



FITRO SWORD

Operating manual

I. SYSTEM DESCRIPTION

The system allows measurement of reaction time to randomly generated stimuli on the screen. The main task of subjects is to respond, as fast as possible, to stimulus according to its position on the screen. The system offers a variety of test setting, such as time generation (constant or random), number of stimuli and their forms. Besides assessment, the system can be applied for practicing of speed of reactions in fencing.

II. INSTALLATION OF THE SYSTEM

Stands with registration bars for start and reflexion bar connect into corresponding socket on interface. Should the target be used in a test, this also has to be connected. Weapon should be connected using reduction included. Connect interface using USB cable into USB port of the computer.

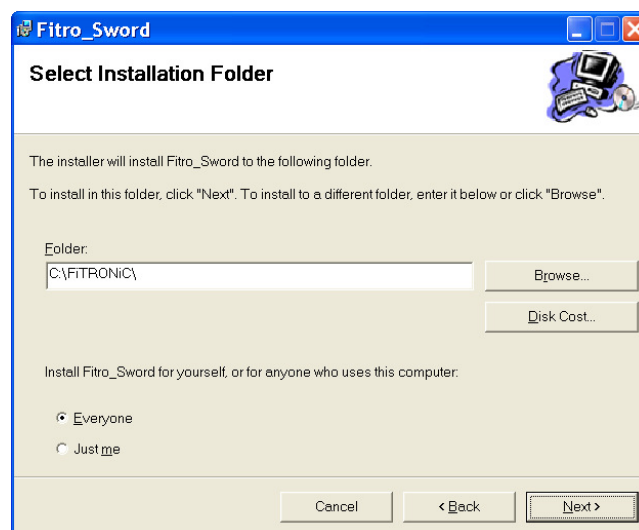
III. INSTALLATION AND RUNNING THE PROGRAM

1. FiTRO-Sword program installation

Insert installation CD into CD or DVD drive and run stup.exe.

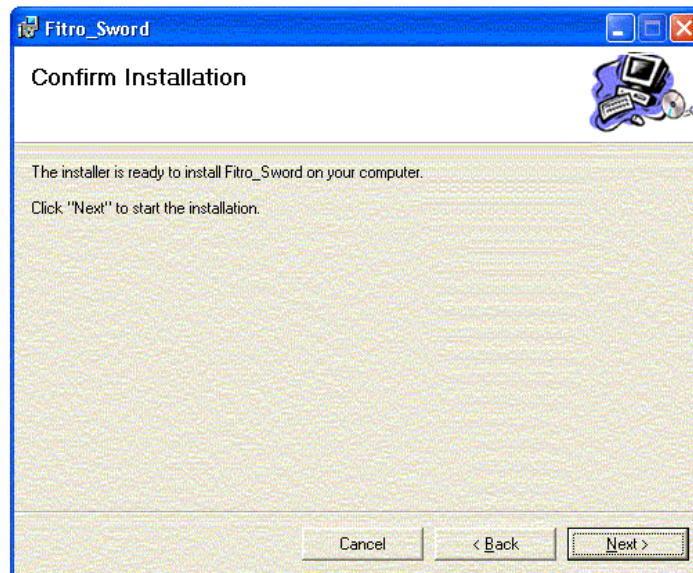


For installation FiTRO_Sword program, click Next.

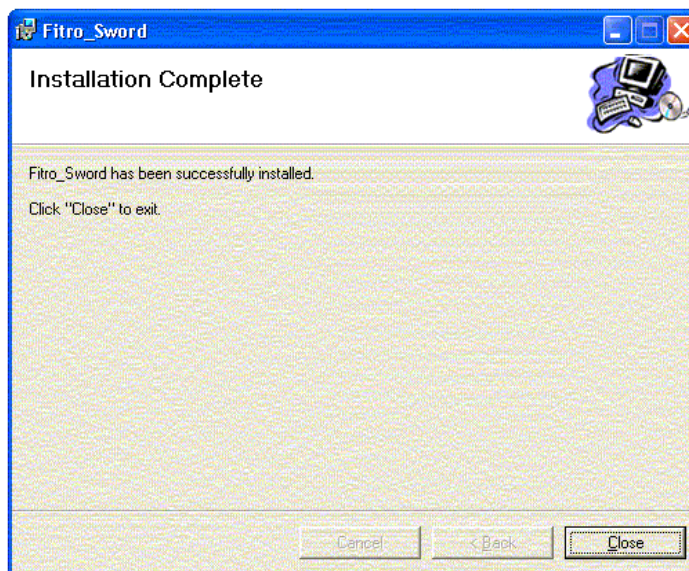


Installation program offers specification of directory, to which program should be installed. Default option is **c:\FiTRONiC**.

The majority of FiTRONiC diagnostic programs use a mutual database of measured subjects and the measured data are stored in the \Fitronic\Data\ folder. Therefore, when installing several programs, it is necessary to select the same folder for installation. It is not recommended to use Windows standard folder for installation of **Program Files**, because the active protection of Windows Vista and Windows7 does not allow storing user data in this folder. The selection of folder is confirmed by clicking NEXT, the confirm installation window will appear.



Click NEXT to start the installation.



Click Close to finish the installation.

To start the program click on the icon Fitro_Sword on the desktop or alternatively through Start/programs/FiTRONiC/FiTRO_Sword (double click on the icon).

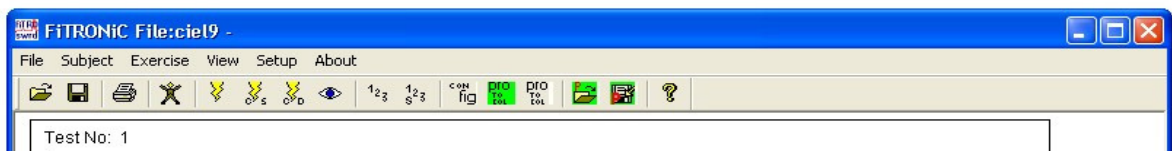
2. USB driver installation

Connect the interface to a USB port of the computer. At the first connection, Windows will announce that a new device (FiTRO Sword) was found. Follow the instructions in a “Special guide for adding a new device” to install the drivers from the installation CD. After successful installation the device is ready for measurement. Detailed process of installation of the drivers for operating systems Windows XP, Windows Vista and Windows7 is in the attachment (“Special guide for adding a new device”).

If you connect the interface into another USB port (there are usually more in a PC) next time, it is possible that the operating system will announce a new device again and require installation of the drivers. This should, however, run automatically without inserting the installation CD. The driver is the same for all FiTRO diagnostic devices, once it is installed, the interface should work at the first connection also without installation of the drivers.

IV. RUNNING THE PROGRAM

Starting the program opens the main menu with the horizontal toolbar.



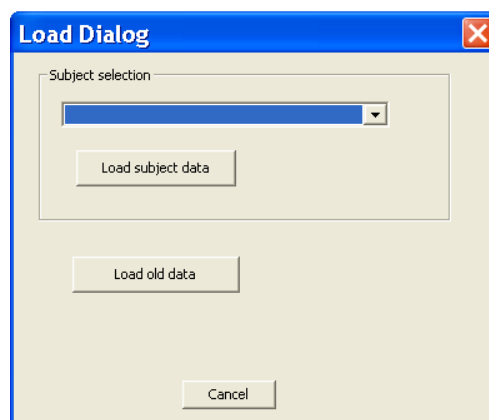
Under main menu is toolbar with icons allowing to start required function.

Program routines (with the exception of Measurement) can be used without connection of the interface.

1. FILE

1.1. OPEN

Allows reading stored data into memory and further processing of these data in a subprogram View. By clicking **Load subject data**, a list of subjects appears, created through Subject dialog and a file for opening is selected according to the date of the measurement. If some data were stored outside of the default set folder for data, it is possible to open them after clicking **Load old data**. Measurement files are ending in .swd.



Stores data in memory. Should you use the name already on the disk, the system shows warning (OVERWRITE? YES/NO).

1.3. PRINT

Prints digital and/or graphical data.

1.4. PRINT PREVIEW

Preview of data on the paper before printing.

1.5. PRINT SETUP

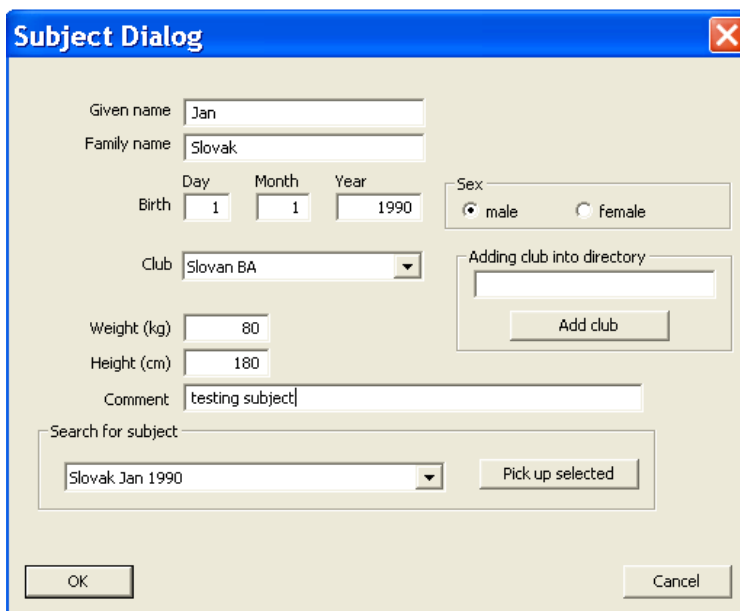
Sets up the printer.

1.6. EXIT

Closes the program.

2. SUBJECT INFORMATION

Here you put in information about a person tested: given name, family name, date of birth, sex, height and weight. There is also a column for your own comment. The information will be stored after measurement together with results into a corresponding folder.



For an easier orientation within the data, a hierarchic arrangement of the data is suggested in FiTRONiC programs. While inputting new subject information, the following items are obligatory: **Given name, Family name and Birth Year**. These entries are used when creating a folder for the person tested. In the example above, a folder Slovak_Jan_1990 is created. Next subfolders will be consecutively created in this folder for FiTRONiC system applications. In particular subfolders e.g. SWORD, GATES, AGILITY, JUMPER, PREMIUM etc., a subfolder YYYY_MM_DD will be created according to the date for each testing day, where all files for a given subject measured that particular day will be stored. In case there are already some data recorded for a given subject, it is necessary to search for it through **Search for subject** window and select it into the displayed dialog. So you can retrieve once inserted data for any application. A list of clubs is created as well in the main data folder, which can be extended in the **Adding club into directory** window. By inserting the club name and subsequent adding through the Add club button, the club name is added into the list of clubs and can be found and selected again for a corresponding subject in the Club

window. In the ...\\FiTRONiC\\DATA\\ folder, a clubs.xml file is created, which can be edited when needed (deleting clubs we do not need).

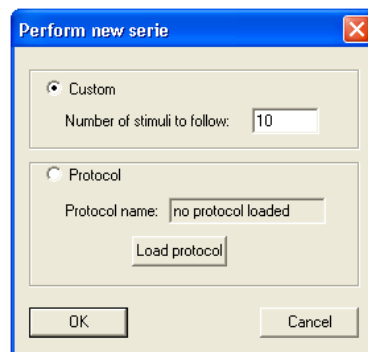
After data insertion you can return to the main menu by clicking OK. It is possible to add the optional data later – after measurement before saving the file.

3. EXERCISE

3.1. Perform new serie

After entering the option one may specify the way in which stimuli should be generated. There are two alternatives: “**Custom configuration**” or “**Protocol**”.

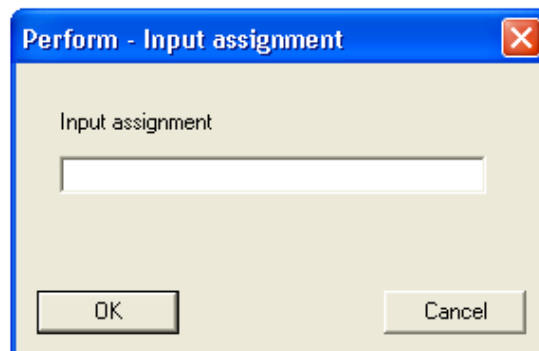
Option “**Custom configuration**” facilitates modification of number of stimuli just before the measurement routine. If the option “**Protocol**” is chosen, the number is given by a chosen program.



Click OK, and in the following window click Start

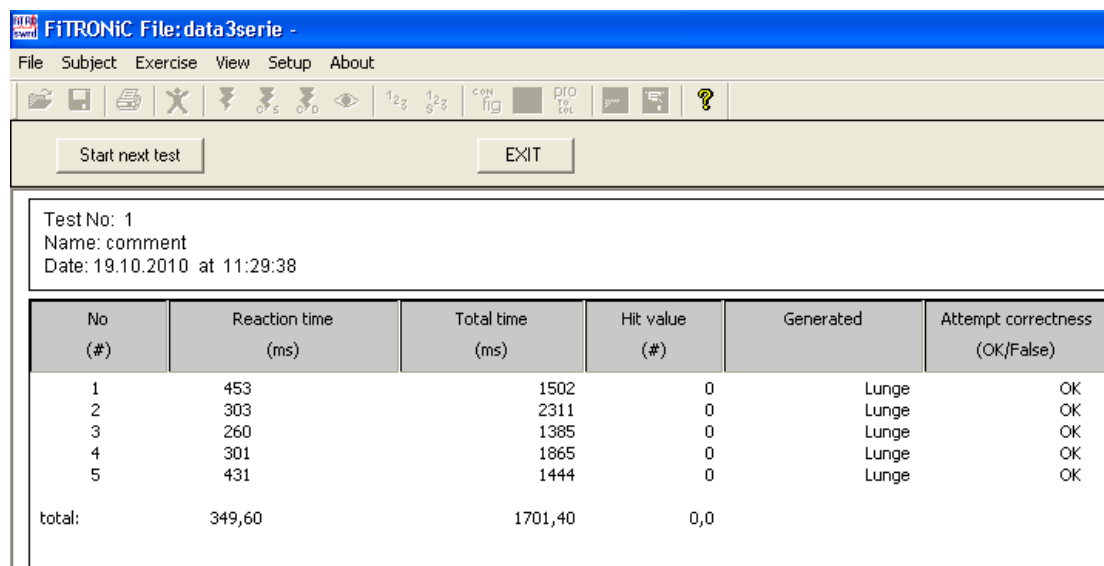


A window will appear allowing to input a comment to a following measurement e.g. set measurement conditions. This will appear then in the report of a corresponding serie.



After click OK putting the weapon to the position **START**, the color of background will be changed from white to black and the stimulus in form of circle in the middle of the screen will be generated. After hitting the target, the reaction time appears on the screen – time from appearing the stimulus on the screen to leaving the position **START** and resulting time from leaving the position **START** to hitting the target, as well as its score. Repeated putting the weapon to the position of **START** starts measurement of successive trial.

Summary after accomplishing the test includes name, date, time of the test, information on conditions of the test (Protocol or Custom configuration), and reaction time of each trial.



The screenshot shows the FiTRONiC software window titled 'FiTRONiC File: data3serie'. The interface includes a menu bar (File, Subject, Exercise, View, Setup, About), a toolbar with various icons, and two buttons: 'Start next test' and 'EXIT'. Below the buttons, a text box displays test details: 'Test No: 1', 'Name: comment', and 'Date: 19.10.2010 at 11:29:38'. A table below the text box shows the results of five trials, with a total row at the bottom.

No (#)	Reaction time (ms)	Total time (ms)	Hit value (#)	Generated	Attempt correctness (OK/False)
1	453	1502	0	Lunge	OK
2	303	2311	0	Lunge	OK
3	260	1385	0	Lunge	OK
4	301	1865	0	Lunge	OK
5	431	1444	0	Lunge	OK
total:	349,60	1701,40	0,0		

After measurement it is possible to continue with another serie by clicking “Start next test” or finish measurement by clicking “Exit”.

It is possible to save measured data using procedure **SAVE** (program module FILE). To avoid possible loss of data, this procedure appears automatically before the next measurement routine. It is possible to skip it (and thus delete the data from the memory) by repetitive pressing ENTER.

3.2. Continue with same subject

This is used for a measurement with the same subject, if we have data from a previous measurement or from an open file in memory. New data will be added to the previous one (ones), i.e. if there are 3 trials measured, trial no. 4 will follow. In this case the measurement conditions in the original setting will be used – protocol or custom configuration and it is not possible to change them.

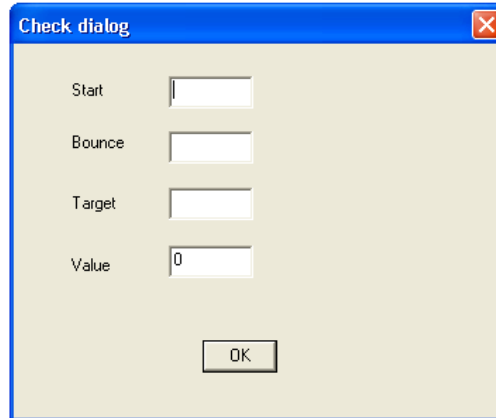
3.3. Continue with different subject

This is used for a measurement with a subject, which we already measured once and the results are stored on the disk. The program will require opening of the corresponding file. It is useful for speeding up the work when measuring a group of subjects. New measured data will be added to the previous ones.

3.4 CHECK

Use to check correct connection of weapon, senzore and function of the system. After activation test page will be displayed and particular interface inputs evaluated. Correct function of the input while touching the START , BOUNCE and TARGET will be indicated by OK in corresponding windows.

If system does not respond, check connection.



4. VIEW

Enables analysis of stored data.

4.1 RESPONSE BY RESPONSE

Displays measured and calculated data in digital form of each reaction

Test No: 1
 Name: Slovak Jan
 Date: 27.06.2011 at 15:38:33
 Test: Custom Random

No (#)	Reaction time (ms)	Total time (ms)	Hit value (#)	Generated	Attempt correctness (OK/False)
1	743	1050	4	Lunge	OK
2	609	433	5	Lunge	OK
3	579	1282	3	Bounce and Lunge	OK
4	0	0	0	No reaction	OK
5	474	841	3	Lunge	OK
6	639	406	3	Lunge	OK
7	370	500	5	Lunge	OK
8	465	489	4	Lunge	OK
9	0	0	0	No reaction	OK
10	287	1003	3	Bounce and Lunge	OK
total:	520,75	750,50	3,8		

4.2 VIEW- SERIE REPORT

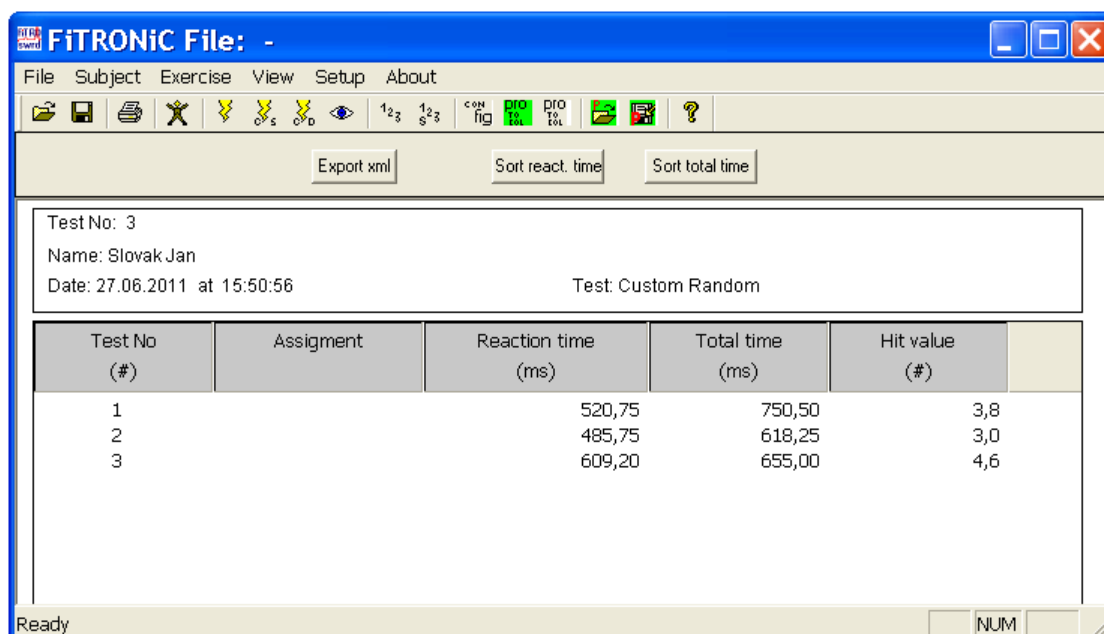
If there are more series measured, a corresponding one is selected in the window with a scrolling list.

Reaction time is the time elapsed between the stimulus display and the moment, when the weapon leaves starting position. **Total time** is the time till hit, **Hit value** is the value hit on the target. Next there is a type of generated stimuli and accuracy of the reaction displayed, if the reaction is incorrect, the corresponding row is highlighted red.

In the lower row **total**, there are average values of correct reactions displayed.

By clicking any row, this will turn blue and it is possible to delete it by clicking **Delete**, if, for example, some error occurred during measurement.

Export xml button will create a transmitting data file for further processing with an affix .xml, if there is MS Excel installed in the computer, it will open and the data will be transferred automatically.



Average values from all series will appear here also with the commentary, which was inserted before each serie measurement. It is possible to sort the data according to reaction time- **Sort react. time** or total time- **Sort total time**.

5. SETUP

5.1. CUSTOM CONFIGURATION

Option enables to specify the test with randomly generated stimuli. Put the number of stimuli into the first window - **No of Test stimuli** and in the second one choose the way of its generation (after fixed or random time period) - **Fixed time or Random time**. Value of fixed period (**Fixed Time**), or top and bottom bounds of range of interval for random time generation are to be filled into the following windows (**Random Time Limits - Lower and Upper**).

5.3. EDIT PROTOCOL 

Allows opening a created and stored protocol and its editing.

5.4. OPEN PROTOCOL 

Opens a stored protocol, which will be used for generation of stimuli in measuring.

5.5. SAVE PROTOCOL 

Stores created protocol to the disk.

6. ABOUT 

Displays information about the program version and copyright.

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