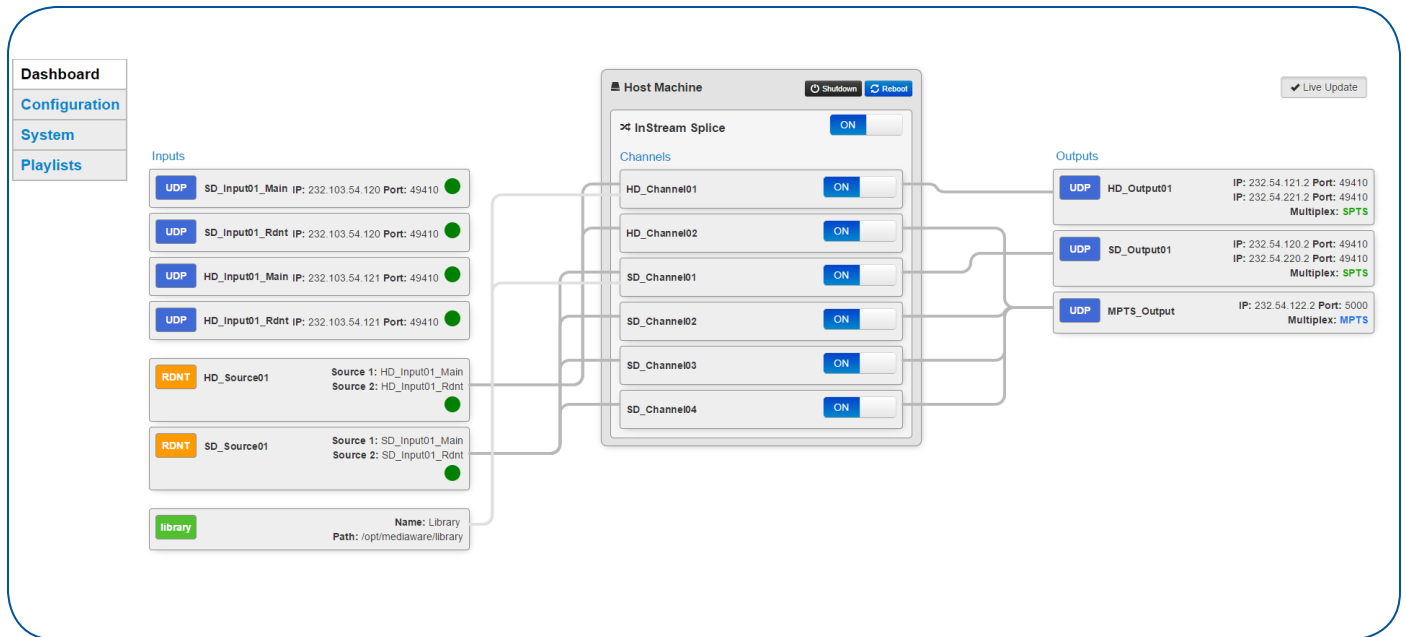


Advanced Ad Insertion with InStream Splice

A high performance, flexible DPI solution



Impressive scalability

Optimal quality

End-to-end solution

Simplifies playout complexity

Reduces per channel costs

TV looks better with InStream

InStream Splice is a scalable TV channel ad insertion and play-out server that improves end-to-end channel quality by leveraging the efficiencies of MPEG for ASI and IP networks. A multi-channel software solution, InStream is a splicer that combines the discreet functions of video switcher, video server, ad and logo inserter embedded into a non-proprietary form factor. All functions operate frame accurately on MPEG-2, H.264/AVC and H.265/HEVC, supporting all resolutions including Ultra HD/4K.

InStream can add commercials, logos, inject live program content and manage different time zones with support for emergency alert systems (EAS). Addressing the digital challenges of cable, satellite, terrestrial and IP broadcasters by performing complex playout tasks in a compressed mode, the InStream suite provides a balance of performance and scalability in a feature-rich software solution.

Features of InStream Splice:

- Localized and network branding
- Time delay
- Loudness control
- Automation options
- Playlist support
- Modern surround sound format support
- Real time monitoring and redundancy
- Extensive operational views
- Clean and accurate insertion
- Supports all resolutions from SD to Ultra HD/4K
- Full HEVC support - NOW

HD_Channel01										
2	223	Library	HD_Channel01	top/mediaware/library/Comedy/HD/10124208.ts		6 missing Assets				
Network ID	Zone ID	Library	Splice Channel	Current Splice						
Playlists	Windows	Breaks	Spots	Time	Length	Advertiser Name	Advertiser	Spot Name	Splice Status	
HD_Channel01.sch 2015-04-02	2015-04-02 14:00:00 2015-04-02 15:00:00	1123	10125015	14:30:30	0:00:30	Example Advertiser	10125015.ts		played	
		1124	10126987	14:45:00	0:00:30	Example Advertiser	10126987.ts		played	
			10126236	14:45:30	0:00:30	Example Advertiser	10126236.ts		played	
	2015-04-02 15:00:00 2015-04-02 16:00:00		1125	10124208	15:00:00	0:00:30	Example Advertiser	10124208.ts		current
			1126	10128961	15:00:30	0:00:30	Example Advertiser	10128961.ts		queued
				10128098	15:15:00	0:00:30	Example Advertiser	10128098.ts		
				10125014	15:15:30	0:00:30	Example Advertiser	10125014.ts		
				10126988	15:30:00	0:00:30	Example Advertiser	10126988.ts		
				10128886	15:30:30	0:00:30	Example Advertiser	10128886.ts		
	2015-04-02 16:00:00 2015-04-02 17:00:00		1127	10126233	15:45:00	0:00:30	Example Advertiser	10126233.ts		
				10124208	15:45:30	0:00:30	Example Advertiser	10124208.ts		
				10128407	16:00:00	0:00:30	Example Advertiser	10128407.ts		
				10128407	16:00:30	0:00:30	Example Advertiser	10128407.ts		
	2015-04-02 17:00:00 2015-04-02 18:00:00		1129	10126348	16:15:00	0:00:30	Example Advertiser	10126348.ts		
				10126977	16:15:30	0:00:30	Example Advertiser	10126977.ts		
				10128086	16:30:00	0:00:30	Example Advertiser	10128086.ts		
				10127859	16:30:30	0:00:30	Example Advertiser	10127859.ts		
				10128086	16:45:00	0:00:30	Example Advertiser	10128086.ts		
				10128086	16:45:30	0:00:30	Example Advertiser	10128086.ts		
	2015-04-02 17:00:00 2015-04-02 18:00:00		1130	10128445	17:00:00	0:00:30	Example Advertiser	10128445.ts		
				10128106	17:00:30	0:00:30	Example Advertiser	10128106.ts		
				10126988	17:15:00	0:00:30	Example Advertiser	10126988.ts		
				10127858	17:15:30	0:00:30	Example Advertiser	10127858.ts		
				10128409	17:30:00	0:00:30	Example Advertiser	10128409.ts		
			10128745	17:30:30	0:00:30	Example Advertiser	10128745.ts			
		1131	10127858	17:45:00	0:00:30	Example Advertiser	10127858.ts			
		1132	10125836	17:45:30	0:00:30	Example Advertiser	10125836.ts			
		1133								
		1134								
		1135								
		1136								

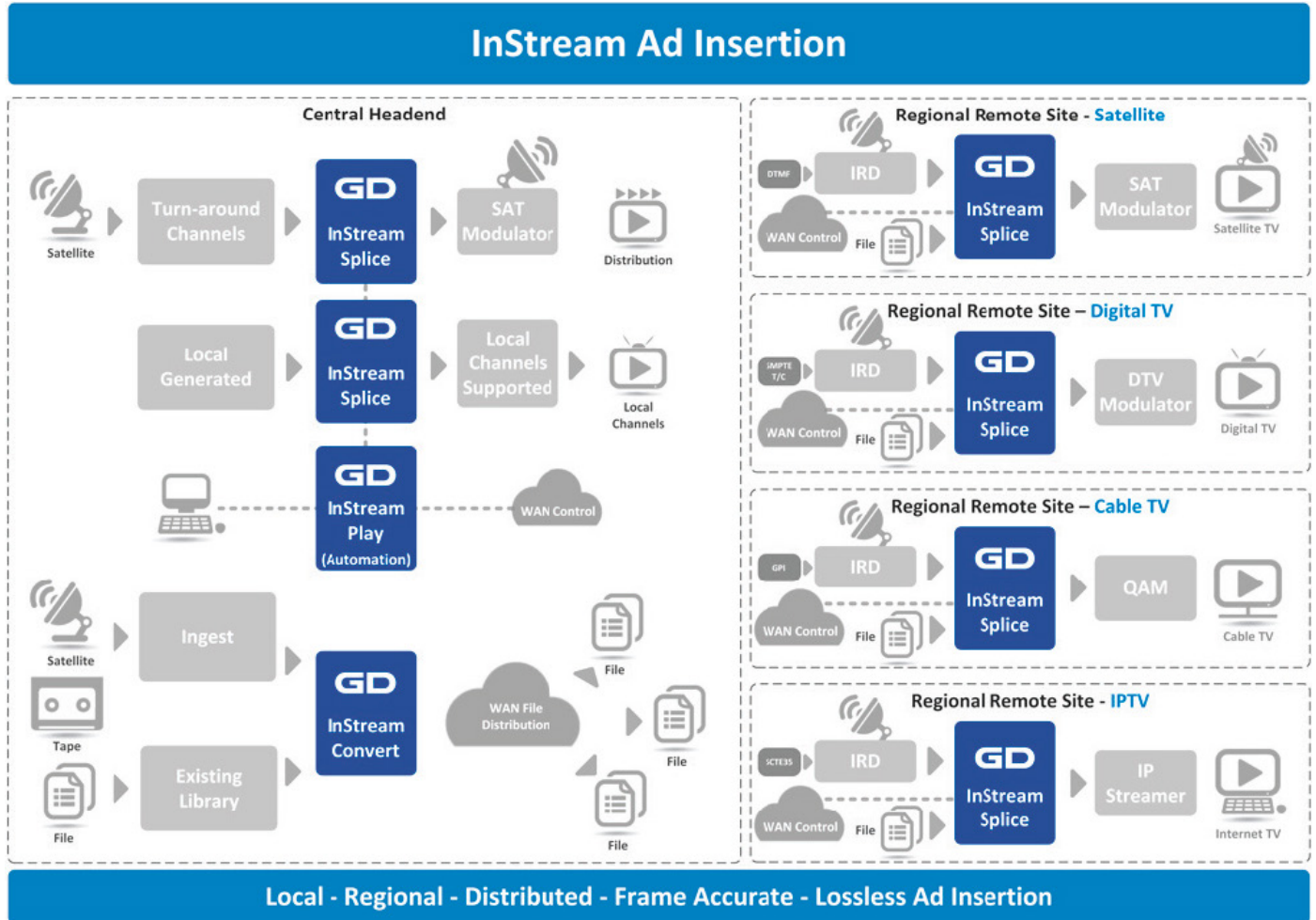
Ad Insertion in the MPEG Transport Layer

The fundamental challenge in splicing is to provide a truly seamless splice, creating the best TV experience.

Mediaware solves the complex challenge of digital program insertion (DPI) by integrating the complete end-to-end set of components required to launch a commercially successful service.

A single InStream platform can support up to 20 HD channels, or up to 40 SD channels, at a marginal cost compared to the standard baseband practice of duplicating systems. Deployment of InStream enables a new IP broadcasting paradigm where service cost and break-even points are significantly lower than a traditional baseband solution.

Advanced DPI Ad Insertion with InStream Splice



Key advantages of InStream Splice

- Significant cost advantage by using off-the-shelf servers
- IP workflows reduce running costs compared to baseband systems
- Designed to fit into your facility
- Affordably scalable
- Intuitive Web GUI allowing easy operation and control

InStream Splice's scalable design will easily fit into any playout facility, and its intuitive Web GUI allows for easy operation and control. InStream Splice runs on off-the-shelf servers and requires no proprietary hardware, reducing running costs when compared to baseband systems.

Technical Specifications

Ingest

GD

InStream
Convert

Automate

GD

InStream
Play

Deliver

GD

InStream
Splice

General Dynamics Mediaware software solutions enable alternative media workflows and lower total cost of ownership across multiple platforms for satellite, terrestrial, cable and IP television.

Our products make it easier for broadcast and media facilities to make the move from baseband to an all-IP workflow with confidence.

Formats

- **Inputs/Outputs**
 - MPEG-2 Transport Stream (MPTS or SPTS)
 - ASI or UDP (Multicast or Unicast UDP)
- **Video**
 - MPEG-2 SD/HD
 - MPEG-4 AVC (H.264) SD/HD/UltraHD/4K
 - MPEG-4 HEVC (H.265) SD/HD/UltraHD/4K
- **Audio**
 - MPEG-1 Layer I and II (Musicam)
 - MPEG-2 Layer I and II
 - Common surround formats
 - AAC-LC
 - HE-AAC v1 & v2
- **VBI**
 - Teletext splicing
 - Advanced teletext weaving
 - Teletext main channel pass-thru
 - US Closed Caption Insertion
 - DVB subtitles
- **Transport Stream**
 - Statistical multiplexing support (splicing and pass-through)

Splicing

- **Modes**
 - TRUE frame accurate splicing
 - Splice on any frame
 - CBR & VBR splicing
 - Stream-to-stream (live to live program)
 - File-to-stream (advert to live program)
 - File-to-file (advert to advert)
 - Stream-to-file (live program to advert)
 - Embedded file asset streaming server
 - MPEG video playout server
- **Services**
 - Up to 20 HD services
 - Up to 40 SD services
 - Service rates up to 50Mbits/s

Control

- **Configuration & Management**
 - Web-based user interface
- **Automation**
 - ASCP protocol
- **Triggering**
 - SCTE35
 - DTMF tones
 - GPI
 - SMPTE time code
- **Playlist**
 - CCMS format
 - Other formats on request

Storage

- **Embedded Video Server**
 - Removes requirement for dedicated streaming server by storing file based assets locally
- **Storage**
 - Embedded HDD/SSD
 - NAS

Enhanced Capabilities

- **Logo insertion**
 - Insertion of graphics, text and crawls
- **Time delay**
 - High accuracy time-shift
- **Loudness**
 - Loudness matching across all channels, in all audio formats for all program types

GENERAL DYNAMICS
Mediaware