

PBS Projects Update: Closed Captioning, XDS, and V-Chip

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PBS Technology & Operations

The logo for PBS Technology & Operations, featuring the text "PBS Technology & Operations" in a light blue, italicized font, followed by a horizontal line and a stylized blue arrow pointing to the right.

Outline

I. Closed Captioning

II. XDS

III. V-Chip

Outline

I. Closed Captioning

- ▶▶ Conversion to Smart Encoders
- ▶▶ DTVCC requirements for stations
- ▶▶ Local insertion

II. XDS

- ▶▶ XDS inserters to be provided to member stations

III. V-Chip

- ▶▶ V-chip insertion capability installed at PBS (with some automation bugs)

PBS NTSC Captioning

- ▶▶ Converted from analog to SDI for Captioning in 2000
- ▶▶ 4 @ Evertz 8074 digital cc encoder to do NTSC captioning with ProCap servers
- ▶▶ 3 @ Evertz 8084 dedicated to live encoding
- ▶▶ 24 @ Evertz 8084 connected to SDI router to clean up captions and insert V-chip

Regulatory Requirements

- ▶▶ 708-compliant decoders due 7/1/02
- ▶▶ Program captioning for ATSC tracks NTSC schedule starting 7/1/02

Regulatory Requirements

- ▶▶ Schedule in FCC Rules - 47CFR 79.1(b)
 - ▶▶ New programming phased in, up to 100% by 01/06
 - ▶▶ “New” is after 1/98 for NTSC; all ATSC is new starting 07/02
 - ▶▶ Legacy programming (NTSC before 01/98)
 - ▶▶ 30% by 01/03
 - ▶▶ 75% by 01/08
 - ▶▶ Captioning for Spanish
 - ▶▶ New programming phased in by 01/10 (currently 450hr/qu)
 - ▶▶ 30% of legacy by 01/05, 75% by 01/12

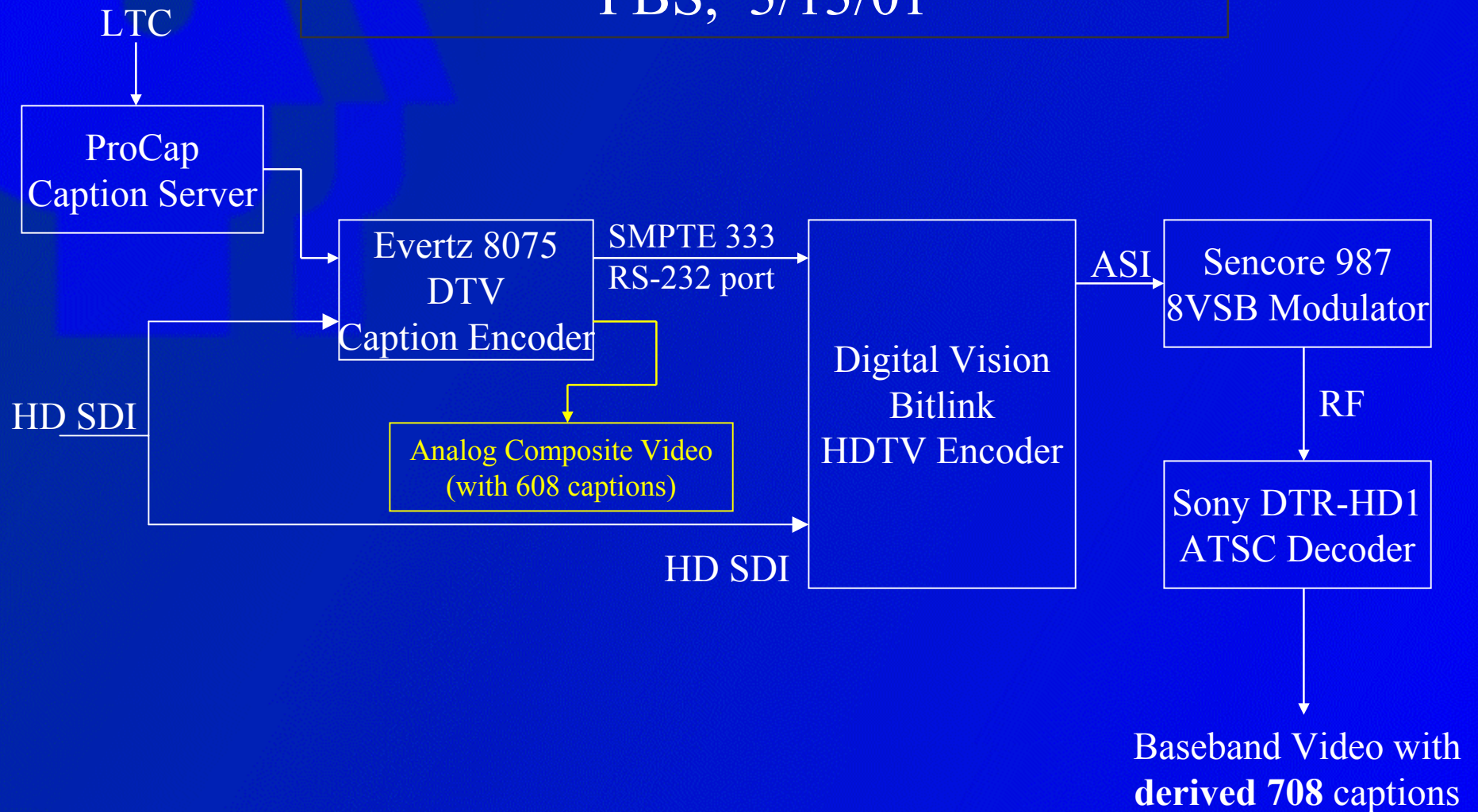
- ▶▶ DVS passthrough required

PBS ATSC Captioning

- ▶ 608 captions on SDTV (708 req'd for SDTV as well)
- ▶ 708 caption capability in HD

DTVCC CLOSED-LOOP TEST

PBS, 3/13/01



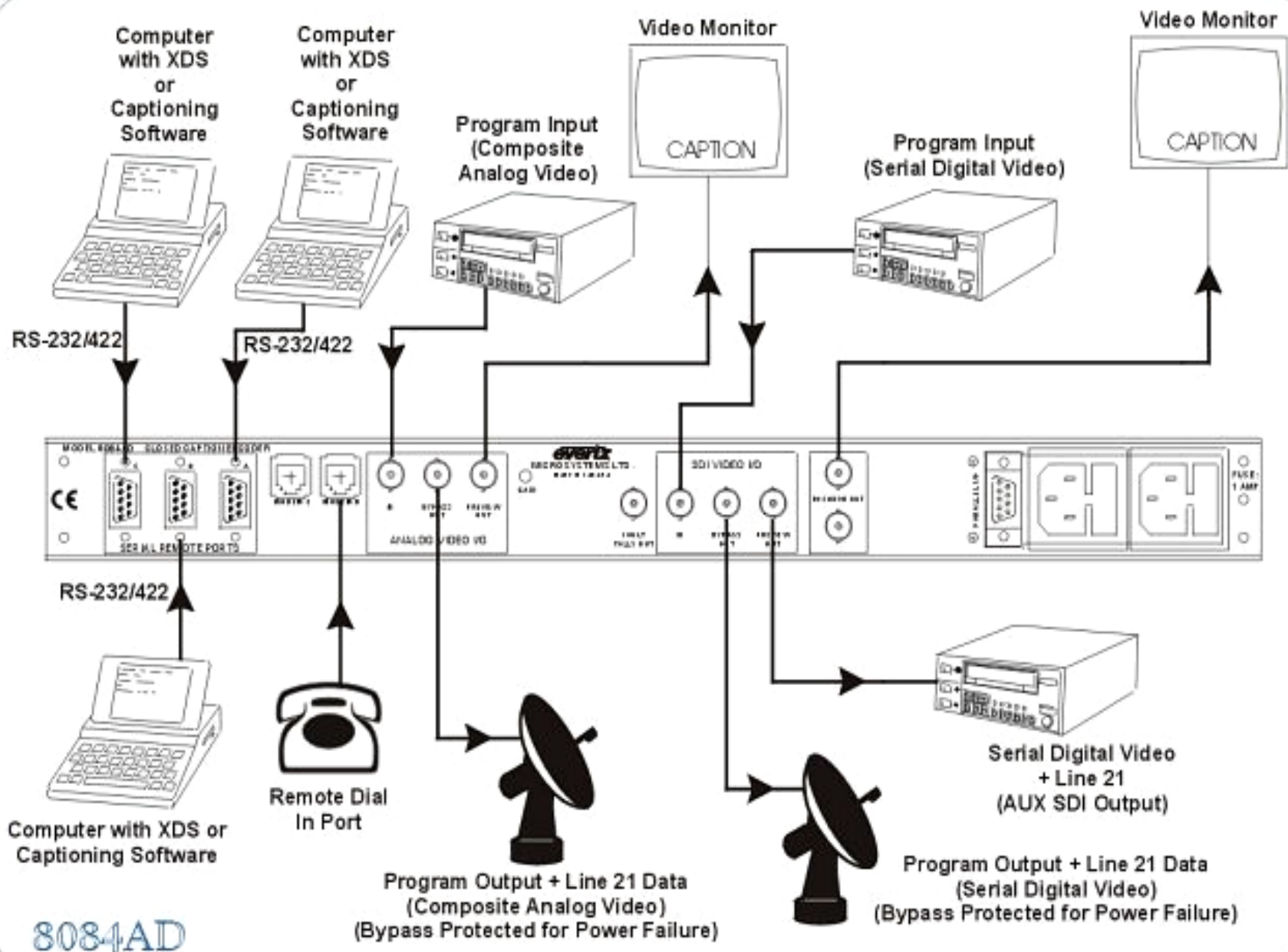
● Caption Encoding Protocols

- ▶▶ XML-based authoring file format
- ▶▶ SMPTE 333 – Pull Protocol
- ▶▶ SMPTE 334 – Push Protocol with data embedded in VANC
- ▶▶ Payload (708 caption data)
 - ▶▶ CDP's
 - ▶▶ Enhanced .TDS

XDS

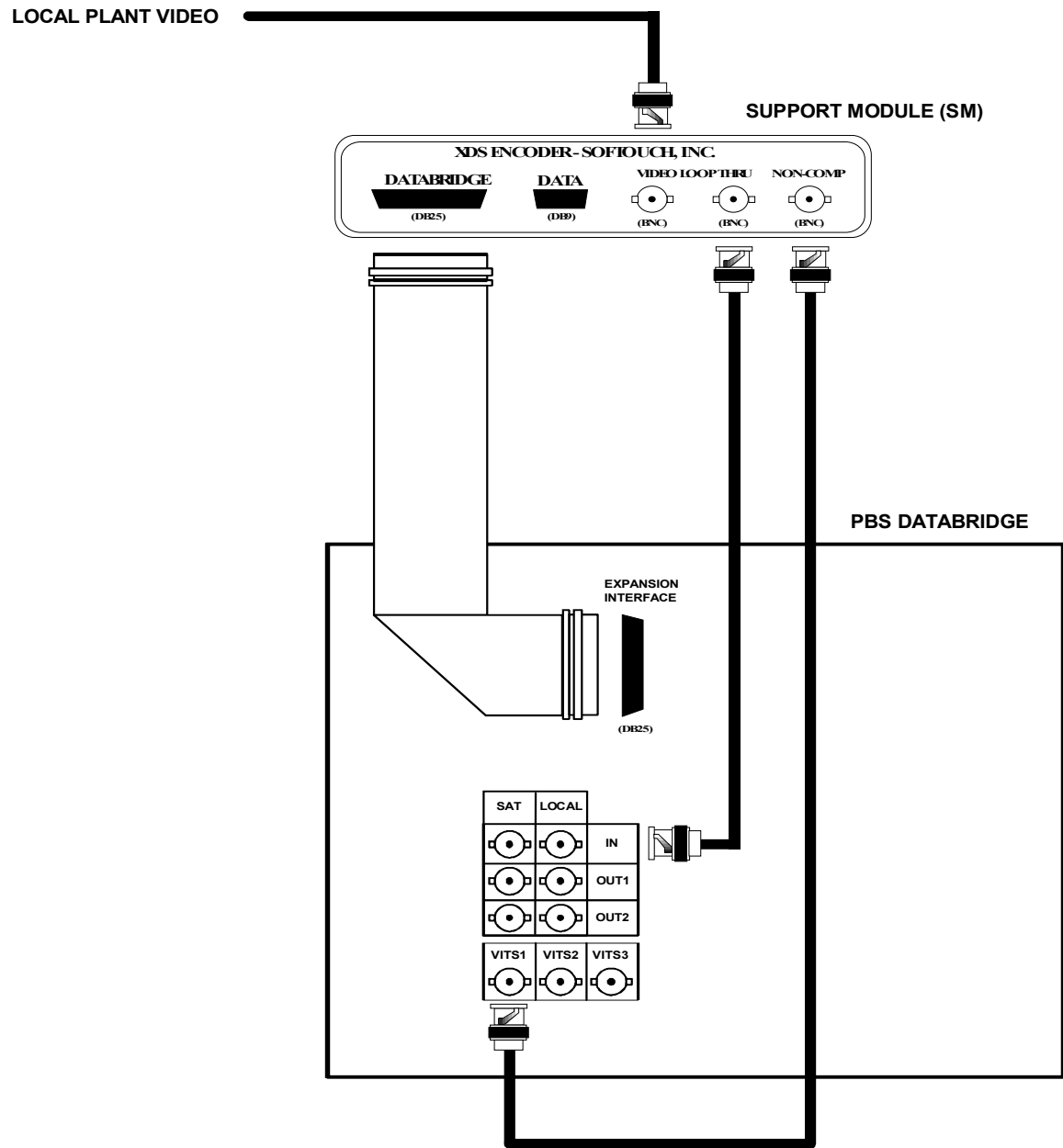
- ▶▶ 3 XDS encoders tested at PBS.
- ▶▶ Evertz smart encoders (8084AD) to be deployed at member stations.
- ▶▶ 8084 vs 8085
- ▶▶ Video inputs include analog composite and SDI (SMPTE 259M). Time code via LTC.

Evertz 8084AD



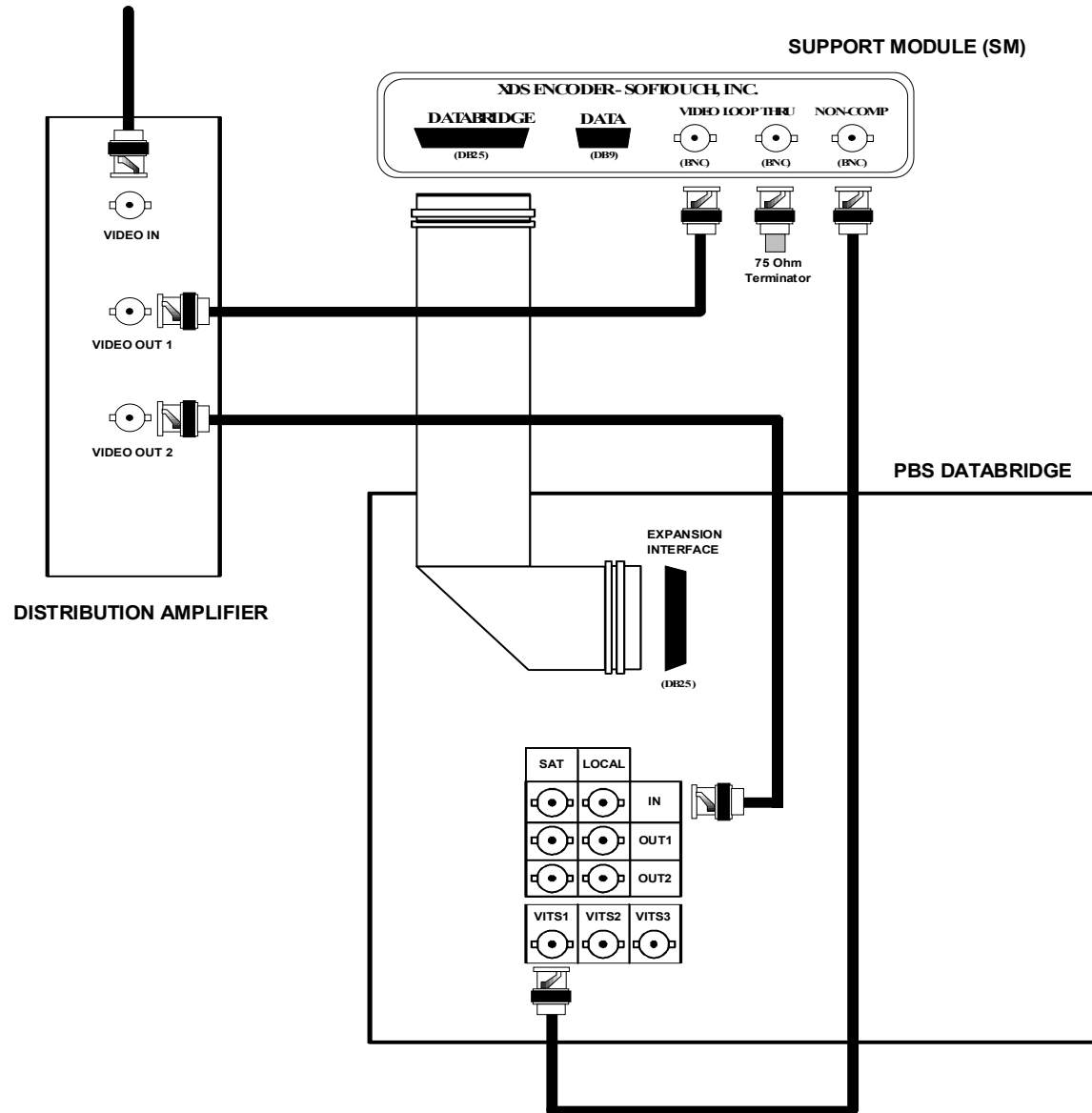
8084AD

SoftTouch XDS Encoder

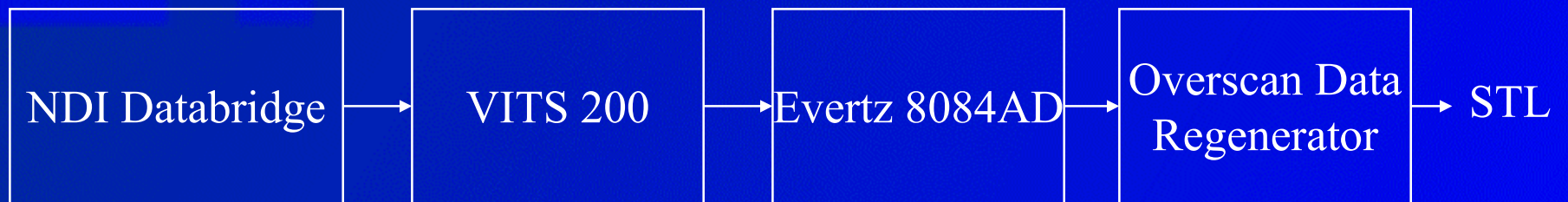


SoftTouch XDS Encoder

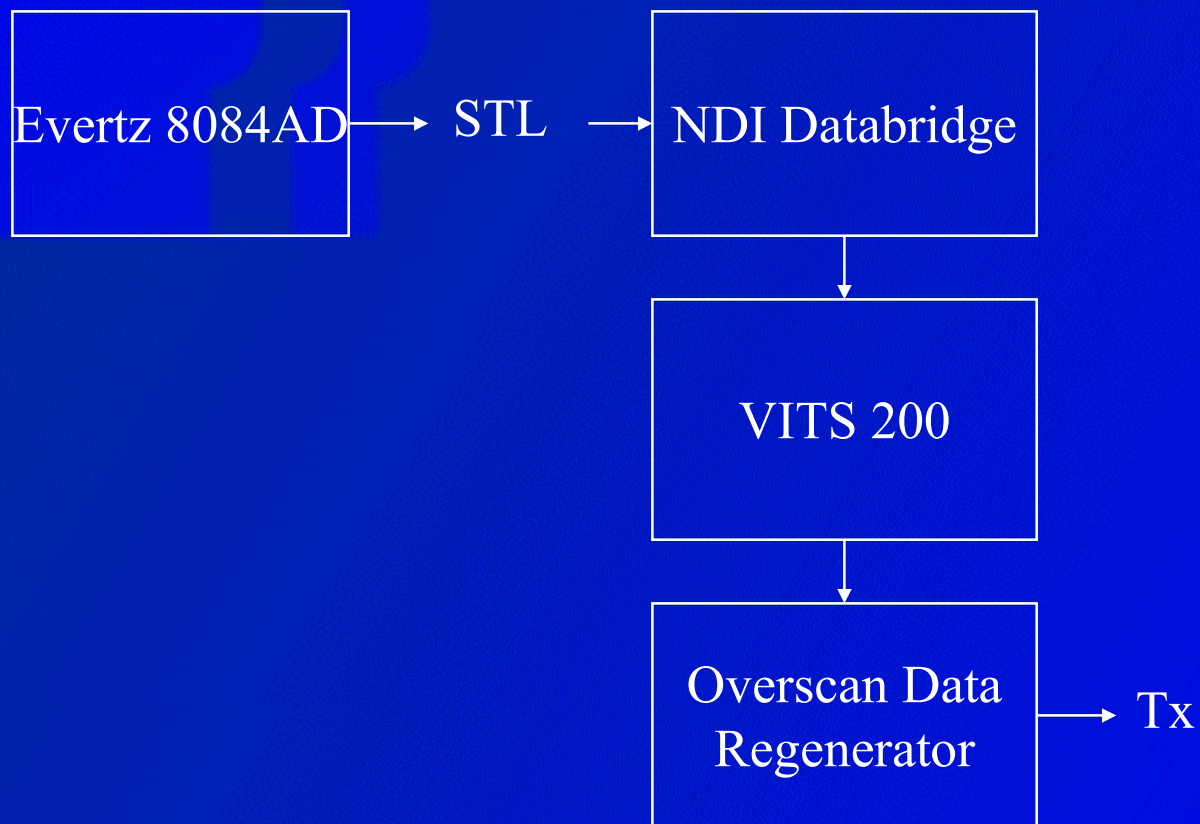
LOCAL PLANT VIDEO



Program and NDI Data Flow - Local Analog Plant



Program and NDI Data Flow - Local Digital Plant



V-Chip Encoding at PBS

- ▶▶ 9 Evertz 8084 encoders to take CR output and feed digital router.
- ▶▶ Monitoring capability installed 04/01
- ▶▶ Leitch Logomotion for logos and icons
- ▶▶ Some automation bugs are preventing RE rating

TV
CG

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Local V-Chip Insertion

- ▶ Local v-chip insertion capability via smart encoders, such as Evertz 8084AD
- ▶ Should work in serial with NDI databridge

Summary

▶▶ Closed Captions

▶▶ XDS

▶▶ V-Chip

Summary

▶▶ Closed Captions

- ▶▶ Digital encoders installed at PBS
- ▶▶ 708 captioning on the horizon

▶▶ XDS

- ▶▶ Encoders to be supplied to 175 station plants

▶▶ V-Chip

- ▶▶ PBS ready to go on-air (shortly)
- ▶▶ Local insertion via smart encoders

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- ▶▶ ATSC IS/S3 AHWG on DTVCC -
<http://www.atsc.org/meetings.html>