
obsurver
Enabling True Safety for Sensor-Driven Autonomous Systems
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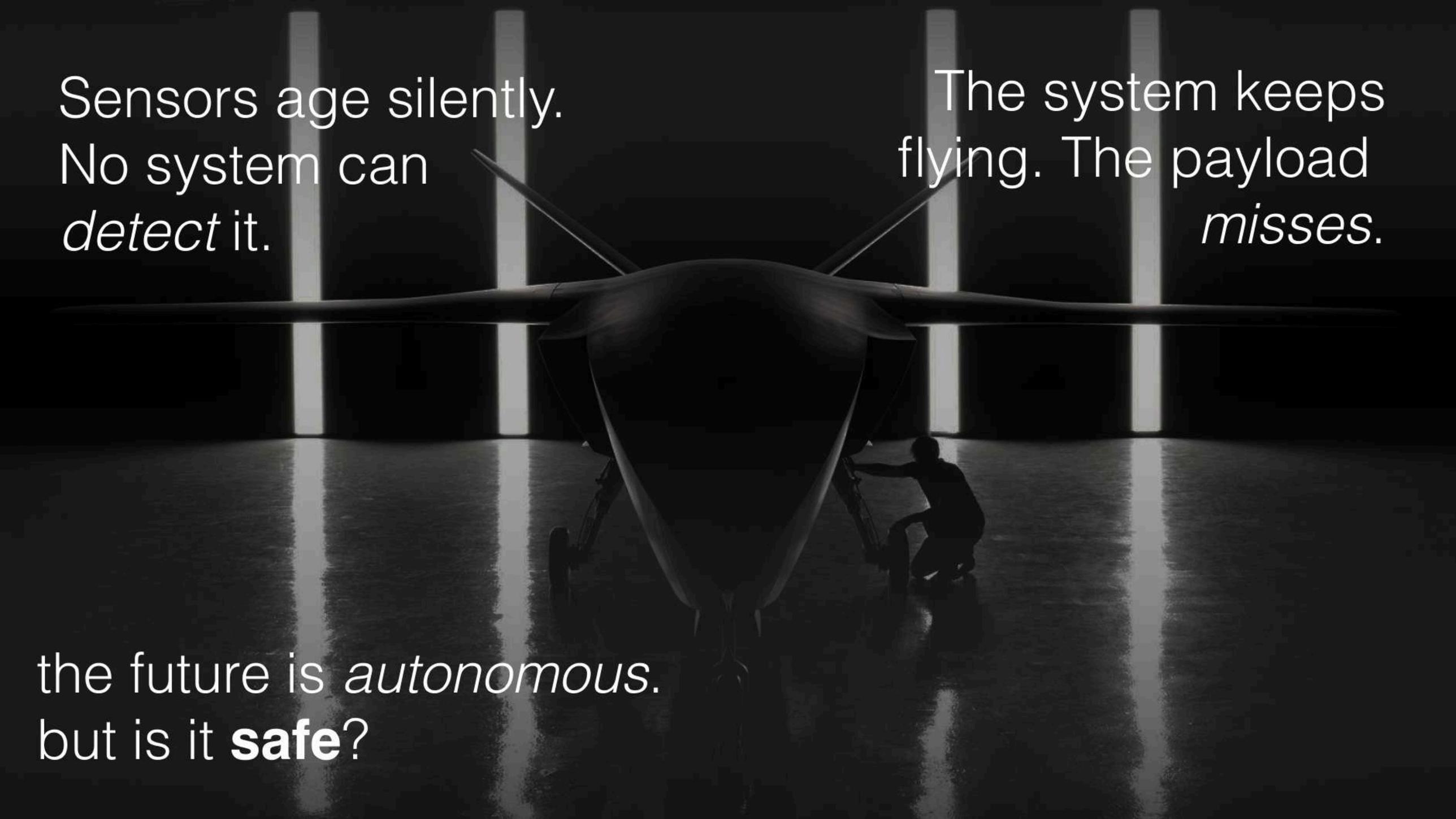
If we want to build a world that is increasingly autonomous, we must be able to trust every sensor system to perform as it’s supposed to - not only on day 1, but also after 5 years in the field.

Degrading sensor-systems are not only a threat to performance, but also a threat to life. Once the human is out of the loop, systems must be monitored, to ensure true safety.

obsurver is building the global software security layer to montior and detect sensor degradation on a system-level.


Sensors age silently.
No system can
detect it.
The system keeps
flying. The payload
misses.
the future is *autonomous*.
but is it **safe**?

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We are building a world where sensors never fail, and autonomous systems can be trusted as much as life itself.

Defense

Degradation weakens both offensive and defensive capabilities: from impaired targeting to reduced situational awareness and mission effectiveness.

Space/Aviation

Degraded sensors undermine navigation and safety, where in-flight or in-orbit failures often leave no room for correction.

Industrial Automation & Robotics

Degraded sensors mean distorted perception, leading to navigation errors, unsafe interactions, and unexpected downtime.

Automotive

Degraded sensors cause phantom braking, missed obstacles, or failed airbags — increasing crash risk.

Heavy Machinery

Unreliable sensors cause navigation errors, delays, or collisions in rough terrain.

Other

- Oil, Gas & Petrochemical
- Rail Operators & Infrastructure
- Maritime & Port Authorities

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We Set the Market Entry Barrier!

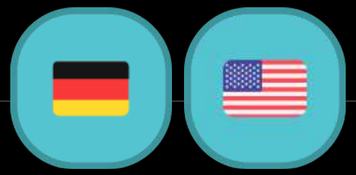
Sensor Degradation Detection (Main IP)

Registered in July 2016

Detects early signs of sensor performance decline before complete failure occurs, ensuring consistent data reliability.

Human degradation Detection

Registered in February 2020



Monitors driver or operator attention, fatigue, and performance to enhance safety in human-machine interaction.

Scenario Driven Individual Feedback to AD/driver

Registered in May 2019

Provides real-time, context-specific feedback to autonomous driving systems or drivers to correct behavior and prevent risks.

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Meet *Argus*: One Software, Every Deployment Context.

Argus

Argus monitors the full signal chain: from raw sensor input to AI output and pinpoints exactly which sensor is degrading, why, and in what way. Their perception stack is the patient. *Argus* the independent diagnostician.

On-Device

Onboard module for real-time sensor monitoring

Argus runs directly on the platform monitoring the full signal chain in real time as the system operates. No cloud connection required. Built for defense platforms, autonomous vehicles, and robots where latency and data sovereignty matter.

Workshop

Offline analysis of sensor logs across missions and deployments

Argus processes recorded sensor logs offline - identifying degradation patterns across missions over time. Built for maintenance teams and workshop environments where predictive servicing replaces reactive repair.

Cloud

Centralized sensor health intelligence across your entire deployed fleet

Argus aggregates signal health data across an entire deployed fleet - giving operators a centralized view of which assets are degrading, where, and why. Built for fleet operators and program managers overseeing hundreds of assets.

Works with every sensor modality and can catch attacks on ISP (image signal processing)

Access to raw/pre-perception / Ai Sensor stream

Scales from one vehicle to entire fleets

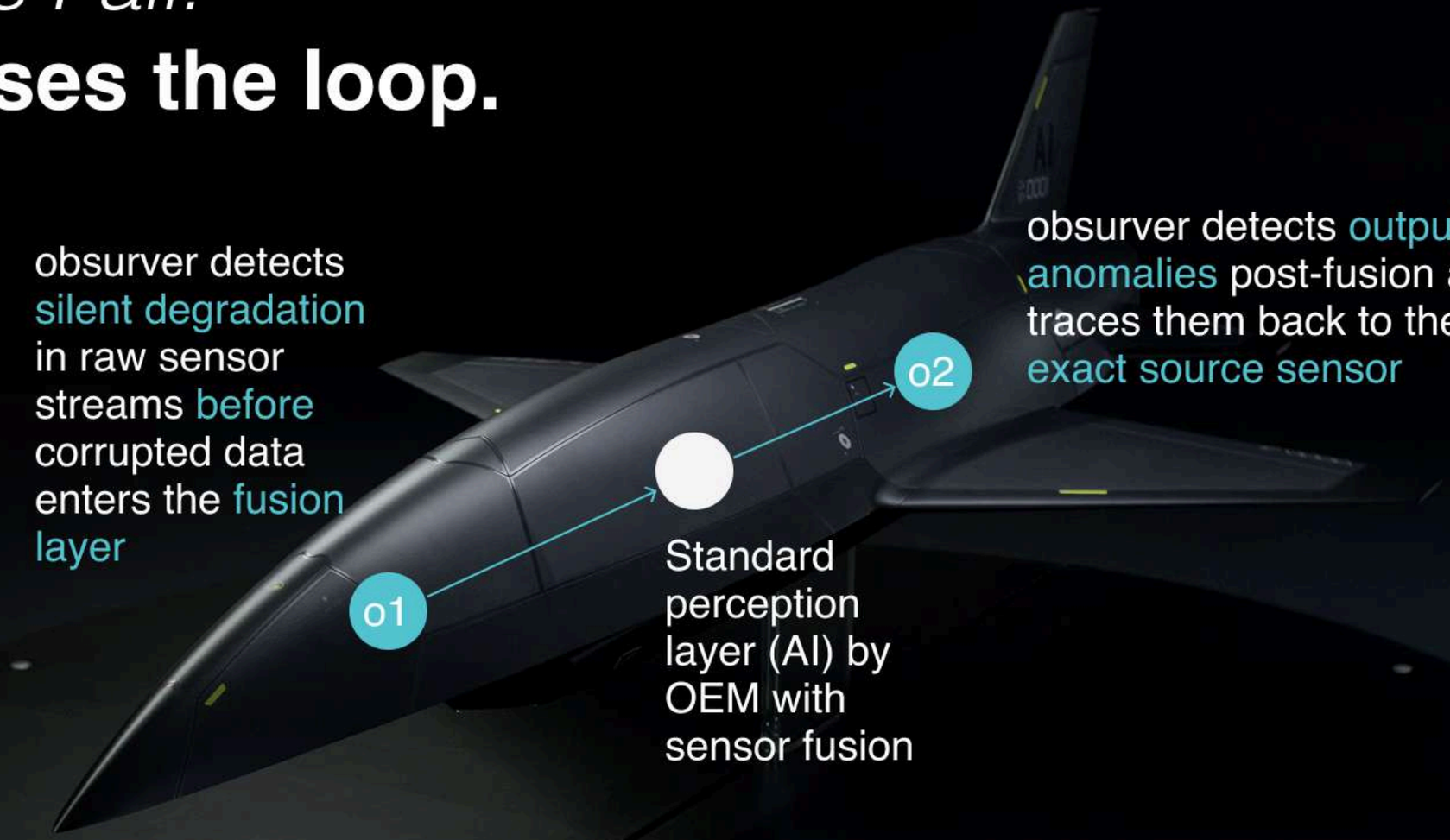
Argus is the only software that can measure signal chain integrity. It detects geometric degradation, signal drift, soiling, sharpness loss and miscalibration across any sensor modality before and after the fusion layer. This approach is protected by patents granted in both the US and Germany, covering the full method across all sensor types and all industries with different deployment opportunities.

When Sensors Fail:
obsurver closes the loop.

A degraded sensor on a defense platform is not a maintenance issue. It is a mission risk.

Standard systems have no verification between a live signal and a dead one - leaving gradual degradation, and even deliberate attacks, sensor manipulation, completely invisible.

obsurver monitors the full signal chain pre- and post-perception and maps every anomaly to its exact source before it costs a mission.



obsurver detects silent degradation in raw sensor streams before corrupted data enters the fusion layer

Standard perception layer (AI) by OEM with sensor fusion

obsurver detects output anomalies post-fusion and traces them back to the exact source sensor

When Sensors Fail:
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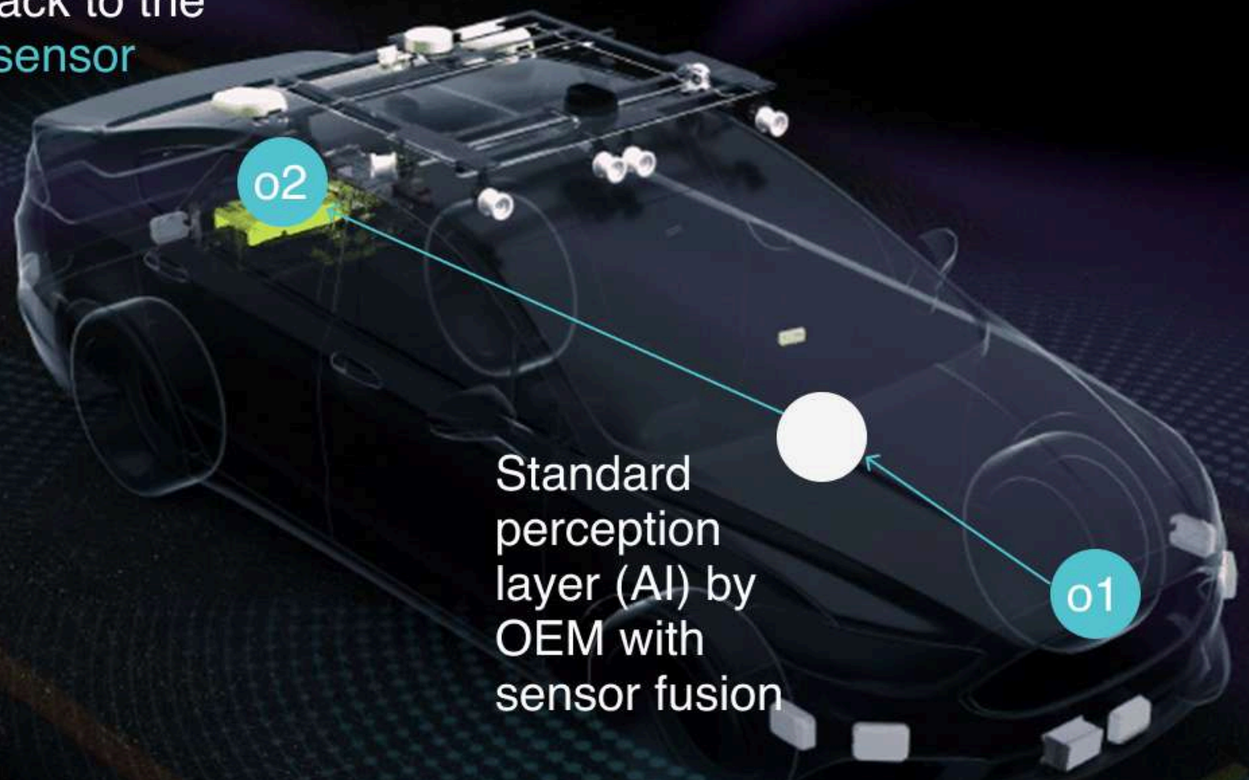


obsurver detects silent degradation in raw sensor streams before corrupted data enters the fusion layer

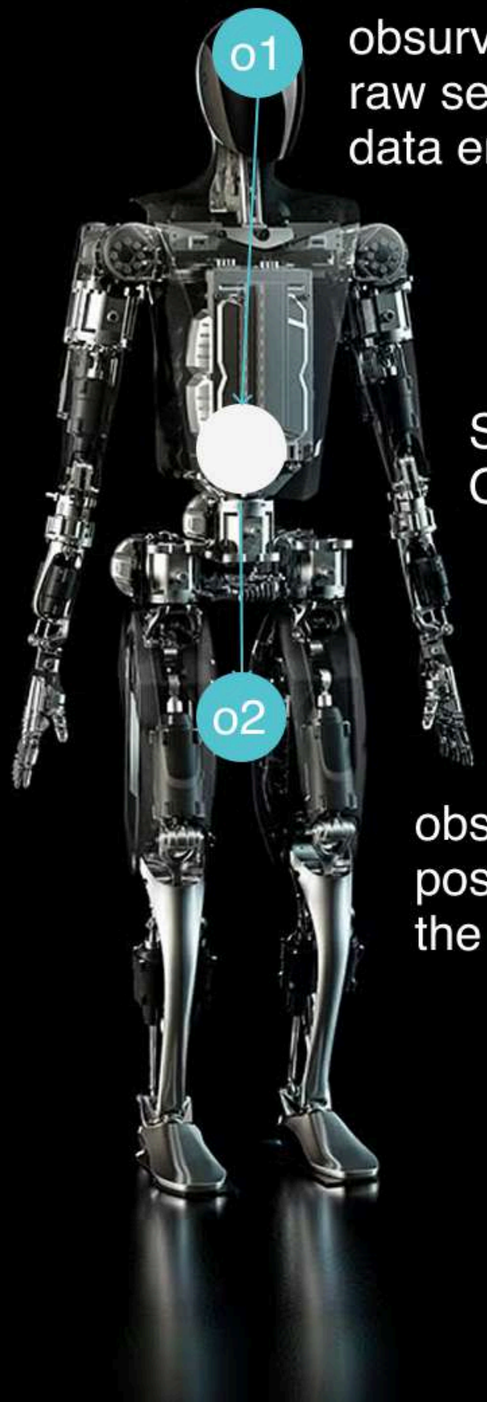
Standard perception layer (AI) by OEM with sensor fusion

Autonomous vehicles operate under a simple assumption - that the sensors feeding the AI are reliable. That assumption is never verified. When a degraded sensor causes a failure, the liability lands on the OEM. But obsurver is not just about avoiding risk. It turns sensor health into a business model - giving OEMs the data to offer predictive maintenance contracts, service exactly what needs servicing, and build recurring revenue from every vehicle in the field.

When Sensors Fail: **obsurver closes the loop.**

A robot that degrades silently is not just one failure. It is a fleet risk that scales with every unit deployed. Standard systems have no verification between a live signal and a dead one - leaving gradual sensor wear completely invisible until a robot fails in the field.

obsurver monitors the full signal chain pre- and post-perception, giving robotics operators the visibility to predict failures, prevent downtime, and scale their fleets without scaling their risk.



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Standard perception layer (AI) by OEM with sensor fusion

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The Data Doesn't Lie

Real-World Validation

12-month data collected from a Tesla Model 3 under diverse weather conditions (sun, rain, snow) showed **calibration drift** significantly affects sensor reliability.

System-Level Failures Detected

±3° miscalibration in cameras led to:

- Missed object detections (e.g., pedestrians)
- Delayed or failed emergency braking
- Incorrect Time-To-Collision (TTC) estimates

Quantified KPIs

- Shifts in ROC curves prove sensor degradation directly lowers detection accuracy
- Measurable deltas in detection confidence and object localization

AI Systems Are Vulnerable

Even minor degradation fooled YOLOv4 object detectors—causing systematic faults without triggering on-board self-diagnostics.

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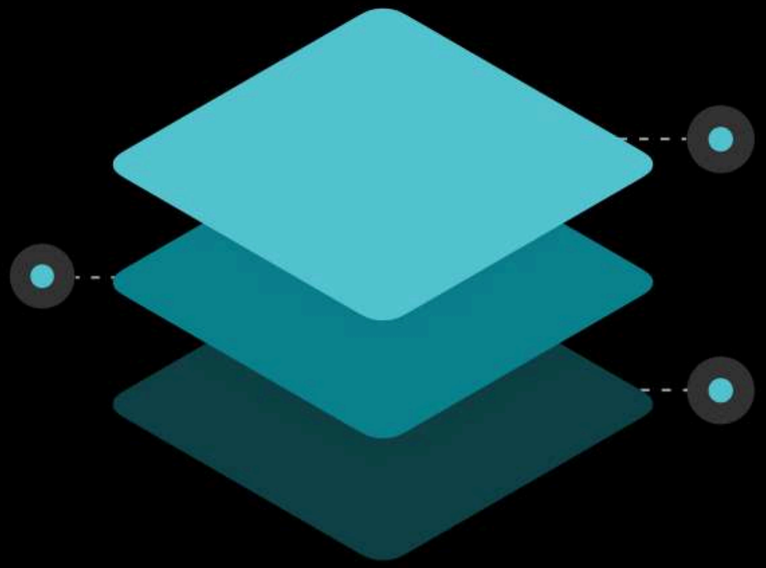
Business Model & Revenue

Non-Embedded Solution

- Standalone diagnostic tools and software for maintenance, inspections, and sensor health management.
- Revenue generated through software subscription fees, maintenance contracts, and diagnostic service fees.



Customized Enterprise Solution

- Tailored, industry-specific solutions designed to meet unique customer needs.
- Revenue from bespoke integration projects, professional services, training, and strategic advisory.

Embedded Solution

- Software integrated directly into client hardware (vehicles, drones, robots, industrial machinery).
- Revenue through recurring licensing fees and long-term integration contracts with OEMs, system integrators, and manufacturers

Revenue Streams

Licensing & integration fees

Subscription & usage-based diagnostics

Enterprise solution engagements

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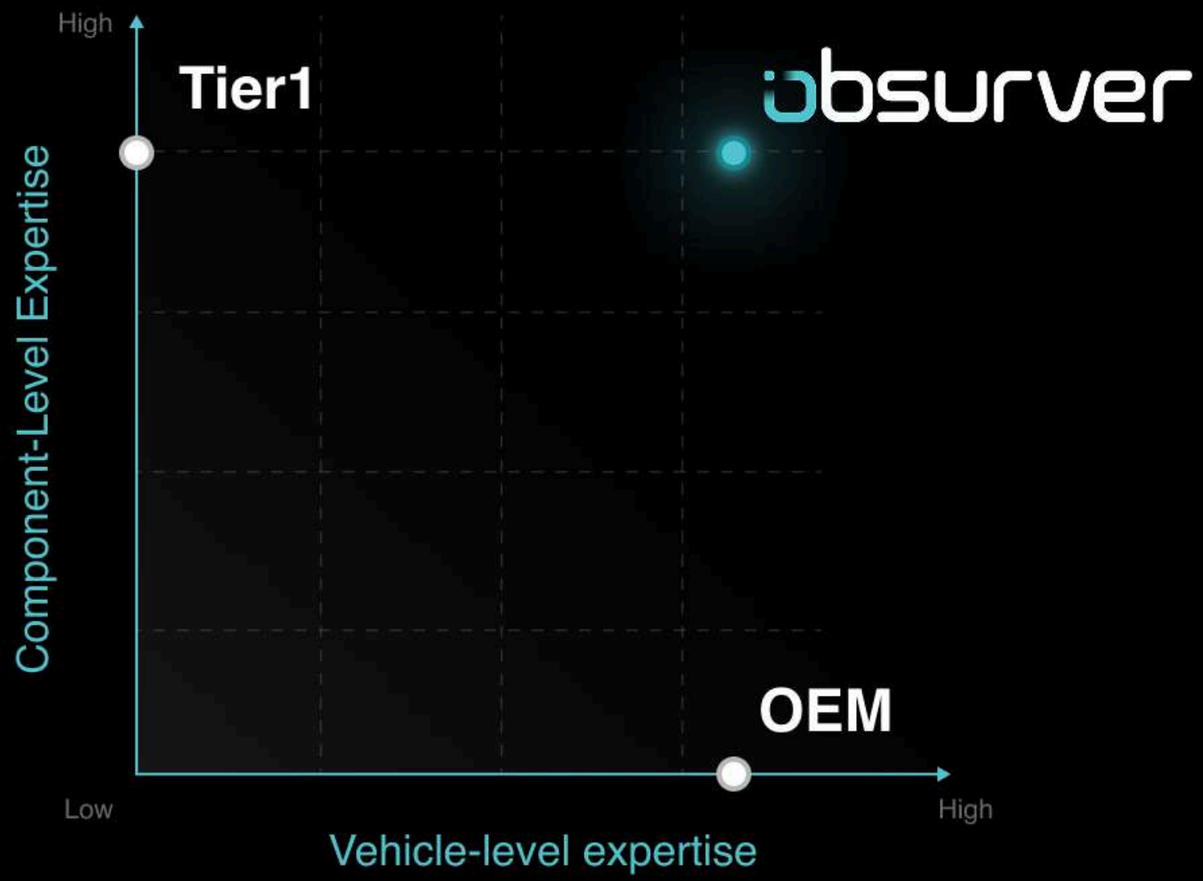
Competitive Landscape

Both component level and system level required for true solution.

Current offering is only toward blockage detection, but not long term and system level degradation recognition or short term degradation pin-pointing.



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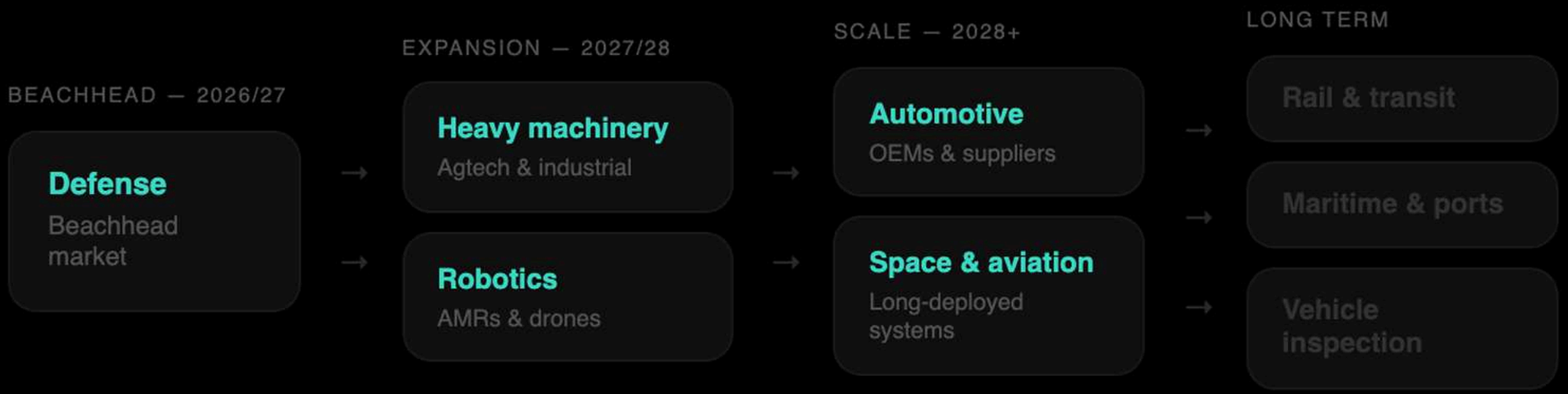
Beachhead & GTM



Defense first

- Highest cost of undetected degradation
- Largest per-asset maintenance budgets
- Long durable contracts once signed
- Reference case that opens every other door

Heavy machinery and robotics

- The underlying problem is identical to defence
- Same software, same signal chain architecture, same PoC model
- Defense gives us the reference case that shortens every conversation
- We are not pivoting when we expand, we are scaling what already works

How we win

- 40+ years in sensor systems, we know the buyers, the sellers and the pain
- Engineering and innovation leads first, not procurement
- PoC-first model converts to recurring contracts

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Why OEMs can’t build it themselves.

The conflicted referee

An OEM cannot credibly self-certify the health of their own sensor stack. When a system failure occurs, liability lands on the manufacturer. A monitoring tool built and operated by the same company that built the system is not independent verification.

Regulators, insurers, and enterprise customers increasingly require independent oversight for exactly this reason.

Blind to what you haven't encountered

An OEM building an internal tool only ever trains it on degradation patterns their own fleet has experienced.

obsurver sees degradation signatures across diverse platforms, industries, and deployment environments simultaneously.

Edge cases that would take an OEM years to encounter, obsurver has already seen and learned from.

Sensor-agnostic by design

OEM-built tools are locked to their current sensor stack. Every new sensor modality requires a new internal tool.

obsurver generalises across camera, radar, LiDAR, infrared, and every future modality from day one - because the method operates at the signal chain level, not the hardware level. That is what the patent protects.

Sensors have always been someone else's problem

OEMs have historically outsourced everything around sensors to specialist suppliers - hardware, software, and integration guidelines all come from third parties. Most have no deep visibility into the sensor stack they depend on. In defense and industrial contexts it is even more pronounced - most platforms run off-the-shelf sensor solutions with no custom monitoring whatsoever.

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Early Traction

BW INVEST

Together with Hochschule Reutlingen

Together with Hochschule Reutlingen, and Deloitte, we just applied for the BW Invest Grand, to build a 2-year project on “Lifecycle monitoring of AI perception systems”

MINI-POCs

together with industry partners like Carglass, dSpace & more

With industry-partners we were able to show that sensor degradation exists and that there is a need to flag/monitor, as well as a clear financial incentive to do so

PAPERS / IEEE

Sven / Benjamin

In recent years, both Sven & Benjamin have written multiple papers on sensor degradation and cofounded IEEE P2020, the standardisation instutution for the automotive industry.
all papers on: www.obsurver.com

START Global Summit

Top 4

During the pitch competition of START Global, we were able to become one of the Top 4 global Deep-Tech Startups, winning the chapter in Stuttgart, representing the state of Baden-Württemberg, going through quarter- and semifinals, into the final. In the competition there were more than 300+ startups from 35+ countries.

GTM-Motion

current strategic focus till fundraising start

In defense, robotics & AgTech we are in discussions to build a pilot-project for either “Watchdog” or “Engine”.
Companies in motion:
One of the largest, publicly traded, Isreali Defense Companies
One of the largest, german based, AgTech companies
One of the largest, german based, telecommunications companies
+ more US & German defense companies in the pipeline

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Core-Team

Fabian Schmidt
CEO

M.Sc. Entrepreneurship, Babson College, with 7+ years as a serial entrepreneur - built various ventures in consulting, supply chain, pet food, FMCG and mobility - then founded obsurver to help autonomous systems monitor sensor degradation.

Benjamin May
CTO

M.Sc. Physics, University of Greifswald, with 15+ years leading ADAS/AD system development and strategy for global OEMs; co-founder and advisor of the IEEE P2020 Automotive Image Quality Standardization WG before co-founding obsurver.

Sven Fleck
CSO (Chief Science Officer)

M.S. & Ph.D. Computer Science, University of Tübingen, with 15+ years consulting on automotive and surveillance imaging, image-quality KPIs; co-founder and Vice-Chair of IEEE P2020 and co-founder of obsurver to tackle in-field sensor degradation.

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History

- Benjamin & Sven co-found IEEE P2020
- Patent process startet
- work in OEM specifications for 10+ years

- var. research projects
- founding of “survschool UG”
- patent process done, more patents in the works

- var. research projects with e.g. Belron (Carglass) or dSpace
- mini-PoC to show degradation can be identified
- Oct. 2025: cofounding of “obsurver GmbH”

10+ years of preparation & lobbying to be able to put obsurver in the right seat at the right time

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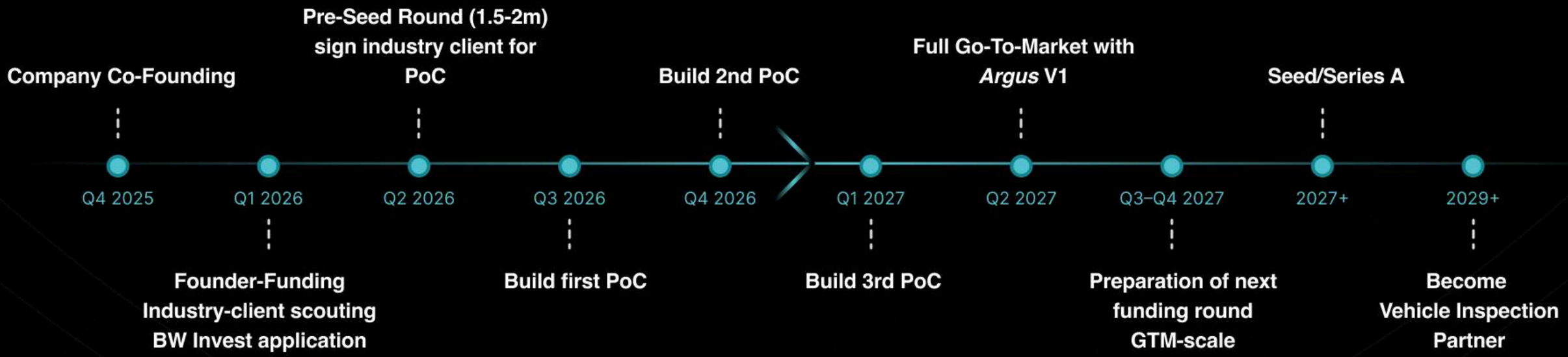
Roadmap & Vision



Making autonomy truly safe by ensuring no sensor degradation goes unnoticed - across all industries and all sensor modalities. obsurver sets the global standard for real-time sensor health.

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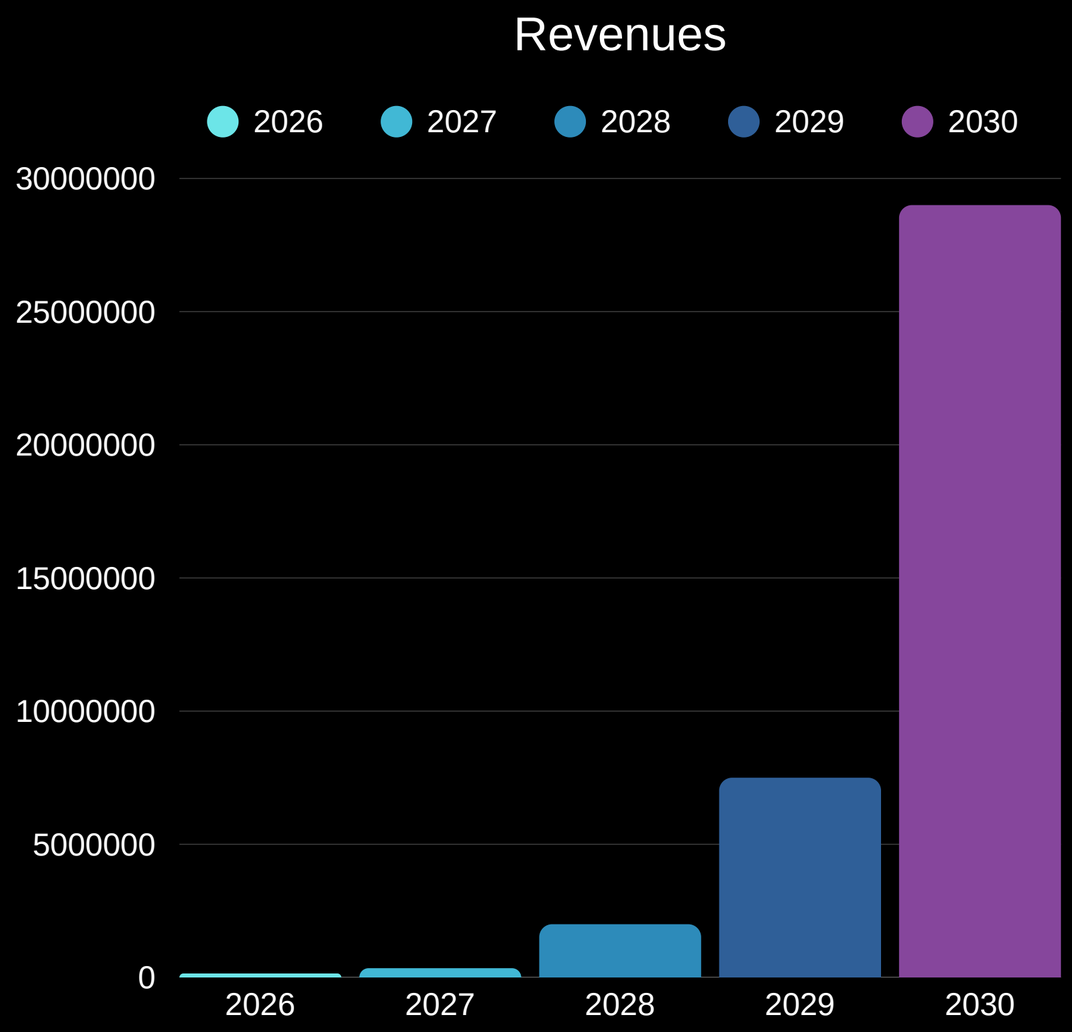
Financials



based on 1.5m pre-seed. more funding would increase GTM speed, sales & product dev, with the right partnerships

Key facts & figures:

Paid PoC with industry-client: 150k rev | 50k EBIT
3 Paid PoCs planned in 2026 & 2027 for the three products. 2028 first year after MVP at market. 2029+ scale-up

Average contract value (ACV): 160k p.a.
Clients needed for 1m+ rev: 7

Fundraising: Pre-Seed/Seed in Q2 2026 | founders-invest currently at ~100k total

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Pre-Seed Round

Outreach starting April, expected closing end of July

Total round size: 2 Million €
Valuation: 10 Million € pre-money
Runway including expected revenues: 24 months

Use of funds:
Engineering & product - 60%: First PoC delivery, Argus v1 deployed on a live platform
GTM & sales - 25%: First enterprise contracts in defense and robotics
Operations & legal - 15%: IP protection, compliance, team infrastructure

This round funds three milestones: First paid PoC signed and delivered; Argus v1 live on a customer platform; Series A ready by end of 2027 with €2M ARR in sight

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Join us in a mission to make the future of autonomous systems and therefore our world truly safe.

If you have any additional questions or interested in our product, contact us at

Fabian Schmidt

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info@obsurver.com

Benjamin May

may@obsurver.com

Bonus

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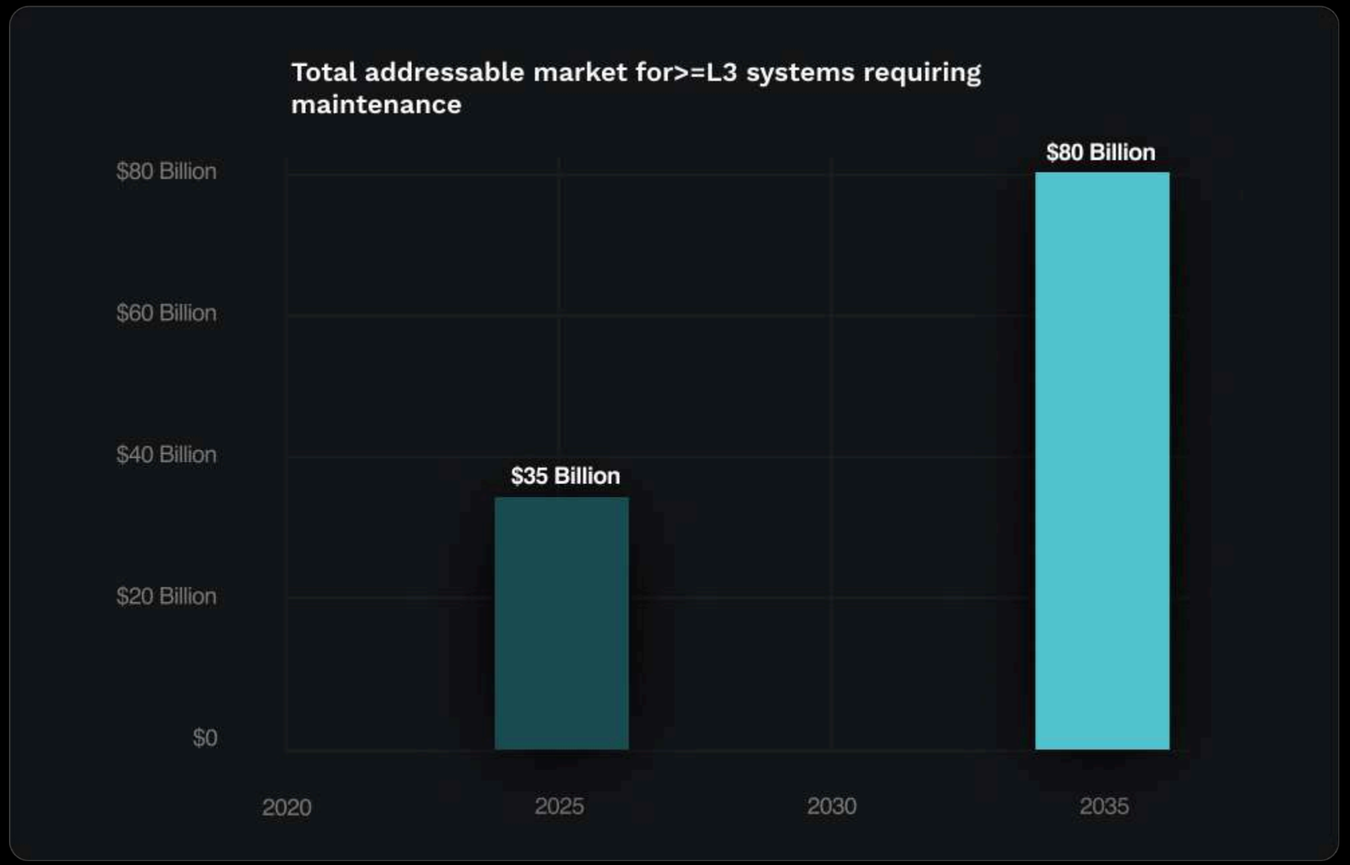
Market & Regulatory Context



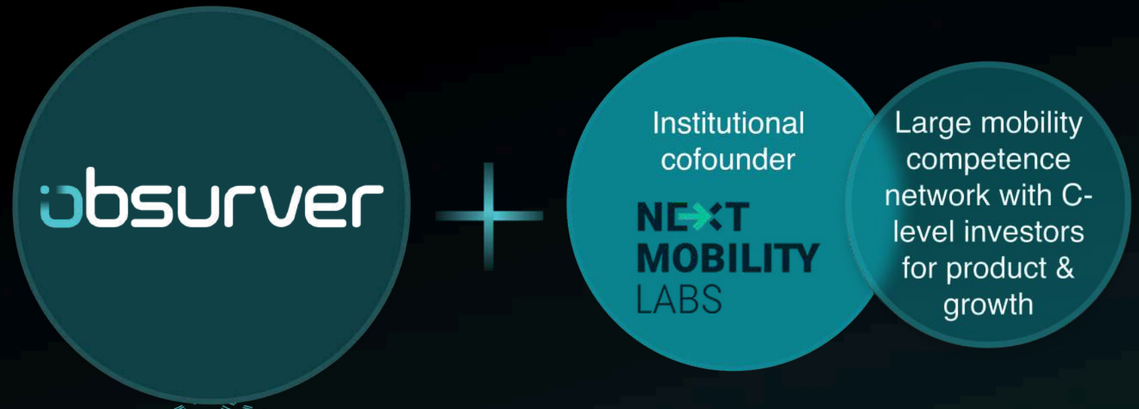
Regulatory Drivers:

- **ISO26262** rev 3 (coming) for predictive maintenance (e.g. germany **read more**)
- **UNECE R155** cybersecurity & safety mandates

Regulators and OEMs must certify sensor health over the vehicle lifecycle.

Just the market for autonomous cars is rapidly growing across all industries. Now is the right timing to enter the market and position obsurver as the single solution for sensor system monitoring.

Partnership & Sales Strategy



Target Segments

Main Target:

Automtive
Defense
Heavy Machinery
Space
Agricultural Machinery

Future Target:

Robotics
Aviation
Smart Buildings
Maritime/ Ports

Security & Surveillance
Rail & Public Transit
Oil Gas Petrochemical

Channel Partners

- DEKRA
- TÜV
- Hüsges
- Automotive test-lane operators

Lead Gen Plan

- Co-branded workshops
- Whitepaper downloads
- Conference demos