



Interface Design & Specification

EPOS Interface Specification – To support Manual Returns

V1.0

30th January 2023

1. DEFINITIONS	4
2. INTRODUCTION	5
3. TECHNICAL NOTES	6
TECHNICAL REQUIREMENTS	6
DATA FORMATS	6
REPOSE CODES	6
INTERFACE SECURITY	6
4. CODE LISTS	7
DEPOSITCODE	7
5. INT-074 EPOS SCHEME ARTICLE	8
BUSINESS PROCESS CONTEXT	8
SUMMARY	9
REST HEADER	9
SCHEME ARTICLE (ARRAY OF OBJECTS)	9

Version history:

Version	Date	Author	Summary of changes made
1.0	30/01/2023	CSL IT / RLG	First Release

Document References:

Version	Document Name	Author	Description
0.1	DRS Platform Interface Security & Authentication	RLG	Describes authentication method for connecting to DRS APIs.

1. DEFINITIONS

Term	Definition
API	Application Programming Interface
CSL	Circularity Scotland Ltd
Count Machine	Industrial RVM used by CSLs operations partner to count the containers returned in bags from manual return points.
DRS	Deposit Return Scheme
EAN	European Article Number
EPOS	Electronic Point of Sale
GTIN	Global Trade Item Number
HTTPS	Hypertext Transfer Protocol Secure
IP	Internet Protocol
JSON	JavaScript Object Notation
OAuth2.0	OAuth 2.0, which stands for “Open Authorization”, is a standard designed to allow a website or application to access resources hosted by other web apps on behalf of a user.
POS	Point of Sale
REST	Representational state transfer
RLG	Reverse Logistics Group, CSL DRS Core platform provider
RPO	Return Point Operator, (E.g. Retailer), a retailer may have 1 or more Return Points e.g. Stores.
RP	Return Point - The site, i.e Retail store, where an RVM is located.
RVM	Reverse Vending Machine. Owned by an RPO, used by consumers to return containers
Scheme Article	<ul style="list-style-type: none"> • A drink (regardless of whether sold alone or as a unit in a multipack) • Contained and sold in single use packaging that is made wholly or mainly from PET plastic, glass, steel or aluminium • Sealed and containing at least 50 ml and no more than 3 litres of liquid

	<ul style="list-style-type: none">• First available to be marketed, donated, offered for sale or sold by the producer, on or after the Deposit Return Scheme start date, in Scotland
HTTPS	HyperText Transfer Protocol Secure

2. INTRODUCTION

This document describes the interface specification to allow an Electronic Point of Sale (EPOS) vendor to integrate with their POS system to validate that a returned container is part of the Scottish Deposit Return Scheme (DRS).

Consideration should be made to ensure the API is not used as part of the Sales Process. I.e. A returned container could be scanned as a sale by mistake

3. TECHNICAL NOTES

Technical Requirements

Each interface is published as a REST-style API call with JSON payload, accessible over the internet via https. Whitelisted IP addresses will be used for additional security.

Interfaces will ordinarily be available 24x7 except for pre-scheduled downtime.

Further elaboration of technical requirements will be needed for detailed design.

Data Formats

All data payloads will be in JSON format. The data format tables in the body of the document are compliant with this by describing a base Object that comprises the data associated with the message. That Object contains data in one of the base JSON types (String, Number, Boolean) or where there is an embedded list, this is included as an Array of Objects. Where it is logical to group items together, a single Object is also embedded.

The data format tables include the JSON type of each attribute and any specific formatting applying to it. These additional format codes are described in the table below.

Code	Description
A	Alphabetical characters only
N	Numerical characters only
AN	Alphanumerical characters
[above code].X	precisely 'X' alpha/numerical characters, where 'X' is the number of characters. Eg. N.3 is 3 numeric characters such as 112.
[above code]..X	Up to 'X' alpha/numerical characters, where 'X' is the number of characters. Eg. AN..3 is 3 alphanumeric characters eg. '1' or '33' or 'AV6' are valid
ISO 8601	Represents Date & Time in ISO 8601 format without UTC relation information (local time). Time Accuracy is Seconds
T/F	Boolean true/false
CodeList	An A.3 with a small set of predefined values.

Reponse Codes

200 **OK** The request was fulfilled with no error, result in response body.

400 **Bad Request** Request has bad syntax, or the URL provided doesn't exist

401 **Unauthorised** Authentication failed (wrong credentials, or token too old)

404 **Not Found** The server is not able to find the resource. The URI is incorrect, i.e. could be referring to a non-existent endpoint

406 **Not Acceptable** Accept header missing or invalid: it must be supplied and end with json

500 **Internal Server Error** The server encountered an unexpected error.

Interface Security

See: *DRS Platform Interface Security & Authentication Specification*

4. CODE LISTS

DepositCode

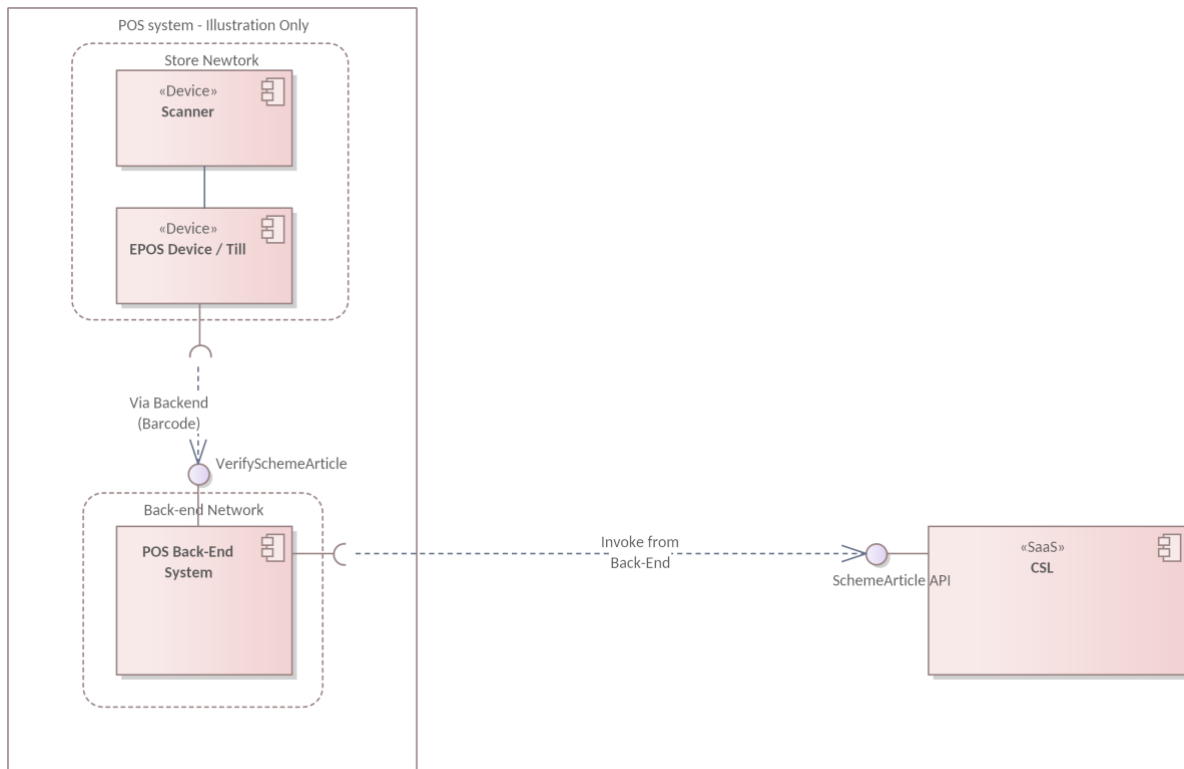
Code	Description
100	20p deposit
101	No deposit

5. INT-074 EPOS SCHEME ARTICLE

Business Process Context

This interface is designed for an EPOS vendor to request the latest list of approved scheme articles on a periodic basis, i.e. daily, to allow them to update their central system, and subsequent downstream integration with their POS devices / Tills.

It is NOT designed for direct integration with each individual POS device / Till. See below *diagram 6a*



6a Diagram – EPOS API Use Case (illustrative)

The interface will provide a list of all the approved Scheme Articles and associated deposit value to reimburse the consumer. Currently this is 20p for all scheme articles.

NOTE: CSL will include some approved non-scheme articles in the list. A consumer will not have paid a deposit for these so will not be entitled to a deposit redemption and the RPO can choose to filter out these non-scheme articles.

The Scheme Article Identifier i.e. EAN must be used as the key to identify an individual container.

If a valid Scheme Article is found, the Deposit Code must be used to determine the value of deposit reimbursement.

If a Scheme Article is not found, then the EPOS system must display an appropriate message.

To access the API, the EPOS vendor must provide CSL, via email, that they have approval from their Return Point Operator to access the API. Also, the Return Point Operation must be registered with CSL.

Summary

Formal Name	EPOSSchemeArticles
Frequency	Called daily
Publisher	DRS
Consumers	EPOS Vendors / RPOs
HTTP Verb	GET
REST Parameters	none

REST Header

Attribute Name	JSON Type	Format	Required	Description
Version	String	AN	M	Version of the Message being used. Format v0.1
DateTime	String	ISO 8601	M	Date & Time that the message was sent.
MessageId	String	AN..40	M	Message Identifier

Scheme Article (Array of Objects)

M = Mandatory, O = Optional, C = Conditional

Attribute Name	JSON Type	Format	Required	Description
SchemeArticleId	String	AN..40	M	Unique identifier for the product. Barcode EAN-13, EAN-8, plus potential for 2D barcode.
SchemeProduct	Boolean	T/F	M	True = 1 or False = 0. CSL may accept containers that are not part of the scheme - e.g. foreign products. CSL will include some approved non-scheme articles in the list. A consumer will not have paid a deposit for these so will not be entitled to a deposit redemption and the RPO can choose to filter out these non-scheme articles
Description	String	AN..20	M	Description of the product. Format: Brand, Sub-Brand (if applicable), Functional Name, Variant and Net Content/Volume
ShortDescription	String	AN..12	O	Short description e.g. small screen or for voucher format
DepositCode	String	CodeList	M	Amount of deposit associated to the package type. E.g. 20p for Scotland. Code list provides flexibility should any regulatory change occur which varies the deposit.
Suspend	Boolean	T/F	O	True or False. Indicates if a container should be temporarily suspended from processing