

Protection is a loop, not a wall: prevent (DRM), attribute (watermark), then operate. Operations shifts the equilibrium and converts sharers — it does not eliminate piracy. Engineering/operational guidance; laws and vendor capabilities change (DMCA § 512, EU DSA, Rec. (EU) 2023/1018) — re-verify live.

## 1 · THE PROTECTION LOOP

- Prevent** — DRM / encryption keeps content from being accessed without permission. Installed once.
- Attribute** — a forensic watermark makes a leak traceable to a session. Installed once.
- Operate** — monitor, identify, decide, act. The running loop that turns the first two into enforcement.
- Fingerprint finds the stream; the watermark blames the session.** Use both, not one.

## 2 · TAKEDOWN PATHS — BY SPEED

- DMCA notice (US 17 U.S.C. § 512)** — host acts in hours-days. On-demand only. Needs every § 512(c)(3) element.
- DSA notice + trusted flagger (EU Reg. 2022/2065)** — platform acts; trusted flaggers get priority.
- Dynamic blocking (ISP order)** — minutes (Italy: 30-min). The only path fast enough for a live match.
- Account action** — cut the leaking session yourself, immediately, when a watermark traces it.

## THE ONE RULE — OPERATIONS SHIFTS THE EQUILIBRIUM, IT DOES NOT ELIMINATE PIRACY

No monitoring suite, DRM, or watermark stops piracy; in 2025 the European Commission found overall levels largely unchanged. Protection is a three-job loop: prevent with encryption and DRM, attribute with a forensic watermark, then operate the running monitor-identify-decide-act loop that turns both into enforcement. Match the enforcement path to the content: a host takedown (DMCA § 512 in the US, the DSA notice-and-action with trusted flaggers in the EU) fits on-demand, but only dynamic ISP blocking and watermark-driven session cuts move fast enough for a live match whose value evaporates in two hours. Run concurrent-stream limits and credential-sharing detection inside your own walls, and convert sharers rather than banning them — the rare anti-piracy line that books revenue. The realistic goal is a better equilibrium: slower, less reliable piracy, a defended high-value window, and the contractual box ticked — not a piracy-free internet.

## 3 · INSIDE YOUR WALLS — SHARING

- Concurrent-stream cap** via a heartbeat — the entitlement service counts live sessions per account.
- Credential-sharing detection** — the usage pattern (devices, locations, simultaneity) separates household from resale.
- Convert, don't punish** — offer the sharer their own membership or a paid extra-member add-on.
- Proof point** — Netflix added ~50M paid memberships by converting sharers, not banning them.

## 4 · READINESS CHECKLIST

- Run the loop, not just a wall** — budget monitoring and operations, not DRM alone.
- Match path to content** — host takedown for VOD; dynamic blocking + session cut for live.
- Send valid notices** — every § 512(c)(3) element; avoid § 512(f) false-notice liability.
- You may be a host too** — if you carry user uploads, run a designated agent, counter-notice, repeat-infringer policy.
- Aim for friction + conversion** — you cannot eliminate piracy (EU 2025 review: levels largely unchanged).