

Proven Results

AmIMotion validated its UWB-based RTLS with a leading provider of food-service equipment, at a complex US MNC warehouse in India, through a comprehensive two-week Proof of Concept.

Pilot Objective

Evaluate and demonstrate the feasibility and effectiveness of UWB technology for real-time asset tracking and rack-level localization — validating accuracy, scalability, and integration capabilities.

Two Case Studies Demonstrated

- **Case Study 1 — Real-time Asset Movement Tracking:** Monitoring dwell time and idle time to enable data-driven insights for operational efficiency.
- **Case Study 2 — 3D Rack/Bin-Level Localization:** Automating pickup and storage operations while enhancing workflow efficiency and placement accuracy.

Implementation Challenges Overcome

- **Harsh metallic environment:** Metal pallets and industrial equipment required advanced NLOS algorithms for reliable tracking.
- **Variable environment:** 30% of the tracked area changed from empty to fully blocked within hours, without requiring system reconfiguration.
- **Complex object associations:** Smart trackable creation for product–worker–forklift relationships with automatic lifecycle management.
- **3D vertical tracking:** Vertically stacked racks required specialized anchor installation to achieve under 30 cm accuracy up to 25 feet high.

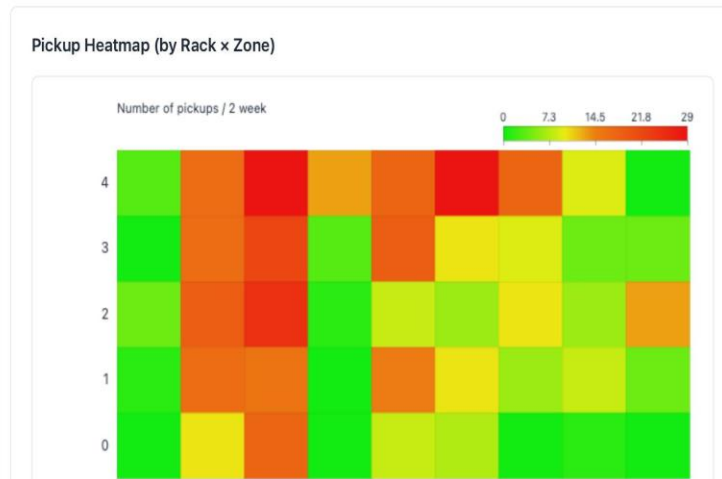
Rapid Two-Week Deployment

- **Days 1–3 — Site Analysis:** Warehouse mapping and anchor placement planning for 3D tracking.
- **Days 4–8 — UWB Deployment:** Anchor installation and tag assignment with specialized vertical setup.
- **Days 9–12 — NLOS Calibration:** Algorithm tuning for the metallic environment and variable conditions.
- **Days 13–14 — Live Validation:** Real-time tracking testing and system optimization.

Pilot Summary & Insights



Pilot KPI results: 399/399 pickups completed, >90% pickup accuracy, 7.5% forklift/stacker utilization, 8s / 19.7s average shipment/pickup time, 30.7 average shipments/day, 133 process anomaly/unauthorized alerts flagged



Rack × zone pickup heatmap — used for space optimization and bottleneck identification

Validated Outcomes

- Automated inventory updates and billing
- Automated inventory audit
- Traffic heatmap and bottleneck analysis
- Rack-level pickup heatmap for space optimization
- Product movement tracking via barcode/RFID integration
- Replay data for root-cause analysis
- High pickup accuracy enabling reliable automation
- Average and peak equipment utilization reporting

Indicative Business Impact

20%	20%	10%	10%
Warehouse space expansion through improved utilization without construction	OEE improvement through better forklift utilization and route optimization	Worker productivity improvement via automated inventory and billing	Process performance improvement via heatmap and bottleneck analysis