**PS-12 — Ownership & UBO Graph with Cascade Screening**

**Intent**  
Model ownership (parents/subs/subsidiaries), compute UBOs, and **cascade** screening outcomes using configurable thresholds (e.g., 50%).

**Actors**  
Ownership Graph Service • Screening Engine • Ops Pilot • Audit Vault

**Preconditions**

* Partners exist with legal entity type and country.
* Ownership edges accepted with %, start/end dates, and evidence docs.

**Flow**

1. **Add/Edit Edge:** User adds owner → owned with %, dates, and document hash (CIR for the edge).
2. **Graph Recompute:** Service builds **beneficial ownership** paths; aggregates indirect percentages.
3. **Cascade Rules:** Config says: *if aggregate ownership by blocked party ≥ X%* ⇒ inherited **BLOCK/REVIEW**.
4. **Auto-Rescreen:** Downstream partners in the graph are re-screened with **evidence chips** (“Via Parent X at 60%”).
5. **Lineage:** Decision stores graph snapshot hash + edges involved.
6. **Change Propagation:** Changing an edge triggers recompute + delta decisions.

**Edge Cases**

* Circular ownership → cut at cycle with warning.
* Missing % → mark edge as “unknown,” exclude from threshold; flag REVIEW.

**Acceptance**

* Graph queries < 1s P95 (up to 100k edges).
* Cascade results visible with **why** (owner list + percentages).
* Every cascade BLOCK shows the **exact threshold** crossed.

**Innovation**

* **Ownership Proof Chips** in decisions (owner chain with % and dates).