Digital Tachograph System

Turkish Authority (TR-A) Policy

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1 Introduction

This document is the **Turkish** National Authority Policy for the Digital Tachograph System. This Policy is in accordance with:

- European Agreement Concerning the Work of Crews of Vehicles Engaged in International Road Transport (AETR) concluded at Geneva on 1 July 1970
- Council Regulation (EEC) No 3821/85
- Council Regulation (EC) No 2135/98
- Commission Regulation (EC) No 1360/2002
- Supplement to the Memorandum of Understanding between the United Nations Economic Commission for European and the European Commission Services, 5 December 2012
- Memorandum of Understanding between the European Commission services and UNECE, 1 July 2015
- the "Guideline and Template National Certification Authority policy" – Version 1.0
- the "Common Security Guidelines" – Version 1.0
- Digital Tachograph System European Root Policy, Version 2.1; European Commission Joint Research Center Publication 53429; 28th July 2009; published at http://dtc.ec.europa.eu.

1.1 Responsible organizations

Responsible for this Policy is the Directorate General for Road Transport Regulation of Ministry of Transport, Maritime Affairs and Communications of the Republic of Turkey acting as Contracting Party Authority (**CPA**), further referred to as **TR-A**[1].

Ministry of Transport, Maritime Affairs and Communications of the Republic of Turkey
Directorate General for Road Transport Regulation
Hakki Turaylic Cad. No: 5
Emek/Ankara
TURKEY

The appointed Card Issuing Authority (**CIA**) is the “The Union of Chambers and Commodity Exchanges of Turkey” (TOBB), further referred to as **TR-CIA[2].**

The Union of Chambers and Commodity Exchanges of Turkey (TOBB)
Dumlupınar Bulvarı No:252
(Eskişehir Yolu 9. Km.)
06530 /Ankara
TURKEY

The appointed Certification Authority (**CA**) is the “The Union of Chambers and Commodity Exchanges of Turkey” (TOBB), further referred to as **TR-CA[3].**

The Union of Chambers and Commodity Exchanges of Turkey (TOBB)
Dumlupınar Bulvarı No:252
(Eskişehir Yolu 9. Km.)
06530 /Ankara
TURKEY

The appointed Card Personalizing organization (**CP**) is the “The Union of Chambers and Commodity Exchanges of Turkey” (TOBB), further referred to as **TR-CP[4]**.

[1] **TR-A** - Turkish Authority
[2] **TR-CIA** - Turkish Card Issuing Authority
[3] **TR-CA** - Turkish Certification Authority
[4] **TR-CP** - Turkish Card Personalizing Organization

The Union of Chambers and Commodity Exchanges of Turkey (TOBB)
Dumlupınar Bulvarı No:252
(Eskişehir Yolu 9. Km.)
06530 /Ankara
TURKEY

“The Union of Chambers and Commodity Exchanges of Turkey” (TOBB) may subcontract parts of its processes as TR-CA or TR-CP to subcontractors, called Service Agencies. The use of Service Agencies in no way diminishes its overall responsibilities as TR-CA and TR-CP.

Manufacturers of vehicle-units and motion-sensors:

ASELSAN A.Ş.
Mehmet Akif Ersoy Mahallesi
296. Cadde No:16 06370
Yenimahalle-Ankara, TURKEY

PARS AR-GE VE BİLGİ TEKNOLOJİLERİ LTD. ŞTİ.
Kocaeli Üniversitesi Teknopark
Yenikoy Yerleşkesi,
B42 Vatan Caddesi No:83 41275
Kocaeli, TURKEY

1.2 Approval

This Policy is approved for the European Commission by the Digital Tachograph Root Certification Authority at … ……… 2016.

European Commission
DG JRC – IPSC Institute
Digital Citizen Security Unit
Via E. Fermi, 2749 – TP 361 –I – 21027 Ispra (VA) Italy

1.3 Availability and contact details

This Policy is publicly available on the website staum.tobb.org.tr. Questions concerning this Policy should be addressed to:

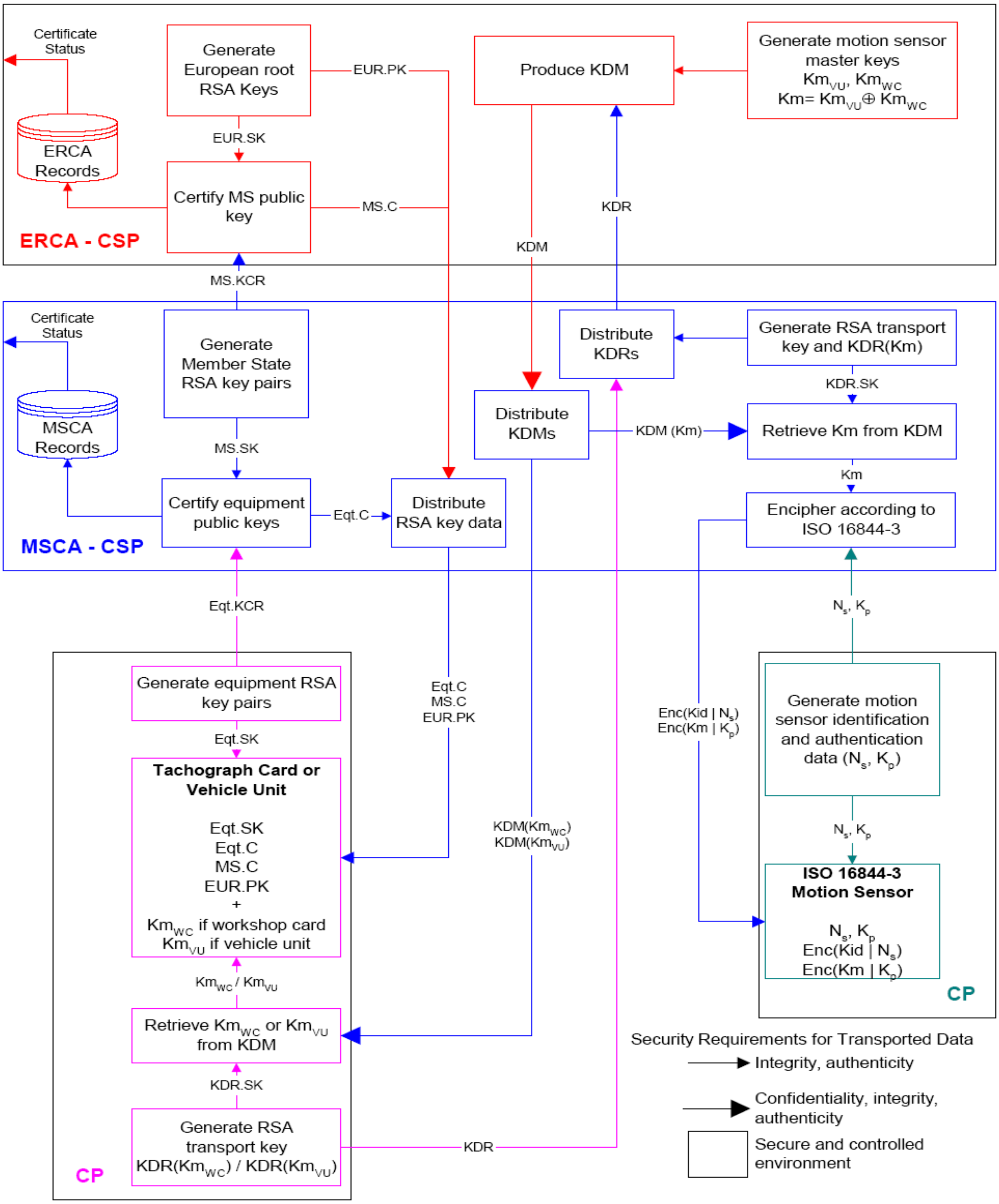
Ministry of Transport, Maritime Affairs and Communications
Directorate General for Road Transport Regulation
Hakki Turaylic Cad. No: 5
Emek/Ankara
TURKEY

2 Scope and applicability

[r1] This Policy is valid for the Tachograph system only.

[r2] The keys and certificates issued by the TR-CA are only for use within the Tachograph system.

[r3] The cards issued by the system are only for use within the Tachograph system.
The scope of this Policy within the Tachograph system is shown in the figure below.


Certificate Status
ERCA Records
ERCA - CSP
Generate European root RSA Keys
EUR.PK
EUR.SK
Certify MS public key
MS.C
Produce KDM
Generate motion sensor master keys Km_{VU}, Km_{WC}
$Km= Km_{VU} \oplus Km_{WC}$
KDR
KDM
MS.KCR
Certificate Status
MSCA Records
MSCA - CSP
Generate Member State RSA key pairs
MS.SK
Certify equipment public keys
Eqt.C
Distribute RSA key data
Distribute KDMs
Distribute KDRs
Generate RSA transport key and KDR(Km)
KDR.SK
KDM (Km)
Retrieve Km from KDM
Km
Encipher according to ISO 16844-3
Eqt.KCR
N_s, K_p
Generate equipment RSA key pairs
Eqt.SK
Tachograph Card or Vehicle Unit
Eqt.SK
Eqt.C
MS.C
EUR.PK
+
Km_{WC} if workshop card
Km_{VU} if vehicle unit
Eqt.C
MS.C
EUR.PK
Km_{WC} / Km_{VU}
Retrieve Km_{WC} or Km_{VU} from KDM
KDR.SK
Generate RSA transport key $KDR(Km_{WC})$ / $KDR(Km_{VU})$
KDR
CP
$KDM(Km_{WC})$
$KDM(Km_{VU})$
Enc(Kid | N_s)
Enc(Km | K_p)
Generate motion sensor identification and authentication data (N_s, K_p)
N_s, K_p
ISO 16844-3 Motion Sensor
N_s, K_p
Enc(Kid | N_s)
Enc(Km | K_p)
CP
Security Requirements for Transported Data
Integrity, authenticity
Confidentiality, integrity, authenticity
Secure and controlled environment

3 General provisions

This section contains provisions relating to the respective obligations of TR-A, TR-CIA, TR-CA, TR-CP, Service Agencies and users, and other issues pertaining to law and dispute resolution.

3.1 Obligations

This section contains provisions relating to the respective obligations of:

- TR-A and TR-CIA
- TR-CA and Service Agency (if any)
- TR-CP and Service Agency (if any)
- Users (Cardholders, vehicle unit manufacturers and motion sensor manufacturers)

3.1.1 TR-A and TR-CIA obligations

With regard to this Policy, the TR-A and TR-CIA have the following obligations.

[r4] The TR-A:

a) Maintains this Policy
b) Appoints a TR-CA and a TR-CP
c) Shall audit the appointed TR-CA and TR-CP including Service Agencies
d) Shall execute or arrange for inspection of the TR-CA, the TR-CP, the TR-CIA, the vehicle unit and motion sensor manufacturers and further external service providers, if necessary,
e) Approves the Practice Statement (PS) of the TR-CA, the TR-CP, manufacturers of vehicle units and manufacturers of motion sensors besides and the PS of other external service providers, Informs the appointed parties about this Policy
f) Lets this Policy be approved by the Commission

[r5] The TR-CIA shall:

a) Ensure that correct and relevant user information from the application process is input to the TR-CA and TR-CP
b) Inform the users of the requirements in this policy connected to the use of the system, i.e. the Cardholders, the vehicle unit manufacturers and the motion sensor manufacturers
c) Immediately inform the TR-A and if necessary the ERCA about all security-relevant incidents related to production, personalization and use of their equipment as well as the keys and certificates integrated in them.

3.1.2 TR-CA obligations

[r6] The appointed TR-CA shall:

a) Carry out, within the scope of its operations, the requirements of Regulation (EEC) 3821/85, (EC) 2135/98 and (EC) 1360/2002, of all the relevant legal provisions, the Root Policy and this TR-A Policy,
b) Publish a TR-CA Practice Statement (TR-CA PS) that includes reference to this Policy, to be approved by the TR-A
c) Maintain sufficient organizational and financial resources to operate in conformity with the requirements laid down in this Policy, in particular to bear the risk of liability damages
d) *Immediately inform the TR-A and if necessary the ERCA about all security-relevant incidents related to production, personalization and use of their equipment as well as the keys and certificates integrated in them.*

[r7] The TR-CA shall ensure that all requirements on TR-CA, as detailed in this policy, are implemented.

[r8] The TR-CA has the responsibility for conformance with the procedures prescribed in this policy, even when the TR-CA functionality is undertaken by subcontractors, Service Agencies. The TR-CA is responsible for ensuring that any Service Agency provides all its services consistent with its Practice Statement (PS) and this Policy.

3.1.3 TR-CP obligations

[r9] The appointed TR-CP (card personalization organization) has to:

a) Carry out, within the scope of its operations, the requirements of Regulation (EEC) 3821/85, (EC) 2135/98 and (EC) 1360/2002, of all the relevant legal provisions, the Root Policy and this TR-A Policy,
b) Publish a TR-CP Practice Statement (TR-CP PS) that includes reference to this Policy, to be approved by the TR-A
c) Maintain sufficient organizational and financial resources to operate in conformity with the requirements laid down in this Policy, in particular to bear the risk of liability damages
d) Immediately inform the TR-A and if necessary the ERCA about all security-relevant incidents related to production, personalization and use of their equipment as well as the keys and certificates integrated in them.

[r10] The TR-CP shall ensure that all requirements on it, as detailed in this policy, are implemented.

[r11] The TR-CP has the responsibility for conformance with the procedures prescribed in this policy, even when the TR-CP functionality is undertaken by subcontractors, Service Agencies.

3.1.4 Service Agency obligations

[r12] Service Agencies (if applicable) have obligations towards the TR-CA or TR-CP and the users according to contractual agreements.

3.1.5 Cardholder obligations

[r13] The TR-CIA shall oblige, through agreement (see 5.1.2), the user (or user's organization) to fulfill the following obligations:

a) accurate and complete information is submitted to the TR-CIA in accordance with the requirements of this policy, particularly with regards to registration;
b) the keys and certificate are only used in the Tachograph system;
c) the card is only used in the Tachograph system;
d) reasonable care is exercised to avoid unauthorized use of the equipment private key and card;
e) the user may only use his own keys, certificate and card (AETR article 11.4.a);
f) a user may have only one valid driver card (AETR article 11.4.a);
g) a user may only under very special, and duly justified, circumstances have both a workshop card and a hauling company card (AETR Appendix 1B VI: 1), or both a workshop card and a driver card, or several workshop cards
h) the user shall not use a damaged or expired card (AETR article 11.4.a);
i) the user shall notify the TR-CIA without any reasonable delay if any of the following occur up to the end of the validity period indicated in the certificate:
    – the equipment private key or card has been lost, stolen, damaged, malfunctioned or potentially compromised; or
    – the certificate content is, or becomes, inaccurate.

3.1.6 Vehicle unit and motion sensor manufacturers' obligations

Manufacturers of vehicle units and **manufacturers of motion sensors** have to especially ensure that they

a) observe the requirements, which are relevant to them, of Regulation (EEC) 3821/85, (EC)

2135/98 and (EC) 1360/2002, of all other laws and decrees relevant in this regard, especially of this TR-A Policy, to the best of their knowledge and according to the respective current technological developments,

i. that the integrated keys and certificates or those to be integrated in the equipment manufactured by them can be used only for proper purposes within the scope of Regulation (EEC) 3821/85, (EC) 2135/98 and (EC) 1360/2002,

ii. take measures in order to ensure the confidentiality of the private as well as secret keys during the complete production process and also during the total service period of the equipment.

b) provide the TR-A with names of all external service providers subcontracted with the responsibility of production and personalization of their equipment at all required times and make it obligatory for them to adhere to the corresponding requirements. As long as the manufacturer passes on his tasks to a third party, his rights and duties remain unaffected by the same.

c) publish a Practice Statement (PS), in which at least the method of implementation of the TR-A Policy, Root Policy and legal provisions, besides the responsibilities and obligations of their external service providers are explained, which is to be approved by the TR-A.

d) immediately inform the TR-A and the TR-CA about all security-relevant incidents related to production, personalization and use of their equipment as well as the keys and certificates integrated in them.

e) permit the TR-A to evaluate and to inspect the practical execution of their duties.

f) construct and maintain the necessary infrastructure, data connections and take the necessary security measures for a secure and uninterrupted data connection between their production premises and the TR-CA, which the TR-A approves.

g) do not share the private and secret keys and certificates to be integrated in the equipment manufactured by them, with any third parties.

h) Manufacturers of Tachograph - so far they have obtained an IT security certificate - have to undergo for the ~~composite smartcard~~ products to an assurance maintenance process for the IT security certificates through the TSE Certification Scheme. This includes surveillance of the certified ~~composite smartcard~~ products on a regular basis (1 year) concerning resistance to relevant attacks in accordance with the Security Targets. The TSE reports the results to the MSA (detailed information can be seen in Annex-I).

3.2 Liability

The TR-CA and TR-CP do not carry liability towards end users, only towards the TR-A and TR-CIA. Any liability issues towards end users are the responsibility of the TR-A/TR-CIA.

[r16] Tachograph cards, keys and certificates are only for use within the Tachograph system, any other certificates present on Tachograph cards are in violation of this policy, and hence neither the TR-A, the TR-CIA, the TR-CA nor the TR-CP carries any liability in respect to any such. Vehicle unit and motion sensor keys and certificates are only for use within the Tachograph system, any other keys or certificates integrated in the vehicle units and motion sensors are in violation of this policy, and hence neither the TR-A nor the TR-CA carries any liability in respect to any such.

3.2.1 TR-A and TR-CIA liability towards users and relying parties

[r17] The TR-A and TR-CIA are liable for damages resulting from failures to fulfill their obligations only if they have acted negligently. If the TR-A or TR-CIA has acted according to this Policy, and any other governing document, it shall not be considered to have been negligent.

3.2.2 TR-CA and TR-CP liability towards the TR-A and TR-CIA

[r18] The TR-CP and TR-CA are liable for damages resulting from failures to fulfill these obligations only if they have acted negligently. If the organization has acted according to this Policy and the corresponding PS or any other governing document, it shall not be considered to have been negligent.

3.3 Interpretation and enforcement

3.3.1 Governing law

All matters related to the implementation and enforcement on the Digital Tachograph System in Turkey will be resolved according to the Turkish national legislation in force. The TR-A reserve its rights to regulate the rights, responsibilities and obligations of the TR-CA, TR-CP, TR-CIA, external service providers, cardholders, manufacturers of vehicle units and manufacturers of motion sensors, for the proper, secure and efficient implementation of the Tachograph system, in accordance with the TR-A Policy.

3.4 Confidentiality

Confidentiality is restricted according to the Directive 95/46/EC and ”Turkish Penal Code” 01.06.2005 No. 5237 on the protection of individuals with regard to the processing of personal data and on the movement of such data.

3.4.1 Types of information to be kept confidential

[r19] Any personal or corporate information held by the TR-CA, the TR-CP or Service Agencies that is not appearing on issued cards or certificates is considered confidential, and shall not be released without the prior consent of the user, nor (where applicable) without prior consent of the user's employer or representative, unless required otherwise by law.

[r20] All private and secret keys used and handled within the TR-CA, TR-CP, vehicle unit and motion sensor manufacturer operations under this Policy are to be kept confidential.

[r23] Audit logs and records shall not be made available as a whole, except as required by law.

3.4.2 Types of information not considered confidential

[r24] Certificates are not considered confidential.

[r25] Identification information or other personal or corporate information appearing on cards and in certificates is not considered confidential, unless statutes or special agreements so dictate.

4 Practice Statement (PS)

[r26] The TR-CA, TR-CP, manufacturers of vehicle units and manufacturers of motion sensors shall have statements of the practices and procedures used to address all the requirements identified in this Policy, Practice Statements (PS).

[r27] The PS must provide the names of all the external service providers and their concrete tasks as well as explain which requirements of the TR-CA, TR-CP, manufacturers of vehicle units and manufacturers of motion sensors have to be adhered to by these service providers.

[r28] The PS must explain how the TR-CA, TR-CP, manufacturers of vehicle units and manufacturers of motion sensors fulfils its duties regarding the information-management.

[r29] A revision process must be described in the PS which ensures that the PS always corresponds to the current developments in legislation, technology and prevailing conditions at the TR-CA, TR-CP, manufacturers of vehicle units and manufacturers of motion sensors and its external service providers.

[r30] The TR-CA, TR-CP, manufacturers of vehicle units and manufacturers of motion sensors submits its PS to the TR-A for approval. Significant changes in the PS likewise require an approval by the TR-A. The TR-CA, TR-CP, manufacturers of vehicle units and manufacturers of motion sensors are responsible to provide the latest version of their Practice Statements to the TR-A..

[r31] The management of the TR-CA, TR-CP, manufacturers of vehicle units and manufacturers of motion sensors has the responsibility for ensuring that the PS is properly implemented.

[r32] The TR-CA/TR-CP shall give due notice of changes it intends to make in its PS and shall, following approval, make the revised PS immediately available. Minor revisions may be released without TR-A approval.

5 Equipment management

The equipment in the Tachograph system is defined as:

- Tachograph cards
- Vehicle units
- Motion Sensors

The equipment is handled and managed by several roles:

- TR-CIA (registration, renewal, etc.)
- TR-CA (certificates, keys)
- TR-CP (visual and electronic personalization, distribution, deactivation)
- VU manufacturers and Motion Sensor manufacturers

The following functions are carried out by the TR-A:

- Quality control (type approval)

The following functions are carried out by the TR-CIA:

- Applications for cards
- Application approval registration
- Equipment registration and data storage (DB)
- Issuing of replacement cards and card renewal

The following functions are carried out by the TR-CA:

- The TR-CA ensures that the certificates produced by it and the secret keys delivered by it are integrated and implemented, corresponding to their intended purpose, only in recording equipment cards and recording equipment which meet the requirements of Regulation (EEC) 3821/85, (EC) 2135/98 and (EC) 1360/2002.
- The TR-CA ensures within their respective authority that private and secret keys are stored and used in a secured environment.

The following functions are carried out by the TR-CP:

- Quality control (sample tests)
- Key insertion
- Personalization of cards
- Distribution
- The TR-CP ensures within their respective authority that private and secret keys are stored and used in a secured environment.

The following functions are carried out by the VU and Motion Sensor manufacturers:

- Application for the security, functional, interoperability and type approval certificates for the manufactured equipment
- Private and secret key insertion to the manufactured equipment
- Manufacturers ensure within their respective authority that private and secret keys are stored and used in a secured environment.

5.1 Tachograph cards

5.1.1 Quality control – TR-CA/TR-CP function

[r27] The TR-CA/TR-CP shall ensure that only type approved cards according to the AETR are personalized in the Tachograph system. See also 5.1.7.5.

5.1.2 Application for card – handled by the TR-CIA

[r28] The TR-CIA shall inform the user of the terms and conditions regarding use of the card. This information shall be available at least in Turkish and English.

[r29] The user shall, by applying for a card, and accepting delivery of the card, accept the terms and conditions.

5.1.2.1 User application

[r30] Applicants for a Tachograph card shall deliver an application in a form to be determined by the TR-A or TR-CIA. As a minimum, the application shall include the data needed to ensure the correct identification of the user.

The following information is required for issuing a card. Unless gathered from other sources, it should be included in the application:

- Full name
- Date and place of birth
- Place of residence
- National Identity Number
- Postal address
- Photo (unless a valid filed photo is used) (Optional except for driver cards)
- Preferred language

Driver card specific:

- Driving license number

Workshop card specific:
[r31] Workshop cards shall be issued only to physical persons associated with legal persons, and who can provide the following evidence:

- full name (including surname and given names) of the user;
- date and place of birth, reference to a nationally recognized identity document, or other attributes of the user which may be used to, as far as possible, distinguish the person from others with the same name;
- full name and legal status of the associated legal person or other organizational entity;

Control body card specific:
[r32] Control body certificates shall be issued only to physical persons associated with legal persons, and who can provide the following evidence:

- full name (including surname and given names) of the user;
- date and place of birth, reference to a nationally recognized identity document, or other attributes of the user which may be used to, as far as possible, distinguish the person from others with the same name;
- full name and legal status of the associated legal person or other organizational entity;

Hauling company card specific:
[r33] Hauling company certificates shall be issued to individual representatives of companies owning or holding vehicles fitted with digital Tachograph and who can provide evidence of:

- full name (including surname and given names) of the user;
- date and place of birth, reference to a nationally recognized identity document, or other attributes of the user which may be used to, as far as possible, distinguish the person from others with the same name;
- full name and legal status of the associated legal person or other organizational entity;
- any relevant existing registration information (e.g. company registration) of the associated legal person or other organizational entity;
- the user's association with the legal person or other organizational entity.

5.1.2.2 Agreement
[r34] The applicant shall, by making an application for a card and accepting delivery of the card, make an agreement with the TR-CIA, stating as a minimum the following:

- the user agrees to the terms and conditions regarding use and handling of the Tachograph card
- the user agrees to, and certifies, that from the time of card acceptance and throughout the operational period of the card, until TR-CIA is notified otherwise by the user:
    - no unauthorized person has ever had access to the user's card
    - all information given by the user to the TR-CIA relevant for the information in the card is true;
    - the card is being conscientiously used in consistence with usage restrictions for the card

5.1.2.3 TR-CIA terms of approval - Driver card specific

[r35] A Driver card shall only be issued to individuals having permanent residence in the country of application.

[r36] The TR-CIA shall ensure that the applicant does not have a valid Driver card issued in another Member State or AETR Contracting Party.

[r37] The TR-CIA shall ensure that the applicant for a Driver card has a valid driving license of appropriate class.

5.1.3 Card renewal – handled by the TR-CIA

[r38] Workshop cards shall be valid for no more than **one** year from issuance (AETR article 9.1).

[r39] Driver cards shall be valid no more than **five** years from issuance (AETR article 11.4.a).

[r40] Company cards shall be valid no more than **five** years from issuance.

[r41] Control cards shall be valid no more than **two** years from issuance.

[r42] The TR-CIA shall establish routines to remind the user of pending expiration.

[r43] An application for renewal shall follow section 5.1.2

5.1.3.1 Driver cards

[r44] The user shall apply for a renewal card at least **15** working days prior to card expiration.

[r45] If the user complies with the above rule, the TR-CIA shall issue a new driver card before the current card expires.

5.1.3.2 Workshop cards

[r46] The user shall apply for a renewal card at least **15** working days prior to card expiration.

[r47] The TR-CIA shall issue a renewal card within **5** working days of receiving a complete application.

5.1.3.3 Company cards

[r48] The user shall apply for a renewal card at least **15** working days prior to card expiration.

[r49] If the user complies with the above rule, the TR-CIA shall issue a new company card before the current card expires.

5.1.3.4 Control cards

[r50] The user shall apply for a renewal card at least **15** working days prior to card expiration.

[r51] The TR-CIA shall issue a renewal card within **5** working days of receiving a complete application.

5.1.4 Card update or exchange – handled by the TR-CIA

[r52] A user who changes country of residence may request to have his/her driver card exchanged. If the current card is valid, the user shall only show proof of residence in order to have the application granted.

[r53] The TR-CIA shall upon delivery of the new card take possession of the previous card and send it to the National Authority of origin (AETR article 11.4.c).

[r54] Card exchange due to changed country of residence shall otherwise follow the rules for new card issuing.

5.1.5 Replacement of lost, stolen, damaged, malfunctioned and confiscated cards – handled by the TR-CIA

[r55] If a card has been lost, stolen, damaged, malfunctioned or confiscated, the user shall notify the TR-CIA.

[r56] Lost, stolen and confiscated card shall be put on a blacklist available to authorities in all Member States.

[r57] Damaged, malfunctioning and confiscated cards shall be delivered to the issuing TR-CIA, visually and electronically cancelled, and put on a blacklist.

[r60] The replacement card shall inherit the time of validity from the original card (AETR Appendix 1B: VII). If the replaced card has less than six months remaining validity, the TR-CIA may issue a renewal card instead of a replacement card.

[r61] The TR-A reserve its rights to regulate the card renewal conditions and administrative sanctions, for the cases arising from lost, stolen, damaged, malfunctioned and confiscated cards, which the cardholders use, in accordance with the TR-A Policy.

5.1.6 Application approval registration – handled by the TR-CIA

[r61] The TR-CIA shall register approved applications in a database. This data is made available for the TR-CA/TR-CP, which uses the information as input to the certificate generation and card personalization.

5.1.7 Card personalization – handled by the TR-CP

Cards are personalized both visually and electronically. In some cases this process will be carried out by Service Agents, this does not diminish the overall responsibility of the TR-A.

5.1.7.1 Visual personalization

[r62] Cards shall be visually personalized according to AETR Appendix 1B, section IV.

5.1.7.2 User data entry

[r63] Data shall be inserted in the card according to the structure in AETR Appendix 1B, sub-appendix 2, rules TCS_403, TCS_408, TCS_413 and TCS_418, depending on card type.

5.1.7.3 Key entry

[r64] The private key shall be inserted in the card without ever having left the key generation environment. This environment must guarantee that no person, in any way what so ever, can get control of the generated private key without detection. See also equipment key management, 7.2.

5.1.7.4 Certificate entry

[r65] The user certificate shall be inserted in the card before distribution to the user.

5.1.7.5 Quality Control

[r66] Documented routines shall exist to ensure that the visual information on users' cards and the electronic information in issued cards and certificates matches each other and also matches the validated owner. The routines shall be described in the personalization PS.

5.1.7.6 Cancellation (destruction) of non-distributed cards

[r67] All cards that are damaged or destroyed (or for other reasons are not finalized and distributed) during personalization shall be physically and electronically destroyed (cancelled).

[r68] All destroyed cards shall be registered in a cancellation database.

5.1.8 Card registration and data storage (DB) – handled by the TR-CP and the TR-CIA

[r69] The TR-CP is responsible for keeping track of which card and card number is given to which user. Data shall be transferred from the TR-CP to the TR-CIA register.

5.1.9 Card distribution to the user – handled by the TR-CP or TR-CIA

[r70]

a) The personalization shall be scheduled so as to minimize the time that the personalized card require safe-keeping before delivery to the user. Storage over night requires secure safe-keeping. Documented routines shall exist for exception handling, including disturbances in the production process, failure of delivery, and loss of or damage to cards.
b) Personalized cards shall be immediately transferred to the place where they are to be delivered or distributed to the user, i.e. a controlled area.
c) Personalized cards shall always be kept separated from non-personalized cards.
d) The Tachograph card shall be distributed in a manner so as to minimize the risk of loss.
e) At the point of delivery of the card to the user, evidence of the user's identity (e.g. name) shall be checked against a physical person.
f) The user shall present valid means of identification
g) The reception of the card shall be acknowledged by the user's signature.

5.1.10 Authentication codes (PIN) – generated by the TR-CP

This section applies only to Workshop cards.

[r71] Workshop cards shall have a PIN code, used for authenticating the card to the Vehicle unit (AETR Appendix 1B, sub Appendix 10: Tachograph cards: 4.2.2)

[r72] PIN codes shall consist of at least **4** digits (AETR Appendix 1B, sub Appendix 10: Vehicle Units: 4.1.2).

5.1.10.1 PIN generation

[r73] PIN codes shall be generated in a secure system, securely transferred to workshop cards, and direct-printed to PIN-envelopes. PIN codes shall never be stored on a computer system in a manner that allows connection between PIN and user. The PIN generation system shall meet the requirements of ITSEC E3, CC EAL4 or equivalent security criteria.

5.1.10.2 PIN distribution

[r74] PIN codes may be distributed by regular mail.

[r75] PIN codes shall not be distributed in connection with the corresponding cards.

5.1.11 Card deactivation – handled by TR-A/TR-CIA and TR-CP

[r76] It shall be possible to permanently deactivate a card and any keys residing thereon. A decision of deactivation shall be taken by the TR-A or TR-CIA, the actual operation should be carried out by the TR-CP or a Service Agency.

[r77] Deactivation of cards shall take place in equipment suitable for the operation and it shall be verified that card functions and keys are destroyed. The card shall also be visually cancelled.

[r78] Deactivation of cards shall be registered in the card database and the card number shall be put on the blacklist.

5.2 Vehicle Units and Motion Sensors

[r79] The private keys shall be inserted in the vehicle units and motion sensors without ever having left the key generation environment. This environment must guarantee that no person, in any way what so ever, can get control of the generated private key without detection.

[r80] The electronic certificates shall be inserted in the vehicle units and motion sensors at the production line.

[r81] The documented routines for key and certificate insertion to the equipment, which the vehicle unit and motion sensor manufacturers must follow shall be described in the PS.

6 Root keys and transport keys management: European Root key, Turkish keys, Motion Sensor keys, transport keys

This section contains provisions for the management of

- European Root key - the ERCA public key (EUR.PK)
- Turkish keys, i.e. the Turkish signing key pair(s) (MS.SK, MS.PK)
- symmetric keys for distance and motion sensors (Km, $Km_{WC,}$ Km_{VU}),
- the transport keys (for communication between the ERCA and the TR-CA)

The **ERCA public key** is used for verifying the Member State certificates. The ERCA secret key is not dealt with here, since it never leaves the ERCA.

The **Turkish keys** are the Turkish signing keys and may also be called Turkish root keys.

The **Motion Sensor keys** are the symmetric keys to be placed in the workshop card, VU and Motion Sensor for mutual recognition. The TR-CA receives the Motion Sensor keys from the ERCA, stores them and distributes them to manufacturers.

The **transport keys** are the asymmetric keys used for securely exchanging information between the ERCA and the TR-CA.

If the TR-CA has need for other cryptographic keys than the above, these shall not be considered part of the Tachograph system, and are not dealt within this policy.

The TR-CA ensures within its domain the confidentiality and integrity of all non-public keys generated, used and/or stored with it and effectively prevents any misuse of these keys. For this purpose, it has to employ suitable technical systems, which fulfill one of the following requirements:

- FIPS 140-2 (or 140-1) level 3 or higher [FIPS],
- CEN Workshop Agreement 14176-2 [CEN],
- certification according to EAL 4 or higher in accordance with ISO 15408 [CC] to level E3 or higher [ITSEC] based on a protection profile or security instructions (“Security Targets”), which encompasses the requirements of this Policy – based on a comprehensive risk analysis – as well as structural and non-technical security measures,
- security criteria, which provide an equivalent level of security.

In the same way, it has to be proved that these systems are operated in an adequately secured operating environment at the TR-CA. No copies of non-public keys exist outside the secured environment

The TR-CA will sign equipment certificates exclusively within the same device used to store the Turkish Private Keys.

6.1 ERCA public key

[r98] The TR-CA shall keep the ERCA public key (EUR.PK) in such a way as to maintain its integrity and availability at all times. If the EUR.PK is stored in the TR-CP, the same rule applies.

[r99] The TR-CP and the manufacturers ensure that EUR.PK is inserted in all tachograph cards and vehicle units within their authority.

6.2 Turkish keys

The Turkish keys are the TR-CA signing key pair(s), which is used to sign all equipment certificates. The key pair consists of a public key (MS.PK) and a private, or secret, key (MS.SK). The TR-CA public key is certified by the ERCA, but is always generated by the TR-CA itself. The TR-CA shall possess different Turkish Key Pairs for the production of vehicle unit public key certificates (undefined validity) and tachograph card equipment public key certificates (limited validity).

[r100] The Turkish private keys must not be used for any other purposes than signing Tachograph equipment certificates and for production of the ERCA key certification request (KCR).

6.2.1 Turkish keys generation

[r101] Turkish key pair generation shall be carried out within a device which either:

- meets the requirements identified in FIPS 140-2 (or 140-1) level 3 or higher [FIPS]; or
- meets the requirements identified in CEN Workshop Agreement 14167-2 [CEN]; or
- is a trustworthy system which is assured to EAL 4 or higher in accordance with ISO 15408 [CC], to E3 or higher in ITSEC, or equivalent security criteria. This shall be to a security target or protection profile that meets the requirements of the current document, based on risk analysis and taking into account physical and other non-technical security measures.

[r102] The key generation device should be stand-alone.

[r103] The actual device used and requirements met shall be stated in the TR-CA PS.

[r104] TR-CA key-pair generation shall require the active participation of three separate individuals. At least two of these shall have a role of CAA/PA (certification authority / personalization administrator); the other may have other trusted roles (see section 9.3.1 for role descriptions).

[r105] Keys shall be generated using the RSA algorithm with a key length of modulus *n*=1024 bits (AETR Appendix 1B, sub appendix 11:2.1/3.2).

[r106] The TR-CA shall have at least two (2) and maximum five (5) Turkish key pairs with associated signing certificates to ensure continuity, since the ERCA cannot issue replacement Turkish certificates rapidly.

6.2.2 Turkish keys period of validity

[r107] Each TR-CA private key usage period is **2** years from the date of issuance of the corresponding public key's certificate, and shall not be used after its validity period for any purpose.

[r108] The corresponding public key shall have no end of validity.

6.2.3 Turkish private key storage

[r109] The private keys shall be contained in and operated from inside a specific tamper resistant device which:

- meets the requirements identified in FIPS 140-2 (or 140-1) level 3 or higher [FIPS]; or
- is a trustworthy system which is assured to EAL 4 or higher in accordance with ISO 15408 [CC], to E3 or higher in ITSEC, or equivalent security criteria. This shall be to a security target or protection profile that meets the requirements of the current document, based on risk analysis and taking into account physical and other non-technical security measures.

[r110] For access to the TR-CA private signing keys, dual control is required. This means that no single person shall possess the means required to access the environment where the private key is stored. It does not mean that signing of equipment certificates must be performed under dual control.

6.2.4 Turkish private key backup

[r111] The Turkish private signing keys may be backed up, using a key recovery procedure requiring at least dual control. The procedure used shall be stated in the TR-CA PS.

6.2.5 Turkish private key escrow

[r112] No key escrow of any private keys takes place, i.e. including equipment keys.

6.2.6 Turkish keys compromise

[r113] The PS of the TR-CA should contain explicit procedures in case the MS.SK is compromised or is potentially compromised. These procedures should also contain instructions for external service providers and information to cardholders and equipment manufacturers.
In case the keys EUR.SK, MS.SK, Km, Km_{WC}, Km_{VU} are compromised or potentially compromised, the TR-A and ERCA have to be informed immediately.
In other cases of key-compromise or potential key-compromise appropriate measures are to be taken and information are to be given to the concerned institutions.

6.2.7 Turkish keys end of life

[r115] The TR-CA shall have routines to ensure that it always has a valid, certified Turkish signing key pair (MS.SK, MS.PK).

[r116] Upon termination of the usage period of a Turkish signing key pair, the public key shall be archived, and the private key has to be destroyed by the TR-CA in such a manner that no feature its use, misuse or recovering is possible.

6.3 Symmetric keys for workshop cards and distance and motion sensors (Km, Km_{WC}, Km_{VU})

[r117] If the need arises, the TR-CA requests the Root CA for the distance and motion sensor keys Km, Km_{WC}, Km_{VU}. Provisions of the Root CA have to be adhered to for the request and delivery of these keys between the Root CA and the TR-CA.

[r120]
The TR-CA, using suitable measures, ensures that the keys Km_{WC} and Km_{VU} are passed on only to the intended receiver and secures their forwarding using suitable measures. The TR-A controls the security measures of the TR-CA.

The TR-CA ensures that the key Km is not passed on.

[r121] The TR-CP shall undertake the TR-CA's task to ensure that the workshop key Km_{WC} is inserted into all issued Workshop cards (AETR Appendix 1B, sub appendix 11:3.1.3).

[r122] In case, one of the keys Km_{WC} or Km_{VU} or especially Km is compromised or there is potentially compromised, the TR-CA has to immediately inform the TR-A and the Root CA.

[r123] The TR-CA and/or TR-CP shall, during storage, use and distribution, protect the symmetric keys with high assurance physical and logical security controls. The keys should be contained in and operated from a specific tamper resistant device which:

- meets the requirements identified in FIPS 140-2 (or 140-1) level 3 or higher [FIPS]; or

- is a trustworthy system which is assured to EAL 4 or higher in accordance with ISO 15408 [CC], to E3 or higher in ITSEC, or equivalent security criteria. This shall be to a security target or protection profile that meets the requirements of the current document, based on risk analysis and taking into account physical and other nontechnical security measures.

6.4 Transport keys

[r124] For secure data communication, TR-CP shall issue special, asymmetric, transport keys. The TR-CP shall, during generation, storage, use and distribution, protect these keys with high assurance physical and logical security controls. The keys should be contained in and operated from a specific tamper resistant device which:

- meets the requirements identified in FIPS 140-2 (or 140-1) level 3 or higher [FIPS]; or
- is a trustworthy system which is assured to EAL 4 or higher in accordance with ISO 15408 [CC], to E3 or higher in ITSEC, or equivalent security criteria. This shall be to a security target or protection profile that meets the requirements of the current document, based on risk analysis and taking into account physical and other nontechnical security measures.

6.4.1 Exclusive transport keys of the TR-CA

[r125] In case the TR-CA wants to give cryptographic keys to its communication partners (that is Personalizer, equipment manufacturers,...) for securing mutual communication, then their confidentiality and integrity has to be effectively protected by the TR-CA and any misuse of the same has to be effectively prevented.
The TR-CA requires its communication partners to meet equivalent security measures in their authority for the protection of the keys.

6.5 Key Certification Requests and Motion Sensor Key Distribution Request

All key transport between TR-CA and ERCA uses means, media and protocols defined by ERCA Root Policy. TR-A will appoint an authorized person to carry the media that contains the messages between TR-CA and ERCA

[r123.1] The TR-CA submits their public keys (MS.PK) for certification by the ERCA using the key certification request (KCR) protocol described in Annex A of the Digital Tachograph System European Root Policy [ERCA].

[r123.2] The TR-CA recognizes the ERCA public key (EUR.PK) in the distribution format described in Annex B of the Digital Tachograph System European Root Policy [ERCA].

[r123.3] The TR-CA requests motion sensor master keys from the ERCA using the key distribution request (KDR) protocol described in Annex D of the Digital Tachograph System European Root Policy [ERCA].

[r123.4] The TR-CA uses the physical media for key and certificate transport described in Annex C of the Digital Tachograph System European Root Policy [ERCA].

[r123.5] The TR-CA and TR-CP ensures that the Key Identifier (KID) and modulus (n) of keys submitted to the ERCA for certification and for motion sensor key distribution are unique within the domain of the TR-CA and TR-CP.

[r123.6] TR-CA ensures that private keys will remain in HSM and will not be transported during key certification operations.

[r123.7] TR-CP ensures that transport private keys will remain in HSM and will not be transported during symmetric key distribution operations.

7 Key management of asymmetric card and equipment keys

This section contains requirements for the generation of and dealing with asymmetric cryptographic keys for recording equipment cards and recording equipment as well as the corresponding certificates.

7.1 General aspects TR-CP / TR-CA incl. Service Agencies and VU manufacturers

[r124] Equipment (Card and VU) initialization, key loading and personalization shall be performed in a physically secure and controlled environment.
Entry to this area shall be strictly regulated, controllable at the individual level, and requiring a minimum of two persons to be present to operate the system. A log shall be kept of the entries and the actions in the system.

[r125] No sensitive information contained in the key generation systems may leave the system in a way that violates this policy.

[r126] Tachograph cards: No sensitive information in the card personalization system may leave the system in a way that violates this policy.

[r128] **Organizations (Subcontractors, Service Agencies)** that perform key generation and card personalization on behalf of more than one Member State or Contracting Party shall do this in a clearly separate process for each of these. A log shall be kept of each individual process and the relevant National Authority shall have access to this on request.

[r130] **TR-CA/TR-CP/Service Agencies/VU manufacturers:** The log of the personalization system shall contain a reference to the order, and list the corresponding equipment numbers and certificates. The relevant National Authority shall have access to the logs on request.

7.2 Equipment key generation

[r131] The TR-CA, TR-CP and the manufacturers ensure within their domain, that the generation of keys takes place in a specially secured production environment, which especially guarantees secrecy of the respective private keys.
[r133] Key generation shall be carried out within a device which either:

- meets the requirements identified in FIPS 140-2 (or 140-1) level 3 or higher [FIPS]; or
- meets the requirements identified in CEN Workshop Agreement 14167-2 [CEN]; or
- is a trustworthy system which is assured to EAL 4 or higher in accordance with ISO 15408 [CC], to E3 or higher in ITSEC, or equivalent security criteria. This shall be to a security target or protection profile that meets the requirements of the current document, based on risk analysis and taking into account physical and other nontechnical security measures.

[r134] Keys shall be generated using the RSA algorithm having a key length of modulus *n* 1024 bits. (AETR Appendix 1B, Sub appendix 11:2.1/3.2)

[r135] The generation procedure and storage of the private key shall prevent it from being exposed outside of the system that created it. Furthermore, it shall be erased from the system immediately after having been inserted in the device.

[r136] It is the responsibility of the key generation entity to undertake adequate measures to ensure that the public key is unique within its domain before certificate binding takes place. (This is presumably done by making sure that the key generation system is random at its nature and therefore the probability of generating non-unique keys is insignificant.)

7.2.1.1 Batch key generation

[r137] Cryptographic key generation may be performed by batch processing in advance of certificate request, or in direct connection with certificate request.

[r138] Batch processing must be performed in stand-alone equipment meeting the security requirements stated above. Key integrity has to be protected until certificate issuing is performed.

7.2.1 Key application

[r139] The TR-CA, TR-CP and the manufacturers ensure within their domain, that the respective private keys can be exclusively used for their intended purpose according to Regulation (EC) 3821/85, (EC) 2135/98 and (EC) 1360/2002. This especially includes that no copies of these keys exist outside the secured environment of the recording equipment cards and recording equipment after the personalisation procedure is done.

[r140] The TR-CP, TR-CIA ensures within its domain, that only those cards are delivered, whose optical and logical personalisation refer correctly to the cardholder.

[r141] The TR-CA and TR-CP ensure within their domain, that private keys cannot be reused after expiry of the service period of a recording equipment card.

[r142] Equipment private keys shall be neither escrowed nor archived.

[r143] All certified public keys shall be archived by the certifying TR-CA. Information about certified public keys can be stored by TR-CP as well.

[r144] Upon termination of use of a Tachograph card, the public key shall be archived, and the private key shall be:

- destroyed such that the private key cannot be retrieved; or
- retained in a manner such that it is protected against being put back into use.

8 Equipment certificate management

This section describes the life cycle, containing registration function, issuing, distribution, use, renewal, revocation (if applicable) and end of life, of certificates created by TR-CA for recording equipment cards and recording equipment

8.1 Data input

[r150] Cardholding users do not apply for certificates, their certificates are issued based on the information given in the application for a tachograph card (section 5.1.2) and captured from the TR-CIA register. The public key to be certified is extracted from the key generation process.

[r151] The TR-CP shall ensure that the input data contains information which renders the Certificate Holder Reference (CHR) unique. The TR-CA shall verify the uniqueness of the CHR within its domain.

[r151.1] If key generation takes place outside the TR-CA, then the TR-CA produces the certificate applied if TR-CP and manufacturers of vehicle units respectively proofs by a pre-agreed procedure that he is in possession of the corresponding private key. At this time the private key shall not leave the secured environment of key generation.

8.2 Certificate issuing

[r152] The TR-CA issues certificates when a proper certificate application is presented to the responsible authority and when all the requirements of Regulation (EC) 3821/85, (EC) 2135/98 and (EC) 1360/2002 and of all other associated legal provisions and agreements have been adhered to at the time of applying.
In case of an automated process, certificate production by manual intervention in the system must be completely prevented.

[r153] The TR-CA ensures within its domain, that the certificates produced by it are transferred only to TR-CP and manufacturers of vehicle units respectively.

[r154] The TR-CA produces certificates only for equipment and cards, for which a component type-approval was issued and is valid.

[r155] Key certification requests that rely on transportation of private keys are not allowed.

8.3 Equipment certificate time of validity

[r160] Certificates shall not be valid longer than the corresponding equipment (section 5):

- Driver certificates shall not be valid more than **5** years (AETR article 11.4.a).
- Workshop certificates shall not be valid for more than **1** year (AETR article 9.1).
- Control body certificates shall not be valid more than **2** years.
- Hauling company certificates shall not be valid more than **5** years.
- Certificates for vehicle units have an undefined validity.

8.4 Equipment certificate issuing

[r161] The TR-CA shall ensure that it issues certificates so that their authenticity and integrity is maintained. Certificate contents are defined by AETR Appendix 1B, sub appendix 11.

8.5 Dissemination of equipment certificates and information

[r161] The TR-CA transfers all certificate data to the TR-CP and the manufacturers, so that certificates, equipment as well as cards and cardholders are interlinked.

[r162] The TR-CA shall export all certificate data to the TR-CIA register so that certificates, equipment and users are connected.

[r163] The TR-CIA shall ensure that certificates are made available as necessary to users and relying parties.

[r164] The TR-CIA shall ensure that all terms and conditions, as well as relevant parts of the TR-CA PS, and other relevant information, are made readily available to all users, relying parties and other relevant groups.

[r164.1] The TR-CA shall maintain and make certificate status information available.

8.6 Equipment certificate use

[r165] The Tachograph certificates are only for use within the Tachograph system.

8.7 Equipment certificate revocation

[r166] Certificates are not revoked (rather than revoking certificates, non-valid Tachograph equipment is put on a "black list" which may be checked at roadside controls).

9 TR-CA and TR-CP Information Security management

This section describes the Information Security measures imposed by this policy.
Note: This section may, at least in part, be substituted by Information Security policies for the relevant entities.

9.1 Information security management of the TR-CA and TR-CP

[r167] The TR-CA/TR-CP shall ensure that administrative and management procedures are applied which are adequate and correspond to recognized standards.

[r168] The TR-CA/TR-CP shall retain responsibility for all aspects of the provision of key certification services, even if some functions are outsourced to subcontractors. Responsibilities of third parties shall be clearly defined by the TR-CA/TR-CP and appropriate arrangements made to ensure that third parties are bound to implement any controls required by the TR-CA/TR-CP. The TR-CA/TR-CP shall retain responsibility for the disclosure of relevant practices of all parties.

[r169] The information security infrastructure necessary to manage the security within the TR-CA/TR-CP shall be maintained at all times. Any changes that will impact on the level of security provided shall be approved by the TR-A.

[r170] The TR-CA/TR-CP shall adopt a security management system equivalent to ISO 17799 [ISO 17799]. Formal certification is not required.

9.2 Asset classification and management of the TR-CA/TR-CP

[r171] The TR-CA/TR-CP shall ensure that its assets and information receive an appropriate level of protection. In particular:

a) The TR-CA/TR-CP shall carry out a risk assessment to evaluate business risks and determine the necessary security requirements and operational procedures.
b) The TR-CA/TR-CP shall maintain an inventory of all information assets and shall assign a classification for the protection requirements to those assets consistent with the risk analysis.

9.3 Personnel security controls of the TR-CA/TR-CP

9.3.1 Trusted Roles

[r172] A TR-CA/TR-CP, supporting this Policy, should recognize at least three distinct roles, as outlined below. Different arrangements of separation of duties may be acceptable, provided the resilience to insider attack is at least as strong as with the recommended model and provided the roles are described in the TR-CA/TR-CP PS.

[r173] To ensure that one person acting alone cannot circumvent safeguards, responsibilities in TR-CA/TR-CP systems need to be attended by multiple roles and individuals. Each account on the systems shall have limited capabilities, commensurate with the role of the account holder.

[r174] The recommended roles are:
a) Certification Authority Administrator or Personalization Administrator (CAA/PA)
b) System Administrator (SA)
c) Information System Security Officer (ISSO)

[r175] The CAA/PA role includes:

a) Key generation (only allowed with dual presence of 2 personel in CAA/PA role);

b) Certificate generation; (Generating signed certificate requests to be processed and executed by the TR-CA/TR-CP equipment according to defined rules)
c) Personalization and secure distribution of equipment;
d) Administrative functions associated with maintaining the TR-CA/TR-CP database and assisting in compromise investigations.

[r176] The SA role includes:

a) Performing initial configuration of the system including secure boot start-up and shut down of the system;
b) Initial set up of all new accounts;
c) Setting the initial network configuration;
d) Creating emergency system restart media to recover from catastrophic system loss;
e) Performing system backups, software upgrades and recovery, including the secure storage and distribution of the backups and upgrades to an off-site location. Backups shall be performed at least
a) once per week, and the system shall be powered on/off after a backup is performed, so that hardware integrity checks are performed.
f) Changing of the host name and/or network address.

[r177] The ISSO role includes:

a) Assigning security privileges and access controls of CAA/PAs.
b) Assigning passwords to all new accounts.
c) Performing archiving of required system records
d) Review of the audit log to detect CAA/PA compliance with system security policy. Review of the audit log shall be done at least once per week.
e) Personally conducting or supervising an annual inventory of the TR-CA/TR-CP's records.
f) Participating in Turkish key generation

The ISSO, who is not directly involved in issuing certificates, performs a supervisory function in examining system records or audit logs to ensure that other persons are acting within the realms of their responsibilities and within the stated security policy.

9.3.2 Separation of roles

[r178] For a TR-CA/TR-CP, different individuals shall fill each of the three roles described above and **at least one individual** shall be appointed per task.

9.3.3 Identification and Authentication for Each Role

[r179] Identification and authentication of CAA/PA, SA and ISSO shall be appropriate and consistent with practices, procedures and conditions stated in this policy.

9.3.4 Background, qualifications, experience, and clearance requirements

[r180] The CAA/PA (Certification Authority/ Personalization Administrator), which involves creating and managing certificate and key information, is a critical position. The individual assuming the CAA/PA role should be of unquestionable loyalty, trustworthiness and integrity, and should have demonstrated a security consciousness and awareness in his or her daily activities.

[r181] All TR-CA/TR-CP personnel in sensitive positions, including, at least, all CAA/PA and ISSO (Information System Security Officer) positions, shall:

a) not be assigned other duties that may conflict with their duties and responsibilities as CAA/PA and ISSO;

b) not as far known have been previously relieved of a past assignment for reasons of negligence or non-performance of duties;
c) have received proper training in the performance of their duties.

[r182] The TR-CA/TR-CP organizations shall ensure that they will all the time have personnel which have been checked for their qualification, rank, absence of a criminal record, absence of credit risks. These requirements should be stated in the applicable PS.

9.3.5 Training requirements

[r183] Personnel shall have adequate training for the role and job.

9.4 System security controls of the CA and personalization systems

[r184] The TR-CA/TR-CP shall ensure that the systems are secure and correctly operated, with minimal risk of failure. In particular:

a) the integrity of systems and information shall be protected against viruses, malicious and unauthorized software;
b) damage from security incidents and malfunctions shall be minimized through the use of incident reporting and response procedures;

[r185] The Certification Authority System (CAS) and Personalization system shall provide sufficient system security controls for enforcing the separation of roles described in this policy or the relevant PS.

[r186] The security controls shall provide access control and traceability down to an individual level on all transactions and functions affecting the use of TR-CA's private issuing keys.

[r187] System security controls imposed on computer systems used by Service Agencies depend on the role assigned to the agency. Agencies that undertake CAA/PA (certification authority/personalization administrator) roles, load certificates onto cards, or initialize such cards, shall meet the requirements imposed upon TR-CA/CPs.

9.4.1 Specific computer security technical requirements

[r188] Initialisation of systems, which contain the private signature key of TR-CA or the secret symmetric keys Km_{VU}, Km_{WC} or Km may take place only in cooperation of two persons, which is ensured by organisational measures.

9.4.2 Computer security rating

[r189] The CA and personalization systems do not require formal rating as long as they fulfill all requirements in this section.

9.4.3 System development controls

[r190] The TR-CA/TR-CP shall use trustworthy systems and products that are protected against modification.

[r191] An analysis of security requirements shall be carried out at the design and requirements specification stage of any systems development project undertaken by the TR-CA/TR-CP or on behalf of the TR-CA/TR-CP to ensure that security is built into IT systems.

[r192] Change control procedures shall exist for releases, modifications and emergency software fixes for any operational software.

9.4.4 Security management controls

[r193] The system roles (section 9.3.1) shall be implemented and enforced.

9.4.5 Network security controls

[r194] Controls (e.g., firewalls) shall be implemented to protect the TR-CA/TR-CP's internal network domains from external network domains accessible by third parties.

[r195] Sensitive data shall be protected when exchanged over networks which are not secure.

9.5 Security audit procedures

The security audit procedures in this section are valid for all computer and system components which affect the outcome of keys, certificates and equipment issuing processes under this policy.

9.5.1 Types of event recorded

[r196] The security audit functions related to the TR-CA/TR-CP computer/system shall log, for audit purposes:

a) The creation of accounts (privileged or not).
b) Transaction requests together with record of the requesting account, type of request, indication of whether the transaction was completed or not and eventual cause of uncompleted transaction.
c) Installation of new software or software updates.
d) Time and date and other descriptive information about all backups.
e) Shutdowns and restarts of the system.
f) Time and date of all hardware upgrades.
g) Time and date of audit log dumps.
h) Time and date of transaction archive dumps.

9.5.2 Frequency of processing audit log

[r197] The log shall be processed regularly and analyzed against malicious behavior. Log procedures shall be described in the PS.

9.5.3 Retention period for audit log

[r198] Audit log shall be retained for at least **7** years.

9.5.4 Protection of audit log

[r199] Audit logs shall be appropriately integrity protected. All entries shall be individually time stamped (system time is sufficient).

[r200] Audit logs shall be verified and consolidated at least monthly. At least two people in SA or ISSO roles (see section 9.3.1) shall be present for such verification and consolidation.

9.5.5 Audit log backup procedures

[r201] Two copies of the consolidated log shall be made and stored in separate physically secured locations.

[r202] The audit log shall be stored in a way that makes it possible to examine the log during its retention period.

[r203] The audit log shall be protected from unauthorized access.

9.5.6 Audit collection system (internal vs. external)

[r204] Only internal audit collection system is required.

9.6 Record archiving

9.6.1 Types of event recorded by the TR-CIA

[r205] The records shall include all relevant evidence in the TR-CIA's possession including, but not limited to:

a) Certificate requests and all related messages exchanged with the TR-CA/TR-CP, users, and the directory.
b) Signed registration agreements from user's applications for certificates and cards, including the identity of the person responsible for accepting the application.
c) Signed acceptance of the delivery of cards.
d) Contractual agreements regarding certificates and associated cards.
e) Certificate renewals and all messages exchanged with the user.
f) Revocation requests and all recorded messages exchanged with the originator of the request and/or the user.
g) Currently and previously implemented policy documents

9.6.2 Types of event recorded by the TR-CA/TR-CP

[r206] The records shall include all relevant evidence in the TR-CA/TR-CP's possession including, but not limited to:

a) Contents of issued certificates.
b) Audit journals including records of annual auditing of TR-CA/TR-CP's compliance with its PS.
c) Currently and previously implemented certificate policy documents and their related PSs.

[r207] Records of all digitally signed electronic requests made by TR-CA/TR-CP or Service Agency personnel (CAA/PA) shall include the identity of the administrator responsible for each request together with all information required for non-repudiation checking of the request for as long as the record is retained.

9.6.3 Retention period for archive

[r208] Archives shall be retained and protected against modification or destruction for a period as specified in the PS.

9.6.4 Procedures to obtain and verify archive information

[r209] The TR-CA/TR-CP shall act in compliance with requirements regarding confidentiality as stated in section 3.4.

[r210] Records of individual transactions may be released upon request by any of the entities involved in the transaction, or their recognized representatives.

[r211] TR-CA/TR-CP shall make available on request, produced documentation of the TR-CA/TR-CP's compliance with the applicable PS according to section 11.5.

[r212] Subject to statute, a reasonable handling fee may be charged to cover the cost of record retrieval.

[r213] The TR-CA/TR-CP shall ensure availability of the archive and that archived information is stored in a readable format during its retention period, even if the TR-CA/TR-CP's operations are interrupted, suspended or terminated.

[r214] In the event that TR-CA/TR-CP services are to be interrupted, suspended or terminated, the TR-CA/TR-CP shall send notification to all customer organizations to ensure the continued availability of the archive. All requests for access to archived information shall be sent to the TR-CA/TR-CP or to the entity identified by the TR-CA/TR-CP prior to terminating its service.

9.7 TR-CA/TR-CP continuity planning

[r215] TR-CA/TR-CP shall have a business continuity plan (BCP). This shall include (but is not limited to) events such as:
- Key compromise
- Catastrophic data loss due to e.g. theft, fire, failure of hardware or software
- System failure of other kinds

9.7.1 Turkish keys compromise

Turkish keys compromise is dealt with in section 6.

9.7.2 Other disaster recovery

[r216] TR-CA/TR-CP and subcontractors shall have routines established to prevent and minimize the effects of system disasters. These routines include secure and remote backup data storage, functioning data restoration procedures etc., to be detailed in the BCP.

9.8 Physical security control of the CA and personalization systems

[r217] Physical security controls shall be implemented to control access to the TR-CA or TR-CP hardware and software. This includes the workstations and other parts of the CA and personalization hardware and any external cryptographic hardware module or card. A log shall be kept over all physical entries to this area (or areas).

[r218] The Turkish keys for signing certificates shall be kept physically and logically protected as described in the PS.

[r219] The TR-CA/TR-CP's facility shall also have a place to store backup and distribution media in a manner sufficient to prevent loss, tampering, or unauthorized use of the stored information. Backups shall be kept both for data recovery and for the archival of important information. Backup media shall

also be stored at a site different from where the TR-CA/TR-CP system resides, to permit restoration in the event of a natural disaster to the primary facility.

[r220] A security check of the facility housing the TR-CA/TR-CP's central equipment shall be made at least once every **24** hours. If it is a continuously attended facility, this may be a visual check once per shift to ensure that the systems and any associated cryptographic devices/cards are securely stored if not in use, that the physical security systems (e.g., door locks and alarms) are functioning properly, and that there have been no attempts at forceful entry or unauthorized access.

9.8.1 Physical access

[r221] Access to the physical area housing the Turkish keys and the means for their usage, shall require simultaneously presence of at least **2** persons which have been individually appointed the right to enter the area.

[r222] Access to other TR-CA/TR-CP facilities shall be limited to those personnel performing one of the roles described in section 9.3.1. Access may be controlled through the use of an access control list to the room housing the systems. Anyone not on the access control list shall be escorted by a person on the list. If an access control list is not feasible for a particular site, it may be acceptable to make sure that the CA and personalization related material is locked in a secure room or storage area when it is not being used.

10 TR-CA or TR-CP Termination

10.1 Final termination - TR-A responsibility

The TR-A takes decisions regarding transfer of the responsibility of TR-CA/TR-CP. Final termination of TR-CA or TR-CP is regarded as the situation where all service associated with a **logical entity** is terminated permanently. It is not the case where the service is transferred from one organization to another or when the TR-CA service is passed over from an old Turkish key pair to new Turkish key pair or ERCA key.

[r223] The TR-A shall ensure that the tasks outlined below are carried out. Note: TR-CA/TR-CP termination implies either that Turkey withdraws from the Tachograph system or termination of the entire Tachograph system, since this cannot function without CAs, or equivalent authorities.

[r224] Before the TR-CA/TR-CP terminates its services the following procedures has to be completed as a minimum:

a) Inform all users and parties with whom the TR-CA/TR-CP has agreements or other form of established relations.
b) Make publicly available information of its termination at least **3** month prior to termination.
c) The TR-CA/TR-CP shall terminate all authorization of subcontractors to act on behalf of the TR-CA/TR-CP in the process of issuing certificates.
d) The TR-CA/TR-CP shall perform necessary undertakings to transfer obligation for maintaining record archives for the remaining period of their life cycle.

10.2 Transfer of TR-CA or TR-CP responsibility

Transfer of TR-CA or TR-CP responsibility occurs when the TR-A chooses to appoint a new TR-CA or TR-CP in place of the former entity.

[r225] The TR-A shall ensure that orderly transfer of responsibilities and assets is carried out.

[r226] The old TR-CA shall transfer all root keys to the new TR-CA in the manner decided by the TR-A.

[r227] The old TR-CA shall destroy any copies of keys that are not transferred.

11 Audit

[r228] The TR-A is responsible for ensuring that audits of the TR-CA and TR-CP take place. External service providers authorised by the TR-CA, if necessary, have to be included in the audit.

11.1 Frequency of entity compliance audit

[r229] TR-CA/TR-CP operating under this Policy shall be audited for conformance with the policy. The TR-CA/TR-CP shall be audited for the first time within 12 months of the start of the operations covered by the approved policy. When an audit finds no evidence of non-conformity, the next audit may be performed within 24 months. When an audit finds evidence of non-conformity, the next audit shall be performed within 12 months.

11.2 Topics covered by audit

[r230] The audit shall cover the TR-CA, TR-CP, manufacturers of vehicle units and manufacturers of motion sensors´s practices (according to their PSs).

[r231] The audit shall cover the TR-CA, TR-CP, manufacturers of vehicle units and manufacturers of motion sensors´s compliance with this Policy.

[r231.1] The audit shall cover the requirements defined in ERCA-CP §5.3 [ERCA]

[r232] The audit shall also consider the operations of any Service Agencies and External service providers.

11.3 Who should do the audit

[r233] The TR-A may consult an external certification or accreditation organization for approval of the TR-CA, TR-CP, manufacturers of vehicle units and manufacturers of motion sensors PS in order to increase relying parties' trust in the implementation. Otherwise the TR-A shall undertake the auditing.

11.4 Actions taken as a result of deficiency

[r234] If irregularities are found in the audit the TR-A shall take appropriate action depending on severity.

11.5 Communication of results

[r235] Results of the audits on a security status level shall be available upon request. Actual audit reports shall not be available except on need-to-know basis.
[r235.1] The TR-A includes the results of the audit in a report that defines corrective actions including an implementation schedule, required to fulfill the TR-A obligations. The report will be provided, in English, to the ERCA.

12 Policy change procedures

12.1 Items that may change without notification

[r236] The only changes that may be made to this specification without notification are

a) Editorial or typographical corrections
b) Changes to the contact details

12.2 Changes with notification

12.2.1 Notice

[r237] Any item in this certificate policy may be changed with **90** days notice.

[r238] Changes to items which, in the judgment of the policy responsible organization (the TR-A), **will not** materially impact a substantial majority of the users or relying parties using this policy may be changed with **30** days notice.

12.2.2 Comment period

[r239] Impacted users may file comments with the policy administration organization within **15** days of original notice.

12.2.3 Whom to inform

[r240] Information about changes to this policy shall be sent to:

- ERCA;
- TR-CIA, TR-CA and TR-CP including subcontractors;
- UN-ECE Transport Division.

12.2.4 Period for final change notice

[r241] If the proposed change is modified as a result of comments, notice of the modified proposed change shall be given at least **30** days prior to the change taking effect.

12.3 Changes requiring a new Policy approval

[r242] If a policy change is determined by the TR-A organization to have a material impact on a significant number of users of the policy, the TR-A shall submit the revised Policy to the **ERCA** for approval.

13 References

[BPM] Digital Tachograph Card Issuing Best Practice Manual. Card Issuing Group, 16 November 2001. - owned by the European Commission.

[CC] Common Criteria. ISO/IEC 15408-1:2009 "Information technology - Security techniques - Evaluation criteria for IT security – Part 1: Introduction and general model".

[CC] Common Criteria. ISO/IEC 15408-2:2008 "Information technology - Security techniques - Evaluation criteria for IT security – Part 2: Security functional components".

[CC] Common Criteria. ISO/IEC 15408-3:2008 "Information technology - Security techniques - Evaluation criteria for IT security – Part 3: Security assurance components".

[CEN] CEN Workshop Agreement 14167-2: Cryptographic Module for CSP Signing Operations – Protection Profile (MCSO-PP)

[ETSI 102 042] ETSI TS 102 042. Policy requirements for certification authorities issuing public key certificates

[FIPS] FIPS PUB 140-2 (May 25, 2001): "Security Requirements for Cryptographic Modules". Information Technology Laboratory, National Institute of Standards and Technology (NIST)

[ISO 17799] BS ISO/IEC 17799: 2005. Information technology -- Code of practice for information security management.

[CSG] Common Security Guideline, Card Issuing Project. – owed by the European Commission

[ERCA] Digital Tachograph System European Root Policy, Version 2.1; European Commission Joint Research Center Publication 53429; 28th July 2009; published at http://dtc.ec.europa.eu.

[AETR] European Agreement Concerning the Work of Crews of Vehicles Engaged in International Road Transport (AETR) concluded at Geneva on 1 July 1970

[AETR] Implementation of the AETR - Project plan for AETR Contracting Parties (ECE/TRANS/SC.1/2006/9)

14 Glossary/Definitions and abbreviations

14.1 Glossary/Definitions

CA Policy: A named set of rules that indicates the applicability of keys, certificates and equipment to a particular community and/or class of application with common security requirements.

Card/Tachograph cards: Integrated Circuit equipped card, in this policy this is equivalent to the use of the terms ”**IC-Card**” and ”**Smart Card**”.

Card holder: A person or an organization that is a holder and user of a Tachograph card. Included are drivers, company representatives, workshop workers and control body staff.

Certificate: In a general context a certificate is a message structure involving a binding signature by the issuer verifying that the information within the certificate is correct and that the holder of the certified public key can prove possession of the associated private key.

Certification Authority System (CAS): A computer system in which certificates are issued by signing certificate (user) data with the CA private signing key.

Certification Practice Statement (CPS): A statement of the practices that a certification authority employs in issuing certificates and is connected to the actual CA policy. The CPS is in this Policy replaced by a Practice Statement, because it has a broader view and connects to keys, certificates and equipment.

Equipment: In the Tachograph system the following equipment exists: Tachograph cards, VU (vehicle units) and Motion Sensors.

Manufacturer/Equipment manufacturer: Manufacturers of Tachograph equipment. In this policy most often used for VU and Motion Sensor manufacturers, since these have distinct roles in the System.

Motion Sensor key: A symmetric key used for the Motion Sensor and VU to ensure the mutual recognition.

Practice Statement (PS). A statement of the security practices employed in the Tachograph processes. A PS is comparable to the standard PKI document CPS.

Private key: The private part of an asymmetric key pair used for public key encryption techniques. The private key is typically used for signing digital signatures or decrypting messages. Also called Secret key.

Public key: The public part of an asymmetric key pair used for public key encryption techniques. The public key is typically used for verifying digital signatures or to encrypt messages to the owner of the private key.

RSA keys: RSA is the cryptographic algorithm used for asymmetric (PKI) keys in the Tachograph system.

Service Agency: An entity that undertakes to tasks on behalf of an TR-CA, as a subcontractor.

Tachograph cards/Cards: Four different type of smart cards for use in the Tachograph system: Driver card, Company card, Workshop card, Control card.

User: Users are equipment users and are either **Card Holders** for card or **manufacturers** for Vehicle units/Motion Sensors. All users shall be uniquely identifiable entities.

In this document:
Signed: Where this policy requires a signature, the requirement is met by a secure and verifiable digital signature.

Written: Where this policy requires information to be in writing, that requirement is met by a data message if the information contained therein is accessible so as to be usable for the parties concerned.

14.2 List of abbreviations

CA Certification Authority
CAA/PA Certification Authority Administrator/ Personalization Administrator
CAS Certification Authority System
CIA Card Issuing Authority
CC Common Criteria
CP Card Personalizing organization
CPS Certification Practice Statement
ERCA European Root CA
ISSO Information System Security Officer
ITSEC Information Technology Security Evaluation Criteria
KG Key Generation
MS Member State
MSA Member State Authority
MSCA Member State CA
PIN Personal Identification Number
PKI Public Key Infrastructure
RSA A specific Public key algorithm
SA System Administrator
PS Practice Statement
TR-A Turkish Authority
TR-CA Turkish Certification Authority
TR-CIA Turkish Card Issuing Authority
TR-CP Turkish Card Personalizing Organization
VU Vehicle Unit
VUP VU Personalizing organization

15 Correspondence table with the ERCA Policy

The requirements for the TR-A Policy are formulated in the ERCA Policy § 5.3. The table below provides the rationale between the requirements as formulated in the ERCA Policy [ERCA] and the requirements in the TR-A Policy.

Item	Reference ERCA Policy	Requirement	Reference TR-A Policy
1	§ 5.3.1	The MSA Policy shall identify the entities in charge of operations.	§1.1 Responsible organization
2	§ 5.3.2	The MSCA key pairs for equipment key certification and for motion sensor key distribution shall be generated and stored within a device which either: • is certified to meet the requirements identified in FIPS 140-2 (or FIPS 140-1) level 3 or higher [10]; • is certified to be compliant with the requirements identified in the CEN Workshop Agreement 14167-2 [11]; • is a trustworthy system which is assured to EAL4 or higher in accordance with ISO 15408 [12]; to level E3 or higher in ITSEC [13]; or equivalent security criteria. These evaluations shall be to a protection profile or security target, • is demonstrated to provide an equivalent level of security.	§6.2.1 Turkish keys generation §6.3 Motion Sensor Keys §6.4 Transport keys §6.5 Key Certification Requests and Motion Sensor Key Distribution Request
3	§ 5.3.3	Member State Key Pair generation shall take place in a physically secured environment by personnel in trusted roles under, at least dual control.	§6 Root keys and transport keys management: European Root key, Turkish keys, Motion Sensor keys, transport keys [paragraph 8] §6.2.1 Turkish keys generation [r104]
4	§ 5.3.4	The Member State Key Pairs shall be used for a period of at most two years starting from certification by the ERCA.	§6.2.2 Turkish keys period of validity
5	§ 5.3.5	The generation of new Member State Key Pairs shall take into account the one month turnaround time required for certification by the ERCA	§6.2.1 Turkish keys generation [r106]

6	§ 5.3.6	The MSA shall submit MSCA public keys for certification by the ERCA using the key certification request (KCR) protocol described in Annex A.	§6.5 Key Certification Requests and Motion Sensor Key Distribution Requests [r123.1]
7	§ 5.3.7	The MSA shall request motion sensor master keys from the ERCA using the key distribution request (KDR) protocol described in Annex D.	§6.5 Key Certification Requests and Motion Sensor Key Distribution Requests [r123.3]
8	§ 5.3.8	The MSA shall recognise the ERCA public key in the distribution format described in Annex B	§6.5 Key Certification Requests and Motion Sensor Key Distribution Requests [r123.2]
9	§ 5.3.9	The MSA shall use the physical media for key and certificate transport described in Annex C	§6.5 Key Certification Requests and Motion Sensor Key Distribution Requests [r123.4]
10	§ 5.3.10	The MSA shall ensure that the Key Identifier (KID) and modulus (n) of keys submitted to the ERCA for certification are unique within the domain of the MSCA.	§6.5 Key Certification Requests and Motion Sensor Key Distribution Requests [r123.5]
11	§ 5.3.11	The MSA shall ensure that expired keys are not used for any purpose. The Member State private key shall be either: destroyed so that the private key cannot be recovered; or retained in a manner preventing its use.	§6.2.7 Turkish keys end of life [r116]
12	§ 5.3.12	The MSA shall ensure that an equipment RSA key is generated, transported, and inserted into the equipment, in such a way as to preserve its confidentiality and integrity. For this purpose, the MSA shall • ensure that any relevant prescription mandated by security certification of the equipment is met. • ensure that both generation and insertion (if not onboard) takes place in a physically secured environment; • unless key generation was covered by the security certification of the equipment, ensure that specified and appropriate cryptographic key generation algorithms are used; The last two of these requirements on generation shall be met by generating equipment keys within a device which either:	§5.1.1 Quality control – TR-CA/TR-CP function[r27] §7.1 General aspects TR-CP / TR-CA incl. Service Agencies and VU manufacturers [r124] to [r126] §7.2 Equipment key generation

		a) is certified to meet the requirements identified in FIPS 140-2 (or FIPS 140-1) level 3 or higher [9]; b) is certified to be compliant with the requirements identified in the CEN Workshop Agreement 14167-2 [10]; c) is a trustworthy system which is assured to EAL4 or higher in accordance with ISO 15408 [11]; to level E3 or higher in ITSEC [12]; or equivalent security criteria. These evaluations shall be to a protection profile or security target. d) is demonstrated to provide an equivalent level of security.	
13	§ 5.3.13	The MSA shall ensure confidentiality, integrity, and availability of the private keys generated, stored and used under control of the MSA Policy.	§3.4.1 Types of information to be kept confidential [r20] §6.2.1 Turkish keys generation §6.2.3 Turkish private key storage §6.4 Transport keys §7.2 Equipment key generation
14	§ 5.3.14	The MSA shall prevent unauthorised use of the private keys generated, stored and used under control of the MSA Policy.	§6.2.3 Turkish private key storage §6.4 Transport keys §7.2 Equipment key generation §7.2.3 Equipment private key protection and storage – Cards
15	§ 5.3.15	The Member State private keys may be backed up using a key recovery procedure requiring at least dual control.	§6.2.4 Turkish private key backup [r111]
16	§ 5.3.16	Key certification requests that rely on transportation of private keys are not allowed.	§6.5 Key Certification Requests and Motion Sensor Key Distribution Request [r123.6] §7.2.3 Equipment private key protection and storage – Cards [r143]

17	§ 5.3.17	Key escrow is strictly forbidden	§6.2.5 Turkish private key escrow [r112] §7.2.5 Equipment private key escrow and archival [r147]
18	§ 5.3.18	The MSA shall prevent unauthorised use of its motion sensor keys.	§6.3 Motion Sensor keys [r120], [r122]
19	§ 5.3.19	The MSA shall ensure that the motion sensor master key (Km) is used only to encrypt motion sensor data for the purposes of motion sensor manufacturers. The data to be encrypted is defined in the ISO / IEC 16844-3 standard [7].	§3.1.7 Motion Sensor manufacturers' obligations (role as personalization organization)
20	§ 5.3.20	The motion sensor master key (Km) shall never leave the secure and controlled environment of the MSA.	§3.1.7 Motion Sensor manufacturers' obligations (role as personalization organization)
21	§ 5.3.21	The MSA shall forward the workshop card motion sensor key (KmWC) to the component personaliser (in this case, the card personalisation service), by appropriately secured means, for the sole purpose of insertion into workshop cards.	§6.3 Motion Sensor keys [r120]
22	§ 5.3.22	The MSA shall forward the vehicle unit motion sensor key (KmVU) to the component personaliser (in this case, a vehicle unit manufacturer), by appropriately secured means, for the sole purpose of insertion into vehicle units.	§3.1.6 VU manufacturers' obligations (role as personalization organization)
23	§ 5.3.23	The MSA shall maintain the confidentiality, integrity, and availability of its motion sensor key copies.	§6.3 Motion Sensor keys [r122]
24	§ 5.3.24	The MSA shall ensure that its motion sensor key copies are stored within a device which either: a) is certified to meet the requirements identified in FIPS 140-2 (or FIPS 140-1) level 3 or higher [9]; b) is a trustworthy system which is assured to EAL4 or higher in accordance with ISO 15408 [11]; to level E3 or higher in ITSEC [12]; or equivalent security criteria. These evaluations shall be to a protection profile or security target.	§6.3 Motion Sensor keys [r122]
25	§ 5.3.25	The MSA shall possess different Member State Key Pairs for the production of vehicle unit and tachograph card equipment public key certificates	§ 6.2 Turkish keys [r100]
26	§ 5.3.26	The MSA shall ensure availability of its equipment public key certification service.	§6.2.1 Turkish keys generation [r106]

27	§ 5.3.27	The MSA shall only use the Member State Private Keys for: a) the production of Annex I(B) equipment key certificates using the ISO / IEC 9796-2 digital signature algorithm as described in Annex I(B) Appendix 11 Common Security Mechanisms [6]; b) production of the ERCA key certification request as described in Annex A. c) issuing Certificate Revocation Lists if this method is used for providing certificate status information (see 5.3.30).	§6.2 Turkish keys [r100]
28	§ 5.3.28	The MSA shall sign equipment certificates within the same device used to store the Member State Private Keys (see 5.3.2).	§6 Root keys and transport keys management: European Root key, Turkish keys, Motion Sensor keys, transport keys – paragraph 9 §6.2.3 Turkish private key storage [r109]
29	§ 5.3.29	Within its domain, the MSA shall ensure that equipment public keys are identified by a unique key identifier which follows the prescriptions of Annex 1(B) [6].	§7.2 Equipment key generation [r136] §8.1.1 Tachograph cards [r151]
30	§ 5.3.30	Unless key generation and certification is performed in the same physically secured Environment, the key certification request protocol shall provide proof of origin and integrity of certification requests, without revealing the private key.	§8.1.1 Tachograph cards [r151.1]
31	§ 5.3.31	The MSA shall maintain and make certificate status information available	§8.7 Dissemination of equipment certificates and information [r164.1] §8.9 Equipment certificate revocation [r166]
32	§ 5.3.32	The validity of a tachograph card certificate shall equal the validity of the tachograph card.	§8.4 Equipment certificate time of validity [r160]
33	§ 5.3.33	The MSA shall prevent the insertion of undefined validity certificates into tachograph cards.	§8.4 Equipment certificate time of validity [r160]
34	§ 5.3.34	The MSA may allow the insertion of undefined validity Member State certificates into vehicle units.	§3.1.6 VU manufacturers' obligations (role as personalization organization)
35	§ 5.3.35	The MSA shall ensure that users of cards are identified at some stage of the card issuing process.	§5.1.2.1 User application [r30] to [r33]

			§5.1.9 Card distribution to the user – handled by the TR-CP or TR-CIA [r70]
36	§ 5.3.36	The MSA shall ensure that ERCA is notified without delay of loss, theft, or potential compromise of any MSA keys.	§6.2.6 Turkish keys compromise [r113], [r114]
37	§ 5.3.37	The MSA shall implement appropriate disaster recovery mechanisms which do not depend on the ERCA response time.	§6.2.1 Turkish keys generation [r106] §9.7 TR-CA/TR-CP continuity planning [r215]
38	§ 5.3.38	The MSA shall establish an information security management system (ISMS) based on a risk assessment for all the operations involved.	§9.1 Information security management of the TR-CA and TR-CP [r170]
39	§ 5.3.39	The MSA shall ensure that the policies address personnel training, clearance and roles.	§9.3 Personnel security controls of the TR-CA/TR-CP
40	§ 5.3.40	The MSA shall ensure that appropriate records of certification operations are maintained.	§9.6.1 Types of event recorded by the TR-CIA [r205] §9.6.2 Types of event recorded by the TR-CA/TR-CP [r206]
41	§ 5.3.41	The MSA shall include provisions for MSCA termination in the MSA Policy.	§10 TR-CA or TR-CP Termination
42	§ 5.3.42	The MSA Policy shall include change procedures.	§12 Policy change procedures
43	§ 5.3.43	The MSA audit shall establish whether the Requirements of this Section are being maintained.	§11.2 Topics covered by audit [r230] to [r232]
44	§ 5.3.44	The MSA shall perform the first audit within 12 months of the start of the operations covered by the approved policy. When an audit finds no evidence of non-conformity, the next audit may be performed within 24 months. When an audit finds evidence of non-conformity, the next audit shall be performed within 12 months.	§11.1 Frequency of entity compliance audit [r229]
45	§ 5.3.45	The MSA shall report the results of the audit as mentioned in 5.3.43 and provide the audit report, in English, to ERCA.	§11.5 Communication of results [r235.1]
46	§ 5.3.46	The audit report shall define any corrective actions, including an implementation schedule, required to fulfill the MSA obligations.	§11.5 Communication of results [r235.1]

ANNEX-I

TSE (Turkish Standards Institiution) and Turkish Common Criteria Certification Scheme (CCCS)

Turkish Standards Institute is authorized governmental agency of Turkish Republic which is responsible for preparing standards for every kind of item and products together with procedure and service. TSE has been established in 1960 and is related with Minister of Science, Industry and Technology. TSE is a public founding institution.

Under TSE's organizational structure; Information Technologies Test and Certification Department (ITCD) is located which is responsible for certifying IT products, performing tests, giving seminars to increase awareness, organizing trainings etc. Within this department is Turkish Common Criteria Certification Scheme (CCCS) of TSE which is a side of Common Criteria Recognition Agreement signed by 26 countries (USA, UK, France, Japan, Germany, etc). This agreement states that signatories will recognize the certificates (up to Evaluation Assurance Level 4) which are given by any one of Authorizing Countries. On behalf of Turkey, TSE had signed the agreement at 2003 and become a Consuming Member. After the successful Shadow Assessment at 2010, **Turkey became an "Authorising Member" and the certificates given by Turkey are became recognized by 26 countries**. Authorising and Consuming Members are given below. This information can also been found on http://www.commoncriteriaportal.org/ which is the official website of the Common Criteria.

Authorising Member	Consuming Member
Australia	Austria
Canada	Czech Republic
France	Denmark
Germany	Finland
India	Greece
Italy	Hungary
Japan	Israel
Malaysia	Pakistan
Netherlands	
New Zealand	
Norway	
South Korea	
Spain	
Sweden	
Turkey	
United Kingdom	
United States of America	

Common Criteria Certification Process

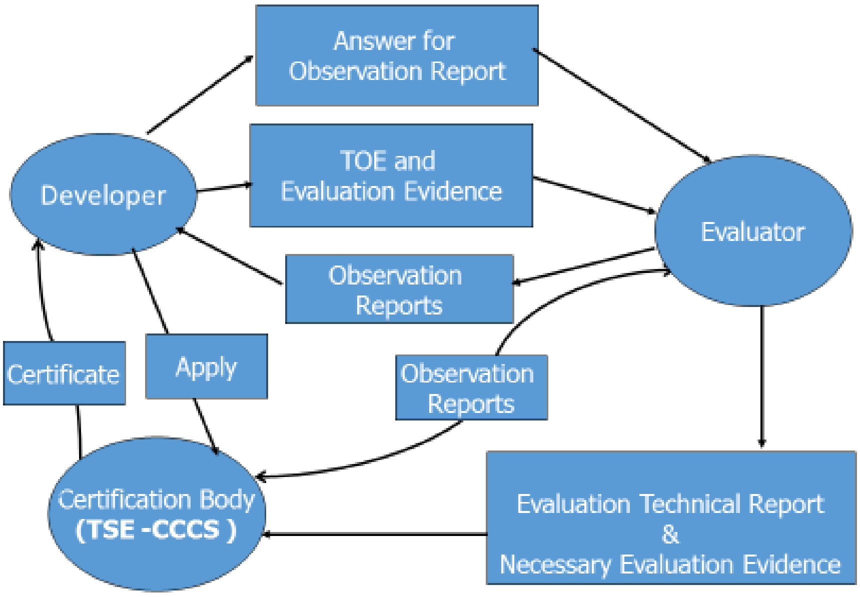
There are 3 parties at the Common Criteria Certification Process; Certification Body, Company and Evaluation Laboratory.

Certification Body is the Authority for the certification. In Turkey, TSE is the Certification Body and TSE-CCCS is the Common Criteria Certification Scheme established in TSE.

Company is the Developer who designed and produced the product. Mostly, it is the same as owner of the product.

Evaluation Laboratory is the Information Technology Security Evaluation Facility who accredited by the Accreditation Body and licensed by the Common Criteria Certification Scheme. TSE-CCCS has licensed **5 Common Criteria laboratories so far**. They have ISO/IEC 17025 Accreditation and they are:;

- TUBİTAK BILGEM OKTEM (located at Turkey)
- BEAM Teknoloji A.Ş. (located at Turkey)
- Cygnacom Inc. (located at U.S.A.)
- Epoche&Espri (located at Spain)
- Brightsight B.V. (located at the Netherlands)


Answer for Observation Report
Developer
TOE and Evaluation Evidence
Evaluator
Observation Reports
Certificate
Apply
Observation Reports
Certification Body (TSE -CCCS)
Evaluation Technical Report & Necessary Evaluation Evidence

The steps of the certification process;

- Company selects a licensed lab by TSE,
- Company needs to make a contract with the laboratory and laboratory prepares an Evaluation Work Plan,
- Company fills the CC Certification Application Form provided by TSE,
- During the Application an NDA (Non-Disclosure Agreement) is signed between the Company and the TSE,
- After a Kick Off Meeting the evaluation is began,
- Company provides the product (TOE: Target of Evaluation) and other evidences to the Evaluator,
- Evaluator analyse the product according to Common Criteria standard and write Observation Reports to the Company,
- Company does necessary changes at the product or evidences,
- For each Assurance Class, Evaluator (laboratory) prepares an Evaluation Technical Report. The ETR has the Pass/Fail verdict,

- For each Assurance Class, Certification Body inspects the Evaluation Technical Report and writes the Observation Decision. The OD has the Pass/Fail verdict,
- After all Assurance Classes are evaluated, evaluator prepares the Final Evaluation Technical Report,
- The Certification Body inspects the Final ETR and prepares the OD,
- The Certification Body prepares the Certification Report and the Certificate,
- Certification Report is published at the commoncriteriaportal.org

The Common Criteria standard (ISO/IEC 15408 Information technology -- Security techniques -- Evaluation criteria for IT security) has three parts;

- Part 1 - Introduction and general model: It defines the terms and abbreviations to be used in all parts ISO/IEC 15408; establishes the core concept of a Target of Evaluation (TOE); the evaluation context; and describes the audience to which the evaluation criteria are addressed. An introduction to the basic security concepts necessary for evaluation of IT products is given. It also contains the key concepts of protection profiles (PP), packages of security requirements and the topic of conformance are specified and the consequences of evaluation and evaluation results are described. Part 1 also gives guidelines for the specification of Security Targets (ST) and provides a description of the organization of components throughout the model.
- Part 2 – Security functional components: It defines the content and presentation of the security functional requirements to be assessed in a security evaluation using ISO/IEC 15408. It contains a comprehensive catalogue of predefined security functional components that will meet most common security needs of the marketplace. These are organized using a hierarchical structure of classes, families and components, and supported by comprehensive user notes.
- Part 3 – Security assurance components: It defines the assurance requirements of the evaluation criteria. It includes the evaluation assurance levels that define a scale for measuring assurance for component targets of evaluation (TOEs), the composed assurance packages that define a scale for measuring assurance for composed TOEs, the individual assurance components from which the assurance levels and packages are composed, and the criteria for evaluation of protection profiles and security targets.

There is also a Methodolgy standard is used during evaluations;

- ISO/IEC 18045 Information technology -- Security techniques -- Methodology for IT security evaluation: It is a companion document to ISO/IEC 15408. ISO/IEC 18045 defines the minimum actions to be performed by an evaluator in order to conduct a Common Criteria evaluation, using the criteria and evaluation evidence defined in ISO/IEC 15408.

The laboratory performs an evaluation in terms of Assurance Classes below;

- Security Target Evaluation: The evaluation of the Security Target of the TOE (Target of Evaluation),
- Development: The evaluation of the Architecture Description and the Functional Specification of the TOE,
- Guidance documents
- Life-cycle support: The evaluation of the Configuration Management Scope, Configuration Management Plan, Delivery Procedures, Development Security of the TOE,
- Tests: Functional and Independent Tests
- Vulnerability Assessment: Vulnerability Analysis and Penetration Tests

Also there are 7 Evaluation Assurance Levels (EAL) as assurance increases proportional to increasing EAL numbers.

TSE CCCS has certified more than 40 products/PPs, more than half of them are above EAL 4.

Certifications of the Digital Tachographs

TSE CCCS has already certified digital tachograph units and is currently certifying even more products of this type. CCCS and its licensed evaluation centers are quite experienced in this field now. These products confirm to the Protection Profile BSI-CC-PP-0057 (Protection Profile for Digital Tachograph-Vehicle Unit, sponsored by Bundesamt für Sicherheit in der Informationstechnik-BSI, http://www.commoncriteriaportal.org/). This elaborate protection profile sets rules to develop a secure vehicle unit for road transport vehicles.