

T.L. Tedford Enterprises, Inc.

Civilian Systems Division — Investor Report (Venture-Capless Edition)

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Executive Brief (2 minutes)

T.L. Tedford Enterprises, Inc. (TLTE) is building a resilient, terrestrial Redundant Ground Mesh Network (RGMN) to deliver GPS-independent navigation, anti-collision safety, and real-time command across road, rail, airfield, and port environments. Think of it as a low-latency, self-healing, “always-on” safety layer that continues to guide vehicles and assets when satellite signals are degraded, spoofed, or down—while simultaneously augmenting them when they’re available.

Why now: (1) growth of autonomous systems and advanced driver assistance, (2) rising incidents of GPS jamming/spoofing, (3) pressure on municipalities to reduce collisions and congestion, (4) insurers demanding hard safety data, and (5) infrastructure funding focused on safety tech with measurable ROI.

What’s different: TLTE’s architecture emphasizes edge intelligence and technical control theory to coordinate moving assets faster than cloud-only systems—sub-20ms local decisions for collision avoidance, with cloud orchestration for learning and fleet rules.

Problem TLTE Solves

- Navigation fragility: Satellite-only positioning is vulnerable to interference, urban canyons, and severe weather.

- Latency & coordination: Pure cloud solutions struggle with sub-50ms coordination decisions across dense, multi-modal traffic.
 - Data gaps: Cities and insurers need trusted, timestamped, privacy-compliant motion data to price risk and audit incidents.
 - Regulatory pressure: Agencies want verifiable, layered safety—beyond vehicle-mounted sensors alone.
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TLTE Solution — How It Works

1. Ground Mesh Beacons (RGMN): Fixed, low-power beacons form an encrypted lattice over corridors and districts (arterials, school zones, airport perimeters, ports, logistics yards).
2. Vehicle/Asset Transceivers: Lightweight units fuse mesh signals with IMU and (when available) GNSS to produce tamper-evident position and intent.
3. Edge Orchestrators: Local nodes run technical control theory policies for right-of-way, spacing, and “no-conflict corridors,” broadcasting micro-commands in <20ms.
4. Cloud Command & Learning: City-wide rules, anomaly detection, over-the-air updates, and longitudinal analytics for safety KPIs and insurer reporting.
5. Failover by Design: Operates GPS-independent when needed; augments satellite navigation when it’s healthy.

Key Differentiators

- Sub-20ms coordination at the edge (collision avoidance and lane/turn arbitration).
 - GPS-independent continuity (resilient positioning in tunnels, urban canyons, storms).
 - Provable data lineage (cryptographically signed motion records for claims & compliance).
 - Domain-agnostic (road, airfield ground ops, industrial yards, ports).
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Primary Launch Segments (Civilian)

1. Municipal Safety Corridors – school zones, bus routes, Vision Zero districts.
 2. Airfield Ground Operations – vehicle/aircraft ramp movements, tug ops, runway incursions prevention (non-ATC).
 3. Freight/Ports & Logistics Yards – truck staging, crane-lane deconfliction, forklift safety.
 4. Camp & Industrial Parks – mixed pedestrian/robot/vehicle environments.
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Go-to-Market (No-VC, Execution-First)

- Pilots that pay for themselves: 90-day paid pilots with explicit safety KPIs (e.g., $\geq 30\%$ collision/near-miss reduction, queue time ↓, claim cost ↓).
 - Anchor Customers: 1–2 municipalities + 1 airport + 1 port/logistics customer as reference sites.
 - Procurement-friendly packaging: Fixed-fee deployment + annual subscription (OPEX), eligible for many public-safety and smart-infrastructure grants.
 - Integrator Channel: Partner with traffic-signal OEMs, ITS integrators, and airport operations contractors for installation and first-line support.
 - Insurer Alignment: Data feeds to underwriting partners to unlock premium reductions—creating a direct, quantifiable ROI story for cities and operators.
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Business Model & Unit Economics (Illustrative)

- Hardware:
 - Beacon node: \$450–\$800 each (installed density: ~12–18 per linear mile in dense grids; fewer in open corridors)
 - Vehicle transceiver: \$220–\$450 (volume-tiered)
- Software & Services:
 - Edge orchestration + cloud: \$18–\$35/vehicle/month or \$6k–\$15k/mi/year corridor subscription
 - Data/claims package for insurers: \$2–\$5/asset/month add-on
- Pilot Corridor (5 miles, 150 vehicles) Example:
 - One-time deploy: ~\$180k–\$260k (beacons + install + setup)
 - Annual software: ~\$90k–\$150k
 - Typical payback: 9–15 months via reduced incidents, less downtime, insurance savings, and throughput gains.

(Numbers are planning ranges; refined quotes provided per site survey.)

Regulatory & Compliance Posture

- Transportation: Designed to complement existing ADS-B/ADS-S, DSRC/C-V2X pilots, and NHTSA/FAA safety objectives (non-ATC for airfields; local ground-ops safety).
- Spectrum: Uses certified bands and compliant power levels; can operate in unlicensed bands with coordination.
- Privacy & Security: End-to-end encryption, pseudonymized asset IDs, strict retention/role-based access, audit logs.

Current Status & Near-Term Milestones

Status (civilian track):

- Architecture locked (RGMN + edge orchestrators + control-policy library).
- Vendor shortlist for beacon and enclosure SKUs.
- Draft pilot SOWs and KPI scorecards ready for municipal/airport/port proposals.

0–90 Days

- Select two pilot corridors (one city school/bus route, one airport ground-ops lane).
- Finalize site surveys, pole/electrical permits, and install plan.
- Deploy 5-mile corridor + 100–200 vehicles; baseline → intervention measurements.

90–180 Days

- Expand to 15–25 miles citywide + add a port yard (50–100 vehicles).
- Close insurer data pilot and publish third-party ROI brief.
- Land first multi-year subscription contract.

180–360 Days

- Replicate in 2–3 additional metros; publish before/after safety results; standardize playbook and pricing.

Risk Map & Mitigations

- Permitting Delays: Pre-negotiated templates with DOT/airport ops; integrator partners familiar with right-of-way rules.
- Interference / RF Noise: Multi-band hopping, adaptive power, and beacon density design; spectrum survey precedes installs.
- Vendor Lead Times: Dual-source critical SKUs; maintain 90-day buffer stock on beacons and transceivers.

- Adoption Resistance: Start with corridors where the ROI is visible within one budget cycle (school buses, airport ground ops, insurer incentives).
 - Data Governance Scrutiny: Privacy by design; external security assessment; clear data ownership terms for customers.
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Why This Works for Venture-Capless Investors

- Near-term cash flow: Paid pilots with tight KPIs convert to multi-year OPEX subscriptions.
 - Tangible public value: “Lives saved / incidents avoided” is politically durable across administrations.
 - Stackable markets: Once a city corridor proves out, expansion to adjacent arteries is straightforward.
 - Option value: The same mesh underpins future services (smart signals, emergency priority lanes, drone ground-risk maps).
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Capital Plan (Use of Proceeds)

Target Raise (non-VC, revenue-aligned): \$1.8M–\$3.2M in staged tranches.

- \$600k–\$1.1M – Pilot hardware, installs, and mobile kits (first 2–3 sites).
- \$450k–\$700k – Edge controllers, cloud infra, and security hardening.
- \$300k–\$600k – Field team & integrator retainers; site surveys and permitting.
- \$250k–\$800k – Working capital buffer + 90-day component inventory.

Structures we support: revenue-share notes, milestone-based SAFEs, municipal prepay credits, customer co-funded pilots.

What We’re Asking For (Right Now)

1. Anchor Customer Intros: City CTOs/COOs, airport operations directors, port safety managers.
2. Pilot Co-Funding: \$300k–\$600k per site (blended with customer budgets).
3. Insurer/Data Partner: Underwriting partner to formalize a premium-reduction model tied to TLTE telemetry.

Team & Governance (Civilian Track)

- Terry L. Tedford, Founder & Chairman — Systems architect; multi-domain safety focus; public-private deployments.
- Integrator Bench — ITS and airfield specialists (named on SOWs per city/airport).
- Advisory Ring — Transportation safety, RF engineering, municipal procurement, cybersecurity.

(Military/defense work is operated separately under the DBA TL Space Technologies & Research and is excluded from this civilian investor brief.)

One-Page Snapshot (for forwarding)

- Product: Ground-mesh navigation & anti-collision layer (GPS-independent capable).
 - Proof Target: Paid pilots; sub-20ms edge decisions; $\geq 30\%$ collision/near-miss reduction goals.
 - Model: Corridor/vehicle subscriptions; insurer data add-ons.
 - Ask: 2–3 pilots + \$1.8M–\$3.2M staged non-VC capital.
 - Why Now: Autonomy growth + GPS fragility + insurer demand + infrastructure dollars.
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Glossary (Quick Reference)

- RGMN: Redundant Ground Mesh Network—encrypted beacon lattice for positioning & coordination.
 - Edge Orchestrator: Local compute that applies technical control theory for real-time right-of-way decisions.
 - Technical Control Theory: Formal control policies that stabilize and coordinate many moving agents under constraints.
 - KPI: Key Performance Indicator (incidents, near-misses, throughput, response time, claim cost).
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Closing Summary

TLTE delivers the “last mile of certainty” for navigation and safety: a terrestrial, encrypted mesh that keeps people and assets coordinated when it matters most. The architecture is deployable, auditable, and designed to pay for itself in reduced incidents and insurer savings. Our immediate objective is to stand up two paid pilots that convert into multi-year subscriptions—proving the model without venture capital. If you can connect us to a city corridor, an airport ground-ops lane, or a port yard ready to quantify safety and throughput gains, we’ll bring the hardware, the control policies, and a clear KPI scorecard.

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