Certification Report

EAL 4+(ATE_DPT.2,AVA_VAN.5) Evaluation of

PARS AR-GE BİLG.TEK.ELEK. MUH. VE DAN.HIZ.SAN.TIC.LTD.ŞTI.
PARS DT-101 DIGITAL TACHOGRAPH VEHICLE UNIT v1.0

issued by

Turkish Standards Institution
Common Criteria Certification Scheme

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Evaluation Lab	***TUBITAK BILGEM OKTEM***
TOE	***PARS DT-101 DIGITAL TACHOGRAPH VEHICLE UNIT v1.0***
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DISCLAIMER

This certification report and the IT product defined in the associated Common Criteria document has been evaluated at an accredited and licensed evaluation facility conformance to Common Criteria for IT Security Evaluation, version 3.1 ,revision 3, using Common Methodology for IT Products Evaluation, version 3.1, revision 3 This certification report and the associated Common Criteria document apply only to the identified version and release of the product in its evaluated configuration. Evaluation has been conducted in accordance with the provisions of the CCCS, and the conclusions of the evaluation facility in the evaluation report are consistent with the evidence adduced. This report and its associated Common Criteria document are not an endorsement of the product by the Turkish Standardization Institution, or any other organization that recognizes or gives effect to this report and its associated Common Criteria document, and no warranty is given

for the product by the Turkish Standardization Institution, or any other organization that recognizes or gives effect to this report and its associated Common Criteria document.

FOREWORD

The Certification Report is drawn up to submit the Certification Commission the results and evaluation information upon the completion of a Common Criteria evaluation service performed under the Common Criteria Certification Scheme. Certification Report covers all non-confidential security and technical information related with a Common Criteria evaluation which is made under the STCD Common Criteria Certification Scheme. This report is issued publicly to and made available to all relevant parties for reference and use.

The Common Criteria Certification Scheme (CCSS) provides an evaluation and certification service to ensure the reliability of Information Security (IS) products. Evaluation and tests are conducted by a public or commercial Common Criteria Evaluation Facility (CCTL) under CCCS' supervision. CCEF is a facility, licensed as a result of inspections carried out by CCCS for performing tests and evaluations which will be the basis for Common Criteria certification. As a prerequisite for such certification, the CCEF has to fulfill the requirements of the standard ISO/IEC 17025 and should be accredited by accreditation bodies. The evaluation and tests related with the concerned product have been performed by TUBITAK BILGEM OKTEM, which is a public CCTL.

A Common Criteria Certificate given to a product means that such product meets the security requirements defined in its security target document that has been approved by the CCCS. The Security Target document is where requirements defining the scope of evaluation and test activities are set forth. Along with this certification report, the user of the IT product should also review the security target document in order to understand any assumptions made in the course of evaluations, the environment where the IT product will run, security requirements of the IT product and the level of assurance provided by the product.

This certification report is associated with the Common Criteria Certificate issued by the CCCS for PARS DT-101 DIGITAL TACHOGRAPH VEHICLE UNIT (product version:1.0) whose evaluation was completed on 28.12.2013 and whose evaluation technical report was drawn up by TUBITAK

BILGEM OKTEM (as CCTL), and with the Security Target document with version no 2.5(27.12.2013) of the relevant product.

The certification report, certificate of product evaluation and security target document are posted on the STCD Certified Products List at bilisim.tse.org.tr portal and the Common Criteria Portal (the official web site of the Common Criteria Project).

RECOGNITION OF THE CERTIFICATE

The Common Criteria Recognition Arrangement logo is printed on the certificate to indicate that this certificate is issued in accordance with the provisions of the CCRA.

The CCRA has been signed by the Turkey in 2003 and provides mutual recognition of certificates based on the CC evaluation assurance levels up to and including EAL4. The current list of signatory nations and approved certification schemes can be found on:

http://www.commoncriteriaportal.org.

1 - EXECUTIVE SUMMARY

The target of evaluation is a digital tachograph vehicle unit which is called PARS DT-101. The TOE is comprised of hardware and software. The hardware PARS DT-101 is certified according to CC EAL4+(ATE_DPT.2, AVA_VAN.5) by Turkish CC Scheme with the certificate number 21.0.01/TSE-CCCS-018

Purpose of the vehicle unit (VU) is to record, store, display and print related output data.User activies data are recorded and stored in VU's internal data memory and tachograph cards. Users introduce themselves via tachograph cards. The VU communicates with external world through display, printer and external devices. The TOE receives motion data from the motion sensor and activity data via the facilities for entry of user's. It stores all these user data internally and can export them to the tachograph cards inserted, to the display, to the printer, and to electrical interfaces.

The basic data provided by TOE are;monitoring card insertions and withdrawals, speed and distance measurement, time measurement, monitoring driver activities, monitoring driving status, drivers manual entries,company locks management, monitoring control activities, detection of events and/or faults, built-in and self tests, reading from data memory, recording and storing in data memory, reading from tachograph cards, recording and storing in tachograph cards, displaying, printing, warning, data downloading to external media, output data to additional external devices,calibration, time adjustment, detection of motion data manipulation, software upgrade.

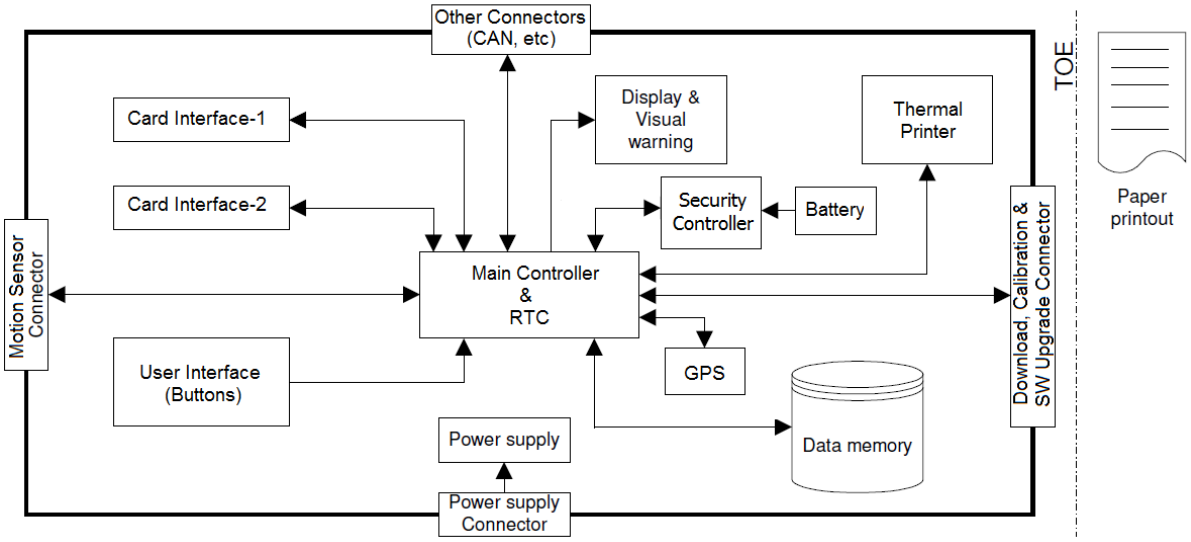

Fig.1 Typical VU

The hardware components are :

- Display
- Thermal Printer
- User interface
- Card Interface (1) and (2)
- Front Panel Connector (C)
- Data Memory

- Main Controller
- Security Controller
- RTC
- Battery
- Power Supply
- Power Supply (C)
- Other Connectors (C)
- Motion Sensor(C)

The TOE software consists of two parts:

- Boot Software
- Main Software

The Security Target [6] is the basis for this certification. It is based on the certified Protection Profile Digital Tachograph - Vehicle Unit (VU PP) Version 1.0, 13 July 2010,BSI-CC-PP-0057-2010 [7].
The TOE Security Assurance Requirements (SAR) are based entirely on the assurance components defined in Part 3 of the Common Criteria (see part C or [1], Part 3 for details). The TOE meets the assurance requirements of the Evaluation Assurance Level EAL 4 augmented by ATE_DPT.2 and AVA_VAN.5.
The TOE Security Functional Requirements (SFR) relevant for the TOE are outlined in the Security Target [6], chapter 4. They are selected from Common Criteria Part 2.
The TOE Security Functional Requirements are implemented by the following TOE Security Objectives:

Security Objectives	Addressed Issue
O.Access	The TOE must control user access to functions and data.
O.Accountability	The TOE must collect accurate accountability data.
O.Audit	The TOE must audit attempts to undermine system security and should trace them to associated users.
O.Authentication	The TOE should authenticate users and connected entities (when a trusted path needs to be established between entities).
O.Integrity	The TOE must maintain stored data integrity.
O.Output	The TOE must ensure that data output reflects accurately data measured or stored.
O.Processing	The TOE must ensure that processing of inputs to derive user data is accurate.
O.Reliability	The TOE must provide a reliable service.
O.Secured_Data_Exchange	The TOE must secure data exchanges with the motion sensor and with

	tachograph cards.
O.Software_Analysis	There shall be no way to analyse or debug software in the field after the TOE activation.
O.Software_Upgrade	The TOE must guarantee confidentiality, authenticity and integrity of the software packages that will be installed during a software upgrade.

The certification results only apply to the version of the product indicated in the certificate and on the condition that all the stipulations are kept as detailed in this Certification Report.

2 CERTIFICATION RESULTS

2.1 Identification of Target of Evaluation

Project Identifier	***21.0.01/TSE-CCCS-018***
TOE Name and Version	***PARS DT-101 DIGITAL TACHOGRAPH VEHICLE UNIT v1.0***
Security Target / PP Document Title	***PARS DT-101 DIGITAL TACHOGRAPH VEHICLE UNIT SECURITY TARGET***
Security Target / PP Document Version	***2.5***
Security Target / PP Document Date	***27.12.2013***
Assurance Level	***EAL4+(ATE_DPT.2,AVA_VAN.5)***
Criteria	• ***Common Criteria for Information Technology Security Evaluation, Part 1: Introduction and General Model, Version 3.1, Revision 4, September 2012*** • ***Common Criteria for Information Technology Security Evaluation, Part 2: Security Functional Components, Version 3.1, Revision 4, September 2012*** • ***Common Criteria for Information Technology Security Evaluation, Part 3: Security Assurance Components,Version 3.1, Revision 4, September 2012***
Methodology	***•Common Methodology for Information Technology Security Evaluation, Evaluation Methodology; CCMB-***

	2012-09-004, Version 3.1, Revision 4, September 2012
Protection Profile Conformance	***BSI-CC-PP-0057 "Protection Profile 'Digital Tachograph – Vehicle Unit (VU PP)'" as sponsored by "Bundesamt für Sicherheit in der Informationstechnik", author Dr. Igor Furgel T-Systems GEI GmbH, SC Security Analysis & Testing, version 1.0 as of 13th July 2010.***
Common Criteria Conformance	***•Common Criteria for Information Technology Security Evaluation, Part 1: Introduction and General Model; CCMB-2009-07-001, Version 3.1, Revision 3, July 2009*** ***•Common Criteria for Information Technology Security Evaluation, Part 2: Security Functional Components; CCMB-2009-07-002, Version 3.1, Revision 3, July 2009*** ***•Common Criteria for Information Technology Security Evaluation, Part 3: Security Assurance Requirements; CCMB-2009-07-003, Version 3.1, Revision 3, July 2009***
Sponsor and Developer	***PARS AR-GE BİLG.TEK.ELEK. MUH. VE DAN.HIZ.SAN.TIC.LTD.ŞTI.***
Evaluation Facility	***TUBITAK BILGEM OKTEM***
Certification Scheme	***TSE-CCCS***

2.2 Security Policy

The Security Policy is expressed by the set of Security Functional Requirements and implemented by the TOE. It covers the following issues:

- the data recorded and stored in such a way as to prevent unauthorized access to and manipulation of the data and detecting any such attempts,
- the integrity and authenticity of data exchanged between the motion sensor and the vehicle unit,
- the integrity and authenticity of data exchanged between the recording equipment and the tachograph cards
- the integrity and authenticity of data which is downloaded locally and remotely.

For detailed information please refer to ST [6, chapter 6.1.1]

2.3 Assumptions and Clarification of Scope

The Assumptions defined in the Security Target and some aspects of Threats and organisational Security Policies are not covered by the TOE itself. These aspects lead to specific security objectives to be fulfilled by the TOE-Environment. The Generic Security Target [5] does not define any dedicated assumption, but measures; these measures will be reflected in the current ST in form of the security objectives for the TOE environment below. Hence, it is to define some assumptions in the current ST being sensible and necessary from the formal point of view (to reflect those environmental measures from [5].

A.Activation	Vehicle manufacturers and fitters or workshops activate the TOE after its installation before the vehicle leaves the premises where installation took place.
A.Approved_Workshops	The Member States approve, regularly control and certify trusted fitters and workshops to carry out installations, calibrations, checks, inspections, repairs.
A.Card_Availability	Tachograph cards are available to the TOE users and delivered by Member State authorities to authorised persons only.
A.Card_Traceability	Card delivery is traceable (white lists, black lists), and black lists are used during security audits.
A.Controls	Law enforcement controls will be performed regularly and randomly, and must include security audits (as well as visual inspection of the equipment).
A.Driver_Card_Uniqueness	Drivers possess, at one time, one valid driver card only.
A.Faithful_Calibration	Approved fitters and workshops enter proper vehicle parameters in recording equipment during calibration.
A.Faithful_Drivers	Drivers play by the rules and act responsibly (e.g. use their driver cards; properly select their activity for those that are manually selected …)
A.Regular_Inspections	Recording equipment will be periodically inspected and calibrated

2.4 Architectural Information

The whole Vehicle Unit is the TOE, as claimed in [5]. Control of the TOE is provided by ARM Cortex M3 based microcontroller.Schematic and PCB Design Tools of Mentor Graphics Company are used for electronic hardware design.

The typical life cycle of the TOE is described in the Figure 1. Design phase include both hardware and software developments stages. During these stages all required actions which includes physical and IT related issues are taken to protect maintain targeted security level of the TOE.

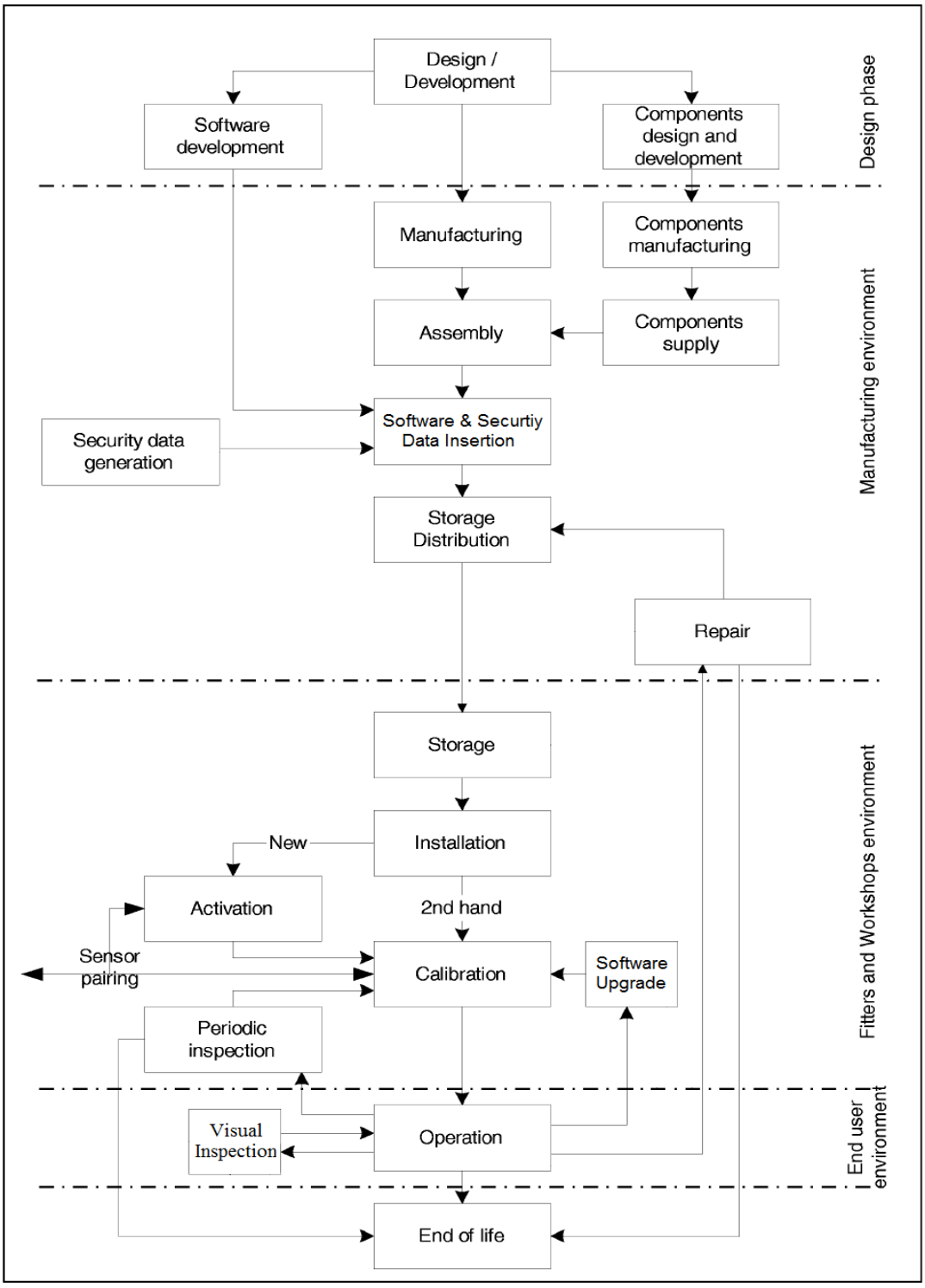

Fig.1 VU typical Life Cycle

After design is completed these data is transferred to the manufacturing environment in a secured way. After hardware assembly, system software and security data are inserted to the TOE. Similar to

development environment, all required IT and physical security action are taken.

2.5 Documentation

Name of Document	Version Number	Publication Date
PARS DT-101 v1.0 DIGITAL TACHOGRAPH VEHICLE UNIT SECURITY TARGET	2.4_GR_06	13.06.2013
PARS DT-101 v1.0 DİJİTAL TAKOGRAF ARAÇ ÜNİTESİ ÜRÜN TESLİM PROSEDÜRÜ DOKÜMANI	0.3	03.07.2013
PARS DT-101 v1.0 TAKOGRAF SÜRÜCÜ VE ŞİRKET KULLANICI KILAVUZU DOKÜMANI	Rev.0 GR_10_v2	10.07.2013
PARS DT-101 v1.0 TAKOGRAF WORKSHOP KULLANICI KILAVUZU DOKÜMANI	Rev.0 GR_10_v2	10.07.2013
PARS DT-101 v1.0 TAKOGRAF KONTROLÖR KULLANICI KILAVUZU DOKÜMANI	Rev.0 GR_10_v2	10.07.2013

2.6 IT Product Testing

During the evaluation, all evaluation evidences of TOE were delivered and transferred completely to CCTL by the developers. All the delivered evaluation evidences which include software, documents, etc are mapped to the assurance families of Common Criteria and Common Methodology; so the connections between the assurance families and the evaluation evidences has been established. The evaluation results are available in the Evaluation Technical Report (ETR) of PARS DT-101[4].

The CCTL spent adequate testing effort for the desired resistance of the TOE against attackers with a high attack potential. The evaluators spent several days each for analysing the test specification and ensuring that the specification has been correctly implemented in the test scripts,to create ideas for independent evaluator tests,to ensure that the test environment delivers correct test results and to repeate developer tests as well as carrying out independent tests.

2.7 Evaluated Configuration

This certification covers the following configuration of the TOE: The TOE PARS Digital Tachograph Vehicle Unit, Version 1.0 is an electronic device , consisting of hardware and software, and additionally of documentations (see Table 2).

Evaluation Evidence	Version Number	Date
PARS DT-101 Digital Tachograph Security Target	2.5	27.12.2013
PARS DT-101 Dijital Takograf Araç Ünitesi TOE Tasarım Tanımlama Dokümanı(Design Description Document)	0.5_GR_09	03.07.2013
PARS DT-101 Dijital Takograf Araç Ünitesi Güvenlik Mimarisi Tanımlama Dokümanı(Security Architecture Description Documentation)	1.0	13.06.2013
PARS DT-101 Dijital Takograf Araç Ünitesi Fonksiyonel Tanımlama(Functional Specification Document)	1.9_GR_09	03.07.2013
PARS DT-101 v1.0 Dijital Takograf Kontrolör Kullanıcı Kılavuzu (Controller User Manual Document)	Rev.0 GR_10_v2	10.07.2013
PARS DT-101 Dijital Takograf Araç Ünitesi Ürün Teslim Prosedürü Dokümanı(Delivery Document)	0.3	03.07.2013
PARS DT-101 Dijital Takograf Araç Ünitesi Geliştirme Araçları Dokümanı(Development Tool Documentation)	0.2_GR_11	23.07.2013
PARS DT-101 Dijital Takograf Araç Ünitesi Yaşam Döngüsü Tanımlama Dokümanı(Life Cycle Defination Document)	0.3	03.07.2013
PARS DT-101 Dijital Takograf Araç Ünitesi Konfigürasyon Yönetim Ünitesi(Configuration Management Document)	0.5	12.12.2013
Test Document	0.6	27.12.2013

PARS DT-101 v1.0 Dijital Takograf Sürücü ve Şirket Kullanıcı Kılavuzu (Driver and Company User Manual)	Rev.0 GR_10_v2	10.07.2013
PARS DT-101 v1.0 Dijital Takograf Workshop Kullanıcı Kılavuzu (Workshop User Manual)	Rev.0 GR_10_v2	10.07.2013
PARS DT-101 Dijital Takograf Araç Ünitesi Geliştirme Güvenliği Dokümanı(Development Security Document)	0.3	03.07.2013
PARS DT-101 Dijital Takograf Araç Ünitesi Açıklık Değerlendirme Dokümanı(Vulnerability Assessment Document)	0.1	25.08.2013

Table 2-Documentation

2.8 Results of the Evaluation

Table 3 below provides a complete listing of the Security Assurance Requirements for the TOE. These requirements consists of the Evaluation Assurance Level 4 (EAL 4) components as specified in Part 3 of the Common Criteria, augmented with ATE_DPT.2 and AVA_VAN.5.

Assurance Classes	Component ID	Component Title
Development	ADV_ARC.1	Security Architecture
	ADV_FSP.4	Complete Functional Specification
	ADV_IMP.1	Implementation Represantation
	ADV_INT	-
	ADV_TDS.3	Basic Modular Design
	ADV_SPM	-
Guidance Documents	AGD_OPE.1	Operational User Guidance
	AGD_PRE.1	Preparative Procedures
Life Cycle Support	ALC_CMC.4	Production Support, acceptance procedures and automation
	ALC_CMS.4	Problem tracking CM coverage
	ALC_DVS.1	Identification of security

		measures
	ALC_TAT.1	Well-defined development tools
	ALC_DEL.1	Delivery procedures
	ALC_FLR	-
	ALC_LCD.1	Developer defined life-cycle model
Security Target evaluation	ASE	standard approach for EAL4
Tests	ATE_COV.2	Analysis of coverage
	ATE_DPT.2	Security Enforcing Modules
	ATE_FUN.1	Functional testing
	ATE_IND.2	Independent testing – sample
Vulnerability Assessment	AVA_VAN.5	Advanced methodical vulnerability analysis

T**able 3-**Security Assurance Requirements of the TOE

2.9 Evaluator Comments / Recommendations

No recommendations or comments have been communicated to CCCS by the evaluators related to the evaluation process of "PARS DT-101 v1.0" product, result of the evaluation, or the ETR.

3 SECURITY TARGET

Information about the Security Target document associated with this certification report is as follows:
Name of Document: PARS DT-101 DIGITAL TACHOGRAPH VEHICLE UNIT SECURITY TARGET
Version No.: 2.5
Date of Document: 27.12.2013
This Security Target describes the TOE, intended IT environment, security objectives, security requirements (for the TOE and IT environment), TOE security functions and all necessary rationale.

4 GLOSSARY

CCCS:	Common Criteria Certification Scheme (TSE)
CCTL:	Common Criteria Test Laboratory (OKTEM)
CCMB:	Common Criteria Management Board
CEM:	Common Evaluation Methodology
ETR:	Evaluation Technical Report
IT:	Information Technology
IC:	Integrated Circuit
ST:	Security Target
TOE:	Target of Evaluation
TSF:	TOE Security Function
TSFI:	TSF Interface
SFR:	Security Functional Requirement
EAL:	Evaluation Assurance Level
DES:	Data Encryption Standard
UEKAE:	National Electronics and Cryptology Research Institute
TÜBİTAK:	Turkish Scientific and Technological Research Council
OKTEM:	Common Criteria Test Center (as CCTL)
BİLGEM:	Center of Research For Advanced Technologies of Informatics and Information Security
VU:	Vehicle Unit
PP:	Protection Profile

5 BIBLIOGRAPHY

[1]Common Criteria for Information Technology Security Evaluation, Version 3.1 Revision 3, July 2009
[2]Common Methodology for Information Technology Security Evaluation, CEM, Version 3.1 Revision 3, July 2009
[3] PARS DT-101 DIGITAL TACHOGRAPH VEHICLE UNIT SECURITY TARGET Version: 2.4_GR_06 Date: 13.06.2013
[4]Evaluation Technical Report(Document Code: DTR 26 TR 01),December 16,2013
[5]Appendix 10 of Annex I B of Commission Regulation (EEC) No. 1360/2002 - Generic Security Targets
[6] PARS DT 101 Digital Tachograph Vehicle Unit Security Target, Vers.2.4,13.06.2013
[7] Common Criteria Protection Profile Digital Tachograph – Vehicle Unit (VU PP) Compliant to EU Commission Regulation 1360/2002, Annex I(B), App. 10, Version 1.0, 13th July 2010 Registered and Certified by Bundesamt für Sicherheit in der Informationstechnik (BSI) under the reference BSI-CC-PP-0057.

6 ANNEXES

There is no additional information which is inappropriate for reference in other sections.