Deep Dive into SMPTE ST 2110-40 Ancillary Data

Leigh Whitcomb, Architect
Imagine Communications

IP SHOWCASE THEATRE AT IBC – SEPT. 14-18, 2018

Ancillary Data

- Over the years, lots of things have been put into the SDI "Ancillary Data" system
  - Some are tightly related to the video signal
  - Some are really separate essence
  - Some are just along for the ride
- Audio is handled a better way – don't use this method for audio

IP SHOWCASE THEATRE

Standards

- IETF RFC 8331, which says how to wrap ANC in IP
  - "RTP Payload for Society of Motion Picture and Television Engineers (SMPTE) ST 291-1 Ancillary Data"
- ST 2110-40 says how to use RFC 8331 in an ST 2110 system
  - "Professional Media over Managed IP Networks: SMPTE ST 291-1 Ancillary Data"

Imagine COMMUNICATIONS

3

IP SHOWCASE THEATRE

Break-Away Routing Ancillary Data?

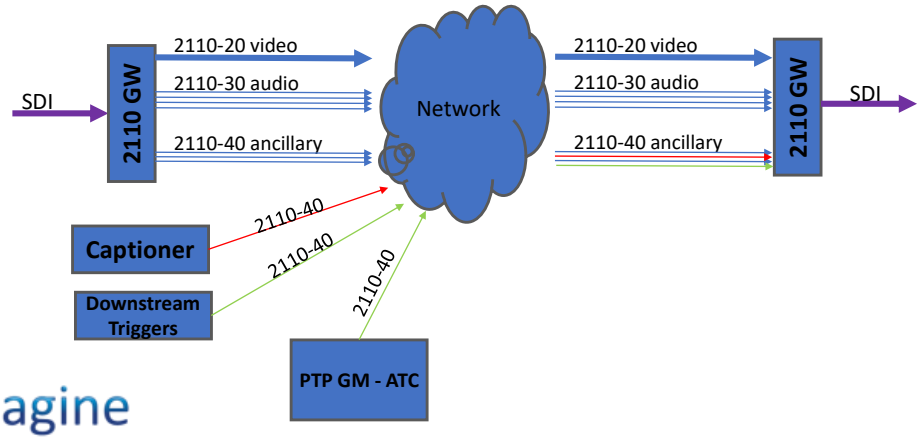
- This is a capability we've never had before…
- What could you do with this kind of ability?
- Today – we loop through a lot of VANC inserters
- Future – the SDI (if you need it) is "composed" from the parts

Imagine COMMUNICATIONS

4

IP SHOWCASE THEATRE

VANC Data Routing – Just Like Audio?

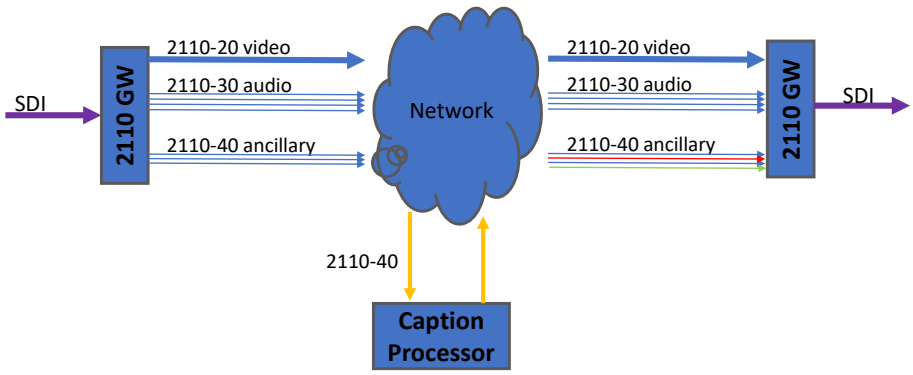


Imagine COMMUNICATIONS

5

IP SHOWCASE THEATRE

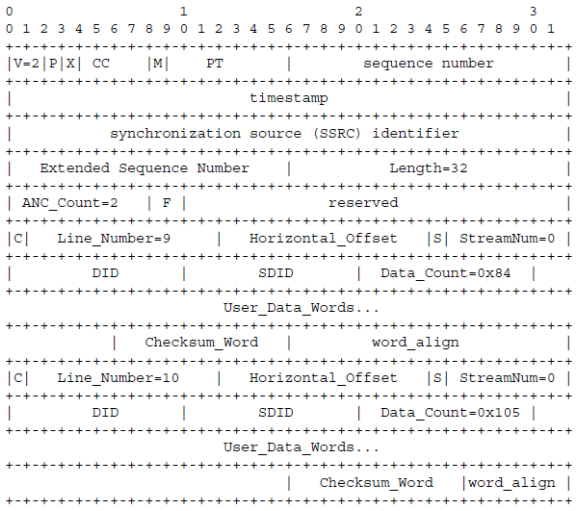
VANC Data Processing



Imagine COMMUNICATIONS

6

RFC 8331



Stream configurations

- Multiple services per packet
- Different services in different packets
- Multiple services per stream
- Different services in different streams

Why have different services in different streams?

ST 2110-40

- SDI Location Information
- Generating SDI
- RTP Timestamps
- Keep alive
  - 1 packet per frame
- SDP

9

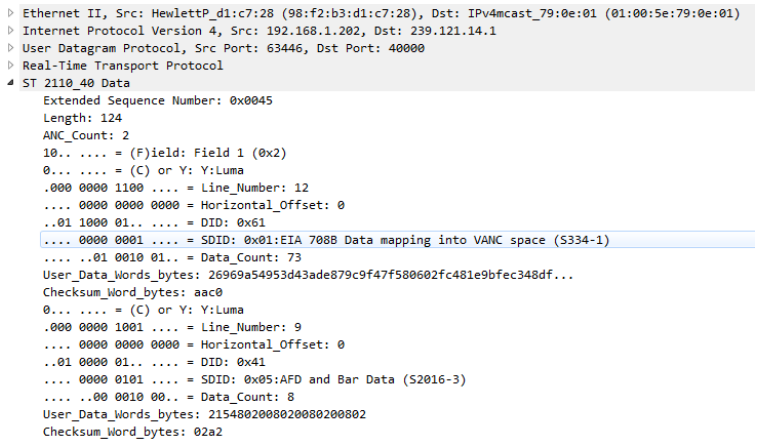
Aligning ST 2110-40 with ST 2110-20

- Same RTP are used for -40 and -20

10

WireShark Dissector

https://github.com/FOXNEOAdvancedTechnology/smpte2110-40-dissector



11

Key Take Aways

- Standards
  - IETF RFC 8331
  - SMPTE ST 2110-40
- Separate essences
- Which services in each stream
- Break-Away Routing Ancillary Data
- Not used for audio

12

IP SHOWCASE THEATRE
CURATED BY
VSF
VIDEO SERVICES FORUM
Thank You
Leigh Whitcomb, Imagine Communications
Leigh.Whitcomb@imaginecommunications.com
Imagine Communications, Hall 4
Imagine COMMUNICATIONS
IP SHOWCASE THEATRE AT IBC – SEPT. 14-18, 2018