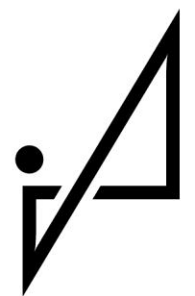


Automatic passenger counting

**IRMA – Infrared MostAccurate
5th Generation**

IRMA MATRIX

Instructions for the "IRMA TestRide - IRMA MATRIX" tool



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INTELLIGENT
SENSORS

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1 Introduction

IRMA TestRide is a tool for determining the counting accuracy. Furthermore the program records sensor data which may help improve the installed system. An intuitive entry mask enables manual recording of the counting results. The comparison between manual and automatic counting data allows a determination of the accuracy of the passenger counting system.

2 Installation

IRMA TestRide is installed using an installation programme. Two variants of this programme are available.

- for user accounts with restricted rights:
IRMA-TestRide_2.5.2.23_Setup_User (or newer version)
- for user accounts with administrator rights:
IRMA-TestRide_2.5.2.23_Setup (or newer version)

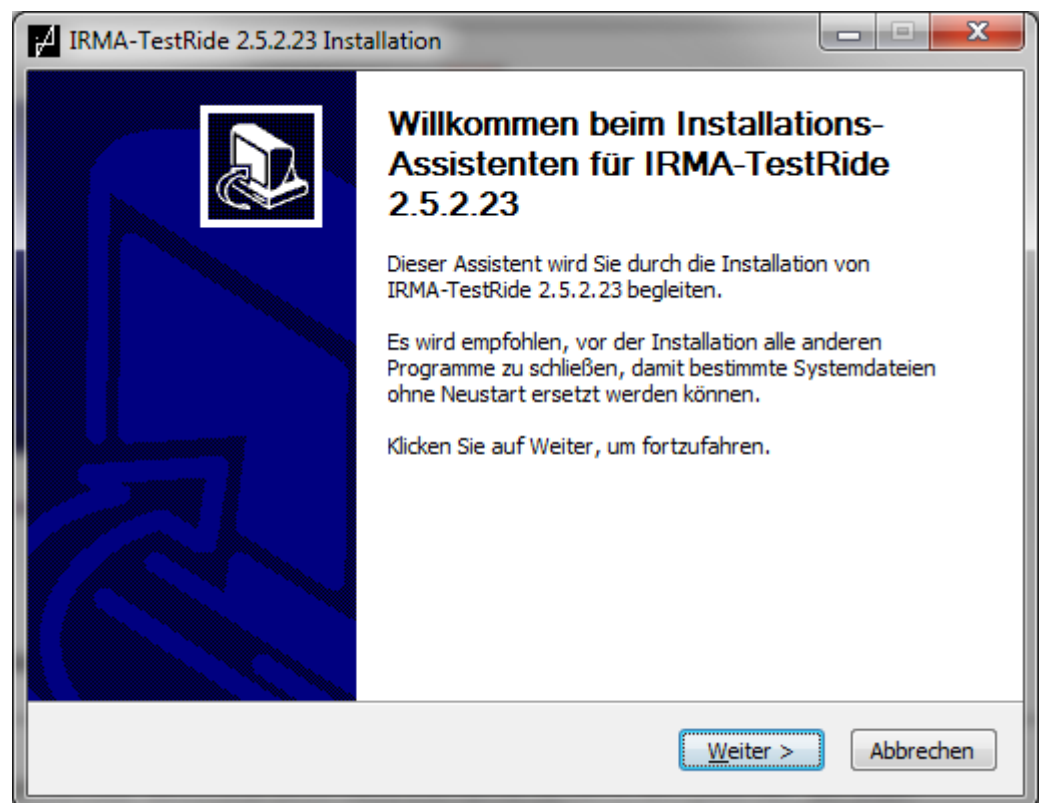


Fig. 1: Installation assistant

The start window of the installation assistant appears. Start the installation by clicking on "Weiter (Next)"; discontinue it by clicking on "Abbrechen (Quit)".

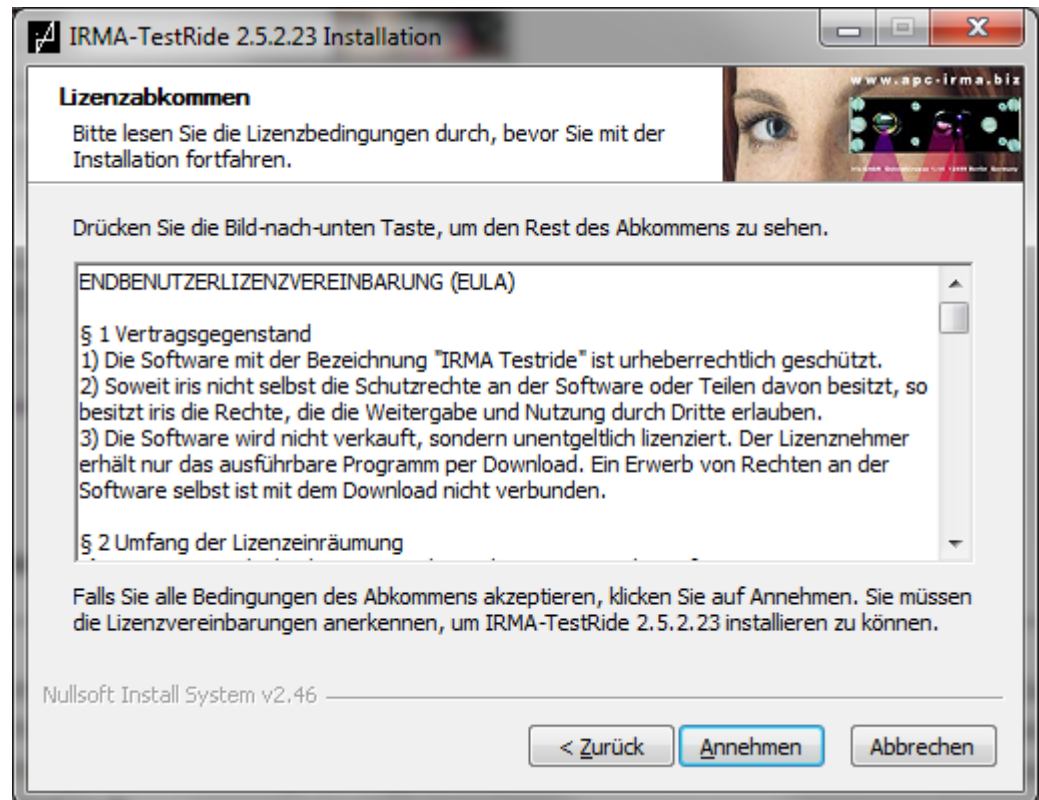


Fig. 2: Licence agreement

The licence agreement for the software terms of use is shown. Press "Annehmen (Accept)" to continue the installation. Pressing "<Zurück (< Back)" takes you to the previous window, "Abbrechen (Quit)" discontinues the installation process.

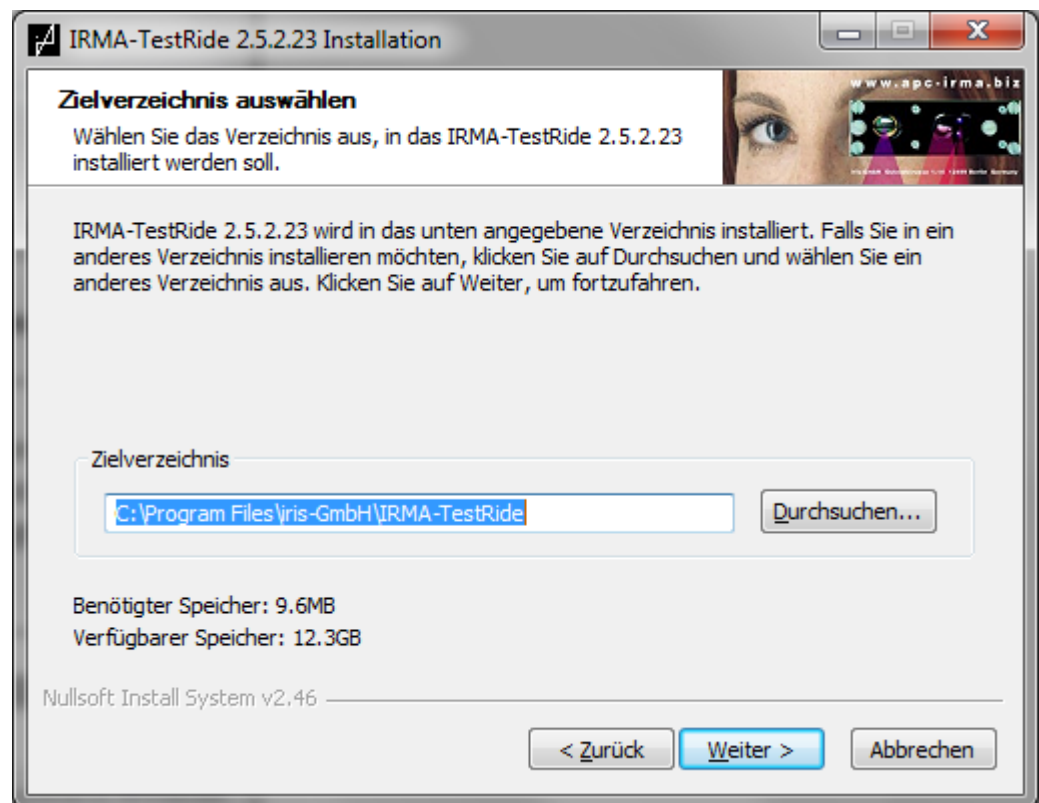
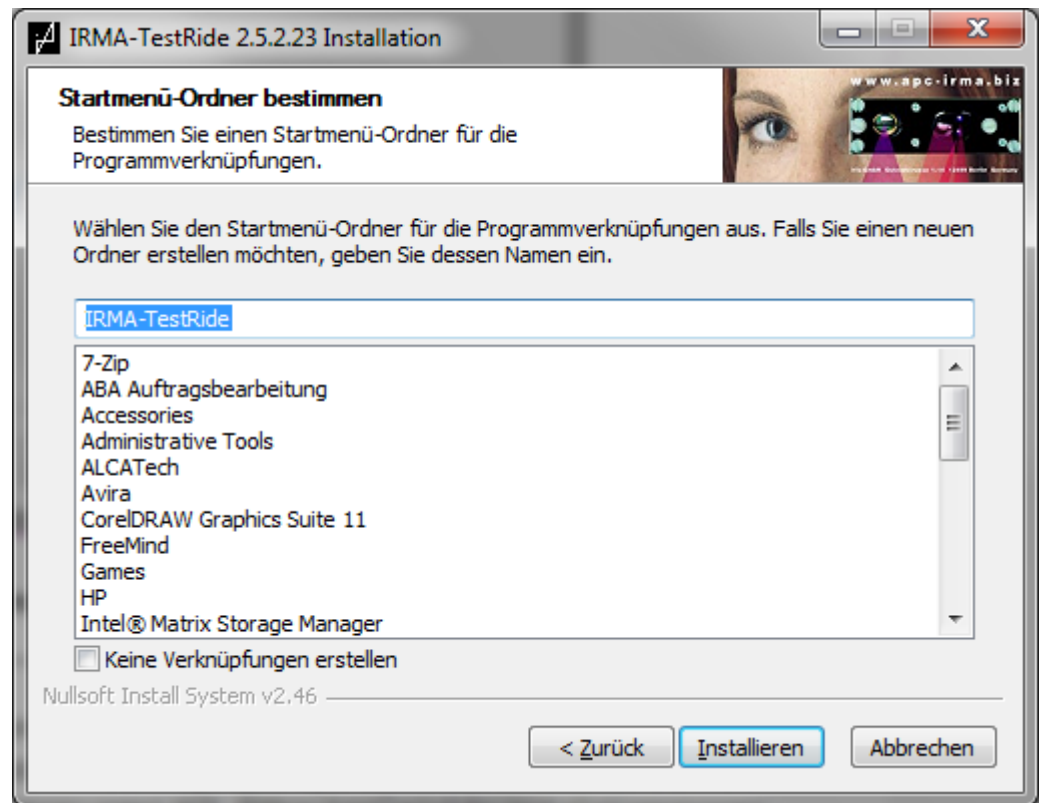


Fig. 3: Select the installation directory

Now you can adjust the installation directory to the necessities or requirements of your installation. Pressing "Weiter > (Next >)" continues the installation, "< Zurück (< Back)" takes you back to the previous window, "Abbrechen (Quit)" discontinues the installation process.

**Fig. 4: Determining the start menu directory**

In this step you can determine the designation in the start menu directory. Pressing "< Zurück (< Back)" takes you to the previous window, "Abbrechen (Quit)" discontinues the installation process.

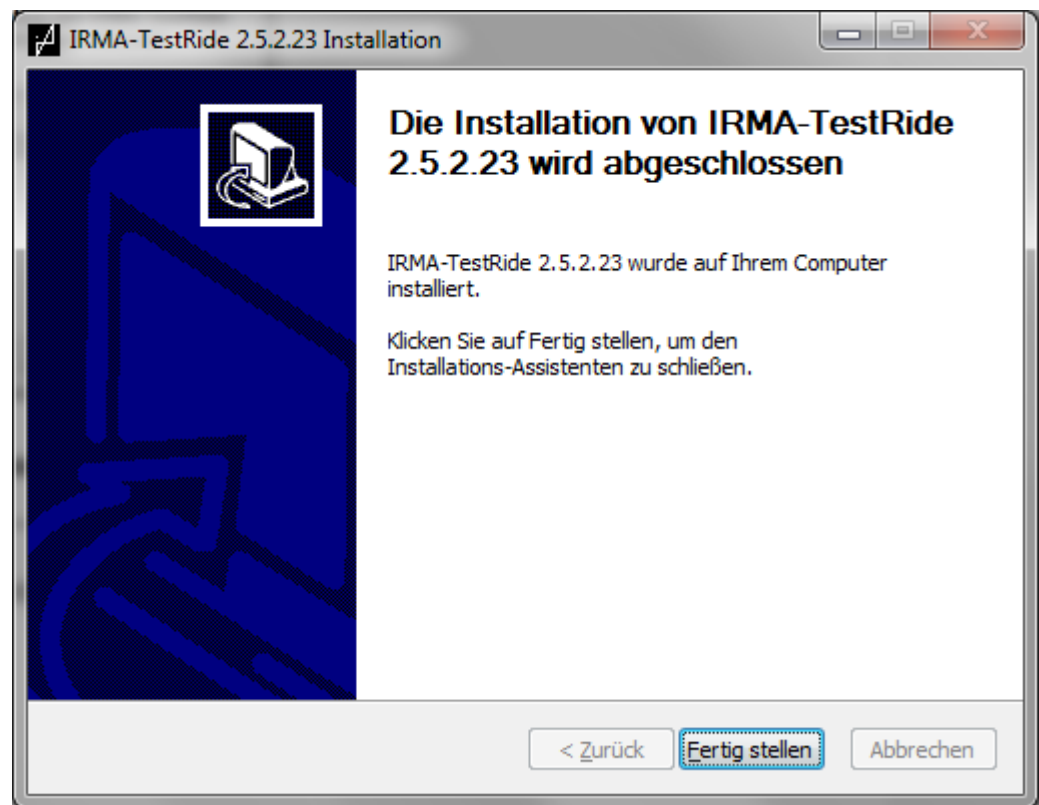


Fig. 5: Installation concluded

IRMA-TestRide was installed. Now you can close the installation assistant by clicking on "Fertig stellen (Finish)".

3 Prerequisites for the test ride

The test ride requires proper installation of the MATRIX system. In addition, you need a notebook with an Ethernet interface (RJ45, 100 Mbit/s). Alternatively - and with restricted functionality (see subsequent explanations) - an RS232 interface (or USB-RS232 converter) are required.

The system can basically be designed in two system variants:



1. Ethernet: All sensors are connected to an Ethernet switch. The sensors receive the message for start or stop of counting from the higher-level system (laptop or on-board computer). The full functionality can be used via Ethernet, i. e. the picture data and counting values of the passenger counting system can be recorded in real time. It is important that the settings of the Ethernet interface of the notebook are correct; otherwise the sensors will not be recognised. See also "IRMA MATRIX Setup manual.pdf".
2. CAN via gateway: All sensors are connected to a gateway (IRIS analyser) via a CAN bus. Only the counting data recorded by the passenger counting system can be recorded by the RS232 service interface. It is not possible to record the picture data from the sensor.

Ensure that the laptop state of charge is sufficient for the entire duration of the planned test ride.

The rules for the test ride are described in the "Manual for test rides with MATRIX sensors".

4 Start of the programme

Start the program via the Windows start menu.

Start-> (All) Programmes -> IRMA-TestRide -> IRMA-TestRide IRMA Matrix

or via the link on the desktop generated during installation.



The language selection dialogue is shown only after initial installation. Select the desired language and confirm your selection by clicking on "OK". Then the main window appears with the request for time synchronisation.

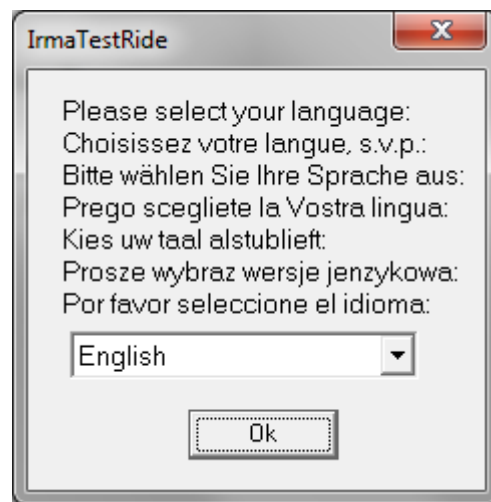


Fig. 6: Language selection dialogue

Then the main window is shown with the "Time synchronisation" message (Fig. 7).

It is important to have PC clock synchronised with the actual time to be able to assign the counting results to the actual door occurrence, e. g. for a check if the counting results are correctly transferred to the back end system (evaluation).

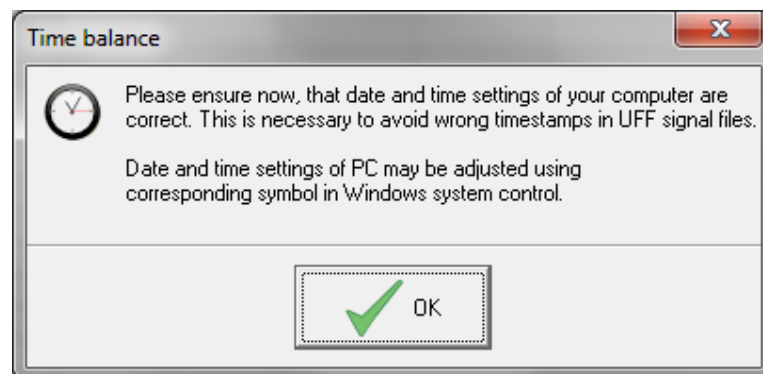


Fig. 7: Information on clock synchronisation

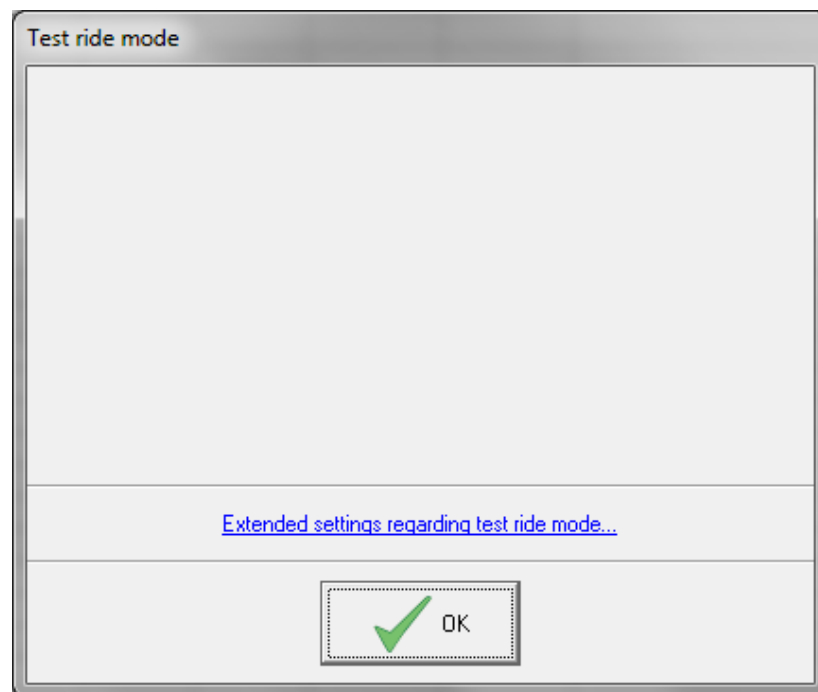


Fig. 9: Settings of the test ride mode

In a completely installed system (see also "Prerequisites for the test ride") all settings are pre-selected so that it is sufficient to click on the "OK" button to start the test ride.

Nevertheless it can be necessary to adjust additional settings.

When you click on the link "Advanced settings for the test ride mode ..." the window opens as shown in Fig. 10.

- **"Test ride (with UFF recording)"** – means that in addition to recording of the counting results the sensor raw data are stored on the PC. For this type of test ride an Ethernet connection to the sensor is required. This mode is the preferred variant as the sensor raw data recorded enable simple improvements of the counting algorithms.
- **"Comparative counting (without UFF recording)"** – means that only the counting data for each stop are recorded. This type of test ride is only possible in a gateway configuration. For recording the PC is connected directly to the service port.
- **"Interface"** – is for information only, the interface is set automatically depending on the first ride mode selected.
- **"Door mode recognition by PC"** – must be activated if the passenger counting system does not receive any information on the door mode or the start or end of the counting activity. If the check box is checked, it is possible to simulate this information with a keystroke or mouse click.
- **"Door mode recording"** – enables logging of times when the door was closed/opened (in the signal file). This option should only be used for a function check after an installation.

It allows you to see if the information on the start/end of counting (e. g. door contact) is available in time, i. e. if you need to set an after-run of the counting action.

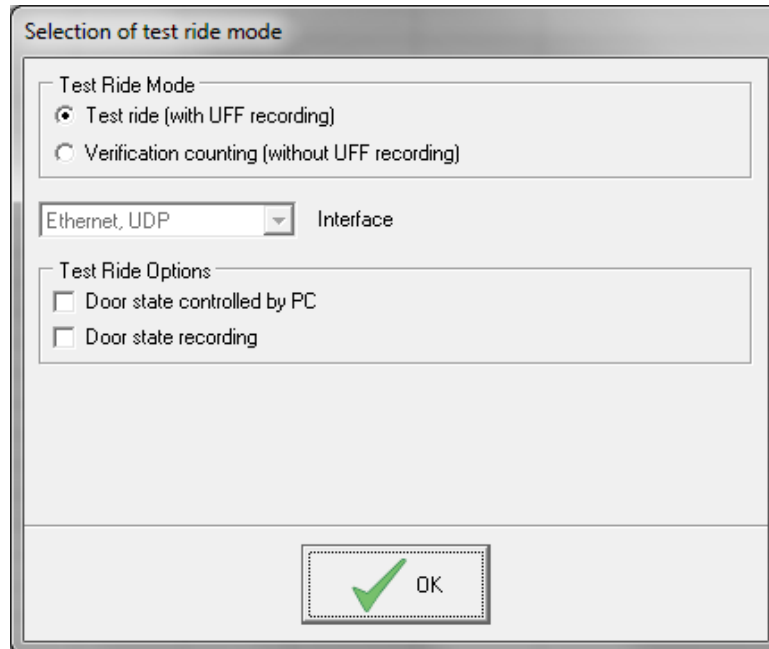


Fig. 10: Selection of test ride mode (here with UFF recording)

Now a form opens which enquires all important information on a test ride. The white fields must be filled in. The only exception is the field "Remarks", which is optional.

Fig. 11: Form "General information"

This is a properly filled-in form (Fig. 12). The entry must be confirmed by clicking on "OK".

Fig. 12: Form "General information" filled in

Now start your test ride.

If there are several doors, the function keys (F1 to F4) allow you to switch between doors. Clicking in the tab of a door also takes you to this door.

The columns "Manual on" and "Manual off" and "Remarks" are filled in for each door.

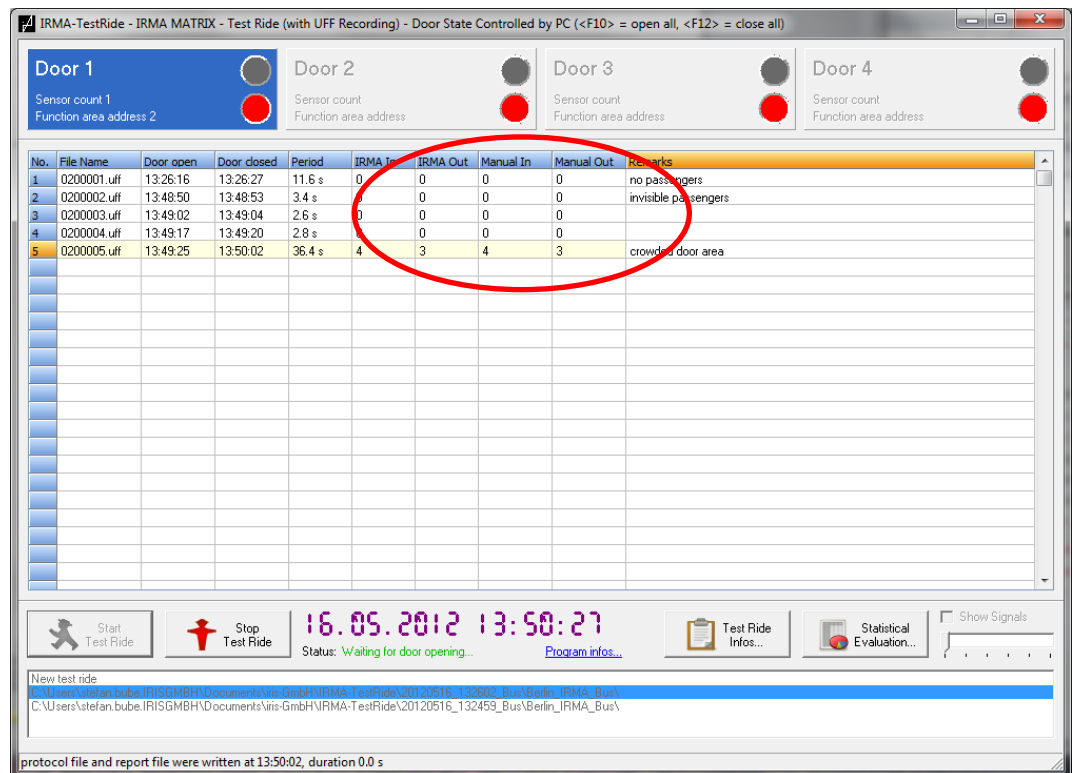


Fig. 13: Main window during a test ride

You can simulate the opening and closing of the doors also using IRMA TestRide. For this purpose click on the greyed-out buttons or press keys "Y" and "C". For this you must have checked the option "Door mode recognition by PC" in the test ride selection dialogue (Fig. 10).

If the red button is active (Figure 14: Door closed), the door is closed.
>> No counting!

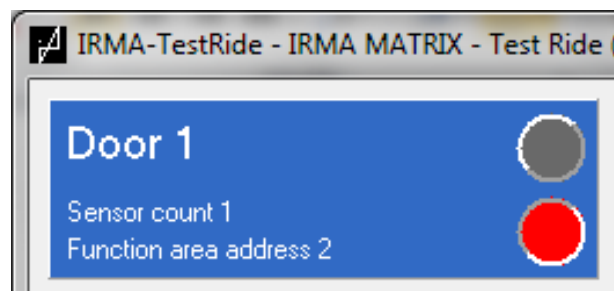


Figure 14: Door closed

If the green button is active (Fig. 15: Door open), the door is open.
>> Passenger counting, sensor active!

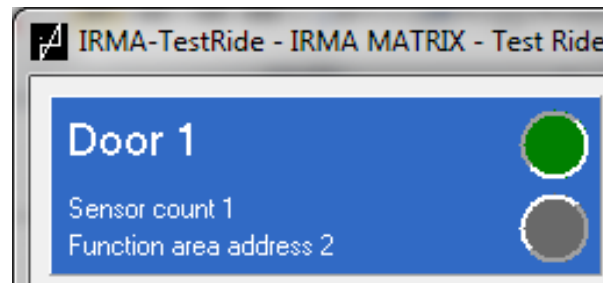


Fig. 15: Door open

6 Continuation of test ride

For continuing a test ride, select the test ride interrupted or discontinued before, as shown in Fig. 16, and continue it by clicking on "Start test ride".

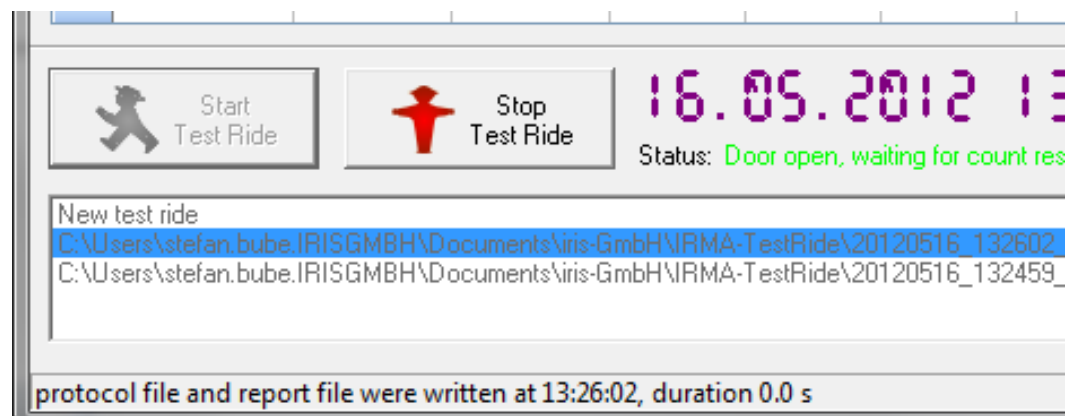


Fig. 16: Test ride selection

7 Additional functions

When clicking on the button "Statistical evaluation" the following window opens. The statistical evaluation is a basic evaluation of the counting accuracy based on the comparison of the manually recorded counting data and the automatic counting results of

the passenger counting system. Of course the evaluation requires correct data entry. Missing entries are assessed as "0".

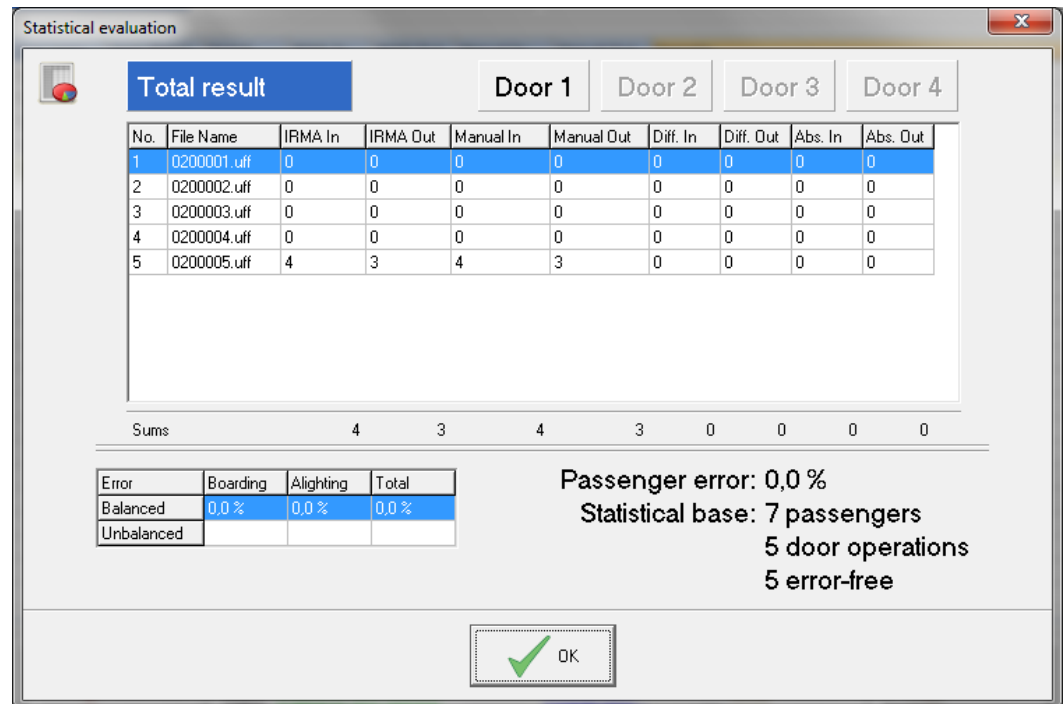


Fig. 17: Statistical accuracy evaluation

8 Error messages

If there is no functional sensor connected to the system, the message shown in Fig. 18 appears. All relevant connections must be checked. In addition it must be checked that the voltage supply is reliable and stable.

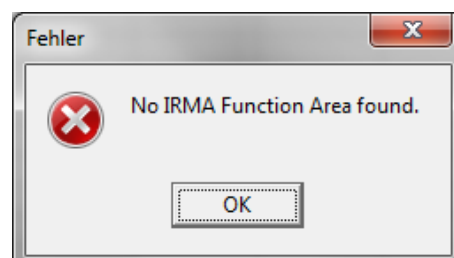


Fig. 18: Error message, if no sensor is detected

If any of the white fields in Form "General information" (see also 5 Start of the test ride) is not filled in, the following error message is displayed.

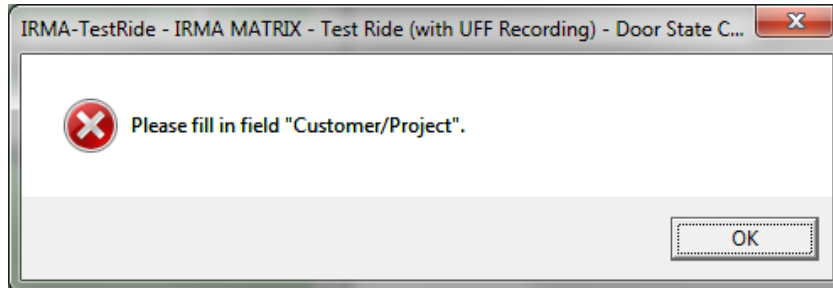


Fig. 19: Message if Form "General information" was not properly filled in
