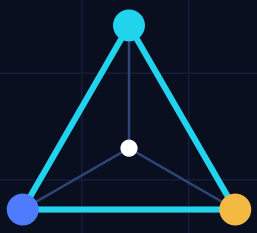

INDEPENDENT BUYER'S GUIDE

Choosing RTLS & RFID without the vendor bias

How to pick the right tracking technology, run a pilot that actually proves value, and avoid the traps that sink most RTLS and RFID projects.

TRACIO · Independent RTLS, RFID & IoT advisory

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WHY THIS GUIDE

Most RTLS & RFID advice isn't neutral.

Real-time location (RTLS) and RFID can transform how an operation runs — inventory accuracy, asset utilisation, throughput, patient flow, worker safety. But the buying process is stacked against you. Most “advisors” are resellers: they earn margin on the hardware they recommend, so the advice bends toward the kit that pays them best.

This guide is written from the other side of the table. Our founder has worked inside RFID and RTLS vendors, so we know how the technology is sold — the demos that flatter, the pilots staged on a quiet shift, the costs that surface after you sign. What follows is the vendor-neutral playbook we use to help buyers choose well.

STEP 1

Start with the outcome, not the radio.

The most expensive mistake is choosing a technology first and looking for a problem it solves. Reverse it. Name the business outcome and the KPI it moves, then let the physics of your environment decide the technology.

Outcomes worth anchoring to:

- **Inventory & stock accuracy** — fewer write-offs, fewer stock-outs, reliable click-and-collect.
- **Asset utilisation** — stop over-buying equipment you already own but can't find.
- **Throughput / OEE** — remove the bottlenecks that location data makes visible.
- **Patient & people flow** — less time searching, faster turns, safer sites.
- **Worker safety & mustering** — accountability, lone-worker protection, faster evacuation.

STEP 2

The technology landscape at a glance.

There is no “best” technology — only the right fit for your accuracy budget, environment and total cost of ownership. A quick orientation:

Technology	Typical accuracy / mode	Best for
UWB	10–30 cm, real-time	High-precision tracking: tools, WIP, people on a line
BLE / AoA	1–3 m, real-time	Room/zone-level asset & people location at scale
RAIN (UHF) RFID	Read/presence at portals	Item-level inventory, dock-door, high-volume counts
Active RFID	Zone-level, long battery	Yard, containers, large outdoor assets
Wi-Fi RTT	3–10 m	Reuse of existing infrastructure, coarse location
GPS / GNSS	Outdoor, metres	Vehicles, field assets, logistics in transit
LoRaWAN	Wide-area, low-power	Sparse, remote or city-scale sensing
SLAM	Infrastructure-free	Mobile robots / AMRs that map as they move

Often the right answer is a **hybrid** — e.g. RAIN RFID for inventory plus UWB where you need precision. The skill is matching each use case to the cheapest technology that still hits the KPI.

BENCHMARKS

What good looks like.

Published, independent figures for well-run programmes — useful to size the prize before you spend. These are industry benchmarks, not a guarantee; your numbers depend on use case, environment and execution.

63% → 95%+
Inventory accuracy after item-level RFID
(Auburn University RFID Lab)

up to –50%
Reduction in out-of-stocks with RFID
(GS1 US)

–96%
Cycle-count time vs manual counts
(GS1 US / Auburn)

In healthcare, clinical staff can lose **30–60 minutes per shift** searching for equipment — time RTLS gives back (HIMSS).

STEP 3

10 questions to ask every vendor.

Print this. Ask all ten before you shortlist — the answers separate a real fit from a good pitch.

1. What accuracy will we actually get *in our environment* (metal, racking, RF noise) — not the lab number?
2. Show a reference at our scale and in our industry. What failed there, and why?
3. What's the all-in 5-year TCO — tags, batteries, infrastructure, software, support, replacement?
4. How does the system integrate with our WMS / ERP / EMR / MES, and who owns that integration?
5. Do we own our data, in an open format, if we leave you?
6. What's the tag battery life under our duty cycle, and the replacement cost at scale?
7. How do you price — per tag, per anchor, per site, per user — and what triggers more cost as we grow?
8. What standards do you support (GS1 EPC, FiRa, BLE, VDA 5050) and are you locking us to your hardware?
9. What does a production-load pilot look like, with measurable go / no-go criteria?
10. Who is liable if the pilot misses its targets, and what happens next?

STEP 4

Run a pilot that actually proves value.

- **Baseline first.** Measure today's KPI before you tag anything — no baseline, no proof.
- **Full production load.** Pilot on a real shift, not a quiet demo lane. Most failures hide here.
- **Written go / no-go criteria** agreed up front, tied to the KPI — not vibes.
- **Integrate early.** A dot on a map proves nothing; the value is in the event reaching your systems.
- **Time-box it.** 6–12 weeks. If it can't show signal in that window, the design is wrong.

RED FLAGS

- The vendor resists a production-load pilot or open success criteria.
- Accuracy quoted is always the lab best-case, never your environment.
- Integration is “phase 2” and never costed.
- The business case rests on the vendor's numbers, not your own pilot data.

Get a second opinion — before you sign.

TRACIO is an independent, vendor-neutral RTLS, RFID & IoT advisory. No hardware to sell, no reseller margin, no platform to push. We help you choose the right technology, score vendors on **your** environment, run pilots that prove value, and recover programmes that have stalled.

Book a free 30-minute RTLS review at **tracio.com** · hello@tracio.com