



The Case for AV Over IP with Open Standards

ANDREW STARKS
Director of Product Management
Macnica Technology
andrew.starks@macnica.com

What is AIMS?



The Goal of AIMS



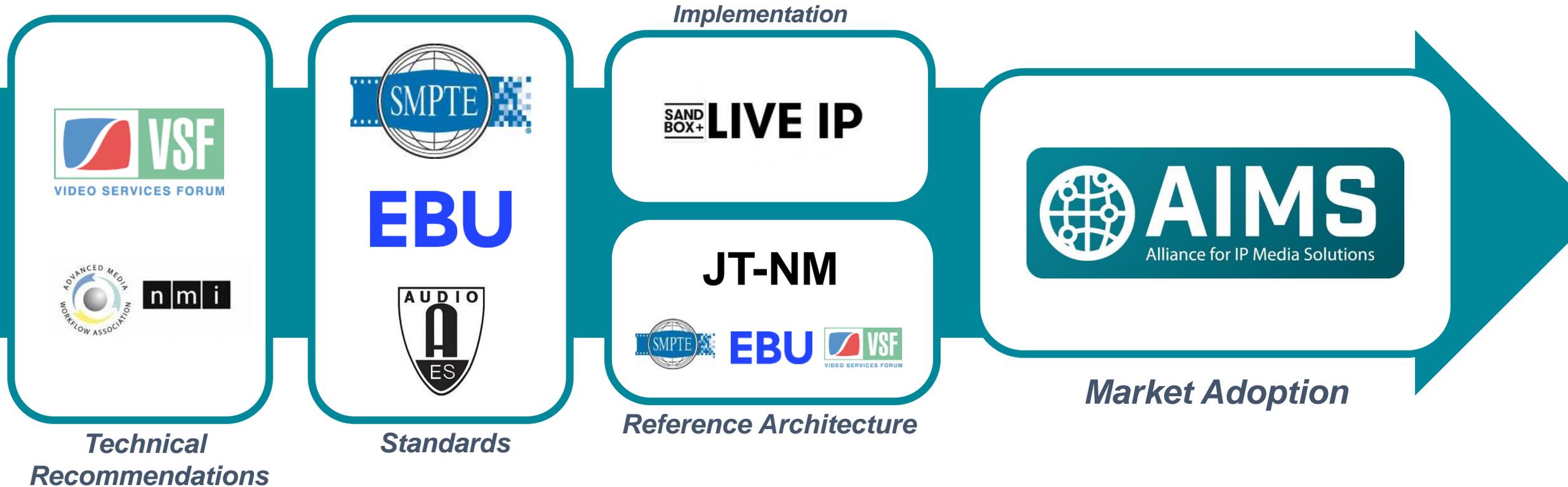
*To foster the **adoption** of
one set of common, ubiquitous,
standards-based protocols
for **interoperability over IP**
in the media, entertainment and **pro AV** industries*

Members List

96 Members



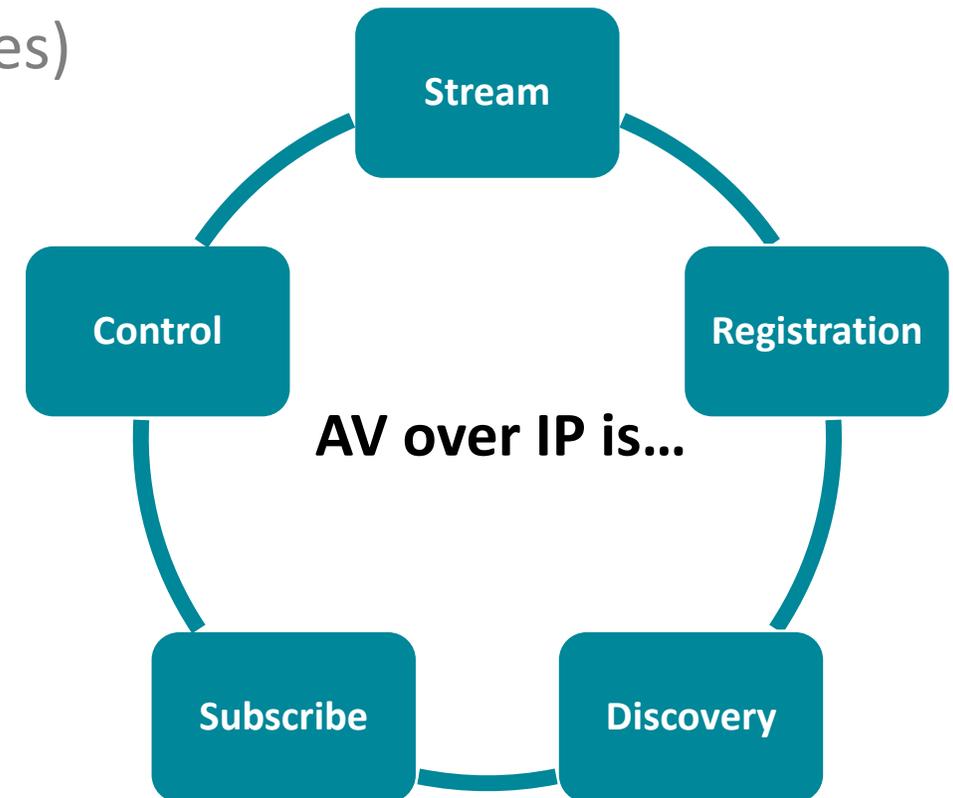
Building on a Strong Foundation for *Market Adoption*



One common goal... Distinct roles... **Powerful Partnership**

What is Meant by AV over IP?

- Move streams (audio, video, ancillary, control) through an IP network
- Synchronized (A \leftrightarrow V and also different sources)
- Low-Latency (<1 Frame)
- Full-Stack:
Publish, Discover, Subscribe,
Stream and Control



Could be used in place of HDMI/DisplayPort/SDI

Real Quick: ST 2110 and NMOS

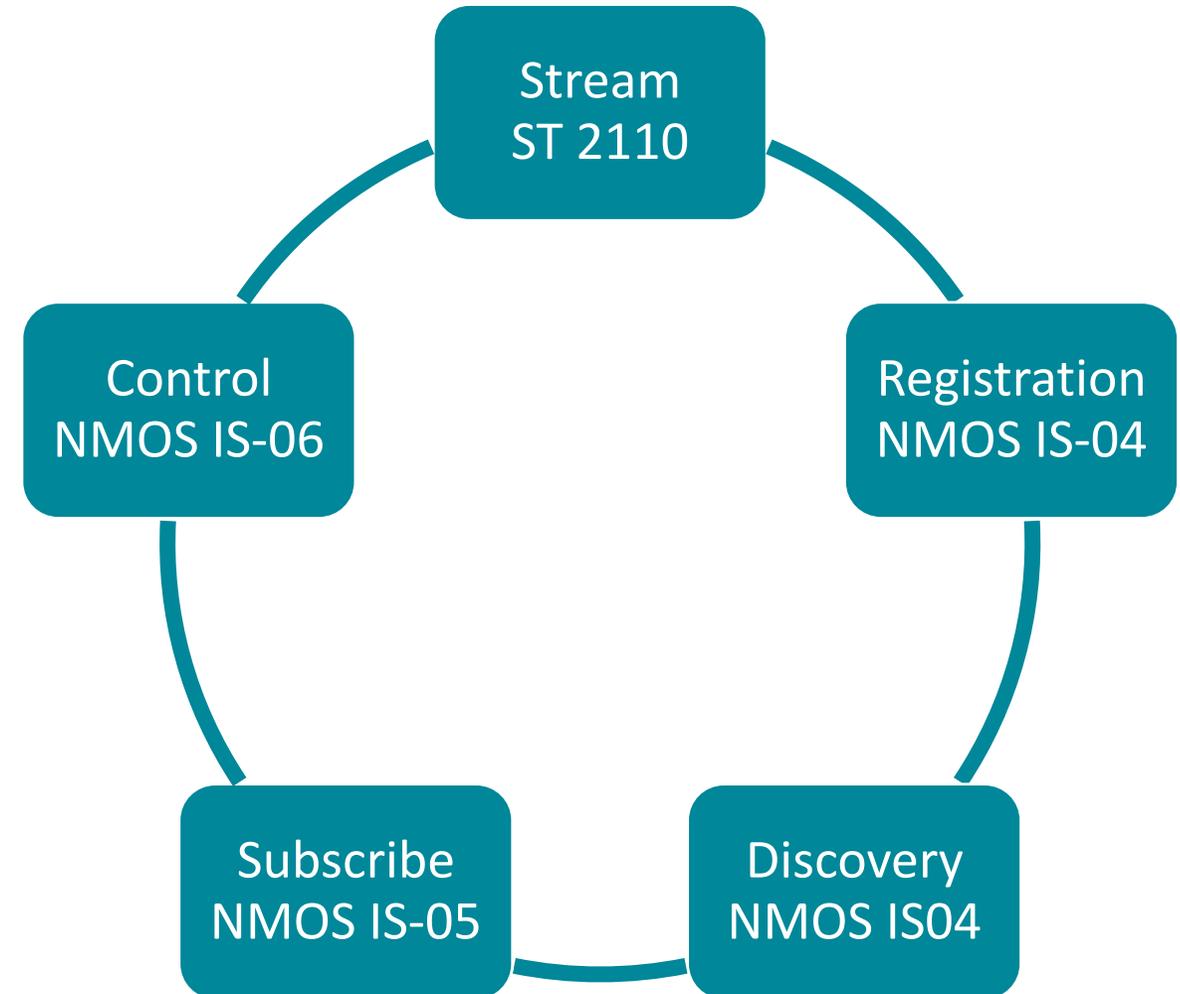
- SMPTE ST 2110 - Transport

- Essence Streams
- Timing
- Description

- NMOS

(Networked Media Open Specification)

- Registration
- Discovery
- Subscribe
- Control



- Designed first for Broadcast Use Cases

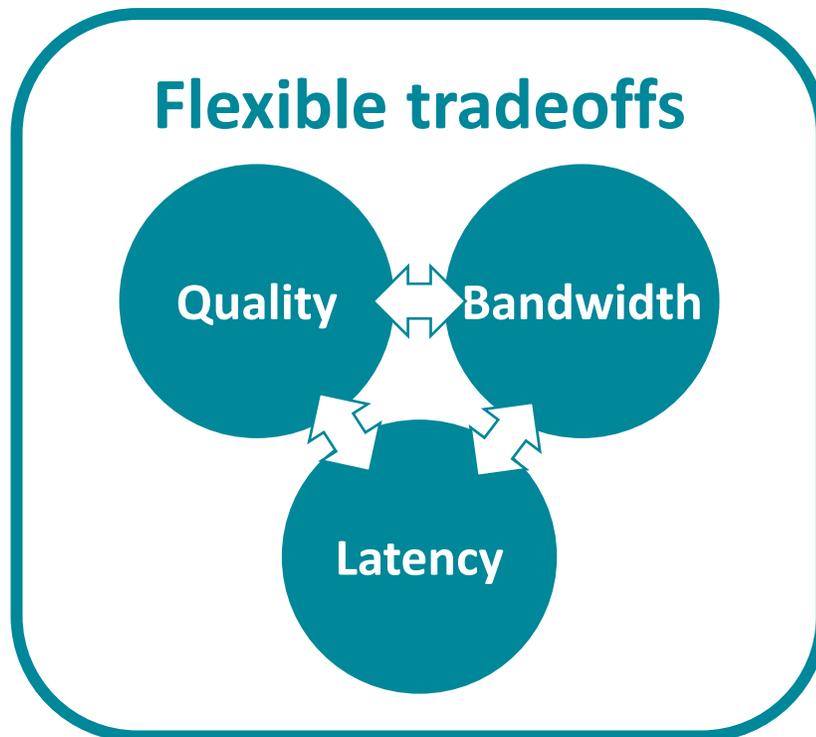
Highest Quality

Highest Reliability

Lowest Latency

**Efficient, but high
bandwidth
(uncompressed)**

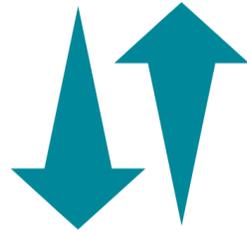
- ST 2110 is here: You can see it in action today!
- How Can we continue to evolve for Pro AV?



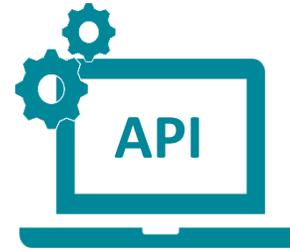
Success requires...



The highest
performance
possible (for the
problem in front
of you)



It's all about
Scale.



A clean **API** that's
simple to use and
models the
problem



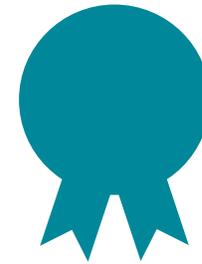
It has to be **better.**

Open Standard?



Open [oh-puh n]

Anyone can build any product from the standard



Standard [stan-derd]

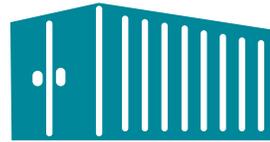
An engineer can build a “correct” product (conforms to the standard)



A Transport Lesson from the Past....

https://en.wikipedia.org/wiki/Intermodal_container

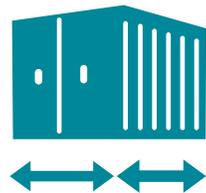
Intermodal Container



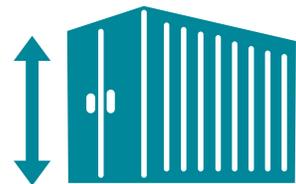
Welded
Corrugated
Steel



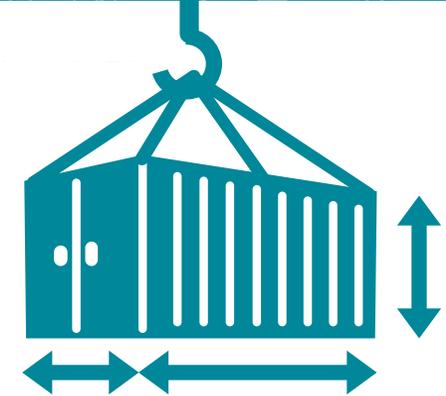
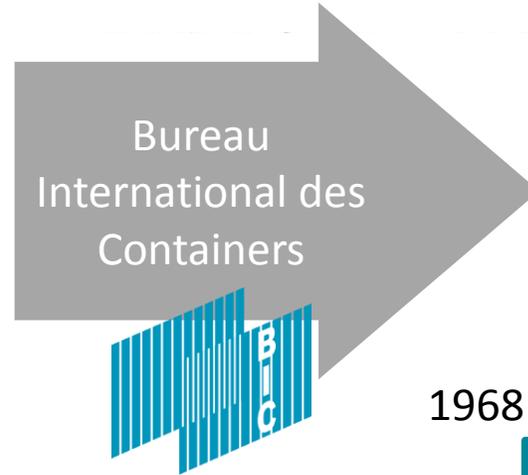
Riveted
Aluminum



Welded
Corrugated Steel
Wider & Shorter



Welded
Corrugated Steel
Higher



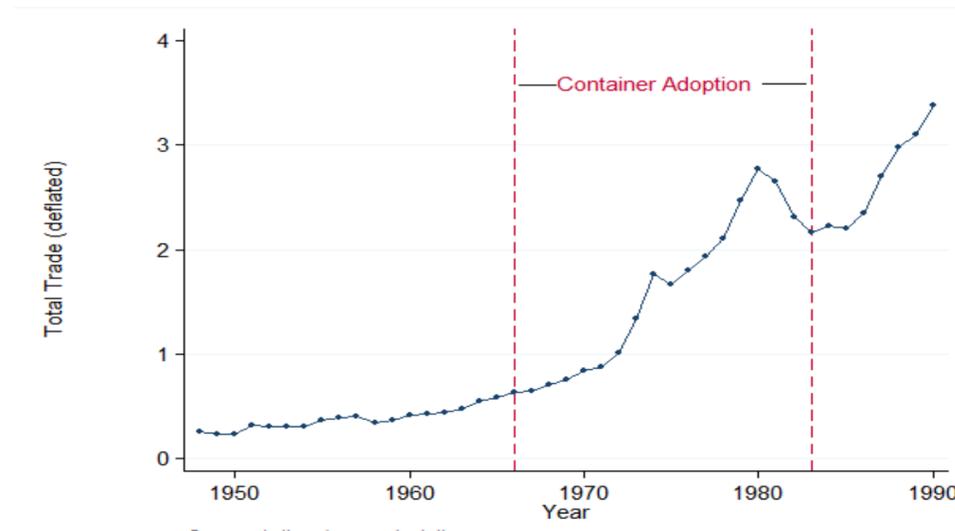
1968 ISO 668 Standard

Length	20 ft/6.1m x n
Width	8 ft/2.44m
Height	8 ft 6in/2.59m or 9 ft 6 in/2.9 m (hi-cube)
Welded Corrugated Steel - Stackable, seawater and rain hard	



[2013, Estimating the effects of container revolution on international trade](#)

Daniel M. Bernhofen, School of Economics, University of Nottingham,

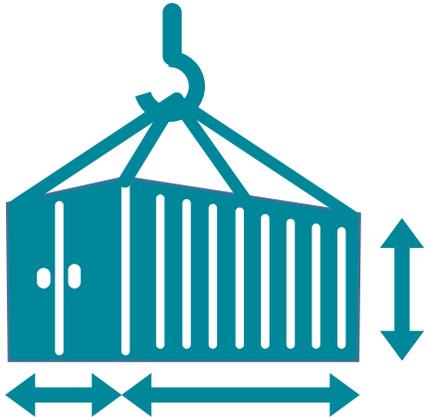


“...the cumulative average treatment effects of containerization over a 20 year time period amount to about 700%...”

-- Daniel M. Bernhofen,
School of Economics, University of Nottingham

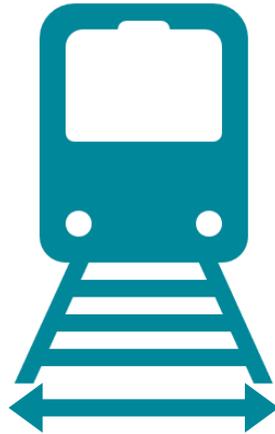
Transport Standards Revolutionized...

**Intermodal Transport
Containers**



**Global Trade
Exploded**

**Standardized
Track Gauges**



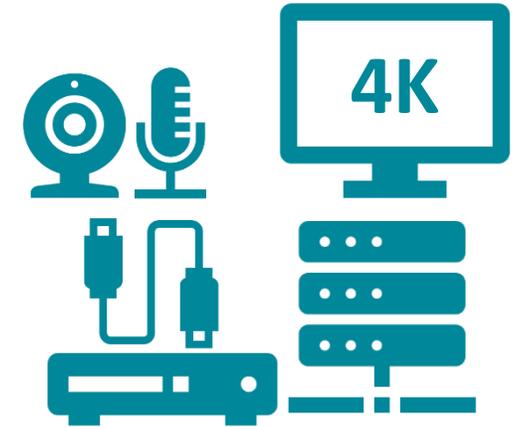
**Industrial
Revolution**

Networking Protocols



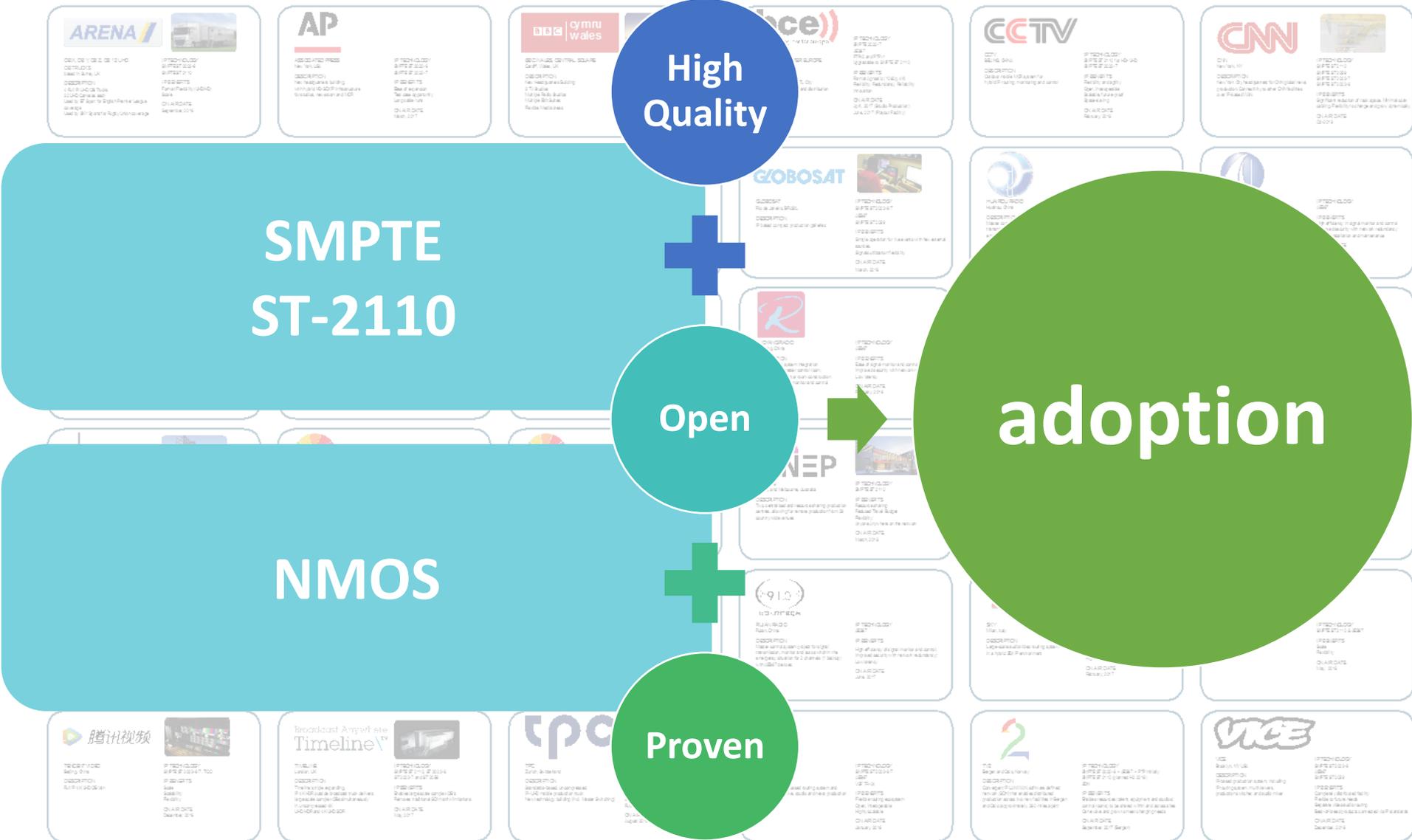
**The information
Age**

ST 2110 / NMOS



???

Our Goal





Thank you

Questions?