

# The digital film reel

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Movies are becoming more and more digital -- from the shooting to the cut to the showing. At the International Broadcasting Convention IBC in Amsterdam that is taking place from Sept. 10-14, 2010, Fraunhofer movie experts will show programs for easy, digital post-production and safe archiving.

In the production of films for [movie theaters](#) and cinemas, digital technology is pushing the film reel aside much more slowly than it does with photography. Up until only a few years ago, mainly 35 mm cameras were being used, and sales of digital movie cameras exceeded those of analog movie cameras only in 2008. Most movies continue to be recorded on film material and are then digitalized. Post production is done at the computer again, and digital projection is also forging ahead.

Instead of film reels data packets - Digital Cinema Packages, in short DCPs - are being sent to the cinema owners. These packets contain the image and sound data of the film. Information, such as how the different packets are linked to each other, which parts of the film they contain and in which sequence they must be played is delivered in the form of meta data such as the composition play list.

The post-production software easyDCP makes creating these digital film packages easier. This software was developed at the Fraunhofer Institute for [Integrated Circuits](#) IIS in Erlangen. The easyDCP Creator can be used to create and package DCP's and the Player can be used for final checking on a standard PC in real time. The versions Creator+ and Player+ are the expansions of the program which allow to create and

playback encrypted DCP's and 3D-DCP's in resolutions for [digital cinema](#) at 2048 or 4096 pixels.

»During the development of the easyDCP tools we focused on making the operation as simple and clear as possible, so that it can be used without full expertise on ISO standards for example,« says Dr. Siegfried Foessel, head of department Moving Picture Technologies at the IIS. Currently, 230 systems have been licensed globally, mainly to smaller post-production and production companies in Europe. The tools also are suitable for the cinema owners who want to design their own advertisement and show it on their digital movie systems.

At IBC in Amsterdam, the easyDCP Creator+ now accepts and processes the image formats .png, .jpg and .bmp in addition to .dpx and .tif. The files contain unlock keys for the film which are called Key Delivery Messages. These KDM's which protect the film from being copied illegally, can also be created using a graphic user interface. easyDCP Creator and Creator+ are available for Windows and Mac operating systems.

## **For eternity**

The Curator Archive Suite, which was also developed at the IIS, is designed to make it easier for employees of film archives to secure digital film, image and sound data in a format similar to the DCP. It contains tools to create, control and playback the digital archive packages.

"At the current time, no such digital working environment exists as of yet. On the basis of ISO standardized codecs we offer a starter model for archives that want to archive digital material or digitalized film or a band material," explains Foessel. For this, the films are scanned in the highest-possible resolution; image and sound files are compressed and archived

in a digital container together with the meta data. It is possible to have an online distribution from the archive format by using the same software to create a DCP if the film is to be shown again in a movie theater. In the future, a Transcoding Engine that also offers additional distribution formats will do this automatically. The software will be available in fall.

**More information:** You will find the test download for the easyDCP tools at [www.dcinema.fraunhofer.de](http://www.dcinema.fraunhofer.de)

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