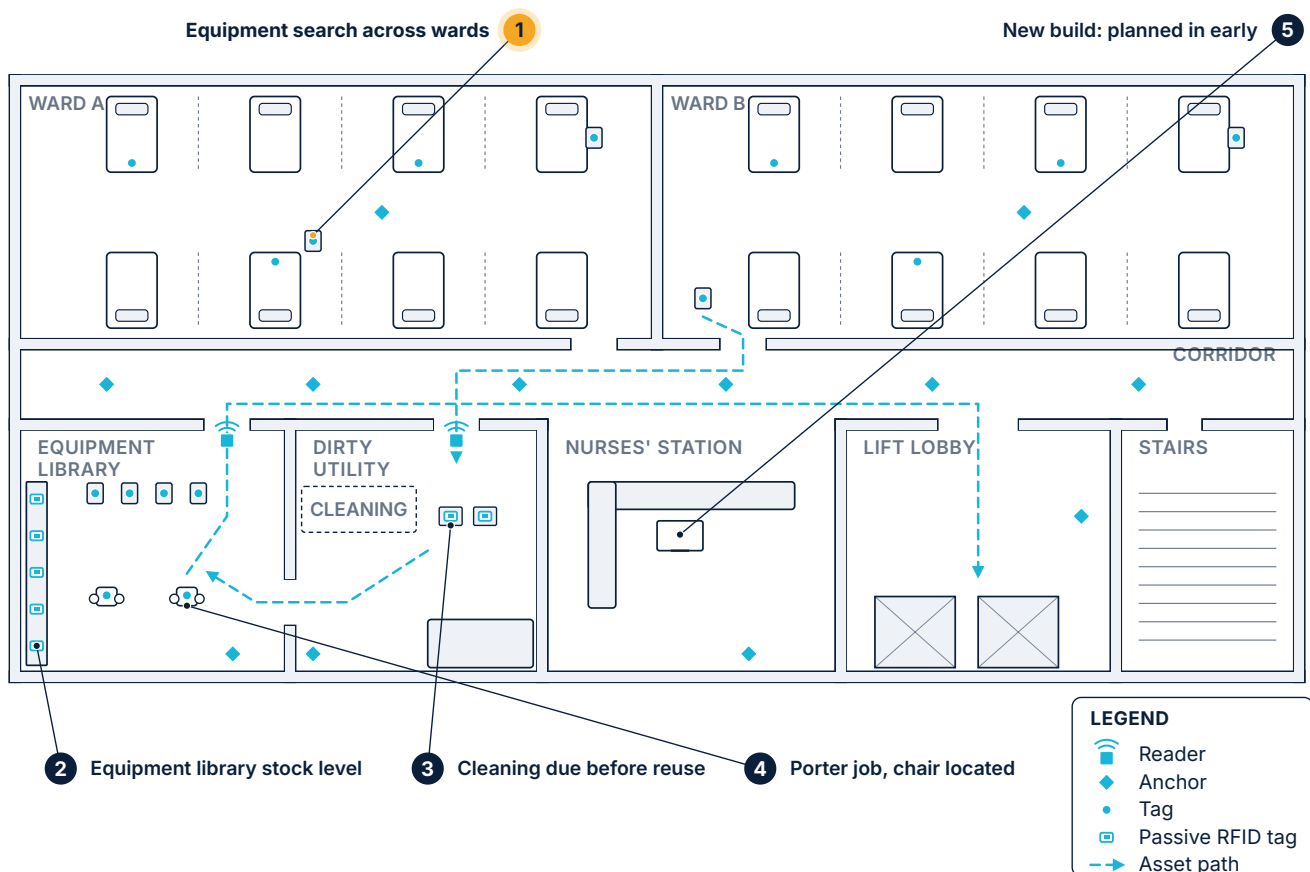


HEALTHCARE · EQUIPMENT FINDING, PORTERING AND NEW BUILDS

A patient needs equipment now. Three wards are searching.

A plain guide for hospitals: finding medical equipment fast, equipment library stock, cleaning status before reuse, porter jobs, and planning tracking into a new build or refurbishment. This kind of system is called an RTLS (real-time location system).



Callouts match the use cases on page 2. Legend: a **reader** reads passive RFID (radio-frequency identification) tags, which have no battery; a **tag** is an active tag, which has a battery; an **anchor** is a fixed receiver that picks up battery tags. Terms used: BLE: a common low-energy radio standard, used in small battery tags.

WHO SHOULD READ WHAT

KPI: key performance indicator, a measure you track. Everyone: your own row and KPI are in the table on page 4.

Nurse and ward managers

Page 2: use cases 1 to 3.

Clinical engineering (biomed) and the equipment library

Page 2: use cases 1 to 3 and the KPIs you would own.

Infection prevention and control

Page 2: use case 3, cleaning status before reuse.

Portering, estates and new build teams

Page 2: use cases 4 and 5. Page 3: devices and walls.

Clinical systems, IT, finance and leadership

Page 3: technology, links to your systems and payback.

One next step: book a free 30-minute call to talk through your site and your use case.

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What goes wrong today

Searching for equipment

Nurses leave the ward to look for medical equipment.

Hoarding

Wards keep spare equipment back "just in case", so others run short.

Porters waiting

A porter job waits until someone finds a chair or trolley.

Added too late

In new builds, tracking added late means reworking walls.

USE CASES

Numbered to match the floor plan on page 1. Each card ends with the technology that usually fits.

1 Equipment search across wards

Pain: Staff phone round and walk wards to find free medical equipment.

What good looks like: Staff see the last reported room of equipment marked free and clean, and check it before use. A ward test checks rooms can be told apart.

Fit: BLE tags with room-level receivers (anchors)

2 Equipment library stock level

Pain: The library does not know how many items are out, or where.

What good looks like: Loans and returns are scanned at the library. Tags show where loaned items were last seen, where there is coverage.

Fit: BLE tags and library loan scans

3 Cleaning status before reuse

Pain: Used and clean items sit side by side.

What good looks like: Staff record when use ends and cleaning is done, so items show "needs cleaning" or "clean". Location never decides an item is safe to reuse.

Fit: location events plus a cleaning step in your process

4 Porter job, chair located

Pain: Porters search for a wheelchair before a job.

What good looks like: The porter job shows the last reported place of available chairs nearby. The porter checks the chair is clean and fit for use.

Fit: BLE tags on chairs, linked to your porter task system

5 New build: planned in early

Pain: Readers, power and network points are added after handover, at extra cost.

What good looks like: Reader positions, power and network are agreed with the design team before walls are fixed. Coverage is tested before handover, and the working process is piloted after opening.

Fit: a coverage plan in the building design, tested before handover

ALSO COVERED

- **Patient flow:** arrival to ward milestones recorded.
- **Staff safety:** duress calls with location, beside alarms.
- **Cold storage:** medicine and vaccine fridge records.
- **Hand hygiene:** dispenser data that supports audits.
- **Trays and specimens:** custody records at each handover.
- **Servicing:** use plus the manufacturer's schedule.

KPIS TO TRACK

A KPI is a number you track. Measure it the same way before and during the pilot, by sample if needed.

KPI	WHO OWNS IT	HOW TO MEASURE IT
Time to find a free item	Nurse manager	Timed searches on sample shifts.
Equipment library stock available	Equipment library lead	Free items in the library at set times.
Items reused without a recorded clean	Infection prevention lead	Sampled reuses not recorded clean.
Items found for maintenance on time	Clinical engineering lead	Share of items due that are found on time.
Porter equipment search time	Portering manager	Job accepted to equipment found.
Rooms passing the coverage test	Estates or new build lead	Share of rooms passing at handover.

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Technology fit

Pick the simplest option that answers the question you have

Technology	Where it fits here	Watch for
Barcode	Equipment library check-in and check-out.	Relies on a scan. No location between scans.
Passive RFID (radio-frequency identification, no battery)	Library doors, store rooms, linen and trays.	Reads only at the reader. Test near metal beds and trolleys.
BLE (low-energy radio tags with a battery)	Room and ward-level location of mobile equipment.	Room level depends on reader layout. Batteries need replacing.
Infrared or ultrasound room tags	Confirming the specific room or bay where it matters.	Extra hardware per room. Higher cost.

Integration

Location appears in the systems staff already use

- **Equipment records:** clinical engineering sees location in its equipment management system.
- **Hospital systems (EMR):** only if you choose, location can be shared with your electronic medical record (EMR), such as Epic, Cerner or Meditech, through an interface your EMR team approves.
- **Devices and walls:** tags must be cleanable with your products. Agree tag fixing with clinical engineering and the device manufacturer, and reader positions with estates.
- **People:** Check local privacy and employee-consultation rules, such as works councils or unions, before tracking people, or tools and equipment linked to people.



ROI AND PAYBACK

ROI (return on investment) compares what you gain with what you spend. Payback is the time until the savings cover the cost. The method below works out payback from your own pilot data, not technology provider averages.

Payback (months) = one-off cost ÷ (annual benefit – annual running cost) × 12

Annual benefit = (search hours that cut paid time, such as overtime or agency cover, × loaded hourly rate) + (items not bought or rented × cost per item) + (maintenance visits saved × cost per visit)

The annual benefit is an estimate: count only savings you can really make, and count each one once. If it is not bigger than the running cost, there is no payback. Loaded hourly rate means pay plus on-costs such as tax, pension and overheads.

Inputs to gather

- **One-off cost:** tags, readers, survey, installation, integration, training, adviser fees and travel. In a new build, cabling and power planned into the design.
- **Running cost per year:** licences, support, batteries, replacement tags, staff time.
- **Hours today:** search time for nurses, porters and clinical engineering.
- **Items bought or rented** each year to cover equipment you cannot find.
- **Wasted maintenance visits** where the item could not be found.

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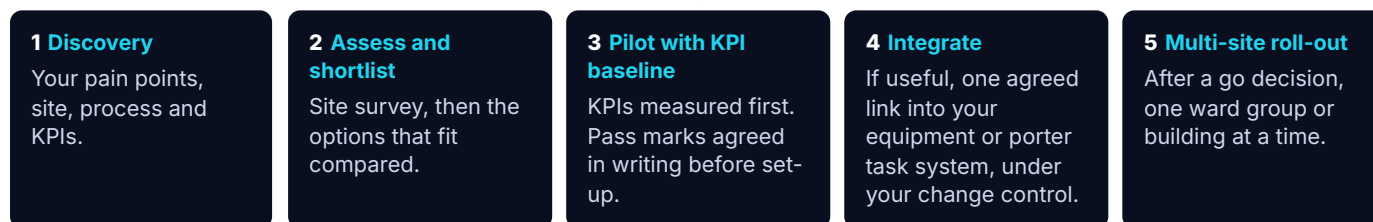
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What it means for you: find your role and your KPI

YOUR ROLE	WHAT IT MEANS FOR YOU	YOUR KPI
Nurse or ward manager	Less time leaving the ward to search.	Time to find a free item
Clinical engineering (biomed)	Last reported location of items due for checks, in covered areas.	Items found for maintenance on time
Equipment library lead	Loans, returns and where items were last seen.	Equipment library stock available
Infection prevention and control	Recorded cleaning status is shown. Required cleaning and reuse checks stay.	Items reused without a recorded clean
Portering and patient flow	Jobs start sooner with an available chair found.	Porter equipment search time
Estates and new build teams	Readers, power and network designed in, not added later.	Rooms passing the coverage test
Clinical systems and IT	Optional: one approved link, under your change control.	Events reaching the linked system
Finance, procurement and leadership	Payback from a ward pilot or new-build test.	Payback months, go or no-go

Events reaching the linked system: share of updates arriving without manual entry.

How a TRACIO project works: five stages



How a pilot runs: set-up, then live weeks in normal use, then a short written report with a go or no-go. Timings are agreed per site.

Questions we hear

"We already have a system."

We give a free second opinion and check how it performs against your KPIs, using your live data and a site visit.

"How do we know it will work here?"

Judge us on method: a pilot, KPIs measured before and during it, and a written go or no-go.

"Can you bid with us, or for us?"

Yes. We team with integrators, or act as the buyer's independent adviser, but never both on the same bid.

"Do you sell or resell hardware?"

No. We don't sell hardware, so our advice stays independent. We rent pilot equipment and offer survey and installation support.

Free second opinion

Send us your technology provider's quote or spec for a free second opinion. What to send: the quote or spec, a floor plan or site photos, item counts and your current process. Bring it to the call or send it via tracio.com/contact.

TRACIO consultancy fees

- **UK:** £3k to £30k per project, £1,200 a day
- **Europe:** €3.5k to €35k per project, €1,400 a day
- **US and Canada:** \$4k to \$40k per project, \$1,600 a day
- **Middle East and Australia:** \$4k to \$40k per project, \$1,600 a day
- **Rest of the world:** \$3.5k to \$35k per project, \$1,400 a day

Scoped per project, no packages. Fees cover our work only; hardware, software licences and other supplier costs are separate. \$ = US dollars. Travel extra.

Why TRACIO: we work for you, not for the technology providers. We compare the options across the market that fit your site, provide site surveys and installation support, and work worldwide under your change control.

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