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Tachograph

- Smart tacho 2 is mandatory in LCV's operating internationally from 1 July 2026.
- This presentation is focused on the Smart Tacho 2
 - Generation 2 Version 2 (G2V2)

CONCEPT

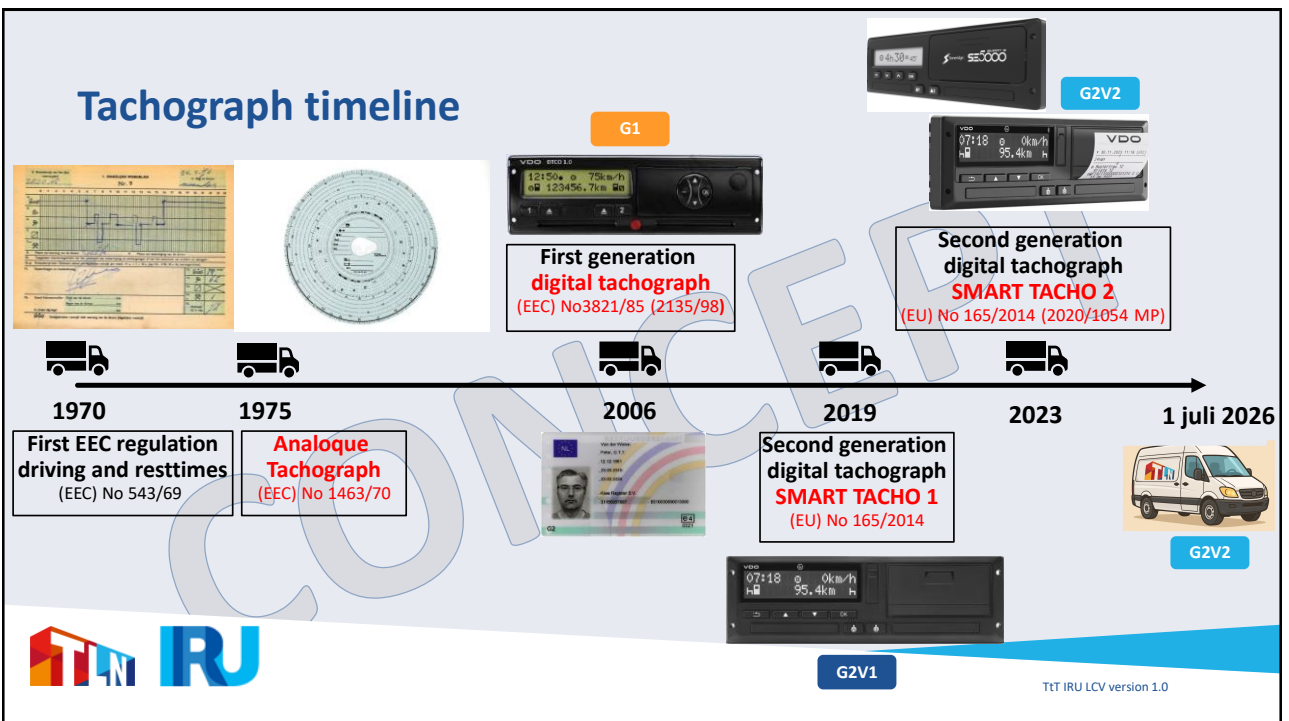


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Smart tachograph 2

1. Vehicle Unit (VU)

- VDO
- Stoneridge

2. Sensor

- M1N1 adapter

3. Tachograph cards

- Company card
- Driver card



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Tachograph: tachograph cards



▪ Company card

- yellow in color, valid for 5 years



▪ Driver card

- white in color, valid for 5 years, personal, with you during work!



▪ Workshop card

- red in color, valid for 1 year, secured with PIN code



▪ Inspection card

- blue in color, for inspector only

Note: Examples are Dutch tachograph cards



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Tachograph: company card



- Own vehicle, rental vehicle and demo vehicle
 - create a 'lock-in'
 - Secure the data
- Very important to be able to download data



- 👉 Pay attention when replacing a tachograph
- 👉 Only 'lock-out' the vehicle when it is no longer in use.



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Tachograph: use of driver cards

- The driver card is personal.
- A driver **may hold** no more than one valid driver card, and is only authorised to **use his own personalised** driver card
- A driver shall not use a driver card which is defective or which has expired
- The driver card is valid for five years
- Issuing by the competent authority of the Member State where the driver has his normal residence.



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REGULATION (EU) No 165/2014 article 34

By paragraph:

1. Using driver card / record sheet
2. Using driver card / record sheet
3. Manual entry
4. Multimanning
5. Switch mechanisms
6. (Analogue tachograph - what information to fill in)
7. Country – begin – end

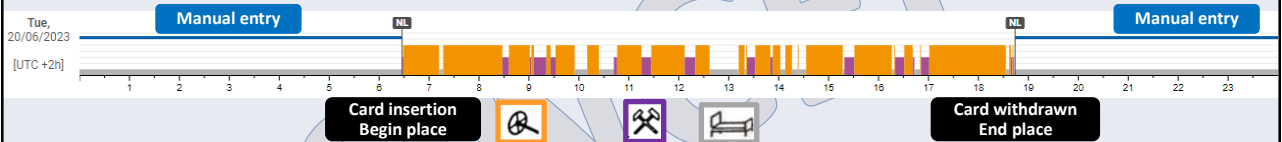


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Article 34(1) & (2) Reg. (EU) 165/2014:

- 1. Drivers shall use record sheets or driver cards every day on which they drive, starting from the moment they take over the vehicle. **The record sheet or driver card shall not be withdrawn before the end of the daily working period unless its withdrawal is otherwise authorised or is necessary in order to enter the symbol of the country after having crossed a border.** No record sheet or driver card may be used to cover a period longer than that for which it is intended.



- 2. Drivers shall adequately protect the record sheets or driver cards, and shall not use dirty or damaged record sheets or driver cards.



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Article 34(3) Reg. (EU) 165/2014:

- 3. When, as a result of being away from the vehicle, a driver is unable to use the tachograph fitted to the vehicle, the periods of time referred to in points (ii), (iii) and (iv) of paragraph 5(b) shall:



(a) if the vehicle is fitted with an analogue tachograph, be entered on the record sheet, either manually, by automatic recording or other means, legibly and without dirtying the record sheet; or

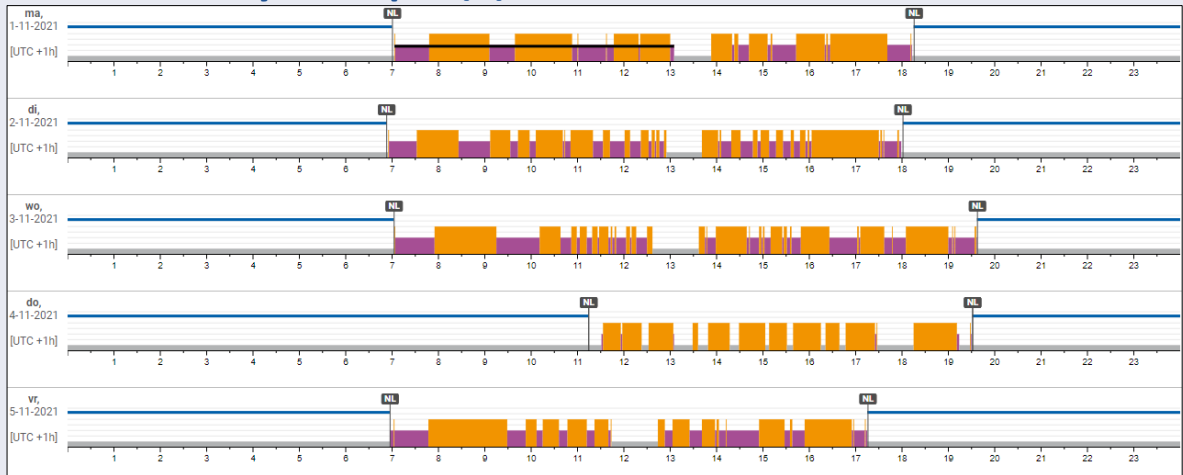
(b) if the vehicle is fitted with a **digital tachograph, be entered onto the driver card using the manual entry facility provided for in the tachograph.**

Member States shall not impose on drivers a requirement to present forms attesting to their activities while away from the vehicle.



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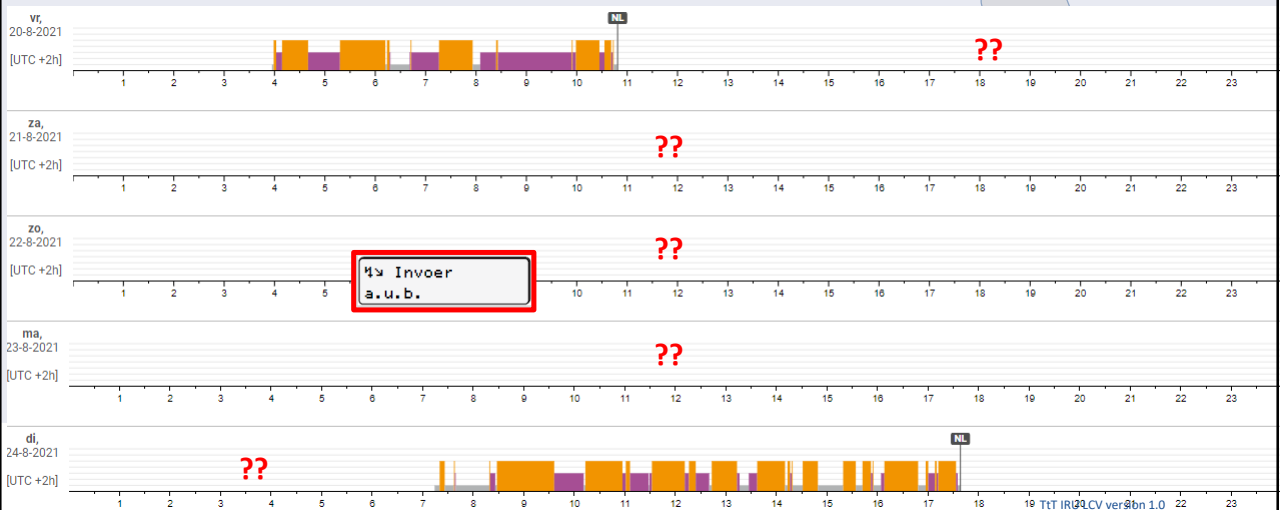
Manual entry example (1)



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Manual entry example (2)



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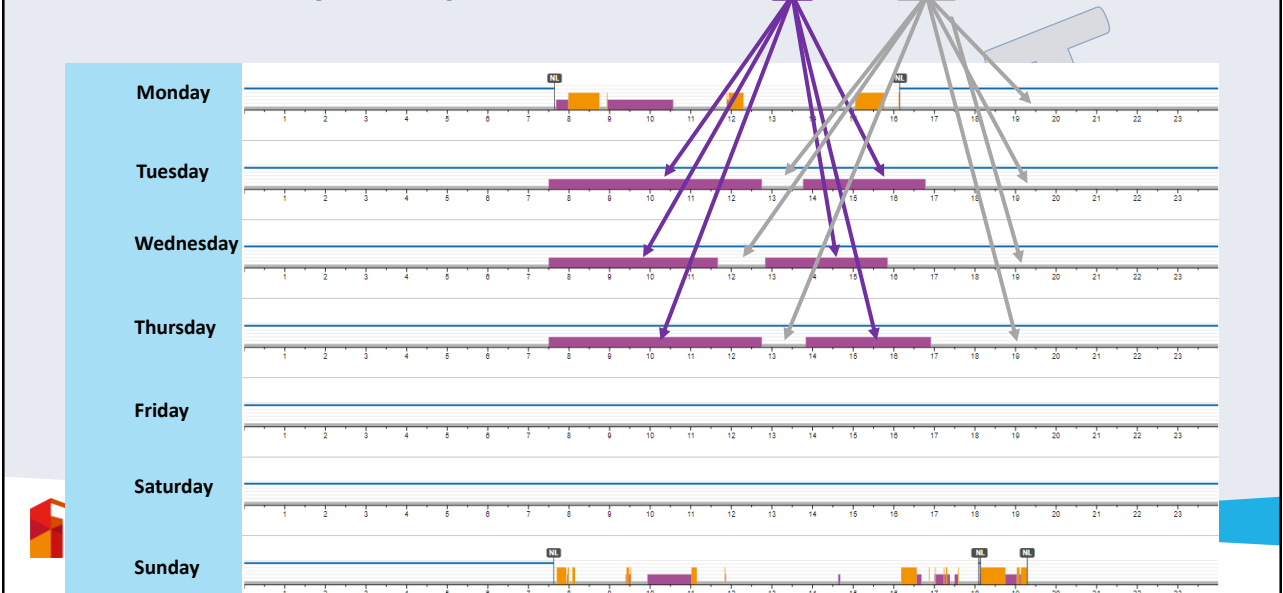
Manual entry example (3)

- When inserting a driver card on Friday 27/8/2021 at 6:42 AM, the driver added 3 different activities manually (recognizable by the blue line):
- On 26/8/2021: 14:30 PM - 15:15 other work
- From 26/8/2021 15:15 to 27/8 6:30 rest
- Other work on 27/8/2021 from 6:30 to 6:42



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Manual entry example (4)



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Manual entry & COMMISSION CLARIFICATION 7 (1)

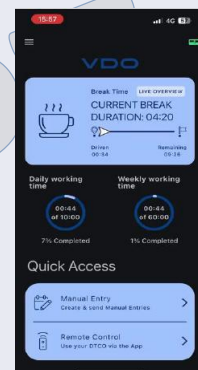
- *'a driver may use the standard attestation form established by Commission Decision C(2009) 9895 in order to cover the gaps in the tachograph records.'*
- **For technical reasons** if there is no possibility to add **56 days back** (technical issue)??
 - This concerns a lot of tachographs and even the smart tachograph 2
- Appears excessively **burdensome** (e.g. a driver was working out of scope for a longer period preceding the activity of driving in-scope)
- Link to EU Form of attestation of activities

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Manual entry & apps (2)

- Apps to simplify manual entry
 - Such as the **VDO Fleet** app for smart tachograph version 4.1a and higher
 - (Smart Tachograph version 2 VU, Remote HMI specification & Transport protocol for ITS (website JRC))



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Article 34(4) Reg. (EU) 165/2014:

- 4. Where there is **more than one driver on board** a vehicle fitted with a digital tachograph, each driver shall ensure that **his driver card is inserted into the correct slot** in the tachograph. Where there is more than one driver on board a vehicle fitted with an analogue tachograph, the drivers shall amend the record sheets as necessary, so that the relevant information is recorded on the record sheet of the driver who is actually driving.



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Article 34(5) Reg. (EU) 165/2014: modified by MP

- 5. Drivers shall:

(a) ensure that the time recorded on the record sheet corresponds to the official time in the country of registration of the vehicle;

(b) operate the switch mechanisms enabling the following periods of time to be recorded separately and distinctly:

(i) under the sign  : driving time,

(ii) under the sign  : 'other work', which means any activity other than driving, as defined in point (a) of Article 3 of Directive 2002/15/EC, and also any work for the same or another employer within or outside of the transport sector

(iii) under the sign  : 'availability', as defined in point (b) of Article 3 of Directive 2002/15/EC,

(iv) under the sign  : breaks, rest, annual leave or sick leave,

(v) under the sign for 'ferry/train': In addition to the sign  : the rest period spent on a ferry or train as **required by Article 9 of Regulation (EC) No 561/2006**.



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Article 34(5) Reg. (EU) 165/2014: modified by MP

- Ferry/train according to article 9 of Regulation (EC) No 561/2006:
 - sleeper cabin, bunk or couchette at their disposal
- (v) under the sign for 'ferry/train': In addition to the sign : the rest period spent on a ferry or train as required by Article 9 of Regulation (EC) No 561/2006.



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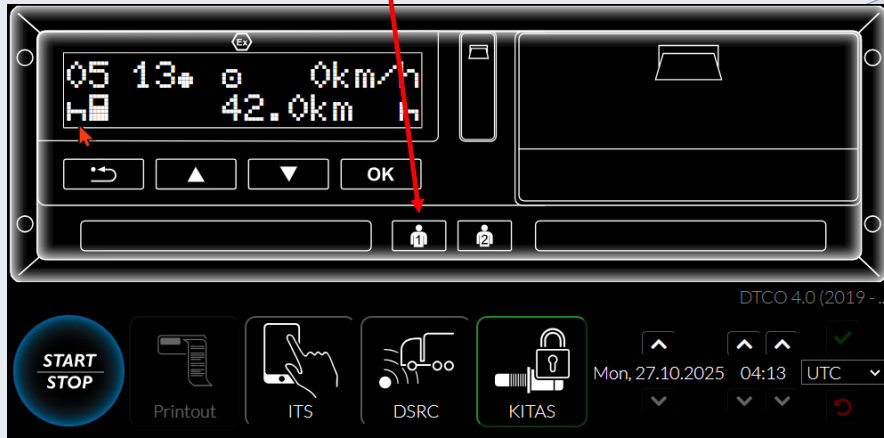
Operate the switch mechanisms (1)



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Operate the switch mechanisms (2)

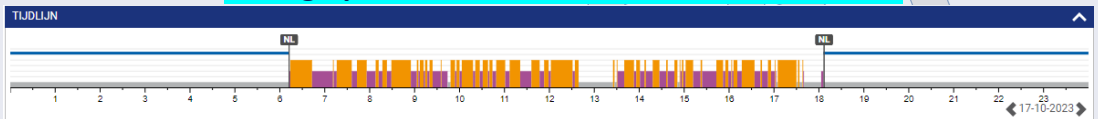


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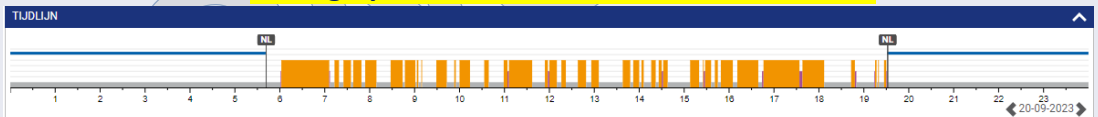
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Operate the switch mechanisms (2)

Tachograph not at rest when vehicle is switched off



Tachograph at rest when vehicle is switched off



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Operate the switch mechanisms (3)



- steering wheel = driving



- bed = rest,
 - Interruption/break, daily/weekly rest etc.



- square with diagonal = availability time
 - The periods and expected duration must be known to the mobile worker in advance



- two crossed hammers = other work
 - Loading, unloading, refueling, etc

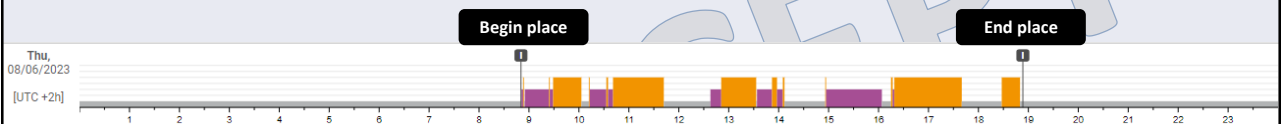


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Article 34(7) Reg. (EU) 165/2014:

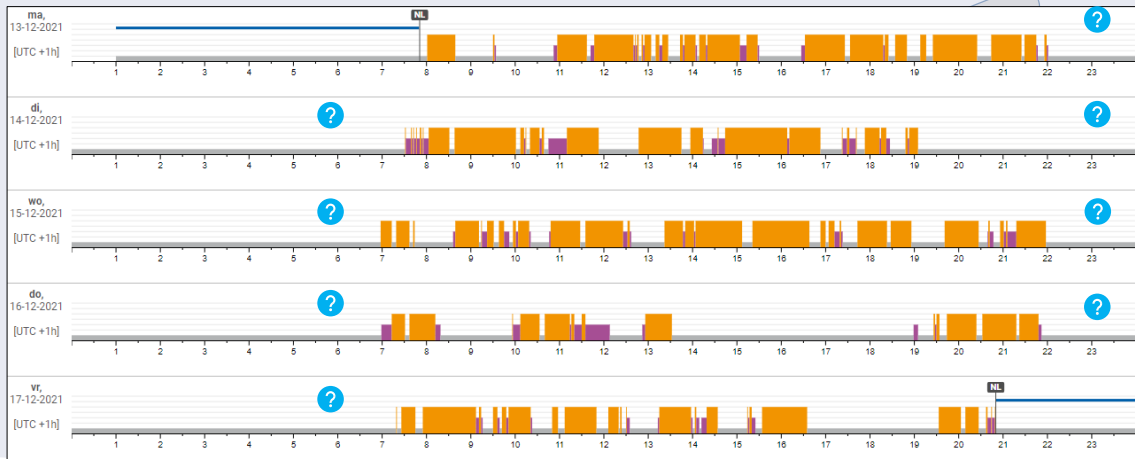
- 7. The driver shall enter in the digital tachograph the symbols of the countries in which the daily working period started and finished.



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Symbols of the countries begin and end (1)



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Other important topics

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Tachograph: Out of Scope

- When carrying out activities outside the scope of the regulation
- For example:
 - Article 2(1aa) is not applicable
 - Exception from Article 3 applies



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Tachograph: stolen, lost or defective driver cards

- **Damaged or if it malfunctions**, the driver shall return it to the competent authority of the Member State of his normal residence.
- **Theft of the driver card** shall be formally declared to the competent authorities of the State where the theft occurred.
- Any **loss of the driver card** shall be reported in a formal declaration to the competent authorities of the issuing Member State and to the competent authorities of the Member State of the driver's normal residence if this is different.
- The driver should apply for its replacement within seven calendar days
- The driver may continue to drive without a driver card for a maximum period of 15 calendar days
- Make printouts at the start and end of the daily working period



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Tachograph: malfunction

- Repaired as soon as circumstances permit
- If the vehicle cannot return to the company within one week, the tachograph must be repaired en route
- On a temporary sheet to be attached to the record sheet or to be kept together with the driver card
 - Please note when replacing a tachograph: "certificate of undownloadability" (COU)

0 1 2 3 4 5 6 7 8 9 10 11 12

12 13 14 15 16 17 18 19 20 21 22 23 24

Date _____

Signature _____

e1 217 Digital Tachograph Thermal Paper for use with e1 e1 e2 e5 200 222 84 25 29 30 0002

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Tachograph: calibration

- Mandatory:
 - After every repair of the VU (Tachograph)
 - After any change in the characteristic coefficient of the vehicle or in the effective circumference of the wheel tyres
 - When the UTC time of the device differs by more:
 - than 5 minutes for a smart tachograph (G2)
 - than 20 minutes for a digital tachograph (G1)
 - Take place every two years (24 months) after the last check-up
 - Breaking digital seal sensor (example Motion data error)



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Download: driver card

- Download at least every 28 days
 - Capacity and period
 - Advice: download every week
 - Entire memory is copied with each download
- ☞ Do not forget to read out the expired driver card

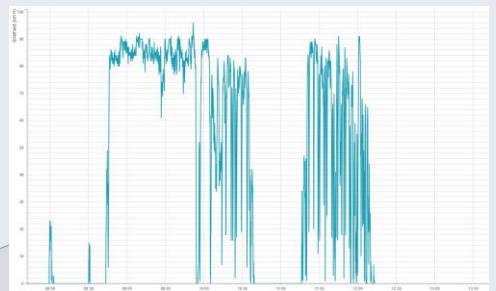


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Download: tachograph

- Download at least every 90 days
 - Capacity 365 days
 - Certain parts restricted
 - Detailed speed of the last 24 hours of driving time in legal Mass memory file
 - Number of manually entered country codes (112)
- ☞ Also pay attention to rental or demo, vehicles
- ☞ Don't forget to manually download a sold vehicle one last time



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Responsibility of transport undertakings

REGULATION (EC) No 561/2006 - LIABILITY OF TRANSPORT UNDERTAKINGS

- The transport undertaking shall properly **instruct** the driver and shall make regular **checks** to ensure that Regulation (EEC) No 3821/85 and Chapter II of this Regulation are complied with.
 - Chapter 2: CREWS, DRIVING TIMES, BREAKS AND REST PERIODS

REGULATION (EU) No 165/2014 - Responsibility of transport undertakings (article 33)

- Transport undertakings shall be responsible for ensuring that:
 - drivers are properly **trained** and **instructed**
 - shall make regular **checks** to ensure that their drivers make correct use the tachograph



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Management tasks

The following basic rules apply during compliance inspections in the Netherlands.

1. How is the provision of instructions organised?
2. How are the necessary measures taken?
3. Which resources are provided to the employees?
4. How is monitoring of compliance performed?



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Compliance guidelines

1. Management

- The company's management must have a clear vision on compliance, safety and prevention of infringements

2. Personnel

- Employees must be aware of and act according to the company's compliance policy.

3. Responsibilities and Authorities

- It must be clear who is responsible for what and who has the authority to deviate from rules in exceptional cases.

4. Knowledge

- Employees must have adequate and up-to-date knowledge of all relevant legal requirements and understand how they apply to their tasks.



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Compliance guidelines

5. Resources / tools

- Employees must have access to the necessary resources and tools to perform their duties safely and in compliance with legal standards.

6. Control Measures (Internal Checks)

- Management must compare actual performance with legal standards, detect deviations and take corrective action.

7. Monitoring, Evaluation and Improvement

- The company must actively monitor compliance performance and use this information to improve systems and processes.



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Monitoring, Evaluation and Improvement

1. Check data completeness

- Is the data from the driver cards and tachograph complete? Crosschecking data!

2. Check driving without a driver card

- What has been driven without a card and without a card in out-of-scope mode?

3. Check infringements of drivers and give feedback

- Create driver reports and awareness
- Avoid operating errors
 - Tachograph operation accounts for 75% of all infringements, which can be resolved with simple measures.



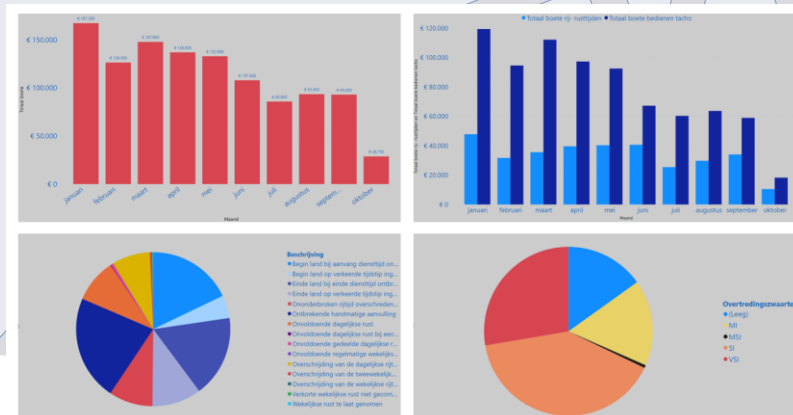
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Management reports

1. Management reporting and insights

- Use the system to generate management information



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