ONVIF™
Replay Control Service Specification

Version 2.2
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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-Specification-v211.pdf>

ONVIF Recording Control Specification

<http://www.onvif.org/specs/srv/rec/ONVIF-RecordingControl-Service-Spec-v211.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	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.
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	*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.* *The **RecordingToken** element indicates the recording to be streamed.* tt:StreamSetup **StreamSetup** [1][1] tt:ReferenceToken **RecordingToken** [1][1]
GetReplayUriResponse	*Contains the Uri to be used for requesting the media stream.* xs:anyURI **Uri** [1][1]
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	*The **Configuration** shall hold the new configuration for the replay service.* tt:ReplayConfiguration **Configuration**[1][1]
SetReplayConfigurationResponse	*This shall be the empty message*
Fault codes	**Description**
env:Sender ter:InvalidArgVal ter:ConfigModify	*The values in the configuration cannot be set.*

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	*This shall be an empty message.*
GetReplayConfigurationResponse	*The **Configuration** shall holds the current configuration for the replay service.* tt:ReplayConfiguration **Configuration**[1][1]
Fault codes	**Description**
	No command specific error codes.

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. The following capabilites are available:

ReversePlayback Indicator that the Device supports reverse playback as defined in the ONVIF Streaming Specification.

SessionTimeoutRange Lists the upper and lower bound of the supported range for the session timeout. This capability defaults to the RTSP default value.

Table 4: GetServiceCapabilities command

GetServiceCapabilities	Access Class: PRE_AUTH
Message name	**Description**
GetServiceCapabilitiesRequest	*This is an empty message.*
GetServiceCapabilitiesResponse	*The capability response message contains the requested service capabilities using a hierarchical XML capability structure.* trp:Capabilities **Capabilities** [1][1]
Fault codes	**Description**
	No command specific faults!

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

Annex A. Revision History

Rev.	Date	Editor	Changes
2.1	Jul-2011	Hans Busch	Split from Core 2.0 without change of content.
2.1.1	Jan-2012	Hans Busch	Change Requests 287, 342, 535
2.2	May-2012	Hans Busch	Change Requests 608, 677