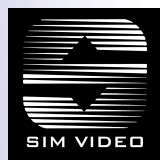


Announcing a seminar with Charles Poynton

Saturday, May 27, 2006
Deluxe Theatre 1,
424 Adelaide St., Toronto
9:00 am–5:00 pm



A related seminar entitled *Colour Science for Digital Cinema and the Digital Intermediate*, intended for a highly technical audience, is planned for early June.

Technical Introduction to Digital Cinema (D-cinema)

Digital cinema refers to techniques, processes, and equipment to acquire, post-process, master, distribute, and exhibit motion picture imagery without using film. Until just a few years ago, digital techniques were limited to post-production: Acquisition and exhibition could only be accomplished economically by using photochemical film. Now, several models of digital cinema cameras are commercially available, and there are nearly 1000 digital cinema projectors in commercial operation worldwide. It is not only possible but commonplace to acquire, post-process (through the "digital intermediate," DI), and exhibit movies completely digitally.

In this 1-day seminar, portions of which were presented recently at Panavision in Los Angeles and at the Digital Cinema Testbed in London, Charles Poynton will outline the digital cinema process from acquisition through display. He will explain how images are captured, encoded, and reproduced; describe the integration of HDTV, computer graphics, and film imagery; and discuss practical details of maintaining image quality through the pipeline. Participants will gain an understanding of the factors that need to be addressed to achieve accurate colour, and will learn how to utilize the DI process. See the reverse of this flyer for a Syllabus. The event is sponsored by the organizations whose logos are displayed in the margin.

Who Should Attend:

The attendee should be quite familiar with cinema film, CGI, and/or HDTV. The seminar will be suitable for people in positions such as these:

- Cinematographers and Assistant cinematographers
- Digital image technicians (DITs) and HD engineers
- Post-production and Visual effects supervisors and technicians
- Colourists, lighters, shaders, and compositors
- Digital cinema product developers and technical managers
- Senior technical staff of studios, post-production facilities, film labs, distribution companies, and rental houses

Charles Poynton specializes in the physics, mathematics, and engineering of digital colour imaging systems, including digital video, HDTV, and D-cinema. He is the author of *Digital Video and HDTV Algorithms and Interfaces*, and a Fellow of the Society of Motion Picture and Television Engineers (SMPTE).

Registration: Fee, CAD \$180. IATSE 667 members and SMPTE members receive a \$25 discount. Detailed handout notes will be provided. Please register in advance; there are no plans for on-site registration. A detailed syllabus is available at www.poynton.com. To register, telephone Lowell at +1 416 462 2482 or send e-mail to dc-seminar@poynton.com.

Technical Introduction to Digital Cinema (D-cinema)

Morning:

Image fundamentals

Lightness terminology; contrast and contrast ratio; viewing conditions; image quality; the relative nature of lightness sensitivity; logarithms; chromatic adaptation and white balancing; end-to-end gamma; image data adjustments based upon display surround and contrast ratio.

Image formats

SD, HD, 2K and 4K; visual acuity, viewing angle, and resolution requirements; frame rate requirements; video and file-based (data) approaches.

Optical formats

$\frac{2}{3}$ -inch (HD) format, and beamsplitter (prism) cameras; Super-35 ($\frac{5}{8}$ -inch) format; depth-of-field, picture angle, and MTF considerations; CCD and CMOS sensors; mosaic (Bayer) sensors and the demosaicking process.

Colour data formats

Perceptual attributes of colour (value, hue, and saturation); additive and subtractive colour; colour sensing and reproduction methods; linear, logarithmic, and video (power function) laws; image coding: linear *RGB*, nonlinear *R'G'B'*, Rec. 709, sRGB, *Y'CbCr*, log *RGB*, Panalog; CPD/DPX, OpenEXR; colour transforms and conversion; chroma subsampling.

Afternoon:

Digital cinematography

Cameras and their characteristics: Sony F900, F950, and Sony/Panavision Genesis, ARRI D-20, Thomson/Grass Valley Viper, DALSA Origin, and emergent cameras; on-set previsualization and look management; colour decision lists; GAMMA, BLACK GAMMA, KNEE POINT, and KNEE SLOPE controls.

Storage and processing

Video recording; data recording; video and IT-based interfaces.

Colour correction and timing/grading

Choice of coding system and gamut; integration of CGI and visual effects; "Printer points"; colour characterization and calibration; lookup tables (LUTs); ICC colour management and ICC profiles; colour grading and approval prior to film recording.

Mastering

DCI standards; the concept of the reference projector; $XYZ^{1/2.6}$ colour data coding; JPEG2000 compression; colour gamut and gamut mapping issues.

Display

Direct-view display technologies (CRTs, LCDs, plasma); projection technologies (LCoS, SXRD, DLP, D-ILA); D-cinema projectors; projection primaries; colorimetric matching; appearance matching; gamut issues.

Film scanning and recording

Sensitometry and film gamma (D -log E curves); optical density; film scanning equipment (telecine, Imagica, ARRISCAN, Northlight), film recording (ARRILASER); Cineon/RP 180 printing density.