Digital Cinema Review
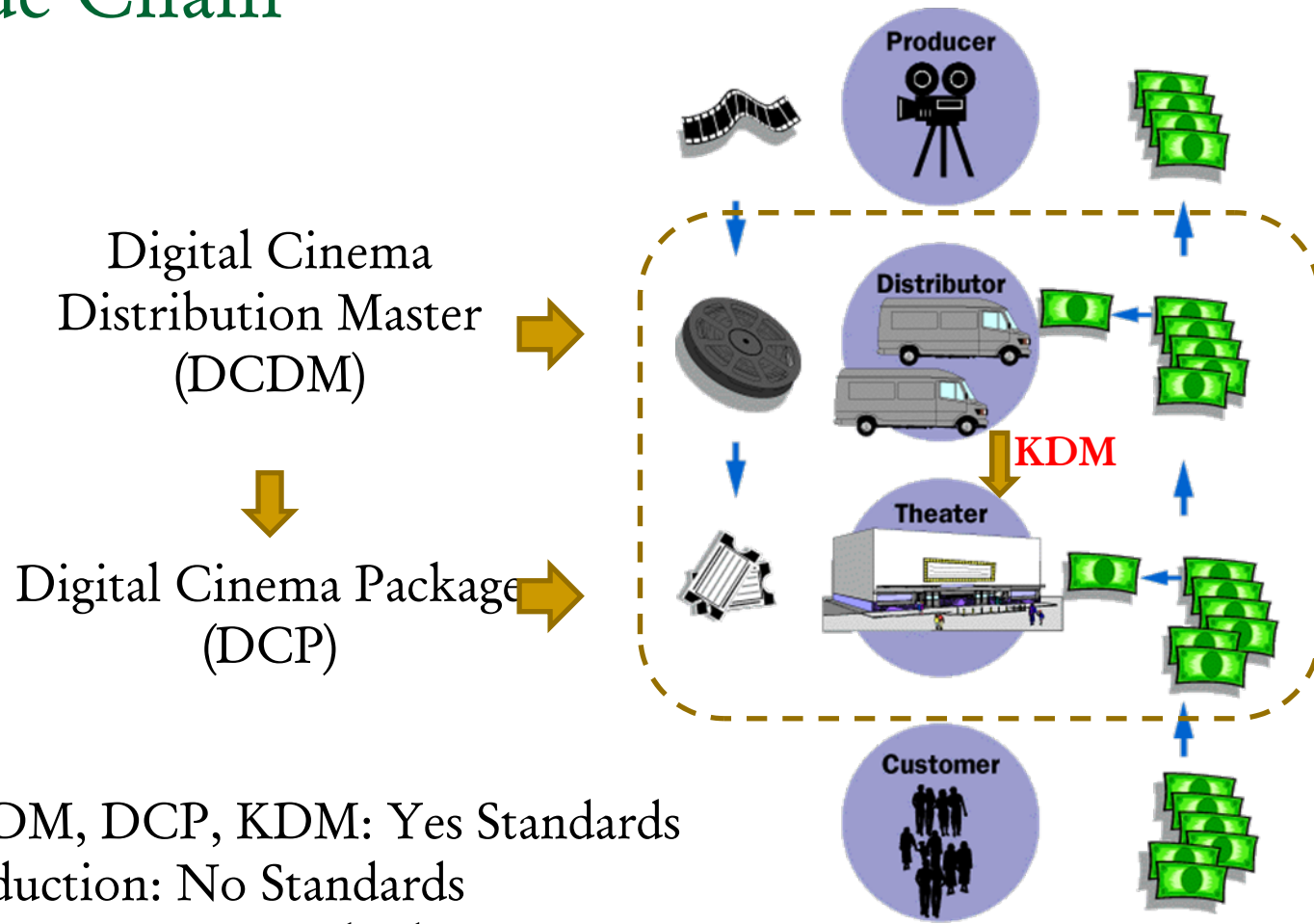
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Principles of D-Cinema Value Chain

Digital Cinema
Distribution Master
(DCDM)

Digital Cinema Package
(DCP)

DCDM, DCP, KDM: Yes Standards
Production: No Standards
Container: No Standards

4K Digital Cinema Technology

- Reason: Presenting higher quality images to those who sit close to the screen or to the marketing power of the 4K number?

- There is no 4K 3D in D-Cinema SMPTE standards. It is defined only 2K 3D.

- 4K 2D trend will cause a shift in the way D-Cinema technology is packaged and sold. (Sony, and DLP announcement).

- Logistics! Eight HD-SDI cables!

- Media block inside the projector. Internal media block and servers become commodities.

Tools and Standards

What elements make up a complete
D-Cinema System Project?
The following apply basically to both
Single Screen architecture and Multi-
Screen Architecture.

- Central Library Management Storage Hub
- Operating Center
- Presentation System (projector, media block)
- Network Operations Center
- Knowledgeable Professionals
- Organizational behavior

Note: Of course the are other important issues to consider in a complete D-Cinema System.

Accessibility for the HI, VI-N & Additional Frame Rates

SMPTE DCP will includes mostly European requirements:

• HI and VI-N audio tracks are to be carried by the several multichannel audio formats.

• The standard also describe how cinematic closed captions are distributed.

• Additional frame rates (25 frame/sec etc.) specifically for EUcontents and archives.

• At moment, no other requests has been asked by European Organizations.

• In 3D, 2D subtitles are uncorfortable to watch. Change to Smpte DCP is now in discussion.

■ Visually Impaired Narrative
Hearing Impaired Audio
SMPTE 429-2

■ Closed Captions
SMPTE 428-10
SMPTE 429-12
SMPTE 430-10
SMPTE 430-11

Standardization, Interoperability & Compliance Test Plan

Standardization
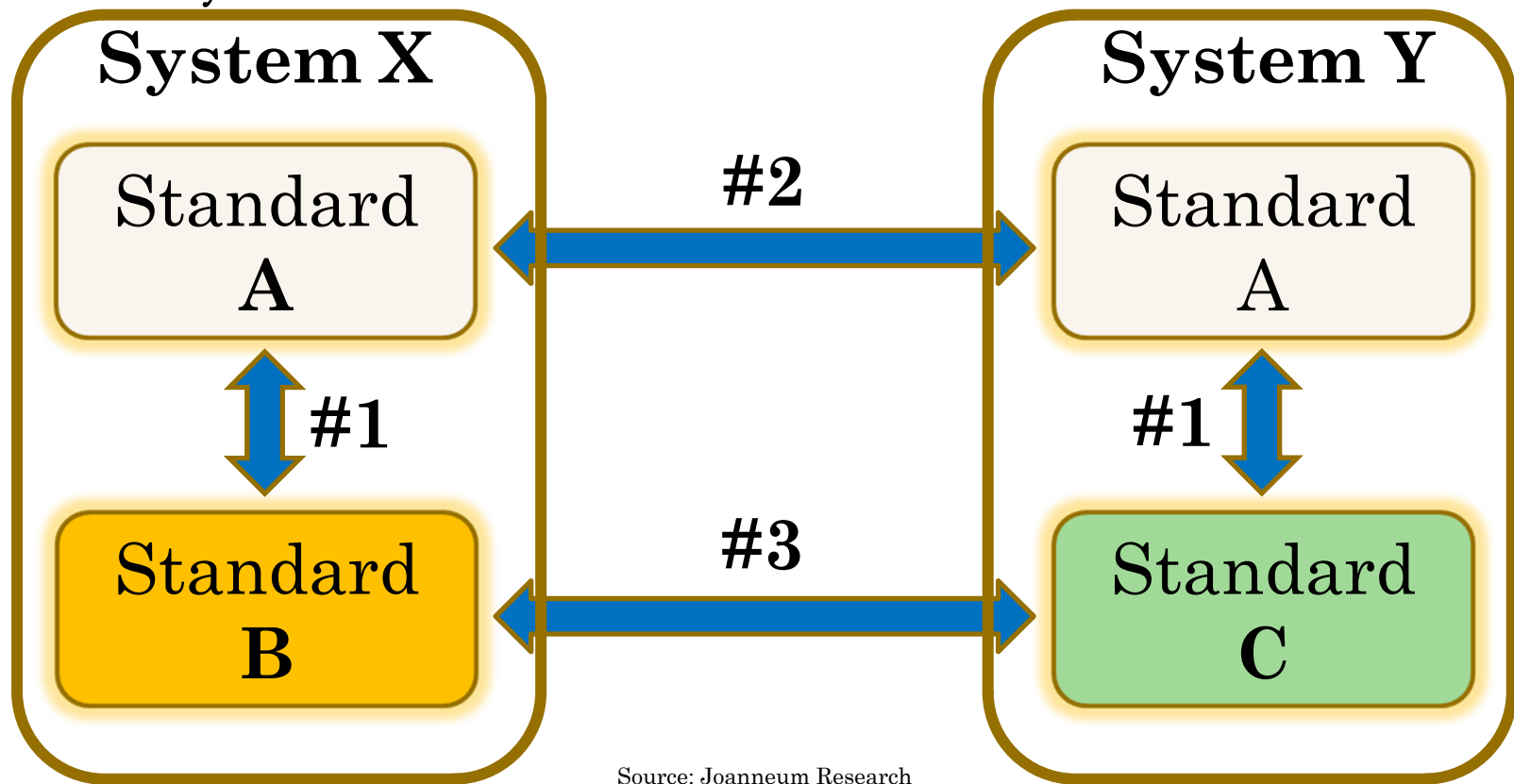
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Interoperability

⬇

Compliance Test Plan

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Base to organize economic relations

Three Interoperability Issues

#1: Different standards used within one system
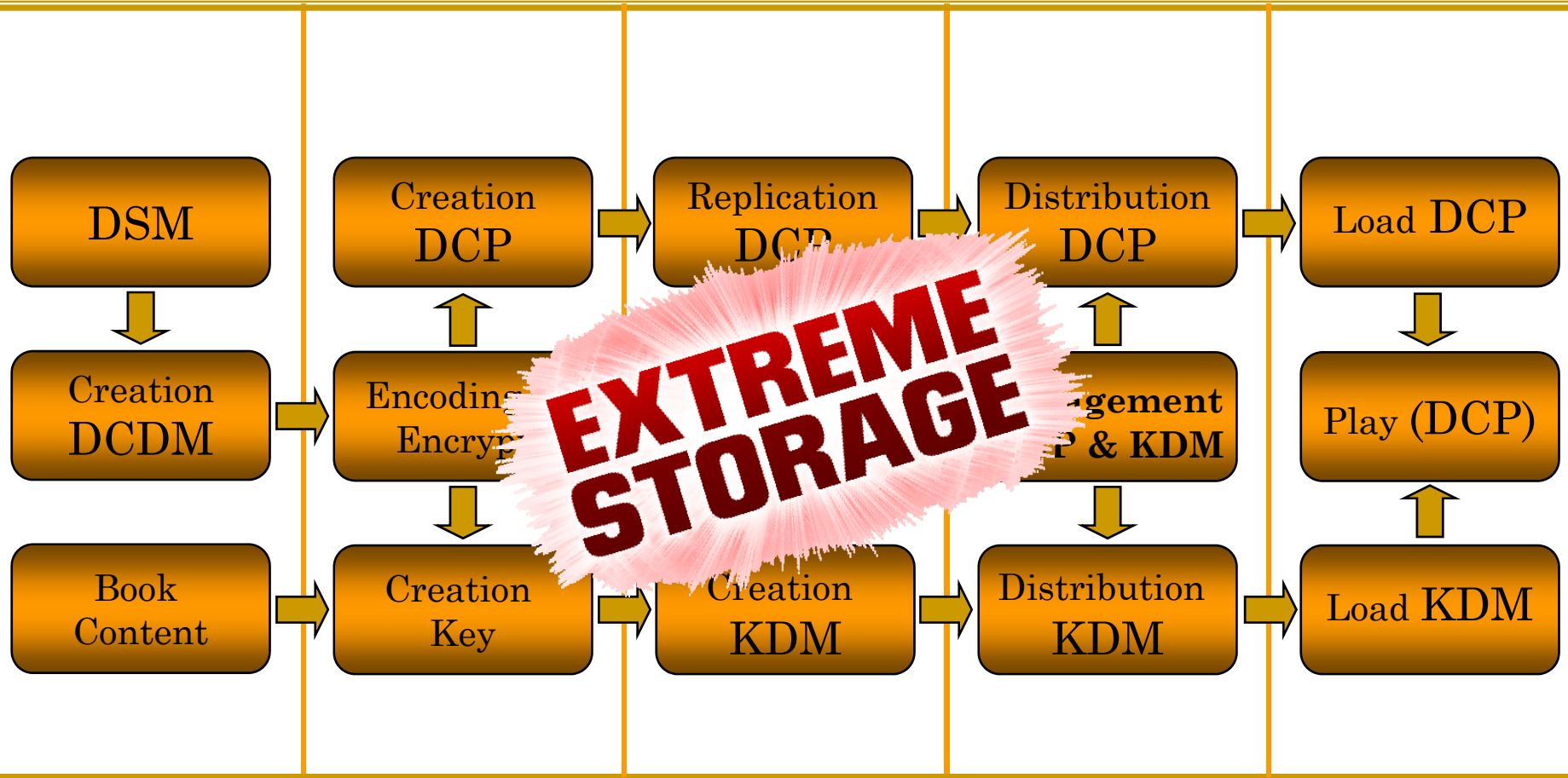#2: Same standard used by different systems
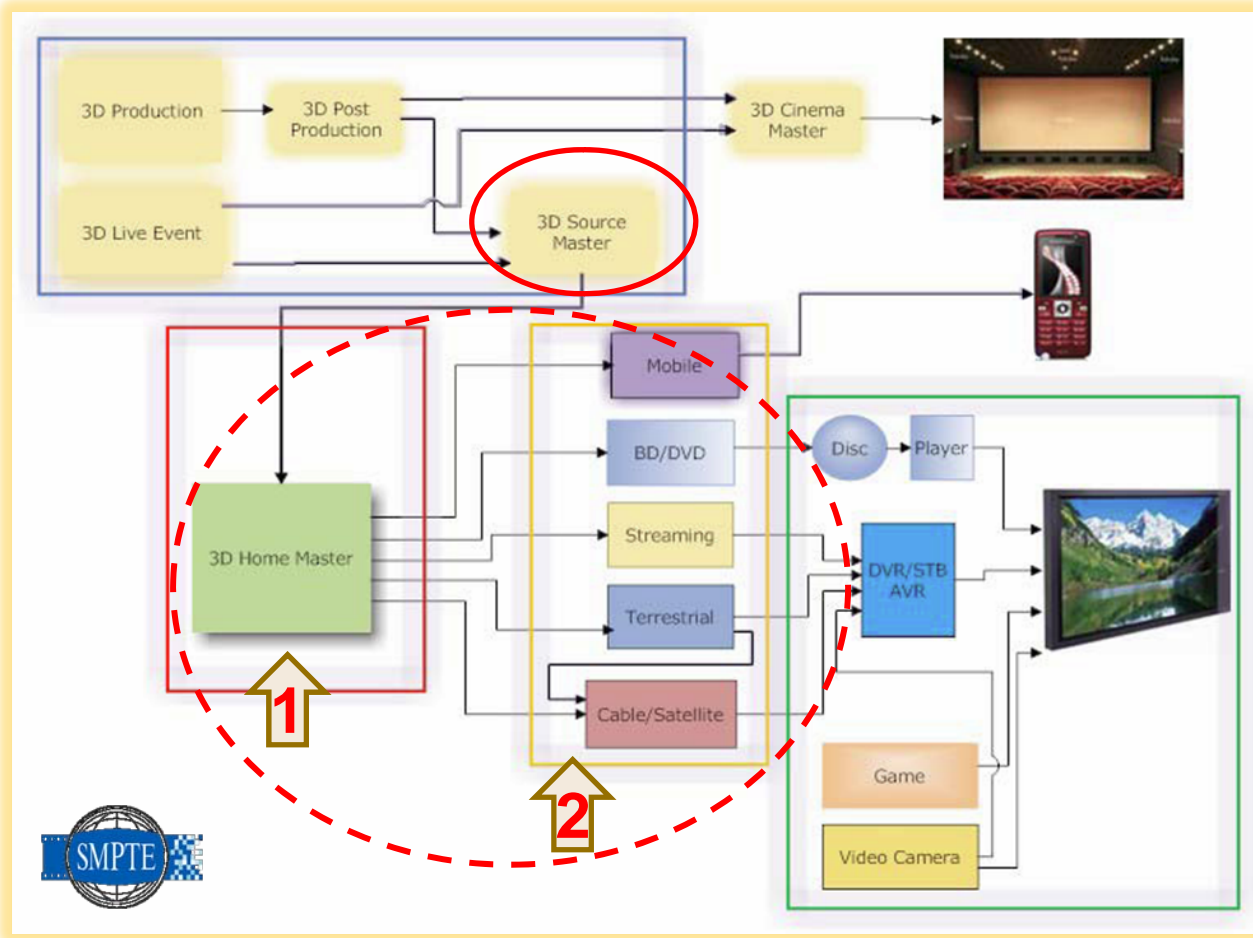#3: Different standards used by different systems

Source: Joanneum Research

Digital Cinema Workflow for 2D and 3D

Interoperability #2: same standard
used by different systems

D-Cinema 3D and 3D@Home

The end-to-end flows for various 3D content distribution systems.
Scope of Task Force: format of the D-Cinema Source Master to Home Master (1)
provided to each distribution system (2) leading to the home.

EU Digital Cinema Compliance Test Plan

- Important for the Roll out of Digital Cinema in Europe?
- It should be related to the production, distribution, and exhibition?
- Applied to processes, contents, containers, archives, training?
- Based on which specifications and methodology?
- In short: What, why, who, when, how?

D-Cinema and the Cinema Advertising

- Cinema Advertising has received no attention to-date, within standardization organizations.

- Still using customized projection equipment that does not meet D-Cinema standards. \

- Need to run advertising on D-Cinema equipment will emerge.

Professionals and Training

- Very limited availability of trained people to operate in the new *d-*World/IT File Base Systems

New professions that fulfill new needs and competences develop;
Existing professions change their profile, they are enriched by additional know-how, they transform.

- Very limited availability of training, and trainers.

Conclusion

The Cinema industry is confronting
unparalleled levels of complexity,
dynamic change and pressure to innovate.

We should not find a solution for next year.
The solution should be valid for many years to come.

Thank you

Angelo D'Alessio