

Video Quick Start Manual

Encoding and playing videos in your game with



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Introduction

About this manual

This manual is intended for movie makers and video programmers. It will give you a quick overview of how to work with Sofdec2: what are its main features, how to encode video files and preview them.

About Sofdec2

Sofdec2 is a versatile encoding and playback video solution from CRI Middleware. It has been used in many games, from indie to AAA, including Destiny.

Sofdec2 is part of the CRIWARE SDK, available for Unity, Unreal Engine and in native versions for the main game platforms.

About CRI

CRI Middleware is a Japanese company headquartered in Tokyo, with offices in San Francisco. Founded in 1983, it specializes in audio and video software solutions for the digital entertainment industry.

It has a long experience pioneering new technologies, from assisting Sega with multi-streaming in the early 90's and developing the very first game on CD-ROM to producing middleware for all main game consoles since then.

Popular products include Sofdec2 and ADX2, an intuitive and powerful game audio middleware. Both are part of the CRIWARE SDK.

Overview of Sofdec2

Features

Sofdec2 high-quality, feature-rich movie playback system allows your game to seamlessly mix movies and gameplay. Here are some of its key features:

➤ Easy encoding and previewing

A video can be encoded and pre-visualized very easily thanks to the Encoding Wizard and the Sofdec 2 Viewer tool.

➤ Support for the H 264 codec

Sofdec2 supports the H264 codec in addition to the proprietary Sofdec2.Prime codec. The H.264 codec allows for high-quality and high-compression movie playback, without having to worry about the different platforms' specificities.

➤ Numerous playback options

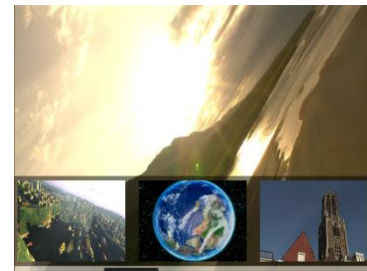
Sofdec2 supports movies with a transparency channel, subtitles and timing information. It also allows for the concatenation and the simultaneous playback of the movies and their display on a 3D surface.



Alpha Channel



Display on 3D surfaces



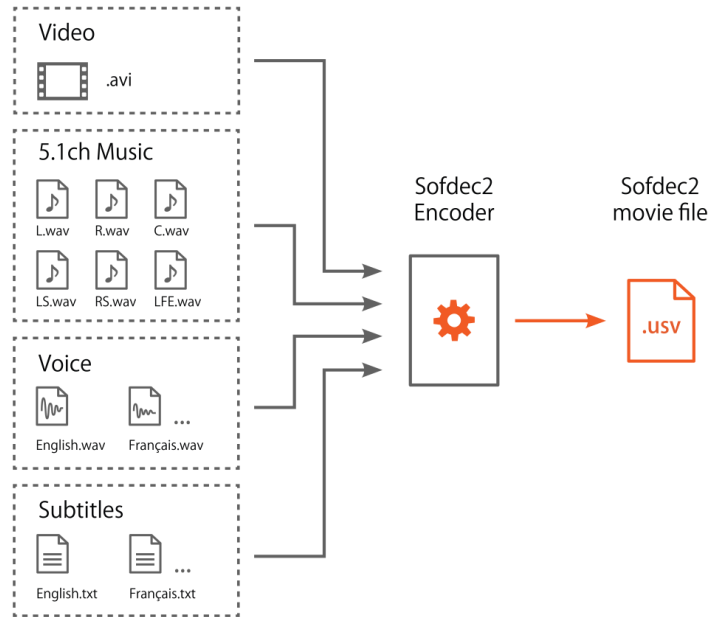
Simultaneous Movies

➤ Easy integration

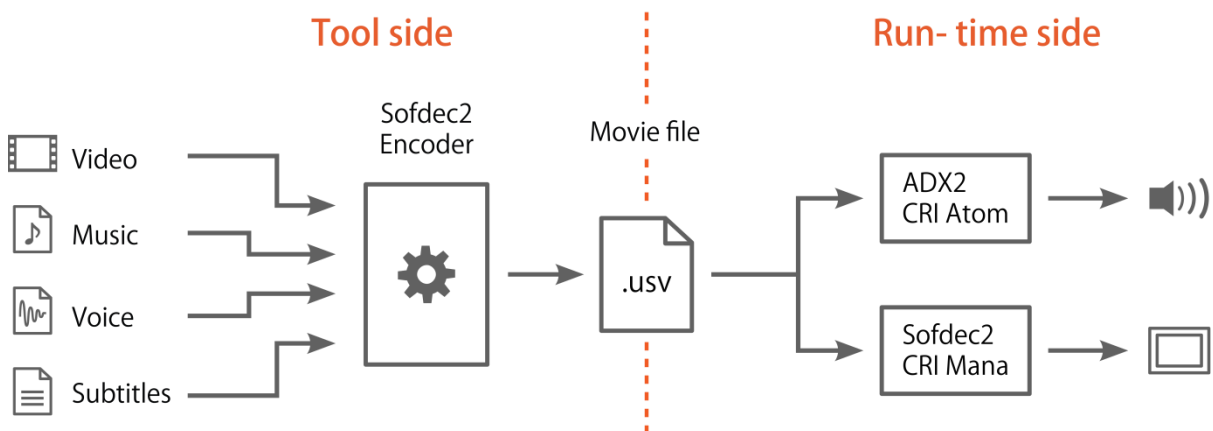
Because it is part of the CRIWARE DK, Sofdec2 works on many platforms and is easy to integrate with your game, should you use a game middleware such as Unity or Unreal Engine or the platform's native mode.

Data Flow

The Sofdec2 encoder accepts video files in the Quicktime and AVI formats as well as sequences of bitmaps files. CRI Middleware's proprietary audio codecs can also be used to add several tracks of music or dialogue (provided as .wav files) to the video. Optional subtitles written in text files (.txt) can also be included. After using the Sofdec2 encoder, an .usv file is generated that can be played by the Sofdec2 run-time.



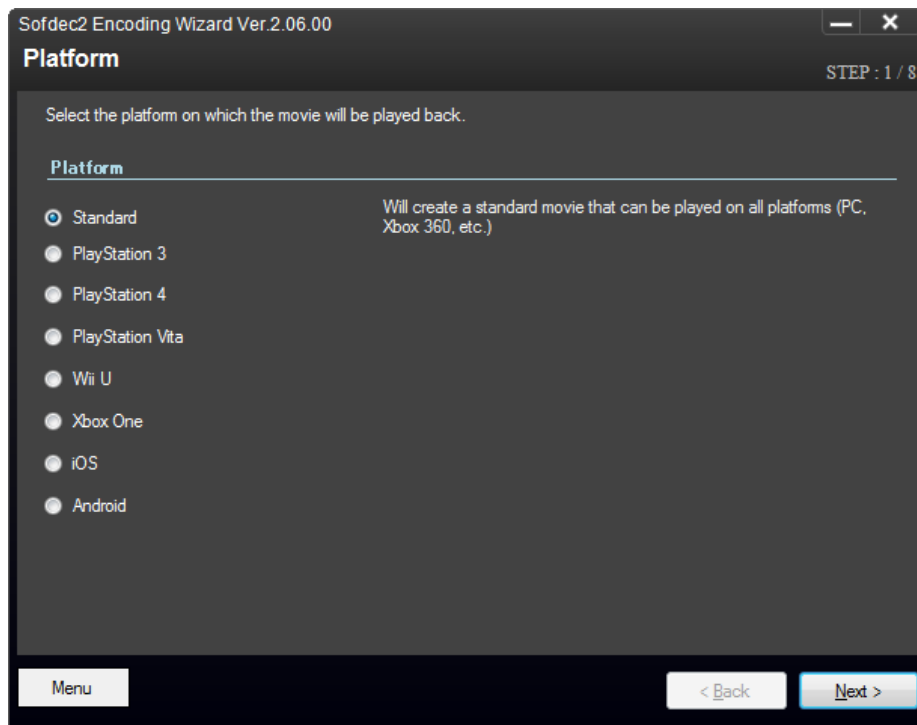
The picture below shows how the data present in the .usv file is used at run-time: the video part is sent to the Sofdec2 playback library (CRI Mana) while audio tracks are decoded and played by ADX2's run-time library (CRI Atom).



Preparing the data

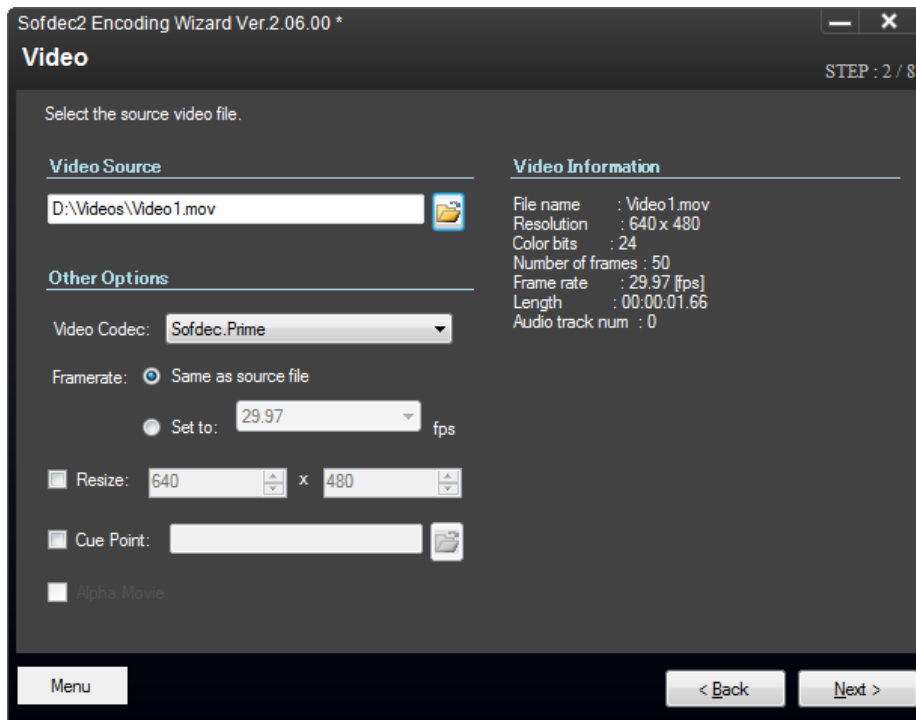
Using the Encoding Wizard

The most user-friendly way to encode a video with Sofdec2 is to use the Encoding Wizard. This tool is located in the CRIWARE->Tools->Sofdec2 folder. It will lead you through the various options available via a series of screens. The first step is to select your target platform, at which point the Encoding Wizard will already select the most common options for it.



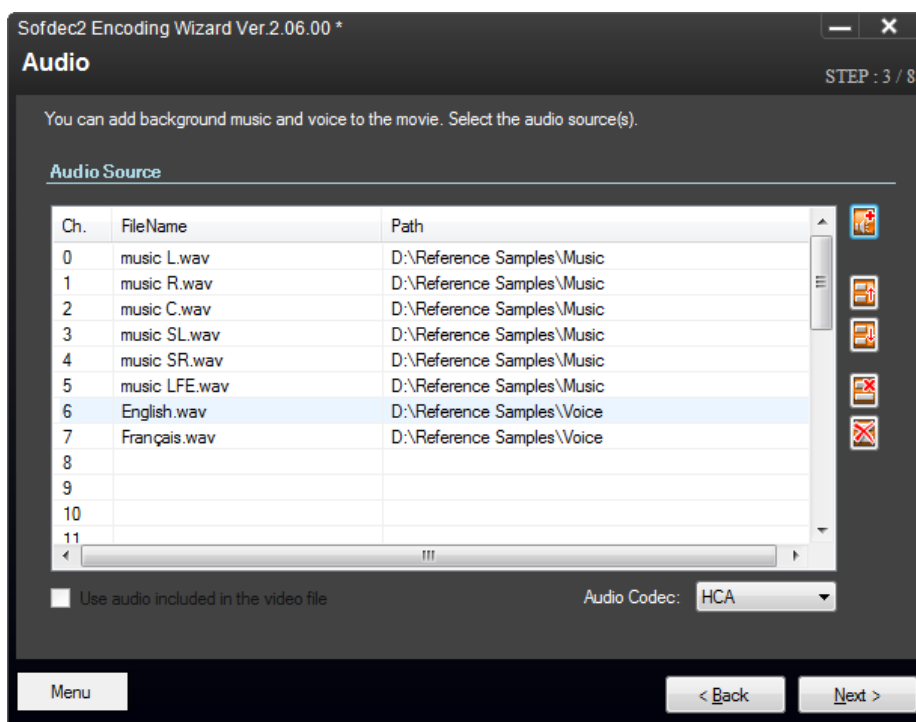
Once you have selected your platform, you will be able to provide the video file you want to encode, as well as information about the final size and what video codec you want to use. Sofdec2 supports two codecs:

| | |
|--------------|---|
| Sofdec.Prime | This is CRI Middleware's own high-quality video codec. It can be used on all platforms. |
| H.264 | The H.264/MPEG-4 AVC codec provides high compression, but has certain limitations. |

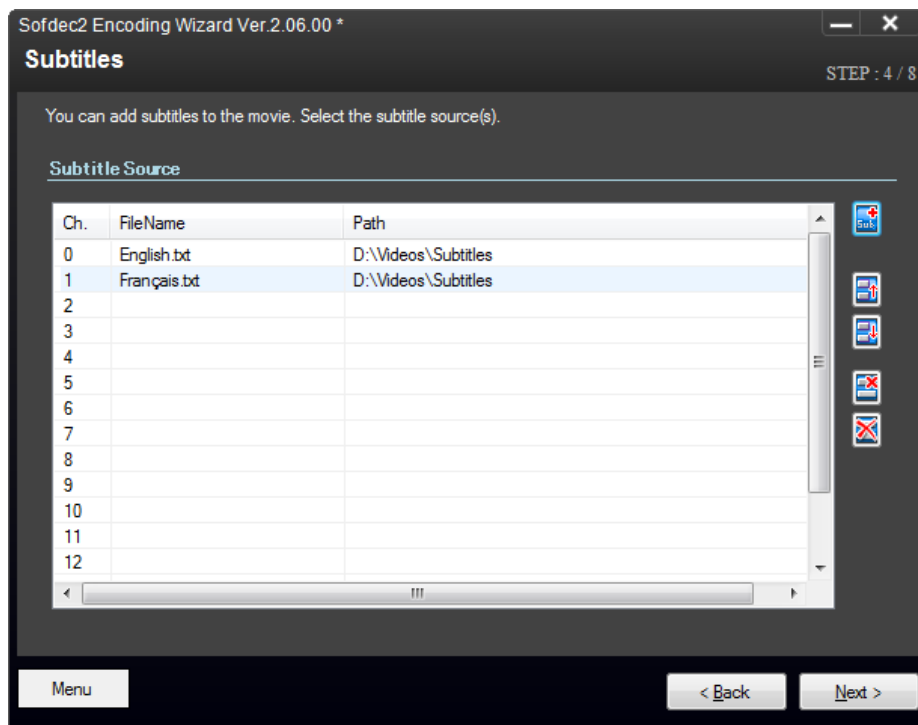


Once the video setup done, you will have a chance to specify multiple audio files for the music (it can be in 5.1 if needed) and the dialogue. This time, you will be able to choose the audio codec between two of the proprietary codecs from CRI Middleware:

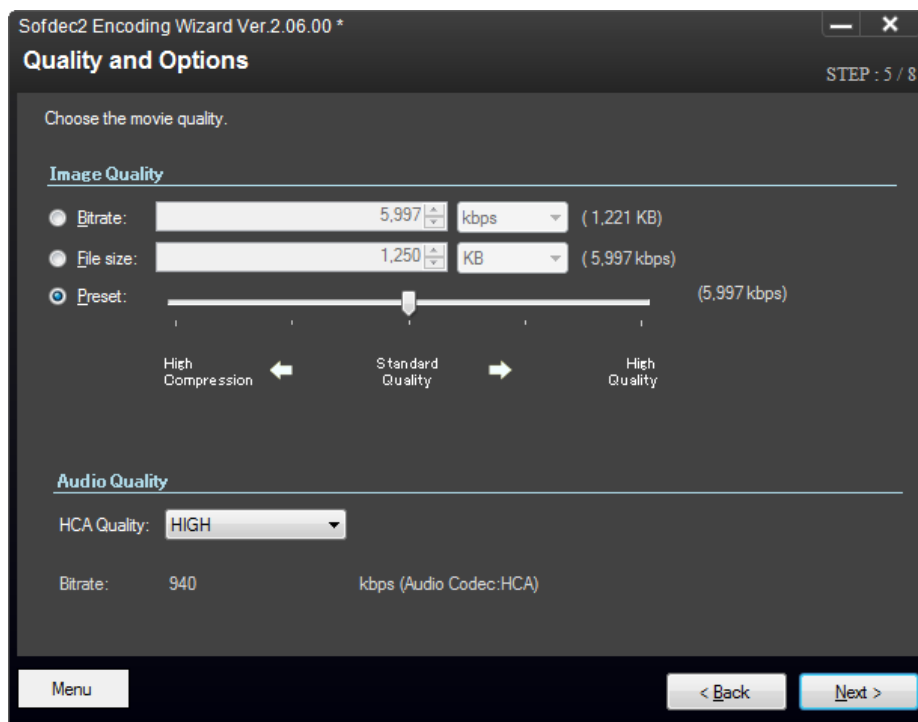
| | |
|-----------|--|
| ADX codec | High-quality, low-load codec with a compression ratio of about ¼. |
| HCA codec | High-quality, high-compression codec with a maximum compression ratio of 1/16. |



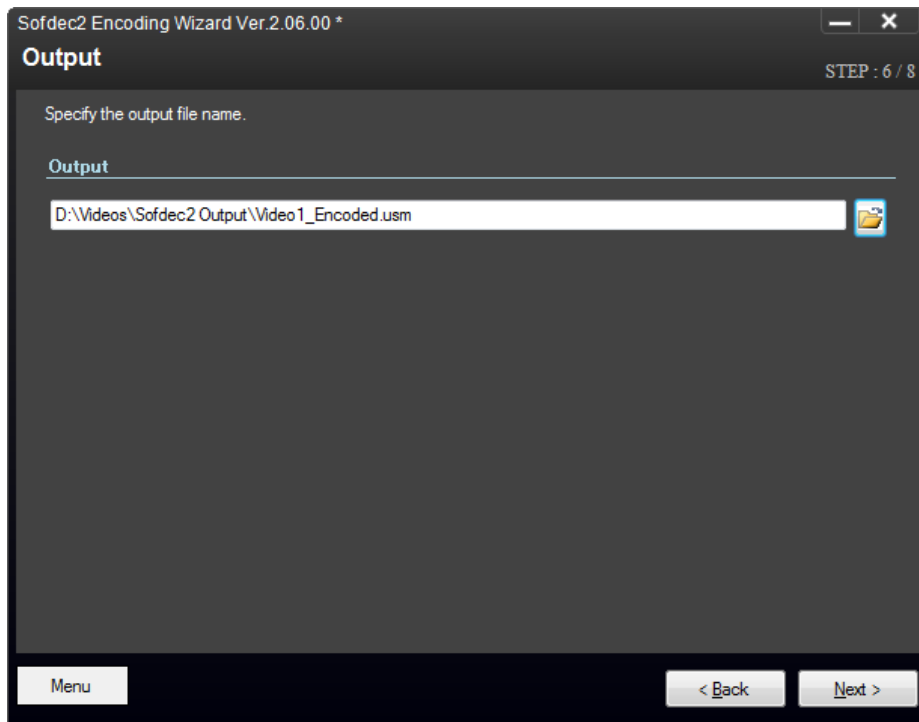
Then it is time to indicate the path of the subtitles files for each language. This is of course optional.



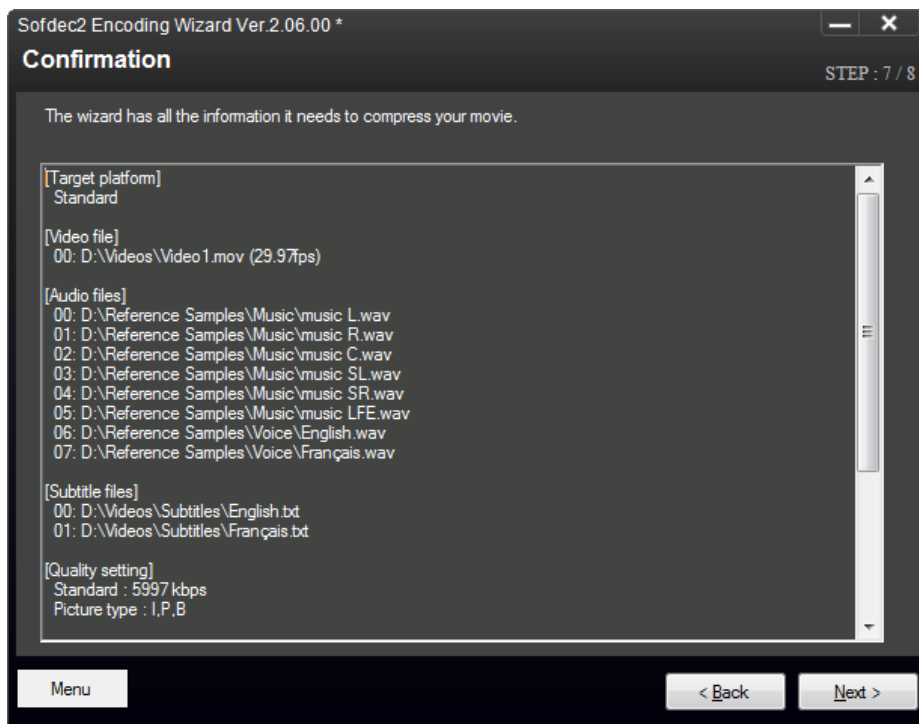
The next screen lets you select quality settings for both video and audio:



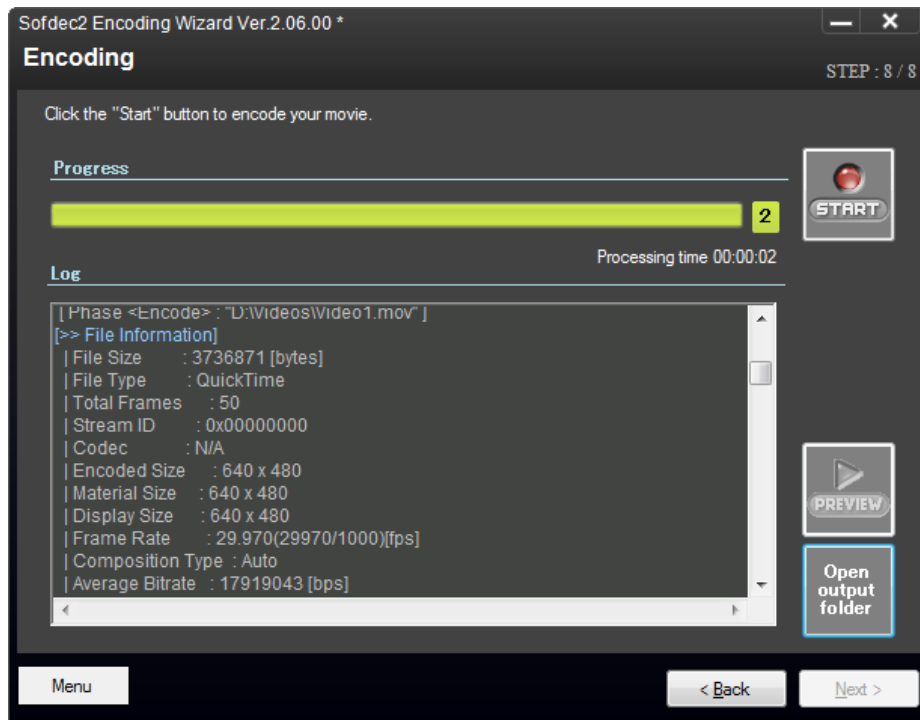
Then, you can finally select the output path of the encoded video.



A last confirmation screen shows all your settings:



Then it is time for the encoding itself, at the end of which an .usv file will be generated that you can use in the game.



Using the command line version

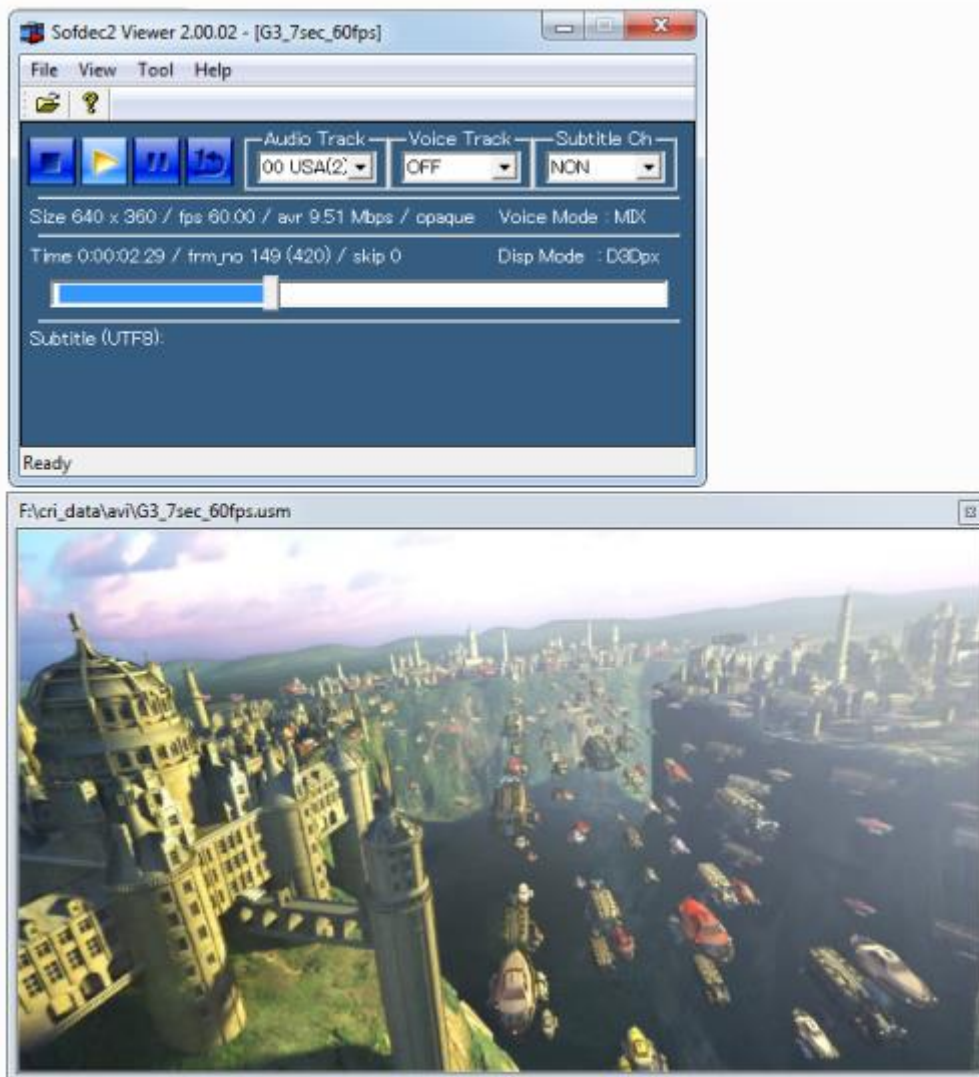
Sofdec2 also comes with a command line version of the encoder. The executable's name is sofdec2enc.exe and it is located in the same folder than the Sofdec2 Encoding Wizard. It is especially useful when encoding movies in a mode that is not yet supported by the wizard. For example, this is how you can encode alpha plus movies (i.e. movies that combine both alpha and additive blending).

```
Copyright (c) 2000-2015 CRI Middleware Co.,Ltd (2015-11-17)
usage: sofdec2enc -in=<input file> -out=<output file> <options>

< options >
-framerate=<n>,<d>      : Framerate(fraction)      [same as Input File]
-framerate=<f>        : Framerate(real)         [same as Input File]
-bitrate=<rate>       : Bitrate[bps]                [6000000]
-br_range=<min,max>   : UBR Bitrate Range [bps] [0 ... 6000000]
-gop_i=<count>        : n of I Pic. in a GOP    [1]
-gop_p=<count>        : n of P Pic. in a GOP    [4]
-gop_b=<count>        : n of B Pic. in a GOP    [2]
-gop_closed=<ON|OFF>  : Closed GOP                [ON]
-detectsc=<ON|OFF>    : Scene Change Detection [ON]
-work_dir=<directory> : Working Directory         [same as Input File Directory]
```

Previewing the video

The Sofdec2 Viewer application can be used to preview an .usm movie that has been generated by the Sofdec2 encoder. Several options are available to select the right music and dialogue tracks as well as the subtitles to display. The blending mode and the type of background (useful for alpha movies) can be selected as well.



Where to go from here?

Congratulations! You learned about the main features of Sofdec2 and know how to encode a video with the Encoding Wizard and to preview it.

This Quick Start manual is only the beginning though. You can do a lot of exciting things with Sofdec2 like using custom shaders and combining alpha and additive blending for example.

To learn more about Sofdec2 (and ADX2 too!), please refer to the CRIWARE SDK reference documentation.