



MÄLARDALENS HÖGSKOLA

LiveTV Test report

Version 1.0

LiveTv	Version: 1.0
Test Report	Date: 2010-01-13

Revision History

Date	Version	Description	Author
2010-01-13	0.01	Initial Draft	Neven Vujasinović

Doc. No.:

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1. Introduction

1.1 Purpose of this document

The purpose of this document is to show which tests from acceptance test plan have passed according to requirements and which ones failed.

1.2 Document organization

The document is organized as follows:

- Section 1, *Introduction*, describes what tests are being performed and their details.
- Section 2, *Test results*, shows test results in different conditions with corresponding statuses.

1.3 Intended Audience

The intended audience is:

- Project customer
- Project supervisor
- Team members
- Users

1.4 Scope

This document is covering test cases from acceptance test plan and showing the results with detailed environment and status conditions.

1.5 Definitions and acronyms

1.5.1 Definitions

Keyword	Definitions

1.5.2 Acronyms and abbreviations

Acronym or abbreviation	Definitions
RTSP	Real Time Streaming Protocol
API	Application Programming Interface
S60	Symbian S60 operating system
VLC	VideoLAN server used for streaming
DSS	Darwin Streaming Server

1.6 References

- Design description.
- Requirement description.
- Project description.

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2. Test case results

2.1.1 Mobile Recorder

2.1.1.1 Live Streaming video from mobile recorder application – MREC-001

Description:

Start recording live video stream in the recorder application and transmit over RTP to the server

Test type:

Component test - Positive

Preconditions:

The mobile phone is connected to the internet and the server is running an instance of VLC to receive the incoming stream.

Input definition:

1. Live TV Recorder application is started and running on the mobile phone
2. Click “Set Server IP” button from the Menu
3. Enter the receiving server’s IP address and click OK
4. Check Send video box from the menu.
5. Uncheck Send audio box from the menu.
6. Click “Set Server Port” button from the Menu
7. Enter the receiving server’s port number where the VLC client would listen for incoming stream, then click OK.
8. VLC listener client is started and running on the receiving server.
9. Click Play button on VLC client.
10. Click “Record/Stream” button on the mobile recording application to start streaming.

Output definition:

Expected output is live video stream playing on the VLC client on the server.

Remarks:

Make sure that only one instance of VLC listener client is run on the server at one time. Otherwise received stream might not play. This is because only one instance of VLC can listen to one incoming RTP stream. VLC will receive and display only video stream, without audio.

2.1.1.2 Live Streaming audio from mobile recorder application – MREC-002

Description:

Start recording live audio stream in the recorder application and transmit over RTP to the server

Test type:

Component test - Positive

Preconditions:

The mobile phone is connected to the internet and the server is running an instance of VLC to receive the incoming stream.

Input definition:

11. Live TV Recorder application is started and running on the mobile phone
12. Click “Set Server IP” button from the Menu

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13. Enter the receiving server's IP address and click OK
14. Uncheck Send video box from the menu.
15. Check Send audio box from the menu.
16. Click "Set Server Port" button from the Menu
17. Enter the receiving server's port number where the VLC client would listen for incoming stream, then click OK.
18. VLC listener client is started and running on the receiving server.
19. Click Play button on VLC client.
20. Click "Record/Stream" button on the mobile recording application to start streaming.

Output definition:

Expected output is live audio stream playing on the VLC client on the server.

Remarks:

Make sure that only one instance of VLC listener client is run on the server at one time. Otherwise received stream might not play. This is because only one instance of VLC can listen to one incoming RTP stream. VLC will receive and play only audio stream, without video.

2.1.1.3 Live Streaming video and audio from mobile recorder application – MREC-003

Description:

Start recording live video and audio streams in the recorder application and transmit over RTP to the server

Test type:

Component test - Positive

Preconditions:

The mobile phone is connected to the internet and the server is running an instance of VLC to receive the incoming stream.

Input definition:

21. Live TV Recorder application is started and running on the mobile phone
22. Click "Set Server IP" button from the Menu
23. Enter the receiving server's IP address and click OK
24. Check Send video box from the menu.
25. Check Send audio box from the menu.
26. Click "Set Server Port" button from the Menu
27. Enter the receiving server's port number where the VLC client would listen for incoming stream, then click OK.
28. VLC listener client is started and running on the receiving server.
29. Click Play button on VLC client.
30. Click "Record/Stream" button on the mobile recording application to start streaming.

Output definition:

Expected output is live video and audio stream playing on the VLC client on the server.

Remarks:

Make sure that only one instance of VLC listener client is run on the server at one time. Otherwise received stream might not play. This is because only one instance of VLC can listen to one incoming RTP stream.

2.1.1.4 Live Streaming video and audio from mobile recorder application when internet connectivity is poor – MREC-004

Description:

Start recording live video and audio streams in the recorder application and transmit over RTP to the server when there is poor connection to the internet.

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Test type:

Component test - Positive

Preconditions:

The mobile phone is having a poor internet connection and the server is running an instance of VLC to receive the incoming stream.

Input definition:

31. Live TV Recorder application is started and running on the mobile phone
32. Click “Set Server IP” button from the Menu
33. Enter the receiving server’s IP address and click OK
34. Check Send video box from the menu.
35. Check Send audio box from the menu.
36. Click “Set Server Port” button from the Menu
37. Enter the receiving server’s port number where the VLC client would listen for incoming stream, then click OK.
38. VLC listener client is started and running on the receiving server.
39. Click Play button on VLC client.
40. Click “Record/Stream” button on the mobile recording application to start streaming.

Output definition:

Expected output is live video and audio stream playing on the VLC client on the server.

Remarks:

Make sure that only one instance of VLC listener client is run on the server at one time. Otherwise received stream might not play. This is because only one instance of VLC can listen to one incoming RTP stream. The mobile application is sending video and audio streams only when internet connection is available. VLC is showing stream when it is available, and it’s showing black when it isn’t,

2.1.2 PC Studio

2.1.2.1 Add an input media to stream list – PCSTD-001

Description:

Add a media input (File/URL) to the list of available streams.

Test type:

Component test - Positive

Preconditions:

The PC Studio application has no input media in the available streams list and allows inserting either file location or URLs as input media. The computer where PC studio application is running is connected to internet. Furthermore, there are available media files that can be fed to the PC studio application.

Input definition:

1. PC Studio application is started and running on the server.
2. Click “Add Input Media” button on the main screen.
3. Enter “rtsp://stream.zoovision.com/zootoones/superman_electric_earthquake.3gp” in the textbox and click OK.

Output definition:

The list of available input streams now contains the “rtsp://stream.zoovision.com/zootoones/superman_electric_earthquake.3gp” entry.

Remarks:

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None

2.1.2.2 *Preview an input stream – PCSTD-002*

Description:

Preview an input stream in one of the six preview panes displayed on the PC Studio application. This allows viewing the input streams before transmitting them to the DSS server.

Test type:

Component test - Positive

Preconditions:

The PC Studio application is started and it contains a list of available input streams (file or internet streaming URLs). It is also connected to the internet in order to be able to play internet streams.

Input definition:

1. PC Studio application is started and it contains a list of available input streams in the stream list.
2. Select any one of the entries in the list of available input streams and drag-drop it to any of the six preview panes.

Output definition:

The selected input media starts playing on the selected preview pane (on which the stream was drag-dropped).

Remarks:

The stream selected for preview must be accessible by the PC studio application (i.e. if it is a file, it must be present on the computer; if it is a streaming URL it must be valid and accessible).

2.1.2.3 *Transmit an input stream – PCSTD-003*

Description:

Transmit an input stream to the DSS server so that it is broadcasted to client viewers.

Test type:

Component test - Positive

Preconditions:

The PC Studio application is started and there is one or more streams being previewed. It is also connected to the internet in order to be able to play internet streams.

Input definition:

1. PC Studio application is started and there is one or more input streams being previewed.
2. Click “Live” button below the preview pane of the stream which you want to transmit.

Output definition:

Selected input stream starts to play in the output stream pane.

Remarks:

None

2.1.3 *Mobile Player*

2.1.3.1 *Play a live stream – MPLY-001*

Description:

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Receive and play a live broadcast coming from the DSS server on the mobile phone (viewer).

Test type:

Component test - Positive

Preconditions:

The mobile phone is connected to the internet and the server is running DSS which is broadcasting video streams.

Input definition:

1. Mobile client player is started and running on the mobile phone
2. Click "Available Broadcasts" button from the Menu
3. Select a video stream to play
4. Click "Play" button

Output definition:

Live video stream buffers up and plays in the mobile client player.

Remarks:

At the time of testing, there would be some test video streams that would be set up on DSS server for streaming and they could either be file sources or internet-streaming sources.

2.1.4 END TO END SOLUTION

2.1.4.1 Live recording and broadcast viewing – LTV-001

Description:

Start recording live stream in the mobile recorder application, select and transmit it from PC Studio and then view it on mobile player client

Test type:

Integration test - Positive

Preconditions:

Both the recorder mobile phone and viewer mobile phone are connected to the internet. There is a configured server with PC studio application and DSS server running on it. The PC Studio application is configured to receive the input live stream coming from mobile recorder. The mobile client player is configured with the output stream URL coming from the PC Studio.

Input definition:

1. Live TV Recorder application is started and running on the mobile phone.
2. Click "Set Server IP" button from the Menu.
3. Enter the receiving server's IP address and click OK.
4. Click "Set Server Port" button from the Menu.
5. Enter the receiving server's port number where the PC Studio application is started and running.
6. PC Studio application is started and running on the receiving server.
7. Click "Record/Stream" button on the mobile recording application to start streaming.
8. On the PC Studio application, select and drag-drop the live input stream URL from the live input streams list to any of the preview panes.
9. Click "Live" button below the drag-dropped preview pane.
10. On the mobile client player, click "Available Broadcasts" button.
11. Select the live stream from the list.
12. Click the "Play" button.

Output definition:

The live video stream coming from the mobile recorder broadcasted by PC Studio is played on the mobile

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viewer phone.

Remarks:

A delay of less than or equal to five seconds is expected to arise due to real-time recording and transmission delays. The delays also depend on the internet bandwidth available to the mobile recorder, PC Studio server and the viewer mobile client.

2.1.4.2 Live recording of multiple streams and broadcast viewing when one of the input streams drops out – LTV-002

Description:

Start recording live stream in the mobile recorder applications, select and transmit it from PC Studio and then view it on mobile player client

Test type:

Integration test - Positive

Preconditions:

Both the recorder mobile phones and viewer mobile phone are connected to the internet. There is a configured server with PC studio application and DSS server running on it. The PC Studio application is configured to receive the input live streams coming from mobile recorders. The mobile client player is configured with the output stream URL coming from the PC Studio.

Input definition:

13. Live TV Recorder application is started and running on the mobile phones.
14. Click “Set Server IP” button from the Menu.
15. Enter the receiving server’s IP address and click OK.
16. Click “Set Server Port” button from the Menu.
17. Enter the receiving server’s port number where the PC Studio application is started and running.
18. PC Studio application is started and running on the receiving server.
19. Click “Record/Stream” button on the mobile recording application to start streaming.
20. On the PC Studio application, select and drag-drop the live input stream URL from the live input streams list to any of the preview panes.
21. Click “Live” button below the drag-dropped preview pane.
22. On the mobile client player, click “Available Broadcasts” button.
23. Select the live stream from the list.
24. Click the “Play” button.

Output definition:

The live video streams coming from the mobile recorders, broadcasted by PC Studio is played on the mobile viewer phone. When one of the mobile recorders loses internet connectivity or in any other way drops out of communication, the other streams still can be selected and shown to the mobile player.

Remarks:

A delay of less than or equal to five seconds is expected to arise due to real-time recording and transmission delays. The delays also depend on the internet bandwidth available to the mobile recorder, PC Studio server and the viewer mobile client. The lost stream will be indicated in the PC studio with a blank or frozen picture.

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3. List of Tables