



Brief:

D-Cinema Content Creation -

A Software Perspective

Introduction

Hollywood is clearly headed towards full digital production, post-production, and distribution of movies. It will take years to get there, and much will be learned along the way. However, the end result will be a more efficient and better quality product that is ultimately more affordable to the end consumer.

Hollywood is already making the changes necessary to accommodate D-Cinema. Production and post-production methodologies are already digital or becoming digital, and usage of compressed signals is already being accepted as a viable tool for the entire process.

While it is clear that hardware encoders will be required in many areas of Hollywood, software may prove a more effective solution in other areas in Hollywood, and more strategically provide a cost effective tool that can be used outside of Hollywood.

Hollywood may use software encoders in three principal areas:

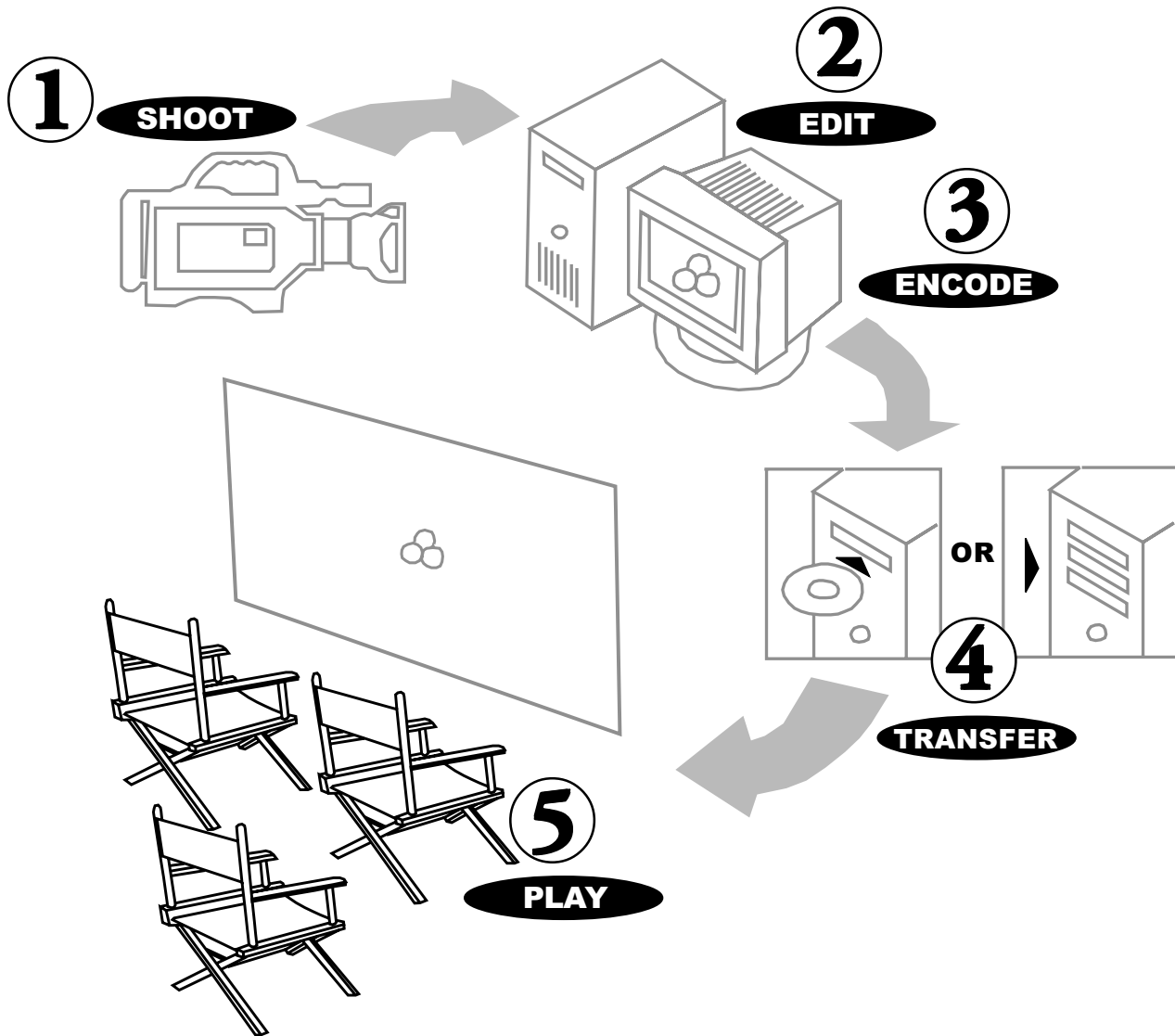
- First, since much work is done in SD on Avid systems, a simple way to output a compressed D-Cinema movie directly from the editing software may prove more cost effective than enabling all post-houses with expensive hardware.
- Second, since Hollywood is moving towards all digital production, and post-production, and even on-line storage of all movies in “libraries”, a software encoder that is integrated into the library management software may again be a more convenient tool for Hollywood.
- Lastly, in the roll-out phase of D-Cinema it is clearly an advantage to use software to create test and promotional content.

Strategically, a more important item may be in how D-Cinema will address the needs of the theaters in the area of local content creation. Does Hollywood plan on providing all of this to all the theaters throughout the world? Instead of Hollywood doing all this work, this paper describes a simple computer based system that can be built today, that should be able to address the needs of local content creation for theaters.

Workflow overview

The diagram below depicts how the proposed process would work. After being acquired using SDI to on-line storage, the local content is delivered to a facility for editing (this facility uses D5, DVCPRO-HD, or similar equipment for general manipulation of the content.) Next, the content is encoded for distribution. This step uses an MPEG compression algorithm that is tailored for D-Cinema. Once the material is encoded, it can be transferred to rewritable optical drives, burned

to DVD-ROM, or even sent directly to the D-Cinema server via broadband or internet connections. While this system is designed for HD content, there are no limitations on using SD content as well.



Proof of Concept

The “proof of concept” demonstration serves the following needs:

- Acquisition of the HD content through a SDI interface.
- Editing and manipulation of the HD content.
- Encoding of the HD content to the D-Cinema specification.
- Up-convert ability of SD content to D-Cinema compatible content.

The system consists of:

- Apple G4
- Pinnacle Cinewave SDI Acquisition Card
- Rorke Data Raid for storage of uncompressed HD
- HEURIS MPEG Power Professional – HD software encoder
- Panasonic DVD-RAM rewritable optical drive

This system is a cost-effective solution to creating HD content that is compatible with D-Cinema. The primary focus of this arrangement is to enable local content creation for D-Cinema. It is also possible for this system to be compatible with Avid and other editing systems already being used by post-production facilities throughout the world.

Conclusion

Hollywood represents only one aspect of 'who' will need solutions for D-Cinema. The system described here can even be easily implemented by local post-production companies.

This cost-effective solution for creating D-Cinema content will enable many new money making opportunities. One significant market will be the improvement of local ad-content at the local theater. Its about time that the existing slide projector is replaced with an item that quality minded brands will find a very viable option for their advertisement.



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