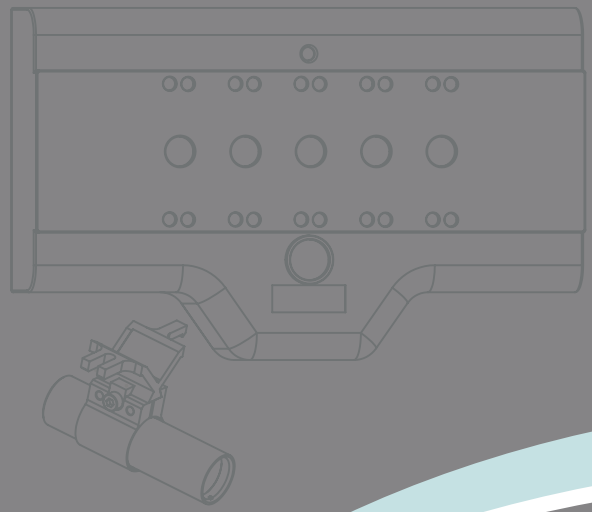
SCATT
SHOOTER TRAINING SYSTEMS

SCATT Biathlon
shooting trainer
User's Manual



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Please read the User's Manual before installation, operation, and / or adjusting the SCATT system. Please save the manual for future reference.

Dear Customer
Thank you for purchasing our training system.
Please read this manual to is end to secure safety and best quality of system's operation.

SAFETY

Risk-free infrared rays are used in this device.
Equipment safe for your health.

Position

Avoid installation in places subject to:
• direct sunlight
• high temperatures
• high humidity
• strong vibrations
These conditions can damage your device or its components or limiting the working time of your trainer.
Do not put heavy objects on top of the device and cables,
avoid bending cables with a bend radius of less than 10 mm.

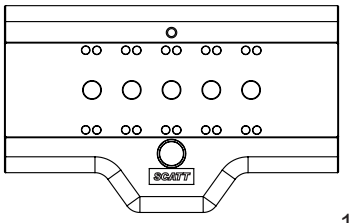
Attention
All component parts and accessories must be repaired professionals, Please don't attempt to fix them at home.
If technical issues arise please contact our customer support for qualified service.

Content

Accessories

Please check and identify all supplied accessories

1. Electronic target (Model: SBT-5)
2. Electronic target control unit (Model: WTC-01)
3. Optical sensor (this system can be supplied with one of two models of optical sensors)
   - Mode: OS-02
   - Model: WS-03
4. Mounting parts kit
5. Software CD
6. User's guide
7. Optical sensor connection / charging cable
8. Electronic target control unit interface cable
9. Electronic target interface cable



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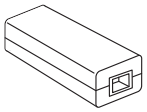

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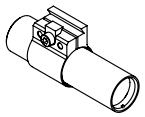

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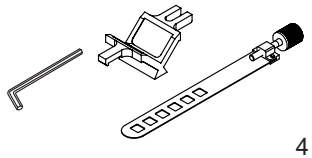

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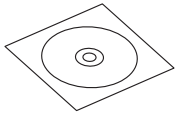

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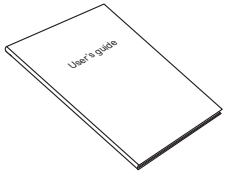

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System installation

Software setup

Before using SCATT system, you need to install SCATT drivers and software.

Insert the CD (provided with your kit) in the CD-ROM drive, Then find and run the SCATT-BIATHLON-SETUP.EXE and SCATT-DRIVER-SETUP.EXE files and follow instructions on the screen *(Fig. 1)*.

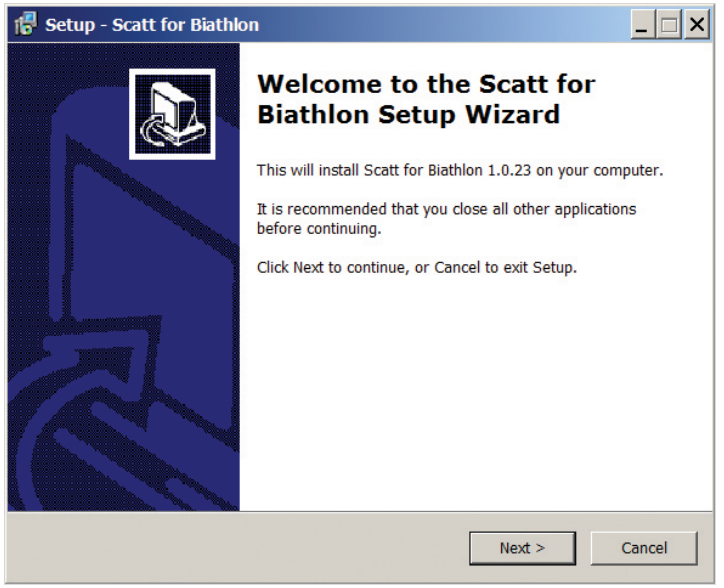


Fig. 1

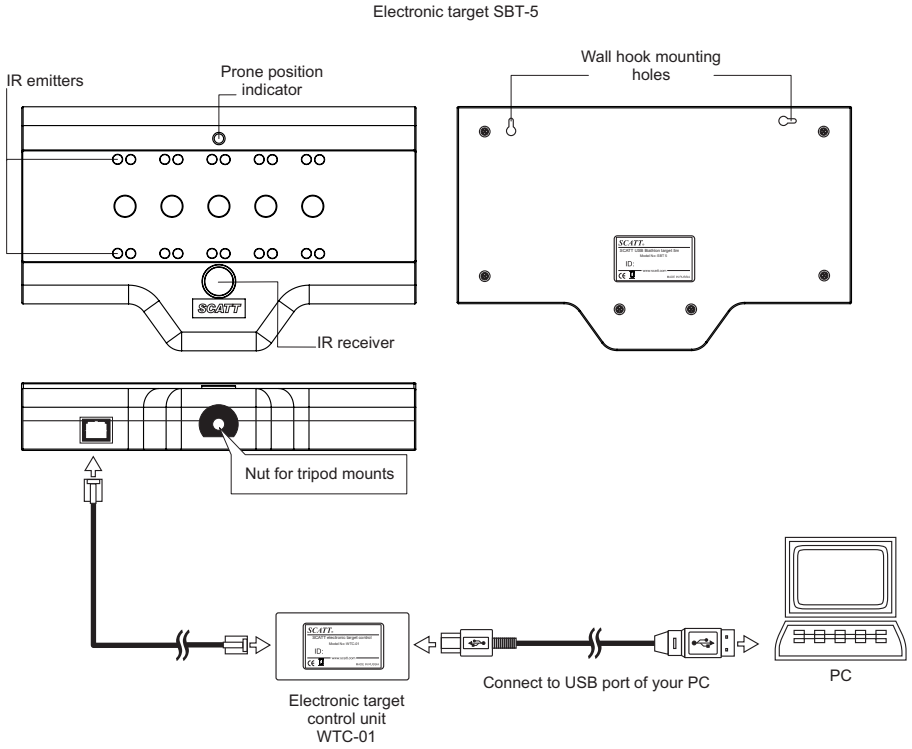
Install drivers before attaching SCATT devices to the computer, then attach all devices one by one *(Page 6)*.

While all necessary software is included on CD, we recommended to download latest versions of software from http://www.scatt.com

System installation

Electronic target installation

Install the electronic target on a photo tripod or mount it on a wall at a distance of 5 meters. Make sure that IR emitters will be facing the shooter.

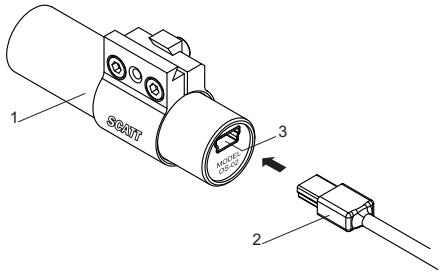


Connect the electronic target to your computer< as shown on the scheme.
The computer will identify a new USB device and automatically find driver.

Optical sensor OS-02 / WS-03 installation

OS-02 optical sensor connection

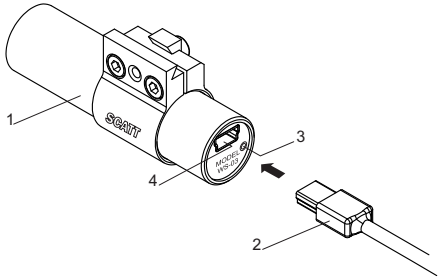
Connect optical sensor model OS-02 to USB port of your computer by standard USB A - mini B type cable (included with your kit).



1 - Optical sensor OS-02
2 - USB A - mini B cable
3 - USB connector

WS-03 optical sensor connection

Optical sensor has two-way infrared connection to electronic target. Sensor has a built-in battery and can be recharged from USB port of your computer. Full charging cycle is 1.5 hours. Operate time from fully charged battery aproximately 30 hours of non-stop aiming or 10.000 shots (with an average aiming time 10 sec. per shot).
In case of non-use, the sensor automatically switches to sleep mode.



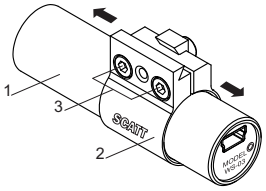
1 - Optical sensor WS-03
2 - USB A - mini B cable (for charging)
3 - LED charging indicator
*4 - USB connector**

*SCATT trigger sensor (not included in the set) can be plugged into the USB connector of WS-03 optical sensor.

Clamp position adjusting

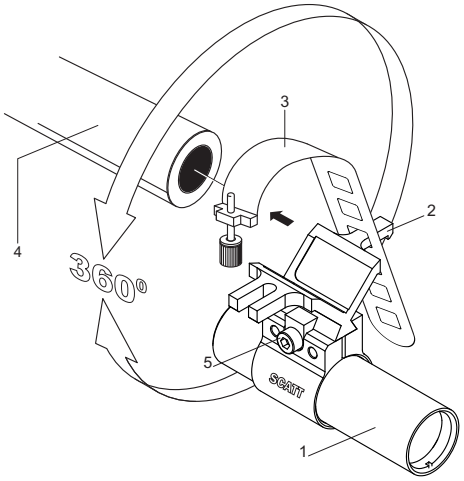
You can change clamp position on optical sensor body.

1 - Optical sensor body
2 - Clamp
3 - Clamp fixing screw



System installation

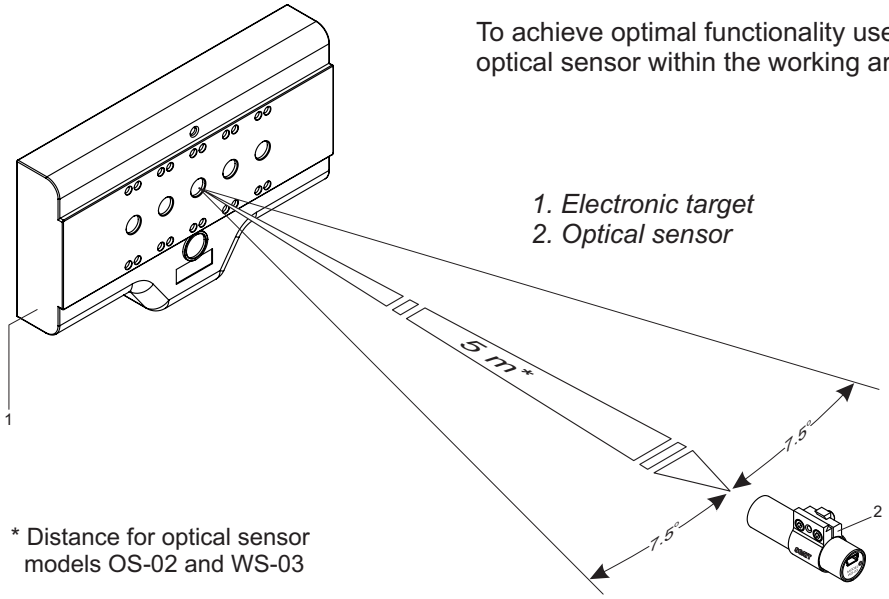
Installation sensor on the barrel



The optical sensor is mounted on the barrel or another part of the gun and is attached via the mounting prism and adjustable metal strip.

1 - Optical sensor
2 - Mounting prism
3 - Adjustable strip with screw
4 - Barrel
5 - Tightening screw

Optical sensor capture area



To achieve optimal functionality use the optical sensor within the working area.

1. Electronic target
2. Optical sensor

* Distance for optical sensor models OS-02 and WS-03

Operating SCATT

Starting practice

To start training, push "**Start**" button, in opened window tape shooter name and press "**Add**" button *(Fig. 2)*.

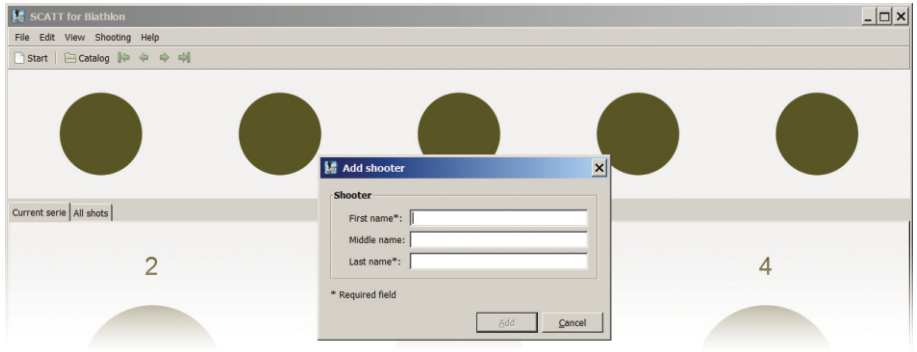
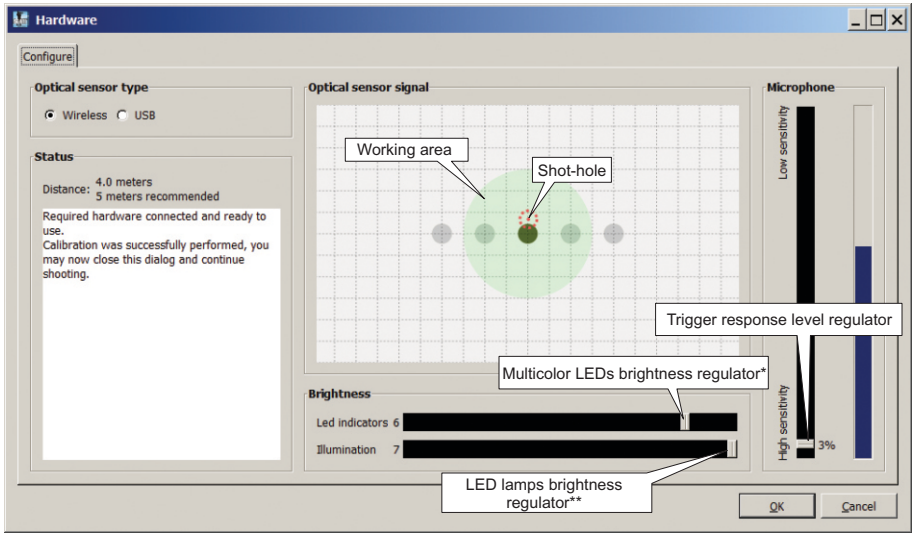


Fig. 2

Optical sensor calibration



*Smaller value of this regulator make sensitivity to trigger response higher.
**Used only if your electronic target have built-in LED target lighting module.

Fig. 3

In this window *(Fig. 3)* you need to select the sensor type and calibrate it. In order to calibrate the sensor aim at the target and make one blank shot.

Shot hole should be displayed inside the workspace (light-green circle). The software will then automatically match the coordinates of the shot hole with the center of the target. If the shot hole is displayed outside the workspace, please check if the sensors's axis is parallel to the axis of the barrel. If the shot is not being registered (the shot hole is not displayed) by the system please adjust the sensitivity of the sensor to trigger click by reducing the trigger response regulator value (higher value means increased sensitivity). The optical sensor automatically compensates the weapon's canting.

After you've successfully calibrated the sensor press the "**Close**" button to begin training. If necessary the calibration window can be reopen from the drop-down menu "**Shooting**" and then "**Adjust optical sensor**" or simply press the **F2** button on your PC.

Practice window

For your convenience the practice window is separated into several adjustable areas.
Full Field of View - the area with all five targets that shows the aiming trajectory, target switch trajectory, as well as shot holes.

Shot List - the area with shooter's information: Name, Date and Time, ammunition quantity for series, position, battery life (only for wireless models), and shooting results grouped in series of five shots. For each separate shot there is data regarding the result, aiming time, and the speed of aiming point.

General Area - here you can see the closeup view of the currently aimed target, the trajectory of aiming, and the shot hole. In order to facilitate the analysis of the density of shots, you can switch the view of this selection and all shots will be displayed on single target.

Additional information panel - in this area you can see the following:

- Coordination graph[1]
- Average aiming point speed graph[2]
- Trigger pressure diagram*
- Pulse data*

Furthermore, you can add comments, which will be saved together with the results of the shooting session.

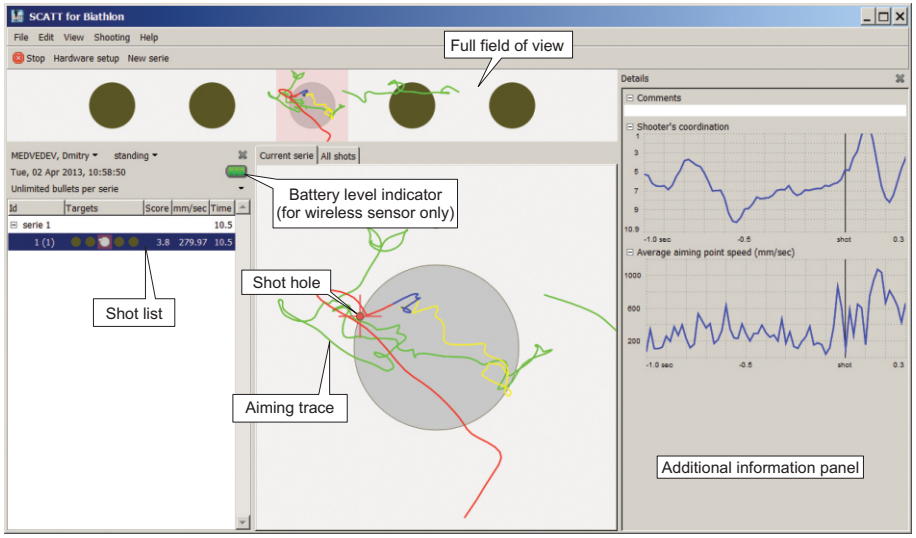


Fig. 4

[1] The term co-ordination means the ability of the shooter to choose the optimal moment of shot release within his (her) ability of holding steadiness. This is one of the most important criteria by which the shooter's ability as a competitor can be judged. This ability to choose an optimal moment of final shot release can partly compensate for insufficient steadiness.

Co-ordination is analyzed by averaged curve of the values of $R(t)=\sqrt{X^2(t)+Y^2(t)}$, It is plotted in some time interval prior to the shot. The value of R(t), and in particular the character of the change (increase or decrease) in the final 0,2-0,3 second, are characteristic of the degree of co-ordination ability of the shooter. The faster the R(t) value grows in last 0,2 second, the lower the shooter's co-ordination ability, i.e. more likely the aiming of the rifle or pistol becomes worse in the final moment of triggering.

[2] A graph of average speed of aiming point movement versus time.

** This kind of data enabled only if extra accessories is connected.*

Use electronic corrections

If necessary, you can make fine accuracy adjustments if the displayed shot hole is displaced relative to the center of the target. Drag the shot hole in the desired direction with your mouse *(Fig. 5)*.

Fig. 5

All further shot holes will be displayed with a corresponding adjustment.

Control panel

During training the shooter has access to operate certain functions and settings displayed on the screen. Contents of “**File**” menu *(Fig. 6)*.

Fig. 6

Contents of “**Edit**” menu *(Fig. 7)*.

Fig. 7

In the “**Edit**” submenu “**Preferences**” can be found *(Fig. 8)*. There you will find various settings for the program and will be able to adjust the color of the interface, operate the list of shooters, etc.

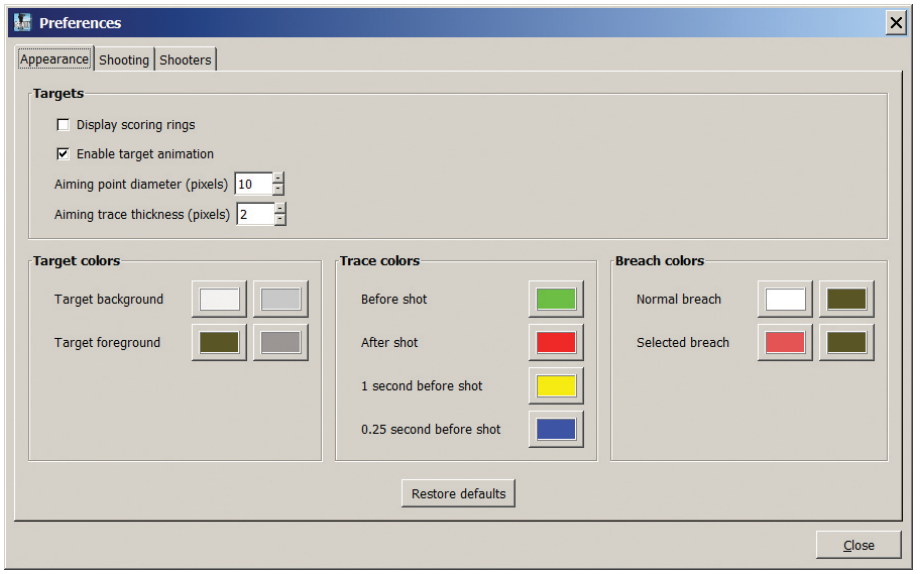


Fig. 8

Contents of the “**View**” menu *(Fig. 9)*.

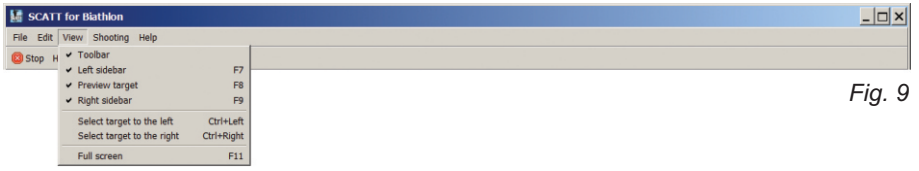


Fig. 9

In the “View” menu you can change the general view of the training window by enabling or disabling different areas. Also, here you can switch full-screen mode.

Contents of the “**Shooting**” menu *(Fig. 10)*.

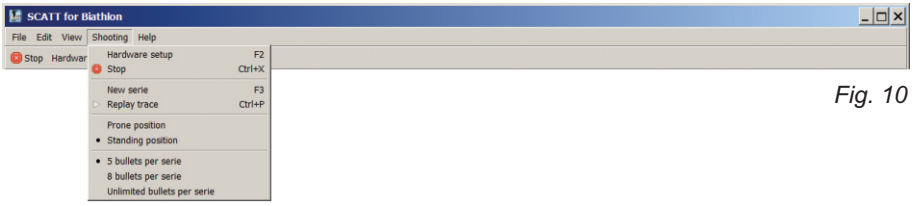


Fig. 10

In this menu you can switch the shooter position and choose the desired number of shots in each series.
Also, here you will find the button for hardware settings.

Contents of the “Help” menu *(Fig. 11)*. Here you can find information regarding the version of your SCATT software.

Fig. 11

Shooting sessions catalog

All shooting results and other pertaining information is automatically saved into an archive. The files are grouped by names and sorted by the date. Together with the results you will find other data like date, number of shots and comments.

To view shooting results on another computer you will need to export the corresponding files by selecting the necessary check-boxes and the pressing the “**Export**” button. You will need to select a destination folder for the exported files. The files will be exported to the selected folder with the *(*.gz)* extension. Transfer this folder to another PC and open them with the SCATT Biathlon software.

To view the files, run the SCATT Biathlon program, press the button “**Catalog**” in the “**File**” menu. Then in the newly opened window *(Fig. 12)* press the “**Import**” button. In the next window select the folder with the necessary files and press “**Open**”. The program will add the imported files to its catalog. To view a particular session choose the corresponding file and press “**Open**”.

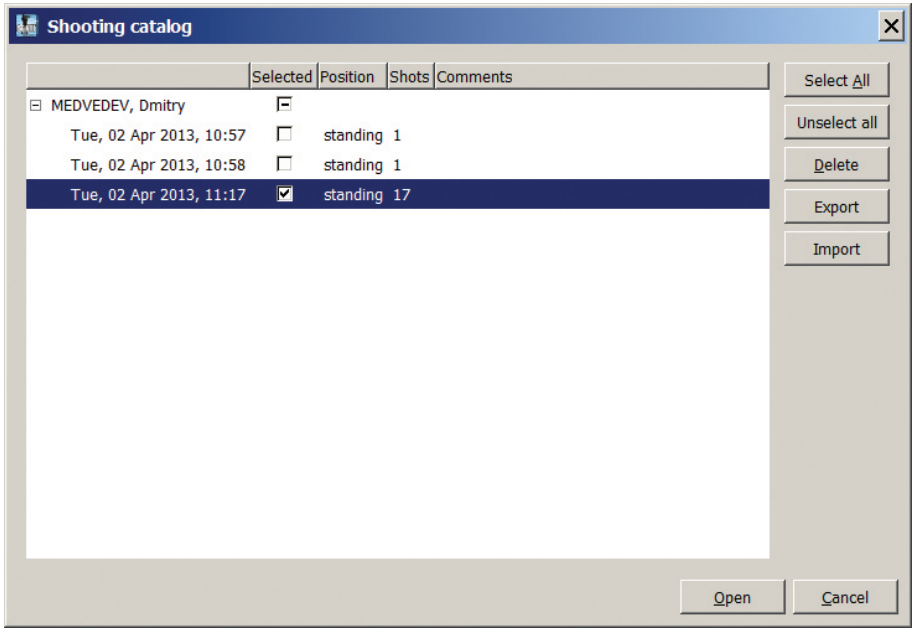


Fig. 12

To navigate the catalog right from the training window you can use the arrow keys on the control panel *(Navigation is possible only within one user)*.
To delete the record from the catalog, select the necessary check-box against a particular session or the name of the shooter *(to delete all his sessions)* and press “Delete”.

Troubleshooting

Software reports “SCATT device not found”	Make sure all SCATT units are connected to the computer, SCATT drivers are installed
No signal from optical sensor	Either the target or optical sensor are not connected, distance to electronic target has ben selected incorrectly. Recharge optical sensor battery, check all connections, restart SCATT program
When optical sensor enters the target area, it results in a spontaneous shot	Adjust trigger response sensitivity of optical sensor

**If given recommendations don’t help solve your problem, consult the Service Center*

Service

Clean this device with soft dry cloth. If the surfaces are too dirty, use soft cloth, wetted in suds or in mild soap detergent solution. Newer use solvents or petrol to clean the device.

Specifications

Optical sensor weight:	OS-02 - 30g (with mount) WS-03 - 33g (with mount)
Electronic target dimensions:	H 124 x W209 x D36 mm
Type of radiation:	IR radiation of 900 nm
Operating temperature range:	+5 to +37 °C

NOTE

Specifications can be modified by manufacturer without being worded in this manual.
Weight and dimensions are approximate.

Template for mounting electronic target on the wall