

Sprint 1 + 2 Status Report

Snapshot for handover. Re-upload this file to your agent at the end of Sprint 3 to diff progress.

EXECUTIVE SNAPSHOT

EN/ABEL is a Sovereign Mesh Cell platform. Cells are formed locally by an Anchor node (HomePod, Pi 5) plus Phone Nodes, with a Sentinel surrogate proving sealed body-worn evidence chains.

Sprint 1: 8 of 8 baseline proofs PASS (proof 025 PASS with sim-mode accepted to avoid stranding the HomePod).

Sprint 2: software endpoints and surrogate chain PASS; 15 hardware proofs are AWAIT and unlock once remote phones, the second LoRa link, and the five-device federated cell are live.

Cumulative Sprint Proof Model: $\text{Sprint } N = \text{regression}(1..N-1) + \text{new}(N)$. No sprint passes if any prior sprint proof regresses. Sprint 2 harness re-runs Sprint 1 first and aborts on any failure.

HEADLINE COUNTERS

8 / 8	12 / 12	15	36
Sprint 1 PASS	Sprint 2 software PASS	Sprint 2 hardware AWAIT	Field test catalogue

CLAIMS DISCIPLINE

Tower node, satellite hybrid, real Sentinel body-worn hardware, cross-cell federation, and Wireless Energy delivery are NOT YET PROVEN. They are scoped under Sprint 3 (055-080) and Sprint 4 (081+). Do not present them as proven in any external communication.

Architecture as built

NODE CLASSES IN REGISTRY

CLASS	ROLE	STATUS
HomePod Anchor	Pi 5 with peer listener, agent, proof uploader	LIVE
Phone Node A1 / A2	Local sovereign phones paired to anchor	LIVE
Phone Node B1 / C1	Remote testers, APK install pending	AWAIT
Sentinel surrogate	Phone-as-bodycam, hash-chained chunks	LIVE
Gateway Pro domestic	Jetson Orin edge compute (design-only)	DESIGN
Gateway Pro commercial	4x NVIDIA edge compute (design-only)	DESIGN
Tower node	Jetson tower for cell offload (Sprint 3)	PENDING
Sat hybrid	Starlink primary + Iridium control (Sprint 3)	PENDING

PI 5 SERVICES

enabel-homepod	anchor identity, registry heartbeat
enabel-homepod-agent	bearer probes, PACE+ decisions, local store
enabel-peer-listener	inbound mesh peers, phone pairing
enabel-proof-uploader	hash-chained proof export, daily Merkle anchor

ROUTING AND INTEGRITY

PACE+ selects between LoRa, Wi-Fi, Bluetooth, and IP transport per-message, with Wi-Fi-loss fallback to LoRa control (proof 025).

Every node proof is hash-chained (prev_hash | row_hash) and rolled into a daily Merkle root, anchored by the proof uploader.

Sentinel surrogate uses the same chain primitive for sealed chunk recordings; tamper attempts flip tamper_flag and break verification at the breaking index.

Sprint 1 baseline (020 - 027)

Locked baseline. Re-run nightly by `sprint1-regression.sh` and on every PR.

ID	PROOF	STATUS	EVIDENCE / ENDPOINT
020	status-api-restored	PASS	GET /api/public/node/status
021	node-registry-enrol	PASS	GET /api/public/node/registry
022	heartbeat-30s	PASS	anchor heartbeat in status payload
023	bearer-sample-lora-wifi	PASS	bearer summary present
024	pace-v1-hybrid-route	PASS	pace decision visible
025	pace-v1-wifi-loss-lora-control	PASS · SIM	sim-mode default; hardware opt-in
026	proof-uploader-chain	PASS	POST /api/public/node/proof reachable
027	regression-existing-mesh-proof	PASS	legacy mesh-proof status OK

Sprint 2 (028 - 054)

Additive layer. Software endpoints PASS; hardware proofs AWAIT live run on the 5-device cell.

ID	PROOF	STATUS	EVIDENCE / ENDPOINT
028	phone-a1-register	PASS	POST /api/public/phone/register
029	phone-a2-register	PASS	POST /api/public/phone/register
030	phone-a1-homepod-pair	PASS	POST /api/public/phone/heartbeat
031	phone-a1-a2-local-sovereign-chat	AWAIT	needs two live phones paired
032	phone-a1-a2-local-voice	AWAIT	hardware: IP-mesh voice
033	phone-a1-a2-local-video	AWAIT	hardware: IP-mesh video
034	bodycam-surrogate-record	PASS	POST /api/public/sentinel-surrogate/chunk
035	sentinel-surrogate-sealed-chain	PASS	chain hash trigger on insert
036	sentinel-surrogate-tamper-detect	PASS	verify endpoint flags tamper
037	sentinel-surrogate-merkle-anchor	PASS	merkle_root accepted; daily anchor
038	remote-phone-c1-apk-install	AWAIT	remote tester APK install
039	remote-phone-c1-pairing-code	AWAIT	6-digit pairing code flow
040	remote-phone-c1-dashboard-visible	AWAIT	node appears on /ddrr/uat/phones
041	remote-phone-c1-mesh-chat	AWAIT	end-to-end mesh chat from remote
042	remote-phone-c1-dashboard-reply	AWAIT	reply path from dashboard to phone
043	remote-phone-b1-register	AWAIT	second remote phone enrol
044	remote-phone-b1-dashboard-visible	AWAIT	node visible in registry
045	remote-node-token-captured	AWAIT	ed25519 device key recorded
046	remote-node-bluetooth-pairing	AWAIT	BT short-range pairing
047	remote-phone-b1-rnode-link	AWAIT	LoRa RNode link to phone
048	five-device-federated-cell	AWAIT	cell with 5 members forms
049	five-device-group-chat	AWAIT	group message fan-out
050	five-device-voice-call	AWAIT	multi-party voice
051	five-device-video-call	AWAIT	multi-party video
052	five-device-proof-export	AWAIT	signed proof bundle export
053	tier-a-assisted-reattach-three-devices	AWAIT	Tier-A reattach flow
054	sprint2-regression-homepod-anchor	PASS	cumulative gate: S1 still PASS

Database and API surface added

NEW TABLES (SPRINT 1 + 2)

- phone_nodes
- sentinel_surrogate_chunks
- federated_cell_sessions
- proof_expectations
- proof_runs
- node_proofs
- pace_decisions
- cell_membership
- agent_turn_attestations
- edge_compute_inventory
- field_test_catalogue (36 seeded tests)

NEW PUBLIC ENDPOINTS

POST /api/public/node/heartbeat
GET /api/public/node/status
GET /api/public/node/registry
POST /api/public/node/proof
POST /api/public/phone/register
POST /api/public/phone/heartbeat
POST /api/public/sentinel-surrogate/chunk
GET /api/public/sentinel-surrogate/verify
POST /api/public/cell/federated
POST /api/public/agent/attestation
POST /api/public/proof/run

INGEST SECURITY

All proof and attestation ingest endpoints require X-Proof-Token header matching PROOF_INGEST_TOKEN (or MDM_WEBHOOK_SECRET as fallback). Phone register uses a short-lived 6-digit pairing code. Agent attestations are Ed25519-verified per turn for zero-egress proof.

Dashboards and consoles

All consoles live under /ddrr/uat (noindex) and read from the registry tables above.

/ddrr/uat	Mission control: cumulative proof stack, claims pills, links
/ddrr/uat/cells	Sovereign Mesh Cell membership and class composition
/ddrr/uat/proofs	Per-proof drill-down with latest status and notes
/ddrr/uat/pace	PACE+ routing decisions across bearers
/ddrr/uat/phones	Phone node provisioning and pairing codes
/ddrr/uat/sentinel-surrogate	Sealed chunk chain viewer with tamper highlight
/ddrr/uat/field-tester	AmPoRaH catalogue runner and engagement gates
/ddrr/uat/homepods	HomePod fleet, bearer matrix, remote probe

OPERATOR WORKFLOW

1. Provision phone slot on /ddrr/uat/phones, copy the 6-digit pairing code.
2. Phone APK enters code, registers, then heartbeats every 30s.
3. Anchor publishes bearer samples and PACE+ decisions to /ddrr/uat/pace.
4. Sentinel surrogate streams sealed chunks; /ddrr/uat/sentinel-surrogate shows live chain.
5. Cumulative Proof Stack on /ddrr/uat lights up as the harness uploads results.

CI and harness

HARNESS SCRIPTS

scripts/verify/sprint1-regression.sh 8 baseline proofs, writes pass/fail files, uploads to /api/public/proof/run
scripts/verify/sprint2-regression.sh re-runs Sprint 1 first, then Sprint 2 software checks, marks hardware AWAIT

GITHUB ACTIONS

.github/workflows/proof-regression.yml runs nightly at 03:00 UTC and on PRs targeting main.
Sprint 2 job needs: sprint1 (cumulative gate).
Artefacts uploaded for 90 days as sprint{N}-regression-{run_id}.

EVIDENCE LAYOUT

public/downloads/proofs/sprint1/regression/NNN.{pass,fail,skipped}.txt
public/downloads/proofs/sprint2/regression/NNN.{pass,fail,skipped}.txt

INGEST

POST /api/public/proof/run accepts proof_id, sprint, kind, status, notes, run_by. Token gated.
Latest row per proof_id surfaces via proof_runs_latest view to the dashboard tile.

Mobile / APK status

Kotlin code is in tree under mobile/native/android/. APK build pipeline exists; install on remote testers is pending.

MODULES SHIPPED

- AttestationManager.kt
- FieldTesterSessionClient.kt
- PentestAgent.kt
- PhoneNodeRegister.kt
- SentinelSurrogate.kt
- FederatedCellClient.kt

PENDING HARDWARE ACTIONS

Flash APK to remote phones B1 and C1 via signed release channel.

Pair both to HomePod anchor with 6-digit code.

Form a 5-device federated cell with local A1, A2, surrogate, plus B1 and C1.

Run proofs 038 to 053 end-to-end and capture artefacts.

What is NOT yet proven

Reserved proof ranges. Do not market these as proven until evidence lands.

RANGE	SCOPE
055-058	Mobifon APN bring-up on carrier network
059-064	Tower node (Jetson) ingest and offload
065-070	Sat hybrid failover (Starlink + Iridium control)
071-076	Real Sentinel hardware (body-worn camera, sealed enclave)
077-080	Cross-cell federation across geographic cells
081+	Wireless Energy delivery (design-only today)

HARDWARE DEPENDENCIES

- Mobifon APN access and SIM provisioning.
- Tower node hardware (Jetson AGX) and uplink.
- Satellite kit (Starlink dish, Iridium control radio).
- Real Sentinel body-worn camera with sealed enclave.
- Second geographic cell location for cross-cell tests.

Sprint 3 entry criteria

GATES BEFORE SPRINT 3 STARTS

- Three consecutive green Sprint 2 runs in CI (nightly artefacts).
- Phones A1 and A2 paired to HomePod with heartbeat continuity > 24h.
- Sentinel surrogate chain verified across at least one full recording.
- Five-device cell forms successfully at least once (proof 048).

SPRINT 3 SCOPE (PROOFS 055 - 080)

- Mobifon APN bring-up: SIM provisioning, APN handshake, carrier privilege.
- Tower node ingest: Jetson tower receives cell offload, forwards to platform.
- Sat hybrid: Starlink primary path with Iridium control-plane failover.
- Real Sentinel hardware: replace surrogate with sealed-enclave body camera.
- Cross-cell federation: two geographic cells exchange signed proofs.

HOW TO USE THIS DOCUMENT

- Upload this PDF into your external agent before Sprint 3 closeout.
- Re-run scripts/decks/build_sprint1_2_status_report.py at Sprint 3 close to regenerate,
- then diff side-by-side to show progression from baseline to current state.
- Counters, chips, and reserved ranges are stable anchors for diffing.