

IMAGICA Film Recorder rewrites the

IMAGICA Technologies Corporation recently introduced the Imager HSR, a new high-speed film recorder that integrates motion imaging technology licensed from Kodak. The Imager HSR is designed to record 2K resolution digital files at three frames per second without compromising image quality. That rate is roughly six times faster than current state-of-the-art laser film recorders.

The Imager HSR is debuting after successful beta testing at LaserPacific Media Corporation, a Kodak company that provides a complete range of post-production services for the motion picture and television industries. The trial was supervised by Glenn Kennel, vice president and general manager of Motion Picture Services at LaserPacific. Kennel brought

a unique perspective to the project. He led the team that developed the Kodak Cineon Digital Film System introduced in 1992. Kennel was also a member of the Kodak team that developed the imaging technology that was integral to the Spirit DataCine, introduced by Philips in 1996. In 1998, Kennel was director of technology for the Digital Mastering Group at Cinesite when that facility pioneered digital intermediate technology in the motion picture industry.

The first Imager HSR film recorder has been installed at LaserPacific. In the following conversation, Kennel shares his thoughts about the new film recorder and its potential impact on the motion picture industry:



Q

What is the significance of the introduction of the IMAGICA Imager HSR film recorder?

A

The Imager HSR is capable of recording three frames per second at 2K resolution onto 35mm film. The best of the previous generation of film recorders operates at two seconds per frame at 2K resolution. A 2K digital file can now be recorded onto a 2,000-foot reel of film in three hours instead of 18 hours. A 90-minute feature film can be recorded out to 35mm film in 12 hours instead of three days or 72 hours. That dramatic gain in productivity makes it practical to create multiple printing negatives. The result is that every release print can now have show print quality. That alone could make a dramatic impact on the future of the cinema.

Q

What advances in technology make this possible?

A

The IMAGICA HSR Recorder uses full frame exposure rather than scanning the frame line by line. It uses a LED light source and makes color sequential exposures. The light source exposes the red, green and blue layers of the film as three separate, sequential exposures, all in less than three seconds. Because there is a single solid state device, there are no problems with registration errors or fringing artifacts. It is a very reliable and accurate mechanism.

Q

What is behind the development of that technology?

A

Many years of intensive research and development went into the system. The Imager HSR combines a newly developed optical engine with a JVC D-ILA LCOS imaging device and LED illumination to record motion picture data onto color intermediate film. It incorporates technology licensed from Kodak, which designed and built the original prototype. The HSR supports a variety of common 2K file formats including HD (1920 x 1080).

the speed limit



Q

Do you see the Imager HSR having other effects in the motion picture industry?

A

The Imager HSR could have a big impact on film restoration and archiving, since it will make it more practical to record high-quality images onto a proven, durable medium that will last for hundreds of years. I already mentioned that it could have a great effect on the quality of film release prints in theaters. There's also an important intangible, and that is a creative impact. Since the faster film recorder reduces turnaround time for rendering images onto film, it could provide more time for color timing in situations where there are tight deadlines. But in most cases, it's really about delivering internegative printing elements faster, so the greatest impact may be in producing multiple negatives that can be used directly for release prints.

Q

Will you elaborate on that thought?

A

Typically a lab can get roughly 1,000 prints from one printing negative. In some cases that is enough for a small release. But an average release requires 3,000 to 4,000 prints. The Imager HSR allows you to make three or four negatives to print from in the time it used to take to make one. You have the opportunity to make multiple negatives without incurring a couple weeks of delay. This path eliminates an interpositive/internegative step in traditional analog printing, which means that the prints in the theaters are one less generation removed from the master, if you will, or one generation closer to the original negative. A print made

from a 2K DI is sharper than a release print made through the traditional IP/IN analog duplication process. That's why I said that every release print can be show print quality. That means that the subtleties and nuances that filmmakers use to evoke emotional responses from audiences are more faithfully translated to the screen. Any technology that results in a higher quality theatrical experience for audiences is good news for us all.

Q

How does the Imager HSR fit into the history of digital intermediate

A

IMAGICA has announced that they are working on a 4K model, and that they will offer an upgrade path to their initial customers for the new 2K film recorder. When we began working on this digital film technology at Kodak in 1989, we spoke about building a seamless bridge between the worlds of film and digital imaging that would allow the creative community to create more engaging stories. To an amazing degree, that vision has become a reality. The Imager HSR is another important step in that direction.