LHUK Supply Chain

Bar Code Protocol

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Contents

1. Purpose

Improved data Accuracy and reducing human errors with Purchase Order line items matching to invoices. This in turn provides a quicker goods receipting and visibility of parts delivered via SAP system.

2. Applicability

All LHUK supply chain to apply a PDF417 barcode to each delivery to allow automated goods receipt.

3. Effective date

Phase 1 of the bar coding project launched in February 2013 and phase 2 is being implemented. All LHUK Purchase Orders raised with reference to this document would require the parts to be delivered with the PDF417 bar code.

4. Detail of bar code required

The 2D barcode type selected from those available is the standard PDF417 (example below)

The length refers to the maximum length of data, the protocol does not require additional information to be added only detail the information required not all protocol will be the maximum length. Part Number is not required in the protocol and a 2D barcode will be required for each item on the purchase order.
Each single barcode will identify a single item of the PO with a maximum number of **100 serial numbers inside.** If more serial numbers have to be received for a single item, another item and barcode will need to be generated.

5. Protocol with no manufacturing batch information

- In order to harmonize the barcode protocol with the requirements of all LHUK sites the barcode will be divided into nested segments:
  - **Header segment**
  - **Item segment**
  - **Serial number segment**

The following segment separators will be applied:

/H = Head start segment
/L = Item start segment
/S = Serial Number start segment
S/ = Serial Number end segment
L/ = Item end segment
H/ = Head end segment

Segment	Description	Header Data	Item data	SN Data	Field Length	Separator Length	Total lengh
/H					2	1	3
	Header						40
		Process ID AW PO Number CofC date CofC Number			2 10 8 16	1 1 1 1	3 11 9 17
/L					2	1	3
	Item						32
			AWPO Line Item Quantity Unit of Measure		5 13 3	1 1 1	6 14 4
/S					2	1	3
	Serial Number						
				SN1 SN2 SN3	30	1 1 1	31
S/					2	1	3
L/					2	1	3
H/					2	1	3

Examples of barcodes which scan have the following data embedded. Note these examples if data is not require you will note the use of 2 semicolons after the segment omitted.

a. For Non Serialised delivery

/H;01;4800005080;20121129;89722;/L;00020;1;N;20121129;/S;S/;L/;H/

b. For Serialised delivery

/H;01;4800330564;20121012;12546;/L;00010;50;N;20121011;/S;10000001;10000002;10000003;S/;L/;H/

6. Protocol including manufacturing batch information

In order to harmonize the barcode protocol with the requirements of all LH sites the barcode will be divided into nested segments:

- **Header segment**
- **Item segment**
- **Batch segment**
- **Serial number segment**

The following segment separators will be applied:

/H = Head start segment
/L = Item start segment
/B Batch start segment
/S = Serial Number start segment
S/ = Serial Number end segment
B/Batch end segment
L/ = Item end segment
H/ = Head end segment

Segment	Description	Header Data	Item data	SN Data	Field Length	Separator Length	Total lengh
/H					2	1	3
	Header						40
		Process ID AW PO Number CofC date CofC Number			2 10 8 16	1 1 1 1	3 11 9 17
/L					2	1	3
	Item						32
			AWPO Line Item Quantity Unit of Measure		5 13 3	1 1 1	6 14 4
/B					2	1	3
	Batch						
			Vendor Batch Date of Manufacture Quantity Unit Of Measure Expiraration Date		10 8 13 2 8	1 1 1 1 1	1 9 14 4 9
/S					2	1	3
	Serial Number						
				SN1 SN2 SN3	30	1 1 1	31
S/					2	1	3
B/					2	1	3
L/					2	1	3
H/					2	1	3

Examples of barcodes which scan have the following data embedded. Note these examples if data is not require you will note the use of 2 semicolons after the segment omitted.

a. For 1 manufacturing batched delivery

/H;01;4800771411;20150401;12345B;/L;00030;11.000;MQ;20150401:/B;Z709336A22;20150401;11.000;MQ;20151231;/S;S/;B/;L/;H/

b. For 3 manufacturing batched delivery

/H;01;4800771411;20150401;12345B;/L;00030;50.000;MQ;20150401:/B;Z709336A20;20150401;26.000;MQ;99991231;/S;S/;B/;/B;Z709336A21;20150401;13.000;MQ;99991231;/S;S/;B/;/B;Z709336A22;20150401;11.000;MQ;99991231;/S;S/;B/;L/;H/

7. Application of bar code

A 2 dimensional bar code type PDF417 in respect of each Contract line item contained therein to be applied to each deliverable on the outer packaging and on the closest layer of packaging of the deliverable.

8. Supply chain benefits and FAQ's

a. What are the benefits to us?

- Fewer data errors – such as wrong line items being booked in.
- Dramatically improves the goods receipt processing time.
- Improved visibility of stock availability making it easier to answer queries.
- Improved traceability - No stock in holding areas prior to receipting.
- Improved matching to invoice verification (PO, GR & IR)
- Order book Alignment.
- Reduction in Proof of Delivery Requests.
- Reduction in non-conformance (QN's)
- Why PDF 417 and not QR's or Code 39?
- PDF 417 is the most widely used 2D matrix code in Logistics where large capacity data is embedded for resilience and readability.
- It is a standard format in SAP.
- Free to download.
- Can be read with Smart phone
- No need for expensive readers

b. When delivering multiple contract lines:

What if there are more than multiple items in a box?

- A bar code must be supplied for each PO line item delivered.

- Do Bar codes need to be present on the outside of the box for all of the **items inside?**

- They can either be represented as stickers or printed on paper accompanying the CofC. If you choose the latter, then the bar codes must all be visible for easy receipt.