To	RVM Suppliers
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1 Introduction

This document describes the file formats used by the software for the Online Counting Machines (OCM). The formats can be changed by Tible and changes will be communicated with RVM supplier.

1.1 Versions

Version history	
1.0	▪ Initial document
1.1	▪ Resolved contradicting naming convention of rvmrefund.csv ▪ Updated SUM in example transaction file to correct amount
1.2	▪ Added OCM introduction ▪ Added 4G and network overview ▪ Added JSON communication
1.3	▪ Removed SRN based routers ▪ Adjusted communication routes and allow communication between RVM and RVM supplier ▪ Added material in article, refund and transaction communication ▪ Added transaction id (filename) in json communication ▪ Added duplicate response in transaction

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1.4	▪ Added communication between RVM supplier and OCM (excluding transactions due to RVM requirements 1.6 ▪ Added OAuth expiration timings and field ▪ Added IP handling ▪ Added clarification on number format (n….) (leading 0 is allowed) ▪ Detailed client id/secret ▪ Added diameter and height in article and refund communication ▪ Replaced bottle into article for transaction json ▪ Replaced ipsec with OpenVPN protocol
1.5	▪ Clarified RVM means RVM and counting on distribution center ▪ Added deposit value in article communication ▪ Finalized version to after POC ▪ Described sFTP location (on OCM side)

1.2 Online Counting Machines

Stichting Retourverpakking Nederland (SRN) or their successors have defined a direct and uninterrupted communication between RVM and counting machines, both named RVM within this document, within the distribution centers and SRNPACK. Each machine supplier will have to setup the communication with SRNPACK using a VPN connection between the RVM hardware and SRNPACK.

The data restriction is currently limited to only the actual and detailed counting information. As this is marketing sensitive information and therefore not required to be shared with the RVM supplier.

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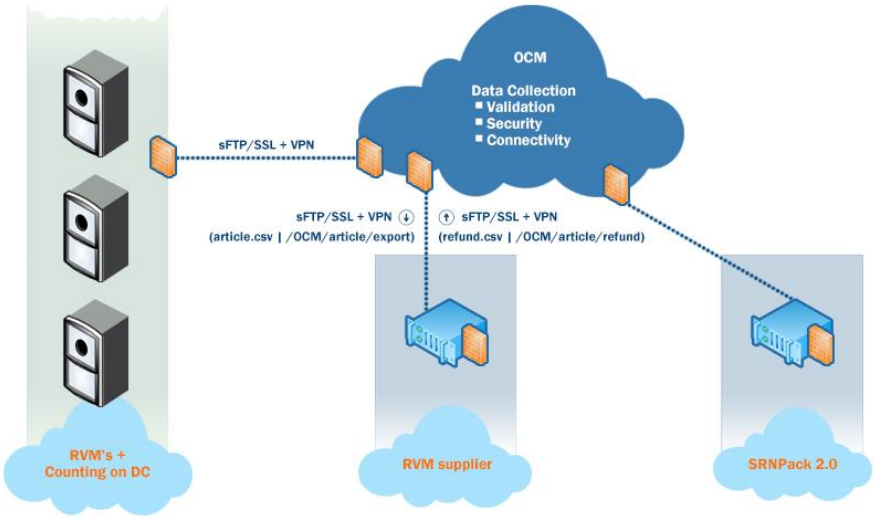

1.3 Communication and setup

1.3.1 VPN

Communication between the different locations is setup based on a Virtual Private Network (VPN). The VPN encrypts the data communication on the network level using the OpenVPN protocol.

The OpenVPN VPN's are most secure for transferring sensitive data over the network as it authenticates and encrypts data being sent. With this high level of security every device connecting to the network is a trusted device, this means that all data being transmitted is safe and that all data being transferred is encrypted and secured from potential threats.

RVM-OCM

The RVM will contain a routing device, installed by the RVM supplier, which will automatically setup the communication between the RVM and OCM. This tunnel can be created over the available LAN, WLAN or 4G connection, this is up to the RVM supplier to arrange.

Each RVM or in case desired by the RVM supplier each client (multiple machines on a shared router) will receive a dedicated OpenVPN configuration file. The connection between RVM and OCM will be based on a fixed IP set on the VPN router of the OCM.

In communication with the RVM supplier a predefined subnet (/19) based on the IP range 10.0.0.0/8 or 192.168.0.0/16 ranges will be agreed on a first come first served basis.

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OCM-SRNPACK

Multiple OCM stacks will be available spread over multiple datacenters in Europe. With this the OCM will always be available for the RVM's even if a full datacenter becomes unavailable. The OCM's are independent stacks which can function with a connection to SRNPACK.

In order to communicate counting data with SRNPACK a VPN Point-to-Point tunnel will be automatically be setup when connections are available or data will temporary be stored on the OCM.

2 Data exchange

The data exchange between RVM supplier and the OCM can take place based with a predefined file structure or with HTTP requests as defined below. The data exchange will go over a secured FTP (SFTP) or SSL connection, preferably using a key exchange but alternatively a username/password combination can be used.

2.1 Standard format

The standard format is a flat ASCII with the following properties:

- The semicolon (;) is the separator.
- Null entries (empty fields) must also have a terminating semicolon.
- If there are null entries at the end of a record type these must be terminated each with a semicolon.
- All fields must be quoted with quotation marks (")
- Semicolons and quotation marks may not be used as characters within fields.
- Commas (,) must be used as decimal separators. Periods are not allowed as thousand-place separators.
- Hyphens (-) are only transferred in the event of negative values, with the hyphen placed in front of the value.
- CRLF serves as the criterion for the end of the set.
- The ISO-8859-1 character set is to be used.

2.2 Format and Depiction

The following conventions are valid for this documentation.

Format Codes	
A	Alphabetical characters only
N	Numerical characters only
An	alphanumerical characters
a3	precisely 3 alphabetical characters

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n3	precisely 3 numerical characters
an3	precisely 3 alphanumerical characters
a..3	up to 3 alphabetical characters
n..3	up to 3 numerical characters (0 to 9)
an..3	up to 3 alphanumerical characters
a2..3	between to 2 and 3 alphabetical characters
n2..3	between to 2 and 3 numerical characters
an2..3	between to 2 and 3 alphanumerical characters

Status Codes	
M	Mandatory: The field must be filled out with information
O	Optional: The field can be filled out with information or left blank

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Record Type Identifier	
HDR	Identifier for heading section
POS	Identifier for position section
SUM	Identifier for mount section

2.3 FTP Directory structure

The SFTP structure files will be placed in a directory structure as indicated below. The retrieving side will need to check the file on the delivered SHA-256 hash and if the key does not comply the rejected file is to be placed in the rejected directory under it.

Structure	
IN	General information provided TO RVM supplier
IN\rejected	Files not comply to SHA256 hash
OUT	General information provided FROM RVM supplier
OUT\rejected	Files not comply to SHA256 hash
TRANS	Transaction files provided FROM RVM supplier
TRANS\rejected	Files not comply to SHA256 hash or files with unknown RVM id's

Due to tunnel limitations the OCM cannot support sending files to locations from the RVM Supplier. OCM will offer a sFTP location where RVM or RVM Supplier can upload or download specified files.

2.4 HTTP requests

The HTTP requests that can be used to communicate with the OCM instead of using the predefined file structure of passing/getting article/transaction information via FTP.

Calls	
OCM/article/export	GET with article information provided TO RVM supplier
OCM/article/refund	POST with refund information and confirmation FROM RVM supplier
OCM/transaction/create	POST with transaction information provided FROM RVM Supplier
OCM/oauth/token	Retrieves the OAuth 2.0 token with client id (IP address provided) and client secret (provided by SRN).

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The OCM uses OAuth 2.0 for the authorization of the clients that can use the defined HTTP requests, for the authorization a request to the OAuth token URL needs to be done before a follow up request can be done with the token in the authorization header.

The timeout of the token will be set on 2400 seconds and is specified in the communication (expires_in)

Authorization header example

```
Bearer
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJzY29wZSI6WyJvY20iXSwiZXhwIjoxNTg5NTU3
Mzc0LCJqdGkiOiI1MmQxZGUyZi0wMzM0LTQ0YzgtYTdiNy04YWI5NWQyZTA4ZDgiLCJjbGllbn
RfaWQiOiJvY20ifQ.ISphXoiJuxvNkwM992L6OE04iVoNIrxJG-JZ1m2IiAg
```

2.5 Article base data format

The article base data consist of article codes with an export from latest activation on date.

The criteria used are:

- Product Type: Netherlands
- Material: PET
- Status: Active
- Payment Type: System bottle

As a control a check file *.hash* will be created with the same name (before the extension) as to indicate that the article files are ready for further processing and in order to confirm the SHA-256 hash value. The article base data file will be placed in the IN directory

2.5.1 Article file

An article file contains all refundable and to be accepted articles from a certain date.
The file name is article.csv and will be placed upon changes in the IN directory.

The header record (HDR)

Identifier	Status	Format	Description
RECORD TYPE IDENTIFIER	M	a3	Record type identifier (see code list). Divides heading, position and amount sections of the message.
MESSAGE VERSION	M	n3	Message version number. Version number of type of message. The version number corresponds with the version number mentioned in the header of this document.
MESSAGE DATETIME	M	n14	Message date and time. Datetime of message. Format: YYYYMMDDHHMMSS

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The POS records (POS)

Identifier	Status	Format	Description
RECORD TYPE IDENTIFIER	M	a3	Record type identifier (see code list). Divides heading, position and amount sections of the message.
ARTICLE NUMBER	M	n..13	GTIN of the article
SUPPLIER	M	an..30	Name of the supplier
ACTIVATIONDATE	O	n14	Datetime of activation. Format: YYYYMMDDHHMMSS If empty valid immediately
WEIGHT	M	n..7	mg of scanned weight
VOLUME	M	n..7	ml volume of the article
HEIGHT	O	n..7	mm of bottle height
DIAMETER	O	n..7	mm of bottle diameter
MATERIAL	M	n1	Type of material currently specified as: 1 = PET 2 = GLASS 3 = STEEL 4 = ALUMIUM
DEPOSITVALUE	M	n..4	Amount of deposit. Amount of deposit without VAT in euro cents
DESCRIPTION	M	an..80	Article description

The SUM records (SUM)

Identifier	Status	Format	Description
RECORD TYPE IDENTIFIER	M	a3	Record type identifier (see code list). Divides heading, position and amount sections of the message.
TOTAL	M	n..10	Total articles

Example of an article file

Filename: article.csv

“HDR”;”014”;”20200513123601”
“POS”;” 8710400446279”;”U.S.D.”;””,”29000”;”1500”;”0”;”0”;”1”;”25”;”AH Cassis 1,5L Pet”
“POS”;” 8715600229202”;”VRUMONA”;””,”41000”;”1500”;;;”1”;”25”;”PET 150cl CRYSTAL CLEAR CHERRY”
“POS”;” 5000112643206”;”Coca-Cola”;”20190819000000”,”35800”;”1000”;”10”;”10”;”1”;”25”;” COCA-COLA ZERO CINNAMON”
“SUM”;”3”

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2.5.2 Transaction Hash

Contains a SHA-256 hash value of the article.csv file.

Example of file

Filename: article.hash
0cabfd96b7c1ac668005feecd9861d6dabb84dfbd13c7c3a0b44b91a7adbb8c4

2.5.3 HTTP request (/OCM/article/export)

The HTTP request for article export is defined here, it will only send a JSON response back to the client doing the request.


```
{
        "version": "014",
        "dateTime": "2020-05-13T12:36:01.000+02:00",
        "articles": [
                {
                        "number": 8710400446279,
                        "supplier": "U.S.D.",
                        "weight": 29000,
                        "volume": 1500,
                        "height": 0,
                        "diameter": 0,
                        "material": 1,
                        "depositvalue": 25,
                        "description": "AH Cassis 1,5L Pet"
                },
                {
                        "number": 8715600229202,
                        "supplier": "VRUMONA",
                        "weight": 41000,
                        "volume": 1500,
                        "material": 1,
                        "depositvalue": 25,
                        "description": "PET 150cl CRYSTAL CLEAR CHERRY"
                },
                {
                        "number": 5000112643206,
                        "supplier": "Coca-Cola",
                        "activationDate": "2019-08-19T00:00:00.000+02:00",
                        "weight": 35800,
                        "volume": 1000,
                        "height": 10,
                        "diameter": 10,
                        "material": 1,
                        "depositvalue": 25,
                        "description": "COCA-COLA ZERO CINNAMON"
```


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```
                }
        ],
        "total": 3
}
```

2.6 RVM Refund base data format

The refund base data consist of the articles which the RVM supplier accepts including the QR-CODE wildcard numbers and the minimum and maximum weight of a specific article.

2.6.1 RVM Refund file

Contains all refundable and to be accepted articles from the RVM supplier including the wildcard articles. The file name is rvmrefund.csv and will be placed upon changes in the OUT directory.

The header record (HDR)

Identifier	Status	Format	Description
RECORD TYPE IDENTIFIER	M	a3	Record type identifier (see code list). Divides heading, position and amount sections of the message.
MESSAGE VERSION	M	n3	Message version number. Version number of type of message. The version number corresponds with the version number mentioned in the header of this document.
MESSAGE DATETIME	M	n14	Message date and time. Datetime of message. Format: YYYYMMDDHHMMSS

The POS records (POS)

Identifier	Status	Format	Description
RECORD TYPE IDENTIFIER	M	a3	Record type identifier (see code list). Divides heading, position and amount sections of the message.
ARTICLE NUMBER	M	n..13	GTIN of the article
SUPPLIER	M	an..30	Name of the supplier
ACTIVATIONDATE	O	n14	Datetime of activation. Format: YYYYMMDDHHMMSS If empty valid immediately
WEIGHTMIN	M	n..7	mg of scanned minimal weight
WEIGHTMAX	M	n..7	mg of scanned maximum weight
VOLUME	M	n..7	ml volume of the article
HEIGHT	O	n..7	mm of bottle height

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DIAMETER	O	n..7	mm of bottle diameter
MATERIAL	M	n1	Type of material currently specified as: 1 = PET 2 = GLASS 3 = STEEL 4 = ALUMIUM
ARTICLE TYPE	M	n1	0=RVM WILDCARD ARTICLE 1=ARTICLE FILE BASED
DESCRIPTION	M	an..80	Article description

The SUM records (SUM)

Identifier	Status	Format	Description
RECORD TYPE IDENTIFIER	M	a3	Record type identifier (see code list). Divides heading, position and amount sections of the message.
TOTAL ARTICLE	M	n..10	Total articles from article file
TOTAL RVM	M	n..10	Total RVM wildcard number articles

Example of a refund

Filename: rvmrefund.csv

"HDR";"014";"20200513123601"
"POS;" 8710400446279";"U.S.D.";"";"29000";"29100";"1500";"0";"0";"1"; "1";"AH Cassis 1,5L Pet"
"POS;" 8715600229202";"VRUMONA";"";"41000";"41200";"1500";;;"1";"1";"PET 150cl CRYSTAL CLEAR CHERRY"
"POS;" 5000112643206";"Coca-Cola";"20190819000000";"35800";"10";"10";"35820";1000";"1";"1";" COCA-COLA ZERO CINNAMON"
"SUM";"3";"0"

2.6.2 Transaction Hash

Contains a SHA-256 hash value of the rvmrefund.csv file.

2.6.3 Example of file

Filename: rvmrefund.hash
8632d8aef60fd4ca892710284f090357a6f4fd9d6642c4c76fb26b13528022fb

2.6.4 JSON (/OCM/article/refund)

The HTTP request for article refund is defined here, it needs a JSON request and it will send a JSON response back to the client doing the request.

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Request


```
{
	"version": "014",
	"dateTime": "2020-05-13T12:36:01.000+02:00",
	"articles": [
		{
			"number": 8710400446279,
			"supplier": "U.S.D.",
			"weightMin": 29000,
			"weightMax": 29100,
			"volume": 1500,
			"height": 0,
			"diameter": 0,
			"material": 1,
			"type": 1,
			"description": "AH Cassis 1,5L Pet"
		},
		{
			"number": 8715600229202,
			"supplier": "VRUMONA",
			"weightMin": 41000,
			"weightMax": 41200,
			"volume": 1500,
			"material": 1,
			"type": 1,
			"description": "PET 150cl CRYSTAL CLEAR CHERRY"
		},
		{
			"number": 5000112643206,
			"supplier": "Coca-Cola",
			"activationDate": "2019-08-19T00:00:00.000+02:00",
			"weightMin": 35800,
			"weightMax": 35820,
			"volume": 1000,
			"height": 10,
			"diameter": 10,
			"material": 1,
			"type": 1,
			"description": "COCA-COLA ZERO CINNAMON"
		}
	],
	"total": 3,
	"wildcard": 0
}
```


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Response

```
{
        "status": "accepted",
        "messages": []
}

Or

{
        "status": "declined",
        "messages": [
                {
                        "text": "format not correct for...."
                }
        ]
}
```

2.7 Transaction reports

The transaction reports define the counting result of a given batch. As a control a check file *.hash* will be created with the same name (before the extension) as to indicate that the counting files are ready for further processing and in order to confirm the SHA-256 hash value.

The transaction file will be placed in the TRANS directory.

2.7.1 Transaction file

Contains all counted articles, accepted as refundable and non-refundable. Preferable per customer transaction if not possible a total file split per RVMSERIAL per day.

The file name is the actual unique transaction number of n21.

The header record (HDR)

Identifier	Status	Format	Description
RECORD TYPE IDENTIFIER	M	a3	Record type identifier (see code list). Divides heading, position and amount sections of the message.
MESSAGE VERSION	M	n3	Message version number. Version number of type of message. Version corresponds with the version of this document mentioned in the header
MESSAGE DATETIME	M	n14	Message date and time. Datetime of message. Format: YYYYMMDDHHMMSS
MESSAGE SENDER	M	n..13	StoreID from RVM supplier

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MESSAGE MACHINE	M	n..13	RVM Serial from RVM supplier

The POS records (POS)

Identifier	Status	Format	Description
RECORD TYPE IDENTIFIER	M	a3	Record type identifier (see code list). Divides heading, position and amount sections of the message.
ARTICLE NUMBER	M	n..13	GTIN of the article
SCANNED WEIGHT	O	n..7	mg of scanned weight
MATERIAL	M	n1	Type of material currently specified as: 1 = PET 2 = GLASS 3 = STEEL 4 = ALUMIUM
REFUND	M	n1	0 = NO REFUND 1 = REFUND
COLLECTED	M	n1	0 = NOT IN BAG 1 = IN BAG

The SUM records (SUM)

Identifier	Status	Format	Description
RECORD TYPE IDENTIFIER	M	a3	Record type identifier (see code list). Divides heading, position and amount sections of the message.
TOTAL	M	n..10	Total scanned articles
REFUNDABLE	M	n..10	Total refundable articles
COLLECTED	M	n..10	Total collected articles

Example of a transaction file

Filename: 606657901600010171000.csv

“HDR”;”014”;”20200513123601”;”126161”;”936860206”
“POS”;”5449000000439”;”54000”;”1”;”0”;”1”
“POS”;”5449000000439”;”54000”;”1”;”0”;”1”
“POS”;”12000002090”;”44000”;”1”;”1”;”1”
“SUM”;”3”;”1”;”3”

2.7.2 Transaction Hash

Contains a SHA-256 hash value of the transaction.csv file.

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Example of file

Filename: 606657901600010171000.hash

751ba8a2179068d0a91f7ca7601eb40f2789582b8a66349109a2a6038bb3bb17

2.7.3 JSON (/OCM/transaction/create)

The HTTP request for creating a transaction is defined here, it needs a JSON request and it will send a JSON response back to the client doing the request. Besides that a request can be done to a RVM supplier HTTP request URL which contains the data that has been sent to the OCM.

The filename as specified under 2.7.1 is converted to transactionNumber n21 in the JSON request

Request


```
{
        "version": "014",
        "dateTime": "2020-05-13T12:36:01.000+02:00",
        "storeId": 126161,
        "serialNumber": 936860206,
        "transactionNumber": 606657901600010171000,
        "articles": [
                {
                        "articleNumber": 5449000000439,
                        "scannedWeight": 54000,
                        "material": 1,
                        "refund": 0,
                        "collected": 1
                },
                {
                        "articleNumber": 5449000000439,
                        "scannedWeight": 54000,
                        "material": 1,
                        "refund": 0,
                        "collected": 1
                },
                {
                        "articleNumber": 12000002090,
                        "scannedWeight": 44000,
                        "material": 1,
                        "refund": 1,
                        "collected": 1
                }
        ],
        "total": 3,
```


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```
        "refundable": 1,
        "collected": 3
}
```

Response

```
{
        "status": "accepted",
        "transactionNumber": 606657901600010171000,
        "messages": []
}

Or

{
        "status": "duplicate",
        "transactionNumber": 606657901600010171000,
        "messages": [
                {
                        "text": "transaction is already offered by [serialNumber]"
                }
        ]
}

Otherwise

{
        "status": "declined",
        "transactionNumber": 606657901600010171000,
        "messages": [
                {
                        "text": "format not correct for...."
                }
        ]
}
```


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