Guidelines

ISSF competitions

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1 About this document

This document is written for the technical staff supporting or operating a competition held according to ISSF rules.
The document is based on the official 2026 rules.

2 Preparation

2.1 Planning in advance

- Make sure that the relevant regulations for backing targets/cards/sheets are understood, planned and followed.
- Make sure that spray paint and/or patches are available to conceal shots in front-covers, outside targets, etc. For 3D-Score 25/50 it is also useful with black patches to reuse control sheets
- Make sure that sufficient spare parts are available. In particular, aiming cards, rubber sheets and paper/rubber bands, but also spare critical hardware components.
- Make sure you have what is needed for target verification before competition start (printer with transparencies and/or paper and control sheets without aiming holes etc)
- Make sure the needed infrastructure is understood and will be operational. Pay special attention to:
    - Network
    - Printers
    - Interfaces to/from result management systems
    - Audience/speaker support
    - Internet access

2.2 Preparation before competition

- Decide if shots are to be presented with or without the donuts.
  Megalink recommends automatic mode.
- Decide how decimal portion of shot values should be presented.
  Megalink recommends automatic mode
- For acoustic targets you should decide if pressure values are to be shown to the shooters.
  ISSF recommends turning it off.
- Make sure that range officers, jury and team leaders are familiar with the chosen monitor presentation.
- Be prepared for special procedures and verify with jury if it occurs:
    - Move shooter to another target
    - Allowable/Non-Allowable malfunctions. There is special functionality for this on 25m Pistol, but be prepared also for all other events
    - Exceptions like crossfire, double shots, missing shots, too many shots etc. For the Rapid Fire Pistol Finals you must in particular be prepared for late shots (Overtime) and shots not fired
    - Malfunction of equipment (target, monitor, range computer)
    - Protest for missing shots or challenged shot values

2.3 Equipment preparation

- Check versions in target, monitor and PC (MLRange, MLRes, MLLiveArena etc)
  Ref.: http://www.megalink.no

- Check chargers and battery condition if relevant.
- Check that all units communicate without problems (e.g. MLRange: File+Fetch ML2000 Status).
- Verify settings of master monitors.
- For increased security you can seal the electronics
- Do a rough test of precision with 1:1 print (refer to separate chapter)
- Check that bands, adapters, aiming faces and back foam/rubber are mounted correctly
- Check that the friction and alignment/centering is correct for the bands on acoustic targets and control strip for 3D-Score 10m
- Check and/or adjust target illumination if relevant
- Check that the correct courses of fires are going to be selected, and that planned band advance will be used.
- Consider security measures:
    - Be sure to change/use passwords on all computers
    - Consider establishing signed agreements with all personnel having access to key systems
    - Establish procedures to mark, sign and archive all control material (paper band, backing sheets etc)
    - Archive all printed lists
- Adjust the installation of the targets in order to have correct distance and angle to each shooter. The 3D-Score targets will provide better data for shooter position if the targets are well aligned towards the shooter in both vertical and horizontal direction.
- Verify target precision with jury (ref procedure in separate chapter)

2.4 Additional preparation for 25m

- If relevant, check the operation of frame sensors by knocking on the steel front of all targets
- Check and adjust the brightness of the red/green lamps if relevant
- Check/adjust the steel front alignment on the target frame.
- For the acoustic targets the lamp contacts for steel front should be cleaned and conserved with contact spray.
- Practice on starting the timer and calling the commands. Use the **Ins**, **Home** and **End** keyboard buttons for the timer instead of the mouse. Commands should be called according to the timer on the PC or monitor!
- The officer calling the command should be in contact with the computer operator or use the MLRange remote control.
- Decide how to use the timer in MLRange. We recommend automatic mode (not using “Split Timer Button” option). If the split timer is used, the **Home** button should be pressed *just before* 3 seconds remaining of the load time. In RFPF the automatic mode (not “Split Timer Button” option) must be used.
- Be aware that load time is not managed by the system for ISFF finals on 25m!
- Make sure that the range officer and/or jury understand exceptions like:
    - Frame shots in one target due to debris sprayed from a frame hit on a neighbor target. And the consequence of double shots on Rapid fire events in such circumstances.
    - Effect of ricochets from dysfunctional bullet catchers.
    - Double shots, from automatic fire and/or cross fire, will be ignored. In case of cross fire, the wrong shot might be included by the system. In case of automatic fire, the target would accept an additional shot to be included to the series (in the unlikely case that the shooter fires 6 shots).

2.5 Verification of accuracy

Before competitions, the accuracy of the targets should be verified with a rough precision test. This test should be managed or supervised by the jury. The procedure is:

- Create a test competition in MLRange. Select relevant target (e.g. air pistol, 50m pistol)
- Install a control sheet on all targets that are to be tested (normally all):
    - 3D-Score 10m: Install the special aiming card without aiming hole (or shoot outside the air rifle hole)
    - 3D-Score 25/50m: Install twinwall backing card and new control sheets on back of target. Do not install rubber directly in front of control sheet! Observe that shot detection calculates hits in the front plane of the target. Therefor you must pay attention to:
        - The shooter should be positioned in a fairly correct position in front of the target and not move during shooting on a single target
        - The shots on the control sheet will have a slightly larger scale than the detected shots. The scaling factor is approximately 1% on 25m and 0.5% on 50m (100mm at front compares to 101mm at control sheet in the back of the 25m)
    - 4K187 at 10m: Install rifle aiming card and shoot outside (using band advance). Or stop band advance and shoot shots at least 15-20mm apart from each other
    - 4K560 at 25m or 50m. Mount a paper target at back of the target. Avoid having a rubber sheet right in front of the paper. Make sure the shooter is not moving during shooting on a target. You will have the same kind of scaling issue as for the 3D targets, but the scaling factor is less due to less depth difference between detection plane and control sheet.
- Shoot at least 2 shots (we recommend 5) on each target
- Mark all control sheets and collect them. Make sure they are handled carefully
- Print 1:1 graphical score cards from MLRange.
    - Observe the “Solid black shots” option:
        - With transparency: OFF
        - With paper: ON
    - To print selected shots
        - Enter “Edit scorecard” function
        - Select relevant shots
        - Select scale (scale value is printed at the bottom of the sheet)
            - 1.000 if control sheet is located in the aiming plane (e.g. 3D score 10m)
            - 1.008 at 25m for control sheet at back of 3D-score
            - 1.002 at 50m for control sheet at back of 3D score
            - 1.001 at 25m for control sheet at back of 4K560/8K560
        - Start print of 1:1
- Compare 1:1 print with control sheets. Observe that some printers can have significant inaccuracies. Make control measures etc to determine, if this is suspected. When printing on paper using “Solid Black Shots”, you hold the printed paper behind the control sheet. With this method you can see the printed black shots through the shot holes of the control sheet.

2.6 During competition

- Understand and respect relevant dress code and remember hearing protection
- Use maintenance mode on range when working on the targets. This is very important when changing the aiming cards during a combined match with two stages on the 25m Pistol events.

- Only range staff and jury members are allowed to approach the targets during competitions. No shooters, team leaders or others are allowed unless an explicit jury approval has been given.

2.7 Training

Clarify how to run training. Check with jury and/or range officers

2.7.1 Unofficial training

This can be done as a managed match or as free training. Keep in mind that you might need supporting staff at range to help with operating the system.

2.7.2 Pre Event Training (PET)

This is mostly done as a regular managed qualification match. Sometimes the discipline is shortened by skipping some series or reducing the available time.

3 Procedures for exceptions

3.1 Registration in MLRange

All DNS, DNF, DSQ, DQB and deductions should be registered in "Edit scorecard" with code. DSQ, DQB and deductions must be followed by a text in the remark field. Examples (not real incidents):

- DNS and DNF: Only code without remark
- DSQ/DQB:
  Athlete 1458 KODAVALI Tanishq Muralidhar Naidu (IND) - ISSF Rule 8.4.4.2 Velocity Test failed (DSQ)
  Athlete 1379 PALMITESSA Marialucia (ITA) - ISSF Rule 9.16.5.4.a Serious breaches of safety (DSQ)
  Athlete 1712 CHEN Yu-Chun (TPE) - DQB – ISSF ADR Article 9
  Athlete 1648 KELES Ismail (TUR) - ISSF Rule 6.2.2.4 Red Card DSQ
- Deduction
  A 2 Athlete 1344 DIMITRIOU Alexandros (GRE) - ISSF Rule 6.11.5 Too many shots in event or position
  A 2 Athlete 1232 OLEWICZ Anastassia (EST) - ISSF Rules 6.10.5.6 Complaint about EST during sighting shots
  A 2 Athlete 1995 MARSH Elizabeth (USA) - ISSF Rule 6.16.5.2.c Shot value protest not upheld
  A 2 Athlete 1102 MIKULJAN Andrija (CRO) - ISSF Rule 6.10.7(d) Protests - Electronic scoring targets
  A 8 Athlete 1384 SALUKVADZE Nino (GEO) - ISSF Rule 8.8.2.1.a) Too many shots fired
  A 2 Athlete 1186 URQUIZA Daniel Zacarias (MEX) - ISSF Rule 6.11.1.1 (k) Shot after the command stop in sighting
- Comment:
  Athlete 1557 MORASSUT Andrea (ITA) - ISSF Rule 6.11.4 late arrival
  Athlete 1642 SONG Jong-Ho (KOR) - ISSF Rule 8.7.4.a & b Ready position violation

The remark should be phrased and/or approved by the jury. It can be useful to prepare a notepad document with relevant samples to copy/paste text from.

3.2 Procedure for moving shooter during qualification

If a shooter must be moved from one lane to another during qualification, the following procedure should be followed:

- Move the shooter in MLRes

- Copy and paste shots in MLRange
- Select the proper shots as match shots for the already shot series
- Delete names in MLRange (all lanes or old + new lane for moved shooter)
- Result + Update card in monitor to ensure that startsum, corrections etc. are correct
- Delete the shots on the old card (in order to prevent them from being sent to MLRes)
- Allow sighter shots if the rules/jury gives this right to the shooter (use Command+For One shooter or select through the right click menu for the series name on the relevant lane)

It is also possible to use the procedure to copy shots back to the original target, but then the shooters new monitor will not be correct with respect to number of shots and totals.

3.3 Procedure for moving shooter during finals

If a shooter must be moved from one lane to another during finals, the following procedure should be followed:

- Move the shooter to R1 or R2 (or any other unused target according to jury decision)
- Remove annulled competition shots if any
- Right click on lane number column for the NEW lane (R1 or R2) and select the ORIGINAL target as destination
- Select sighter if relevant and let the shooter shoot
- Select the aborted series for the shooter to complete (if needed)
- Continue as normal

The scoring for the moved shooter will be display at the audience screen as if he still was shooting on the original target!

3.4 Penalty

- Decide which shot the penalty should be placed on (e.g. lowest shot value on the first series of the stage). This information should come from or be approved by the jury.
- Insert a shot with reduced value corresponding to the penalty
- Delete the original shot and select the inserted shot instead
- If needed, the deduction can be done on several shots to achieve the wanted result
- Remember to register a remark with rule reference on the score card. This can be postponed until later, but should be done before sending results to the ranking system

3.5 Shot value challenged (by shooter)

- Frame shot: Verify in MLRange if there are other frame shots on the relevant target. Then inspect the target visually. If there is a false frame detection (e.g. the shot has touched the inside of the frame), and the target has detected a valid position and value, then remove the false frame shot and insert manually the correct shot value.
- Shots within the printable area for a 1:1 print can be found by verification of the control sheet, control card or aiming mask against the 1:1 print (remember the scale parameter). Use “Solid Black Shots” for paper and look through the bullet holes of the control media. Alternatively, you can print a transparency without the “Solid Black Shots” and hold the control media behind the transparency.
- Shots outside the printable area for 1:1 plot, will often be found on the aiming mask or control card. In most cases, the distance from the target center must be measured and a shot value can then be calculated.
- In the case the jury decides a value change, you must insert a shot with the given value and remove the original shot from the score card

- In case the jury decides to reject the challenge, the shooter will normally get a 2-point penalty on the lowest shot value in the first series of the current stage (?). Confirm with the jury!

3.6 Missing shot

- Count the number of holes in the control media. Remember to look for frame shots, shots outside the target, cross fire etc.
- If a shot is found that is not detected by the target, you can decide a shot value by following the same procedure as for a challenged shot value

3.7 Allowable malfunction on 25m qualification

- Use the right click menu functions to mark VOID shots as AM or insert AM on the series that has Allowable Malfunction. The idea is to mark as many shots as AM the shooter was allowed. At least one AM is required for the special AM functions to be activated!
- Use the function to remove the AM tag if you did a mistake. Only removing the shot as a match shot will not disable the special AM functionality!
- When you change to the next series, the lanes with active AM will be held back one series. You will therefore also get a notification that there already is shots on this series…
- The shots from the re-shoot or completion series will be registered on the same series as the series with Allowable Malfunction.
- Use the right click menu function to correct the series with Allowable Malfunctions. In case there is some special situation where this correction is not correct, you can always select the shots manually in the normal "Change Scorecard" function
- Remember to add one extra series in case of Allowable Malfunction on one or more targets
- Lanes with Allowable Malfunction are indicated with a background color. Yellow means that the shooter has an AM within this time-group and you need to shoot an extra series. Green means that the shooter has already had an AM on another time-group. There is no need to add an extra series for this lane in this time-group. Normally the shooter would not get several Allowable Malfunctions, but this is not automated. Confirm with the proper responsible authority. The coloring is intended only as a reminder!

3.8 Allowable malfunction on 25m finals

- In the Rapid Fire Pistol Finals, the series with AM should be deleted (use right click context menu). Then a new series will be fired immediately
- In the 25m Pistol Finals, there are two possible methods:
    - Delete any shots (or void markers) that are not to be included and then shoot the completion shots
    - Tag any AM shots (or void markers) as AM before completion. Then use the “Correct AM for series” context menu

3.9 Frame, double, void, late, missing, cross shots

The system counts most of these incidents with a value of zero and there is no need for any action. But manual intervention might be needed in some situations:

- False frame shots
- Cross shots
- Rapid Fire Pistol finals with late or unfired shots

Confer with jury to clarify in such situations

3.10 Procedure for replacing critical equipment

We recommend documenting as much as possible. Back-up, photo, write down data etc.
For issues with target or shooters display, the shooter is usually moved to another lane. Replacing a display or the range computer in the middle of a score-card is not straight forward.

4 Exchange between Range and Result management systems

There is three different ways to run result management:

- MLRes produces all lists and exchange name and results with MLRange
- Atos, Sius, Microplus or others produce all lists and exchange name and results with MLRange
- MLRange and MLRes is used at the ranges to produce lists during competition.
    - Startlists are made in third party systems (Excel, Oris etc) and imported in MLRes using e.g. Fil+ISSF Import. Names are forwarded by MLRes to MLRange.
    - Results are sent from MLRange to MLRes and MLRes is used to produce relay results, preliminary results, team resulta, results with protest time etc.. The results are also exported from MLRes to third party systems where final official lists are published.

4.1 Exchange from MLRange to result management system (MLRes etc.)

- Select the exchange type “Megalink (MLRange)” in MLRes and "Megalink (MLRes)" in MLRange
- Be sure that you use a unique event-id for each event. This event-id must be identical in MLRes/ATOS and MLRange. Be careful with events with multiple stages!
- The event-ID is flexible in MLRes and MLRange, but we still recommend keeping to these guidelines. The event-id has the following form:
  <EventCode>-<EventVariant>-<Phase><Stage>.
    - Event Ccodes are following the ISSF standard (AR60 etc). Other variants like A, P, AP etc can be used for MLRange with MLRes, if needed.
    - Event Variants M, W, MJ, WJ, MT, WT, MJT, WJT, MIX, JMIX etc. is recommended for MLRange with MLRes. Atos require numbers for the Event variants (e.g. 0 for Women, 1 for men, 3 for JrWomen, 4 for JrMen).
    - Phase can be P for PET, E for elimination, Q for qualification, S for shoot-off and F for finals.
    - Stage is either not used or a stage number where relevant (Q1/Q2 for SP, CF, RF, Team Q etc.).
- Use the option for “Alphanumeric lane numbers” in MLRange for all ISSF finals and for the RFP elimination/qualification (bay number). For the RFP-finals you MUST fill in and verify the dialog that maps lane numbers to final positions. NB! With alphanumeric option you should use lane 1-10 in MLRes (corresponding to A-J on the range regardless of actual lane numbers used).
- Use of "Spare targets" option:
    - Enable for finals in 10mP/10mR/25mSP/25mCF/50mP/50mPR/50m3P events (with a total of 10 active targets for the finals range).
    - Disable for Rapid Fire Pistol Men finals!
- Do not use drop-in shooting in MLRange (i.e. keep the “Common Relay Change” checked)!
- Do not use the “Use Startnumber” option in MLRange!
- The startlist files with names are prefixed with a S- while result files are prefixed with R-. All files are suffixed with –R<relay-nr>.txt. In some situations, it will be suffixed further with #<lane>

5 Finals

This chapter describes how to run the finals defined in 2026 rules.

Study the competition flow diagrams later in this document.

The rest of this chapter points to special features for the finals.

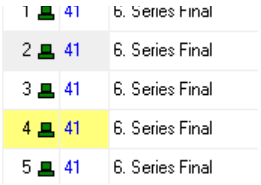
5.1 Range setup

- Normally the finals require visible audience screens for the shooter. To avoid the need for the shooter to turn towards the spectator screens, this can result in a need to plave screens in front of the firing line at the shooting stand!
- Pay attention to lane numbering and make sure proper labels for targets, shooting positions etc are available
- The audience on the arena is recommended to follow the competition through MLLiveArena.
- MLLiveArena should also be used to provide live graphics over internet

5.2 General

- Startlists for the beginning of the finals are provided by the Result Management System
- If you have multiple equal finals (eg Men, Women, Men Jr etc), we recommend that you create separate events in both MLRes and MLRange for each final! This also means unique EventId for each. For the 2019-2021 finals and the medal matches, you MUST do this!
- As always – remember to send also the last relay to the Result Management System!
- Exceptions (cross fire, missing shots, penalties, malfunctions etc.) MUST be handled immediately and before the next shot/series is fired.
- Signing of score cards is normally not needed for the finals, since any protest MUST be given immediately on the range and the results are final when announced.
- There is a separate tab in MLRange to get an overview of results for several series
- Observe that MLRange automatically or manually can exclude lanes from the finals (e.g. for missing names). Use the right click menu in the Relay column if you need to change this
- The audience systems will in some situation wait with upating/sorting rank information until the timer is stopped and/or all equal shot counts are detected or the series has been completed. You should It is therefore stop the timer when all shooters are finished.
- For the old finals using points (and not scores) there have been added some columns in MLRange to see the points more easily in addition to the shot or series score.
- For medal matches (not used for individual or mixed, only old team finals) you should NOT use non-standard relay numbers. Start with relay number 1 on go through the parts or stages. If you for example want to skip a bronze match that normally is relay 1, you MUST select relay 2 to go directly to the gold match. For the old finals formats you MUST use the proper relay numbers!

5.3 Use of colors in the interface



From the last series before elimination, MLRange will highlight shooters lane and name:

2B= 4	Red background	Just eliminated (turns gray in the next series). Used for easier observation of recent elimination
3 1	Gray background	Eliminated
2 1	Yellow background	Indicates danger of being eliminated
2 1	Green background	In a tie for elimination. Need shoot-off to resolve tie

5.3.1.1 Resolving ties

Lanes with ties that need to be resolved are flagged green. If this occurs, you must proceed to the first shoot-off series and resolve the tie.

If the tie continues you should select next shoot off series if possible. There is implemented logic that should make it possible to continue with multiple shoot-offs on a singe shoot off series, but be careful! It is also possible to delete the shots on a tied shoot-off and continue as if the series was not fired

Be careful when more than two shooters are tied, and in particular when multiple shooters are tied for multiple eliminations! The best strategy is to continue to the next shoot off series when any shooter wins and/or looses the shoot off while some others must continue! In worst case (extremely rare) you can register shoot off results manually and construct artificial results to force MLRange to eliminate the right shooters.

Exceptions like too many shots, missing shots, malfunctions etc. MUST be corrected and it must be done BEFORE announcing results!!!

As soon as a tie condition has been resolved (no more than one lane being green), proceed to the next match series.

NB! There might still be some oddities in color ond/or ranking during shooting of shoot-offs. Pay close attention and do not call results until all shooters are finished and you have understood the results!

5.4 Presentation

- In MLLiveArena the total (score/points) will be shown in italic font after the first shot is fired on a series until the series is complete on that lane.
- In case of delayed sorting, the rank numbers will be presented on gray or transparent background until the series is completed and the sorting is done. Both the total and the rank numbers can still be updated during the shooting!
- Any shooter in danger of getting eliminated might be presented with yellow background
- A shooter that has been eliminated is presented with light gray background
- In some situations, it can be difficult to see which shooter was eliminated right now. In such cases the background is light red to indicate that there is a recent/pending elimination. This simplifies the job for the speaker. It can be regarded as if the shooter is now eliminated.
- When two or more shooters are in a tie situation for an elimination, they are presented with a green background.
- During a shoot-off, the same coloring is used.

5.5 Operation

- MLRange is in general operated as any other competition
- Lanes that should participate in the finals require the name of a shooter to be present!
- Shooters and/or lanes can be excluded (or re-included) from the competition by right-clicking the lane number column!
- In simulation where you register shooters locally in MLRange, you might run into difficulties…. The automatic exclude system runs before the names are present and you might have to re-create the relay and/or adjust manually.
- Observe that points (for old formats) are in general not allocated to any shooters until ALL participating shooters have completed their series. In case of missing shots (eg. not fired) you MUST manually insert a miss (0) to get the correct scores!

- The finals are quite complex and there is a lot of hidden configurable functionality to delay sorting and/or ranking and/or totals. We recommend testing the finals in advance to get used to the behavior. We also recommend to stick with the default settings!
- It is technically possible to jump back and forth in the Course Of Fire. Observe that audience screes and shooters monitors also will reflect this!

5.6 25m Rapid Fire Pistol Finals

This final is described in more details in a separate document. Please observe that you need to:

- Activate only the 10 targets to be used , select alphanumeric lanes and set the mapping of lanes to be used in the "RFPF Shooter Position" dialog in Setup+Event menu. Use the auto function!
- Do NOT use "Split Timer button"
- Open activation panel with … button (left of Shoot button). The panel floats on top and can be placed in wanted position and will not block for operation in the main MLRange window
- Before EACH shooter starts:
  - Ensure that the series selection is correct. Press Shoot button after you have changed series.
  - Activate shooter(s) with respective button on the activation panel
  - When the shooter and range is ready, Call the shooters name and start the timer with the **Home** keyboard button
  - You can start the series with the home button even if the red light is still on
  - Continue for all shooter before selecting next series
- Call "Attention" when red light starts
- Shoot offs for the medals are handled with the shoot off *series.* Continue with next shoot off series. You can also shoot multiple series on one series. If both/all equals in shoot off, you can also delete the current shoot off series and re-use that series for the next shoot off.
- In case of AM, the "old" series should be deleted before re-shooting on the same series

5.7 25m Pistol Finals

- In case of AM you should delete the "void" shots that are to be replaced by shots in the completion.

6 Additional guidelines

6.1 25m events

6.1.1 25m Pistol/Center fire – Precision stage

- Calling of "attention" when the red lights are started is optional. Megalink recommends informing the shooters before the competition regarding the details of your chosen method.

6.1.2 Rapid Fire Pistol

- With split timer: Press Home just before load time has counted down to 3
- Call "Attention!" just when the red light comes on (start just a fraction before the countdown changes from 3-2-1 to 4-3-2-1-0).

6.2 4K187

- Remember to change adapters (behind the band) when there has been shots far out in the target (outside 10cm diameter).

6.3 3D-Score

- When the witness strip is used, we recommend
  - 15mm advance pr. shot for rifle
  - 25mm advance pr shot for pistol
- To simplify the handling of cross fire, we recommend to align the targets properly. Shoot a shot and check in MLRange scorecard details!

6.4 50m Rifle 3x40 and 3x20

- Prepare and check the settings regarding change from sighter to match series and/or between positions in 3P (the pre-defined Course of Fire definitions should be correct).

6.5 MLRes – Result Management

Definition/description/comments for some terms

Term	Description
Events	Use one MLRes event pr. ISSF event 1) • Separate events for each stages in qualifications for RF, SP and CF (when the shooters leave the range after stage 1). • Separate event for finals • Same set of event is needed for PET/ELIM (without finals)
Classes	Allow only one class pr. Event. Use a common class (MIX) for mixed team events
Program ID	Verify/change the program ID. Use "Fix Program ID" button for each event!
Prizes	• Use ONE Prize definition pr. event • Combined is slightly easier to handle, but Pr. Class also works well • Make sure you select the correct values for Decimal and Rank • Use Standard ISSF list as Listtype
Remarks	• Do not replace the remark codes DNF-MQS! • Modify the remark codes for records according to competition • Do not add too many remarks. The program can only handle 30 codes
Logo	• Use the Logo button on Competition setup to enter top and bottom logo • Use the form ./Logoname.png to make logos accessible from multiple MLRes in a network! • Adjust logo size in MLRange.ini
Nation/Club 2)	• Select shooter represents nation • Import IOC nation codes as clubs • Register the shooters with IOC codes
Start nr	• When BIB numbers are used, you should enable the "Use start nr" option for each event • For events with multiple stages, you must ensure that you are using the same start numbers. You might want to remove the "Use start-nr" option to verify this….
Lane range	• Make sure that the lane range is correct. It could be wise to enable the first and last lane even if they are not used.
Team event	• Enable the "Team event" option for events with team competitions. Shooters that are registered on a team will be tagged with a # sign after the nation code. Probably obsolete with the new 2022 rules?
DNS/DNF	• Preferably registered on the range. Can be changed in MLRes • No remark text! • Verify that DNS is forwarded. There has been issues with no data exchanged when no shots are registered. Register manually in MLRes…

DSQ	• Can be registered on range or in MLRes • Add a remark text on the form: "ISSF rule 6.7.8 Failed equipment control" • For multiple stages within an event, you might need to duplicate the registration
DQB	• As for DSQ • Remember to add DQB to all events where the shooter is registered (use the search function)
Penalty	• A remark description is normally entered on the range in case of penalty. Use MLRes to add/change. Same format as for DSQ
Lock relays	• When you are finished with registering the relay, we strongly recommend to lock the relay by using the right click menu on the Shooters tab • If you need to edit remarks, then unlock, edit and lock • When results are received, you should lock by using the right click menu on the Results tab.
Records	• Use the "Add/Edit ISSF Note" button to edit records • Use the following format: <Total><Name><IOC><Date><Competition><Place> <(country)> 632.7 YANG Haoran CHN 5 SEP 2015 WCF Munich (GER)
PET remark	• Use the "Add/Edit ISSF Note" button to add text in start list header note field: • "The same start list will be used for Pre-Event Training which will be held on DD MMM HH:MM"
Targets available	• Summary on the lists are handled automatically, but you might want to change the Targets Available value by using the "Add/Edit ISSF Note" button
Finals squading	• After individual qualifications, you should position yourself on the qualification event and select the Prizes+Shoot-off/Gift tab. • Select the Prize-definition in the left pane. • Enter check marks in the finals column (QF) for the shooters to be included in the finals • Press the "Export finals shooters" and select relay number (1) for the finals event. • Note the filename. Observe that it is created both a randomized and a ranked version. • Use the menu function File+Import Relay. Select the previously exported file and select the correct finals event when prompted.
Qualification squading	• Use the MLRes2 program with entry list and range constraints • Import with File+Import Relay
List heading	• When printing reports you will be prompted with a dialog to adjust the list heading. Edit manually if needed. • If the event name is not correct, you might have to check the Fix Event ID button • Lists that does not contain all shooters and/or all shots, should have the text PRELIMINARY RESULTS • Lists should preferably be printed to PDF and archived before printing. After changes, new PDF versions should be generated to keep track of all variants posted.
Protest	• Remember to enable the Protest time option for lists that need this • Protest time is not used for Start List, Relay results and Finals Results

	• The jury/judges must manually write the protest time. Use blue permanent pen • When the protest time has expired, print a new version without the protest time.
Start list	• ISSF want a complete start list with all relays, but MLRes also supports printing separate start lists
Relay list	• For multi relay events you should print relay lists for each relay • Remember to add PRELIMINARY RESULTS
Graphical Score Card	• The score cards are often printed automatically on the range, but it can be handled in MLRes also

Result list	• When all shooters are finished with all stages, you should make sure
	  o Finals shooters are tagged with QF
	  o All remarks are updated
	  o All shooters have results and/or DNS/DSQ/DQB
	• Then print a result list with protest time
	• After the protest time has elapsed, you should post a final result list

Team competition	• Enable the "Team Event" option for the qualification event • Create a new team definition and select the correct ranking and decimal settings • Add a event record to the team definition and register the wanted qualification evet, series, class an number of shooters (3) • Then you can register teams on the Shooters tab. Create a new team • Select the team and register club/nation • Add shooters by selecting with the drop downs

1) MLRes can handle mixing classes and even different shootings (like 40 shot Air pistol and 60 shot Rifle). However, the lists will then deviate from the ISSF requirements and you are not able to handle records.
2) MLRes supports use of club names instead of nations, but the lists will change slightly. You can also register the clubs with a 3 letter code and a full name ("NOR-Norway" or "NOR-Fredrikstad MSL"). You can then use Nation style during competition and still track clubs.

6.6 Old Finals formats

These finals are not supported anymore. Some of the old formats are still available in the software, but functionality might be broken! Please test carefully if you absolutely MUST use any of these!

7 Event setup overview

Event description	Event ID	Event variant 1)	Phase/ Stages 2)	Program	Discipline	Alpha	Res. Tgt.	Lane in Res.Mgmt	Lane in MLRange 3)
10m Pistol Qualification 4)	AP	M,W	Q,P,E	10m Qual	60 Pistol	×	×	Any	Ref MLRes
10m Rifle Qualification 4)	AR	M,W	Q,P,E	10m Qual	60 Rifle Decimal	×	×	Any	Ref MLRes
10m Pistol Finals	AP	M,W	F	10m Pistol Finals	Pistol	✓	✓	1..8	A..H
10m Rifle Finals	AR	M,W	F	10m Rifle Finals	Rifle	✓	✓	1..8	A..H
10m Pistol Mix Qualfication 4)	AP	MIX	Q	10m Mixed Team Qual	Pistol	×	×	Any	Ref MLRes
10m Rifle Mix Qualfication 4)	AR	MIX	Q	10m Mixed Team Qual	Rifle	×	×	Any	Ref MLRes
10m Pistol Mix Finals	AP	MIX	F	10m Pistol Mix Finals	Bronze Match, Gold Match 4)	✓	✓	2..3, 4..5	B..E
10m Rifle Mix Finals	AR	MIX	F	10m Rifle Mix Finals	Bronze Match, Gold Match 4)	✓	✓	2..3, 4..5	B..E
25m Rapid Fire Pistol Qualification part 1	RF	M	Q1,P1,E1	25m RF Pistol	30 shot	✓	×	1, 2, 3…	A, B, C… (3,8,13,…)
25m Rapid Fire Pistol Qualification part 2	RF	M	Q2,P2,E2	25m RF Pistol	30 shot	✓	×	1, 2, 3…	A, B, C… (3,8,13,…)
25m Rapid Fire Pistol Finals	RF	M	F	25m RF Pistol Finals	Finals	✓	×	1..8	1A, 5A, 2B, 6B, 3C, 7C, 4D, 8D (1,2,4,5 + 6,7,9,10)
25m Pistol Qualification	SP (CF)	W (M)	Q1,P1,E1, Q2,P2,E2	25m	25m Prec, 25m Rapid	×	×	1,2,-,4,5, 6,7,-,9,10 etc	Ref MLRes
25m Pistol Finals	SP (CF)	W (M)	F	25m Pistol Finals	Elimination	✓	×	1..8	A,B,R1,C,D, E,F,R2,G,H
50m Rifle 3P Qualification		M, W	Q	50m Qual	3x20	×	×	Any	Ref MLRes
50m Rifle 3P Finals		M, W	F	50m Rifle 3P Finals	Rifle 3 Position	✓	×	1..8	A..H

1) Junior, SH1 etc. follows the same standard as seniors, except the Event variant (e.g. AP-MJ-Q)
2) Elmination and PreEvent Traning follows the same standard as Qualification, except for using E or P as the phase ID (e.g.AR-M-P1).
3) For finals, use 10 sequential lanes anywhere on the range (e.g. lane 21..30). Exclude other lanes in “Event setup” (not in File+Interface)
4) Pistol and Rifle can be mixed in each relay of an 10m qualification event. Use a generic EventId and separate the disciplines by using classes for shooters

8 Target configuration overview

Target model	Event type	Front	Back	Other
3D-Score 10m	Rifle/Pistol	N/A	• Aiming card	Vitness strip (paper band): 15mm for rifle 25mm for pistol
3D-Score 25m	Rapid Fire	• Twin Wall w/RF aiming opening • Black 2mm rubber w/aiming lines and no hole	• Twin Wall Control card • Black paper control sheet • Rubber if not dark background or no roof	
3D-Score 25m	Precision	• White 1mm rubber opening for aiming • Only if no roof: Add black 1mm rubber with no hole	• Twin wall Control card • Black paper control sheet • Rubber if not dark background or no roof	
3D-Score 50m	Rifle/Pistol	• White 1mm rubber opening for aiming • Only if no roof: Add black 1mm rubber with no hole	• Twin wall Control card • Black paper control sheet • Rubber if not dark background or no roof	
4K187 10m	Rifle/Pistol	• Plastic clips must be used to press the aiming card towards the band • AR aiming card (P.nr. 1037) or AP aiming card (P.nr. 1038) • 120mm black paper band (P.nr. 1046) • Paper adapter	• 22x22 foam piece (P.nr. 1220-B)	1)
4K300 10m	Rifle/Pistol	• Plastic clips • Aiming card • Paper band • Paper adapter (P.nr. 1307)	• 30x30 foam piece (P.nr. 1089-B)	
4K560-8 25m	RF/Prec.	• Twin Wall 4K560 Precision aiming card (P.nr. 5866) or rapid fire aiming card (P.nr. 5867) • 1mm rubber band with 250mm	• Mount a 59x59cm foam piece (P.nr. 2047) behind the frame • Mount a Control Card and Control Sheet behind the foam	2)

		width (P.nr. 6151-B) • Main rubber sheet with white aiming lines and 200mm cutout in center	• The range must have a Backing Target 1m behind the target	
4K560-8 50m	Rifle/Pistol	• Twin Wall 50m Rifle aiming card (P.nr. 5865) or 4K560 Precision aiming card (P.nr. 5866) • 1mm rubber band with 250mm width (P.nr. 6151-B) • Main rubber sheet with white aiming lines and 200mm cutout in center	• Mount a 59x59cm foam piece (P.nr. 2047) behind the frame • Mount a Control Card and Control Sheet behind the foam • The range should have a Backing Target 0.5-1m behind the target	2)

1) The band should be centered horizontally, and the friction should be fairly high
2) The band should leave the roll from behind and coming forward over the top roller before the band is running in front of the main rubber sheet and entering the motor mechanism. Verify that the band is centered horizontally and that the friction of the roll is fairly high.