

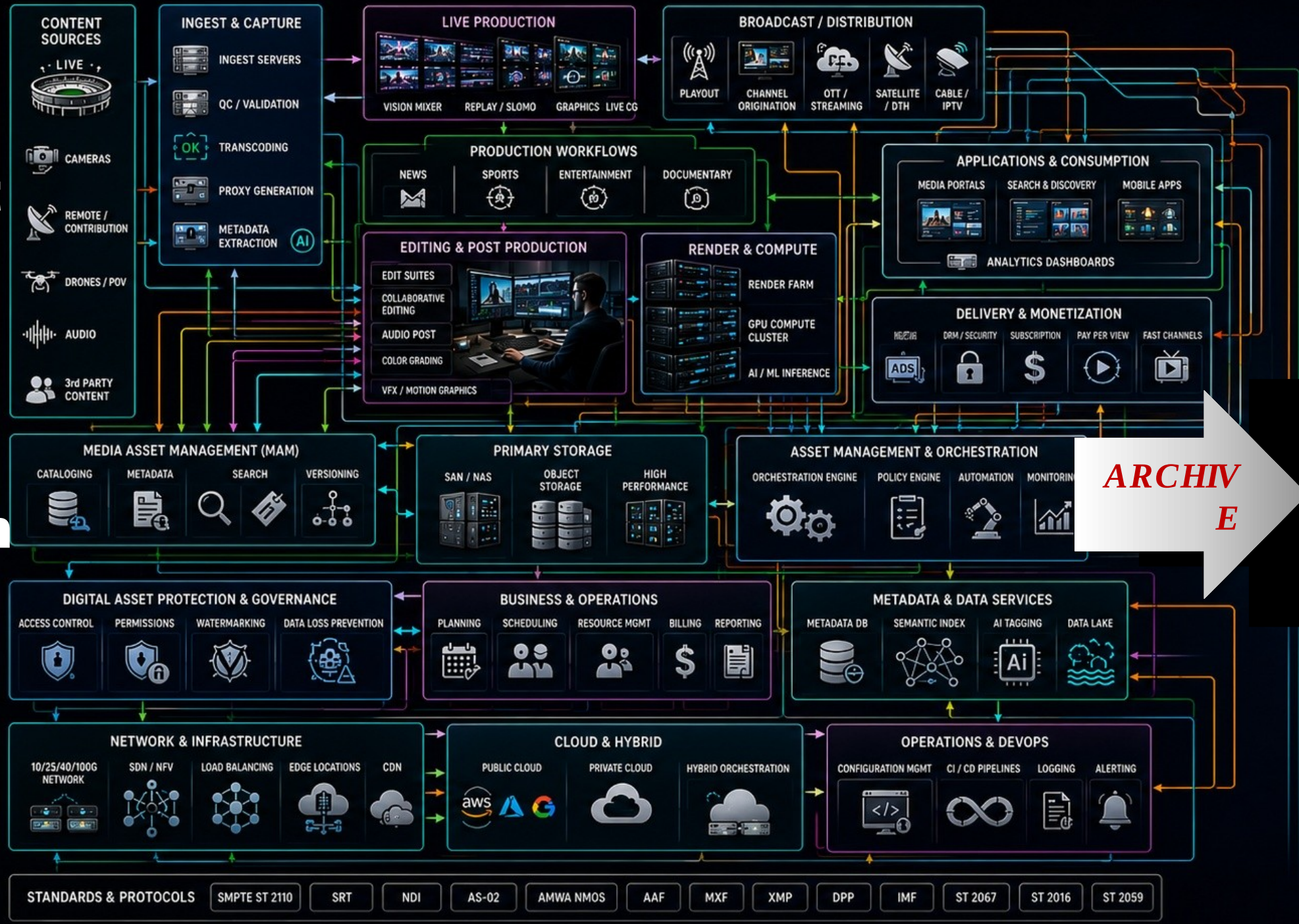
# AI-Native Workflows Are Rewriting Archive Assumptions

**Active Infrastructure**

**Joel Lovell**  
**Sr. Solutions Architect**  
**M&E / HPC**

**SPECTRA**

**M&E Asset Management**  
**Archive workflows**  
**used to be**  
**largely**  
**human-driven**  
**and event-driven.**



**ARCHIVE**

# Emerging AI Native Workflows



## Capture & Rendering

- 4D Gaussian Splatting (4DGS)
- Volumetric Capture
- Neural Rendering



## Content Production

- AI remastering + Synthetic Media
- Localization + Sports Analytics



## Data Governance

- Inference lineage + Provenance
- Training Dataset Retention



**Traditional video stores a  
fixed viewpoint**

**Neural Rendering turns  
media into a retained  
spatial state**





**A file used to just  
be a record of  
what happened.**

**Now it is a  
retained state for  
what can happen  
next.**

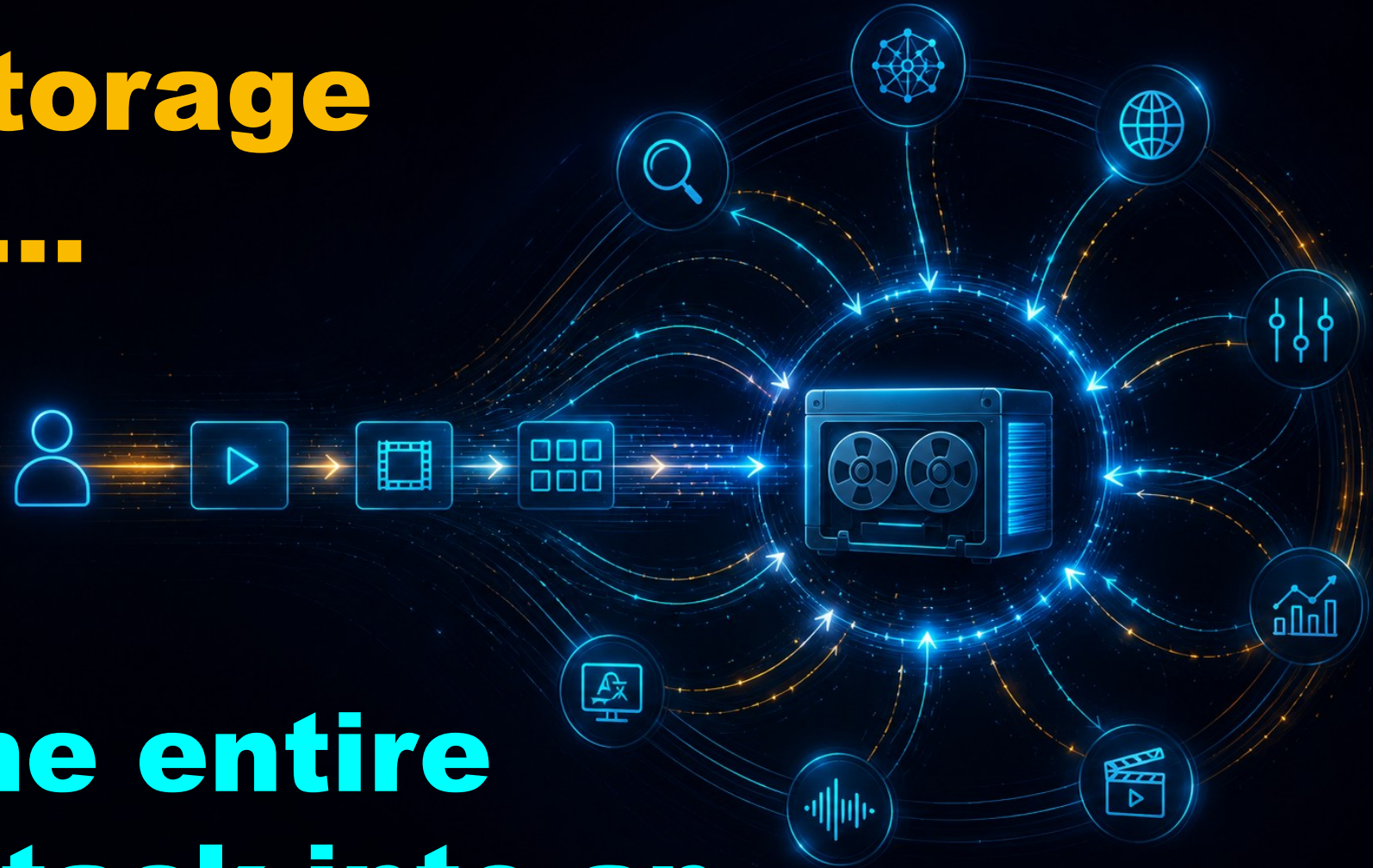
**SPECTRA**

**computation**  
**it now**  
**needs storage**  
**it.**



**SPECTRA**

**AI Native workflows  
amplify storage  
demands...**



**turning the entire  
storage stack into an  
active system**



# Archive is now part of a continuous production lifecycle



**SPECTRA**

**Retrieval becomes**  
***more* iterative**



**Patterns**  
**matter more**  
**than raw throughput.**



**Object count scales  
independently from capacity**

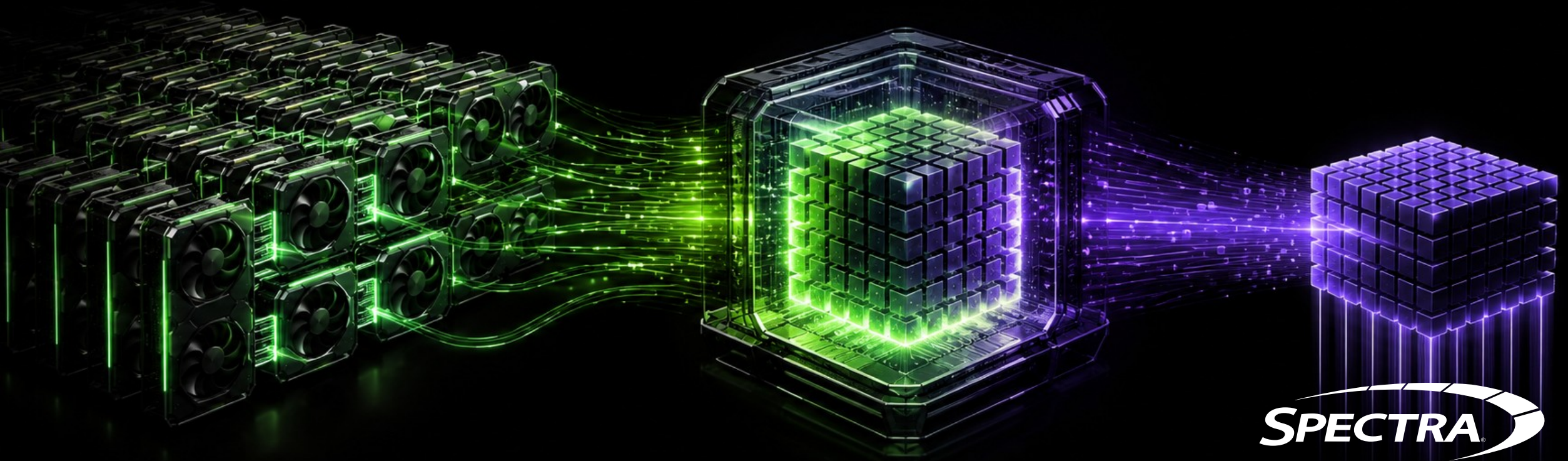
**Until metadata  
management becomes  
infrastructure.**



# Metadata becomes **critical** operational infrastructure



# GPU infrastructure **creates** **pressure** across **the entire** **storage hierarchy**



**SPECTRA**

**Metadata persistence in large-scale **file systems** can be problematic.**

**Object storage semantics matter more**



**Is Object-  
Based Tape  
the answer  
to deep  
archive?**

**Hyperscalers  
have already  
answered  
this  
question.**



OBJECT-BASED TAPE



COST EFFICIENT



HIGHLY DURABLE



IMMUTABLE



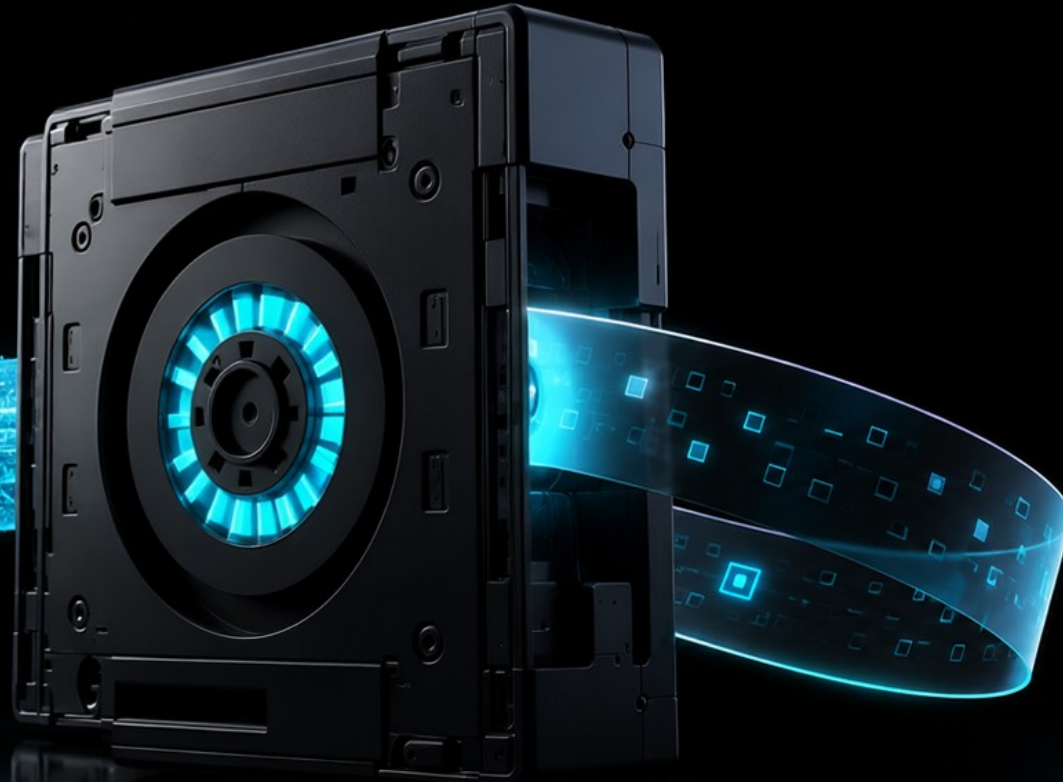
SUSTAINABLE



LONG-TERM  
RETENTION



# Object-Based Tape



with **AWS Glacier-class**  
**behavior on-prem.**



# The biggest operational win requires more than just Archive Storage...



**SPECTRA**

# AI-scale **retrieval** behavior was not in the original **cloud archive TCO model**



# The archive boundary is dissolving

