



REVOLUTIONISING ASSET TRACKING

WITTRA's PIONEERING UWB SOLUTION

w!ttra™



INTRODUCTION



Håkan Dackefjord was out on his routine run when he spotted a new bicycle leaning against a tree, passing the same bike every day for the next week, wondering if it had been stolen or misplaced. It was this thought that got Håkan thinking, where is my stuff and what is it doing?

Håkan began researching location technology and current solutions in the market and soon realized that the IoT technologies today were competing within two distinct positioning categories – indoor and outdoor. The indoor

market was filled with LPWAN solutions and outdoor consisted mainly of satellite and cellular technologies. Neither of which were suitable to track objects like bikes, tools or machines. Thinking about the bike he understood that a multitude of tracked objects within the IoT space would be moving, and specifically between indoor and outdoor spheres, and in complex environments such as cities or construction sites. A viable asset-tracking system would therefore need to work successfully within every type of environment. Unfortunately, no such tracking system existed.

In 2013, WITTRA® Sweden AB was founded, WITTRA technology has gained significant traction in the IoT industry and received several awards for its ground-breaking patent protected technology in location intelligence. This technology allows seamless tracking between indoor and outdoor spheres, no matter what the environment. In 2022 WITTRA rebranded to WITTRA Networks AB.

GETTING STARTED

In the realm of Ultra-Wideband (UWB) and Real-Time Location Systems (RTLS), innovation is not just about advancing technology—it's about redefining market standards and addressing the core needs of industries seeking to optimize asset tracking and management. WiTTRA's 2024 development initiative, a hybrid mesh network architecture integrating sub-GHz and UWB technologies, has emerged as a beacon of innovation, signalling a new era in scalable, efficient, and cost-effective wireless solutions. This article looks into the intricacies of WiTTRA's approach, contrasting it with traditional UWB/RTLS solutions to underscore the transformative impact on the industry.

UNIFIED NETWORK ARCHITECTURE: A LEAP TOWARDS FLEXIBILITY AND EFFICIENCY

WiTTRA's solution heralds a paradigm shift with its unified network architecture, blending UWB/6LoWPAN and Mioty LPWAN technologies into a single, cohesive framework. This integration is not merely a technical achievement; it represents a strategic reimagining of asset-tracking infrastructures, aiming for unparalleled adaptability and user-centricity.

COMPARISON WITH TRADITIONAL SOLUTIONS:

Traditional RTLS solutions often commit to a singular technology, creating a bottleneck in flexibility and increasing dependence on specific vendors. This approach limits the scope of adaptability and forces businesses into a one-size-fits-all solution, which can be inefficient and costly in the long run.

THE DIMENSION OF LOCATION ACCURACY: PRECISION MEETS SCALABILITY

Precision in asset tracking is not just about the technology's capability to pinpoint locations; it's about the applicability and scalability of this precision to meet diverse operational needs. WiTTRA's nuanced approach to location accuracy—offering Coarse, Medium, and Fine precision levels—caters to this diversity, enabling businesses to allocate resources judiciously and optimize their investments.

THE TRADITIONAL TRADE OFF:

In contrast, conventional UWB/RTLS technologies often present a dichotomy between high precision at a steep cost or broad coverage with compromised accuracy. This binary choice can hamstring organizations, especially those with varied and dynamic operational requirements.

COST AND COMPLEXITY OF INSTALLATION: REDEFINING ECONOMIC VIABILITY

One of the most critical barriers to the widespread adoption of RTLS technologies has been the prohibitive cost and complexity of installation, primarily due to the reliance on extensive cabling. WiTTTRA's solution addresses this head-on, significantly lowering the cost and simplifying the installation process by eliminating the need for traditional cabling infrastructure.

TRADITIONAL COSTS: A STUMBLING BLOCK:

The economic burden of installing traditional cabled UWB systems is substantial, with costs often constituting a significant portion of the total system expense. This economic barrier has restricted the adoption of RTLS technologies to large-scale enterprises, leaving smaller businesses and those with limited budgets out of the loop.

SENSOR COMPATIBILITY: EMPOWERING CUSTOMER CHOICE

WiTTTRA's network architecture not only supports a wide range of location accuracies but also boasts compatibility with thousands of third-party sensors. This openness fosters an ecosystem where customers are free to choose the best-fit sensors for their specific needs, avoiding the pitfalls of vendor lock-in and promoting innovation through competition.

THE CHALLENGE OF CLOSED SYSTEMS:

In contrast, the limited sensor compatibility of traditional RTLS solutions often leads to increased costs and reduced flexibility for customers. The dependency on a single vendor for sensors and technology can stifle innovation and inflate costs due to the lack of competitive pricing.

FLEXIBILITY AND SCALABILITY: TAILORING SOLUTIONS TO OPERATIONAL NEEDS

The true measure of an RTLS solution's value lies in its flexibility and scalability—its ability to adapt to changing operational needs and scale in tandem with business growth. WiTTTRA's hybrid mesh network architecture exemplifies this, offering a solution that is as dynamic as the industries it serves.

RIGID SYSTEMS AND INFLEXIBLE SOLUTIONS:

Many traditional UWB/RTLS technologies are rigid, designed for static use cases without considering the fluid nature of business operations. This inflexibility can result in suboptimal asset tracking, where the technology fails to evolve with the business, leading to redundant investments and operational inefficiencies.

INNOVATION AND MARKET POSITION: SETTING NEW STANDARDS

WITTRA's innovative approach does more than just address the present challenges of the RTLS market; it anticipates future needs and sets new benchmarks for performance, cost-efficiency, and user experience. By providing a scalable, flexible, and economically viable solution, WITTRA is not just leading the market—it's redefining it.

TRADITIONAL SOLUTIONS: PLAYING CATCH-UP

In contrast, many traditional RTLS solutions have been slow to innovate, primarily iterating on existing technologies rather than seeking breakthroughs. This conservatism has left a gap in the market for solutions that can meet the evolving demands of industries with agility and foresight.

CONCLUSION: A NEW HORIZON IN ASSET TRACKING

WITTRA's pioneering UWB solution represents a seismic shift in the landscape of RTLS and asset-tracking technologies. Through its innovative network architecture, scalable location accuracy, cost-effective installation process, sensor compatibility, and strategic market positioning, WITTRA is not just offering a product—it's providing a comprehensive, future-proof solution that addresses the nuanced needs of modern industries. As we move forward, the impact of WITTRA's solution is poised to resonate across the market, transforming the way businesses think about and implement RTLS technologies for enhanced safety, efficiency, and asset management. The table below encapsulates the key differences between WITTRA's solution and traditional UWB/RTLS technologies, underscoring the advancements and competitive advantages WITTRA brings to the table.

WITTRA's solution transcends traditional limitations, offering a visionary approach to RTLS that aligns with the evolving demands of industries worldwide. By prioritizing flexibility, efficiency, and cost-effectiveness, WITTRA is not just advancing technology—it's shaping the future of asset management.

Comparison Chart on the next page...

FEATURE

WITTRA'S SOLUTION

TRADITIONAL UWB/RTLS SOLUTIONS

Network Architecture

Unified network integrating UWB / 6LoWPAN and Mioty LPWAN technologies

Typically rely on a single technology, limiting flexibility and increasing vendor dependency

Location Accuracy

Offers Coarse (6LoWPAN RSSI), Medium (6LoWPAN ToF), and Fine (UWB) location accuracies

Specialize in either high-accuracy at a high cost or low-accuracy at a low cost

Cost of Installation

Significantly reduced by eliminating expensive cabling

High due to complex cabling and infrastructure requirements, often constituting 80-90% of the total system cost

Compatibility with Sensors

Compatible with thousands of third-party sensors, reducing vendor lock-in

Limited compatibility, often leading to higher costs and less adaptability

Flexibility and Scalability

Highly flexible and scalable, allowing for tailored solutions based on specific asset tracking needs

Limited flexibility and scalability, often requiring compromises between precision and budget

Innovation and Market Position

Leads in innovation with a hybrid mesh solution that addresses key market barriers to UWB adoption

Some competitors are exploring hybrid solutions but face limitations like longer update rates or high costs

About WITTRA

In 2013, WITTRA® Networks AB was founded as a consequence of the team's tireless research, insight, and ongoing development. Since that time, WITTRA® technology has gained significant traction in the IoT industry and received several prestigious awards for its ground-breaking technology in location intelligence. This technology is currently protected by 51 patents, making it possible to seamlessly track assets between the indoor and outdoor spheres, no matter what the environment. The next step has been to utilize emerging standards to create products with the right market fit. As a result, WITTRA® has launched its first applications into the market, providing a simple, practical solution for keeping track of your things.



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