



EU-MIDT

Plenary

EU-MIDT/PLE/004-2006

Digital Tachograph System

Guidelines to approve workshops

PREPARED BY: IDT Project

DATE: 24/04/2006

EU-MIDT Plenary – 004-2006

REF : EU-MIDT/PLE/004-2006

EU-MIDT SECRETARIAT DOCUMENT PREPARATION

OPERATION	NAME	ORGANISATION	DATE
PREPARED BY	IDT Project		09/07/2004
CHECKED BY	Marie-Christine BONNAMOUR	Cybele – MIDT Secretariat	24/04/2006
APPROVED BY	Thierry GRANTURCO	Granturco & Partners – MIDT	24/04/2006
ISSUED BY	Secretariat	MIDT	08/05/2006

CHANGE CONTROL LIST

VERSION	DATE	NAME	DESCRIPTION

GUIDELINES TO APPROVE WORKSHOPS

INTRODUCTION

From the moment digital tachographs begin to be installed into new in-scope vehicles, a range of support measures will already need to have been put in place to ensure that the units can function and operate correctly. It will be the responsibility of approved workshops to ensure that when the recording equipment leaves the workshop it meets the requirements set out in the European Regulations (Regulation (EEC) n° 3821/85 as last modified).

The Regulations exist to provide a legal framework to ensure that appropriate equipment is available and maintained to support the associated EU Regulations on Drivers Hours (Regulation (EEC) n° 3820/85 as last amended). All digital tachographs will need to be, at some point, activated, calibrated, inspected, and, ultimately, decommissioned from service; and workshops will be expected to provide this front-line support and expertise and to take on tasks and roles for which, at the moment, they have little or no knowledge or experience of. They will need to learn new skills, new technical and administrative procedures, and to understand what for them will be an entirely new set rules, such as Data Protection issues when handling downloaded data.

It is the purpose of these guidelines, on the one hand, to set out the legal texts within which all workshops must comply and, on the other hand, make recommendations that Member State Competent Authorities should consider when setting out the criteria to approve their own workshops, and to provide a framework that all Member States can adopt or adapt when setting national requirements for the approval of workshops when the fitting of digital tachographs is implemented.

Existing workshops – those already dealing with analogue tachographs – will have a range of procedures in place, and some of these may need to be reviewed or modified if those workshops intends to deal with digital tachographs. These guidelines are intended to build on existing procedures or administrative measures already in place and to allow the existence of two systems (analogue/modular and digital) to be as compatible, simple and as practicable as possible.

In view of the new security issues that exist with digital tachographs the Competent Authorities of each Member State will need to ensure that adequate audit and security control systems are in place to minimise the possibility of mistakes or errors, and that workshops and their staff have access to the necessary guidance, support and technical knowledge needed for them to undertake the tasks in the workshop. Providing an appropriate level of security to minimise the opportunities for the fraudulent use or handling of Workshop Cards is considered a key aspect of the requirements for approving workshops.

On points of clarity, the Regulations specify two entities, ‘workshops’ and ‘fitters’. It is clear that most Member States currently apply one of two different interpretations to the meaning of these terms and to the legal obligations that can be imposed on

these entities. For the purposes of these guidelines, and in the interests of a consistent interpretation, it is necessary to explain the differences.

In the first interpretation the Competent Authorities will approve people or organisations as businesses to conduct tachograph work, and place upon them the full responsibility for the actions of themselves and their employees (including the actions of the technicians employed to actually conduct inspections, calibrations and repairs). In such systems the term ‘fitter’ and ‘workshop’ as defined within Annex 1B of the Regulations become interchangeable.

In the second interpretation Competent Authorities will separately approve ‘workshops’ (that is the individual or organisation conducting the work on tachographs) and ‘fitters’ (that is the individual technicians employed by the ‘workshops’ to conduct inspections, calibrations and repairs). In such systems the Competent Authority will hold both entities responsible for their individual and joint conduct.

These guidelines apply the first interpretation and where the terms ‘workshop’ and ‘fitter’ are used in the Regulations to dictate responsibilities and obligations, the single term workshop has been used.

However, there remain key aspects of workshop activities that are dependent upon the conduct of individual technicians who carry out the work. Where these are referred to, the term ‘technician’ has been used, to denote an individual person. But it remains, however, for the individual Member States to determine how the responsibilities of individual technicians are identified and controlled.

Vehicles equipped with analogue tachographs are likely to remain in service for some years after the fitting of digital tachographs to all new vehicles. Existing workshops may wish to continue to offer services to vehicles equipped with analogue tachographs and, in addition, to seek the necessary approval from their Competent Authorities to carry out activities on digital ones also, and that such tasks can run in parallel.

It is not within the scope of these guidelines to define the precise criteria or procedures that each Member State should adopt when approving workshops, or to impose limitations on the types of tachograph against which workshops may seek approval.

Member States themselves will always have the ultimate discretion to decide if - and how - to adopt the recommendations contained within these guidelines, or to add further requirements, depending entirely on their individual Competent Authorities. Therefore, Member States should be encouraged to ensure continued compliance with the Regulations, in their wider context, and to recognise the needs to preserve the integrity of the scheme if its repute and credibility throughout the industry are to be respected.

CHAPTER I

The work that workshops will be expected to do

A . The Issues

1.1 Background

The Competent Authority of each Member State has a responsibility to ensure that installation, activation, calibration, inspection and repairs are only carried out by trusted and approved workshops. This chapter describes the operations and work that a workshop will be expected to undertake when dealing with vehicles fitted with digital tachographs.

The activities described are requirements of Annex IB. There will be a significant amount of new work that workshops will be expected to undertake, and it is therefore imperative that they receive the support and guidance that ensures that they can perform all of these tasks, but also that they can do so to a competent and acceptable standard.

B The Requirements

1.2 The Regulations

1.2.1 Annex IB of Regulation (EEC) n° 3821/85 (as last amended) defines the requirements for digital tachographs and provides all the relevant technical information about the recording equipment and the four different types of “smart” card.

1.2.2 Before any of the workshop operations described below can take place a valid workshop card and a PIN code must be issued by the Member State within whose legal jurisdiction the workshop is approved.

1.3 Approval of Workshops

1.3.1 Chapter VI of Annex 1B requires that Member States will approve, regularly control and certify bodies to carry out:

1.3.1.1. Installations (including activation).

1.3.1.2. Checks.

1.3.1.3. Inspections and calibration

1.3.1.4. Repairs and decommissioning

1.4 Responsibilities and Obligations of the Competent Authorities of Member States

- 1.4.1 The competent authority of each Member State shall maintain a register of the marks and electronic security data used and of approved workshop cards issued.¹
- 1.4.2 In addition, the competent authorities of the Member States shall forward to the Commission the lists of ‘approved fitters and workshops’, and the cards issued to them, and shall forward to it copies of the marks and of the necessary information relating to the electronic security data used.
- 1.4.3 Member States also need to take measures to guarantee the security, accuracy and availability of data recorded and stored by digital recording equipment in the event of recording equipment being decommissioned or sold.²

1.5 Procedures to be carried out by Workshops - DEFINITIONS

1.5.1 INSTALLATION means:

- 1.5.1.1 Mounting the recording equipment³ in a vehicle. The recording equipment will be activated⁴ by vehicle manufacturers or ‘fitters’ before the vehicle leaves the premises where the installation took place.

1.5.2 CHECKS⁵ means:

- 1.5.2.1 Every individual device, whether new or repaired, shall be checked in respect of its proper operation and the accuracy of its reading and recordings, within the limits laid down in Chapter III.2.1 and III.2.2⁶ by means of sealing in accordance with Chapter V.3 and calibration.⁷

1.5.3 INSPECTIONS means

¹ Article 12 of Regulation (EEC) n° 3821/85 as last amended (Chapter III - Installation and Inspection)

² Article 14 (5) of Regulation (EEC) n° 3821/85 as currently modified (Chapter IV – Use of equipment) – “Member States shall ensure that data needed to monitor compliance with Regulation (EEC) n° 3820/85 and Council Directive 92/6/EEC which are recorded and stored by recording equipment in conformity with Annex IB to the Regulation (EEC) n° 3821/85 as last amended can be made available for at least 365 days after the date of their recording and that they can be made available under conditions that guarantee the security and accuracy of the data.

Member States shall take any measures necessary to ensure that the resale or decommissioning of recording equipment cannot detract, in particular, from the satisfactory application of this paragraph.

³ For the purposes of the Regulation, “recording equipment” means the total equipment intended for installation in road vehicles to show, record and store automatically, or semi-automatically details of the movement of such vehicles and of certain work periods of their drivers.

⁴ Activation means phase where the recording equipment becomes fully operational and implements all functions, including security functions. Activating a recording equipment requires the use of a workshop card and the entry of its PIN code.

⁵ Requirement 254 of Annex 1B - the term ‘Checks is not included in the glossary of definitions in Annex 1B

⁶ Annex 1B - Ch III.2.1 refers to measurement of distance travelled; Ch.III.2.2 measurement of speed; Ch.V.3 requirements of sealing.

⁷ As defined under Definitions (f) in Annex 1 B

- 1.5.3.1 *Installation inspection*: when being fitted to a vehicle, the whole installation of the recording equipment shall comply with the provisions relating to maximum tolerances laid down in Chapter III.2.1 and III.2.2 (speed and distance measurements).

After the recording equipment has been checked on installation, an installation plaque which is clearly visible and easily accessible shall be affixed on, in or beside the recording equipment. (To assist location it is recommended that this be the vehicle unit).

This requirement applies not only to the very first installation of the new recording equipment into a vehicle, but also any installation of secondhand recording equipment installed for the first time into any other vehicles thereafter. Such installations shall be performed by a vehicle manufacturer, a fitter or a workshop.

- 1.5.3.2 Periodic inspections of the equipment fitted to the vehicle shall take place:

- 1.5.3.2.1 after any repair of the equipment; or,
- 1.5.3.2.2 after any alteration of the characteristic coefficient of the vehicle or of the effective circumference of the tyres or,
- 1.5.3.2.3 after equipment UTC time is wrong by more than 20 minutes; or,
- 1.5.3.2.4 when the VRN has changed; and,
- 1.5.3.2.5 at least once within two years (24 months) of the last inspection.

- 1.5.3.3. The inspections mentioned above in 1.5.3.1 and 1.5.3.2. above shall include:

- 1.5.3.3.1 That the recording equipment is working properly, including the data storage in tachograph cards function;
- 1.5.3.3.2 That compliance with the provisions on the maximum tolerances on installation is ensured⁸;
- 1.5.3.3.3 That the recording equipment carries the type approval mark;
- 1.5.3.3.4 That the installation plaque is affixed;

⁸ Chapter III.2.1 and III.2.2 of Annex 1B

- 1.5.3.3.5 That the seals on the equipment and on the other parts of the installation are in tact;
- 1.5.3.3.6 The tyre size and actual circumference of the wheel tyres;
- 1.5.3.4 These inspections shall include a calibration and, after every inspection by an approved ‘fitter’ or workshop, a new plaque shall be affixed in place of the previous one.
 - 1.5.3.4.1 The plaque shall bear at least the following details⁹:
 - 1.5.3.4.2 Name, address or trade names of the approved fitter or workshop;
 - 1.5.3.4.3 Characteristic coefficient of the vehicle in the form “w = ...imp/km.”
 - 1.5.3.4.4 Constant of the recording equipment, in the form “k = ...imp/km.”
 - 1.5.3.4.5 Effective circumference of the wheel tyres in the form of “l = ...mm.”
 - 1.5.3.4.6 Tyre size
 - 1.5.3.4.7 The date on which the characteristic coefficient of the vehicle was determined and the effective circumference of the wheel tyres measured.
 - 1.5.3.4.8 The vehicle identification number.

1.5.4 REPAIRS AND DECOMMISSIONING

- 1.5.4.1 A repair is defined in Annex 1B¹⁰ as “any repair of a motion sensor or of a vehicle unit that requires disconnection of its power supply or disconnection from other recording equipment components, or opening of it”. When repair¹¹ or decommissioning takes place, workshops shall be able to download data from the recording equipment to give the data back to the appropriate transport operator.
- 1.5.4.2 Approved workshops shall issue to transport operators a certificate of undownloadability where the malfunction of the recording equipment prevents previously recorded data to be downloaded, even after repair by the

⁹ Requirement 249-250, Annex IB

¹⁰ Definition “gg” (page 11), Annex 1B

¹¹ At the time of writing it appears unlikely that the repair of VU or motion sensors will be undertaken because of the possible compromise to the security elements. It should therefore be considered that workshops will normally be required to decommission and replace the defective units.

workshop. The workshop will keep a copy of each issued certificate for at least one year.¹²

1.5.5 CALIBRATION¹³

1.5.5.1 Calibration of the recording equipment is a mandatory part of any inspection and will take place at the time of installation, periodic inspection or repair.

1.5.5.2. The recording equipment shall record and store in its data memory data relevant to:

- 1.5.5.2.1 The known calibration parameters at the moment of activation
- 1.5.5.2.2 Its very first calibration following its activation
- 1.5.5.2.3 Its first calibration in the current vehicle (as identified by its VIN)
- 1.5.5.2.4 The five most recent calibrations (if several calibrations happen within one calendar day, only the last one of the day shall be stored)
- 1.5.5.2.5 The purpose of the calibration (first installation, installation, activation, periodic inspection)
- 1.5.5.2.6 Workshop name and address
- 1.5.5.2.7 Workshop card number, card issuing Member State
- 1.5.5.2.8 Workshop card expiry date
- 1.5.5.2.9 Vehicle identification
- 1.5.5.2.10 Parameters updated or confirmed (w, k, l, tyre size, speed-limiter setting, odometer (old and new values), date and time (old and new values)).

1.5.5.3 The motion sensor shall record and store in its memory the following motion sensor installation data:¹⁴

- 1.5.5.3.1 First pairing with a VU (date, time, VU approval number, VU serial number);
- 1.5.5.3.2 Last pairing with a VU (date, time, VU approval number, VU serial number)

¹² Requirements 260-261, Annex IB, and Article 14 (5) dealing with the keeping of records;

¹³ Requirements 097-099, Annex IB

¹⁴ Requirement 099, Annex 1B

CHAPTER 2

Approval Criteria and Operating Guidelines for Workshops Conducting the Installation, Activation, Inspection, Calibration and Servicing of Digital Tachographs

A The Issues

2.1 Background and Basis for the Requirements

- 2.1.1 Manufacturers¹⁵ (those existing now, and those that may come into the market at a later date) and the Competent Authorities of each Member State have a part to play¹⁶ in ensuring that workshops comply with the requirements described in the Regulations relating to digital tachographs. It is the intention of this chapter to identify those roles and to establish the difference between what are binding legal obligations and those of a purely commercial interest.
- 2.1.2 Competent Authorities should set out their own approval criteria as appropriate for each Member State. The Competent Authorities should not attempt to intervene in the commercial setting up of workshops other than to ensure that legal requirements are adhered to.
- 2.1.3 In order that the independence of tachograph workshops from other commercial interests is made clear some Member States have in the past required them to be explicitly independent of vehicle dealers and distributors. This is however becoming more and more difficult to achieve as tachographs become more integrated into vehicle systems and as more vehicle owners expect full service from their vehicle suppliers including detailed diagnostics of vehicle faults requiring detailed information on the vehicle. Whatever commercial constraints are considered appropriate by Member States it is important to ensure that approved workshops are able to provide, at least, an inspection and calibration service to the requirements of the Regulations for all types of digital tachograph with which they will be presented.
- 2.1.4 A network of approved tachograph workshops in each Member State exists today, and it is envisaged that most of these workshops will wish to support digital tachographs, possibly alongside their current analogue tachograph activities. It has to be recognised, however, that the requirements which must be placed on workshops handling digital tachographs are necessarily much more stringent than those applied to workshops today. Therefore all workshops, both existing and new, will need to go through, respectively, either an additional or separate approval process before being qualified to handle digital tachographs.

¹⁵ When referring to manufacturers, it is inclusive of both tachograph manufacturers and vehicle manufacturers and distributors, who will have an increasing role and influence.

¹⁴ Regulation (EEC) n° 3821/85 as last amended. Ch. III Article 12.1 states; "Recording equipment may be installed or repaired only by fitters or workshops approved by the competent authorities of Member States for that purpose after the latter, should they so desire, have heard the views of the manufacturers concerned".

Simply by being approved to work on the existing generation of tachographs does not give automatic approval to work on digital tachographs.

2.1.5 Traditionally workshops have mainly been ‘sponsored’ by one or other of the tachograph manufacturers. This has had the significant benefit that such workshops have had ready and reliable access to data and other information relating to at least one manufacturer’s equipment. At the same time, sponsors have generally been able to provide information about other equipment in the market and about relationships between different products. It is considered desirable that manufacturers should make available technical bulletins, recall notices or any other information pertinent to the functioning of their own make and models of digital tachograph. An important role exists here for the Competent Authorities to ensure that procedures and mechanisms exist to enable such information to reach their approved workshops.

2.1.6. In the past there have also been a number of independent workshops who may have received their information and parts from sources other than direct from tachograph equipment manufacturers or who may have different ad hoc arrangements. Such workshops have often concentrated on repair, rather than supply, of new equipment. Provided that such workshops consider themselves commercially viable, have the necessary equipment and can demonstrate their competence to the satisfaction of the Competent Authority, there seems to be no reason why such workshops should not apply – and be approved – to install, calibrate and inspect digital tachographs too.

2.1.7 However, in future, repairs to digital tachographs are likely to require workshops obtaining ITSEC Approval to allow them to carry out anything other than the most trivial repairs to digital tachographs. The cost and processes to obtain such approval is very likely to be prohibitive.

2.1.8 In view of the above it is essential that the tachograph manufacturers provide advice to Member States in regard to acceptable processes of repair for digital recording equipment in order to enable to Competent Authorities to take any necessary measures to prevent abuses or creation of a sub-scheme.

2.1.8.1. If repairs are a feasible option, the tachograph manufacturers will need to specify what work can be undertaken on workshop premises, and under what circumstances and conditions units will need to be returned to the manufacturers themselves (or scrapped).

2.1.8.2. Similarly if it becomes apparent that local repairs to recording equipment, in particular vehicle units and motion sensors, are possible then it will be necessary to ensure that spare parts and replacement components used for repair conform to the type approval for the recording equipment fitted to the vehicle. To address this issue it will be the responsibility of manufacturers to provide clear instructions to workshop which identify acceptable components to be used for repairs and the responsibility of workshops to fully comply with the manufacturers’ instructions.

2.1.8.3. It is possible that repair or replacement of cables, which will often be integral with the vehicle's own systems, might be acceptable without affecting the security of the system.

B The Requirements

2.2 Approval of Workshops by Member States

2.2.1 All workshops should be approved against two sets of criteria:

2.2.1.1 Technical competence and facilities

2.2.1.2. Suitability of Applicant

2.2.2 Assessment of technical competence can be best achieved by ensuring that workshops have available appropriate and/or approved equipment to allow them to carry out the required tachograph-related tasks, and by ensuring that all technicians who carry out the work have successfully completed appropriate training. The Competent Authority may also have an interest in the environment in which the work is to be conducted, for example to ensure that facilities are adequate to accommodate vehicles, and that where other considerations may apply, these will also be met (e.g. health and safety guidelines).

2.2.3. Whilst the Competent Authorities should have little interest in the commercial arrangements that are reached between a workshop and a manufacturer (providing these are legally acceptable), they do, however, have an obligation to ensure that the transport industry as a whole has access to workshops in order that their recording equipment can be installed, activated, calibrated, inspected, repaired and decommissioned properly. Therefore, the criteria used for approval should clearly set out the conditions that a workshop must meet in order to do so. Such conditions should include at least an undertaking to receive "all-comers". This means that all tachograph workshops will be able to provide a consistent level of service to vehicles fitted with different makes of digital tachographs so as to ensure that the requirements of the Regulations are met. The activities that workshops are expected to conduct on all-comers is specified as:

2.2.3.1. Installation (requirement 239 of Annex 1B) – it is accepted that this procedure is likely to be confined to the installation of recording equipment made by manufacturers to whom the workshop has a franchise arrangement.

- 2.2.3.2. Activation (requirement 243)¹⁷ this procedure likely to be confined to the installation of recording equipment made by manufacturers to whom the workshop has a franchise arrangement.
 - 2.2.3.3. Calibration (requirement 248)
 - 2.2.3.4. Producing Plaques (requirement 249) and Certificates
 - 2.2.3.5. Sealing (electronic) (requirement 251)
 - 2.2.3.6. Periodic inspections (requirement 256)
 - 2.2.3.7. Downloading (requirement 260) - (this requirement must be possible for all VUs, irrespective of their make or model, at all workshops in order to meet the Regulation)¹⁸
 - 2.2.3.8. Undownloadability Certificates (requirement 261) – this would require all makes of workshop IDE¹⁹ to function with all types of VU. For security reasons it is also anticipated that an Undownloadability Certificate will include electronic authentication from the IDE.
 - 2.2.3.9 Decommissioning
 - 2.2.3.10 Items 2.2.3.3 to 2.2.3.9 – all workshops shall be able to conduct these operations on all types of digital tachograph²⁰.
- 2.2.4 To satisfy itself that workshops can meet these obligations the Competent Authority should include within the approval requirements the need for workshops to meet certain conditions. Such conditions may include:
- 2.2.4.1 A declaration of Commercial Approval supported by the manufacturer;
 - 2.2.4.2 All names of the owner, or owners, of the workshop and the address where such activities will take place.
 - 2.2.4.3 The naming and nomination of an individual who shall have responsibility for the security, controls and use of all workshop cards assigned to that particular workshop;
 - 2.2.4.4 Compliance with agreed administrative procedures to ensure all operations are carried out correctly and to an approved standard;

¹⁷ For technical reasons it is recognised that, in conducting procedure 2.2.3.1 & 2.2.3.2, some particular vehicle units may need to be replaced by another of the same or compatible make and type on certain vehicles to ensure compatibility with other electronic systems on the vehicle.

¹⁸ Article 14 (5) of 3821/85 as currently modified and requirement 260 of Annex 1B

¹⁹ Intelligent Dedicated Equipment

²⁰ To meet these requirements it will be necessary for test and programming equipment to be interoperable between different makes and models of tachographs.

- 2.2.4.5 Ensuring that all test equipment used for calibration on digital tachographs works correctly and operates within agreed tolerances;
 - 2.2.4.6 That records are kept of all such activities and are available when requested by inspecting officers;
 - 2.2.4.7 Ensuring the security of the workshop and its equipment (particularly the control of the workshop card) is maintained and that breaches are reported and recorded;
 - 2.2.4.8 Compliance with Data Protection Rules (as interpreted by each Member State);
 - 2.2.4.9 The setting of fees (if any) to be charged for different activities associated with digital tachographs;
 - 2.2.4.10 Ensuring that individual technicians are trained to a suitable level of competence and that that level is maintained throughout their employment with the workshop;
 - 2.2.4.11 The display of certificates, notices and authorisations to indicate compliance and approval.
- 2.2.5 The Competent Authority of each Member State will also need to:
- 2.2.5.1 Decide the period of validity of workshop approvals;
 - 2.2.5.2 Decide the level of fees for applying for the approval and the renewal of such approval where this applies;
 - 2.2.5.3. Undertake or delegate responsibility for conducting periodic inspections of workshops, individual technicians, records, equipment and security aspects;
 - 2.2.5.4 Ensure that approval criteria are reviewed and updated periodically in light of changes and experience;
 - 2.2.5.5 Ensure that procedures are in place to ensure applications for workshop cards from workshops and their staffs are validated satisfactorily and that cards are not issued inappropriately.
 - 2.2.5.6 Ensure that Workshop Cards are issued only for use at workshops within the territorial jurisdiction of that Member State, and that PINs are issued securely so as to be known only to the individual technician who will be required to use the workshop card to which it provides access.
 - 2.2.5.7 Maintain a list of approved workshop seal code numbers and share this information with the Commission and other Member States.

2.2.5.8 Ensure the competency of the technicians through either the approval of training programmes or by any other appropriate means.

2.2.6 Workshop approvals should not be transferred without the express approval of the Competent Authority. However, should ownership or control of the workshop change then the Competent Authorities should satisfy themselves that the approval requirements for the workshop, including any pertaining to individuals controlling the business, remain fulfilled. Whenever there is a major change of ownership, facilities or equipment, the Competent Authority should seek a full approval procedure. In other circumstances, for example the departure of one of the partners or directors of a business controlling the workshop, the matter may only require an administrative procedure. It will be for Member States to determine when, how and under what circumstances a full or partial approval process would be required to satisfy themselves that the approval requirements are still met.

2.3 Monitoring and Control of Workshops

2.3.1 If the workshop scheme is to work effectively, and continue to keep its integrity and repute, it is vital that it is properly enforced. To achieve this, Competent Authorities are encouraged to develop a robust legal base from which to work and at the same time, be in a position to discipline in those areas that need it. Monitoring of the competence and of the activities of workshops by (or on behalf of) the Competent Authority should always be treated as a continuing activity.

Member States need to determine the appropriate level of resources to monitor the workshops and its employees so as to prevent the security elements of the scheme from being compromised and to ensure that downloaded tachograph data are adequately safeguarded by workshops.

2.3.2 To maintain the security of the overall digital tachograph system, proper audit trails of all activities relating to digital tachographs should be kept, and each workshop should keep a complete record of all its tachograph-related activities.

Whilst it is possible that records could be kept in paper form, in practice, and with the existing need for the transfer of electronic data from workshop cards and the need to audit the use of those cards, electronic systems for maintaining records and for conducting audit would be the recommended and preferred method.

2.3.3 It will be for the Competent Authority of each Member State to determine arrangements for the control of workshops and workshop personnel within its national jurisdiction. Whether these are administered directly by the Competent Authority or by another agency it is anticipated that accurate records of the following should be maintained by the monitoring body:

- 2.3.3.1 the workshop approval details including names of the principles (owners or directors) responsible for the workshop;
- 2.3.3.2 the facilities, tools and equipment authorised or approved for use within the workshop;
- 2.3.3.3 records concerning required certification (e.g. calibration and maintenance of test equipment, training certificates, registration for Data Protection purposes, payment of workshop approval fees if appropriate, etc);
- 2.3.3.4 names of qualified technicians employed by the workshop;
- 2.3.3.5 details of each technicians level of training including whether they are in possession of valid training certificates;
- 2.3.3.6 details of the workshop cards issued to workshops and the individual names of the technicians authorised to use the individual cards;
- 2.3.3.7 records of the inspections, calibrations and repairs undertaken;
- 2.3.3.8 records of internal audit checks conducted by the workshop;
- 2.3.3.9 additional requirements as considered appropriate by individual Member States.

2.4 Criteria for Disciplinary Procedures and Withdrawal of Workshop Approval

- 2.4.1 The Competent Authorities who issue the approval for a workshop to operate, should consider withdrawing such approval if:
 - 2.4.1.1 The workshop has failed to comply with the criteria of its original approval; or if,
 - 2.4.1.2 The standard of work falls below an acceptable level; or if,
 - 2.4.1.3 Malpractice or criminal activities have been detected.
- 2.4.2 It will always be for the Competent Authorities of each Member State to decide the appropriate level of discipline to be taken against workshops when they do not comply with the conditions of approval.

The nature of disciplinary sanctions taken may be dependent on factors such as the civil code of the Member State and the legal capacity of the Competent Authority concerned. However, the principle to be adhered to is that the quality of work conducted by workshops (and therefore the integrity of the monitoring systems for ensuring compliance with drivers' hours Regulations) is always assured by effective control.

2.4.3 In principle the Competent Authorities should have in place disciplinary procedures which ultimately enable consideration to be given regarding the suspension or withdrawal of an approval to prevent further operation and/or the prosecution of a workshop. Examples of such cases would be where:

2.4.3.1 A false statement or declaration has been made in order to secure or to maintain the workshop approval and which calls into question the integrity or repute of the workshop; or,

2.4.3.2 The workshop has operated in such a way as to bring the scheme into disrepute (say by improperly setting calibration parameters or devices to vehicles in a way likely to compromise the measurement of drivers hours on the vehicles concerned); or,

2.4.3.3 Financial or other impropriety has occurred which adversely affects the repute of the Tachograph Scheme or the Competent Authority responsible for approving the workshop; or,

2.4.3.4 An attempt has been made to compromise the security elements of the digital tachographs; or,

2.4.3.5 The quality standards of the workshops and/or the administrative processes have been shown to be unacceptable for a period unacceptable to the Competent Authority.

2.4.4 In such cases, and where the workshop's approval is withdrawn or suspended, the Competent Authority must seek the immediate return of the workshop cards and sealing equipment issued to the workshop, and to notify the tachograph manufacturers. Member States should keep records of such actions, notify the Commission and provide information on the status of workshops and workshop cards to Competent Authorities of other Member States when requested.²¹

2.5 Qualification Requirements for individual Workshop Technicians

2.5.1 'Suitability', as described in paragraph 2.2.1.2, refers explicitly to the criteria against which Competent Authorities should assess whether the appointment of an individual technician at a specific workshop is acceptable. Such suitability should include

2.5.1.1 having relevant experience and understand the duties required of them;

2.5.1.2 having the competence to carry out the work required of them;

2.5.1.3 having acceptable standards of reliability, honesty and integrity.
(note: in particular, anyone convicted of tachograph- or business-related crime should be barred from all activities within workshops)

²¹ The communication mechanism for informing Member States will be TACHOnet

unless or until the Competent Authority has satisfied itself that the individual is rehabilitated and that their repute is restored).

2.6 Training of Workshop Technicians and Personnel

2.6.1 Training of workshop personnel, in particular the technicians, can be carried out by a number of possible bodies, for example:

2.6.1.1 The training arms of equipment manufacturers; or

2.6.1.2 Technical colleges and other training institutions administered by Member States; or

2.6.1.3 Independent training bodies providing specialist training appropriate for tachograph workshops.

2.6.2 The Competent Authorities of Member States may choose to satisfy themselves that such training establishments and trainers meet certain criteria. For example,

2.6.2.1 that training covers an appropriate course curriculum; and,

2.6.2.2 that the quality of the course modules meets a satisfactory standard; and

2.6.2.3 that the trainers used are competent for the level of training required; and,

2.6.2.4 that trainees are assessed to ensure they have reached an acceptable standard of knowledge, competency and ability.

2.6.3 Control officers used by, or on behalf of, the Competent Authorities to carry out quality assurance of training may themselves be trained to an appropriate level of competence in order to assess the value and quality of such training.

2.7 Control and Disciplinary Procedures for Workshop Technicians

2.7.1 It will remain for individual Member States, dependent on their individual administrative systems, to determine the most appropriate procedures needed to ensure that staff working for workshops, in particular the technicians who work on digital tachographs, maintain appropriate standards and conduct their duties satisfactorily.

2.7.2 The Competent Authorities should always ensure that appropriate procedures are put in place to ensure that effective disciplinary action can be taken against individual technicians who compromise the security elements of digital tachographs, undertake fraudulent or criminal activity or in any way attempt or take part in activities that bring the tachograph scheme into

disrepute. In serious cases of wrong doing or incompetence it would not be appropriate to allow such persons future access to workshop cards.

2.8 Notices and Documentation (Authorisation, Certification and Approval)

2.8.1 It is important that any transport operator or driver presenting himself to any workshop across the European Union, with a vehicle fitted with a digital tachograph, can be confident that the workshop and its staff can provide a competent and reliable service, and that they comply to a recognised code of practice, and that in such circumstances when the operator is not satisfied, he can have recourse to the appropriate authority. In this respect it is recommended that:

2.8.1.1 All approved workshops display an approved tachograph workshop sign as prescribed by the competent authority in the Member State. The tachograph workshop sign should be placed in a prominent position so that it is clearly visible to all visitors entering the building.

2.8.1.2 All approved workshops should display certain notices prescribed by the Competent Authority; preferably on a clean display board covered in glass or transparent plastic glazing at a location within the workshop where they can be clearly read by those presenting, or intending to present, their vehicles for inspection, calibration or repair. Notices likely to be required are:

- a) The official Notice of Approval issued by the Competent Authority and containing the seal code assigned to the approved workshops;
- b) A list of the names of all qualified technicians at the centre (to be provided by the workshop and approved by the Competent Authority);
- c) A notice showing the Data Protection Registration Number; (provided by the Member State Data Protection Authorities where applicable by National legislation);
- d) A notice giving the times of each day when the centre carries out tachograph activities by appointment or on demand (provided by the workshop);
- e) A standard notice which lists the [maximum] fees to be charged by the centre for various types of checks, inspections, repairs and calibrations specified under the Regulations. (In some Member States this may well be provided by the Competent Authority);
- f) If applicable, a notice indicating any restriction on the weight or type of vehicles that can be calibrated/repared (provided by the workshop).

2.8.2. Notices and forms for the display board provided by the workshop should be completed fully and legibly.

- 2.8.3 The information contained on the display board should be kept up-to-date at all times, and correspond with the information provided to the Competent Authority.
- 2.8.4 Competent Authorities of Member States may specify the type of forms and stationary that workshops may be required to use in order to record their activities, certify certain events and to formally notify customers of certain information. These may include:
 - 2.8.4.1 Installation Plaques
 - 2.8.4.2 Inspection Certificates
 - 2.8.4.3 Certificates of Undownloadability
 - 2.8.4.4 Request form for the supply of downloaded data (for use by Company Card holders)
 - 2.8.4.5 Certificate/receipt form for downloaded data
 - 2.8.4.6 Register of work conducted – to include details of tachographs installed, activated, calibrated, inspected, repaired and decommissioned
- 2.8.5 The information contained on the display board should be up-to-date and correspond at all times with the information held by the Competent Authority.

CHAPTER 3

Control and Security of Workshops and Workshop Cards

A **The Issues**

3.1. Workshop cards

To meet the EU vision of ensuring compliance with drivers' hours requirements it is imperative that the accuracy of the recording equipment is maintained. Workshop cards, should they fall into the wrong hands, or if they are misused, probably represents the greatest threat to the authenticity and integrity of the recorded data of drivers' hours

It is therefore essential that responsibility for the use and control of these cards is taken seriously by the workshops and, particularly, the individual technicians who themselves represent a key link in the security chain. It is also essential that all workshop cards and the activities carried out using those cards are individually identifiable so that proper audit trails can be maintained both to provide assurance on the activities of workshops and to trace fraud and other malpractice.

3.2. Seals

In addition to workshop card security it should also be remembered that, in order to provide a complete tachograph installation, it is necessary to be able to install motion sensors. Installation of a motion sensor requires the sensor to be sealed to the gearbox, and therefore requires the availability of appropriate sealing equipment.

Sealing pliers used for sealing the installation of analogue tachographs will need to continue to be used for sealing motion sensor installations on vehicles equipped with digital tachographs unless and until an alternative means of sealing motion sensors becomes available. The security arrangement for pliers should mirror those for workshop cards, and unauthorised individuals, whether employed in the workshop or not, should never have access to either the pliers or the seals..

B **The Requirements**

3.3. Data Stored on a Workshop Card

3.3.1 The workshop card shall be able to hold records of calibrations and/or time adjustments performed while the card is inserted in a recording equipment.²²

The workshop card shall be able to store at least 88 records each of which will hold the following data:

²² Requirement 226-230a, Annex 1B

- 3.3.1.1 Purpose of calibration (first installation, installation, periodic inspections);
 - 3.3.1.2 Vehicle identification (vehicle registration number (VRN) with indication of the registering Member State and vehicle identification number (VIN)²³;
 - 3.3.1.3 Parameters updated or confirmed (w, l, k, tyre size, speed-limiting device setting, odometer (new and old values), date and time (new and old values));
 - 3.3.1.4 Recording equipment identification (VU part number, VU serial number, motion sensor serial number).
- 3.3.2 The workshop card shall also:
- 3.3.2.1 Hold a counter indicating the total number of calibrations performed with the card;
 - 3.3.2.2 Hold a counter indicating the number of calibrations performed since its last download.

3.4 How should workshop cards be issued?

- 3.4.1 Given the importance of workshop cards, it is important for cards to be delivered to specific workshops or collected from the Competent Authority by the management of the workshop. PINs need to be issued to individual technicians under a separate cover completely. It remains, however, for each Member State to decide the procedures necessary to ensure the appropriate level of security needed to control the validity and issuance of workshop cards to workshops; and the secure issue of the PIN codes linked to those cards to the individual technicians who will use them.

3.5 Control of Workshop Cards

- 3.5.1 Because of the importance of workshop cards and their associated PINs the issue of the cards becomes, in effect, a 'licence to practise' within a tachograph workshop. As with any licence certain controls should be put in place by Member States and the following are suggested as basic to ensuring cards are not issued or used inappropriately:
 - 3.5.1.1 Cards should only ever be issued to used by individuals who have been trained to an acceptable competency and are considered suitable by the Competent Authority responsible for approving workshops;

²³ As defined at "nn" in Definitions, page 11 of Annex 1B

- 3.5.1.2 A Workshop Card should only be used by the specified technician at the specified workshop to which it has been issued;
- 3.5.1.3 The card should only be issued to the workshop where the specified technician is employed;
- 3.5.1.4 Member States should provide secure arrangements to ensure that PINs are only issued to the individual technician for whom the workshop card to which it is linked has been approved;
- 3.5.1.5 Acceptable procedures should be put in place to make clear that the security of the PIN is, at all times, the responsibility of the individual technician to whom it has been issued;
- 3.5.1.6 Workshop Cards should only be issued for use by individuals who acknowledge the significance of the workshop card and sign a declaration that they understand what they must do in the event of the card being lost or damaged, or if it malfunctions or expires.

3.6 The Responsibilities of Individual Workshop Technicians

Individual workshop technicians will need to support the arrangements for security of the Scheme, and their contribution is important. Therefore, technicians should:

- 3.6.1. declare if any other valid workshop card has been, or is, currently issued for their use by any (other) Member State;
- 3.6.2 take individual responsibility for all valid workshop cards (and the PIN codes) issued to him/her;
- 3.6.3. never divulge the PIN code to anyone;
- 3.6.4. never allow others to use either their cards or PIN code;
- 3.6.5 take responsibility for *all* activities undertaken under the authority of that card and PIN even if certain aspects of the activities have been undertaken by another person (such as an apprentice or trainee under direct supervision);
- 3.6.6 ensure that their workshop card is downloaded on a regular basis to ensure that data on the card is not overwritten or lost;
- 3.6.7 immediately report the loss, theft or malfunctioning of the card to the workshop card manager;;
- 3.6.8 report to their manager and/or to the Competent Authority if they believe that their card and/or PIN code has been used by another person.

- 3.6.9 either destroy or return expired cards in accordance with the instructions set out by the Card Issuing Authority;
- 3.6.10 At appropriate times make application jointly with the workshop for a new or renewed workshop card, and obtain the approval of the Competent Authority; ;
- 3.6.11 be able to provide proof of competence (such as training and/or trade test certificates) to the Competent Authority upon request.

3.7 The Responsibilities of Workshops

Whilst individual workshop technicians have a responsibility for their own workshop cards and PIN codes, their employers (i.e., the workshop) have broader responsibilities and obligations which they should meet, both to ensure that individual technicians continue to satisfy their individual requirements and to ensure that the activities and security of the workshop as a whole is satisfactory.

The requirements expected of workshops should include:

- 3.7.1.1 That workshops comply with the basic security principles;
- 3.7.1.2 That each individual technician qualified to work with digital tachographs has a valid workshop card available for his/her use;
- 3.7.1.3 That all valid workshop cards issued to the workshop can be made available for inspection to control officers upon request;
- 3.7.1.4 That, on normal day-to-day activity, the workshop cards do not leave the workshop premises. However, workshops may need technicians to use the workshop cards away from the approved workshop, and under such circumstances, it is recommended that workshops obtain approval and authority from the Competent Authority, who may set out specific conditions relating to the use of the workshop card whilst being used outside its normal workshop environment;
- 3.7.1.5. That technicians never use each others' workshop cards;
- 3.7.1.6. That individual technicians are supported by the workshop in meeting their obligation never to disclose their PIN codes;
- 3.7.1.7 That the record of calibrations conducted using workshop cards are downloaded on a regular basis to ensure that data stored on the card are not overwritten or lost;
- 3.7.1.8 That a designated room, with limited access only available to those who work at the workshop, is maintained for work with digital tachographs. Such a designated area should have:

- 3.7.1.8.1 a steel locker and/or an approved wall or floor safe for the storage of all testing equipment, sealing material, workshop cards, installation plaques and all other sensitive material,
 - 3.7.1.8.2 a lockable, secure cabinet for all accountable documents, certificates and other paper work associated with digital tachograph,
 - 3.7.1.8.3 clear regulations on access, utilisation and organisational responsibilities for all secure lockers, safes and designated areas must be stated in the workshop;
- 3.7.1.9 That the workshop management routinely audit the records of inspections and calibrations conducted at the workshop to ensure that records are complete and accurate.
- 3.7.1.10 That the workshop management conduct periodic quality assurance inspections of the work undertaken by their technicians, keep records of these checks and take corrective action where necessary.
- 3.7.1.11 The nomination of a manager, who should have responsibility for all the day-to-day security and management of workshop cards. Such responsibilities may include that:
- a) approved technicians have been supplied with and can use their cards correctly;
 - b) workshop cards, sealing pliers and accountable documents are properly secured in a security container when not in use;
 - c) cards which are lost, stolen or malfunction are reported immediately to the issuing authority;
 - d) renewal applications are completed and forwarded to Competent Authorities in good time to met renewal deadlines;
 - e) the physical security of the card is maintained when in use. The workshop should, for example, be made aware that it may be held liable for any fraudulent calibrations conducted prior to the time the Card Issuing Authorities and/or the Competent Authority responsible for the workshop approval are informed of the loss or theft of a card.

CHAPTER 4

Workshop Procedures

A. The Issues

Installation and Programming

- 4.1 When recording equipment or individual components are fitted or replaced on a vehicle the whole installation will be subject to a thorough inspection to ensure that:
- a. The recording equipment has been correctly installed in accordance with vehicle and tachograph manufacturers instructions,
 - b. It is functioning correctly,
 - c. The inclusion of, or connection to, the recording equipment of any function, device or devices (approved or otherwise) cannot interfere with (or be capable of interfering with) the proper and secure operation of the recording equipment
- 4.2 After installation, the VU must be activated, paired with the motion sensor and certain information, as described in Annex 1B, entered into its memory relating to the vehicle's identification, recording equipment identification and its operating parameters. The recording and storing functions of the recording equipment shall be fully operational after its activation.
- 4.3 Recording equipment manufacturers are likely to make this possible using the keyboard and display on the front panel of the VU. However, given the limitations of the VU keyboard this is likely to be a long and tedious process. In practice workshops will probably need a suitable piece of equipment (a programmer) to ease entry of such information.
- 4.4 To set required parameters into a digital tachograph the workshop card must be directly inserted into the Vehicle Unit.
- 4.5 Installation shall be followed by a calibration within two weeks of either the installation or the issue of the vehicle registration number (whichever is later). Calibration will require the constant of the recording equipment, in the form 'k' impulses per kilometre, the effective circumference of the tyres²⁴ on the driving wheels in the form 'l' in millimetres, and the characteristic coefficient of the vehicle in the form 'w' impulses per kilometre.
- 4.6 The methods used to determine the w factor for the vehicle are those currently used for analogue tachographs and include measurement over 1km, measurement over 20m, measurement over 40m and measurement on a

²⁴ "effective circumference of the wheel tyres" is defined as the average distance travelled by each of the wheels moving the vehicle (driving wheels) in the course of one complete rotation.

suitable rolling road or roller brake tester. In each case a suitable piece of calibrated measuring equipment will be necessary.

- 4.7 Once the correct 'w', 'k' and 'l' factors have been determined, these values need to be programmed into the VU.
- 4.8 Having completed programming of the VU, the final stage is to attach an installation plaque either to the VU or to a suitable place near to the VU, to complete entry of required data onto the register of inspections and calibrations and issue any other documents (e.g. calibration certificates, invoices, receipts etc as may be required). The plaque is a legal requirement and gives the identification of the vehicle and lists the calibration parameters and is the proof that the recording equipment fulfils the requirements of the Regulation²⁵. Again the plaque may be prepared by hand, but it would be preferable for both accuracy and speed if it were printed automatically from the record which is electronically written to the workshop card during the programming and calibration process. Similarly accuracy of the register records and other documents would be better maintained if the information were taken directly from the workshop card.
- 4.9 The above activities require the use of both the workshop card and knowledge of the PIN code. If the PIN code is inserted incorrectly on five consecutive occasions, the workshop card will become locked, thereby preventing dialogue taking place between the card and any vehicle unit. The data on the card will still be available to download (e.g. for downloading the information on earlier VU calibrations for workshop record purposes). The card itself is then invalidated and the workshop together (with the technician) will need to make an application to the Card Issuing Authority for a replacement.

Checks and Inspections

- 4.10 Inspections will take place when recording equipment is first fitted to a vehicle and when it is replaced (installation inspections) and, whilst in service, within two years of the last inspection (periodic inspections). Inspections will also take place after:
 - a. any repair of the equipment
 - b. any alteration of the characteristic coefficient of the vehicle, 'w'
 - c. any alteration of the effective circumference of the tyres
 - d. the equipment UTC time becomes wrong by more than 20 minutes
 - e. the vehicle registration mark is changed
- 4.11 Inspections shall include the following checks:

- a. the condition of seals previously fitted to the recording equipment and other parts of the installation (N.B. the presence of broken seals should always be recorded on the inspection report and the inspection register and should be regarded as reason for carrying out procedure 4.11.h (below) with extra vigilance).
- b. A comparison of the information recorded on the plaque with the information contained within the VU record (N.B. where it is found that information does not agree the Member State Enforcement Authorities should be informed - such incidents should always be recorded on the inspection report and the inspection register).
- c. the recording equipment carries the appropriate type approval marks, and these will be found at locations specified by the tachograph manufacturers.
- d. the recording equipment is fully functional and working properly, (including the data storage in tachograph cards function).
- e. the recording equipment complies with the provisions of Annex 1B Chapter III 2.1 and 2.2 on the maximum tolerances on installation
- f. the tyre size is checked and the actual circumference of the tyres are measured and recorded
- g. the recording equipment is properly and accurately calibrated
- h. a check for the presence of any device or devices connected between the vehicle unit and the motion sensor. These tests should This check should ensure that the motion sensor installed in the gearbox is the one paired with the VU (N.B. where any manipulation device is fitted between the vehicle unit and the motion sensor, the Member State Enforcement Authorities should be informed - such incidents should always be recorded on the inspection report and the inspection register. Under no circumstances should the vehicle be resealed or issued with a installation plaque until the system has been restored to meet the requirements of the Regulation).
- i. the recording equipment and other parts of the installation are properly sealed where required
- j. that an installation plaque showing the parameters set by the workshop is affixed to the vehicle in close proximity to the VU

Repairs and Decommissioning

4.12 It is considered unlikely, because of the security requirements for the Annex 1B recording equipment, that all but the most minor repairs will be possible at approved workshops. Such repairs will be specified as part of the type approval process for the recording equipment.

4.13 Where recording equipment in compliance with Annex 1 needs replacing (in the vehicles described in Article 2.1 b of Regulation (EC) n° 2135/98 it shall be replaced with recording equipment in compliance with Annex 1B.

Recording equipment means the whole system (vehicle unit (tachograph head) and motion sensor).

4.14 Workshops shall be advised to check compatibility with the relevant vehicle manufacturers, their authorised agents or representative before carrying out such installations.²⁶

4.15 Decommissioning requires the securing of drivers' data (see Chapter 5) and the circumstances to be recorder on the register of work conducted by the workshop. The decommissioned equipment should either be returned to the vehicle owner or to the tachograph manufacturer for warranty or service exchange purposes. Other than these requirements no additional obligations in respect of decommissioning should be placed on the workshop over and above any normal commercial arrangements that may apply.

B Requirements

It is not possible to draw up detailed recommendations until technical information from the Recording Equipment manufacturers is made public.

²⁶ France has expressed a reserve on this issue.

CHAPTER 5

Workshop Downloading of Drivers Hours Data – Requirement 260

A The Issues

5.1. Workshops shall be able to download data from the Recording Equipment

Workshops shall be able to download data from a recording equipment and is specified under requirement 260 of Annex 1B. The requirement states that workshops shall be able to give the data back to ‘appropriate transport company’. For the purposes of meeting the requirements of Article 14 of Regulation (EEC) n° 3821/85²⁷ it is a requirement that all makes or models of digital tachograph shall be able to have their data downloaded at any workshop approved by the Competent Authority of a Member State in the event of the Vehicle Unit being decommissioned or repaired.²⁸

The purpose of requirement 260 is to enable transport operators to have the opportunity to maintain a continuous record of driver and vehicle activity which can be presented to inspectors if requested to do so (and which may also be of benefit to the transport operator). Data are stored in the vehicle unit and transport operators are recommended to download their data from VU prior to locking out and passing a VU to another operator.

This requirement applies whether or not the VU is still fitted to a vehicle which is being sold or, indeed, if the VU is simply removed from the vehicle and replaced. However in circumstances where a VU becomes defective away from its normal premises, or where data has not been recently downloaded it may be necessary for the workshop to download and supply data.

The downloading of data and its delivery to the transport operator by the workshop should:

- a) assist transport operators to keep accurate records;
- b) not impose any onerous or impractical responsibilities on the workshop, nor,
- c) expose the workshop or their employees to legal challenges arising from its delivery of data or its compliance with data protection.

²⁷ Article 14 (5) of Regulation (EEC) n° 3821/85 as last amended (Chapter IV – Use of equipment) – “Member States shall ensure that data needed to monitor compliance with Regulation (EEC) n° 3820/85 and Council Directive 92/6/EECwhich are recorded and stored by recording equipment in conformity with Annex 1B to the Regulation can be made available for at least 365 days after the date of their recording and that they can be made available under conditions that guarantee the security and accuracy of the data.

Member States shall take any measures necessary to ensure that the resale or decommissioning of recording equipment cannot detract, in particular, from the satisfactory application of this paragraph.

²⁸ Downloading should conform to the definition (s) and requirements of Appendix 7 of Annex 1B

5.2. Equipment and facilities to download data

Annex 1B requires all workshops to be able to download digital tachograph data. Workshops shall therefore need suitable equipment and facilities to be able to carry this out. It will not be possible to give detailed guidance on the requirements for facilities and equipment until digital tachographs themselves become available. However, an interpretation of the requirements of the legislation is provided below.

5.3. Downloading and data protection

As the data to be downloaded contains personal data all workshops will need to satisfy the requirements of their national legislation on data protection, including, if applicable, registration with the Data Protection Authority for the Member State concerned, and will have to operate according to data protection rules. Workshops are required to make sure that not only data can be returned to the appropriate transport operator, but that it will only be provided to the appropriate transport operator.

Under the provisions of the Regulations workshops cannot legally process data without the permission of the owner (e.g. by passing it on to an individual without the owner's consent).

For practical purposes the identity of the data owner should be established by reference to the Company Card used to secure a specific block of data ('locked-in' the VU). The company to whom the Company Card has been issued may then therefore be considered, by definition, as the owner of the data.

B The Requirements

5.4 Handling of Downloaded Data – Principles

5.4.1 The procedures for handling data downloaded and provided for the purposes of Regulation (EEC) n° 3821/85, Article 14 should always adhere to certain principles:

5.4.1.1 That data is not inadvertently lost during decommissioning, repair or service exchange, and that all data from the last VU data download needs to be downloaded and securely stored at the workshop.

5.4.1.2 Having downloaded data from a VU the workshop should inform the 'appropriate transport company' (that is the transport operator holding the company card for the last identifiable data) that data from the VU has been downloaded

and that the data is available. The workshop is not expected to inform other data owners that it holds data.

5.4.1.3 Data should only be supplied upon written request from the transport operator Card holder for the data concerned.

5.4.1.4 The appropriate recipient for the data should normally be the transport operator which holds the Company Card. Alternatively, it may be a third party authorised by the transport operator who holds the Company Card to collect the data on behalf of the transport operator. Workshops should be provided with, and to retain for at least one year, written permission from the data owner before passing the data on to a third party.

5.4.1.5 Data should be securely stored within the workshop, and access to the data should be restricted, and always comply with data protection requirements.

5.5 Other requests for downloaded data and downloading services.

5.5.1 Data can also be returned to transport operators who also have earlier (previous) lock-ins, provided a written request is received and the workshop can identify the ownership of the data by reference to the Company Card lock-in details held on the downloaded data.

5.5.2 There may, of course, be circumstances when a workshop is asked to download data from a VU relating to a transport operator prior to the transport operator which last locked in. Such procedures can be undertaken as a commercial arrangement between the workshop and the transport operator. However, whilst it is permissible to use the facilities and equipment in a workshop, it is strongly recommended that, specifically, workshop cards are never used to download data when such activities clearly fall outside the scope of, and are no longer compliant with, the Regulations.²⁹ Instead, workshops should only undertake to download such data when presented with a valid company card.

5.5.3 Whilst there is no obligation for workshops to download data from a vehicle unit that is not being repaired or decommissioned, there is no reason why they may not wish to provide a separate downloading service to transport operators. As this would be a commercial arrangement they may charge a fee for this service and store the data elsewhere outside the premises of the workshop. Such arrangements may offer an attractive business opportunity and are, by and large, a commercial issue to be agreed between the workshop and the transport

²⁹ Annex 1B, Requirements 260 and 261 dealing with workshops downloading data

operator. Workshops that choose to conduct such activities should declare their intention to the Competent Authorities.

Where such commercial activities are conducted by workshops alongside the Regulatory controlled work it would be expected that both the internal auditing conducted by the workshop and the external control and audit conducted by the Competent Authority should take particular care to ensure that workshop cards are not misused and that data protection requirements are always observed. Competent Authorities may well wish to consider setting control procedures in place to ensure that this.

5.6 Processing Data

5.6.1 To satisfactorily process data to meet the requirements of Regulation (EEC) n° 3821/85 as last amended, and to comply with Data Protection rules, workshop should always:

5.6.1.1 Ensure that all data recorded on the VU since the last recorded operator download is downloaded by the workshop and safely stored;

5.6.1.2 Only provide data to a person or organisation authorised to receive that data;

5.6.1.3. Ensure that all reasonable measures are taken to ensure the data is not received by anyone else;

5.6.1.4 Ensure that proof of despatch is retained for at least one year.

5.6.2 To achieve the above, a workshop should be required to:

5.6.2.1 Always download the data contained in the VU which has been recorded since the last operator download, and whenever the VU is being repaired or decommissioned;

5.6.2.2 Alternatively, workshops may decide to download the whole VU, in which case the following requirements (from 5.6.2.3 till 5.6.2.9) would still apply

5.6.2.3 Establish details of the operator lock-ins and lock-outs³⁰ as recorded on the digital tachograph vehicle unit since the last operator download. These should include the operator name and address and company card number, thereby enabling the workshop to identify the last identifiable transport operator

³⁰ Requirement 104, Annex 1B

- 5.6.2.4 Notify, in writing, the last identifiable transport operator identified by the most recent lock-in that its data is being held at the workshop, where it should be held for a period of at least one year;
- 5.6.2.5 Act only on a written request from the identified data owner to provide downloaded data. Workshops should never pass data to anyone other than the data owner identified by the use of a company card to lock the data in the VU. The tachograph manufacturers and downloading equipment suppliers will provide detailed operating instructions for the downloading procedure in case of repair and/or decommissioning – and these will include detailed advice on separating data belonging to different companies and must be complied with;
- 5.6.2.6 Securely store downloaded data for a period of at least one year (which is the period specified for the retention of data within the regulations), and dated from the point of the download by the workshop;
- 5.6.2.7 Ensure that downloaded data retains the relevant security features to ensure the authenticity and integrity of that data;
- 5.6.2.8 Respect the confidentiality of the data downloaded from VUs and not to carry out processing of data (other than as a requirement of meeting the Regulatory requirements) other than on the specific instructions of the data owner or an Authorised Enforcement Officer. In meeting the regulatory requirements there should be no expectation that workshops will be obliged to analyse downloaded data (which may not be physically visible by virtue of the procedure to be followed in downloading data³¹);
- 5.6.2.9 Workshops should always ensure that downloaded data is made available to Authorised Enforcement Officers upon request, and in a format that will allow Enforcers to inspect that data later, in compliance with the procedures laid down in Appendix 7 of Annex 1B.

5.7 Providing Data to the Data Owner

- 5.7.1 It is clear that a person having a VU in his care, very often a driver, may not necessarily be a person authorised to receive a copy of data downloaded from that VU. Therefore it should not be considered automatically appropriate for downloaded data to be handed to that person. Instead, a means is needed whereby downloaded data can be sent back to the appropriate transport operator, perhaps in another Member State, in such a way that it is protected from unauthorised access.
- 5.7.2 Transport operators may be offered, by the workshop, to chose among a range of solutions the best way to receive their data. A number of secure alternatives exist and include:

³¹ Appendix 7, 2.1 – Downloading Procedure.

- 5.7.2.1 Giving an encrypted disc to the driver,
- 5.7.2.2 Sending the encrypted data by e-mail or other internet means,
- 5.7.2.3 Sending an encrypted disc by courier,
- 5.7.2.4 Sending an encrypted disc by registered post.

The advice and support of manufacturers is needed to identify what practical options exist for safeguarding data in transit, and their advice and guidance should always be sought to confirm the reliability of such transaction types in the future.

5.7.3 Workshops should always be expected to ensure that, whatever means of delivery is used, they also make adequate records and retain these for at least one year to prove that the appropriate downloaded data was sent to the transport operator. Such records should include:

- 5.7.3.1 The original written request received by the workshop from the transport operator for the data;
- 5.7.3.2 The original written permission if any, received by the workshop (see 5.4.1.4);
- 5.7.3.3 Details of the Company Card that relate to the transport operator to whom the data has been sent (the card number, name of company, address, Issuing Member State, period of card validity);
- 5.7.3.4 The date the data was sent to the transport operator;
- 5.7.3.5 The method of despatch;
- 5.7.3.6 The record of receipt, if any (e.g. e-mail acknowledgement, courier receipt, postal receipt etc...).

5.8 Storage and Security of Downloaded Data

- 5.8.1 When it is necessary to download data from VUs at the time of repair or decommissioning, the workshop should keep data securely stored for a minimum period of 365 day from the date of downloading.
- 5.8.2 The measures needed by workshops to maintain the integrity of downloaded data should include:
 - 5.8.2.1 that downloading from a digital tachograph vehicle unit is only conducted via an appropriate and/or approved intelligent dedicated equipment (IDE) to an appropriate and/or approved external storage medium (ESM),

5.8.2.2 that workshops ensure that all digital signatures/certificates are stored along with the associated data,

5.8.2.4 that workshops implement a secure backup procedure to guard against data loss in the event of equipment failure.

5.9 IT- Equipment and Requirements

5.9.1 The utilised IT-equipment, and the data stored on it should meet certain conditions. Such conditions may include:

5.9.2 protection of the equipment and the data (by using, for example, a password);

5.9.3 access to the equipment should be controlled and limited to only those who have a legitimate reason for using the equipment;

5.9.3 if the database with data of digital tachographs is sourced out to another PC in the network, the access to the database should be also protected against external access with a password;

5.9.4 if data from digital tachographs is transmitted via the Internet, the transmission should be carried out secured way (e.g. SSL or http);

5.9.5 the PC should be equipped with a chip card reader;

5.9.6 the PC should be equipped with an interface to transfer the download data from the digital tachograph to the PC;

5.9.7 the software used for tachograph checks and for the download and transmission of data should be fit for purpose (to be capable of dealing with data extracted from a tachograph card or vehicle unit, whilst ensuring the continued presence of the security elements that protect the integrity and authenticity of that data);

5.9.8 a backup copy of all downloaded data from the mass memory should be kept in a secure place in the workshop for at least 1 year, after which it should be destroyed, in accordance with the national data protection rules applicable to the workshop;

5.9.9 the data content of the workshop card should be downloaded after the respective checks of digital tachographs and should be archived in the workshop together with the test results (test certificates) for at least 3 years.

5.10 Certificates of undownloadability

5.10.1. If the data cannot be downloaded and therefore the transport operator having used the VU and to which the data belong cannot be identified, the workshop

should issue a certificate of undownloadability only to the last user of the vehicle.

- 5.10.2 If the transport operator can be identified, but its data can only be partially downloaded, a certificate of undownloadability should be issued only for the undownloadable data. The data should be stored by the workshop and given back to the appropriate transport operator as defined above in 5.7.
- 5.10.3 Workshops may be asked to download VUs not fitted in a vehicle, in which case they should follow the provisions laid down above under the point 5.7 if the data can be downloaded. If the data are not downloadable, they should issue a certificate of undownability to the transport operator holding the VU but mentioning clearly what was available and accessible at the time of the attempt to download.

CHAPTER 6

Records and Record Keeping

A The Issues

- 6.1 In order to properly administer and exercise control over the tachograph workshops and to maintain standards, Competent Authorities should require workshops to conduct their own routine internal audit to ensure that their operations are satisfactory and for the Competent Authority, or its agents, to satisfy themselves that, by conducting external audits on workshops, standards are acceptable and consistent. Key to efficient and effective audit, whether conducted internally or externally, is the availability of accurate and proper records of activities conducted.
- 6.2 For enforcement purposes it is important that, if a vehicle is found with an incorrectly calibrated tachograph, checks can be quickly made on the workshop against whom the last inspection or calibration is attributed.
- 6.3 The regulations recognise the importance of records and audit in safeguarding the security of the workshop cards and data taken from tachographs, and included in the requirements listed below are certain key obligations placed on Member States.
- 6.4 The Competent Authorities of each Member State have a legal obligation under the Regulations to:
 - 6.4.1 Maintain a register of the marks and electronic security data used for the production of workshop cards;
 - 6.4.2 Maintain a record of Workshop Cards issued including details of the ('fitters' and) workshops to whom the cards have been issued;
 - 6.4.3 Forward to the European Commission lists of approved ('fitters' and) workshops and the workshop cards issued to them, and shall forward to the Commission copies of the marks and of the necessary information relating to the electronic security data used.
- 6.5 In order for the Competent Authorities to meet their obligations in respect of audit and control of approved workshops they need to maintain records of the following for each workshop:
 - 6.5.1 The initial workshop approval (as described in Chapter 2) together with details of any changes or amendments to the requirements for authorisation that have occurred;

- 6.5.2 Details of technicians employed within the workshop who are considered as competent to conduct work on digital tachographs and eligible for the issue of workshop cards;
- 6.5.3 Details of the qualifications of technicians including training certificates and relevant trade qualification;
- 6.5.4 Details of the workshop cards issued (both currently and historically) to the workshop and the technicians nominated to use them;
- 6.5.5 Details of any workshop cards reported as lost, stolen or malfunctioning.

B Requirements

- 6.6 In order to conduct their own internal quality assurance audits and to support external checks made by the Competent Authority the management of tachograph workshops need to ensure that they have adequate records of their activities. These should include at least:
 - 6.6.1 A register, or electronic record, chronologically recording vehicle identity and recording equipment details and serial numbers, together with parameter settings, for all tachographs installed, activated, calibrated, inspected, repaired and decommissioned at the workshop. These should also include details of the workshop card (or cards) used to conduct the work.
 - 6.6.2 A register, or electronic record, which could be the same as that described at 6.6.1. which copies or otherwise corresponds with and records the electronic data records held on the individual workshop cards. Workshop cards should be downloaded on a regular basis, ideally no less frequently than at the completion of each period of duty for the technician to whom the card is assigned. This will ensure that a continuous and verifiable record of all work done using the workshop card is maintained and should minimise the number of lost records should a card be accidentally lost or damaged.
 - 6.6.3 A record verifying that all undownloadability certificates issued are accounted for. In addition to the record of issued certificates, all unused, spoilt, invalid or damaged certificates should be retained and be available for inspection during audits.
 - 6.6.4 Documentary evidence should always be made available to an Authorised Official of the Member State upon request, confirming:
 - 6.6.4.1 The workshop approval is still valid,

- 6.6.4.2 That training/competences for all technicians who have been nominated to use a workshop card is current and valid,
 - 6.6.4.3 Certification showing the accurate calibration of test/calibration equipment used for the purposes of tachograph calibrations/inspections, and details of the tolerances within which the equipment has been tested and operates,
 - 6.6.4.4 There is a Certificate of Registration with the Data protection Authorities where this is required,
 - 6.6.4.5 That Copies of all technical bulletins, notices and data provided by the Member State Competent Authority, tachograph manufacturers and/or vehicle manufacturers and distributors as may be specified by the Member State.
- 6.7 Records of data downloaded in event of repairs and/or decommissioning of recording equipment.

Where workshops download or otherwise process data from vehicle units proper records should be kept and workshops should ensure that:

- 6.7.1 data, when downloaded to an external storage medium, preserves the security elements protecting the authenticity and integrity of the data and that the accuracy of the downloaded data is confirmed and the fact recorded at the time of downloading;
- 6.7.2 data is securely stored and is protected from unauthorised access;
- 6.7.3 records of the requests for downloaded data returned to the data owner are properly kept and include:
 - 6.7.3.1 The original written request received by the workshop from the transport operator for the data;
 - 6.7.3.2 Hash value/digital signature of the data sent;
 - 6.7.3.3 Details of the Company Card for the transport operator to whom the data has been sent (card number, name of company, address, Issuing Member State, period of card validity),
 - 6.7.3.4 Date on which the data was sent to the transport operator;
 - 6.7.3.5 Method of despatch;
 - 6.7.3.6 Record of receipt (e.g. e-mail acknowledgement, courier receipt, postal receipt, etc...).

- 6.7.4 the destruction of downloaded data at the end of one year from the date of downloading is recorded and can be verified. The destruction should be witnessed by a responsible member of the organisation;
 - 6.7.5 that copies of data are available up to the specified date of destruction should the data owner request them;
 - 6.7.6 make available any data downloaded from vehicles where an inspecting officer requests it, provided that the data is less than 365 days old from the date of downloading.
- 6.8 Recommended procedures to be used in the event of fitting a second-hand VU. These procedures are intended to ensure that data from VUs removed from vehicles other than at a workshop are safeguarded in the event of the VU being presented for fitment to another vehicle. It may also assist in identifying previously “stolen” VUs which reappear at a later date.
- 6.8.1 Download the contents of the existing VU currently fitted to the vehicle, record in the normal way and remove the VU. Notify the last Company Card owner that locked-in data that the data has been downloaded and is available upon request.
 - 6.8.2 Download the contents of the second-hand VU which is to be fitted to the vehicle, ensuring that a note of the VU serial number and the last vehicle registration number are recorded. Where data from the last company card lock-in are less than 1 year old, the workshops notify the company that the data have been downloaded.

Member States may require that in cases such as this, workshops either inform an appropriate enforcement agency of the details of the data download or that they mark the register/record for interest of enforcement operators who conduct audit checks at the workshop.

CHAPTER 7

Summary – Workshop approval and related requirements

1. Workshop Approval

In order to meet the combination of legal and technical requirements and to satisfy the transport industry's needs for a comprehensive and consistent service across Europe tachograph workshops need to work in partnership with both the Competent Authorities of Member States and the tachograph manufacturers. The responsibility for setting approval standards and for ensuring that they are met, rests with the Competent Authorities of Member States who will also need to decide the period for which an approval will remain valid before requiring re-approval.

2. Workshop Cards and PINs

Workshop Cards should only be issued by Card Issuing Authority, and only after the applicant has been assessed through a process that ensures that the applicant meets the requirements of the Regulation (as applied by the Member State). This may include tachograph manufacturers training certificates, vocational training certificates, checks on repute as specified by the Competent Authority.

3. Conditions under which Workshop Cards will be used

Workshop Cards should only be issued for use at a specific workshop and for use only by a single identified technician, who should be separately issued with the activating PIN code. The PIN code must always remain secret and known only to the technician to whom it was issued, and must never be disclosed to others. Best practice would also be to ensure that the workshop card is personalised for the technician.

4. Responsibility for the Security of Workshop Cards

Once the cards have been issued, the workshop should remain responsible for the control and security of the cards, and to do so by nominating an individual of suitable rank and competency. Such nominated individuals should also have responsibility for any other related workshop security issues.

5. Monitoring of Workshop Activities

In order to provide an appropriate standard of tachograph workshop support to transport operators needing to use digital tachographs under the requirements of Regulation (EEC) n° 3821/85, as last amended, and most especially under the

requirements of its Annex 1B the Competent Authorities of Member States should put in place robust approval and monitoring procedures.

6. Disciplinary Action where Workshop Standards are found not to be acceptable

When workshops fail to meet or maintain required standards of quality and service, consistent with the approval given to them by the Competent Authority, or if workshops commit breaches of discipline, the Competent Authority should have a disciplinary process in place that ensures that workshops (and technicians) can be suspended or withdrawn from the Scheme.

7. Service to be provided to Transport Operators

Workshops will be required to conduct a range of workshop tasks specified within the Regulations; at various times tachographs will need to be activated, calibrated, inspected, repaired and, ultimately, decommissioned. Due to the likelihood of the need to meet ITSEC requirements it appears unlikely at this stage that workshops will be able to conduct anything but minor repairs.

8. Competence of Workshop Technicians

To conduct these duties technicians need to meet a minimum level of competence, which may include the satisfactory completion of approved training. Member States shall need to decide what nationally approved measures are appropriate for this.

9. Workshop Equipment and Facilities

Workshops will need to be suitably equipped with approved equipment able to allow them to conduct the required work on all types of digital tachograph.

10. Data Handling

Suitable IT equipment including IDE (intelligent dedicated equipment) and ESM (electronic storage medium) and programmers will be required for data downloading, electronic records keeping and backup and for conducting activation, inspection and calibration duties.

11. Security

Due to the sensitive nature of tachograph inspections, calibration and repairs, neither the public nor customers should be given access to areas of the workshop

where this work is undertaken. Workshops should be equipped with suitable security arrangements for the safeguarding of workshop cards, sealing pliers and all accountable documents. Lockable security cabinets for documents and downloaded data and safes for accountable documents, sealing pliers and workshop cards should themselves be located in a lockable office located in areas of the workshop where neither the public nor unauthorised staff have access.

12. Internal Management and Control

Workshops should conduct internal audit checks to ensure that individual technicians work to acceptable standards, and that all their work related to digital tachographs, is properly recorded, that security requirements are observed and that, in particular, the security of workshop cards and PINs are ensured. The audit checks should also ensure that procedures for downloading and processing data meet the Regulatory and Data Protection requirements, and that all data and records are securely stored.

13. Data Protection

The procedures to be followed during the downloading of data at the time of repair or decommissioning of recording equipment, should be clearly set out by the Member States, and all Member States are encouraged to try to follow these guidelines in a way that ensures consistency across the EU. Processing of data and supplying data to the data owner, who may be from another Member State, also needs to be considered and should always be conducted in accordance with data protection rules. Many Member States may find that their workshops may need to register for this purpose.

RECEIPT FOR DATA DOWNLOADED/CERTIFICATE OF UNDOWNLOADABILITY

DETAILS OF MEMBER STATE COMPETENT AUTHORITY
(That Authority responsible for the issuance and control of these certificates)

VEHICLE & COMPANY DETAILS

1. Vehicle Registration Number
2. Vehicle Identification Number
3. Vehicle Manufacturer
4. Vehicle Model
5. Company Name
6. Company Address
7. Company Card Details

VEHICLE UNIT DETAILS

13. Name of Tachograph Manufacturer
14. Vehicle Unit Model
15. Vehicle Unit Serial Number
16. Date of manufacture
17. Location of unit in the cab
18. Approval mark for the equipment type
19. Visibility of plaque (Requirements 169/170 of Annex 1B of Regulation (EEC) n° 3821/85)

CERTIFICATE NUMBER: MS/.....

Where "MS" = the Member State (ie, UK, NL, F, etc) and any numerical sequence selected by the issuing Member State. **TOP copy = the company copy; next copy = workshop copy; third copy = Competent Authority copy**

WORKSHOP DETAILS

8. Name of Workshop
9. Address of Workshop
10. Workshop Approval Number
11. Details of Workshop Card
12. Technicians I.D. and Signature

RECORD OF DOWNLOADING

The written request received from the appropriate Company Card holder for the data downloaded **must** be attached to this document

20. Was a visual display of data possible? YES/NO
21. Was a print-out of data possible? YES/NO
22. Was it possible to download any data? YES/NO
23. Was ALL data downloaded from the VU? YES/NO
24. If no, why?
25. Date of original data download from vehicle unit
26. Has data been supplied? YES/NO
27. Date of supply of downloaded data

DECLARATION

1. This certificate has been issued in accordance with the procedures set out by the Competent Authority in which country the named workshop has been approved to conduct work on digital tachographs.
2. This certificate confirms that it was/was not **(delete as necessary)** possible to download the data stored in the vehicle unit identified above which was fitted to the vehicle identified above. In response to the written request from the company card holder identified above **(Delete as necessary)**:
 - (a) No data has been provided to the company card holder and this certificate is issued as an undownloadability certificate against the vehicle unit and the vehicle in which it was fitted or,
 - (b) The data identified above has been issued to the Company Card holder, and on presentation of verified company identification;

SIGNATURE OF FITTER WHO UNDERTOOK WORK

.....

SIGNATURE OF WORKSHOP MANAGER

.....

NOTES FOR GUIDANCE

- A) Downloaded data can only be made available to an "Appropriate Transport Company", that is a company which has used its own company card to secure its data in the vehicle unit;**
- B) Only data relating to the "Appropriate Transport Company" can be made available to that company;**
- C) Proof of entitlement to that data must be presented to the approved workshop by the company concerned, directly, or by an appointed, identifiable representative, and in a way that enables the workshop to verify and record the identity of that representation;**
- D) An application for a copy of the data should be made to the approved workshop identified on this certificate. Details of how the data should be transmitted should be clearly specified (ie, by registered post, e-mail, etc). The confidentiality of the data must be borne in mind by the recipient of the data when specifying the method of transmission. The approved workshop cannot be held responsible for any breaches of such confidentiality in transmission;**
- E) The data retrieved from the vehicle unit identified on this certificate will be retained by the approved workshop for a period of one year from the date that the data was downloaded by that approved workshop. After that period the data will be destroyed.**