

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.

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.

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.

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 ≤ 1 segment; never share across viewers.

4. Tracking & viewability

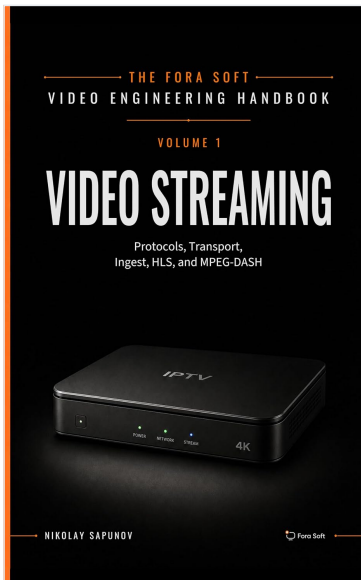
Server-side beacons + OM SDK on devices that allow it.

- 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 — 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.



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This checklist covers SCTE-35 contribution, manifest packaging, VAST exchange and tracking before an SSAI launch. Volume 2 covers the packaging side in depth: HLS, MPEG-DASH and CMAF, segment protocols, and how contribution and ingest feed the origin.

WHAT YOU WILL FIND INSIDE

- HLS, MPEG-DASH and CMAF packaging
- Contribution and ingest to origin
- Segment protocols and manifests
- Live latency budgets

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