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**EXTEND CMAF
USAGE FOR LARGE
SCALE VIDEO
DELIVERY**

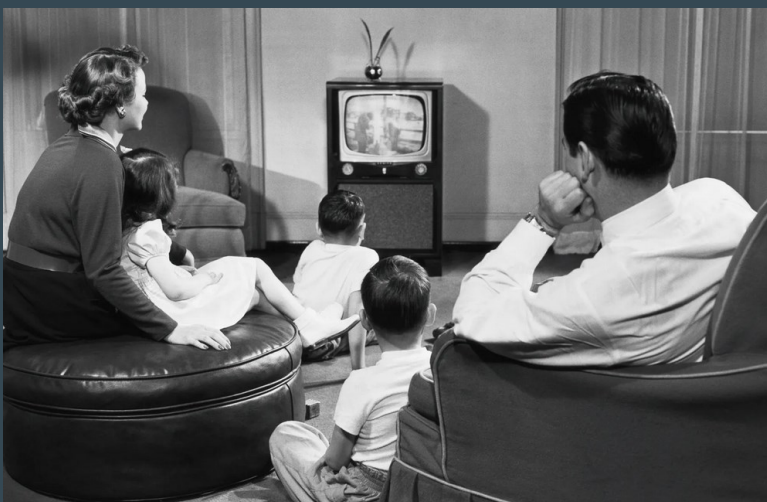
ATEME
Captivate your audience

PLAN

1. CMAF prominence
2. Live media ingest protocol
3. Extending CMAF usage scope

CMAAF prominence

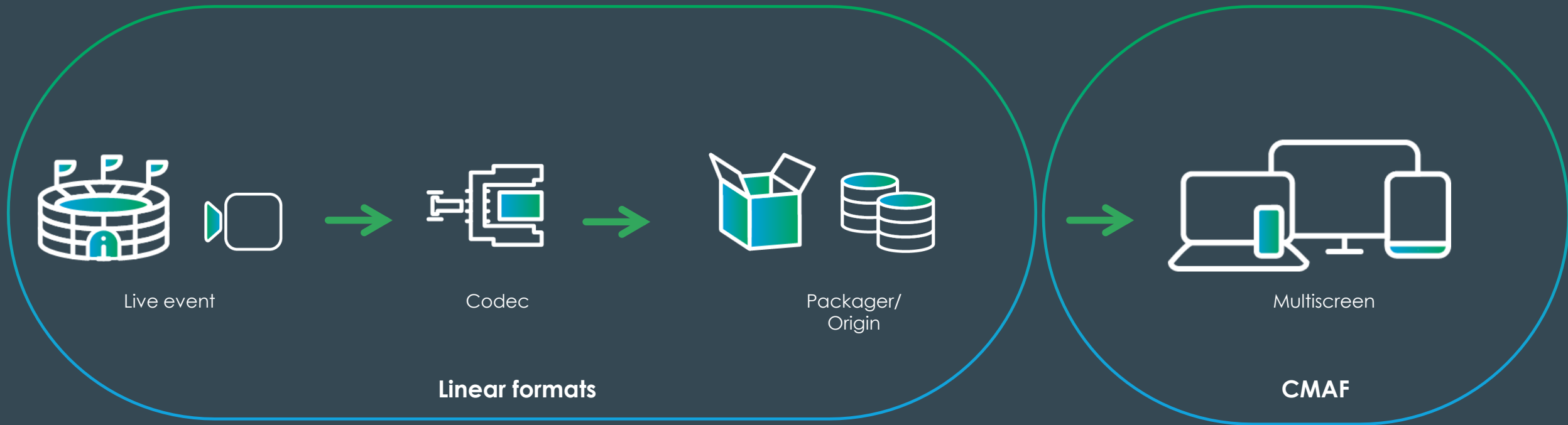
HUGE TECHNOLOGY JUMP



OTT services

CMAF FILE FORMAT

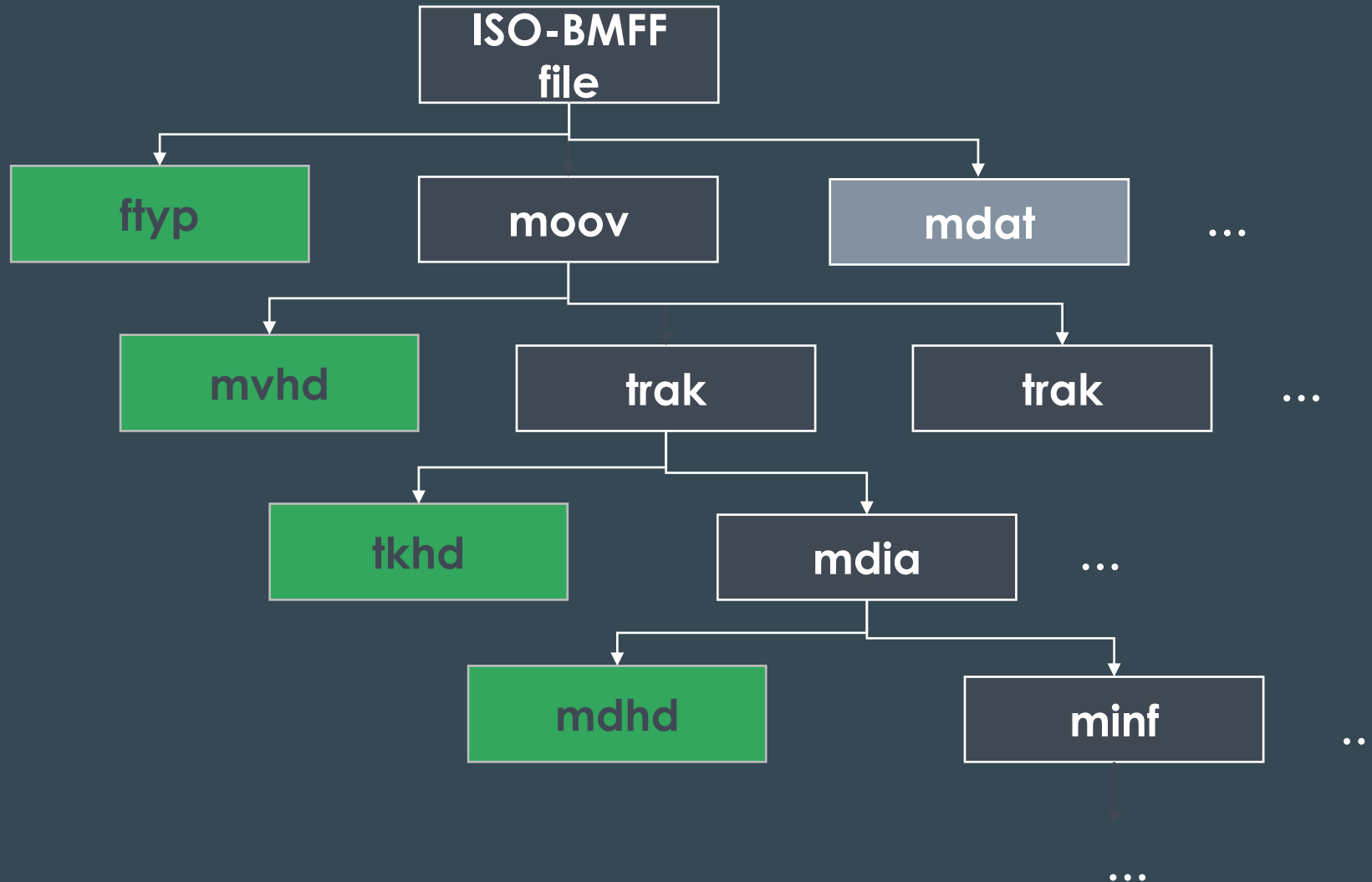
- > Several OTT protocols: DASH, HLS, SS
- > Different ways of packaging: MP4, TS
- > Unification with ISO-BMFF file format: CMAF
- > CMAF used mainly for last mile delivery to end-users
- > MPEG2-TS is dominating the rest of the scope



WHY CONTENT PROVIDERS WANT TO REPLACE MPEG2-TS?

- > Storage and Network Manipulation: TS packets require special operations to be handled with common web servers
- > High Level Data Access: a depacketization/demultiplexing of the whole content is required to access a certain part or frame
- > More complexity when using MPTS or MBTS
- > Why packaging TS to later depackage it and repackaging OTT?

A BETTER PACKAGING WITH ISO-BMFF

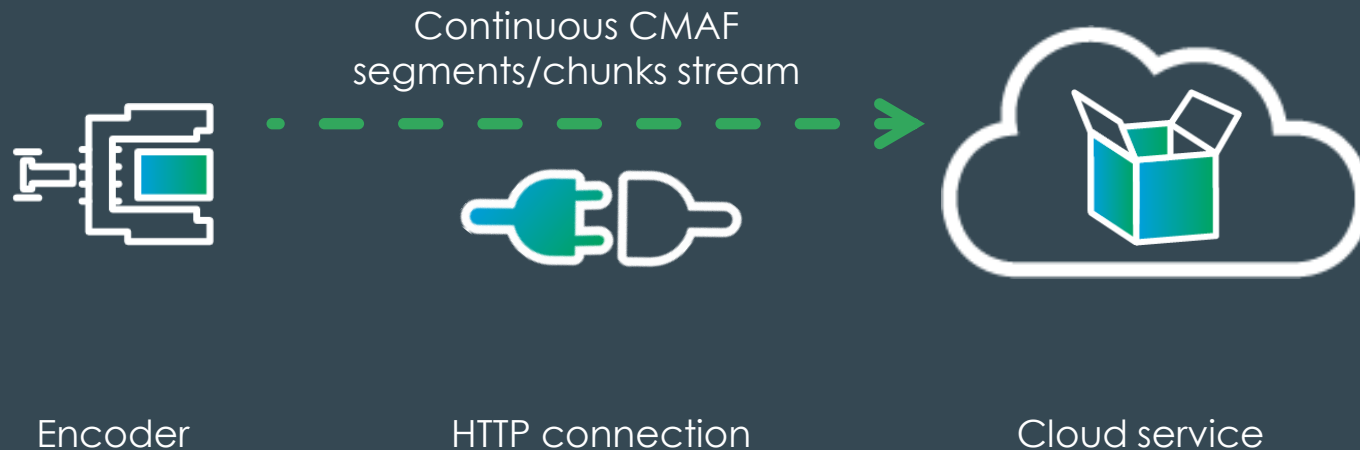


- > File oriented
- > Hierarchical boxes structure
- > Direct access to data
- > Fragments and chunks for low latency
- > Not auto sufficient when using timed meta data!

Live Media Ingest Protocol

LIVE MEDIA INGEST PROTOCOL

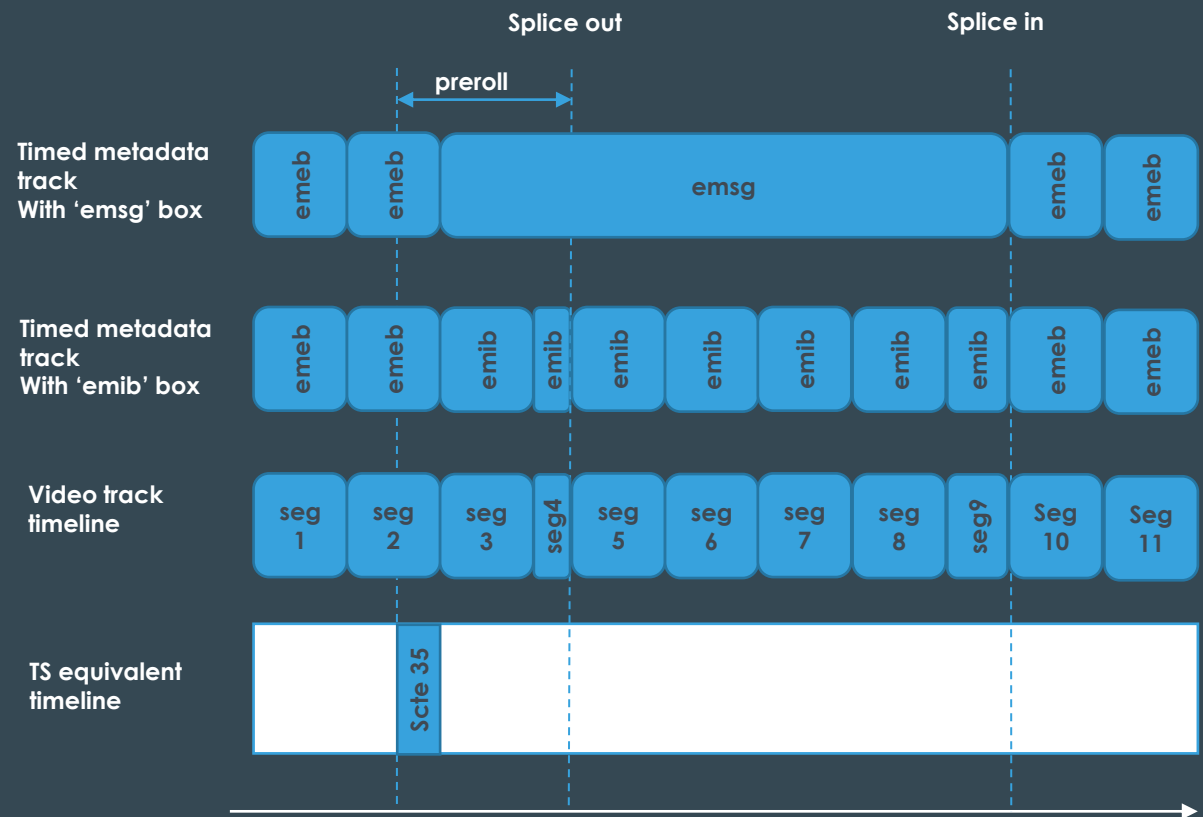
- > Released in March 2020
- > Describes the communication and interoperability between an ingest source and a receiving entity (packager, CDN ...)
 - > Communication interfaces and protocol (HTTP)
 - > File format (ISO-BMFF)
 - > Meta data transmission (thumbnails, SCTE35 ...)
 - > Tracks synchronization and redundancy



LIVE MEDIA INGEST PROTOCOL

> How to handle time related metadata such as SCTE35 splices?

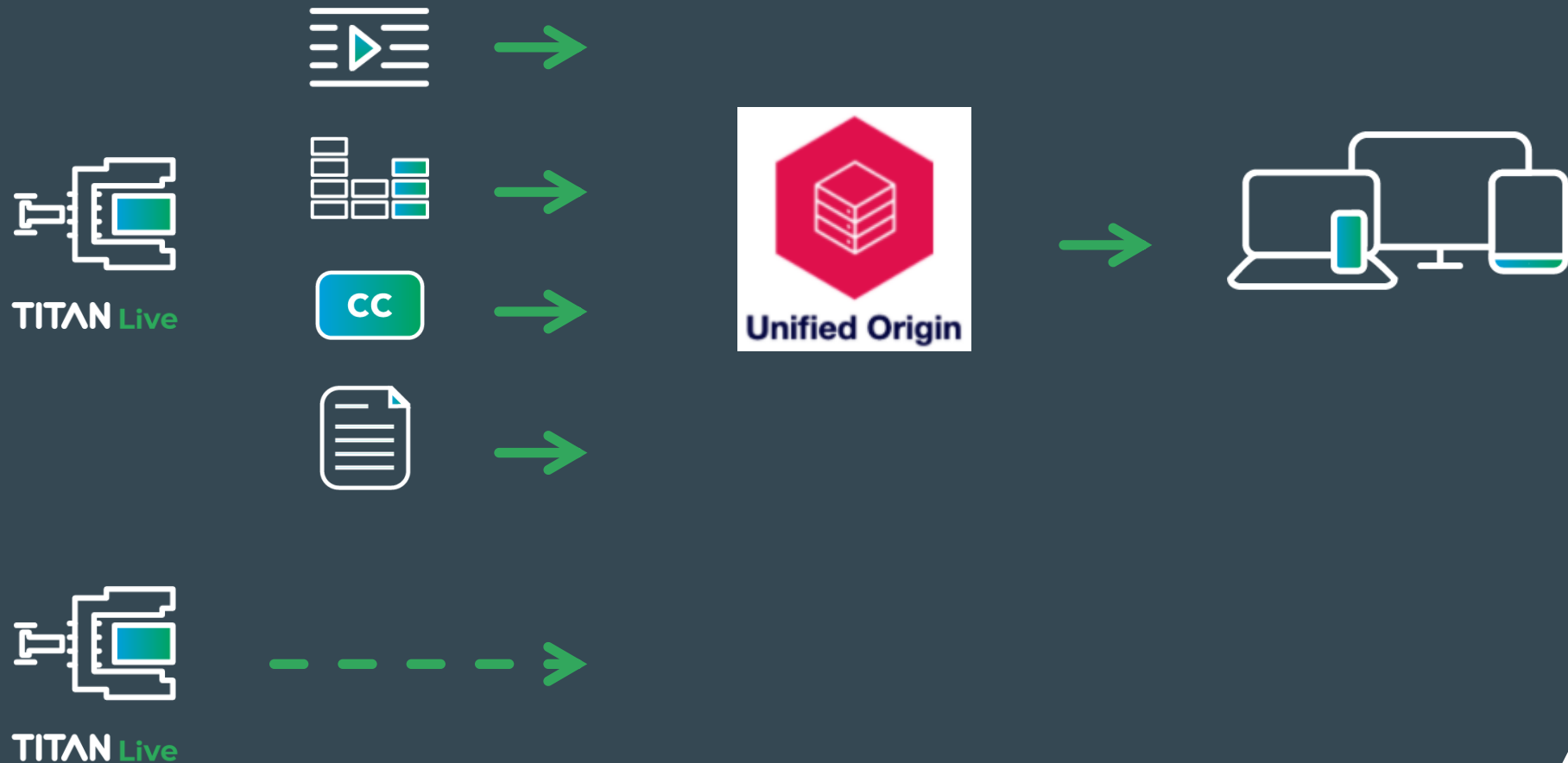
=> Standardize a new track for timed metadata with event message boxes (emeb, emsg, emib)



Extending CMAF usage scope

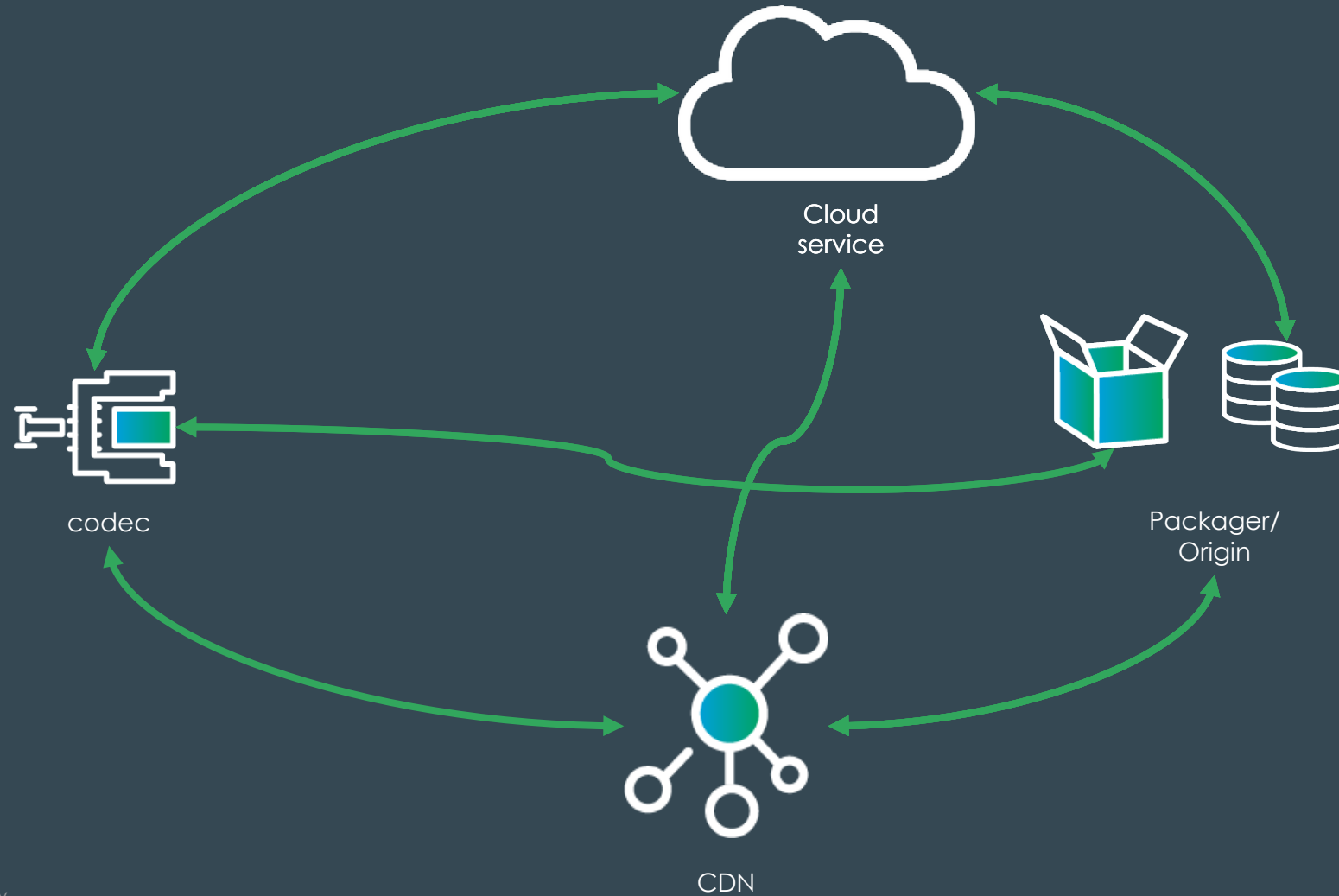
EXTENDING CMAF USAGE TO A LARGER SCOPE

- > Functional implementation with Titan Live and Unified Streaming Origin
- > Validation of the timed metadata track and the redundance



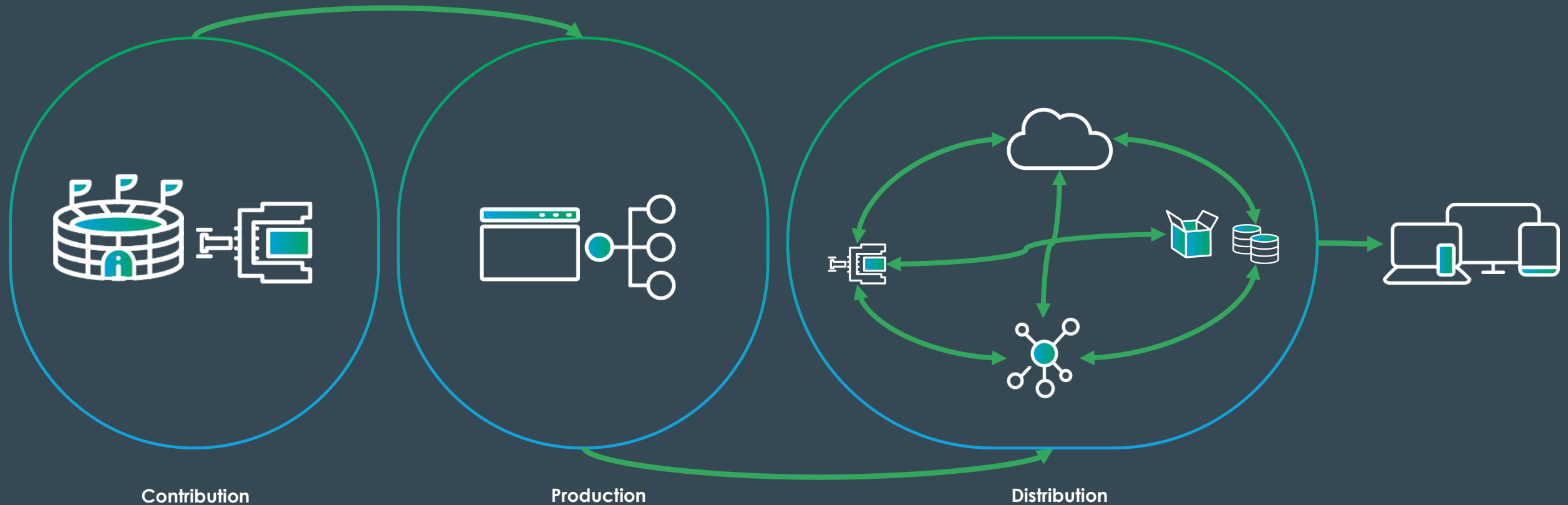
EXTENDING CMAF USAGE TO A LARGER SCOPE

> Towards using CMAF between Video processing entities at distribution



EXTENDING CMAF USAGE TO A LARGER SCOPE

> Towards using CMAF everywhere at large scope





THANK YOU.