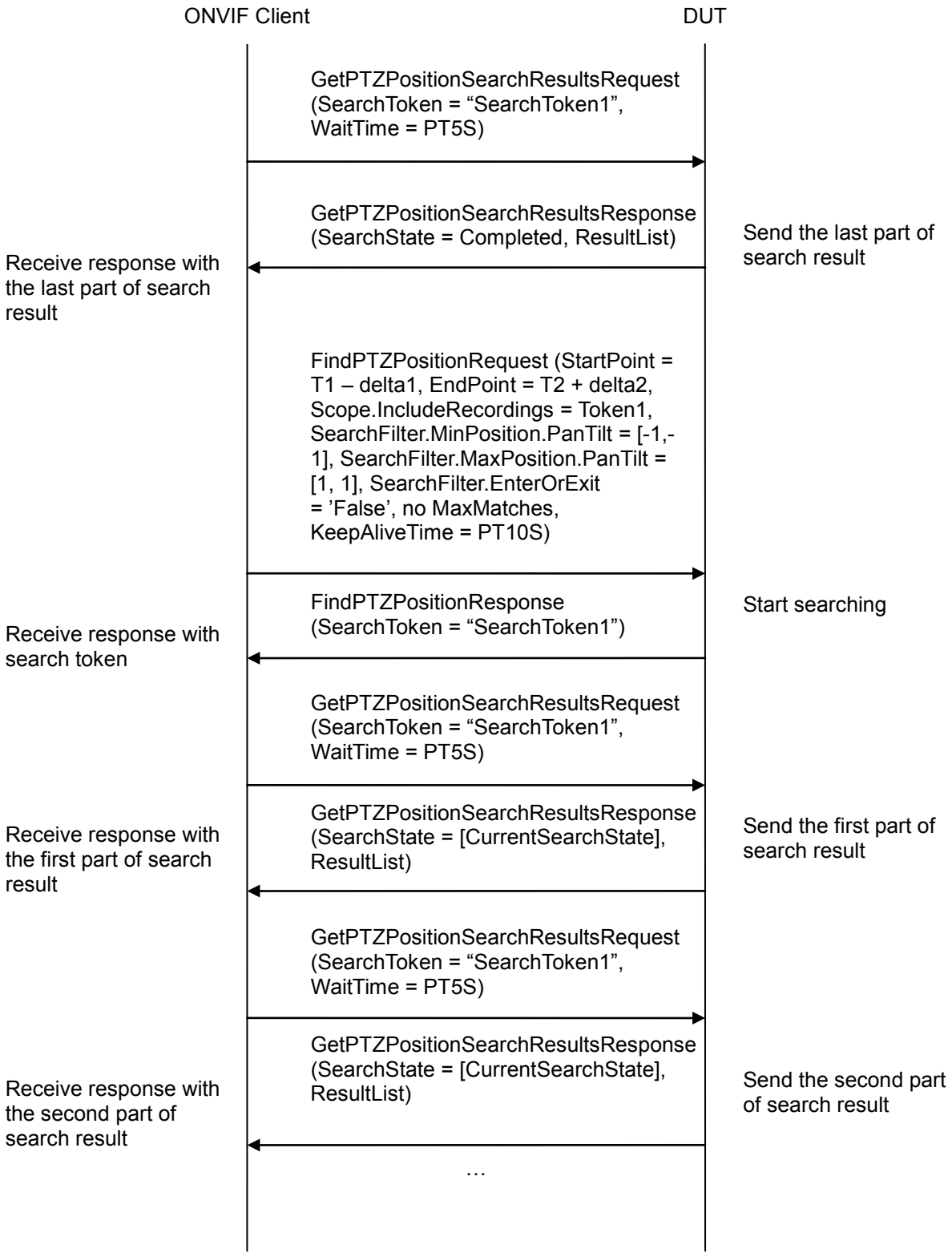
Test Purpose: To verify PTZ position forward and backward search in case the search endpoints are outside the recording endpoints.

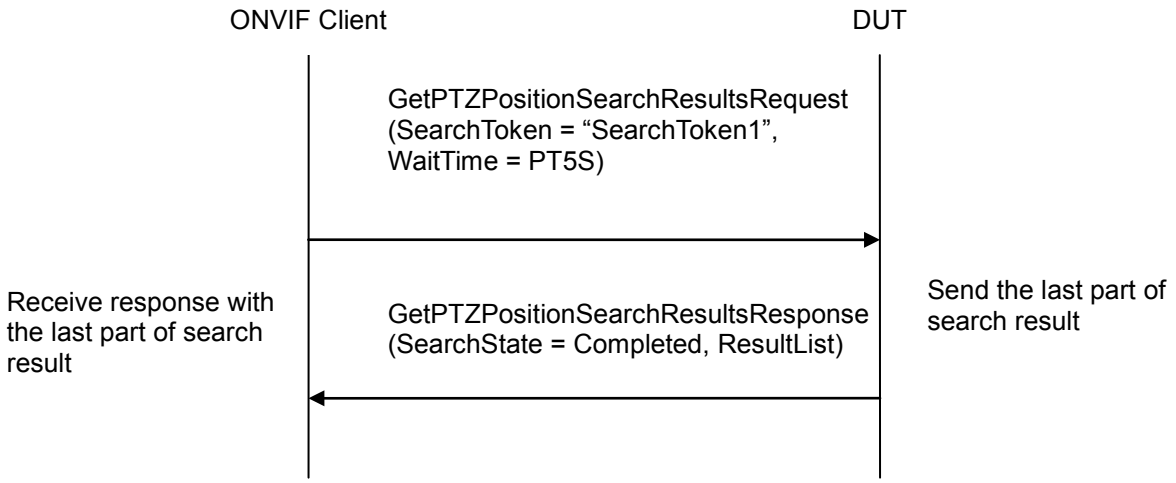
Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details). The recording shall contain PTZ metadata and that the matching PTZ search criterion is present in the recording.

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
Start DUT
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
FindPTZPositionRequest (StartPoint = T1 – delta1, EndPoint = T2 + delta2, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, no MaxMatches, KeepAliveTime = PT10S)
FindPTZPositionResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…


ONVIF Client
DUT
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = Completed, ResultList)
Send the last part of search result
Receive response with the last part of search result
FindPTZPositionRequest (StartPoint = T1 – delta1, EndPoint = T2 + delta2, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, no MaxMatches, KeepAliveTime = PT10S)
FindPTZPositionResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token Token1 of recording which contains at least one track with PTZ position data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = “Token1”**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke FindPTZPositionRequest message (**StartPoint = T1 – delta1, EndPoint = T2 + delta2, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, no MaxMatches, KeepAliveTime = PT10S**) to start PTZ positions search session and retrieve SearchToken.
7. Verify the FindPTZPositionResponse message (**SearchToken = “SearchToken1”**) from the DUT.
8. ONVIF Client will invoke GetPTZPositionSearchResultsRequest message (**SearchToken = “SearchToken1”, WaitTime = PT5S**) to get current search result and search state.
9. Verify the GetPTZPositionSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList)** from the DUT. Check that time (**ResultList.Result.Time**) of the search result is inside the recording endpoints that were defined in GetRecordingInformationResponse at step 5.
10. Repeat steps 8-9 until SearchState is equal to Completed.

11. ONVIF Client will invoke FindPTZPositionRequest message (**StartPoint = T2 + delta2, EndPoint = T1 – delta1, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = 'False', no MaxMatches, KeepAliveTime = PT10S**) to start PTZ positions search session and retrieve SearchToken.
12. Verify the FindPTZPositionResponse message (**SearchToken = "SearchToken1"**) from the DUT.
13. ONVIF Client will invoke GetPTZPositionSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
14. Verify the GetPTZPositionSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultLis**t) from the DUT. Check that time (**ResultList.Result.Time**) of the search result inside the recording endpoints that were defined in GetRecordingInformationResponse at step 5.
15. Repeat steps 13-14 until SearchState is equal to Completed.
16. Verify that sets of results from GetPTZPositionSearchResultsResponse messages for the first (steps 6-10) and the second (steps 11-15) PTZ position search session are the same.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetPTZPositionSearchResultsResponse message.

The DUT did not send a valid FindPTZPositionResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned PTZ position search results with invalid time (Time is not inside the recording endpoints).

The DUT returned invalid Recording token or invalid Track token for PTZ position search results.

The DUT did not return PTZ position search results in ascending order for steps 6-10 (Time of previous result was greater than for the next one or equal to it).

The DUT did not return PTZ position search results in descending order for steps 11-15 (Time of previous result was less than for the next one or equal to it).

The DUT did not return the same set of results for steps 6-10 and for steps 11-15 (see Annex A.9).

Note: If RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse message, then minimum value of Track.DataFrom will be used as **T1**.

Note: If RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message, then maximum value of Track.DataTo will be used as **T2**.

Note: If GetPTZPositionSearchResultsResponse contains responses with Position.PanTilt out of requested range, ONVIF Device Test Tool will report it as warning.

4.5.3 FIND PTZ POSITION – FORWARD AND BACKWARD SEARCH (SEARCH ENDPOINTS INSIDE RECORDING ENDPOINTS)

Test Label: Find PTZ Position- Forward and Backward Search (Search Endpoints Inside Recording Endpoints).

Test Case ID: SEARCH-6-1-10

ONVIF Core Specification Coverage: FindPTZPosition, GetPTZPositionSearchResults, GetRecordingInformation

Command under test: FindPTZPosition, GetPTZPositionSearchResults, GetRecordingInformation

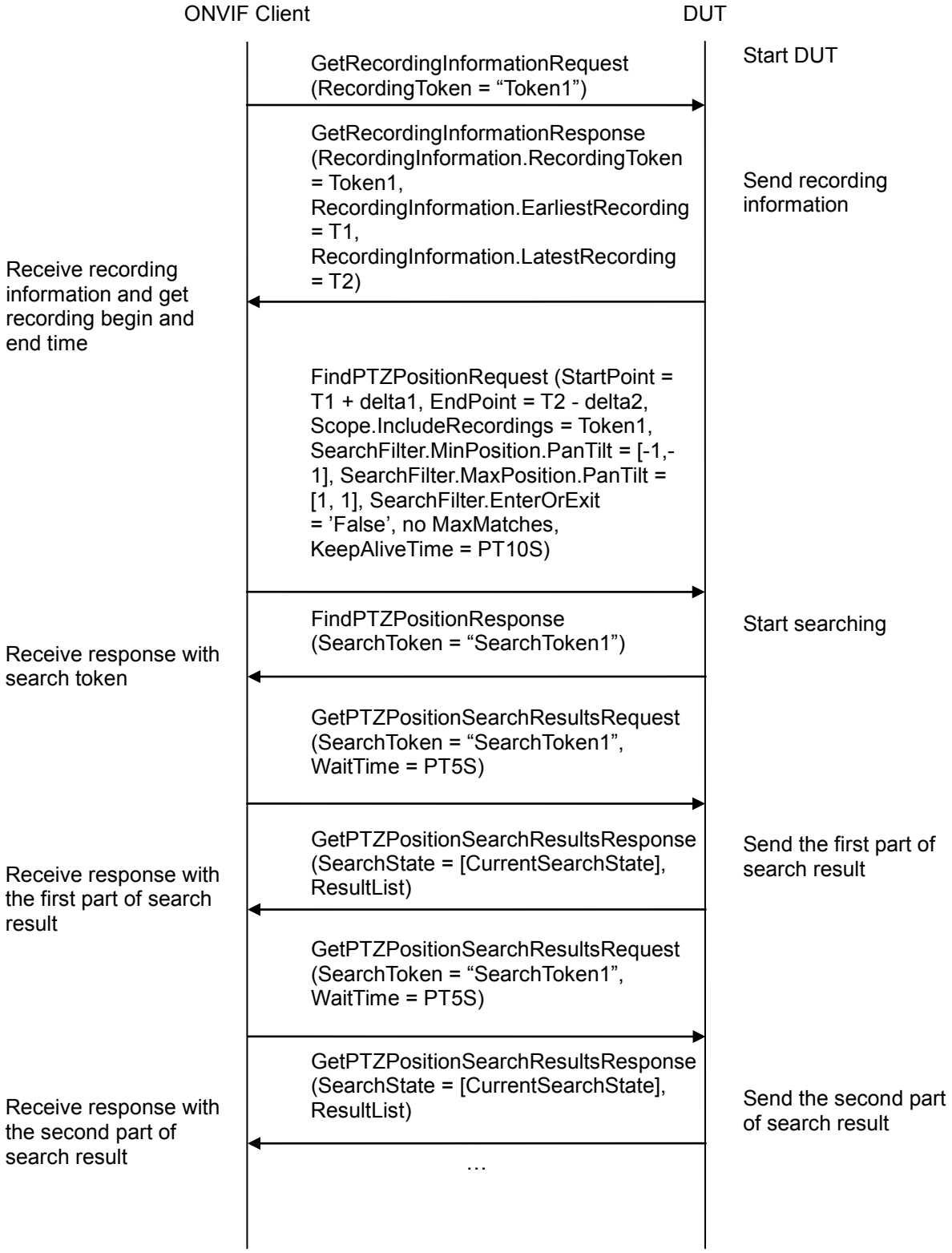
WSDL Reference: search.wsdl

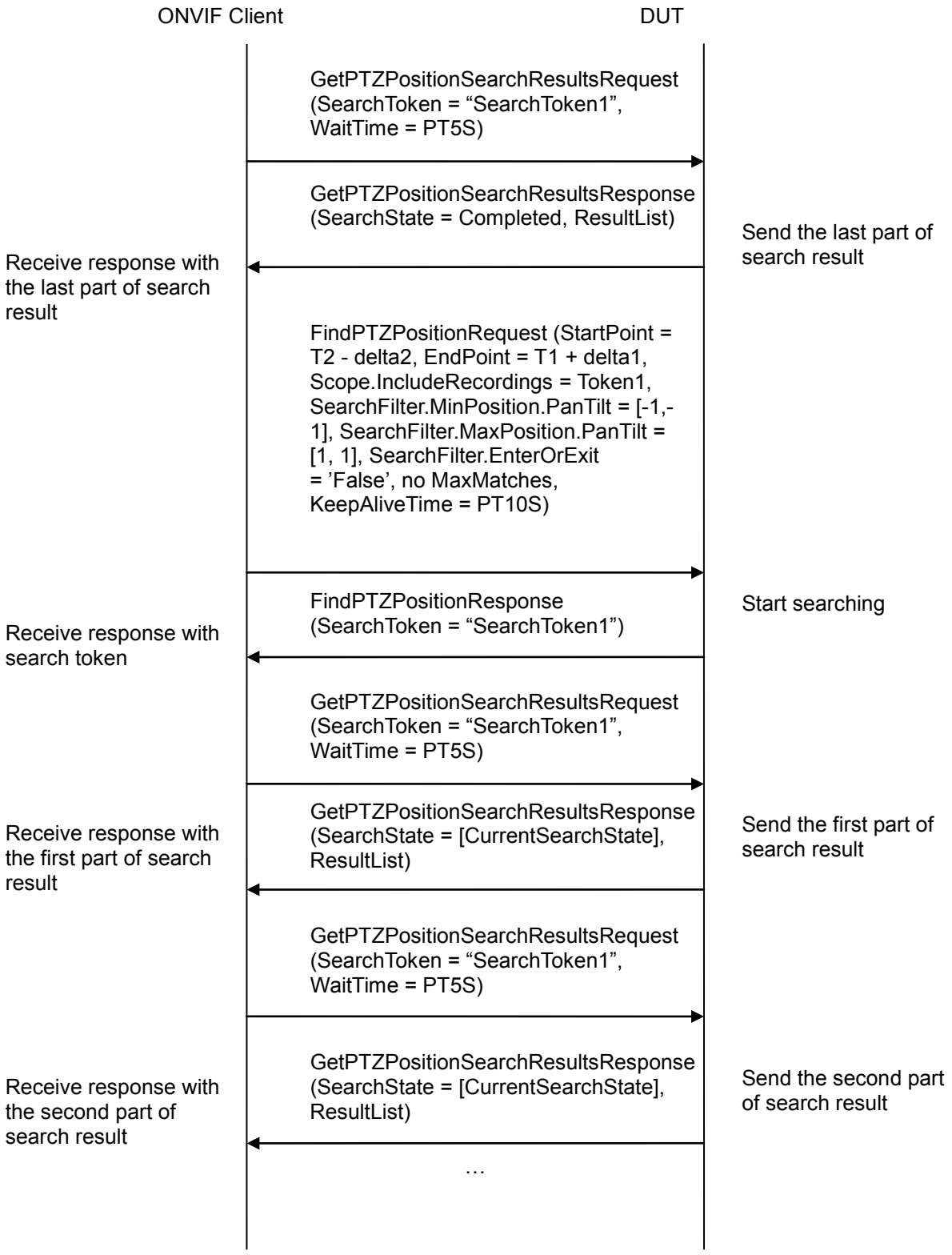
Test Purpose: To verify PTZ position forward and backward search in case the search endpoints are inside the recording endpoints.

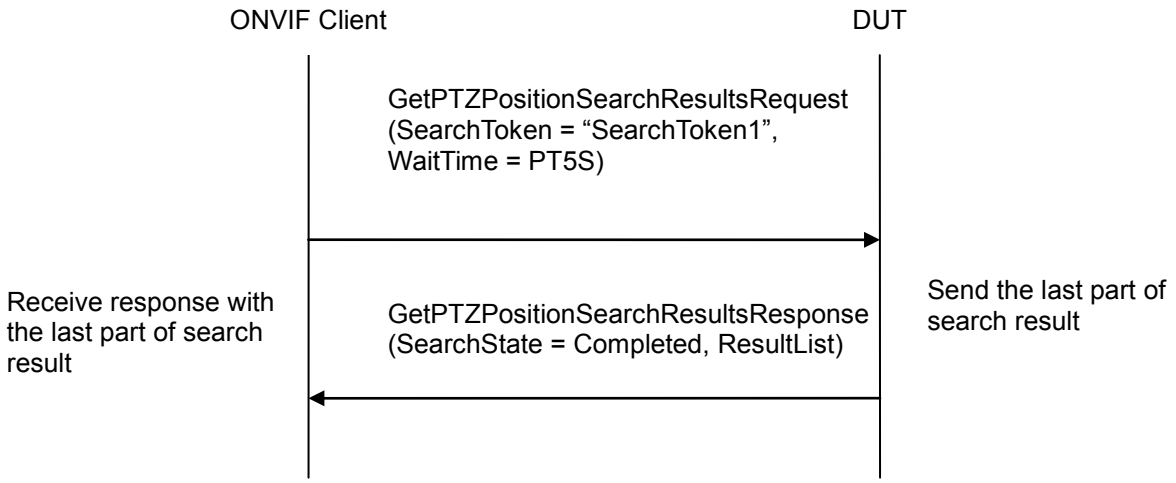
Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details). The recording shall contain PTZ metadata and that the matching PTZ search criterion is present in the recording.

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
Start DUT
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
FindPTZPositionRequest (StartPoint = T1 + delta1, EndPoint = T2 - delta2, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, no MaxMatches, KeepAliveTime = PT10S)
FindPTZPositionResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…


ONVIF Client
DUT
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = Completed, ResultList)
Send the last part of search result
Receive response with the last part of search result
FindPTZPositionRequest (StartPoint = T2 - delta2, EndPoint = T1 + delta1, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, no MaxMatches, KeepAliveTime = PT10S)
FindPTZPositionResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token Token1 of recording which contains at least one track with PTZ position data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = “Token1”**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke FindPTZPositionRequest message (**StartPoint = T1 + delta1, EndPoint = T2 - delta2, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, no MaxMatches, KeepAliveTime = PT10S**) to start PTZ positions search session and retrieve SearchToken.
7. Verify the FindPTZPositionResponse message (**SearchToken = “SearchToken1”**) from the DUT.
8. ONVIF Client will invoke GetPTZPositionSearchResultsRequest message (**SearchToken = “SearchToken1”, WaitTime = PT5S**) to get current search result and search state.
9. Verify the GetPTZPositionSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT. Check that time (**ResultList.Result.Time**) of the search result is inside the search endpoints that were defined in FindPTZPositionRequest message at step 6.
10. Repeat steps 8-9 until SearchState is equal to Completed.

11. ONVIF Client will invoke FindPTZPositionRequest message (**StartPoint = T2 - delta2, EndPoint = T1 + delta1, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = 'False', no MaxMatches, KeepAliveTime = PT10S**) to start PTZ positions search session and retrieve SearchToken.
12. Verify the FindPTZPositionResponse message (**SearchToken = "SearchToken1")** from the DUT.
13. ONVIF Client will invoke GetPTZPositionSearchResultsRequest message (**SearchToken = "SearchToken1", WaitTime = PT5S**) to get current search result and search state.
14. Verify the GetPTZPositionSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT. Check that time (**ResultList.Result.Time**) of the search result is inside the search endpoints that were defined in FindPTZPositionRequest message at step 11.
15. Repeat steps 13-14 until SearchState is equal to Completed.
16. Verify that sets of results from GetPTZPositionSearchResultsResponse messages for the first (steps 6-10) and the second (steps 11-15) PTZ position search session are the same.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetPTZPositionSearchResultsResponse message.

The DUT did not send a valid FindPTZPositionResponse message.

The DUT did not reach the Completed state for the search session.

The DUT returned PTZ position search results with invalid time (Time is not inside the search endpoints).

The DUT returned invalid Recording token or invalid Track token for PTZ position search results.

The DUT did not return PTZ position search results in ascending order for steps 6-10 (Time of previous result was greater than for the next one or equal to it).

The DUT did not return PTZ position search results in descending order for steps 11-15 (Time of previous result was less than for the next one or equal to it).

The DUT did not return the same set of results for steps 6-10 and for steps 11-15 (see Annex A.9).

Note: If RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse message, then minimum value of Track.DataFrom will be used as **T1**.

Note: If RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message, then maximum value of Track.DataTo will be used as **T2**.

Note: If GetPTZPositionSearchResultsResponse contains responses with Position.PanTilt out of requested range, ONVIF Device Test Tool will report it as warning.

4.5.4 FIND PTZ POSITION (MAXMATCHES = 1)

Test Label: Find PTZ Position- MaxMatches = 1.

Test Case ID: SEARCH-6-1-11

ONVIF Core Specification Coverage: FindPTZPosition, GetPTZPositionSearchResults, GetRecordingInformation

Command under test: FindPTZPosition, GetPTZPositionSearchResults, GetRecordingInformation

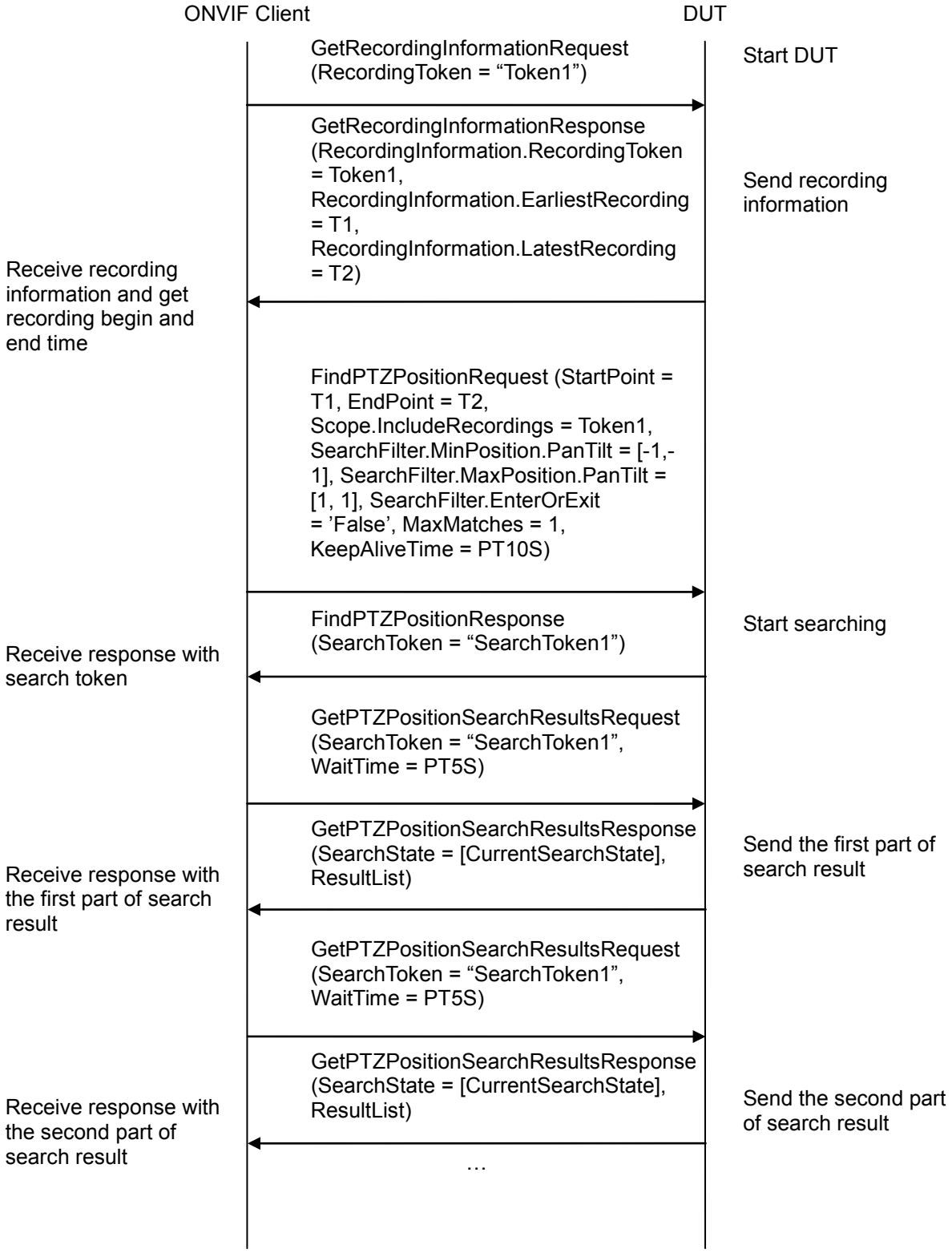
WSDL Reference: search.wsdl

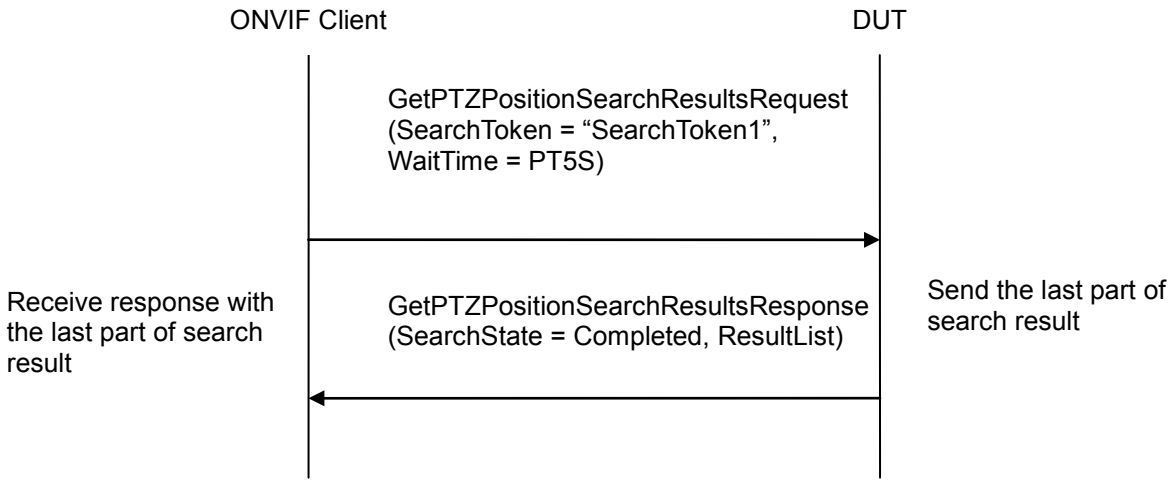
Test Purpose: To verify PTZ position search in case MaxMatches = 1.

Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details). The recording shall contain PTZ metadata and that the matching PTZ search criterion is present in the recording.

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
Start DUT
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
FindPTZPositionRequest (StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, MaxMatches = 1, KeepAliveTime = PT10S)
FindPTZPositionResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token Token1 of recording which contains at least one track with PTZ position data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = “Token1”**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke FindPTZPositionRequest message (**StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, MaxMatches = 1, KeepAliveTime = PT10S**) to start PTZ positions search session and retrieve SearchToken.
7. Verify the FindPTZPositionResponse message (**SearchToken = “SearchToken1”**) from the DUT.
8. ONVIF Client will invoke GetPTZPositionSearchResultsRequest message (**SearchToken = “SearchToken1”, WaitTime = PT5S**) to get current search result and search state.
9. Verify the GetPTZPositionSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT. Check that time (**ResultList.Result.Time**) of the search result is inside the search endpoints that were defined in FindPTZPositionRequest message at step 6.
10. Repeat steps 8-9 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetPTZPositionSearchResultsResponse message.

The DUT did not send a valid FindPTZPositionResponse message.

The DUT returned PTZ position search results with invalid time (Time is not inside the search endpoints).

The DUT returned invalid Recording token or invalid Track token for PTZ position search results.

The DUT did not reach Completed state for the search session after one PTZPosition was returned in GetPTZPositionSearchResultsResponse.

The DUT returned more than one PTZ position in results.

Note: If RecordingInformation.EarliestRecording is not included in GetRecordingInformationResponse message, then minimum value of Track.DataFrom will be used as **T1**.

Note: If RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message, then maximum value of Track.DataTo will be used as **T2**.

Note: If GetPTZPositionSearchResultsResponse contains responses with Position.PanTilt out of requested range, ONVIF Device Test Tool will report it as warning.

4.5.5 FIND PTZ POSITIONS USING RECORDING INFORMATION FILTER

Test Label: Find PTZ Positions Command using Recording Information Filter.

Test Case ID: SEARCH-6-1-12

ONVIF Core Specification Coverage: FindPTZPosition, GetPTZPositionSearchResult, GetRecordingInformation

Command under test: FindPTZPosition, GetPTZPositionSearchResult, GetRecordingInformation

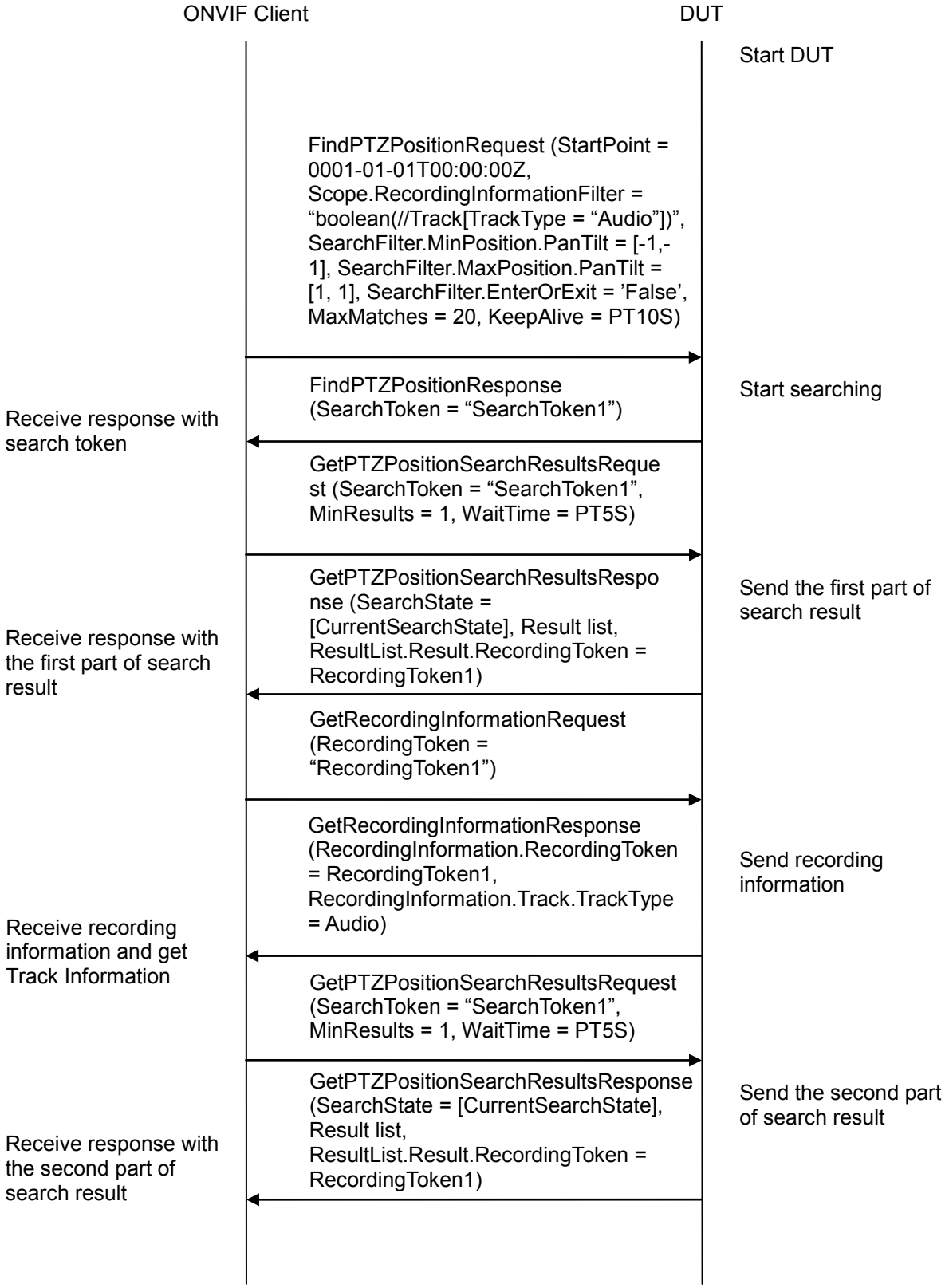
WSDL Reference: search.wsdl

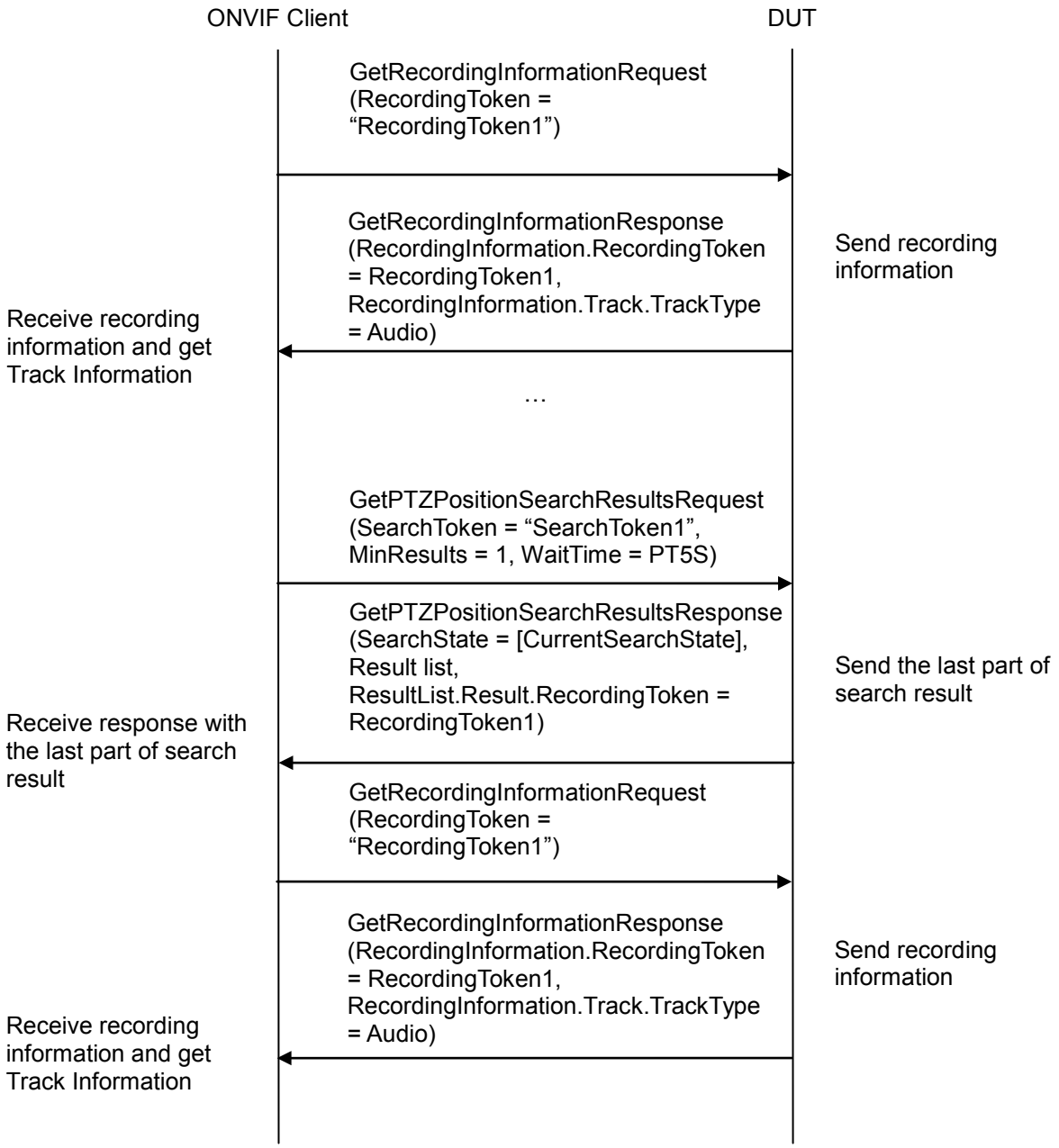
Test Purpose: To verify FindPTZPosition with the specified RecordingInformationFilter (filter to find only recordings with audio track).

Pre-Requisite: At least one recording with metadata track exists on the DUT (see A.1 for more details). The recording shall contain PTZ metadata and that the matching PTZ search criterion is present in the recording.

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
FindPTZPositionRequest (StartPoint = 0001-01-01T00:00:00Z, Scope.RecordingInformationFilter = “boolean(//Track[TrackType = “Audio”])”, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, MaxMatches = 20, KeepAlive = PT10S)
FindPTZPositionResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, MinResults = 1, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], Result list, ResultList.Result.RecordingToken = RecordingToken1)
Send the first part of search result
Receive response with the first part of search result
GetRecordingInformationRequest (RecordingToken = “RecordingToken1”)
GetRecordingInformationResponse (RecordingInformation.RecordingToken = RecordingToken1, RecordingInformation.Track.TrackType = Audio)
Send recording information
Receive recording information and get Track Information
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, MinResults = 1, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], Result list, ResultList.Result.RecordingToken = RecordingToken1)
Send the second part of search result
Receive response with the second part of search result



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke FindPTZPositionRequest message (**StartPoint = 0001-01-01T00:00:00Z, Scope.RecordingInformationFilter = "boolean(//Track[TrackType = "Audio"])", SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = 'False', MaxMatches = 20, KeepAlive = PT10S**) to start PTZ positions search session and retrieve SearchToken.

4. Verify the FindPTZPositionResponse message (**SearchToken = "SearchToken1**") from the DUT.
5. ONVIF Client will invoke GetPTZPositionSearchResultsRequest message (**SearchToken = "SearchToken1", MinResults = 1, WaitTime = PT5S**) to get current search result and search state.
6. Verify the GetPTZPositionSearchResultsResponse message (**SearchState = [CurrentSearchState], Result list, ResultList.Result.RecordingToken = RecordingToken1, ResultList.Result.Time**) from the DUT.
7. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = "RecordingToken1"**) to retrieve information about Recording.
8. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = RecordingToken1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2, RecordingInformation.Track.TrackType = Audio**). Check that this recording contains at least one track with Audio. Check that time (**ResultList.Result.Time**) of search result returned at step 6 is inside the Recording endpoints.
9. Repeat steps 5-8 until SearchState is equal to Completed.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetPTZPositionSearchResultsResponse message.

The DUT did not send a valid FindPTZPositionResponse message.

The DUT returned PTZ position search results with invalid time (ResultList.Result.Time is not inside the Recording endpoints).

The DUT returned Recordings without Tracks with TrackType equal to "Audio".

The DUT did not reach the Completed state for the search session.

Note: The DUT could return no result at step 6 if it has no recordings with audio track.

Note: If GetPTZPositionSearchResultsResponse contains responses with Position.PanTilt out of requested range, ONVIF Device Test Tool will report it as warning.

4.5.6 FIND PTZ POSITION – SEARCHING IN A CERTAIN POSITION

Test Label: Find PTZ Positions applying the specific Position Filter

Test Case ID: SEARCH-6-1-13

ONVIF Core Specification Coverage: FindPTZPosition, GetPTZPositionSearchResult, GetRecordingInformation

Command under test: FindPTZPosition, GetPTZPositionSearchResult, GetRecordingInformation

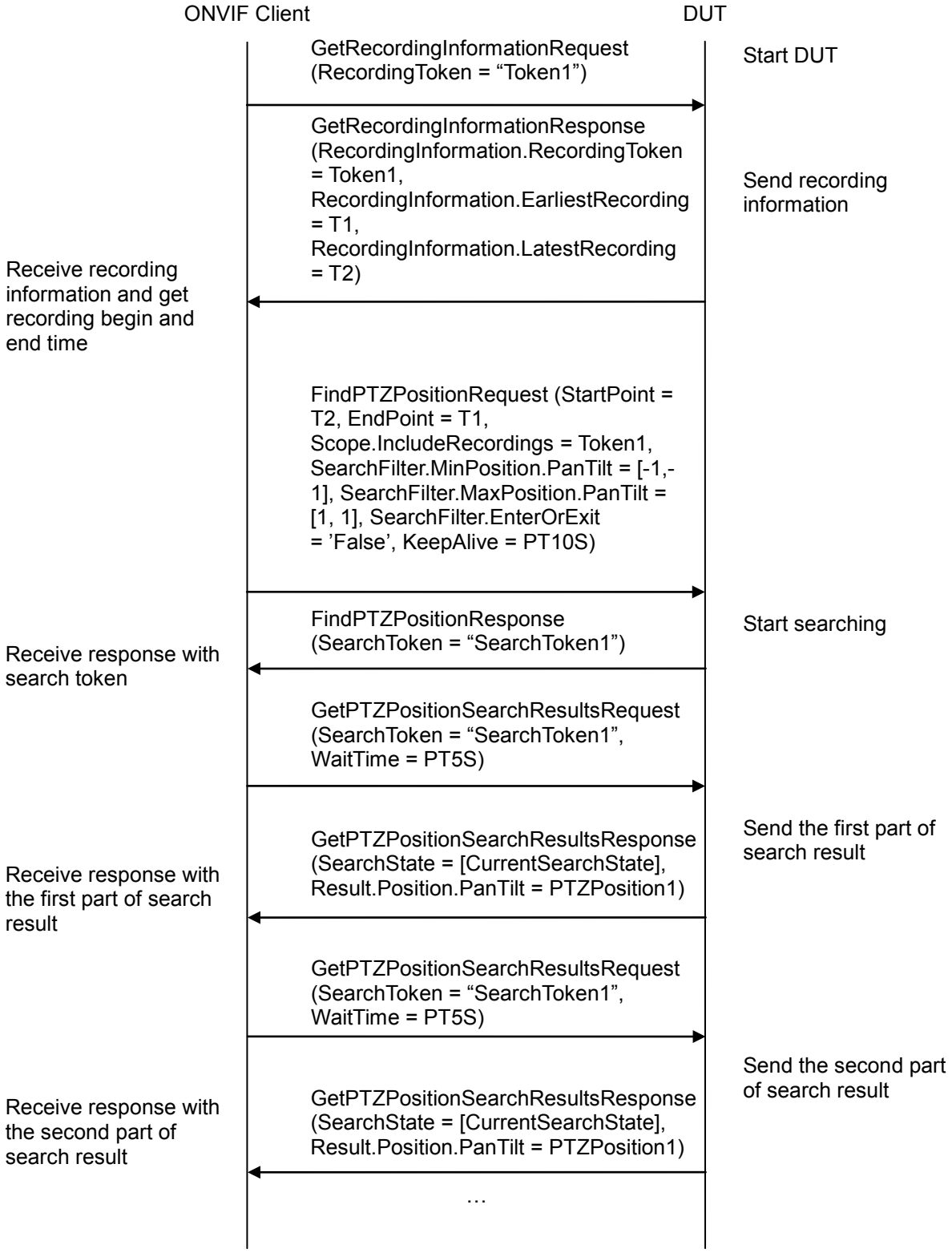
WSDL Reference: search.wsdl

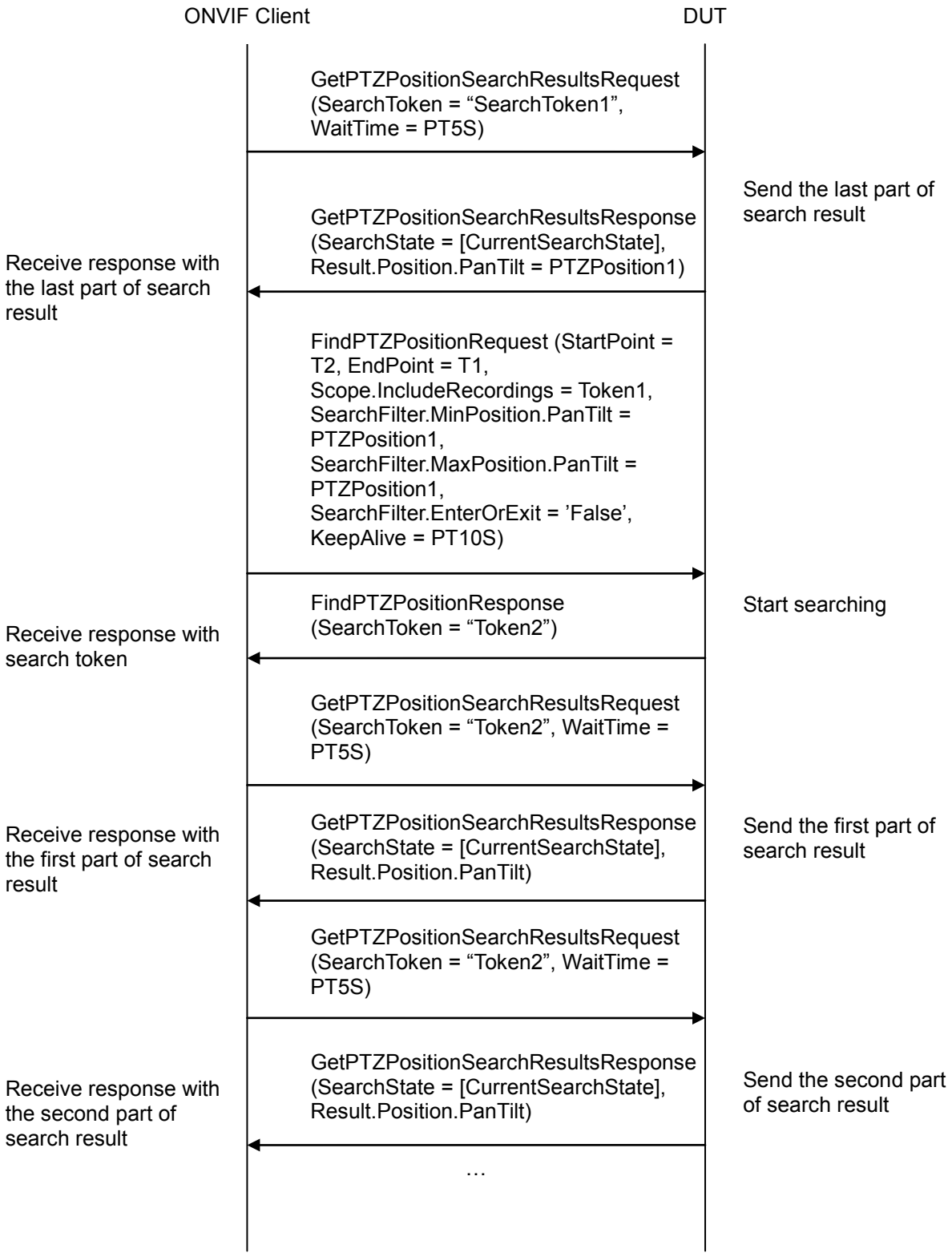
Test Purpose: To verify FindPTZPosition with specified SearchFilter (filter that uses known PTZPosition).

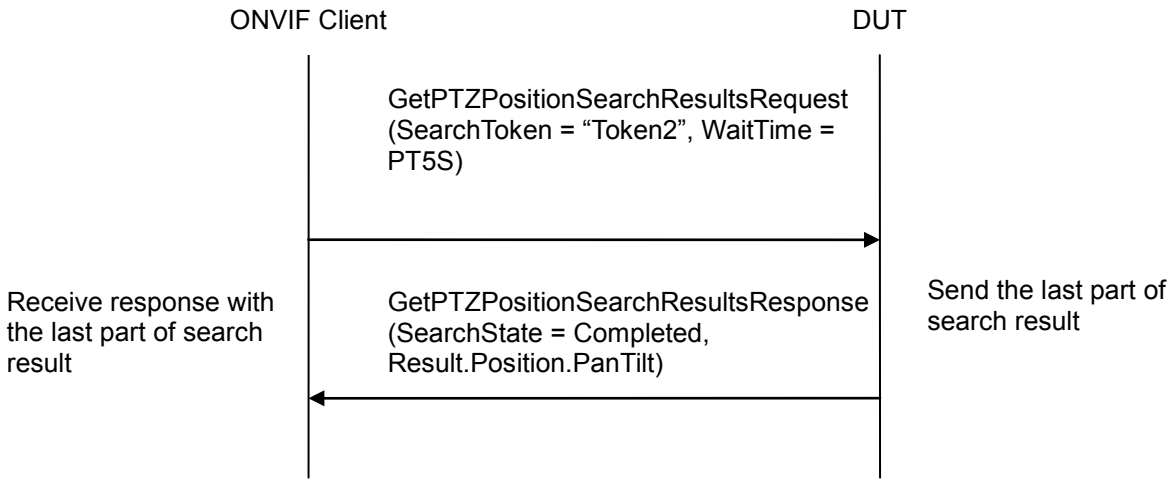
Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details). The recording shall contain PTZ metadata and that the matching PTZ search criterion is present in the recording.

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
Start DUT
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
FindPTZPositionRequest (StartPoint = T2, EndPoint = T1, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, KeepAlive = PT10S)
FindPTZPositionResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], Result.Position.PanTilt = PTZPosition1)
Send the first part of search result
Receive response with the first part of search result
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
Send the second part of search result
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], Result.Position.PanTilt = PTZPosition1)
Receive response with the second part of search result
…


ONVIF Client
DUT
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
Send the last part of search result
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], Result.Position.PanTilt = PTZPosition1)
Receive response with the last part of search result
FindPTZPositionRequest (StartPoint = T2, EndPoint = T1, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = PTZPosition1, SearchFilter.MaxPosition.PanTilt = PTZPosition1, SearchFilter.EnterOrExit = ’False’, KeepAlive = PT10S)
Start searching
FindPTZPositionResponse (SearchToken = “Token2”)
Receive response with search token
GetPTZPositionSearchResultsRequest (SearchToken = “Token2”, WaitTime = PT5S)
Send the first part of search result
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], Result.Position.PanTilt)
Receive response with the first part of search result
GetPTZPositionSearchResultsRequest (SearchToken = “Token2”, WaitTime = PT5S)
Send the second part of search result
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], Result.Position.PanTilt)
Receive response with the second part of search result
…



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token Token1 of recording which contains at least one track with PTZ position data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = “Token1”**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke FindPTZPositionRequest message (**StartPoint = T2, EndPoint = T1, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, KeepAlive = PT10S**) to start PTZ positions search session and retrieve SearchToken.
7. Verify the FindPTZPositionResponse message (**SearchToken = “Token1”**) from the DUT.
8. ONVIF Client will invoke GetPTZPositionSearchResultsRequest message (**SearchToken = “Token1”, MinResults = 1, WaitTime = PT5S**) to get current search result and search state.
9. Verify the GetPTZPositionSearchResultsResponse message (**SearchState = [CurrentSearchState], Result.Position.PanTilt = PTZPosition1**) from the DUT. Check that time (ResultList.Result.Time) of the search result is inside the search endpoints that were defined in FindPTZPositionRequest message at step 6.
10. Repeat steps 8-9 until SearchState is equal to Completed.
11. ONVIF Client will invoke FindPTZPositionRequest message (**StartPoint = T2, EndPoint = T1, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = PTZPosition1, SearchFilter.MaxPosition.PanTilt = PTZPosition1,**

SearchFilter.EnterOrExit = 'False', KeepAlive = PT10S) to start a PTZ position search session and retrieve SearchToken.

12. Verify the FindPTZPositionResponse message (**SearchToken = "Token2"**) from the DUT.
13. ONVIF Client will invoke GetPTZPositionSearchResultsRequest message (**SearchToken = "Token1", MinResults = 1, WaitTime = PT5S**) to get current search result and search state.
14. Verify the GetPTZPositionSearchResultsResponse message (**SearchState = [CurrentSearchState], Result.Position.PanTilt)** from the DUT. Check that time (**ResultList.Result.Time**) of the search result is inside the search endpoints that were defined in FindPTZPositionRequest message at step 11.
15. Repeat steps 13-14 until SearchState is equal to Completed.
16. Check search results: The Result.Position.PanTilt shall be the same as PTZPosition1.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingSearchResultsResponse message.

The DUT did not send a valid FindPTZPositionResponse message.

The DUT returned PTZ position search results with invalid time (Time is not inside the search endpoints).

The DUT returned invalid Recording token or invalid Track token for PTZ position search results.

The DUT did not reach the Completed state for the search session.

The DUT returned at step 14 the Position that differs from PTZPosition1.

Note: If GetPTZPositionSearchResultsResponse contains responses with Position.PanTilt out of requested range, ONVIF Device Test Tool will report it as warning.

4.5.7 GET PTZ POSITION SEARCH RESULTS WITH INVALID SEARCHTOKEN

Test Label: Get PTZ Position Search Result with Invalid SearchToken.

Test Case ID: SEARCH-6-1-7

ONVIF Core Specification Coverage: GetPTZPositionSearchResults

Command under test: GetPTZPositionSearchResults

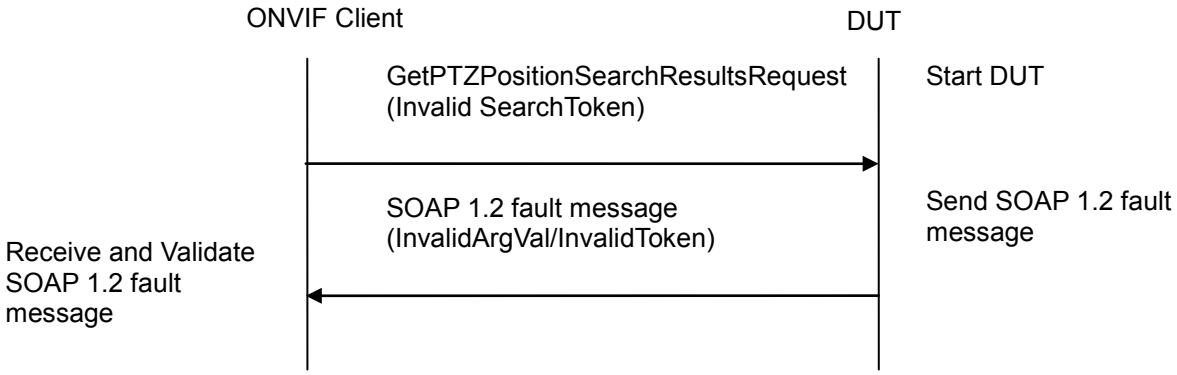
WSDL Reference: search.wsdl

Test Purpose: To verify Get PTZ Position Search Result with Invalid Search Token.

Pre-Requisite: None

Test Configuration: ONVIF Client and DUT

Test Sequence:



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke GetPTZPositionSearchResultsRequest message (invalid SearchToken).
4. The DUT will generate SOAP 1.2 fault message (InvalidArgVal/InvalidToken).

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send SOAP 1.2 fault message.

The DUT sent an incorrect SOAP 1.2 fault message (fault code, namespace, etc.).

Note: Other faults than specified in the test are acceptable, though the specified are preferable.

4.6 Media Attributes

4.6.1 GET MEDIA ATTRIBUTES – PTZ MEDIA ATTRIBUTES

Test Label: Get Media Attributes – PTZ Media Attributes.

Test Case ID: SEARCH-7-1-1

ONVIF Core Specification Coverage: GetMediaAttributes

Command under test: GetMediaAttributes

WSDL Reference: search.wsdl

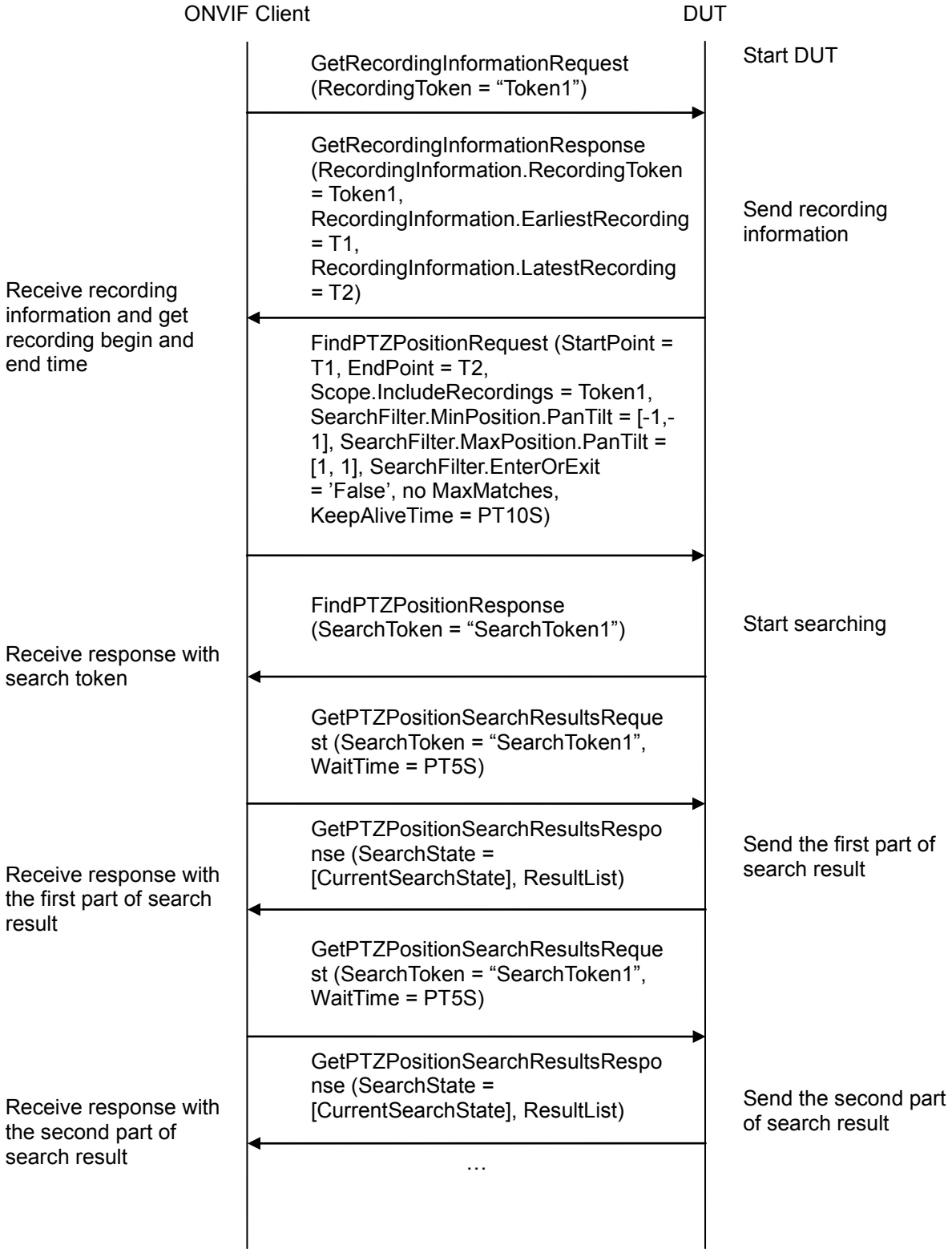
Test Purpose: To verify PTZ Media Attributes.

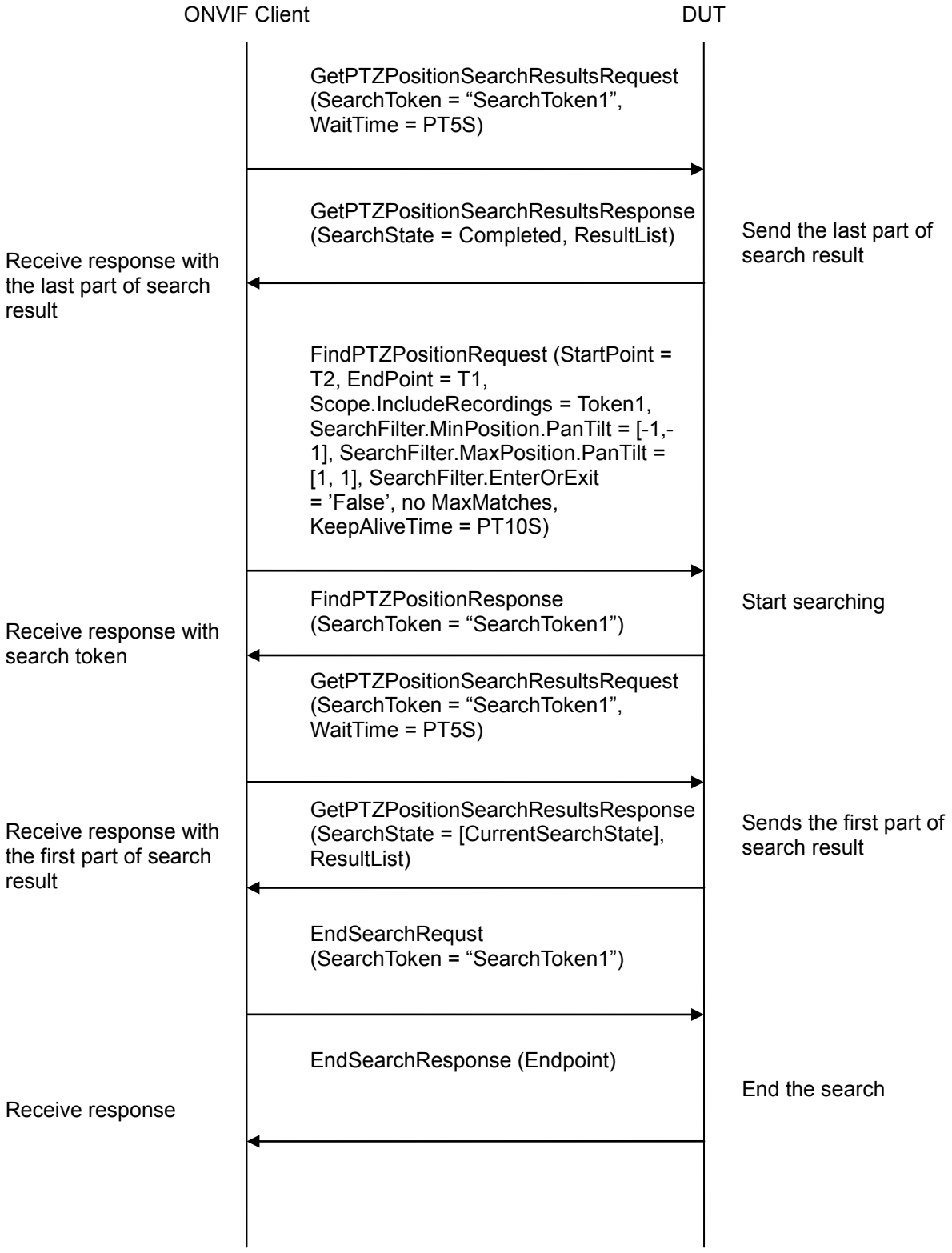
Pre-Requisite: At least one recording exists on the DUT (see A.1 for more details). The recording

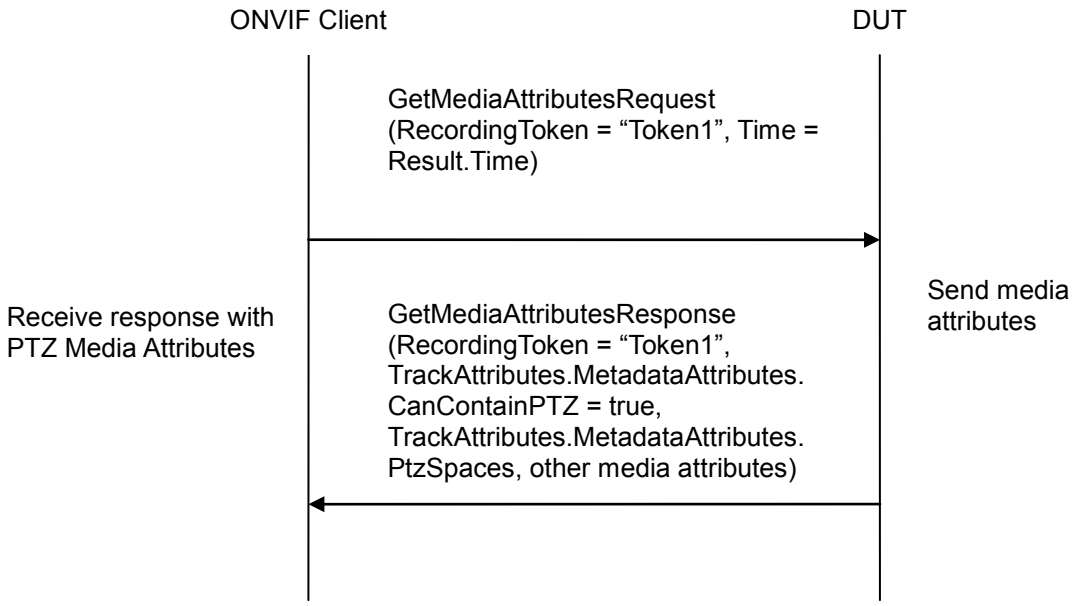
shall contain PTZ metadata and that the matching PTZ search criterion is present in the recording.

Test Configuration: ONVIF Client and DUT

Test Sequence:


ONVIF Client
DUT
Start DUT
GetRecordingInformationRequest (RecordingToken = “Token1”)
GetRecordingInformationResponse (RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2)
Send recording information
Receive recording information and get recording begin and end time
FindPTZPositionRequest (StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, no MaxMatches, KeepAliveTime = PT10S)
FindPTZPositionResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the first part of search result
Receive response with the first part of search result
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Send the second part of search result
Receive response with the second part of search result
…


ONVIF Client
DUT
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = Completed, ResultList)
Send the last part of search result
Receive response with the last part of search result
FindPTZPositionRequest (StartPoint = T2, EndPoint = T1, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, no MaxMatches, KeepAliveTime = PT10S)
FindPTZPositionResponse (SearchToken = “SearchToken1”)
Start searching
Receive response with search token
GetPTZPositionSearchResultsRequest (SearchToken = “SearchToken1”, WaitTime = PT5S)
GetPTZPositionSearchResultsResponse (SearchState = [CurrentSearchState], ResultList)
Sends the first part of search result
Receive response with the first part of search result
EndSearchRequst (SearchToken = “SearchToken1”)
EndSearchResponse (Endpoint)
End the search
Receive response



Test Procedure:

1. Start an ONVIF Client.
2. Start the DUT.
3. Get token Token1 of recording which contains at least one track with PTZ position data from the DUT.
4. ONVIF Client will invoke GetRecordingInformationRequest message (**RecordingToken = “Token1”**) to retrieve information about Recording.
5. Verify the GetRecordingInformationResponse message (**RecordingInformation.RecordingToken = Token1, RecordingInformation.EarliestRecording = T1, RecordingInformation.LatestRecording = T2**).
6. ONVIF Client will invoke FindPTZPositionRequest message (**StartPoint = T1, EndPoint = T2, Scope.IncludeRecordings = Token1, SearchFilter.MinPosition.PanTilt = [-1,-1], SearchFilter.MaxPosition.PanTilt = [1, 1], SearchFilter.EnterOrExit = ’False’, no MaxMatches, KeepAliveTime = PT10S**) to start PTZ positions search session and retrieve SearchToken.
7. Verify the FindPTZPositionResponse message (**SearchToken = “SearchToken1”**) from the DUT.
8. ONVIF Client will invoke GetPTZPositionSearchResultsRequest message (**SearchToken = “SearchToken1”, WaitTime = PT5S**) to get current search result and search state.
9. Verify the GetPTZPositionSearchResultsResponse message (**SearchState = [CurrentSearchState], ResultList**) from the DUT.
10. Repeat steps 8-9 until SearchState is equal to Completed or at least one Result was received.

11. If SearchState after step 10 was not Completed, ONVIF Client will invoke EndSearchRequst message (**SearchToken = "SearchToken1"**) to stop searching. Otherwise if Completed state was reached, but no Result was received, fail the test and skip other steps.
12. Select one of received Result and use it for other steps.
13. ONVIF Client will invoke GetMediaAttributesRequest message (**RecordingToken = "Token1", Time = Result.Time**) to media attributes with PTZ media attributes.
14. Verify the GetMediaAttributesResponse message (**RecordingToken = "Token1", TrackAttributes.MetadataAttributes.CanContainPTZ = true, TrackAttributes.MetadataAttributes.PtzSpaces,** other media attributes) from the DUT.
15. Verify that TrackAttributes.MetadataAttributes.CanContainPTZ is equal to true for the Track with TrackInformation.TrackToken = Result.TrackToken.
16. If Prfile G is claimed as supported by the DUT, verify that TrackAttributes.MetadataAttributes.PtzSpaces for the Track with TrackInformation.TrackToken = Result.TrackToken contains PanTilt Position Generic namespace, if Result contains Position.PanTilt.
17. If Prfile G is claimed as supported by the DUT, verify that TrackAttributes.MetadataAttributes.PtzSpaces for the Track with TrackInformation.TrackToken = Result.TrackToken contains Zoom Position Generic namespace, if Result contains Position.Zoom.

Test Result:

PASS –

DUT passed all assertions.

FAIL –

The DUT did not send a valid GetRecordingInformationResponse message.

The DUT did not send a valid GetPTZPositionSearchResultsResponse message.

The DUT did not send a valid FindPTZPositionResponse message.

The DUT did not send a valid EndSearchResponse message, if EndSearchRequest was invoked.

The DUT did not send a valid GetMediaAttributesResponse message.

The DUT did not send a TrackAttributes.MetadataAttributes.CanContainPTZ is equal to true for the Track with TrackInformation.TrackToken = Result.TrackToken.

The DUT did not send a TrackAttributes.MetadataAttributes.PtzSpaces for the Track with TrackInformation.TrackToken = Result.TrackToken contains PanTilt Position Generic namespace, if Result contains Position.PanTilt and Profile G is claimed as supported bu the DUT.

The DUT did not send a TrackAttributes.MetadataAttributes.PtzSpaces for the Track with TrackInformation.TrackToken = Result.TrackToken contains Zoom Position Generic namespace, if Result contains Position.Zoom and Profile G is claimed as supported bu the DUT.

Note: If RecordingInformation.EarliestRecording is not included in

GetRecordingInformationResponse message, then minimum value of Track.DataFrom will be used as **T1**.

Note: If RecordingInformation.LatestRecording is not included in GetRecordingInformationResponse message, then maximum value of Track.DataTo will be used as **T2**.

Note: If GetPTZPositionSearchResultsResponse contains responses with Position.PanTilt out of requested range, ONVIF Device Test Tool will report it as warning.

Note: The following Position Generic namespaces are defined for PanTilt and Zoom:

- http://www.onvif.org/ver10/tptz/PanTiltSpaces/PositionGenericSpace
- http://www.onvif.org/ver10/tptz/ZoomSpaces/PositionGenericSpace

Annex A

This section describes the meaning of the following definitions. These definitions are used in the test case description.

A.1 Recording Environment Pre-Requisite

The following pre-requisites shall have all fields filled in before executing tests for Replay Service:

1. At least one recording shall be present at the DUT and specified for test execution.
2. The recording shall be stopped before executing tests.
3. The recording shall contain at least one track each for video, audio (if Audio Recording is supported) and Metadata (if Metadata Recording is supported).
4. The recording shall contain data at least in the video track, audio track (if Audio Recording is supported), and metadata track (if Metadata Recording is supported) and configuration of each track shall be consistent for the duration of the recording.
5. The recording shall contain at least one gap.
6. The recording span (including gap) should be not more than 3 minutes.
7. Each recording event should be at least one minute for the recording.

A.2 Check list of Recordings from GetRecordingsResponse and list of recordings form GetRecordingSearchResultsResponses

To check the list of Recordings from GetRecordingsResponse and the list of recordings from GetRecordingSearchResultsResponses consistency the following steps will be done:

1. Verify that GetRecordingsResponse contains the same number of RecordingItem's with the total number of RecordingInformation's which were in GetRecordingSearchResultsResponses. If number of recordings is different for these two cases, fail the check and skip the next steps.
2. Verify that for each RecordingItem in GetRecordingsResponse message there is RecordingInformation item in one of the GetRecordingSearchResultsResponse messages with RecordingInformation.RecordingToken equal to RecordingItem.RecordingToken. If this verification does not pass, fail the check and skip the next steps.
3. Verify that if RecordingInformation.RecordingToken is equal to RecordingItem.RecordingToken for RecordingItem from GetRecordingsResponse and for RecordingInformation in one of the GetRecordingSearchResultsResponses the following statements are true:

    a. RecordingInformation.Source and RecordingItem.Source are equal to each other (e.g. have the same values for each field).

    b. RecordingInformation.Content and RecordingItem.Content are equal to each other.

    If one of the statements is not true, fail the check.

A.4 Get Total Number of Recordings from the DUT

The following procedure will be used to get the total number of recordings from the DUT:

1. Start an ONVIF Client.
2. Start the DUT.
3. ONVIF Client will invoke GetRecordingSummaryRequest message to get the total number of recordings.
4. Verify the GetRecordingSummaryResponse message (DataFrom, DataUntil, NumberRecordings) from the DUT.
5. Summary.NumberRecordings value from GetRecordingSummaryResponse message will be assumed as the total number of Recordings on the DUT.

A.5 Check that DUT return same set of recordings for two search recording sessions

To check that the list of Recordings from GetRecordingSearchResultsResponse messages for two search recording sessions contains the same set of Recordings the following steps will be done:

1. Verify that GetRecordingSearchResultsResponse messages for the first search recording session contain the same number of RecordingInformation items with GetRecordingSearchResultsResponse messages for the second search recording session. If the number of items is different for these two cases, fail the check and skip the next steps.
2. Verify that for each result in GetRecordingSearchResultsResponse messages in the first search recording session, there is the same result in GetRecordingSearchResultsResponse messages in the second search recording session (e.g. result with the same RecordingToken). If this verification does not pass, fail the check and skip the next steps.
3. Verify that the following statements are true if RecordingInformation.RecordingToken is equal for two RecordingInformation items from the first and the second search recording session:
    a. RecordingInformation.Source items are equal to each other (e.g. have the same values for each field).
    b. RecordingInformation.EarliestRecording items are equal to each other or not included for both RecordingInformation items.
    c. RecordingInformation.LatestRecording items are equal to each other or not included for both RecordingInformation items.
    d. RecordingInformation.Content items are equal to each other.
    e. RecordingInformation.Track lists are equal to each other (see Annex A.6).
    f. RecordingInformation.RecordingStatus items are equal to each other.

    If one of the statements is not true, fail the check.

A.6 Check that DUT return same set of tracks for two RecordingInformation items

To check that the list of Track items for two RecordingInformation items contains the same set of Tracks the following steps will be done:

1. Verify that RecordingInformation items contain the same number of Track items. If the number of items is different, fail the check and skip the next steps.
2. Verify that for each RecordingInformation.Track item in the first RecordingInformation item, there is the same Track item in the second RecordingInformation item (e.g. Track items with the same TrackToken). If this verification does not pass, fail the check and skip the next steps.
3. Verify that the following statements are true if Track.TrackToken is equal for two Track items from the first and the second RecordingInformation item:
    a. Track.TrackType items are equal to each other.
    b. Track.Description items are equal to each other.
    c. Track.DataFrom items are equal to each other.
    d. Track.DataTo items are equal to each other.

    If one of statements is not true fail the check.

A.7 Check that DUT return same set of event Results for two search event sessions

To check that the list of Result items from GetEventSearchResultsResponse messages for two search event sessions contains the same set of Result items the following steps will be done:

1. Verify that GetEventSearchResultsResponse messages for the first search event session contain the same number of Result items with GetEventSearchResultsResponse messages for the second search event session. If the number of items is different for these two cases, fail the check and skip the next steps.
2. Verify that for each Result item in GetEventSearchResultsResponse messages in the first search event session, there is the same Result item in GetEventSearchResultsResponse messages in the second search event session. If this verification does not pass, fail the check and skip the next steps.
3. Verify that the following statements are true if two Result items are the same:
    a. Result.Event.SubscriptionReference items are equal to each other (e.g. have the same values for each field).
    b. Result.Event.ProducerReference items are equal to each other (e.g. have the same values for each field).
    c. Result.Event.Message items are equal to each other (e.g. have the same values for each field).
    d. Result.StartStateEvent items are equal to each other.

    If one of the statements is not true, fail the check.

Note: Two Event Results will be assumed as the same, if they have the same values for

GetEventSearchResultsResponse.ResultList.Result.RecordingToken,
GetEventSearchResultsResponse.ResultList.Result.TrackToken,
GetEventSearchResultsResponse.ResultList.Result.Time,
GetEventSearchResultsResponse.ResultList.Result.Event.Topic and fields and values of GetEventSearchResultsResponse.ResultList.Result.Event.Message.Data.

A.8 Check that DUT returns the same set of metadata Results for two search metadata sessions

To check that the list of Result items from GetMetadataSearchResultsResponse messages for two search metadata sessions contains the same set of Result items the following steps will be done:

1. Verify that GetMetadataSearchResultsResponse messages for the first search metadata session contain the same number of Result items with GetMetadataSearchResultsResponse messages for the second search metadata session. If the number of items is different for these two cases, fail the check and skip the next steps.

2. Verify that for each Result item in GetMetadataSearchResultsResponse messages in the first search metadata session, there is the same Result item in GetMetadataSearchResultsResponse messages in the second search metadata session. If this verification does not pass, fail the check and skip the next steps.

Note: two Metadata Results will be assumed as the same, if they have the same values for: GetMetadaSearchResultsResponse.ResultList.Result.RecordingToken, GetMetadaSearchResultsResponse.ResultList.Result.TrackToken, GetMetadaSearchResultsResponse.ResultList.Result.Time

A.9 Check that DUT returns the same set of PTZ Position Results for two search PTZ position sessions

To check that the list of Result items from GetPTZPositionSearchResultsResponse messages for two search PTZ Position sessions contains the same set of Result items the following steps will be done:

1. Verify that GetPTZPositionSearchResultsResponse messages for the first search PTZ Position session contain the same number of Result items with GetPTZPositionSearchResultsResponse messages for the second search PTZ Position session. If the number of items is different for these two cases, fail the check and skip the next steps.

2. Verify that for each Result item in Get PTZPositionSearchResultsResponse messages in the first search PTZ Position session, there is the same Result item in Get PTZPositionSearchResultsResponse messages in the second search PTZ Position session. If this verification does not pass, fail the check and skip the next steps.

Note: Two PTZ Position Results will be assumed as the same, if they have the same values for: GetPTZPositionSearchResultsResponse.ResultList.Result.RecordingToken, GetPTZPositionSearchResultsResponse.ResultList.Result.TrackToken, GetPTZPositionSearchResultsResponse.ResultList.Result.Time, GetPTZPositionSearchResultsResponse.ResultList.Result.Pozition.

A.10 Check GetRecordingInformationResponse.RecordingInformation and GetRecordingSearchResultsResponse.ResultList.RecordingInformation consistency

To check the RecordingInformation structure consistency from GetRecordingInformationResponse and from GetRecordingSearchResultsResponse ONVIF Client will compare GetRecordingInformationResponse.RecordingInformation structure with GetRecordingSearchResultsResponse.ResultList.RecordingInformation stucture for corresponding RecordingToken. The following steps will be done:

1. Verify that GetRecordingInformationResponse.RecordingInformation.Source.SourceID equals to GetRecordingSearchResultsResponse.ResultList.RecordingInformation.Source.SourceID.
2. Verify that GetRecordingInformationResponse.RecordingInformation.Source.Name equals to GetRecordingSearchResultsResponse.ResultList.RecordingInformation.Source.Name.
3. Verify that GetRecordingInformationResponse.RecordingInformation.Source.Location equals to GetRecordingSearchResultsResponse.ResultList.RecordingInformation.Source.Location.
4. Verify that GetRecordingInformationResponse.RecordingInformation.Source.Description equals to GetRecordingSearchResultsResponse.ResultList.RecordingInformation.Source.Description.
5. Verify that GetRecordingInformationResponse.RecordingInformation.Source. Address equals to GetRecordingSearchResultsResponse.ResultList.RecordingInformation.Source.Address.
6. Verify that if RecordingInformation.EarliestRecording is skipped in GetRecordingInformationResponse, then ResultList.RecordingInformation.EarliestRecording is skipped in GetRecordingSearchResultsResponse.
7. If RecordingInformation.EarliestRecording is not skipped in GetRecordingInformationResponse, then verify that GetRecordingInformationResponse. EarliestRecording equals to GetRecordingSearchResultsResponse.ResultList.RecordingInformation.EarliestRecording.
8. Verify that if RecordingInformation.LatestRecording is skipped in GetRecordingInformationResponse, then ResultList.RecordingInformation.LatestRecording is skipped in GetRecordingSearchResultsResponse.
9. If RecordingInformation.LatestRecording is not skipped in GetRecordingInformationResponse, then verify that GetRecordingInformationResponse. LatestRecording equals to GetRecordingSearchResultsResponse.ResultList.RecordingInformation.EarliestRecording.
10. Verify that GetRecordingInformationResponse.RecordingInformation.Content equals to GetRecordingSearchResultsResponse.ResultList.RecordingInformation.Content.
11. Verify that GetRecordingInformationResponse.RecordingInformation contains the same number of Tracks with number of Tracks from GetRecordingSearchResultsResponse.ResultList.RecordingInformation item. If number of tracks is different for these two cases, fail the check and skip the next steps.
12. Verify that for each RecordingInformation.Track.TrackToken in GetRecordingInformationResponse message, there is RecordingInformation.Track item in the GetRecordingSearchResultsResponse messages with TrackToken equal to RecordingInformation.Track.TrackToken. If this verification does not pass, fail the check and skip the next steps.

13. Verify that if RecordingInformation.Track.TrackToken from GetRecordingInformationResponse is equal to RecordingInformation.Track.TrackToken in GetRecordingSearchResultsResponse, the following statements are true:

    a. RecordingInformationTrack.TrackType and RecordingInformation.Track.TrackType are equal to each other.

    b. RecordingInformationTrack.Description and RecordingInformation.Track.Description are equal to each other.

    c. RecordingInformationTrack.DataFrom and RecordingInformation.Track.DataFrom are equal to each other.

    d. RecordingInformationTrack.DataTo and RecordingInformation.Track.DataTo are equal to each other.

14. Verify that GetRecordingInformationResponse.RecordingInformation.RecordingStatus equals to GetRecordingSearchResultsResponse.ResultList.RecordingInformation.RecordingStatus.

    If one of the statements is not true, fail the check.