SCTE-35 and Ad Signaling — One-Page Field & Marker Reference

SCTE-35 is the in-stream cue that marks where an ad break goes, how long it lasts, and what kind it is. The ad decision server and stitcher supply the actual ad. Engineering reference; spec revisions and HLS/DASH carriage evolve in 2026 — confirm live.

1 · THE MESSAGE (splice_info_section)

- **table_id = 0xFC** — the fixed id of every SCTE-35 section.
- **pts_adjustment** — 33-bit offset that corrects timing after re-stamping.
- **tier** — 12-bit value used to route or filter cues.
- **splice_command_type** — names the instruction (see panel 2).
- **descriptor loop + CRC_32** — optional descriptors, then a checksum.

2 · THE TWO COMMANDS THAT CARRY A BREAK

- **splice_insert (0x05)** — the classic cue-out / cue-in ad break.
- **out_of_network_indicator** — 1 = leave for the ad, 0 = return.
- **time_signal (0x06)** — carries only a timestamp; the modern default.
- **time_signal needs a descriptor** — that is where its meaning comes from.

3 · AD-RELEVANT SEGMENTATION TYPES (type_id)

- **0x22 / 0x23** — Break Start / End.
- **0x30 / 0x31** — Provider Advertisement Start / End.
- **0x34 / 0x35** — Provider Placement Opportunity (replaceable avail).
- **0x36 / 0x37** — Distributor Placement Opportunity.
- **UPID** — names the content/break: Ad-ID 0x03, EIDR 0x0A, URI 0x0F.

4 · CARRIAGE INTO MANIFESTS

- **HLS (RFC 8216):** EXT-X-CUE-OUT / CUE-IN, or EXT-X-DATERANGE SCTE35-OUT / IN.
- **DASH (SCTE 214):** MPD EventStream (out-of-band) or in-band emsg box.
- **Same message, base64** (RFC 4648) carried in both manifests.
- **Packager translates once** — one transport-stream cue serves every device.

PRE-ROLL & QC — WHY AD BREAKS FAIL TO FIRE

Send the cue at least 4 seconds before the splice point and repeat it (for example at 8, 5, 4, and 2 seconds prior); a cue arriving with under 4 seconds' notice may not fire (ANSI/SCTE 35 2023r1, Sec 9.1). Align encoding so a segment boundary — an IDR keyframe the player can cut to — lands exactly on the splice point, or the splice rounds to the nearest chunk and drifts. Never let packaging strip a time_signal's segmentation_descriptor: a bare timestamp has no meaning, so the ad server cannot tell a placement opportunity from a chapter mark. Verify the type_id and UPID survive end to end into the manifest, and remember pts_time counts a 90,000-tick-per-second clock whose 33-bit field wraps about every 26.5 hours. Upstream, an automation system requests the cue over SCTE-104 and the encoder writes the SCTE-35; out-of-band policy (blackouts, audience) rides SCTE 224. Confirm the current SCTE 35/104/224 revision and the HLS/DASH carriage specs at build time — this area moves in 2026.



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This reference lays out the SCTE-35 message, the segmentation types and how cues ride into HLS and DASH. We wrote seven volumes on the video stack. Start with Volume 2 for HLS, DASH and CMAF packaging, then Volume 3 for players and delivery economics, and Volume 1 for keyframes and encoding.

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Ad breaks that fail to fire or drift off the splice point?

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