

ERP-797 Mobility-Barcode Decoder/Data Capture

Status	Approved
Owner	BIRSE-ext, Gary
Stakeholders	PALMER, Francine RIZOS, Antonios
Jira Request ID	 ERP-407 - Jira project doesn't exist or you don't have permission to view it.
Jira Development ID	 ERP-797 - Jira project doesn't exist or you don't have permission to view it.

High- Level Specification

Parameter	Value
Application System	SAP S4/HANA SyWay
Business Process Reference	06.10 Manage Inventory and Logistics 06.11 Manage Warehouse and Logistics

Functional Overview

This mobile app will allow barcodes to be decoded and will also provide an Data Capture option.

Barcode Decoding

Based on scanning a barcode, the application will show the raw content of the barcode, the barcode symbology and all the individual field content based on GS1 application identifiers.

Barcode decoding will be used for troubleshooting any barcodes that cannot be processed by the Logistics Mobility Solution.

Data Capture

The application will also provide a Data Capture option where multiple barcodes can be scanned to allow the barcode content to be stored on SAP in a custom table.

When the app is executed on a desktop, a reporting option will allow users to display the details of the scanned barcodes and transfer the results to a spreadsheet.

The Data Capture option will be useful to the business in a variety of scenarios including the capture of SSCC numbers for a specific selection of materials, for reporting or further processing on SAP on a desktop.

The application is to be named "Barcode Decoder".

Scope and Objectives

Allows any barcode to be decoded and allows data capture of multiple barcodes.

Process Flow Diagram

Step	Description	Comment
1	Scan a barcode	Raw data, symbology and field content of barcode is displayed.

2	Use Data Capture option to scan multiple barcodes.	Field content of all barcodes scanned is stored on SAP.
3	Report captured data	Field content of all barcodes scanned is shown and can be transferred to a spreadsheet.

Assumptions

None

Dependencies

None

Security, Integrity and Controls

None

Configuration Requirements

None

Language Requirements

This app will be available in all SyWay languages.

See [KDD055 - Multi-Language Support](#).

Special Requirements

None

Design Rationale

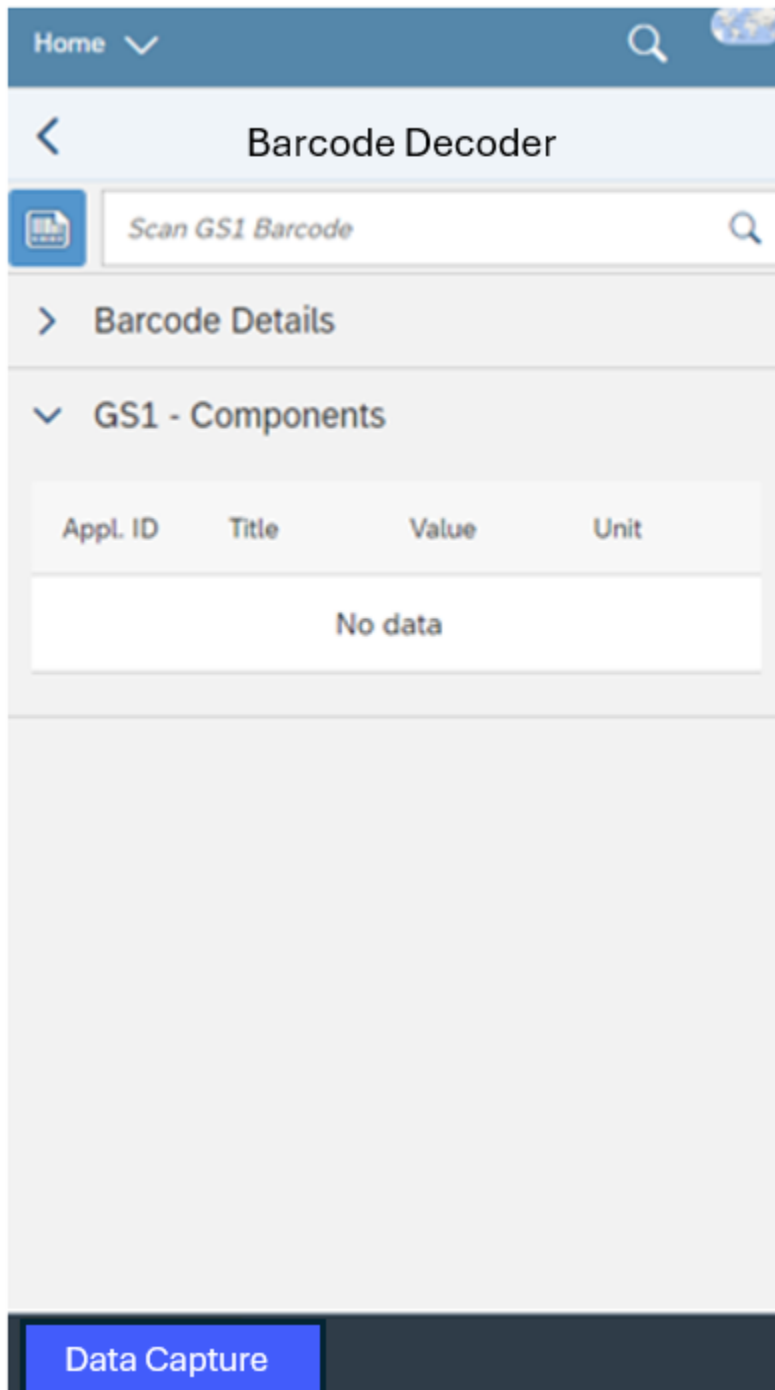
Functional Requirements

Initial Screen

The application will prompt for the user to scan a barcode.

A "Data Capture" button will allow the user to go to Data Capture mode where all scanned barcodes will be stored in a transaction list (Like other handheld apps) and finally saved and stored on SAP in a custom table.

A reporting option "Report Captured Data" will show only when the app is executed in desktop mode.



When a barcode is scanned, the barcode value will be decoded to derive all field content based on GS1 application identifiers.

See below for the GS1 application identifiers that need to be included in the decoding logic.

The application will display the raw content of the barcode, the symbology and all field values.

Home			
Barcode Decoder			
Appl. ID	Title	Value	Unit
(00)	SSCC	254012360000000106	
(240)	Material	10000343	
(10)	Batch	RM01QBA001	
(37)	Count	2040	
(11)	Date Manuf.	11-Mar-2026	
(17)	Expiry Date	10-Mar-2029	
(422)	Ctry of Origin	250	

Data Capture

When the Data Capture option is selected, the screen will change to show that this mode is enabled.

The user must enter a group name as this will later allow selection of the scanned information on the desktop. The group number can be any alphanumeric value and there is no validation on this field other than it being a mandatory field.

The group name field will initially show the text "Enter a group name."

At the time of posting if no group name has been entered then show the error "Enter a group name."

Any barcode scanned will still be decoded with the existing decode logic but now scanned data will be stored in a scanned list like other handheld apps. In the scanned list the user will have the option to delete individual scans or all scans and to finally post the scanned data to SAP.

The scanned list will only show the SSCC number when present in the barcode or the entire barcode content when an SSCC is not present, but all decoded fields from the barcode scanned will be stored.

Field	Description
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User	User posting the data capture
Date	Date of posting
Time	Time of posting
Device	Device ID used to perform data capture
Type	"HU-IM" or "HU-EWM" when the scanned ID is identified as an existing HU in SAP. Otherwise show "<Unknown>"
Symbology	The Symbology of the barcode. e.g. GS1 Data Matrix
Material	The material number for the HU. If the HU has more than one material then show the text "**MIX**".
Batch	The batch number for the HU. If the HU has more than one batch then show the text "**MIX**".

Additional Data IM HUs

Packaging Material	For HUs, the packaging material VEKP-VHILM
Higher-Level HU	For HUs, show the HU number of any parent HU (VEKP-UEVEL)
Highest-Level HU	For HUs, repeatedly read VEKP for each higher-level HU (VEKP-UEVEL) until the HU with no higher-level HU is found. Show the HU of this highest-level HU. NB. For single level HUs, the higher and highest HU numbers will be the same.

Additional Data EWM HUs

Packaging Material	For EWM HUs, the packaging material /SCWM/HUHDR-PMAT_GUID
Higher-Level HU	For EWM HUs, show the HU number of any parent HU - use class/method - /SCWM /CL_API_HANDLING_UNITREAD_BY_HUIDENT , parameter ET_HUTREE to read higher level HU
Highest-Level HU	For EWM HUs, use /SCWM/HUHDR-GUID_HU_TOP to get the highest level HU number or use class/method - /SCWM /CL_API_HANDLING_UNITREAD_BY_HUIDENT , parameter ET_HUTREE to read highest level HU NB. For single level HUs, the higher and highest HU numbers will be the same as the HU itself.

Scanned data.

Each field of scanned data in a GS1 barcode, as identified in the existing GS1 Decoder logic, will be stored in a dedicated field in the custom table.

GS1 Fields
AI00 SSCC
AI240 Material
AI10 Batch
AI37 Count
AI11 Date of Manufacture (YYMMDD)
AI17 Expiry Date (YYMMDD)
AI422 Country of Origin

Data Capture Report

When the GS1 Decoder app is executed in desktop mode, a button will be available for “Data Capture Report”. This option will allow the user to report on the previously captured data based on a selection by Userid, date and group name.

The report results will list all fields in the custom table and provide the option to download to Excel.

Barcode Data Capture Report																			
Group	User	Date	Time	Device	HU Type	Symbology	HU	Packaging Material	Higher-Level HU	Highest-Level HU	Material	Batch	AI00 SSCC	AI240 Material	AI10 Batch	AI37 Count	AI11 Production Date	AI17 Expiry Date	AI422 Country of Origin
84001201	BIRS7840	12/03/2026	17:07	SDZ7DE4	HU-IM	GS1 Data Matrix	254012360000000106	PALLET	254012360000000106	254012360000000106	10000343	RM01QBA001	254012360000000106	10000343	RM01QBA001	2040	11-Mar-26	10-Mar-29	250
84001201	BIRS7840	12/03/2026	17:07	SDZ7DE4	HU-IM	GS1 Data Matrix	2540123600000001042	PALLET	2540123600000001042	2540123600000001042	10000343	RM01QBA001	2540123600000001042	10000343	RM01QBA001	2040	11-Mar-26	10-Mar-29	250
84001201	BIRS7840	12/03/2026	17:08	SDZ7DE4	HU-IM	GS1 Data Matrix	2540123600000001035	PALLET	2540123600000001035	2540123600000001035	10000343	RM01QBA001	2540123600000001035	10000343	RM01QBA001	2040	11-Mar-26	10-Mar-29	250
84001201	BIRS7840	12/03/2026	17:08	SDZ7DE4	HU-IM	GS1 Data Matrix	2540123600000001042	PALLET	2540123600000001042	2540123600000001042	10000343	RM01QBA001	2540123600000001042	10000343	RM01QBA001	2040	11-Mar-26	10-Mar-29	250

Recommended UI Technology

This app will be developed using Neptune DXP Open Edition. The app will appear on the Neptune launchpad.

Application Screen

Wireframe or Mock-Up

See example screens in Functional Requirements section.

Screen Behavior

See example screens in Functional Requirements section.

Screen Navigation

Standard navigation.

Data Integration

Field	Table-Field Name	Comments / Calculation / Field Manipulation / Input / Output / Validation rule / Value help
Barcode scanned	Custom table	Barcode content will be decoded and stored in custom table.

Custom Tables

Data Capture table

Field	Description	Data Type/Length	Validation rule / Value help
Group	Group Name	CHAR 20	
Username	User	CHAR	
Date	Date of posting	DATE	
Time	Time of posting	TIME	
Device ID	Device of posting	CHAR	
HU Type	Type of barcode	CHAR 10	HU-IM or HU-EWM or Unknown
Symbology	Symbology of barcode scanned	CHAR 20	
HU	HU number	CHAR 18	
Packaging Material	Packaging material of scanned HU	CHAR 40	
Plant	Plant of HU	CHAR 4	
Higher-Level HU	Higher-Level HU of scanned HU	CHAR 18	
Highest-Level HU	Highest-Level HU of scanned HU	CHAR 18	
Material	Material of scanned HU	CHAR 40	
Batch	Batch of scanned HU	CHAR 10	
AI00 SSCC	SSCC number on barcode	CHAR 18	

AI240 Material	Material number on barcode	CHAR 40	
AI10 Batch	Batch number on barcode	CHAR 10	
AI37 Count	Count on barcode	CHAR 20	
AI11 Production Date	Production date on barcode	DATE	
AI17 Expiry Date	Expiry Date on barcode	DATE	
AI422 Country of Origin	Country of Origin on barcode	CHAR 3	ISO 3166-1 numeric value for country. e.g. 250 for France

Master data

None

Field	Description	Data Type/Length	Validation rule / Value help

Configuration table

None

Field	Description	Data Type/Length	Validation rule / Value help

Tooltips

None

Front-End

This app can be executed on a mobile device or in desktop mode.

Mobile Services

Not applicable.

Authentication & Authorization

None

Accessibility

Not applicable.

Volumetrics

The data capture option should support the scanning of hundreds of barcodes, as required.

Data captured will normally be used in the short term. Longer term it will be possible to purge records to reduce the table size. e.g. Records more than 10 years old.

Performance Consideration

Not applicable.

Error Handling

Errors to appear in a pop up window that needs to be acknowledged by the user.

Testing

How to Test

Test Conditions and Expected Results

ID	Condition	Expected Result
1	Scan a GS1 Data Matrix label from Loftware.	Barcode symbology and correct GS1 field content is shown.
2	Scan an as-is QR code.	Barcode symbology and content is correctly shown.
3	Scan a barcode from a vendor label	Barcode symbology and content is correctly shown.
4	Use the data capture option to scan several GS1 Data Matrix barcodes	Barcodes are correctly captured and stored on SAP.
5	Use the Data Capture report option to report the values scanned.	Barcode details are correctly reported and can be opened in a spreadsheet format.

Test Considerations/Dependencies

None

Other Information

None

Development Details

Package

Package Name	Parent Package

UI Implementation

UI Type	UI Name	Fiori Catalogue	Design Rationale Reference

API Implementation

API Type	API Name	Purpose / High Level Logic	API Product	Design Rationale Reference

Other Development Objects

Object Type	Object Name	Purpose/High Level Logic	Design Rationale Reference

Appendix

See also

Change log

Version	Published	Changed By	Comment
CURRENT (v. 13)	Mar 12, 2026 12:40	BIRSE-ext, Gary	
v. 12	Mar 12, 2026 12:34	BIRSE-ext, Gary	
v. 11	Mar 12, 2026 12:33	BIRSE-ext, Gary	
v. 10	Mar 12, 2026 12:20	BIRSE-ext, Gary	
v. 9	Mar 12, 2026 11:36	BIRSE-ext, Gary	
v. 8	Mar 12, 2026 11:17	PANDIT-ext, Sunil	
v. 7	Mar 12, 2026 11:14	PANDIT-ext, Sunil	
v. 6	Mar 11, 2026 17:02	BIRSE-ext, Gary	
v. 5	Mar 11, 2026 13:23	BIRSE-ext, Gary	
v. 4	Mar 11, 2026 13:22	BIRSE-ext, Gary	

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Workflow history

This view shows the 5 most recent entries. The complete workflow log is available from the 'Document Activity' menu item.

Mar 19, 2026	Actor	Type	Activity	Version
Approved	 VENKAT-ext, Rama	State	changed state to Approved at 11:49 am	v13
Lead Approval	 VENKAT-ext, Rama	State	gave <i>POD Lead Review</i> approval at 11:49 am Reviewed and approved	
	BIRSE-ext, Gary	State	assigned approval <i>POD Lead Review</i> to  VENKAT-ext, Rama at 11:26 am	
	MAKKAY-ext, Kas	State	changed expiry date to '26 Mar, 2026 07:32 am' at 7:32 am	
		State	changed state to Lead Approval at 7:32 am	v13
Tech Review	MAKKAY-ext, Kas	State	gave <i>Tech Review</i> approval at 7:32 am	