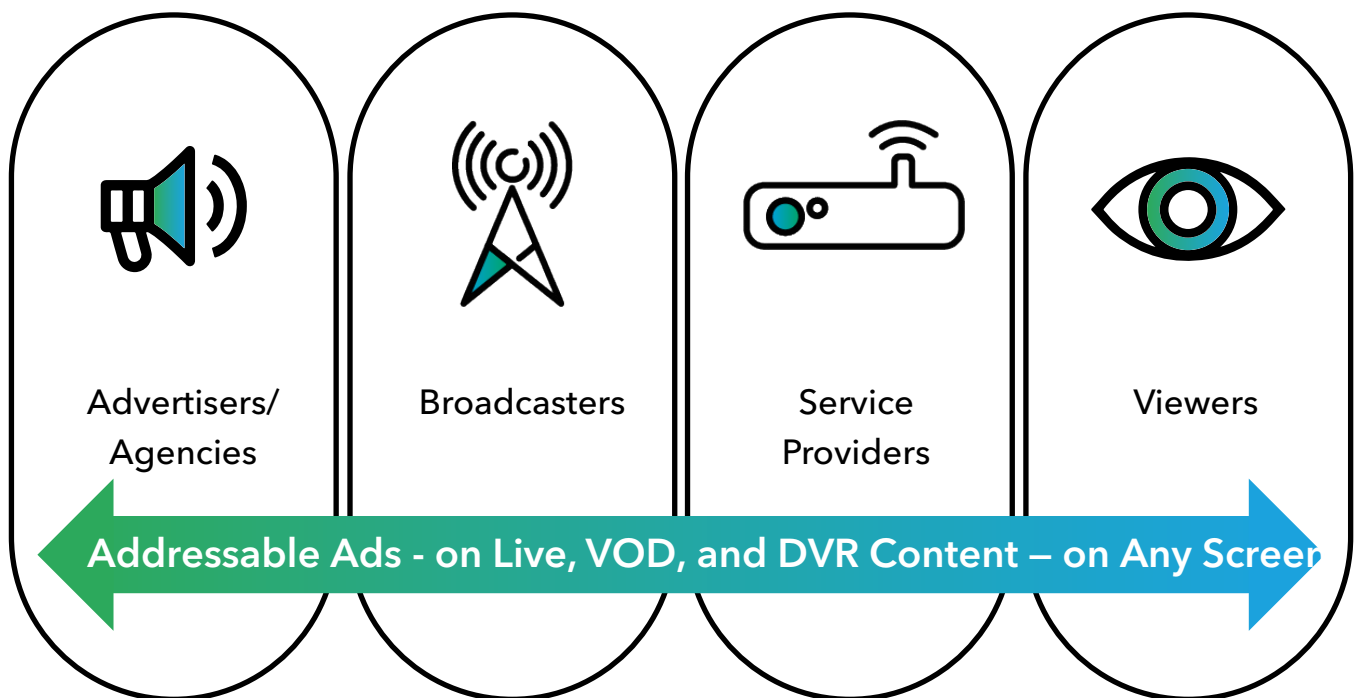


DYNAMIC AD INSERTION

MAXIMIZE YOUR MONETIZATION WITH NEXT-GENERATION SERVER-SIDE AD INSERTION AND FAST CHANNEL ORIGINATION

With worldwide revenues drastically increasing year after year, addressable advertising is set to take the TV market by storm. While this creates opportunities, it also brings challenges. Delivering and measuring individually targeted video ads is becoming more difficult with the increasing fragmentation of video-viewing devices and the variety of content types. Other challenges arise from client-side ad insertion, which is prone to ad fraud and increases complexity when it comes to cross-device compatibility. As a content or service provider, how can you maximize your monetization potential, delivering addressable fraud-immune ads that run smoothly on each device?

**SpotX, eMarketer 2020*



Content and service providers, advertisers, and viewers all benefit from server-side ad insertion. It makes sense for everybody.

NEA Composer manifest manipulation is a next-generation solution to dynamically insert ads in HLS and DASH streams for live, VOD, and catch-up content. Based on a wide range of targeting mechanisms, NEA Composer serves to your viewers addressable ads at the individual or segment scale in media contents. It receives ad decisions from Ad Decisioning Systems (ADS) for each insertion opportunity, ensures ad assets are in the right formats and resolutions via a transcoding process, and then stitches them in outgoing HLS and DASH clients' manifests.

Integrated Ad Files Processing Workflow

To ensure a smooth and consistent playback experience for your viewers, NEA Composer orchestrates transcoding processes for ads that get returned from Ad Decision Systems in the wrong formats, resolutions, or bitrates. NEA Composer ensures the ads are in resolutions and bitrates that match the content they are being inserted into. Viewers will see no difference in quality between the main content and the ad content.

To facilitate these transcoding processes, NEA Composer is pre-integrated with many leading media supply chain and file transcoding solutions, including Ateme's own PILOT Media workflow orchestrator and TITAN File transcoding.

Cross-Device Compatibility

One challenge for video ad insertion is how to support a wide range of client devices and their varying environments. NEA Composer overcomes this task by allowing you to insert ads reliably in any HLS- and DASH-compliant client. Manifests are generated with stitched-in personalized ads in the server-side. Consequently, devices' players are simply required to play a single standards-compliant HLS or DASH stream that already includes personalized ads for them. A key benefit of this approach is that ads will work out-of-the-box and smoothly on a wide range of your target devices

Tracking / Measurement

Advertisers demand reliable measurement and verification of their campaign delivery. To meet this need, NEA Composer offers two types of ad-tracking approaches:

- **Server-Side Beacons:**
Quartile ad delivery tracking events sent from NEA Composer directly to Ad Decision Systems. This approach requires no integration on the client environments.
- **Client-Side Beacons:**
With players supporting client-side beacons, quartile ad playback tracking events are sent from the client/player to the Ad Decisions System.

Scalable, Modular Architecture

NEA Composer manifest manipulation is a cloud-native containerized solution following a microservices approach designed to run in any of the following options:

- Virtual machines in the cloud
- On-premises with standard COTS or blade servers
- A hybrid cloud/on-prem architecture to increase efficiency

It is dynamically scalable from regional to individually targeted (addressable) ads, and can serve from a few thousand to millions of concurrent viewers.

Faster Time to Market / Ready Integrations

Relying on widely adopted industry standards, and with a modular 'lego' software approach, NEA Composer has been designed for minimal disruption to your existing HLS and DASH OTT workflows. With a wide variety of set integrations, you are operational and ready to go to market faster than ever before.

Use Cases / Applications

NEA Composer manifest manipulation is designed for content and service providers that want to achieve one of the following use cases:

- Insert addressable ads in HLS and DASH OTT streams
- Ad regionalization in HLS and DASH OTT streams – linear parity
- FAST channels origination in HLS and DASH

Key Benefits

Higher Revenue

Unlock new inventory for monetization with advanced Server-Side Ad Insertion (SSAI) techniques and origination of new FAST channels. In addition, Ateame also leverages its extensive expertise to help you optimize audience segmentation and profiling, campaign sales, campaign booking, inventory management, ad placements, invoicing, and campaign reporting to boost your revenues.

Perfect the User Experience

The NEA Composer solution does not cause any buffering or service interruption to your viewers when playing ads. The pre-integrated ad transcoding workflow guarantees seamless audio and video experience. Furthermore, the Ateame's SSAI solution does not alter the streaming latency.

Increase Ad Reach to All Your Target Devices

Insert personalized ads on all your target HLS and DASH devices at once without lengthy integration processes for each device. Ateame's SSAI technology expands your inventory to devices that were not monetizable before.

Increase Inventory Value with More Insights

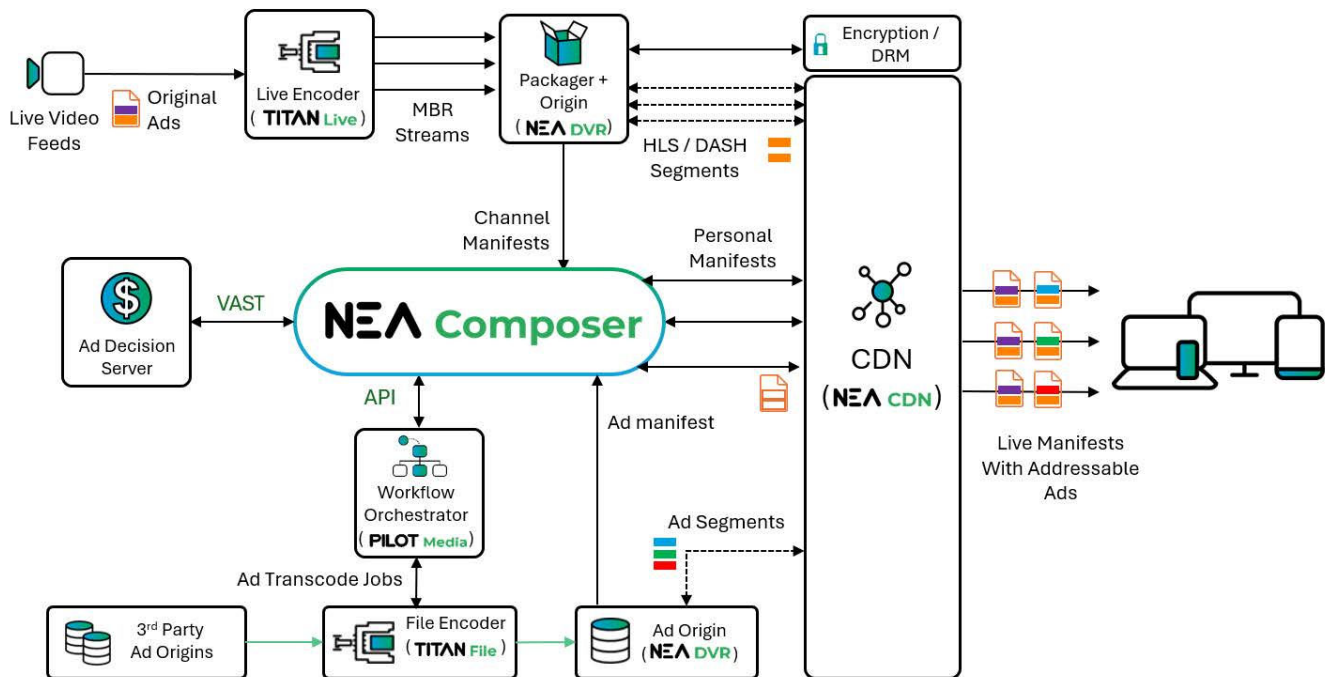
The accurate and granular reports generated by Ateame's SSAI solution will enhance your operational team's visibility on the system and give your advertisers the confidence they need to continue and grow campaigns on your inventory.

Overcome Ad Blockers

Ad blockers prevent 30% of ad revenue worldwide. Add immunity to them with Ateame's SSAI solution to increase your monetization potential.

Boost Fill Rates

Work with multiple Ad Decision Systems (ADS) and Supply-Side Platforms (SSP) simultaneously to generate higher demand for your inventory, boost your fill rates, and increase revenue.



Technical Features

OTT Manifest Manipulation for:

- SSAI on live channels
- SSAI on VOD-to-Live channels

OTT Protocols:

- HLS using discontinuity tags
- HLS using interstitials
- MPEG-DASH

Ad-server Interface:

- iab VAST V3 and V4
- iab VMAP V1

Ad Markers Processing:

- SCTE-104 (conversion with TITAN Live)
- SCTE-35 Type 5/6 (Supported in NEA packaging)
- Discontinuity flags in HLS streams
- DASH events in DASH streams

Reporting & Analytics:

- Client-side beaconing
- Server-side beaconing
- Metrics reporting

Deployment Types:

- Microservices with Kubernetes
- On-premises
- AWS
- Google Cloud*
- Azure*

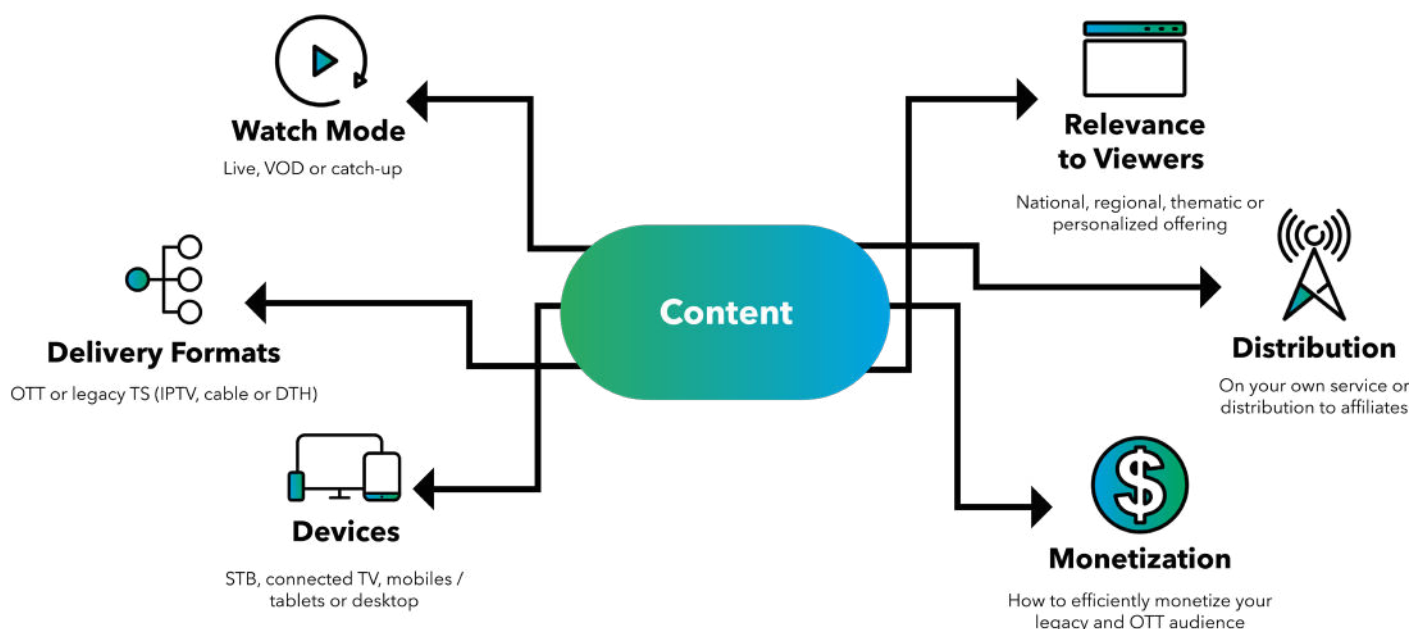
*Roadmap items

LINEAR ORIGATION

CAPTIVATE YOUR AUDIENCE WITH PERSONALIZED CHANNELS COMPOSED FROM YOUR VOD CATALOG

Viewing habits are changing quickly, with viewers looking for relevant content in multiple watch modes and on all devices. Live line-ups and categorized VOD catalogs no longer meet their demands.

Meanwhile, the growth of VOD and catch-up catalogs adds even more complexity as libraries get bigger and harder to navigate. As a content or service provider, how do you present viewers with the right content options?



Increasing the relevance of live channels, via personalized programming on any device, is a key predictor of success in the media & entertainment sector.

NEA Composer Linear Origination is a next-generation solution to create linear channels from your VOD, catch-up, and archive libraries. You can create linear channels simply and reliably, based on your schedules and without needing to spin up expensive and compute-intensive playout/video-server solutions. With NEA Composer Linear Origination, you can generate thematic live channels (e.g., sports, cooking, kids, box sets or other theme variations).

You can even use analytics to develop personalized channels by leveraging specific customers' viewing history. These thematic channels will perfectly match your viewers' tastes and give them what they want, when they want it. Creating such linear thematic channels exposes content efficiently to viewers in live-watch mode. As a result, viewership and engagement will increase and you reduce subscription churn.

NEA Composer Linear Origination with Graphics and Dynamic Ad Insertion (DAI)

In addition, NEA Composer Linear Origination can insert ad breaks in the scheduled channels to enable efficient monetization of every view through Dynamic Ad Insertion (DAI). Next-generation HTML5 graphics for channel branding are easily added with secondary events and rendered in the player, delivering viewer-specific graphic personalization.

Faster Time to Market

Leverage your existing VOD workflows with a modular 'lego' software approach to create new channels in a matter of minutes with NEA Composer Linear Origination, while reducing costs. You are operational and ready to go to market faster than ever before.

Scalable Modular Architecture

NEA Composer Linear Origination is a cloud-native containerized solution following a micro-services approach designed to run in any of the following options:

- Virtual machines in the cloud
- On-premise with standard COTS or blade servers
- A hybrid cloud/on-premise architecture to increase efficiency

It is scalable – from national to regional to thematic and even personalized feeds – to match each viewer's tastes and experience.

Use Cases / Applications

NEA Composer Linear Origination is for content and service providers that want to:

- Create thematic or personalized channels with graphics and ad breaks (DAI monetization) for distribution on their own OTT service
- Create thematic channels to distribute to affiliate OTT operators or monetize on the growing Free Ad Supported TV (FAST) platforms worldwide (Samsung TV Plus, LG Channels Plus, Pluto TV, Rakuten TV, Roku Channel, and others)
- Create thematic or regional linear channels to distribute, as a transport stream, to affiliate IPTV/cable/DTH operators

Key Benefits

• Increase Viewership and Loyalty

Increase viewership by creating relevant channels to your viewers' tastes. This will in turn increase their loyalty to your service.

• Diversify and Increase Revenue Streams

Increase revenue by creating advertising inventory on the generated live channels. Combine channel origination and SSAI for efficient monetization.

• Add New Channels in Minutes

No need to order, wait for, receive, and install traditional playout servers. With NEA Composer Linear Origination, you can add new channels in a matter of minutes.

• Integrate Easily and Launch Quickly

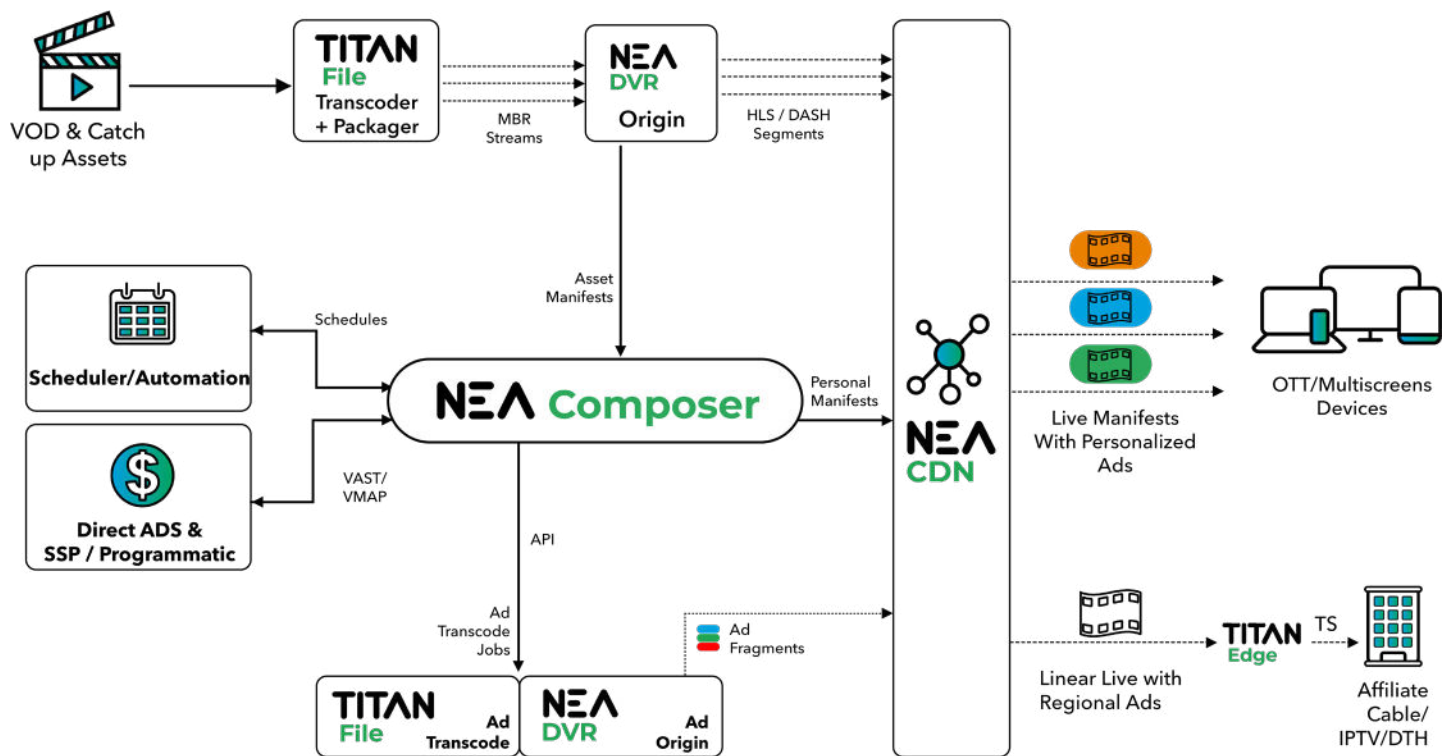
NEA Composer Linear Origination is designed for minimal disruption to your existing VOD architecture. It fits seamlessly into your HLS or DASH file workflows.

• Reduce Operational Costs

NEA Composer Linear Origination helps you reduce operational costs by decreasing compute power and the size of the infrastructure (on premises or in the cloud) needed to create a live channel, compared to traditional playout solutions.

• Protect Our Planet

NEA Composer Linear Origination is designed to minimize your impact on our planet by reducing energy consumption with a lower compute power needed to create a live channel.



Technical Features

Input:

- Pre-encoded HLS VOD assets
- Pre-encoded HLS catch-up assets
- Pre-encoded DASH VOD assets
- Pre-encoded DASH catch-up assets

Output:

- DASH live channels
- HLS live channels

Reporting & Analytics:

- SSAI client-side beaconing
- SSAI server-side beaconing
- Metrics reporting
- GUI monitoring utilities

Scheduling:

- Schedules ingest via API (JSON based)
- BXF API*

Graphics:

- Overlay graphics signaling in manifests
- Out-of-band HTML5 graphics (with supporting HTML5 player)

Ad Insertion SSP Integrations:

- VAST V3 and V4 protocol
- VMAP protocol

Pre-Integrated with:

- TITAN File transcoding and packaging
- NEA-DVR® packager and origin
- NEA-CDN® delivery
- PILOT Media workflow orchestrator

Distribution:

- OTT destinations
- Cable / DTH / Telco TS distribution with TITAN Edge DVB Gateway

Deployment Types:

- Microservices with Kubernetes
- AWS, Azure* or Google Cloud*
- On premise

*Roadmap items