MAINCONCEPT

Future distribution video codec

Considerations from an implementer

January 17, 2025 Nicolai Otto

MainConcept

We provide professional video codec technology, trusted by the world's most innovative brands for over 30 years.

We offer the largest library of video & audio SDKs, applications, plugins, and custom development services.

SDKs

- VVC/H.266
- HEVC/H.265
- AVC/H.264
- MPEG-2
- JPEG XS
- MV-HEVC
- AV1
- Apple ProRes
- LCEVC
- Dolby Digital
- MPEG-H
- xHE-AAC

…and many more

Plugins

- FFmpeg
- Dolby
- Blackmagic Design
- Adobe

Applications

- Live
- Cloud
- Transcoding

QUALITY

Superior audio & visual quality at any bitrate

PERFORMANCE

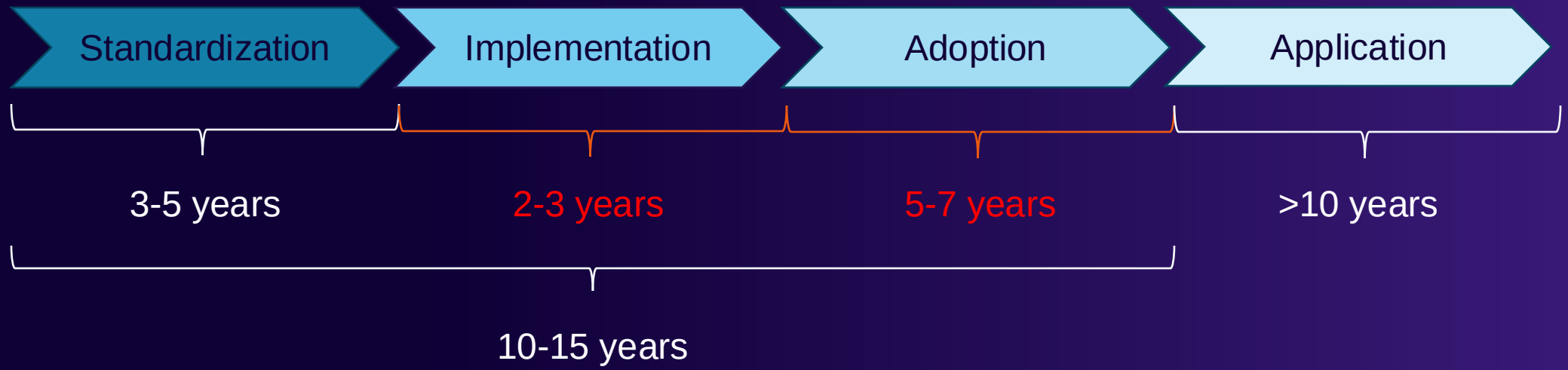
Exceptional performance on-site or in the cloud

RELIABILITY

Reliable audio & video solutions

Codec lifecycle

Simplified, estimated



- 10-15 years until a new codec “hits the street” (2035+)
- 7-10 years in which industry invests with unclear ROI

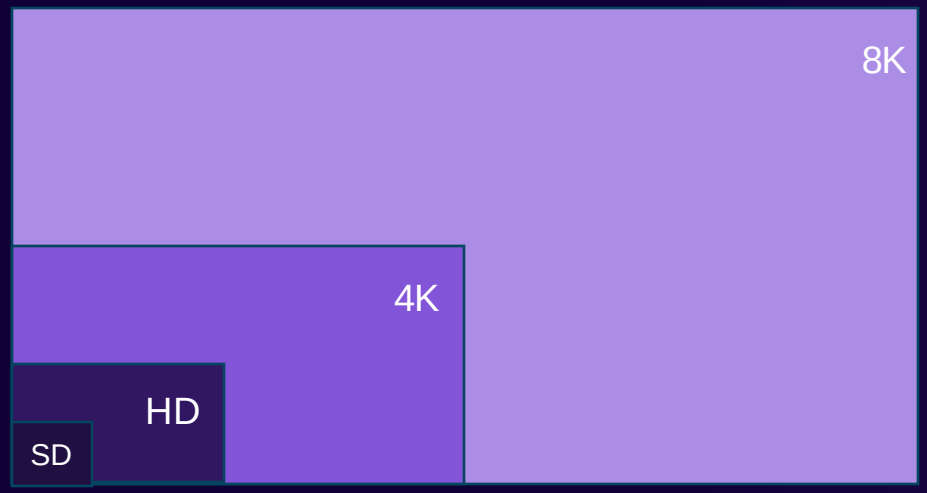
- What will the market look like by then?

Display evolution

What the consumer sees

Expectation

Displays will get larger



Reality (2025)

- 8K not mass market
- Large displays still 4K
- Content consumed on mobile devices
- Alternative displays (HMD)

- Most of the distribution still in HD
- Requirements change

Shifting requirements

Distribution side

- Quality metric shifting from objective to perceived
- 1080p and 4K “sweet spot”
- Latency and startup times become much more relevant

- additional bitrate reduction beyond VVC/H.266 less relevant

Conclusion

How can a new codec be successful?

- Target resolution 1080p to 4K
- 4:2:0 10-bit (HDR)
- Coding tools for perceived quality
- Ultra-low latency (Sub-Frame)
- Fast startup times (< 0.5 sec)
- CPU-friendly decode (like HEVC)

- Implementation in parallel with spec
- Reduced time to market

nicolai.otto@mainconcept.com