

OnStream MediaPlayer+ SamplePlayer Tutorial

for
Android Platforms
SDK Version 3.7 and later

VisualOn, Inc.

<http://www.visualon.com>

September, 2013

Version 1.3

201309002

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1 About This Manual

1.1 OVERVIEW

This manual describes the installation and usage of the sample player project included with the OnStream[®] MediaPlayer+ SDK (or “SDK”) release for Android platforms. The sample player provides an example of a fully integrated SDK client that highlights some of the important features of the SDK.

1.2 SCOPE

This manual is intended for Android developers who need to create a flexible and high-performance media player that supports playback of live or VOD streaming, progressive download, and local media sources.

Android developers are assumed to be familiar with: the Android SDK/ADT; the Eclipse IDE; the Java Native Interface (JNI) and Android NDK; and the Java and C/C++ programming languages.

1.3 REVISION HISTORY

Rev	Product Version	Date	Description
1.2	V3.5	2013-03-25	Document Creation
1.3	V3.7	2013-09-05	Updated SamplePlayer Screenshots

1.4 RELATED DOCUMENTS

The following documents (included with your installation package) provide additional information related to this user guide:

- *OnStream MediaPlayer+ Introduction and Documentation Guide for Android Platforms*
- *OnStream MediaPlayer+ SDK Project Setup for Android Platforms*
- *OnStream MediaPlayer+ Player API Reference Manual for Android Platforms*
- *OnStream MediaPlayer+ Player SDK Integration Guide for Android Platforms*

1.5 ABBREVIATIONS

Acronym	Description
API	Application Programming Interface
DRM	Digital Rights Management
IDE	Integrated Development Environment
JNI	Java Native Interface
OSMP+	OnStream MediaPlayer+
SDK	Software Development Kit

1.6 TYPOGRAPHIC CONVENTIONS

- **Directory Contents** are shown in “Calibri” font in **blue**.
- **File and Directory Names** are shown in “Calibri” font in **blue italics**.
- **File Contents and Source Code** are shown single-spaced in “Courier New” font.
- **Menu Options, Commands, and Windows/Views** are shown single-spaced in **bold**.
- **Project and Document Titles** are shown in *italics*.

Examples:

1. Select the **Select root directory** radio button, and input or browse to **<SDK_INSTALL_DIR>\Android\SamplePlayer**.
2. Under **Projects**, make sure that the *SamplePlayer* checkbox is selected. Click **Finish** to complete the import.
3. Customer module integration is discussed in the *OnStream MediaPlayer+ Player API Reference Manual for Android Platforms*.
4. Set the format for the surface using

```
SurfaceHolder.setFormat(PixelFormat.RGBA_8888);
```

2 Prerequisites

This section describes prerequisite documentation and examples for the sample player.

2.1 PROJECT SETUP MANUAL

The sample player project requires installation of the Android SDK/ADT, Eclipse IDE, and OSMP+ SDK. SDK project setup is described in the *OnStream MediaPlayer+ SDK Project Setup for Android Platforms* manual.

2.2 INTEGRATION GUIDE

SDK integration with Android projects, including detailed source code examples and integration labs, is discussed in detail in the *OnStream MediaPlayer+ SDK Integration Guide for Android Platforms* manual.

2.3 LICENSING AND SUPPORT

An evaluation license is included with the sample player project. If the license has expired, the project can still be compiled but it cannot be executed. Please contact VisualOn support to update your evaluation license. Visual contacts are provided in the *OnStream MediaPlayer+ Introduction and Documentation Guide for Android Platforms*.

3 SamplePlayer Installation

This section describes the installation of the *SamplePlayer* application included with the SDK.

3.1 IMPORT THE SAMPLEPLAYER PROJECT INTO ECLIPSE

To import the *SamplePlayer* project:

1. From the Eclipse IDE, select **File->Import...**. The **Import** dialog box will appear.

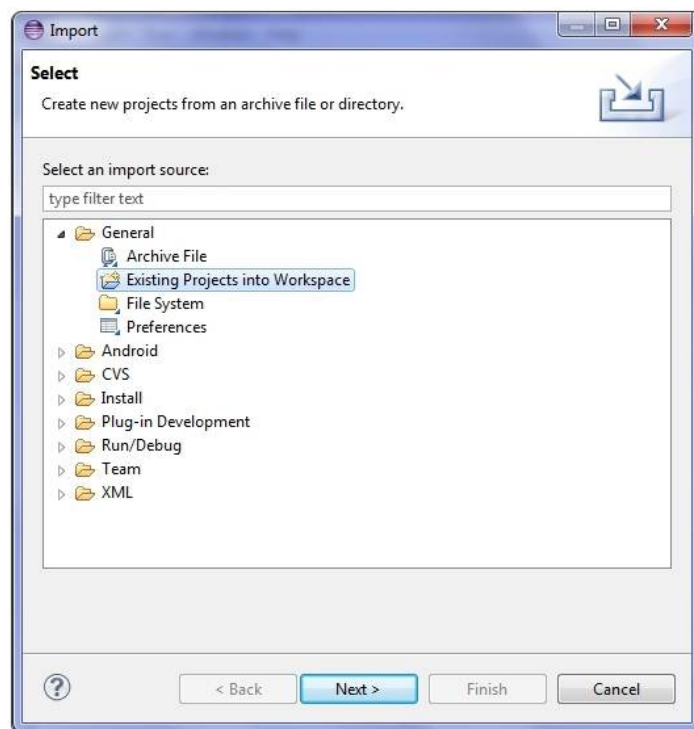


Figure 3-1: Eclipse IDE Import Dialog Box 1

2. From the **Import** dialog box, open the **General** folder and select **Existing Projects into Workspace**. Click **Next** to continue.
3. Select the **Select root directory** radio button, and input or browse to `<SDK_INSTALL_DIR>\Android\SamplePlayer`. Under **Projects**, make sure that the *SamplePlayer* checkbox is selected. Click **Finish** to complete the import.

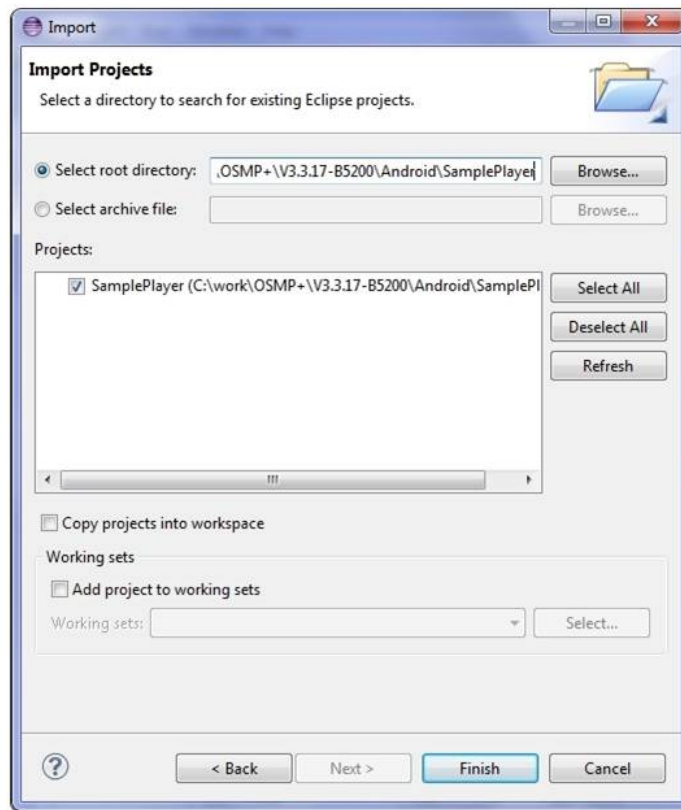


Figure 3-2: Eclipse IDE Import Dialog Box 2

An Android project whose name is *SamplePlayer* has been imported into Eclipse, and should now be visible in the **Package Explorer**. However, the imported project contains multiple errors and warnings, indicated in red. Adding the SDK to the project will remove these warnings.

Note: Adding the SDK to a project is described in the *OnStream MediaPlayer+ SDK Project Setup for Android Platforms* manual.

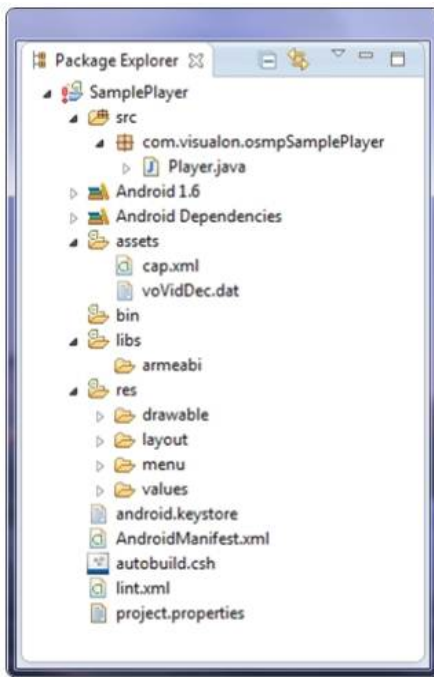


Figure 3-3: Eclipse IDE Package Explorer View with *SamplePlayer* Project

3.2 RUN THE SAMPLE PLAYER ON A DEVICE

Once the SDK has been added to the *SamplePlayer* project in Eclipse, you are ready to run the application on an Android device.

To run the *SamplePlayer* application on an Android device:

1. Connect the device to the Eclipse workstation with a USB cable.
2. In Eclipse, right-click on the *SamplePlayer* project in the **Project Explorer** and select **Run as -> Android Application**.

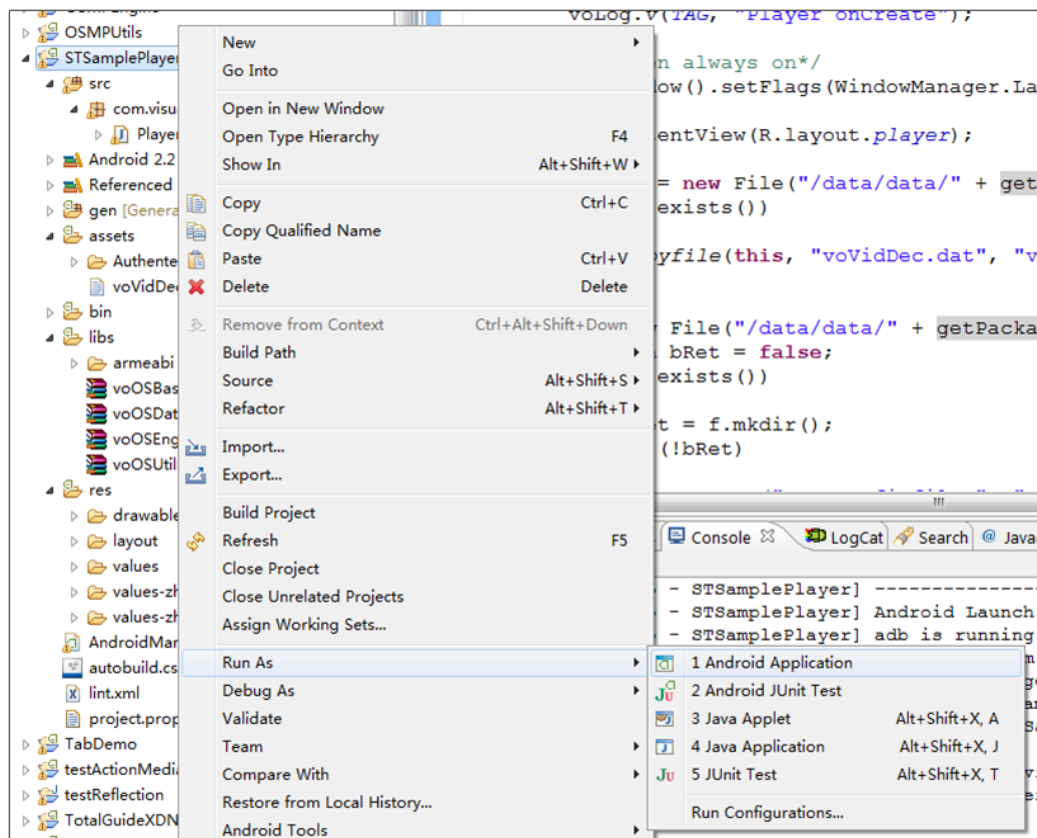


Figure 3-4: Context Menu for *SamplePlayer* Project in Eclipse IDE

The *SamplePlayer* application can now be explored on the Android device.

4 SamplePlayer Usage

This section describes the usage of the *SamplePlayer* application included with the SDK. The *SamplePlayer* application implements a fully integrated media player with the following features:

- Manual and list input for media source selection
- List input for subtitle source selection
- OpenMAX AL option (ICS and later on supported CPUs)
- Synchronous/Asynchronous source open option
- Pause, Play, and Seek through touchscreen controls
- Channel Switching
- Built-in and manual Closed Captions/Subtitles rendering
- Asset property selection (language, bit rate, audio track)

4.1 INITIAL VIEW

The initial view of the *SamplePlayer* application, shown in Figure 4-1 provides the user interface (UI) to select the media and subtitle sources, and to select global options.

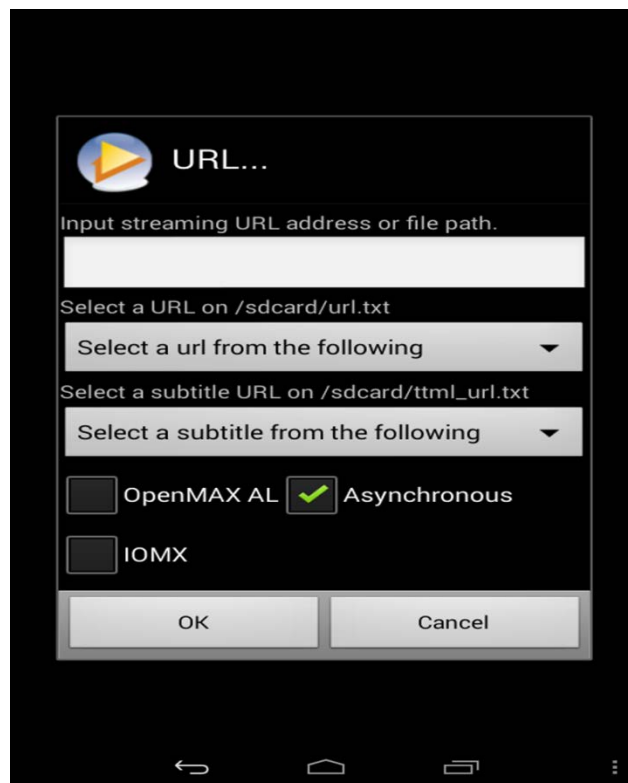


Figure 4-1: Initial View of the *SamplePlayer* Application

4.1.1 Select the Media Source

The *SamplePlayer* application allows you to select the media source (e.g., H.264 or MP4 file, HTTP Live Streaming link, etc.) for playback. The media source path can be input manually or selected from a list.

To manually input a media file or link:

1. Enter the full URL (including “http://”) or file path to the media source in the **Input streaming URL address or file path** text box.

Alternately, a list of media files and links can be supplied to the *SamplePlayer* application through a text file. The text list must be saved to [/sdcard/url.txt](#), with each link URL and file path separated by line.

To select a media file or link from [url.txt](#):

1. Touch/Click the **Select a URL on /sdcard/url.txt** drop-down menu to display the list.
2. Touch/Click the desired media source.

4.1.2 Select the Subtitle Source

The *SamplePlayer* application allows you to optionally select an external subtitle source (e.g., CEA 608, CEA 708, SRT, SMI, etc.) for Closed Captions (CC) or subtitles rendering. A list of subtitle files and links can be supplied to the *SamplePlayer* application through a text file. The text list must be saved to [/sdcard/ttml_url.txt](#), with each link URL and file path separated by a line.

To select an external subtitle file or link from [ttml_url.txt](#):

1. Touch/Click the **Select a URL on /sdcard/ttml_url.txt** drop-down menu to display the list.
2. Touch/Click the desired subtitle source.

4.1.3 OpenMAX AL

The *SamplePlayer* application includes an option for OpenMAX AL hardware decoding. OpenMAX hardware decoding is only supported on Android Ice Cream Sandwich (ICS) releases and later, and only on supported CPUs.

To activate the OpenMAX AL hardware decoding option:

1. Select (check) the **OpenMAX AL** checkbox.

4.1.4 Asynchronous Source Open

The *SamplePlayer* application includes an option for asynchronous source open. In synchronous operation, the source open method is blocking, and will not return until the open operation is complete. In asynchronous operation, the open method will return immediately. When the source open is complete, the SDK will notify the client through its event listener.

To activate the asynchronous source option:

1. Select (check) the **Asynchronous** checkbox.

4.1.5 Start Playback

To initialize the SDK, open the media source, and start playback:

1. Touch/click **OK**.

Note: Initializing the SDK player, opening the media source, and beginning playback is discussed in section 4 (Basic Integration) of the *OnStream MediaPlayer+ Player SDK Integration Guide for Android Platforms*.

4.2 PLAYBACK CONTROLS

During playback, the *SamplePlayer* application provides a set of basic controls including a shared **Play/Pause** button and a **Seek** bar, as shown in Figures Figure 4-2 and Figure 4-3. The playback controls are displayed whenever a touchscreen event occurs, or when the application is resumed after an interruption.

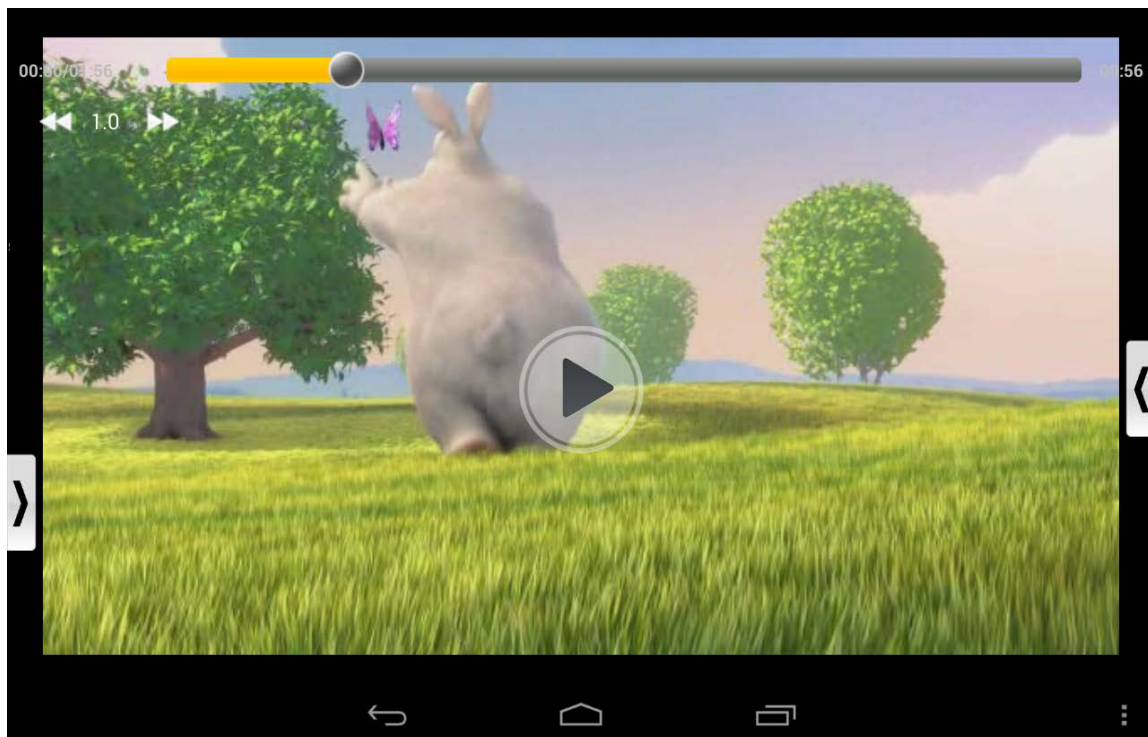


Figure 4-2: Playback Controls when Media is Paused or Application is Resumed

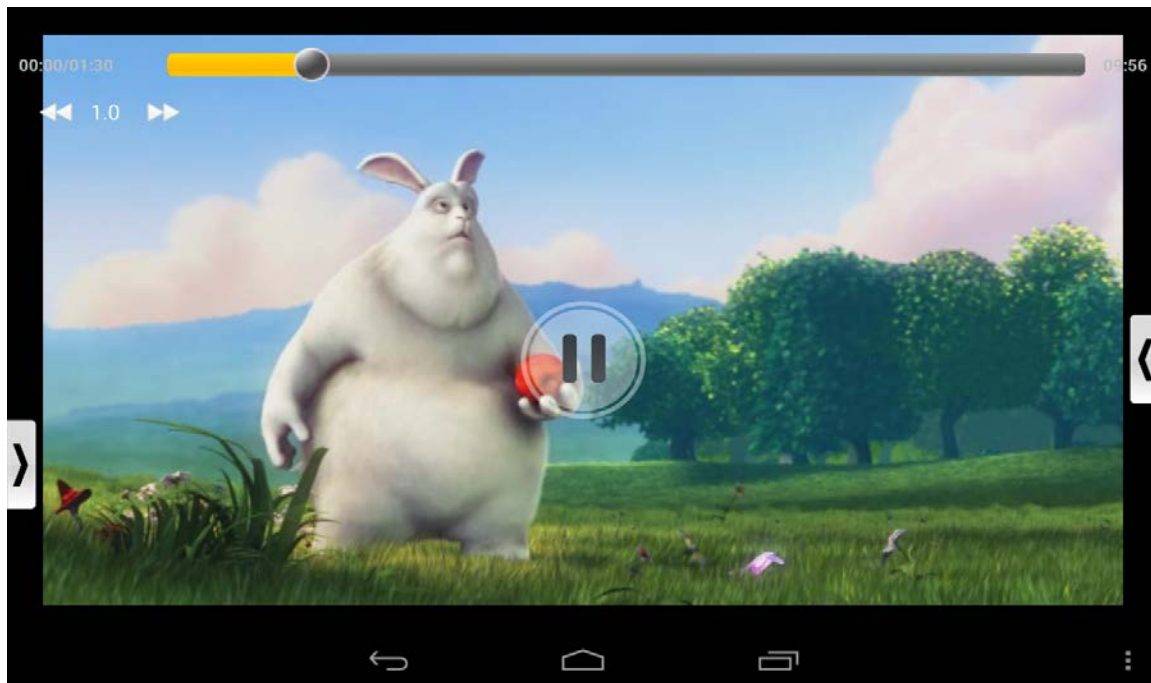


Figure 4-3: Playback Controls when Media is Playing

Note: Pause/Play integration is discussed in section 5 (Advanced Integration: Pause/Play Control) of the *OnStream MediaPlayer+ Player SDK Integration Guide for Android Platforms*. Seekbar integration is discussed in section 7 (Advanced Integration: Seekbar Control) of the *OnStream MediaPlayer+ Player SDK Integration Guide for Android Platforms*.

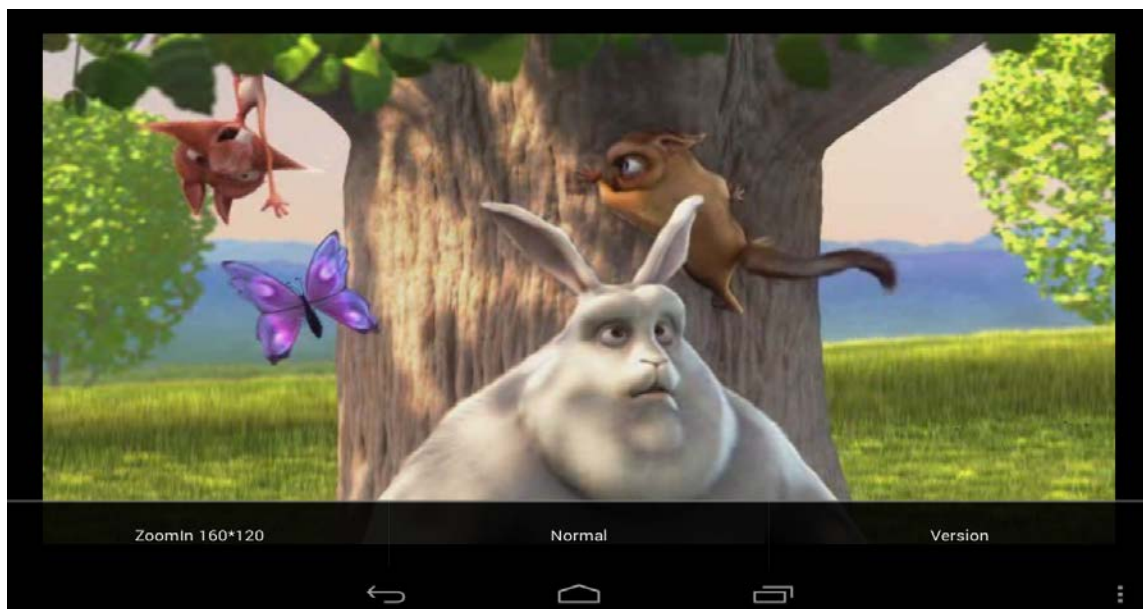


Figure 4-4: Zoom Feature Demonstrated when Media is Playing

4.3 CHANNEL SWITCHING

During playback, the *SamplePlayer* application supports channel switching from the list of media sources supplied by */sdcard/url.txt*. The source list can be accessed using the slide-out menu shown in Figure 4-5.

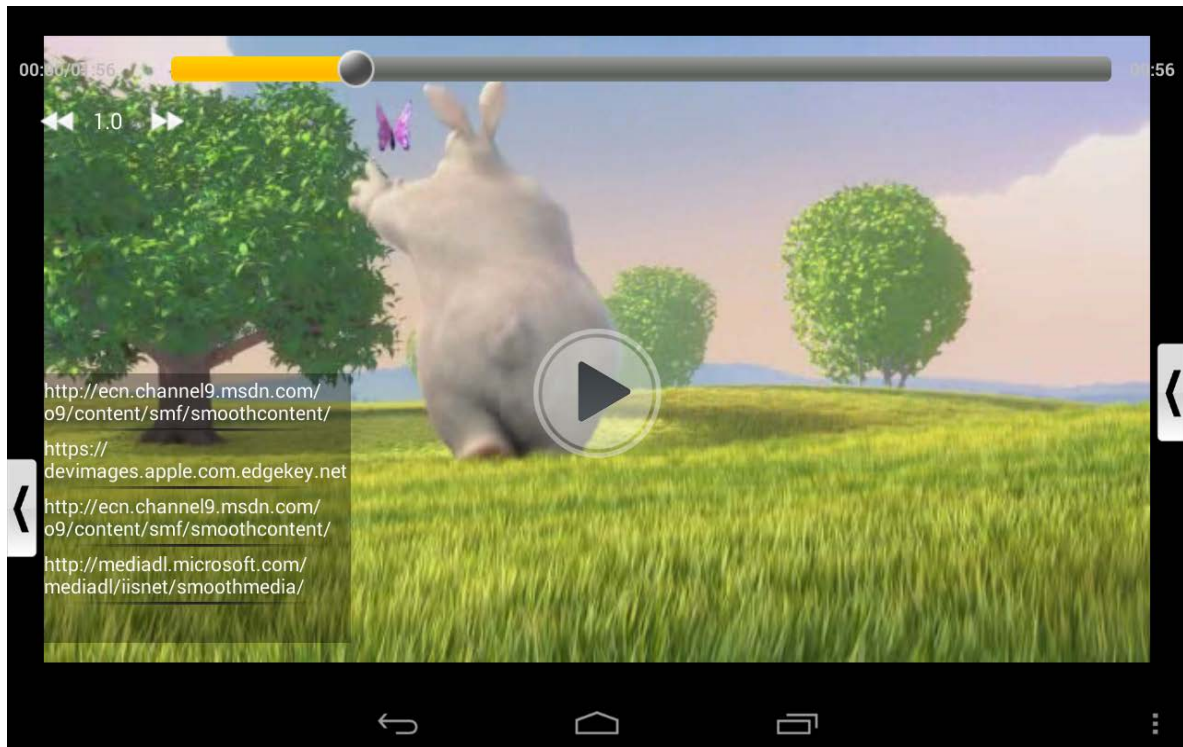


Figure 4-5: *SamplePlayer* Channel Selection Menu

To switch channels (sources):

1. Touch/click the **right arrow** on the left side of the screen.
2. Touch/click the desired media source. The file or link will be highlighted and playback on the new source will start automatically.

Note: Channel switching is discussed in section 8 (Advanced Integration: Channel Switching) of the *OnStream MediaPlayer+ Player SDK Integration Guide for Android Platforms*.

4.4 CLOSED CAPTIONS

The *SamplePlayer* application demonstrates both built-in and manual handling of CC and subtitles rendering. CC handling is controlled using the Android Menu options, as shown in Figure 4-6.

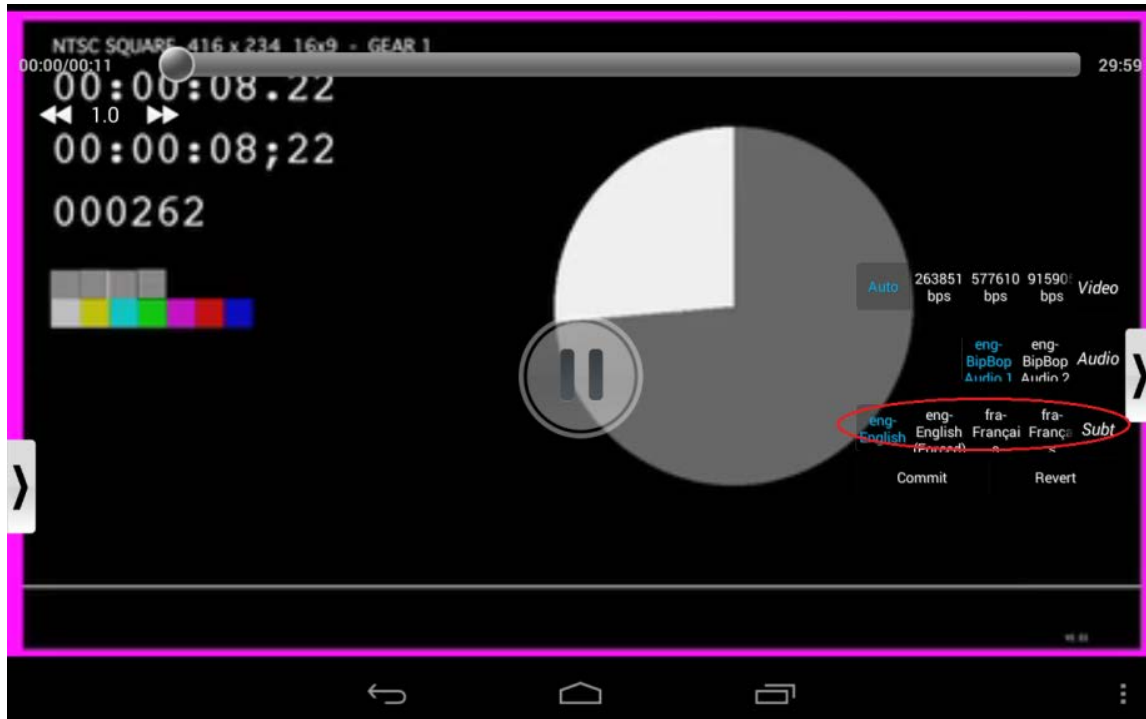


Figure 4-6: *SamplePlayer* CC Menu Options

4.5 ASSET PROPERTY SWITCHING

If the media source includes multiple subtitle (language), video (bit rate/angle), or audio tracks, the *SamplePlayer* application supports property switching during playback. The **Language**, **bps**, and **Audio Track** selection buttons are available on the right side of the screen, as shown in Figure 4-7. If multiple selections are available, the list will appear to the left.

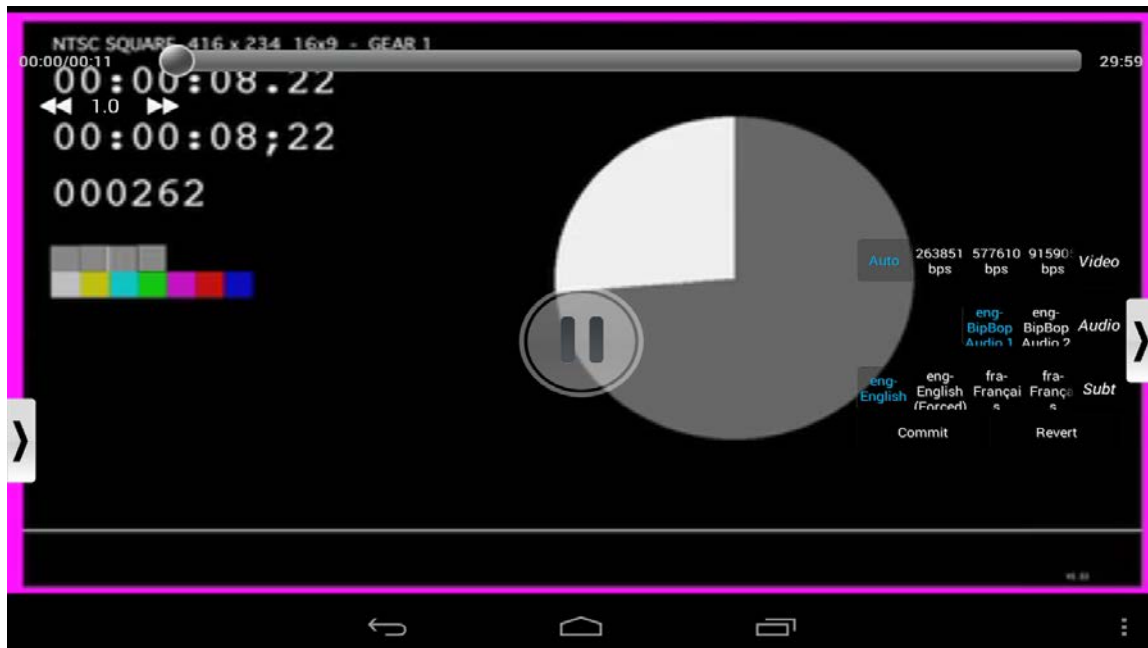


Figure 4-7: *SamplePlayer* Bit Rate Property Selection Menu

4.6 LEAVING THE APPLICATION

If the user leaves the *SamplePlayer* application using the Android **Home** button, or due to an event such as an incoming phone call, it will pause the playback if possible and keep the media source open. Some live streaming sources cannot be paused, and are stopped instead. When the user returns to the application, playback can be resumed.

When the media playback is complete, the *SamplePlayer* application will automatically close the media pipeline and exit the application. Using the **Back** button at any time will also close the media pipeline and exit the application.

Note: Stopping playback is discussed in section 4 (Basic Integration) of the *OnStream MediaPlayer+ Player SDK Integration Guide for Android Platforms*.