TachoScan Control

Tutorial

Version: 3.1

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1. Introductory note

This Manual has been drafted in order to familiarize users with the general manner of conduct during on the road control and during control realized in company premises. New users are recommended to start the TachoScan software and try out the operations as they are presented, whereas, those users that command already some experience in working with the software may, straight away, proceed to a given level of their choice.

Saying all this, the Manual is especially targeted to those persons, which had no previous contact with read out of digital driver cards and of tachographs in the TachoScan software, and thus, every single stage is meticulously portrayed.

Usually, initial control assumes the following pattern:

- Logging in;
- New control "parameters" setting;
- Entering of data from tacho disco and/or driver cards;
- verification of tampering;
- Reporting and approval of offences;
- Control locking and exporting;
- Control unlocking and editing.

The Manual portrays the realization of all of these stages with the use of exemplary data.

Details of the drivers, controlled companies, driver card numbers and vehicle registration numbers are fictitious.

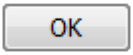
2. Logging in

Before you start to work with the program you should log in first. To log in, select the proper login from the drop-down list and enter a valid password. The first successful logging enables the possibility to add new users.

Prior to commencing software operation, one should first log in. Logging in is effected through the selection of appropriate login from the list and by entering of a correct password.

First login

In case of logging in for a first time, one should:

- in **Surname and name** field, select : **Administrator**;
- in **Password** field enter: **admin**;
- press the button 

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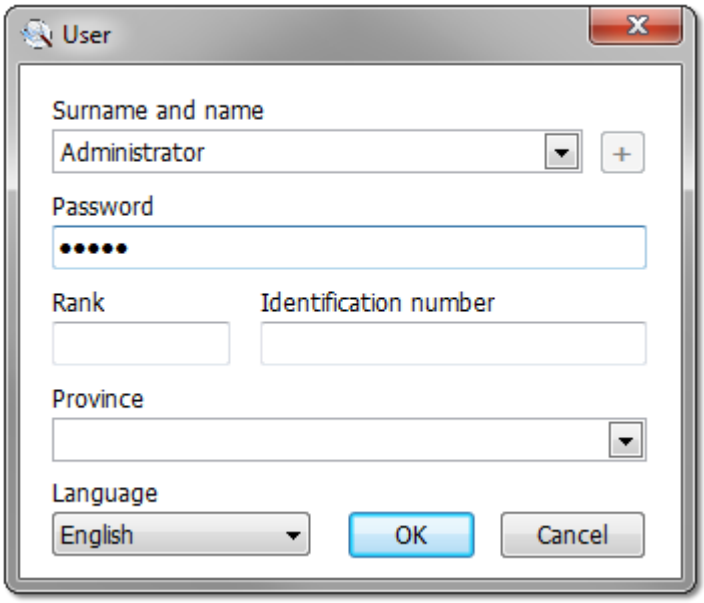
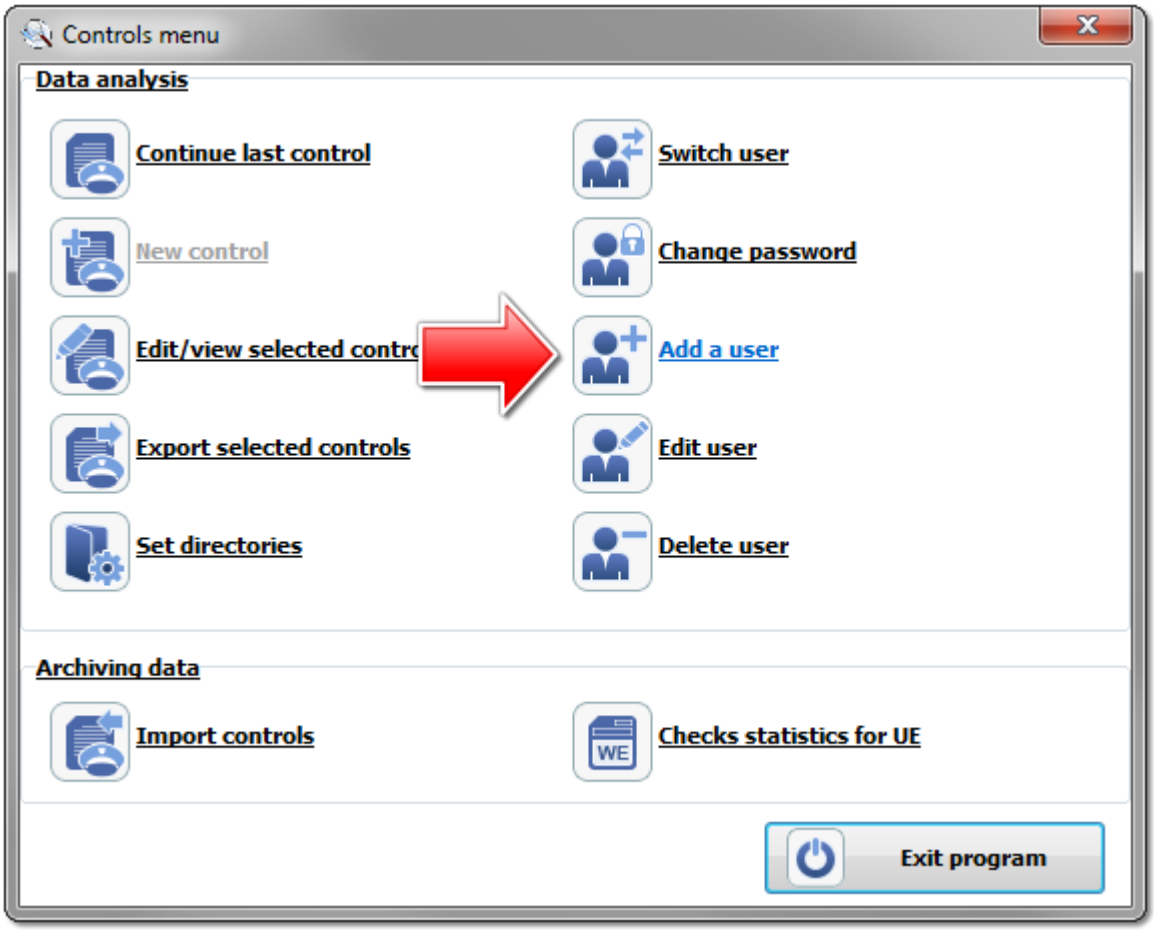


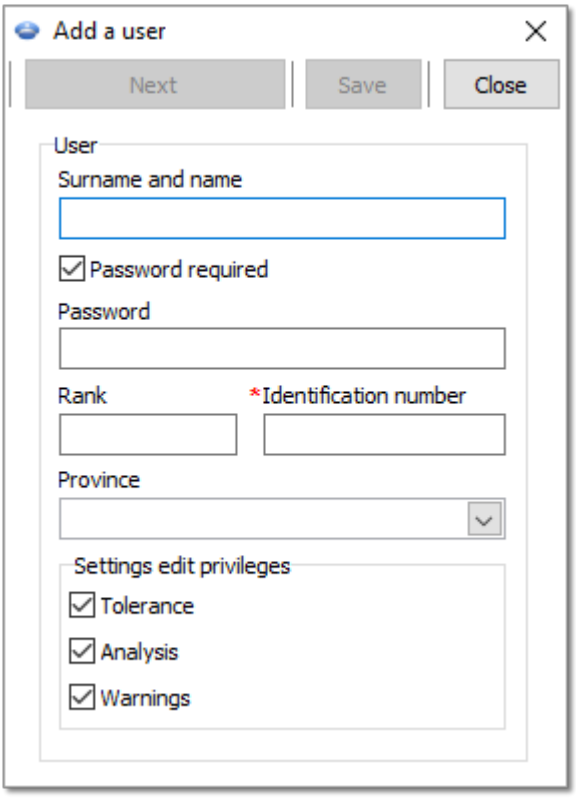
Once logging in is successfully completed, the software shall be activated. The controls menu makes possible the selection of a given operation of choice: starting of a new control, edition of already existing control, continuation of current control. It also makes possible user switching, exporting (archiving) of selected controls, importing of controls, as well as setting of the mentioned directories.

New user

Following a first-time logging in (Administrator), the controls menu should be used to select the option: **Add a user**.



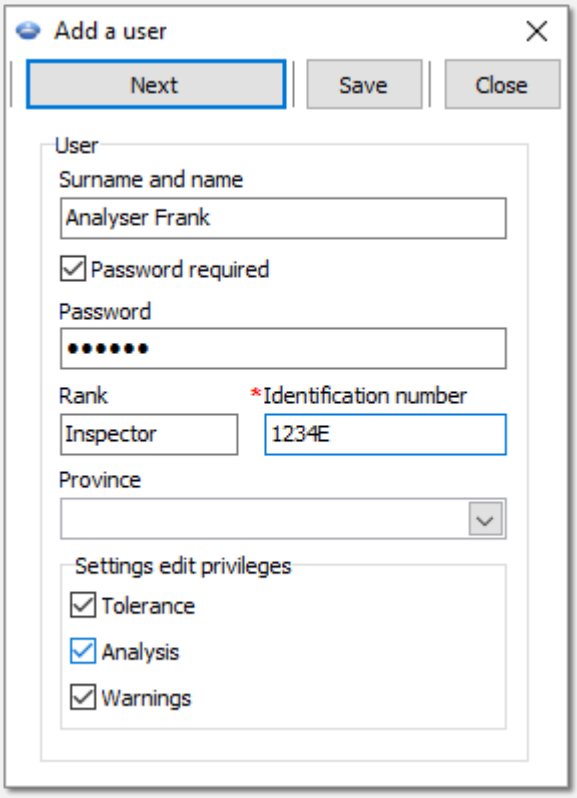
Once the above option is selected, add a user window shall appear.



We enter, accordingly:

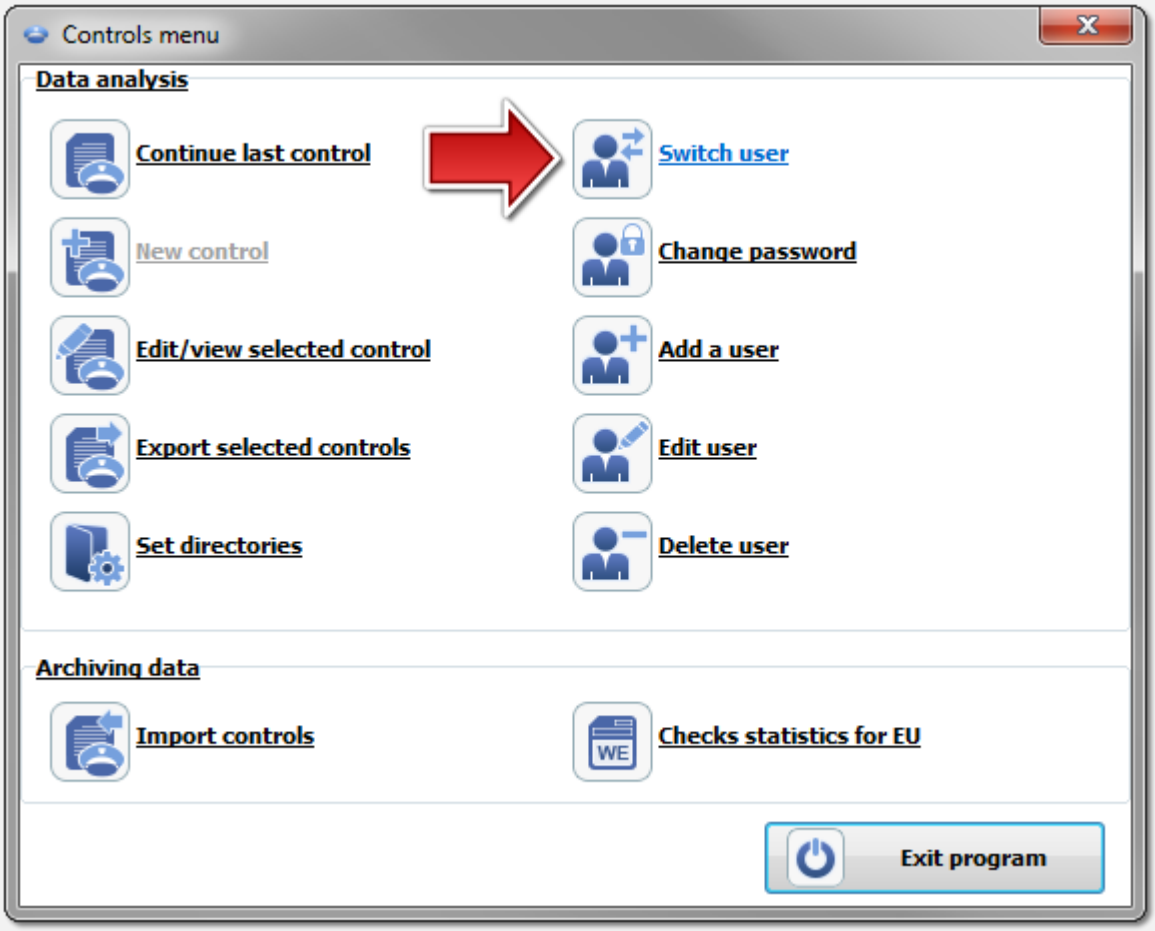
- Surname and name;
- Password required - uncheck this option if you don't want the user to supply a password at login;
- Password - if the abovementioned option is checked;
- Rank;
- Identification number;
- Province - select from the list;
- Settings edit privileges - select the tabs which the user being added or edited can access.

Example



After the foregoing data are completed, press: Save and then Close button.

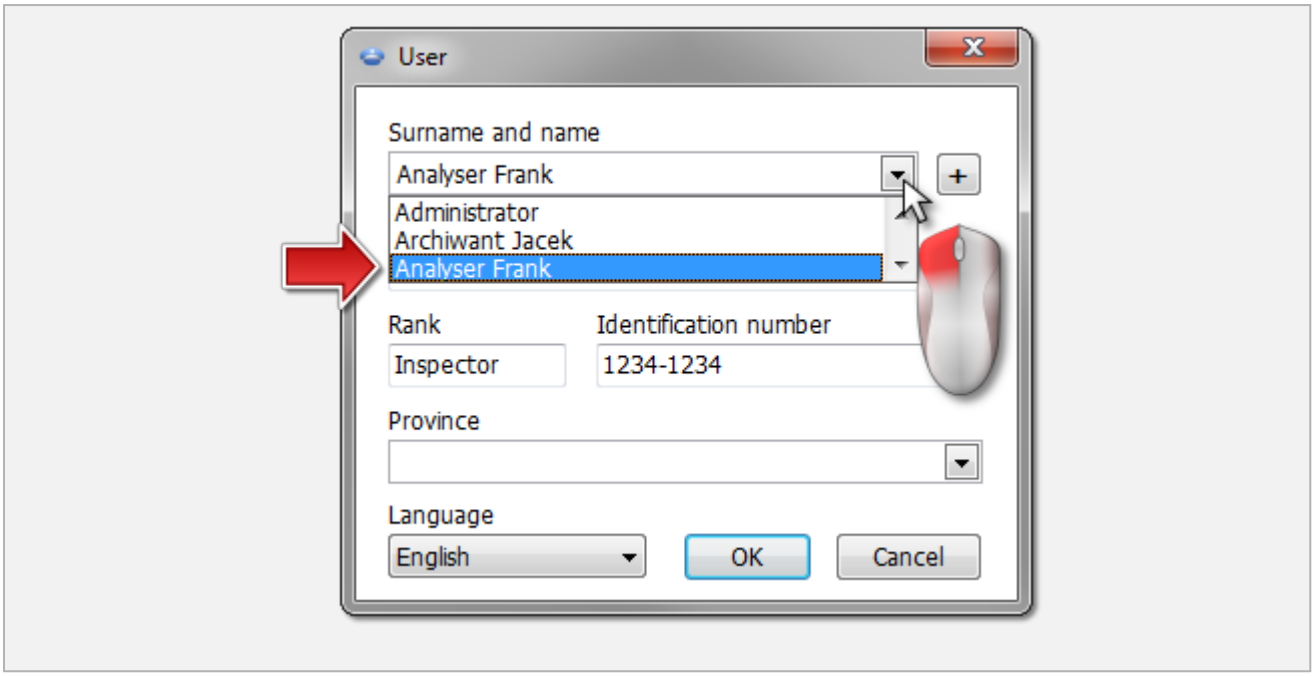
Then, the **Controls menu** window shall appear, again:



On the list, we click on the option: **Switch user**.

In the new window, we select from the "Surname and name" list Mr. Analyser Frank. We enter password, and press OK.

(then, the **Controls menu** window shall reappear)



3. New control

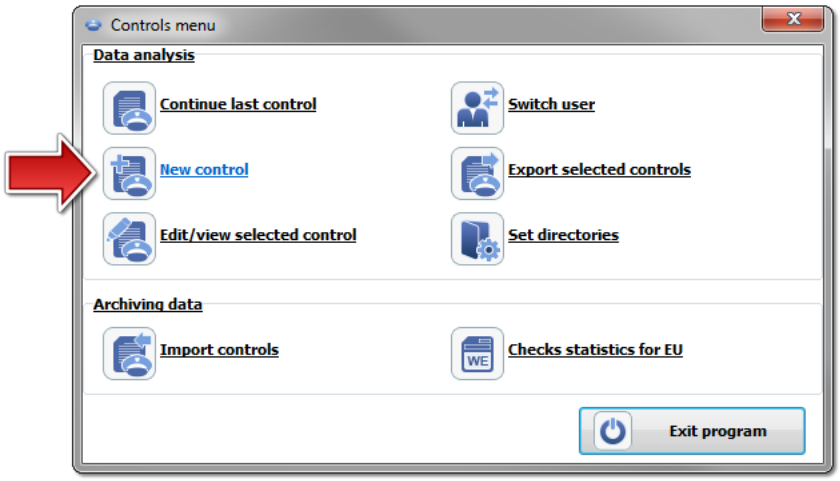
Each control performed by TachoScan Control is recorded in the database, so when you select **New control** you need to enter the data specifying: control no., date, name of the controlled company and the type of control carried out.

To start a new control:

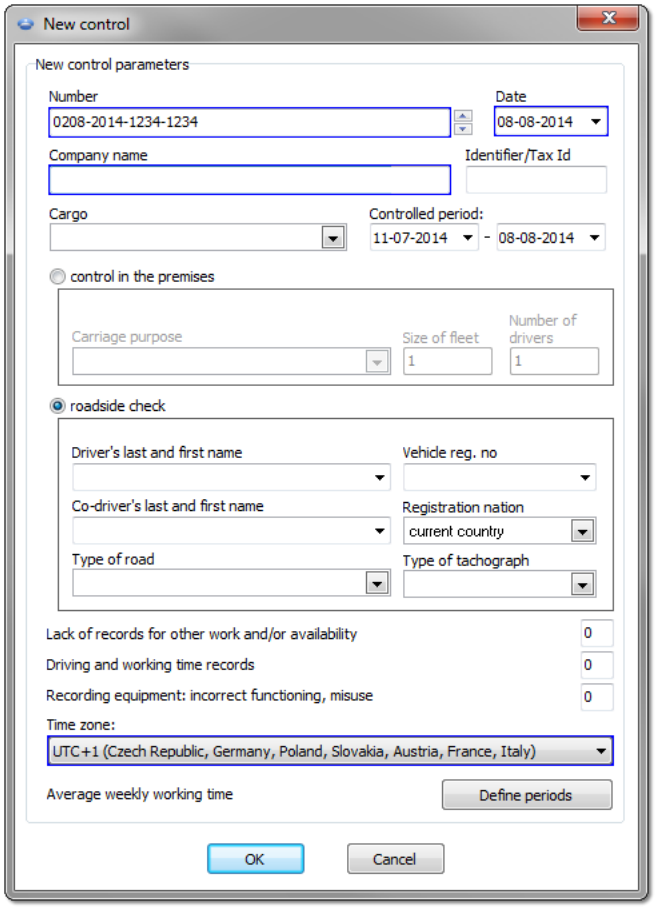
- in **Control** menu select **New control**;

or

- click on:  , and then, in **Controls menu** window, select **New control**.



The program displays: **New control** window which contains the following elements:



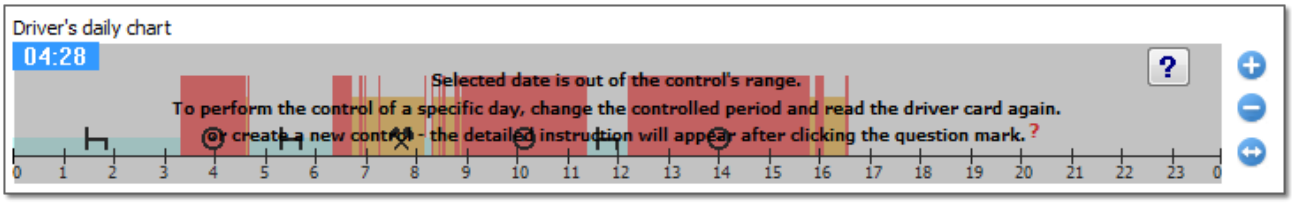
New control parameters:

1. **Number** – the program automatically assigns a number for each control:
   - the first part **0208** is the consecutive control number, which can be changed using arrows on the right;
   - the second part **2014** is the current year read from the Windows system date;
   - the third part **1234-1234** is the identification number of the logged inspector.
2. **Date** – this is the control date, by default the current date read from the Windows system date is displayed.
3. **Company name** – enter the name of the controlled company or, for driver control, the company he works for.
4. **Cargo** – in this window, select the type of carriage from the list: **goods**, **passengers** or **unspecified**.
5. **Controlled period:** – select a range of dates between which the control is to be carried out. By default, the program sets a controlled period of 28 days plus the current day

Data downloaded from the driver card and digital tachograph outside of the specific range are NOT analysed and are NOT saved in the database.

*If you change the "controlled period" you need to **download again the driver card data and/or data from the digital tachograph and re-analyse the drivers' infringements**.*

Immediately after downloading data from a driver card/ digital tachograph, in the daily chart preview window, days outside the control period will be "greyed out" with an appropriate message (see: Fig. bellow).



6. **Selecting the type of control**:
   - control in the premises:
     - Carriage purpose – choose a purpose from the list: own purposes or earning.
   - roadside check:
     - Driver name;
     - Vehicle registration;
     - Co-driver's last and first name – driving in a team;
     - Registration nation.

If data is retrieved from the driver card, this data is automatically filled in.

     - Type of tachograph.
7. Depending on the results of the checks carried out, fill in the following fields (data entered in the fields below are displayed in the report: "Checks statistics for EU"):
   - Lack of records for other work and/or availability;
   - Driving and working time records;
   - Recording equipment: incorrect functioning, misuse.
8. **Time zone:** – the local time offset against **UTC** - when you retrieve the data, the program moves all times read from the driver card data and the tachograph against the time zone set in this option.

Time zone should be set according to the country of registration of the vehicle.

***UTC** (Coordinated Universal Time) - standard time determined based on TAI (French: Temps Atomique International), taking into account the irregularity of the Earth's rotation and coordinated with the solar time.*

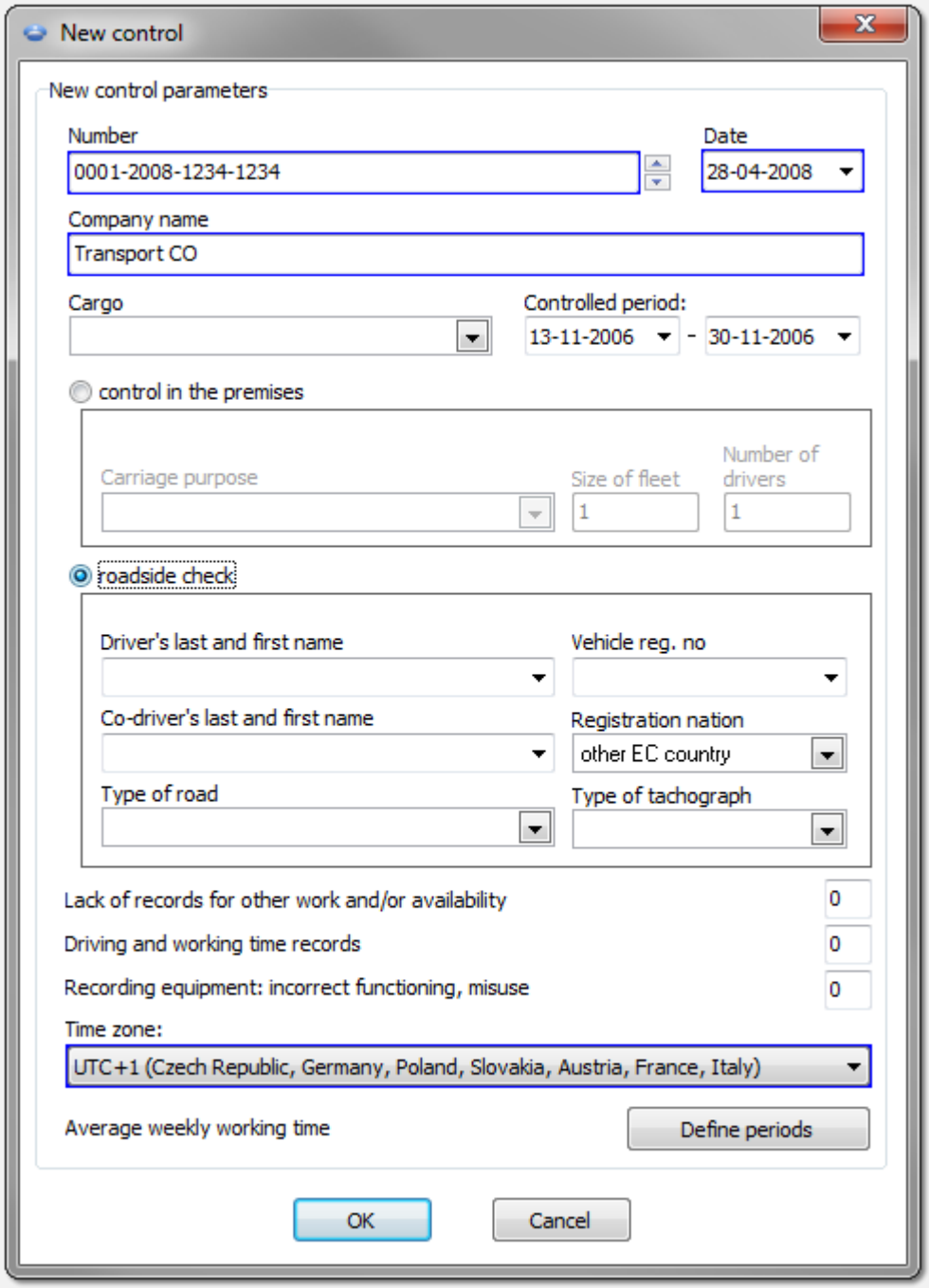
9. **Average weekly working time** Define periods - Allows to set any dates for the analysis to be carried out in the: **Driver's average weekly working time report - detailed** report.

Fields marked with blue frames are required.

Example

Let's perform on the road control of driver – Mr. Kowalski Jan employed in the Polish company Transport CO. The company is engaged in the transport of goods.

Since the driver and vehicle data shall be entered automatically from the card, there is no need for entering it in.



We press OK.

4. Entering of data

The TachoScan Control software makes possible the control of entrepreneur or driver, who simultaneously uses vehicles carrying digital tachographs and analogue tachographs. Then, the TachoScan software analyses all data and combines it appropriately.

4.1. Scanning the record sheets

Record sheets can be scanned on two types of scanners: flatbed 16 and roll 17 scanner.

Default settings

The default settings make it easy to enter new record sheets in the program, because the program can automatically fill in the appropriate fields with predetermined values.

Default settings window is opened using:  icon.

Elements of the window:

1. **Driver** - Set the default driver.
   When you select this option from the drop down list, you can select a driver that will be displayed in the appropriate field in the record sheet view/edit window.
2. **Vehicle** - Set the default car
   When you select this option from the drop down list, you can select a vehicle registration number that will be displayed in the appropriate field in the record sheet view/edit window.

Use the + button to add a new driver or a car to the database.

3. Date and time:
   - Default disc date - the program will assign the date specified here to all scans;
   - Start time - means the point of time from which a day (twenty-four hours) is calculated by default on the disc.

Scanning settings

The "Program settings" window includes, among others, settings for the scanner. If you select **Show the settings** option, scanning settings appear before every scanning. If you use a scanner different than the one recommended by INELO, scanning settings appear irrespectively

of this option.

Recommended scanners: Canon LiDE 70, LiDE 100 or LiDE 200, Plustek SmartOffice PS283.

Settings for other scanners:

Recommended scanner settings (Program settings window):

- resolution **300 dpi;**
- brightness **-20**;
- colour – **black – white**;
- scanner lid background colour: **Black**.

Brightness

Setting higher brightness can improve the quality of reading on dark discs. It contributes to a clearer image. At the same time, additional points (distortions) having an influence on the later analysis of the disc disappear. If some points are not **recognized** by the program, you should add them manually on the tab "Read preview". If the reading is still incorrect, you should try to set other brightness once again.

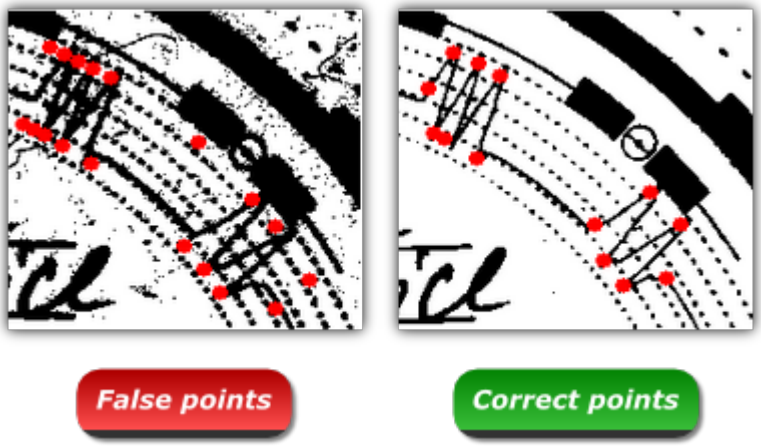
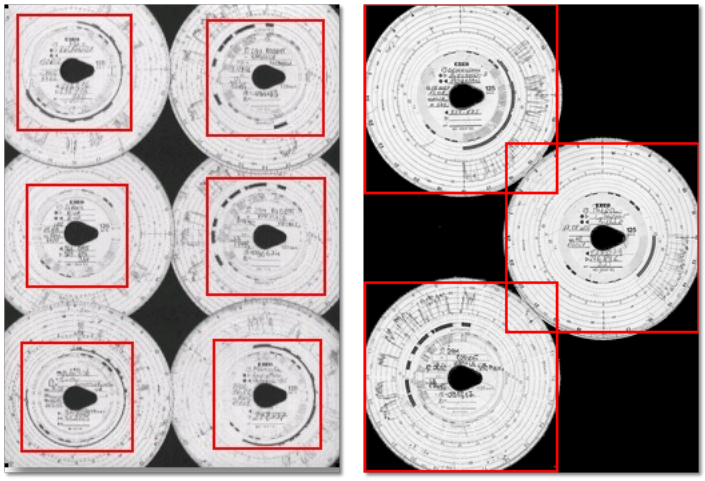


Fig. An example of a scanned kilometres graph.

4.1.1. Flatbed scanner

To start the scan process, place a certain number of discs (1 to 6) in the scanner so that all are placed in the scanning area (A4 area). No special adapter is needed for proper scanning. Discs can be arranged in any way.



Red rectangles mark the disc sections considered in the analysis.

Discs on the scanner must be placed facing down. The example above shows the discs as seen from the scanner glass side.

When you place a disc, close the scanner cover to limit the number of possible inaccuracies. Scanning can be started in three ways:

- choose: "Get -> Scan" from menu: **Data**;
- click the  button on the toolbar;
- use the  shortcut.

After scanning, the program will open the last record sheet in the record sheet preview edit tab, and the rest will be displayed in the Unsaved discs panel. Each record sheet should be reviewed, data should be completed and saved.

For a detailed description of the record sheet preview/edit window refer to the topic: Analysis of scanned discs.

4.1.2. Roll scanner

To start the scanning process, place a certain number of discs (max. 50) in the scanner feeder, so that they are all directed with the graph to the inside of the scanner. The angle of rotation of the disc teardrop is not important (Fig. bellow).

When you place the disc in the tray, you can start scanning using the following methods:

- choose: "Get -> Scan" from menu: **Data**;
- click the  button on the toolbar;
- use the  shortcut.

After scanning, the program will open the last record sheet in the record sheet preview edit tab, and the rest will be displayed in the Unsaved discs panel. Each record sheet should be reviewed, data should be completed and saved.

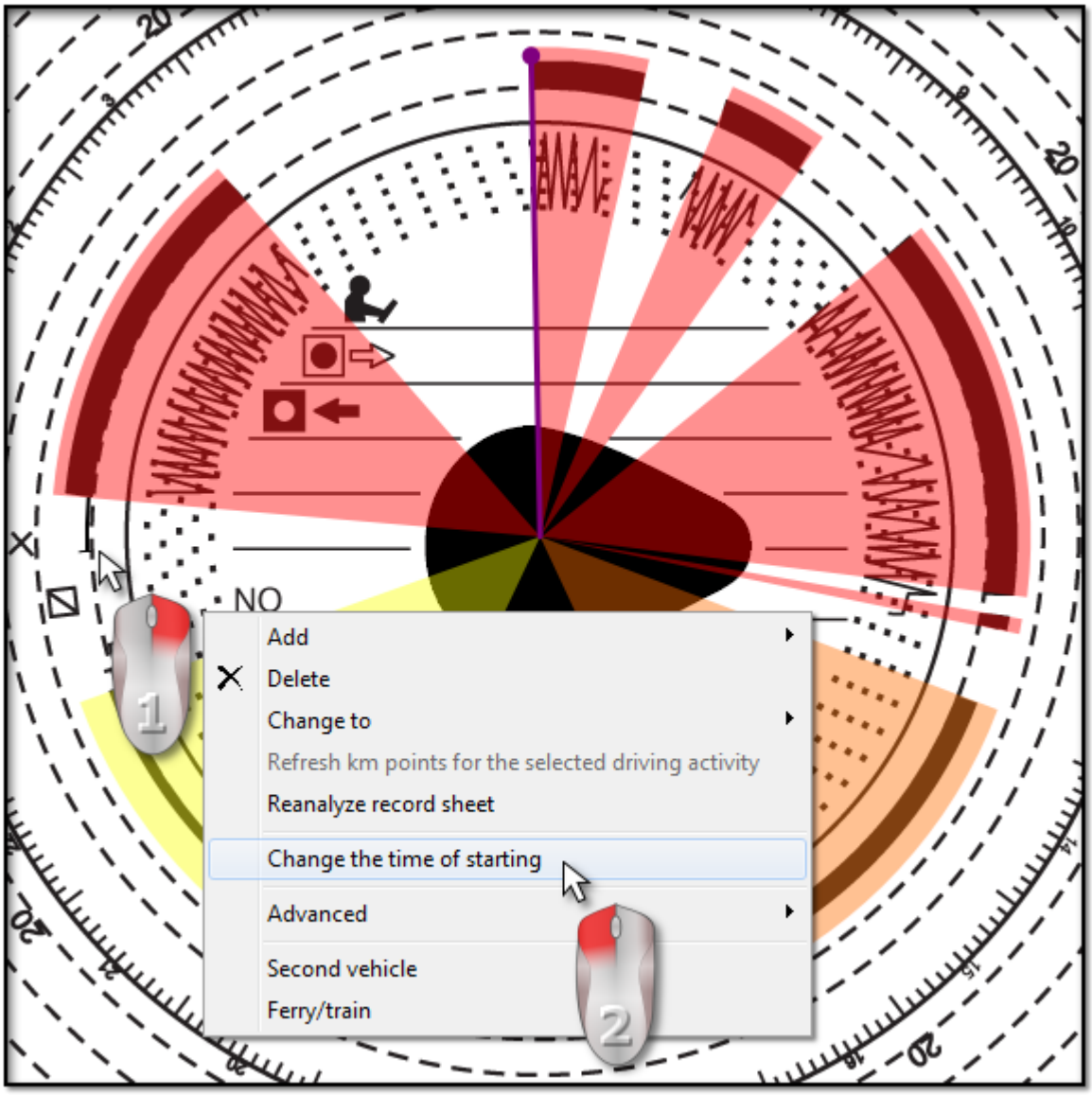
> *For a detailed description of the record sheet preview/edit window refer to the topic: Analysis of scanned discs.*

4.1.3. Set the record sheet start time

Start time is the time the driver first inserts the record sheet into the tachograph or the start time of manual entries (on the back of the record sheet). It is represented by the purple line from the centre of the disc. It can be changed on each tab containing a scanned image of the disc (Read preview, Basic data).

Starting hour can be changed in two ways:

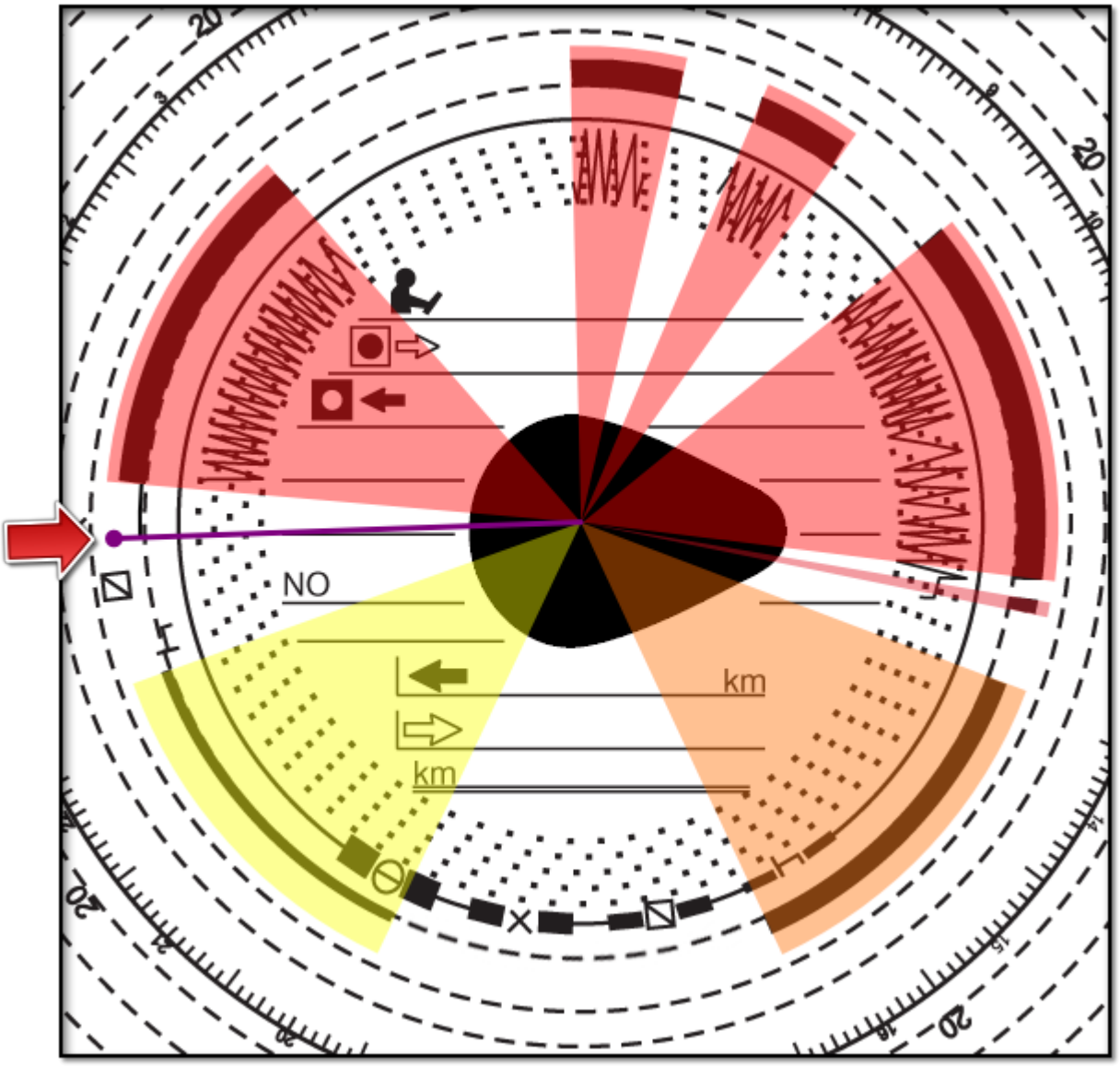
Using the option: "Change the time of starting"



1. Move the mouse cursor to the place of the first insertion of the record sheet into the tachograp (Fig. above).

The clock in the upper left corner of the image shows the time over which the cursor is at this moment.

2. Right-click in the same place and then select: **Change the time of starting** (Fig. above) from the drop-down menu.
3. Purple line (start time) will be moved to the selected location (Fig. bellow).



Exception:

If you select the start time place within a driving event, the program will automatically move it to the beginning of the event.

Moving using the mouse

This method works only in the Basic data tab.

Moving is possible only within a single event on which the purple line is placed.

1. Place the mouse cursor on the purple line, so that the arrow is changed into: ⇹.

2. Click and hold the left mouse button, then move the purple line to the desired position.

4.1.4. Record sheet data

To save the record sheet it is required to specify the date, driver and vehicle.

To take full advantage of the program it is recommended to complete all the data:

Date
Enter the start date of the record sheet.

Driver and vehicle
These fields should be filled in using the drop-down lists besides. If the required values are not included in the lists, use  buttons to complete the database. If the default vehicle was set for the selected driver (add/ edit driver window), it will appear automatically in **Vehicle** field, if it was empty.

Odometers
In **Km initial** and **Km final** fields enter the initial and the final reading of the odometer of the vehicle (the numbers entered by the driver on the disc). Then in the **Difference in km** box below, the difference of kilometres is shown, which is the distance travelled according to the driver. If the calculated distance differs too much from the number of kilometres read by the program from the disc, located in **Sum of kilometers** field, these fields will be automatically highlighted in red.

> *Tolerance of km difference is in "Settings -> Analysis settings -> Tolerance tab" in the **Alert if km distinction greater than** field.*

In the **Read preview** tab, the program draws a thin red line to check whether the kilometres reading was correct. If the red line does not coincide with the black one drawn by the tachograph, re-scan the disc with other brightness settings or correct the position of peaks manually.

Team disc
The **Team disc** field should be checked for discs from the drivers driving in a team. Selecting this option results in a different analysis of the data in accordance with the respective regulations for drivers driving in a team.

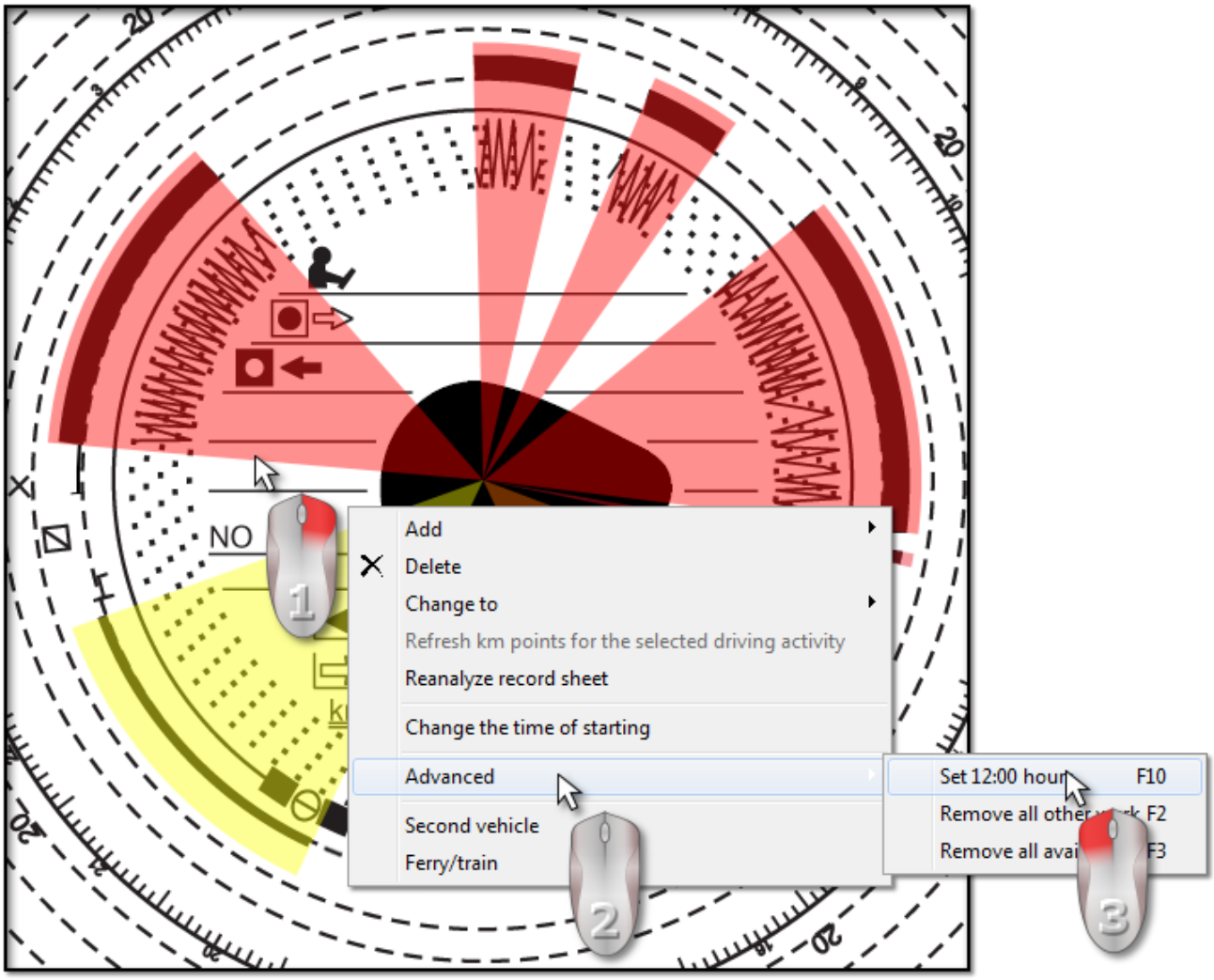
4.1.5. Record sheet calibration

If you think that the program misread the start time of activity on the record sheet, check if 12:00 o'clock is set correctly.

> *"12:00 o'clock" setting can be changed only in **Basic data** tab.*

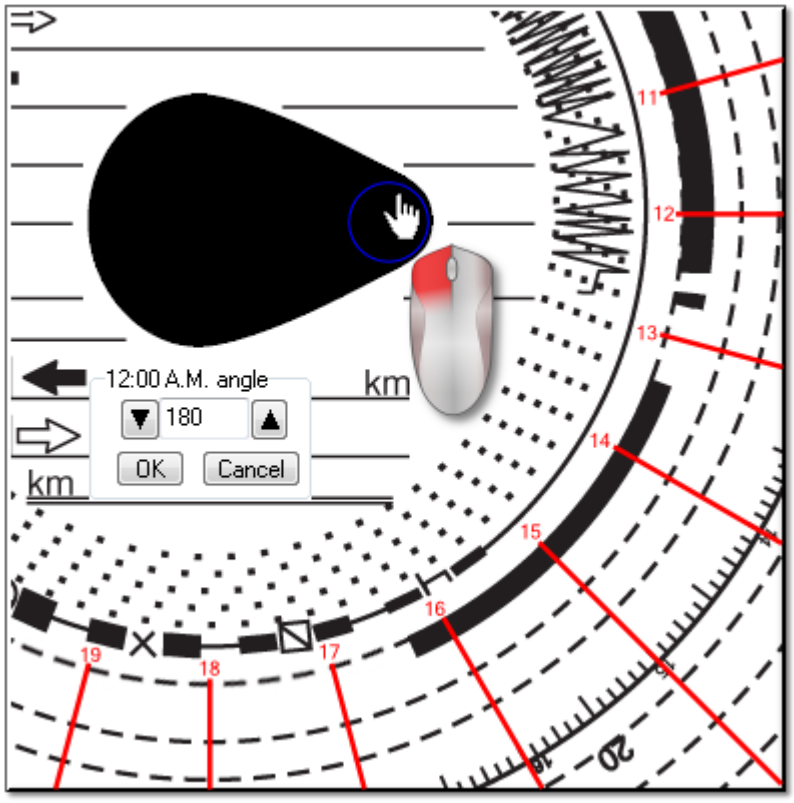
"12:00 o'clock" can be changed in two ways:

- **right click** anywhere on the record sheet image (Fig. bellow), and then, from the drop-down menu, select **Advanced** -> **Set 12:00 hours**.



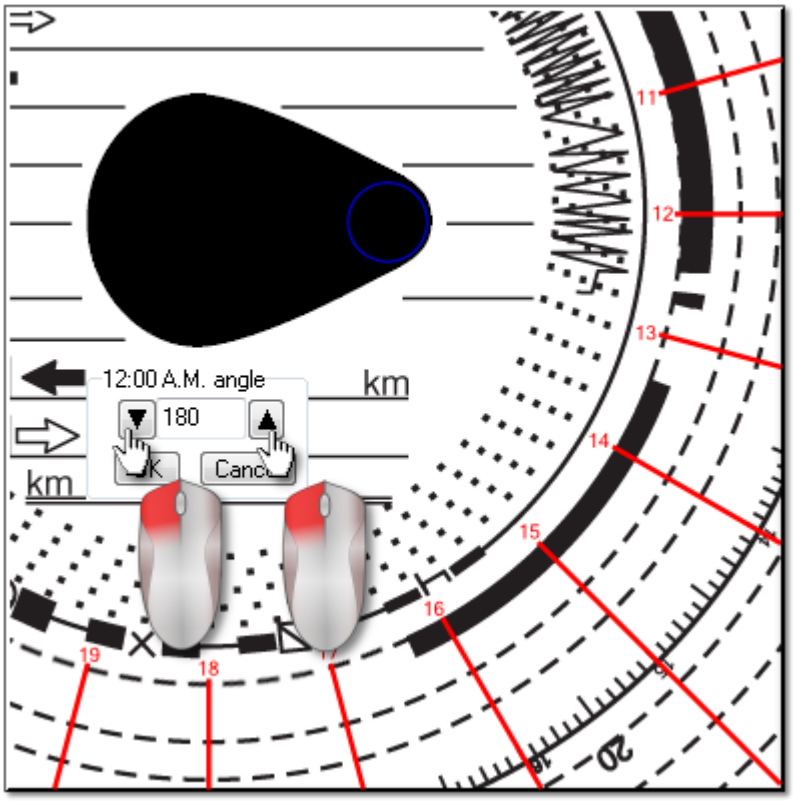
- press F10.

Colour markings are removed from the disk image and the red circle appears to mark the position of the "12 o'clock" on the record sheet, the window showing the angle of deviation of twelve o'clock and auxiliary lines indicating the hours on the disc (Fig. bellow).



To change the position of "12:00 o'clock," click and hold the circle with the left mouse button (Fig. above), and then move the mouse to set the circle in the new position.

As you move it, the clock in the upper left corner of the image will be replaced by the number of degrees.

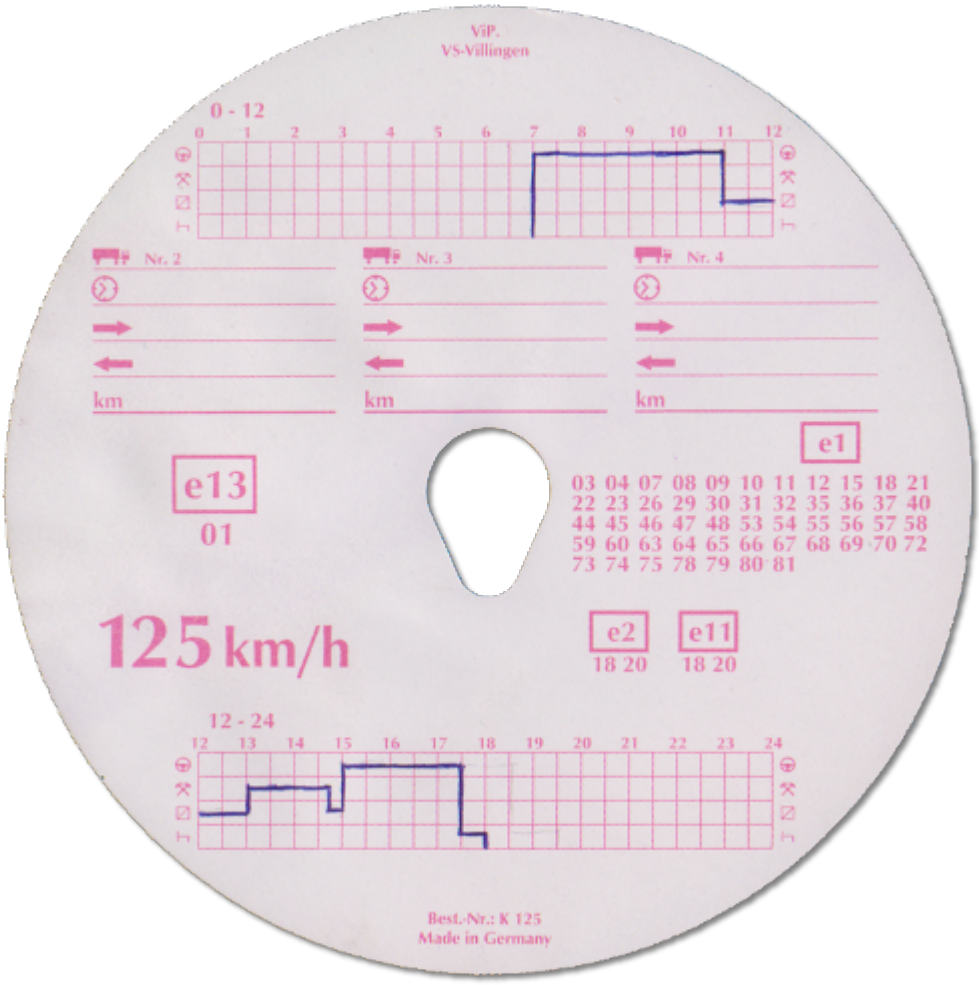


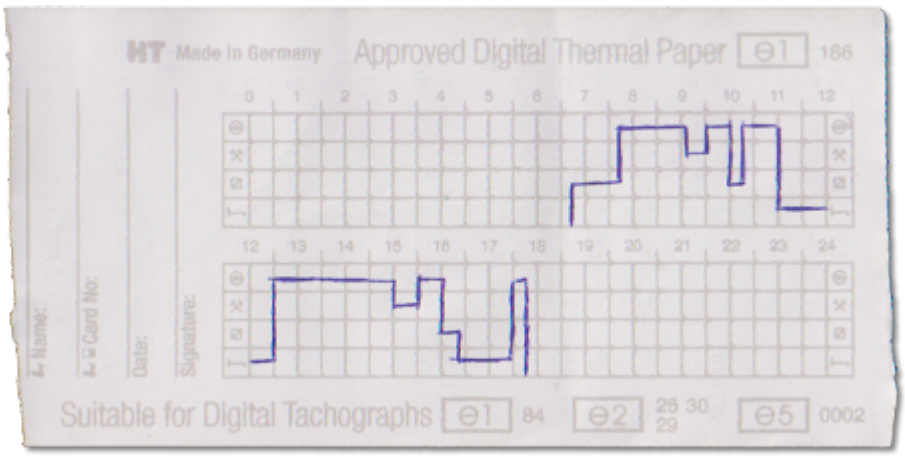
Fine adjustment can be made by pressing the appropriate buttons (Fig. above) in **12:00 A.M. angle** window.

> *The correct setting of "12:00 o'clock" (always in the thinner end of the teardrop) is achieved if the auxiliary lines coincide with the hours on the record sheet.*

4.1.6. Manually add activities

The program allows you to add activities manually. You can use this option if the driver during the inspection provided record sheet or printout from the tachograph, on which he drew activities by hand (Fig. bellow)

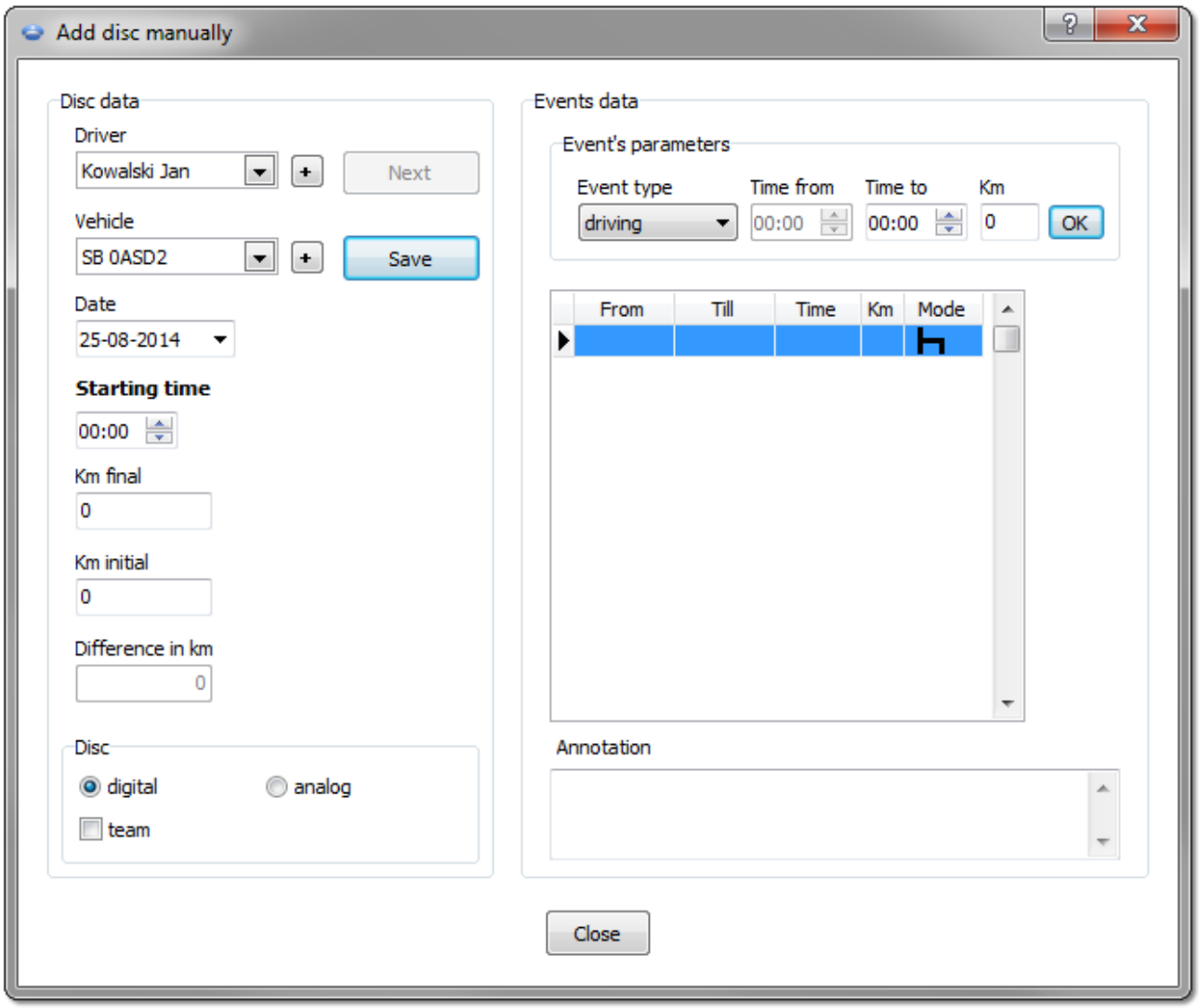




To open the window of manual adding of the activities, choose one of the following options:

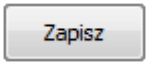
- press the combination of Alt + R keys;
- from the main menu **Data** select the **Add manually** option.

In the Manual adding discs, provide the following information:

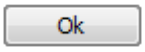


1. Driver (Fig. bellow);
2. Vehicle;
3. Date of starting the "record sheet/ day from the driver card";
4. Start time of the "record sheet/ day from the driver card";

Changing the day start time after adding the events is possible after their removal.

5. Click 

.
6. The final and initial number of kilometres;
7. Km difference - is calculated automatically;
8. Select the type of data presentation: **analogue** or **digital**;
9. Alternatively, check the **team** field;
10. Annotations - here you can enter additional remarks;

11. Detailed data - events - contains a list of activities for the specific day, which should be filled in:
    - select the event type;
    - time from - is automatically filled in based on the start time of the day, and in the following items on the basis of the end of the previous event;
    - time to - end time of the activity;
    - km - for driving events you can enter the number of kilometres travelled;
    - clicking 

will add the event to the list.

The total duration of all events must be equal to 24 hours.

4.2. Download from driver card

To download driver card data, it is required to install and connect the **digital card reader**.

Retrieving data, after inserting a driver card to the reader, can be started in three ways:

- select: **Get -> Scan** from the **Data** menu;
- click the  button on the toolbar;
- use the 

shortcut.

Subsequently, data analysis may proceed in two ways (for a description refer to "Supplementary information" chapter):

- Correct reading of data from the driver card/ tachograph 46;
- Corrupt reading of data from the driver card/ tachograph 47.

If you have downloaded the data from a driver card that is registered as cancelled, the appropriate information that such card was detected is displayed.

4.2.1. Preview and data edition

The top part of the edition window in digital discs contains the following elements:

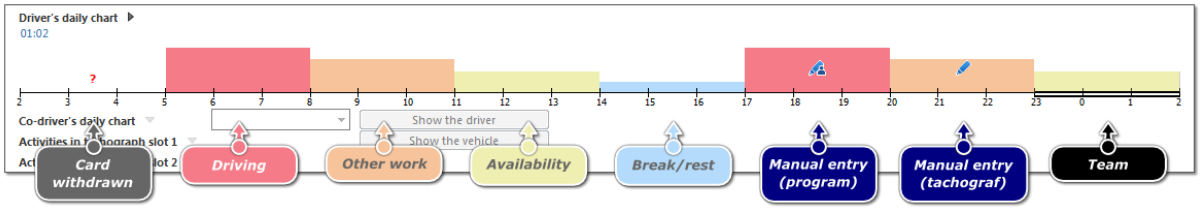
Driver's daily chart

Basic data
Driver, Date, Vehicle, start and end km counter status.

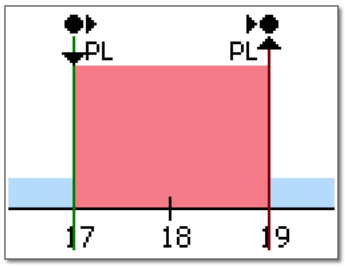
1. If on a given day, a driver rode more than one vehicle, you can shift between activities connected with a given vehicle, choosing the appropriate registration number in the **Vehicle** field.
2. Changes of date in the **Day** field causes a shift to the card of a chosen driver from a given day, if it is in the database. Otherwise, instead of an activity graph, the sign **No data** will appear.
3. Choosing a different surname in the **Driver** field causes the closing of data edition of the previous driver and a move to data edition from the card of that driver.

The choice of date or driver with the driver's card has a completely different meaning than with an analogical disc.

Activity marking



Znaki specjalne



Manual entry of a change of location without removing/inserting the driver card is not properly recorded by some tachographs.

In such a case it may happen that the chart can show a few card removals in a row, with the change of location, and similarly a few insertions in a row with the change of location of the card.

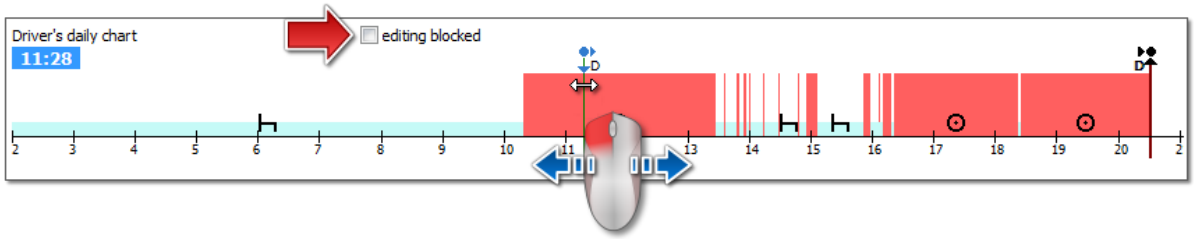
Adding, editing, deleting entries of start and end countries

Adding:

1. Uncheck: **editing blocked**.
2. Right-click in the place of entering the country - select: **Insert -> Entry of the country** from the drop down menu.
3. In the new window, select **Country at the beginning** or **Country at the end**, and then select the **country**.
4. Click OK - the program will insert a blue entry mark.

Editing:

1. Uncheck: **editing blocked**.
2. Click and hold the left mouse button on the entry mark and then move it to the desired position (Fig. bellow).



Removing:

1. Uncheck: **editing blocked**.
2. Right-click on the country entry mark that you want to delete and then select: **Delete** from the drop down menu.

Select an area

Select an area by placing two vertical brown lines on the chart (Fig. bellow). In the **Selection** tab, you can view the sum of the activities from the selected area. These lines are placed by single-clicking the left mouse button in the selected place.

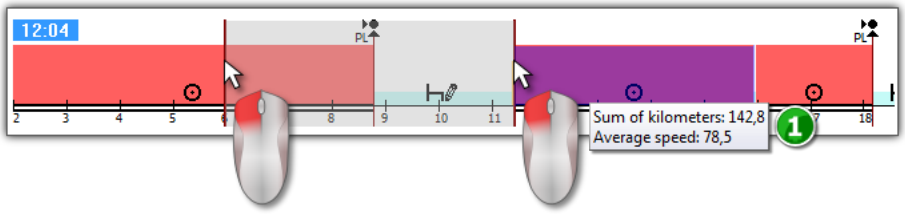


Fig. Selecting the area.

If the selection includes a driving event, the program will display a tooltip with the total mileage and average speed (item 1 - Fig. above).

Selection can be removed by right-clicking on the chart and selecting the menu option: **Remove selection line** or **Remove all selection lines** (Fig. bellow).

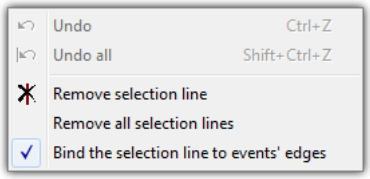


Fig. Removing the selection.

*In the drop-down menu, there is the **Bind the selection line to events' edges** option (Fig. above) - if line is dragged near the beginning or end of an activity it allows to snap it automatically to the beginning or end of the activity, respectively.*

drop-down menu (editing enabled)

Available options (general):

- inserting a new activity;
- change and deletion of highlighted activity;
- change of all activities **card withdrawn** for Stopover;
- setting an event as a team or non-team event;
- change of all activities **card withdrawn** lasting less than 5 minutes for Stopover;
- marking a driving event as driving onto a ferry or train;
- deleting the vertical line of the highlighted area;
- deleting all things highlighted in the area;
- moving data from a digital tachograph in place of a Card Withdrawn (if a preview of one of the tachograph slots is opened and the event card withdrawn is chosen);

Each change can be reversed by pressing 

. Multiple pressing of this combination will reverse a determined number of last changes.

Add, edit, and delete activities

The program allows you to add, move and delete activities downloaded from the driver card.

If the following text is displayed: ***Select a vehicle so that you can edit data*** *it means that on the given day the driver has records for at least two vehicles. In such a case, the following changes occur in the window:*

- initial and final mileage counter is hidden;

- button: ***[Change vehicle]*** *is blocked;*

- in the list of activities, in summary, in the location window, in the events and failures window and in the annotations window, records for all vehicles will be visible (if you specify a particular vehicle, in these windows only records for this selected vehicle will be visible).

To unlock the above elements, choose a specific vehicle registration number in: ***Vehicle*** *field.*

Edit activity

When you hover the mouse over the border between two activities (the cursor changes onto the following: " ↔ " - Fig. bellow) press the left mouse button and holding it (item 1) move the boundaries of the activity, and then release.

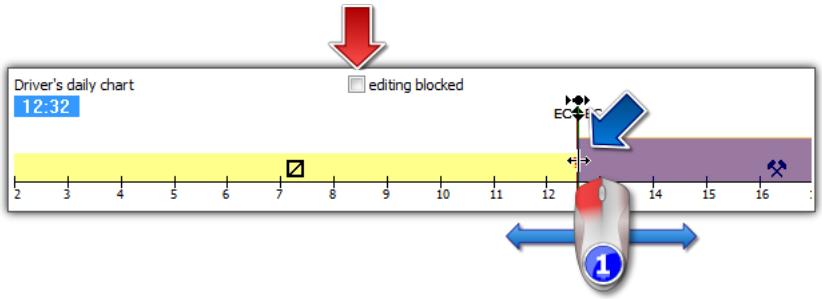


Fig. Moving activities.

To change the type of activity, right-click on the edited activity, then in the drop-down menu select: **Change to** and select the type of activity.

If the driver does not change ***card withdrawn*** *records in the tachograph, the options useful in supplementing these activities are:*

- "?" shorter than 5 minutes to a break;
- All "?" to a break.

Add activity

From the drop-down menu, select: **Insert**, and then choose the type of activity.

Delete activity

In order to delete an activity, right-click on it and then, from the drop-down menu, select: **Delete**.

The deleted activity is replaced with the activity following it.

When editing charts, the possibility to zoom them using the:  *button on the right side of the chart, is handy. Using the*  *button allows to zoom out the chart, and the*  *button resets the chart to its default size.*

The icons above are used to scale all the charts simultaneously.

If for the edited day we have a reading from the digital tachograph (the same vehicle), it is possible to copy data from the tachograph instead the ***card withdrawn*** *event ("? ") - option:* ***Copy events from tachograph - slot 1****.*

Options

Driving in a team

If in the edited day team activities occur and the programme discovers data from a second driver's card for that day, the activity preview option of that driver is activated – button  . Pressing this button causes the appearance of a graph of the second driver of the team, but non-editable. The option of moving to edition of a day of the second driver of the team is also activated – button **[Edit]** below.

Preview of activities from the tachograph

If for a given day and vehicle the programme discovers in the database data from a digital tachograph, the option of event preview read from both tachograph slots of that vehicle is activated – buttons  and  . Pressing one of them will result in displaying the activity chart for a given slot. The option of moving to edition of a day from a digital tachograph is also activated – button **[Edit]** below.

Speed chart

After clicking  below the activity chart, the following option is displayed: **Speed chart**- when this option is selected, below the activities chart an interdependent speed chart is displayed.

The chart is displayed if speed data were collected for a given vehicle.

*Dotted line indicates the **authorized speed**.*

*The program downloads and stores in the database the speed if **Save detailed speed from digital tachograph** option is selected in the program settings window.*

Digital tachograph records in its memory speed over the last 24 hours of driving.

There are warnings

If this text is displayed in the bottom of the window, it means that the program has detected irregularities associated with the use of the driver card in the open readout - left-click on this text to display a list of irregularities: ("Manipulation warnings" tab of "Infringements and manipulations 58" generation windows).

*The analysis is based on the settings in the: **Analysis settings** window, "Warnings".*

Button: Weekly chart

for a description refer to the section: "Weekly chart 74".

Button: Team chart

enables graphical comparison of activity charts of drivers working in a team. Design of the team chart window is very similar to the "weekly chart 74" window.

Button: Print activities

for a description refer to the section: "Printing activities".

Button: Print pictograms

for a description refer to the section: "Print pictograms".

4.3. Download from tachograph

TachoScan Control software includes tools that enable automatic data downloading from digital tachograph using the following devices:

- DBOX;
- TachoDrive;
- Optac;
- DownloadKey;
- **TachoReader Mobile II**;
- **TachoReader Combo Plus**.

Installation, configuration and the data download routine for the above listed devices is described in detail in the document: **External devices – tutorial.pdf** attached to the program installation CD.

Below there is an additional description of how to use devices: **TachoReader Mobile II** and **Combo Plus**.

4.3.1. TachoReader Mobile II

TachoReader Mobile II is a download device and supports all established digital tachograph makes. Using the tachograph, it is also possible to download driver card data. That data remain in the device memory until they are transmitted via USB interface into other storage medium.

During the download TachoReader Mobile II is supplied with power by the tachograph (no extra energy sources needed). The TachoReader Mobile II is a small, user-friendly and handy device.

Fig. TachoReader Mobile II.

4.3.1.1. Configure device

Before downloading the data from tachograph using TachoReader Mobile, the device needs to be properly configured.

Device configuration:

- plug it into USB port in the PC;

- click the icon:  ;
- click: **Configure device** from dropdown menu;
- set the appropriate data to be downloaded:

- when all is set, click the button: 

.
- unplug the device from USB port.

4.3.1.2. Download from tachograph

To download data from the tachograph:

Operations after connecting to a computer
Make sure that the "Driver card download via tachograph" option in the configuration window of **TachoReader Mobile II** device is **unchecked**, otherwise uncheck it.

Operations on the vehicle
1. Turn the vehicle key in the position II (ignition) – the control lamps on the instrument board flash (tachograph activation).

We recommend to perform these operation together with the driver.

2. Insert the company card / control card into slot 1 or 2 in the tachograph.
3. The tachograph detects the card. Confirm the checkback "Company lock yes/no".
4. Plug your TachoReader Mobile II into the tachograph interface.

Position of the interface within the tachograph - see tachograph manual.

5. The TachoReader Mobile II starts the download automatically (both LED flashing green).

*Depending on the data range the download can take up to **1 hour** time.*

Flash the LEDs in the device with red light during the download then see: "Error codes".

6. After the download both LEDs beam green (they beam red by download faults).

Repeat the download when a download fault is signaled. When the repeated download is faulty as well, try to download data from another tachograph.

If the download from another tachograph is OK, the first tachograph may be disturbed (visit a tachograph service station).

When the second download is disturbed contact the service of the TachoReader manufacturer.

7. After reading, unplug the device from the tachograph and remove company card / control card.

After pressing the reject button, you are asked, if the company lock has to be activated.

*It is useful to **ALWAYS** set the company lock, to avoid downloading of data by third parties (external persons could download data and lock the tachograph for their own company card).*

4.3.1.3. Download from driver card

To download driver card data:

Operations after connecting to a computer
Make sure that the "Driver card download via tachograph" option in the configuration window of TachoReader Mobile II device is **checked**, otherwise check.

Operations on the vehicle

1. Turn the vehicle key in the position II (ignition) – the control lamps on the instrument board flash (tachograph activation).

It is recommended to perform this step together with the driver.

2. Insert the company card into slot 1 or 2 in the tachograph.
3. After reading the card in the tachograph confirm the message: "**Lock tachograph yes/no.**"
4. Insert driver card from which data is to be retrieved into a free slot in the tachograph.
5. After recognizing the card by the tachograph, connect the TachoReader Mobile II device to the tachograph port.

For location of the port in the tachograph refer to the tachograph manual.

6. **TachoReader Mobile II** automatically proceeds to retrieve data (LED flickers green).

If, during data downloading, LEDs on the key light up in red, this means an error; see the topic: "Error codes".

7. After the download is complete, both LEDs on TachoReader Mobile II turn green (if there were errors while downloading, the LED turns red).

If the device signals data download error, repeat the download. If download error persists, please use another tachograph for downloading.

If the download in another tachograph is successful, take the tachograph returning faulty reading to the service.

If the incorrect reading is repeated also on another tachograph, please contact the TachoReader manufacturer service.

8. After the reading, unplug the unit from the tachograph, remove the company card and the driver card.

When you press the company card eject button, the tachograph asks: "Do you want to lock the tachograph?".

It is recommended to ALWAYS lock the tachograph to prevent unauthorized persons from downloading the data and locking the tachograph with another company card.

4.3.1.4. Transferring data files into PC

To transfer data from TachoReader to a computer, proceed as follows:

- start the program;
- press the:  button first and then select: **Download data files -> all**.

Subsequently, data analysis may proceed in two ways (for a description refer to "Supplementary information" chapter):

- Correct reading of data from the driver card/ tachograph 46;
- Corrupt reading of data from the driver card/ tachograph 47.

If you have downloaded the data from a driver card that is registered as cancelled, the appropriate information that such card was detected is displayed.

4.3.2. TachoReader Combo Plus

TachoReader Combo Plus device allows to download data directly from a tachograph or a driver's card, without having to connect other devices. What is more, the device makes it possible to store data in its internal memory until the data is transferred to a different data carrier (e.g. a computer disk).

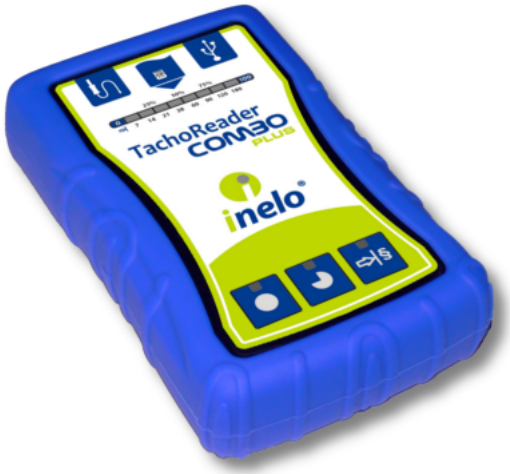


Fig. TachoReader Combo Plus.

The kit

The device set includes:

1. Two 1,5V AA batteries to supply the device without having to connect it to a different source of electricity,
2. Mini-USB cable by means of which the device is connected with a computer (transfers data from the memory to a computer disk) and provided supply from the computer,

3. Tacho-Combo cable, which makes it possible to supply directly from the tachograph, without having to use batteries.

4.3.2.1. Configure device

The configuration can be performed in two ways:

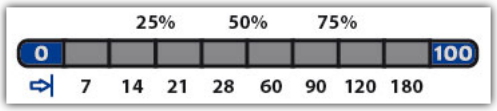
- configuration on the computer - see: "TachoReader Mobile II -> Configure device 34";
- direct configuration on the device - see description below.

4.3.2.1.1 Configuration directly in the device

To perform configuration directly in the device:

1. *Connect the device to a computer - select:* ***Select data range using § button (TRC only)*** *option in the "device configuration 34" window.*
2. *Connect* ***TachoReader Combo Plus*** *to the tachograph using a Tacho-Combo cable.*

1. **Setting the range of days to download**:
   - below the progress bar there are numbers indicating the range of days to download (e.g., 7 - the last seven days, 60 - the last sixty days, etc.);



   - to change the range of days to download, press the:  button until the LED on the respective number of days lights up;
   - downloading is started by pressing:  button.
2. **Downloading data from driver card inserted in the tachograph** - refer to the description in the section: "Download from driver card inserted in the tachograph 43".

4.3.2.2. Download from driver card

Driver card data can be downloaded in several ways:

1. Place batteries into the battery compartment of **TachoReader Combo Plus** (if they are not already there) - download with the Combo alone (current supply form the batteries).
2. Cable Tacho-Combo - download using Combo and tachograph (power supply from tachograph).
   Connect the **TachoReader Combo Plus** to tachograph using Tacho-Combo cable.

3. Cable MINI-USB - download using Combo and PC (power supply from PC).
   Connect the **TachoReader Combo Plus** with the PC using the MINI-USB cable.

> *Downloading data from driver card inserted in the tachograph - refer to the description in the section: "Download from driver card inserted in the tachograph 43".*

Download procedure

1. Plug cables and connect devices according to the actual download method (see above)
2. Insert the driver card into the slot of the TachoReader Combo Plus (Fig. bellow).
   The download starts automatically when a card in the slot is detected - this is announced by a sound and growing progress bar.

Fig. TachoReader Combo Plus - inserting a driver card.

> *When the red LED on the foreside of the device lights up for about 4 seconds and within this period three short acoustic signals can be heard and then the LED goes out for about 2 seconds (this sequence repeats), please check the chapter "Error codes" for error interpretation.*

3. Recurrent acoustic signals can be heard and the LEDs within the progress bar flash as an indication for completed download.
4. Pull the driver card from the Combo slot.
5. The data is saved to a file (Surname_First name_Middle name_Date and time of data download.DDD) placed in the "Driver" directory in the device memory.

4.3.2.3. Download from tachograph

To download data from the tachograph:

Operations after connecting to a computer

1. Make the appropriate settings in the device configuration window - refer to the description in the section "Configuration 34".
2. Select/ deselect the **Select data range using § button (TRC only)** option as necessary - refer to the description in the section "Configuration directly in the device 39"
3. Make sure that the **Driver card download via tachograph** option is unchecked.

Operations on the vehicle

1. Turn the vehicle key in the position II (ignition) – the control lamps on the instrument board flash (tachograph activation).

We recommend to perform these steps together with the driver.

2. Insert the company card / control card into slot 1 or 2 in the tachograph.
3. The tachograph detects the card. Confirm the checkback 'Company lock yes/no'.
4. Plug the TachoReader Combo Plus to tachograph using the Tacho Combo cable.

Position of the interface within the tachograph - see tachograph manual.

5. Press one of the following buttons to start the download:
   - **normal speed data download** - press quickly one of the buttons below (single beep) to start downloading data at a speed of 9600;
   - **high speed data download** - available for tachographs which support 115200 baud standard - press and hold one of the buttons below for about 2 sec. until you hear a double beep to start downloading data at a speed of 115200.

If you select a higher baud rate in the tachograph which does not support it, the device will not proceed to download at all or reading will be corrupted.

	- downloads all the data stored in the tachograph;
	- downloads the data from the tachograph according to pre-defined configuration - see the description under: "Configuration 34"; or - downloads data for a range of days set by pressing:  ;
	- downloads data for the last 28 days; or

	- allows to set the range of downloaded days without having to connect the device to a PC - in the configuration window of the device, select: **Select data range using § button (TRC only)** option. In this case, the data download starts when you press the:  button. For a description refer to the section: "Configuration directly in the device 39".

Press the respective button. A running download process is indicated by flashing of the red LED on the device foreside and by the expanding progress bar.

Fig. TachoReader Combo - indication elements.

*Depending on the data range the download can take up to **1 hour** time.*

When the red LED on the foreside of the device lights up for about 4 seconds and within this period three short acoustic signals can be heard and then the LED goes out for about 2 seconds (this sequence repeats), please check the chapter "Error codes" for error interpretation.

Repeat the download when a download fault is signaled. When the repeated download is faulty as well, try to download data from another tachograph.

If the download from another tachograph is OK, the first tachograph may be disturbed (visit a tachograph service station).

When the second download is disturbed contact the Service of the TachoReader Combo Plus manufacturer.

6. Recurrent acoustic signals can be heard and the LEDs within the progress bar flash as an indication of completed download.
7. After the download is completed unplug the Tacho-Combo cable from the tachograph and from the TachoReader Combo Plus and pull the company card / control card.

After pressing the reject button you are asked if the company lock has to be activated.

*It is useful to **ALWAYS** set the company lock, to avoid downloading of data by third parties (external persons could download data and lock the tachograph for their own company card).*

8. The data is saved to a file (Vehicle reg.no._Date and time of data download.DDD), which is placed in the "Tacho" folder in the device memory.

4.3.2.4. Download from driver card inserted in the tachograph

Operations after connecting to a computer

a) check the **Driver card download via tachograph** option in the "configuration 34" window;

The advantage of this method is that there is no need to interfere with the device settings.

The disadvantage is that after the device is connected to the tachograph the data can be downloaded only from the driver card.

b) check the **Select data range using § button (TRC only)** option in the "configuration 34" window;

The advantage of this method is that the data can be downloaded from both the driver card and the tachograph.

A disadvantage is that appropriate settings must be made directly in the device.

Operations on the vehicle

1. Turn the vehicle key in the position II (ignition) – the control lamps on the instrument board flash (tachograph activation).

It is recommended to perform this step together with the driver.

2. Insert the company card into slot 1 or 2 in the tachograph.
3. After reading the card in the tachograph confirm the message: "Lock tachograph yes/no."
4. Insert driver card from which data is to be retrieved into a free slot in the tachograph.
5. Connect TachoReader Combo Plus Plus device to the tachograph using a Tacho-Combo cable.

For location of the port in the tachograph refer to the tachograph manual.

6. Starting driver card data download:
   - according to method **a)** 43 ("Driver card download via tachograph" option checked):

- press the:  button - starting data download;

- according to method **b)** 43 ("Select data range using § button (TRC only)" option checked):
  - Repeatedly press the:  button until the LED lights up in field 180, and then until the two LEDs light up in fields 28 and 60 of the progress bar:

- press the:  button - starting data download.

Data can be downloaded at two speeds:

- ***normal speed data download*** *- press:*  *quickly (single beep) to start downloading data at 9600;*
- ***high speed data download*** *- available for tachographs which support 115200 baud standard - press and hold:*  *button for about 2 sec. until you hear a double beep to start downloading data at a speed of 115200.*

If you select a higher baud rate in the tachograph which does not support it, the device will not proceed to download at all or reading will be corrupted.

If during data retrieval the red LED located in the centre of the label lights up for about 4 seconds, and in this time the device will sound three short beeps, and then go off for about 2 seconds (repeated operation), this means an error - refer to the topic "Error codes".

7. After the download is complete the device will sound a repetitive beep with LEDs on the progress bar flashing.
8. After the download, unplug the Tacho-Combo cable from the tachograph, unplug the cable from the **TachoReader Combo Plus** device and remove the driver card and the company card.

When you press the company card eject button, the tachograph asks: "Do you want to lock the tachograph?".

It is recommended to ALWAYS lock the tachograph to prevent unauthorized persons from downloading the data and locking the tachograph with another company card.

9. The data is saved to a file (Surname_First name_Middle name_Date and time of data download.DDD) placed in the "Driver" directory in the device memory.

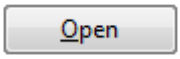
4.3.2.5. Transferring data files into PC

Moving data is done in the same way as with TachoReader Mobile II and is described in the chapter: "TachoReader Mobile II -> Transferring data files into PC 38".

4.4. Open from a file

To open, from a file, the scanned record sheet images or source files from the driver card or the digital tachograph readings, you can proceed in the following ways:

- click on the:  icon located in the **TachoScan** tab in the toolbar;
- press the combination of  keys;
- from the **Data** main menu select **Get** -> **Open from a file**.

When you select this option, the normal file selection window appears. Please select the file containing the desired record sheet (bmp format) or source file that contains the data retrieved from the driver card or the digital tachograph (ddd format), and then click  .

Do not use this option to edit the record sheets which are already stored in the current control.

The next step depends on the type of file:

Record sheets (bmp)

The program opens "Record sheet view/ edit window" - each additional record sheet is opened in a new tab.

Digital data (ddd, dtc, dtg, esm, c1b, v1b, tgd)

Subsequently, data analysis may proceed in two ways (for a description refer to "Supplementary information" chapter):

- Correct reading of data from the driver card/ tachograph 46;
- Corrupt reading of data from the driver card/ tachograph 47.

If you have downloaded the data from a driver card that is registered as cancelled, the appropriate information that such card was detected is displayed.

4.5. Correct reading of data from the driver card/ tachograph

If the downloaded data are correct, the new driver and vehicle are automatically saved in the database.

Reading data from the driver card:

- *All new cars are saved as inactive;*
- *If in the downloaded reading the program finds a driver that is stored in the database with the status **inactive**, it will change their status to **active**;*
- *If in the downloaded reading the program finds a similar driver, it opens a window for selecting/saving a new driver.*

Reading data from the tachograph:

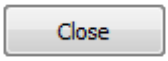
- *All new drivers are saved as inactive;*
- *If in the downloaded reading the program finds a vehicle that is stored in the database with the status **inactive**, it will change its status to **active**;*
- *If in the downloaded reading the program finds a similar vehicle, it opens a window for selecting/saving a new vehicle.*

Then **Data summary** window appears, consisting of two tabs:

- **Basic data** - it contains, among others, card/ tachograph identification data, data on the last control (driver card) and the date of the previous reading;
- **Certificates** - Digital signatures verification;

Clicking on:

- 

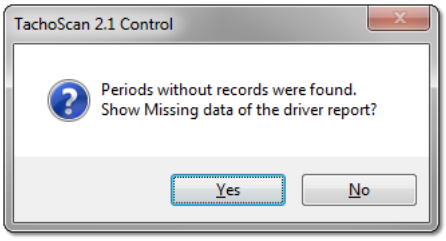
- opens a digital signature print preview window;
- 

- the program closes the window and goes to the preview of a day from the driver card or the preview of the day from the tachograph 49.

The downloaded data is stored in a binary file in Digital subdirectory of the current control directory.

*The additional downloaded data is stored in a binary file in **Digital** subdirectory of the current control directory. They can be opened from there and re-analyzed at any time by selecting "Data -> Get -> Open from a file" from the menu or by clicking on the*  *icon.*

If, in the controlled period, the program finds no records, the following window is displayed:

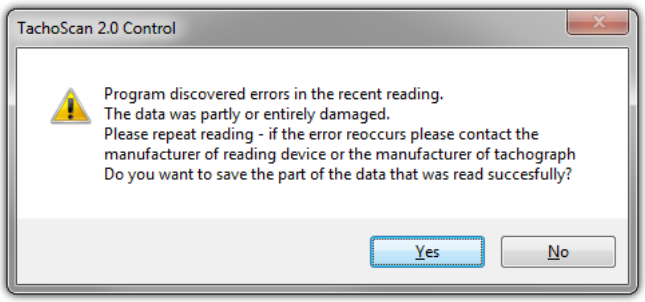


- Yes - the report generation window is displayed in a new tab;
- No - the report is skipped - the program proceeds to the next stage of analysis;

Report on missing driver data can be generated during the control using the "Reports -> Missing data of the driver 57".

4.6. Corrupt reading of data from the driver card/ tachograph

If the software detects a corrupt reading or invalid certificate, the following window will be displayed:



Yes - properly read data is saved to the database - a further step is carried out in the same manner as for a correct reading, except for:

- in the read summary window, reading/file will be displayed in red;
  - in the **Certificates** tab the places where the program detected irregularities will be indicated.

No - downloading data will be canceled.

4.7. Import of data from tachograph to the card

This mechanism makes it possible to fill the empty days, in which the driver does not have any records of activities from the digital tachograph. You can import tasks assigned to any driver, activities not assigned to any of the drivers and activities from a given vehicle.

If the driver card is read later, the imported days are removed and replaced by the data read from the card.

Data import mechanism can be run in several ways:

- from the "Data" menu select: **Import of data from tachograph to the card**;
- "click" the  button on the "toolbar";
- use the "shortcut"  .

When you select one of the commands above, import window appears and should be filled in as necessary:

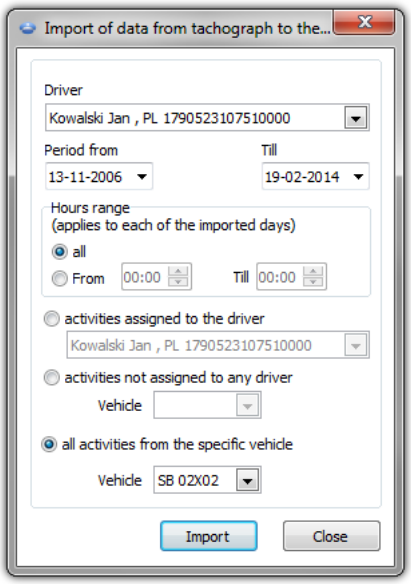
- **Driver** - to which the data will be imported;
- **Period** - of the imported data;
- **Hours range** - whether to import all data or only for a certain range of hours;
- **activities assigned to the driver** - select the driver from whom data will be imported, if the driver drove the vehicle using the driver card, but has not made it available during the control;

or

- **activities not assigned to any driver** - select the vehicle from which data not assigned to any driver will be imported, if the driver drove the vehicle without a card;

or

- **all activities from the specific vehicle** - select a vehicle from which all data will be imported (whether they are assigned to other drivers or not), if the driver drove a vehicle without a card, using other cards, etc.



Days imported from tachograph are marked in the "List of discs/days from card" window ("Data -> Driver

*card and record sheet data" menu) as **Digital tachograph**, while in "view/edit day on the driver card window" above the driver's daily chart, **TC** symbol is displayed.*

5. Preview window of data from the digital tachograph

The window is divided into the following tabs:

General and technical data

The tab is divided into several parts:

- **Vehicle data**;
- **Range of stored days** - two date are visible in this part. The first date is the first day with tachograph actions saved in the database, the second date is the last day with tachograph actions saved in the database;
- **Tachograph data** - besides tachograph data, this part includes motions sensor data;
  -  - highlight with the mouse to see additional information;
- **Calibration data** - depending on the selected calibration date, this parts presents data for the workshop which performed the calibration and the calibration itself;
- **Analysis of the constant of recording equipment (k) and the effective circumference of wheel tyres (l)** -comparing and calculating the difference of "k" and "l" constants for the selected calibration (Calibration data -> Select calibration) against the previous one;
  - **Velocity** - on the basis of the difference between "k" and "l" constants (see above) the speed values for the selected calibration are compared with the previous calibration.

 *There are warnings - if this text is displayed in the bottom of the window, it means that the program has detected irregularities associated with the use of the tachograph in the open readout - left-click on this text to display a list of detected irregularities ("Manipulation warnings" tab of "Infringements and manipulations" generation window).*

*The analysis is based on the settings in the **Analysis settings** window, "Warnings" tab.*

***Technical data in red** - anomaly detected.*

***Type of detected irregularities in this tab** (depending on settings):*
- change in the vehicle identification number (VIN);
- change in the tire size for calibration;
- change in the characteristic coefficient of the vehicle (w) without changing the effective circumference of tire (l);
- a significant change (over 3%) of the characteristic coefficient of the vehicle (w);
- a significant change (over 3%) of the recording equipment constant (k);
- incorrect authorized speed in calibration;
- period of 2 years from the last calibration exceeded;
- a high number of calibrations (more than two, except for the calibration carried out on the same day) during two years;
- date of the first pairing is different from the date of the first calibration-activation.

Report button - opens print preview of general information and technical data.

Activities on a specific day

This tab presents a list of all days saved on the tachograph card for the selected range of dates. Each day can contain the following data:

- date and meter status at the end of the day;
- areas visited;
- detailed information on card insertion and removal by the driver and the assistant;
- actions performed on the given day by the driver and the assistant;
  - the following options are available, in addition to the option of removing the selection, in the drop-down menu after clicking the RMB on the daily chart:
    - Copy all activities to driver's data;
    - Copy marked activities to driver's data;

After selecting one of the above options, the programme opens a window where the driver is selected.

- list of actions with card insertions and removals for the driver and the assistant;
- list of actions from the card or the chart, if at least one card or chart is in the database for the given day.
  If it is a card, you can open "View/ edit a day from a driver card window" by clicking **[Edit]**;

*The option: **current vehicle only** is selected by default. If the given driver moved in the given day between vehicles and data from other vehicles was downloaded into the database (driver card download, saving of the tachograph chart) then **MARKING** this option will cause that events for all vehicles driven by him will be displayed.*

- Printout (24h) - a simulation of a printout from the tachograph;
- Speed chart - when this option is selected, below the activities chart an interdependent speed chart is displayed;

The chart is displayed if speed data were collected for a given vehicle.

*Dotted line indicates the **authorized speed**.*

*The program downloads and stores in the database the speed if **Save detailed speed from digital tachograph** option is selected in the program settings window.*

Digital tachograph records in its memory speed over the last 24 hours of driving.

Button: Report - opens a print preview of the day from the tachograph.

Selecting an area

Select an area by placing two vertical brown lines on the chart (Fig. bellow). In the **Selection** tab (below the charts), in the **Selected area** field, depending on the selected chart (Driver (slot 1), Co-driver (slot 2), Driver card), you can read the sum of the events from the selected area. These lines are placed by single-clicking the left mouse button in the selected place.

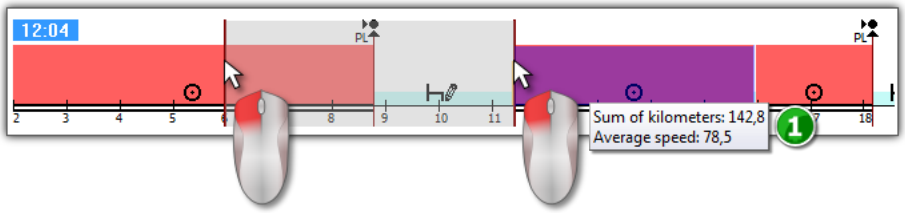


Fig. Selecting the area.

> *If the selection includes a driving event, the program will display a tooltip with the total mileage and average speed (item 1 - Fig. above).*

Selection can be removed by right-clicking on the chart and selecting the menu option: **Remove selection line** or **Remove all selection lines** (Fig. bellow).

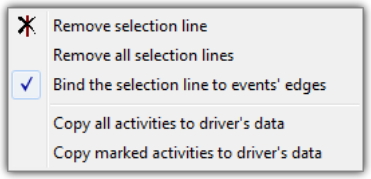


Fig. Removing the selection.

> *In the drop-down menu, there is the **Bind the selection line to events' edges** option (Fig. above) - if line is dragged near the beginning or end of an activity it allows to snap it automatically to the beginning or end of the activity, respectively.*

Events and faults

This tab contains a general list of not permitted actions related with the tachograph or the card or other problems with the device, as well as instances of exceeding permitted speed downloaded from the tachograph.

Button: Report opens the preview window for the events and failures printout - the report is expanded in relation to the view by maximum speed data, average speed data and other driver data, whose driver card was in the tachograph at the moment of the defect, event or failure.

Activities, events and faults in the table

This tab presents data for events, failures, exceeding the speed limit, places visited and card

insertions and removals, all put into one table, which can be sorted in any way (by clicking the header of the given column, another click causes the order to be reversed) and filtered (filters are located on the right side of the window).

Button: Printout (24h) - opens the print preview window for speed limit violations from the tachograph.

Button: Report - opens the print preview window for actions, events and failures in the table.

Card insertions and withdrawals

This tab features a list of driver card insertions and removals, which can be sorted and filtered in any way. In comparison to the previous tab, the list also has information on the country code and the slot number, from/to which the card was inserted/removed.

Button: Report opens the print preview window for card insertion and removal.

Company locks and last download

This tab presents a list of company locks applied using the company card on the tachograph. In the top part of the window, card data is displayed for the card using which the last tachograph data download was completed.

Button: Report opens the locks and last download print preview window.

List of controls

This tab displays all road checks recorded by the tachograph.

In addition, in **Drivers on the day of the control** column, the drivers who had activities recorded on a tachograph on the control date are displayed.

Report button - opens a print preview window of the controls displayed in the tab.

Speed chart

The tab shows a speed and acceleration chart. The chart is generated based on the data read from the digital tachograph (speed data download option).

See the following chapter.

5.1. Speed chart

The speed data read are shown on a graph in red, while acceleration is shown on the graph in blue. Graphs can be freely scaled, moved, printed and saved.

Basic information

*If the option **save detailed speed data from digital tachograph** is selected in the program settings window, the list of speeds will be saved to the database.*

You can set the required period that the chart will cover by default.

The blue colour represents the acceleration and speed chart. The chart is generated by the program.

The charts are visible only for the data that have been downloaded from the source file (Open) or external devices, provided that the option of detailed speed data reading was enabled during downloading the data from a tachograph.

Tachograph's memory keeps the speed from the last 24 driving hours, registered with once per second frequency.

By default, the program shows charts which cover full 24 hours of driving. You can freely scale, displace, print, save etc. the chart with the tools located above it.

The toolbar comprises the following tools:

-  - expands the size of the chart by 10%,
-  - reduces the size of the chart by 10%,
-  - zooms the selected area,
-  - enables displacement of the chart,
-  - automatically resets the size of the chart to the default values in respect to both axes,
-  - automatically resets the size of the chart to the default value in respect to the horizontal axis only,
-  - automatically resets the size of the chart to the default value in respect to the vertical axis only,
-  - possibility to save chart image to a **bmp**, **jpg** or **png** file,
-  - opens a chart print preview window,
- 

- Statutory speed data - after expanding the field

you can select additional sections - available only for **Continental VDO** tachographs, version 1.3 (since 2008), whose data were downloaded using special software (see the following topic: "Continental VDO since version 1.3 - Additional Sections 53" for a detailed description);

- ◀ - decreases the value in the field described beneath,
- Whole range - a check box to select the time range covered by the displayed charts:
  - whole range,
  - last 1 minute,
  - last 5 minutes,
  - last 10 minutes,
  - last 15 minutes,
  - dates of the individual days covered by the range of the downloaded vehicle speed data,
- ▶ - increases the value in the field described above.
- Go to __-__-____ __:__ (dd-MM-yyyy hh:mm) - If you enter the precise time (date and time) in this field, the program will center the chart around the time and will broaden the chart to 10-minute span.
  (5 minutes before and 5 minutes after the entered time)

Continental VDO since version 1.3 - Additional Sections

For speed data downloaded from Continental VDO tachographs, version 1.3 and later, using special software (reading additional data) click on the: Speed according to Regulation 3821/85 button for additional sections:

*Despite the fact that this type of tachographs record speed over the previous 168 hours of driving plus additional sections, during a **standard** download only statutory speed data (pursuant to Regulation 3821/85) for the last 24 hours of driving are retrieved.*

If the statutory speed (Regulation 3821/85) and speed over the previous 168 hours was downloaded into the program, in the daily activity graphs from the driver card and/or digital tachograph the statutory speed will be primarily displayed, and in its absence, the speed from the last 168 hours.

- Speed from last 168 hours - speed history of the last 168 hours of driving recorded with a frequency of one second;
- Detailed speed 4/sec - type 1 - Last three records (high resolution - frequency: four values /second) of two-minute speed periods, in which there was an **unnatural speed change in a short period of time**;
- Detailed speed 4/sec - type 2 - Last three records (high resolution - frequency: four values/second) of two-minute speed periods, in which there was a **sudden, high change in speed**;

Additional options

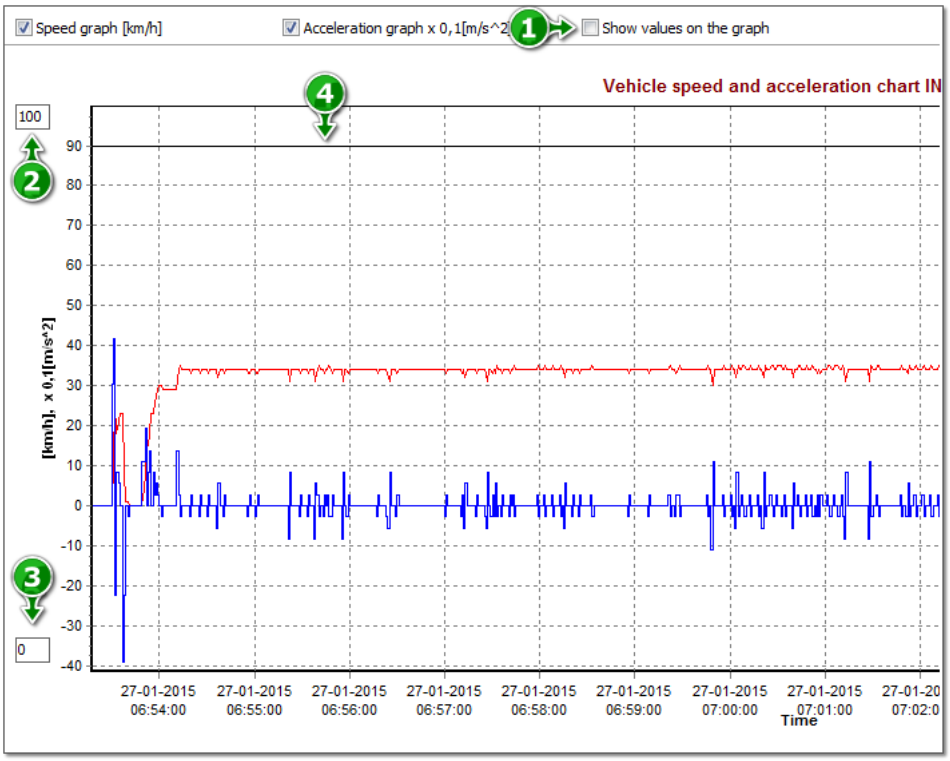


Fig. The acceleration and speed chart window.

1. Show values on the graph - each diagram top will have a value displayed.
2. You can enter the value of upper speed limit – the chart will be displayed up to the entered value.
3. You can enter the value of lower speed limit – the chart will be displayed starting from the entered value.
4. The dashed line represents the authorized speed.

Fig. 2 shows two enlarged charts. You can precisely define acceleration or speed for a given point in the chart. In order to do so, point out the required position with the mouse – the program will display a box with the information pertaining to the position (Fig. bellow).

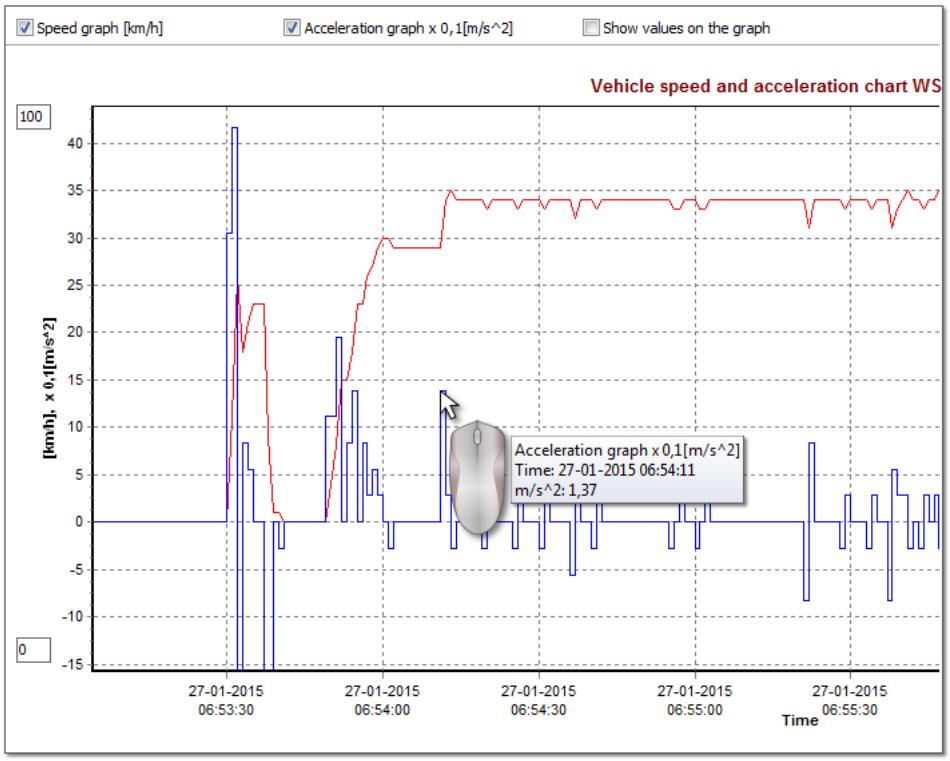


Fig. Enlarged speed and acceleration charts.

The Speed and Acceleration Report

There is a button to the window bottom right: Report that can be used to save all values recorded in the value diagram in the **xls** or **csv** file. The report will show as the summary:

*Saving chart data into an "xls" file is possible on the computer with **MS Excel** installed.*

- for speeds: maximum speed, average speed both in [km/h] and in [m/s],
- for acceleration: Max acceleration and Max deceleration,
- summary distance.

Before saving the file, the application will display the window of period length selection (Fig. bellow) – the period read from the current diagram view will be inserted by default.

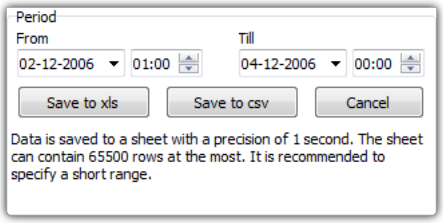


Fig. Preparation of the report.

6. Data verification

The next step after recording sheets/ days from the driver card or reading data from digital tachographs is data verification and analysis of the drivers' tasks against the standards of driving time, breaks and rest periods in accordance with the relevant legal provisions.

"Missing data of the driver 57" report displays the periods in which there are no records of record sheet/ day from the driver card.

In the Infringements and manipulations 58" report, the program offers the ability to automatically generate the places where there is a suspicion of tampering, as well as tools for indirect analysis of the accuracy of stored data.

"Compare driving time and distance on the map 72" allows you to check whether the distance travelled by the driver (or travel time) corresponds to the number of kilometres on the map.

The last topic: "Presentation of infringements 73" contains the tools which allow you to show the places where the infringements occurred and understand their reasons.

6.1. Missing data of the driver

The report **Missing data of the driver** displays the start and end time and duration of periods during which the driver activities are not stored in the program activity.

How to create a report

1. In the report generation window
   - select the driver or select: **All drivers**;
   - select "Period", from which data will be displayed;
   - possibly for: **Show lack of data infringements lasting at least** option, change the time value;

*This option applies to **card withdrawn** and no data activities.*

Options

Show manual rests longer than

☑ ***Option checked*** — on the report, the manual entries lasting longer than the time set for this option will be displayed;

☐ ***Option unchecked*** — manual entries will not be shown.

To view the report, use the toolbar buttons (see: Generating reports 85).

6.2. Infringements and manipulations

Report based on collected data generates a list of infringements and interference warnings. The report is generated for all drivers under the active check. Thanks to the relevant mechanisms it is possible to quickly move from the infringement to the record sheet/ driver card day on which an infringement took place. For each violation, you can view and print the ready infringement template report.

How to create a report

1. Open the report ("Reports" menu).
2. Analysis settings window is displayed, which should include:
   - the analyzed period:
     - **All infringements and warnings** – the software analyzes the period between the first and the last step stored in the database for the specific control;
     - **period** – allows setting any analysis period - by default, the software sets a controlled period;
   - Use activities time tolerance:

     ☑ ***Option checked*** — tolerances of driving times, rest periods and breaks set in the settings window, under: "Tolerance" tab will be taken into account during the analysis of the infringements;

     ☐ ***Option unchecked*** — these tolerances are not taken into account in the analysis of infringements;

   - Generate - press this button, the program will proceed to analyze infringements in the pre-selected period of time - before you click, review the settings described below;
   - Settings - opens "Analysis settings" window;

Advanced - click to expand the advanced settings panel.

Button: Define periods

Allows to set any dates in which the analysis is to be carried out in the **Driver's average weekly working time report - detailed** report that is generated when you click on the button below:

Button: Detailed report

Opens, for the selected driver(s), **Driver's average weekly working time report - detailed** with specified periods (set using the Define periods button) and weeks, including: Driver, Period, Week, the calculation of the week (how many days - for weeks at the beginning and at the end of the period may not be less than seven), Driving time, Other work time and Actual working time of the driver. In the summary - the sum of weeks, the sum of individual driving and work periods, and **Average weekly working time** calculated during the period. If Average weekly working time is exceeded, it is displayed in red.

Analysis according to

Select whether the data should be analyzed according to: AETR, AETR (2010) or Reg. 561.

Report on the basis of data from:

- **cards / discs** - control of driver's card data and tacho disks;
- **tachograph** - control of vehicle data (mass memory data) – after choosing this option the frame shown next becomes active:

Data from digital tachograph

Select the type of analysed events:

- **activities with this driver's card inserted** - only activities recorded in the tachograph with driver card inserted;
- **all activities from slot 1** - all activities recorded in slot No 1 of the tachograph are verified, regardless of whether the driver's card was inserted or not;
- **all activities from slot 2** - all activities recorded in slot No 2 of the tachograph are verified, regardless of whether the driver's card was inserted or not;

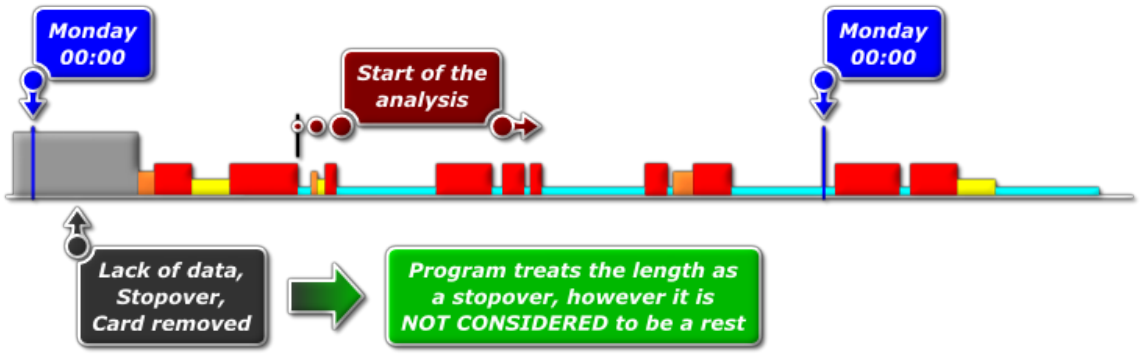
allow weekly rest periods after up to 12 days (art. 29 reg. 1073/2009) minimum rest period in case of the exception

☑ ***Option checked*** — program when it does not have the correct (regular or reduced) to 6 days of rest will be searched rested for a minimum of 69 hours (regular + reduced) - in accordance with the derogation of Article 29 of Regulation 1073/2009;

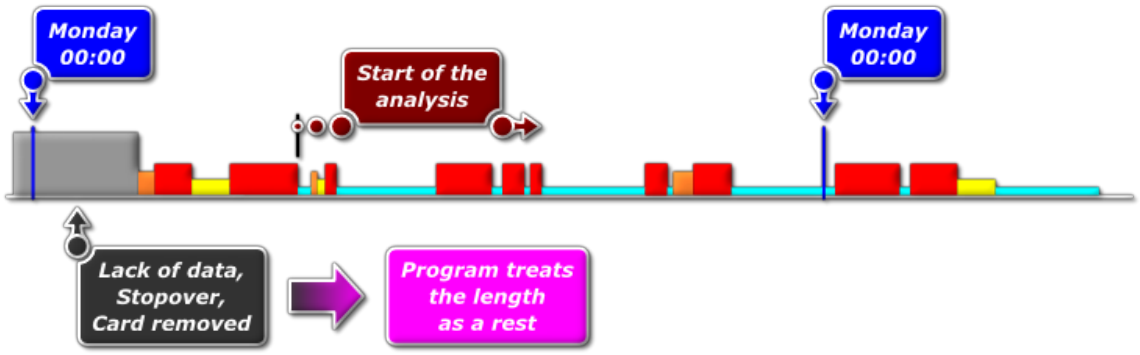
☐ ***Option unchecked*** — program when the analysis does not reflect the derogation provided for in Article 29 of Regulation 1073/2009,

do not consider lack of data in the beginning of the period as a rest

☑ ***Option checked***



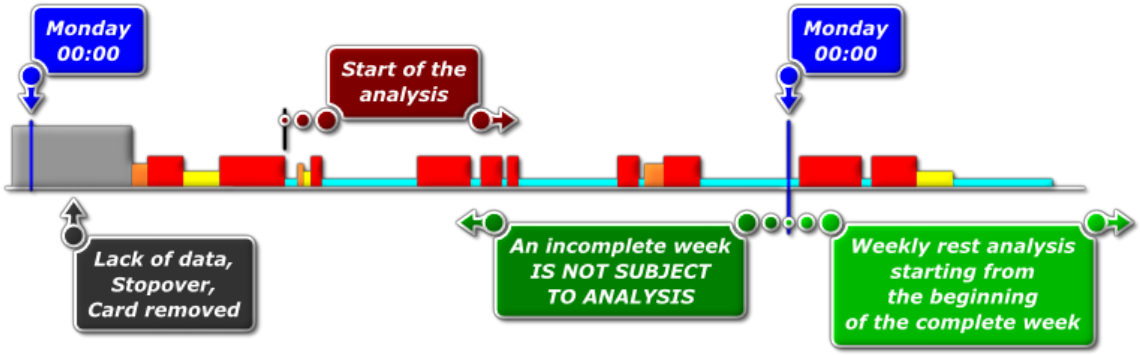
☐ ***Option unchecked***



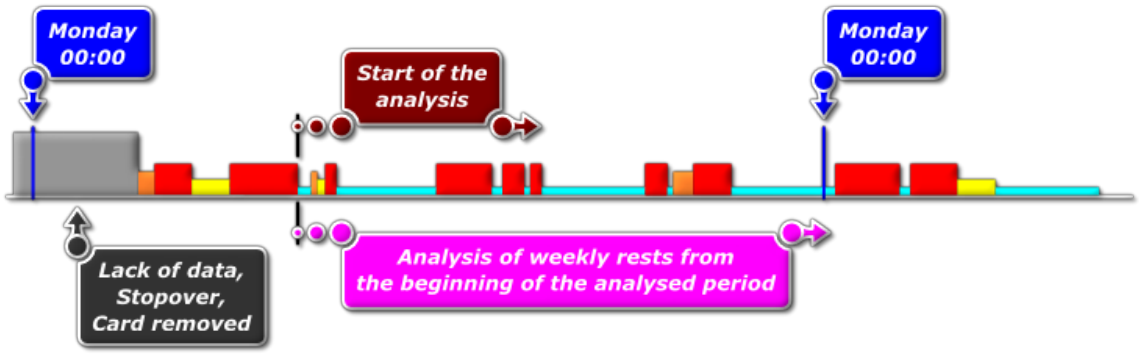
analyse weekly rest starting from complete weeks (from Monday till Sunday)

the option is accessible only if the preceding one has been checked.

☑ ***Option checked***



☐ ***Option unchecked***



Infringements

Offences list, edition, options

As a result of pressing the Generate button, if infringements have occurred in the selected period of time, their list will be displayed in **Infringements** tab with detailed data on each of them.

> *If the program detected irregularities associated with the use of the tachograph or the driver card, the text under **Manipulation warnings** will be displayed in bold and change the color to red (Description of the tab in the following topic.)*

1. Results filtering - above the infringement table, there are driver, vehicle and infringement type and severity selection boxes that allow to filter data in the list of infringements.
2. Approval of the infringements - by default, all infringements detected by the program are **approved**. Status of the infringements can be changed using the **Approved**, **All approved** and **All not approved** commands in the drop-down menu (right-click on any item in the list of infringements).

> ***Unapproved** infringements will have a "No" indication in the **Approved** column.*
>
> *Approved/unapproved infringements can be filtered using the **Show approved infringements only** option below the list of infringements.*

3. The most serious offences are displayed in red, bold text;
   - by clicking the Filter button, only the most serious offenses will be displayed.

Regulation 1071/2009, Annex IV

Most serious infringements for the purposes of Article 6(2)(a)
1.
a) Exceeding the maximum 6-day or fortnightly driving time limits by margins of 25% or more.
b) Exceeding, during a daily working period, the maximum daily driving time limit by a margin of 50% or more without taking a break or without an uninterrupted rest period of at least 4,5 hours.

4. **Show approved infringements only** - hides/displays the unacknowledged infringements.
5. On the basis of any violation shown on the list one can proceed to a day visualization when the said violation was caused (see: Days from card or Discs). In order to do this click the given violation with the mouse right button and choose the option: **Edit the day**. You can also indicate a given violation and click the button: Edit the day.
6. Weekly chart - opens "Weekly chart 74".
7. Monthly chart - opens "Monthly chart 77".

Generating reports

1. Report preview - when you press this button and select the language of the report, the report preview window displays.

*Depending on the option selected: **Show not approved infringements in the report (striked out)** in the preview, **unapproved** infringements will not be displayed or will be shown as crossed out.*

*Notes to an **unapproved** infringement will not be printed as crossed out.*

2. Check report - by clicking, the report is displayed: "Control report 78" based on the settings selected in the window.

Warnings

List of manipulation warnings

1. Just as the list of infringements, the list of interference warnings is generated when you press the button: Generate. If the program detects irregularities associated with the

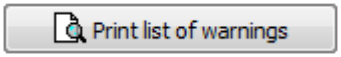
use of the tachograph or the driver card, the text under **Manipulation warnings** will be displayed in bold and change the color to red.

2. Results filtering - above the interference warnings table, there are driver, vehicle and warning type selection boxes that allow to filter data in the list of interference warnings.
3. On the basis of any warnings shown in the list of interference warnings you can go to visualize the day on which there was a warning (record sheet or driver card day). To do this, click RMB on the desired warning and select **Edit the day**. You can also select the specific warning and click on the following button: 

.
4. For each of the selected warnings at the bottom of the tab, an instruction for checks that should be performed to verify the warning will be displayed.

Generating reports

1. 

- opens a print preview window for the selected warning along with the description.
2. 

- opens the print preview window for the list of all warnings found.

Add/edit annotation

You can add or edit notes using **Add/edit annotation** command in the drop-down menu (right-click);

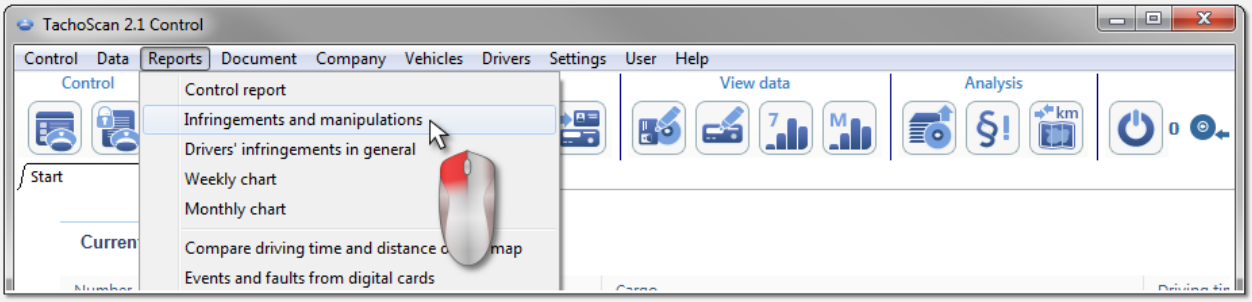
- an infringement, which has a note added will be marked with icon in the: **Annotation** column;
- a note can be removed using: **Delete annotation** command from the drop-down menu;

Settings made in this window are stored for that control.

Example

Let's start a control of our driver, Jan.

From the **Reports** menu choose **Infringements and manipulations**.



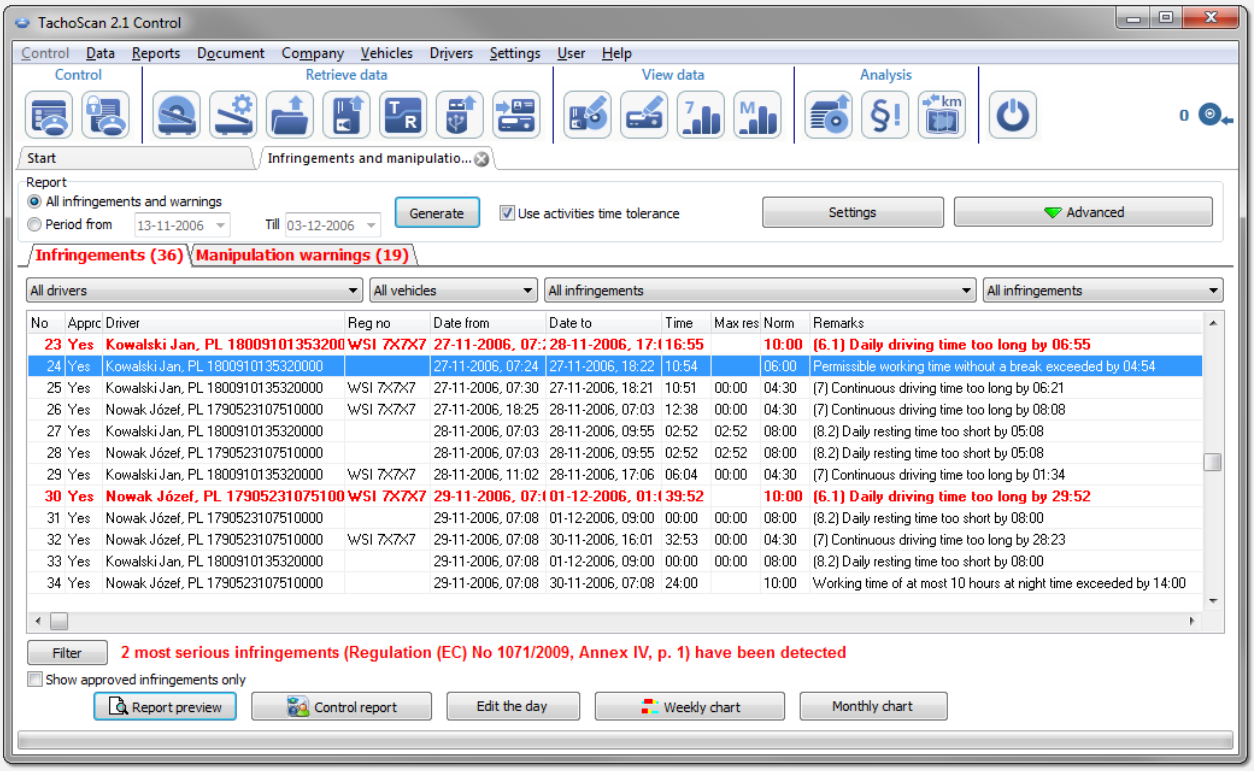
You can also use the:  icon.

In the infringements generation window:

- check: **All infringements and warnings**;
- check: **Use activities time tolerance**;
- click the: Settings button;

✠ in the analysis settings window, click on the: Default button;

Klikamy: Generate.



The program displays a list of infringements and tamper warnings. By default, all infringements have the status: **Approved**.

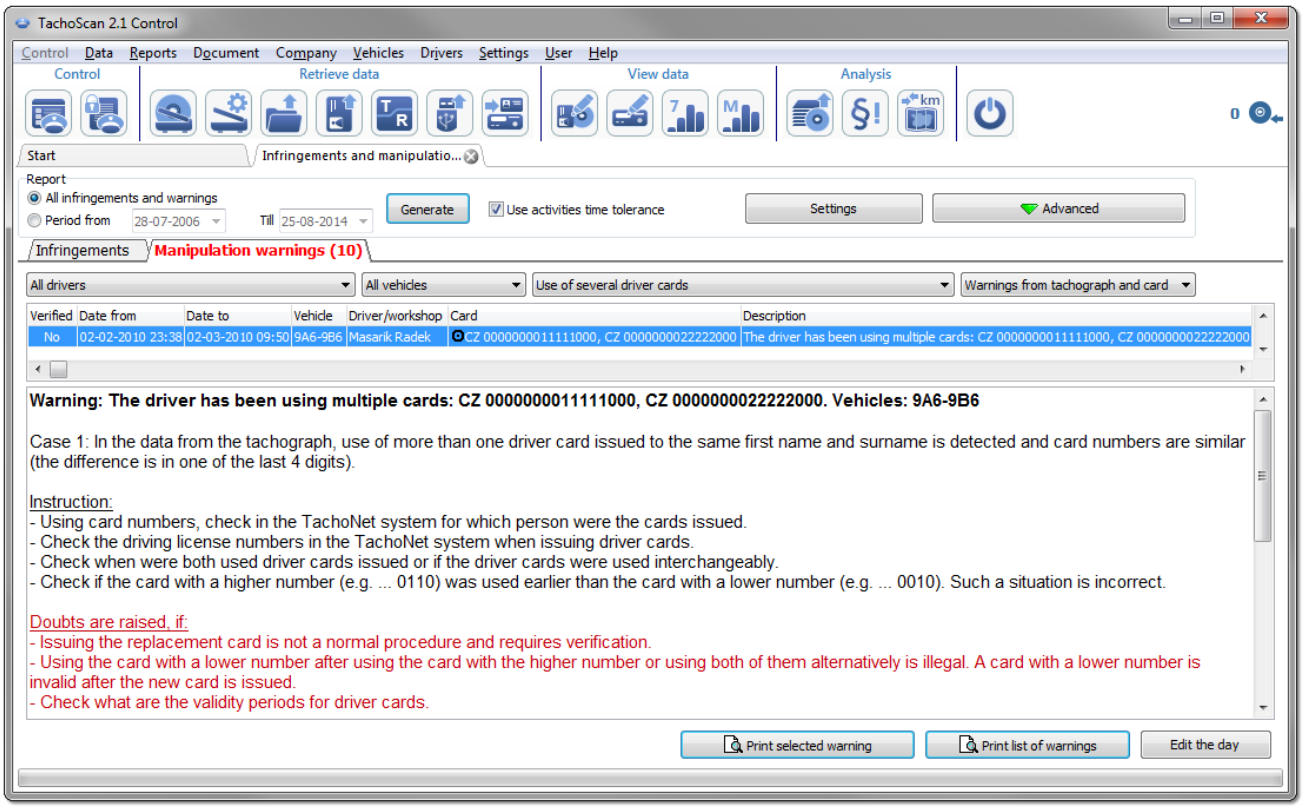
In the following items, examples of analysis of two suspected tampering cases are discussed.

6.2.1. Use multiple driver cards

To show the case, data from the driver card of Radek Masarik and data from the vehicle he drove were retrieved.

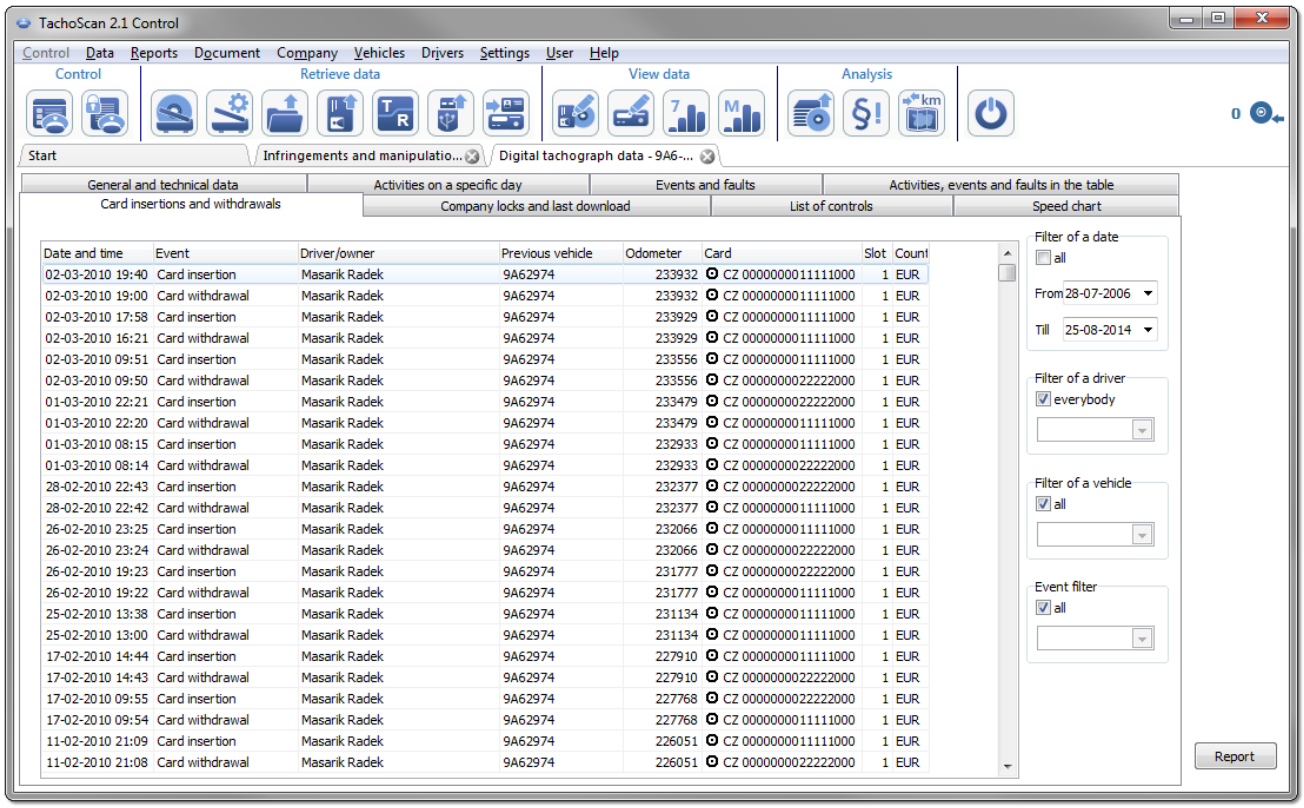
> *Tampering of this type can be detected only on data downloaded from the digital tachograph.*

In the **Infringements and manipulations** window, in **Manipulation warnings** tab, the suspected tampering is represented as follows ("Use multiple driver cards" filter is applied):

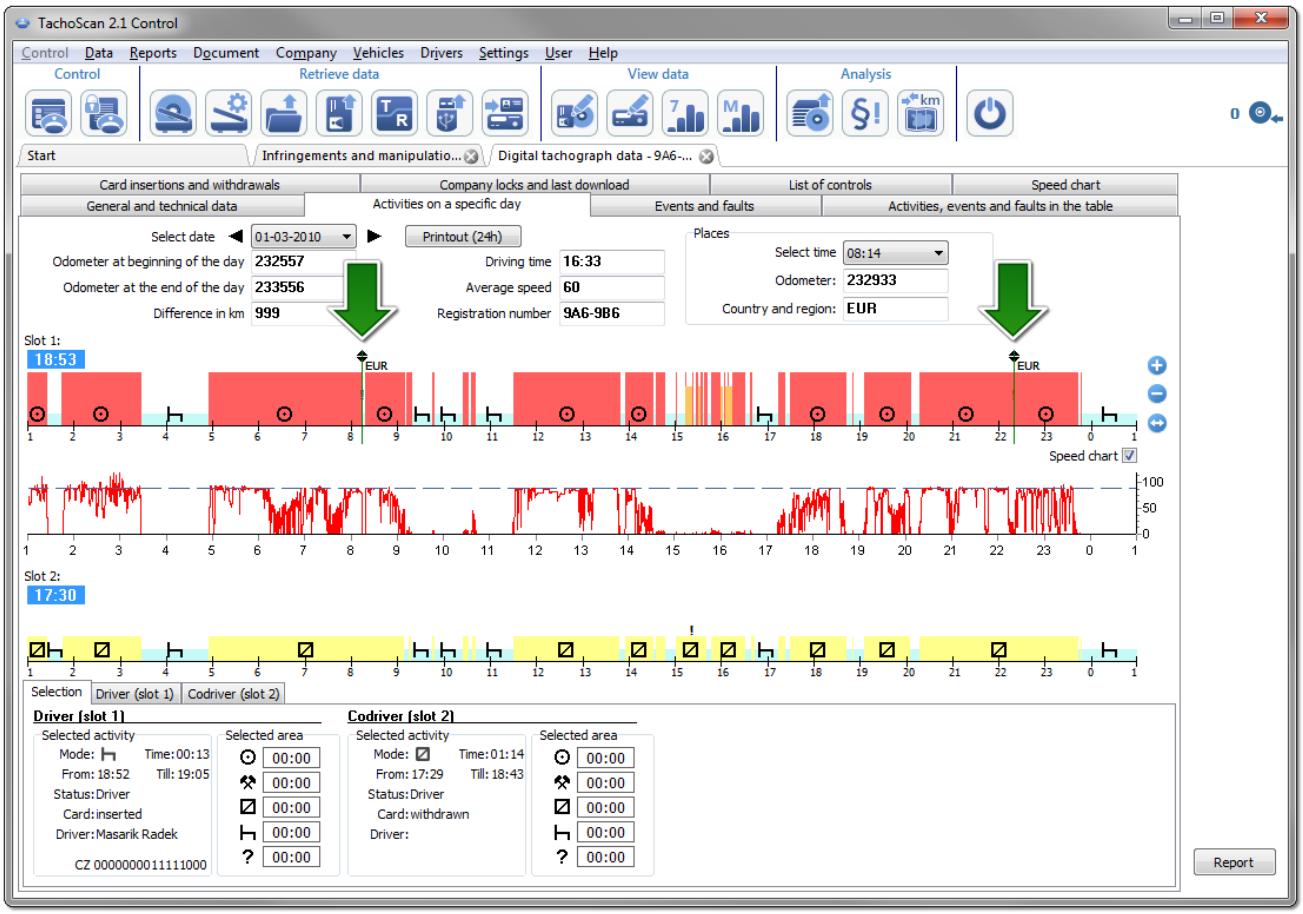


In accordance with the instructions provided in the above window (in the example we analyse only the first case):

1. *Using card numbers, check in the TachoNet system for which person were the cards issued.*
   - go into the **TachoNet** system and perform verification.
2. *Check the driving license numbers in the TachoNet system when issuing driver cards.*
   - verify, as above.
3. *Check when were both used driver cards issued or if the driver cards were used interchangeably.*
   - in **TachoScan Control**, in the same window, double-click on the warning;
   - in the next window, the program opens **Data from digital tachograph** in **Card insertions and withdrawals** tab:



- card insertions and removals are sorted by date (Fig. above) - on the basis of the displayed results you can tell in a simple and fast way that the cards were used interchangeably;
- in the same window, in the **Activities on a specific day** tab, the program uses the exclamation marks "!" to display the places where tampering is suspected:



- on the first (upper) data chart from the first slot in the tachograph, after highlighting with the mouse, data of the inserted driver card can be read (bottom tab:Selection -> Driver (slot 1)).

4. *Check if the card with a higher number (e.g. ... 0110) was used earlier than the card with a lower number (e.g. ...c0010). Such a situation is incorrect.*
   - in the former case, it was apparent that the cards were used interchangeably, i.e., the condition was met: a card with a higher number was used earlier than the card with the lower number.

If the TachoNet system confirms that the cards were issued to the same person we have a clear case of tampering.

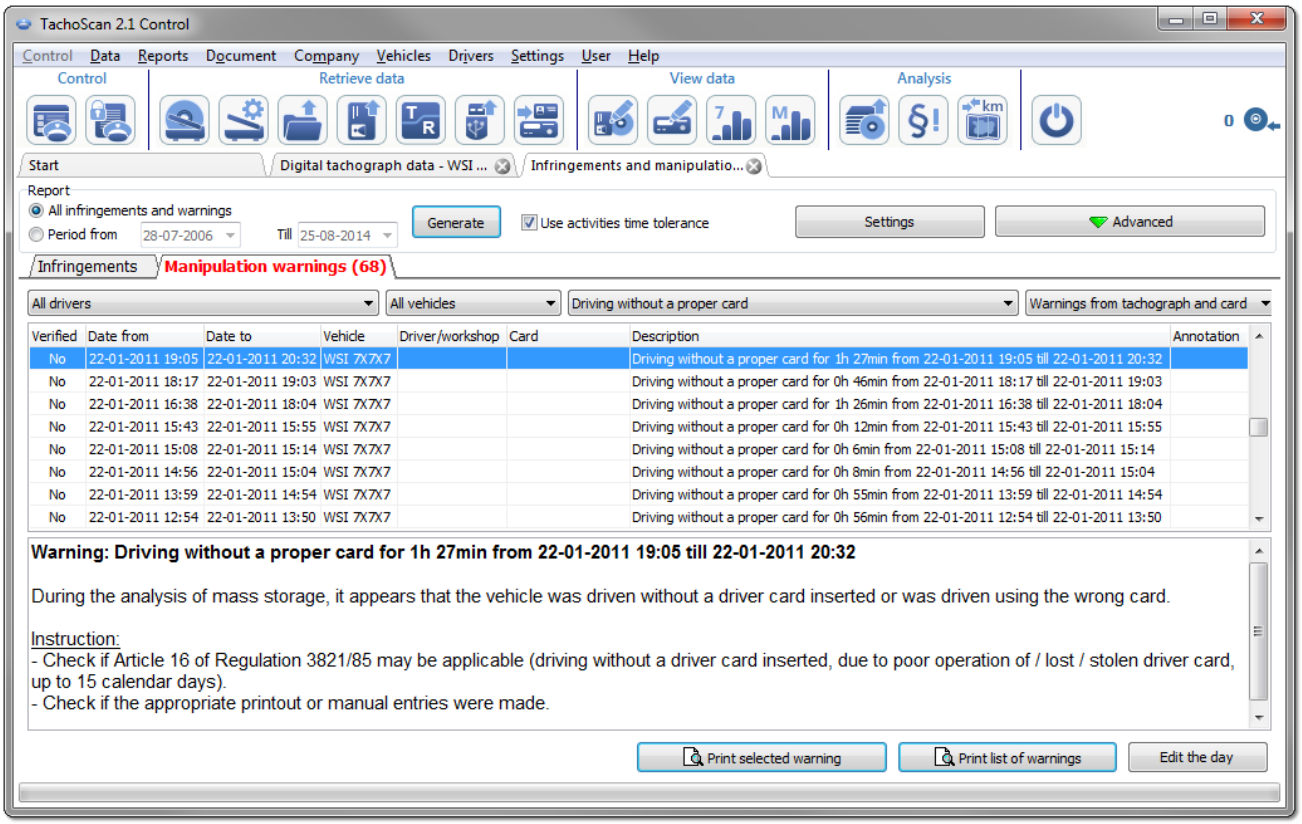
6.2.2. Driving without a proper card

For the purposes of this example, we retrieved data from the digital tachograph placed in the vehicle: WSI 7X7X7.

If the control is carried out in the company, retrieving data from a specific driver card depends on further analysis.

As in the previous example, this type of tampering can be detected only for the data collected from a digital tachograph.

In the **Infringements and manipulations** window, in **Manipulation warnings** tab, the suspected tampering is represented as follows ("Driving without a proper card" filter is applied):



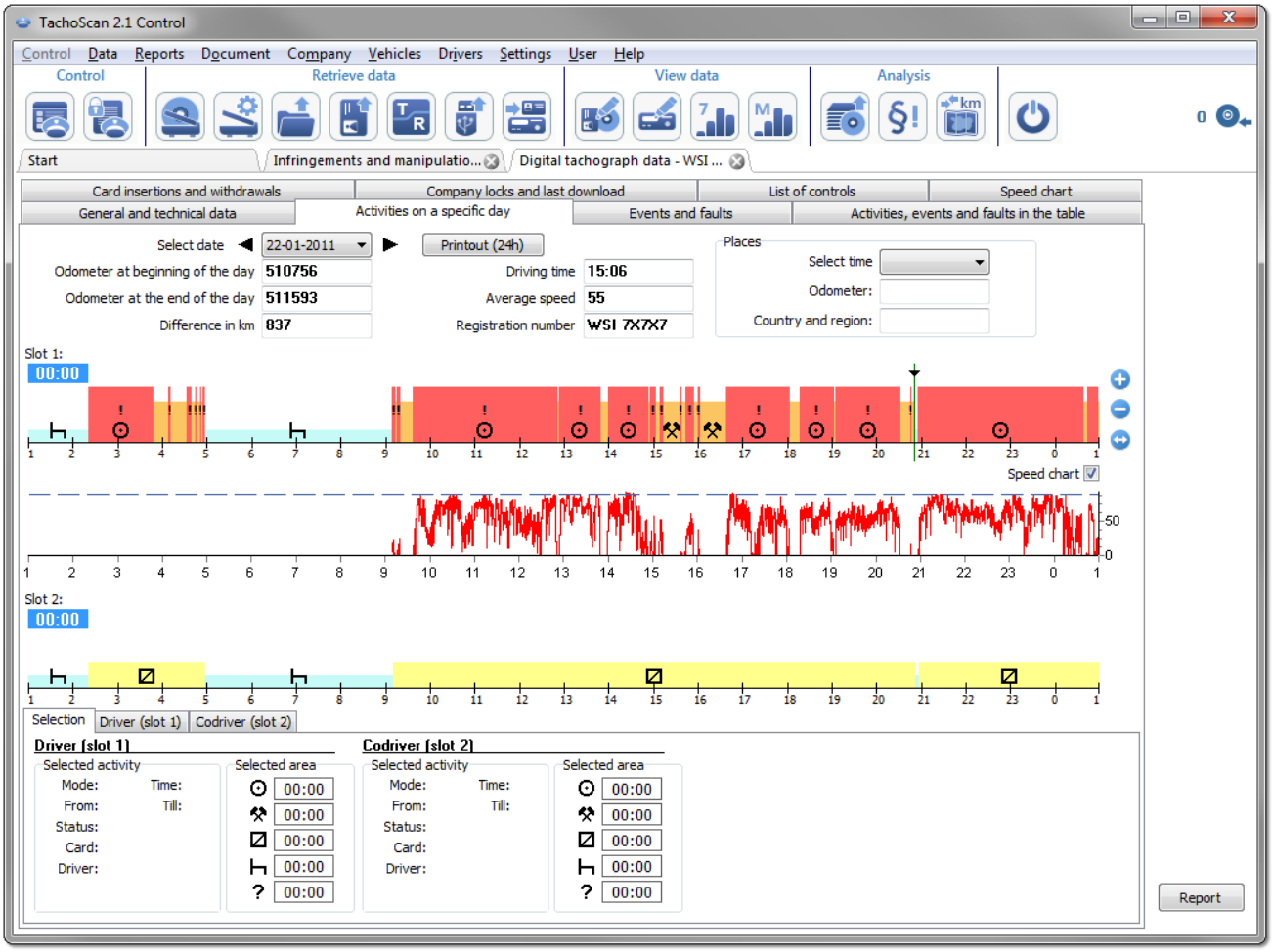
In accordance with the instructions in this window:

1. *Check if Article 16 of Regulation 3821/85 may be applicable.*
   - make verification.
2. *Check if the appropriate printout or manual entries were made.*
   - for each driving event without the right card, we are looking for confirmation in the manual records.

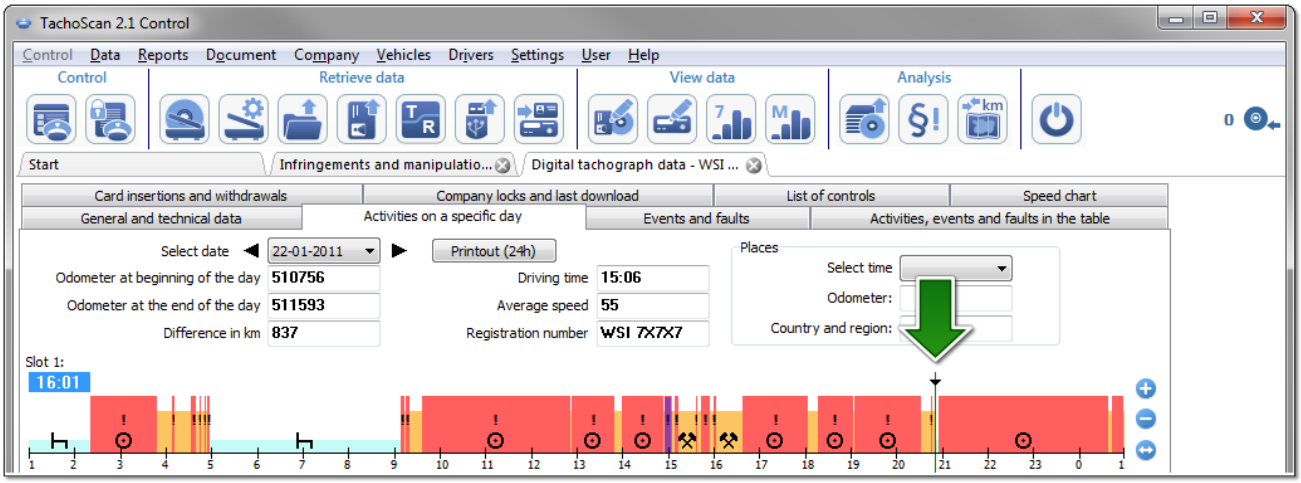
Subsequently, the control is dependent on manual records shown.

Using TachoScan Control, you can find the driver/drivers who drove the vehicle before and after the events: **Driving without a proper card**. In our example, let's consider the longest driving event: 1h 27min:

- double-click the mouse on the above warning;
- in the next window, the program opens **Data from digital tachograph** in **Activities on a specific day** tab:

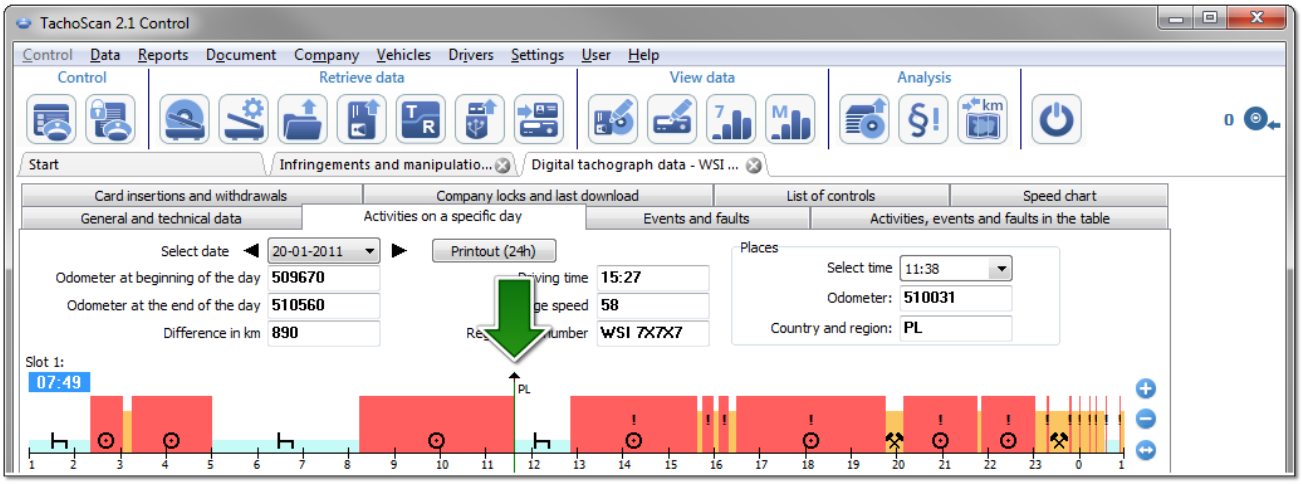


- exclamation mark "!" indicates the places where tampering is suspected (Fig. above). In our example, these are driving events without an appropriate card;
- the chart also shows that the driver card insertion event was recorded in the tachograph, followed immediately by the regular driving activities (Fig. bellow).



- highlight the place of card insertion with the mouse (Fig. above) and in **Selection** tab (located under the graphs) read driver details - in this case, Szczepan Godlewski;

- then, we are looking for a driver who was driving the vehicle before the driving without card events - scroll the chart back, until the place of driver card removal (Fig. bellow) appears;



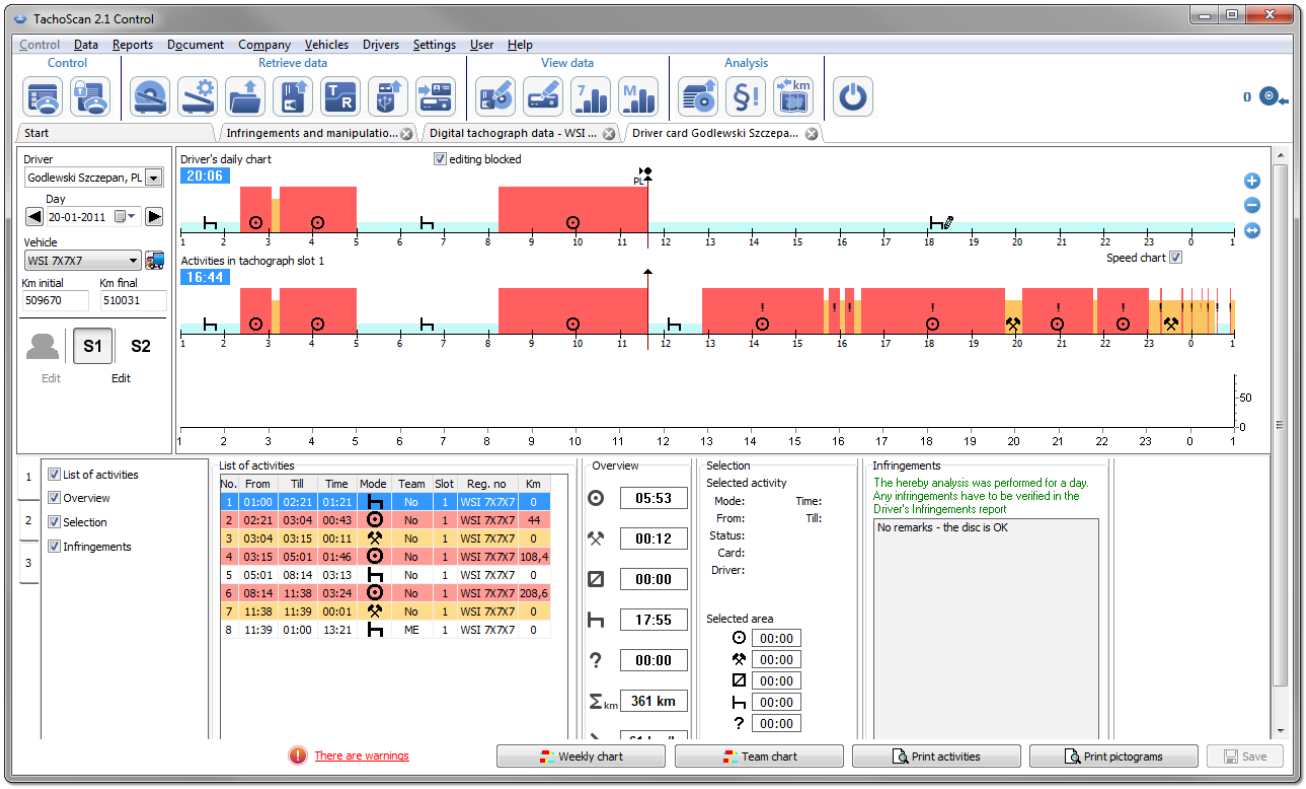
- as above, highlight the place of card removal and read the driver details from the **Selection** tab - it is also Szczepan Godlewski;
- there is a high probability that the driver drove the vehicle without a card - retrieve data from his driver card;
- re-open the **Data from digital tachograph** window, in **Activities on a specific day** tab - compare the graph of the activities from the tachograph with the chart for Szczepan Godlewski:

*If **Comparison to data from driver card or disc** chart is empty, uncheck **current vehicle only** and select the appropriate driver.*

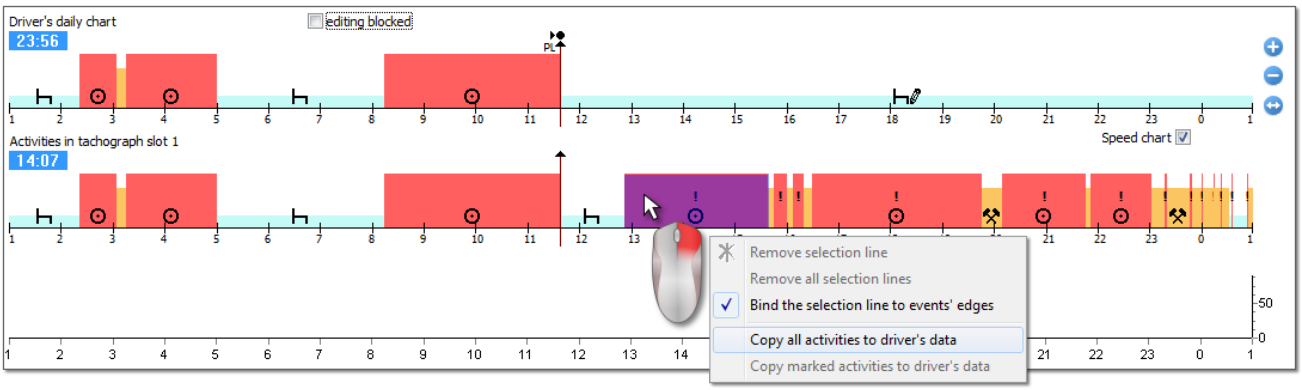
- already in the first "driving without card" period (Fig. above) you can see that Szczepan Godlewski has no records besides manually entered stop - in the next days, the situation is similar, until the place of card insertion;
- if necessary, you can copy the activities from the tachograph to the driver card - the program offers such a possibility in the "view/ edit day from the driver card" window:
  - click on the **[Edit]** button placed right of **current vehicle only** option;
  - in the **Driver's daily chart** window, click on 

, to display the graph from slot no. 1 of the tachograph, and then uncheck the **editing blocked** option (Fig. bellow);

*If the **Vehicle** field is empty, click on the  icon and then select the appropriate car.*



- right-click on the activities from the tachograph graph and select **Copy all activities to driver's data** from the drop down menu (Fig. bellow);



- ***Copy all activities to driver's data*** *- (graph from the tachograph) - regardless of the selected function copies (overwrites) all activities from the tachograph onto the driver card;*
- ***Copy marked activities to driver's data*** *- (graph from the tachograph) - make the selection by left-clicking (area). After selecting this option activities of the tachograph will be copied to the driver card within the selection;*
- ***Copy events from tachograph - slot 1*** *- (chart of the driver card) - the option is active only for* ***card withdrawn*** *periods. It copies all events from slot no. 1 of the tachograph to the driver card. If you turn on the chart from slot no. 2,* ***Copy events from tachograph - slot 2*** *option is available.*

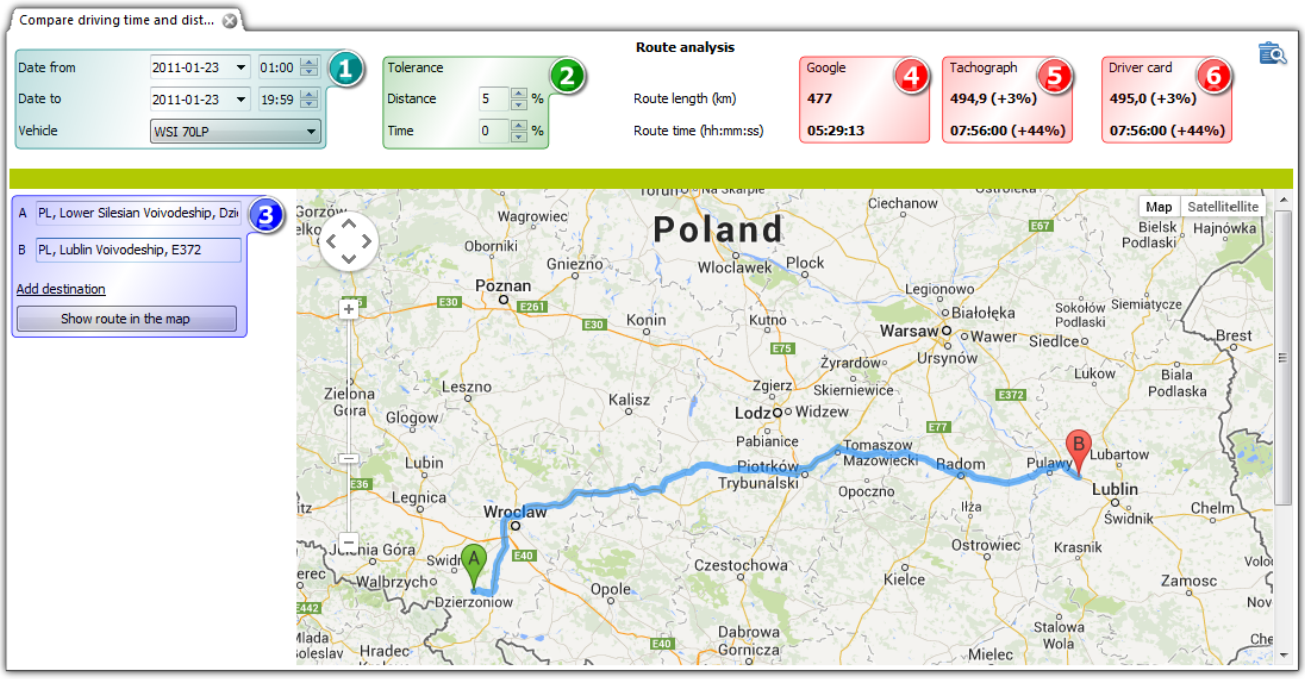
- after copying activities, go to the: "Infringements and manipulations 58" report and generate violations for Szczepan Godlewski again.

6.2.3. Compare driving time and distance on the map

Opens a Google™ map window, where you can compare the mileage read from the tachograph and driver card against kilometers from the route designated on the map.

The main objective of the analysis is to verify whether there was any tampering that leave no trace in the tachograph and on a driver card. It is actually the only tool to verify whether the driver tampered with the tachograph with a magnet or by reducing the voltage.

To make a comparison, select:



- (item 1 - Fig. above) analyzed period of time and vehicle;
- (item 2) determine the tolerance of variation between indications for time and distance;
- (item 3) determine the route on the map;

In the right part of the program window, the suggested driving time and distance read from **Google™ map** (item 4), as well as the tachograph data (item 5) and the data from the driver card (item 6) are displayed.

- opens a "report print preview" window.

6.3. Presentation of infringements

The following are tools useful in the analysis of infringements:

"Weekly chart 74" - represents a seven-day chart of driver activities (data from record sheets/ days from driver card) or a graph of activities from the digital tachograph. In the chart, you can find all infringements (see the explanations is in the "Legend" tab). Driving periods for each day and weekly rest periods are shown in a transparent manner;

"Monthly chart 77" - represents a five-week chart of driver activities. The graph clearly shows the weekly rest periods and 2-week driving period;

"Control report 78" - in the report, **Weekly chart** is presented with a detailed description of each week, which can be displayed in several languages. The report can be printed or exported to PDF file. **Control report** is a sort of answer to what the infringements result from.

6.3.1. Weekly chart

Weekly chart is a graphic representation of driver's activities in specified weeks.

The chart may be accessed in the following ways:

- From the main **Reports** menu, select: **Weekly chart**;
- after pressing the  or 

button in the preview windows of the days from the "driver card" / "record sheet" and in the generation windows for the following reports: "Control report 78" and "Infringements and manipulations 58";

Designation of the driver's activity is the same as in the "daily chart from the driver card 27".

To activate the report:

- specify driver's name (selected from the list);

or

- Vehicle;
  - If in the downloaded reading the program finds activities stored on the first and the second slot, the following selection options are displayed: **Slot 1** and **Slot 2**;

*For vehicles, **only events** are displayed - the program does not analyse any infringements.*

- specify "time extent";
- press the button:  .

The following options are available in the weekly chart:

Button: 

Opens in a new tab: "Monthly chart 77".

Selected activity

In the **Selection** tab on the left side of the chart, in Selected event field, the information on the event pointed to with the mouse (Fig. bellow) is displayed.

The time of inserting and removing the driver card will also be visible in the chart, if they were downloaded from the tachograph card for the given day and for this vehicle.

*After placing the cursor on the card insertion and removal symbol in the **Selected activity** field, an appropriate bubble text will appear.*

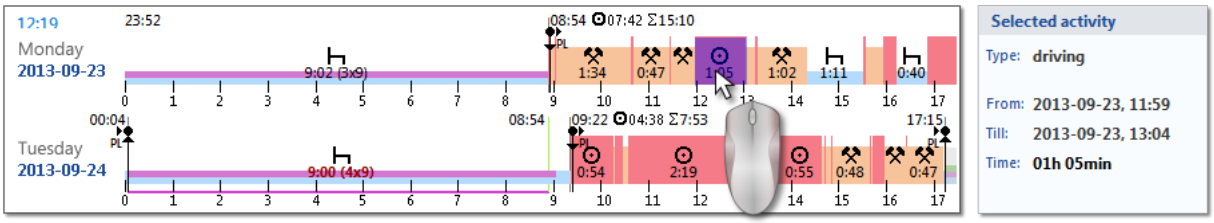


Fig. Point with the mouse to one of the driver activities on the chart.

Selected area

In the **Selection** tab, on the left side of the chart, in In the selected area field, a summary of the selected period is displayed. Click with the mouse two points at the weekly chart. Two lines will appear and mark the resp. period of time (item 1 and 2 - Fig. bellow).

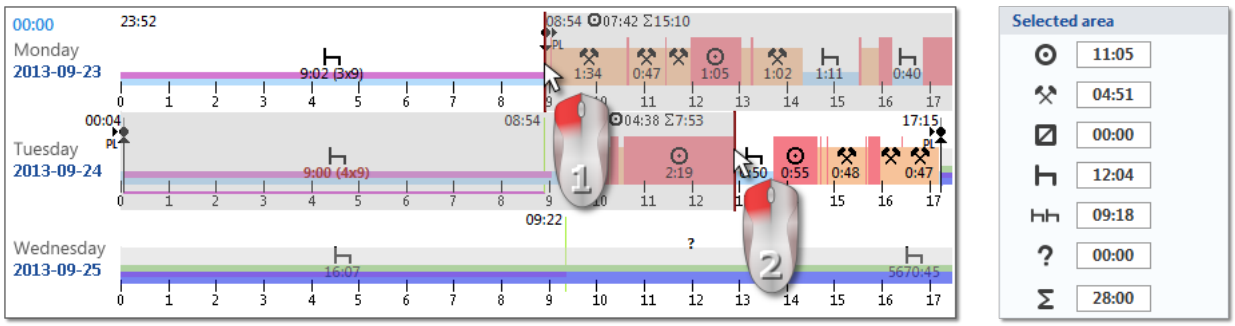


Fig. Marking a part of the weekly chart.

You can grip those lines (marks) with the mouse and move them as you need (item 1 - Fig. bellow). Having set the second mark you can make it jump to another position by clicking another spot of the chart.

If the selection area is larger than the chart displayed on the screen while selecting, or have other problems, you can use when selecting an area from the dropdown menu.

Setting the start area** - click the PPM to the desired location and drop-down menu, select **Set beginning

***Settings for the end of the area** - click the PPM to the desired location and drop-down menu, select **Set end**.*

*There is the option **Bind the selection line to events' edges** below the chart. When this option is activated the placed selection lines will be automatically moved exactly to the end/begin of the neighboring activity (item 2 - Fig. bellow).*

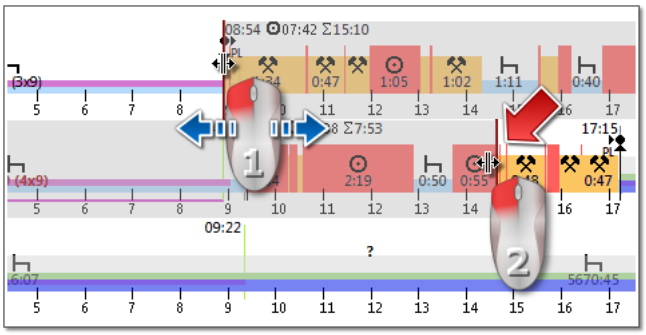


Fig.3. Move selection line.

Overview and legend

In the third window: **Overview**, subsequent events from the weekly chart are totaled, for the driver or the vehicle, respectively.

And in the fourth window **Legend** is shown.

Visualization of infringements (for driver only)

Beside the linear visualization of events, the chart shows also places in which offences occurred in connection with exceeding driving time or reducing resting time.

> *Only confirmed violations will be displayed in the weekly chart.*
>
> *The infringements analysis is carried out only for the selected driver.*

The place of display is shown in the figure below (Fig. bellow).

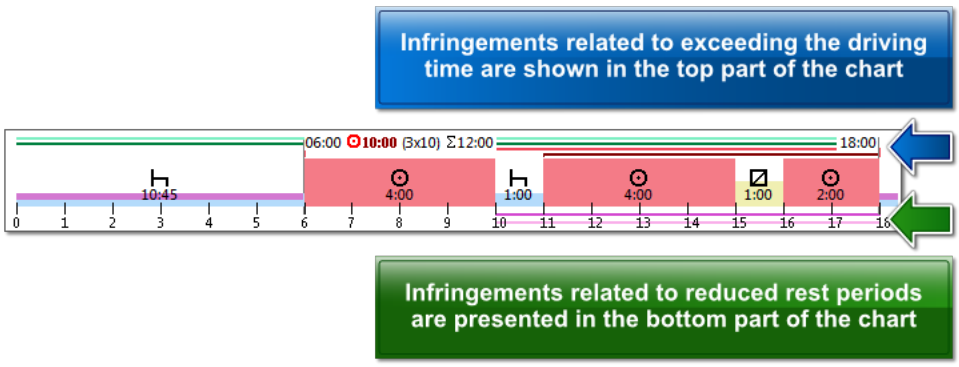


Fig. Place, where the offences detected by the program are displayed.

> *Description of the other markings on the chart can be found in the **Legend** tab.*

"Days" Tab

The **Days** tab shows the sums of four basic events (driving, work, driver's availability, stop) for each day separately.

View/edit days from the driver card/record sheet on weekly chart

From the weekly chart level it is possible to open the view/edit the day from the driver card/ record sheet (for a driver), or to open the day preview window from the digital tachograph 49 (for a vehicle) - from the weekly chart drop-down menu, choose: **Edit day**.

The program will open a preview window for the selected day in a new tab.

Additional options

You can better evaluate particular parts of the chart by enlarging it with: (button under the chart). Use the button to make the chart smaller. The default size of the chart can be regained with .

Chart printout

It is possible to print out the chart. After clicking LPM on the Print button, a pull-down menu will be displayed, with the following options:

- **Print visible week** - displays the print preview for the currently viewed week;
- **Print selected weeks** - displays the print preview for the currently marked weeks (see "Selected area" above);
- **Print entire period** - displays print preview for weeks included in the control period;

Options related with printing the chart:

- **Show legend on the printout** - if this option is marked, the legend will be displayed on the last page of the report;
- **Show activities list on the printout** - after marking this option, a list of actions included in the chart will be displayed under the weekly chart, right above the legend;

6.3.2. Monthly chart

There are 5 consecutive weeks displayed in the monthly chart which provides easier and faster analysis of weekly rests, weekly driving time and fortnightly driving time.

The chart may be accessed in the following ways:

- from the main **Reports** menu, select: **Monthly chart**;
- after pressing the or Monthly chart button in the "weekly chart 74" window and the generation windows for the following reports: "Control report 78" and "Infringements

and manipulations 58".

To activate the report:

- specify driver's name (selected from the list);
- specify time extent,
- press the button: ;

The main features of the monthly chart

1. One week displayed in one line.
2. The whole chart view covers 5 weeks (we can see the whole period of 28 days).
3. an option that enables the display of rest periods only is available:
   - you can select the length of rest periods to be shown in the chart (daily and weekly rest periods are displayed by default);
4. Display of 24/30 hour periods.
5. Display of a 6-day period for taking a weekly rest.
6. Day/weekly rests are drawn differently than in the weekly chart (see the legend).
7. Options/mechanisms taken from the weekly chart:
   - the option of marking any area (dragging the marking to the event edge);
   - displaying the data of a backlit event using the mouse;
   - visualization of the offences;

Chart printout

You can print the chart. When you left-click on the Print button, a drop-down menu appears with the following options:

- **Print actual view** - opens currently displayed month printout preview;
- **Print selected period** - opens currently selected period printout preview (see topic: "Weekly chart -> Selected area 74");
- **Print entire period** - opens printout preview of all the weeks in the controlled range;

Options related to chart printout:

- **Show legend on the printout** - if this option is checked, then the chart legend will be appended to the printout;
- **Show activities list on the printout** - if this option is checked, then all the driver's activities in the printed period will be listed in the printout (right before the legend).

6.3.3. Control report

This report is helpful in understanding the analysis of driving time, time of daily and weekly rest periods and to understand and explain any infringements detected by the program. The report can be called either from the menu: **Reports -> Control report** as well as from the infringements

report generation window: "Infringements and manipulations" when you press the button: 

.

Report construction

- weekly chart of record sheets activities/ driver card days (key on the last page of the report);
- weekly and two-week driving time (for the current and the previous week) with comments on possible cases of exceeding the norms and driving time available next week;
- information on weekly rest periods: the time the rest was used and its duration, possible reduction and compensation, then the number of days between the previous and the current weekly rest period;
- information on daily rest periods: for each day the maximum time of rest and the time of daily rest used are shown. In addition, comments on these times are entered, stating the compliance with Council Regulation (EEC) No 3820/85 or Regulation (EC) No 561. The division into the days is done according to the provisions of the laws;
- daily driving periods: the length of the cycle (daily driving period), the analysis of daily driving time and constant driving time, comments on possible exceeding the norms. The last column shows the penalty amount for the driver and the company according to the fines for infringements;
- on the last page there is the key for the signs used in weekly activities chart.

How to create a report

1. Open the report ("Reports" menu).
2. In the report generation window select:
   - a driver's surname (chosen from the activated list);
   - the period of analysis;
   - select whether the data should be checked according to AETR, AETR (2010) or Reg. 561;
   - Report on the basis of data from::
     - **cards / discs** - control of driver's card data and tacho disks;
     - **tachograph** - control of vehicle data (mass memory data) – after choosing this option the frame shown next becomes active: **Data from digital tachograph** where one can choose what data are to be analyzed:
       - **activities with this driver's card inserted** – only activities recorded in the tachograph with driver card inserted;
       - **all activities from slot 1** – all activities recorded in slot No 1 of the tachograph are verified, regardless of whether the driver's card was inserted or not;
       - **all activities from slot 2** – all activities recorded in slot No 2 of the tachograph are verified, regardless of whether the driver's card was inserted or not;

Options

For a detailed description of other options refer to: "Infringements and manipulations 58" -> Advanced tab.

show weekly chart on the report

After selecting this option, the so-called weekly chart of driver's driving time will be shown at the end of each week section,
(markings of symbols on the chart is the same as on the "weekly visualisation 74").

Colour

As a result of selecting this option, some elements of the report will be presented in several basic colours, otherwise it will be presented in shades of gray.

Legend

After selecting this option, a legend for the weekly chart will be presented in the final section of the report.

Button:

Opens "Weekly chart 74".

Button:

Opens "Monthly chart 77".

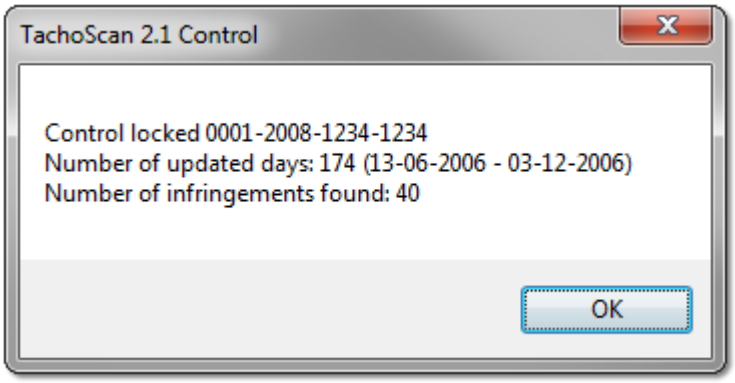
To view the report, use the toolbar buttons (see: Generating reports 85).

7. Locking and exporting of control

After approval and printing out is done, or after copying of reports is finished, we may set about the locking of control. Control locking is necessary for it to be exported.

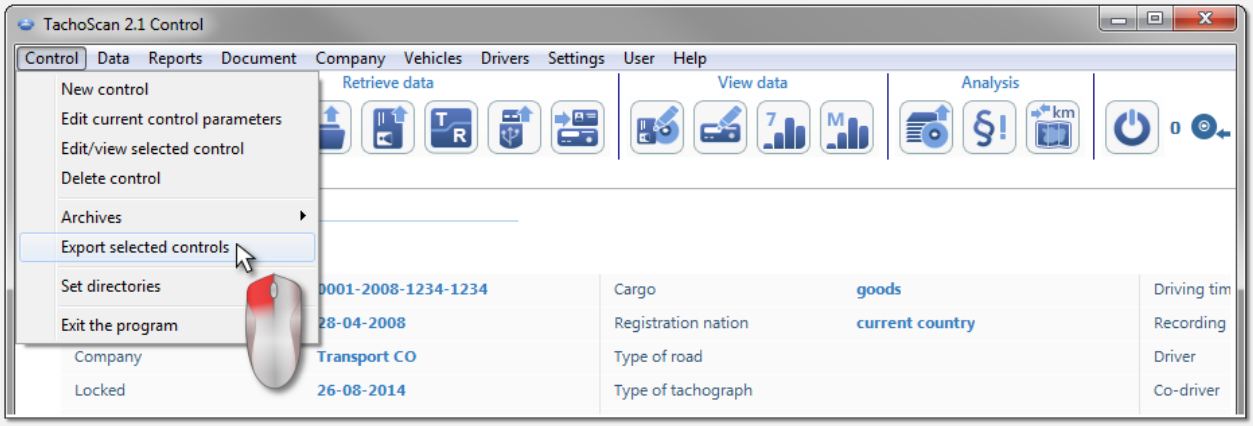
In order to lock control we press the second icon: .

TachoScan displays a window confirming control closing and then a control summary window:



Control exporting

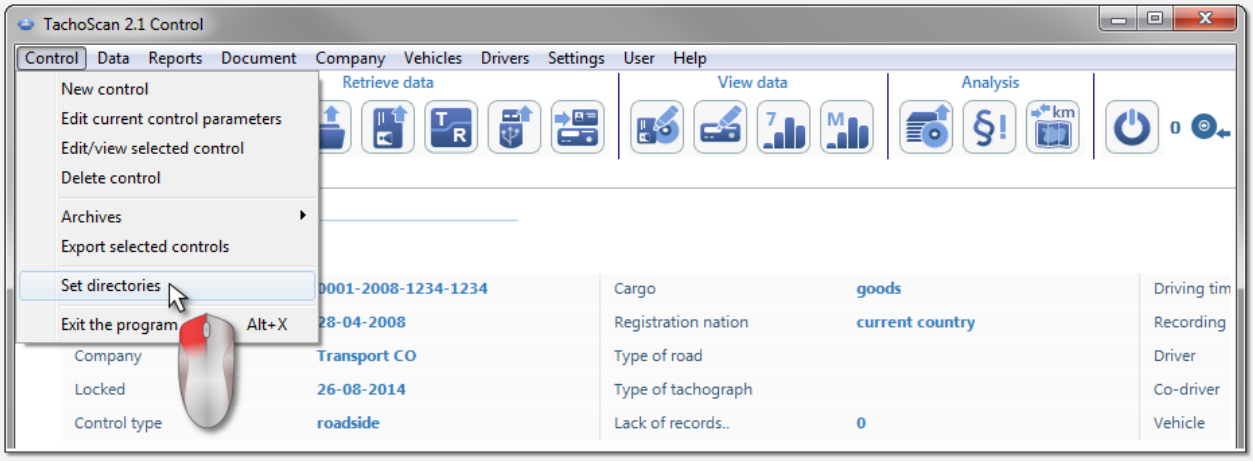
Once they are complete and locked, controls may be exported for archiving purposes. With this purpose in mind, from the **Control** menu we opt for **Export selected controls**.



It is also possible to opt for control exporting from the **Controls menu** window.

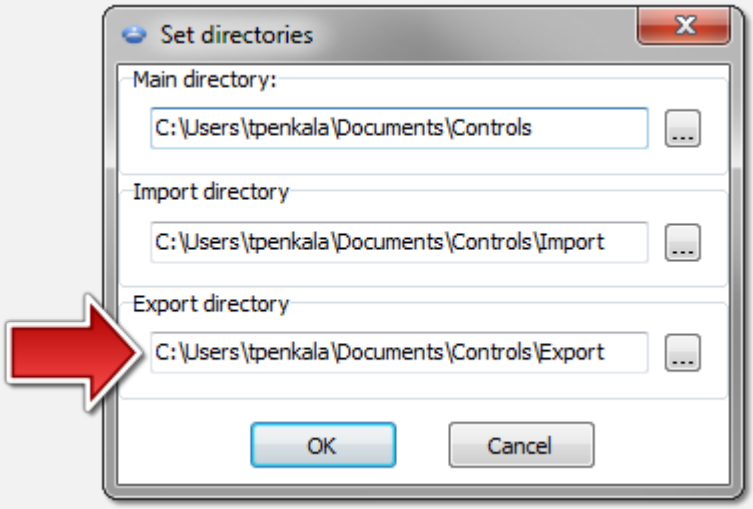
By default, the TachoScan software exports selected controls to the directory: "C: \Documents and Settings\UserName\My documents\Controls\Export".

If we want select another directory for saving exported control, then, we use the **Set directories** option from the TachoScan menu.



One may also set the export directory from **Controls menu** window.

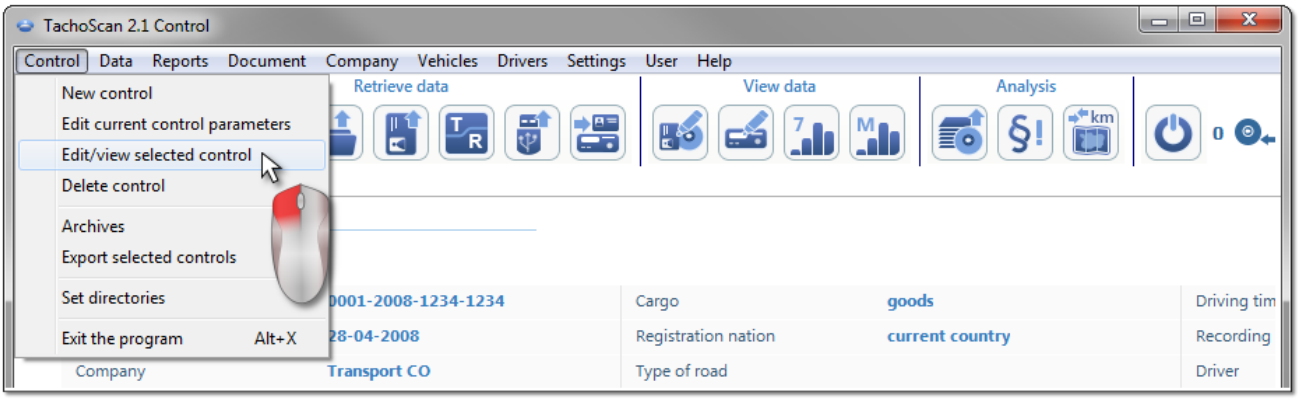
After command is triggered, **Program settings** window shall be displayed, where we may enter in any other location of choice, or with the use of the ... icon, choose another directory.



After exporting if finished, the TachoScan Control software shall save the file in a stated directory with a name containing a given number of control with *.zip extension. This file shall contain all of the data from the performed control.

8. Unlocking and editing of control

In order to view or edit a given already performed control (in the archiving module it may be an imported control), from the **Control** menu one should select the command: **Edit/view selected control**.



Alternatively, we may use relevant option from **Controls menu**.

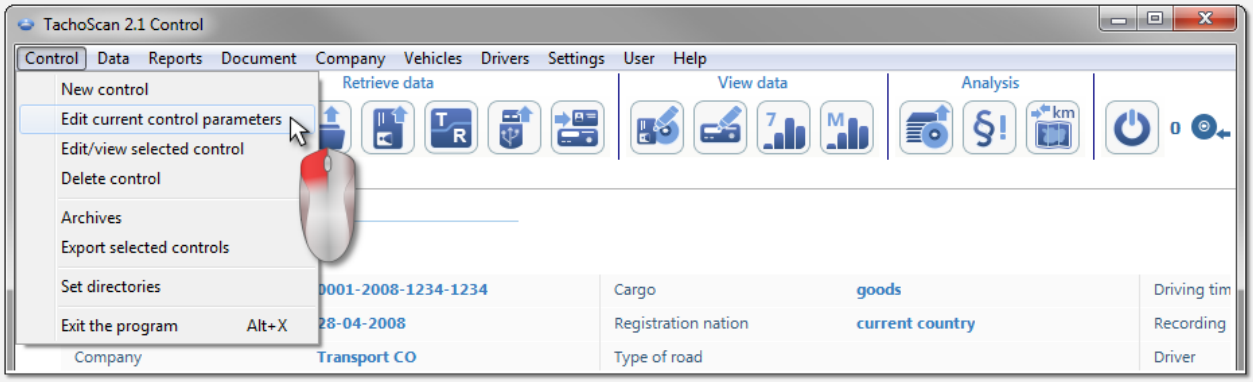
After making our choice, **Select control** window shall be displayed. We mark, then, a given required control and press OK.

If the control is locked, then, we unlock it SOLELY for previewing – data editing is not possible, here.

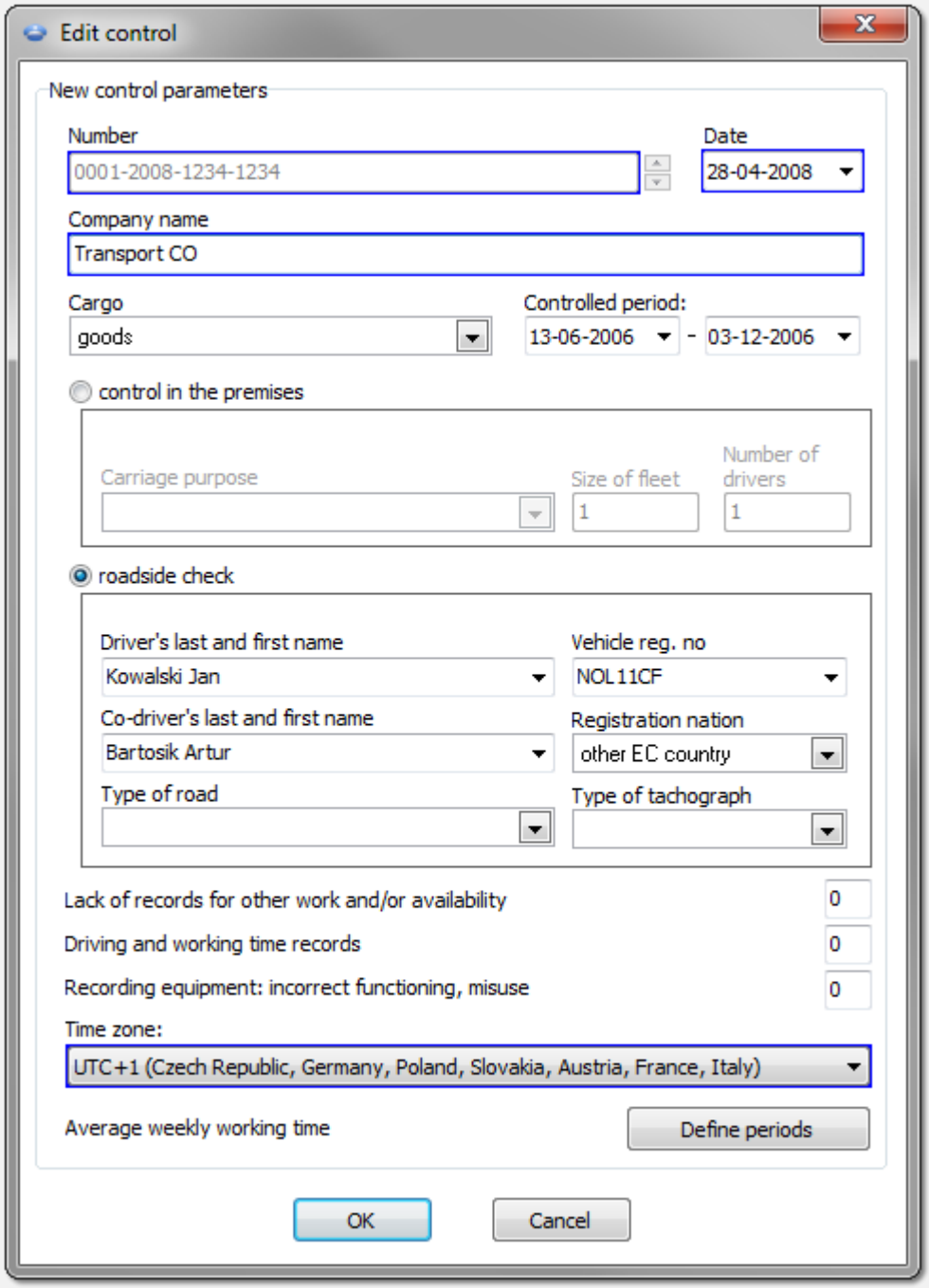
In order to narrow down a given number of controls being displayed on the list, expanded filtering system to the right of the window may be used.

Edit control data

In the **Control** menu, select: **Edit current control parameters**:



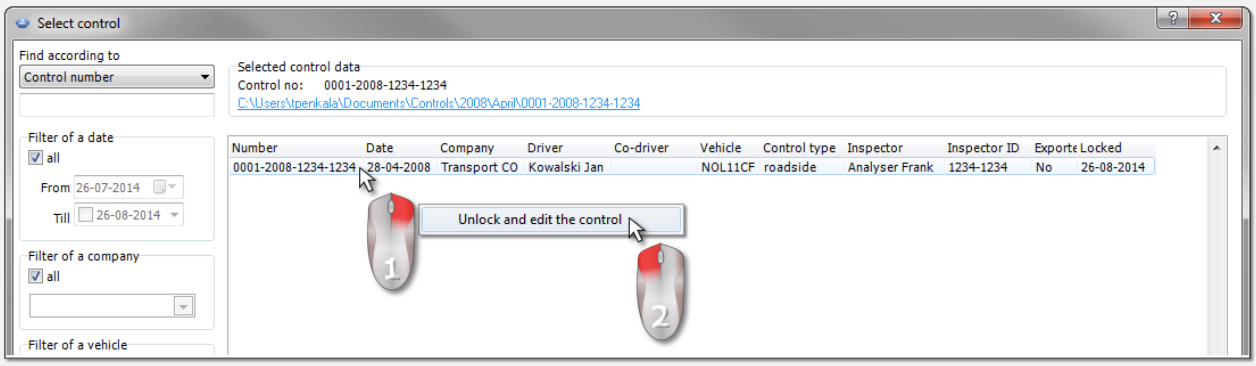
The following window shall appear:



When the "controlled period" is changed, it is necessary to ***download the data from driver's card and/ or digital tachometer again and then to reanalyze the drivers' infringements****.*

Edition of closed control

In order to begin editing a locked control, from **Control** menu we opt for the command **Edit/view selected control**, and then, we right-click with the mouse on the selected control and opt for **Unlock and edit the control** (Fig. bellow).



After generating **Infringements and manipulations** report, you can change the status of infringements.

9. Generating reports

A report can be generated in two ways:

Rys. Pasek narzedziowy okna wywolania raportu.

-  - (Fig. above) - **Generate and close** - when the report is displayed, the window from which the report was generates will be closed;
-  - **Generate** - when the report is displayed, the window from which the report was generates will still be visible,

This option is recommended when displaying several reports of the same type – then, there is no need to close the report preview window to display the same report, for example, for another driver or period.

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