Self – Certification document for the Providers of the automated collection machines (RVMs)

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Content

Application for enrollment into the Deposit-Return System for automated collection machines designed for plastic, metal, and glass packaging	Declaration of Conformity of Automatic Collection Equipment (RVM) Provider
Company Name: ..... and legal details.....	**Date:** *dd/mm/yyyy*
	Contact Details: Name: Function/Role: Email address: Phone:

A. Essential Information and Criteria

1. **Expertise and Experience:** *proven track record and a deep understanding of DRS specifics.*
   Client testimonials and any industry recognition is a plus.

2. **Range of Services Offered:** *types of RVMs to be placed into the market.*
   Brief description of the features of each type of RVM.
   Number of typologies is not a criterion, but RVMs provided must receive/accept all types of packaging – Plastic, Metal, and Glass as defined under the relevant Romanian DRS legislation.

3. **Quality Assurance and Support:** *established quality assurance processes in place to maintain high EU standards. This includes certifications and adherence to industry best practices.*
   Customer support mechanisms are mandatory, such as response times and availability for servicing customers across all geographies; existing local support team is mandatory.

B. Mandatory Technical Requirements

1. Recognition and Classification of Objects: **At least 99% recognition accuracy for all eligible beverage packaging, including plastic bottles, metal cans and glass bottles, as specified in the document.** Minimum 100 beverages packaging in total (40% Plastic/10% Metal/50% Glass) from a minimum 10 beverages producers must be tested. **Qualification: only IF Recognition (%) is Minimum 99% for all 3 Packaging Types.**	**Results of testing:** Achieved/Not Achieved Period of testing: **…….** Confirmation Signature:
2. Barcode reading (scanning): **The barcode scanner should be capable of recognizing at least 99% of undamaged barcodes, including when the object has maximum tilt. The barcode scanner can use 3 reading trials to achieve the 99% target.** **The RVM should be upgradable to read 2D Data Matrix or QR codes.** Minimum 100 beverages packaging (in total) must be tested. In the test should be included different types of bar codes (EAN 8 and EAN 13), different magnifications of the bar codes and different positioning (vertically and horizontally). Feature/Parameter tested: a) ISO15416 EAN 8 code, 80% magnification b) ISO15416 EAN 8 code, 120% magnification c) ISO15416 EAN 13 code, 80% magnification d) ISO15416 EAN 13 code, 120% magnification e) Invalid GTIN bar code, to be refused.	**Results of testing:** Achieved/Not Achieved Period of testing: …… Confirmation Signature:

3. Basic shape Recognition - Size and Weight Requirements:
RVMs must be capable of handling packaging measuring between 40mm and 130mm in diameter and between 75mm and 360mm in height, with a maximum weight of 1kg as specified.

Basic shape recognition is used on all objects and is used in combination with barcode reading.

Basic shapes data for the DRS packaging are found in the DRS Packaging Register file.

Minimum 100 beverage packaging for each parameter (40% Plastic/10% Metal/50% Glass) must be tested.

3.1. Testing basic shape recognition in range. Feature/Parameter tested (in range): a) External diameter of the packaging: min 40 mm (in range) b) External diameter of the packaging: max 130 mm (in range) c) Packaging height including closure: min 75 mm (in range) d) Packaging height including closure: max 360 mm (in range) e) Packaging weight (without content): max 1 kg.	**Results of testing:** Achieved/Not Achieved Period of testing: …… Confirmation Signature:
3.2. Testing basic shape recognition out of range. Feature/Parameter tested out of range: a) External diameter of the packaging ABOVE 10% Minimum grade (out of range) b) External diameter of the packaging BELOW 10% Minimum grade (out of range) c) External diameter of the packaging ABOVE 10% Maximum grade (out of range) d) External diameter of the packaging BELOW 10% Maximum grade (out of range) e) Packaging height including closure ABOVE 5% Minimum grade (out of range) f) Packaging height including closure BELOW 5% Minimum grade (out of range) g) Packaging height including closure OUT OF RANGE h) Packaging weight (with content more than 5% weight).	**Results of testing:** Achieved/Not Achieved Period of testing: …… Confirmation Signature:
4. Silhouette shape recognition: **Silhouette shape recognition should achieve at least 99% accuracy, meaning that:**	**Results of testing:** Achieved/Not Achieved

a) At least 99% of undamaged objects with the given silhouette shape definition should be recognized and accepted, i.e., at most 1 % of otherwise acceptable objects can be rejected. b) At least 99 % of objects with silhouette shape definition outside the specified bounds should be recognized and rejected (this could be fraud attempts), i.e., < 1% of objects with wrong silhouette shape can be accepted. Minimum 100 trials for different type of packaging (40% Plastic/10% Metal/50% Glass) must be tested.	Period of testing: ……. Confirmation Signature:
5. Metal detection: **RVMs must be equipped with metal detectors for aluminum and steel. The RVM must be able to determine if the object is made of aluminum and steel metals with 99% average certainty.** **The metal detector can accept up to 1% of objects with deviating metal properties.** Multiple trials are allowed to increase accuracy. The metal detector needs to distinguish between nonferrous (aluminum) and ferrous (steel). Material properties for objects are included by RetuRO in the DRS Packaging Register**.**	**Results of testing:** Achieved/Not Achieved Period of testing: ……. Confirmation Signature:
6. Weight detection: **Weight will primarily be used to reject full or partly filled containers.** **RVM must be able to separate relevant objects, such as bottles with above limit residual liquid, by weight with 99% success rate. Check correlation between actual weight and weight data for a specific object as specified in the DRS Packaging Register.** Minimum 100 trials for different type of packaging containing liquid above 5% weight must be tested. RVM must display a “not empty packaging” message type.	**Results of testing:** Achieved/Not Achieved Period of testing: ……. Confirmation Signature:
7. Fraud detection: **The RVM must ensure that barcode, shape, silhouette, weight, and metal recognition are done for the same physical object without tampering. This means that the barcode, shape, silhouette, weight, and metal properties must be related through the one object being handled by the RVM. For example, this can be done by checking that there are no physical objects connecting user and the beverage package barcode (e.g., using a string or pin to retrieve the package), and/or detect if (even small) objects move in the wrong direction.** **99% of fraud attempts using tampering as described above must be detected, and the transaction rejected.** Non-compliant packaging must be rejected and RVM should display a rejection message.	Results of testing: Achieved/Not Achieved Period of testing: ……. Confirmation Signature:

8. Compacting of cans and plastic bottles:

The performance requirements outlined below are generally best achieved using separate or combined compactors for cans and plastic bottles, if requirements are met.

8.1. Deform the beverage package in such a manner that it is not possible to place the package into the RVM again to claim multiple deposit refunds for the same package. Deformation must be such that, on average, 99% or more of the beverage packages will be rejected for deposit payment by the RVM after compacting.	Results of testing: Achieved/Not Achieved Period of testing: ……. Confirmation Signature:
8.2. Volume should be reduced by at least 50% versus non-compacted packaging. Volume reduction is measured by the number of objects that can be filled in a defined bag before compaction, and after (divided between cans and plastic). **For Plastic, the degree of compacting should be at least 2:1.** **For Cans, the degree of compacting this should be at least 3:1.** Thickness after compacting should be at least 1/2 of thickness before compacting for Plastic and 1/3 for Cans. This is measured as an average over the full length of the package, i.e., allowing parts of the package to achieve less compacting (and other parts more). For comingled cans and plastic, the degree of compacting must be at least 2:1 to prevent cross-contamination.	Results of testing: Achieved/Not Achieved Period of testing: ……. Confirmation Signature:
8.3. Avoid shredding or fragmenting of the beverage package, to facilitate sorting and material separation, and avoid contamination, in later stages. The following detailed regulations are used: Shredding is defined as follows: A piece of material is any continuous piece, where the thinnest section between larger sections is allowed to be minimum 15 mm. If it is less, each section should count as a separate and smaller section. Fragmentation occurs when a section of material is so small that a circular area of at least 10 cm2 cannot be placed on the section. Any section of material which is too small according to this rule, is regarded as a fragment. At most 0,5% of the material weight is accepted as fragments. This is calculated within each material group, i.e., of cans and plastic bottles separately.	Results of testing: Achieved/Not Achieved Period of testing: ……. Confirmation Signature:

Tear-off rings, caps and closures parts of containers are not included in the fragment measurement and calculation. Keep the beverage package as one object, separated and not attached to other objects in the collection container. A maximum of 0,5% of beverage packages by number can be attached to each other in such a manner that they will not separate if dropped from 50 cm height to a concrete floor.	
9. Glass Breakage **It is mandatory to have glass breakage mechanisms in the RVM. Glass can be broken using a mechanism that only breaks the glass package into large pieces that facilitate the appropriate sorting in the glass plants to obtain the maximum cullet.** This device should break the bottle into some few large pieces. Specifically, it is recommended that less than 5% (as measured in weight) of the fragments are smaller than 5mm in size.	Results of testing: Achieved/Not Achieved Period of testing: …….. Confirmation Signature:
10. Noise reduction: **RVM shall comply with the relevant national work environment regulations according to the measurement methods approved by the work environment authority.** processing the packaging of glass. It will be measured sound intensity at 50 cm distance from the infit return packaging. Accepted - not to exceed the level of 87 dB (HG 493/2006).	Results of testing: Achieved/Not Achieved Period of testing: ……..
11. RVM collection and transport containers **Approved Glass collection bins are generally designed to correspond to ½ Euro pallet size (0.60 m width x 0.80 m length) or 1/1 Euro pallet size (0.80 x 1.20 m) boxes.** **Approved collection bags are generally designed to fit ¼ Euro pallet (0.6 m width x 0.4 m long), ½ Euro pallet size (0.60 m width x 0.80 m length) or 1/1 Euro pallet size (0.80 x 1.20m) boxes.** Collection and transport containers should be traceable, logistically practical, and functional for use in RetuRO's plants. Bins and bags for testing will be provided by RetuRO (temporary custody).	Results of testing: Achieved/Not Achieved Period of testing: ……..

C. Process Flow for New RVM Provider Integration into DRS IT system (RVM Provider and RetuRO)

1. API Documentation and Configuration:

A) API Documentation: RetuRO will provide the new RVM Provider with the documentation for all required APIs. This includes endpoints and configurations necessary for communication between the RVM machines and the RetuRO system.

B) API Configuration: To assist with a proof of concept (PoC), RetuRO can configure a test RVM using a different model from another RVM Provider, as the serial number of the machine is the key attribute in API communication. This can serve as a preliminary setup for testing purposes.

API changes are not recommended due to the potential for complications, data inconsistencies, and disruptions to the overall system.

2. Machine Setup and Collection Point Configuration:

A) Machine Configuration (Testing Phase): For the initial setup and testing purposes, RetuRO will create a dummy return point on the portal. Instead of setting up new machines right away, we will modify the serial number of an existing machine to simulate the new RVM Provider's device. This allows us to test the system's functionality and data flow without affecting production.

B) Return Point Setup (Testing Phase): RetuRO will assign this dummy return point to the RVM Provider's machine during the testing phase, ensuring that data from the modified serial number is correctly mapped in the system for testing purposes. This ensures the communication between the dummy RVM machine, and the system can be validated before moving forward.

3. Implementation Phase of physical RVM

A) Device's configuration will be implemented in DRS UAT system. This integration will be part of the planned release schedule.

RVM Supplier	Model Name	**Glass - bin type**	**Commingled - bag type**
		BinHalfPallet	BagQuarterPallet
		BinFullPallet	BagHalfPallet
			BagFullPallet

A) RetuRO will assign these return points to the corresponding machines, ensuring accurate and real-time data communication between the new RVM machines and the RetuRO DRS system. This will ensure that the machines are fully operational and integrated into the system after the UAT testing has been completed and validated.

4. Deployment

The deployment will only proceed after RetuRO provides official sign-off. This confirms that all testing has been successful, and the new machines are ready for deployment in a live environment.

A) Deployment and API Keys: will release the integration into the live environment, and deployment xAPI keys will be issued to the new RVM Provider.

B) Retailer Notification: RetuRO will notify retailers that the new RVM Provider's machines (by types of each such machines) are, each, fully integrated and can now be each registered in the system.

Official Sign-Off by RetuRO: The deployment will only proceed after RetuRO provides official sign-off mentioning each such type of machine that has been accepted (signed-off). This confirms that all testing of each such machine has been successful, and the new machine is ready for deployment in a live environment.

In accordance with Clause **Error! Reference source not found. Error! Reference source not found. Error! Reference source not found.** of Annex 2 of the DRS Retailer Agreement, RetuRO shall publish on its website the list of the RVM Providers whose machines have been signed-off in accordance with the above mentions, together with the list of the relevant types of machines that have each been accepted in the DRS (signed-off) by RetuRO in accordance with the provisions of this document.

The Automatic Collection Equipment Provider, i.e. the RVM Provider, knowing that the false statement is punishable under the Romanian laws, in accordance with Art. 326 of the Romanian Criminal Code, hereby declares on their own responsibility: (i) that all aspects contained in this present document are real and correct; (ii) that it and/or any person that has any share in it (any of its affiliates), are not, and have not been, involved in any illegal activity, or any potential illegal activity or any activity that might result in the creation of an illegal situation; and (iii) that it acknowledges that they have received certain information from RetuRO regarding any and all aspects that concern the functioning of the DRS system, and, therefore, once decided to enter the DRS, for the purposes of the DRS, it agrees to follow the DRS legislation and, hence, enter in any RVM sale-purchase agreement with a retailer (as this is defined under the DRS legislation), merely provided that the completion of this self-certification followed by its validation by RetuRO, as a RVM Provider under the DRS System, has been duly and completely performed.

In addition, the undersigned (and any of its affiliates) hereby declares that they will keep any and all information provided by RetuRO to themselves and not pass it, or any part of it, to another.

Signature RVM Provider:

By: _____

As Legal Representative

Date: _____

Approval for enrollment into the Deposit-Return System by RetuRO Sistem Garantie-Returnare:

Date:

From RetuRO:

- Commercial Department:
- IT Department:

- Operational Department: