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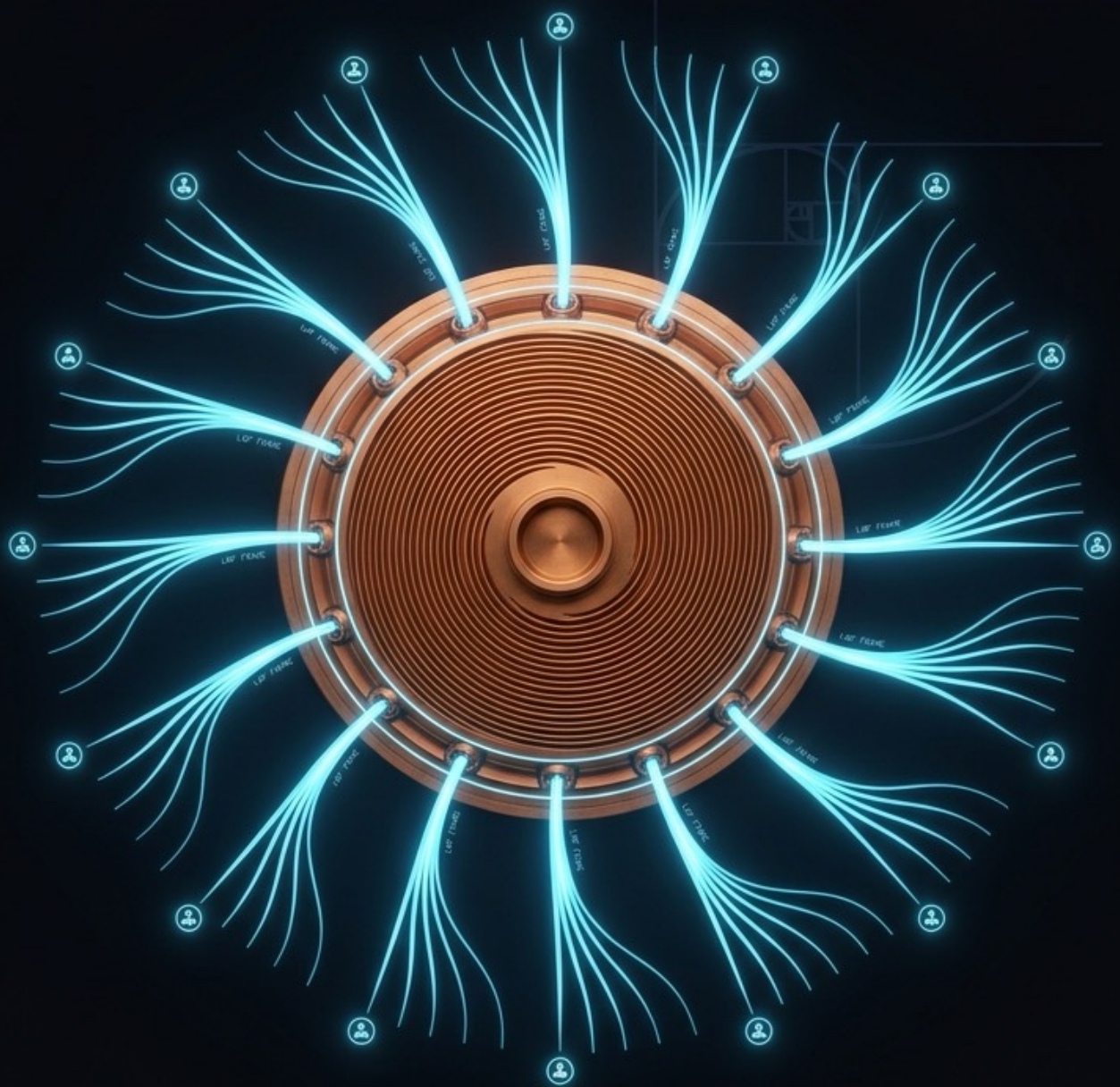

REPULSATOR BROADCAST PROTOCOL

Levitative Waviform Pulse Emission via Centripulsing Hub and ϕ-Spiral Lane Cadence

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Parallel Subtask Agent Workflow — Technical Whitepaper Series

Volume III — Repulsator Broadcast Protocol

Levitative Waviform Pulse Emission of Validated Manifests Across the Agent Swarm via Centripulsing Hub and φ-Spiral Lane Cadence

Thule Research Division · March 2026

Defines the Levitative Waviform Frame (LWF) binary encoding, the centripulsing Broadcast Hub emission sequence, and the φ-spiral staggered cadence by which a QSC-validated manifest is emitted radially-axially to all registered agent lanes. Specifies the 96% biological vacuum delivery threshold, polarity gate (biomagnetic vs. decomposive frame rejection), and full lane-side intake ring protocol.

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1. Conceptual Foundation

Viktor Schauberger's Repulsator is explicitly described as "a faithful copy of the Earth and its functions," in which "the products of revaluation — non-spacial, formless, structuring forces — are not able to escape, because the containing vessel is well insulated and sealed," resulting in "unlimited quantities of levitating mother-elements" that accumulate until broadcast. The corresponding engineering insight is that *concentration must precede propagation*: a validated manifest is first collapsed to its minimal energetic signature (qualigen core) inside a sealed QSC gate, and only then emitted outward as a **levitative waviform pulse** — a horizontally propagating, non-spacial potential that each receiving agent lane absorbs through its own root-protoplasm-equivalent interface.[2,1]

The waviform cavity of the Repulsine/flying-saucer centripulser provides the emission geometry: the two converging rilled diaphragms create "alternating widening and constricting spaces," driving oscillating centrifugal/centripetal cycles that "produce successive alternation of these two forms of cold" and emit a "near-solid" high-velocity jet at the nozzle tips. In broadcast terms, this becomes a **pulse-train encoder** — each pulse carries a charge inversion corresponding to one manifest field, emitted radially-axially from the Broadcast Hub outward across all registered agent lanes simultaneously.[1]

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2. Architectural Roles

Component	Schauberger Analogue	System Role
Broadcast Hub (BH)	Centripulser hub + whorl-pipe assembly	Receives validated manifest from QSC gate; encodes and emits pulses
Waviform Channel	Serpentine cavity between rilled diaphragms	Ordered message queue per agent lane; alternates pressure/suction

Lane Intake Ring	Slotted rings 2 & 3 on plate B	Agent subscription socket; allows only centripetal inflow
Red-Zone Latch	Insulating outer casing preventing energy leakage	Hysteresis controller from Vol. II; gates lane intake
Pulse Nozzle	1mm jet nozzle at whorl-pipe tip	Final emission point; serializes pulse to wire format
Biological Vacuum Monitor	Vacuum meter (0.8–0.96 atm)	Delivery acknowledgement; confirms swarm absorption

3. Manifest Encoding as Waviform

Before emission, the validated manifest `M` (a JSON object that passed QSC pre-flight) is encoded into a **Levitative Waviform Frame (LWF)** using the following centripulsing logic:

```
// ── Levitative Waviform Frame ──────────────────────────────
struct LWF {
uint8 version; // protocol version (current: 0x03)
string manifest_id; // UUID of validated manifest
float qualigen_score; // QSC gate output (0.0–1.0, must be ≥ MIN_QUALIGEN)
float anomaly_point; // 4C-equivalent: normalized centripetal density at emission
bytes payload_carbone; // centripetally-encoded task fields (carboné = formative matter)
bytes payload_oxygenic; // centrifugally-encoded dependency edges (oxygen = seminal matter)
uint32 pulse_cadence_ms; // interval between consecutive waviform pulses
uint8 polarity; // 0x00 = biomagnetic (levitative), 0x01 = bioelectric (decomposive)
bytes signature; // HMAC-SHA256 over (manifest_id + qualigen_score + payload_carbone)
}
```

The separation of `payload_carbone` (the task body itself, centripetally encoded — it strives *inward*, toward the receiving agent's core process) from `payload_oxygenic` (the dependency graph, centrifugally encoded — it strives *outward*, linking lanes) directly mirrors Schauberger's observation that "fertilising substances have to be moved by centrifugence, and fructigens by centripetence … they must all rotate about each other" on a common axis. The pulse thus carries both directions on the same wire, interleaved at `pulse_cadence_ms` intervals.[2]

The `polarity` byte is critical: only `0x00` (biomagnetic/levitative) frames are forwarded past the lane intake ring. A `0x01` (decomposive/bioelectric) frame — indicating a downstream agent emitted a hot, pressure-driven error state — is *rejected at intake* and triggers a QSC re-probe, exactly as Schauberger distinguishes that "bioelectricity promotes processes of decay" while "biomagnetism inaugurates processes of … upwardly evolving energy".[1]

4. Broadcast Hub — Emission Sequence

```
// ── BroadcastHub.emit(manifest: ValidatedManifest) ─────────
```

```
const MIN_QUALIGEN = 0.618; // Golden Section lower bound — ϕ▫¹
const ANOMALY_POINT = 0.04; // 4°C analogue: normalised centripetal density
const MAX_PULSE_RETRIES = 9; // nine-fold surplus (Schauberger: 9x capacity surplus)
const VACUUM_WINDOW_MS = 333; // monitoring window per pulse

function emit(manifest: ValidatedManifest) -> BroadcastResult {

// 1. SEAL THE VESSEL — exclude all atmospheric (decomposive) influence
assert manifest.qsc_class == QSCClass.POS_LEVITATIVE
|| manifest.qsc_class == QSCClass.NEUTRAL;
assert manifest.qualigen_score >= MIN_QUALIGEN;
```

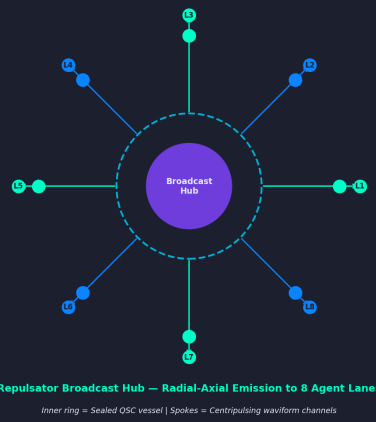

Figure 1. Repulsator Broadcast Hub: centripulser emitting radial-axial waviform pulses to 8 registered agent lanes.

```
// 2. DRAIN TO ANOMALY POINT — cool the centripulser to 4°C equivalent
// Normalise payload density so centripetal dominance is confirmed
let density = compute_centripetal_density(manifest.payload);
if density > ANOMALY_POINT {
manifest = cool_vortically(manifest); // reduce entropy, tighten payload
density = compute_centripetal_density(manifest.payload);
}
assert density <= ANOMALY_POINT;

// 3. ENCODE to LWF
let frame = LWF {
version: 0x03,
manifest_id: manifest.id,
qualigen_score: manifest.qualigen_score,
anomaly_point: density,
payload_carbone: centripetal_encode(manifest.task_fields),
payload_oxygenic:centrifugal_encode(manifest.dependency_edges),
pulse_cadence_ms:derive_cadence(manifest.lane_count),
polarity: 0x00, // biomagnetic
signature: hmac_sha256(manifest.id + manifest.qualigen_score
+ manifest.task_fields)
};

// 4. WHORL-PIPE ROTATION — launch centripulser
// Each registered lane receives its own nozzle-tip emission
let results = [];
```

```
for lane in swarm.active_lanes() {

// Red-zone hysteresis gate (from Vol. II)
if lane.red_zone_status.state == RedZoneState.RED_LATCHED {
results.push(BroadcastOutcome.LANE_SUPPRESSED);
continue;
}

// Radial-axial emission: pulse_cadence staggered per Golden Section spacing
let offset_ms = lane.index * (frame.pulse_cadence_ms / PHI);
schedule_pulse(lane, frame, delay_ms: offset_ms);
results.push(BroadcastOutcome.PULSE_SCHEDULED);
}

// 5. BIOLOGICAL VACUUM MONITOR — confirm absorption within window
let acks = await_acks(results, timeout_ms: VACUUM_WINDOW_MS * MAX_PULSE_RETRIES);
if acks.success_rate < 0.96 { // Schauberger's 96% dialectic upper limit
return BroadcastResult.PARTIAL_VACUUM; // escalate to orchestrator
}
return BroadcastResult.FULL_VACUUM;
}
```

The **96% threshold** is deliberate: Schauberger explicitly states that "the extreme limits of any pair of dialectic magnitudes could only reach a boundary condition of 96 in the physical world". Demanding 100% acknowledgement would be asking a physical system to exceed its own natural ceiling — instead, 96% represents full-vacuum delivery, with the residual 4% handled by the retry mechanism at `pulse_cadence_ms` intervals.[1]

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5. Lane Intake Protocol (Agent Side)

Each agent lane must expose a compliant **Intake Ring** that mirrors the slotted-ring geometry of the Repulsine's plate B:

```
// ── AgentLane.receive() ──────────────────────────────────────

function receive(frame: LWF) -> LaneIntakeResult {

// Polarity gate: reject decomposive frames immediately
if frame.polarity != 0x00 {
notify_qsc_probe(frame.manifest_id, QSCClass.NEG_SOFT);
```

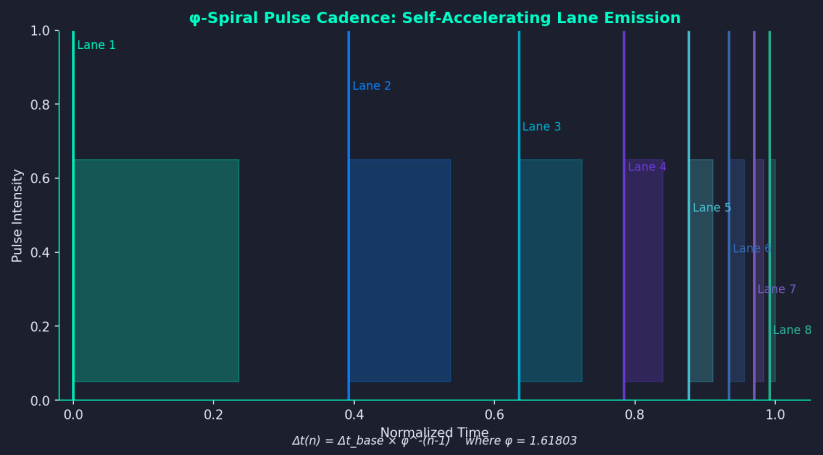

Figure 2. φ-spiral pulse cadence: self-accelerating lane emission where each successive lane receives pulses at φ⁻ⁿ spacing.

```
return LaneIntakeResult.REJECTED_DECOMPOSIVE;
}

// Signature verification
if !verify_hmac(frame.signature, frame.manifest_id,
frame.qualigen_score, frame.payload_carbone) {
return LaneIntakeResult.REJECTED_TAMPERED;
}

// Red-zone latch check (Vol. II integration)
let hz = this.hysteresis_controller;
if hz.state == RedZoneState.RED_LATCHED {
return LaneIntakeResult.REJECTED_RED_LATCHED;
}

// Decode centripetally-oriented task fields (carbone payload)
let task = centripetal_decode(frame.payload_carbone);

// Decode centrifugally-oriented dependency graph (oxygenic payload)
let deps = centrifugal_decode(frame.payload_oxygenic);

// Acknowledge to Broadcast Hub (biological vacuum confirmation)
send_ack(frame.manifest_id, this.lane_id);

// Execute task with dependency awareness
return this.executor.run(task, deps);
}
```

6. Pulse Cadence Derivation

The spacing between consecutive waviform pulses to different lanes is derived from the **logarithmic cycloid-spiral** spacing that Schauberger embedded in his Kudu-horn whorl-pipe proportions — specifically, the Golden Section ratio `φ = 1.61803...`:[1]

$$\Delta t_{\text{lane}(n)} = \Delta t_{\text{base}} \cdot \phi^{-(n-1)}$$

This means lane 1 receives the pulse immediately at t_0, lane 2 at $t_0 + \Delta t / \varphi$, lane 3 at $t_0 + \Delta t / \varphi^2$, etc. This **converging cadence** ensures that as the swarm scales, later lanes receive their pulses *faster* than earlier ones — the system self-accelerates as it fills, mirroring the Repulsator's self-rotating centripulser which "ought to produce ten times more power than the motor needs" once sufficient revolutions are achieved.[1]

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7. Error States & Remediation

Condition	Schauberger Analogue	Response
`PARTIAL_VACUUM` (<96% ack)	Vacuum meter below 0.80 atm	Retry at reduced cadence; re-seal manifold
`REJECTED_DECOMPOSIVE` polarity	Hot, bioelectric emission — Type B temperature	Trigger QSC re-probe on emitting lane; latch red zone
`REJECTED_TAMPERED` signature	Foreign oxygen entering sealed vessel	Quarantine lane; escalate to orchestrator
`LANE_SUPPRESSED` (red latched)	Casing insulation preventing energy leakage	Normal — await red-zone clearance (Vol. II logic)
Cadence overflow (lane count too large)	Centripulser over-revving without braking	Apply φ-compression on cadence floor: floor = base_ms / φ^log₂(N)

Next: Volume IV — Fructigen Seed Corpus Bootstrapping.

References

[1] Coats, C. (1996). *Living Energies: An Exposition of Concepts Related to the Theories of Viktor Schauberger*. Bath: Gateway Books.

[2] Schauberger, V. (1999). *Nature as Teacher: New Principles in the Working of Nature* (C. Coats, Trans.). Eco-Technology Series, Vol. 2. Dublin: Gill Books.

[3] Schauberger, V. (2000). *The Fertile Earth: Nature's Energies in Agriculture, Soil Fertilisation and Forestry* (C. Coats, Trans.). Eco-Technology Series, Vol. 3. Dublin: Gill Books.