SMPTE
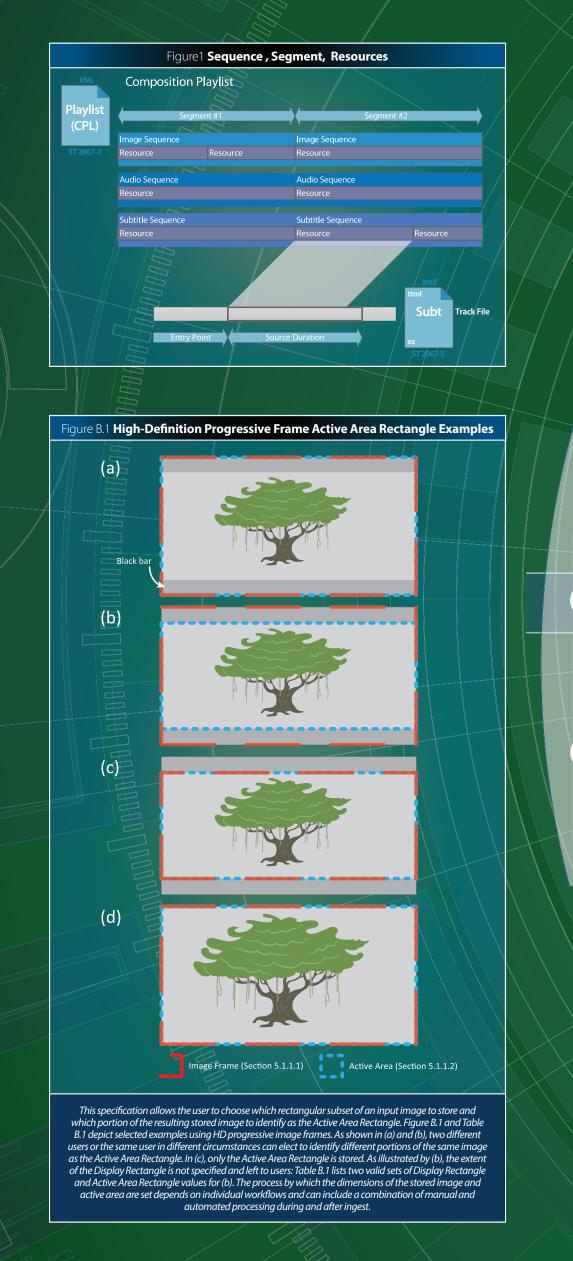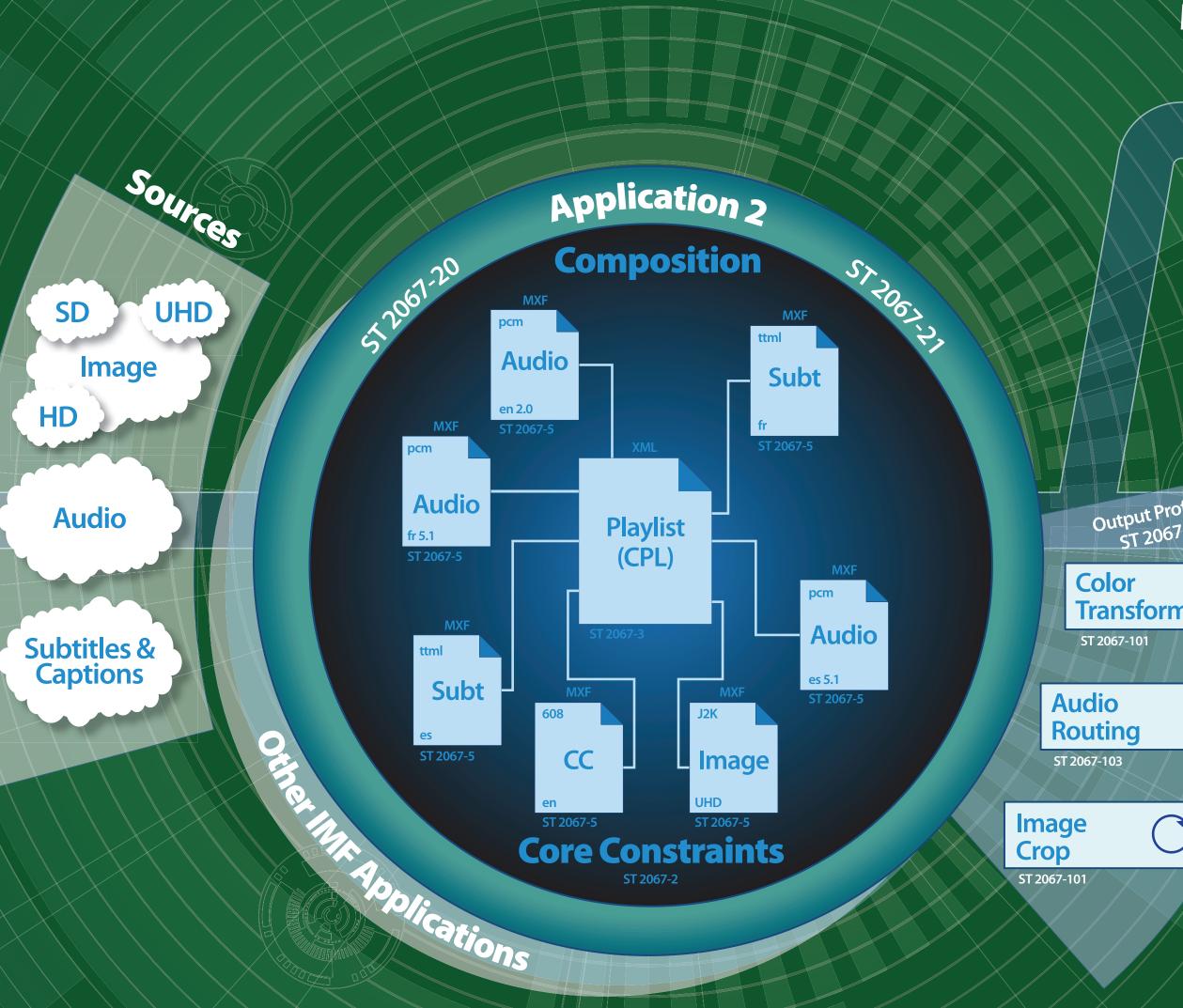
INTEROPERABLE MASTER FORMAT (IMF) – APPLICATION 2
High-Quality Multi-Version Masters for Studio Applications
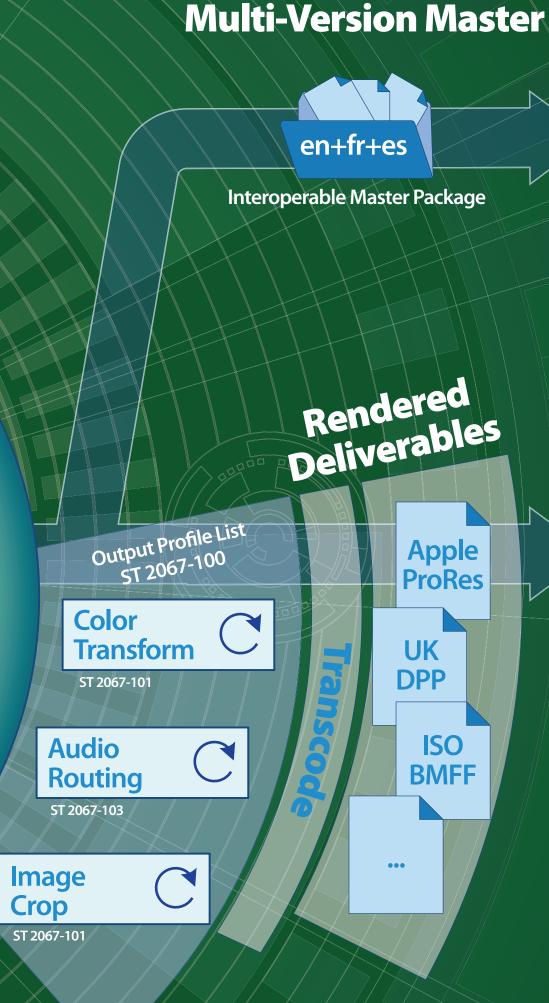
Figure1 Sequence, Segment, Resources

Composition Playlist

Playlist (CPL)
ST 2067-3

Segment #1 — Segment #2

Image Sequence / Resource / Resource
Audio Sequence / Resource / Resource
Subtitle Sequence / Resource / Resource

Subt / Track File / Tml

Entry Point — Source Duration

Figure B.1 High-Definition Progressive Frame Active Area Rectangle Examples

(a)
(b)
(c)
(d)

Black bar

Image Frame (Section 5.1.1.1)   Active Area (Section 5.1.1.2)

This specification allows the user to choose which rectangular subset of an input image to store and which portion of the resulting stored image to identify as the Active Area Rectangle. Figure B.1 and Table B.1 depict selected examples using HD progressive image frames. As shown in (a) and (b), two different users or the same user in different circumstances can elect to identify different portions of the same image as the Active Area Rectangle. In (c), only the Active Area Rectangle is stored. As illustrated by (b), the extent of the Display Rectangle is not specified and left to users; Table B.1 lists two valid sets of Display Rectangle and Active Area Rectangle values for (b). The process by which the dimensions of the stored image and active area are set depends on individual workflows and can include a combination of manual and automated processing during and after ingest.

Sources

SD UHD
Image
HD
Audio
Subtitles & Captions

Other IMF Applications

Application 2

Composition

ST 2067-20
ST 2067-21

MXF / pcm / **Audio** / en 2.0 / ST 2067-5
MXF / ttml / **Subt** / fr / ST 2067-5
MXF / pcm / **Audio** / fr 5.1 / ST 2067-5
XML / **Playlist (CPL)** / ST 2067-3
MXF / pcm / **Audio** / es 5.1 / ST 2067-5
MXF / ttml / **Subt** / es / ST 2067-5
CC / 608 / en / ST 2067-5
MXF / J2K / **Image** / UHD / ST 2067-5

Core Constraints
ST 2067-2

Multi-Version Master

en+fr+es
Interoperable Master Package

Rendered Deliverables

Output Profile List
ST 2067-100

Color Transform
ST 2067-101

Audio Routing
ST 2067-103

Image Crop
ST 2067-101

Transcode

Apple ProRes
UK DPP
ISO BMFF
...

Table 2 Image Characteristics

Image Frame Width	1..1920			1..3840			
Image Frame Height	1..1080			1..2160			
Pixel Bit Depth	8 / 10			10			
Frame Structure	Progressive		Interlaced	Progressive			
Stereoscopy	Stereoscopic / Monoscopic		Monoscopic	Stereoscopic / Monoscopic			
Frame Rate	24 / 24000/1001 / 25 / 30 / 30000/1001 / 50 / 60 / 60000/1001 / 30000/1001		25 / 30 / 30000/1001	24 / 24000/1001 / 25 / 30 / 30000/1001			
Sampling	4:4:4			4:2:2			
Quantization	ITU-R BT.709	SMPTE RP 2077		ITU-R BT.709			
Color Components	R'G'B' / Y'C'bC'r	R'G'B'		Y'C'bC'r			
Colorimetry	ITU-R BT.601 (625) BT.601 (525) BT.709	ITU-R BT.709	ITU-R BT.601 (625) BT.601 (525) BT.709	ITU-R BT.601 (625) BT.601 (525) BT.709	ITU-R BT.709	IEC xvYCC	ITU-R BT.2020
JPEG 2000 Encoding	Broadcast Contribution Single Tile Profile Level 1 / Broadcast Contribution Single Tile Profile Level 2 / Broadcast Contribution Single Tile Profile Level 3 / Broadcast Contribution Single Tile Profile Level 4 / Broadcast Contribution Single Tile Profile Level 5 / Broadcast Contribution Multi-tile Reversible Profile Level 6 / Broadcast Contribution Multi-tile Reversible Profile Level 7						

Note: Image frames shall conform to the combinations of characteristics allowed in Table 2

SMPTE is the preeminent standards development body in the motion imaging and media industry.

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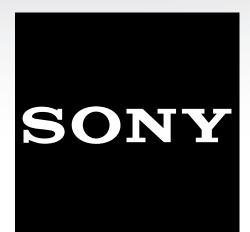Information provided in this wall chart is subject to change. Published November 2014.

Special thanks to Mesclado for their input.

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