

# SOLUTIONS CATALOG



**Sensing the Future:**  
AI-Powered 5G Intelligence

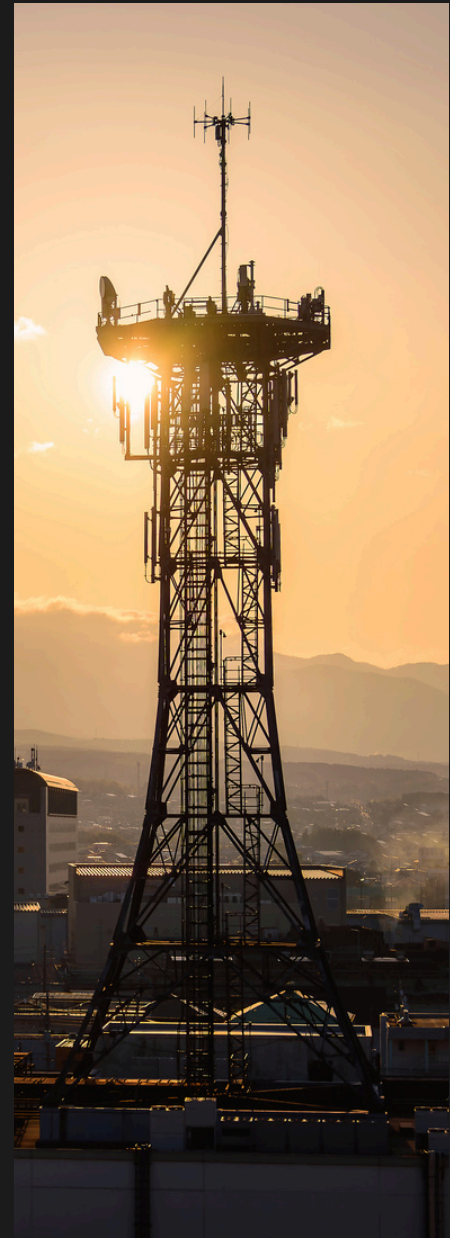
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# About Us



Tiami Networks is a deep-tech startup pioneering innovations in Integrated Sensing and Communications (ISAC).

Based in California, we develop AI-powered sensing solutions that transform existing wireless signals into valuable insights.

By integrating cutting-edge research with industry collaboration, we create scalable, privacy-conscious technologies for smart infrastructure, security, and situational awareness.

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# PolyEdge Multifunction Sensor

PolyEdge is a next-generation multifunction sensor that leverages ambient wireless signals—5G, 4G, and Wi-Fi—to passively sense and track objects, people, and vehicles.

Without requiring additional transmitters or invasive cameras, PolyEdge enables real-time intelligence across various environments, from airports and smart cities to homes and industrial sites.

Its FPGA-powered edge computing ensures rapid, efficient data processing, making it a powerful tool for a wide range of applications.

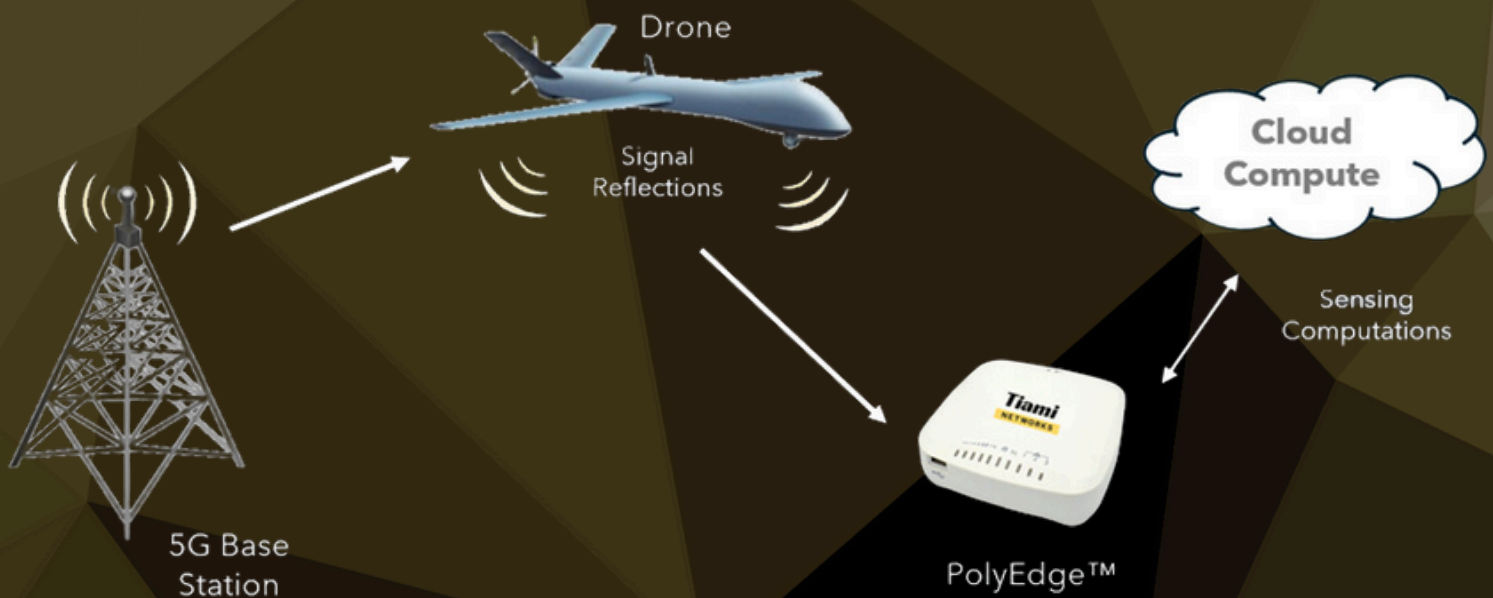




# What is Passive Radar Sensing?

Traditional radar systems emit signals and measure their reflections off objects to measure things like distance, speed, and object heading.

Passive radar sensing, in contrast, harnesses existing wireless transmissions from cellular networks and Wi-Fi, analyzing their reflections off objects to determine movement and positioning. This approach eliminates the need for active transmissions, making it undetectable, interference-free, and highly resilient.



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# Benefits of Passive Radar

In a world where digital privacy is a growing concern, PolyEdge offers a revolutionary approach to sensing.

Unlike traditional surveillance tools that rely on intrusive cameras, PolyEdge respects personal privacy by extracting insights without collecting visual data.

Its ability to function in all weather conditions—whether rain, fog, or complete darkness—ensures uninterrupted situational awareness where optical sensors often fail.

And because it utilizes existing wireless infrastructure, PolyEdge is a seamless addition to any environment, eliminating the need for expensive installations or regulatory approvals for new spectrum allocations.



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# Benefits of Passive Radar

Beyond its flexibility, PolyEdge is also an energy-efficient and cost-effective solution.

Operating on low-power hardware, it minimizes energy consumption while maximizing data precision. Furthermore, its passive nature makes it virtually immune to jamming, ensuring reliable detection even in contested environments.

Whether for security, smart city planning, or intelligent automation, PolyEdge represents the next step in the evolution of wireless sensing—one that prioritizes efficiency, adaptability, and discretion.



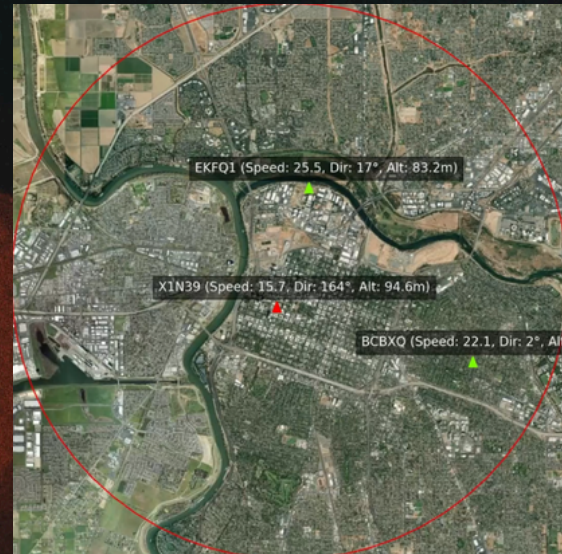


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# Use Cases

## Drone & UAS Detection

PolyEdge provides precise tracking of drones and unmanned aerial systems, leveraging passive 5G-based radar. It detects unauthorized UAS in restricted airspace without requiring direct transmissions, making it ideal for security-sensitive locations like airports and military bases. It's jammer-resistant and invisible to radar search.



## Smart Cities

Enhances urban planning and traffic management by providing real-time pedestrian and vehicle movement data without compromising privacy.

## Smart Homes

Integrates seamlessly with home automation systems to enable energy-efficient lighting, security monitoring, and elderly care applications like fall detection.



# Use Cases

## Occupancy Sensing & Tracking

Using ambient wireless signals, PolyEdge detects human presence without the need for cameras, enabling real-time space monitoring for smart buildings, retail analytics, and security.



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# Monetization Opportunity

The future of sensing and ISAC isn't just about innovation—it's about unlocking economic potential.

With its diverse applications, PolyEdge presents multiple monetization avenues.

Cities and enterprises can integrate PolyEdge to optimize infrastructure, reduce operational costs, and enhance security, driving both efficiency and sustainability.

In the defense and security sector, licensing agreements can provide governments and private security firms with a cutting-edge, non-intrusive surveillance tool tailored for counter-drone operations and perimeter monitoring.



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# Monetization Opportunity

Beyond infrastructure and security, the analytics generated by PolyEdge open the door for subscription-based services, where real-time sensing data is made available through cloud-based or on-premise platforms.

For businesses in retail, transportation, and real estate, these insights translate into better customer engagement, space utilization, and energy management. Even within the consumer market, PolyEdge has the potential to integrate with smart home ecosystems, enabling safer, more personalized environments.

By transforming passive radar sensing into an indispensable asset across industries, PolyEdge is not just redefining technology—it's creating new opportunities for value and growth.

# Product Roadmap

## Use Case



People Counting



Asset Tracking

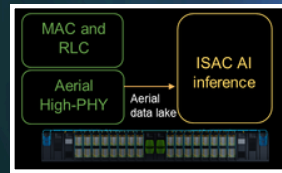


UAS Tracking

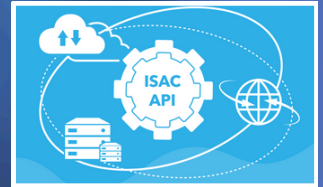
## Product



PolyEdge IoT Sensor

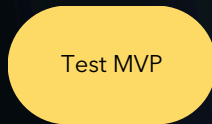


PolyRAN O-RAN App



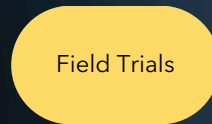
ISAC Network API

## Company Progress



Test MVP

2024



Field Trials

2025



New Verticals

2026



Pre-6G Product Development

2027





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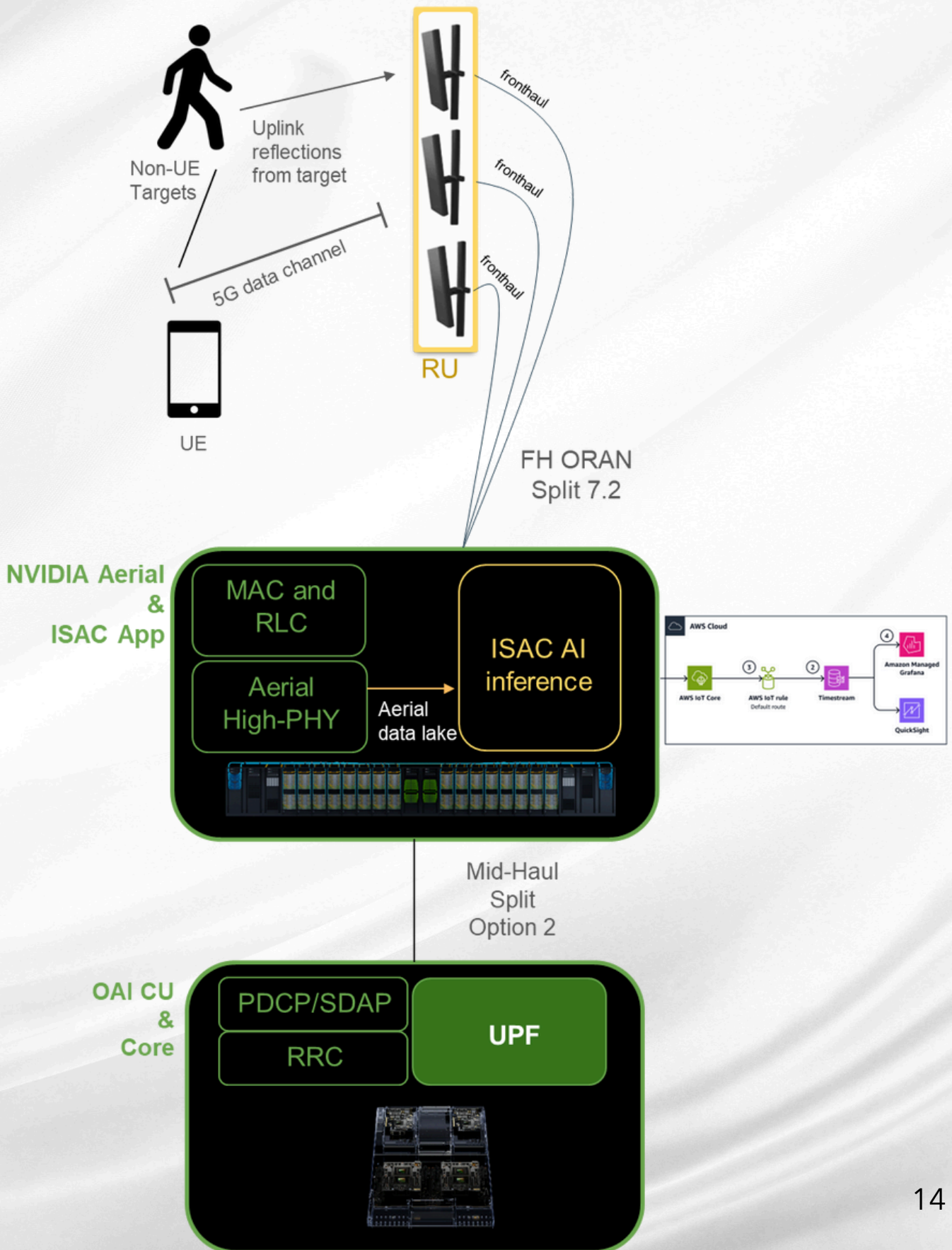
# Next Generation ISAC

At MWC Barcelona 2025 - Tiami Networks, in conjunction with the AI-RAN Alliance, demonstrated the next generation of Integrated Sensing and Communications - in the form of base station-based ISAC.

## Key Features Included:

- AI RAN infrastructure using 5G waveform for radar sensing and detection of non-UE targets (such as people) while simultaneously serving 5G UE with data.
- The AI workload for ISAC ran as an App, leveraging Aerial High-PHY functions.
- ISAC inference outputs visualized in real-time on AWS.

# Next Generation ISAC



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