

Royal Mail Mailmark[®]

Direct Data – Technical Specification Access and Onboarding

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Summary of changes V1.0 to V1.1 09 December 2020

1. Requirement for additional details when MDD access is requested
2. Clarity that commas (,) will be used instead of pipe (|) characters to separate the raw data
3. MDD Detail Report has an additional numeral in the file name
4. MDD Detail Report will include a reference to an 'end of extraction message'
5. If there is no data, an empty file will be provided to demonstrate the daily extract has taken place
6. Customers whom have signed to receive MDD will receive an empty file if there is no data
7. Data Dictionary – multiple changes included in both tables;
 - a. clarity and corrections on data format
 - b. provision of further clarity on data description
 - c. minimum and maximum field lengths
 - d. data examples
 - e. padding is not required when separating data
 - f. solutions require commas to be identified to ensure values are separated

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1. Introduction

1. Overview

Mailmark® requires a number of technical solutions to; store all Mailmark data; present report visuals to users; correlate items declared, processed and billed and share status information for mailings handed over.

2. Reporting

Customers have two options to view the performance of their mailings.

- a. See at a glance, through PDF report visuals for both Active (live mailings handed over within 5 days of the report being viewed) and historic (mail handed over between 5 and 14 days previously) mailings.
- b. In-depth reporting through the use of Mailmark Direct Data which provides item level information at Summary and Detail levels in a variable length file, in a format known as CSV (Comma-Separated Variable length) with a header record giving a name to each field. The file, in the standardized well-documented published format, will not change for the foreseeable future.

3. Document purpose

The focus of this document is to provide the technical detail to support customers and software providers to enable;

- a. secure, customer specific, retrieval of data files
- b. development of an external solution to deliver data in a format and medium requested by end clients
- c. data integration with external customer solutions

4. Intended Audience:

This document is primarily for providers or customers who wish to develop a software solution or integrate the Mailmark Direct Data into their systems.

5. Additional Documentation

Mailmark Reporting – Direct Data Technical Guide (downloading data) v0.1

Please note: the data received will essentially be as a single csv. output so it is essential, for the data to be used meaningfully, that a solution is created to effectively split the data into the categories mentioned later in this guide.



2. Onboarding process

The onboarding process requires the recipient of the Mailmark Direct Data transfer (MDD) to request access from Royal Mail.

The process is as follows:

1. Request Access from Royal Mail

Customer (Mailmark User) contacts mailmark@royalmail.com and provides;

- a. Mailmark Participant ID(s) and Participant Name(s)
- b. Company / Business name and, where applicable, Company Registration number
- c. Contact details including name, email address, contact number, job title
- d. Confirmation that the email address provided has been registered on www.royalmail.com as a business user
- e. If in the event of a customer wishing a password free connection, the SSH Public¹ key must be provided to mailmark@royalmail.com

2. Royal Mail provides access details to Requestor

Royal Mail will action the request and send to the contact provided;

- a. A unique User name.
- b. A unique password which is formatted as: 9 characters long with letters (capital and small caps), numbers and symbols, randomly sequenced.
- c. A unique directory structure where the ZIP files will be available.

This directory can only be accessed by the user.

The directory structure is: /pub/1036/out. The ZIP files are found in the folder “out”.

Note:

1. The DNS and IP are common across all customers
2. SFTP Password free connection is an option and not mandatory.
3. A contract needs to be signed to access Mailmark Direct Data
4. The set-up process can take 48 hours

¹ SSH keys are a matching set of cryptographic keys which can be used for authentication. The public key can be shared freely without concern, while a private key is guarded and never exposed to anyone.

3. Mailmark Direct Data

The Mailmark Direct Data (MDD) solution will provide detailed data on all Mailmark items for a Supply Chain. This data will be provided through two automated reports in the following sequence.

Please note: each customer signed up for MDD will receive at least one daily file.

- a. where there is data, the final file will include an 'end of extraction message',
- b. where there is no data, an empty file will be shared.

1. MDD Summary Report

This will be created first as soon as the data has been aggregated. This the day after the 'Handover Date' on an eManifest.

The report will be shared using the following naming convention:

Summary-`{Customer_id}`-`{DATE}`-`{Time}`.csv

Max file size: 5MB

2. MDD Detail Report

These will be created in CSV format using eManifest and Supply Chain ID (SCID) detail to drive data extraction.

The report will be extracted and split into files with up to 1m rows with the following naming convention:

Detail-`{Customer_id}`-`{DATE}`-`{Time}`-`{nnn}`. csv.gz

The data within the files are sorted as follows:

- a. in order of Handover Date, in descending order then,
- b. SCID in ascending order

This will deliver the latest posting in the first customer file

Max file size :2GB

The file will need to be retrieved by the user through;

- a. Accessing the SFTP
- b. Retrieving the file from the secure host platform
 - The format is zipped file(s) transmitted via SFTP.
- c. Transferring the selected file(s) to the customer's destination of choice
 - The data file will be in a variable length file (CSV).
 - It will have a header record that gives a name to each field.
 - The Data in the files is sorted by Handover date in descending order and then SCID in ascending order in order to have the latest item in the 1st file for your Participant ID.



3.1 MDD – Opening Reports

The MDD files will be exported as a CSV file, therefore can be opened in Excel for ease of use. The file can also be opened as a .txt file in Notepad++ if required.

As noted previously, comma-separated values (CSV) file is a delimited text file that uses a comma to separate values. Each line of the file is a data record. Each record consists of one or more fields, separated by commas. As the file is now produced in a CSV format, commas will be used to separate the values instead of pipes, illustrated below.

```
HANDOVER DATE,SCID,MANIFESTID,BATCH  
13/10/2020,1000196,552802,4296963,043
```

Please note: Due to the new line character additional which cannot be recognised in Notepad, the file should not be opened in Notepad as the file will have additional padding. When opening the CSV file in Excel, the date format applied by the customer must be in British format (dd/mm/yyyy). If the date format shows in a different format, then the user should check the regional settings on their local machine.

3.2 MDD – Summary Level Report

The eManifest Summary Report shows a daily snapshot of all current postings during the active 5 day window that an eManifest is open.

The report is accessed via: /data/FDP/extract_files/MDD/MDD_Summary

The report layout shows:

- a. a summarised view of the posting volumes vs the eManifest
- b. eManifests showing summarised item numbers linked to potential non-compliance.

This data can be used to pinpoint the item level reports that are needed.

Example of raw MDD Summary Data

This is in CSV format, for the purposes of this example, the headers have been listed in order and, as in the raw file will be separated by a comma (,)

Please note: spaces < > have been added for visual purposes to show the headers more clearly.

```
HANDOVER DT , MANIFEST ID , SCID ID , RAG FLAG , DAY NO , PREDICTED DELIVERY , VOLUME DECLARED ,  
DOCKET VOLUME , ITEM SEEN , ITEM NOT SEEN , ITEM NOT EXPECTED TO BE SEEN , MISSORT , INACCURATE  
POSTCODE , INACCURATE DELIVERY POINT , INCORRECT CLASS , INCORRECT FORMAT , INTERNATIONAL ,  
DUPLICATE MANIFESTED , DUPLICATE SEEN , AVERAGE ERROR CORRECTION % , SPARE 1 , SPARE 2
```



3.3 MDD – Item Level Report

The full eManifest item event data report, shows active data (data within five days of an open eManifest).

The report is accessed via: /data/FDP/extract_files/MDD/MDD_LineItem/

The report layout is:

- a. specified by eManifest
- b. contains all the items, (positive and negative) that our machines have seen,
- c. details of potential non-compliance at item level

Example of raw MDD Detail Data

This is in CSV format, for the purposes of this example, the headers have been listed in order and, as in the raw file will be separated by a comma (,)

Please note: spaces < > have been added for visual purposes to show the headers more clearly.

HANDOVER DATE , SCID , MANIFEST ID , BATCH ID , ITEM ID , BATCH REF , CUSTOMER REFERENCE , DEPARTMENT ,
CAMPAIGN NAME , CONTAINER FIELD , FIRST MAIL CENTRE SEEN DATE , FIRST MAIL CENTRE SEEN TIME , PREDICTED
DELIVERY FLAG , DECLARED PRODUCT , DECLARED CLASS , DECLARED FORMAT , DECLARED PC&DPS , SORTED PC ,
UNMANIFESTED FLAG , MACHINEABILITY , DUE MAIL CENTRE , MAIL CENTRE FIRST SEEN , EXPECTED TO BE SEEN , NOT
EXPECTED TO BE SEEN , MISSORTED , INACCURATE POSTCODE , INACCURATE DELIVERY POINT , INCORRECT CLASS ,
INCORRECT FORMAT , INTERNATIONAL , DUPLICATE MANIFESTED , DUPLICATE SEEN , ADVERTISING SEED NOT SEEN ,
SPARE 1 , SPARE 2

3.4 MDD – Empty and complete files

Where a customer has no data, an empty file will be generated that will only contain the file header and an end of extract message as follows: ****Summary Data Extraction Ends****

Where a customer has data and the final record has been extracted, a message indicating the end of the Files is included in the Summary and Detailed Reports as follows: ****Summary Data Extraction Ends****



4. Mailmark Direct Data Dictionary

The following detail provides you with the fields which will be shown in the report and the source of data.

eManifest = details within the file a Participant within the Supply Chain has uploaded

Barcode = details included in the barcode string and should be reflected in the eManifest

Derived = data outputs during processing e.g. an item is missorted as was due in Newcastle Upon Tyne but was first seen in Aberdeen

The purpose of this detail is to enable you to develop your software / integration solution to separate the Variable length file data files (CSV with associated header records giving a name to each field) at specific points to enable the data to be used in a meaningful way.

Please note:

- where there are fields with a longer length than the characters required, no solutions will require padding
- all the fields will be separated by commas, including where there is no data, so a solution should look for a comma to separate values
- we have not explicitly specified minimum length at database level



4.1 MDD – Summary Report Dictionary

DATA FIELD	DESCRIPTION	FORMAT	MAX LENGTH	MIN LENGTH	Nullability	Values - example	DATA SOURCE
Handover Dt	The date the mail was due to be handed over to Royal Mail.	dd/mm/yyyy	10	10	Not Null	28/11/2020	eManifest
eManifest ID	Unique number linked to a posting.	Integer	6	6	Not Null	123456	eManifest
SCID	Number unique to a set of four Participants.	Integer	7	2	Not Null	1000196	eManifest & barcode
RAG FLAG	Status of posting. GREEN Successful mailing, AMBER some minor errors RED Multiple or significant issues	Varchar	10	3	Not Null	AMBER	Derived
Day No	Number of days after the Handover Date.	Varchar	10	3	Not Null	1 5	Derived
Predicted Delivery	Royal Mail's prediction of what will be delivered and when. This column is an additional requirement in the current scope which is displayed currently as null but in future when it will be pulled for database it will be displayed in a date format	dd/mm/yyyy	10	10	Not Null	30/11/2020	Derived
Volume Declared	Number of items declared in the eManifest.	Integer	11	0	Not Null	52173	eManifest
Docket Volume	Number of items declared on a docket (Future Development)	VARCHAR	255	0	Null		
Items Seen	Number of items declared in the eManifest and machine processed by Royal Mail.	Integer	11	0	Not Null	20408	eManifest & barcode

Item Not Seen (and expected to be seen)	Number of items declared in the eManifest where Royal Mail has no record of having seen the barcode and expected to process the item on a Royal Mail machine.	Integer	11	0	Not Null	31771	Derived
Item not expected to be seen	Number of items declared in the eManifest where Royal Mail has no record of having seen the barcode, and Royal Mail expected to process the item manually.	Integer	11	0	Not Null	0	Derived
Missort	Number of items processed at the wrong Mail Centre that have been re-routed to the correct Mail Centre for delivery.	Integer	11	0	Not Null	1	Derived
Inaccurate Postcode	Number of items where the Postcode declared within the eManifest or barcode is inaccurate (versus PAF) or missing or 9z used.	Integer	11	0	Not Null	26	Derived
Inaccurate Delivery Point	Number of items where the Delivery Point Suffix (DP) declared within the eManifest or barcode is inaccurate (versus PAF) or missing or 9z used.	Integer	11	0	Not Null	167	Derived
Incorrect Class	Number of items that do not match the class declared within the eManifest.	Integer	11	0	Not Null	0	Derived
Incorrect Format	Number of items that do not match the format declared within the eManifest.	Integer	11	0	Not Null	0	Derived
International	Number of items declared as Domestic but identified as International by Royal Mail's sorting machines.	Integer	11	0	Not Null	1	Derived
Duplicate Manifested	Number of items where the item ID is duplicated in the eManifest.	Integer	11	0	Not Null	0	eManifest & barcode

Duplicate Seen	Number of items with multiple track events on Royal Mail's sorting machines where tracking information identifies more than one physical item with the same unique ID.	Integer	11	0	Not Null	6	Barcode
Average Error Correction %	Royal Mail's sorting machines made corrections while processing the barcode. The higher the Average Error Correction, the more indication there is an issue with barcode quality or ability to read the barcode. An error correction of more than 1 could potentially cause an issue which may have adjustments applied	Decimal	10,2	0	Not Null	18.01%	Derived
RM 1 (spare 1)²	For future development	VARCHAR	255	0	Null		
RM 2 (spare 2)	For future development	VARCHAR	255	0	Null		

² "Please note that the Mailmark Direct Data file columns 'SPARE1 & SPARE2' are reserved for future RM use and are not in any way linked to the eManifest upload fields of the same naming convention"

4.2 MDD – Detail Report Dictionary

Data Field	DESCRIPTION	FORMAT	MAX LENGTH	MIN LENGTH	Nullability	Values - example	Data source	Query
Handover Date	The date the mail was due to be handed over to Royal Mail.	dd/mm/yyyy	10	10	Null	13/10/2020	eManifest	All Items
SCID	Number unique to a set of four Participants.	Varchar	7	2	Not Null	1000196	eManifest & barcode	All Items
eManifest ID	Unique number linked to a posting.	Integer	6	6	Null	123456	eManifest	All Items
Batch ID	Unique number to describe a subset of an eManifest.	Integer	7		Null	4296963	eManifest	All Items
Item ID	The mail item ID to identify the individual item. Maintained per Supply Chain ID and must remain unique for 90 days	Char	8	8	Null	4379749	eManifest & barcode	All Items
Batch Ref	Customer reference given to the Batch ID.	Varchar	30		Null	M00665 - 1330 JACARANDA RADIO	eManifest	All Items
Customer Reference	Optional field for customer specified reference.	Varchar	30		Null	919R15ZLJ00960-	eManifest	All Items
Department	Optional field for customer specified department name.	Varchar	30		Null	ZBC	eManifest	All Items
Campaign Name	Optional Customer Specified Campaign Name.	Varchar	30		Null	JACARANDA RADIO	eManifest	All Items
Container Field	Container ID of the container the mail item was handed over within, declared in the eManifest in SPARE10 field.	Varchar	14		Null	919R15ZLJ00960	eManifest	All Items

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First Mail Centre Date	The date of the first track event on Royal Mail's sorting machines.	dd/mm/yyyy	10	10	Null	13/10/2020	Derived	All Items
First Mail Centre Time	The time of the first track event on Royal Mail's sorting machines.	Time	5	5	Null	14:54	Derived	All Items
Predicted Delivery Flag	Royal Mail's prediction of what will be delivered and when	Varchar	255		Null		Derived	All Items
Declared Product	The declared product matching the 3 Character Code within SAP OBA (RM billing system).	Char	3	3	Null	ZSB	eManifest	All Items SAP OBA
Declared Class	The declared class, identified by a 1 Character Code.	Integer	6	1	Null	0 = Null/Test 1 = 1c (Retail) 2 = 2c (Retail) 3 = 3c (Retail) 4 = Premium (Retail Publishing Mail) 5 = Deferred (Retail) - For use with Deferred mail Supply Chains only. = Air (Retail) 7 = Surface (Retail) 8 = Premium (Network Access) 9 = Standard (Network Access) "E" - Economy (Network Access) "A" to "D" and "F" to "Z" - Spare	eManifest & barcode	All Items

Declared Format	The declared format, identified by a 1 Character Code.	Integer	6	1	Null	1 = Letter 2 = Large Letter	eManifest & barcode	All Items
Declared PC & DPS	Postcode and Delivery Point assigned in the eManifest.	Varchar	10	8	Null	EC1V1AA 1R	eManifest	All Items
Sorted Postcode	Postcode and Delivery Point Suffix assigned in the barcode.	Varchar	10	8	Null	LS101JE	Barcode	All Items
Unmanifested Flag	Items that Royal Mail has seen but does not have a corresponding eManifest	Integer	11	0	Not Null	0 = Not unmanifested 1 = Manifested	Derived	All Items
Machinability	This is an additional spare column being requested to add for future use. At present it will be displayed as blank.	VARCHAR	255	0	Null	Blank	Derived	All Items
Due Mail Centre (ID)	The Mail Centre where the first track event on Royal Mail's sorting machines was expected to occur with correct routing.	Integer	11	0	Null	See Appendix 5.1	Derived	All Items
Mail Centre First Seen (ID)	The Mail Centre where the first track event on Royal Mail's sorting machines occurred.	Integer	11	0	Null	See Appendix 5.1	Derived	All Items
Expected to be Seen	Declared in the eManifest and Royal Mail has no record of having seen the barcode, and Royal Mail expected to process the item manually.	Integer	11	0	Not Null	0 = Expected to be seen 1 = Not expected to be seen	Derived	All Items
Not Seen Expected to be Seen	Declared in the eManifest and Royal Mail has no record of having seen the barcode in a location where it should have been machined.	Integer	11	0	Not Null	0 = Expected to be seen 1 = Not expected to be seen	Derived	All Items

Missorted	Processed at the wrong Mail Centre and needs to be re-routed to the correct Mail Centre for subsequent delivery.	Integer	11	0	Not Null	0 = Not missort 1 = Missort	Derived	All Items
Inaccurate Postcode	The Postcode declared within the eManifest or barcode is inaccurate (versus PAF) or missing.	Integer	11	0	Not Null	0 = Accurate Postcode 1 = Inaccurate Postcode	Derived	All Items
Inaccurate Delivery Point	The Delivery Point Suffix (DP) declared within the eManifest or barcode is inaccurate (versus PAF) or missing.	Integer	11	0	Not Null	0 = Accurate DP 1 = Inaccurate DP	Derived	All Items
Incorrect Class	Does not match the class declared within the eManifest.	Integer	11	0	Not Null	0 = Correct 1 = Incorrect	Derived	All Items
Incorrect Format	Does not match the format declared within the eManifest.	Integer	11	0	Not Null	0 = Correct 1 = Incorrect	Derived	All Items
International	Declared as Domestic but identified as International on Royal Mail's sorting machines.	Integer	11	0	Not Null	0 = Domestic 1 = International	Derived	All Items
Duplicate Manifested	Item ID is duplicated in the eManifest.	Integer	11	0	Not Null	0 = Not duplicate 1 = Duplicate	Derived	All Items
Duplicate Seen	Identifies an item has multiple track events on Royal Mail's sorting machines.	Integer	11	0	Not Null	0 = Not duplicate 1 = Duplicate	Derived	All Items
Advertising Seed not Seen	Flag to identify whether an advertising seed has been seen on a mailing.	Integer	11	0	Not Null	0 = Seed 1 = Not seed	Derived	All Items
RM 1 (spare 1)³	For future development	Varchar	255		Null			
RM 2 (spare 2)	For future development	Varchar	255		Null			

³ "Please note that the Mailmark Direct Data file columns 'SPARE1 & SPARE2' are reserved for future RM use and are not in any way linked to the eManifest upload fields of the same naming convention"

5. Appendix – Mail Centre Lookup table

LOCATION_NAME_RLN	MC_ID
Plymouth Mail Centre	1
Tyneside Mail Centre	2
Sheffield Mail Centre	3
Warrington Mail Centre	4
Nottingham Mail Centre	5
Gatwick Mail Centre	6
Cardiff Mail Centre	7
Bristol Mail Centre	8
Swindon Mail Centre	9
London Central Mail Centre	10
Preston Mail Centre	11
Manchester Mail Centre	12
NW Midlands Mail Centre	13
Dorset Mail Centre	14
Croydon Mail Centre	15
Inverness Mail Centre	16
Medway Mail Centre	17
Norwich Mail Centre	18
Exeter Mail Centre	19
Chester Mail Centre	20
Southampton Mail Centre	21
Truro Mail Centre	22
Chelmsford Mail Centre	23
Leeds Mail Centre	24
Romford Mail Centre	25
Northern Ireland Mail Centre	26
Birmingham Mail Centre	27
Aberdeen Mail Centre	28
Home Counties North MC	29
Glasgow Mail Centre	30
Swansea Mail Centre	31
Edinburgh Mail Centre	32
Jubilee Mail Centre	33
Carlisle Mail Centre	34
Greenford Mail Centre	35
South Midlands Mail Centre	36
Peterborough Mail Centre	37