AI model for Color correction pipeline

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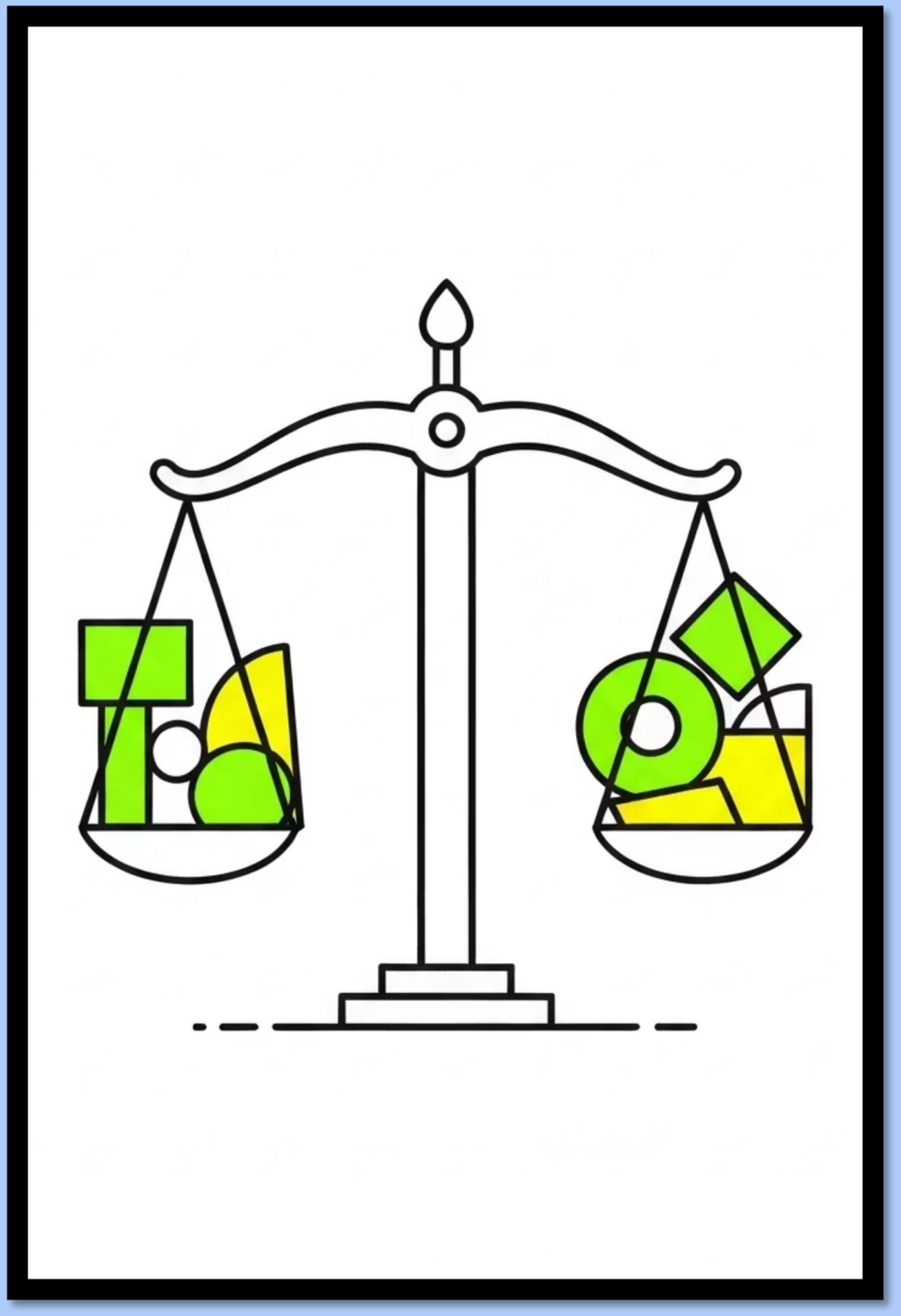
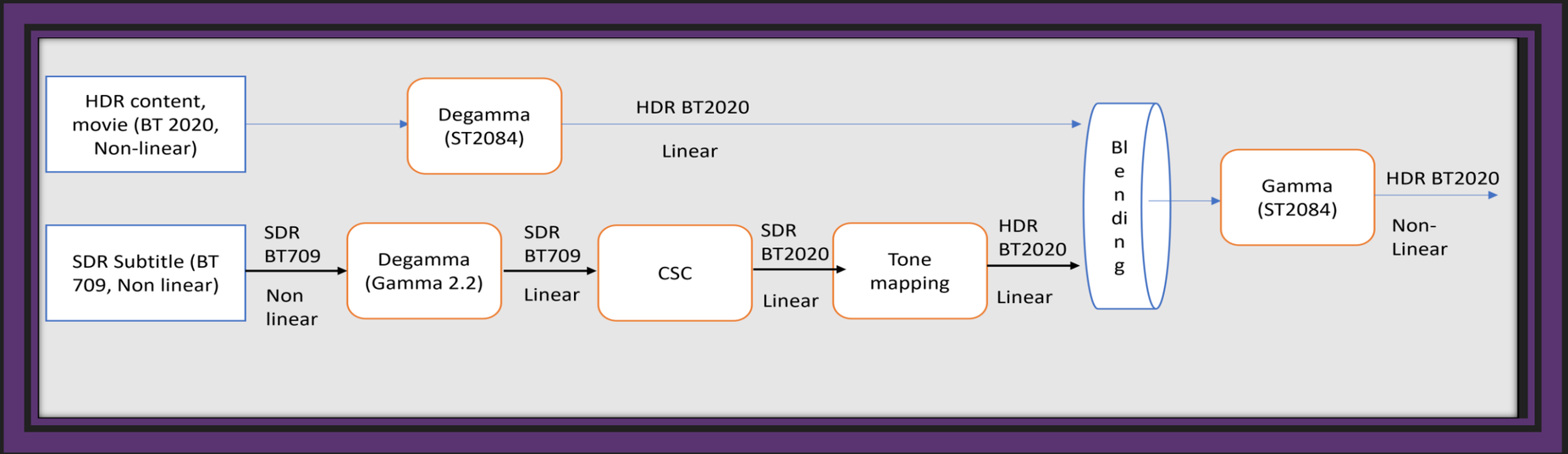
XDC 2025



COLOR COMPOSITION

Luma and Chroma handling



Color correction and Composition: Basic transformations ?

- Color format conversion: RGB, YCBCR etc
- Color space / Gamut conversion: BT2020, Rec709, SRGB, DCI-P3
- Linearization (Degamma): SDR (2.2) vs HDR (2.4)
- Non-linearization (Gamma): SDR, HDR etc
- Tone mapping: SDR to HDR, HDR to SDR, HDR to HDR

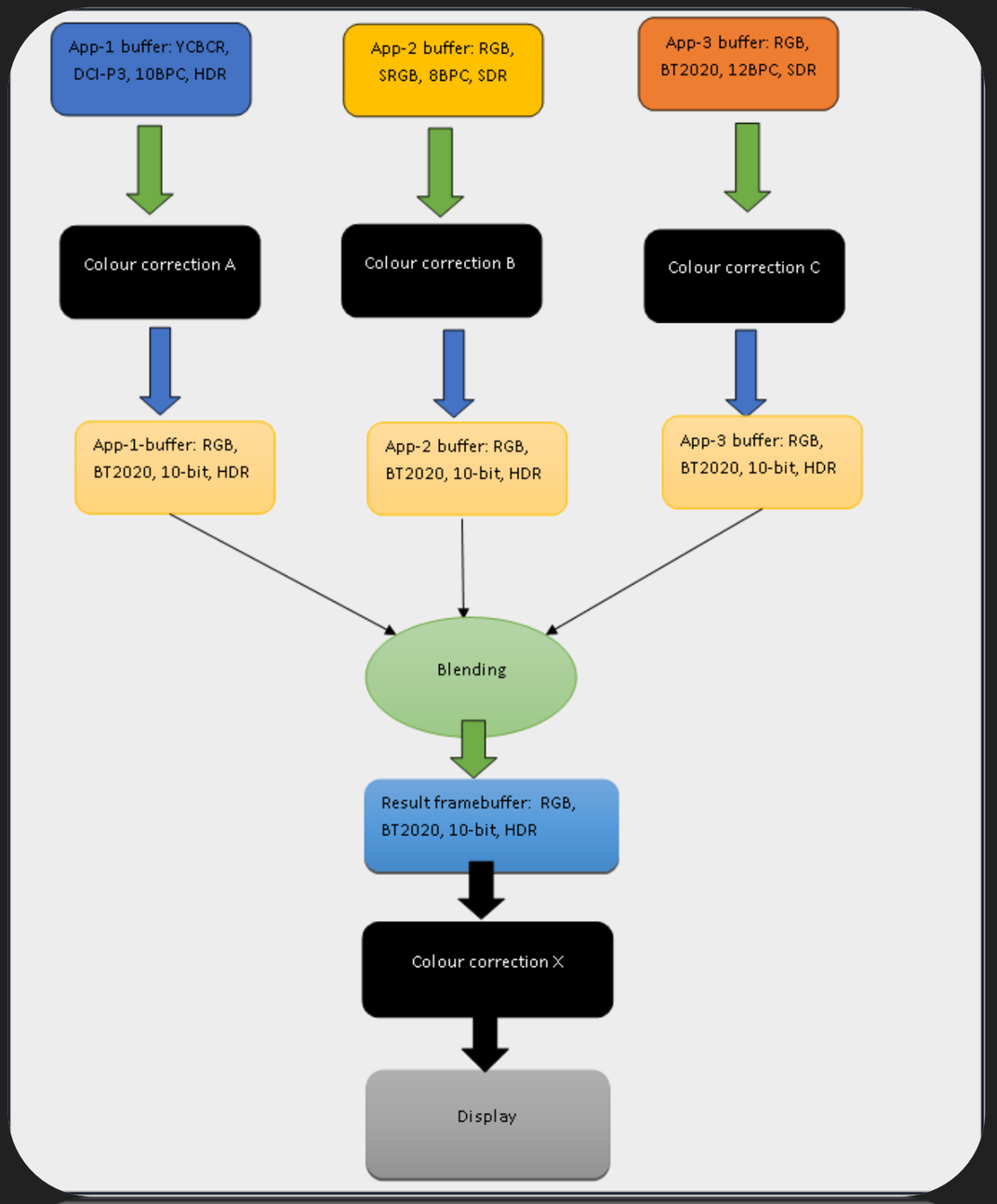
DECISION COMPLICATIONS

3 different app buffers to compose

- All with different colorspaces
- All with different color models/formats
- Mix of HDR and SDR luminance

How to composite for ?

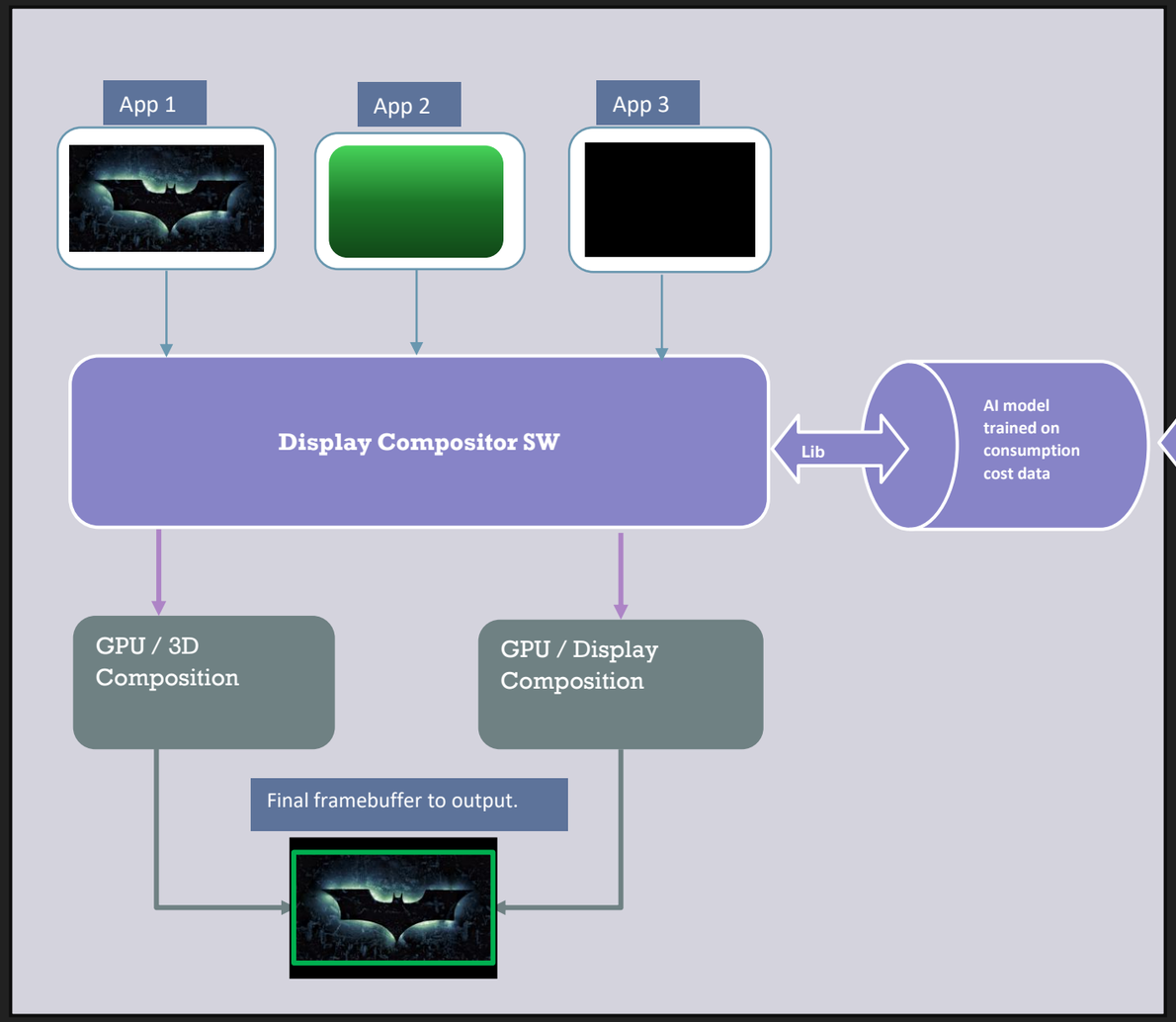
- Best power efficiency
- Best performance
- Best accuracy



TRANSFORMATION COST PER BLOCK

Transformation	3D engine transformation costs		Display engine transformation cost		Decision making tree
	Power (mw)	Time (us)	Power (mw)	Time (us)	
CSC BT2020 to SRGB	X	Y (<X)	A	B (<A)	3D engine is faster but consumes more power
CSC SRGB to BT2020	Z	W (<Z)	C	D (>C)	Display engine is faster and uses less power
Degamma SDR (2.2)	M	N (> M)	E	F (> E)	
Degamma HDR (PQ)	O	P (>O)	G	H (<G)	
Gamma SDR (2.2)	X	Y (<X)	A	B (<A)	
Gamma HDR (PQ)	Z	W (<Z)	C	D (>C)	
Tone mapping SDR to HDR	M	N (> M)	E	F (> E)	
Tone mapping HDR to SDR	O	P (>O)	G	H (<G)	

SYSTEM ARCHITECTURE



Queries
Which pipeline to use for most power efficient HDR playback ?
How to set color correction pipeline for fastest performance ?
What is the most accurate path of HDR composition ?
How to get the best tone mapping done ?