Medusa CSS3
ATSC 3.0/NextGen TV Complete Station Solution

A Turnkey ATSC 3.0 Solution

Medusa CSS3 is a **C**omplete **S**tation **S**olution for ATSC 3.0 transmission comprising an encoder/DASH packager, service announcements/signaling generator & broadcast gateway within a single server providing broadcasters with the ability to cost effectively launch an ATSC 3.0 transmission. It meets all FCC requirements, and supports ATSC Recommended Practices.
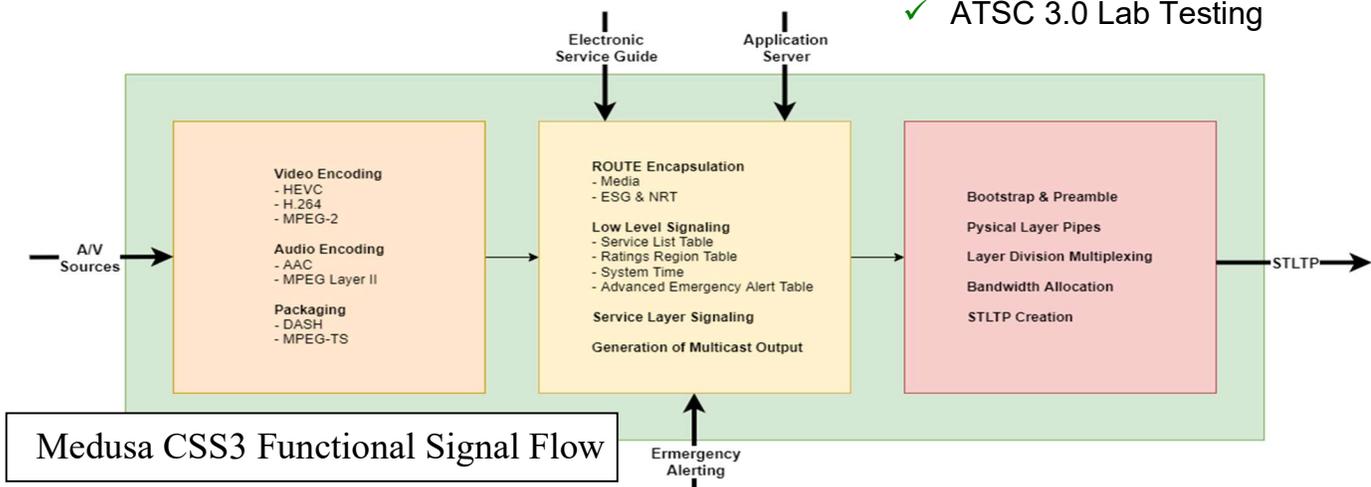
Medusa CSS3 provides everything required to launch a NextGen TV service except the content and integration with an ATSC 3.0 compliant exciter and transmitter, thereby minimizing the required investment while expediting your time to market and monetization.

Key Features

- ✓ ATSC A/330, A/331, & A/332
- ✓ Video & Audio encoding
- ✓ DASH packaging
- ✓ ROUTE media encapsulation
- ✓ ESG & NRT ROUTE encapsulation
- ✓ SLT, SLS, & LMT creation
- ✓ RRT & AEAT table creation
- ✓ ATSC 3.0 Metadata
- ✓ Bandwidth assignment, PLP & STLTP creation
- ✓ Also supports ATSC 1.0

Applications

- ✓ ATSC 3.0 Lighthouse
- ✓ ATSC 1.0 to ATSC 3.0 Flash cut
- ✓ ATSC 3.0 Lab Testing

Medusa CSS3 Functional Signal Flow

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Signaling & Service Announcement Features	EPG Management
A/331 – Signaling for service discovery; delivery specifying transport protocols; synchronization of media components across different networks, protection via AL-FEC	Manual event editing & scheduled ESG importing from traffic or listing services including Gracenote, TitanTV, & Myers ProTrack
ROUTE encapsulation of DASH segments, ESG, and NRT	Multiple source ingest with merge
Defining multiple service streams to support multiple stations, redundant paths, and hybrid broadcast/broadband feeds	A/332 ATSC 3.0 OMA BCAST and A/76 ATSC 1.0 Program Metadata Communications Protocol (PMCP) import/export of EPG data
Supports terrestrial and cable applications	Event overrun/gap management, recurring and default background event

Broadcast Gateway Features	Service Information
Generates Bootstrap, Preamble and multiple Subframes	Unlimited licensable virtual channels & services
Supports all modulation, code rate, interleaver, and forward error correction combinations	Closed-caption, audio, content advisory, and genre descriptors
Generates multiple PLPs	Advanced Emergency Alert Table support
Supports Layer Division Multiplexing	User defined ESG time span and refresh cycles
Allocates bandwidth to defined services	
Generates ALPTP or STLTP w/ optional SMPTE 2022 FEC	

Packaging Features	Encoding Features		
DASH and MMT Packaging	**Video**	**Audio**	
MPEG-TS Packaging	HEVC	Dolby AC4	
	H.264	AAC & MPEG Layer II	
	MPEG-2	Dolby Digital/AC3 & Dolby E pass through	

Software Options	I/O Options
4K UHD Supports 1 12G SDI input or 4 3G SDI inputs *Need to be bought with conjunction of MED-HW-4ENC option	**4 Channel Encoder card** MPEG2, H.264 and HEVC encoding 1080p/60 resolution 4:2:0 and 4:2:2, 8 bit and 10-bit Chroma 4 x 3G SDI Inputs
Standard Definition Video Software Encoder License SD MPEG2/AVC/HEVC 8 bit 4:2:0, 480i and 576i Up to 3 stereo pairs MPEG-1 layer 2 embedded audio per video. Dolby Digital/AC3 & Dolby E pass through	**2** Input 3G SDI/ASI Input/Output Interface card
High Definition Video Software Encoder license SD/HD MPEG2/AVC/HEVC 8 bit 4:2:0, 480i, 576i, 720p, 1080i or 1080p Up to 3 stereo pairs MPEG-1 layer 2 embedded audio per video. Dolby Digital/AC3 & Dolby E pass through	**4** Input 3G SDI/ASI Input/Output Interface card
	8 Input 3G SDI/ASI Input/Output Interface card
	2 ASI Input/Output Interface with relay bypass card
	4 Extra Gigabit Ethernet Interface card
Medusa Multiplexer option for up to 8 Stream Input. Support cherry picking Video/Program from each individual Streams Provide Interface for Dynamic PSIP Engine (either Internal or external) Multiple Mux can coexist in 1 Medusa, each with differen individual outpu	

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March 2024. Specifications subject to change without notice.