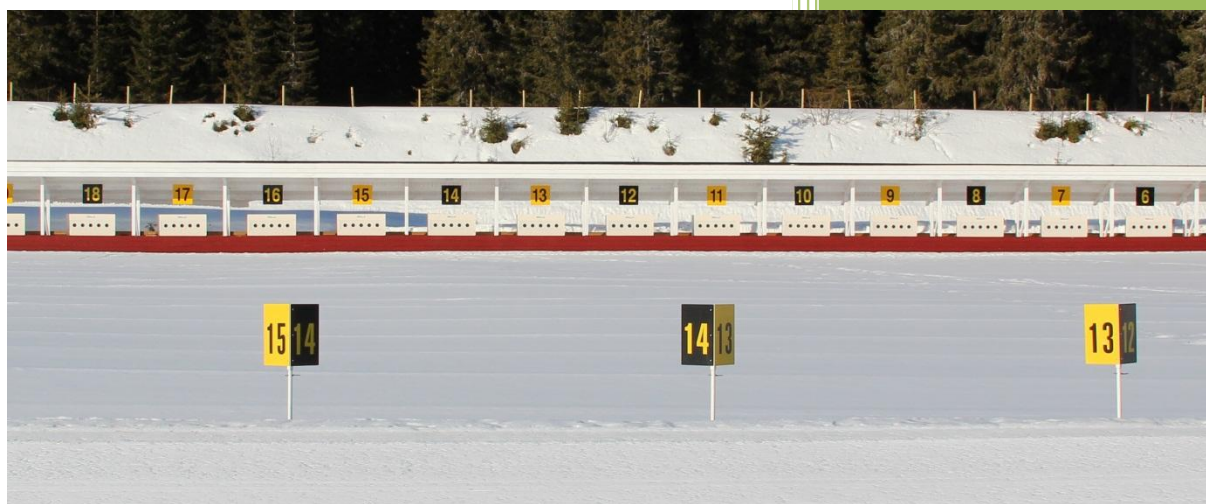


2025

ML2000 Manual Biathlon competition



MEGAlink 

Megalink AS
V25.10



ML2000 Manual

Biathlon competition

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1 Stand PC

1.1 Generally

MLBia is Megalink's competition management software. The program starts a database server for storing data and a web server for user interface.

The system can be run in two modes: Single and Full. Easy to use where there is only one PC on the stand. Full mode is used where there are multiple PCs connected. Used to separate, for example, communication with targets and interfaces with TV production and audience service.

1.2 PC requirements

- Windows 10.
- Latest version of the [Google Chrome browser](https://www.google.com/chrome/).
- SSD disk to ensure good performance of database.
- Sufficient number of USB ports for USB adapters for all disc segments as well as trainer monitors and start number terminals. If an external USB HUB is used, *these must* have an external power supply connected. Its recommended to replace the USB adapters with the new PC Adapter Pro.
-

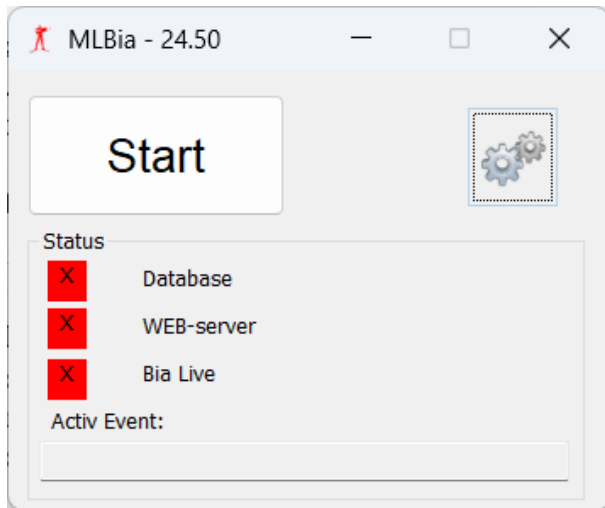
1.3 First-time software setup

If the software is not already installed on your PC, the installation file can MLBiaSetup.exe be downloaded from www.megalink.no. Make sure to always use the newest software version.

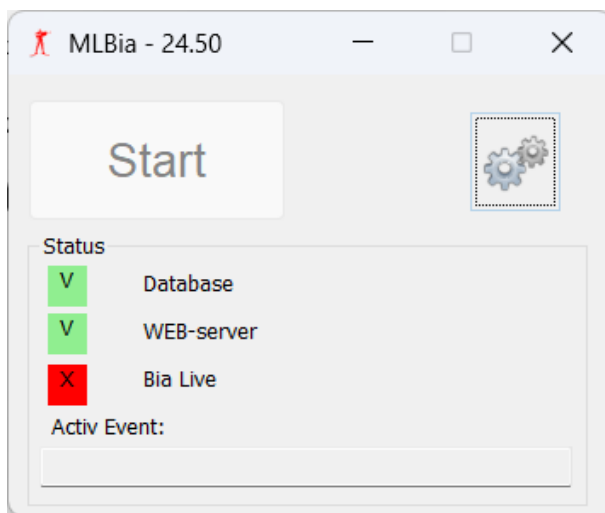
1. Make sure that no USB adapters are connected to the PC if this is the first time the program is installed on a new computer.
2. Run the installation program MLBiaSetup.exe. Shortcut to the program and to the WEB interface will be created on the Desktop.
3. When the setup program is finished, all USB adapters can be connected to the PC.
4. Launch MLBia by tapping this icon:



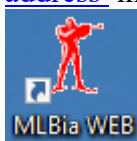
5. The program will start with this status image. Tap the gears to change the language or mode. Then press start or wait for the automatic countdown to finish.



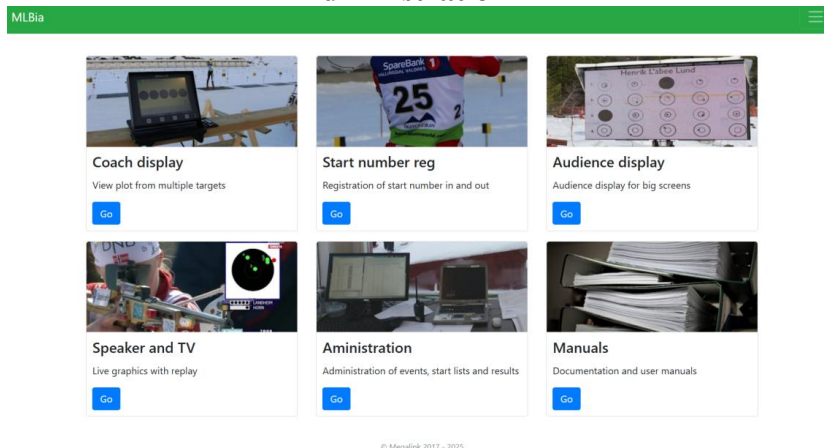
6. Wait for the database and WEB server to start. The status fields should then be green.



- 7.
8. Launch the Web interface by tapping on this icon or go to <http://localhost:8081> address in the browser.



9. Select the link labeled **Administration** in the menu.



10. Then select the gear icon in the top right corner to set up your system.



11. Enter the license name and license code under **Setup / License**. Remember to save.
License information can be retrieved at www.megalink.no/login.

The screenshot shows the 'License' setup form in the MEGALink web interface. The form has a title 'License' with a dropdown arrow. Below the title, there are two input fields: 'License Name' and 'License Code'. The 'License Name' field contains the text 'Megalink Produksjon' and the 'License Code' field contains the text 'D94EBD0A'. Below the input fields, there is a green 'Save' button.

12. Add targets under **Interface/Targets**. The targets are divided into a number of segments. The number of targets per segment may vary from range to range. Check how many targets are connected on your track. Each target segment communicates with the PC via USB adapter or PC adapter Pro. The adapter's ID is printed on the adapter itself.

Enter the number on the first and last targets. And be sure to activate the segments that are in use. See example in the image below. Remember to save.

Interface

Targets ▲

First target: 1 ▼

Last target: 3 ▼

	USB ID	First	Last
☒ Segment 1	ML100001	1 ▼	10 ▼
☒ Segment 2	ML100002	11 ▼	20 ▼
☒ Segment 3	ML100003	21 ▼	30 ▼
☐ Segment 4	ML100000	0 ▼	0 ▼
☐ Segment 5	ML100000	0 ▼	0 ▼
☐ Segment 6	ML100000	0 ▼	0 ▼
☐ Segment 7	ML100000	0 ▼	0 ▼
☐ Segment 8	ML100000	0 ▼	0 ▼
☐ Segment 9	ML100000	0 ▼	0 ▼
☐ Segment 10	ML100000	0 ▼	0 ▼

Save

13. Add start number terminals under **Interface/Start number terminals**. The terminals communicate with PC via USB adapter or PC adapter Pro. See example in the image below. If 6 terminals are to be used, the first should be set to 1 and the last should be set to 6. The physical start number terminals must have ID (target number) from 1 to 6. Remember to save.

Start number terminals ▲

	USB ID	First	Last
☒ Segment 1	ML102819	1 ▼	6 ▼

Save

14. Add coach displays under **Interface / Coach display**. The monitors communicate with the PC via USB adapter. The monitors can be divided into several segments to minimize strain and risk. See example in the image below. The monitors must be set with ID (target number) that matches the list. Remember to save.

Coach display ▲

	USB ID	First	Last
☒ Segment 1	ML102820	7 ▼	18 ▼
☒ Segment 2	ML102821	19 ▼	30 ▼
☐ Segment 3	ML100000	0 ▼	0 ▼
☐ Segment 4	ML100000	0 ▼	0 ▼

Save

1.3.1 Export and import of config

All settings during setup can be exported from one installation to another.

On the PC you want to export from, tap **Export setup to file** under **Export/Import**. The file with the setup is named **biamain_export.json** and will be saved in the MLBia directory (Typically C:\Megalink\MLBia). Copy this file onto a USB flash drive or similar.

Then copy this file into the MLBia directory on the PC you want to import the setup to. Then tap **Import config from File**.

Export/Import ▲

Export config to file

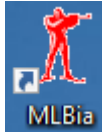
Import config from file

Config will be imported from the file **biamain_export_config.json** that must be in the MLBia folder

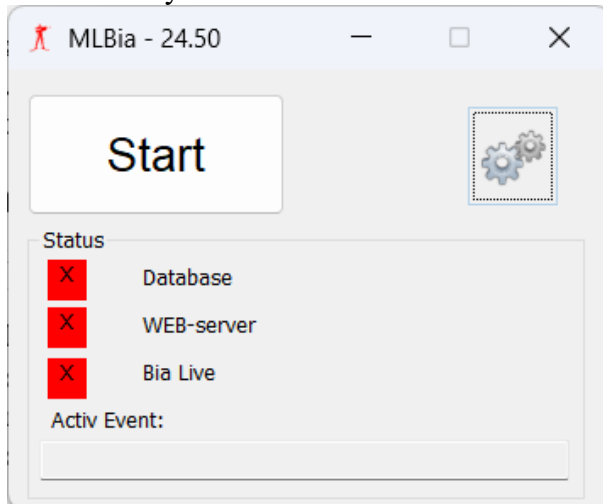
1.4 Software Startup

In order to use the system, the database and web server for user interface must be running on the PC.

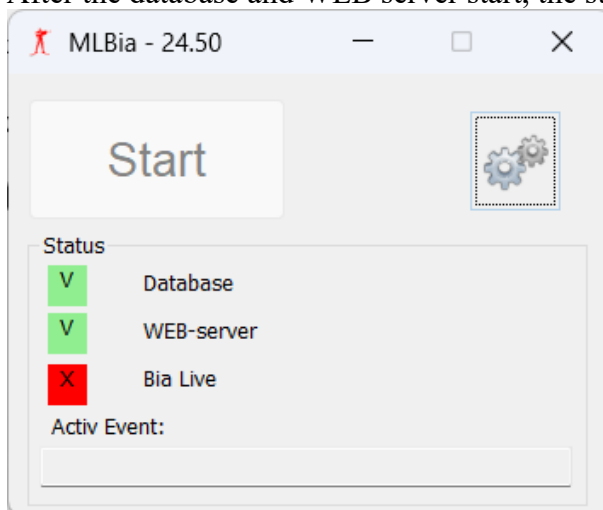
1. Launch MLBia by tapping this icon on your desktop:



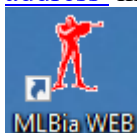
2. The program will start with this status image. The status fields are red and indicate that the database and web server have not been started. Press start or wait for it to run automatically after the countdown.



3. After the database and WEB server start, the status fields change color to green.

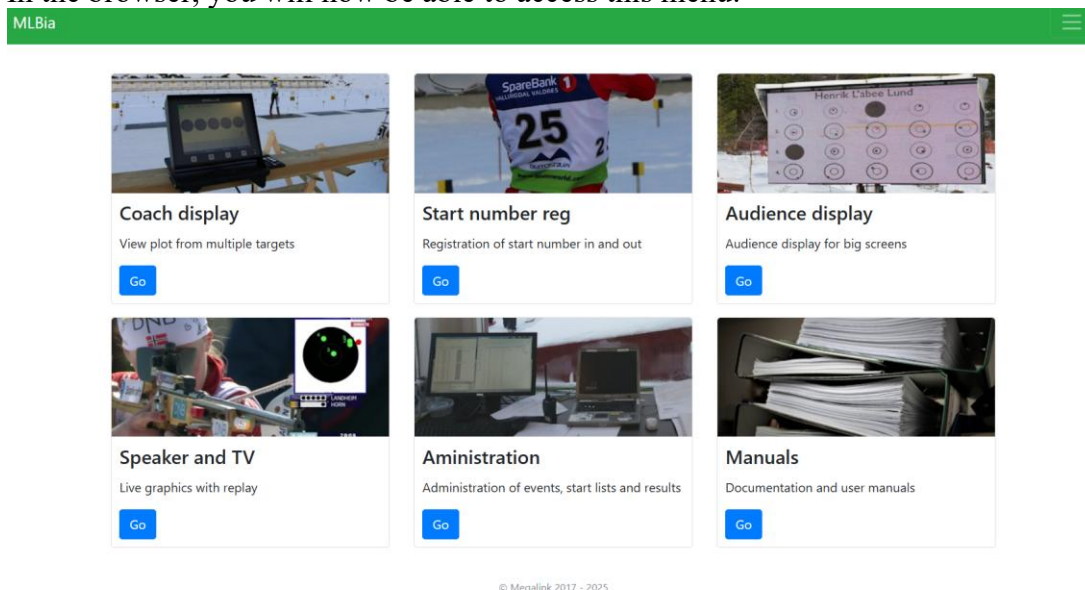


4. Launch the Web interface by tapping on this icon or go to <http://localhost:8081> address in the browser.



The user interface can also be accessed from other PCs or mobile/tablets. This is done by replacing "localhost" with the PC's IP address in the browser. This is not available in simple mode.

5. In the browser, you will now be able to access this menu:



On stand PC, the menu option **Administration** is the most relevant to use.

1.5 Running competitions and training

All administration of the competition takes place in the Administration screen in the menu.

1.5.1 Create a new event

Select the **Competition admin** tab. If an event already is active, it must be stopped.

1. Press the **Create New Event** button.
2. Enter the event name, description and start time and date.
3. Select the event type. The following can be selected:

Name	Series size	Description
Zeroing	-	Trainers can reset and alternate between training / lying down / standing.
Zeroing locked	-	The coach can reset. The disc is locked on the insertion.
Normal	5	
Sprint	5	
Super sprint	5	
Pursuit	5	
Mass start	5	
Relay	8	
Mixed relay	8	
Single mix relay	8	
2 series	5	
Other	5	
WiFi Practice	-	Trainers can reset and alternate between training / lying down / standing.

- Then tap **Start Now** or **Save Event**. Saved events can be retrieved and started later.

Tip: The **Start training button** is a shortcut to start a training exercise. Exercise names will be generated automatically.

1.5.2 Check the status of targets and equipment

Under the Status tab, there is a field marked *Status on target and equipment*. If you get a message from targets and terminals, there is contact. Check that temperatures and voltage look okay.

Target and HW status

Get target status (CU) Get falling target status (FT) Get coach terminal status Get start number terminal status Co											
Lane	Version	Temp lower	Temp upper	Voltage	Mode	Series	Shot count	Error count	HW count	Fal	
1	14.15 HW=66	-17.6 (0.0) °C	-8.6 (0.0) °C	11.7 V	⊙	Innskyting	1	0	0	5:10	
2	14.15 HW=66	-8.7 (0.0) °C	-0.7 (0.0) °C	12.0 V	⊙	Innskyting	1	2	0	5:10	
3	14.15 HW=66	-2.6 (-0.0) °C	1.5 (-0.0) °C	12.8 V	⊙	Innskyting	1	0	0	5:10	
4	14.15 HW=66	12.0 (0.0) °C	18.4 (0.0) °C	12.0 V	⊙	Innskyting	1	0	0	5:10	
5	14.15 HW=66	-19.1 (-0.0) °C	-14.4 (-0.0) °C	13.5 V	⊙	Innskyting	1	0	0	5:10	
6	14.15 HW=66	-15.4 (0.0) °C	-6.8 (0.0) °C	13.4 V	⊙	Innskyting	1	0	0	5:10	
7	14.15 HW=66	2.6 (83.1) °C	7.5 (97.5) °C	12.5 V	⊙	Innskyting	1	0	0	5:10	
8	14.15 HW=66	2.6 (6.0) °C	3.4 (6.0) °C	14.2 V	⊙	Innskyting	1	0	0	5:10	
9	14.15 HW=66	-4.2 (0.0) °C	-2.6 (0.0) °C	12.8 V	⊙	Innskyting	1	0	0	5:10	
10	14.15 HW=66	15.7 (0.0) °C	23.1 (0.0) °C	13.3 V	⊙	Innskyting	1	0	0	5:10	

(Simulated feedback)

Using the buttons above you can choose to get status from targets, drop figures, start number terminals and trainer monitors.

A button has been added here for restarting coach monitors. There have been some reported cases where the coach monitors do not update themselves. Then this button can be pressed as an emergency solution.

1.5.3 Test lamps and fall figures

Under the Status tab, there is a field labeled *Change position*. Set all targets to zeroing, prone or stand to check that the status lights on the targets are working. The brightness of the lamps can be adjusted under *Competition admin / Equipment / Targets*.

Under the tab Competition administration / Equipment there is a field marked *Fall figures*. Here, all fall figures (self-indicators) can be opened and closed on all or one target. Test that all of them work before shooting.

1.5.4 Review checklist

Before each event in a competition go through the checklist before starting the competition. See the bottom of this document.

1.5.5 Changing the position of the targets

Under the Overview tab, there is a field labeled *Change mode*. Here the position of the lanes can be changed. The possibilities are sighter (zeroing), prone and stand. When in sighter (zeroing), the fall figures (self-indicators) do not indicate.

It is possible to change the position of only a group of lanes by using the *From Lane* and *To Lane* fields.

1.5.6 Registration of start numbers in and out

Normally, start numbers are registered in and out by officials at the stand. But this can also be done manually from a stand PC.

Under the Status tab, there is a field marked *Registration of start numbers in and out*.

1.5.7 Overview tab explanation

This tab should be open at all times during an event. We recommend using two screens, so that this is always visible.

Overview of the status fields:

- **Lane:**
Lane number
- **StartNr.:** What start number is registered IN on the lane.

It will happen that shots on the target are detected without a registered start number. Shooters can shoot at the wrong target or the official has not registered the shooter IN. Until a start number is registered, the series will be given a temporary start number. This number will always be 9000 or higher.

- **Status:**

Free	No shooter registered on the target.
Inside	Shooter registered IN on target. Haven't started shooting.
Active	The shooter is registered IN on the target and

	shots have come in.
Unknown	Shots are detected on the disc, but the start number is not registered
Hold	The shooter is registered OUT from the target. The hold time (configurable) indicates how many seconds before the dial is reset.

- **Mode:**
Mode if the target marked with a symbol. Can be a zeroing, prone or stand.
- **Shots:**
Number of shots detected on active series.
- **Serie:**
Number of series registered on the current start number.
- **Marker:**
Marking of hits and misses when self-indicators are activated.

1.5.8 System timeout

Under the tab Competition admin, there is a field marked System timeout. Here there are different variables for resetting the target. These will be used during competitions and when the targets are set up for self-service via WEB solution. During zeroing, all variables must be set to zero. It is important that these are set up correctly, as they will help the targets to be fired at during an exercise even if communication or PC should stop working.

System timeout ▲

☐ Short
☒ Medium
☐ Long
☐ Custom
☐ None

Series size: 5 ▼

Hold timeout: 20

Complete timeout: 120

Shot timeout: 240

Start number timeout: 300

- **Series Size:** Sets the number of shots per series. Typically 5 or 8. Use 0 during zeroing to prevent automatic reset.
- **Hold timeout:** The number of seconds before the target is reset after the shooter is registered out of the stand. Useful as the speaker, coaches and the audience can see the result.

- **Series timeout:** The number of seconds before resetting after the end of the series if the shooter is not registered out.
- **Shot Timeout:** The number of seconds before the reset after the last shot if the shooter has not completed the series and is not registered out.
- **Start number timeout:** The number of seconds before zeroing after the shooter has been registered if there are no shots on target.

1.5.9 Communication towards timing equipment

MLBia continuously sends registrations and shots against timing equipment such as EQ Timing or Siwidata.

This is set up under the tab Competition administration in the field marked *Timing equipment*.

The example shows the default setup against EQ Timing. EQ Timing's PC is connected to the stand PC via a standard zero modem (crossed) cable. This is connected to serial port number 1.

1.5.10 Read and change data from previous event

In the Event tab, there is a table with all saved events. Clicking on an event will make this event active in all tabs.

1.5.11 Import start list

In the tab Start list there is a table with all athletes who have been added to the selected event.

A athlete can be added or changed using the *New*, *Change*, and *Remove* buttons.

Import of start list generated by EQ Timing: Press the *button Import from file* and select *File format = EMIT/EQTiming*.

Custom Start List Import: Press the *button Import from File* and select *File Format = Auto*.

If you want to copy the start list from one exercise to another, you can press the *button Export to file* and then import this file into another exercise. Which exercise it should be imported to is selected in the Exercise tab.

1.5.11.1 Custom start list

A custom start list can be created in Excel or similar programs. The file must be saved as a semicolon or comma-separated file (CSV). As a minimum, the list must contain columns with the start number and name. It can also include last name, team, and class. The order is indifferent.

The following column names are valid:

- Snr, StartNr, Startnummer, Bib
- Navn, Fornavn, Name, Given name, First name
- Etternavn, Last name, Family name, Surname
- Lag, Forening, Klubb, Club, Klubbnavn
- Klasse, Class

Example 1:

A	B	C	D	E
StartNr	Navn	Etternavn	Klasse	Forening
123	Øyvind	Johannessen	Sr	Fredrikstad SKL
124	Pål	Bakken	Sr	Drøbak
125	Dag Ivar	Findreng	Jr	Lillesand
126	Ove	Hagen	Jr	Frogn

Example 2:

A	B	C
StartNr	Club	Name
123	Fredrikstad SKL	Øyvind Johannessen
124	Drøbak	Pål Bakken
125	Lillesand	Dag Ivar Findreng
126	Frogn	Ove Hagen

Example 3:

A	B	C	D	E
StartNr	Etternavn	Fornavn	Klubb	
123	Johannessen	Øyvind	Fredrikstad SKL	
124	Bakken	Pål	Drøbak	
125	Findreng	Dag Ivar	Lillesand	
126	Hagen	Ove	Frogn	

Note that comma (,) cannot be used in fields. For example, in class names. Use a period (.) instead.

1.5.12 Consecutive results list

In the Result list tab, a continuously clear result list is created. This can be good to follow during an exercise to have an overview of shooting and any errors or missing registrations of start numbers. Press the Reload button to regenerate the list. This is not automatic.

1.5.13 Printing of results list and graphic shooting cards

Under the Printing tab, you can print a result list, graphic shooting card and 1:1 printout.

A PDF with graphic shooting cards can be generated and posted online. This tends to be a popular measure for coaches and athletes.

Your own logo and/or advertising can easily be added to result lists and graphic shooting cards. Up to two image files can be added. These are placed in the Logo folder where MLBia is installed (Typically C:\Megalink\MLBia\Logo). The files must be in PNG format and have the names Logo1.png and Logo2.png.

1.5.14 Shot log

Under the Shots tab, all details of all recorded shots are displayed. You can choose to see all shots at once or filter on a slice.

Explanation of the fields:

Id	The ID of the shot
Event Id	ID of the event the shot belongs to
Lane	Lane (target) number
Series	Series number
ShotNo	Shot numbers in the series
Figure	Which figure the shot was registered in. Figure 1 is furthest to the left. Figure 5 is furthest to the right.
Mode	Mode of the target – zeroing (TR), Prone (P) or standing (S)
Pos	The position of the shot. Prone (P), Stand (S) or miss (--)
HitType	Hit or miss
L1-U6	Pressure value of microphones (sensors). Stable number indicates good quality of the microphone. Click the ?-button to see details.
X	X value in mm (horizontal)
Y	Y value in mm (vertical)
TimeCu	Time of shooting was recorded on the target
TimePC	Time shot was saved on PC
HWCCount	The number before the colon counts up every time there is a shot on the target. The number after the colon counts up each time the dial is started (power on/off). This field can be used to see if there have been uncontrolled events on the target between shots.

1.5.15 Series list

Under the Series tab, there is a list of all series that have been registered. In case of deviations, you can change the start number of each individual series.

It will happen that shots on the target are detected without a registered start number. Shooters can shoot at the wrong target or the official has not registered the shooter IN. Until a start number is registered, the series will be given a temporary start number. This number will always be 9000 or higher.

To watch all unknown (9000+) series, press the button *Show unknown*. To see all shows that have been changed manually, tap the *Show Changed* button. Tap the *Show All* button to see all shows.

By selecting a series and then pressing the button *Set new start number*, you can manually set a new start number for a series.

Explanation of the fields:

Id	Series ID
EventId	ID of the event the series belongs to
Status	OK = done, Active = active
Lane	Lane number
Serial No.	Series numbers
StartNr	Start number of series
OrgStartNr	Original start number if this has been changed manually
Flaps	P = Prone, S = Stand
Time first	Time of the first event of the series. Either the first shot or the start number registered.
Time out	Time of start number registered out
Shots	Number of shots on series
Marker	Pattern on fall figures (self-indicators). 0 = miss, 1 = hit

1.5.16 Event log

The Log tab shows all events that are registered in the system. For example, shots, registrations and unregistrations.

Explanation of the fields:

Id	Log ID																		
EventId	ID of the event the event belongs to																		
Time	Time the incident was recorded																		
Source	Source of the incident																		
Lane	Lane number																		
StartNr	Any start number associated with the event																		
StartNrOld	Original start number if this has been changed afterwards																		
Series	Series number																		
Event type	<table border="1"> <tr> <th colspan="2">Event type</th></tr> <tr> <td>Start</td><td>Start of exercise</td></tr> <tr> <td>Pos</td><td>Change of mode</td></tr> <tr> <td>SnrIN</td><td>Start number registered</td></tr> <tr> <td>SnrOut</td><td>Start number registered out</td></tr> <tr> <td>SnrCancel</td><td>Start number cancelled</td></tr> <tr> <td>CuSHOT</td><td>Shots registered on target</td></tr> <tr> <td>CuRESET</td><td>Skive restarted</td></tr> <tr> <td>CuSTATUS</td><td>Explanation in comment</td></tr> </table>	Event type		Start	Start of exercise	Pos	Change of mode	SnrIN	Start number registered	SnrOut	Start number registered out	SnrCancel	Start number cancelled	CuSHOT	Shots registered on target	CuRESET	Skive restarted	CuSTATUS	Explanation in comment
Event type																			
Start	Start of exercise																		
Pos	Change of mode																		
SnrIN	Start number registered																		
SnrOut	Start number registered out																		
SnrCancel	Start number cancelled																		
CuSHOT	Shots registered on target																		
CuRESET	Skive restarted																		
CuSTATUS	Explanation in comment																		
Mode	Mode of the target – zeroing (TR), Prone (P) or standing (S)																		
Shoot	Shot numbers in series																		
Fig	Which figure (flash) the shot was registered in. Figure 1 is furthest to the left. Figure 5 is furthest to the right.																		
X	X value in mm (horizontal)																		
Y	Y value in mm (vertical)																		
Pos	The position of the shot. Landscape (L), portrait (S) or boom (--)																		
Shot Time	Time of shooting was recorded on the target																		
Marker	Pattern of fall figures (self-indicators) after event 0 = miss, 1 = hit																		
Actual markers	Actual pattern of fall figures at the time of the incident. 0 = miss,																		

	1 = hit. This may be different from the column "fall figure" if the self-referee system does not work. In the event of a shot, it will show what was in effect when the shot was registered, not what it should be set to.
HitType	Hit or miss
Date	Date the event was recorded
Comment	Comment on incident

1.5.17 Passcode for resetting targets for coaches

If the system is set up so that coaches use tablets for instructions, these can be set up with a PIN code. This means that the trainer must enter a PIN code to be able to reset a target during shooting.

PIN codes are generated under *Competition admin / Coach passcodes*. These can be printed out on a list for distribution at the stand.

1.5.18 Sending a message to coaches and start number officials

In the field marked *Text message to clients* during event administration, a message can be sent to coaches and start number officials. This only applies if they use the tablet solution.

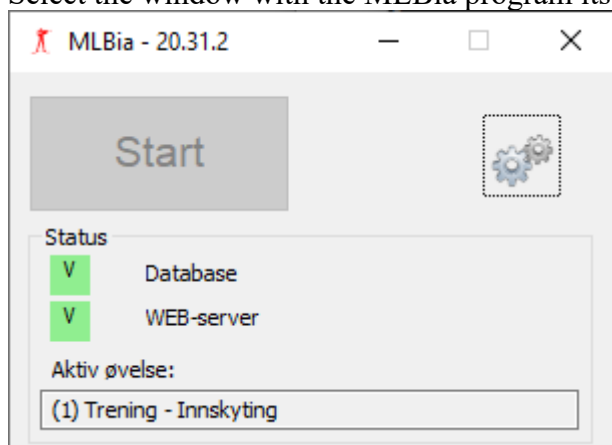
1.6 Simulation

Simulation mode can be used to test the system without physical targets being connected.

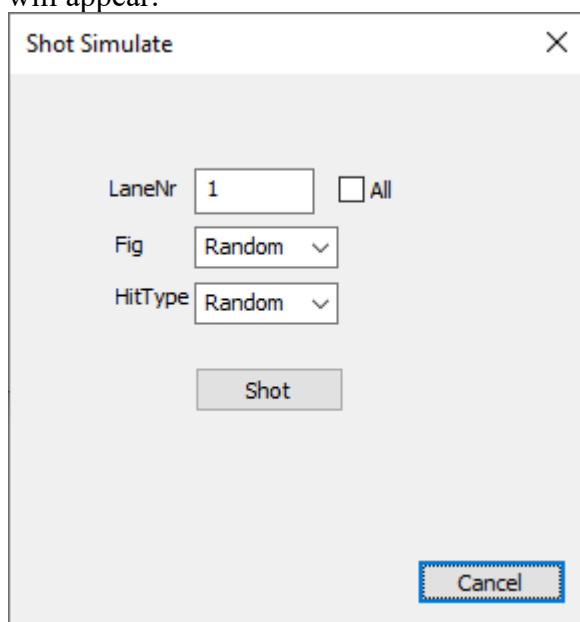
Turn on simulation mode by selecting **Administration** from the menu. Then select **the gear icon in the top right corner** to change settings. Check the Simulation Mode box under **Other/Miscellaneous**.

Shots can be generated in the following way:

1. Select the window with the MLBia program itself



2. Then hold down [Alt] + [Shift] + [#] on your keyboard. Then the following window will appear:



3. Select target (LaneNr) and flash (Fig) and hit type (HitType). Then press the Shot button to generate shots. These will show up in the status picture and the rest of the system as normal shots.

Remember to disable simulation mode after use.

1.7 Software upgrade

Target and equipment upgrades have not yet been implemented in MLBia. MLRange must be used. Contact Megalink for help if the equipment needs to be upgraded.

1.8 Audience view

From a PC that will be used for public viewing, you can connect to a stand PC. This is done via a web browser. Find the IP address of the stand PC. If the IP is, for example, 192.168.1.100, then the following address should be entered in the address field:

<http://192.168.1.100:8081>

Then select the link labeled **Audience View** in the menu or go directly to

<http://192.168.1.100:8081/audience>.

Here you have the opportunity to set up different images for the big screen.

1.9 Live graphics for speaker and TV production

From a PC to be used for speaker or for TV production, you can connect to a stand PC. This is done via a web browser. Find the IP address of the stand PC. If the IP is, for example, 192.168.1.100, then the following address should be entered in the address field:

<http://192.168.1.100:8081>

Then select the link labeled **Speaker and TV** in the menu or go directly to

<http://192.168.1.100:8081/replay>.

Here you can choose to follow an album live or run a replay on any of the previous series.

2 Coach display

Coaches and team leaders can use a monitor to see the results of up to six different discs on one monitor.



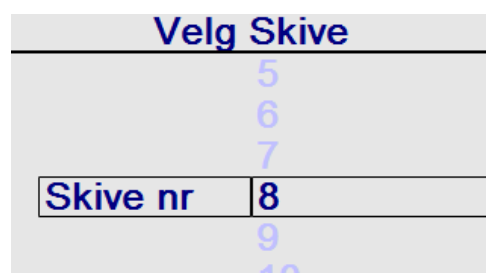
The figure shows the monitor with instructions from four different targets. The coach can choose to look at any discs from the entire stand.

The buttons now have the following functions:

Field	Used to select which target of the image is in focus. This is marked with a green frame.
Target no	Used to change the target number of the field in focus.
Zoom	Used to zoom in and out. The best zoom level shows all shots of a shape. This makes it easy to see the mean point and collection.
Menu	Main menu. Here the number of targets that are displayed at the same time can be changed.

Example: The coach will look at target 1, 2, 8, 5 instead of 1, 2, 3, 5 as shown in the figure above.

1. Press **Fields** twice to select field number three (Target 3) on the screen. This field now runs a green frame.
2. Press **Dial No** to change the target number.
3. Then use the **Previous/Next** buttons to change to dial 8.



4. Press Select.

2.1 Keypad Use – Coach Display – Type 1

To simplify the use of the coach displays, it can be connected to a keyboard. The keyboards supplied by Megalink are waterproof and can be used in rain and snow. (Laminate this page and hand out to coaches.)



0-9	Change the target number (confirm with Enter)
Enter	Changing fields
+ / -	Change the number of targets
*	Change zoom level
/	Resetting the Target / Changing Mode (only during shooting, if enabled)

Del / ← Correcting Dial Numbers

2.2 Keypad Use – Coac Display – Type 2

To simplify the use of the coach displays, it can be connected to a keyboard. The keyboards supplied from Megalink are waterproof and can be used in rain and snow. (Laminate this page and hand out to coaches.)



0-9 Change the target number
(confirm with Enter)

Enter Changing fields

+ / - Change the number of targets

***** Change zoom level

/ Resetting the Dial / Changing

Position
(only during shooting, if enabled)

C/Del Correcting target Numbers

2.3 Coach display setup

2.3.1 Startup

The monitors can be put into trainer display mode by entering the menu in one of two ways:

Menu → System setup → Biathlon competition → Coach mode

or

Series → Biathlon competition → Coach mode

The latter method is the easiest. But it requires BIA to be set as the organization in the filter settings.

- Select **Menu → System Setup → Advanced (Password=3) → Filter Setup**.
- Set **Organization1** = IBU.

2.3.2 Display ID

Each display must have a unique ID. The number of displays connected must be recorded in the MLBia setup. This ID is equal to the dial/monitor number used in training setups.

To change:

- Exit coach mode (**Menu → Exit**).
- Select **Menu → System Setup → Communication**.
- Change the **Lane number** to the ID the display should have.

3 Tablet solution for coaches

By connecting to tablets via WiFi or wired solution, the trainer monitors can be replaced. Trainers will then be able to use tablets instead of following one or more discs. This is a solution that is easy to use and there is the option to save images of each series locally.

Coach display can be selected in the main menu.

4 Start Number Registration Terminal

The start number registration terminals are used by officials to register start numbers in and out of the stand.

The terminal is a regular monitor that runs in competition mode.

Each terminal can be operated by two officials. Each official may be responsible for up to eight targets, but no more than five are recommended. Each employee has their own keyboard connected.

Start Nr Reg A				Start Nr Reg B			
11	126	● ● ● ● ●	4 	16	0	● ● ● ● ●	0 
12	127	● ○ ○ ● ●	3 	17	144 Ut Er du sikker?	○ ○ ○ ● ●	0 
13	129	○ ● ○ ● ●	3 	18	162	● ● ● ● ●	0 
14	0	● ● ● ● ●	0 	19	153	○ ○ ○ ○ ●	0 
15	121_	● ● ● ● ●	0 	20	0	● ● ● ● ●	0 

The figure shows, among other things, the following information:

- Discs 11-15 are set up as standing. Disc 16-20 is set up as horizontal.
- Start number 126 is registered on disc 11.
- Shooter with start number 153 has shot 4 hits.
- Officer B is in the process of registering start number 144 UT from the stand. The system is waiting for confirmation.
- Officer A is about to enter start number 121.

Allowed to manually exit the recording mode and use the monitor for regular training; Press button **A** on monitor.

4.1 Terminal setup

To change the layout of the terminal, press button **D** on the monitor.

Antall funksjonærer	1	
Høyre første skive	1	
Høyre siste skive	6	
Venstre første skive	1	
Venstre siste skive	8	
Terminal ID	1	
Opp	Ned	Endre
Ferdig		

- Number of reg: Up to two clerks can use the terminal at the same time. Make sure that there are no overlapping dial numbers on the right and left if only one official is going to use the terminal.
- Right first lane: First lane for the official on the right side.
- Right last lane: Last lane for the official on the right side.
- Left first lane: First lane to the official on the left side.
- Left last lane: Last lane for the official on the left side.
- Terminal ID: **Each terminal must have its own unique ID.** It is important to check that this is unique at each terminal. The number of terminals must be registered in the MLBia setup.

4.1.1 Startup

The monitors can be used as a start number terminal by entering the menu in one of two ways:

Menu → System setup → Biathlon competition → Start number reg

or

Series → Biathlon competition → Start number reg

The latter method is the easiest. But it requires BIA to be set as the organization in the filter settings.

- Select **Menu → System Setup → Advanced (Password=3) → Filter Setup.**
- Set **Organization1 = IBU.**

4.1.2 Terminal restart

There have been some cases where the start number terminal has hung up. To restart, press the **buttons first A** and then **C**.

4.2 Use of Keypad – Startnumber Terminal – Type 1

To use the start number registration terminals, there must be a keypad connected. The keyboards supplied from Megalink are waterproof and can be used in rain and snow.
(Laminate this page and distribute to officials.)



0-9	Register start number INN (confirm with Enter)
*	Register start number UT (confirm with Enter)
/	Switching between Stand/Lie
Enter	Send command
+ / -	Changing fields
Part/ ←	Delete/Correct start number

4.3 Use of Keyboard – Startnumber Terminal – Type 2

To use the start number registration terminals, there must be a keypad connected. The keyboards supplied from Megalink are waterproof and can be used in rain and snow.
(Laminate this page and distribute to officials.)



0-9	Register start number INN (confirm with Enter)
*/OUT	Register start number UT (confirm with Enter)
/	Switching between Stand/Lie
Confirm / Enter	Send command
↑ (+) / ↓ (-)	Changing fields
Delete / Share	Delete/Correct start number

5 Tablet solution for start number registration

We recommend replacing the start number terminals with tablets. The tablet connects to the stand PC via WiFi or wired network. Wired network is preferable. This is a solution with a simpler user interface than the traditional terminal solution.

The start number registration "app" can be selected in the main menu.

Startnummerregistrering 3 - 1 (System A) v.2

Skive 3	Skive 2	Skive 1
Serienr: Skudd:	Serienr: Skudd:	Serienr: Skudd:
1 2 3 4 5 6 7 8 9 ⌫ 0 ⬅	1 2 3 4 5 6 7 8 9 ⌫ 0 ⬅	1 2 3 4 5 6 7 8 9 ⌫ 0 ⬅
Registrer Ut Avbryt	Registrer Ut Avbryt	Registrer Ut Avbryt

Tilkoblet

It's best to use a tablet that's made for rain, snow, and freezing temperatures. These often have both a power input and a network connector.

If you use a regular tablet, you should use a USB-C adapter so that both power and wired network can be used at the same time.



5.1 Tablet setup

If the tablets are run on a wired network, they must have a fixed IP. For the start number tablets, we use the IP range x.x.x.101 and above

5.1.1 Windows tablet

Set fixed IP in Windows setup.

5.1.2 Samsung (Android) tablet

The example indicates that the IP of the network card in question on the server PC is 10.10.1.1 and that the tablet is number 2 in the series of tablets.

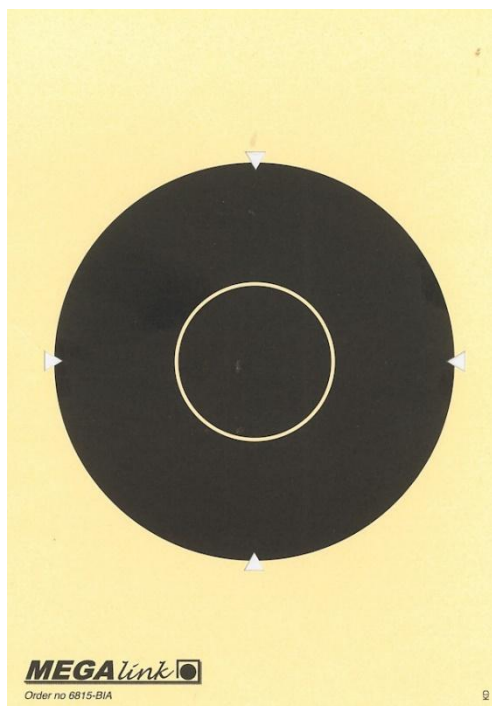
1. Connect USB C Network Adapter
2. *Go to Settings → Connections → More connection settings → Ethernet*
3. Make sure Ethernet is not turned on
4. Tap *Set up Ethernet device*
5. Select *Connection Type = Static IP*
6. Set up the following:

IP address	10.10.1.102
Netmask	255.255.0.0
DNS address	10.10.1.1
Default gateway	10.10.1.1
Proxy	Nobody

7. Tap *Save*
8. Turn on Ethernet

6 Precision testing of target

- Start a zeroing exercise. This is important so that the self-indicators do not decrease.
- Mount the sheet with the target face on the front of the target. Five sheets per target, one sheet per figure. The sheet has four holes for precise placement. Secure with tape.
- Shoot a round of test shots.
- Go into administration and select 1:1 printing under the Printing tab. Feel free to use transparent sheets.
- Place the printout over the paper target face and compare.

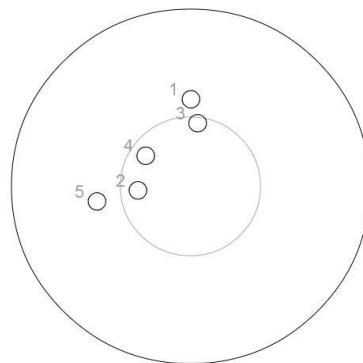


Cardboard target face for Precision Test

1 - 1 Print

Event: 2
Lane: 4
StartNr: 57
Series: 3

Shots: 5



Date: Tue Apr 22 2014 15:16:14 GMT+0200 (Vest-Europa (sommetid))



1:1 printing

7 Checklist before the start of the competition

(Print this list. Go through all points before shooting each day of the competition.)

Event: _____ Date: _____

Event start:

- ☐ **Rubber sheet is moved forward and is without damage**
Check that all the rubber sheets are moved forward so that shooting starts on clean rubber. If there are visible holes in the rubber, these are covered with rubber or silver tape.
- ☐ **Plastic target face and steel plates are without damage.**
Replace or seal a hole in the plastic if necessary. Paint over any stains on the steel plates.
- ☐ **Sync Clock**
Sync clock on PC. This should match the clock on the timer system and the clocks of the stand crew. (Tip: Most newer phones have automatic time syncing.)
- ☐ **Battery and voltage on all target**
Create a zeroing event in MLBia. Open the Status window and check that there is contact with all targets and that all have a voltage of over 12V. Is the charging cable in each cabinet inserted properly?
- ☐ **Counter log**
Read the target shot counter in target status tab. (Tip: Print the status window)
- ☐ **Coach display**
Retrieve status on PC and/or check that the green (yellow) LED is lit on all displays. And that the correct targets are displayed (zeroing, prone or stand).
- ☐ **Unit for start number registration**
Retrieve the status on your PC and/or check that all the green (yellow) LEDs are lit on all terminals. Check that all terminals have their own ID and are registered with the correct dial numbers. Feel free to test by, for example, registering shooter number 999 in and then out at all terminals.
- ☐ **All self-indicators open/close as they should**
Close and reopen all self-indicators (under Equipment in the Competition Admin tab in MLBia).
- ☐ **Red/Green lights for indication of target mode**
Change between target mode (At the bottom of the Overview tab) and check that it lights up red on stand, green on prone and no light for zeroing. Adjust any intensity (under Equipment in the Competition Admin tab in MLBia).
- ☐ **Timing system – EMIT/SIWI**
Cabling against any timing system has been checked and in order.
- ☐ **The correct event has been started on the PC**
Check that the correct event is selected and that all time settings are correct.
- ☐ **Prone/Stand/Zeroing**
Check that all targets are set up with the correct shooting position.
- ☐ **Import start list,**
select the correct event and import start list. Check that the name, club etc is correctly read.
- ☐ **For dual-system**
Check settings for override of the other system, replication of start number and that the correct system controls flaps. Make sure that both systems are in contact with each other. For each exercise, it is checked that the start lists, exercises and timing are the same, and that the result lists and dual-log are checked

Signature: _____

8 Notes

[illegible]

[illegible]