

ONVIF™ Replay Control Service Specification

Version 2.1
June, 2011



© 2008-2011 by ONVIF: Open Network Video Interface Forum Inc.. All rights reserved.

Recipients of this document may copy, distribute, publish, or display this document so long as this copyright notice, license and disclaimer are retained with all copies of the document. No license is granted to modify this document.

THIS DOCUMENT IS PROVIDED "AS IS," AND THE CORPORATION AND ITS MEMBERS AND THEIR AFFILIATES, MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR TITLE; THAT THE CONTENTS OF THIS DOCUMENT ARE SUITABLE FOR ANY PURPOSE; OR THAT THE IMPLEMENTATION OF SUCH CONTENTS WILL NOT INFRINGE ANY PATENTS, COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS.

IN NO EVENT WILL THE CORPORATION OR ITS MEMBERS OR THEIR AFFILIATES BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, ARISING OUT OF OR RELATING TO ANY USE OR DISTRIBUTION OF THIS DOCUMENT, WHETHER OR NOT (1) THE CORPORATION, MEMBERS OR THEIR AFFILIATES HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR (2) SUCH DAMAGES WERE REASONABLY FORESEEABLE, AND ARISING OUT OF OR RELATING TO ANY USE OR DISTRIBUTION OF THIS DOCUMENT. THE FOREGOING DISCLAIMER AND LIMITATION ON LIABILITY DO NOT APPLY TO, INVALIDATE, OR LIMIT REPRESENTATIONS AND WARRANTIES MADE BY THE MEMBERS AND THEIR RESPECTIVE AFFILIATES TO THE CORPORATION AND OTHER MEMBERS IN CERTAIN WRITTEN POLICIES OF THE CORPORATION.

CONTENTS

- 1 Scope** **4**
- 2 Normative references** **4**
- 3 Terms and Definitions** **4**
 - 3.1 Definitions.....4
 - 3.2 Abbreviations4
- 4 Overview** **5**
- 5 Replay Control** **6**
 - 5.1 Request replay URI.....6
 - 5.2 ReplayConfiguration.....6
 - 5.3 SetReplayConfiguration7
 - 5.4 GetReplayConfiguration.....7
 - 5.4.1 Capabilities7
 - 5.5 Service specific data types.....8
 - 5.5.1 ReplayConfiguration8
 - 5.6 Service specific fault codes.....9

1 Scope

This document defines the web service interface for the control of a replay of recorded Video, Audio and Metadata. Additionally the associated events are defined.

For a definition of the storage model see the ONVIF Recording Control Specification.

Web service usage is outside of the scope of this document. Please refer to the ONVIF core specification.

2 Normative references

ONVIF Core Specification

<<http://www.onvif.org/specs/core/ONVIF-Core-Spec-v210.pdf>>

ONVIF Recording Control Specification

<<http://www.onvif.org/specs/srv/rec/ONVIF-RecordingControl-Service-Spec-v210.pdf>>

3 Terms and Definitions

3.1 Definitions

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	Represents the currently stored media (if any) and metadata on the NVS from a single data source. A recording comprises one or more tracks. A recording can have more than one track of the same type e.g. two different video tracks recorded in parallel with different settings
Recording Event	An event associated with a Recording, represented by a notification message in the APIs
Recording Job	A job performs the transfer of data from a data source to a particular recording using a particular configuration
Track	An individual data channel consisting of video, audio, or metadata. This definition is consistent with the definition of track in [RFC 2326]
Video Analytics	Algorithms or programs used to analyze video data and to generate data describing object location and behaviour.

3.2 Abbreviations

ONVIF	Open Network Video Interface Forum
-------	------------------------------------

4 Overview

The replay service provides a mechanism for replay of stored video, audio and metadata. This mechanism may also be used to download data from the storage device so that export functionality can be provided.

The replay protocol is based on RTSP [RFC 2326]. However because RTSP does not directly support all of the requirements for replay, several extensions have been added to the protocol. In particular, an RTP header extension is defined to allow an absolute timestamp to be associated with each access unit (e.g. video frame), and to convey information about stream continuity.

The GetReplayUri command in the replay service returns the RTSP URL of a recording to allow it to be replayed using RTSP.

WSDL for this service is specified in <http://www.onvif.org/ver10/replay.wsdl>.

5 Replay Control

This section defines a service for mapping replay endpoints to URI for use in RTSP.

5.1 Request replay URI

GetReplayUri requests a URI that can be used to initiate playback of a recorded stream using RTSP as the control protocol. The URI is valid only as it is specified in the response. All implementations of the Replay Service shall support the GetReplayUri command.

Table 1: GetReplayUri command

GetReplayUri		Access Class: READ_MEDIA
Message name	Description	
GetReplayUriRequest	<p>The StreamSetup element contains two parts. StreamType defines if a unicast or multicast media stream is requested. Transport specifies a chain of transport protocols defining the tunnelling of the media stream over different network protocols.</p> <p>The RecordingToken element indicates the recording to be streamed.</p> <p>tt:StreamSetup StreamSetup [1][1] tt:ReferenceToken RecordingToken [1][1]</p>	
GetReplayUriResponse	<p>Contains the Uri to be used for requesting the media stream.</p> <p>xs:anyURI Uri [1][1]</p>	
Fault codes	Description	
env:Sender ter:InvalidArgVal ter:NoProfile	The recording does not exist.	
env:Sender ter:InvalidArgVal ter:InvalidStreamSetup	Specification of StreamType or Transport part in StreamSetup is not supported.	
env:Sender ter:OperationProhibited ter:StreamConflict	Specification of StreamType or Transport part in StreamSetup causes conflict with other streams.	

5.2 ReplayConfiguration

The ReplayConfiguration structure contains the configuration of the replay service. The fields in the ReplayConfiguration structure are:

SessionTimeout: An RTSP session has a keep-alive time. It shall be refreshed regularly to prevent the session from timing out. If the session times out, it shall be torn down. The session timeout for replay follows the same rules as applies for live streaming using the media service and as discussed in chapter “Real-time streaming”.

5.3 SetReplayConfiguration

SetReplayConfiguration changes the configuration of the replay service. The replay service shall allow its configuration to be changed using this command.

Table 2: SetReplayConfiguration command

SetReplayConfiguration		Access Class: ACTUATE
Message name	Description	
SetReplayConfigurationRequest	<i>The Configuration shall hold the new configuration for the replay service.</i>	
	tt:ReplayConfiguration Configuration [1][1]	
SetReplayConfigurationResponse	<i>This shall be the empty message</i>	
Fault codes	Description	
env:Sender ter:InvalidArgVal ter:ConfigModify	<i>The values in the configuration cannot be set.</i>	

5.4 GetReplayConfiguration

GetReplayConfiguration returns the current configuration of the replay service. The replay service shall allow its configuration to be retrieved using this command.

Table 3: GetReplayConfiguration command

GetReplayConfiguration		Access Class: READ_MEDIA
Message name	Description	
GetReplayConfigurationRequest	<i>This shall be an empty message.</i>	
GetReplayConfigurationResponse	<i>The Configuration shall holds the current configuration for the replay service.</i>	
	tt:ReplayConfiguration Configuration [1][1]	
Fault codes	Description	
	<i>No command specific error codes.</i>	

5.4.1 Capabilities

The capabilities reflect optional functions and functionality of a service. The information is static and does not change during device operation. Currently there are no capabilities defined for this service.

Table 4: GetServiceCapabilities command

GetServiceCapabilities		Access Class: READ_MEDIA
Message name	Description	
GetServiceCapabilitiesRequest	<i>This message contains a request for device capabilities.</i>	
GetServiceCapabilitiesResponse	<i>The capability response message contains the requested service capabilities using a hierarchical XML capability structure.</i> trp:Capabilities Capabilities [1][1]	
Fault codes	Description	
	<i>No command specific faults!</i>	

5.5 Service specific data types

5.5.1 ReplayConfiguration

Configuration parameters for the replay service.

```
<xs:complexType name="ReplayConfiguration"/>
  <xs:element name="SessionTimeout" type="xs:duration"/>
</xs:complexType>
```

- **SessionTimeout**
The RTSP session timeout.

5.6 Service specific fault codes

Table 5 lists the replay service-specific fault codes. In addition, each command can also generate a generic fault as defined in the ONVIF Core Specification.

The specific faults are defined as sub code of a generic fault. The parent generic subcode is the *subcode* at the top of each row below and the specific fault *subcode* is at the bottom of the cell.

Table 5: Replay service specific fault codes

Fault Code	Parent Subcode	Fault Reason	Description
	Subcode		
env:Sender	ter:InvalidArgVal	Profile token does not exist	The requested profile token ProfileToken does not exist.
	ter:NoProfile		
env:Sender	ter:InvalidArgVal	Invalid Stream setup	Specification of StreamType or Transport part in StreamSetup is not supported.
	ter:InvalidStreamSetup		
env:Sender	ter:OperationProhibited	Stream conflict	Specification of StreamType or Transport part in StreamSetup causes conflict with other streams.
	ter:StreamConflict		
env:Sender	ter:InvalidArgVal	Parameters cannot be set	The configuration parameters cannot be set.
	ter:ConfigModify		