GS1 UK Healthcare Conference 2022

17 - 18 March 2022 | QEII Centre, London

Asset management

#bettercarecostsless

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Asset management in action

Rachael Ellis

Scan4Safety programme director, Hull University Teaching Hospitals NHS Trust

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Assets:
Maps = Money

Rachael Ellis, Scan4Safety
Programme Director

18th March 2022

Numbers worth noting

- 72,000 assets on the equipment list
- 16,500 sterile trays
- 48 Theatres across HUTH
- 126 Transport Trolleys for sterile trays
- We process 2500+ trays a week at peak times
- To date, we have installed 351 RFID readers and antennas (and this will triple)
- Covering 623,499 square feet

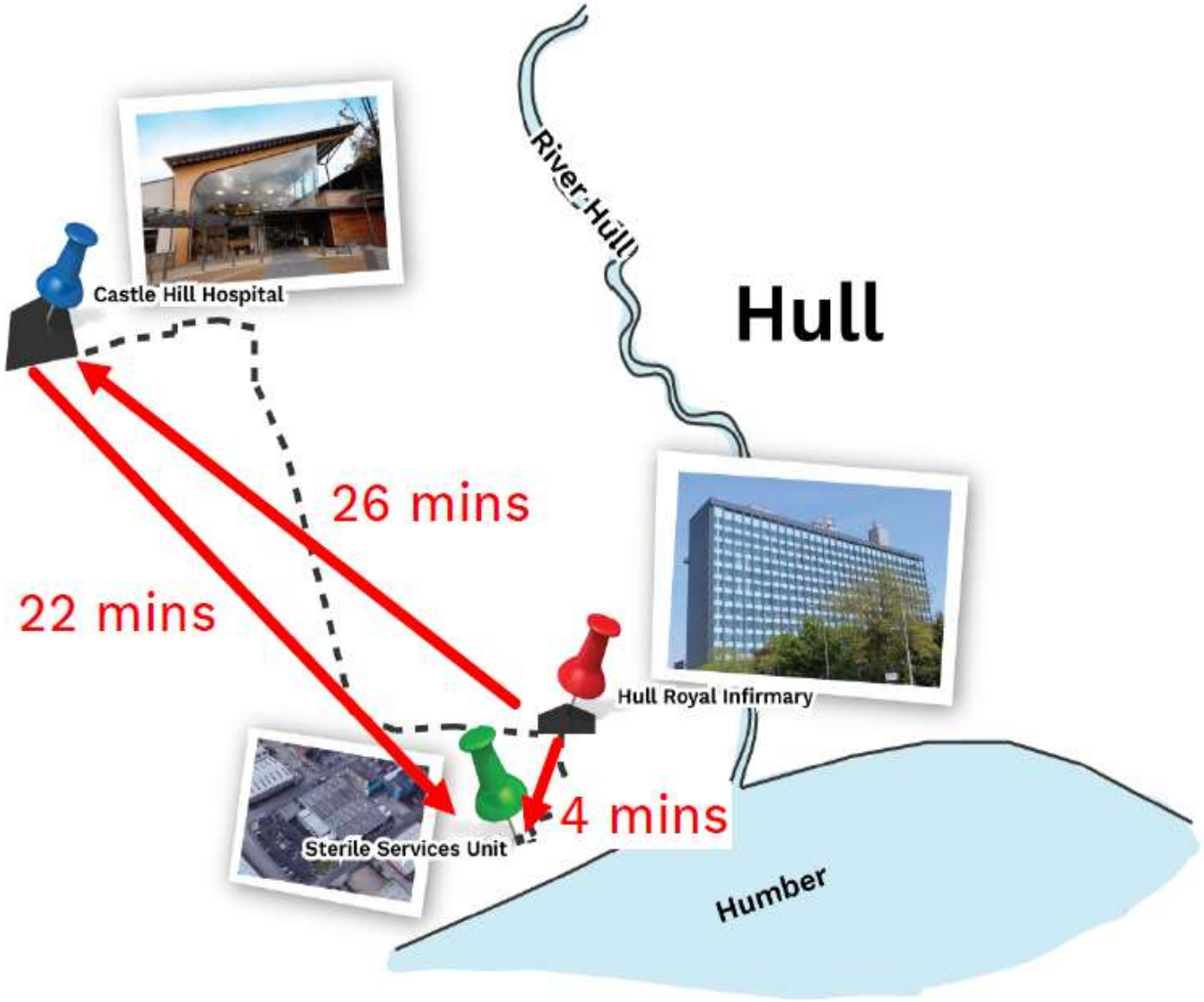
On a map it looks like this…

Hull Map

Castle Hill Hospital
- **26 minutes** drive from Hull Royal Infirmary

Sterile Services Unit
- **4 minutes** drive from Hull Royal Infirmary
- **22 minutes** drive from Castle Hill Hospital

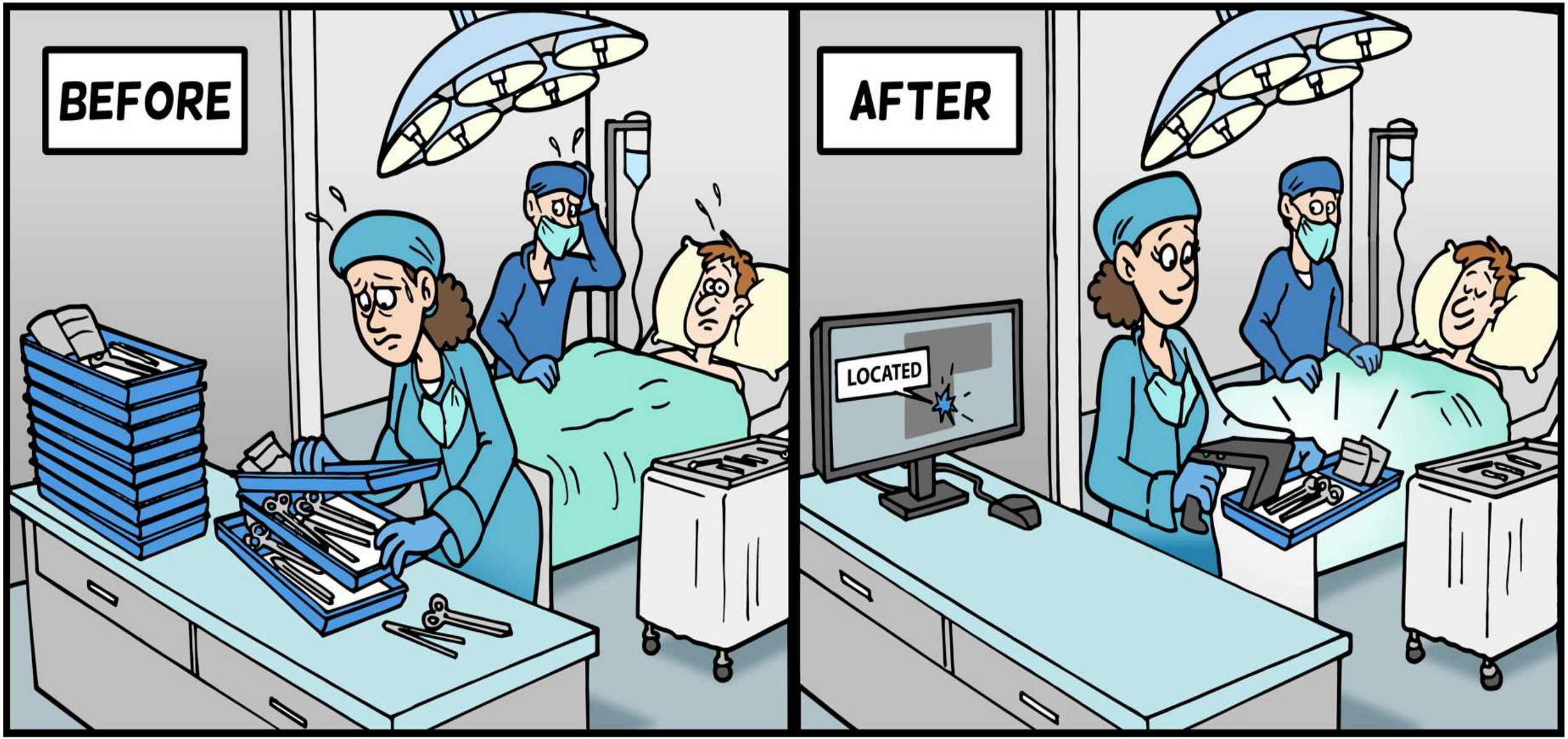
Hull Royal Infirmary
- **26 minutes** drive from Castle Hill Hospital
- **4 minutes** drive from Sterile Services Unit



SCAN4SAFETY

In reality it felt like this…

At HUTH - We have changed the landscape



HUTH have discovered the benefit of chips and wands!

Maps really do equal time and money…

Money Saved

Resource time saved

Patient Care = Improved

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Asset management in action

Richard Price

Senior category manager, University Hospitals Plymouth NHS Trust

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NHS
University Hospitals Plymouth
NHS Trust

Tracking Hospital Assets using GS1 Standards & RFID

GS1

RFiD DISCOVERY

e-Quip
Asset Management

SCAN4SAFETY
Patient. Product. Place. Process.

NHS
University Hospitals Plymouth
NHS Trust

Why is RFID and GS1 important?

- Large trauma and teaching hospital serving the South West Peninsula
- Main building 12 floors with lots of corridors and rooms
- Other buildings and off-site locations
- Circa 100,000 Medical, SDU and IT assets
- Maintaining a schedule for asset service and repair
- Turnaround time to bring equipment back into use
- Replacing Medical equipment costs £100,000+ each year
- Clinical staff spend a lot of time looking for assets
- Issuing/Borrowing of assets that are not returned

Implementation

Already using GS1 GIAI standard for Medical and SDU assets, but implemented in isolation	Roll-out Trust-wide a new GS1 structure agreed with departmental prefixes
Started by re-labelling medical devices	400+ models' label placement optimised for scans
New process flow / security documents created	Opportunity taken to correct MDAR anomalies

Implementation

University Hospitals Plymouth NHS Trust

Contract awarded to Paragon ID's RFID Discovery solution

122 readers across 2 phases, with approx. 360 antennae

2x mobile trolleys, 10x handheld scanners, 2x RFID printers

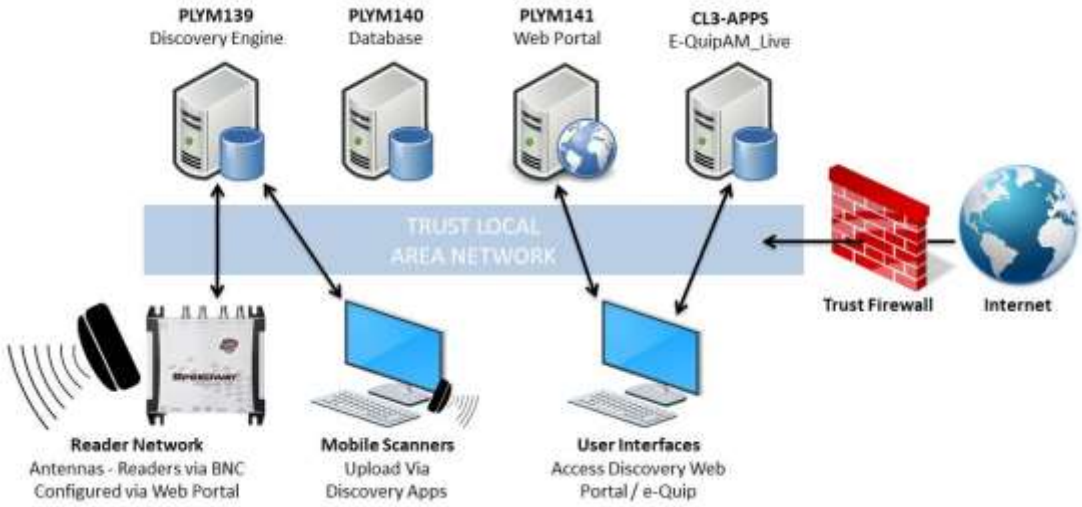
Live web portal & interfacing to asset management systems

Antennae's optimum locations mapped out

Digital location tree updated with corridor GLNs

Network elements installed, tested, interfaced

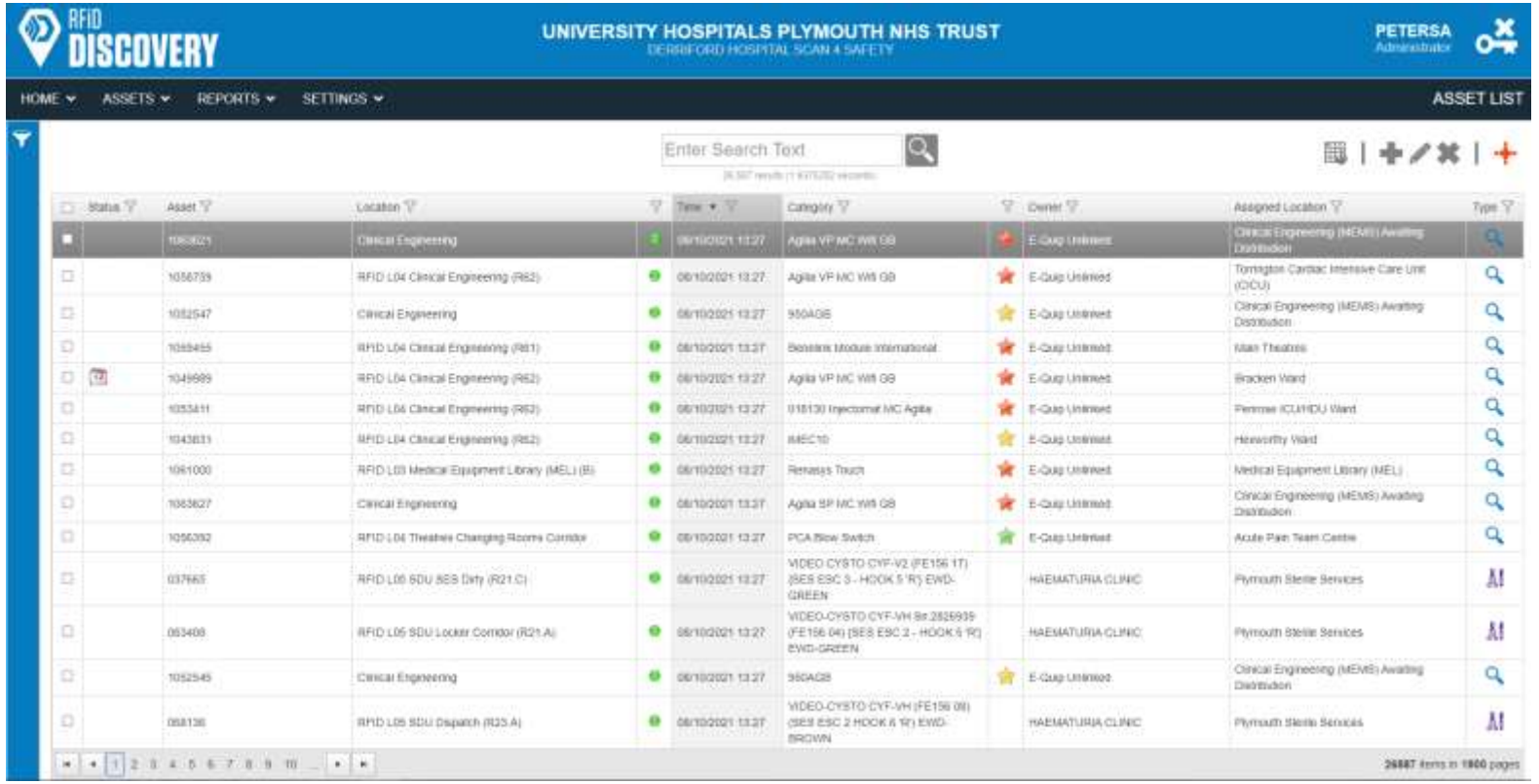
One of the largest GS1-compliant RFID solutions in the NHS



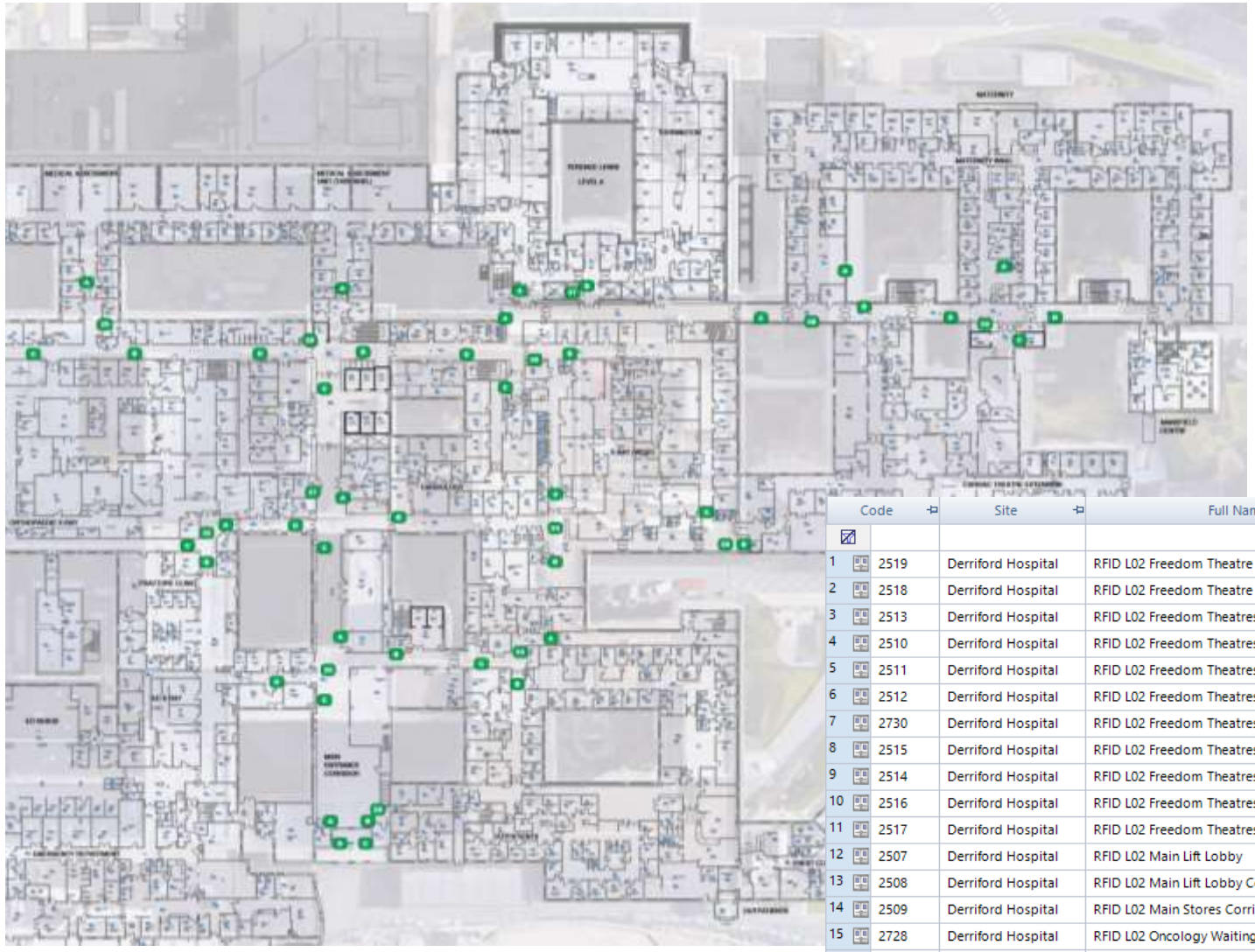
RFiD DISCOVERY

Progress

- Web portal is fully up and running
- Training materials created, clinical staff trials being carried out
- 25,000+ medical devices re-labelled; SDU and IT re-labelling underway
- 83/122 total readers installed, networked, and reading assets
- 3,500 assets tracked every day
- Phase 2 of reader / antennae installations near to completion



All progressed during COVID



	Code	Site	Full Name	Team	Parent Location	Location Type	GS1 Global Location	Area
1	2519	Derriford Hospital	RFID L02 Freedom Theatre 4 Corridor	Scientific Computing	RFID Reader 58	RFID Location Point	01048	61034061034
2	2518	Derriford Hospital	RFID L02 Freedom Theatre 5 Corridor	Scientific Computing	RFID Reader 58	RFID Location Point	01048	41039041039
3	2513	Derriford Hospital	RFID L02 Freedom Theatres Corridor North	Scientific Computing	RFID Reader 55	RFID Location Point	02380	56126056126
4	2510	Derriford Hospital	RFID L02 Freedom Theatres Entrance	Scientific Computing	RFID Reader 54	RFID Location Point	00614	58166058166
5	2511	Derriford Hospital	RFID L02 Freedom Theatres Equipment Store	Scientific Computing	RFID Reader 55	RFID Location Point	02373	57142057142
6	2512	Derriford Hospital	RFID L02 Freedom Theatres Reception	Scientific Computing	RFID Reader 55	RFID Location Point	00362	50137050137
7	2730	Derriford Hospital	RFID L02 Freedom Theatres Recovery Area	Scientific Computing	RFID Reader 56	RFID Location Point	02595	52107052107
8	2515	Derriford Hospital	RFID L02 Freedom Theatres Recovery Area	Scientific Computing	RFID Reader 56	RFID Location Point	02595	53115053115
9	2514	Derriford Hospital	RFID L02 Freedom Theatres Recovery Corridor	Scientific Computing	RFID Reader 56	RFID Location Point	02649	63100063100
10	2516	Derriford Hospital	RFID L02 Freedom Theatres Waiting Corridor North	Scientific Computing	RFID Reader 57	RFID Location Point	00720	59080059080
11	2517	Derriford Hospital	RFID L02 Freedom Theatres Waiting Corridor South	Scientific Computing	RFID Reader 57	RFID Location Point	00720	55065055065
12	2507	Derriford Hospital	RFID L02 Main Lift Lobby	Scientific Computing	RFID Reader 54	RFID Location Point	00683	60190060190
13	2508	Derriford Hospital	RFID L02 Main Lift Lobby Corridor	Scientific Computing	RFID Reader 54	RFID Location Point	00683	42177042177
14	2509	Derriford Hospital	RFID L02 Main Stores Corridor	Scientific Computing	RFID Reader 54	RFID Location Point	00843	75178075178
15	2728	Derriford Hospital	RFID L02 Oncology Waiting Area	Scientific Computing	RFID Reader 53	RFID Location Point	01321	210086210086
16	2506	Derriford Hospital	RFID L02 Oncology Waiting Area	Scientific Computing	RFID Reader 53	RFID Location Point	01321	205077205077
17	2726	Derriford Hospital	RFID L02 Oncology Waiting Area	Scientific Computing	RFID Reader 53	RFID Location Point	01321	209070209070
18	2727	Derriford Hospital	RFID L02 Oncology Waiting Area	Scientific Computing	RFID Reader 53	RFID Location Point	01321	220084220084
19	2505	Derriford Hospital	RFID L02 Radiotherapy & Oncology Corridor	Scientific Computing	RFID Reader 52	RFID Location Point	01369	223120223120
20	2504	Derriford Hospital	RFID L02 Radiotherapy Corridor	Scientific Computing	RFID Reader 52	RFID Location Point	01482	236126236126

Operational Benefits

Clinical Staff

See live availability of models in the equipment library

Locate desired or lost devices from neighbouring wards

Reduces time searching for devices

Technical Staff / Trust-wide

Locate devices due maintenance, upholding device compliance and reliability/safety

Gain awareness of devices in demand, high turnover, frequently lost etc.

Automated tracking of expensive assets / those on loan to the trust

Operational Benefits

- **3,500** medical devices tracked every day (15% of medical equipment database)
- **£50k** spent on an external company to audit entire hospital, taking a couple of weeks to complete. RFID system allows the Trust to audit the same quantity of medical devices in a single day.
- **£70k** a year (
  serviced on ti
- **£620k*** each
  equipment le
  hour
- In addition, ir
  lost assets ea
  £100k in repl
- Trust-wide and external revalidation showed circa **£22m** assets on the Asset Management system have not been seen on the RFID system for 3+ years**.
- By ensuring scalability in our infrastructure, benefits can expand to other departments and assets, not just medical devices.
- The Trust has entered the 'best global healthcare award' nomination for the implementation of RFID asset management

Releasing time to care and increasing patient safety…..

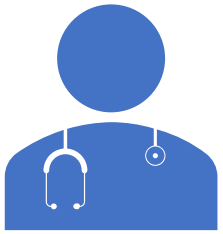
Patient stay costs est. £400 per 24 hours = £17 per hour per patient. On average there are 100 discharges a day (£17 per hour x 100 patients x 365 days)

** a full-time role has been agreed to investigate*

Operational Benefits

University Hospitals Plymouth NHS Trust

Clinical Staff

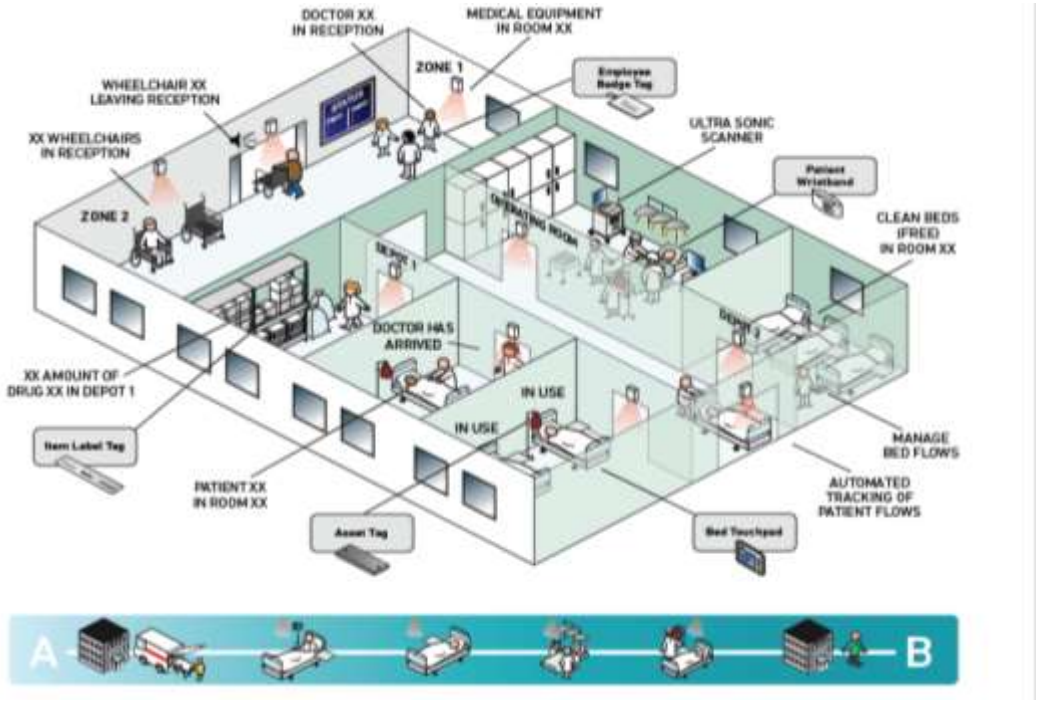


‘This is definitely a really useful tool – we use it to track wheelchairs as many get abandoned around the site and are then not available for use at entrances’.

Technical Staff / Trust-wide

‘The system has been hugely beneficial for us by tracking devices as they come and go, enabling us to see whether they are actively in use. Even more crucially we can now see at a glance what is in stock, saving clinical staff a wasted trip to the MEL.’

Our Future Roadmap



- Infrastructure in place for more services/uses:
  e.g. Estates, Stores, Patients, Staff
- RFID Readers included in expansion/refurbishment costs
- Views to expand to external buildings, then external sites
- Live maps on web portal to aid visual guidance
- Potential to enable other projects e.g. visitor guidance apps, automated patient check-ins, etc.

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Asset management in action

Aubrey Sitch

Scan4Safety programme manager

Martha James

Scan4Safety project manager, Airedale NHS Foundation Trust and Bradford Teaching Hospitals NHS Foundation Trust

#bettercarecostsless

Bradford Teaching Hospitals
NHS Foundation Trust

BTHFT's Journey to RFID

Aubrey Sitch & Martha James - Scan4Safety Programme

Together, putting patients first

BTHFT

Bradford Teaching Hospitals
NHS Foundation Trust

- **BTHFT** – An acute trust serving a population of 0.5m (specialist services to 1.1m across West Yorkshire)
- **Active** – Annually: 6,000 babies delivered; 300,000 operations performed; 140,000 A&E attendances and 500,000 outpatient appointments.
- **Mature** - One of the few Trusts in the UK to deliver **care**, **teaching** and **research**.
- **Ambitious** – First GE Command Centre in Europe to manage patient flow; Digital aspiration for HIMSS level 6
- **Collaborative** – WYAAT; Shared EPR with CHFT; Airedale & BDCT Place based partnership.

The Problems

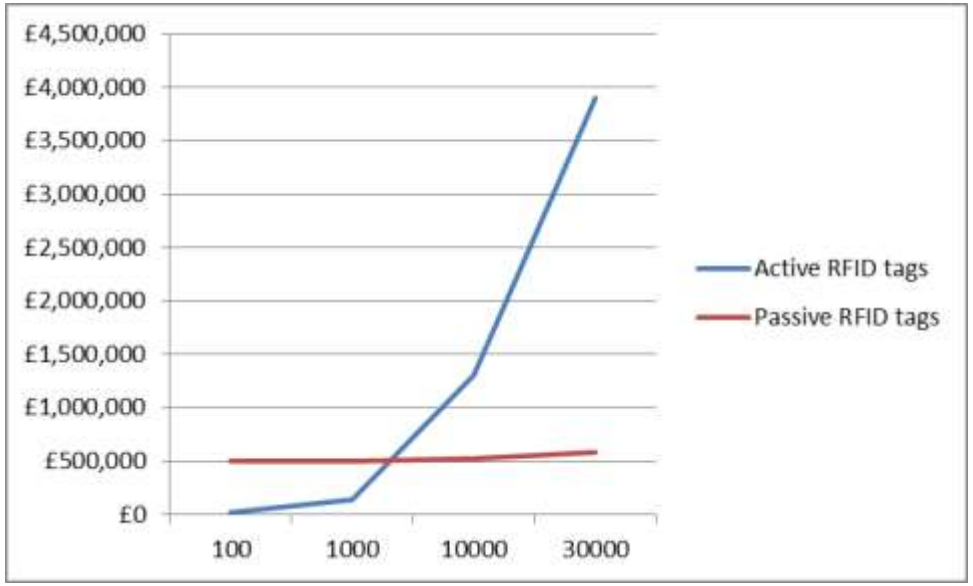
Bradford Teaching Hospitals NHS Foundation Trust

- **Clinicians** – Where's my ???
- **Clinical Engineering** – Servicing equipment in COVID
- **Capital Asset Register** – Previously a historic document
- **Infection Control** – Tracing use of equipment
- **Asset Utilisation** – Tracking utilisation data
- **Stock Control** – Could we prevent unnecessary orders
- **Departmental use** – IT, Estates, Pharmacy
- End of Year Financial pressures.

The Options

Bradford Teaching Hospitals NHS Foundation Trust

- **ACTIVE -** WiFi / BLE tags on devices
  - positive – Minimal start-up, live data
  - Negative – Unaffordable at scale, additional servicing, they fail
- **PASSIVE -** UHF RFID at ‘choke points’ or on demand
  - Positive – Low revenue, scalable, no servicing, failsafe
  - Negative – Is ‘last seen location’ sufficient?



The Solution

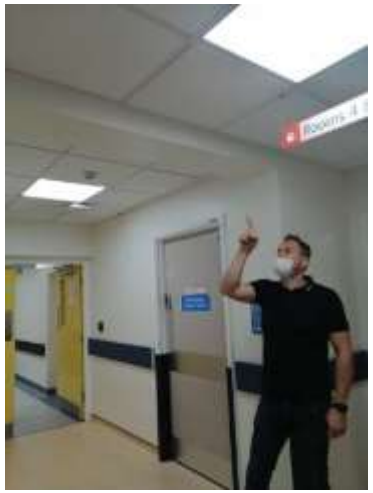
Bradford Teaching Hospitals NHS Foundation Trust

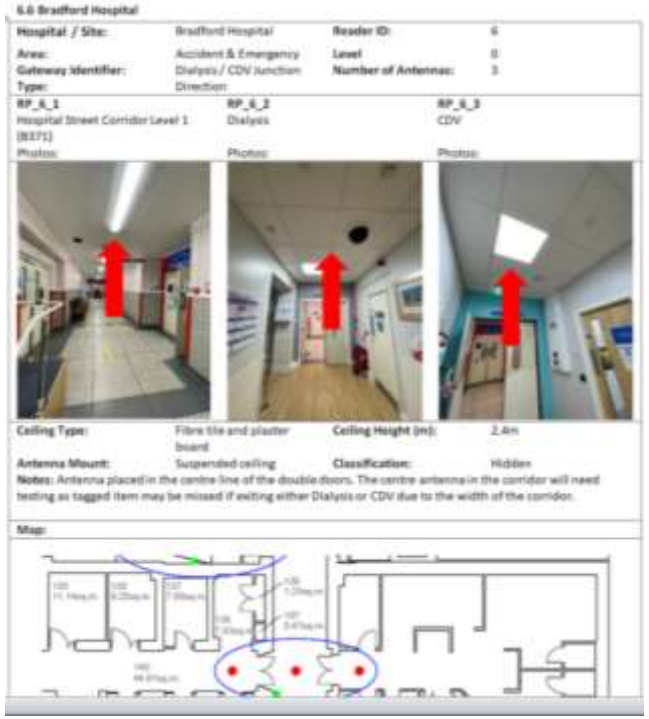
- Lyngsoe Systems - https://lyngsoesystems.com/
  - Track 38,000 assets across 2 hospitals using 260 RFID readers above security doors ‘choke-points’.
  - Integration with Equip and CARS
- The business case
  - Capital investment covered by NHSE funding c£500k
  - 15 CE techs searching for devices 1hr per day = £63k per year
  - Clinical staff delayed looking for equipment = c£5m per year
  - Unnecessary purchases of under-utilised equipment = £?m

Bradford Teaching Hospitals
NHS Foundation Trust

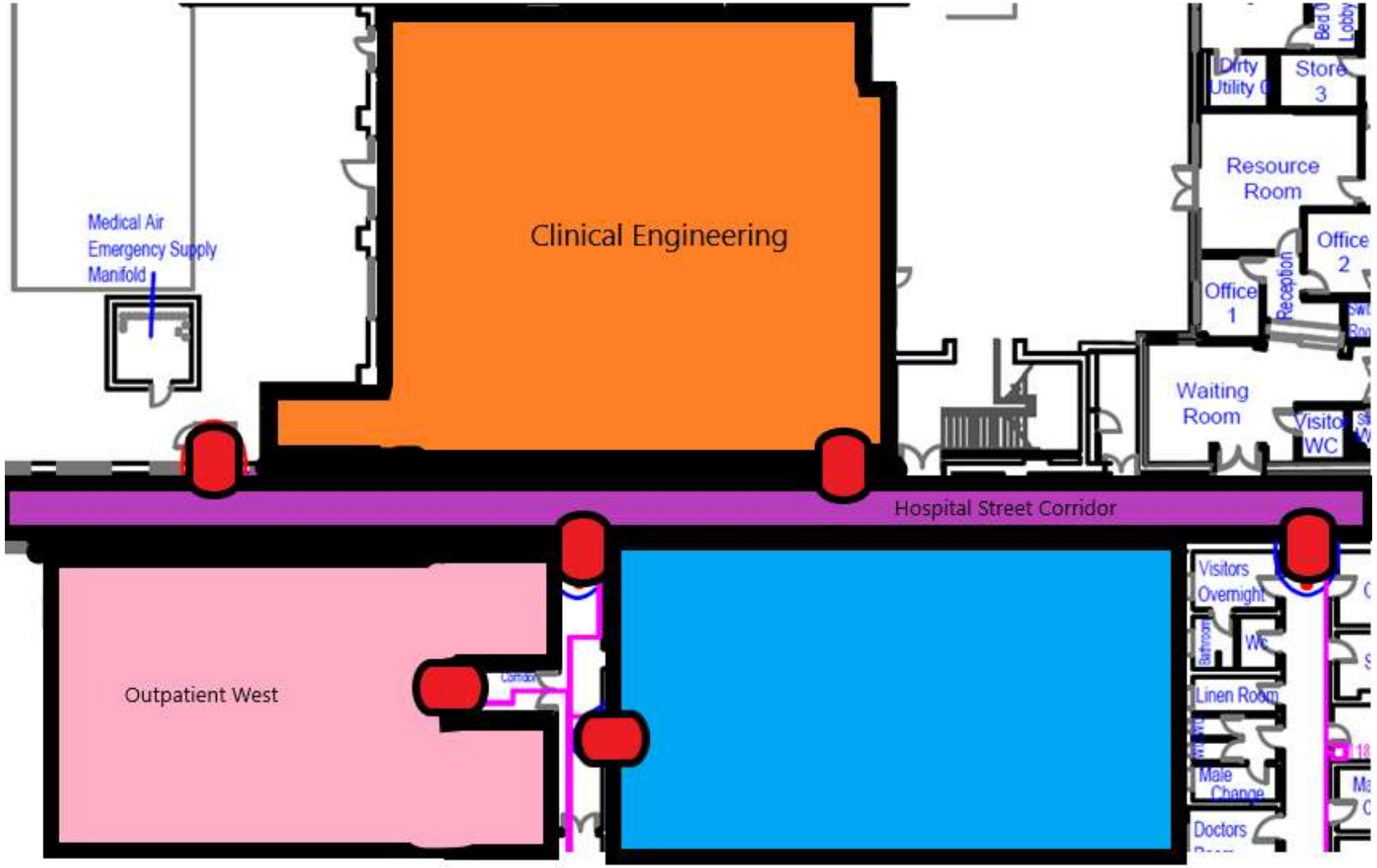
Implementation

- Site Surveys
  - Where should they go?
  - What we considered





NHS
Bradford Teaching Hospitals
NHS Foundation Trust



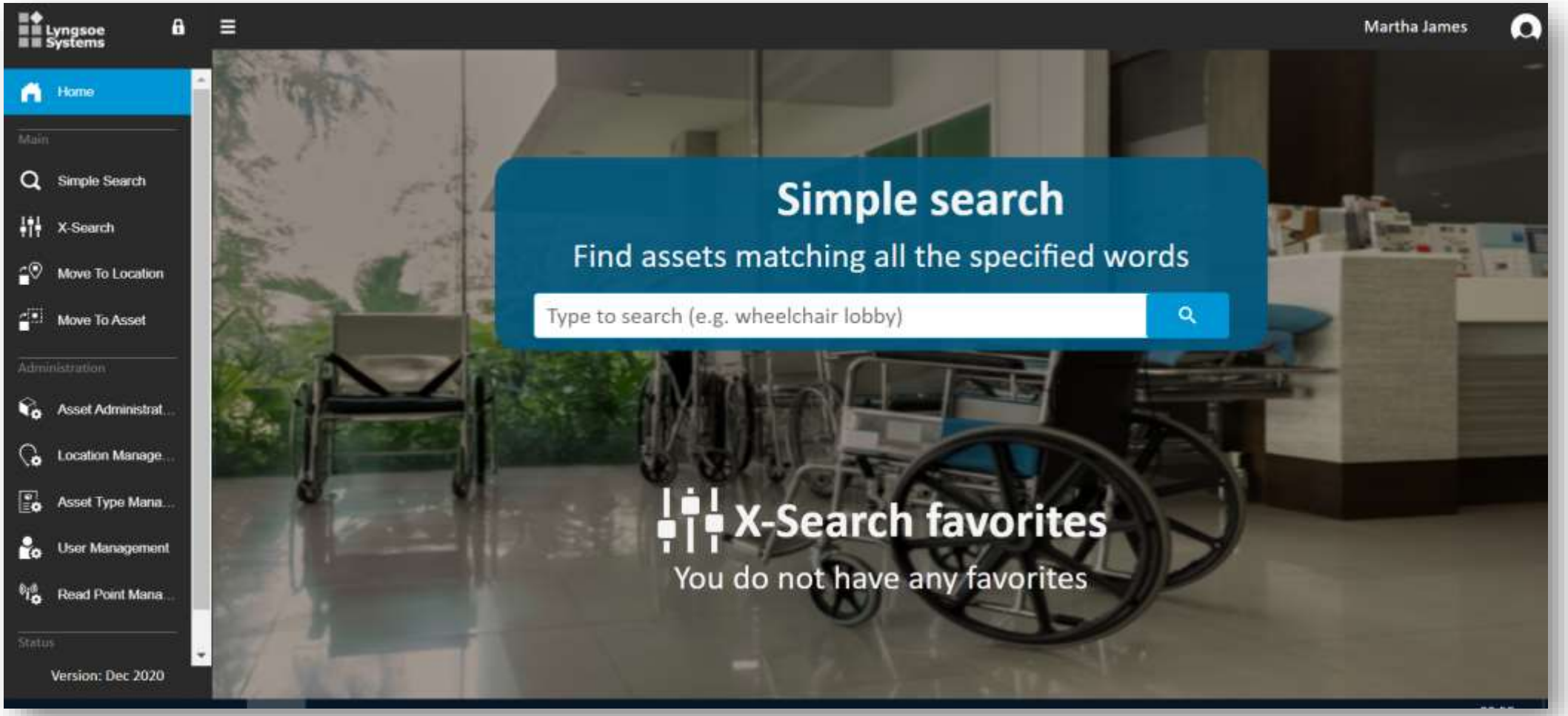
Implementation

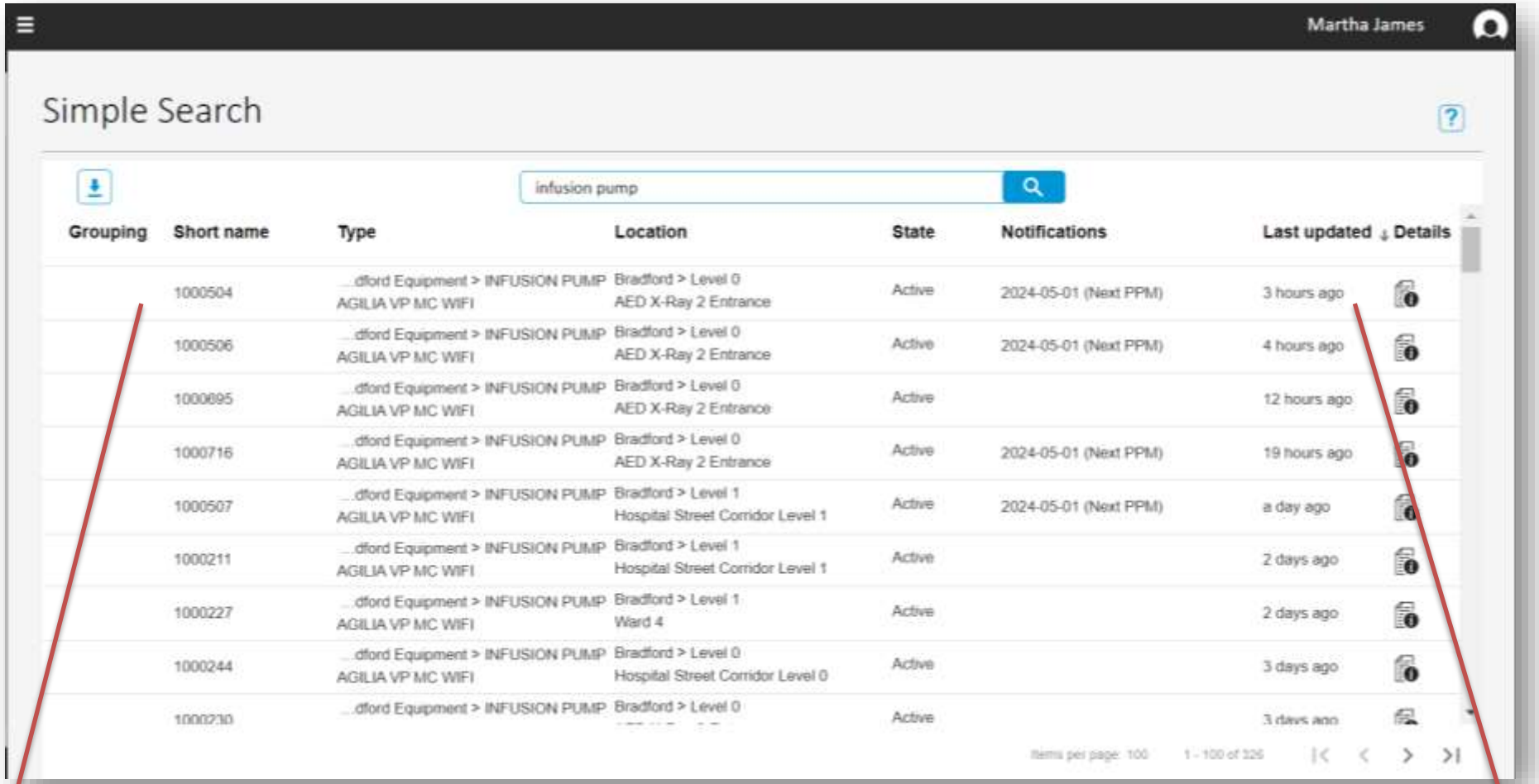
Bradford Teaching Hospitals
NHS Foundation Trust

- Installing Phase 1
  - 10 in BTHFT and 13 in ANHST
- Testing
  - Does it actually work?
- Timeline

Bradford Teaching Hospitals
NHS Foundation Trust

Our software - X-Tracking





Short name	Type	Location	State	Notifications	Last updated
1000504	...dford Equipment > INFUSION PUMP AGILIA VP MC WIFI	Bradford > Level 0 AED X-Ray 2 Entrance	Active	2024-05-01 (Next PPM)	3 hours ago

Upcoming challenges

Bradford Teaching Hospitals NHS Foundation Trust

- Communicating how passive RFID works
  - Will staff have a preconceived notion of what RFID is
- Communicating where the geo fences are to staff
  - Knowing where the geo fences are will enable the staff to use the system to the full advantage
- Labelling enough equipment for a working system
  - Will there be enough for the system to be useful?

Summary

Bradford Teaching Hospitals NHS Foundation Trust

- Determine the problem you are solving
  - Who are the end users?
  - What is the end solution you are wanting?
  - Is the benefit quantifiable?
- Determine the most appropriate solution
  - Potential scope
  - Ownership of buildings, ease of install
  - Time/Cost constraints – system ownership

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