

SSAI Integration Checklist

Pre-launch checks for server-side ad insertion: SCTE-35, manifest, VAST exchange, tracking, four production pitfalls.

1. SCTE-35 contribution

The cue tone is the foundation; everything downstream depends on it.

Encoder emits ANSI/SCTE 35 2023r1 messages at correct PIDs.

Cues fire 4–6 s ahead of the splice point (pre-roll).

Use `time_signal + segmentation_descriptor` type 0x34/0x35 for placements.

Validate every cue with an SCTE-35 monitor before going live.

Carry cues into CMAF via `emsg` boxes; into MPEG-2 TS via `stream_type 0x86`.

2. Manifest & packaging

The personalised manifest is the SSAI service's only product.

HLS: EXT-X-DATERANGE with SCTE35-OUT / SCTE35-IN attributes.

HLS: EXT-X-DISCONTINUITY around every ad block — never skip.

DASH: Multi-period MPD; EventStream `urn:scte:scte35:2014:xml+bin`.

Match ad rendition ladder to content's; same codec profile.

Per-session manifest URL; cache TTL \leq 1 segment; never share across viewers.

3. VAST exchange

VAST 4.3 + the July 2024 CTV Addendum is the current spec.

POST per cue; include IFA, IP, user-agent, content metadata, slot duration.

Parse InLine and Wrapper; chase Wrapper at most 5 hops (timeout 1 s).

Honour UniversalAdId; pass it to the tracking layer.

Use BYOA (pre-conditioned HLS/DASH ads in VAST) where possible.

Verification block: register OM SDK vendors on every supported device.

4. Tracking & viewability

Server-side beacons + OM SDK on devices that allow it.

Fire impression, firstQuartile, midpoint, thirdQuartile, complete server-side.

Forward X-Forwarded-For, X-Device-User-Agent, X-Device-IP (VAST 4.1+).

OM SDK v1.5 (June 2024) on browser, mobile app, Android TV.

Smart TVs without OM SDK: segment-fetch proxy with reduced-confidence flag.

Reconcile server-side and client-side counts daily; investigate >5% drift.

Pitfalls — contribution & manifest

Where the upstream pipeline silently breaks SSAI.

Cue without pre-roll. SSAI has no time to splice; splice misses boundary.

HLS without EXT-X-DISCONTINUITY. Decoder freezes at PTS jump.

DASH ad rendition mismatch. Player can't pick a matching bitrate.

Cached manifest shared across sessions. Wrong ad to wrong viewer; metric chaos.

SCTE-35 in TS but not in CMAF. Cue lost at packaging step; verify both paths.

Pitfalls — VAST & tracking

Where ad-ops and engineering disagree on what shipped.

Opaque beacons. Missing X-Device-* headers; viewability vendors can't attribute.

Wrapper chase loop. Cap depth at 5; timeout each hop at 1 s.

OM SDK assumed everywhere. Tizen/webOS need device-specific integration.

Server clock skew. Quartile timestamps drift; reconciliation breaks.

ADS slow path. Cache ad creatives 1 h; warm cache before live event.