

# Certification Report

**BSI-CC-PP-0094-V2-2021**

for

**Digital Tachograph – Vehicle Unit (VU PP),  
Version 1.15**

developed by

**European Commission - Joint Research Centre**

Federal Office for Information Security (BSI), Postfach 20 03 63, 53133 Bonn, Germany  
Phone +49 (0)228 99 9582-0, Fax +49 (0)228 9582-5477, Infoline +49 (0)228 99 9582-111



Bundesamt  
für Sicherheit in der  
Informationstechnik

Deutsches  
erteilt vom



IT-Sicherheitszertifikat  
Bundesamt für Sicherheit in der Informationstechnik

## BSI-CC-PP-0094-V2-2021

Common Criteria Protection Profile

**Digital Tachograph – Vehicle Unit (VU PP)**, Version 1.15

developed by European Commission - Joint Research Centre

Assurance Package claimed in the Protection Profile:

Common Criteria Part 3 conformant

EAL 4 augmented by

ATE\_DPT.2 and AVA\_VAN.5

valid until 29 June 2031



SOGIS Recognition  
Agreement



The Protection Profile identified in this certificate has been evaluated at an approved evaluation facility using the Common Methodology for IT Security Evaluation (CEM), Version 3.1 for conformance to the Common Criteria for IT Security Evaluation (CC), Version 3.1. CC and CEM are also published as ISO/IEC 15408 and ISO/IEC 18045.

This certificate applies only to the specific version and release of the Protection Profile and in conjunction with the complete Certification Report.

The evaluation has been conducted in accordance with the provisions of the certification scheme of the German Federal Office for Information Security (BSI) and the conclusions of the evaluation facility in the evaluation technical report are consistent with the evidence adduced.

This certificate is not an endorsement of the Protection Profile by the Federal Office for Information Security or any other organisation that recognises or gives effect to this certificate, and no warranty of the Protection Profile by the Federal Office for Information Security or any other organisation that recognises or gives effect to this certificate, is either expressed or implied.



Common Criteria  
Recognition  
Arrangement

Bonn, 30 June 2021

For the Federal Office for Information Security

Matthias Intemann  
Head of Branch



Bundesamt für Sicherheit in der Informationstechnik

Godesberger Allee 185-189 - D-53175 Bonn - Postfach 20 03 63 - D-53133 Bonn

Phone +49 (0)228 99 9582-0 - Fax +49 (0)228 9582-5477 - Infoline +49 (0)228 99 9582-111

This page is intentionally left blank.

## Contents

A	Certification.....	6
1	Preliminary Remarks.....	6
2	Specifications of the Certification Procedure.....	6
3	Recognition Agreements.....	7
3.1	European Recognition of CC – Certificates (SOGIS-MRA).....	7
3.2	International Recognition of CC – Certificates (CCRA).....	7
4	Performance of Evaluation and Certification.....	8
5	Validity of the certification result.....	8
6	Publication.....	8
B	Certification Results.....	10
1	Protection Profile Overview.....	11
2	Security Functional Requirements.....	11
3	Assurance Requirements.....	12
4	Results of the PP-Evaluation.....	12
5	Obligations and notes for the usage.....	13
6	Protection Profile Document.....	13
7	Definitions.....	13
7.1	Acronyms.....	13
7.2	Glossary.....	14
8	Bibliography.....	14
C	Annexes.....	16

# A Certification

## 1 Preliminary Remarks

Under the Act on the Federal Office for Information Security (BSIG), the Federal Office for Information Security (BSI) has the task of issuing certificates for information technology products as well as for Protection Profiles (PP).

A PP defines an implementation-independent set of IT security requirements for a category of products which are intended to meet common consumer needs for IT security. A PP claimed by a user, consumer or stakeholder for IT gives them the possibility to express their IT security needs without referring to a specific product. Product certifications can be based on Protection Profiles. For products which have been certified based on a Protection Profile an individual certificate will be issued but the results from a PP certification can be re-used for the Security Target evaluation within a product evaluation when conformance to the PP has been claimed.

Certification of the Protection Profile is carried out on the instigation of the BSI or a sponsor. A part of the procedure is the technical examination (evaluation) of the Protection Profile according to Common Criteria [1]. The evaluation is usually carried out by an evaluation facility recognised by the BSI or by BSI itself. The result of the certification procedure is the present Certification Report. This report contains among others the certificate (summarised assessment) and the detailed Certification Results.

## 2 Specifications of the Certification Procedure

The certification body conducts the procedure according to the criteria laid down in the following:

- Act on the Federal Office for Information Security (BSIG)<sup>1</sup>
- BSI Certification and Approval Ordinance<sup>2</sup>
- BMI Regulations on Ex-parte Costs<sup>3</sup>
- Special decrees issued by the Bundesministerium des Innern (Federal Ministry of the Interior)
- DIN EN ISO/IEC 17065 standard
- BSI certification: Scheme documentation describing the certification process (CC-Produkte) [3], including PP Certification
- BSI certification: Scheme documentation on requirements for the Evaluation Facility, its approval and licencing process (CC-Stellen) [3]

<sup>1</sup> Act on the Federal Office for Information Security (BSI-Gesetz - BSIG) of 14 August 2009, Bundesgesetzblatt I p. 2821

<sup>2</sup> Ordinance on the Procedure for Issuance of Security Certificates and approval by the Federal Office for Information Security (BSI-Zertifizierungs- und -Anerkennungsverordnung - BSIZertV) of 17 December 2014, Bundesgesetzblatt 2014, part I, no. 61, p. 2231

<sup>3</sup> BMI Regulations on Ex-parte Costs - Besondere Gebührenverordnung des BMI für individuell zurechenbare öffentliche Leistungen in dessen Zuständigkeitsbereich (BMIBGebV), Abschnitt 7 (BSI-Gesetz) - dated 2 September 2019, Bundesgesetzblatt I p. 1365

- Common Criteria for IT Security Evaluation (CC), Version 3.1<sup>4</sup> [1] also published as ISO/IEC 15408
- Common Methodology for IT Security Evaluation, Version 3.1 [2] also published as ISO/IEC 18045
- BSI certification: Application Notes and Interpretation of the Scheme (AIS) [4]
- Internal procedure for the issuance of a PP certificate

### 3 Recognition Agreements

In order to avoid multiple certification of the same Protection Profile in different countries a mutual recognition of IT security certificates - as far as such certificates are based on CC - under certain conditions was agreed. Therefore, the results of this evaluation and certification procedure can be re-used by the product certificate issuing scheme in the evaluation of a Security Target within a subsequent product evaluation and certification procedure.

#### 3.1 European Recognition of CC – Certificates (SOGIS-MRA)

The SOGIS-Mutual Recognition Agreement (SOGIS-MRA) Version 3 became effective in April 2010. It defines the recognition of certificates for IT-Products at a basic recognition level up to and including Common Criteria (CC) Evaluation Assurance Levels EAL 4, and in addition at higher recognition levels for IT-Products related to certain technical domains only. In addition, certificates issued for Protection Profiles based on Common Criteria are part of the recognition agreement.

The SOGIS-MRA logo printed on the certificate indicates that it is recognised under the terms of this agreement by the related bodies of the signatory nations. A disclaimer beneath the logo indicates the specific scope of recognition.

Details on recognition, the signatory nations, technical domains and the agreement itself can be found at <https://www.sogis.eu>.

#### 3.2 International Recognition of CC – Certificates (CCRA)

The international Common Criteria Recognition Arrangement (CCRA) became effective in September 2014 in its current version. It defines the recognition of certificates for IT-products based on collaborative Protection Profiles (cPP) (exact use), CC certificates based on assurance components up to and including EAL 2 or the assurance family Flaw Remediation (ALC\_FLR) and CC certificates for Protection Profiles and for collaborative Protection Profiles (cPP).

The Common Criteria Recognition Arrangement logo printed on the certificate indicates that this certification is recognised under the terms of this agreement by the related bodies of the signatory nations. A disclaimer beneath the logo indicates the specific scope of recognition.

Details on recognition, the signatory nations and the agreement itself can be found at <https://www.commoncriteriaportal.org>.

<sup>4</sup> Proclamation of the Bundesministerium des Innern of 12 February 2007 in the Bundesanzeiger dated 23 February 2007

## 4 Performance of Evaluation and Certification

The certification body monitors each individual evaluation to ensure a uniform procedure, a uniform interpretation of the criteria and uniform ratings.

The PP Digital Tachograph – Vehicle Unit (VU PP), Version 1.15 has undergone the certification procedure at BSI. This is a re-certification based on BSI-CC-PP-0094-2017. Specific results from the evaluation process based on BSI-CC-PP-0094-2017 were re-used.

The evaluation of the PP Digital Tachograph – Vehicle Unit (VU PP), Version 1.15 was conducted by the ITSEF Deutsche Telekom Security GmbH (Bonn). The evaluation was completed on 17 June 2021. The ITSEF Deutsche Telekom Security GmbH (Bonn) is an evaluation facility (ITSEF)<sup>5</sup> recognised by the certification body of BSI.

For this certification procedure the sponsor and applicant is: European Commission - Joint Research Centre.

The certification is concluded with the comparability check and the production of this Certification Report. This work was completed by the BSI.

## 5 Validity of the certification result

This Certification Report only applies to the version of the Protection Profile as indicated.

In case of changes to the certified version of the Protection Profile, the validity can be extended to new versions and releases, provided the sponsor applies for assurance continuity (i.e. re-certification or maintenance) of the modified Protection Profile, in accordance with the procedural requirements, and the evaluation does not reveal any security deficiencies.

For the meaning of the CC concepts and terms please refer to CC [1] Part 1 for the concept of PPs, to CC [1] Part 2 for the definition of Security Functional Requirements components (SFR) and to CC [1] Part 3 for the definition of the Security Assurance Components, for the class AVA Vulnerability assessment and for the cross reference of Evaluation Assurance Levels (EALs) and assurance components.

The validity of this certificate ends as outlined on the certificate. The applicant and the sponsor of this certificate are recommended to review the technical content of the Protection Profile certified according to the evolvement of the technology and of the intended operational environment of the type of product concerned as well as according to the evolvement of the evaluation criteria. Such review should result in an update and a re-certification of the Protection Profile accordingly. Typically, technical standards are reviewed on a five years basis.

The limitation of validity of this PP certificate does not necessarily impact the validity period of a product certificate referring to this Protection Profile, but the certification body issuing a product certificate based on this Protection Profile should take it into its consideration on validity.

## 6 Publication

The PP Digital Tachograph – Vehicle Unit (VU PP), Version 1.15 has been included in the BSI list of the certified Protection Profiles, which is published regularly (see also Internet:

<sup>5</sup> Information Technology Security Evaluation Facility



<https://www.bsi.bund.de> and [5]). Further information can be obtained from BSI-Infoline +49 228 9582-111.

The Certification Report may be obtained in electronic form at the internet address stated above.

## **B Certification Results**

The following results represent a summary of

- the certified Protection Profile,
- the relevant evaluation results from the evaluation facility, and
- complementary notes and stipulations of the certification body.

## 1 Protection Profile Overview

The Protection Profile Digital Tachograph – Vehicle Unit (VU PP), Version 1.15 [6] is established by the European Commission - Joint Research Centre as a basis for the development of Security Targets in order to perform a certification of an IT-product, the Target of Evaluation (TOE).

The TOE is a second generation vehicle unit (VU) in the sense of Annex 1C of Commission Implementing Regulation (EU) 2016/799 of 18 March 2016 implementing Regulation (EU) 165/2014 of the European Parliament and of the Council [8], intended to be installed in road transport vehicles. Its purpose is to record, store, display, print and output data related to driver activities. The VU records and stores human user activities data in its internal data memory. It also records human user activities data in tachograph cards. The VU outputs data to display, printer and external devices.

The TOE is connected to a motion sensor from which it obtains the vehicle's motion data. Information from the motion sensor is corroborated by vehicle motion information derived from a GNSS receiver, and optionally by other sources independent of the motion sensor.

The TOE may be connected to

- an external remote early detection facility (a DSRC communication module), to allow remote early detection equipment to detect possible manipulation or misuse of the VU, and to
- an external GNSS facility, to allow for recording of the position of the vehicle at certain points during the daily working period, and providing a second source of vehicle motion information.

The assets to be protected by a TOE claiming conformance to this PP are defined in the Protection Profile [6], chapter 3.1.1. Based on these assets the security problem definition is defined in terms of assumptions, threats and organisational security policies. This is outlined in the Protection Profile [6], chapter 3.2, 3.3 and 3.4.

These assumptions, threats and organisational security policies are split into security objectives to be fulfilled by a TOE claiming conformance to this PP and security objectives to be fulfilled by the operational environment of a TOE claiming conformance to this PP. These objectives are outlined in the PP [6], chapter 4.

The Protection Profile [6] requires a Security Target based on this PP or another PP claiming this PP to fulfil the CC requirements for strict conformance.

To support proper and consistent usage of the PP, it is supplemented by the Supporting Documents [8].

## 2 Security Functional Requirements

Based on the security objectives to be fulfilled by a TOE claiming conformance to this PP the security policy is expressed by the set of security functional requirements (SFR) to be implemented by a TOE. It covers the following issues:

- Protection of the data memory in such a way as to prevent unauthorised access to and manipulation of the data and detecting any such attempts,
- Protection of the confidentiality, integrity and authenticity of data exchanged between the motion sensor and the vehicle unit,

- Protection of the integrity, authenticity and, where applicable, confidentiality of data exchanged between the vehicle unit and the tachograph cards,
- Protection of the integrity and authenticity of data exchanged between the vehicle unit and the external GNSS facility, if and only if the TOE is connected to an EGF,
- Protection of the confidentiality, integrity and authenticity of data output through the remote early detection communication for control purposes, and
- Protection of the integrity, authenticity and non-repudiation of data downloaded.

These TOE security functional requirements are outlined in the PP [6], chapter 6.1. They are selected from Common Criteria Part 2 and some of them are newly defined. Thus the SFR claim is called:

Common Criteria Part 2 extended

### 3 Assurance Requirements

The TOE security assurance package claimed in the Protection Profile is based entirely on the assurance components defined in part 3 of the Common Criteria. Thus, this assurance package is called:

Common Criteria Part 3 conformant  
EAL 4 augmented by ATE\_DPT.2 and AVA\_VAN.5

(for the definition and scope of assurance packages according to CC see [1], part 3 for details).

### 4 Results of the PP-Evaluation

The Evaluation Technical Report (ETR) [7] was provided by the ITSEF according to the Common Criteria [1], the Methodology [2], the requirements of the Scheme [3] and all Application Notes and Interpretations of the Scheme (AIS) [4] as relevant for the TOE.

As a result of the evaluation the verdict PASS is confirmed for the assurance components of the class APE (Protection Profile evaluation).

The following assurance components were used:

APE\_INT.1 PP introduction  
APE\_CCL.1 Conformance claims  
APE\_SPD.1 Security problem definition  
APE\_OBJ.2 Security objectives  
APE\_ECD.1 Extended components definition  
APE\_REQ.2 Derived security requirements

As the evaluation work performed for this certification procedure was carried out as a re-evaluation based on the certificate BSI-CC-PP-0094-2017, re-use of specific evaluation tasks was possible. The focus of this re-evaluation was on technical changes resulting from the evolutions of Annex IC and Appendixes [8] mainly consist in:

- Recording of border crossings, based on a stored digital map
- Recording of load/unload operations
- Additional storage capacity in tachograph cards (56 days instead of 28 days)
- Additional information for communication to the roadside (driving times)

- ITS interface becoming mandatory instead of optional
- The Software Update becoming mandatory instead of optional
- Use of Galileo OS-NMA, for authentication of navigation messages

The results of the evaluation are only applicable to the Protection Profile as defined in chapter 1.

## 5 Obligations and notes for the usage

The following aspects need to be fulfilled when using the Protection Profile:

- The Protection Profile contains application notes, the author of a product specific security target needs to consider
- Usage of the Supporting Documents [8]

## 6 Protection Profile Document

The Protection Profile Digital Tachograph – Vehicle Unit (VU PP), Version 1.15 [6] is being provided within a separate document as Annex A of this report.

## 7 Definitions

### 7.1 Acronyms

<b>AIS</b>	Application Notes and Interpretations of the Scheme
<b>BSI</b>	Bundesamt für Sicherheit in der Informationstechnik / Federal Office for Information Security, Bonn, Germany
<b>BSIG</b>	BSI-Gesetz / Act on the Federal Office for Information Security
<b>CCRA</b>	Common Criteria Recognition Arrangement
<b>CC</b>	Common Criteria for IT Security Evaluation
<b>CEM</b>	Common Methodology for Information Technology Security Evaluation
<b>DSRC</b>	Dedicated Short Range Communications
<b>EAL</b>	Evaluation Assurance Level
<b>EGF</b>	External GNSS Facility
<b>ETR</b>	Evaluation Technical Report
<b>GNSS</b>	Global Navigation Satellite System
<b>IT</b>	Information Technology
<b>ITS</b>	Intelligent Transportation Systems
<b>ITSEF</b>	Information Technology Security Evaluation Facility
<b>MS</b>	Motion Sensor
<b>OS-NMA</b>	Open Service Navigation Message Authentication
<b>PP</b>	Protection Profile
<b>SAR</b>	Security Assurance Requirement

<b>SF</b>	Security Function
<b>SFP</b>	Security Function Policy
<b>SFR</b>	Security Functional Requirement
<b>ST</b>	Security Target
<b>TOE</b>	Target of Evaluation
<b>TSF</b>	TOE Security Functionality
<b>VU</b>	Vehicle Unit

## 7.2 Glossary

**Augmentation** - The addition of one or more requirement(s) to a package.

**Extension** - The addition to an ST or PP of functional requirements not contained in part 2 and/or assurance requirements not contained in part 3 of the CC.

**Formal** - Expressed in a restricted syntax language with defined semantics based on well-established mathematical concepts.

**Informal** - Expressed in natural language.

**Object** - A passive entity in the TOE, that contains or receives information, and upon which subjects perform operations.

**Protection Profile** - An implementation-independent statement of security needs for a TOE type.

**Security Target** - An implementation-dependent statement of security needs for a specific identified TOE.

**Semiformal** - Expressed in a restricted syntax language with defined semantics.

**Subject** - An active entity in the TOE that performs operations on objects.

**Target of Evaluation** - A set of software, firmware and/or hardware possibly accompanied by guidance.

**TOE Security Functionality** - Combined functionality of all hardware, software, and firmware of a TOE that must be relied upon for the correct enforcement of the SFRs.

## 8 Bibliography

- [1] Common Criteria for Information Technology Security Evaluation, Version 3.1, Part 1: Introduction and general model, Revision 5, April 2017  
Part 2: Security functional components, Revision 5, April 2017  
Part 3: Security assurance components, Revision 5, April 2017  
<https://www.commoncriteriaportal.org>
- [2] Common Methodology for Information Technology Security Evaluation (CEM), Evaluation Methodology, Version 3.1, Revision 5, April 2017  
<https://www.commoncriteriaportal.org>
- [3] BSI certification: Scheme documentation describing the certification process (CC-Produkte) and Scheme documentation on requirements for the Evaluation Facility, approval and licencing (CC-Stellen), <https://www.bsi.bund.de/zertifizierung>

- [4] Application Notes and Interpretations of the Scheme (AIS) as relevant for the TOE<sup>6</sup>.
- [5] German IT Security Certificates (BSI 7148), periodically updated list published also on the BSI Website
- [6] Protection Profile DigitalTachograph – Vehicle Unit (VU PP), BSI-CC-PP-0094-V2-2021, Version 1.15, 06 June 2021, European Commission, DG JRC – Directorate E – Space, Security and Migration Cyber and Digital Citizens' Security Unit E3
- [7] Evaluation Technical Report, Version 1.0, 14 June 2021, Evaluation Technical Report – Summary BSI-CC-PP-0094-V2, Deutsche Telekom Security GmbH (confidential document)
- [8] Commission Implementing Regulation (EU) 2016/799 of 18 March 2016 implementing Regulation (EU) 165/2014 of the European Parliament and of the Council laying down the requirements for the construction, testing, installation, operation and repair of tachographs and their components, Annex 1C amended by Commission Implementing Regulation (EU) 2018/502 of 28 February 2018

<sup>6</sup> specially

- AIS 27, Version 5, Certification body of the BSI in the context of the certification scheme
- AIS 32, Version 7, CC-Interpretationen im deutschen Zertifizierungsschema
- AIS 38, Version 2.0, Reuse of evaluation results

## **C Annexes**

### **List of annexes of this certification report**

Annex A: Protection Profile Digital Tachograph – Vehicle Unit (VU PP), Version 1.15 [6]  
provided within a separate document.

Note: End of report