PVPlayer Engine Unit Test Guide
OHA 1.0, rev. 1
Oct 20, 2008

Table of Contents

1. Introduction

This document describes the usage of and the test cases covered in the PVPlayer engine unit test. The unit test is a command-line application that drives the player engine through several different use-case scenarios and validates that the engine behaves as expected.

2. Running PVPlayer Engine Unit Test

PVPlayer engine unit test is based on PV unit test framework defined in OSCL. The purpose of the unit test is to enable developers and quality assurance engineers to verify essential functionalities of PVPlayer SDK.

2.1. Command Line Arguments

The PVPlayer Engine Unit Test accepts a number of parameters to allow playback of different files and URLs, specify logging options, etc. Below is a list of supported parameters

`-source` *`filename or URL`*
Specify the source filename or URL to use for test cases that allow user-specified source name. The unit test determines the source format type using extension or URL header.

`-compA`
`-compV`
Compressed video and audio output option. Default is OFF for both. For test cases and sinks that support compressed media output (media I/O node test cases), the output data files would have compressed bitstreams. This also means the player engine would not use a decoder node to decode the bitstream from the source node.

`-test` *`x y`*
Specify a range of test cases to run, where x is the start test case number and y is the end test case number. To run one test case, use the same index for x and y.

`-test L`
Run local playback test cases 0 to 99 only

`-test D`
Run download playback test cases 100 to 199 only.

`-test S`
Run streaming playback test cases 200 to 299 only.

`-sourcetype` *`format_type`*
Specify the format type name in upper case/lower case letter for test cases that allow user-specified format type, e.g. for executing MP4 specific tests: test_pv_player_engine.exe MP4.

2.2. Logging Options

User can control various logging options through command line arguments to PVPlayer Engine Unit Test

2.2.1. Log Level

The default log level is debug level, and the two options below can modify the log level to reduce log output.
-logerr
Log at error level
-logwarn
Log at warning level

2.2.2. Log Node Options

The default log node is player engine only, and the following option can modify the modules providing log output

-logall
 Log everything (log appender at root node)
-logdatapath
 Log datapath only
-logclock
 Log clock only
-logoscl
 Log OSCL only
-logperf
 Log scheduler performance
-logperfmin
 Log scheduler performance (minimal)
-logdatapathsrc
 Log source node datapath only
-logdatapathdec
 Log decoder node datapath only

2.2.3. Log Output Destination

The default log output destination is stderr. The following option can modify the log output destination

-logmem
Stores log output to heap memory.
-logtext
Stores log output to a file.

3. Test Categories

PVPlayer Engine Unit Test can be divided into several categories of test cases.

Test Category	Test Case Number	Description
Local Playback – Playback Control	1 to 50 83 to 86	These are the basic player control test cases, to test play, pause, resume, stop, repositioning, reset and EOS functionality for both protected and unprotected content.
Local Playback – File format	51 to 78	These cases test the player controls for the various file formats supported by OpenCORE.
3GPP Download, Playback	102 to 110 112 to 115	These cases test the download and playback using HTTP URLs or SDP files.
Progressive streaming playback	150 to 161	These cases test the progressive streaming playback of MP4 and MP3 contents
Streaming Playback	201 to 204 851 to 854 856 to 860	These cases test various use-cases of streaming playback. RTSP streaming is supported by default in OpenCORE.
Interactive	801 to 803	These cases test local playback and print memory usage statistics and metadata of the content.

4. Test Case Description

4.1. Player Control Test Cases

Test 1	OpenPlayStopResetTest	Step 1. Open the file Step 2. Play the clip for 15 second, Step 3. Stop the Playback
Test 2	OpenPlayStopResetCPMTest	Step 1. Open a protected file Step 2. Play the clip for 15 second, Step 3. Stop the Playback
Test 3	MetaDataTest	This test case has been hardcoded for a particular file "test_metadata.mp4" with hardcoded metadata parameters. This particular file should be present in the working directory for the case to pass. Step 1. Open the file "test_matadata.mp4". Step 2. Get the Metadata Step 3 Check the metadata values. Step 4. Start the playback and play the clip for 3 seconds. Step 5. Stop the playback. Step 6. Get the metadata keys Step 7. Check the metadata values.

Test 4	TimingTest	Step1. Open the file. Step 2. Start the playback. Step 3. Check the playback position every 100 miliseconds. Step 4. Stop the playback after 4 seconds.
Test 5	InvalidStateTest	It checks that only valid state transitions are allowed by the player Step1. Check that an error is returned on moving to START state from IDLE state Step2. Check that an error is returned on moving to STOP state from IDLE state Step3. Initialize the player Step4. Check that an error is returned on moving to ADDDATASOURCE state from INIT state Step5. Check that an error is returned on moving to START state from INIT state Step6. Open the file Step7. Check that an error is returned on moving to INIT state from PREPARE state Step8. Check that an error is returned on moving to PAUSE state from PREPARE state Step9. Play the file Step10. Check that an error is returned on moving to RESUME state from START state Step11. Check that an error is returned on moving to PREPARE state from START state Step12. Pause the file Step13. Check that an error is returned on moving to INIT state from PAUSE state Step14. Check that an error is returned on moving to PREPARE state from PAUSE state Step15. Stop the file
Test 6	PreparedStopTest	Step1. Open the file Step 2. Start the playback. Step 3. Stop the playback.
Test 7	VideoOnlyPlay7Seconds	Step1. Open the video file Step 2. Play the file for 7 seconds Step 3. Stop the playback.
Test 8	Play5StopPlay10StopReset	Step 1. Open the media file. Step 2. Play the file for 5 seconds. Step 3. Stop the playback. Step 4. Play the same file again for 10 seconds. Step 5. Stop the playback.

Test 9	PauseResume	Step 1. Open the media file. Step 2 Play the clip for 10 seconds. Step 3. Pause the clip for 5 seconds. Step 4. Resume the playback. Step 5. Play the clip for 10 seconds. Step 6. Stop the playback.
Test 10	PlayPauseStop	Step1. Open the media file. Step 2. Play the clip for 20 seconds. Step 3. Pause the playback. Step 4. Stop the playback.
Test 11	OutsideNodeForVideoSink	It creates an Media output node for the video Data Sink Step1. Open the video file Step 2. Play the file for 7 seconds Step 3. Stop the playback.
Test 12	GetPlayerState	Step 1. Open the file Step 2. Play the file for 7 seconds Step 3. Stop the playback. Step 4. Get the state of the player Step 5. Remove the Video Sink Step 6. Get the state of the player Step 7. Remove the Audio Sink Step 8. Get the state of the player Step 9. Reset the player Step10.Get the state of the player
Test 13	GetCurrentPosition	It tests the synchronous and asynchronous GetCurrentPosition calls Step 1. Open the media file. Step 2. Start the playback. Step 3. Call the function GetCurrentPositionSync() after every 1 sec, 10 times. Step 4. Call the function GetCurrentPosition() after every 1 sec, 10 times. Step 5.Stop the playback.
Test 14	PlaySetStopPosition	Step 1. Open the media file. Step 2. Start the playback. Step 3. Set the playback range of the clip with starting range as blank and the end range be such that the clip stop at 15 seconds. Step 4.Play the clip for 20 seconds. Step 5. Stop the playback.
Test 15	PlaySetStopPositionVidFrameNum	Step 1. Open the video file. Step 2. Start the playback. Step 3. Set the playback range of the clip with starting range as blank and the end range be such that the clip stop at 15 seconds or stop at the 150th frame. Step 4.Play the clip for 20 seconds. Step 5. Stop the playback.

Test 16	SetStartPositionPlayStop	Step 1. Open the media file. Step 2. Set the playback of the clip with startting range to be 10 second and end range to be of any value. Step 3. Play the clip for 20 seconds. Step 4. Stop the playback.
Test 17	SetPlayRangePlay	Step 1. Open the media file. Step 2. Set the playback of the clip with startting range to be 10 second and end range to be 25 seconds. Step 3. Play the clip for 20 seconds. Step 4. Stop the playback.
Test 18	SetPlayRangeVidFrameNumPlay	Step 1. Open the video file. Step 2. Set the playback range of the file with starting range as 100 frame (or 10 seconds) and the end range to be 20 seconds. Step 3. Play the clip for 20 seconds. Step 4. Stop the playback.
Test 19	PlaySetPlayRangeStop	Step 1. Open the media file. Step 2. Play the clip for 10 seconds. Step 3. Set the playback range of the clip with starting range to be 20 seconds and the end range to be of any value. Step 4. Let the playback continue for 10 seconds. Step 5. Stop the playback.
Test 20	PlaySetPlayRangeVidFrameNumStop	Step 1. Open the video file. Step 2. Play the clip for 10 seconds. Step 3. Set the playback range of the clip with starting range to be 100 frames or 10 seconds and the end range to be of any value. Step 4. Continue to play the clip for 10 seconds. Step 5. Stop the playback.
Test 21	TrackLevelInfoTest	Step 1. Open the media file. Step 2. Start the playback. Step 3. Call track level info APIs Step 4. Stop the playback.
Test 22	SetPlaybackRate2X	Step 1. Open the media file. Step 2. Set playback rate to be 200000. Step 3. Play the clip for 15 seconds. Step 4. Stop the payback.
Test 23	SetPlaybackRateFifth	Step 1. Open the media file. Step 2. Set playback rate to be 20000 Step 3. Play the clip for 15 seconds. Step 4. Stop the payback.

Test 24	CapConfigInterfaceTest	It fetches the capabilities of the PVPlayer Interface and configures them through both Synchronous and asynchronous calls. Step 1: Create Player Step 2: Query Interface Step 3: Get the Player capabilities and the Player Info. Step 4: Configure through a synchronous call Step 5 : Configure through an asynchronous call Step 6 : Add Data Source Step 7 : Initialize the player Step 8 : Configure through a synchronous call Step 9 : Add Data Sink (video & audio) Step 10 : Open and Play a clip Step 11 : Configure more parameters through Synchronous call while playing Step 12 : Get the video decoder capability Step 13 : stop playback and exit
Test 25	QueuedCommandsTest	It enqueues a set of commands and executes them. Step 1 : Queue and execute - add data source; Initialize; add Data Sink (Video & Audio) Step 2 : Queue and execute - open file and Play the clip for 20s Step 3 : Queue and exceute - stop playback ; remove data sink video Step 4 : Queue and exceute - remove Data Sink (audio) ; Reset ; Remove Data Source
Test 26	LoopingTest	Step 1. Open the media file. Step 2. Set the playback range of the clip with starting range to be any value and the end range to be 10 seconds. Step 3. Play the clip for 15 seconds. Step 4. Set the playback range of the clip with starting range to be 0 seconds and the end range to be 10 seconds Step 5.Play the clip for 15 seconds. Step 6. Stop the playback.
Test 27	WaitForEOSTest	Step 1. Open the media file. Step 2. Play the clip till EOS or for 180 second timeout. Step 3. Stop the playback.
Test 28	MultiplePauseResumeTest	Step 1. Open the media file. Step 2. Play the clip for 5 seconds. Step 3. Pause the playback. Step 4. Resume the playback and play the clip for 2 seconds. Step 5. Pause the playback. Step 6. Resume the playback and play the clip for 5 seconds. Step 7. Pause the playback Step 8. Resume the playback and play the clip for 3

		seconds. Step 9. Pause the playback. Step 10. Resume the playback and play the clip for 3 seconds. Step 11. Stop the playback.
Test 29	MultipleRepositionTest	Step 1. Open the media file. Step 2. Play the clip for 5 seconds. Step 3. Set the playback range of the clip with start range as 20 seconds and end range to be indeterminate (Reposition the clip to 20 Seconds). Step 4. Play the clip for 5 seconds. Step 5. Set the playback range of the clip with start range as 5 seconds and end range to be indeterminate(Reposition the clip to 5 Seconds). Step 6. Play the clip for 5 seconds. Step 7. Set the playback range of the clip with start range as 25 seconds and end range to be indeterminate.(Reposition the clip to 25 Seconds). Step 8. Play the clip for 5 seconds. Step 9. Set the playback range of the clip with start range as 10 seconds and end range to be indeterminate.(Reposition the clip to 10 Seconds). Step 10. Play the clip for 5 seconds. Step 11. Set the playback range of the clip with start range as 20 seconds and end range to be indeterminate.(Reposition the clip to 20 Seconds). Step 12. Now again set the playback range of the clip with start range as 0 seconds and end range to be indeterminate.(Reposition the clip to 0 Seconds). Step 13. Play the clip for 5 seconds. Step 14. Stop the playback.
Test 30	MediaIONodeOpenPlayStopTest	Step 1. Open the media file, Step 2. Play the clip for 20 second, Step 3. Stop the Playback
Test 31	MediaIONodePlayStopPlayTest	Step 1. Open the media file, Step 2. Plays the clip for 5 second Step 3. Stop the playback. Step 4. Play the same clip again for 10 seconds. Step 5. Stop the playback.
Test 32	MediaIONodePauseResumeTest	Step 1. Open the media file. Step 2. Play the clip for 5 seconds . Step 3. Pause the playback and wait for 5 seconds Step 4. Resume the playback and play the clip for 10 seconds. Step 5. Stop the playback.

Test 33	MediaIONodePlaySetPlayback RangeTest	Step 1. Open the media file. Step 2. Play the clip for 10 seconds. Step 3. Set the playback range of the clip with starting range as 20 seconds till the end of the clip. Step 4. Play the clip for 10 seconds. Step 5. Stop the playback.
Test 34	MediaIONodeSetPlaybackRate 3XTest	Step 1. Open the media file. Step 2. Set the playback rate of the clip to 3 times its original rate. Step 3. Play the clip for 20 seconds. Step 4. Stop the playback.
Test 35	MediaIONodeSetPlaybackRate HalfTest	Step 1. Open the media file. Step 2. Set the playback rate of the clip to half of its original rate. Step 3. Play the clip for 20 seconds. Step 4. Stop the playback.
Test 36	MediaIONodeLoopingTest	Step 1. Open the media file, Step 2. Set the playback range of the clip with starting range as indeterminate and the end range be 10 seconds. Step 3. Play the clip for 15 seconds Step 4. Now again set the playback range of the clip with starting range as 0 and the end range to be 10 seconds. Step 4. Play the clip again for 15 seconds. Step 5. Stop the playback.
Test 37	MediaIONodeWaitForEOSTest	Step 1. Open the media file. Step 2. Play the clip till the end of steaming or timeout after 180 seconds. Step 3. Stop the playback.
Test 38	MediaIOMultiplePauseResume Test	Step 1. Open the media file. Step 2 Pause the clip after 5 seconds. Step 3. Resume the playback and play the clip for 2 seconds. Step 4. Pause the clip again and wait for 5 seconds. Step 5. Resume the playback and play the same clip for 3 seconds. Step 6. Now again pause the clip and wait for 5 seconds. Step 7. Stop the playback.
Test 39	MediaIOMultipleRepositionTest	Step 1. Open the media file. Step 2. Play the clip for 5 seconds. Step 3. Set the playback range of the clip with start range as 20 seconds and end range to be indeterminate (Reposition the clip to 20 Seconds). Step 4. Play the clip for 5 seconds. Step 5. Set the playback range of the clip with start range as 5 seconds and end range to be indeterminate (Reposition the clip to 5 Seconds).

		Step 6. Play the clip for 5 seconds. Step 7. Set the playback range of the clip with start range as 25 seconds and end range to be indeterminate.(Reposition the clip to 25 Seconds). Step 8. Play the clip for 5 seconds. Step 9. Set the playback range of the clip with start range as 10 seconds and end range to be indeterminate.(Reposition the clip to 10 Seconds). Step 10. Play the clip for 5 seconds. Step 11. Set the playback range of the clip with start range as 20 seconds and end range to be indeterminate.(Reposition the clip to 20 Seconds). Step 12. Now again set the playback range of the clip with start range as 0 seconds and end range to be indeterminate.(Reposition the clip to 0 Seconds). Step 13. Play the clip for 5 seconds. Step 14. Stop the playback.
Test 40	MediaIORepositionConfigTest	Step 1.Open the media file Step 2. Set the playback range of the clip with start range as 10 seconds and end range to be indeterminate(Reposition the clip to 10 Seconds). Step 3. Play the clip for 5 seconds. Step 4. Set the playback range of the clip with start range as 20 seconds and end range to be indeterminate.(Reposition the clip to 20 Seconds). Step 5. Play the clip for 10 seconds. Step 6. Set the playback range of the clip with start range as 20 seconds and end range to be indeterminate.(Reposition the clip to 20 Seconds). Step 7. Play the clip for 10 seconds. Step 8. Set the playback range of the clip with start range as 20 seconds and end range to be indeterminate.(Reposition the clip to 20 Seconds). Step 9. Play the clip for 10 seconds. Step 10. Set the playback range of the clip with start range as 20 seconds and end range to be indeterminate(Reposition the clip to 20 Seconds). Step 11. Play the clip for 10 seconds. Step 12. Set the playback range of the clip with start range as 20 seconds and end range to be indeterminate.(Reposition the clip to 20 Seconds). Step 13. Play the clip for 5 seconds. Step 14. Set the playback range of the clip with start range as 30 seconds and end range to be indeterminate.(Reposition the clip to 30 Seconds). Step 15. Play the clip for 5 seconds. Step 16. Stop the Playback.

Test 41	MediaIONodeEOSLoopingTest,	Step 1. Open the media file Step 2. Play the clip for 180 sec. or till the end of streaming(EOS). Step 3. Set the playback range of the clip with starting range as 0 and the end range to be indeterminate. Step 4. Play the clip for 180 sec. or till the end of streaming(EOS). Step 5. Set the playback range of the clip with starting range as 0 and the end range to be indeterminate. Step 6. Play the clip for 180 sec. or till the end of streaming(EOS). Step 7. Stop the playback.
Test 42	MediaIONodeRepositionDuringPreparedTest	Step 1. Open the media file Step 2. Set the playback range of the clip with starting range as 20 seconds and the end range to be indeterminate.(Reposition the clip to 20 Seconds). Step 3. Start the playback. Step 4. Play the clip for 10 seconds. Step 5. Stop the playback.
Test 43	MediaIONodePlaySetPlaybackRangeStopPlayTest	Step 1. Open the media file. Step 2. Play the clip for 5 seconds Step 3. Set the playback range of the clip with starting range as 20 seconds and the end range as indeterminate. Step 4. Play the clip for 5 seconds. Step 5. Stop the playback. Step 6. Play the clip for 10 seconds. Step 7. Stop the playback.
Test 44	MediaIONodePlayStopSetPlaybackRangePlayStopTest	Step 1. Open the media file. Step 2. Play the clip for 10 seconds Step 3. Stop the playback. Step 4. Set the playback range of the clip with starting range as 30 seconds and the end range to be of any value. Step 5. Play the clip for 10 seconds and check the playback position. Step 6. Stop the playback.
Test 45	MediaIONodeSetPlaybackRangeNearEndStartTest	Step 1. Open the media file. Step 2. Set the playback range of the clip as 1 second before the end of the clip. Step 3. Play the clip till the EOS.
Test 46	MediaIONodePlayRepositionNearEndOfClipTest	Step 1. Open the media file. Step 2. Start the playback of the clip and wait till 2 seconds are remaining for the clip to end. Step 3. Set the playback range of the clip with starting range as 0 second and the end range to be of any value. Step 4. Play the clip for 5 seconds. Step 5. Stop the playback.

Test 47	MediaIONodeForwardStepToEOSTest	Step 1. Open the media file. Step 2. Set the playback rate to -1X in stepping mode. Step 3. Step 1 Frame and Wait for 1/5 sec then Step again. Do this until End of stream is reached. Step 4. Stop the playback.
Test 48	MediaIONodeForwardStepTest	Step 1. Open the media file. Step 2. Play the clip for 2 seconds. Step 3. Pause the playback. Step 4. Set the playback rate to 1X in stepping mode. Step 5. Resume the Playback. Step 6. Step 1 Frame and Wait for 1/2 sec then Step again until 10 steps in total. Step 7. Set the playback range of the clip with starting range as 20 seconds(Reposition to 20 secs) and the end range to be indeterminate. Step 8. Step 1 Frame and Wait for 1/2 sec then Step again until 25 steps in total (incl the 10 prior) Step 9. Pause the playback. Step 10. Set the playback rate to normal 1X playback. Step 11. Resume the Playback. Step 12. Play the clip for 2 seconds. Step 13. Stop the playback.
Test 49	MediaIONodeForwardStepActiveAudioTest	Step 1. Open the media file. Step 2. Play the clip for 2 seconds. Step 3. Pause the playback. Step 4. Set the playback rate to 1X in stepping mode. Step 5. Resume the Playback. Step 6. Step 1 Frame and Wait for 1/2 sec then Step again until 10 steps in total. Step 7. Set the playback range of the clip with starting range as 20 seconds(Reposition to 20 secs) and the end range to be indeterminate. Step 8. Step 1 Frame and Wait for 1/2 sec then Step again until 25 steps in total (incl the 10 prior) Step 9. Pause the playback. Step 10. Set the playback rate to normal 1X playback. Step 11. Resume the Playback. Step 12. Play the clip for 2 seconds. Step 13. Stop the playback.
Test 83	MediaIONodeBackwardForwardTest	1) Open the media file 2) Play the clip for 40 seconds 3) Set the playback rate to –2X 4) Play the clip backwards at 2X for 10 seconds 5) Set the playback rate to 3X 6) Play the clip forward at 3X for 10 seconds 7) Set the playback rate to normal 8) Play the clip forward at 1X for 20 seconds or until EOS 9) Stop the playback after 20 seconds or if EOS is

		reached
Test 84	MediaIONodePauseNearEOSBackwardResumeTest	1) Open the media file 2) Play the clip until 1 second before the end 3) Pause for 10 seconds 4) Set the playback rate to –4X 5) Play the clip backwards at 4X for 10 seconds 6) Set the playback rate to 1X 7) Play the clip forward at normal speed for 20 seconds or until EOS 8) Stop the playback after 20 seconds or if EOS is reached
Test 85	MediaIONodeMultiplePauseSetPlaybackRateResumeTest	1) Open the file 2) Play for 10 seconds 3) Pause for 1 second 4) Set the playback rate to different playback rates 5) Resume playback for 5 seconds 6) Repeat steps 3 to 5 with a different playback rate for 10 times 7) Set playback rate to normal (1X) 8) Play the clip forward at normal speed for 20 seconds or until EOS 9) Stop the playback
Test 86	MediaIONodBackwardNearEOSForwardNearStartTest	1) Open the file 2) Play until 1 second before end of file 3) Pause for 5 seconds 4) Set the playback rate to –4X 5) Resume playback at –4X speed until 1 second after start of file 6) Set the playback rate to 1X 7) Play the clip forward at normal speed for 20 seconds or until EOS 8) Stop the playback

4.2. File Format Test Cases

Test 51	MP4M4VAMRFileOpenPlayStopTest	Step 1.Open a .mp4 ,m4v and .amr file. Step 2..Play each of the the clip for 20 second. Step 3.Stop the playback.
Test 52	MP4M4VAMRFilePlayStopPlayStopTest	Step 1.Open a .mp4 ,.m4v and .amr files Step 2..Play each of the the clip for 10 second. Step 3.Stop the playback. Step 4.Play the same clip again for 10 seconds Step 5.Stop the playback..
Test 53	MP4H263AMRFileOpenPlayStopTest	Step 1.Open a .mp4 audio and video and .amr Step 2..Play the clip for 10 second Step 3.Stop the playback.
Test 54	MP4H263AMRFilePlayStopPlayStopTest	Step 1.Open a .mp4 ,H.263 and amr file Step 2..Play each of the clip for 10 second Step 3.Stop the playback. step 4.Play the same clip again. Step 5.Stop the playback.
Test 55	MP4AVCAMRFileOpenPlayStopTest	Step 1.Open a .mp4,.avc and .amr file Step 2.Play each of the the clip for 10 second Step 3.Stop the playback.
Test 56	MP4AVCAMRFilePlayStopPlayStopTest	Step 1.Open a .mp4,.avc and .amr file. Step 2.Play each of the clip for 10 second Step 3.Stop the playback. step 4.Play the same clip again. Step 5.Stop the playback.
Test 57	MP4AMRFileOpenPlayStopTest	Step 1.Open a .mp4 and .amr file. Step 2..Play each of the clip for 10 seconds. Step 3.Stop the playback.
Test 58	MP4AMRFilePlayStopPlayStopTest	Step 1.Open a .mp4 and .amr file. Step 2..Play each of the clip for 10 seconds. Step 3.Stop the playback. step 4.Play the same clip again, Step 5.Stop the playback.
Test 59	MP4AACFileOpenPlayStopTest	Step 1.Open a.mp4 and .aac file. Step 2..Play each of the clip for 10 second, Step 3.Stop the playback.
Test 60	MP4AACFilePlayStopPlayStopTest	Step 1.Open a.mp4 and .aac file. Step 2..Play each of the clip for 10 seconds. Step 3.Stop the playback. step 4.Play the same clip again, Step 5.Stop the playback.

Test 61	MP4M4VAMRTextFileOpenPlayStopTest	Step 1.Open a .mp4, .m4v,.amr and.txt files. Step 2..Play each of the clip for 10 second. Step 3.Stop the playback.
Test 62	MP4M4VAMRTextFilePlayStopPlayStopTest	Step 1.Open a.mp4,.m4v ,.amr and.txt file. Step 2..Play each of the clip for 10 seconds. Step 3.Stop the playback. step 4.Play the same clip again, Step 5.Stop the playback.
Test 63	AMRIETFFileOpenPlayStopTest	Step 1.Open amr ietff file. Step 2..Play the clip for 10 second. Step 3.Stop the playback.
Test 64	AMRIETFFilePlayStopPlayStopTest	Step 1.Open amr ietff file. Step 2.Play the clip for 10 seconds. Step 3.Stop the playback. step 4.Play the same clip again, Step 5.Stop the playback.
Test 67	AACADTSFileOpenPlayStopTest	Step 1.Open aac adts file. Step 2.Play the clip for 10 second. Step 3.Stop the playback.
Test 68	AACADTSFilePlayStopPlayStopTest	Step 1.Open aac adts file. Step 2.Play the clip for 10 second. Step 3.Stop the playback. Step 4.Play the same clip again. Step 5.Stop the playback.
Test 69	AACADIFFileOpenPlayStopTest	Step 1.Open aac adiff file. Step 2.Play the clip for 10 second. Step 3.Stop the playback.
Test 70	AACADIFFilePlayStopPlayStopTest	Step 1.Open aac adiff file. Step 2.Play the clip for 10 second. Step 3.Stop the playback. Step 4.Play the same clip again. Step 5.Stop the playback.
Test 71	AACRawFileOpenPlayStopTest	Step 1.Open aac raw file. Step 2.Play the clip for 10 second. Step 3.Stop the playback.
Test 72	AACRawFilePlayStopPlayStopTest	Step 1.Open aac raw file. Step 2.Play the clip for 10 second. Step 3.Stop the playback. Step 4.Play the same clip again. Step 5.Stop the playback.
Test 73	MP3CBRFileOpenPlayStopTest	Step 1.Open mp3 cbr file. Step 2.Play the clip for 10 second. Step 3.Stop the playback.

Test 74	MP3CBRFilePlayStopPlayStopTest	Step 1.Open mp3 cbr file. Step 2.Play the clip for 10 second. Step 3.Stop the playback. Step 4.Play the same clip again. Step 5.Stop the playback.
Test 75	MP3VBRFileOpenPlayStopTest	Step 1.Open mp3 vbr file. Step 2.Play the clip for 10 second. Step 3.Stop the playback.
Test 76	MP3VBRFilePlayStopPlayStopTest	Step 1.Open mp3 vbr file. Step 2.Play the clip for 10 second. Step 3.Stop the playback. Step 4.Play the same clip again. Step 5.Stop the playback.
Test 77	WAVFileOpenPlayStopTest	Step 1.Open wav file. Step 2.Play the clip for 10 second. Step 3.Stop the playback.
Test 78	WAVFilePlayStopPlayStopTest	Step 1.Open wav file. Step 2.Play the clip for 10 second. Step 3.Stop the playback. Step 4.Play the same clip again. Step 5.Stop the playback.

4.3. Download Test Cases

Test 102	ThreeGPPDownloadPlayAsapTest	Step 1. Open the player Step 2. Wait for the data ready event to occur. Step 3. Start the playback. Step 4. Play the clip till EOS for play until 10 seconds after download. Step 5. Stop the Playback.
Test 103	ThreeGPPDownloadDownloadThenPlayTest	Step 1. Open the player Step 2. Wait for the data ready event to occur. Step 3. Download the entire content and then play the downloaded file. Step 4. Stop the Playback.
Test 104	ThreeGPPDownloadDownloadOnlyTest	Step 1. Open the player Step 2. Wait for the data ready event to occur. Step 3. Download the entire content .
Test 105	ThreeGPPDownloadCancelDuringInitTest	Step1. Open the player. Step 2. Start the download. Step 3. Wait for 1 second and then click on cancel. Step 4. Wait for 5 seconds. Step 6. Close the player.
Test 106	ThreeGPPDownloadContentTooLarge	Step1. Open the player. Step 2. Downlaod the file whose size is larger than the Maximum file size which the player can download. Step 3. The error message"PVMFErrContentTooLarge" should be displayed Step 4. Close the player. Step 5. Stop the playback .
Test 107	ThreeGPPDownloadTruncated	Step 1. Open the player. Step 2. Download the content. Step 3. Start the playback until PVMFInfoContentTruncated or EOS error occurs. Step 4. Stop the playback.
Test 108	ThreeGPPDownloadProtocolRolloverTest	Step 1. Open the player. Step 2. Set the Protocol Rollover . Step 3. Download the content.
Test 109	ProgDownloadSetPlayBackRangeTest	1) Download the content 2) After download is complete, set playback range to start playback from ¼ of duration of the clip 3) Play for 10 seconds 4) Stop the playback
Test 110	ProgDownloadPlayUtilEOSTest	1) Download the content 2) After download is complete, play until EOS

Test 112	ProgDownloadDownloadThenPlayPauseTest	A test case to test the normal HTTP download and playback with PAUSE-RESUME from an HTTP URL
Test 113	ProgDownloadDownloadThenPlayRepositionTest	A test case to test the normal HTTP download and then start playback with SETPLAYBACKRANGE from an HTTP URL
Test 114	ProgDownloadCancelDuringInitDelayTest	A test case to test cancel of invalid 3GPP download during init. Cancel request is delayed
Test 115	ProgDownloadPauseResumeAfterUnderflowTest	A test case to test the normal PDL Pause Resume After UnderFlow and playback from an HTTP URL.

4.4. Progressive Streaming Test Cases

Test 150	ProgPlaybackMP4UntilEOSTest	Progressive streaming playback until EOS
Test 151	ProgPlaybackMP4ShortTest	Progressive streaming playback for 20 seconds
Test 152	ProgPlaybackMP4ShortPauseResumeTest	1) Progressive streaming playback for 20 seconds 2) Pause for 20 seconds 3) Resume playback for 20 seconds or until EOS
Test 153	ProgPlaybackMP4LongPauseResumeTest	1) Progressive streaming playback for 20 seconds 2) Pause for 90 seconds 3) Resume playback for 20 seconds or until EOS
Test 154	ProgPlaybackMP4StartPauseSeekResumeTwiceTest	1) Progressive streaming playback for 20 seconds 2) Pause the playback 3) Reposition to start playback at 180 seconds 4) Resume playback for 20 seconds 5) Reposition to start playback at 100 seconds 6) Resume playback for 20 seconds 7) Stop the playback
Test 155	ProgPlaybackMP4SeekStartTest	1) Before playback is started, reposition to start playback at 180 seconds. 2) Progressive streaming playback until EOS
Test 156	ProgPlaybackMP4StartPauseSeekResumeLoopTest	Basically like test 154 in a 10X Loop: 1) Progressive streaming playback for 20 seconds 2) Pause the playback 3) Reposition to start playback at 180 second 4) Resume playback for 20 seconds 5) Pause playback 6) Reposition to start playback at 100 second 7) Resume playback for 20 seconds 8) Repeat steps 2) through 7), a total of 10 times
Test 157	ProgPlaybackMP4SeekForwardStepLoopTest	1) Progressive streaming playback for 20 seconds 2) Pause the playback 3) Reposition to start playback at 60 second (time marker set to 60 second) 4) Increment time marker by 2 seconds 5) Resume playback for 5 seconds 6) Pause playback 7) Reposition to start playback at time marker

		8) Repeat steps 4) through 7), a total of 10 times
Test 158	ProgPlaybackPlayStopPlayTest	1) Progressive streaming playback for 10 seconds 2) Stop the playback 3) Start playback for 10 seconds or until EOS
Test 159	ProgPlaybackMP4SeekToBOCAfterDownloadCompleteTest	1) Progressive streaming playback until download is complete 2) Pause playback 3) Reposition to start playback at 0 second 4) Resume playback for 20 seconds or until EOS
Test 160	ProgPlaybackMP4SeekInCacheAfterDownloadCompleteTest	1) Progressive streaming playback until download is complete 2) Pause playback 3) Get current position 4) Reposition to start playback at current position + 5 seconds 5) Resume playback for 20 seconds or until EOS
Test 161	ProgPlaybackMP4EOSStopPlayAgainTest	1) Progressive streaming playback until EOS 2) Stop playback 3) Start playback for 3 seconds

4.5. Streaming Test Cases

Test 201	StreamingOpenPlayStopTest	Step 1. Open the player Step 2. Start streaming a file through rtsp url. Step 3. Stream the content for 20 seconds. Step 4. Stop the streaming.
Test 202	StreamingOpenPlayPausePlayStop Test	Step 1. Open the player Step 2. Start streaming a file through rtsp url. Step 3. Stream the content for 20 seconds. Step 4. Pause the streaming. Step 5. Start the playback again. Step 6. Stop the streaming.
Test 203	StreamingOpenPlaySeekStopTest	Step 1. Open the player Step 2. Start streaming a file through rtsp url. Step 3. Stream the content for 20 seconds. Step 4. Stop the streaming. Step 5. Start the playback again.
Test 204	StreamingCancelDuringPrepareTest	Step 1. Open the player Step 2. Start streaming a file through rtsp url. Step 3. Stream the content for 10 seconds. Step 4. Cancel the streaming while the streaming is still going on.
Test 851	StreamingOpenPlayUntilEOSTest	Step 1. Open the player Step 2. Start streaming a file through rtsp url. Step 3. Stream the content till the EOS occurs.
Test 852	StreamingOpenPlayPausePlayUntil EOSTest	Step 1. Open the player Step 2. Start streaming a file through rtsp url. Step 3. Stream the content for 20 seconds. Step 4. Pause the streaming. Step 5. Start the playback again and stream the content till EOS occurs.
Test 853	StreamingOpenPlaySeekPlayUntilE OSTest	Step 1. Open the player Step 2. Start streaming a file through rtsp url. Step 3. Stream the content for 20 seconds. Step 4. Seek the file to 10 seconds. Step 5. Stream the content again till EOS occurs.
Test 854	StreamingJitterBufferAdjustUntilEO STest	Step 1. Open the player Step 2. Set the jitter buffer option Step 3. Start streaming a file through rtsp url. Step 4. Stream the content for 20 seconds. Step 4. Seek the file to 10 seconds. Step 5. Stream the content again till EOS occurs. Step 6. Stop the player.

Test 856	StreamingPlayBitStreamSwitchPlayUntilEOSTest	Step 1. Open the player Step 2. Set the speed of the stream. Step 3. Start streaming a file through rtsp url. Step 4. Stream the content till EOS occurs.. Step 5. Stop the player.
Test 857	StreamingMultiplePlayUntilEOSTest	Step 1. Open the player Step 2. Start streaming a file through rtsp url. Step 3. Stream the content till EOS is reached. Step 4. Start streaming the same file file again till EOS occurs. Step 5. Stop the player.
Test 859	StreamingProtocolRollOverTest	Step 1. Open the player. Step 2. Set the Protocol Rollover . Step 3. Stream the content.
Test 860	StreamingProtocolRollOverTestWithUnknownURLType	Step 1. Open the player. Step 2. Set the Protocol Rollover with the unknown URL type. Step 3. Stream the content. Step 4. Stop the player.

4.6. Interactive Test Cases

Test 801	PrintMetadataTest	Step 1. Open the media file. Step 2. Get the Metadata keys. Step 3 Get the metadata values. Step 4. Start the playback and play the clip for 2 seconds. Step 5. Get the metadata keys Step 6. Check the metadata values. Step 8. Print out the metadata list. Step 9. Stop the playback. Step 10. Get the metadata keys Step 11. Check the metadata values.
Test 802	PrintMemStatsTest	Step 1. Open the media file. Step 2. Get the Metadata keys. Step 3 Get the metadata values. Step 4. Start the playback and play the clip for 20 seconds. Step 5. Stop the playback.
Test 803	PlayUntilEOSTest	Step 1. Open the media file. Step 2. Play the file until EOS occurs. Step 3. Stop the Playback.