

# Translator for movie worlds

September 6 2005

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Even the film industry has to contend with the annoyance of incompatible standards. Converters can do more than provide a transition between European and US television. Scientists are displaying the prototype of a multi-purpose conversion device at two trade fairs.

[HDTV](#) is an abbreviation that is particularly likely to inspire the imagination of home cinema fans in the coming years. This global digital standard for widescreen format is remarkable for its very sharp contours, lush colors and greater sharpness than conventional television. The biggest technical advantage of high-definition TV is its high resolution: The image is some 2000 pixels wide. This means that coming television images show details that are lost under the PAL standard (720 x 576 pixels) used until now. Cinema films, too, are due for a major upheaval: The entire process from shooting and cutting to distribution and projection is gradually being migrated from analog to digital technology. As in television productions, converters are used – that is, soft- and hardware that convert movies from one standard to another with as little loss of information as possible.

Researchers from the Fraunhofer Institute for Telecommunications HHI are presenting a particularly versatile electronic translator of this kind at the Berlin consumer electronics fair (September 2 to 7, Hall 5.3). Immediately afterwards they will show off their “HiCon” technology at the International Broadcast Convention IBC in Amsterdam – at the Fraunhofer Digital Cinema Network stand 8.221. “Usually, this type of equipment for professionals can cost as much as 100,000 euros,” reports project manager Maati Talmi. “Our goal is to offer a converter that

combines maximum performance with a minimum price.”

One fundamental difference is the way in which the images are built up: In the cinema and on the computer, a film is created with a rapid series of full-screen images. Television and video, on the other hand, depict frames in which one image holds only odd-numbered lines, the subsequent one only even-numbered lines, and so on. The converter uses the interlacing or de-interlacing procedure to alternate between the two systems. Different frequencies are another obstacle: While the US television standard NTSC transmits images at 60 hertz, for instance, Europe’s PAL standard only transmits 50 per second. A third area requiring conversion is constituted by rapid movements, which should be displayed as smoothly as possible but with only little loss of sharpness. This is achieved by a module that the HHI researchers have already developed. They plan to integrate it in the converter by next year, when it will be marketed by the spin-off company MikroM GmbH. “Smooth motion” interpolates – that is, it computes interim pictures. In this way, even the slow-motion replay of a goal scene in a soccer match can flow more smoothly.

Source: Fraunhofer-Gesellschaft

Citation: Translator for movie worlds (2005, September 6) retrieved 28 April 2024 from <https://phys.org/news/2005-09-movie-worlds.html>

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