OnStream MediaPlayer+

Download Manager Integration Guide

for
Android Platforms

SDK Version 3.9 and later

*Visual**On**, Inc.*

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1   About This Manual

1.1   OVERVIEW

This manual describes the integration of the OnStream® MediaPlayer+ Download Manager with Android projects. This document includes the following topics:
- Description and features
- Basic SDK Integration
- Sample code

1.2   SCOPE

This manual is intended for Android developers who need to create a flexible and high-performance media player that supports streaming asset download.

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

1.3   REVISION HISTORY

Rev	Product Version	Date	Description
1.0	V3.9	2013-12-18	Document Creation

1.4   RELATED DOCUMENTS

The following documents (included with your installation package) provide additional information related to this user guide:
- *OnStream MediaPlayer+ SDK Project Setup for Android Platforms*
- *OnStream MediaPlayer+ Player API Reference Manual 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
HLS	HTTP Live Streaming

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   Download Manager

This section describes the functionality of the streaming asset download manager, a feature in limited release starting with SDK version 3.9.

The download manager is meant for streaming VOD assets. It is not meant to handle local files or live streams.

2.1   SCOPE

The download manager functionality is available with these limitations:

OS: Android, iOS
Streaming protocol: HLS
DRM: PlayReady (Discretix), or clear

Contact your VisualOn representative for the latest information and schedule for upcoming features, such as Smooth Streaming and other DRMs.

3   Basic Integration

This section describes the download manager integration with the OSMP+ Android client.

3.1   INTEGRATION FLOW

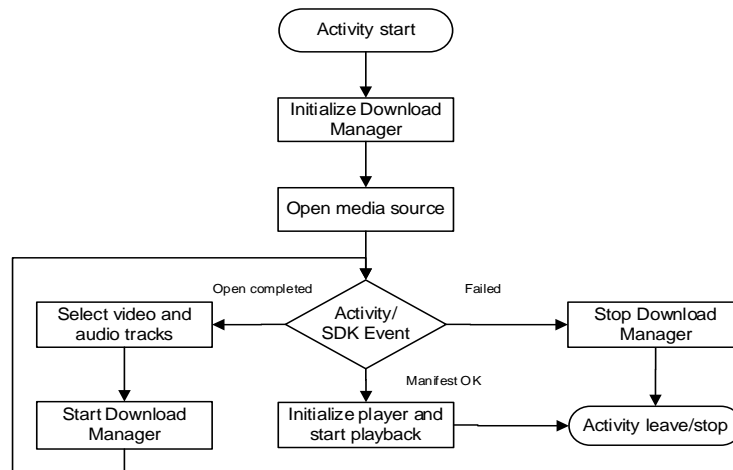Figure 3-1 below illustrates the integration flow of a basic SDK client media player.

Figure 3-1: Flow Diagram for Download Manager

4 Sample Code

4.1 INITIALIZATION

Sample code:

```
VOOSMPStreamingDownloaderInitParam *initParam = NULL;
self.downloader = [[[VOOSMPStreamingDownloaderImpl alloc];
```

4.2 OPENING MEDIA SOURCE

Sample code:

```
int nFlag = 0;
VO_OSMP_RETURN_CODE nRet = [self.downloader open:pURL flag:nFlag
    localDir:NSTemporaryDirectory()];

if (nRet != VO_OSMP_ERR_NONE) {
        [self showAlert:[NSString stringWithFormat:@"Download open
    failed"]];
}
```

4.3 HANDLING DOWNLOAD MANAGER EVENT

Sample code:

```
(VO_OSMP_RETURN_CODE)
    onVOStreamingDownloaderEvent:(VO_OSMP_CB_STREAMING_DOWNLOADER_EVENT_
    ID)nID param1:(int)param1 param2:(int)param2 pObj:(void *)pObj
{
    if (nID == VO_OSMP_CB_STREAMING_DOWNLOADER_OPEN_COMPLETE) {
        [self performSelectorOnMainThread:@selector(startDownloader)
    withObject:nil waitUntilDone:NO];
    }
    else if (nID == VO_OSMP_CB_STREAMING_DOWNLOADER_MANIFEST_OK)
    {
        [self
    performSelectorOnMainThread:@selector(startPlayDownloader:)
    withObject:(NSString *)pObj waitUntilDone:NO];
    }
    else if (nID ==
    VO_OSMP_CB_STREAMING_DOWNLOADER_LIVE_STREAM_NOT_SUPPORT)
    {
        NSLog(@"Live stream not supported");
    }
    else if (nID ==
    VO_OSMP_CB_STREAMING_DOWNLOADER_LOCAL_STREAM_NOT_SUPPORT)
    {
        NSLog(@"Local stream not supported");
    }
    else if (nID ==
    VO_OSMP_CB_STREAMING_DOWNLOADER_DOWNLOAD_MANIFEST_FAIL)
```

```
    {
         NSString *pString = [NSString stringWithFormat:@"Download manifest
    failed"];
         [self
    performSelectorOnMainThread:@selector(showDownloaderAlert:)
    withObject:pString waitUntilDone:NO];
     }
     else if (nID == VO_OSMP_CB_STREAMING_DOWNLOADER_WRITE_MANIFEST_FAIL)
     {
         NSString *pString = [NSString stringWithFormat:@"Write manifest
    failed"];
         [self
    performSelectorOnMainThread:@selector(showDownloaderAlert:)
    withObject:pString waitUntilDone:NO];
     }
     else if (nID == VO_OSMP_CB_STREAMING_DOWNLOADER_DOWNLOAD_CHUNK_FAIL)
     {
         NSString *pString = [NSString stringWithFormat:@"Download chunk
    failed"];
         [self
    performSelectorOnMainThread:@selector(showDownloaderAlert:)
    withObject:pString waitUntilDone:NO];
     }
     else if (nID == VO_OSMP_CB_STREAMING_DOWNLOADER_WRITE_CHUNK_FAIL)
     {
         NSString *pString = [NSString stringWithFormat:@"Write chunk
    failed"];
         [self
    performSelectorOnMainThread:@selector(showDownloaderAlert:)
    withObject:pString waitUntilDone:NO];

     }
     else if (nID == VO_OSMP_CB_STREAMING_DOWNLOADER_DISK_FULL)
     {
         NSString *pString = [NSString stringWithFormat:@"Disk is full"];
         [self
    performSelectorOnMainThread:@selector(showDownloaderAlert:)
    withObject:pString waitUntilDone:NO];
     }
     return VO_OSMP_ERR_NONE;
}
```

4.4 SELECTING TRACK

Sample code:

```
[self.downloader selectVideo:selectedVideo];
[self.downloader selectAudio:selectedAudio];
[self.downloader selectSubtitle:selectedSubtitle];
[self.downloader commitSelection];
```

4.5 STARTING DOWNLOAD

Sample code:

```
[self.downloader start];
```

4.6 STOPPING DOWNLOAD

Sample code:

```
[self.downloader stop];
[self.downloader close];
```

5 Troubleshooting Guide

Problem	Possible Cause(s)	Action(s)