



Place

Written by Trusts, for Trusts

A Trust's guide to location identification

V1.0

Aligned to Scan4Safety
Implementation Requirements v1.9



Patient. Product. Place. Process.

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1. Introduction

Scan4Safety is a pioneering initiative, led by the Department of Health and developed by NHS trusts, that is improving patient safety, increasing clinical productivity and enabling supply chain efficiency across the NHS. Scan4Safety achieves these aims by driving standardisation across healthcare. Adoption of the initial scope of Scan4Safety by all acute trusts in England will, in itself, generate net efficiency benefits of over £1 billion in seven years.

Scan4Safety is about the adoption of common ways of working across healthcare, supported through two international standards, GS1 and PEPPOL. These enable all organisations involved in healthcare to use standard and proven nomenclature systems for the vital clinical and operational processes that support the delivery of care.

"Scan4Safety is a world first in healthcare – and a vital part of this government's drive to make the NHS the safest and most transparent healthcare system in the world."

Jeremy Hunt Secretary of State for Health & Social Care

The opportunities for Scan4Safety are broad and varied, ultimately covering all areas of healthcare. To make adoption manageable an initial scope was agreed that limited activity to just acute trusts, to the three core enablers (Place, Product and Patient) and to three primary use cases (Inventory Management, Purchase to Pay and Product Recall). In future it is expected that the scope will be expanded to cover all healthcare organisations, other enablers and a far broader set of use cases.

To define the ways of working, validate the benefit to the NHS of adopting initial scope, and to learn the lessons once on behalf of NHS, the Department of Health provided funding and support to six acute NHS 'Scan4Safety Demonstrator sites'.

- Derby Teaching Hospital NHS Foundation Trust;
- The Leeds Teaching Hospital NHS Trust;
- North Tees and Hartlepool NHS Foundation Trust;
- Plymouth Hospitals NHS Trust;
- Royal Cornwall NHS Trust; and,
- Salisbury NHS Foundation Trust.

The Department of Health and the Demonstrator sites have worked closely with both medical suppliers and technology service providers to drive the adoption of GS1 and PEPPOL standards upstream within the healthcare supply chain.

Further information on Scan4Safety and its benefits can be found at: www.Scan4Safety.nhs.uk.



2. Background

The six acute NHS Scan4Safety Demonstrator sites worked through adoption of the three primary use cases (Inventory Management, Purchase to Pay and Product Recall) and supporting three core enablers (Place, Product and Patient). In doing so, the sites defined a highly structured approach of phases, milestones and achievements as outlined in the published "Guidance Scan4Safety implementation requirements".

The Demonstrator sites have worked together to capture and document their experiences and learnings in a set of 'How To' guides. These guides provide any NHS trust looking to follow the Scan4Safety approach robust, step-by-step manuals for each area of activity, ensuring a consistent approach is taken and maximum benefit is realised for the NHS.

The suite of Scan4Safety 'How To' guides will continue to grow and initially includes:

- Place;
- Product;
- Patient;
- Inventory Management;
- Point of Care (Surgical);
- Purchase-to-pay (NHS trusts);
- Purchase-to-pay (suppliers);
- Product Recall;
- Pharmacy;
- Supplier Adoption;
- Resource and Cost Planning;
- Benefits Planning and Reporting.



3. Acronym Decoder

Term	Definition
	Computer-Aided Drawing
CAD	The CAD will hold the plans of the hospital from which, depending upon the software in place, you will be able to calculate the number of buildings, floors and rooms. The CAD will be able to produce drawings of the plans that will help labelling rooms
	GS1
GS1	A not for profit organisation who issue guidance about the formatting and content of bar codes to provide an industry standard. GS1 UK is part of a global network.
CCD	Global Company Prefix
GCP	Same as the Organisational GLN as described above.
	Global Location Number
GLN	The GLN enables the unique and unambiguous identification of any type of location used in business processes. Identification in this manner is a prerequisite for efficient communication between trading partners. A GLN acts as a database key which references location specific information that is repeatedly applied. Its function is to reduce input errors and increase efficiency.
	GLN Extension
GLN Extension	The GLN extension component may be used to identify internal physical locations within a location identified with a GLN (e.g. stores, factories, buildings). A company may alternatively choose to assign a unique GLN, without an extension component, as a way to identify these locations.
	Physical Location Number
Physical GLN	A site (an area, a structure or group of structures) or an area within the site where something was, is, or will be located. The identification of physical locations is an essential element for supply chain visibility. A GLN assigned to a physical location always has a permanent and identifiable geographical address regardless of any business process roles conducted at the site.
Functional	Functional Global Location Number



Term	Definition
GLN	An organisational subdivision or department based on the specific tasks being performed, as defined by the organisation. Legal entities and functions can engage as parties in business processes. The use of Global Location Numbers (GLNs) in these areas is driven by the exact role of each party within a given business process.
	Digital Global Location Number
Digital GLN	A digital location represents an electronic (non-physical) address that is used for communication between computer systems. Just as the exchange of physical goods is a transaction between companies, the exchange of data is a transaction between systems, for example the delivery of an invoice by EDI or email to an accounting system.
	Legal Global Location Number
Legal GLN	Any business, government body, department, charity, individual or institution that has standing in the eyes of the law and has the capacity to enter into agreements or contracts.
Linear Bar Code	
2D Data Matrix	
	Location Manager
Location Manager	GS1 Member Organisations administer national GLN databases, known as GLN registries, which provide a common list of GLNs registered within that country. However, the company issuing these GLNs is responsible for keeping business partners informed of all GLNs related to the trading relationship. LocationManager is GS1 UK's GLN registry (See Appendix F).
	Private Finance Initiative
PFI	PFI Providers are the organisation who own and manage some of the NHS Estate. The buildings are on a long term lease. At the end of which the building will transfer to public ownership.



4. Why Place?

'Place' information is required by many separate functions within a trust. Historically, within the NHS, each trust and function has tended to develop its own approach to managing the places they operate within, geared to their own specific requirements. This has, over time, led to separate, uncoordinated approaches when identifying places within a trust, which do not always make a clear distinction between physical and functional entities. Similarly, particular spaces in a Trust can have multiple identities.

The GS1 identifier called a "Global Location Number" (GLN) has been chosen by the NHS as the best option for a common identifier to describe a place and allows a logical way of integrating existing computer systems within a trust. Further detail on GLNs and their structure can be found in Error! Reference source not found.

The Department of Health is asking Trusts in England, and their associated business partners, to adopt these standards initially for physical places (owned/managed by a legal entity) and to provide information about their individual places (using a GLN) to other organisations.

Adoption and implementation of location identifier ("Place"), along with similar approaches for "Product" and "Patient", are enablers to numerous use cases and opportunities including inventory management, purchase to pay and product recall.

4.1 The need for Place identification

Opportunities for using GLN are identification of specific locations in Healthcare, for example:

- To allow identification of a specific room
- Use of GLNs for Organisational Identification, Deliver to, Ship to and Invoice to locations in the Purchase to Pay PEPPOL regulations.
- Tracking of stock usage in inventory to a specific location using a physical GLN
- Tracking of stock usage in inventory to a specific budget through a functional GLN
- Provision of GLNs to distributors allowing them to track where products have been delivered by their representatives
- Use of a GLN and an extension component for identifying specific beds, allowing real time bed states.
- Identification to a specific location of an RFID Cabinet can be identified to a supplier showing its exact location

Table 1 below shows examples of why unambiguous identification of physical places within a Trust is needed:



Table 1

Functional area	Description of requirement
Patient tracking	Hospital staff need to be able to quickly and accurately identify where patients are and what activities have been undertaken.
Infection control	Records relating to where a patient has been, so the risk of infection can be monitored. This information needs to be accurate even when wards and clinics move to a new place.
Procurement and inventory management	Suppliers need to have clear information of the physical place where incoming supplies need to be delivered to. From there, Hospital staff need to know where products need to be taken or where they are to be stored.
Medical equipment	Clinical staff need to know where to find equipment required for patient care. Similarly, Medical Engineering need to know where equipment is to carry out maintenance and calibration.
Maintenance	Hospital staff need to include information relating to a specific place when reporting faults, equally maintenance staff need to record the place of work planned and carried out.

By having multiple mechanisms operating across a single trust for location identification it is (virtually) impossible to be able to accurately and quickly capture where people and things are. Similarly, it enables easy reconciliation of products, equipment, services and patient interaction to a particular space.

Whilst creating the GLN labels it is helpful to understand the potential use cases for this information. Here are limited use cases so far, but these bar codes have already been identified as being able to:

- act as location identifiers in Estates Management and Works systems.
- allow for patient tracking to a precise location
- enable distributers who deliver to a specific location in the hospital and record a delivery
- creation of apps to assist patients and visitors navigating hospital sites



5. Specific differences

The six Scan4Safety demonstrator sites have used a number of different options for delivering the "Place" element of Scan4Safety. The differences have been due to the software that the trust has used for place management in the organisation. The specific estates management systems in use across the Demonstrator sites include MICAD, Archibus and Planet. Information that relates to any particular system is there for reference only, it is not a recommendation.

However, all organisations have started from the point of having no GLNs displayed in any trust Space.

Place Management for a hospital is used for any location, not just clinical areas, as the benefits can be far reaching and are only limited by the will and imagination of the organisation.

Where there are additional benefits to a particular step, these have been included at the end of section to allow the reader to get full benefits from the scheme. Any costs and times shown are indicative.



6. Implementation Steps

6.1 Phase 0

Single Trust GS1 Global Company Prefix (GCP) assigned and communicated.

"Need to confirm that a GS1 GCP has been assigned, ideally only one GCP is to be used per Trust, and communicated to relevant stakeholders across the Trust.

Where more than one GCP is in use a process document is required, ideally approved by the Chief Information Officer (CIO), stating why the Trust has multiple GCPs and how the use of multiple GCPs will be managed across the Trust."

Step 1 Accessing Global Location Numbers

The GLNs are held by GS1 on behalf of the Department of Health. They can be requested from GS1 UK. Contacts can be found on their website at: www.gs1uk.org.

GS1 UK will be able to advise you on your Global Company Prefix (GCP).

Level 1 Global Location Number (GLN) assigned and communicated.

"Need to communicate the Level 1 GLN to relevant stakeholders across the Trust."

Step 2 Communicate

The GLN for the organisation will need to be communicated in the first instance to the Estates team and to any procurement function as it is fundamental to PEPPOL adoption.

Produce an estimate of the number of Level 2-5 unique locations.

"Need to undertake a Trust-wide review of estates to produce an initial estimate of the number of Level 2-5 unique locations, by individual sites, that need to be identified by a GLN.

Need to show that step 1 of the 'Place' How To guide has been completed."

Step 3 Sizing

This should be part of the Trust Estates Return Information Collection (ERIC).

Table 2 shows the five levels to physical Global Location Numbering:



Table 2

Level 1 Organisation	
Level 2	Site
Level 3	Building
Level 4	Floor
Level 5	Room or Space

From your Trust CAD team you will be able to work out the number of spaces for each of the above levels. From experience this may include flat roof, walls and roof voids; it may not be possible to label these.

As well as the physical locations to enable PEPPOL to work correctly and for working with NHS Supply Chain, each NHS Supply Chain Requisition (Transfer) point will need a GLN assigned. These are functional GLNs and are defined as:

A function is an organisational subdivision or department based on the specific tasks being performed, as defined by the organisation. A function must be allocated its own GLN when its business purpose is different from other functions or more specific than other functions, and there is a business need to identify the function across organisations.

GS1 GLN Allocation Rules

Step 4 Establish roles and responsibilities

This is a review of the roles and responsibilities of any systems currently using place information. The following stakeholders should be engaged at this stage:

- Director of Estates and Facilities, as they will have responsibility for the buildings and the data that are key to the delivery of the project
- Workstream lead for GLNs, as they will have responsibility management of implementation through to delivery
- the Estates Building Manager
- any PFI partners the Trust has
- CAD team from Estates, as they will have responsibility for reviewing the existing Trust system
- potentially a member of staff to produce the GLN barcodes labels
- Teams of people with the responsibility of affixing the GLN barcodes labels to locations
- the Trust Communications team, as they will have responsibility for informing staff about the changes
- Infection Prevention
- Supply Chain and eProcurement Lead

The Workstream Lead has a number of responsibilities



- a) Assign a Workstream Lead to oversee the adoption of GLNs and coordinate between departments such things as:
 - where place information is currently held. Location information may be held in many internal systems e.g. Estates, Procurement, Pharmacy, Medical Equipment
 - which place information is relevant and prioritise the order in which these locations need to be assigned GLNs
 - whether existing place information is still valid before applying GLNs
- b) Establish clear roles and responsibilities determining across the Trust who should:
 - have overall responsibility and management (recommendation would be the Estates department)
 - create, amend or delete a GLN and related data elements
 - be responsible for identifying when and what information should be shared with other entities
 - be notified of any location changes and how (such as by automated email notification)
 - maintain policies and processes and be responsible for aligning any 'Place' creation/changes with relevant internal systems
- c) Manage expectations across your organisation
 - establishing why GLNs are required
 - determine how long it may take to implement
 - create KPIs and metrics to gauge progress of GLN adoption

Step 5 Define a High Level Plan

The roll out for the project can be summarised in the following high level steps.

- Establish an Estates Management System capable of holding GLNs
- Check the existing needs of the organisation
- Acquire sufficient GLNs from GS1 UK
- Create a local Place Management Procedure
- Communicate the programme to Trust employees
- Assign GLNs to all spaces and functions
- Order materials for labelling
- Label locations
- Verify locations
- Share data via GS1 UK's LocationManager and consider how to share information locally
- Review future uses cases

A detailed example of a plan can be found in Error! Reference source not found.



6.2 Phase 1

Publish approved Trust policy(ies) and processes for location identification.

"Need to demonstrate that a Trust policy has been produced and approved covering the allocation of location identifiers using GLNs. The policy should cover:

- all areas of the Trust operated estate;
- confirm roles and responsibilities; and,
- define whether location identification covers levels 1-5 or beyond, e.g. to individual bed spaces. Need to evidence that relevant process(es) have been created or updated to cover consistent location identification."

Step 6 The Policy

This policy sets out the organisation's approach for current and future management of location identification. It should relate to all aspects of location management and set out a framework within which all staff, particularly those with designated responsibilities for the management of estates and facilities, should operate.

Contents

Table 3 shows what the policy should include (an example Policy can be found in 0):

Table 3

Section	Content
Purpose	What is the reason for this policy being produced?
Background / Context	Why has this issue not been tackled before, where has it come from?
Definitions	There will be a lot of unfamiliar acronyms in this document - there needs to be a lookup.
Policy Effect	High level process flows with supplementary information. Should include updates of relevant flows from Step 1.
Roles & Responsibilities	Defines all staff involved in the production or upkeep of the policy.
Equality Analysis	Evidence that the policy does not unfairly discriminate against groups of users.
Consultation & Review Process	The frequency and process for reviewing and updating the policy.
Standards / Key Performance Indicators (KPIs)	The metrics that identify the outputs of the effects of the policy



Monitoring Compliance & Effectiveness	The frequency and process for reviewing the KPIs to measure impact of the policy
References / Associated Documentation	Any relevant linked documentation

Final Publication

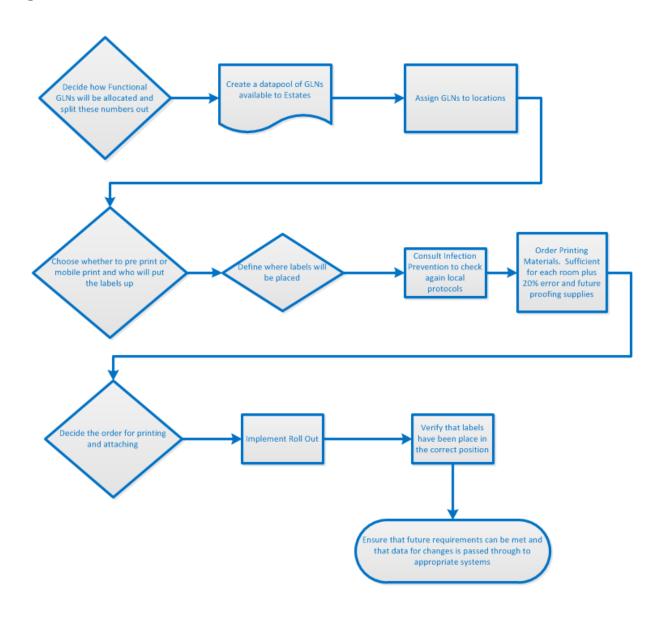
Once completed it must be agreed by all parties affected. The document will need to be embedded in your organisation. To do this, please consult your organisation's policy of policies and procedures.

Step 7 Development of process

Once the procedures have been agreed above and there is a process for getting the labels applied across the organisation, this will need to be clearly communicated as demands will be placed on the implementation team from many directions.



Figure 1



Governance

To ensure allocation and maintenance of these GLNs is accurate and efficient it is important to have a clear governance process in place. This should:

- include clear accountability regarding roles and responsibilities;
- include clearly defined processes regarding the allocation, printing, placement and on-going maintenance of GLNs; and



• the agreed policy/process should be signed off by the relevant person/department e.g. Quality Control/Clinical Governance.

Step 8 Ongoing maintenance

- a) Changes to existing spaces
 - where there are changes made to existing labelled spaces see Q&A for indication of handling allocation of GLNs
 - where new spaces are created through construction or acquisition of additional buildings then these should have GLNs allocated and labels placed as with all other areas
 - when changes are made to spaces or new spaces added, then the standard operating procedure should enforce the updating of the organisation's GLN register to reflect these changes
- b) Replacement of labels
 - where a label needs to be replaced, responsibility and process should already be established and the label reprinted and re-affixed. No update is required to the registry
 - during normal activity additional copies of specific labels may be required within a space.
 Responsibility and process should already be established and labels printed and affixed. No update to the registry is required
- c) Allocation of new GLNs to functions
 - As new departments are created links will need to be created between physical and functional GLNs. This will include new NHS Supply Chain Accounts.

Step 9 Label printing

- a) Agree labelling approach for Trust
 - all physical places in an organisation need to have a machine-readable representation of the allocated GLN present within the location (Figure 2 and Figure 3). The background should be white; if the site is a Scan4Safety site then the Scan4Safety logo may be used. However, the Scan4Safety logo must be accompanied by the NHS logo (Figure 3).
 - it is useful for location labels to also have human readable information, e.g. to help staff when reporting maintenance or other issues. This could be an existing alpha numeric location identifier, or alternatively the last 5 or 6 digits of the GLN (i.e. the GLN without the GS1 Global Company Prefix (GCP)). Room ownership, e.g. Dr Smith's office, should be avoided to minimise the need to update labels as and when room ownership changes.
 - machine readable labelling of physical places (including where the coding is extended to identify specific bed areas, cupboards, shelves or cabinets) should be implemented using GS1-128 linear barcode or 2D DataMatrix. For more information, please see the GS1 document 10 Steps to Barcode Your Product.



Pre-printed backing and label



Figure 2

Pre-printed Identity Card



Figure 3

- b) Agree on what printing solution to use
 - a number of different printing solutions exist including thermal transfer and direct thermal printing technologies
 - samples of labels should be obtained and provided to the organisation's Infection Control team and Cleaning teams to validate that labels are compliant and will withstand regular cleaning materials and practices
 - Once you have a potential supplier, ensure that Infection Prevention are aware of the change then work with the Estates and Facilities Team to ensure that a label will be placed in an area that is due to deep [High Pressure Vapour] clean to ensure that the label will remain attached after cleaning
 - ensure that the software used by the label printing solution is GS1 compliant and that printed labels can be accurately and rapidly read by scanning technologies used within the organisation
 - the label must carry the human readable format of the GLN barcode
 - print one sample label and send to GS1 UK for verification at Healthcare@GS1 UK.org. Once this label has been approved by GS1 UK move to C
- c) Printing in batches or print-on-demand
 - Labels can either be printed in batches, whether by external organisations, on-site or they can be printed on-demand using mobile printing solutions. The organisation should agree which approach is more appropriate based on working practices
 - When labels are printed a check should be made to ensure the appropriate bar code is being pulled through the system

The cost implication should be reviewed. As an indication, the per label costs (all costs have been rounded up) are set out in Table 4 below based on the experiences of the trusts.



Table 4

Double La	abel Model	PVC Card Model (including RFID)			
L7994-25 Stickers back	£0.10 per label	PVC Card 8.5x5.4cm	£0.50 per card		
label plus GLN labels		780 microns pre-			
		printed (including RFIC)		
Handheld units, mobile	£0.35 per label	Printer, Software,	£0.31 per card		
printers and charging		Ribbon and Cleaner			
facilties (based on		(based on c22,000			
c6,000 applied labels)		applied cards)			
Verification Software	Included in Handheld	Verification Software	£0.16 per card		
and Hardware	unit costs	and Hardware			
			·		
Average labour cost (inc	luding apportion of	£1.00 per label/card			
equipment costs)					
Average cost per £1.45		Average cost per f	1.97		
applied label		applied card			

NB. These are indicative/average costs and do not reflect all returned materials. They are also based on number of labels produced when calculating labour and technology.

- Whichever approach is selected there should also be a mechanism established to enable validation and verification of the printed GLN labels
- Your organisation may incur software development charges if the supplier is not GS1 GLN Compliant

Step 10 Label placement

- a) Location of labels
 - labels should be located to ensure ease of scanning on entry to the 'place' and should be sited as near as practical to where a physical task is undertaken
 - labels should be placed just inside the entry to the 'place' at a height that would be easily scanned and seen. A logical location would be alongside light switches and fire alarm call points for which UK regulation states a location of between 1.2 and 1.4 metres off the floor
 - labels should be placed on walls as opposed to doors
 - physical doors can be moved for maintenance purposes and not always returned to original locations
 - doors are regularly propped open which would make the label for the outside place prominent within the place. This can be negated by replicating labels on both sides of the door, however a challenge will then exist as to which label to scan



- whilst walls can be subject to regular painting this can be overcome by replacing labels or painting around existing labels
- Where an organisation uses an existing room numbering system the GLN maybe replicated on the door however this is an additional item not an alternative
- where the organisation has decided to go down to the level of coding unique bed spaces (see Q&A section) labels (including optionally the GLN extension component) should be placed on or above the bed space
- where the organisation has decided to go down to the level of coding unique cupboards, shelves
 or bed space the appropriate labels (including optionally the GLN extension component) should
 be placed on both the inside and outside of the cupboard, on the specific shelves being
 referenced and on the bed space not the bed itself
- in large rooms, such as corridors, there may be a need to apply more than one label. Where multiple labels are required, these should display the same GLN
- Once label has been attached to a wall, a scan should be performed to validate the label

b) Placement of labels

- whether printing of labels in batches or on demand individuals should be identified and given responsibility for application of labels to specific areas of the Trust's estate
- the organisation needs to establish a standard operating procedure for the placement of labels to include: validation of location, confirmation of placement of label in correct location and confirmation of readability of the label by scanning technologies currently used by the organisation
- designate a trial ward area for the affixing GLNs this will ensure that any potential problems of surfaces and adhesives are identified prior to the full roll out
- the organisation should commence a plan for the placement of labels in all identifiable places across the estate
- on confirmation that a label has been applied, the organisation's local register should be updated to reflect this, that it contains the relevant code and that it can be read
- the organisation should aim to undertake audits of affixed labels to further validate that the GLNs are represented in the correct locations and that labels have been appropriately affixed to the walls so as to be visible and easily scanned
 - Using the double label method and a suitable app linked to the estates management system, the label and location can be verified at the time of printing and affixing. This shows progress throughout the installation and a snapshot can be retrieved at any time.
 - Using the PVC card approach verification can either take place at the time the labels are being applied to the wall or post attachment.

If this is being done post attachment then progress of production and attachment of the labels will need to be created. The audit will need to verify that the labels are in the correct place and that the GLN information conforms to the location.

c) Audit of application

- Depending upon the software used as Property Management and CAD it may be possible to use pre-prescribed audit software to allow a member of staff to scan the barcode to ensure that the description is correct and validate the location.
- The results should ensure that all labels have been placed in the correct location.



- If a proprietary system is not available then an audit will need to cover:
 - i. The location has a GLN label
 - ii. The label is in a suitable physical location
 - iii. The label shows the human readable format and the information contained in the barcode match
 - iv. A cross check to ensure that the GLN corresponds to the correct location
 - v. Who did the check and when

Design the requirements of a sustainable organisation for managing location identification.

"Need to demonstrate that the sustainable (as opposed to a project) organisation has been designed and approved for the ongoing management of location identification across the Trust.

Need to show that clear controls and monitors are included with corresponding escalation paths."

Step 11 Organisational structure

An organisational structure will be in place in your hospital, however, experience from the demonstrator sites has shown that ensuring room information is being created and applied in a consistent manner may cause difficulties.

To create a sustainable structure the groups listed in Roles and Responsibilities section below should be considered.

Step 12 Roles & Responsibilities

Facilities CAD Office

Allocation of GLNs to locations in the Trust and provision of information from the property register to other systems which require location information to be held. The CAD Office will update the national registry (LocationManager) with changes to GLNs for physical locations and this will be supported by local procedures.

Estates

Estates staff will be appointed to issue and attach the labels on each site. These staff will, for the initial installation, be supported by back filling their substantive roles.

Estates staff will check when applying the bar codes that the location description matches the information from the property register. Estates will hold the Barcode Printer and appropriate technology for labelling each room.

Where Estates change the usage of a room the new usage will be notified to the CAD Team

Capital Planning

Inform CAD of the change of use of any Trust locations and any alterations to the layout of the Trust.

Materials Management



The creation of Transfer Point numbers and notification of Transfer Points to the eProcurement Team. The Materials Management Team will also disable Transfer Points upon request and will notify eProcurement Team.

eProcurement Team

The attachment of GLNs to Transfer Points and management of GLN amendments on behalf of Materials Management. GLNs are held in a legacy database which is used as the register of available GLNs. The eProcurement Team will update the National Register (LocationManager) for all virtual GLNs and this will be supported by localised procedures.

Step 13 Controls and monitors.

An audit should be carried out once an area has had its GLN barcodes applied.

A download from Property Register will be compared to the local GLN Registry held by the Facilities Team on a quarterly basis.

A review of GLNs in the Inventory System should take place on a quarterly basis to validate that any new or updated GLNs have been reflected accurately.

Undertake a site survey to identify all level 2-5 Trust locations.

"Need to demonstrate that a complete site survey has been undertaken to confirm the number of level 2-5 locations operated and/or used of by the Trust."

Step 14 Site survey

To perform a survey, information can be taken from AutoCAD drawings and any retained space data. This will then need converting and labelling with the appropriate room numbers to enable the GLN information to be created.

Particular attention should be paid if there are existing methods of room numbering. Staff in the hospital will be used to this system. Applying a GLN with the existing room number will enable staff to pin point a location visually as opposed to having to use an electronic device.



Confirm the system that will act as central GLN registry for Trust.

"Need to evidence that a review has been undertaken and agreement reached on which system should act as the central GLN registry for the Trust. If an appropriate system is not currently available then an investment case should be produced."

Step 15 Agree where 'Place' information is recorded

- a) Local Registry
 - A local registry should be identified or created using a single database to record all physical and functional places within the Trust. This database should feed each of the separate computer systems used across the Trust that require 'place' information, ideally using Open Application Programming Interfaces (APIs)/dedicated interfaces
 - Each Trust will be required to maintain additional attributes/data about each 'place' such as a description of place and specific address details
 - Where existing references exist already in the Trust for individual 'places' these should be crossreferenced to the GLN by adding both references to the registry entry. Over time the GLN should become the primary identifier within electronic systems for all 'places' and be used consistently across all Trust systems
 - Where space across the Trust is altered (such as the splitting of single rooms into two or the joining of smaller rooms into one) the GLN information must be updated (see Q&As)
- b) National Registry
 - The organisation will be required to provide relevant GLN records to be held in the national registry, LocationManager.



6.3 Phase 2

A sustainable organisation is in place to manage location identification.

"Need to evidence a sustainable (as opposed to project) organisation is in place to manage location identification and allocation of GLNs across all relevant areas of the trust and that it is working to appropriate policy(ies) and process(es).

Need to show that clear controls and monitors are in place with corresponding escalation paths."

Step 16 Implementing sustainable organisation

Your Trust will have a Policy on management of policies, this will define whether the policy mentioned above is a policy or a process for your organisation. It will then need to go through the approval and communication process for your organisation to become an official Trust process.

Step 17 Training

The following people will require training:

Label production - how will each label be produced, dependent upon the method used for application this could be either an administration member of staff or Estates staff.

Label placement - if this can include a picture of where the label or plaque is to be placed in each room; this will ease the work being undertaken.

Systems operatives of the Trusts property management solution, so that they understand GLNs policy and processes.

100% of Trust locations have a GLN and they are in the Trust's GLN registry.

"Need to confirm that all physical level 1-5 locations have been assigned GLNs and they are loaded into the Trust's GLN registry."

Step 18 Allocating GLNs

- a) Determine where to start
 - all physical places in the Trust need to be separately identified using GS1 standards to the five levels mentioned in Table 2, starting at organisation level
 - GLNs should be allocated reflecting the organisational and physical structure of the Trust through the five required levels
 - what resources, equipment and systems will be needed
- b) Allocate GLNs
 - commence allocation of unique GLN to each identifiable 'place' within the organisation by referencing the GS1 GLN allocation rules
- c) Extent of GLN allocation



- the organisation needs to determine if allocation of GLNs will extend beyond level 5 (Table 2),
 e.g. to unique bed locations or cupboards (see Q&A)
- where the organisation utilises physical space within other organisations refer to the Q&A and determine appropriate approach

Identify and update the relevant systems to hold and use GLNs.

"Need to confirm which systems are considered "Relevant" covering functional areas including (but not limited to) Inventory Management, Patient Administration/Patient Record and Finance Management.

Evidence that those identified systems are now capable holding and using GLNs."

Step 19 System Review

There will be an initial period where the GLN labels will not have an immediate use. However, experience has shown that the following systems may be able to use GLN information:

Physical GLNs

- Inventory Management Software for establishing the location of an item
- Estates Management for confirming the attendance of Estates Staff at an issue
- Patient Management systems for locating patients around the hospital
- Point of Care systems for capturing where patient care was administered
- Distributors for confirming goods have been delivered to a specific location
- Order Management Systems for transferring location data via PEPPOL
- Providing mapping information for Patients and Visitors

Functional GLNs

• Inventory Stock locations Ordering process for NHS Supply Chain as the NHS Supply Chain Requisition Points can now be linked to a GLN.



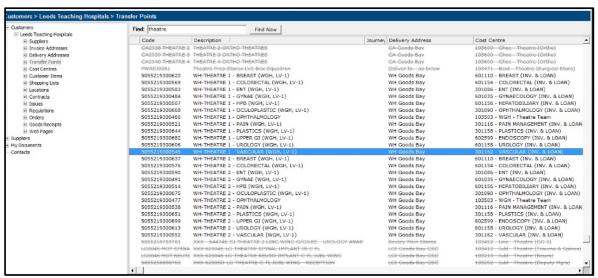
6.4 Phase 3

Inventory management systems using GLN location identifiers.

"Need to evidence that all systems performing inventory management function (such as inventory management systems, pharmacy management systems and Purchase-to-Pay systems), are holding and using GLNs for all locations were inventory is stored."

Where a system requires a GLN then a screenshot should be taken from that system (Figure 4) showing which field location the GLN is held in and ensuring that it is in the correct format. For example a screenshot has been provided from an inventory system below.

Figure 4



And a data extract from a financials ordering system (Figure 5).

Figure 5





At least 50% of Trust level 5 locations have a compliant barcode label affixed.

"Need to evidence that GS1 compliant barcoded labels have been affixed to at least half of the spaces around the Trust in line with the allocation of GLNs and that they have been verified."

When GLNs are being produced a manual tracker on production and application of labels to walls can be maintained as shown in Figure 6 below:

Figure 6

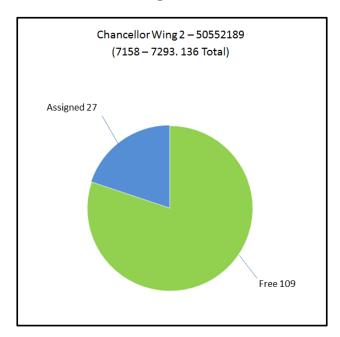
					98.6755
				17969	17731
Order	→¹ Site ▼	Code	▼ Building	No Mate ▼	Rooms 💌
D	SJH 44	SJH 44	Leeds Cancer Centre - Bexley Wing Count	2859	2859
D	SJH	SJH 31 SJH 32	Pathology Count	187	187
D	SJH	SJH 33	Lincoln Wing XRay Count	182	182
D	LGI	LGI 55	Old Medical School (Grade II Listed) Count	354	354
D	LGI	LGI 50	Generating Station Complex & Ambulance Station Count	249	249
D	LGI	LGI 23	Great George St Entrance & Littlewood Hall (Grade I Listed) Count	211	211
D	SJH	SJH 35	David Beevers Theatres Count	146	146
D	LGI	LGI SC	Eckersley House & Creche Count	142	142
D	SJH	SJH 16	Cancer Research Building (Leeds University) Count	132	132
D	LGI	LGI 3, LGI 4	Ward L26 (Grade I Listed) Count	113	113
D	LGI	LGI 6	Wards L27 & L28 (Grade I Listed) Count	99	99
D	SJH	SJH 10	Leeds Genetics Laboratory Count	94	
D	LGI	LGI 09	Leeds Chest Clinic Count	93	93
D	LGI	LGI 25	Wards X38 & X39 - Offices (Grade I Listed) Count	84	84
D	SJH	SJH 54	Fielding House - Dept of Clinical Health & Psycology Count	83	83
D	SJH	SJH 43	Residential Accommodation Count	81	81
D	SJH	SJH 48	Multi-Storey Car Park Count	79	79
D	SJH	SJH 55	The Sir Robert Ogden Building Count	78	78
D	LGI	LGI 27	Offices & Liason Psychiatry Count	72	
D	SJUH	SJUH	Workshops, Stores, Linen Count	58	58
D	SJUH	SJH 12	Ashley Wing J - Bookings & Referrals Estates Count	159	159
D	SJUH	SJH 13	Ashley Wing K - The Leeds Clinical Practice Centre Count	102	102
D	SJH	SJH 19	Multi Specialty Outpatients Count	157	157
D	SJH 59	SJH 59	Paul Sykes Urology Building Count	57	57
D	LGI	LGI 51	Clarendon Wing Count	2023	2023
D	SJH	SJH 50	Beckett Wing Count	548	548
D	CAH	CAH	Wards C4 to C6 Count	353	353

Specific GLNs for levels 1 to 4 do not necessarily need to be displayed by way of printed and applied label as they may create confusion. There are, however, practical uses for these GLNs and it is therefore important that they are assigned and visible within system records.

Alternatively some systems will record application on verification:



Figure 7



This review is essential as staff applying the barcodes may find it difficult to access some clinical areas.

At the end of Phase 3 a statement is required detailing the total number of GLNs that are required for the organisation and the number that have been applied to date. This will result in a percentage of application (Figure 7).

All relevant "Ship To" and "Invoice To" locations identified with a GLN.

"Need to confirm which locations across the Trust are used as "Ship to" "Invoice To" locations."

Step 20 Communication

- a) Information to Suppliers
 - The Trust should produce a structured listing of relevant GLNs and associated data elements. This should include all locations across the Trust that are used as either "Ship To" or "Deliver To" locations. It should also include all GLNs from across the Trust for specific locations used to store supplier owned consignment stock.
 - The Trust should make the GLN listing available to all suppliers through the national GLN registry. See section on National Registry below.
- b) Information from Suppliers
 - The Trust should ask suppliers to upload confirmation of their respective organisation level GLN, plus locally allocated GLNs for locations from which shipments are made or orders dispatched to the national GLN registry, LocationManager. See section on National Registry below
 - On receipt of the GLN data from suppliers, trusts should update supplier master records utilising the supplier's organisation level GLN as the primary supplier reference number



6.5 Phase 4

All relevant systems hold and are using GLNs.

"Need to confirm which locations across the Trust are used as "Ship to" "Invoice To" locations."

Step 21 System review

Check that all ordering systems have the "Ship To" and "Invoice To" GLNs transmitted. Your procurement department will be able to show you where they are held in your inventory and order management systems.

100% of Trust level 5 locations have a compliant barcoded label affixed.

"Need to evidence that all level 5 locations across the Trust have had a compliant barcoded label affixed.

Need to evidence that there is a process for the management of location labels."

Step 22 Affixed label review

This is a repeat of the exercise in Step 19 to ensure 100% compliance.

"Ship to" and "Invoice to" locations uploaded to National Location Registry.

"Need to evidence that identified Ship-to and Invoice-to locations have been uploaded to the National Location Registry.

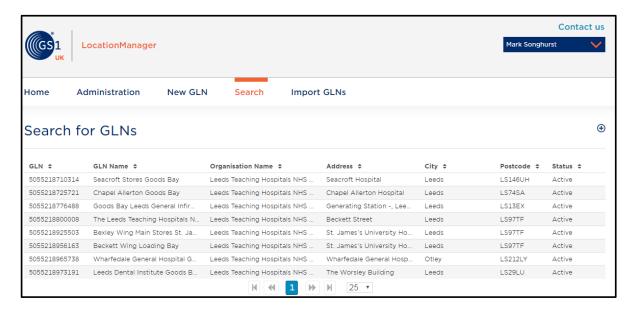
Need to evidence that process(es) are operational to maintain the data held."

Step 23 Upload locations to National Location Registry

Once you have registered with LocationManager you will be able to up load all the GLNs that you want to share with a wider audience. A list of all your GLNs can be produced. Take a screen shot for audit evidence (Figure8).



Figure 8



Produce a project review report.

"Need to evidence that a full review has been undertaken following adoption of GLNs and unified location identification including the population of a national registry (LocationManager)."

Step 24 Produce project review report

All along your journey there will be incremental developments that move you towards your final position at the end of the programme. As you complete each of these steps record your successes and the lessons learnt along the way.

Your final project review should gather this information together along with:

a) Costs

- The cost of any new systems (installation, support and license costs)
- The cost of any system upgrades
- The cost of any new system interfaces
- Any hardware costs that may have been incurred
- The costs of any posts created for the implementation of the Place workstream
- The time and banding of any non-Scan4Safety funded bodies contributing
- The numbers and bandings of any new positions generated to carry on the work as BAU

b) Benefits

Together all of this information should represent the summary of your level of change as a result of your work in Scan4Safety. It can then be shared with other organisations to allow them to avoid pitfalls you may have fallen into and adopt practices you have discovered as beneficial.



7. References

- For latest information from the demonstrator sites, go to <u>www.scan4safety.nhs.uk</u>
- For latest information regarding data dictionaries and compliance timelines by market sector go to <u>Scan4Safety Supplier Workspace</u>
- For further details on the use of GS1 standards required by the DH, please go to the Scan4Safety Trust Workspace
- For GLN Allocation Rules, go to http://www.gs1.org/1/glnrules/en/

Contact us:

To speak directly to a demonstrator site, email scan4safety@nhs.net



Appendix A - Implementation requirements

Phase 0	Phase 1	Phase 2	Phase 3	Phase 4
Single Trust GS1 Global Company Prefix (GCP) assigned and communicated.	Publish approved Trust policy(ies) and processes for location identification.		Inventory management systems using GLN location identifiers.	All relevant systems hold and are using GLNs.
Level 1 Global Location Number (GLN) assigned and communicated.	Design the sustainable organisation for managing location identification.	A sustainable organisation is in place to manage location identification.	At least 50% of Trust level 2-5 locations have a compliant barcode label affixed.	100% of Trust level 2-5 locations have a compliant barcoded label affixed.
Produce an estimate of the number of Level 2-5 unique locations.	Undertake a site survey to identify all level 2-5 Trust locations.	100% of Trust locations have a GLN and they are in the Trust's GLN registry.	All relevant "Ship To" and "Invoice To" locations identified with a GLN.	"Ship to" and "Invoice to" locations uploaded to National Location Registry
	Confirm the system that will act as central GLN registry for Trust.	Identify and update relevant systems to hold and use GLNs.		Produce a project review report.

Appendix B - What is a GLN

Global Location Numbers (GLNs) are a 13 numeric digit code made up of an organisation (Trust) prefix, a unique number assigned to the location and a check digit which can be encoded in a barcode format or used in systems as an identifier. The 13 digit GLN is created as follows:

GS1			
GS1 Company Prefix number example	Location reference element example	Check digit	Number of GLNs that can be created
5012345	000000	8	100,000
50551234	0123	9	10,000
506001234	999	8	1,000

Flexibility

GLNs do not have any significant internal structure; they are non-significant numbers which can be used as keys to look up information in a database. This lack of internal structure means that GLNs can be used to identify physical places at any level of granularity from whole building sites down to individual shelves or cabinets or bed spaces. GLNs can also be used to identify organisations and functions.

The lack of internal structure also means that the GLN will remain effective regardless of any organisational and physical structural changes.

Unique and self-managed

GLNs, and their associated data attributes, can be created and managed as required by a Trust, hospital or department while still being globally unique. GS1 achieves this by ensuring that all GLNs start with a unique sequence of numbers, known as a GS1 Company Prefix, which GS1 UK allocates to each Trust. The use of this prefix ensures that GLNs can be created by a Trust as required safe in the knowledge that the GLNs will not conflict with other GLNs created by Trusts or organisations worldwide.

Standardised and secure

GLNs are designed for machine readable use. The 13th digit is a check digit which is used to check that the data is correctly composed.





Clinical meeting room 3

When a GS1 key is encoded in a GS1 barcode (as in the examples above) it is prefixed by an Application Identifier (AI) number which identifies the type of GS1 key in use, so that it can be



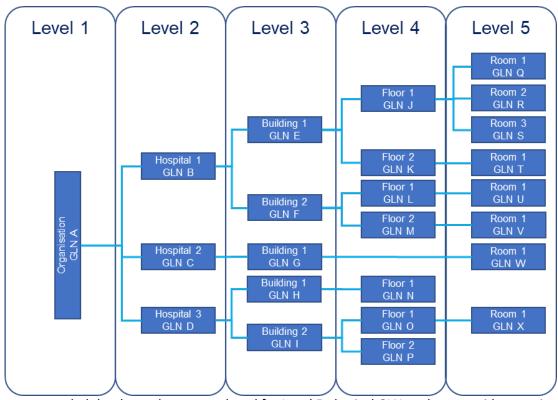
interpreted and processed correctly. In the case of a physical GLN the code is 414. For more information on Als, please see GS1 <u>GLN allocation rules</u>.

Identifying physical places

Currently the Department of Health requires Trusts to apply GLNs to all physical places identified to five levels. These places may have associated barcode labels where appropriate.

Level	Description
Level One	A single code identifying the Organisation/Trust
Level Two	Each site/campus/hospital operated by the Trust
Level Three	Individually identifiable buildings or areas within particular site/campus/hospital
Level Four	This applies to floors within buildings
Level Five	This applies to rooms, corridors and other discrete spaces that need to be identified. This could include ducts and riser cupboards

Physical GLN organisational structure



It is recommended that barcodes are produced for Level 5 physical GLNs only to provide scanning functionality at a granular level. Levels 1 to 4 may be used to electronically refer to locations.

Functional GLNs can have a hierarchy and may be associated with physical GLNs e.g. a ward or the finance department (a functional GLN) can be associated with a room (a physical GLN).



Appendix C - Questions and Answers

Question	Answer
What about beds or cupboards?	GLNs are primarily aimed at identifying discrete spaces, as required by the Department of Health. A simple definition for Level 5 could be the lowest level of granularity where changing a space would require some form of estates work to change it (such as removing a wall or installing a door). Trusts may apply GLNs at a level beyond level 5 (for example specific patient bed space, drugs cabinet or storeroom shelf), alternatively they may use the GLN extension component. The GLN extension component is an alphanumeric field that is variable in length up to a maximum of twenty characters. When encoded in a barcode, the GLN extension component is prefaced with the Application Identifier 254 and must appear in conjunction with Al 414, the identification of a physical location.
	Example for 4 individual bed spaces within a particular room
	(414)9501101530003(254)BED1 (414)9501101530003(254)BED2 (414)9501101530003(254)BED3 (414)9501101530003(254)BED4
	It is important to note that the GLN and extension component should relate to the space occupied by a bed and not to the specific bed unit as that can be moved and would be considered as a discrete asset.
	The GLN extension component should only be used internally as some systems may not be configured to receive this information.
What about buildings owned by the Trust but leased to others?	Where a Trust has leased part of its estate to a third party the Trust should still assign a GLN to that building, i.e. to all the physical spaces.
	Where the third party is then providing services on behalf of the Trust (such as catering, post room or pathology services), these services are an extension of a Trust's operations. In this instance, the standards should be embedded by the third party within its operating policy and processes in the same way as the Trust.
What about if the Trust uses space in buildings owned and operated by other organisations?	Where a Trust uses space in a building that is owned and operated by a third-party organisation (such as provision of offsite clinics), the third party should be encouraged to become a member of GS1 UK and apply the standards to ensure all of a Trust's operations are compliant. Where this is not possible or practical the Trust should assign its own GLN to each physical place it uses until the third party adopts GS1 standards.
	The exception to this is where the Trust leases or occupies the entire building. In this instance, it would be appropriate for the Trust to take responsibility for assigning GLNs.
What about Private Finance Initiatives?	Where Trusts have Private Finance Initiatives (PFI) in place then the contract manager for the PFI should be approached about the best method of deploying the labels. Discussion may include use of the PFI Contract Staff at a charge, use of a third-party contractor which may need independent validation by the PFI Partner or Use of Trust staff with the permission of the PFI Partner.



How are GLNs used for Purchase-to-Pay processes (P2P) through Electronic Data Interchange (EDI)

GLNs should be used in EDI transactions as part of Trust's P2P process. GLNs will be used when sending orders, receiving delivery information and invoices via EDI. For example, when an order is sent to a supplier it should contain:

<u>Mandatory</u>

- A GLN (Trust's) to provide details of the buying organisation and physical place of delivery.
- A GLN (Supplier) to provide details of the supplying organisation and physical place where products & services will be supplied from.

Optional

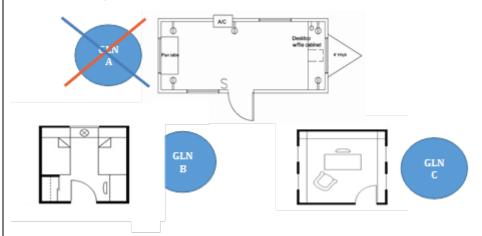
 A GLN (Trust's/Suppliers) to provide details of a functional entity (eg. internal department) that identifies where the order/delivery/invoice should be routed to within an organisation.

Please refer to the Scan4Safety P2P How To Guide

What happens when existing rooms are

split?

Where a room is split into two, an organisation should deactivate the original GLN and create a new GLN for each room. Within the registry there should be a note of what the change was and when it was made





previous room usage.

Where two rooms are combined the organisation should deactivate the GLNs assigned to the original rooms and assign a new GLN to the new room. Within the registry there should be a note against both GLN records of what the change was and when the changes were made

What happens when existing rooms are merged?

Note: When specific GLNs are no longer required, they MUST not be reused elsewhere. They need to remain in the local registry to enable full traceability of



There are various types of GLN: a GLN may be used to identify a legal entity, a physical location, a function or a digital location.

GLNs are used to identify the Who and Where in various applications:

- Who: legal entity, function
- Where: physical location, digital location

But the most common GLN Location types are Physical and Functional.

Below are examples of the different types of GLNs:

- A legal entity: this may be assigned, for example, to a Hospital Trust or Healthcare provider.
- A digital location: this represents an electronic (non-physical) address that is used for communication between computer systems to identify the digital location across organisations.

Are there only physical GLNs?

A physical location is a site or an area within a site where something is located e.g. a building or a room

A physical location within another physical location may get its own GLN (e.g. a shelf in a store room).

Information associated with a physical location GLN may include the contact details (visiting address, email address, phone number, etc.), location purpose (e.g. Hospital, office), operating hours, etc.

A function is an organisational subdivision or department based on the specific tasks being performed, as defined by the organisation. Where an organisation agrees that it is going to commence deployment of GLNs to functional locations it should follow the same steps in relation to allocation and data capture within the local register and make copies of corresponding machine-readable codes available where required, e.g. in order books.

Information associated with the functional GLN may include the contact details (visiting address, email address, phone number, etc.), tax registration numbers (e.g. VAT number), and financial account information.



Appendix D - PLACE project stakeholders

Job Title	Responsibility within Place
GLN Work Stream Lead	To ensure that the GLN workstream is delivered
CAD Team	Ensure that the space data is up to date and that the CAD Software is capable of holding GLNs
Procurement Team	Ensure that Functional GLNs and Ship To GLNs are in place in appropriate systems
Director of Estates	Ensure that GLN labels are placed appropriately
Capital Planning Team Manager	Ensure that Capital Planning information is held appropriately





Appendix E - National Registry

GS1 UK have developed a national GLN Registry called "LocationManager". Trusts are required to provide extracts from individual local registries to LocationManager. This national registry, and the information it contains is publicly available over the internet to share physical place information relating to every registered GS1 UK member including both Trusts and suppliers. LocationManager can be accessed from: https://locationmanager.gs1uk.org/home

The registry contains a single organisational entry for each organisation, below which hierarchies of physical GLNs can be maintained. Within Trusts the term 'hierarchy' refers to following physical levels (Table 5):

Table 5

Level	Description
Level One	A single code identifying the Organisation/Trust
Level Two	Each site/campus/hospital operated by the Trust
Level Three	Individually identifiable buildings or areas within particular site/campus/hospital
Level Four	This applies to floors within buildings
Level Five	This applies to rooms, corridors and other discrete spaces that need to be identified. This could include ducts and riser cupboards

Data elements

Each entry in the registry, with a corresponding unique GLN, contains structured data elements which identify it specifically to a place within an organisation. This includes elements such as description and postal address, delivery information, etc.

Data Management

Control of data quality within LocationManager and approval of new entries and edits will be the responsibility of a nominated officer from each organisation providing data.

A full history of changes to each GLN and to user profiles will be maintained. Once a GLN has been assigned and added to LocationManger it will no-longer be available for re-use.

Communication and access

Changes to GLNs and associated data elements uploaded to LocationManager will be notified to those parties who have elected to receive updates by email, and data will be visible (on a read-only basis) to all community members.

Further functionality will be available in the full version of LocationManager which is scheduled for release in the second quarter of 2018.



Appendix F - Example location identity policy

Below is an example location identity Policy for use by a Trust. It is meant as a guide and can be altered to suit each specific organisation.

Global Location Number (GLN) Procedure

Date approved	
Approved by:(Board Director)	
Version	V2
Executive Lead	Deputy Chief Medical Officer
Procedure Lead	Head of Supplies
Procedure Author (if different from Lead)	Project Analyst - GS1
Governance Group	Quality
Review Date	31 December 2018
Link to Policy	Not Applicable
Other Associated Documents	Not Applicable



Contents

Paragraph		Page
	Staff Summary	
1	Purpose	
2	Scope	
3	Definitions/Abbreviations	
4	Procedure to be Followed	
5	Roles and Responsibilities	
6	Links to Other Documents	
7	Monitoring Arrangements	
8	References	
Appendix A	Estates and Facilities Room Detail Change Form	
Annex 2	Checklist for Review and Approval	



Staff Summary

The Trust is using GS1 to drive forward change in the organisation ensuring that all locations have a unique Global Location Number (GLN) which will allow for exact identification of locations in a standard format across systems.

The Trust will use GLNs to identify all locations either physical or functional in the Trust. GLNs have to be compliant with the GS1 standards.

The Trust is required to meet key milestones e.g. 100% of locations have a GLN assigned by MMM YYYY 2016 and 100% of locations have a GLN barcode affixed by MMM YYYY.

1. PURPOSE

The purpose of this procedure is to provide guidance for the creation and management of Global Location Numbers (GLNs) at the Leeds Teaching Hospitals NHS Trust.

In 2014, the NHS eProcurement strategy mandated the adoption of GS1 and PEPPOL messaging standards through-out the healthcare sector and its accompanying supply chains. The adoption of GS1 will provide a unique set of bar-code standards that allow products, patients and places to be tracked and traced throughout the healthcare system.

One of the core enablers for this work is location coding to simplify trade and internal processes using consistent location numbers across the Trust based on GS1 Global Location Numbers (GLNs).

A unique GLN shall be assigned to each physical location within the Trust – enabling locations to be linked to events, with certainty and in real-time. For example, every event along the patient pathway can be recorded against the location where it happens – enabling better understanding of patient care, improved infection control and better outcomes. Implants can be accurately tracked – enabling efficient and effective product recalls and products can be recorded to a specific storeroom.

The use of GLNs enable information to be collected and stored where an event occurs – whether this event involves the dispensing of patient care, the use of medical equipment or the ordering and delivery of goods.

2. SCOPE

Physical locations in the Trust are currently assigned a five level identification number (Organisation/Site/Building/Level/Room or Space) - this is a long established protocol originally introduced by Estates in the 1990s. This is compliant with GLN Governance guidance.

All rooms in the Trust have been assigned a GLN which is a thirteen digit number which commences 50552.

The Trust GLN is 5055218800008

The Trust aim is that all locations will also be labelled with a GS1 compliant barcode to enable the further roll out of GS1 Scan4Safety technology. To enable recording GLN to bed location the Trust will need to identify a technological solution capable of holding GLN and Extension detail.

3. DEFINITIONS/ ABBREVIATION

DH - The Department of Health

GLN - Global Location Number - this is a GS1 compliant number with a company prefix, a location reference and a check number. A GLN can be:



- physical, A definite place
- functional, A service or department
- digital, used in the transmission of documents
- legal, identifying a company or organisation

Only physical GLN bar codes can be printed and displayed. These are primary to the identification of space within the Trust.. Physical GLNs are structured in the following way

505 552 1870000

UK Identifier

Company Identifier

Single Location

Attribute Identifiers (AI) - this is the way of identifying what type of information is being held in a bar code. The characters are added to the front of the bar code or bar code section. The human readable characters of the Bar Code display the AI in brackets for example (414)5055521870000

To identify a physical GLN the GS1 Attribute identifier '414' is placed in front of the GLN to denote a physical space.

GLN Extension - This provides a method for identifying physical locations at a more granular level and may be used to identify areas within a physical location identified with the same GLN. The GLN extension is an alphanumeric that can take up to twenty characters. In a Bar Code this is preceded by '254' and is attached to the end of a physical GLN. As an example (414)5055521870000(254)ReceptionDesk

GLN Registry - the Trust's GLN Registry (local) will be held in the MICAD system established for the space record by Estates and will be the location where all of the Trust's physical GLNs will be recorded. In the future, DH will be issuing a national GLN registry into which the Trust will upload its own local registry.

Global Standards 1 (GS1) – GS1 is a not-for-profit, international organization that develops and maintains standards for supply and demand chains across multiple sectors.

MICAD system - Software that holds the design plans and room numbering structure for all hospital sites and will be used as the local GLN Registry. This registry feeds into many established compliance processes within Estates to support the management of the estate, its buildings and services.

CAD Team - Computer Aided Design is a team in Estates and Facilities, responsible for maintaining the official space record (among other critical Estates related data) within the MICAD system.

4. PROCEDURE TO BE FOLLOWED

GS1 Registry

The CAD Team will update the GS1 Registry with the details held in MICAD on a monthly basis.

The eProcurement Team will update the GS1 Registry for Transfer Point GLNs on a monthly basis.



Management of the GLN Registry

Supplies will hold the first 1000 of each range of GLNs for issuing at the request of the Supply Chain Manager for attachment to the Trust Supplies and Procurement Transfer Points.

These are:

50552 187 0000 - 50552 187 0999 + check digit

50552 188 0000 - 50552 188 0999 + check digit

50552 189 0000 - 50552 189 0999 + check digit

50552 193 0000 - 50552 193 0999 + check digit

50552 239 0000 - 50552 239 0999 + check digit

50552 240 0000 - 50552 240 0999 + check digit

The remaining GLNs will be held by the Facilities CAD office for attachment to physical locations in the organisation.

These are:

50552 187 1000 - 50552 187 9999 + check digit

50552 188 1000 - 50552 188 9999 + check digit

50552 189 1000 - 50552 189 9999 + check digit

50552 193 1000 - 50552 193 9999 + check digit

50552 239 1000 - 50552 239 9999 + check digit

50552 240 1000 - 50552 240 9999 + check digit

Attachment of GLNs to MICAD

The Trust is able to reference any site, building, floor and room number through the MICAD information retained. This matches the DH requirement of: In a bar code GLNs will be preceded by (414).

Level One	A GLN identifying the Trust
Level Two	Any entity reporting directly to the Trust. For the purpose of this procedure this can be defined as a hospital site
Level Three	A specific building or block on a site
Level Four	This applies to floors within buildings
Level Five	This applies to rooms, corridors and other discrete spaces that need to be identified. This could include ducts and riser cupboards

A GLN will be attached to each location which enables the space to be identified. In the initial process this will be managed by MICAD as a single upload ensuring that all locations in the Trust have a GLN. The GLNs have been assigned consecutively regardless of the room location number assigned in MICAD.

In future all GLNs will be assigned by the CAD Office. The CAD Team will maintain a register of



available space GLNs and will issue the next consecutive number as the need arises. GLNs must not be reused. The register will contain the date the GLN went live and the date the GLN expired. This can then be cross referenced by date to a change form available in the CAD Office.

GLN Extensions

Where greater detail is required in a particular space for example shelf, cupboard or bed bay location; then a GLN Extension will be used, subject to a technological solution being available. This provides a method for identifying physical locations at a more granular level. The GLN extension is an alphanumeric that can take up to twenty characters. Examples of GLN Extensions would be 5055218800008/Bay1 or 505521880008/Cabinet1Shelf2. In a bar code GLN Extensions will always be preceded by (254). Therefore a full GLN with extension would look like (414)5055218800008(254)Bay1 in readable format with the bar code reading 4145055218800008254Bay1

Affixing of GLN labels

GLN labels will be placed inside the space that they relate to, ideally near the entrance alongside any light switches.

Where appropriate or relevant a second can be placed on the outside of the door at handle level (or above the crash protection) on the hinge-side of the door for use by staff capturing GLNs as part of a Trust process - e.g. Materials Management staff.

Please note that this only refers to physical GLNs all other forms of GLN cannot be printed and displayed.

The two designs will be as follows:

Internal to the Room





On the door



Amendment of GLN locations

Where the Trust creates a new location, for example a division of an area into smaller rooms or a merge of rooms, all original GLNs must be expired and new GLNs created for the area(s). GLNs must not be reused.

All CAD Change forms must contain the previous GLNs which are being expired to create an audit trail. (Appendix 1)

Changes of usage

Where the use of a location is changed for example creation of offices and stock rooms, the Facilities CAD Team must be notified in order to keep the registry up to date. However, as this is not a physical change to the space boundary, a new GLN will not be issued.

Transfer Points

NHS Supply Chain currently use transfer points as a reference for ordering; this applies to stock requisitions and materials management. In order to match with Oracle, the Supplies eProcurement a GLN to each transfer point for both Oracle and PowerGate purposes. Transfer Point GLNs (Virtual GLNs) are taken from a legacy database of GLNs held by the eProcurement team.

Transfer Points are de-activated as opposed to deleted and a register is kept of which GLN is attached to which transfer point.

GLNs for Receipting of Goods

Orders will be dispatched with an ordering GLN and a ship to GLN. The ship to GLN will be a recognised delivery point and the Ordering GLN will be a functional GLN. Should a supplier require the use of a location GLN then they will be able to access the section of the National Registry on which the Trust data is held and identify the locations they need from the descriptors to use these in their systems. The national registry will only hold physical, legal and digital.

Bed Level GLNs

In order for the Trust to assign a patient to a bed space then an appropriate bar code will need to be applied to the space behind the bed head where it can easily be accessed by staff.

These will be created by the Scan4Safety Team initially and require a survey and spread-sheet



approach.

The Bar-code format will be the room bar code plus (254) Bed1 or Room Bar Code (254)Bed1Door.

The information will be maintained by the Scan4Safety Team until a repository can be created.

Example of a Bed label



5. ROLES AND RESPONSIBILITIES

Estates and Facilities CAD Office

Allocation of physical GLNs to locations in the Trust and provision of information from MICAD to other systems which require physical location information to be held. The CAD Office will update the national registry with changes to GLNs for physical locations and this will be supported by local procedures.

Estates

Estates staff will be appointed to issue and attach the labels on each site. These staff will, for the initial installation, be supported by temporary staff.

Estates staff will check when applying the bar codes that the location description matches the information from MICAD.

The printer and ability to produce the labels will be transferred to the CAD Office once the initial issuing of all labels has been completed.

Where Estates, Corporate Planning, Minor Works or Capital Schemes change the physical layout and/or usage of a room the new information will be notified to the CAD Team who will update the physical space record (and associated GLN data) accordingly, maintaining an auditable trail as documented.

Corporate Planning, Minor Works, Capital Schemes

Inform CAD team of the change of use of any Trust locations and/or any physical alterations to the



layout of the Trust.

Materials Management

Creation of Transfer Point numbers and notification of Transfer points to eProcurement Team. The Materials Management Team will also disable Transfer Points upon request and will notify eProcurement.

eProcurement Team

Attachment of GLNs for Transfer Points and management of GLN Amendments on behalf of Materials Management. GLNs are held in a legacy database which is used as the register of available GLNs. The eProcurement Team will update the National Register for all virtual GLNs and this will be supported by localised procedures.

Scan4Safety Team

Will monitor the application of the GLN provide the resource in terms of man-power to produce and apply the initial labels. Once the initial roll out is complete the Scan4Safety team will provide ongoing support to the CAD Team for training.

6. LINKS TO OTHER DOCUMENTS

Not Applicable

7. MONITORING ARRANGEMENTS

Once complete Scan4Safety will undertake an audit using the MICAD Mobile solution, at the same time this will record where possible the Latitude and Longitude of the location.

A download from the MICAD system will be compared to the local GLN Registry held by the Facilities Team on a quarterly basis.

A review of GLNs in the PowerGate System will take place on a quarterly basis.

8. REFERENCES

- For further details on the use of GS1 standards required by the DH please go to the GS1 UK website www.gs1uk.org/healthcare where you can also find a more detailed document on 'GLNs in Healthcare'.
- For GLN Allocation Rules go to http://www.gs1.org/docs/barcodes/GS1 GLN Allocation Rules.pdf
- For more information about barcoding go to https://www.gs1uk.org/~/media/documents/how-to/how_to_barcoding_getting_it_right.pdf?la=en
- For further information on GS1 standards refer to http://www.gs1.org/docs/barcodes/GS1 General Specifications.pdf
- For any other questions on GS1 standards you can contact the GS1 members team who are available Monday to Friday from 8:30am to 5:30pm on freephone 0808 178 8799 or alternatively call 0207 092 3501.

You can also email us at support@gs1uk.org



Appendix A: Estates and Facilities Room Detail Change Form

	Facilities - F	Room Detail C	hange Form				Estates & Facilities at Leeds	The Le	eds Teaching Hospitals 🚺 NHS Trust
e:									
Room umber		n Change	Action New, Change	Location Change	GLN No Change	GLN No Expired	New GLN No Assigned	Ву	Date
	From	То	Remove	(Y/N)	(Y/N)				
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	Finn Tempest/Tim Ha								



Policy Template Annex 1 - Checklist for the Review and Approval of Policy LEEDS TEACHING HOSPITALS NHS TRUST

Approving Body Checklist for the Review and Approval of Trust Policy or Procedure

To be completed and attached to the policy when submitted to the appropriate committee for consideration and approval.

	Title of document being reviewed:	Yes/No/ Unsure	Comments
1.	Format and Content		
	Is it in the correct format?	Yes	
	Is the staff summary clear and adequate?	Yes	
	Are the intended outcomes clearly described (the Policy/Procedure Effect)?	Yes	
	Is there a Definitions section giving an explanation of key terms used?	Yes	
	Is there an Equality Analysis signed off by the Head of Equality and Diversity (Policies Only)?	Not Applicable	
2.	Consultation and Review		
	Has there been appropriate consultation with stakeholders and users?	Yes	
	Has an appropriate governance group reviewed and supported the document prior to submission for formal approval?	Yes	
	For HR Policies only, has the TCNC approved the document?	Not Applicable	
	If it is a clinical policy/procedure has it been reviewed by the Clinical Guidelines Group?	Not Applicable	
	Has it been reviewed by internal audit for counter fraud?		This still need to be done
3.	Dissemination and Implementation		
	Is there a communications plan to identify how it will be communicated and implemented? The Communications Team can help you with advice.	No	All stakeholders have been involved in the discussion around the procedure
	Does the communications plan include a summary	No	The procedure has a limited



	Title of document being reviewed:	Yes/No/ Unsure	Comments
	for InTouch?		impact
4.	Process to Monitor Compliance and Effectiveness		
	Is there a monitoring table setting out measurable standards or KPIs together with clear monitoring and reporting mechanisms (to ensure there is assurance of implementation)?	Yes	
5.	Review Date		
	Is the review date in 2 years? If not is there a justified reason?	Yes	

If the document needs urgent approval before all of the above are satisfactorily addressed, please bring this to the attention of the appropriate committee so conditional approval can be given.

Committee Approval (This section only required for staff- related policies)					
If the committee is happy to approve this document, please sign and date it and forward copies to the person with responsibility for disseminating and implementing the document and the person who is responsible for maintaining the organisation's database of approved documents.					
Name		Date			
Signature					
Name		Date			
Signature					

