

LIQUID LEVEL MONITORING AND UNAUTHORIZED LIQUID REMOVAL DETECTION SYSTEM

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The Team



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The Problem

1

Fuel theft and inaccurate fuel monitoring cost Indian fleet operators thousands of crores annually — and no existing system solves this reliably under real-world conditions.

2

Fleet operators, truck owners, logistics companies, and industrial storage users suffer massive fuel losses daily. Today they rely on conventional float sensors, ultrasonic probes, or capacitive sensors — all of which fail during vehicle motion, rough terrain, sloshing, and tank inclination, generating false alarms or missing actual theft entirely.

3

India loses thousands of crores annually to fuel theft. With over 1.2 million commercial vehicles and a fleet telematics market growing at 13% annually, the cost of an unreliable monitoring system is enormous — both financially and operationally.



KEY STAT

5–15% of total fuel purchases are lost to theft annually in Indian commercial fleets — amounting to over ₹20,000 Crores in losses every year.

Indian Fleet Management Industry Reports & Automotive Logistics Research, 2024

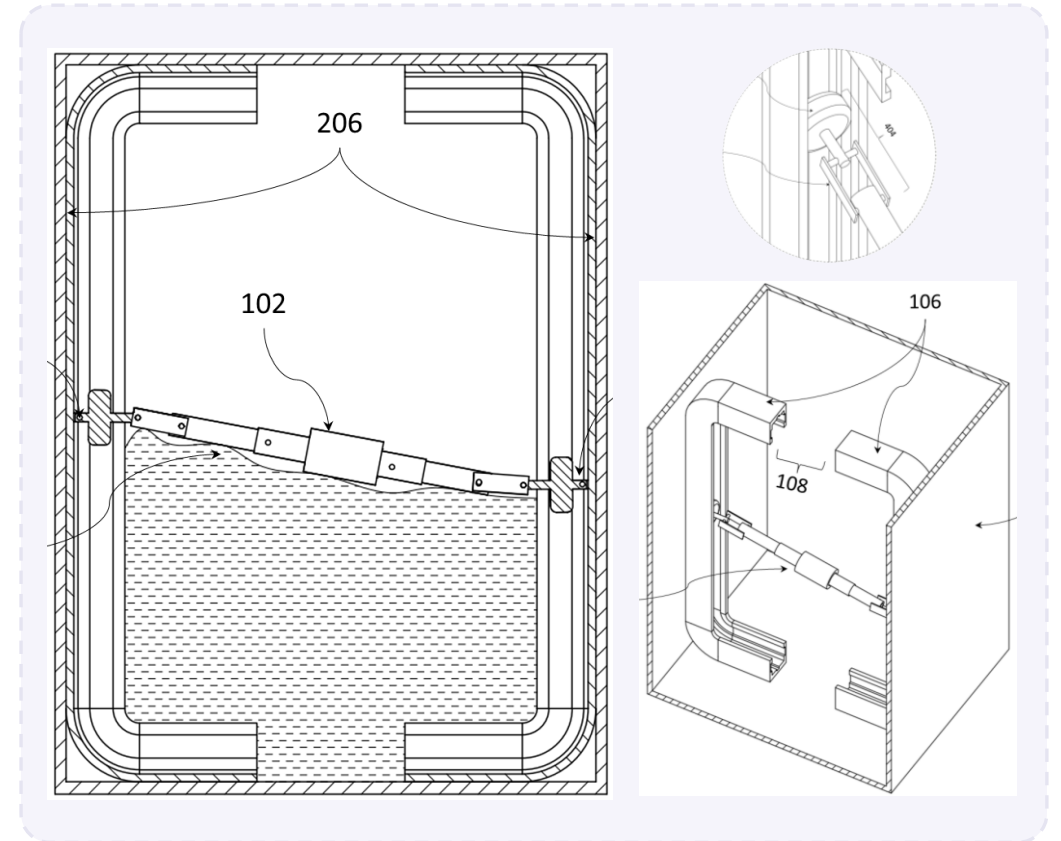
The Solution

Smart Liquid Level Monitoring & Theft Detection System

This Technology is a patented hardware-software integrated IoT system that accurately monitors fuel levels inside commercial vehicle tanks under all real-world conditions — including motion, rough terrain, sloshing, and inclination. Fleet operators can now detect actual fuel theft with zero false alarms, both during vehicle motion and when stationary.

- + Benefit 1 – Accurate fuel measurement under motion, sloshing & inclination**
- + Benefit 2 – Intelligent GPS-based theft detection — zero false alarms**
- + Benefit 3 – Real-time alerts via SMS, call, email & WhatsApp**

CURRENT STAGE:
Ideation



Product / Service – How It Works

HOW IT WORKS

- 1** **Step 1** Telescopic shaft floats on liquid surface inside the tank, extending across its full width. Dual position sensors at both ends simultaneously measure fuel levels at two spatially separated points — computing a mean liquid level that eliminates errors from sloshing or tank inclination.
- 2** **Step 2** The Staying-Time Algorithm continuously monitors sensor stability. Only when readings remain consistent within a predefined threshold for a minimum duration does the system treat the data as reliable — completely eliminating false alarms caused by vehicle motion, rough terrain, or sloshing.
- 3** **Step 3** GPS-based mileage tracking computes expected fuel consumption. This is compared against actual liquid level reduction in real time. Any significant deviation beyond the predefined threshold triggers an instant alert via SMS, call, email, or WhatsApp — reliably detecting unauthorized fuel removal both during motion and when stationary.



Market Opportunity

TAM [₹ 29,000 Cr+]

Accuracy note: This is the broader fleet management market — not specifically fuel monitoring alone.

SAM [₹ 4,500 Cr]

Accuracy note: This is an estimated figure — no single published report gives this exact number.

SOM [₹ 150–300 Cr]

Realistic licensing revenue target in 3–5 years from 2–3 major OEM partnerships

India has 1.2M+ (with a $\pm 15\%$ threshold) commercial vehicles with telematics. Fuel theft costs ₹20,000+ Cr (with a $\pm 20\%$ threshold) annually. Fleet telematics market growing at 13.2% CAGR. Each licensed unit generates recurring royalty revenue per vehicle.



Why now?

Government AIS-140 mandate for vehicle tracking, rising fuel costs, and explosive growth in logistics post-COVID have created massive demand for reliable fleet fuel security solutions right now.



Your early adopters?

Commercial truck & tanker fleet operators across India — specifically companies managing 50+ vehicle fleets where fuel theft losses are most significant and measurable.

Business Model



Who pays?

Automotive OEMs (Tata Motors, Mahindra), Fleet Management Companies (Fleetx, Watsoo), Logistics operators, and Industrial liquid storage companies across India.



How they pay?

Technology Licensing Fee (one-time) + Royalty per unit manufactured (per-unit recurring revenue model).



Revenue per customer?

Example: ₹10–25 Lakhs one-time licensing fee per company + ₹500–2,000 royalty per unit manufactured. So, If a partner manufactures 10,000 vehicles with our system — royalty income alone = ₹50 Lakhs to ₹2 Crores.



Unit economics

Low CAC — outreach via tech transfer agent + direct pitch. High LTV — recurring royalties across millions of units. Gross margin 85%+ as IP licensing has near-zero marginal cost.



Revenue streams

Primary: Technology Licensing & Patent Transfer to OEMs.
Future: SaaS fleet monitoring platform, hardware manufacturing partnerships, international IP licensing.

Roadmap & Milestones

1

TODAY

Where you are today

Patent filed & published by Indian Patent Office. Non-confidential tech summary distributed. Active outreach to Tata Motors, Mahindra, TCS, Fleetx, and Watsoo underway. Tech Transfer Agent engaged.

2

+12 MONTHS

Next milestone

Secure first technology licensing agreement or co-development partnership with an automotive OEM or fleet management company. Develop working prototype using partner R&D facilities. File international PCT patent.

3

+2 YEARS

Scaling milestone

Patent licensed to 3+ major companies. System integrated into 50,000+ commercial vehicles across India. Recurring royalty revenue stream established. Second-generation product development initiated.

4

+5 YEARS

Expansion milestone

Expand into international markets — SE Asia, Middle East, Africa. Extend technology to water tankers, chemical storage, agriculture sector. Launch SaaS fleet analytics platform built on thedata.



Phrasing each milestone relative to where we are today

Key Risks & Mitigation



RISK 1

Large OEMs may develop similar technology in-house rather than licensing ours.



HOW WE'LL TACKLE IT

Our patent is already filed and under examination — giving us legal priority. We are actively pursuing licensing agreements now before any parallel development. Our telescopic shaft design is uniquely patented and hard to replicate without infringement.



RISK 2

No prototype exists yet — companies may hesitate without a physical demonstration.



HOW WE'LL TACKLE IT

We are seeking R&D facility access through Vande Bharatam and partner companies to build the first prototype. Our detailed patent specification and technical documentation serve as proof of concept in the interim.

Competition & Your Advantage

Feature / Advantage	Liquid Level Monitoring & Detection	Conventional Float Sensors	Ultrasonic/Capacitive Sensors	GPS Telematics Only
Accurate under vehicle motion & sloshing	✓	✗	✗	✗
GPS-based intelligent theft detection	✓	⦿	⦿	✗
Zero false alarms via Staying-Time Algorithm	✓	✗	✗	✗
Explosion-proof ATEX compliant design	✓	⦿	✗	✗



YOUR ADVANTAGE

Our floating telescopic shaft with dual-end sensing is a patented hardware innovation — legally protected and technically unique. The combination of dynamic measurement accuracy + GPS-based intelligent theft detection in one integrated system cannot be replicated without infringing our patent. No competitor offers all four capabilities simultaneously.

ANY ADDITIONAL INFORMATION YOU WOULD LIKE US TO KNOW

Annexure 1

PATENT DETAILS

Application Number: 202631061326

Filed with: Indian Patent Office (IPO)

Current Status: Published & Under Examination

Title: Smart Liquid Level Monitoring and Unauthorized Liquid Removal Detection System

Field: Automotive / Transportation / Fleet Management / Industrial Liquid Storage

Key Technical Components:

- *Floating Telescopic Shaft with dual-end Position Sensors*
- *Guideway Structures with Circumferential Guide Channel*
 - *Staying-Time Algorithm for noise filtering*
 - *GPS-based Expected Consumption Computation*
 - *ATEX-compliant Explosion-Proof Enclosure*
- *Distributed Master-Slave Processing Architecture*
- *Real-time Alert Generation via GSM/GPS Module*