Digifort RTSP Interface

For Digifort 7.1.0.0

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1   Overview

1.1   Description

This document specifies the Digifort media interface based on RTSP protocol.

This interface provides access to live video from cameras of a Digifort server using the RTSP protocol, allowing for any media player that supports this protocol to receive live video from Digifort servers. This interface can also be used as a tool for systems integration.

1.2   History

Digifort Version	Date	Revision	Comments
6.7.0.0	2013-Abr-25	Éric Fleming Bonilha	First version

2   Definitions

This section contains general information related to the use of this document

2.1   General notations

2.1.1   General abbreviations

The following abbreviations are used in this document

Abbreviation	Description
N/A	Not applicable - The feature/parameter/value is not used in the specified task
URL	Uniform Resources Location (URL) is a compact string that represents a feature available in Internet. The RFC 1738 describes the syntax and semantics for a URL
URI	Uniform Resource Identifier (URI) is a compact string of characters for identifying an abstract or physical feature. The RFC 3986 describes the generic syntax of a URI

2.1.2   Style conventions and general syntax of the URL

In URL syntax and in the descriptions of the arguments, text in italics with greater than and less than signs denote a content that must be substituted by a value or a string. When substituting the text, the

greater than and less than signs must also be substituted. For example, the name of a camera is denoted by *<cameraname>* in description of URL syntax. In the example of URL syntax, *<cameraname>* is substituted by the string mycamera.

The URL syntax is written with the word "**Syntax:**" in bold face, accompanied by a box with the syntax of the command.

Syntax:
```
rtsp://<server_address>/Interface/<object>[/<subobject>...]/<command>
[?<argument=value>[&<argument=value>...]]
```

Example 1: Request live video from camera 1
```
rtsp://192.168.0.1:554/Interface/Cameras/Media?Camera=1
```

3   RTSP server implementation

This session provides details on the implementation of the Digifort RTSP server.

3.1   RFCs

The Digifort RTSP server was developed using as a basis the following RFCs:

Server base:
RFC 2326 - Real Time Streaming Protocol (RTSP)
RFC 2327 - Session Description Protocol (SDP)

Packetizers:
RFC 3550 - RTP: A Transport Protocol for Real-Time Applications
RFC 2435 - RTP Payload Format for JPEG-compressed Video
RFC 3016 - RTP Payload Format for MPEG-4 Audio/Visual Streams
RFC 3984 - RTP Payload Format for H.264 Video
RFC 3551 - RTP Profile for Audio and Video Conferences with Minimal Control
RFC 3640 - RTP Payload Format for Transport of MPEG-4 Elementary Streams

3.2   Supported RTSP commands

The Digifort RTSP server supports the following protocol commands:

OPTIONS
DESCRIBE
SETUP
PLAY
PAUSE
TEARDOWN

3.3   Supported media types

The Digifort RTSP server supports the packing and transmission of the following media types:

Video: Motion JPEG, MPEG-4, H.264
Audio: Linear PCM, G.711, G.726, AAC

3.4   Transmission protocol

The Digifort RTSP server allows the transmission of media using UNICAST over TCP or UDP protocols.

MULTICAST transmission is not yet supported.

3.5   Media transcoding

The Digifort RTSP server **DOES NOT** transcode the media, it only serves as a bridge to the original media stream sent by the camera, with it, you cannot request a media stream with resoluion, frame rate or quality different from the values configured on the camera.

4   Interface

This section contains information related to the API Interface

4.1   Requesting live video

The RTSP server from Digifort System allows for the request of live video from any camera of the server.

Security level: Requires user authentication through RTSP protocol

Syntax:
```
rtsp://<server_address>/Interface/Cameras/Media?<argument=value>
[&<argument=value>...]
```

Arguments:

Argument	Valid values	Description
Camera=`<String>`*	String	Camera name
Profile=`<String>`	Recording Visualization Custom	Type of media profile: Recording - Request the media stream using the default recording profile Visualization - Request the media stream using the default visualization profile Custom - Request the media stream using the profile specified on `CustomProfile` argument If this parameter is omitted, the default value Recording will be used
CustomProfile=`<String>`	String	Media profile name in case the value of argument `Profile` is "Custom"

* Mandatory parameters

Example 1: Request media stream from camera 1, using default recording profile
```
rtsp://192.168.0.1:554/Interface/Cameras/Media?Camera=Camera1
```
or
```
rtsp://192.168.0.1:554/Interface/Cameras/Media?Camera=Camera1&
Profile=Recording
```

Example 2: Request media stream from camera 2, using default visualization profile
```
rtsp://192.168.0.1:554/Interface/Cameras/Media?Camera=Camera2&
```

```
Profile=Visualization
```

Example 3: Request media stream from camera ABC, using the previously registered and configured media profile, named "LowResolution"

```
rtsp://192.168.0.1:554/Interface/Cameras/Media?Camera=ABC&
Profile=Custom&CustomProfile=LowResolution
```

5   Tested RTSP clients

The following RTSP clients were tested with Digifort RTSP server successfully:

VLC 2.0.6 - The worlds most popular free media player (www.videolan.org)

Wowza Media Server 3 - Powerful media server, that can be used for internet video broadcasting. This media server is capable of delivering video in different protocols, allowing for the use of different media players, including flash plugins that can be added to web pages (www.wowza.com)