

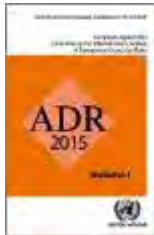


**United Nations road safety legal instruments:
European agreement concerning the work of crews of
vehicles engaged in international road transport
(AETR)**

**Robert Nowak
Sustainable Transport Division
Hanoi, Ho Chi Minh, January 2017**



UNECE



★ Traffic rules

★ Signs and signals

- Dangerous goods

- Construction and periodic inspection of vehicles

- Driving times and rest periods for professional drivers

- Road infrastructure

EUROPEAN AGREEMENT
concerning
THE WORK OF CREWS OF VEHICLES
ENGAGED IN INTERNATIONAL ROAD TRANSPORT
(AETR)
done at Geneva on 1 July 1970



ACCORD EUROPÉEN
relatif
AU TRAVAIL DES ÉQUIPAGES DES VÉHICULES
EFFECTUANT DES TRANSPORTS INTERNATIONAUX
PAR ROUTE (AETR)
en date, à Genève, du 1^{er} juillet 1970

Being desirous of promoting the development and improvement of the international transport of passengers and goods by road,
Convinced of the need to increase the safety of road traffic, to make regulations governing certain conditions of employment in international road transport in accordance with the principles of the International Labour Organisation, and jointly to adopt certain measures to ensure the observance of those regulations,

AETR Objectives:

- **To prevent professional drivers from driving excessive hours**
- **To reduce road accidents due to fatigue**
- **Uniform working conditions - to avoid distortions in competitive conditions**

Some principles:

- **Drivers: responsible of driving and rest hours**
- **Transport undertaking: responsible of application of the AETR rules**
- **Drivers' wages cannot depend on the distance driven**



Article 2⁸

Scope

1. This Agreement shall apply in the territory of each Contracting Party to all international road transport performed by any vehicle registered in the territory of the said Contracting Party or in the territory of any other Contracting Party.

2. Nevertheless, unless the Contracting Parties whose territory is used agree otherwise, this Agreement shall not apply to international road transport performed by:

(a) Vehicles used for the carriage of goods where the permissible maximum mass of the vehicle, including any trailer or semi-trailer, does not exceed 3.5 tonnes;

(b) Vehicles used for the carriage of passengers which, by virtue of their construction and equipment, are suitable for carrying not more than nine persons, including the driver, and are intended for that purpose;

(c) Vehicles used for the carriage of passengers on regular services where the route covered by the service in question does not exceed 50 kilometres;

(d) Vehicles with a maximum authorized speed not exceeding 40 kilometres per hour;

(e) Vehicles owned or hired without a driver by the armed services, civil defence services, fire services, and forces responsible for maintaining public order when the carriage is undertaken as a consequence of the tasks assigned to these services and is under their control;

(f) Vehicles used in emergencies or rescue operations, including the non-commercial transport of humanitarian aid;

(g) Specialized vehicles used for medical purposes;

(h) Specialized breakdown vehicles operating within 100 kilometres of their base;

(i) Vehicles undergoing road tests for technical development, repair or maintenance purposes, and new or rebuilt vehicles which have not yet been put into service;

(j) Vehicles with a maximum permissible mass not exceeding 7.5 tonnes used for

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(b) Vehicles used for the carriage of passengers which, by virtue of their construction and equipment, are suitable for carrying not more than nine persons, including the driver, and are intended for that purpose;

⁸ Modified successively by amendments 2 and 6

1. Driving time – 9 hours a day

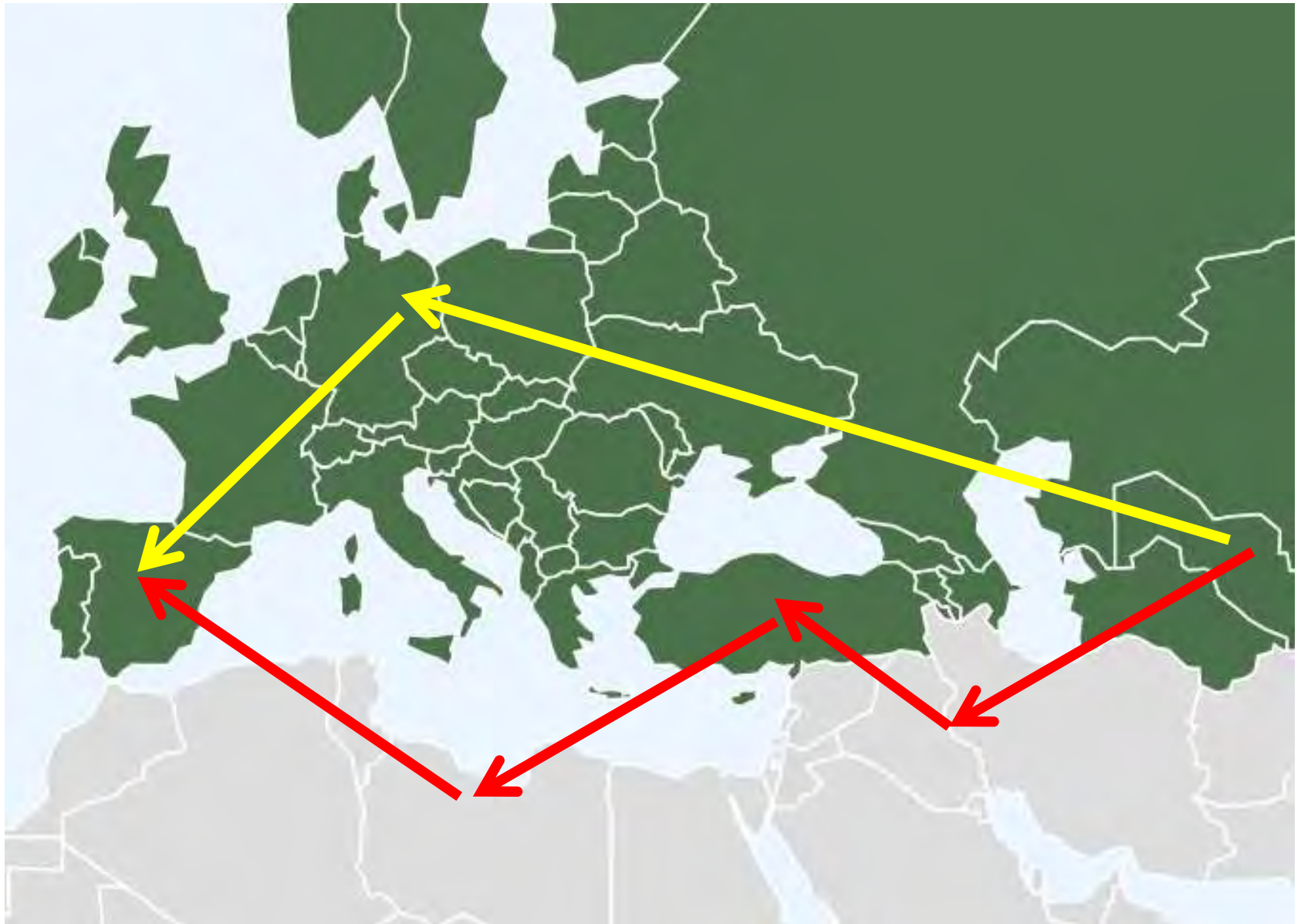
2. Driving time – 56 hours a week

3. Driving time – 90 hours per two weeks

Article 6¹²

Driving periods

1. The daily driving time, as defined in article 1, paragraph (s), of this Agreement, shall not exceed 9 hours. It may be extended to at most 10 hours not more than twice during the week.
2. The weekly driving time, as defined in article 1, paragraph (t), of this Agreement, shall not exceed 56 hours.
3. The total accumulated driving time during any two consecutive weeks shall not exceed 90 hours.
4. Driving periods shall include all driving in the territory of Contracting and non-Contracting Parties.



Article 7¹³

Breaks

Break of 45 min after 4.5hrs driving

1. After a driving period of four and a half hours, a driver shall take an uninterrupted break of not less than 45 minutes, unless he begins a rest period.
2. This break, as defined in article 1, paragraph (n), of this Agreement, may be replaced by a break of at least 15 minutes followed by a break of at least 30 minutes each distributed over the driving period or immediately after this period in such a way as to comply with the provisions of paragraph 1.
3. For the purposes of this article, the waiting time and time not devoted to driving spent in a vehicle in motion, a ferryboat or a train shall not be regarded as 'other work', as defined in article 1, paragraph (q), of this Agreement, and will be able to be qualified as a "break".
4. The breaks observed under this article may not be regarded as daily rest periods.

Article 8¹⁴

Rest periods

Rest periods: daily and weekly

1. A driver shall take daily and weekly rest periods as defined in article 1, paragraphs (o) and (p).

(n)⁷ “Break” means any period during which a driver may not carry out any driving or any other work and which is used exclusively for recuperation;

(o) “Daily rest period” means the daily period during which a driver may freely dispose of his time and covers a ‘regular daily rest period’ and a ‘reduced daily rest period’:

Reg. daily rest: 11 hrs

(i) “Regular daily rest period” means any period of rest of at least 11 hours. Alternatively, this regular daily rest period may be taken in two periods, the first of which must be an uninterrupted period of at least 3 hours and the second an uninterrupted period of at least 9 hours;

(ii) “Reduced daily rest period” means any period of rest of at least 9 hours but less than 11 hours;

(p) “Weekly rest period” means the weekly period during which a driver may freely dispose of his time and covers a ‘regular weekly rest period’ and a ‘reduced weekly rest period’:

Reg. weekly rest: 45 hrs

(i) “Regular weekly rest period” means any period of rest of at least 45 hours;

(ii) “Reduced weekly rest period” means any period of rest of less than 45 hours, which may, subject to the conditions laid down in article 8, paragraph (6), of the Agreement be shortened to a minimum of 24 consecutive hours;

(q) “Other work” means all working activities except driving, including any work for the same or another employer, within or outside of the transport sector. It does not include waiting time and time not devoted to driving spent in a vehicle in motion, a ferryboat or a train;

Article 10¹⁷

Control device

1. The Contracting Parties shall prescribe the installation and use on vehicles registered in their territory of a control device according to the requirements of this Agreement and the Annex and Appendices thereto.
2. The control device within the sense of this Agreement shall, as regards construction, installation, use and testing, comply with the requirements of this Agreement and the Annex and Appendices thereto.
3. A control device conforming to Council Regulation (EEC) No. 3821/85 of 20 December 1985 as regards construction, installation, use and testing shall be considered as conforming to the requirements of this Agreement and the Annex and Appendices thereto.

Appendix 1⁴⁶

Requirements for construction, testing, installation and inspection

I. Definitions

In this appendix

- (a) “control device” means equipment intended for installation in road vehicles to show and record automatically or semi-automatically details of the movement of those vehicles and of certain working periods of their drivers;
- (b) “record sheet” means a sheet designed to accept and retain recorded data, to be placed in the control device and on which the marking devices of the latter inscribe a continuous record of the information to be recorded;
- (c) “constant of the control device” means the numerical characteristic giving the value of the input signal required to show and record a distance travelled of 1 kilometre; this constant must be expressed either in revolutions per kilometre ($k = \dots \text{ rev/km}$), or in impulses per kilometre ($k = \dots \text{ imp/km}$);
- (d) “characteristic coefficient of the vehicle” means the numerical characteristic giving the value of the output signal emitted by the part of the vehicle linking it with the control device (gearbox output shaft or axle) while the vehicle travels a distance of one measured kilometre under normal test conditions (see chapter VI, paragraph 4 of this appendix). The characteristic coefficient is expressed either in revolutions per kilometre ($W = \text{rev/km}$) or in impulses per kilometre ($W = \dots \text{ imp/km}$);
- (e) “effective circumference of wheel tyres” means the average of the distances travelled by the several wheels moving the vehicle (driving wheels) in the course of one complete rotation. The measurement of these distances must be made under normal test conditions (see chapter VI, paragraph 4 of this appendix) and is expressed in the form: $1 = \dots \text{ mm}$.

II. General characteristics and functions of control device

The control device must be able to record the following:

1. distance travelled by the vehicle;
2. speed of the vehicle;
3. driving time;
4. other periods of work or of availability;
5. breaks from work and daily rest periods;
6. opening of the case containing the record sheet;
7. for electronic control device which is device operating by signals transmitted electrically from the distance and speed sensor, any interruption exceeding 100 milliseconds in the power supply of the recording equipment (except lighting), in the power supply of the distance and speed sensor and any interruption in the signal lead to the distance and speed sensor.

For vehicles used by two drivers the control device must be capable of recording

APPENDIX 1B⁴⁷

Requirements for the construction, testing, installation and inspection of the digital control device used in road transport

Article 1

Preamble

1. As this Appendix is an adaptation of Annex IB of Council Regulation (EEC) No. 3821/85 of 20 December 1985 concerning recording equipment in the field of road transport¹, the content of this Annex is not reproduced in the AETR because of its size and its very technical character. For the complete official text and its subsequent amendments, Contracting Parties shall refer to the *Official Journal* of the European Union.

The content of the present Appendix 1B is therefore limited to an introduction citing the references to the relevant texts of the European Union and of the Official Journals in which they were published and highlighting, by means of cross references, the particular points where that Annex has had to be adapted to the context of the AETR.

2. In order to facilitate consultation of that Annex with the adaptations made to take into account the AETR and to allow an overall view of the text, a consolidated version of this Appendix will be elaborated by the secretariat of the United Nations Economic Commission for Europe. However, this version will not have any legal force. This version, elaborated in the official languages of the UNECE, will be updated as necessary.

Article 2

Introductory provisions to Appendix 1B

1. In accordance with paragraph 1 of article 1 above, Contracting Parties are invited, in order to consult Annex 1B, to refer to Commission Regulations No. 1360/2002 of 13 June 2002 and No. 432/2004 of 5 March 2004 (*see footnote below for the dates of their publication in the Official Journal of the European Union), adapting for the seventh and eighth times to technical progress Council Regulation (EEC) No. 3821/85 concerning recording equipment in the field of road transport.

2. For the purposes of Appendix 1B:

2.1 The terms in the left column below shall be replaced by the corresponding terms in the right column:









¹ Introduced by amendment 5.

As amended by Council Regulation (EC) No. 2135/98 of 24 September 1998 (OJ L 274 of 9 October 1998) as well as by Commission Regulations (EC) No. 1360/2002 of 13 June 2002 (OJ L 207 of 5 August 2002 (corrigendum OJ L 77 of 13 March 2004)) and No. 432/2004 of 5 March 2004 (OJ L 71 of 10 March 2004).

Control device:

1. Control book
2. Mechanical device (paper discs)
3. Electronic device (paper discs)
 - Flouting rules on driving times and rest periods, blatant infringements, fraud
4. Digital tachograph
5. Smart tachograph

(d) Example of completed daily sheet

2. Registration No(s) of vehicle(s)		1. DAILY SHEET		3. Day of week and date																						
		No																								
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
4.		[Graph showing driving time (solid line) and rest time (dashed line) over 24 hours]																								
5.																										
6.																										
7.	<input checked="" type="checkbox"/>																									
7a.																										
8. Came on duty at (place):												9. Went off duty at (place):														
10. Permissible weight of vehicle combination or articulated vehicle:																										
10a. Carriage of passengers. System of daily rest chosen:																										
11. Remarks and signature:																								12.		Number of hours
																								13.		5%
																								14.	<input checked="" type="checkbox"/>	2%
																								14a.		2
15. Odometer: End of day: 91,430 km												15. TOTAL														
Beginning of day: 91,090 km												13+14														
Total distance covered: 340 km												+14a														
												10%														
												Where appropriate														
16.  Total duration of uninterrupted rest before coming on duty (D. R.):																										

- 025 To ensure a maximum tolerance in speed displayed of ± 6 km/h in use, and taking into account:
- a ± 2 km/h tolerance for input variations (tyre variations, ...),
 - a ± 1 km/h tolerance in measurements made during installation or periodic inspections,
- the control device shall, for speeds between 20 and 180 km/h, and for characteristic coefficients of the vehicle between 4000 and 25000 imp/km, measure the speed with a tolerance of ± 1 km/h (at constant speed).
- Note: The resolution of data storage brings an additional tolerance of ± 0.5 km/h to speed stored by the control device.

025a The speed shall be measured correctly within the normal tolerances within 2 seconds of the end of a speed change when the speed has changed at a rate up to $200/s^2$

026 Speed measurement shall have a resolution better than or equal to 1 km/h.

3. Time measurement

027 The time measurement function shall measure permanently and digitally provide UTC date and time.

028 UTC date and time shall be used for dating throughout the control device (recordings, printouts, data exchange, display, ...).

029 In order to visualise the local time, it shall be possible to change the offset of the time displayed, in half-hour steps.

030 Time drift shall be within ± 2 seconds per day in type approval conditions.

031 Time measured shall have a resolution better than or equal to 1 second.

032 Time measurement shall not be affected by an external power supply cut-off of less than 12 months in type approval conditions.

4 Monitoring driver activities

033 This function shall permanently and separately monitor the activities of one driver and one co-driver.

034 Driver activity shall be DRIVING, WORK, AVAILABILITY, or BREAK/REST.

035 It shall be possible for the driver and/or the co-driver to manually select WORK, AVAILABILITY, or BREAK/REST.

036 When the vehicle is moving, DRIVING shall be selected automatically for the driver and AVAILABILITY shall be selected automatically for the co-driver.

037 When the vehicle stops, WORK shall be selected automatically for the driver.

038 The first change of activity arising within 120 seconds of the automatic change to WORK due to the vehicle stop shall be assumed to have happened at the time of vehicle stop (therefore possibly cancelling the change to WORK).

039 This function shall output activity changes to the recording functions at a resolution of one minute.

040 Given a calendar minute, if any DRIVING activity has occurred within the minute, the whole minute shall be regarded as DRIVING.

SUB-APPENDIX III

PICTOGRAMS

PIC_001 The control device may use the following pictograms and pictograms combinations:

Basic pictograms

	<u>People</u>	<u>Actions</u>	<u>Modes of operation</u>
♠	Company		Company mode
♣	Controller	Control	Control mode
♢	Driver	Driving	Operational mode
♠	Workshop/test station	Inspection/calibration	Calibration mode
♠	Manufacturer		

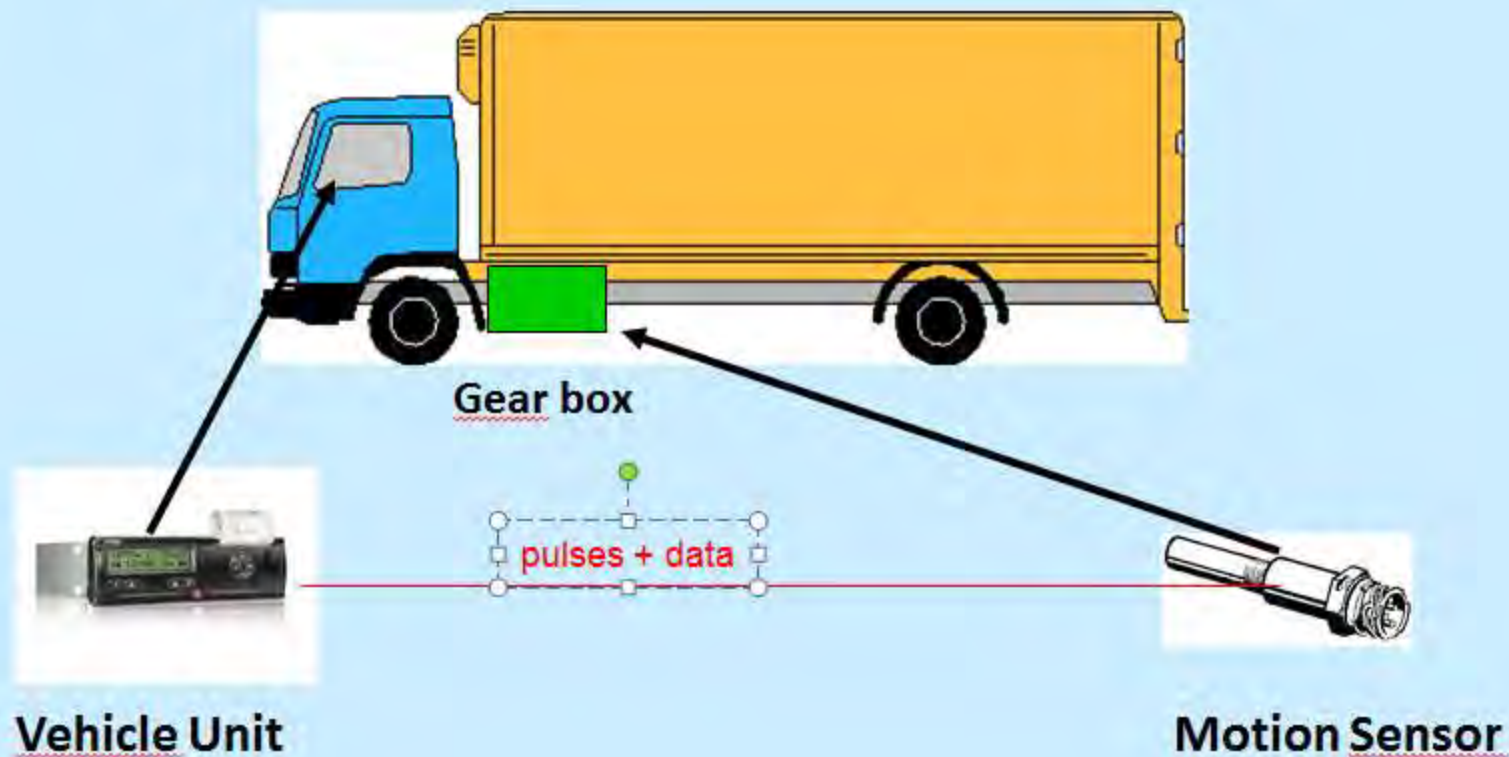
	<u>Activities</u>	<u>Duration</u>
♠	Available	Current availability period
♢	Driving	Continuous driving time
♣	Rest	Current rest period
♠	Work	Current work period
♠	Break	Cumulative break time
?	Unknown	

	<u>Equipment</u>	<u>Functions</u>
1	Driver slot	
2	Co-driver slot	
♠	Card	
♢	Clock	
♠	Display	Displaying
♣	External storage	Downloading
♠	Power supply	
♣	Printer/printout	Printing
♠	Sensor	
♢	Tyre size	
♠	Vehicle/vehicle unit	

Specific conditions

OUT	Out of scope
♠	Ferry/train crossing

Digital Tachograph



MS sealed to gearbox

MS and VU paired

Data between MS and VU encrypted

Source: G. Baranger

Security:

Mechanical

- VU housing protected against opening
- Motion sensor sealed into gearbox

Electronics and software:

- If housing opening is detected, then the most sensitive part of VU data are destroyed (encryption keys, and related security mechanisms)
- Communication between modules authenticated and encrypted



Vehicle unit:

- Memory of the vehicle (365 days)
- Output: printer, display, connector
- Two card slots



Source: G. Baranger

Tachograph cards:

- White – driver
- Yellow – company
- Red – workshop
- Blue – controller
- Memory: 28 days driver activities



Source: G. Baranger



Roadside and on premises checks

Article 12¹⁹

Measures of enforcement of the Agreement

1. Each Contracting Party shall adopt all appropriate measures to ensure observance of the provisions of this Agreement, in particular by an adequate level of roadside checks and checks performed on the premises of undertakings annually covering a large and representative proportion of drivers, undertakings and vehicles of all transport categories coming within the scope of this Agreement.

(a) The competent administrations of the Contracting Parties shall organize the checks so that:

(i) During each calendar year, a minimum of 1% of the days worked by the drivers of vehicles to which this Agreement applies shall be checked. From 1 January 2010, this percentage will increase to at least 2%, and from 1 January 2012, to at least 3%;

(ii) At least 15% of the total number of working days checked shall be checked at the roadside and at least 25% on the premises of undertakings. From 1 January 2010, not less than 30% of the total number of working days checked shall be checked at the roadside and not less than 50% shall be checked on the premises of undertakings.

(b) The elements of roadside checks shall include:

(i) Daily and weekly driving periods, interruptions and daily and weekly rest periods;

(ii) The record sheets of the preceding days, which shall be on board the vehicle, and/or the data stored for the same period on the driver card and/or in the memory of the control device and/or on the printouts, when required;

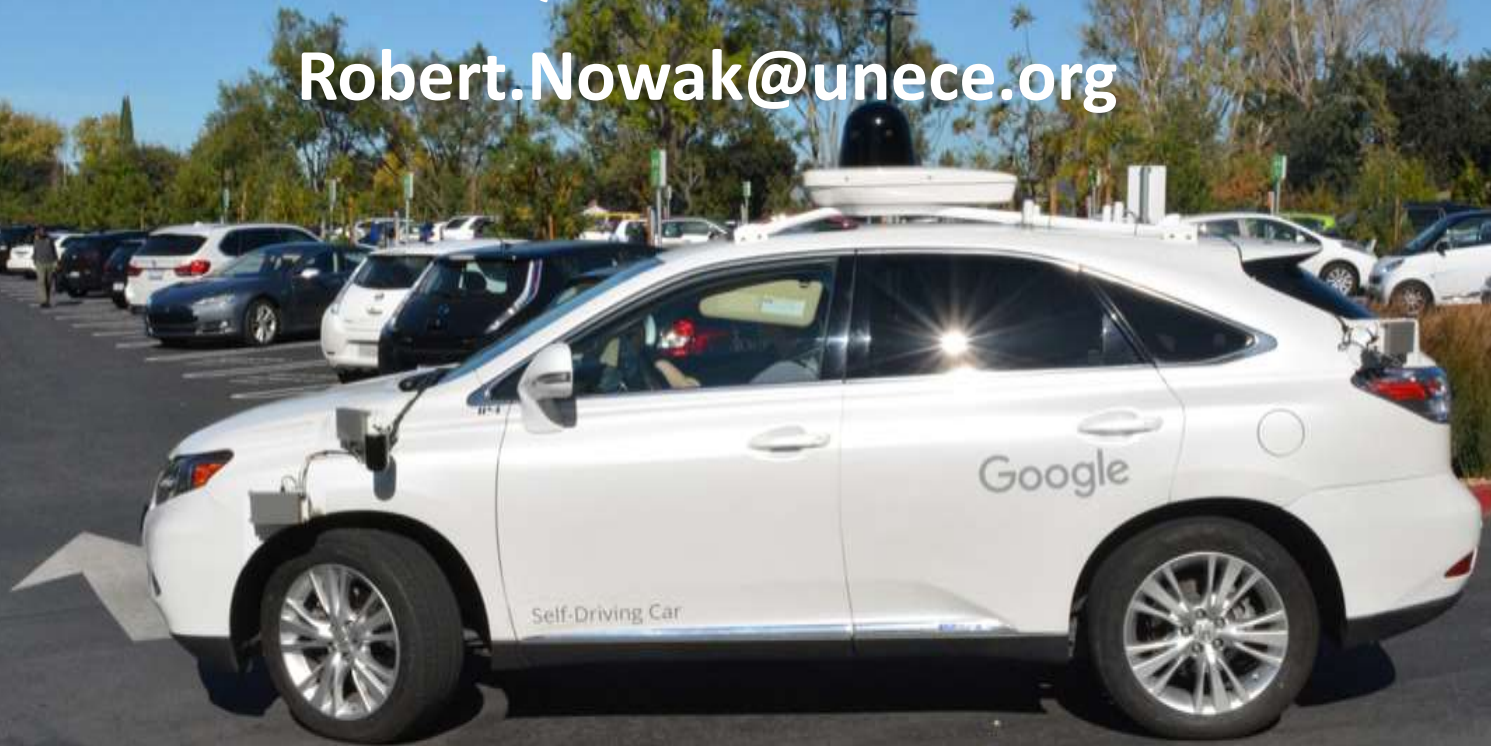
Recent developments:

Smart tachograph:

- GPS link
- Remote communication with control authorities
- Interoperability with ITS applications



Questions:
Robert.Nowak@unece.org



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