SMPTE DC28.2
Mastering Committee

October 19, 2000
Digital Cinema is Five Areas

- Digital Capture
- Digital Production
  - Big “Avid”
- Digital Master
  - Cinema, Home Video, Trailers, Test Screenings
- Distribution
  - Satellite, Fiber, Packaged
- Exhibition
  - Digital Projector Security
Digital Cinema Flow

1. **Camera Negative**
   - Scan (2K to 4K resolution)

2. **Digital Video Origination**

3. **CGI / Visual Effects**

   - Color Correction
   - Big “Avid”
   - Approval on Digital Projector
   - Create Digital Cinema Distribution Master
   - Editing
   - Print Inter Negative
   - Release Prints
   - Digital Projection in Theater
   - Film Projection in Theater
Mastering Committee

- First step in conversion to D-Cinema Presentation
- Will impact future way we make a movie (digital version at same time as film version)
- Evolutionary design of flow
- Goal is to set the standards for delivery to theater without interfering with the creative way we make a movie
Goals of Mastering

• Digital presentation should do no harm. All versions of D-Cinema should be equivalent or better experience to projected film

• The standard should have functionality of film (plays anywhere in the world)

• Should not be limited to 35mm film temporal restrictions (24fps) but able to convey other experiences, if desired

• A better and more consistent experience for the consumer

• More tools for the filmmaker in making stories
The (Tentative) Answer

DCDM *Distribution* Master (not the editing master)

<table>
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<tr>
<th></th>
<th>Vertical</th>
<th>Horizontal (2.39:1)</th>
<th>1.85 Horizontal</th>
<th>Bit Rate</th>
<th>Mega-PELS</th>
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<td>DCDM 10D</td>
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Square PELS 10 bit log color, New color primaries, white point 5500, 4:4:4, Frame rates 24P, 48P, (60P), (72P), Fixed vertical variable width
FUTURE MASTERING AND DISTRIBUTION FLOWS

Content Acquisition

- Film
- Video
- CGI

Data Centric
- DSM
  - Source Digital Elements
  - Correction Layers (delta’s)
  - Spec Needed
    - Container: DPX?
    - Linear colorspace
  - Scanner (TK)

Film Centric
- IP
  - Final Print
  - Scanner (TK)

Tradational Preparation
- IP
- Final Print
- Scanner (TK)

Digital Source Master (DSM)

- Convert
  - RP needed

Data Centric path
- Spec Needed
- Digital Cinema Compressed Copy (DCCC)
  - Container: DPX?
  - Defined Profiles

Digital Cinema Distribution Master (DCDM)
- Digital Cinema Distribution Master
  - Digital Projection
  - Defined Profiles

Film Master
- Film Master
- Film Archive
- Film Archive

Film Projector
- Film Projector
- Film Projector

4X3
16x9
Letterbox
HD 480/720/1080
PAL
NTSC

Pseudo DSM

- DSM
  - Convert
    - Digital Cinema Distribution Master
  - Digital Cinema Distribution Master

Category 1 (sort of 35mm)
Category 2 (sort of 70mm)
Category 3 (sort of IMAX)