LYNDAX GLOBAL | REAL-WORLD DEPLOYMENT BRIEF

TRACK BRIEF 01: MINA KULA — People of the 1,000-Year Trust

Phase 1 Deployment: Woodlark (Murua) Island | Release: 9 August 2026

Complete Track Brief — all 11 challenges

CHALLENGE AT A GLANCE

Objective: Build the tamper-proof sovereign ledger, tactical mesh, canopy sentinel detection logic, offline identity rails, and dual-node verification dashboard that turns raw field data into immutable proof.

Technical Baseline: Edge hashing, non-line-of-sight tactical mesh, multi-orbit SATCOM, non-lithium storage, hardened ingress, dual-sensor telemetry, human-in-the-loop audit authority.

Required Deliverables: Architecture schematics, data-flow map, cryptographic protocol spec, and proof-of-concept evidence in whatever form fits your team's stage.

A note before you read further: everything below is one way to solve this challenge, not the only way. It's meant to show you the shape of the problem clearly enough to work with, not to box you into a single design. Bring your own research, your own expertise, and tell us plainly what extra value your approach adds beyond what's written here — that's genuinely welcome, not a deviation to explain away. This is also a challenge, not the finished deployment: some things that belong to the real, on-the-ground project — like securing consent from customary landowners — aren't yours to demonstrate at this stage, and you won't be asked to. Read the Guidelines for Guardians to Unite alongside this brief for the fuller picture of how deployment actually works, logistics included.

Who can apply: You can apply as a single person, a company, or a team — whatever shape your work actually takes. If more than one submission ends up solving the same piece of this puzzle, we'd rather introduce you to each other than make you compete: this is about uniting the right people around Ava, not picking a lone winner.

1. SYSTEM PLACEMENT & ROLE

Where This Sits: The central nervous system. Every kilowatt generated, every litre of water produced, every vessel mile sailed, every hectare monitored — across all six other tracks — flows through what you build here.

Core Mission: Construct the immutable sovereign ledger, encrypted mesh network, canopy sentinel detection and verification logic, offline biometric identity system, Kula Trade payment rail, and mirrored dual-node dashboard. Your work transforms raw sensor readings into verifiable, unalterable proof of protection — recognised by auditors, buyers, and the clans equally.

Integration Rule: Every hardware brief across the other six tracks assumes Mina Kula's connectivity, security, and data standards exist beneath them. You build the backbone.

2. WOODLARK ISLAND: WHAT YOU'RE ACTUALLY DESIGNING FOR

A real starting point, not the whole picture — go do your own deeper research from here. Facts below are sourced from public geographic and climate records; anything marked as an estimate is exactly that.

Geography. Woodlark Island is roughly 60km east-west and 30km north-south at its center, in the Solomon Sea, part of Milne Bay Province, centered around 9.13°S, 152.81°E. Highest point is Mount Kabat at 240m. The

island's own name is Muyuw, also called Murua.

Population & settlements. No formal census has been taken since 1990; an unofficial estimate puts the island's population around 6,000 today, spread thin. Kulumadau is the largest settlement, Guasopa second — Guasopa also holds the island's health centre, currently 9 health workers covering roughly 6,000 people across Woodlark and the surrounding islands. There is one primary school, in Kulumadau; every child leaves for Alotau to attend secondary school.

Climate. Warm and humid year-round, roughly 21–34°C. Wet season runs January through March, peaking in March. Southeast trade winds dominate the drier stretch, roughly May through November. Cyclone and tropical storm risk concentrates December through March.

Access. The route in runs through Alotau, Milne Bay Province's capital, then by sea to Woodlark — roughly 155–160 nautical miles by straight-line estimate; no verified figure exists for actual sea-route distance or travel time, so treat this as a rough planning estimate, not a fixed number.

3. THE TECHNICAL BASELINE

These fall into two tiers. A small number are hard constraints, marked [HARD CONSTRAINT] below — they protect physical safety, not architecture, and admit no exceptions. Everything else here is the reference bar for meeting each field challenge, not the only acceptable answer: if your team has a genuinely better way to solve the same problem, propose it. This challenge is evaluated on what actually works in the field, not on matching this document line for line.

- **Edge-Locked Cryptography**: Every sensor and meter hashes data locally at capture, binding readings to a hardware-unique identifier and immutable UTC timestamp before transmission.
- **Non-Line-of-Sight Tactical Mesh**: Encrypted, self-healing MANET-class mesh networking between nodes, engineered to penetrate dense tropical canopy and open water without a single point of failure.
- **Multi-Orbit Satellite Backhaul**: Gateways maintain simultaneous LEO/GEO connectivity via electronically-steered, metamaterial-aperture flat-panel antenna arrays, with automated frequency handover. No single network outage takes the system down.
- **Non-Flammable Storage by Design** — **[HARD CONSTRAINT]**: Sodium-ion or flow-battery chemistry only across all field nodes. No lithium enters the forest.
- **Hardware-Rooted Security**: Firewalls reject any payload not signed by a pre-authorised device key. Spoofed data cannot enter the ledger.
- **Human-in-the-Loop Oversight**: All automated systems remain auditable and stoppable by authorised guardians. Code serves people — never the other way around.
- **Working With Customary Land**: Free, Prior and Informed Consent with the registered customary landowners is led by Lyndax Global and the Samarai-Murua District Development Authority, as a real, ongoing relationship — it isn't something your submission needs to demonstrate or secure yourself, and you won't be asked to. Gateways, sentinels, and smart-card kiosks all get physically sited; design for flexible placement, not around a permission you don't have standing to obtain.
- **Field Durability, Anti-Theft & Ease of Use** — **[HARD CONSTRAINT]**: Anything deployed unattended in the field is built to survive years without regular maintenance, resist tampering or theft, and stay simple enough not to fail from ordinary misuse — this district is genuinely isolated, and a fragile or easily-defeated unit doesn't help anyone. This is about the real outcome (long unattended service life, tamper resistance, hard to get wrong), not a specific named spec like ‘military grade’: propose whatever achieves that outcome.

4. THE ELEVEN SUB-CHALLENGES — ONE BACKBONE

1.1

Sovereign Ledger & Trust Architecture

THE FIELD CHALLENGE

Commercial logging and illegal mining operate at the forest edge. Standard databases can be altered. You must build a ledger where a reading recorded in Kulumadau cannot be changed, deleted, or double-counted — even if servers are physically accessed.

REFERENCE STANDARDS

- Immutable, edge-signed time-series ledger
- Zero-knowledge audit capability for Verra validators
- Double-claim prevention across Article 6.2 and voluntary markets
- Fixed reference plots to prevent baseline manipulation
- Automated cross-referencing of incoming data against expected environmental baselines before any asset is minted, with an authenticated human-in-the-loop channel able to freeze or manually audit anything the system flags — this is what the baseline's "human-in-the-loop oversight" requirement actually looks like in practice, not just a stated principle

WHO SHOULD APPLY

Distributed ledger architects, cryptographic protocol engineers, trust-framework specialists.

1.2

Canopy Sentinel Detection & Verification Logic

THE FIELD CHALLENGE

Chainsaws start deep under 30m canopy. Satellites pass too late. Optical sensors fail through foliage. The Forest Sentinel Totem that carries the physical sensors — its structure, power, battery, and connectivity — is built under Mina Valu's brief. What's yours to solve: the detection logic that turns raw acoustic, thermal, and visual signal from that hardware into a real, actionable alert.

REFERENCE STANDARDS

- Acoustic classification tuned to recognise chainsaw signatures specifically, not just generic loud sounds — false alarms from a car backfiring three villages away help nobody
- Thermal-anomaly detection that tells the difference between an actual threat and ordinary wildlife or weather
- Canopy-density baselining that can detect real change over time, not just a single snapshot
- Feeds directly into 1.1's ledger and its automated baseline cross-referencing — detection and verification are one connected pipeline, not two separate tools

WHO SHOULD APPLY

Signal-processing and sensor-fusion specialists, ML engineers with acoustic/thermal classification experience, ecologists who can help define what "anomalous" actually looks like in this forest.

1.3

Tactical Mesh & Satellite Backhaul

THE FIELD CHALLENGE

Cyclone-strength winds destroy infrastructure. There is no cellular service. The network must self-heal and route critical alerts through canopy, through storm — without dropping data.

REFERENCE STANDARDS

- Non-line-of-sight, self-healing MANET-class encrypted mesh between nodes
- Multi-orbit flat-panel gateways with seamless constellation handover
- Every packet cryptographically signed at origin

WHO SHOULD APPLY

RF and network engineers, SATCOM developers, embedded firmware specialists.

1.4

Offline Identity & ILG Smart Card System

THE FIELD CHALLENGE

Rangers and landholders have no bank branches, no cellular service, no internet. Paper registers invite fraud. You must verify identity and authorise benefit payouts — entirely offline.

REFERENCE STANDARDS

- Encrypted physical smart card storing biometric templates locally
- On-device matching — zero internet required at payout
- Deduplication at enrolment; cryptographically signed batch sync when back online

WHO SHOULD APPLY

Secure hardware designers, embedded IoT engineers, biometric and fintech developers.

1.5

River Silt & Dredging Telemetry

THE FIELD CHALLENGE

Silt dredged for 3D-print aggregate must be measured by mass in real time — no manual weighing, no paper logs. Every tonne moved must be verifiable proof of work.

REFERENCE STANDARDS

- Electromagnetic volumetric flow meter paired with an inline acoustic density scanner on the discharge line, calculating precise volumetric displacement and solid-mass weight composition automatically
- Data streamed directly to ledger — no manual entry

WHO SHOULD APPLY

Flow and acoustic sensor engineers, marine telemetry specialists.

1.6

Dual-Node Verification Dashboard & Digital Twin

THE FIELD CHALLENGE

Two locations — SMDDA Headquarters (Woodlark) and Lyndax Command (Singapore) — must see identical data simultaneously. If records diverge, governance fails.

REFERENCE STANDARDS

- Mirrored sub-second synchronisation between both nodes
- Unified visualisation across all seven tracks in real time

WHO SHOULD APPLY

Full-stack and backend engineers, 3D GIS and data-visualisation specialists.

1.7

Cybersecurity & Anomaly Detection

THE FIELD CHALLENGE

Spoofed telemetry injected via satellite uplink could falsely mint credits. You must detect impossible readings — and block them — before they enter the ledger.

REFERENCE STANDARDS

- Stateful inspection firewall at the network gateway, rejecting any payload that doesn't match a pre-authorised device's hardware-locked signature
- AI anomaly detection cross-checking readings against physical limits and expected environmental baselines
- Human override always available

WHO SHOULD APPLY

Cybersecurity architects, AI/ML anomaly engineers, infrastructure security specialists.

1.8

Storage Health Telemetry & Predictive Monitoring

THE FIELD CHALLENGE

The non-flammable storage baseline is already required on every device, engineered device-by-device — the totems under Mina Valu, the fixed district microgrid alongside them. What doesn't exist yet is the layer that watches all of it: nobody currently knows, fleet-wide and in real time, which node's storage is degrading before it fails in the field, 20km from the nearest technician.

REFERENCE STANDARDS

- Continuous state-of-health telemetry (temperature, cycle count, degradation curve) from every sodium-ion and flow-battery unit across the whole system
- Predictive-failure alerting surfaced on the Mina Kula dashboard before a unit actually goes dark, not after
- Feeds directly into the ledger as verifiable uptime data, not a separate siloed monitoring tool

WHO SHOULD APPLY

Power electronics engineers, battery health/BMS specialists, data engineers comfortable with time-series and predictive modeling.

1.9

Benefit-Distribution Payment Rail

THE FIELD CHALLENGE

Carbon revenues due to landholders must reach them directly — no leakage, no middlemen, no cash. This is the formal, audited rail: institutional carbon revenue moving from the verified ledger to registered ILG members, reconciled against official records. It is a different system from 1.10's informal cultural exchange, built to a different standard of auditability, even though both may share underlying offline-transfer hardware.

REFERENCE STANDARDS

- Direct integration with offline identity system
- Every transaction immutable and auditable
- Reconciliation against official ILG registers

WHO SHOULD APPLY

Fintech developers, secure payment systems engineers.

1.10

The Kula Trade System — Cultural Value Exchange

THE FIELD CHALLENGE

Western banking models do not fit traditional reciprocity. Value must move peer-to-peer, offline, in a way that honours Kula custom — modeled on the soulava (red shell necklace) and mwali (white shell armband) exchanged in the traditional Kula ring, the actual valuables this whole track is named for, not a generic wallet with a cultural skin over it. This is a distinct system from 1.9's formal carbon-revenue rail: informal, community-governed, cultural in purpose rather than institutional, even if it ends up sharing underlying transfer hardware.

REFERENCE STANDARDS

- Offline peer-to-peer value transfer via smart card or local mesh
- Cultural design — a covenant, not just a wallet: any use of the Kula name or the soulava/mwali imagery specifically requires genuine sign-off from the Incorporated Land Groups themselves, not an internal branding decision
- Conversion to local currency at designated hubs

WHO SHOULD APPLY

Fintech UX designers, mobile payment engineers, cultural-technology consultants.

1.11

Land-Sea-Air Corridor Reservation

THE FIELD CHALLENGE

As vessel, drone, and eventually aircraft traffic grows, there is currently no coordination point for navigation or de-confliction, and no space reserved for one to exist later. This is scoped deliberately small for now: reserve the actual sea lanes, air corridors, and land routes within the GIS/boundary mapping work already underway — not the full real-time coordination hub. Geofenced live tracking, automated collision alerting, and active traffic management are intentionally deferred until real traffic volume justifies building them.

REFERENCE STANDARDS

- Geofenced corridor and sacred-zone boundary definitions within the GIS layer
- A data schema ready to accept live position feeds later, without being built to actually process them yet
- A clear scoping document distinguishing what's reserved now from what's deferred

WHO SHOULD APPLY

GIS and mapping engineers, systems architects interested in scoping this for a later phase.

5. WHAT TO SUBMIT

Teams applying to Mina Kula upload to lyndax.org:

- **System Architecture Package** — CAD schematics, network topology, cryptographic data-flow diagrams.
- **Telemetry Handoff Matrix** — exactly how sensor data moves from edge → mesh → gateway → ledger → dashboard.
- **Proof-of-Concept Evidence** — in whatever form best reflects where your team actually is — a working prototype, a bench-tested subsystem, evidence of a prior deployment, or a detailed feasibility case with supporting calculations. A polished video is welcome but not required; a rigorous feasibility case from an early-stage team is evaluated on its own merits, not penalised for lacking footage.

- **Rough Cost Estimate** — an order-of-magnitude budget for the specific challenge(s) you're addressing — not a binding quote. Early-stage teams can give a range; further-along teams can be more precise. This helps us plan against something real instead of guessing.

6. HOW THIS IS EVALUATED

Submissions are scored on three equal pillars:

- **Technical Integrity** — Does it meet the technical baseline — either as written, or with a genuinely better alternative?
- **Integration Readiness** — Does it plug cleanly into the rest of the build?
- **Guardian Spirit** — Was it designed for the clans, not just the spec sheet?

7. INTELLECTUAL PROPERTY

Any technology or intellectual property you bring into this challenge remains yours. What gets built specifically for this project is licensed to Lyndax Global and the Samarai-Murua District Development Authority for use here — not assigned, not sold, not owned by us. If your technology's use ever expands beyond this initial deployment, those terms will be set out clearly in your individual contract once you're selected — never assumed from this brief.

Questions or more detail before you submit? Reach Mina Kula directly at kula@lyndax.org.

This is a first-of-its-kind deployment, and this brief is a challenge document, not the final build — specifications are a starting point for direct engagement with applicant teams, not a fixed spec to execute silently. Full disclaimers and engagement terms are set out in the Guidelines for Guardians to Unite and the Eligibility & Disclaimers document. Submissions close 11 September 2026, 6:00pm Singapore time.

LYNDAX GLOBAL | REAL-WORLD DEPLOYMENT BRIEF

TRACK BRIEF 03: MINA TAWALI — People of the Saltwater & Reefs

Phase 1 Deployment: Woodlark (Murua) Island | Release: 9 August 2026

Complete Track Brief — all 8 challenges

CHALLENGE AT A GLANCE

Objective: Build zero-fossil-fuel marine transit, small-craft conversion kits, reef and mangrove monitoring, sustainable fisheries, reserve patrol, and the maintenance hub that keeps it all running across the Solomon Sea and Woodlark archipelago.

Technical Baseline: Zero fossil fuel propulsion, multi-source power generation, non-lithium storage, revenue-grade telemetry, volcanic-particulate resilience.

Required Deliverables: Vessel or conversion design package, power/telemetry plan, and proof-of-concept evidence in whatever form fits your team's stage.

A note before you read further: everything below is one way to solve this challenge, not the only way. It's meant to show you the shape of the problem clearly enough to work with, not to box you into a single design. Bring your own research, your own expertise, and tell us plainly what extra value your approach adds beyond what's written here — that's genuinely welcome, not a deviation to explain away. This is also a challenge, not the finished deployment: some things that belong to the real, on-the-ground project — like securing consent from customary landowners — aren't yours to demonstrate at this stage, and you won't be asked to. Read the Guidelines for Guardians to Unite alongside this brief for the fuller picture of how deployment actually works, logistics included.

Who can apply: You can apply as a single person, a company, or a team — whatever shape your work actually takes. If more than one submission ends up solving the same piece of this puzzle, we'd rather introduce you to each other than make you compete: this is about uniting the right people around Ava, not picking a lone winner.

1. SYSTEM PLACEMENT & ROLE

Where This Sits: The sensing and living body of the sea. Connects Woodlark Island to outer atolls, the Louisiade Archipelago, and mainland Alotau across a roughly 24,000 km² marine estate in the Solomon Sea — the Murua zone staging out of Woodlark, the Louisiade zone centered near Misima, and the Bwanabwana atolls linking out to Alotau.

Core Mission: Deploy zero-fossil-fuel solar-kinetic catamarans, small-craft conversion kits, submerged reef and mangrove telemetry, sustainable fisheries infrastructure, reserve patrol systems, and local maintenance and training hubs across the district — without imported fossil fuel or fabricating vessels on Woodlark itself.

Integration Rule: Every vessel, conversion kit, and submerged pod embeds revenue-grade meters executing hardware-locked edge hashing, streaming telemetry through Mina Kula's tactical mesh and satellite backhaul to the central dual-node dashboard.

2. WOODLARK ISLAND: WHAT YOU'RE ACTUALLY DESIGNING FOR

A real starting point, not the whole picture — go do your own deeper research from here. Facts below are sourced from public geographic and climate records; anything marked as an estimate is exactly that.

Geography. Woodlark Island is roughly 60km east-west and 30km north-south at its center, in the Solomon Sea, part of Milne Bay Province, centered around 9.13°S, 152.81°E. Highest point is Mount Kabat at 240m. The island's own name is Muyuw, also called Murua.

Population & settlements. No formal census has been taken since 1990; an unofficial estimate puts the island's population around 6,000 today, spread thin. Kulumadau is the largest settlement, Guasopa second — Guasopa also holds the island's health centre, currently 9 health workers covering roughly 6,000 people across Woodlark and the surrounding islands. There is one primary school, in Kulumadau; every child leaves for Alotau to attend secondary school.

Climate. Warm and humid year-round, roughly 21–34°C. Wet season runs January through March, peaking in March. Southeast trade winds dominate the drier stretch, roughly May through November. Cyclone and tropical storm risk concentrates December through March.

Access. The route in runs through Alotau, Milne Bay Province's capital, then by sea to Woodlark — roughly 155–160 nautical miles by straight-line estimate; no verified figure exists for actual sea-route distance or travel time, so treat this as a rough planning estimate, not a fixed number.

3. THE TECHNICAL BASELINE

These fall into two tiers. A small number are hard constraints, marked [HARD CONSTRAINT] below — they protect physical safety or the project's core environmental commitments, not architecture, and admit no exceptions. Everything else here is the reference bar for meeting each field challenge, not the only acceptable answer: if your team has a genuinely better way to solve the same problem, propose it. This challenge is evaluated on what actually works in the field, not on matching this document line for line.

- **Intake-Less Closed-Loop Skin Thermal Management**: Vessels operating in pumice-dense volcanic waters route propulsion, battery, and auxiliary system cooling through sealed structural micro-channels built into the hull skin itself, dissipating heat passively into the surrounding ocean. No raw seawater is drawn into the vessel, eliminating impeller damage and clogged heat exchangers from floating pumice — this is the reference approach, not the only way to solve pumice-fouling; propose a better one if you've got it.
- **Sacrificial Waterline Abrasion Boundary**: Forward bows and active waterlines carry a flush-mounted, field-replaceable abrasion track absorbing impact from floating volcanic pumice rafts, swappable during operational stops without dry-docking.
- **Zero Fossil Fuel Propulsion** — **[HARD CONSTRAINT]**: No diesel or petrol engines anywhere in the fleet, including the small craft this replaces — the high-emission two-stroke outboards currently used for inter-island transit and patrol.
- **Multi-Source Power Generation**: Propulsion and auxiliary systems draw from more than one independent generation source — solar deck skins, hydro-kinetic hull turbines, and/or rainwater catchment micro-turbines are the reference stack — so no single weather condition leaves a vessel without power.
- **Non-Flammable Energy Storage** — **[HARD CONSTRAINT]**: Sodium-ion or flow-battery (VRFB) chemistry only. No lithium enters the fleet, including solid-state variants that are still lithium-based — the same fire-safety baseline as every other track.
- **Revenue-Grade DC Bus-Bar Telemetry**: Digital meter modules embedded directly on primary DC distribution bus-bars and charging regulators, measuring exact kWh generation and compressing data with hardware-locked signatures and UTC timestamps before satellite transmission.

- **Local Revenue Kept Separate From the Carbon Loop**: Physical local revenue — passenger fares, cargo tariffs — is tracked separately from carbon-verification data and reinvested in local operations and maintenance. Specific split terms are set out in individual engagement agreements, not fixed in this brief.
- **Working With Customary Land**: Free, Prior and Informed Consent with the registered customary landowners is led by Lyndax Global and the Samarai-Murua District Development Authority, as a real, ongoing relationship — it isn't something your submission needs to demonstrate or secure yourself, and you won't be asked to. Vessel routes, patrol patterns, and monitoring sites should be designed to respect traditional marine tenure, not assume unrestricted access.
- **Field Durability, Anti-Theft & Ease of Use** — **[HARD CONSTRAINT]**: Anything deployed unattended in the field is built to survive years without regular maintenance, resist tampering or theft, and stay simple enough not to fail from ordinary misuse — this district is genuinely isolated, and a fragile or easily-defeated unit doesn't help anyone. This is about the real outcome (long unattended service life, tamper resistance, hard to get wrong), not a specific named spec like ‘military grade’: propose whatever achieves that outcome.

4. THE EIGHT SUB-CHALLENGES — ONE BACKBONE

3.1

Volcanic-Hardened Tri-Source Catamarans & Maritime Transit Insetting

THE FIELD CHALLENGE

Inter-island transit and eco-ranger patrols around Woodlark currently rely on high-emission petrol "banana boats" that pollute marine reserves and burn expensive fossil fuel. Floating volcanic pumice rafts and marine debris shred standard outboard impellers and clog raw seawater cooling intakes, leaving patrol teams stranded mid-transit. Solar-electric catamarans at this general scale are already a real, commercially built category, not speculative technology — the diagram below includes general market ranges (solar capacity, battery storage, cruise speed) for context on what's already achievable.

REFERENCE STANDARDS

- Closed-loop skin cooling and sacrificial abrasion track, per the universal baseline — this is proven marine engineering (keel cooling has been standard on commercial vessels since the 1940s), not experimental
- Multi-source power generation feeding non-lithium storage — solar and hydro-kinetic generation are both established; a dedicated stand-alone hydro-kinetic turbine specifically is the newer piece of this stack, so validate it or propose a better-proven alternative if you've got one
- Embedded revenue-grade DC meters enabling verified Maritime Transit Insetting (Asset Class 5, under CPA 2 / CDM AMS-III.C, transitioning to VM0059) as fossil outboards are displaced

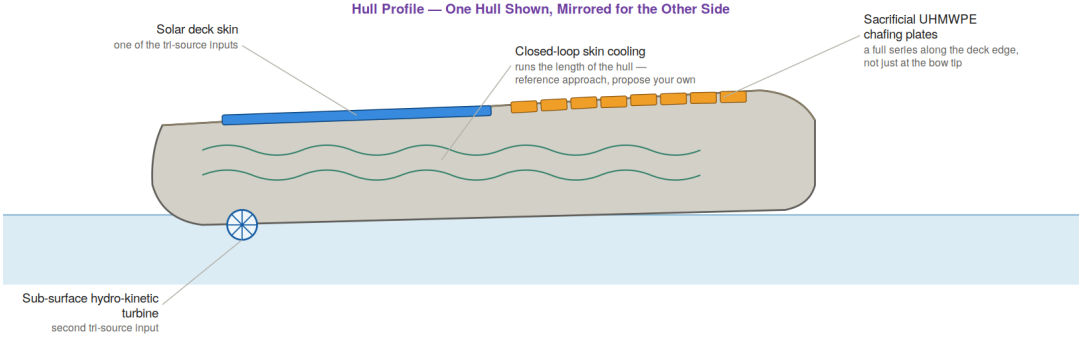
WHO SHOULD APPLY

Naval architects, marine propulsion engineers, composite fabrication specialists.

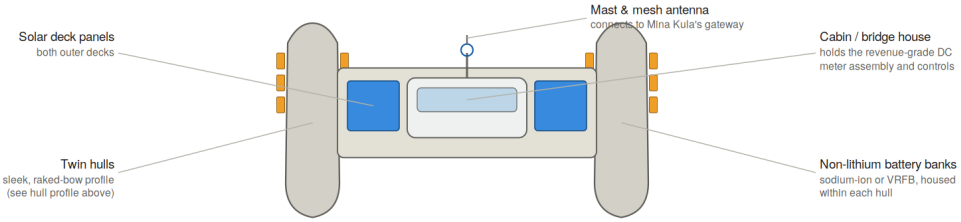
The Tri-Source Catamaran

Illustrative guideline only — one way to build this, not the only way

Hull Profile — One Hull Shown, Mirrored for the Other Side



Twin-Hull Configuration — Viewed From Above



Third tri-source input: rainwater catchment micro-turbines (sited on the upper deck, not pictured).

Zero fossil fuel propulsion anywhere in the fleet.

What's Already Being Built — Real-World Calibration

General market ranges for solar-electric catamarans at comparable scale — for context, not a fixed target

Hull Size	Solar Capacity	Battery Storage	Cruise Speed
Small (≈35–40 ft)	≈8–9 kWp	≈100–140 kWh	≈8 knots
Mid (≈45–50 ft)	≈3–9 kWp	≈70–140 kWh	≈10–18 knots
Large (≈55–65 ft)	≈15–18 kWp	≈280–560 kWh	≈10–14 knots

Solar-electric catamarans at this scale are already a real, commercially built category — these ranges are what's already been achieved, not a locked target. Closed-loop hull cooling is likewise proven marine engineering (in use commercially since the 1940s), not experimental — the dedicated hydro-kinetic turbine is the newer piece here, worth validating or proposing an alternative for.

3.2

Small-Craft Solar-Kinetic Retrofit Kits

THE FIELD CHALLENGE

The actual daily heartbeat of inter-island and atoll travel runs on thousands of privately owned small boats, powered by carbon-heavy, expensive two-stroke petrol outboards — not the big catamarans. Converting the fleet that already exists matters as much as building a new one.

REFERENCE STANDARDS

- A modular, open-access electrification kit combining a durable solar canopy attachment and an efficient electric long-tail or pod drive
- Sized for standard local watercraft, for shorter atoll-to-atoll journeys rather than the catamaran's longer transit routes

WHO SHOULD APPLY

EV conversion mechanics, retrofitting engineers, marine electrical technicians, low-power propulsion designers.

3.3

Submerged Reef Sentinel Pods & AUV Robotics

THE FIELD CHALLENGE

Alluvial gold mining siltation, distant-water overfishing, and pelagic pumice smothering threaten Guasopa Bay's living reef. Continuous underwater monitoring in salt water destroys standard consumer electronics within a season.

REFERENCE STANDARDS

- Fixed, low-maintenance submerged units carrying optical cameras and LiDAR payloads
- Autonomous surface vehicles (ASVs) and underwater robotics (AUVs) for coral cover and fish stock telemetry, reporting via the tactical mesh and satellite backhaul

WHO SHOULD APPLY

Marine roboticists, underwater optical engineers, marine biologists, blue-carbon specialists.

3.4

Bio-Composite Non-Timber Canoes

THE FIELD CHALLENGE

Traditional canoe building — a vital cultural practice — currently requires felling old-growth rainforest trees, putting conservation goals in direct conflict with native heritage.

REFERENCE STANDARDS

- Preserve traditional clan canoe hull designs using bio-composite, recycled-material, or geopolymer-compatible construction
- Eliminate tree-felling completely while preserving traditional sailing physics and navigation aesthetics

WHO SHOULD APPLY

Naval architects, composite fabrication engineers, master traditional canoe builders.

3.5

Mangrove & Blue Carbon Restoration Systems

THE FIELD CHALLENGE

Coastal mangroves and seagrass beds are degrading from siltation and unregulated fishing, threatening the blue-carbon credit pipeline this whole programme depends on.

REFERENCE STANDARDS

- Nursery, planting, and acoustic monitoring systems for mangrove and blue-carbon restoration
- Must satisfy Verra VM0033 (Tidal Wetland and Seagrass Restoration) methodology requirements

WHO SHOULD APPLY

Mangrove restoration specialists, marine ecologists, blue-carbon methodology experts.

3.6

Sustainable Fisheries, Aquaculture & Off-Grid Cold Storage

THE FIELD CHALLENGE

Zoning reefs for conservation without providing alternative protein sources breeds local resentment or simply shifts fishing pressure elsewhere. And a smaller, sustainable catch still needs to actually reach people before it spoils — right now, it often doesn't.

REFERENCE STANDARDS

- Off-grid, atoll-appropriate aquaculture and sustainable catch systems that provide community food security without competing with protected reef zones
- Off-grid freezer or cold-storage capability for fishermen, so a sustainable catch goes further and doesn't spoil before it reaches anyone — real food security and livelihood value without needing a bigger catch

WHO SHOULD APPLY

Aquaculture engineers, fisheries scientists, marine food-security technologists, off-grid refrigeration engineers.

3.7

Eco-Ranger Marine Custody & Patrol Systems

THE FIELD CHALLENGE

The marine reserve faces real pressure from illegal fishing and unauthorised petrol craft entering protected zones. Right now there's no zero-emission way for local eco-rangers to patrol, monitor, and report it.

REFERENCE STANDARDS

- Zero-emission ranger patrol vessels, built to the same propulsion and hardening baseline as everything else in this track
- Geofenced monitoring that reports intrusion signatures back to Mina Kula's ledger — this is about visibility and reporting, not armed interception

WHO SHOULD APPLY

Systems engineers, maritime logistics experts, geofencing software developers, marine patrol vessel designers.

3.8

Vessel Maintenance & Training Hub

THE FIELD CHALLENGE

Vessels are built at applicants' own shipyards, not fabricated on Woodlark — but a damaged hull 20km from anywhere cannot wait for a shipyard visit, and high-tech vessels fail within years if no one local can service them. The district needs a real repair and training facility, not a factory.

REFERENCE STANDARDS

- Working maintenance yard at Guasopa and Bwagoia capable of servicing (not constructing) skin-cooled solar-kinetic catamarans and small-craft retrofit kits — hull repair, thermal system servicing, abrasion-track replacement
- A genuine training pathway into paid local maintenance and technician roles, not a facility staffed entirely from outside

WHO SHOULD APPLY

Marine maintenance engineers, naval architects with field-service experience, vocational trainers.

5. WHAT TO SUBMIT

Teams applying to Mina Tawali upload to lyndax.org:

- **Naval Engineering or Conversion Package** — hull CAD, CFD thermal cooling analysis, structural abrasion-track schematics, or electrical retrofitting diagrams — whichever fits your challenge.
- **Power & Telemetry Plan** — how generation components capture energy and how edge meters package data for mesh uplink.

- **Proof-of-Concept Evidence** — in whatever form best reflects where your team actually is — a working prototype, a bench-tested subsystem, evidence of a prior deployment, or a detailed feasibility case with supporting calculations. A polished video is welcome but not required.
- **Rough Cost Estimate** — an order-of-magnitude budget for the specific challenge(s) you're addressing — not a binding quote. Early-stage teams can give a range; further-along teams can be more precise. This helps us plan against something real instead of guessing.

6. HOW THIS IS EVALUATED

Submissions are scored on three equal pillars:

- **Technical Integrity** — Does it meet the technical baseline — either as written, or with a genuinely better alternative?
- **Integration Readiness** — Does it plug cleanly into the rest of the build?
- **Guardian Spirit** — Was this built with real reverence for the saltwater, the reefs, and the clans who skipper these waves — not just to satisfy the spec sheet?

7. INTELLECTUAL PROPERTY

Any technology or intellectual property you bring into this challenge remains yours. What gets built specifically for this project is licensed to Lyndax Global and the Samarai-Murua District Development Authority for use here — not assigned, not sold, not owned by us. If your technology's use ever expands beyond this initial deployment, those terms will be set out clearly in your individual contract once you're selected — never assumed from this brief.

Questions or more detail before you submit? Reach Mina Tawali directly at tawali@lyndax.org.

This is a first-of-its-kind deployment, and this brief is a challenge document, not the final build — specifications are a starting point for direct engagement with applicant teams, not a fixed spec to execute silently. Full disclaimers and engagement terms are set out in the Guidelines for Guardians to Unite and the Eligibility & Disclaimers document. Submissions close 11 September 2026, 6:00pm Singapore time.

LYNDAX GLOBAL | REAL-WORLD DEPLOYMENT BRIEF

TRACK BRIEF 02: MINA VALU — People of the Land & Soil Ancestry

Phase 1 Deployment: Woodlark (Murua) Island | Release: 9 August 2026

Complete Track Brief — all 9 challenges

CHALLENGE AT A GLANCE

Objective: Design off-grid, cement-free, regenerative living infrastructure for logging-scarred island land — housing, power, and water that a scattered village can actually run.

Technical Baseline: Geopolymer 3D-printing (no imported cement), a two-part totem system (forest sentinel + village power/water unit), non-lithium storage.

Required Deliverables: Design package, material approach, energy/water concept, telemetry integration plan, and proof-of-concept evidence in whatever form fits your team's stage.

A note before you read further: everything below is one way to solve this challenge, not the only way. It's meant to show you the shape of the problem clearly enough to work with, not to box you into a single design. Bring your own research, your own expertise, and tell us plainly what extra value your approach adds beyond what's written here — that's genuinely welcome, not a deviation to explain away. This is also a challenge, not the finished deployment: some things that belong to the real, on-the-ground project — like securing consent from customary landowners — aren't yours to demonstrate at this stage, and you won't be asked to. Read the Guidelines for Guardians to Unite alongside this brief for the fuller picture of how deployment actually works, logistics included.

Who can apply: You can apply as a single person, a company, or a team — whatever shape your work actually takes. If more than one submission ends up solving the same piece of this puzzle, we'd rather introduce you to each other than make you compete: this is about uniting the right people around Ava, not picking a lone winner.

1. SYSTEM PLACEMENT & ROLE

Where This Sits: The living body of the land. Carries the physical infrastructure — housing, water, power, food, health, education, sanitation, and waste-to-energy.

Core Mission: Design off-grid 3D-printed housing, the two totem types that power and monitor the district, atmospheric water generation, clean cooking, and e-health/e-learning pods across Woodlark Island — without imported cement and without touching standing primary forest.

Integration Rule: Microgrid meters, water-generation sensors, and clinic/school telemetry all stream through Mina Kula's tactical mesh to the central dashboard. Verification itself is Mina Kula's job — Valu generates and feeds the data, it doesn't run a second ledger.

2. WOODLARK ISLAND: WHAT YOU'RE ACTUALLY DESIGNING FOR

A real starting point, not the whole picture — go do your own deeper research from here. Facts below are sourced from public geographic and climate records; anything marked as an estimate is exactly that.

Geography. Woodlark Island is roughly 60km east-west and 30km north-south at its center, in the Solomon Sea, part of Milne Bay Province, centered around 9.13°S, 152.81°E. Highest point is Mount Kabat at 240m. The island's own name is Muyuw, also called Murua.

Population & settlements. No formal census has been taken since 1990; an unofficial estimate puts the island's population around 6,000 today, spread thin. Kulumadau is the largest settlement, Guasopa second — Guasopa also holds the island's health centre, currently 9 health workers covering roughly 6,000 people across Woodlark and the surrounding islands. There is one primary school, in Kulumadau; every child leaves for Alotau to attend secondary school.

Climate. Warm and humid year-round, roughly 21–34°C. Wet season runs January through March, peaking in March. Southeast trade winds dominate the drier stretch, roughly May through November. Cyclone and tropical storm risk concentrates December through March.

Access. The route in runs through Alotau, Milne Bay Province's capital, then by sea to Woodlark — roughly 155–160 nautical miles by straight-line estimate; no verified figure exists for actual sea-route distance or travel time, so treat this as a rough planning estimate, not a fixed number.

3. THE TECHNICAL BASELINE

A small number of things here are genuinely non-negotiable, marked [HARD CONSTRAINT] — both are things your design fully controls, not permissions someone else has to grant. Everything else is the reference bar for meeting the challenge, not the only acceptable answer: if you've got a genuinely better way to solve the same problem, bring it. This is evaluated on what would actually work on Woodlark, not on matching this document line for line.

- **Cement-Free Construction** — **[HARD CONSTRAINT]**: No imported Portland cement, anywhere. Structural 3D printing and foundations use local, recycled material — dredged river silt or volcanic sand as the binder — instead.
- **Non-Flammable Energy Storage** — **[HARD CONSTRAINT]**: Sodium-ion or flow-battery (VRFB) chemistry only. No lithium anywhere in the microgrid — the same fire-safety baseline as every other track.
- **Working With Customary Land**: Free, Prior and Informed Consent with the registered customary landowners is led by Lyndax Global and the Samarai-Murua District Development Authority, as a real, ongoing relationship — it isn't something your submission needs to demonstrate or secure yourself, and you won't be asked to. What we're actually looking for is a design that can adapt to what that process determines: flexible siting, modular scale, the ability to move or resize if a specific location changes. Design for that reality, not around a permission you don't have standing to obtain.
- **Field Durability, Anti-Theft & Ease of Use** — **[HARD CONSTRAINT]**: Anything deployed unattended in the field is built to survive years without regular maintenance, resist tampering or theft, and stay simple enough not to fail from ordinary misuse — this district is genuinely isolated, and a fragile or easily-defeated unit doesn't help anyone. This is about the real outcome (long unattended service life, tamper resistance, hard to get wrong), not a specific named spec like ‘military grade’: propose whatever achieves that outcome.

4. THE NINE SUB-CHALLENGES — ONE BACKBONE

2.1

Cement-Free Housing & the Lifestyle Dividend Block

THE FIELD CHALLENGE

Standard construction out here relies on imported Portland cement, which is expensive and slow to ship at any real scale, and works against the project's whole carbon logic. The challenge: 3D-print cyclone-resilient,

comfortable homes directly on already-scarred land, without imported cement.

REFERENCE STANDARDS

- A geopolymer mix using recycled glass, dredged river silt, or local volcanic ash as the binder, in whatever ratio you can justify
- Delivered under the Lifestyle Dividend Block: customary landowners hold permanent, non-revocable occupancy rights to the home itself
- Built to withstand severe tropical cyclones

WHO SHOULD APPLY

3D printing specialists, structural/materials engineers, geopolymer architects.

2.2

The Forest Sentinel Totem

THE FIELD CHALLENGE

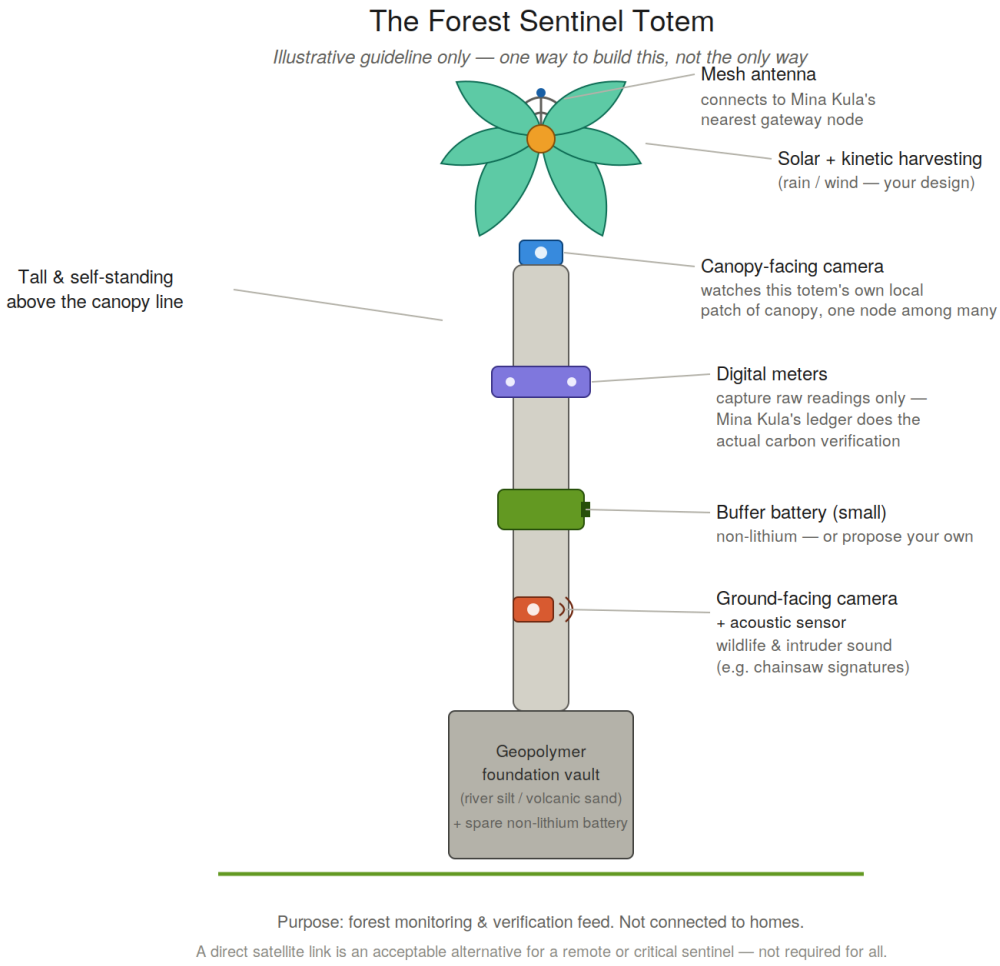
Isolated hamlets across Woodlark have no grid power and no way to monitor what's happening in the forest around them. The challenge: a tall, self-powered totem that stands above the canopy, watches over its own patch of forest, and never needs anyone to visit and recharge it. A district-wide picture comes from many of these working together, sector by sector — not from any single totem seeing everything.

REFERENCE STANDARDS

- Tall and structurally stable enough to stand alone above the canopy line, printed from the same cement-free material as the housing
- Self-powered — solar panels plus some form of kinetic harvesting (rain, wind, whatever your design makes work) feeding a small non-lithium buffer battery, with a spare non-lithium battery held in the foundation vault; propose your own storage layout if you've got a better one
- Two distinct sensor packages, not one: a canopy-facing camera watching this totem's own local patch of forest, and a separate ground-facing camera plus acoustic sensor picking up wildlife and intruder sound — chainsaw signatures included
- Connects to Mina Kula's nearest gateway over the tactical mesh, which carries the actual satellite link — a direct satellite terminal on the totem itself is a reasonable alternative for an especially remote or critical sentinel, not a requirement for every one
- Digital meters capture raw readings only; Mina Kula's ledger is where that data actually becomes verified carbon accounting

WHO SHOULD APPLY

Renewable energy specialists, structural engineers, sensor-fusion designers.



2.3

The Village Totem & Home Microgrid

THE FIELD CHALLENGE

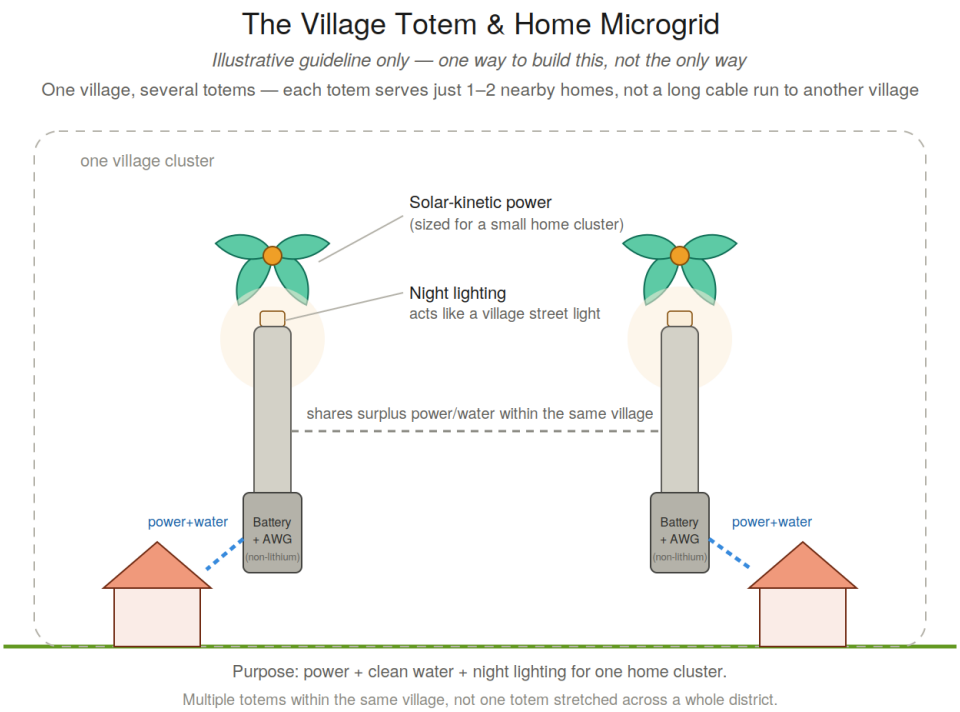
A single family's home still needs power and clean water even without a grid reaching it. The challenge: a shorter totem — doesn't need forest-canopy height — that brings both to just one or two nearby homes. A village genuinely has several of these, not one totem stretched across the whole cluster, since homes and villages here sit too far apart to run cable between them.

REFERENCE STANDARDS

- Non-lithium battery, atmospheric water generation, and solar-kinetic power sized for one or two homes, not a whole forest sentinel — propose your own design if you've got a better one
- Doubles as village lighting at night, the way a street light would — a small, genuinely useful extra given the totem's already generating and storing power after dark
- Designed to share surplus power or water with neighbouring totems within the same village — not across the distance to another village — the exact linking method is yours to propose
- Every totem streams its own generation and water data into Mina Kula's ledger in real time

WHO SHOULD APPLY

Microgrid engineers, power electronics designers, water systems engineers.



2.4

Closed-Loop Pyrolysis & Clean Household Energy

THE FIELD CHALLENGE

Households currently cook over open firewood, which drives local deforestation and serious respiratory illness, while coconut husk and cacao waste get burned for lack of anything better to do with them.

REFERENCE STANDARDS

- A pyrolysis or gasifier unit turning organic waste, crop residue, and husks into biochar and clean cooking gas
- Zero primary or protected forest biomass in the feedstock, ever

WHO SHOULD APPLY

Pyrolysis/gasification engineers, clean-cooking technologists, waste-to-energy developers.

2.5

Coconut & Cacao Circular Economy Hub

THE FIELD CHALLENGE

Coconut husk gets burned as waste, and raw cacao has no local processing, so farmers export raw beans for a fraction of what they're actually worth.

REFERENCE STANDARDS

- A processing hub combining copra handling and cacao fermentation, feeding waste directly into the pyrolysis loop rather than being burned separately

WHO SHOULD APPLY

Agritech engineers, food-processing equipment specialists, circular economy developers.

2.6

Cyclone-Resilient Controlled Agrofarming

THE FIELD CHALLENGE

Cyclones and volcanic ashfall periodically wipe out subsistence crops, leaving communities dependent on emergency supply until the next harvest comes in.

REFERENCE STANDARDS

- Off-grid, solar-powered hydroponic or controlled-environment growing modules built to survive cyclone damage and ashfall
- Water and nutrient use metered and linked back to Mina Kula's telemetry

WHO SHOULD APPLY

Agritech engineers, controlled-environment agriculture specialists.

2.7

Off-Grid AI-Triaged E-Medical & E-Learning Pods

THE FIELD CHALLENGE

Remote islanders currently have no real access to primary healthcare or secondary education.

REFERENCE STANDARDS

- Off-grid, solar-powered, satellite-linked clinic and learning pods attached to housing clusters
- Diagnostic data sent, with consent, to partner medical and educational networks via the Sinabada Hub

WHO SHOULD APPLY

Medtech engineers, telehealth platform developers, edtech specialists.

2.8

Closed-Loop Sanitation & Off-Grid Water Systems

THE FIELD CHALLENGE

No sanitation infrastructure means polluted groundwater, and the outer atolls are too dry for atmospheric water generation to work well on its own.

REFERENCE STANDARDS

- Composting toilets or plasma sanitation treating waste on-site, converting it into syngas and inert biochar
- A hybrid water approach — atmospheric generation where humidity allows, small-scale desalination or rainwater harvesting where it doesn't

WHO SHOULD APPLY

Sanitation engineers, water treatment specialists, desalination engineers.

2.9

Vocational Training & Maker-Space Hub

THE FIELD CHALLENGE

High-tech infrastructure fails within a few years if nobody local is trained to fix it.

REFERENCE STANDARDS

- A fab-lab and training curriculum turning clan members into paid eco-rangers, printer operators, and utility technicians
- A real handover path — not a facility permanently staffed from outside

WHO SHOULD APPLY

Vocational education designers, fab-lab specialists, technical trainers.

5. WHAT TO SUBMIT

Teams applying to Mina Valu upload to lyndax.org:

- **Design Package** — your structural approach, material mix reasoning, and energy/water concept — CAD/BIM if you have it, clear sketches and calculations if you don't yet.
- **Telemetry Handoff Notes** — how your microgrid, water generation, or pyrolysis metrics would interface with Mina Kula's tactical mesh.
- **Proof-of-Concept Evidence** — in whatever form best reflects where your team actually is — a working prototype, a bench-tested subsystem, evidence of a prior deployment, or a detailed feasibility case with supporting calculations. A polished video is welcome but not required.
- **Rough Cost Estimate** — an order-of-magnitude budget for the specific challenge(s) you're addressing — not a binding quote. Early-stage teams can give a range; further-along teams can be more precise. This helps us plan against something real instead of guessing.

6. HOW THIS IS EVALUATED

Submissions are scored on three equal pillars:

- **Technical Integrity** — Does it meet the technical baseline — either as written, or with a genuinely better alternative?
- **Integration Readiness** — Does it plug cleanly into the rest of the build?
- **Guardian Spirit** — Was it designed for the clans, not just the spec sheet?

7. INTELLECTUAL PROPERTY

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Questions or more detail before you submit? Reach Mina Valu directly at valu@lyndax.org.

This is a first-of-its-kind deployment, and this brief is a challenge document, not the final build — specifications are a starting point for direct engagement with applicant teams, not a fixed spec to execute silently. Full disclaimers and engagement terms are set out in the Guidelines for Guardians to Unite and the Eligibility & Disclaimers document. Submissions close 11 September 2026, 6:00pm Singapore time.

LYNDAX GLOBAL | REAL-WORLD DEPLOYMENT BRIEF

TRACK BRIEF 04: MINA YAGUMA — People of the Upper Winds & Sky

Phase 1 Deployment: Woodlark (Murua) Island | Release: 9 August 2026

Complete Track Brief — all 4 challenges

CHALLENGE AT A GLANCE

Objective: Build zero-emission aerial logistics, heavy-lift canopy deployment drones, aerial mesh relays, and hydrogen-electric inter-island air corridors.

Technical Baseline: Zero-fossil-fuel propulsion, hardware-locked flight telemetry, edge-AI canopy analytics, MANET-class aerial mesh extension, geopolymer landing infrastructure, non-lithium charging.

Required Deliverables: Aircraft/UAV CAD schematics, flight control software architecture, sensor telemetry plan, and proof-of-concept evidence in whatever form fits your team's stage.

A note before you read further: everything below is one way to solve this challenge, not the only way. It's meant to show you the shape of the problem clearly enough to work with, not to box you into a single design. Bring your own research, your own expertise, and tell us plainly what extra value your approach adds beyond what's written here — that's genuinely welcome, not a deviation to explain away. This is also a challenge, not the finished deployment: some things that belong to the real, on-the-ground project — like securing consent from customary landowners — aren't yours to demonstrate at this stage, and you won't be asked to. Read the Guidelines for Guardians to Unite alongside this brief for the fuller picture of how deployment actually works, logistics included.

Who can apply: You can apply as a single person, a company, or a team — whatever shape your work actually takes. If more than one submission ends up solving the same piece of this puzzle, we'd rather introduce you to each other than make you compete: this is about uniting the right people around Ava, not picking a lone winner.

1. SYSTEM PLACEMENT & ROLE

Where This Sits: Moves between land and sea to carry payloads, medical supplies, environmental sensors, and personnel.

Core Mission: Establish zero-emission hydrogen-electric/eVTOL flight corridors, deploy heavy-lift drones that carry Mina Valu's Forest Sentinel Totems into position, extend the tactical mesh over terrain dead zones by air, and execute edge-AI forest density LiDAR mapping across Woodlark Island.

Integration Rule: Every drone and aircraft embeds hardware-locked telemetry processors executing edge hashing, streaming flight logs and canopy metrics through Mina Kula's tactical mesh and satellite backhaul to the central dual-node dashboard.

2. WOODLARK ISLAND: WHAT YOU'RE ACTUALLY DESIGNING FOR

A real starting point, not the whole picture — go do your own deeper research from here. Facts below are sourced from public geographic and climate records; anything marked as an estimate is exactly that.

Geography. Woodlark Island is roughly 60km east-west and 30km north-south at its center, in the Solomon Sea, part of Milne Bay Province, centered around 9.13°S, 152.81°E. Highest point is Mount Kabat at 240m. The island's own name is Muyuw, also called Murua.

Population & settlements. No formal census has been taken since 1990; an unofficial estimate puts the island's population around 6,000 today, spread thin. Kulumadau is the largest settlement, Guasopa second — Guasopa also holds the island's health centre, currently 9 health workers covering roughly 6,000 people across Woodlark and the surrounding islands. There is one primary school, in Kulumadau; every child leaves for Alotau to attend secondary school.

Climate. Warm and humid year-round, roughly 21–34°C. Wet season runs January through March, peaking in March. Southeast trade winds dominate the drier stretch, roughly May through November. Cyclone and tropical storm risk concentrates December through March.

Access. The route in runs through Alotau, Milne Bay Province's capital, then by sea to Woodlark — roughly 155–160 nautical miles by straight-line estimate; no verified figure exists for actual sea-route distance or travel time, so treat this as a rough planning estimate, not a fixed number.

3. THE TECHNICAL BASELINE

These fall into two tiers. A small number are hard constraints, marked [HARD CONSTRAINT] below — they protect physical safety or the project's core environmental commitments, not architecture, and admit no exceptions. Everything else here is the reference bar for meeting each field challenge, not the only acceptable answer: if your team has a genuinely better way to solve the same problem, propose it. This challenge is evaluated on what actually works in the field, not on matching this document line for line.

- **Zero-Fossil-Fuel Propulsion** — **[HARD CONSTRAINT]**: All UAVs, eVTOLs, fixed-wing STOL, and amphibious aircraft run strictly on solar, kinetic, or green hydrogen-electric powertrains. No fossil combustion anywhere in the fleet.
- **Hardware-Locked Flight & CORSIA Telemetry**: Aircraft electrical buses and fuel-cell regulators integrate revenue-grade digital meters. Flight path, altitude, payload weight, distance flown, and energy consumption are cryptographically hashed with device MAC addresses and UTC timestamps, streaming to Mina Kula's dashboard in a form that supports ICAO CORSIA-aligned aviation reporting.
- **Edge-AI Canopy Analytics**: Survey drones carrying optical/LiDAR arrays process imagery on localized neural networks, classifying environmental degradation versus seasonal canopy change so only high-value data crosses the satellite link.
- **Aerial Mesh Extension**: Tethered or long-endurance solar aerial relays extend Mina Kula's tactical mesh over terrain the ground network can't reach — Woodlark's mountain ridges create real dead zones ground relays alone can't solve.
- **Geopolymer Landing Infrastructure** — **[HARD CONSTRAINT]**: All airstrips, drone charging pads, and water-landing piers are built jointly with Mina Valu using cement-free geopolymer materials, on land already scarred by logging. No primary forest clearing.
- **Non-Lithium Ground Charging** — **[HARD CONSTRAINT]**: Drone charging hubs and airstrip microgrids run strictly on sodium-ion or VRFB storage, or green hydrogen fuel cells. No lithium thermal-runaway risk anywhere in the ground infrastructure.
- **Airspace Corridor Reservation**: Flight paths integrate with the same GIS corridor-reservation work described in Mina Kula's brief — sea lanes, air corridors, and sacred-zone boundaries reserved now, ahead of the full real-time coordination hub, which is deferred until traffic volume actually justifies building it.
- **Working With Customary Land**: Free, Prior and Informed Consent with the registered customary landowners is led by Lyndax Global and the Samarai-Murua District Development Authority, as a real,

ongoing relationship — it isn't something your submission needs to demonstrate or secure yourself, and you won't be asked to. Flight corridors and landing infrastructure should be designed to route around sacred sites and adapt to what that process determines, not assume unrestricted airspace.

- **Field Durability, Anti-Theft & Ease of Use** — **[HARD CONSTRAINT]**: Anything deployed unattended in the field is built to survive years without regular maintenance, resist tampering or theft, and stay simple enough not to fail from ordinary misuse — this district is genuinely isolated, and a fragile or easily-defeated unit doesn't help anyone. This is about the real outcome (long unattended service life, tamper resistance, hard to get wrong), not a specific named spec like ‘military grade’: propose whatever achieves that outcome.

4. THE FOUR SUB-CHALLENGES — ONE BACKBONE

4.1

Heavy-Lift Sentinel Deployment Drones

THE FIELD CHALLENGE

Dropping Mina Valu's Forest Sentinel Totems into Woodlark's dense interior forest can't be done by foot or road without cutting a path through the exact canopy the sentinels exist to protect.

REFERENCE STANDARDS

- Autonomous heavy-lift cargo drones capable of air-dropping self-powered sensor totems into pinpoint forest locations
- Integrated multispectral LiDAR running edge AI to verify canopy density and confirm a safe drop zone before releasing payload

WHO SHOULD APPLY

Heavy-lift UAV engineers, remote-sensing specialists, flight control software developers.

4.2

Tethered & High-Altitude Aerial Mesh Relays

THE FIELD CHALLENGE

Mountainous interior ridges on Woodlark block ground-based mesh radio signals, isolating interior sentinels from the rest of the network.

REFERENCE STANDARDS

- Tethered or long-endurance solar aerial relays extending Mina Kula's tactical mesh coverage over terrain dead zones
- Rated for continuous operation through tropical storm conditions, not just fair-weather deployment

WHO SHOULD APPLY

RF payload engineers, tethered drone developers, aerospace communications specialists.

4.3

Zero-Emission Inter-Island Air Mobility (STOL / eVTOL)

THE FIELD CHALLENGE

Moving emergency medical patients, eco-rangers, or technical specialists between Woodlark, Misima, and Alotau currently takes days on dangerous open-water boats.

REFERENCE STANDARDS

- Hydrogen-electric short-takeoff-and-landing (STOL) or amphibious aircraft capable of island-hopping ranges, landing on water or short geopolymer strips
- Flight routing logic that prioritizes emergency medical evacuation and eco-ranger patrol routes over standard transit

WHO SHOULD APPLY

Aerospace engineers, hydrogen-electric powertrain specialists, amphibious aircraft designers.

4.4

Autonomous Drone Fleet Coordination & Non-Lithium Charging Hubs

THE FIELD CHALLENGE

A fleet of drones operating in remote island terrain with no automated charging system is grounded after a single mission.

REFERENCE STANDARDS

- Fleet coordination software paired with renewable solar/hydrogen charging stations deployed at Guasopa HQ
- Automated battery-swapping or fast-charging integrated with the non-lithium ground microgrid

WHO SHOULD APPLY

Fleet management software engineers, automated charging infrastructure designers.

5. WHAT TO SUBMIT

Teams applying to Mina Yaguma upload to lyndax.org:

- **Aeronautical & Systems Package** — aircraft/UAV CAD schematics, powertrain energy calculations, and edge-AI computer vision algorithms.
- **Telemetry Handoff Matrix** — direct mapping showing how flight logs, LiDAR outputs, and power metrics interface with Mina Kula's tactical mesh and dashboard.
- **Proof-of-Concept Evidence** — in whatever form best reflects where your team actually is — a working prototype, a bench-tested subsystem, evidence of a prior deployment, or a detailed feasibility case with supporting calculations. A polished video is welcome but not required.
- **Rough Cost Estimate** — an order-of-magnitude budget for the specific challenge(s) you're addressing — not a binding quote. Early-stage teams can give a range; further-along teams can be more precise. This helps us plan against something real instead of guessing.

6. HOW THIS IS EVALUATED

Submissions are scored on three equal pillars:

- **Technical Integrity** — Does it meet the technical baseline — either as written, or with a genuinely better alternative?
- **Integration Readiness** — Does it plug cleanly into the rest of the build?
- **Guardian Spirit** — Was it designed for the clans, not just the spec sheet?

7. INTELLECTUAL PROPERTY

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deployment, those terms will be set out clearly in your individual contract once you're selected — never assumed from this brief.

Questions or more detail before you submit? Reach Mina Yaguma directly at yaguma@lyndax.org.

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LYNDAX GLOBAL | REAL-WORLD DEPLOYMENT BRIEF

TRACK BRIEF 05: MINA LILIU — Keepers of Songs & Oral Histories

Phase 1 Deployment: Woodlark (Murua) Island | Release: 9 August 2026

Complete Track Brief — all 6 challenges

CHALLENGE AT A GLANCE

Objective: Digitize oral histories, songcodes, and craft heritage; build consent-based archives; let the world actually watch the build happen, sector by sector, verified as real.

Technical Baseline: Consent-governed access control, hardware cryptographic watermarking, sensitivity clearing for sacred sites, offline-compatible grievance channel.

Required Deliverables: Platform architecture schematics, consent governance framework, data security plan, and proof-of-concept evidence in whatever form fits your team's stage.

A note before you read further: everything below is one way to solve this challenge, not the only way. It's meant to show you the shape of the problem clearly enough to work with, not to box you into a single design. Bring your own research, your own expertise, and tell us plainly what extra value your approach adds beyond what's written here — that's genuinely welcome, not a deviation to explain away. This is also a challenge, not the finished deployment: some things that belong to the real, on-the-ground project — like securing consent from customary landowners — aren't yours to demonstrate at this stage, and you won't be asked to. Read the Guidelines for Guardians to Unite alongside this brief for the fuller picture of how deployment actually works, logistics included.

Who can apply: You can apply as a single person, a company, or a team — whatever shape your work actually takes. If more than one submission ends up solving the same piece of this puzzle, we'd rather introduce you to each other than make you compete: this is about uniting the right people around Ava, not picking a lone winner.

1. SYSTEM PLACEMENT & ROLE

Where This Sits: What lets the world actually watch, understand, and respect what the rest of the project protects.

Core Mission: Turn verified telemetry and community consent into a living public record — broadcast, documentary, and archive — without ever separating storytelling from the strict consent and data-sovereignty rules that govern everything it draws from.

Integration Rule: Nothing broadcast or archived here originates in this track alone; it all originates as verified data or community material from elsewhere in the project, cleared through mandatory consent review before release, and identity/ledger functions stay Mina Kula's — this track consumes them, it doesn't rebuild them.

2. WOODLARK ISLAND: WHAT YOU'RE ACTUALLY DESIGNING FOR

A real starting point, not the whole picture — go do your own deeper research from here. Facts below are sourced from public geographic and climate records; anything marked as an estimate is exactly that.

Geography. Woodlark Island is roughly 60km east-west and 30km north-south at its center, in the Solomon Sea, part of Milne Bay Province, centered around 9.13°S, 152.81°E. Highest point is Mount Kabat at 240m. The island's own name is Muyuw, also called Murua.

Population & settlements. No formal census has been taken since 1990; an unofficial estimate puts the island's population around 6,000 today, spread thin. Kulumadau is the largest settlement, Guasopa second — Guasopa also holds the island's health centre, currently 9 health workers covering roughly 6,000 people across Woodlark and the surrounding islands. There is one primary school, in Kulumadau; every child leaves for Alotau to attend secondary school.

Climate. Warm and humid year-round, roughly 21–34°C. Wet season runs January through March, peaking in March. Southeast trade winds dominate the drier stretch, roughly May through November. Cyclone and tropical storm risk concentrates December through March.

Access. The route in runs through Alotau, Milne Bay Province's capital, then by sea to Woodlark — roughly 155–160 nautical miles by straight-line estimate; no verified figure exists for actual sea-route distance or travel time, so treat this as a rough planning estimate, not a fixed number.

3. THE TECHNICAL BASELINE

These fall into two tiers. A small number are hard constraints, marked [HARD CONSTRAINT] below — they protect customary rights and consent, not architecture, and admit no exceptions. Everything else here is the reference bar for meeting each field challenge, not the only acceptable answer: if your team has a genuinely better way to solve the same problem, propose it. This challenge is evaluated on what actually works in the field, not on matching this document line for line.

- **ILG Status Ledger & Consent Governance** — **[HARD CONSTRAINT]**: The governance and access-control layer for all digitized cultural material is hard-linked to Mina Kula's Incorporated Land Group identity and status records. Stored material can only be accessed or shared under terms explicitly authorized by recognized clan executive councils, meeting Verra CCB and SD VISta Gold Level standards.
- **Hardware Cryptographic Watermarking**: Live broadcast feeds drawing raw video or audio from Mina Valu's Forest Sentinel Totems or Mina Tawali's marine pods execute edge-level cryptographic watermarking — hardware MAC signatures and UTC timestamps embedded in the video container — before satellite uplink.
- **Sensitivity & Consent Clearing** — **[HARD CONSTRAINT]**: Live streaming feeds pass through an automated sensitivity review to obscure sacred spatial locations before any public broadcast on lyndax.org.
- **Digital Grievance Mechanism**: An offline-compatible stakeholder engagement and grievance channel, reachable via ILG smart cards, so customary landowners can log grievances or consent updates without needing connectivity, routed to the SMDDA Board and Lyndax legal counsel once back online.
- **Craft Heritage Coordination**: Documentation of traditional canoe-building geometries and craft skills is built in direct partnership with Mina Tawali's non-timber fabrication teams, preserving oral tradition as materials transition away from tree felling.
- **Field Durability, Anti-Theft & Ease of Use** — **[HARD CONSTRAINT]**: Anything deployed unattended in the field is built to survive years without regular maintenance, resist tampering or theft, and stay simple enough not to fail from ordinary misuse — this district is genuinely isolated, and a fragile or easily-defeated unit doesn't help anyone. This is about the real outcome (long unattended service life, tamper resistance, hard to get wrong), not a specific named spec like ‘military grade’: propose whatever achieves that outcome.

4. THE SIX SUB-CHALLENGES — ONE BACKBONE

5.1

Consent-Based Cultural Archiving & Data Sovereignty

THE FIELD CHALLENGE

Digitizing oral histories, the Muyuw language, and traditional songcodes creates a real risk of third-party exploitation if cultural assets are exposed without clan permission.

REFERENCE STANDARDS

- Encrypted, decentralized digital archive where access rights are controlled via Mina Kula's offline ILG smart card identity layer, not a separate identity system built here
- Zero-knowledge permissions so clan elders retain absolute, unalterable control over who views or listens to archived material

WHO SHOULD APPLY

Archival systems developers, digital rights and consent-management specialists, zero-knowledge security engineers.

5.2

Songcodes & Oral History Digitization

THE FIELD CHALLENGE

Ecological knowledge, navigation lore, and clan genealogy currently exist only in the memory of living elders, with no digital preservation and no guarantee that knowledge survives the next generation.

REFERENCE STANDARDS

- High-fidelity audio/visual capture, preservation, and living-archive software designed for offline field collection alongside customary clans

WHO SHOULD APPLY

Cultural archivists, audio/digital preservation specialists, applied anthropologists.

5.3

Traditional Craft & Vessel Culture Documentation

THE FIELD CHALLENGE

Canoe-building and craft traditions are living knowledge held in the hands of elders, currently undocumented as new non-timber materials are introduced under Mina Tawali.

REFERENCE STANDARDS

- Multi-angle 3D scanning and audio-visual documentation of traditional canoe carving, in direct coordination with Mina Tawali's non-timber fabrication teams

WHO SHOULD APPLY

Applied anthropologists, 3D scanning specialists, cultural documentarians.

5.4

Live Multi-Sector Viewing Channel

THE FIELD CHALLENGE

Right now, nobody outside the project can actually see what's happening on Woodlark as it happens — the forest that's being protected, the reef that's being monitored, the villages that are being built. The challenge: a live channel where people can watch each sector for themselves, not one generic feed but a real choice of what to watch, cleared and cryptographically verified so what they're seeing is provably real, not staged or

deepfaked.

REFERENCE STANDARDS

- A viewing interface letting someone choose between live sectors — forest canopy, reef and mangrove, village construction — rather than a single undifferentiated stream
- Each feed cryptographically watermarked at the edge before it ever reaches lyndax.org
- Pulls from cleared sentinel, reef, and site cameras already built elsewhere in the project — this challenge is the viewing and verification layer, not the cameras themselves

WHO SHOULD APPLY

Broadcast engineers, live-streaming platform developers, video cryptography specialists, UX designers for multi-feed viewing experiences.

5.5

Programme Grievance & FPIC Engagement Portal

THE FIELD CHALLENGE

Customary landowner disputes or community concerns need to be addressed quickly, before they escalate into localized project freezes or physical site disruption. This builds the tool that supports Lyndax/SMDDA's ongoing FPIC relationship — it doesn't lead that relationship itself.

REFERENCE STANDARDS

- Offline-capable digital grievance submission channel linked to ILG smart cards
- Transparent logging and resolution tracking on Mina Kula's sovereign ledger — not a separate tracking system

WHO SHOULD APPLY

Legaltech developers, dispute-resolution platform designers, FPIC governance specialists.

5.6

Documentary & Field Production

THE FIELD CHALLENGE

The scale of what's being built on Woodlark — landing craft deployments, 3D printing, ranger patrols, clan partnerships — needs authentic, long-form human storytelling, not just a live data feed.

REFERENCE STANDARDS

- Field documentary production capturing Phase 1 deployment across all six physical tracks

WHO SHOULD APPLY

Filmmakers, documentary producers, field media teams.

5. WHAT TO SUBMIT

Teams applying to Mina Liliu upload to lyndax.org:

- **Platform & Governance Architecture Package** — data vault schematics, zero-knowledge permission flowcharts, ILG status ledger integration, and grievance portal schematics.
- **Consent & Security Handoff Matrix** — direct mapping showing how cultural access rights and grievance logs interface with Mina Kula's smart-card identity layer.

- **Proof-of-Concept Evidence** — in whatever form best reflects where your team actually is — a working prototype, a bench-tested subsystem, evidence of a prior deployment, or a detailed feasibility case with supporting calculations. A polished video is welcome but not required.
- **Rough Cost Estimate** — an order-of-magnitude budget for the specific challenge(s) you're addressing — not a binding quote. Early-stage teams can give a range; further-along teams can be more precise. This helps us plan against something real instead of guessing.

6. HOW THIS IS EVALUATED

Submissions are scored on three equal pillars:

- **Technical Integrity** — Does it meet the technical baseline — either as written, or with a genuinely better alternative?
- **Integration Readiness** — Does it plug cleanly into the rest of the build?
- **Guardian Spirit** — Was it designed for the clans, not just the spec sheet?

7. INTELLECTUAL PROPERTY

Any technology or intellectual property you bring into this challenge remains yours. What gets built specifically for this project is licensed to Lyndax Global and the Samarai-Murua District Development Authority for use here — not assigned, not sold, not owned by us. If your technology's use ever expands beyond this initial deployment, those terms will be set out clearly in your individual contract once you're selected — never assumed from this brief.

Questions or more detail before you submit? Reach Mina Liliu directly at liliu@lyndax.org.

This is a first-of-its-kind deployment, and this brief is a challenge document, not the final build — specifications are a starting point for direct engagement with applicant teams, not a fixed spec to execute silently. Full disclaimers and engagement terms are set out in the Guidelines for Guardians to Unite and the Eligibility & Disclaimers document. Submissions close 11 September 2026, 6:00pm Singapore time.

LYNDAX GLOBAL | REAL-WORLD DEPLOYMENT BRIEF

TRACK BRIEF 07: MINA SALOSALO — Guardians of the Wild & Uncharted Eco-Tech

Phase 1 Deployment: Woodlark (Murua) Island | Release: 9 August 2026

Complete Track Brief — all 1 challenges

CHALLENGE AT A GLANCE

Objective: Catch genuinely green, genuinely useful, unconventional ideas that don't fit neatly into the six named currents.

Technical Baseline: Tactical mesh telemetry, non-lithium storage, zero environmental hazard, tropical/volcanic hardening at deployment, explicit sub-system handoff.

Required Deliverables: Engineering/technical specification, sub-system handoff declaration, telemetry integration plan, and proof-of-concept evidence in whatever form fits your team's stage.

A note before you read further: everything below is one way to solve this challenge, not the only way. It's meant to show you the shape of the problem clearly enough to work with, not to box you into a single design. Bring your own research, your own expertise, and tell us plainly what extra value your approach adds beyond what's written here — that's genuinely welcome, not a deviation to explain away. This is also a challenge, not the finished deployment: some things that belong to the real, on-the-ground project — like securing consent from customary landowners — aren't yours to demonstrate at this stage, and you won't be asked to. Read the Guidelines for Guardians to Unite alongside this brief for the fuller picture of how deployment actually works, logistics included.

Who can apply: You can apply as a single person, a company, or a team — whatever shape your work actually takes. If more than one submission ends up solving the same piece of this puzzle, we'd rather introduce you to each other than make you compete: this is about uniting the right people around Ava, not picking a lone winner.

1. SYSTEM PLACEMENT & ROLE

Where This Sits: The open door.

Core Mission: Catch the genuinely green, genuinely useful ideas that don't fit neatly into the six named currents — on the condition that they answer to the exact same data rules, environmental safeguards, and telemetry protocols as everything else in the build.

Integration Rule: A Salosalo submission is not exempt from project standards. It declares, at minimum, which physical track or subsystem it feeds (Mina Kula, Mina Valu, Mina Tawali, Mina Yaguma, Mina Liliu, Sinabada Hub) and how it reports to the central dual-node dashboard.

2. WOODLARK ISLAND: WHAT YOU'RE ACTUALLY DESIGNING FOR

A real starting point, not the whole picture — go do your own deeper research from here. Facts below are sourced from public geographic and climate records; anything marked as an estimate is exactly that.

Geography. Woodlark Island is roughly 60km east-west and 30km north-south at its center, in the Solomon Sea, part of Milne Bay Province, centered around 9.13°S, 152.81°E. Highest point is Mount Kabat at 240m. The

island's own name is Muyuw, also called Murua.

Population & settlements. No formal census has been taken since 1990; an unofficial estimate puts the island's population around 6,000 today, spread thin. Kulumadau is the largest settlement, Guasopa second — Guasopa also holds the island's health centre, currently 9 health workers covering roughly 6,000 people across Woodlark and the surrounding islands. There is one primary school, in Kulumadau; every child leaves for Alotau to attend secondary school.

Climate. Warm and humid year-round, roughly 21–34°C. Wet season runs January through March, peaking in March. Southeast trade winds dominate the drier stretch, roughly May through November. Cyclone and tropical storm risk concentrates December through March.

Access. The route in runs through Alotau, Milne Bay Province's capital, then by sea to Woodlark — roughly 155–160 nautical miles by straight-line estimate; no verified figure exists for actual sea-route distance or travel time, so treat this as a rough planning estimate, not a fixed number.

3. THE TECHNICAL BASELINE

These fall into two tiers. A small number are hard constraints, marked [HARD CONSTRAINT] below — they protect physical safety or the project's core environmental commitments, not architecture, and admit no exceptions. Everything else here is the reference bar for meeting each field challenge, not the only acceptable answer: if your team has a genuinely better way to solve the same problem, propose it. This challenge is evaluated on what actually works in the field, not on matching this document line for line.

- **Sub-System Handoff Declaration** — **[HARD CONSTRAINT]**: Every submission states explicitly which primary track receives its output — feeding power to Mina Valu's microgrids, propulsion to Mina Tawali's vessels, payload capacity to Mina Yaguma's aircraft, or data to Mina Kula's dashboard. A technology with nowhere declared to plug in isn't ready for this track yet, whatever else it does well.
- **Telemetry & Edge Hashing**: Physical devices, generators, or sensors embed digital meters executing cryptographic hashing at the edge, binding raw outputs to a device-unique identifier and an unalterable UTC timestamp, reporting through Mina Kula's tactical mesh to the central dual-node dashboard.
- **Non-Flammable Energy Storage** — **[HARD CONSTRAINT]**: No unshielded lithium storage anywhere in the field. Sodium-ion, VRFB, or kinetic/non-electrochemical alternatives only — the same fire-safety baseline as every other track.
- **Zero Environmental Hazard & Non-Overlap Feedstock** — **[HARD CONSTRAINT]**: No toxic chemical runoff, no destructive habitat disturbance, and — for any energy, waste, or biomass transformation technology — zero feedstock overlap with primary rainforest biomass (CPA 1) or protected forest understory.
- **Working With Customary Land**: Free, Prior and Informed Consent with the registered customary landowners is led by Lyndax Global and the Samarai-Murua District Development Authority, as a real, ongoing relationship — it isn't something your submission needs to demonstrate or secure yourself, and you won't be asked to. Any field deployment touching customary land or water should be designed to adapt to what that process determines.
- **Tropical & Volcanic Mechanical Hardening**: Deployed field hardware withstands 95%+ relative humidity, ambient temperatures exceeding 40°C, volcanic ashfall, and saltwater corrosion. This is the standard for what gets deployed in the field — an early-stage submission demonstrating a credible path to meeting it is welcome; it doesn't need to already be field-hardened to be evaluated seriously.
- **Field Durability, Anti-Theft & Ease of Use** — **[HARD CONSTRAINT]**: Anything deployed unattended in the field is built to survive years without regular maintenance, resist tampering or theft, and stay simple enough not to fail from ordinary misuse — this district is genuinely isolated, and a fragile or easily-defeated

unit doesn't help anyone. This is about the real outcome (long unattended service life, tamper resistance, hard to get wrong), not a specific named spec like ‘military grade’: propose whatever achieves that outcome.

4. THE ONE SUB-CHALLENGE — ONE BACKBONE

7.1

Open Green-Tech Submission & Unconventional Field Inventions

THE FIELD CHALLENGE

Every named track was defined by people who already know this programme. The best idea for Woodlark Island might come from someone looking at the island's problems sideways — from a discipline nobody on this list anticipated.

REFERENCE STANDARDS

- Something real, buildable, green, and useful that solves an acute island field problem — novel bio-remediation, kinetic wave harvesters, micro-hydro generators, bio-inspired materials, or anything else that doesn't fit the other six tracks
- A credible path to meeting the edge-hashing, tactical mesh connectivity, environmental safety, and dashboard reporting baseline, even if the submission itself is an earlier-stage prototype

WHO SHOULD APPLY

Inventors, tinkerers, unconventional eco-engineers, deep-tech researchers with a real, buildable idea that serves the project.

5. WHAT TO SUBMIT

Teams applying to Mina Salosalo upload to lyndax.org:

- **Engineering & Technical Package** — specification or CAD schematics, material science details, power/thermodynamic balance, and environmental safety data.
- **Sub-System Handoff Declaration** — explicit statement of which physical track receives your technology's output and how it interfaces with Mina Kula's tactical mesh.
- **Proof-of-Concept Evidence** — in whatever form best reflects where your team actually is — a working prototype, a bench-tested subsystem, evidence of a prior deployment, or a detailed feasibility case with supporting calculations. This track exists to catch ideas from outside the programme's existing network; an early-stage submission with a credible path to field-hardening is exactly what it's for. A polished video is welcome but not required.
- **Rough Cost Estimate** — an order-of-magnitude budget for the specific challenge(s) you're addressing — not a binding quote. Early-stage teams can give a range; further-along teams can be more precise. This helps us plan against something real instead of guessing.

6. HOW THIS IS EVALUATED

Submissions are scored on three equal pillars:

- **Technical Integrity** — Does it meet the technical baseline — either as written, or with a genuinely better alternative?
- **Integration Readiness** — Does it plug cleanly into the rest of the build?
- **Guardian Spirit** — Was it designed for the clans, not just the spec sheet?

7. INTELLECTUAL PROPERTY

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Questions or more detail before you submit? Reach Mina Salosalo directly at salosalo@lyndax.org.

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LYNDAX GLOBAL | REAL-WORLD DEPLOYMENT BRIEF

TRACK BRIEF 06: AVA: SINABADA HUB — Mother Sanctuary & Sovereign Unity

Phase 1 Deployment: Woodlark (Murua) Island | Release: 9 August 2026

Complete Track Brief — all 6 challenges

PARTNERSHIP AT A GLANCE

Objective: Bring the human hands, clinical care, education across all levels, disaster response, and diplomatic standing that let the other six tracks actually reach the people of Woodlark.

What's Needed: Traceable partnerships, patient and cultural data consent, Article 6.2 bilateral alignment, mercy relief integration.

Required Deliverables: A brief overview of how your team, network, or institution can support one of the six gaps below, and proof of prior capacity in whatever form fits where you're at.

A message from the team: this isn't a technical specification or an engineering brief — it's an ask. We're naming real gaps that need real partners, not a checklist for you to complete silently and submit. If you bring support or expertise that serves these needs in a different shape than we've described, we want to hear about it. Some things remain ours — securing land consent stays directly between Lyndax, the Samarai-Murua DDA, and customary landowning clans, not something a partner organisation demonstrates at this stage. Read this alongside the Guidelines for Guardians to Unite to see what you'd actually be joining.

Who this is for: You can reach out as an individual expert, an NGO, a clinical institution, an educational foundation, a diplomatic advisory body, or a government partner. This Hub exists to unite the right partners around Ava to help the island, not to hold a competition.

1. SYSTEM PLACEMENT & ROLE

Where This Sits: The resourcing layer — what keeps the whole body partnered, cared for, taught, and diplomatically protected, connected to governments, humanitarian networks, and conservation bodies outside the district.

Core Mission: Roughly 6,000 people live spread across Woodlark Island with no paved roads. The island's one health centre has 9 workers covering all of them and the surrounding atolls. There's no secondary schooling at all — children leave their families and cross open ocean to Alotau just to keep learning. Physical buildout on the ground is self-funded through carbon offtakes; what this Hub asks for is different — human, clinical, educational, and diplomatic support, not capital.

Integration Rule: Every partnership formed here is traceable to a specific physical track it resources or a specific data stream it relies on — the Hub exists to serve the field build, not to sit beside it. It does not run its own ledger or telemetry system; it connects to Mina Kula's.

2. WOODLARK ISLAND: WHAT YOU'D ACTUALLY BE SUPPORTING

A real starting point, not the whole picture — go do your own deeper research from here. Facts below are sourced from public geographic and climate records; anything marked as an estimate is exactly that.

Geography. Woodlark Island is roughly 60km east-west and 30km north-south at its center, in the Solomon Sea, part of Milne Bay Province, centered around 9.13°S, 152.81°E. Highest point is Mount Kabat at 240m. The island's own name is Muyuw, also called Murua.

Population & settlements. No formal census has been taken since 1990; an unofficial estimate puts the island's population around 6,000 today, spread thin. Kulumadau is the largest settlement, Guasopa second — Guasopa also holds the island's health centre, currently 9 health workers covering roughly 6,000 people across Woodlark and the surrounding islands. There is one primary school, in Kulumadau; every child leaves for Alotau to attend secondary school.

Climate. Warm and humid year-round, roughly 21–34°C. Wet season runs January through March, peaking in March. Southeast trade winds dominate the drier stretch, roughly May through November. Cyclone and tropical storm risk concentrates December through March.

Access. The route in runs through Alotau, Milne Bay Province's capital, then by sea to Woodlark — roughly 155–160 nautical miles by straight-line estimate; no verified figure exists for actual sea-route distance or travel time, so treat this as a rough planning estimate, not a fixed number.

3. WHAT HAS TO BE TRUE FOR THIS TO WORK

A few of these are genuinely non-negotiable, marked [NON-NEGOTIABLE] below — they protect what a partnership is actually for, and the people whose data or trust runs through it, not paperwork for its own sake. Everything else here is the shape of what we're hoping for, not a fixed checklist: if you bring something that serves the same real need in a better way, we want to hear about it. This is judged on whether it actually helps get Ava built and protected, not on how closely it matches this document.

- **Partnership Traceability** — **[NON-NEGOTIABLE]**: Every partnership formed under this track traces back to a real, concrete link that helps the island community or backstops a physical track — health, education, water, transport, safety. Partnerships that exist for optics alone aren't what this Hub is asking for.
- **Patient & Cultural Data Consent** — **[NON-NEGOTIABLE]**: Health records, educational performance, or cultural knowledge crossing borders to international networks moves only under explicit, informed consent from the individual or community it concerns — separate from land-based FPIC, and just as non-negotiable given how sensitive this data is.
- **Asynchronous Telehealth Bridge**: The Hub's digital health gateway connects Mina Valu's off-grid village e-medical pods to accredited international clinical networks for 24/7 asynchronous, AI-triaged diagnostic review.
- **Mercy Relief & Humanitarian Logistics**: Partner logistics networks integrate with Mina Valu's physical infrastructure to deliver disaster relief supply chains — water purification, rapid shelter, medical kits — during cyclone events, rather than building relief logistics from scratch mid-crisis.
- **Article 6.2 & Sovereign Alignment**: International market pathways align with the Singapore-Papua New Guinea Article 6.2 Implementation Agreement, coordinating with PNG's CCDA and Singapore's NCCS to support Letters of Authorization and Corresponding Adjustments.
- **Conservation & Institutional Backing**: Institutional partners bring formal conservation and technical weight behind the programme's subnational JNR REDD+ framework ahead of validation.

4. SIX WAYS TO STAND WITH US

6.1

Asynchronous Medical Humanitarian Networks

THE GAP WE'RE ASKING YOU TO CLOSE

Off-grid, AI-triaged e-medical clinic pods are being deployed in Woodlark villages under Mina Valu. But a clinic pod is useless without real doctors and medical specialists reviewing patient scans and diagnostic data on the other end.

WHAT PARTNERING HERE ACTUALLY LOOKS LIKE

- Medical humanitarian networks, hospital systems, or telehealth NGOs willing to receive, triage, and respond to patient diagnostic data sent from village pods via satellite link
- Explicit patient consent captured at point of care, honoured all the way through to the reviewing clinician

WHO WE'RE HOPING READS THIS

Medical NGOs, international telehealth charities, medtech clinical directors, volunteer doctor networks.

6.2

Universal Education, Vocational & Lifelong Learning Networks

THE GAP WE'RE ASKING YOU TO CLOSE

Every child on Woodlark deserves a complete educational journey — from early childhood development and foundational primary learning, up through secondary curriculum, teacher training, and adult vocational skills. The off-grid e-learning pods built under Mina Valu need real, accredited educational content and teaching support so no child has to leave their island to learn.

WHAT PARTNERING HERE ACTUALLY LOOKS LIKE

- Educational foundations, edtech institutions, literacy organisations, or teaching networks willing to deliver remote curriculum across early childhood, primary, secondary, and vocational tiers over satellite links
- Real teacher training and support, not just content dropped into a pod with nobody behind it

WHO WE'RE HOPING READS THIS

Educational NGOs, international learning foundations, early childhood development charities, vocational training institutions, distance-education experts.

6.3

Humanitarian Mercy Relief & Disaster Logistics

THE GAP WE'RE ASKING YOU TO CLOSE

Cyclones regularly hit Woodlark, and scrambling for emergency supplies after a disaster strikes leaves families stranded without clean water or shelter.

WHAT PARTNERING HERE ACTUALLY LOOKS LIKE

- A humanitarian logistics or emergency supply chain partner willing to pre-integrate relief supply chains — water purification, rapid shelter, medical kits — with our landing craft and village hubs before the next cyclone hits, not during it

WHO WE'RE HOPING READS THIS

Disaster relief NGOs, humanitarian supply chain organisations, emergency response specialists.

6.4

Article 6.2 & Sovereign Policy Alignment

THE GAP WE'RE ASKING YOU TO CLOSE

Structuring Article 6.2 Internationally Transferred Mitigation Outcomes requires seamless coordination between Papua New Guinea's CCDA and Singapore's NCCS.

WHAT PARTNERING HERE ACTUALLY LOOKS LIKE

- Sovereign advisory teams, bilateral trade specialists, or international environmental policy experts who can help align Letters of Authorization and Corresponding Adjustments

WHO WE'RE HOPING READS THIS

Bilateral trade advisors, sovereign environmental policy experts, Article 6.2 specialists.

6.5

Conservation & Diplomatic Standing

THE GAP WE'RE ASKING YOU TO CLOSE

A young island community programme needs institutional, diplomatic, and conservation weight behind it to stand strong before host and international governments.

WHAT PARTNERING HERE ACTUALLY LOOKS LIKE

- Diplomatic advisory bodies or international conservation NGOs bringing technical backing and policy support to our subnational REDD+ framework

WHO WE'RE HOPING READS THIS

Conservation NGOs, diplomatic advisory groups, international environmental law institutions.

6.6

Carbon Market Due Diligence & Buyer Integrity

THE GAP WE'RE ASKING YOU TO CLOSE

Carbon buyers need complete transparency and confidence in verified climate credits spanning nature removals, clean transport, off-grid utilities, and methane avoidance.

WHAT PARTNERING HERE ACTUALLY LOOKS LIKE

- Carbon market advisors or sovereign buyers to help establish honest, visible due diligence frameworks across all five asset classes
- Clear disclosure of what's registered versus what's still in progress, kept visible rather than smoothed over — that's what buyer trust actually rests on

WHO WE'RE HOPING READS THIS

Sovereign carbon buyers, corporate sustainability leaders, ethical carbon market advisors.

5. HOW TO REACH OUT

Organisations and institutions reaching out to Ava: Sinabada Hub share, via lyndax.org:

- **Your Proposed Support Protocol** — a brief overview showing how your team, clinic network, school, or NGO can support one of the six gaps above.
- **Resource & Track Connection Notes** — a simple note explaining how your support links to the community or one of our physical tracks — health, education, housing, water, transport.
- **Proof of Capacity / Prior Work** — any evidence showing your prior humanitarian, clinical, educational, or conservation work in remote regions — whatever form best reflects where you're at.

6. HOW THIS IS EVALUATED

Submissions are scored on three equal pillars:

- **Technical Integrity** — Does it meet what's needed here — either as written, or with a genuinely better alternative?

- **Integration Readiness** — Does it plug cleanly into the rest of the build?
- **Guardian Spirit** — Was this partnership built for the clans, not just the paperwork?

7. INTELLECTUAL PROPERTY

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Questions or more detail before you submit? Reach Ava: Sinabada Hub directly at sinabada@lyndax.org.

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