User Guide
Smart Tachograph EFAS-4.10

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1 Introduction

1.1 General

The smart tachograph EFAS-4.10 (hereinafter abbreviated as EFAS) logs the work periods, driving times, rest periods and availability periods of the driver and co-driver. Furthermore, EFAS logs automatically the speed and distance covered by the vehicle. The protocols logged by the digital tachograph serve as proof for controlling bodies (e.g. police). The smart tachograph EFAS complies with the technical specifications set out in the implementing regulation (EU) No. 2016/799 of 18 March 2016, implementing Regulation (EU) No 165/2014 of the European Parliament and of the Council laying down the requirements for the construction, testing, installation, operation and repair of tachographs and their components replaced by COMMISSION IMPLEMENTING REGULATION (EU) 2018/502 of 28 February 2018 amending Implementing Regulation (EU) 2016/799 laying down the requirements for the construction, testing, installation, operation and repair of tachographs and their components.

This user guide is for all EFAS users (drivers, workshop staff, company representatives, controlling staff). The user guide describes the proper use of the smart tachograph EFAS as set out in the regulation. Read the corresponding sections thoroughly and familiarise yourself with the operation of the digital tachograph EFAS.

1.2 Legal Requirements

The use of analogue tachographs or digital tachographs is governed by EC regulation 3821/85 Annex I B or 3820/85. This regulation assigns a number of obligations to the driver and the owner of the vehicle.

It is prohibited to falsify, disable or delete recordings of the smart tachographs and the tachograph cards. Also it is prohibited to falsify printouts. Modifications of the smart tachograph or its electronic signals or data links, especially if made with the intention of deceit, shall be punishable.

Any disconnection of the vehicle's battery from the vehicle electrical system without prior insertion of a workshop card will be logged as interruption by the smart tachograph. Always have your battery disconnected by an authorised workshop and make sure the workshop card is inserted.

A regular inspection of the smart tachograph EFAS must be performed at least once within a 24 month period by an authorised workshop.

The EFAS must be additionally inspected, when

- the EFAS was repaired,
- the tyre circumference has changed,
- the revolution ratio has changed,
- the registration number of the vehicle has changed,
- the UTC time of the EFAS deviates by more than 20 minutes from the correct UTC time.

Please observe the instructions for using the digital tachograph for hazardous material transportation.

As the driver, you must ensure correct use of the smart tachograph and the driver card. If the smart tachograph malfunctions, you must report the incorrectly recorded activities on a separate sheet or on the reverse side of the printout. The notes must be accompanied by your personal data (name, number of driver card, signature). If your driver card is lost or damaged, or if it malfunctions, you must create a daily report after your journey (see chapter 9). This report is to be accompanied by your data and signature. If your driver card is damaged or malfunctions, submit it to the responsible authorities immediately. Always notify the responsible authorities of the loss of your driver card immediately.

As company representative, monitor the smart tachograph and the tachograph card to ensure that it functions properly, ensure that the vehicle and calibration data is entered in the smart tachograph by an authorised workshop, ensure that your drivers use the smart tachograph and the drivers' cards properly, instruct your drivers to comply with the driving times and the rest periods.

2   Operation

2.1   Display and Controls

The smart tachograph EFAS features the following display elements and controls:
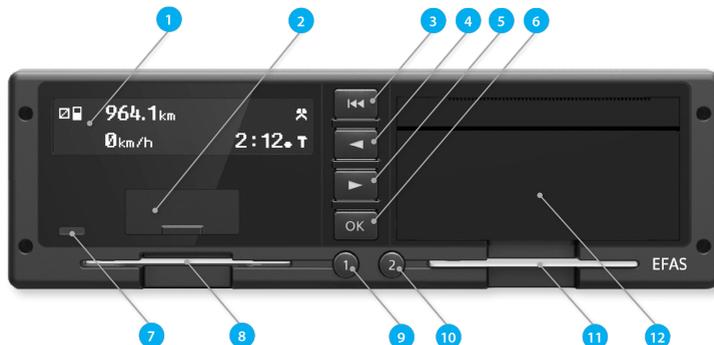
1.   Alphanumeric display
2.   Service interface cover (cap)
3.   Backspace ◄◄ (backspace & clear, cancel)
4.   Control key ◄ (backward / previous entry)
5.   Control key ► (forward / next entry)
6.   Red warning light to display the operating mode

Display	Meaning
Red	The warning light flashes upon activation (functional check).
Off	EFAS is ready for operation.
Permanently red	• If an FE warning is displayed EFAS awaiting the acknowledgment of this warning. The LED switches off when no more EF-warning appears. • If no FE warning appears, there is a system error. Have your EFAS checked by a workshop
Flashing red	Warning. Acknowledge the warning with **OK**.
Flashing red 2x	Incorrect entry. Correct your entry.

7.   Card slot for the driver's tachograph card
8.   Key ❶ for the driver (driver 1)
     short push = adjusting of the activity, push longer = card withdrawal
9.   Key **OK** (invoke menu, confirm)
10. Key ❷ for the co-driver (driver 2)
     short push = adjusting of the activity, push longer = card withdrawal
11. Card slot for the co-driver's tachograph card (vehicle operated in team mode)
12. Integrated printer module (for inserting a new reel of paper see „EFAS Quickstart Guide")

2.2   Working with menus

1.   Press OK. The main menu is displayed.
2.   Use control keys ◄ and ► to select the required menu.
3.   Press OK to acknowledge your choice.
     The next sub-menu is displayed.
4.   Repeat step 2 and 3 until you reach the required setting.
5.   Key ◄◄ is used to return to the next higher menu level.

The following instructions use an abbreviated description of menu selection with arrows (→). An arrow (e.g. → Settings) indicates selection of the respective menu (i.e. Settings) using control keys and confirmation of the selection by pressing **OK**. Chapter 4 provides you with an overview of the menu structure.

3 Display Symbols and Combinations

Symbol	Meaning
☑	Availability, current availability period
☉	Driver, driving, mode: OPERATIONAL, continuous driving time
⊢	Rest, current rest period
⚒	Work, current work period
‖	Break, cumulative break time
?	Unknown
⌂	Company, mode: COMPANY
⊓	Controller, mode: CONTROL
⊤	Workshop/test station, mode: CALIBRATION
⊟	Manufacturer, tachograph not activated
1	Driver slot
2	Co-driver slot
▪	Valid tachograph card inserted
▨	Invalid tachograph card inserted
▤	Card cannot be ejected because ignition is off
⊙	Clock
▯	Display
⊤	Data download to external memory
÷	Power supply
▼	Printer, printout
Ⅱ	Sensor
o	Tyre size
⊟	Vehicle, vehicle unit (Tachograph)
OUT	Digital tachograph not required (=„OUT OF SCOPE")
OUT✈	Start of digital tachograph not required
✈OUT	End of digital tachograph not required
⚓	Ferry/train crossing
!	Event
×	Fault
�	Start of working day
⊣	End of working day
●	Place, local time for time entries
M	Manual entry of driver activities
⚿	Security
>	Speed
Σ	Total, summary
24h	Daily
I	Weekly
II	Two-weekly
✦	From or to
⟩	Current setting (menu)

Symbol	Meaning
⠿	GNSS-Function (Global Navigation Satellite System)
⊤	DSRC-Function (Deticated Short Range Communication)
≋	ITS-Interface (Intelligent Transportation System)
DST	Daylight saving time activated
⊙>>	Speed monitoring
⊟⌂✛	Register company on digital tachograph
✛⊟⌂	De-register company from digital tachograph
⊟---	No card
⊟✛	Card valid to
⊙⊟	Driver card
⌂⊟	Company card
☐⊟	Control card
�⊤⊟	Workshop card
!✛⊢	rest needed
⊙✛ıı	Driving period until the next driving break
ıı45'	Driving break duration of 45 minutes

Further combinations of symbols can be found at the end of this manual.

4   Menu Structure

The following figure shows the EFAS menu structure. Which of the menu items can be accessed depends on the mode of the tachograph, which is set when certain tachograph cards are inserted. The remarks in the following representation denote:

*1)   Before activation, only "Technical data" can be selected in the menu "Printout" or "Print preview".
*2)   Only available with inserted workshop card (mode CALIBRATION)
*3)   Only available for the currently registered company
*4)   Optionally available (depends on the device settings)
*5)   Only available in the modes COMPANY or CALIBRATION
*6)   Only with driver or workshop card inserted
*7)   Only in the mode COMPANY and only if the inserted company card belongs to the company which activated the last company lock and no vehicle registration number has yet been entered.
*8)   Only in the mode COMPANY and only if the inserted company card belongs to the company which activated the last company lock
*9)   Only available with inserted workshop card (mode CALIBRATION) or EFAS is not activated.
*10)   Only available with inserted control card

Menu

Printout ▶*1)
- 24h↓▼ Daily report *6)
- 24h↓▼ Daily report *6)
- !×↓▼ Events/Faults *6)
- !×↓▼ Events/Faults
- >>▼ Overspeed
- ↑⑤▼ Technical data
- ⑧◫⑤ Card History
- km/h▼ Speed profile
- RPM▼ Engine speed profile
- D1/D2▼ Status changes
- ⓪⑧⑤▼ Driver's times summary
- SrvID ▶
- Local time

Inputs
- ●▶? Begin Country
- ▶◀? End Country
- OUT▶ Begin/OUT▶ End
- ♣▶ Begin/▶♣ End

Settings

Display
- Language
- Brightness *4)
- Keyb-brightness *4)
- Contrast
- Distance unit
- Menu options ▶*4)
- Help texts *4)
- Scrollbar *4)
- Advance notice *4)

Tones
- Key click
- Notification
- Warning
- ▶H45'
- Volume
- Muting

Clock
- Time adjustment
- Time zone
- Summertime *4)
- Format date
- 12h/24h mode

Company locks ▶*8)
- Vehicle registration number *7)
- Activity ignition ON/OFF *5)
- >> Pre-Alarm
- ⊘>> Warning
- ITS Driver Consent
- iCounter

Lock-out/Lock-in *2)
- Info

Infos
- Cards
- Driver's times summary
- Remaining times
- Tachograph
- Motion Sensor
- Activity ignition ON/OFF
- GNSS Info
- DSRC Info
- Company locks

Print preview ▶*1)
- 24h↓▼ Daily report *6)
- 24h↓▼ Daily report *6)
- !×↓▼ Events/Faults *6)
- !×↓▼ Events/Faults
- >>▼ Overspeed
- A↓⑤ Card profile
- km/h▼ Speed profile
- RPM▼ Engine speed profile
- D1/D2⑤ Status changes
- ⓪⑧⑤▼ Driver's times summary
- SrvID ▯
- Local time

Installation ▶*9)
- ∏▶A Sensor pairing
- Vehicle voltage
- Parameter ▶
- System restart
- GNSS Test
- DSRC Test
- ◫▯◫ GEN1 blocking
- Q‡⬡ Remote data download

Calib. Check ▶*10)
- Auto detection
- Factory setting

5 Operation of EFAS – Driver and Co-Driver

5.1 Before Starting

Before starting your trip, you must insert your driver card into the left-hand slot (with chip side up). Your card will be read. Your name, the date and the time of your last card withdrawal will be displayed. The first time a driver card or workshop card is inserted which is not yet known to the vehicle unit, the cardholder shall be requested to consent to the issue of personal data related to the tachograph via the optional ITS interface (⋛).

Next, the display shows the question "Complete manual inputs?" If so, select YES with the control keys, press **OK** and follow the instructions in section 5.5. If you do not want to complete your activities, select NO with the control keys and press **OK**. Subsequently, select the country where your working day begins. Use the control keys to select the country code and press **OK**.

If a co-driver is present, he must insert his driver card into the right-hand slot and conduct the same procedure. When the co-driver takes over the vehicle, the cards must be exchanged so that the driver-card of the person operating the vehicle is always in the left-hand slot.

5.2 Automatic Settings

The smart tachograph EFAS makes a number of automatic settings.

- Whenever the vehicle starts driving, the smart tachograph automatically changes to driving time for the driver and to availability for the co-driver.
- Whenever the vehicle stops, the smart tachograph EFAS automatically changes to work period for the driver. If less than 2 minutes pass between stopping and re-starting, the smart tachograph cancels the automatic change from driving time to work period.
- Whenever the ignition is turned off, EFAS is able to change automatically to a programmed driver activity, see also chapter 6.

5.3 Time Zones

Since your vehicle may move within different time zones, all logs and entries are in UTC time. UTC time is a standardised world time without daylight saving time. Printouts can be based either on UTC time or local time. However, only printouts in UTC-time are compliant with legal requirements. For the sake of simplicity, times are often entered in local time.

If you have set the time zone correctly for EFAS, the smart tachograph displays the local time on all standard displays during the journey. This is shown by the so called "time dot" (e.g. 17:23●) which is displayed after the time (contrastingly, with UTC time no such "time dot" is displayed). **Whenever a time entry is required, please check whether the system requires UTC time or local time.**

In most central European countries, UTC time during the winter is one hour earlier than local time. In the winter, one hour has to be deducted from local time to calculate UTC time. In the summer, two hours have to be deducted from local time to calculate UTC time.

5.4 Display settings

If there is no need to display warnings and no menu has been selected, you may use the control keys ◄ or ► to display one of the following screens:

1. Odometer *odometer and speed*
2. Current times (default screen) *Current work periods and activities for driver and co-driver*
3. Times driver (1) *Driving times driver 1*
4. Times co-driver (2) *Driving times driver 2*
5. Trip meter *trip meter and speed*
6. Remote Data Download active
7. UTC time
8. Remaining times (1) *Remaining time (1)*
9. Remaining times (2) *Remaining time (2)*

While the vehicle is travelling, only displays no. 1, 2, 5, 7, 8 and 9 are available for selection.

5.4.1 Odometer

```
□▪ 281176.7 km   ▪☑
  80 km/h    9:51.☉
```

The first line displays the following information from left to right:
- Symbol for driver activity (in this case, driving).
- The card symbol indicates that there is a card in the driver slot. The card symbol is hidden when no card is inserted.
- Current reading of odometer.
- The card symbol indicates that there is a card in the co-driver slot. The card symbol is hidden when no card is inserted.
- Symbol for co-driver activity (in this case availability).

The second line displays the following information:
- Current speed in km/h (mph option available).
- Current local time (see section 5.3).
- Symbol for the current mode (in this case OPERATIONAL)

5.4.2 Speed and Trip Meter

```
✕▪ >5.2 km      ▪⊢
  0 km/h    9:53.☉
```

The first line displays the following information from left to right:
- Symbol for driver activity.
- The card symbol indicates that there is a card in the driver slot. The card symbol is hidden when no card is inserted.
- Trip meter reading of the digital tachograph EFAS.
- The card symbol indicates that there is a card in the co-driver slot. The card symbol is hidden when no card is inserted.
- Symbol for co-driver activity.

The second line displays the following information:
- Current speed in km/h (mph option available).
- Current local time.
- Symbol for the current mode.

5.4.3 Current Activities for Driver and Co-Driver

```
1□00h01 ‖00h00
2☑00h01    9:38.☉
```

The first line displays the following information from left to right:
- Number of card slot for driver.
- Symbol for current activity of driver and current activity time (here: driving time).
- Interruption of driving time (according to regulation (EC) No. 561/2006).

The second line displays the following information for the co-driver:
- Number of card slot for co-driver.
- Symbol for current activity of co-driver and current activity time (here: availability).
- Current local time.
- Symbol for current mode (in this case OPERATIONAL).

5.4.4 Driving Times Driver 1

```
1 □00h45  ‖00h00
 □▶01h45  □‖12h34
```

The first line displays the following information from left to right:
- Number of card slot for driver, the display refers to:
  1 = Driver   (2 = Co-driver)
- Symbol for driving time and duration of driver's driving time.
- Total driving time interruptions (according to regulation (EC) No. 561/2006).

The second line displays the following information:
- Total driving time on current day.
- Total driving time in the last two weeks.

5.4.5 Remaining Times (iCounter)

```
1|□→▮04h26 ⇨ ▮45'
 ┤  ▮00h03 ⟵
```

The screen provides important times to organize further trip activities. Most important information is always shown in row 1. The screen shown above is an example and may differ from EFAS. For further information see section 5.10.

5.4.6 Driving Times Driver 2

Information is displayed in the same way as described for driver 1 in section 5.4.4 and 5.4.5.

5.4.7 UTC-Time

```
UTC□11.08.2016 DST
 5:49 37 (+01:00)  □
```

The first line displays the following information from left to right:
- Pictogram for UTC time
- Current UTC date
- The field DST indicates that the smart tachograph was set for daylight saving time. A hidden DST indicates that the current setting is standard time.

The second line displays the following information:
- Current UTC time
- Currently set time zone (time difference to UTC)
- Symbol for current VU mode

5.4.8 FMS-Download

If a remote data download of mass memory or driver card data is started via a remote inquiry unit, the system automatically switches to the displayed driver information. When the download is completed, the previously displayed driver information is automatically displayed. If the driver wishes to display other driver information

```
⌂↓⌀ Download act
▪1 ▨▨▨▨▪▪▪▪
```

during the download, he can use the cursor keys to select the driver information - depending on the activity status. ▪1 or ▪2 indicates from which card slot a download is made.

5.5 Manual Entries of Activities

If after inserting your driver card you want to manually add your activities, use the control keys to select YES and press **OK**.

EFAS will then guide you through the dialog for manual entry of activities. Firstly, the date and the time (UTC) of the last card withdrawal are displayed and the question "End prev.work period?" occurs, if you did not enter the end of shift at card withdrawel. Otherwise you are prompted for the beginning of the shift.

```
▪1:complete man-
ual inputs?  YES

▶23.09. 09:34. ⊤
 End prev.work
```
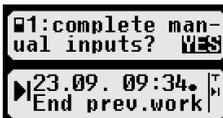
The following dialogs allow the entry of time periods for certain activities WORK ⚒, AVAILABILITY ⊠, BREAK/REST ┤ (except DRIVING ⊙). The dialog ends with the question "Confirm activities?". Here you may confirm the entered activities (press **OK**) or use the control keys to select another option (confirm, cancel, print).

5.6 Acknowledge Events or Faults

When certain events or faults occur, EFAS displays a warning (see chapter 11) in that a signal tone sounds and a warning lamp flashes for 30 seconds. The warnings will be displayed until they are confirmed by **OK**. Use control keys ◄ or ► to display additional information about the warning.

5.7 Setting a Ferry/Train Crossing

When using a ferry or a train with your vehicle, you have to set the condition "Ferry/Train Crossing".

1. Select **OK** → Inputs → ⚓→ Begin
2. Press **OK**.

To switch off the condition "Ferry/Train Crossing",
1. Select **OK** → Inputs → →⚓ End
2. Press **OK**.

The condition "Ferry/Train Crossing" is deactivated automatically when EFAS recognizes for the previous calendar minute DRIVING or a driver card is inserted or removed.

5.8   Smart Tachograph not required (OUT)

For trips which are excluded from the provisions of EC Regulation or the driving staff regulations, you may activate the specific condition "out of scope" (OUT).

```
OUT   >9.6km
  80km/h    13 26.⊙
```

1.   Select **OK** → `Inputs` → `OUT⁺ Begin`
2.   Press **OK**.

In order to switch-off the condition "out of scope" (OUT).

1.   Select **OK** → `Inputs` → `⁺OUT End`
2.   Press **OK**.

5.9   Speed Monitoring (⊡>> Warning)

Besides the legally prescribed monitoring of the maximum permissible speed of the vehicle, EFAS allows for sur-veillance of an individually programmable speed limit. Once the vehicle has been parameterized accordingly, this speed limit can be adjusted in two different ways.

Setting via menu (when the vehicle is stationary):

1.   Select **OK** → `Settings` → `⊡>> Warning`
2.   Use control keys ◄ or ► to adjust the desired speed which shall trigger your individual warning.
3.   Select "`off`" to switch-off speed warnings.

```
⊡>> Warning:
  50 km/h ?
```

Setting when the vehicle is moving:

1.   Use control keys to switch to a display where speed is shown.
2.   Press **OK** to fix the shown speed to be monitored.
3.   In order to switch-off speed monitoring when the vehicle is moving, press I◄◄ and then **OK**.

```
⊡>>  50km/h
```

5.10   Remaining Times (iCounter)

The screen provides important times to organize further trip activities. Most impor-tant information is always shown in row 1.

```
1|⊡⁺II04h30 ⇨ II45'
 ⊢   II00h30 ⇦▭
```

⁺⊢ hh**h**mm   Remaining time ('hh' in hours; 'mm' in minutes) after the daily/ weekly rest period must be started.

⊡⁺II hh**h**mm   Driving time left before the driver must start a driving time interruption.

⊡⁺⊢ hh**h**mm   Driving time left before the driver must start the daily/weekly rest period.

II   The duration (hh**h**mm) of cumulative break time is increased every minute if activity REST ⊢ or AVAILABILITY ⊠ is active.

Display	Meaning	

start of 4½h driving period
 	
`1|⊡⁺II04h30 ⇨ II45'`
`⊡ ⁺⊢14h16⇨⊢9h`
	reaming driving time until next driving break	

	⊡⁺II	Remaining driving period until next driving break
	⇨[1]	of
	II45'	45 minutes driving break.

1 minute later:
 	
`1|⊡⁺II04h29 ⇨ II45'`
`⊡ ⁺⊢14h15⇨⊢9h`
	⁺⊢14h15	Remaining time after the driver has start daily rest period

	⇨	of
	⊢9h	9 hours (REST).

after 4 ½h driving ⊡;
stop vehicle
 	
`1|⊡⁺II00h00➜II45'`
`⊡ ⁺⊢09h46⇨⊢9h`
	reaming driving time until next driving break	

	⊡⁺II	Remaining driving period until next driving break
	➜[1]	of (now)
	II45'	driving break of 45 minutes.
	⁺⊢09h46	Remaining time after the driver has start daily rest period
	⇨	of
	⊢9h	9 hours (REST).

Display	Meaning
auto. switching to ☼	Driver has to switch to REST ⊢
`1│☐→II00h00→II45'` `☼  →⊢09h46 ⇨⊢9h`	

manual switching to ⊢	*driving break*	
`1│☐→II00h00→II45'` `⊢  II00h01 ←—`	☐→II →[1] II45'	Remaining driving period until next driving break of (now) driving break of 45 minutes.
	II00h01	1 minute of 45 minutes driving break are over.
	daily rest period	
`1│ →⊢00h00→⊢9h` `⊢  ⊢01h08 ←—`	→⊢00h00 →[1] ⊢9h	No more remaining time available until (now) daily rest period.
	⊢01h08	1 hour and 8 minutes of daily rest period are over.
	weekly rest period	
`1│ →⊢00h00→⊢24h` `⊢  ⊢09h01 ←—`	→⊢ 00h00 →[1] ⊢24h	No more remaining time available until (now) weekly rest period.
	⊢09h01	9 hours and 1 minute of weekly rest period are over.

6   Operation of EFAS – Company Representatives

The company card is used for downloads or printouts of the data that is stored in the smart tachograph. Furthermore, the activity for driver and co-driver after the ignition is turned on/off can be defined to be set automatically.

It is possible to print or download the data that was stored while your company was registered on the smart tachograph. When registering your company on the smart tachograph, a company lock is activated. This company lock prevents other companies from reading out or displaying the data stored for your drivers.

6.1   Registration and De-registration of Company

If no other company is registered on the smart tachograph, your company will be registered automatically, when you insert the company card into the digital tachograph.

`⊟⌂→ Registration`
`      takes place.`

If your company was registered before, the following information is displayed.

`⊟⌂→ active since`
`08.09.15 14:10.`

If another company is registered, the display shows the following screen "Company Lock Request?".

`⊟⌂→ Company lock`
`request?     YES`

If you select YES, the other company is de-registered and your company is registered. If you select NO, you have access only to data that had already been allocated to your company.

If you rejected the automatic registration after insertion of the company card, you may switch on the company lock as follows:

OK → Settings → Company Locks → Lock-in, confirm with **OK**.

In order to deactivate the company lock, select **OK** → Settings → Company Locks → Lock-out and confirm the lock-out dialog with **OK**.

---

1   ⇨   There is no warning.
    →   (blinking) A warning has occurs; Driver has to do a driving break.
       NOTE: A warning will be displayed only on the first line of the screen.
Recent resulting activity after a switch of activity. A change in the display may be due to the calculation procedure of activities thus after maximum time of 1½ minutes.

6.2   Automatic Setting of Activity after Ignition ON/OFF (Option)

In the modes COMPANY and CALIBRATION, by using the function "`Activity Ignition`", the activity can be selected which will be automatically set for the driver and/or co-driver after the ignition is turned on/off. This function can also be switched off, so that after switch over the ignition, the current activity is maintained.

Select **OK** → `Settings` → `Activity Ignition ON/OFF`

The current setting for the driver at Ignition ON is displayed. Use control keys to change into one of the following settings:

- – Maintain driver activity
- ⊢ Rest
- ✳ Work
- ☑ Availability

Having pressed **OK**, you may enter the settings for the driver at "`Ignition OFF`", and thereafter the settings for the co-driver.

6.3   Downloading Stored Data

The data that is stored in the smart tachograph can be downloaded by using a suitable external device. You can only download the data for drivers from your company. However it is important that your company was or is registered on the smart tachograph (see section 6.1).

Proceed as follows:
1. Turn on the ignition.
2. Insert your company card into one of the card slots. The second slot must either be empty or contain a driver card.
3. Open the cover of the interface on the front side. To do so, stick your fingernail into the groove above the cover, pull out the flap and fold it down.
4. Connect the external device to the interface.
5. Start the download at the external device.

While data is being downloaded from the smart tachograph, a flashing twin arrow is displayed. Do not disconnect the data connection to the smart tachograph EFAS before the download is completed.

7   Operation of EFAS – Controlling Bodies

Inserting your control card enables you to display, print, or download all data that is stored in EFAS and on a driver card, independently of any company locks. At this time, the other card slot should be occupied either by no other card or by a driver card only.

7.1   Displaying Data
1. Select **OK** → `Print preview` and confirm with **OK**.
   The menu for the stored data is displayed.
2. Select the required data and confirm with **OK**.
3. Use control keys ◄ or ► to select the character size and confirm with **OK**.
4. Use control keys ◄ or ► to select the required date and confirm with **OK**.
   The stored data is displayed.
5. Press ► to display the next line or ◄ to display the previous line.
6. Press ◄◄ to close the print preview. The display shows Start "`Printout?`".
7. Use control keys to select the desired answer and acknowledge with **OK**.

```
Print preview:
24h▲☐ Daily repo
```

```
 --------------
☑ 20:45 21:30 0
```

7.2   Downloading Stored Data
1. Turn on the ignition.
2. Make sure your control card is inserted into one of the card slots. The second card slot must be empty or contain a driver card.
3. Open the cap of the service-interface at the front of the device and connect the external device for data download to the interface.
4. Start the download at the external device.

While data is being downloaded from the smart tachograph, a flashing twin arrow is displayed. If you insert a tachograph card into a card reader slot during a download, the card will only be read by EFAS, after the download has completed. Do not disconnect the data connection to the smart tachograph before the download is complete.

7.3 Calibration inspection

If a control card is inserted in the vehicle unit, the function „Calibr.-inspection" can be entered via the menu of the vehicle unit.

7.4 Quick selection of displayed language

If driver information like speed or odometer (see section 5.4.1) are displayed, the dialog for setting display language can be invoked by pressing the button ⏮ for more than 5 seconds.

8 Operation of EFAS – Workshop

By inserting a workshop card and entering the respective PIN, the smart tachograph EFAS enters the mode CALIBRATION. This section describes how to enter the PIN, and also some aspects specific to the CALIBRATION mode. Please refer to the workshop manual of the smart tachograph EFAS for further information.

8.1 Entering the PIN

After the insertion of a workshop card, EFAS requests the entry of the respective PIN. The PIN consists of 4 to 8 characters. The characters may be digits, upper-case letters, lower-case letters or special characters; EFAS there-fore divides all the possible characters in 4 groups.

The selection of each of the 4 to 8 characters of a PIN consists of the following steps:
1. **Select a character group**
   The first available group consists of the digits [1-0]. With key ❷ you switch to the following character groups „ABC", „abc", „@$#", and with key ❶ you return to the previous character groups.
2. **Select a character**
   With the control keys you may select the next or previous character from a repeating series of characters; the currently selected character is always shown in plain text in the first line.
3. **Assign the character by pressing OK**
   The assigned character is represented by a "*" and the input control moves to the next PIN character position.

The key ⏮ allows you to step back to previous character positions in the PIN; the respective character is displayed briefly. The character may then be changed as described above. If the key ⏮ is pressed while positioned on the first PIN character, a question is displayed as to whether the card should be ejected.

Having assigned the last character of the PIN, confirm the whole PIN with a second **OK**. The card data will be read and the PIN is checked.

If PIN validation fails, the number of remaining attempts at entering the PIN is displayed. Subsequently, the PIN entry procedure starts again.

8.2 Performing a Test Run

It is also possible to perform test runs of the vehicle with your workshop card. Make sure that the workshop card is in the left-hand card slot. Before and after a test run, the same entries are required as for a driver card (see chapter 5).

8.3 Output of Warnings in CALIBRATION Mode

In CALIBRATION mode, storage of some EFAS warnings is suppressed. However, these warnings are displayed briefly as EF-Info (EventFault-Info) on the EFAS display:

For the list of displayable faults ("SrvIDs") and for further information on causes and solutions, refer to the EFAS Workshop Manual.

9 Printing Data

The built-in printer allows you to print data stored within EFAS and on tachograph cards:

Select **OK** → `Printout` and, on the following menu level select among:

- Daily report from your driver/workshop card (stored on the inserted card)
- Daily report from the vehicle unit (stored within the smart tachograph)
- Events and faults from the driver/workshop card (stored on the inserted card)
- Events and faults from the vehicle unit (stored within the smart tachograph)
- Over speeding
- Technical data
- Card history
- Speed profile
- Engine speed profile
- D1/D2 status changes
- Driver's times summary (iCounter) see section 9.1
- List of service IDs   see section 9.2

Confirm your choice with **OK**, then use the control keys to select the desired date, and confirm with **OK**. The stored data is printed. Pull the paper off (transversely/downwards) in order to get a clean tear.

If two driver cards or a driver card and a workshop card are inserted, you have to specify from which card the data has to be printed.

Use key ◄◄ to cancel printing at any time.

Data cannot be printed when driving. Any printout is cancelled when the vehicle starts moving. Leave the ignition on when printing. The printout is halted when the ignition is turned off. If the ignition is switched off for more than 30 seconds, the print job is cancelled.

Printing is interrupted when the printer runs out of paper, the following message appears:

```
> Printer <
Paper empty
```

After you have inserted a new paper roll, the printout can be restarted.

For inserting a new reel of paper, please see the accompanying „*EFAS Quickstart Guide*".

9.1 Driver's times summary (iCounter)

The print out of current driving times can be done using the print function „⊙⊡∑▼ Driver's times summary".

```
INTELLIC
Smart Tachograph EFAS
▼ dd/mm/yyyy hh:mm
  (UTC ± hh:mm)
-----------▼-----------
⊙⊡∑
-----------⊙-----------
⊙ Last_Name _____
  First_Name _____
Card_Identification _____
  dd/mm/yyyy
---------⊙⊡∑-----------
⊪        dd/mm/yy hh:mm[?]
[!]1⊙    hhhmm[?]
[!]1▥    hhhmm[?]
[!]⊙⊪    hhhmm[?] (>9h:N)
[!]✛ʜ    hhhmm[?] [▩▩⊙]
[!]⊙|    hhhmm[?]
[!]⊙||   hhhmm[?]
---------⊙▩∑-----------
[!]⊙▩    dd/mm/yyyy
[!]▩⮇    dd/mm/yyyy
---------ᴀ⊙∑-----------
[!]ᴀ⮇    dd/mm/yyyy
[!]ᴀᴛ    dd/mm/yyyy
-----------------------
```

- printing time

- block identifier[2]
- Type of printout
- block identifier[3]
- card-holder name
- card-holder first name(s)
- card-ID
- card expiration date
- driving times (overview)
-[4]
-[5]
-[6]
-[7]
-[8]
-[9]
-[10]
-[11]
-[12]
-[13]
-[14]
-[15]
-[16]

end of printout

Remarks:
- A question mark ("?") is printed after a value when periods of unknown activity were consulted in order to calculate breaks and rest periods.
- An exclamation mark ("!") is only printed in the first columns when the associated warning is active (and is not suppressed by an „EU-Reg. not applied"-condition). It will be printed no exclamation mark if associates warning is active. Also no exclamation mark is printed when warning or pre-warning "Daily driving time over 9 hours" is active, because there is no associated time violation.
- Square brackets ("[ ]") in the example indicate that the sign inside the brackets may be absent. The brackets themselves are not printed.

Specifically applies to warnings concerning the driver card expiry date, the next mandatory driver card download date, the next mandatory VU download date and the next mandatory calibration date: An exclamation mark ("!") will be printed if the current VU-time is within the (adjustable) period in which this warning will be triggered.

---

2   Type of print out
3   Identity of driver
4   End of the last daily / weekly rest period
5   Drivers ongoing driver time
6   Drivers accumulated break time
7   Daily driving time, number (N) of days of the current week, where the daily driving time was greater than or equal to 9 hours. N appears only if there were such days.
8   Remaining time until the driver has to start his daily / weekly rest period. The "Multiple drivers" pictogram is printed only if the driver was together with another driver on board since the end of the last daily/weekly rest period. If the driver's rest period would already have to start, "00h00" appears.
9   Weekly driving time
10 Two-weekly driving time
11 Driver card overview (this line is only printed if one of the following lines is available)
12 Driver card expiration date (this line is printed only if the corresponding warning was activated)
13 Date of the next mandatory driver card downloads (this line is printed only if the corresponding warning was activated)
14 Overview of the VU-hours (this line is printed only if one of the following lines is available)
15 Date of the next mandatory VU Downloads (this line is printed only if the corresponding warning was activated)
16 Date of the next mandatory VU calibration (this line is printed only if the corresponding warning was activated)

9.2   Service Identifier

The printout of the last max. 100 Service-IDs (events/faults) can be shown via the print menu "SrvId▼". The printout is in reverse chronological order, latest events/faults are printed in the list above. Faults that are still pending, are marked with of time "--h--".

Because the list of SrvIDs in EFAS cannot be reset, the user can cancel the printout of SrvIDs by pressing the ⏮ key at any point.

Note: The marker helps to cancel the printout with the button ⏮.

EFAS remembers the last time of the printout and displays it via the marker ⤓⊡▼ (last printout time; see example).

```
┌──────────────────────────┐
│     INTELLIC             │
│  ┌────────────────────┐  │
│  │ Smart Tachograph EFAS│  │
│  └────────────────────┘  │
│ ▼ 12/06/2019 15:15 (UTC) │
│ -----------▼----------   │
│ SrvId▼                   │           - type of printout
│ ------------------------ │
│ 12/06/2019 - 12/06/2019  │           - If a printout period has been defined, it is printed here.
│ ------------------------ │
│ ×Ᵽ      12/06/2019 10:34 │           - Symbol of event/fault;   start time/-date of event/fault
│ ×31    S41        00h01  │           - EU error number;   SrvID;   duration
│   -------------------    │
│ ######################## │
│ ⤓⊡▼     12/06/2019 10:33 │           - Marker of last printout time of SrvId▼
│ ######################## │           - If there is printout time available, marker is skipped.
│   -------------------    │
│ !Ᵽ      12/06/2019 10:32 │
│ ×31    S41        00h02  │           - Fault SrvId: S41 duration of 0 hours and 2 minutes
│   -------------------    │
│ !Л      12/06/2019 10:04 │
│ !11    S124       --h--  │           - Event SrvId: S124 is still active (--h--)
│   -------------------    │
│ !⊡⊡     12/06/2019 09:02 │
│ !03    S10        --h--  │
│ ...                      │
│ -----------Σ----------   │
│ ΣSrvId: ▼                │           - Total SrvIDs within the print period and in the archive
│ S10  Σ (1)               │
│ S41  Σ (2)               │
│ S124 Σ (1)               │
└──────────────────────────┘
```

10   General Settings

10.1   Printouts

According to EU regulations, the times specified on the printout and in the print preview are output in UTC time. For easier inspection, the times can also be output in local time by using the setting "Local time".

1.   Select **OK** → `Printout` → `Local time`
      The current setting is displayed.
2.   Use control keys ◄ and ► to select the required setting. Press **OK**.

```
┌─────────────────┐
│ Local time:     │
│ >Off            │
└─────────────────┘
```

10.2 Display

10.2.1 Language

EFAS supports a multitude of languages. The language which is used for the digital tachograph display depends on the tachograph card which is inserted in the left-hand card slot. The language is automatically set upon card insertion or withdrawal. However, you can select the language manually.

1. Select **OK** → `Settings` → `Display` → `Language`
   The current language is displayed.
2. Use control keys ◄ and ► to select the required language. Press **OK**.

```
Language:
>English
```

If a driver information screen like speed or odometer are displayed, the dialog for setting display language can be invoked by pressing ◄◄ for at least 5 seconds.

10.2.2 Display Brightness

If your EFAS is not connected to the central brightness control for the dashboard lighting of your vehicle, the display brightness for day and night can be set via the menu. The day mode is stored when the vehicle lights are off. The night mode is stored when the vehicle lights are on.

1. Select **OK** → `Settings` → `Display` → `Brightness`
   The current brightness setting is displayed.
2. Use control keys ◄ and ► to select the required brightness. Press **OK**.

```
Brightness:
☼ ▬▬▬▬▬▼▬▬ 7
```

Day setting:
```
Brightness:
☼ ▬▬▬▬▬▼▬▬ 7
```

Night setting:
```
Brightness:
☽ ▬▬▬▼▬▬▬▬ 4
```

10.2.3 Display Contrast

1. Select **OK** → `Settings` → `Display` → `Contrast`
   The current display contrast setting is displayed.
2. Use control keys ◄ and ► to select the required contrast. Press **OK**.

```
Contrast:
▬▬▬▬▼▬▬▬ 5
```

10.2.4 Keyboard Back-light Brightness

1. Select **OK** → `Settings` → `Display` → `Keyb.brightness`
   The current brightness setting of the keyboard backlight is displayed.
2. Use control keys ◄ and ► to select the required brightness. Press **OK**.

```
Keyb.brightness:
☼ ▬▼▬▬▬▬▬▬ 2
```

Day setting:
```
Keyb.brightness:
☼ ▬▼▬▬▬▬▬▬ 2
```

Night setting:
```
Keyb.brightness:
☽ ▬▬▬▬▬▬▼▬ 8
```

10.2.5 Distance and Speed Unit Display

This function is used to determine the unit that shall be used for displaying the distance. You can select either kilometres or miles. The unit for displaying the speed (km/h or mph) changes automatically.

1. Select **OK** → `Settings` → `Display` → `Distance unit`
   The current distance unit setting is displayed.
2. Use control keys ◄ and ► to select the required unit. Confirm your choice with **OK**.

```
Distance unit:
>km
```

10.3 Acoustic Signals (Tones)

You can use these menu functions to change the settings for key click, notification tone, warning tone.

10.3.1 Key click

1. Select **OK** → `Settings` → `Tones` → `Key click`
   The current key click setting is displayed.
2. Use control keys ◄ and ► to select the required setting. Confirm your choice with **OK**.

```
Tones:
◄) Key click ☑
```

Set the notification tone and warning tone accordingly.

10.3.2 Signal for the end of a driving break time

At the end of a driving break time of 45 minutes in total (45 or 15+30) EFAS may show the following screen together with an acoustic signal, which reminds you to continue driving.

```
Have a
good trip
```

This signal may be switched on and off via menu (+II45').
1.   Choose **OK** → `Settings` → `Tones` → +II45'.
      The current setting will be shown.
2.   Use control keys ◄ and ► to select the required setting. Confirm your choice with **OK**.

```
Tones:
◄) +II45'  ☑
```
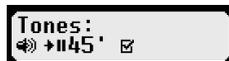
HINT: If the function mute is active, only the screen is shown, no acoustic signal will occur.

10.4   Time and Date

Normally, the time is set automatically via the GNSS receiver. Alternatively, the workshop can enter the date and time (UTC) in CALIBRATION mode.

EFAS checks during the input whether the time is within the card validity. If the time falls below the minimum or exceeds the maximum, the displayed time is automatically corrected to the minimum or maximum..

1.   Select **OK** → `Settings` → `Clock` → `Time adjustment`
      If you have already corrected the time within the last seven days, the time cannot be changed and a message is displayed to you. Otherwise, the following display appears:
2.   Use control keys ◄ and ► to make the required correction. Press **OK**. The new corrected time is displayed.

```
Time adjustment:
■0 sec.
```

3.   Press **OK** again to store the correction or press ◄◄ to cancel the correction.

For setting other menu sub-items, choose the respective sub-item and proceed accordingly.

10.5   ITS Driver Consent

Via the ITS driver consent dialog, the status of the ITS consent can be displayed and changed at the EFAS when a driver or workshop card is inserted. After selecting the card slot, the setting for ITS driver consent can be made.
1.   Select **OK** → `Settings` → `ITS Driver Consent`
2.   Use control keys ◄ and ►   to select the desired card slot number and press **OK**. After selecting the card slot, the setting for ITS driver consent can be made.

```
ITS Driver Conse
Driver 2 ?
```

3.   Use control keys ◄ and ► to select whether or not you want to output personal data, then press **OK**.

```
ITS Driver Conse
>YES           ■2
```

10.6   GNSS Info

Via the menu entry "GNSS Info" the user can see the status of the current position of the vehicle.
1.   Select **OK** → `Infos` → `GNSS Info`.
      EFAS determines the GNSS data every second.
      ⚲: *Indicates whether the GNSS position of the vehicle is available.*
      ⊕: *Position accuracy (the lower the value, the more accurate).*
      ⌗: *GNSS time*
2.   The function is closed by pressing **OK** or ◄◄.

```
⚲:YES(2)  ⊕:17
⌗: 11:18:05
```

If no valid time is received from the GNSS receiver, only "--:--:--" is displayed instead of the valid time.

10.7   DSRC Info

Via the menu entry "DSRC Info", the user can see the current status of the DSRC module (version, serial number, production date, etc.).
1.   Select **OK** → `Infos` → `DSRC Info`
2.   Scroll to the desired information with the control buttons ◄ and ►.
3.   The function is closed by pressing **OK** or ◄◄.

```
Version
1 1.0.0 1.0.0
```

If there is no communication to the DSRC module, the following information is displayed on the EFAS.

```
DSRC Facilitynse
not available
```

10.8 Company Lock (COMPANY mode only)

This menu is used to display information on the current company lock.

1. Select **OK** → `Settings` → `Company locks` → `Info`
   The information about the current company lock is displayed.
2. Use control keys ◄ and ► to access the required line.
3. Press ◄◄ to return to the menu.

Also, with a company card inserted, the company lock can be activated or deactivated (see chapter 6).

10.9 Automatic Setting of Activity after Ignition ON/OFF

In the digital tachograph mode COMPANY, the activity for the driver and co-driver can be selected which is set automatically after the ignition is turned on/off (see chapter 6).

10.10 Overspeeding pre-warning (>>Pre-Alarm)

When the maximum speed (programmed by the workshop) is exceeded for 1 minute or longer, the smart tachograph stores this event in the mass memory of the tachograph and on the driver card in accordance with EU regulations. To avoid this, the driver can be warned before this minute is over. If the function "`>>Pre-Alarm`" is activated, a pre-alarm will be displayed when the maximum permissible speed is exceeded for a certain time.

When the Pre- warning is displayed, a long beep is performed and the red warning lamp flashes temporarily. The advance warning time can only be set when the vehicle is stationary.

1. Select **OK** → `Settings` → **>>**`Pre-Alarm`. The current setting is displayed.
2. Use control keys ◄ and ► to choose a time between 5 and 55 seconds. When displaying a warning to reduce speed, this warning will remain on the display for this time, before an entry is stored in the digital tachograph and stored on the driver card. Alternatively select "`OFF`", if you don't want to receive advance warnings.
3. Press **OK** to adopt your entry.

10.11 Displaying Card Information

This function is used to view the card type or card status or the name of the card holder of the cards that are inserted in the card slots. If the card is defective or expired, the status of the card is displayed as follows:

Symbol	Card status
▉---	No card in card slot
▣▉×	Data error on driver card
▣▉▣	Driver card - start of validity period not yet reached or expiry date exceeded
⌂▉×	Data error on company card
⌂▉▣	Company card - start of validity period not yet reached or expiry date exceeded
▉▉×	Data error on control card
▉▉▣	Control card - start of validity period not yet reached or expiry date exceeded
T▉×	Data error on workshop card
T▉▣	Workshop card - start of validity period not yet reached or expiry date exceeded

1. Select **OK** → `Infos` → `Cards`.

10.12 Displaying the Device Data

The software version, production date, and serial number of EFAS can be displayed via the menu.

1. Select **OK** → `Infos` → `Tachograph`
2. Use control keys ◄ and ► to browse to the required information.
3. Press **OK** or ◄◄ to return to the menu.

10.13 Motion Sensor

1.   Via the menu entry Motion Sensor device specific data can be displayed.
2.   Select OK → `Infos` → `Motion Sensor`
3.   Use control keys ◄ and ► to browse to the required information.
4.   Press **OK** or ◄◄ to return to the menu.

11   Messages and Warnings

The smart tachograph EFAS outputs different messages and warnings. The warnings are partially accompanied by beeps. Messages and warnings are mostly output as plain text using the current display language. This section explains the most important messages and warnings.

Pictograms of events contain always the symbol "!" at the beginning, except the special pictogram of the speeding event „>>". Pictograms of faults contain always the symbol "✕" at the beginning.

Display	Meaning
> Card < No access	The digital tachograph is refusing to eject a card. The card can only be ejected when the vehicle has stopped.
�II◎ 04h15 ▯1 ▦B R E A K	15 minutes before the end of a 4½-hour period of driving time. Take a break within the next 15 minutes. This message is not displayed if the specific condition OUT is active.
�II◎ 04h30 ▯1 ▦B R E A K	You exceeded the permissible driving time of 4½ hours. Take a break. This message is not displayed if the specific condition OUT is active.
> Printer < Temperature err.	The temperature inside the printer is too high. Wait until the printer has cooled down. Then start the printout again.
> Printer < Insert cartridge	You removed the printer module from the smart tachograph. This terminates printing. Remove the printer module only when the display shows Paper empty.
24h▦▾ ▯1 aborted	Printing was aborted via ◄◄ or the vehicle started moving while printing was underway (here: daily reports from card).
> Data < not available	No data available for selected printout.
!▯ Card not ▦ valid	The used card is invalid or plugged incorrect.
!▯▯ Card not ▦correctly clo▸	The previous card withdrawal was not completed properly.
!◎▯ Driving w/o ▦ valid card	This event is triggered when the driver activity changes without valid card to DRIVING or changing during driver activity DRIVING to another operating mode.
!▯▯ Card ▦ conflict	The two inserted tachograph cards must not be used together. Remove one of the cards. For further Information see 11.3.
!◎▯ Time ▦ overlap	The inserted tachograph card has a stored withdrawal time. This time is later than the current time. If this message is displayed, check the actual time of the smart tachograph.
>> Over speeding ▦	You exceeded the permissible speed limit for longer than 1 minute.

English

Display	Meaning
!÷ Power supply / S3 interruption	The power supply of the motion sensor or to the smart tachograph was interrupted. Have the sensor and/ or the tachograph checked if this message occurs repeatedly.
!⬦ Motion data / S101 error	A data error occurred when transmitting data from the motion sensor. Have the smart tachograph and the sensor checked if this message occurs repeatedly.
!▯ Security / S84 breach	The smart tachograph detected a security violation. Have your smart tachograph checked by an authorised workshop.
×▯1 Card fault / S39	The tachograph card in the left-hand slot could not be read correctly. Have your tachograph card checked if this fault occurs frequently.
×⬦ Sensor / S45 fault	The smart tachograph detected a motion sensor fault. Have your digital tachograph checked by an authorised workshop if this fault occurs frequently.
×A Internal / S35 fault	The smart tachograph detected an internal fault. Have your smart tachograph checked by an authorised workshop if this fault occurs frequently.
×A Service! / SrvID:S30	The smart tachograph determines a serious internal error. In this case the logging of your driver activities must take place handwritten. Please assure that the digital tachograph will be examined by an authorised workshop as soon as possible.
!▯ Card not / S117 valid	The inserted card has expired.

11.1 Display of additional information

If one of the faults and events listed in chapter 11 is displayed, additional information can be displayed. After pressing the buttons ◄ or ► following screen appears for about 4 seconds:

Display	Meaning	
SrvID:S13 #1 / 03.06.19 14:15.	SrvID:S13	Service-ID (max. 3 digits)
	#1	Number of unacknowledged messages of the same type
	03.06.19 14:15	Date + time of the first occurrence (# 1) of message

11.2 Repeated Display of events and faults

The display of events / faults, the cause of which is not yet completed, will be displayed again after a change of driver / workshop card or once a day. The display appears with a acoustic signal until it is terminated by pressing the ⏮ or **OK**.

If the service ID (e.g. "S134") appear not blinking, there is a warning which is repeated.

Indicator ↻ of a warning that is repeated.

!▯÷ 12.06.19 ▯1 / S134 Card data dow   SrvID:S134 ↻ #3 / 07.06.19 07:26.

11.3 Event „Card conflict"

This event is triggered when a combination of valid cards exists, which are marked in the following table with "×":

22

English

Card conflict		Slot driver				
		no card	driver card	control card	workshop card	company card
slot 2nd driver	no card					
	driver card				×	
	control card			×	×	×
	workshop card		×	×	×	×
	company card			×	×	×

11.4 Event „Driving without an appropriate card"

This event is triggered when the driver activity changes to DRIVING or changing during driver activity DRIVING to another operating mode. In the following table this event is marked with "×":

Driving without an appropriate card		Slot driver				
		no card	driver card	control card	workshop card	company card
slot 2nd driver	no card	×		×		×
	driver card	×		×	×	×
	control card	×	×	×	×	×
	workshop card	×	×	×		×
	company card	×	×	×	×	×

11.5 iCounter

Display	SrvId	Warning
⊡▶ hh**h**mm ⊡▶ 08h30 ▪1 S120 9h daily driu	S120	Warning when reaching the daily driving time of 9 hours (XX minutes before 9 hours reached). *(hh**h**mm represents the current daily driving time to the date on which the warning was generated.)* **XX** minutes represents a configurable warning time in minutes. The default value is set in EFAs to 30 minutes.
⊡▶ 9h ⊡▶ 9h ▪1 S121 9h daily driu	S121	Daily driving time of 9 hours has been reached (above 9 hours).
!⊡▶ hh**h**mm !⊡▶ 09h30 ▪1 S122 Max. daily di	S122	Warning when reaching maximum daily driving time of 10 hours (XX minutes before 9 hours reached). *(hh**h**mm represents the current daily driving time to the date on which the warning was generated.)* **XX** minutes represents a configurable warning time in minutes. The default value is set in EFAs to 30 minutes.
!⊡▶ hh**h**mm !⊡▶ 10h ▪1 S123 Max. daily di	S123	The maximum permitted daily driving time of 9 respectively 10 hours has been reached.
!⊡I hh**h**mm !⊡I 55h30 ▪1 S124 Weekly driuir	S124	Warning when reaching the maximum permitted weekly driving time of 56 h (XX minutes before 56 hours have been reached). **XX** minutes is a configurable pre-warning time in minutes. The default value in EFAS is set to 30 minutes.

Display	SrvId	Warning
!⊙l 56h !⊙l 56h ▪1 S125 Weekly drivin	S125	Weekly driving time limit of 56 hours is achieved (above 56 hours).
!⊙ll hh**h**mm !⊙ll 89h30 ▪1 S126 Two weeks dri	S126	Warning upon reaching of the maximum permitted double weekly driving time of 90 hours (XX minutes before the 90 hours are reached). **XX** minutes is a configurable pre-warning time in minutes. The default value in EFAS is set to 30 minutes.
!⊙ll 90h !⊙ll 90h ▪1 S127 Two weeks dri	S127	Double weekly driving time of 90 hours has been reached (above 90 hours).
!⁺⊢ 00**h**mm !⁺⊢ 00h30 ▪1 S128 REST required	S128 S129	Warning; XX minutes before the daily/weekly rest period has to be started. *(00**h**mm, remaining time before the driver has to start daily/weekly rest period.)* **XX** minutes is a configurable pre-warning time in minutes. The default value in EFAS is set to 30 minutes. *S128 applies to the card in the driver slot, S129 applies to the card in the co-driver slot.*
!⁺⊢ !⁺⊢ ▪1 S130 REST required	S130 S131	The daily/weekly rest period has to be done now. *S130 applies to the card in the driver slot. S131 applies to the card in the co-driver slot.*
!⊙▪ dd.mm.yy !⊙▪28.05.24 ▪1 S132 Card expiry c	S132 S133	(Card expiration date) not valid from dd.mm.yy *S132 applies to the card in the driver slot, S133 applies to the card in the co-driver slot.*
!▪↓ dd.mm.yy !▪↓12.06.19 ▪1 S134 Card data dow	S134 S135	Next prescribed card data download before dd.mm.yy. *S134 applies to the card in the driver slot, S135 applies to the card in the co-driver slot.*
!Ħ↓ dd.mm.yy !Ħ↓24.06.19 S136 Mass storage	S136	Next prescribed mass storage data download before dd.mm.yy.
!ĦT dd.mm.yy !ĦT01.06.21 S137 Calibration c	S137	Next calibration of the VU has to be done on dd.mm.yy latest.
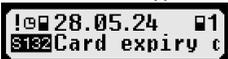
12   Important Pictogram Combinations

Display	Meaning
●▯►	Place of begin of working day
►●	Place of end of working day
⊙→	Start time
→⊙	End time
⊙⊙	Team
⊙▮	Driving time in one week
⊙▮▮	Driving time in two weeks
!▬▬	Card conflict
!⊙⊙	Time overlap
!⊙▬	Driving without appropriate card
!▬⊙	Card inserted while driving
!▬月	Last use of card not finished
!月×	Expiry date tachograph
!⸬	Missing position information from GNSS receiver
!Υ	Communication error with DSRC device
!目	Manufacturer specific event
>>	Over speeding
!≠	Interruption of power supply
!Л	Motion data error
!🔒	Security violation
×▬1	Card fault, driver slot
×●	Display fault
×⤓	Download fault
×▼	Printer fault
×Л	Sensor fault
×月	Internal fault of vehicle unit (device fault of tachograph)
×⸬	GNSS malfunction
×Υ	DSRC malfunction
!→⊢	Rest required
⊙→❚❚	Driving time until next stop
hh**h**mm	Indicator of duration in hours and minutes
--h--	not yet completed event/fault
24h▬▼	Driver Activities from Card Daily Printout
24h月▼	Driver Activities from VU Daily Printout
!×▬▼	Events and Faults from Card Printout
!×月▼	Events and Faults from VU Printout
>>▼	Over speeding Printout
T⊙▼	Technical data Printout
目▬⊙▼	Historic of inserted cards
km/h▼	Speed profile

Display	Meaning
RPM▼	Engine speed profile
D1/D2▼	Status changes
⊙⊕Σ▼	Driver's times summary
SrvID ▼	Service Identifier Overview