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CERTIFICATION REPORT

File: 2013-1 WISE WASTE RFID

Applicant: PT500272492 SOMA - Sociedade de Montagem de Automóveis S.A.

References:

[EXT-2002] Certification Request

[EXT-2200] Evaluation Technical Report

The product documentation referenced in the above documents.

Certification report of the product WISE WASTE® RFID SYSTEM version 3.0.0, as requested in [EXT-2002] dated 15-01-2013, and evaluated by the laboratory EPOCHE AND ESPRI, as detailed in the Evaluation Technical Report [EXT-2200] received on 30/05/2013.

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EXECUTIVE SUMMARY

This document constitutes the Certification Report for the certification file of the product WISE WASTE® RFID SYSTEM version 3.0.0.

WISE WASTE® RFID SYSTEM is classified as a "Waste Bin Identification System (WBIS)" as defined in the protection profile [WBIS-PP]. The TOE parts are:

- The ID-Tag.
- The vehicle software.
- The security module.

Developer/manufacturer: SOMA – Sociedade de Montagem de Automóveis S.A.

Sponsor: SOMA – Sociedade de Montagem de Automóveis S.A.

Certification Body: Centro Criptológico Nacional (CCN) del Centro Nacional de Inteligencia (CNI).

ITSEF:EPOCHE AND ESPRI.

Protection Profile: Protection Profile Waste Bin Identification Systems WBIS-PP Version 1.04.

Evaluation Level: Common Criteria version 3.1 revision 4, EAL1+ ASE_SPD.1, ASE_OBJ.2 and ASE_REQ.2.

Evaluation end date: 30/05/2013.

All the assurance components required by the evaluation level EAL1 (augmented with ASE_SPD.1, ASE_OBJ.2 and ASE_REQ.2) have been assigned a “PASS” verdict. Consequently, the laboratory EPOCHE AND ESPRI assigns the “PASS” VERDICT to the whole evaluation due all the evaluator actions are satisfied for the EAL1+ ASE_SPD.1, ASE_OBJ.2 and ASE_REQ.2, as defined by the Common Criteria version 3.1 revision 4 and the Common Methodology for Information Technology Security Evaluation version 3.1 revision 4.

Considering the obtained evidences during the instruction of the certification request of the product WISE WASTE® RFID SYSTEM v3.0.0, a positive resolution is proposed.

TOE SUMMARY

The TOE is the WISE WASTE® RFID SYSTEM, which is a "Waste Bin Identification System" as defined in the protection profile [WBIS-PP]. This is a system that aims the operational and fleet management of waste collection companies and it is designed to implement billing methods based on how many times one's waste bin is collected.

The full system consists of the following components:

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- An ID-Tag, containing the identification data of a waste bin.
- A vehicle with an ID-Tag reader (consisting in antennas, a multiplexer and reader module), lifter sensors, a button box and a vehicle computer. The vehicle computer consists on a processing unit and a modem. The vehicle software is installed in the vehicle computer, hence, in the module containing the processing unit and the modem. The interface with the driver is done through a tactile display.
- The office computer, installed in a remote location. The security module and the server software are in this office computer.

Of the above described components, only the following are part of the TOE:

- The ID-Tag.
- The vehicle software.
- The security module.

With this system, waste containers equipped with an ID-Tag are identified and their associated clearance data is recorded and time stamped by the vehicle software. This data contains the identification number of the container. The recorded and time stamped information is then sent to the office computer to be used for billing purposes by city councils or waste collection private companies. It should be noted that this system identifies waste containers and not the actual waste.

The WISE WASTE® RFID SYSTEM is capable of protecting the billing data for manipulation and loss, providing a reliable structure for data transmission and backup. The collection records are backed up in the vehicle computer, pre-validated by the vehicle software and then sent to the office computer of the city council or disposal company. After strict validation and scrutiny in the security module located in the office computer, the clearance data can then be used to generate billing invoices.

Not only clearance data is exchanged between the vehicle software and the office computer. As WISE WASTE® RFID is an operational and fleet management system, all the information regarding the work performed by the collection teams is processed and sent to the office computer.

There, through accessing the server software, TOE costumers such as city councils or private waste collection companies may not only manage the work performed by their employees but also charge their own costumers based on the clearance records. They can generate reports, billing invoices and monitor, in real time, the work being performed by the waste collection teams.

The access to the vehicle software is granted to authorized personnel only, due to physical and organizational measures. The office computer may only be accessed by anyone who has valid credentials for it.

The TOE consists solely on the ID-Tag, the vehicle software and the security module. All other components are part of the TOE environment, not the TOE. Therefore, the TOE environment consists in elements such as the lifter sensors, the

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button box, the ID-Tag reader (antennas, reader and multiplexer), the tactile display and the physical channels from the ID-Tag to the vehicle software, from the vehicle software to the tactile display and from the vehicle software to the security module. All additional interfaces, as well as the tactile display software and the office software are also not part of this TOE.

In terms of security features, the TOE is capable of:

- Generate and guarantee the validity of records of clearance data AT and clearance data blocks AT+.
- Prevent the modification of user data when it is transmitted between physically separated parts of the TOE.
- Monitor stored data for random manipulation.
- Implement fault tolerance when loss of user data in the primary memory of the vehicle software occurs.

SECURITY ASSURANCE REQUIREMENTS

The product was evaluated with all the evidence required to fulfil the evaluation level EAL1 and the evidences required by the additional component ASE_SPD.1, ASE_OBJ.2 and ASE_REQ.2, according to Common Criteria version 3.1 revision 4.

Assurance Class	Assurance components
ADV: Development	ADV_FSP.1 Basic functional specification
AGD: Guidance documents	AGD_OPE.1 Operational user guidance
	AGD_PRE.1 Preparative procedures
ALC: Life-cycle support	ALC_CMC.1 Labelling of the TOE
	ALC_CMS.1 TOE CM coverage
ASE: Security Target evaluation	ASE_CCL.1 Conformance claims
	ASE_ECD.1 Extended components definitions
	ASE_INT.1 ST introduction
	ASE_OBJ.2 Security objectives
	ASE_REQ.2 Derived security requirements
	ASE_SPD.1 Security problem definition
	ASE_TSS.1 TOE summary specification
ATE: Tests	ATE_IND.1 Independent testing – conformance
AVA: Vulnerability assessment	AVA_VAN.1 Vulnerability survey

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SECURITY FUNCTIONAL REQUIREMENTS

The product security functionality satisfies the following functional requirements, according to the Common Criteria version 3.1 revision 4:

Class	Components
FDP: User Data Protection	FDP_DAU.1 Basic Data Authentication
	FDP_ITT.5 Internal transfer integrity protection
	FDP_SDI.1 Stored data integrity monitoring
FRU: Resource utilisation	FRU_FLT.1 Degraded fault tolerance

IDENTIFICATION

Product: WISE WASTE® RFID SYSTEM v3.0.0

Security Target: SOMA - WISE WASTE® RFID SYSTEM Security target, v5.0.

Protection Profile: Protection Profile Waste Bin Identification Systems WBIS-PP Version 1.04.

Evaluation Level: Common Criteria version 3.1 revision 4. EAL1+ (ASE_SPD.1, ASE_OBJ.2 and ASE_REQ.2).

SECURITY POLICIES

The use of the product WISE WASTE® RFID SYSTEM v3.0.0 shall implement a set of security policies assuring the fulfilment of different standards and security demands.

The detail of these policies is documented in the Security Target. In short, it establishes the need of implementing organisational policies related to the following aspects.

Policy 01: P.Safe Fault tolerance

This security policy is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 15).

ASSUMPTIONS AND OPERATIONAL ENVIRONMENT

The following assumptions are constraints to the conditions used to assure the security properties and functionalities compiled by the security target. These assumptions have been applied during the evaluation in order to determine if the identified vulnerabilities can be exploited.

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In order to assure the secure use of the TOE, it is necessary to start from these assumptions for its operational environment. If this is not possible and any of them could not be assumed, it would not be possible to assure the secure operation of the TOE.

Assumption 01: A.Id ID-Tag

This assumption is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 34).

Assumption 02: A.Trusted Trustworthy personnel

This assumption is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 34).

Assumption 03: A.Access Access protection

This assumption is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 34).

Assumption 04: A.Check Check of completeness

This assumption is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 34).

Assumption 05: A.Backup Data backup

This assumption is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 34).

CLARIFICATIONS ON NON-COVERED THREATS

The following threats do not suppose a risk for the product WISE WASTE® RFID SYSTEM v3.0.0, although the agents implementing attacks have the attack potential according to the basic attack potential of EAL1+ (ASE_SPD.1, ASE_OBJ.2 and ASE_REQ.2) and always fulfilling the usage assumptions and the proper security policies satisfaction.

For any other threat not included in this list, the evaluation results of the product security properties and the associated certificate, do not guarantee any resistance.

The threats covered by the security properties of the TOE are categorized below.

Threat 01: T.Man Manipulated identification data

This threat is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 14).

Threat 02: T.Jam#1 Disturbed identification data

This threat is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 15).

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Threat 03: T.Create Invalid records of clearance

This threat is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 15).

Threat 04: T.Jam#2 Corrupted record of clearance

This threat is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 15).

OPERATIONAL ENVIRONMENT FUNCTIONALITY

The product requires the cooperation from its operational environment to fulfil some of the objectives of the defined security problem.

The security objectives declared for the TOE operational environment are categorized below.

Environment objective 01: OE.Id ID-Tag

This environment objective is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 16).

Environment objective 02: OE.Trusted Trustworthy personnel

This environment objective is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 16).

Environment objective 03: OE.Access Access protection

This environment objective is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 17).

Environment objective 04: OE.Check Check of completeness

This environment objective is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 17).

Environment objective 05: OE.Backup Data backup

This environment objective is included in the ST and it is described in the [WBIS-PP] Protection Profile (page 17).

The details of the product operational environment (assumptions, threats and organisational security policies) and the TOE security requirements are included in the associated security target.

ARCHITECTURE

The Target of Evaluation (TOE) is a "Waste Bin Identification System (WBIS)" and consists of the following components:

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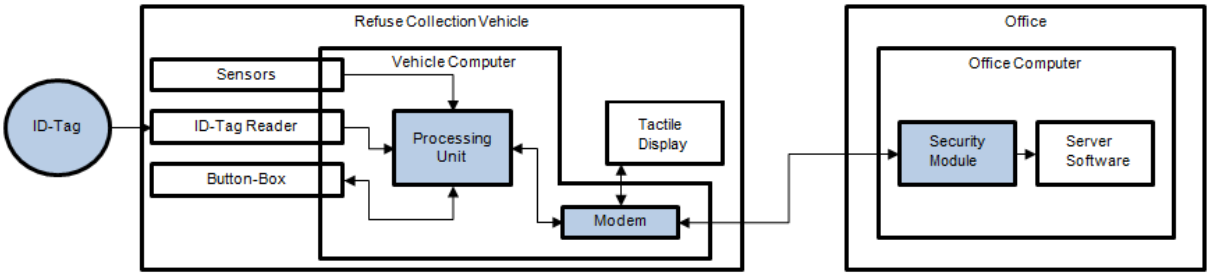
- An ID-Tag containing the identification of the waste container (the waste is not identified).
- A vehicle computer with a processing unit and a modem. The vehicle software is the one installed in the vehicle computer considering no add-on features, namely, the software of the processing unit and the modem.
- A security module installed in a remote location that interfaces the refuse collection vehicle with the office computer.



DOCUMENTS

The product includes the following documents that shall be distributed and made available together to the users of the evaluated version:

- SOMA-WISE WASTE RFID SYSTEM Security target, version 5.0, May 2013
- Manual Ww Rfid Toe Parts-V4 May 2013
- System Manual SOMA® Wise Waste® V4.0 RFID-V03 February 2013

PRODUCT TESTING

The evaluator has tested all the SFRs defined through the TOE TSFIs. It has been checked that the obtained results conform to the expected results.

EVALUATED CONFIGURATION

The full system consists of the following components:

- An ID-Tag, containing the identification data of a waste bin.
- A vehicle with an ID-Tag reader (consisting in antennas, a multiplexer and reader module), lifter sensors, a button box and a vehicle computer. The vehicle computer consists on a processing unit and a modem. The vehicle software is installed in the vehicle computer, hence, in the module containing the processing unit and the modem. The interface with the driver is done through a tactile display.
- The office computer, installed in a remote location. The security module and the server software are in this office computer.

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Of the above described components, only the following are part of the TOE:

- The ID-Tag.
- The vehicle software.
- The security module.

The system is delivered to the client fully installed, configured and validated. Upon delivery of the vehicle, there is a document both SOMA, SA and the employer must sign, listing the vehicle's characteristics, as well as the description and quantity of system components installed. Upon delivery of the manual, the employer is able to check whether the product version is the expected one.

EVALUATION RESULTS

The product WISE WASTE® RFID SYSTEM v3.0.0 has been evaluated against the Security Target “SOMA - WISE WASTE® RFID SYSTEM Security target, v5.0”.

All the assurance components required by the evaluation level EAL1+ ASE_SPD.1, ASE_OBJ.2 and ASE_REQ.2 have been assigned a “PASS” verdict. Consequently, the laboratory EPOCHE AND ESPRI assigns the “**PASS**” **VERDICT** to the whole evaluation due all the evaluator actions are satisfied for the evaluation level EAL1+ ASE_SPD.1, ASE_OBJ.2 and ASE_REQ.2, as defined by the Common Criteria version 3.1 revision 4 and the Common Methodology for Information Technology Security Evaluation version 3.1 revision 4.

COMMENTS & RECOMMENDATIONS FROM THE EVALUATION TEAM

Next, recommendations regarding the secure usage of the TOE are provided. These have been collected along the evaluation process and are detailed to be considered when using the product.

The TOE usage is recommended given that there are not exploitable vulnerabilities in the intended operational environment.

The following usage recommendations are given:

- The physical access to the TOE must be controlled to ensure that only authorized personnel have access.
- The crew of the collection vehicle and the user of the office computer are authorized and trustworthy.
- The operator should check at regular intervals if the transported data from the vehicle software to the security module in office is complete. Identified loss of data should be analyzed.

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CERTIFIER RECOMMENDATIONS

Considering the obtained evidences during the instruction of the certification request of the product WISE WASTE® RFID SYSTEM v3.0.0, a positive resolution is proposed.

GLOSSARY

CCN	Centro Criptológico Nacional (National Criptologic Centre)
CNI	Centro Nacional de Inteligencia (National Intelligence Centre)
EAL	Evaluation Assurance Level
ETR	Evaluation Technical Report
OC	Organismo de Certificación (Certification Body)
TOE	Target Of Evaluation

BIBLIOGRAPHY

The following standards and documents have been used for the evaluation of the product:

[CC_P1] Common Criteria for Information Technology Security Evaluation Part 1: Introduction and general model, Version 3.1, R4, September 2012.

[CC_P2] Common Criteria for Information Technology Security Evaluation Part 2: Security functional components, Version 3.1, R4, September 2012.

[CC_P3] Common Criteria for Information Technology Security Evaluation Part 3: Security assurance components, Version 3.1, R4, September 2012.

[CEM] Common Methodology for Information Technology Security Evaluation: Version 3.1, R4, September 2012.

[WBIS-PP] Protection Profile Waste Bin Identification Systems Version 1.04

SECURITY TARGET

Along with this certification report, the complete security target of the evaluation is available in the Certification Body and CCRA websites: **SOMA - WISE WASTE® RFID SYSTEM Security target, v5.0.**

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