

AI in Live Broadcast — Engineering & Compliance Decision Sheet

Fora Soft Learn · AI for Video Engineering

1 — The feature catalog (the group decides the constraint)

Capture & direct	auto-track/robotic cameras, switching, AR graphics, replay → races the clock.
Widen the reach	live captions, translation & dubbing, audio description → often required by law.
Repackage & synth	instant highlights, moderation/logging, AND AI anchors/voices/altered footage.

Synthetic content (the last item) = EU AI Act Article 50 disclosure. The rest is standard editing.

2 — The latency ladder (put every feature on a rung first)

Rung	Budget	What lives there
IN-FRAME	≤ 20 ms (50 fps)	auto-track, AR, keying → GPU next to the signal.
NEAR REAL	seconds	captions, translation, moderation in the broadcast delay, instant highlights.
BROADCAST	~2-6 s	live encode, Low-Latency HLS/DASH, SCTE-35 ad insertion.
LEGACY OTT	30-45 s behind live	→ the gap low-latency streaming exists to close.

3 — Three places the AI can run (placement follows the rung)

On-prem / OB truck	uncompressed SMPTE ST 2110 + NMOS → lowest latency, home of in-frame AI.
Cloud / REMI	compressed feeds over SRT/RIST → elastic GPU, but each hop adds delay.
2026 default = HYBRID	edge for can't-wait work, cloud for heavy/elastic work.

4 — Real footage vs synthetic content (EU AI Act Article 50, from 2 Aug 2026)

Content	Rule
REAL footage + assistive AI (track/caption/translate/highlight)	no Article 50 disclosure.
SYNTHETIC shown to viewers (AI voice/anchor/altered footage)	disclose, clearly & persistently.
AI TEXT informing the public	disclose UNLESS human review + editorial responsibility (newsroom).

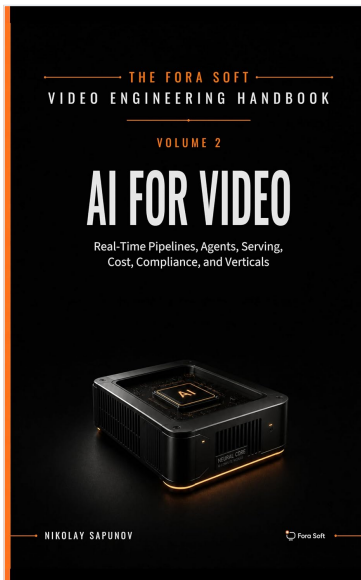
5 — Compliance gate — before air (context, not legal advice)

- ☐ Meet closed-caption quality rules on live audio (e.g. US FCC 47 CFR 79.1); wrap AI with human oversight + a broadcaster dictionary.
- ☐ Manage loudness (CALM Act / equivalents) and log the output — what aired, with what captions and moderation flags.
- ☐ Design graceful degradation: a safe default (wide shot, last caption, silence) when AI confidence drops — there is no second take.
- ☐ Keep a human director or editor on anything consequential; never let an AI flag drive an irreversible on-air action alone.
- ☐ Disclose any AI-generated or manipulated content under Article 50 — clear, at first exposure, persistent for broadcast; add C2PA provenance.
- ☐ For AI-written on-air news text, keep a human with editorial responsibility, or disclose it.

Companion to: 'AI in Live Broadcast — Engineering & Compliance Decision Sheet'

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This sheet places live-broadcast AI features on a latency ladder and runs them through the Article 50 gate. Volume 7 covers AI under a real-time budget: live captions and translation, moderation on the fly, serving infrastructure, and regulation including the EU AI Act and C2PA.

WHAT YOU WILL FIND INSIDE

- Live captions and translation under a latency budget
- EU AI Act Article 50 and C2PA provenance
- Moderation on live streams
- Serving and cost per stream-hour

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Adding AI captions, highlights or graphics to a live broadcast?

We will place each feature on the latency ladder, choose edge or cloud and design the safe-default fallbacks. 250+ video products shipped since 2005.

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