XZIMG

Flash SDK

Manual v1.0

Product:	**Face Tracking SDK for Flash**
Pitch:	**Creating an application using XZIMG SDK and Adobe Flash 3D**
Version:	**1.0**
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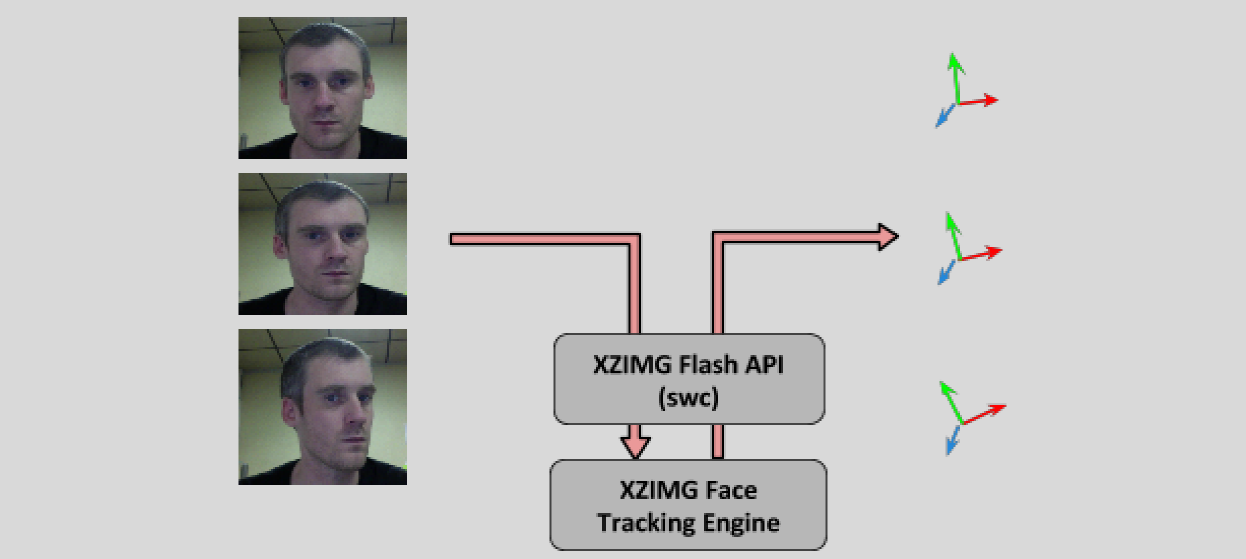
1. Overview

The goal of this documentation is to describe:

- the principles behind the XZIMG Flash SDK for face-tracking,
- the ActionScript API of the SDK,
- how to integrate the SDK in a Flash project, using Away3D as a rendering engine.

The XZIMG Flash SDK is a library that provides face detection and tracking from an input video stream. It takes images as inputs and outputs the 3D pose of the face detected in the images.



Input face images, face-tracking SDK's role and resulting poses (right side)

2. Package

The SDK consists of different files that may be available (or not) according to your subscription plan. you'll find included in the package a sample project made with the FlashDevelop IDE (http://www.flashdevelop.org/). We kindly **advise** our users **to reuse and modify this project** to ease the creation of their applications.

This sample project is already working and contains the following items:

- Two libraries: one for the tracking (face-v2-sdk.swc) and the other one for the rendering (away3D - http://away3d.com/) which is a library that takes full advantage of Adobe Stage3D API.
- Two media are made available: a 3D model for masking (faceMask.awd) the face and a 3D glass (glass.awd).
- Source files (./src/) to connect the tracking and the rendering together, other files to open the

web camera and display the video stream.

- An HTML example to deploy the resulting .swf application (stored in /bin/ directory).

3. Action Script API

The XZIMG Flash SDK provides a class named `FaceTracker` that is used to perform all operations, from initialization to face detection and tracking.

Initialization

The SDK is initialized by creating a new instance of the `FaceTracker` class, and calling its `initialize()` method. The method comprise a parameter that correspond to the opened video capture stream you want to process.

```
var faceTracker:FaceTracker = new FaceTracker();
var videoCapture:VideoCapture = new VideoCapture();
faceTracker.initialize(videoCapture);
```

Tracking Events

Once a new frame is available, it fires an event `Event.ENTER_FRAME` (or `Event.VIDEO_FRAME` on older versions of flash). This new frame event is attached to a function that tracks the face in this new frame.

You can add an event to your program to catch the result of the face-tracking (using the `getFacePose` function) on that frame:

```
addEventListener(Event.ENTER_FRAME, onViewFrameEnter);

private function onViewFrameEnter(event:Event):void
{
     _container.transform = faceTracker.getFacePose();
     _view3D.render();
}
```

The `getFacePose` function returns a flash.geom.Matrix3D. Note that when no objects are tracked, the function returns the identity matrix.

Displaying Objects

One important thing is to be able to display a 3D Object and hide it when a face is tracked or not. You can access to that information using the function `faceTracker.getFaceTracked()`.

To display objects at the correct position, you'll have to change manually their position and orientation using Away3D standard 3D transformation functions (Z axis being aligned to the view-direction):

```
var m:Mesh = event.asset as Mesh;
m.scale(...);
m.transform.appendTranslation(...);
m.transform.appendRotation(...);
```

Contact

For any information or question regarding this product, contact us at contact@xzimg.com