

DCI Specification for Digital Cinema – A view from Europe

15th September 2005



The DCI Specification



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Covers:-

- *Content Mastering*

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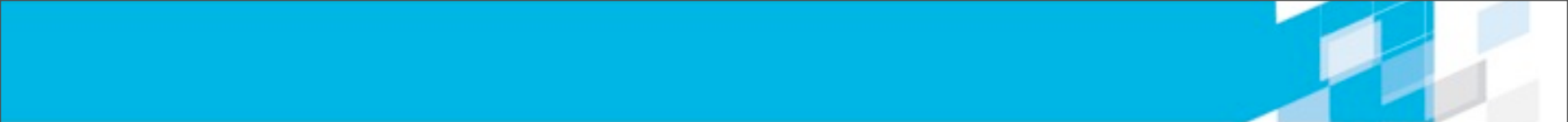
- *Content Mastering*
- *Content Management*

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Covers:-

- *Content Mastering*
- *Content Management*
- *Content Distribution*



The DCI Specification



The DCI Specification

- *Will all content be mastered, managed and distributed from Hollywood?*

The DCI Specification

- *Will all content be mastered, managed and distributed from Hollywood?*
- *Will European Facilities be needed?*

The DCI Specification

- *Will all content be mastered, managed and distributed from Hollywood?*
- *Will European Facilities be needed?*
- *Need to cater for:-*
 - ❑ *Diversity of Cultures*
 - ❑ *Language*
 - ❑ *Local requirements 'the importance of local knowledge'*
 - ❑ *Timescales*



The DCI Specification



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- *Will European Facilities be needed?*

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- Secure Network

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- *Will European Facilities be needed?*
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- DCI Compliant
- Secure Network
- Service local needs & mainstream Hollywood content
- Two way flow
- Existing film distribution patterns

The DCI Specification

- *How do we as facilities respond to the DCI spec?*
 - ❑ Skills exist today
 - ❑ Migrate skills to new Digital Cinema workflow
- *Step by step approach*

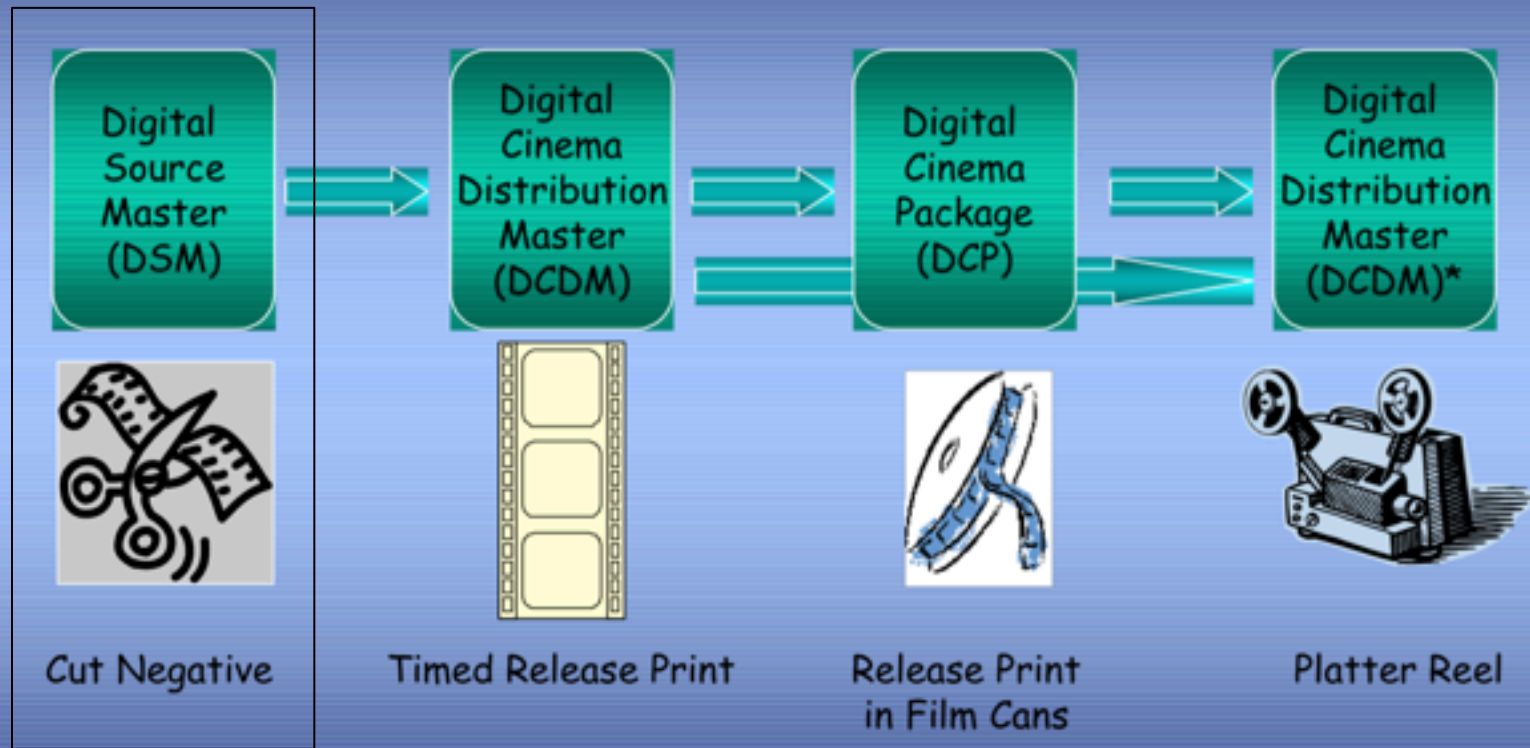
The DCI Specification

■ *Areas covered by DCI and SMPTE:-*

- ❑ Mastering
 - Picture
 - Audio
 - Subtitle
- ❑ Compression
- ❑ Encryption
- ❑ Packaging
- ❑ Transport
- ❑ Theatre systems
- ❑ Projection
- ❑ Security

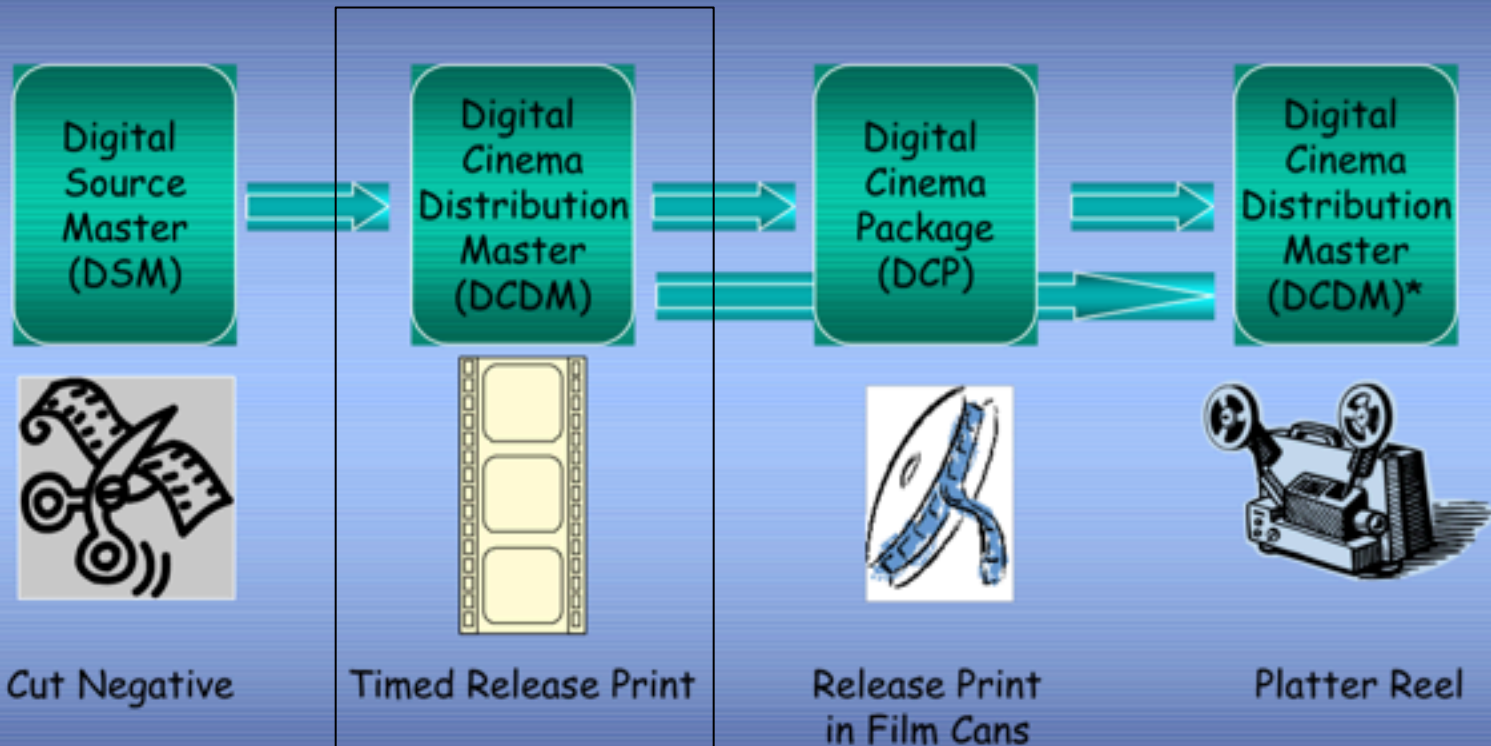
Digital Source Master

Simplified Workflow F-C-M vs D-C-M



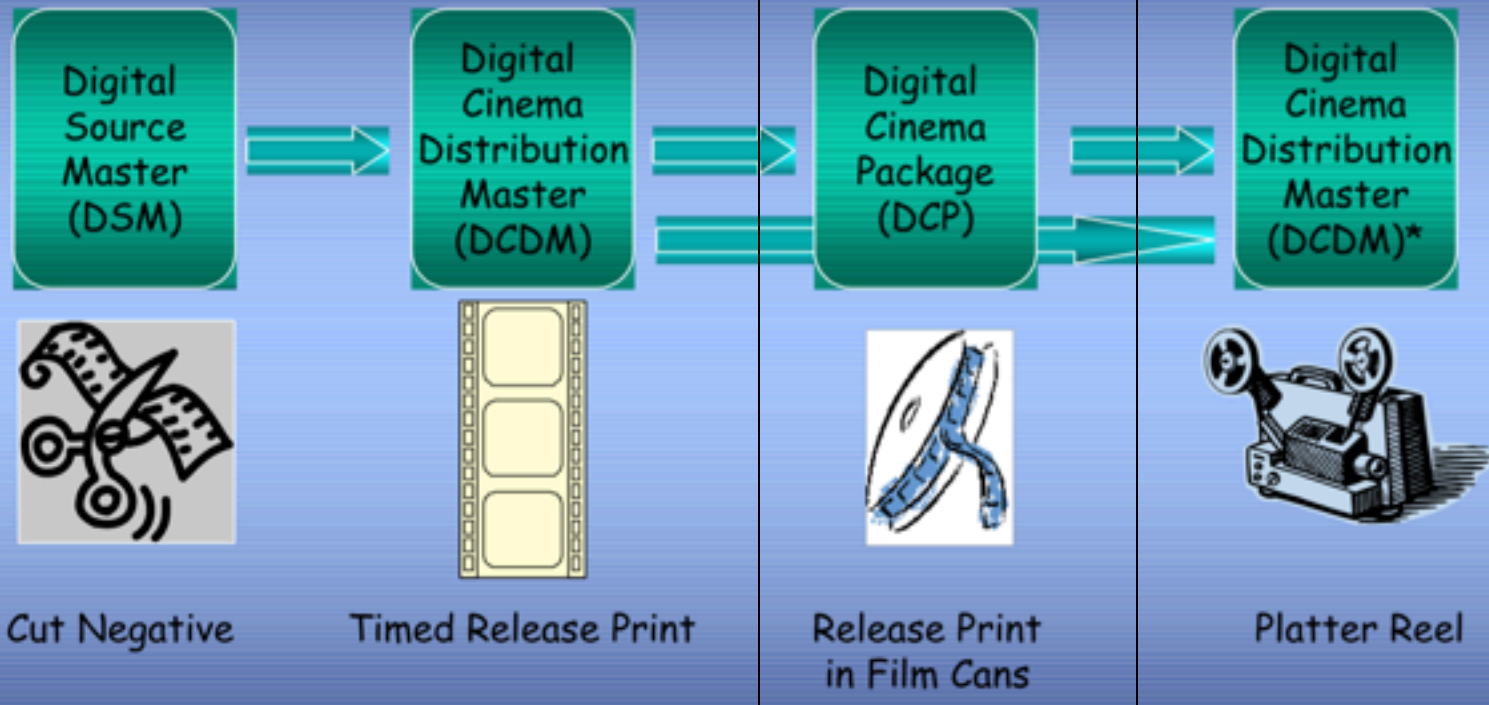
Digital Cinema Distribution Master

Simplified Workflow F-C-M vs D-C-M



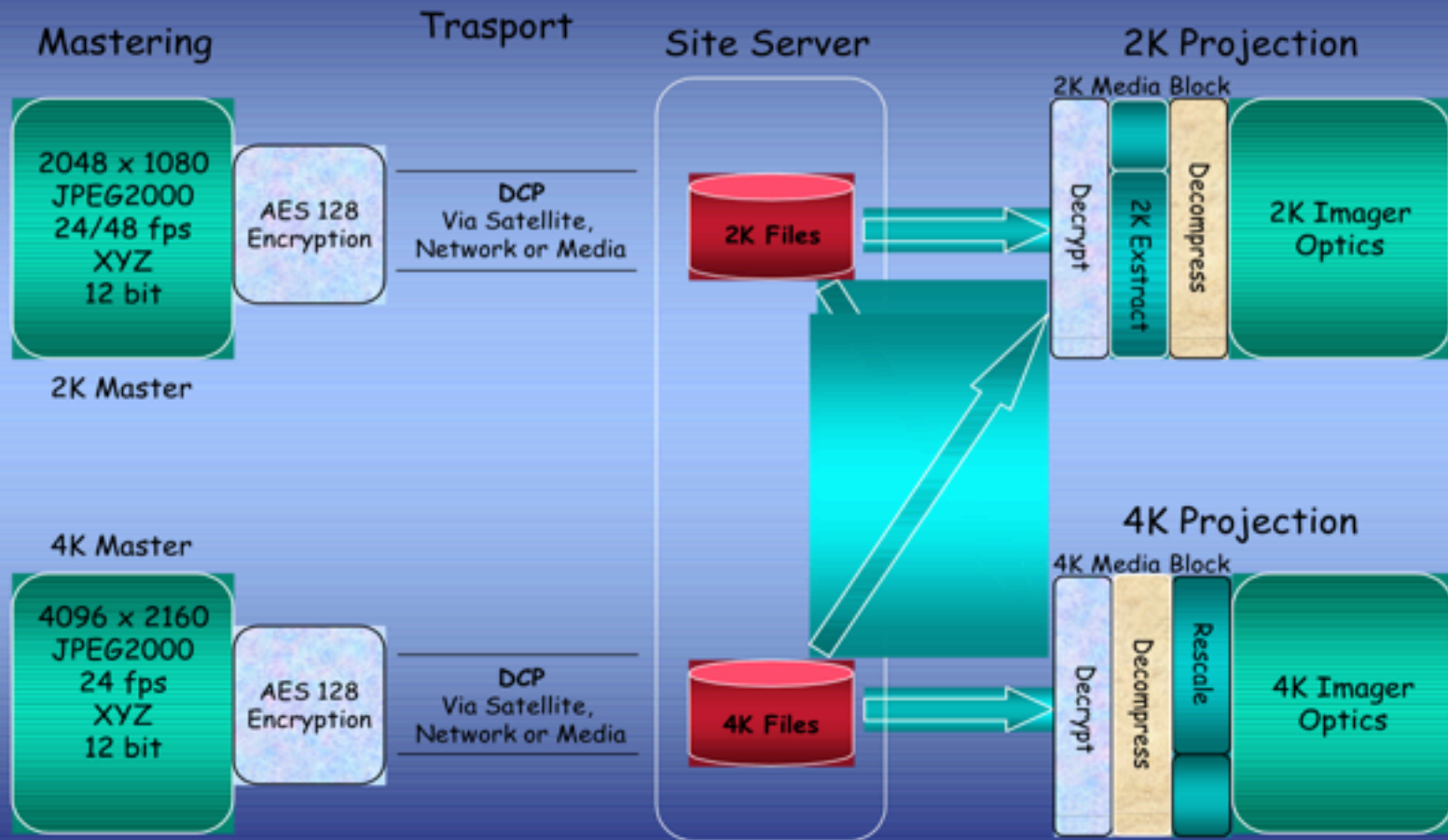
Digital Cinema Package

Simplified Workflow F-C-M vs D-C-M



2K & 4K Delivery to Theatre

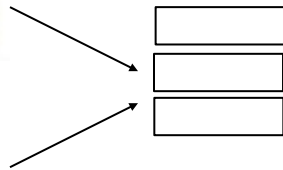
Hierarchical Image Structure



Mastering – Digital Intermediate Workflow



*Scan
Selected
Negative*



Data Storage

Mastering - Digital Intermediate Workflow



*Scan
Selected
Negative*



Data Storage

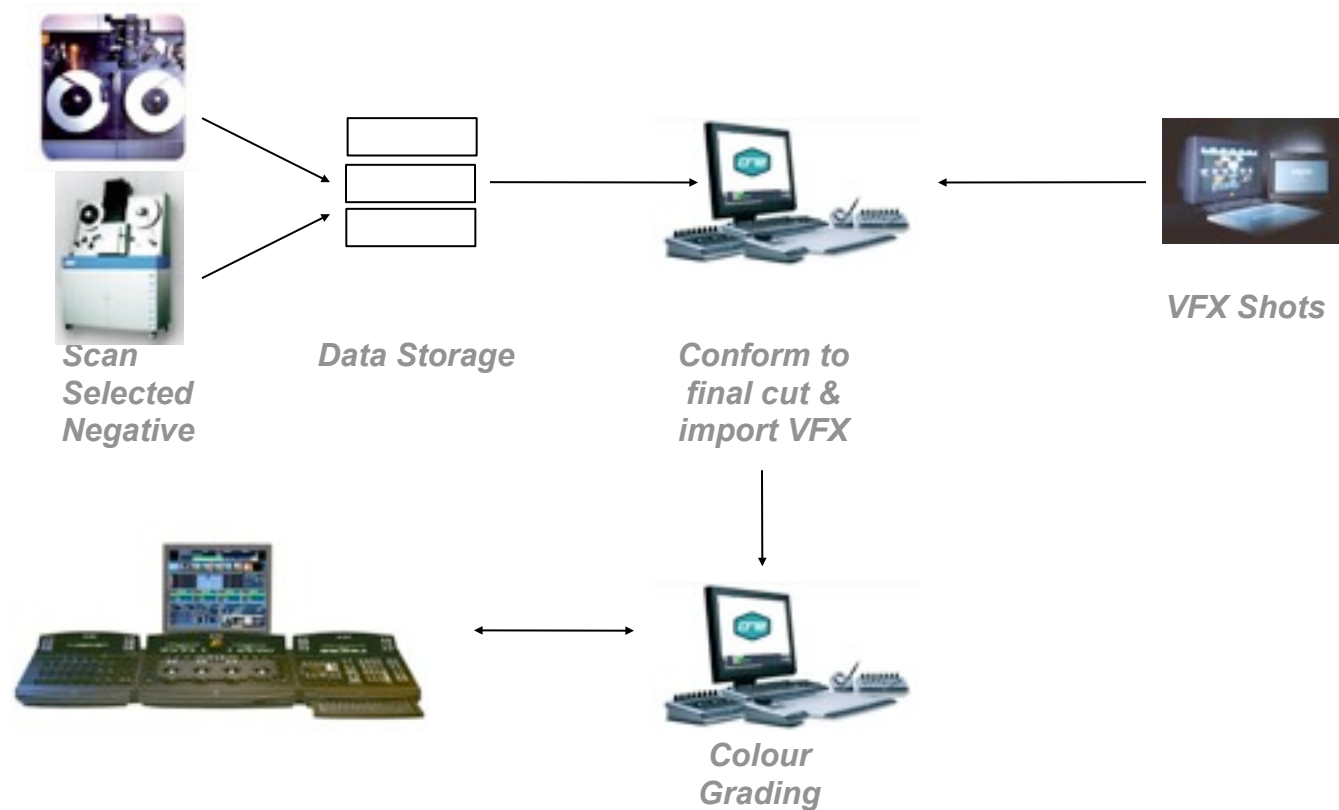


*Conform to
final cut &
import VFX*

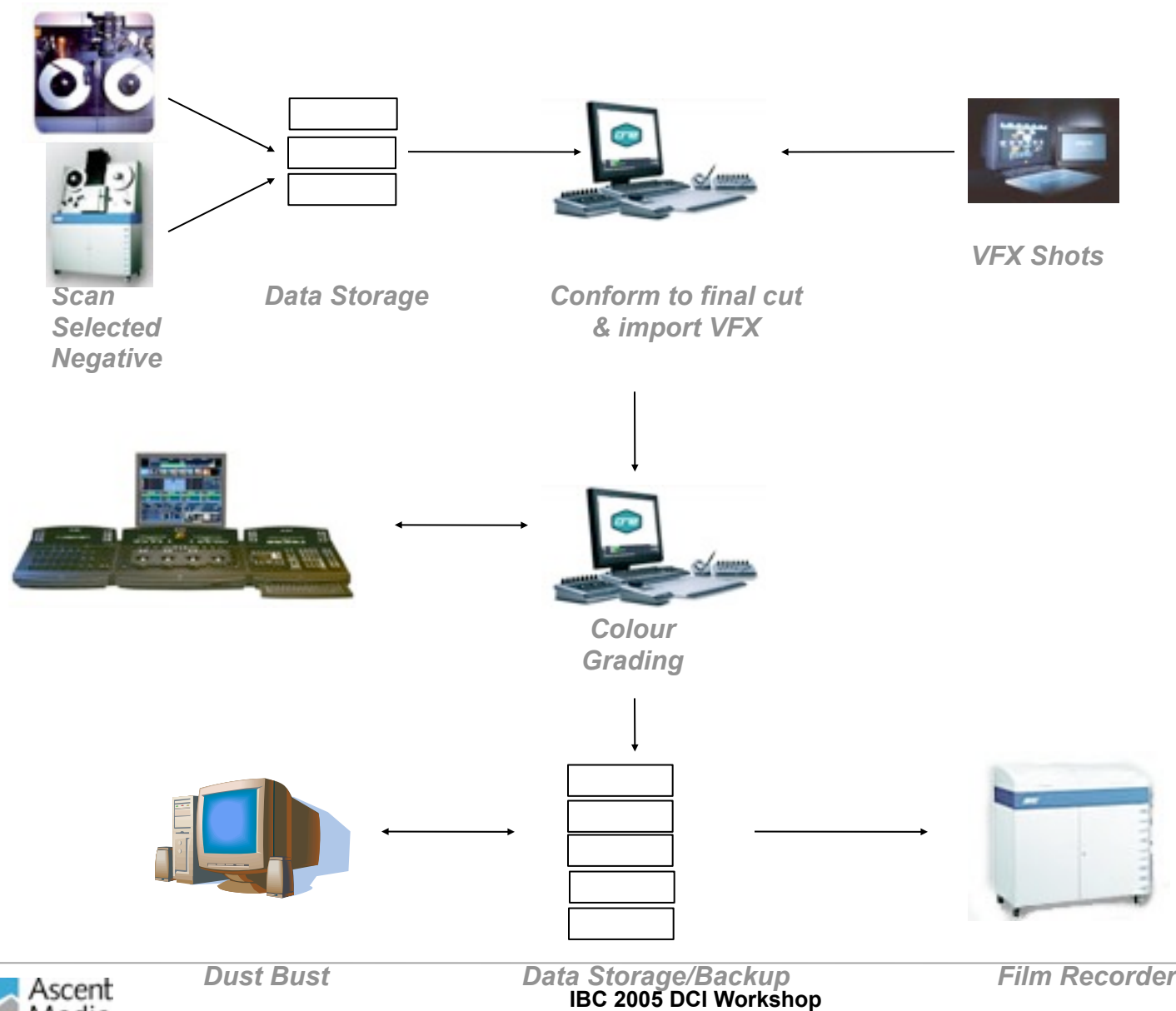


VFX Shots

Mastering - Digital Intermediate Workflow

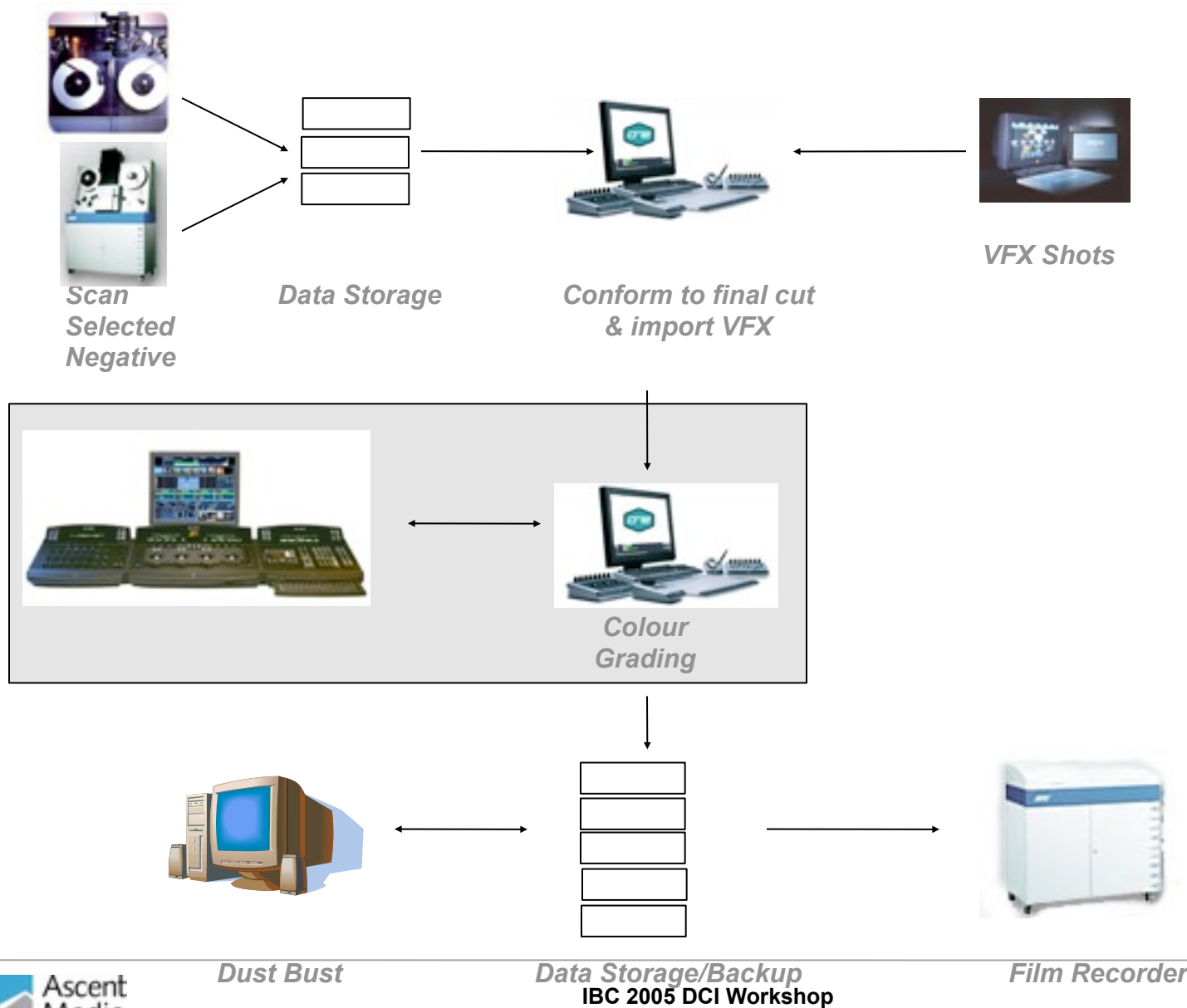


Mastering - Digital Intermediate Workflow

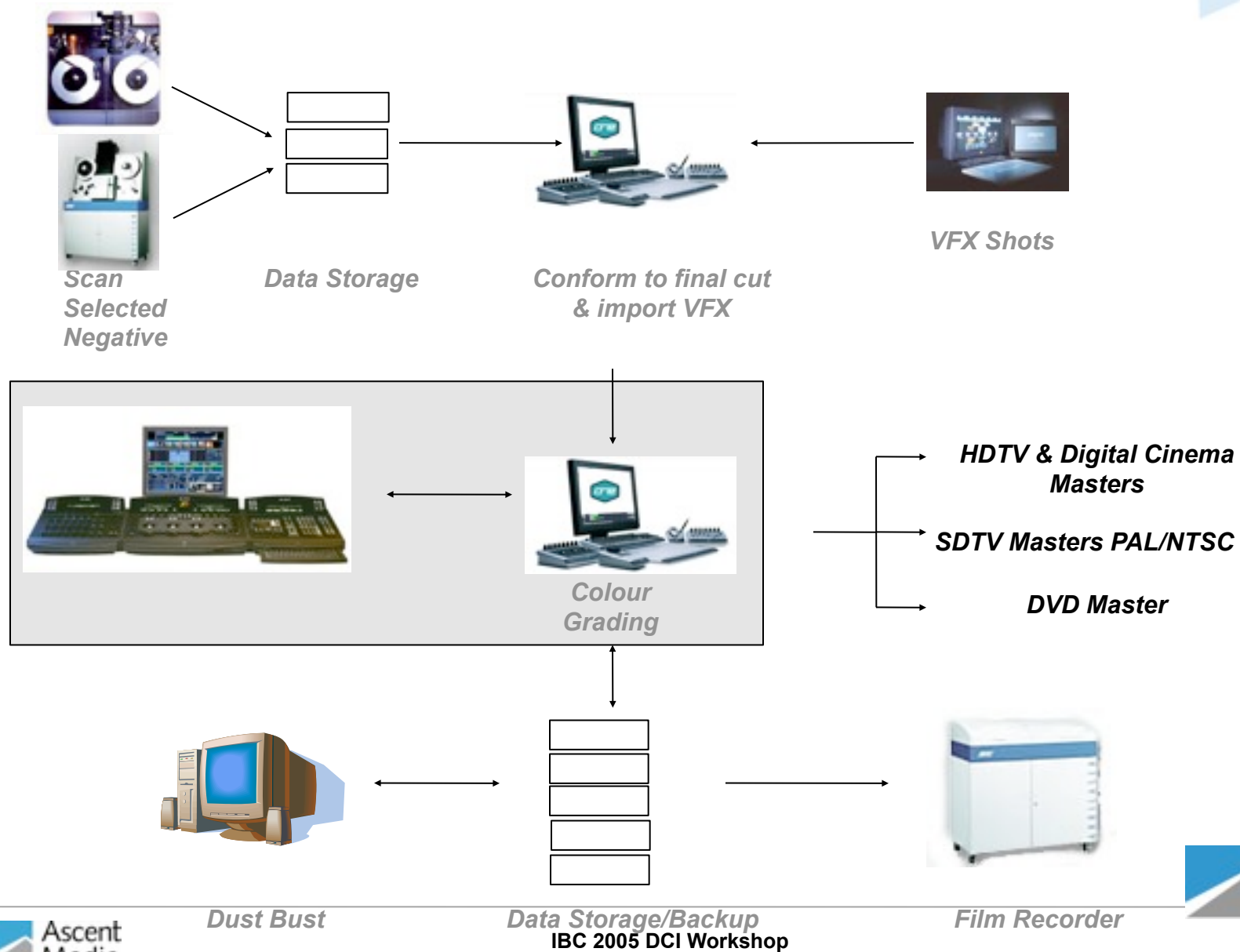


IBC 2005 DCI Workshop

Mastering - Digital Intermediate Workflow



Mastering - Digital Intermediate Workflow



Mastering – Digital Intermediate Theatre



The DCI Specification

Workflow stages

- *DSM* or Digital Source Master - the 'picture negative'
- *DCDM* or Digital Cinema Distribution master – The 'master show print'
- *DCP* or Digital Cinema Package - The 'distribution release print' compressed & encrypted, JPEG 2000 2K/4K layered compression.

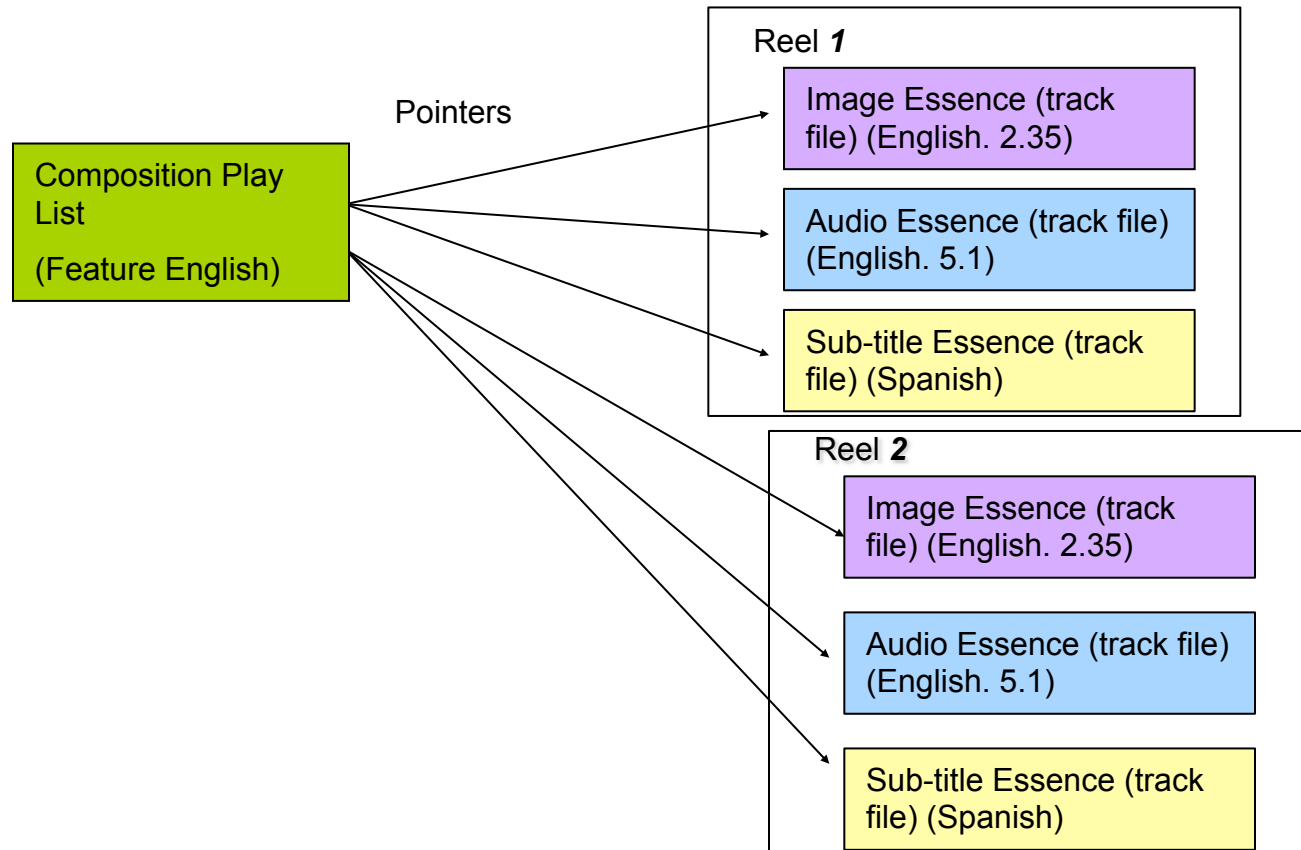
The DCI Specification

- *Workflow stages*
- *DSM* or Digital Source Master - the 'picture negative'
- *DCDM* or Digital Cinema Distribution master – The 'master show print'
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- *Composition Playlist* – The selected elements from the DCP 'essence' which make up a feature version

Composition Playlist



Composition



Example Composition Playlist

Workflow Skills Needed

- *Mastering* - Digital Intermediate creative skills within calibrated environment – standard viewing conditions across facilities. Audio dubbing & mixing skills.
- *Compression* – Encoding & DVD authoring skills
- *Encryption* - Watermarking skills, Media Management
- *Subtitling* – Subtitling skills for DVD/Cinema
- *Composition Playlist* – DVD Authoring & Subtitle management skills
- *Multiple Distribution Copies* – Network Services, Media Management
- *Trusted Environment* - All stages require full QC & total security

Ascent Media Core Solutions & Service Offerings



Creative Services



*Media Management
Services*



Network Services

- Laboratory services
- Digital intermediates
- Telecine and transfers
- Feature dailies and high-definition previews
- Electronic finishing
- Production offices/cutting rooms
- Editing
- Color correction
- Visual effects
- Sound services – editorial, design, Foley, ADR, scoring, mixing
- Trailers/promo production

- Transfer, film mastering, transform
- Duplication and format conversion
- Restoration and preservation
- Digital encoding & new media
- Digital asset management
- Vaulting and library services
- Standard Def/High Def services
- Closed-captioning/subtitling
- Format and standard conversion
- Sound services
- DVD authoring and Design

- Network origination and distribution
- Satellite space segment solutions
- Consulting, engineering, and systems integration
- Satellite network management and support
- Satellite earth station maintenance and support
- On-air promotion, post-production, and language support
- Location-based entertainment design and integration
- Worldwide satellite transmission
- Digital distribution-store & forward



Summary

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- *Will European Facilities be needed? - Yes*

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- *Post Facilities* – become DCI compliant, extending service offerings
- *New Skills needed* – Migrate skills existing today in other areas
- *Digital Asset Management* – New solutions & services for storage & distribution