**OPS-11 — Data Residency & Sovereignty Controls**

**Intent**  
Pin tenant data to a **region**, ensure processing stays in-region (storage, backups, logs, analytics).

**Preconditions**

* Supported regions list (e.g., EU, India, US).
* Region-aware storage & KMS.

**Flow**

1. **Policy**: per-tenant data\_region flag; enforcement matrix (storage, compute, logs, backups).
2. **Provision**: allocate region-specific buckets, DBs, KMS keys; tag all artifacts with tenant\_id, region.
3. **Processor geofencing**: workers pick jobs only for their region; cross-region calls blocked by policy.
4. **Backups & DR**: secondary within same legal zone (e.g., EU-to-EU).
5. **Telemetry**: metrics/logs shipped to region-local sinks; cross-region aggregation via anonymized rollups only.
6. **Attestation**: export a **Residency Proof Report** for auditors.

**Edge cases**

* Feature unavailable in region → feature flag off with banner.
* Tenant region change → migration playbook (see OPS-12).

**Done when**

* Writes/reads/copies rejected outside region; backups & logs validated in-region; Residency Proof Report downloadable.