

Welcome to the new world of digital cinema

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We are on the brink of breaking through to the new world of digital cinema (D-Cinema). The key to unlocking this potential is data compression and researchers are set to have a starring role.

“There is not a complete and optimised 4K [high quality]-workflow for the world of digital cinema, particularly for the effective and seamless handling of film data from acquisition to post-production and transmission. Data compression is the key to achieving this,” says Dr Siegfried Foessel at Fraunhofer IIS and coordinator of the IST-funded project WORLDSCREEN.

The demands for high quality digital cinema applications require huge amounts of data that cannot be effectively handled. The WORLDSCREEN consortium is addressing these challenges by using

layered scheme data compression (LSC) algorithms, while at the same time preserving the highest quality possible.

“Our aim is to develop viable compression systems for digital cinema workflows and data,” Dr Foessel says. “At the same time, we are considering the economic aspects of the value chain for LSC D-Cinema, E-Cinema and rich media archives.” (E-Cinema is lower resolution and poorer quality than D-Cinema. It is primarily used for art house content, independent films at live events, streaming applications and in-cinema games and advertising. Hollywood studios demand D-Cinema, the highest quality digital cinema.)

WORLDSCREEN is working across the cinema workflow chain. For example, they are exploring LSC for digital acquisition on the set by developing a prototype for portable media storage for high-quality 2K (2048 x 1080 pixel) to 4K (4096 x 2160 pixel) digital cameras and film scanners. This will eliminate the need for film processing and transfer. Immediate previews and dailies’ extraction would be possible.

“A very important aspect of our work is that LSC offers the possibility to extract different resolutions and qualities from a single copy of the image,” he says. “This is really good news for digital archiving.”

For post-production, project partners are developing a plug-in for a 2k-JPEG2000 encoder for special effects and editing software. The great advantage of LSC is getting previews, editing files and correcting colour in full resolution out of a compressed file.

He notes that WORLDSCREEN partners - members of several European, American and international organisations - are also contributing to key standardising activities.

The future looks bright for WORLDSCREEN. Although the project is

in its infancy, user requirements regarding workflow and metadata have been defined and post-production tests are being finalised this year. Hollywood is already knocking on the door.

“Digital cinema can not be realised without the participation of the United States,” Dr Foessel concludes. “But we don’t think this will be an issue because three to four Hollywood studios are very interested in what we are doing in this project.”

Source: [IST Results](#)

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