



Certification Report

T-Systems-DSZ-CC-04121-2005

**CardOS V4.3B with Application
for Digital Signature**

Siemens AG



Deutsches IT-Sicherheitszertifikat

anerkannt vom
Bundesamt für Sicherheit in der Informationstechnik

T-Systems

CardOS V4.3B with Application for Digital Signature

Siemens AG



DAT-ZE-015/98-01

The product has been evaluated by an accredited and licensed evaluation facility against the Common Criteria Version 2.1, the Common Methodology Part 1 Version 0.6, Part 2 Version 1.0 and the Final Interpretations in accordance with the Common Criteria Version 2.2 and the Common Methodology Part 2, Version 2.2. The result is:

- ▶ **Functionality** **product specific security target**
Common Criteria Part 2 extended

- ▶ **Assurance Package** **Common Criteria Part 3 conformant**
EAL4 augmented by:
 - AVA_MSU.3 Vulnerability Assessment:
Analysis and testing for insecure states
 - AVA_VLA.4 Vulnerability Assessment:
Highly resistant

This certificate is valid only for the evaluated version of the product in connection with the complete certification report and the evaluated configurations described there. Evaluation and certification have been performed in accordance with the rules of the certification scheme of T-Systems and the stipulations from BSI for the "Deutsches IT-Sicherheitszertifikat [German IT Security Certificate]". The rating of the strength of cryptographic algorithms suitable for encryption as well as decryption is excluded from the recognition by BSI.

Registration: Bonn: May 20, 2005

T-Systems

T-Systems-
DSZ-CC-04121-2005

Dr. Heinrich Kersten
Head of the Certification Body

Accredited against EN 45011 by
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Preliminary Remarks

This certification report for the TOE (target of evaluation) CardOS V4.3B with Application for Digital Signature is intended as a formal confirmation for the sponsor concerning the performed evaluation and as a basis for the user to operate the TOE in a secure way.

Copies of this certification report may be obtained from sponsor or – if the sponsor agrees – from the certification body.

The following parts of the certification report contain important information:

- Section 1, para 3: The precise name of the TOE including its version reference: The certificate and the certification report apply only to this TOE and this specific version.
- Section 6, para 28: Specification of the delivery procedure for the TOE. Other delivery procedures may not offer the degree of security required for the assurance level EAL4.
- Section 6, para 29: Specification of the evaluated configuration(s) of the TOE. The certification of the TOE is valid only for the configuration(s) described.
- Section 6, para 30: Specification of the evaluated functionality: Only the security functions described here have been certified.
- Section 6, para 32: Information on the assurance package applied by the evaluation depending on the criteria used.
- Section 6, para 33: Stipulations for the user of the TOE. A secure usage of the TOE may not be possible if these stipulations are not met.

The security target for the TOE provides information on the intended usage of the TOE, the list of TOE components, its security objectives resp. the considered threats and the operational environment. This information should be read carefully. The security target is available as a separate document.

The processes of evaluation and certification are carried out with state-of-the-art expertise, but cannot give an absolute guarantee that the TOE is free of vulnerabilities. With increasing evaluation level however, the probability of undiscovered *exploitable* vulnerabilities decreases significantly. As a prerequisite for this, any requirement and stipulation described in this report, must be met. Otherwise, the evaluation results may not be fully applicable. In such a case, there is a need for an additional analysis whether and to which



degree the TOE may offer security under the modified conditions. The evaluation facility and the certification body can give support to perform this analysis.

When the TOE including its documentation, its delivery procedure or its operational environment is modified, the certification is no longer valid. In this case, a re-certification can be performed which will be documented in technical annexes to this certification report.

If current findings in the field of IT security affect the security of the TOE, technical annexes to this certification report may be issued as well.

The web pages of the certification body (www.t-systems-zert.com) will provide information on

- the issuance of technical annexes to this certification report (technical annexes are numbered consecutively: T-Systems-DSZ-CC-04121-2005/1, .../2,...),
- new TOE versions under evaluation or already certified.

Any warranty for the TOE by T-Systems is excluded.

The certification of the TOE is not meant to be an endorsement by T-Systems for an arbitrary usage of the TOE.

For the certification report: © T-Systems, 2005

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For further information, please contact the certification body:

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Abbreviations

AIS	Anwendungshinweise und Interpretationen zum Schema [Guidance and Interpretations of Scheme Issues] (BSI procedure)
BGBI	Bundesgesetzblatt [German Federal Gazette]
BS	British Standard
BSI	Bundesamt für Sicherheit in der Informationstechnik [(German) Federal Office for Information Security]
CC	Common Criteria for Information Technology Security Evaluation
CEM	Common Methodology for Information Technology Security Evaluation
CSP	Certification Service Provider
DAR	Deutscher Akkreditierungsrat [German Accreditation Council]
DATech	Deutsche Akkreditierungsstelle Technik e.V. [German Accreditation Body Technology]
DIN	Deutsches Institut für Normung e.V. [German Standards Institution]
EAL	Evaluation Assurance Level
ETR	Evaluation Technical Report
ETSI	European Telecommunications Standards Institute
ISO	International Organization for Standardization
IT	Information Technology
ITSEC	Information Technology Security Evaluation Criteria
ITSEF	IT Security Evaluation Facility
ITSEM	Information Technology Security Evaluation Manual
JIL	Joint Interpretation Library
PP	Protection Profile
RegTP	Regulierungsbehörde für Telekommunikation und Post (German) [Regulatory Authority for Telecommunications and Posts]
SF	Security Function
SigG	German Electronic Signature Act
SigV	German Electronic Signature Ordinance



SOF	Strength of (Security) Function
ST	Security Target
TOE	Target of Evaluation
TSF	TOE Security Functions

References

- /AISx/ Anwendungshinweise und Interpretationen zum Schema [Guidance and Interpretations of Scheme Issues], BSI, endorsed versions
- /ALG/ Geeignete Kryptoalgorithmen [Approved Crypto-Algorithms], published in the Bundesanzeiger [German Federal Gazette] by the (German) Regulatory Authority for Telecommunications and Posts, endorsed version
- /BS7799/ BS7799-1:2000 Information technology - Code of practice for information security management (ISO/IEC 17799:2000)
BS7799-2:2002 Information security management systems - Specification with guidance for use
- /CC/ Common Criteria for Information Technology Security Evaluation (ISO/IEC 15408), Version 2.1, August 1999
Part 1: Introduction and general model
Part 2: Security functional requirements
Part 3: Security assurance requirements
(As to CC version 2.2: This version is functionally identical to the above version 2.1 with all interpretations /CINT/ until 31-dec-2003 applied.)
- /CEM/ Common Methodology for Information Technology Security Evaluation
Part 1: Introduction and general model, version 0.6, January 1997
Part 2: Evaluation Methodology, version 1.0, August 1999
Part 2 Supplement CEM-2001/0015R: ALC_FLR - Flaw Remediation, Version 1.1, February 2002
(As to CEM Part 2 version 2.2: This version is functionally identical to CEM Part 2 version 1.0 with all interpretations until 31-dec-2003 applied and in combination with the ALC_FLR supplement v1.1.)
- /CINT/ Common Criteria for Information Technology Security Evaluation: Final Interpretations that apply to CC v2.1, most recently endorsed interpretations, cf. www.commoncriteriaportal.org/public/expert/
- /ETSI/ ETSI TS 101 456: Policy requirements for certification authorities issuing qualified certificates, Version 1.2.1, 2002-04
- /EU-DIR/ Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures



- /EU-REF/ Commission Decision of 14/7/2003 on the publication of reference numbers of generally recognised standards for electronic signature products
- /ITSEC/ Information Technology Security Evaluation Criteria (ITSEC), version 1.2 (1991), ISBN 92-826-3004-8
- /ITSEM/ Information Technology Security Evaluation Manual (ITSEM), version 1.0 (1993), ISBN 92-826-7087-2
- /JIL/ ITSEC Joint Interpretation Library, version 2.0, November 1998
- /SiGAK/ Spezifizierung der Einsatzbedingungen für Signaturanwendungskomponenten: Arbeitsgrundlage für Entwickler / Hersteller und Prüf- / Bestätigungsstellen [Specification of the Operational Environment for Signature Application Components: Basics for Developers / Manufacturers and Assessment / Certification Bodies], Regulierungsbehörde für Telekommunikation und Post, version 1.1, December 15, 2003
- /SigG/ Gesetz über Rahmenbedingungen für elektronische Signaturen und zur Änderung weiterer Vorschriften (Signaturgesetz – SigG) [Law Governing Framework Conditions for Electronic Signatures and Amending Other Regulations] as of May 16, 2001 (BGBl. I, p. 876 ff.), recently revised by Article 1 of the first act to adapt the Signature Act (1. SigGÄndG) as of January 04, 2005 (BGBl. I p. 2)
- /SigV/ Verordnung zur elektronischen Signatur (Signaturverordnung – SigV) [German Electronic Signature Ordinance] as of 16.11.2001 (BGBl. I., p. 3074 ff.), recently revised by Article 2 of the first act to adapt the Signature Act (1. SigGÄndG) as of January 04, 2005 (BGBl. I p. 2)
- /SigG-A/ Austria: 190. Bundesgesetz über elektronische Signaturen [190. Federal Act on Electronic Signatures], www.a-sit.at/informationen
- /SigV-A/ Austria: 30. Verordnung des Bundeskanzlers über elektronische Signaturen, [30. Ordinance of the Chancellor on Electronic Signatures], www.a-sit.at/informationen
- /SigG-CH/ Switzerland: Bundesgesetz über die elektronische Signatur [Federal Act on the Electronic Signature], www.sas.ch/de/pki_isms
- /SigV-CH/ Switzerland: Verordnung über die elektronische Signatur [Ordinance on the Electronic Signature], www.sas.ch/de/pki_isms
- /SigR-CH/ Switzerland: Technische und administrative Vorschriften über Zertifizierungsdienste im Bereich der elektronischen Signatur [Technical and Administrative Regulation on Certification Services in the Area of of Electronic Signature], www.sas.ch/de/pki_isms



Glossary

This glossary provides explanations of terms used within the certification scheme of T-Systems, but does not claim completeness or general validity. The term *security* here is always used in the context of information technology.

For criteria specific terms cf. the glossary in the relevant security criteria.

Accreditation	A process performed by an accreditation body to confirm that an evaluation facility [resp. a certification body] complies with the requirements of the relevant standard ISO 17025 [resp. EN 45011].
Audit	A procedure of collecting evidence that a process works as required.
Availability	Classical security objective: Data should always be available to authorised persons, i.e. this data should neither be made inaccessible by unauthorised persons nor be rendered unavailable due to technical defects.
Business Process	Cf. Process
Certificate	Summary representation of a certification result, issued by the certification body.
Certification	Independent confirmation of the correctness of an evaluation. This term is also used to describe the overall process consisting of evaluation, monitoring and subsequent issue of certificates and certification reports.
Certification Body	An organisation which performs certifications.
Certification Report	Report on the object, procedures and results of a certification; this report is issued by the certification body.
Certification Scheme	A summary of all principles, regulations and procedures applied by a certification body.
Certification Service Provider	An institution (named “certification service provider” in the German Electronic Signature Act) that confirms the relationship between signature keys and individuals by means of electronic certificates.
Certifier	Employee at a certification body authorised to monitor evaluations and to carry out the certification.



Confidentiality	Classical security objective: Data should only be accessible to authorised persons.
Evaluation	Assessment of an (IT) product, system or service against published IT security criteria.
Evaluation (Assurance) Level	Level of assurance gained by evaluation; level of trust that a TOE meets its security target (according to ITSEC / CC).
Evaluation Facility	The organisational unit which performs evaluations (ITSEF).
Evaluation Technical Report	Final report written by an evaluation facility on the procedure and results of an evaluation.
Evaluator	Person in charge of an evaluation at an evaluation facility.
Integrity	Classical security objective: Only authorised persons should be capable of modifying data.
IT Product	Software and/or hardware which can be procured from a supplier (manufacturer, distributor).
IT Security Management	Implemented procedure to install and maintain IT security within an organisation.
IT Service	A service supported by IT systems.
IT System	An inherently functional combination of IT products. (ITSEC:) A real installation of IT products with a known operational environment.
License Agreement	Agreement between an Evaluation Facility and a Certification Body concerning the procedure and responsibilities of a joint assessment / evaluation and certification project.
Milestone Plan	A project schedule for the implementation of evaluation and certification processes.
Monitoring	Procedure implemented by the certification body in order to check whether an evaluation is performed correctly (compliance with criteria, use of standard processes and ratings etc.).
Problem Report	Report sent by an evaluation facility to the certification body and concerning special problems during evaluation, e. g. concerning the interpretation of IT security criteria.
Process	Sequence of networked activities (process elements) performed within a given environment – with the objective to provide a certain service.
Product Certification	Certification of IT products.



Re-Certification	Renewed certification of a previously certified object due to a new version following modification; re-certification might also be required after a change of tools, production / delivery processes and security criteria.
Security Certificate	Cf. „Certificate“.
Security Confirmation	SigG: A legally binding document stating conformity to SigG / SigV.
Security Criteria	Normative document that may contain technical requirements for products, systems and services, but at least describes the evaluation of such requirements.
Security for Business	Program of T-Systems offering service modules for enterprise IT security. The modules contain consulting, awareness, analyses, penetration tests, audits as well as procedures of registration, awarding seals and certification.
Security Function	Technical function or measure to counteract certain threats.
Security Target	Document specifying a TOE and describing its configuration and environment, security objectives and threats, met security requirements and corresponding rationale; used as a basis for the evaluation of the TOE.
Service	Here: activities offered by a company, provided by its (business) processes and usable by a client.
System Certification	Certification of an installed IT system.
Target of Evaluation	An IT product or system and its associated administrator and user guidance documentation that is the subject of an evaluation.
Trust Centre	Cf. Certification Service Provider



Security Criteria Background

This chapter gives a survey on the applied criteria and ratings. Excerpts from CC and CEM are printed in *italics*.

In general, the security objectives for a TOE (target of evaluation) consist of requirements for confidentiality, availability and / or integrity of certain data objects. Such security objectives are defined by the sponsor of the evaluation. Normally, the sponsor of a product evaluation is the product's developer or vendor; in case of a system evaluation it is the owner of the system.

The defined security objectives are exposed to threats leading to attacks if unauthorised subjects try to read, modify data objects or prevent other authorised subjects to access such objects. (TOE) security functions provided by the considered TOE are intended to counter these threats.

In CC part 2, requirements to security functions are described by "functional components". The reference "CC part 2 conformant" in certification reports indicates that only functional components from CC part 2 have been selected to describe the requirements. The reference "CC part 2 extended" indicates that the requirements include functional components not in CC part 2.

Even if a TOE security function cannot be bypassed, deactivated, or corrupted, it may still be possible to defeat it because there is a vulnerability in the concept of its underlying security mechanisms. For those functions a qualification of their security behaviour can be made using the results of a quantitative or statistical analysis of the security behaviour of these mechanisms and the effort required to overcome them. The qualification is made in the form of a strength of TOE security function claim.

The strength of function (SOF) expresses *the minimum efforts assumed necessary to defeat its expected security behaviour by directly attacking its underlying security mechanisms*. Three levels of SOF have been defined in the CC:

SOF basic: *A level of the TOE strength of function where analysis shows that the function provides adequate protection against casual breach of TOE security by attackers possessing a low attack potential.*

SOF medium: *A level of the TOE strength of function where analysis shows that the function provides adequate protection against straightforward or intentional breach of TOE security by attackers possessing a moderate attack potential.*



SOF high: *A level of the TOE strength of function where analysis shows that the function provides adequate protection against deliberately planned or organised breach of TOE security by attackers possessing a high attack potential.*

In the view of CC, trustworthiness of a TOE is given when there is sufficient assurance that the TOE meets its security objectives. The CC philosophy asserts that greater assurance results from the application of greater evaluation effort, and that the goal is to apply the minimum effort required to provide the necessary level of assurance. The increasing level of effort is based upon

- scope - that is, the effort is greater because a larger portion of the IT product or system is included;
- depth - that is, the effort is greater because it is deployed to a finer level of design and implementation detail;
- rigour - that is, the effort is greater because it is applied in a more structured, formal manner.

The following table gives a survey on the *assurance classes* and *assurance families* defined in CC part 3 including their abbreviated name as used in certification reports and certificates.

Assurance Class	Assurance Family	Abbreviated Name
ACM: Configuration management	CM automation	ACM_AUT
	CM capabilities	ACM_CAP
	CM scope	ACM_SCP
ADO: Delivery and operation	Delivery	ADO_DEL
	Installation, generation and start-up	ADO_IGS
ADV: Development	Functional specification	ADV_FSP
	High-level design	ADV_HLD
	Implementation representation	ADV_IMP
	TSF internals	ADV_INT
	Low-level design	ADV_LLD
	Representation correspondence	ADV_RCR
AGD: Guidance documents	Security policy modeling	ADV_SPM
	Administrator guidance	AGD_ADM
	User guidance	AGD_USR



Assurance Class	Assurance Family	Abbreviated Name
ALC: Life cycle support	Development security	ALC_DVS
	Flaw remediation	ALC_FLR
	Life cycle definition	ALC_LCD
	Tools and techniques	ALC_TAT
ATE: Tests	Coverage	ATE_COV
	Depth	ATE_DPT
	Functional tests	ATE_FUN
	Independent testing	ATE_IND
AVA: Vulnerability assessment	Covert channel analysis	AVA_CCA
	Misuse	AVA_MSU
	Strength of TOE security functions	AVA_SOF
	Vulnerability analysis	AVA_VLA

Assurance families are compiled from assurance components. From the numerous assurance components in CC part 3, seven evaluation assurance levels (EAL) have been developed defining requirements to the developer of the TOE and the evaluator. EAL1 denotes the lowest, EAL7 the highest level. Thus, trustworthiness of a product or system can be measured by an assurance level. Not all assurance components from CC part 3 have been used to define the EALs.

The following excerpts from the CC characterise the evaluation assurance levels.

EAL1 functionally tested

EAL1 is applicable where some confidence in correct operation is required, but the threats to security are not viewed as serious. It will be of value where independent assurance is required to support the contention that due care has been exercised with respect to the protection of personal or similar information.

EAL1 provides an evaluation of the TOE as made available to the customer, including independent testing against a specification, and an examination of the guidance documentation provided. It is intended that an EAL1 evaluation could be successfully conducted without assistance from the developer of the TOE, and for minimal outlay.

An evaluation at this level should provide evidence that the TOE functions in a manner consistent with its documentation, and that it provides useful protection against identified threats.



EAL2 structurally tested

EAL2 requires the co-operation of the developer in terms of the delivery of design information and test results, but should not demand more effort on the part of the developer than is consistent with good commercial practice. As such it should not require a substantially increased investment of cost or time.

EAL2 is therefore applicable in those circumstances where developers or users require a low to moderate level of independently assured security in the absence of ready availability of the complete development record. Such a situation may arise when securing legacy systems, or where access to the developer may be limited.

EAL3 methodically tested and checked

EAL3 permits a conscientious developer to gain maximum assurance from positive security engineering at the design stage without substantial alteration of existing sound development practices.

EAL3 is applicable in those circumstances where developers or users require a moderate level of independently assured security, and require a thorough investigation of the TOE and its development without substantial re-engineering.

EAL4 methodically designed, tested, and reviewed

EAL4 permits a developer to gain maximum assurance from positive security engineering based on good commercial development practices which, though rigorous, do not require substantial specialist knowledge, skills, and other resources. EAL4 is the highest level at which it is likely to be economically feasible to retrofit to an existing product line.

EAL4 is therefore applicable in those circumstances where developers or users require a moderate to high level of independently assured security in conventional commodity TOEs and are prepared to incur additional security-specific engineering costs.

EAL5 semiformally designed and tested

EAL5 permits a developer to gain maximum assurance from security engineering based upon rigorous commercial development practices supported by moderate application of specialist security engineering techniques. Such a TOE will probably be designed and developed with the intent of achieving EAL5 assurance. It is likely that the additional costs attributable to the EAL5 requirements, relative to rigorous development without the application of specialised techniques, will not be large.

EAL5 is therefore applicable in those circumstances where developers or users require a high level of independently assured security in a planned development and require a rigorous development approach without incurring unreasonable costs attributable to specialist security engineering techniques.



EAL6 semiformally verified design and tested

EAL6 permits developers to gain high assurance from application of security engineering techniques to a rigorous development environment in order to produce a premium TOE for protecting high value assets against significant risks.

EAL6 is therefore applicable to the development of security TOEs for application in high risk situations where the value of the protected assets justifies the additional costs.

EAL7 formally verified design and tested

EAL7 is applicable to the development of security TOEs for application in extremely high risk situations and/or where the high value of the assets justifies the higher costs. Practical application of EAL7 is currently limited to TOEs with tightly focused security functionality that is amenable to extensive formal analysis.

The following table from CC part 3 displays for each EAL its component structure. The precise definition of each component is given in CC part 3. The figures denote the component number within a family.

Assurance Class	Assurance Family	Assurance Components by Evaluation Assurance Level						
		EAL1	EAL2	EAL3	EAL4	EAL5	EAL6	EAL7
ACM: Configuration management	ACM_AUT				1	1	2	2
	ACM_CAP	1	2	3	4	4	5	5
	ACM_SCP			1	2	3	3	3
ADO: Delivery and operation	ADO_DEL		1	1	2	2	2	3
	ADO_IGS	1	1	1	1	1	1	1
ADV: Development	ADV_FSP	1	1	1	2	3	3	4
	ADV_HLD		1	2	2	3	4	5
	ADV_IMP				1	2	3	3
	ADV_INT					1	2	3
	ADV_LLD				1	1	2	2
	ADV_RCR	1	1	1	1	2	2	3
AGD: Guidance documents	AGD_ADM	1	1	1	1	1	1	1
	AGD_USR	1	1	1	1	1	1	1



Assurance Class	Assurance Family	Assurance Components by Evaluation Assurance Level						
		EAL1	EAL2	EAL3	EAL4	EAL5	EAL6	EAL7
ALC: Life cycle support	ALC_DVS			1	1	1	2	2
	ALC_FLR							
	ALC_LCD				1	2	2	3
	ALC_TAT				1	2	3	3
ATE: Tests	ATE_COV		1	2	2	2	3	3
	ATE_DPT			1	1	2	2	3
	ATE_FUN		1	1	1	1	2	2
	ATE_IND	1	2	2	2	2	2	3
AVA: Vulnerability assessment	AVA_CCA					1	2	2
	AVA_MSU			1	2	2	3	3
	AVA_SOF		1	1	1	1	1	1
	AVA_VLA		1	1	2	3	4	4

A higher level of assurance than that provided by a given EAL can be achieved by

- including additional assurance components (e.g. from other assurance families); or
- replacing an assurance component with a higher level assurance component from the same assurance family.

For a specific TOE, such extensions or replacements are reflected by the corresponding certification report: The reference "CC part 3 conformant" indicates that only assurance components from CC part 3 have been used. The reference "CC part 3 extended" indicates that the assurance requirements include assurance components not in CC part 3.



1 Sponsor and Target of Evaluation

- ¹ Sponsor of the certification is Siemens AG, Charles-de-Gaulle Strasse 2, D-81737 Munich, Germany.
- ² The sponsor applied for a certificate compliant with the service type 04: „Deutsches IT-Sicherheitszertifikat [German IT Security Certificate]“ by the certification body of T-Systems.
- ³ Target of Evaluation (TOE) is the product „CardOS V4.3B with Application for Digital Signature“ , in the sequel abbreviated as: CardOS V4.3B.
- ⁴ The TOE is a Smart Card Operating System with Digital Signatures Application.
- ⁵ The sponsor provided the security target for the TOE in English language. The security target, final version 0.80 as of Apr 05, 2005, is available as a separate document.
- ⁶ The security target references the Common Criteria as criteria and EAL4 as assurance level. The (minimum) strength of TOE security functions (SOF) is claimed as “high“.

2 Relevant Normative Documents for the Evaluation¹

- ⁷ As applied by the sponsor, the evaluation of the TOE was carried out against the
 - Common Criteria for Information Technology Security Evaluation (ISO/IEC 15408) /CC/.
- ⁸ In addition, the following documents were relevant for the evaluation and certification:
 - Common Methodology for Information Technology Security Evaluation /CEM/,
 - Common Criteria for Information Technology Security Evaluation: Final Interpretations that apply to CC v2.1 /CINT/,
 - Anwendungshinweise und Interpretationen zum Schema [Guidance and Interpretations of Scheme Issues], BSI /AIS/,
 - Work instruction „04: Deutsches IT-Sicherheitszertifikat [German IT Security Certificate]“ by T-Systems (endorsed version).

¹ The precise bibliographical data for these documents can be found in the section "References" in this certification report.



3 Evaluation

- ⁹ The evaluation of the TOE by the Prüfstelle für IT-Sicherheit of T-Systems GEI GmbH was sponsored by Siemens AG.
- ¹⁰ The evaluation facility accredited against ISO 17025 has a valid license of the BSI and of the certification body for the scope of the evaluation.
- ¹¹ The evaluation was carried out under the terms of the certification scheme of T-Systems.
- ¹² The Evaluation Technical Report (ETR), version 1.01 and dated May 20, 2005, provided by the evaluation facility, contains the outcome of the evaluation.
- ¹³ The evaluation was completed on May 20, 2005.

4 Certification

- ¹⁴ The certification scheme of T-Systems is described on the web pages of the certification body (www.t-systems-zert.com).
- ¹⁵ The certification body of T-Systems operates in compliance with EN 45011 and has a corresponding accreditation by DATech e.V. for certifications against ITSEC and Common Criteria (DAR registration code DAT-ZE-015/98-01).
- ¹⁶ The certification of the TOE was carried out under registration code T-Systems-DSZ-CC-04121-2005.
- ¹⁷ In compliance with the criteria, the evaluation was monitored by the certification body.
- ¹⁸ The certification of the TOE was carried out according to service type „04:Deutsches IT-Sicherheitszertifikat [German IT Security Certificate]" as applied for by the sponsor.
- ¹⁹ The certification of the TOE may be subject to stipulations and further guidelines, cf. section 6 for details.
- ²⁰ A summary of the results is given by the security certificate T-Systems-DSZ-CC-04121-2005 as of May 20, 2005 reproduced on page 2 in this report.
- ²¹ The status of the TOE being certified is published on the web pages of the certification body (www.t-systems-zert.com).
- ²² The certification report is available for download under www.t-systems-zert.com.



5 National and international acceptance

- ²³ The certificate T-Systems-DSZ-CC-04121-2005 as a "Deutsches IT-Sicherheitszertifikat [German IT Security Certificate]" carries the logo officially approved by the (German) Federal Office for Information Security (BSI).
- ²⁴ The status of the TOE being certified will be published in the brochures BSI 7148 / 7149 of the BSI.
- ²⁵ The certificate is recognised by the BSI as equal to their own certificates.
- ²⁶ As contractually agreed, the BSI explicitly confirms this equivalence in the international context.
- ²⁷ A further international acceptance of the certification results is achieved through the multi-lateral mutual recognition agreement of EA, ILAC and IAF signed by the accreditor DATech e.V. (cf. www.datech.de for details).

6 Summary of Results

- ²⁸ The delivery procedure for the TOE is described by the sponsor as follows:

The Card Manufacturer delivers the TOE to a Trust Center (Certification Services Provider) by courier. As an alternative possibility, the Card Manufacturer may personally hand over the TOE to a Trust Center (pick-up at the Card Manufacturer's site by a Trust Center).

Delivery of a personalized or pre-personalized TOE from the Trust Center to a card holder lies in the Trust Center's responsibility and shall be described in its security concept.

This delivery procedure meets the requirements of the national certification body for the assurance level EAL4 of the CC.

- ²⁹ The following configurations of the TOE were evaluated:

The parts of the TOE as delivered by the card manufacturer are listed in tables 1 and 2 (cf. para 33). The TOE has a single configuration. The TOE can be parameterized by three parameters which once fixed during personalization are not subject to alteration. These parameters are:

- Length of modulus of the RSA pair of keys: 1024 to 2048, incremented by 8
- PUK object defined and useable: yes / no



- Number of electronic signatures which may be generated by the TOE after single authentication without re-authentication: 1 to 254 incremented by 1 or limit not controlled by the TOE

The evaluation result is only valid for the configurations of the TOE described above.

- ³⁰ Based on the security target and the outcome of the evaluation, the TOE has the following security functionality (cf. the Security Target for details):

SF1 User Identification and Authentication, SF2 Access Control, SF3 SCD/SVD Pair Generation, SF4 Signature Creation, SF5 Protection

- ³¹ As to the strength of the TOE security functions the evaluation provided the following result (cf. the Security Target for details):

The TOE security functions SF1, SF3, SF4 have a minimum strength of SOF-high.

- ³² The evaluation provided the following results:

The security target meets the requirements of the corresponding class ASE (Security Target Evaluation) of the Common Criteria.

The functional requirements are CC Part 2 extended.

The assurance package is CC Part 3 conformant.

The TOE meets the requirements of the evaluation assurance level EAL4 of the Common Criteria. The assurance components for this level are given in the section Security Criteria Background starting at page 12 in this report.

Augmentation is described as follows:

AVA_MSU.3 Vulnerability Assessment:
Analysis and testing for insecure states

AVA_VLA.4 Vulnerability Assessment:
Highly resistant

- ³³ The following stipulations for the secure usage of the TOE have to be met:

1. Among others, the TOE may provide RSA key pairs with a key length of 1024 bit. This key length was approved by the (German) Regulatory Authority for Telecommunications and Posts (RegTP) for use according to the German Electronic Signature Act until the end of 2007. However, it is recommended to use greater key sizes (e.g. 2048 bit).



2. The number of TOE devices (i.e. smart cards) issued for operational use must not exceed 83 million.
3. Trust Centers / Registration Authorities issuing the TOE smart cards have to ensure that, except for the well-defined software in the following table 1, no other executable code is loaded onto the smart card. In particular, it is not allowed to load any other package than the Service Pack and the CERT Package. Trust Centers and Registration Authorities have to ensure that misuse of the functionality to load packages is effectively prevented.

No.	Type	Term	Version	Date	Form of delivery
1	Software: operating system	CardOS V4.3B	C808	-	loaded in ROM / EEPROM
2	Software: application / data structure	SigG application	cf. Table 2 below and footnote2	cf. Table 2, below and footnote2	Personalization Script Files (.CSF)
3	Software	Service Pack	1.11	22.04.2005	Package contained in scripts
4	Software	CERT Package	1.4	28.04.2005	package contained in scripts
5	Documentation	CardOS V4.3 User's Manual	1.0	06/2004	Paper form or PDF- File
6	Documentation	User's Manual CardOS V4.3, Correction Sheet	0.1	05/2005	Paper form or PDF- File
7	Documentation	CardOS V4.3B Administrator Guidance	0.7	10.05.2005	Paper form or PDF- File
8	Documentation	Application SigG, CardOS V4.3B	0.2	08.04.2005	Paper form or PDF- File
9	Documentation	CardOS V4.3B User Guidance	0.7	09.05.2005	Paper form or PDF- File

Table 2: TOE components and deliverables

² Sequences for centralised and decentralised personalisation, PersAppSigG(_withoutPUK).csf (Rev. 1.5), Pre-PersAppSigG(_withoutPUK).csf (Rev. 1.5) and Post-PersAppSigG(_withoutPUK).csf (Rev. 1.3) with five Defines_XXXX.csf (XXXX=1024, 1280, 1536, 1792 and 2048) (Rev. 1.2), Siemens AG, 09.05.2005



No.	Term	Revision	Date
a	PersAppSigG_withoutPUK.csf	1.5	09.05.2005
b	PersAppSigG.csf	1.5	09.05.2005
c	Pre-PersAppSigG.csf	1.5	09.05.2005
d	Pre-PersAppSigG_withoutPUK.csf	1.5	09.05.2005
e	Post-PersAppSigG.csf	1.3	09.05.2005
f	Post-PersAppSigG_withoutPUK.csf	1.3	09.05.2005
g	Defines_1024.csf	1.2	09.05.2005
h	Defines_1280.csf	1.2	09.05.2005
i	Defines_1536.csf	1.2	09.05.2005
j	Defines_1792.csf	1.2	09.05.2005
k	Defines_2048.csf	1.2	09.05.2005

Table 2: Script components and deliverables

- ³⁴ For the validity of the certification, the following stipulations have to be met by the sponsor:
- The number of TOE devices (i.e. smart cards) issued for operational use must not exceed 83 million.

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