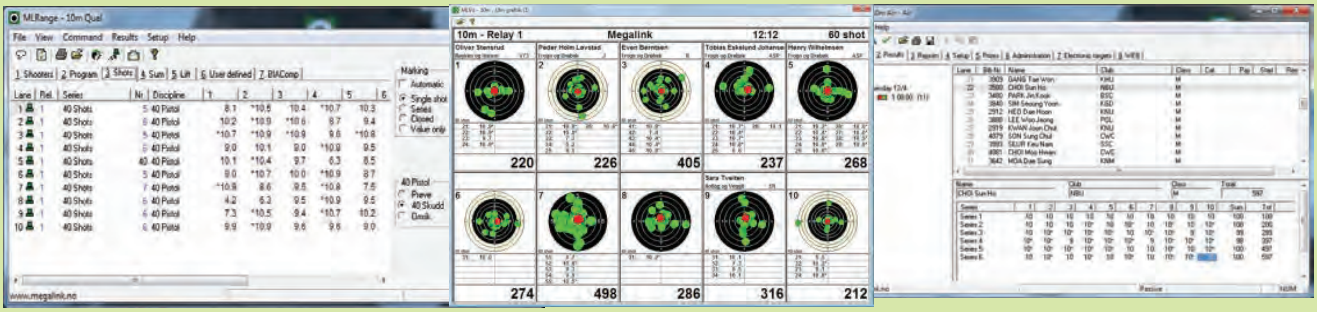
ELECTRONIC SHOOTING TARGETS

First class software

All disciplines 10-300m



MEGAlink

ELECTRONIC SCORING SYSTEMS

Megalink

Company history

Megalink was founded by shooters with skills and experience in design and production of electronic computer based solutions. The first products were delivered in 1987 while the current company was officially founded in 1991. The development of the electronic targets started in 1993 and the first targets were sold in Norway in 1997. Since then, and after the quality was proven, about 2000 customers has bought Megalink targets.

ML2000 Electronic targets

The ML2000 system provides a complete solution for electronic detection and presentation of shooting results. A few different target units can be used to cover a large range of shooting variants. All target units are based on sound wave measurements. A well proven and reliable technology with more than 30 years of history.

The shot results are presented on a handy display unit located at the shooters stand. Competition staff operates the system with high quality Windows applications. The audience can follow the shooting on large screens using standard PC technology, or you can publish live on the internet.

Simple and flexible

The ML2000 system is based on handy modules with simple cabling. Installation can be done by the customers and the range can easily be expanded later. The use and maintenance of the system is easy and does not require special training. Large amounts can be saved with the ML2000 system, since the same equipment can be used in different configurations.

Operation security

The expectations are high for ranges with electronic shooting targets. We are therefore proud of all the feedback regarding excellent stability, accuracy and operation security. From the start we have paid attention to build in security mechanisms to offer a high degree of security for shot detection and result storage. Examples of different techniques are:

- Automatic storage of shot and event information in all units, target, monitor and the computer
- Guarantee for correct content and sequence for data sent between the units
- Hardware counter for monitoring sensor activity independent of software
- No central server that could potentially block the system, and potentially lose all results.
- Patented sound pressure detection at all sensors for all shots - excellent support for the rangemanager.
- Excellent phone support 24/7 worldwide - English.
- Update of software is done by the customers with updates available on Internet.

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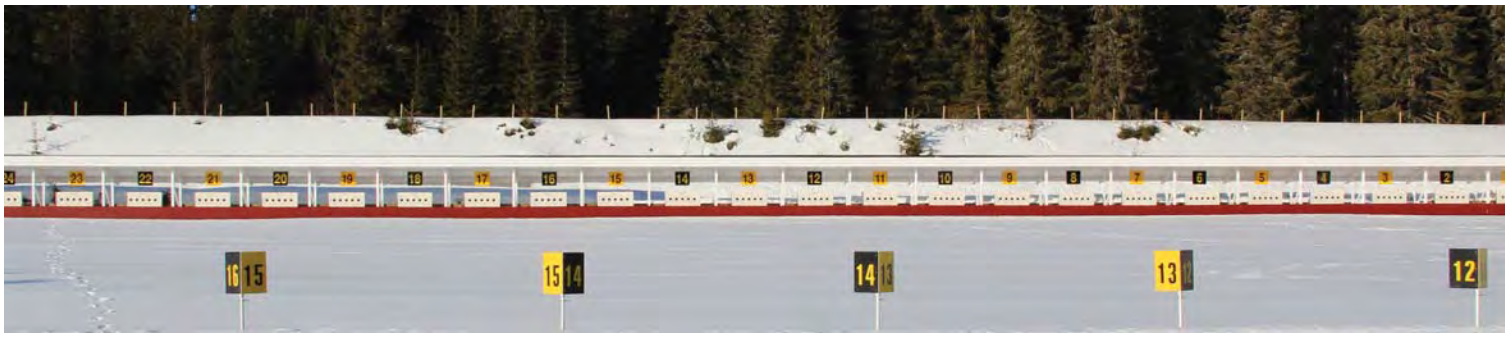

Mjøsski 30 targets BIA

Complete scoring system solutions

Megalink can deliver complete solutions for scoring management for shooting. This includes electronic shooting targets, range management, scoring result system and support.

Picture: Norwegian Championship 25m

System description

Each target unit detect and store shot information without need of contact with any other component in the system. Up to twenty target units are connected to a common power supply box. As an option the power supply box can be equipped with a lead battry and a charger.Due to extremely low power consumption, this battery is sufficient for several hours of operation without charging.

Connection boxes are mounted at the shooting stand for connection of the shooter monitors. A single 12V mains power converter will cover up to ten monitors.

A simple cable with one twisted pair is all that is required between the shooting stand and the targets for a segment with up to ten targets. By adding power supplies and cabling, several segments can be added to build large ranges.

For out-door ranges we deliver surge protection for the communication line.

For competitions, a range management PC will be connected using a USB interface against the electronics. Our range management software provides a user friendly and powerful solution for capturing shots, controlling marking, correcting shooting mistakes and distributing results to back-office and audience systems.

Sound pressure measurement

The ML2000 system uses a patented technique to detect the level of sound pressure in the triggering sound wave. This has proved to be a unique aid to monitor the detection quality in the targets. The mechanism is used both to evaluate the need for maintenance and to evaluate the status of the target in case of problems or protests regarding the target precision.

USA Shooting 25m

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Color Display Unit

Color Display Unit

The display for the shooter is designed for the environment at the shooting stand and provide clear and explicit information about the shooting.

Design

The display can be folded by twisting the stand plate up in front of the LCD. In the folded position the stand plate protects the unit and provides a carrying handle. The unit is designed to be placed directly in an optimal position on the shooting stand. This gives a maximum of flexibility and comfort. The angle of the monitor can be adjusted by the shooter according to individual needs.

The display units are connected to a outlet in front of the shooting stand. One single connection is sufficient for both data and power (12V).

Operation

The large display is easily readable with clear presentation of key information. The operation is done with four push buttons that corresponds to on-screen menu functions. In combination with a simple menu system this results in a user interface that can be handled by all kind of users.

Shots are presented in a clear and explicit way with the following information available:

- The last shot is marked in another color and the average position is marked with a cross.
- List with the last 10 shot series.
- Exact position and value of the last shot is given in large fonts
- Sum of current series, split series and total for scoring card
- Sighting series is indicated with a triangle in the upper right corner
- Sound pressure values, relay information etc. is presented with small fonts to avoid disturbance
- Clock that displays preparation or shooting time

Card reader

The display units are delivered with a build-in card reader for memory cards (smart card). Those can be used for payment based on number of shots.

LCD

The information is presented on a Color LCD with LED background illumination. A cover in front of the LCD protects the unit against shock waves from shots, and empty shells ejected from weapons. The cover has an anti-reflex treated surface to reduce problems with difficult indirect light.

Specifications for color display unit

- 10,4" LCD, 800x600 pixels Color LCD
- Display with LED backlight and anti reflex protection cover
- Additional protection can be mounted
- Weight: approx. 3kg
- Measures : 290x282x66 (WxHxD folded)
- Power supply: 12V (8-15V), 700mA
- Temperature for use: -30°C - +45°C
- Built in reader for memory cards (smart card)
- Built in 2 USB ports for special equipment.
- Software update by using a USB memory stick
- Automatic storage of the last 99 score cards.
- Flexible solution to handle different shooting regulations
- Simulation of shooting distance
- Support for running (hunt) and turning targets (pistol)
- Display series sum, split sums and score card total
- Single shot marking, manual marking or range management controlled marking
- Score cards can be printed on standard Windows printer when a PC is connected to the system

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4K300 - 4K300L
Target Unit for 10m, 15m and 50m

10m air rifle

50m rifle

Flexible unit for short range shooting
The target unit is designed to cover a wide specters of short range shooting:
- 10m air rifle and pistol
- 15m air and cal. .22 rifle and pistol
- 50 foot rifle
- 50m rifle
- Can be combined with target lift
- Indoor or outdoor use

Installation and use is very simple and the unit offers the full functionality of the ML2000 system. This unit has been very popular in the Scandinavian market for permanent ranges, portable ranges and personal training targets.

Rubber or paper band
The motor unit for automatic band advance is designed to handle both rubber and paper bands with different width. Combined with different aiming plates, the same target unit can be used for a wide range of shooting variants.

The band advance is controlled by software, and can easily be set from the display unit or the range management computer. Reducing the advance for practice can reduce cost of operation, while increasing the advance for competitions will eliminate the risk of detection problems. Our patented sound pressure measurement is a valuable tool for monitoring the condition of the target.

LED light on 4K300, 10m Air
It's possible to install LED light on the 4K300 model.

Simple converting
The target unit can be converted to different target variants in a
simple converting process:
- Remove the protection plates
- Replace roll with rubber or paper band
- Modify band guide
- Insert the band in the mechanism
- Mount aiming sheets and protection plates

Specifications for 4K300:
- Approved by ISSF for 10m air
- Approved by several national federations for 15m and 50m rifle
- Detection area: 172x172mm 4K300L ø 260mm
- Temperature for storage: -25°C - +60°C
- Temperature for use: -25°C - +45°C
- Power supply: 9-16V, 50-80mA
- Measures: 440x570x110mm (WxHxD)
- Weight: Base unit 5.0 kg
  Steel protection: 7.5 kg
  15mm plywood 4.5 kg
- Accecories:
  - o Low stand (centre height approx. 75cm)
  - o High stand (centre height approx. 40cm, 90cm and 140cm)
  - o Target lift
  - o Pellet trap for air weapon

4K187 - and target lift

Target Unit for 10m, 15m and 50m

Approved phase II by ISSF for 10m diciplines

The smallest target for 10m-50m

4K187 is a compact size target unit designed for 10m air weapons and 15m small bore ranges. The target contains all the powerful functions in the ML2000 system, but is more easily maintained than 4K300. The target unit is protected with a aluminum plate for air, and steel plate for small bore ammunition. For small bore we recommend to add a wooden protection plate in front to avoid ricochets on short distance shooting (often a national regulatory requirement). For 50m use, a larger aiming plate in polyethylene can be mounted.

The target can be mounted directly on a wall with the key holes on the back of the target. More often the unit is mounted on a stand together with a pellet trap. The unit is also well suited for our target lift for short range match practice.

Target lift:

Target Lift comes complete and is very easy to assemble:

- Target lift can be mounted in the ceiling, on the wall or in a stand special made for target with lift..
- For a smooth sliding surface up and down on each side of the target.
- This is done by using the existing wall or table mount sliding
- The target is mounted in a cargo strap on to the lift
- The target lifts are chained together for communication and power.
- The three positions (plus park) are programed from the master display unit (software controlled)

LED Light

The target can be delivered with integrated LED illumination

- 5 steps level gives from 1500 - 2500 LUX
- Can also be mounted on old targets

Specifications target lift:

- Measures 85x150x245mm (WxHxD)
- Weight: 3,5 kg
- Lifting capacity: 20 kg
- Speed up/down: 8 sek. / 6 sek.
- Power Supply: 24VAC/5A
- Monting ceiling: 195cm-300cm

Specifications for 4K187:

- ISSF phase II approved for 10m
- Approved by several national federations for 50m rifle, 15m rifle and 50foot rifle.
- Detection area: 172x172mm
- Temperature for storage: -25°C - +60°C
- Temperature for use: -25°C - +45°C
- Power supply: 9-16V, 50-80mA
- Measures: 280x430x100mm (WxHxD)
- Weight: Target unit (steel) 6.7 kg
  Target unit (alu) 4.7 kg
  15mm plywood 1.3kg
- Accessories:
  - o Low stand (centre height approx. 75cm)
  - o High stand (centre height approx. 40cm, 90cm and 140cm)
  - o Target lift
  - o Pellet trap for air weapon

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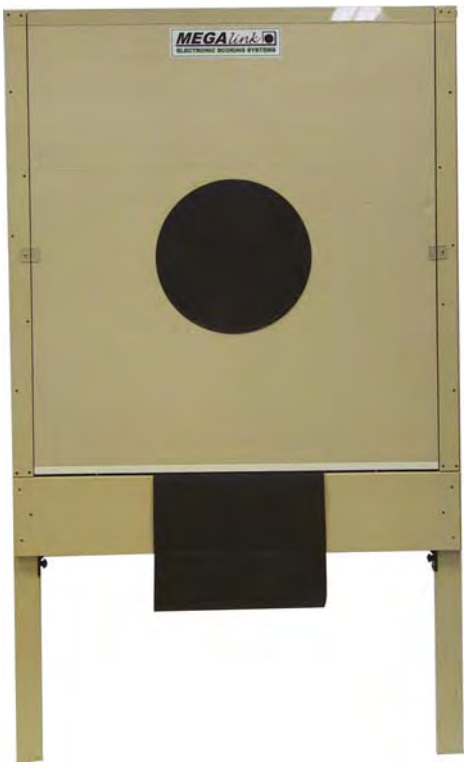
3U545
Target Unit for 300m



Design
The base unit is made in laminated pine wood, plywood and rubber. All wooden parts are painted in an off white colour. The front and back targets is made of polystyrene foam and covered with painted glass fiber wall paper. This design results in a robust out-door unit with simple maintenance.

Sensor unit
The sensor unit is an aluminum rod with integrated microphones (3), temperature sensor and controller unit. The unit is located at the bottom of the sound chamber for easy access when maintenance is required.
The design of the sensor unit and the base frame, results in a system where the aiming centre corresponds extremely well with the electronic center, this is important for zeroing the sight.

Target Color
Our standard color is off white. This reduces problems with bright light while still providing a superb contrast. The feedback from customers is very positive. Due to the design, other colors can easily be delivered to conform to national shooting rules.

Specifications for 3U545:
- Complies with ISSF rules for 300m rifle
- Detection area: 1200x1300mm (WxH)
- Measures: 1300x2020x86mm (WxHxD)
- Weight - complete: 25kg

The sensor unit is protectetd from shots in the bottom of the target.

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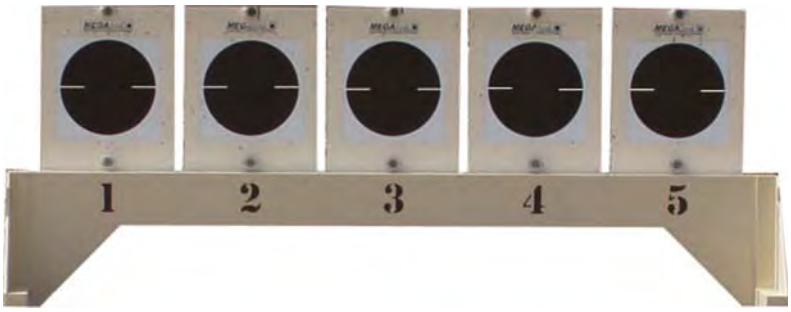
4K560-8

Target Unit for 25 and 50m



Approved phase II by ISSF for 25m and 50m diciplines

25m and 50m pistol

The target unit are designed according to the ISSF rules for pistol shooting at 25m and 50m. The targets can be used with aiming plates for precision, rapid fire and 50m rifle. The rapid fire target has horizontal aiming guides instead of ring numbers (according to ISSF rules). For additional aiming guide the target design also provides a visible square around the target (between the detection area and the steel protection).

Light signal

A light signal system (Used for 25m) is used instead of turn targets for rapid fire on electronic shooting targets. The system consists of a red lamp above the detection area and a green lamp below the detection area. The lamps are LED based lamps with thick polycarbonate protection to stand hits from cal. .22 and .32 (without jacket). If a lamp is hit with several cal. .22 shots the polycarbonate can easily be replaced.

The light signals are managed either from the range management computer (MLRange) for competition or from the display unit for individual practicing. The most common shooting programs are available in both cases. From MLRange you can even define your own shooting program with your own timing.

The intensity of the light can be independently adjusted for both lamps on each target to optimize the signals for indoor or outdoor use.

Installation

The pistol system is identical to all the other ML2000 systems except for using segments with 5 targets. The reason for this is partly power distribution to light signals and the rules for pistol events that assumes groups of five targets. The light signal is fully integrated into the system and therefore no additional cabling or installation is needed.

Specifications for 4K560-8:

- ISSF phase II approved for 25m and 50m
- Detection area: 520x520mm
- Target unit base in aluminium
- Protection plate in Hardox steel 25m
  - o Unjacketed .22 and .32
  - o Jacketed 9mm (NATO ammunition)
- Protection plate in aluminum (50m)
- Automatic motor driven band advance
- Red and green LED lamps with polycarbonate protection (25m)
- Aiming plates for rapid fire, precision and 50m rifle
- Measures: 700x920x130mm (WxHxD)
- Weight - 25m complete: 25kg (base unit 12kg)
  - 50m complete: 19Kg (base unit 12kg)

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Personal target

Target Units for 10-300m

Target

Powersupply

USB-Adapter

Pc with Hasp key and MLShoot

Personal target
Different needs = different solutions
Due to the flexibility of our solution we have delivered personal practice targets based on a number of target units and connection techniques. The two standard products are:

Personal target with PC.
The target unit is connected to your own PC. This requires only a target unit, the software MLShoot, a PC-adapter and cable. This solution is optimal for 10m and 50m practicing and is delivered as a standard solution to a very attractive price.

Personal target with display unit
This is a complete target system with display unit. Only the cabling solution differs from a regular range installation. This solution is usually delivered for outdoor use and one or two battery units are used as power supply. Communication between target and display is through cable or radio modem.

MLShoot
The MLShoot program offers you the possibility to control the electronic shooting target directly from your PC. Marking, score card sums, printing etc. is handled by this Windows program. Keep in mind that a PC is usually not designed for a rough environment at a shooting range. This solution is therefore intended for indoor use with air weapons, but there are no technical limits in the solution with regard to target types etc.

Specifications for MLShoot:
- Windows XP or newer operating system
- Minimum 800x600 (recommended minimum is 1024x768 resolution)
- PIII 800MHz, 1Gb RAM, 200Mb available disk
- 2 standard USB communication ports
- All target types in ML2000 is available
- Local storage and print possibility

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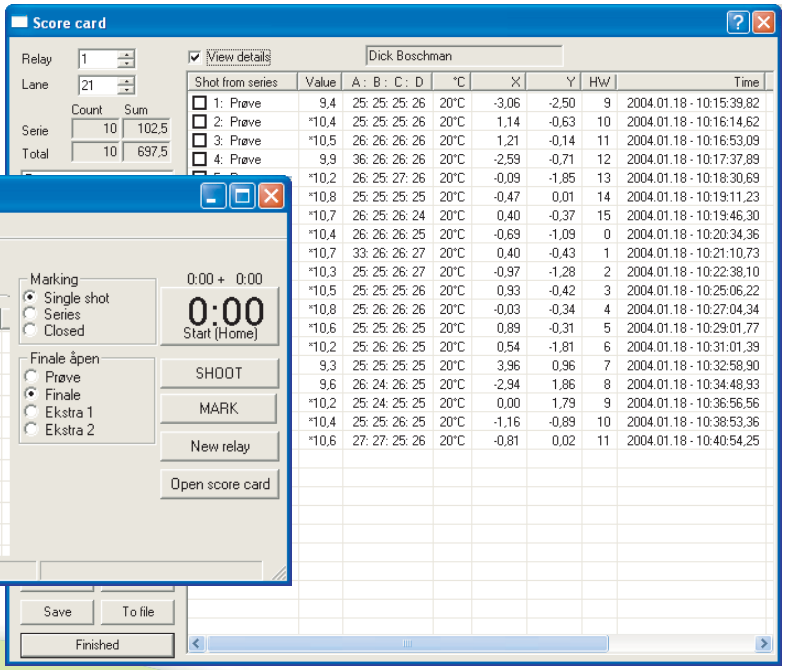
MLRange

Range management software

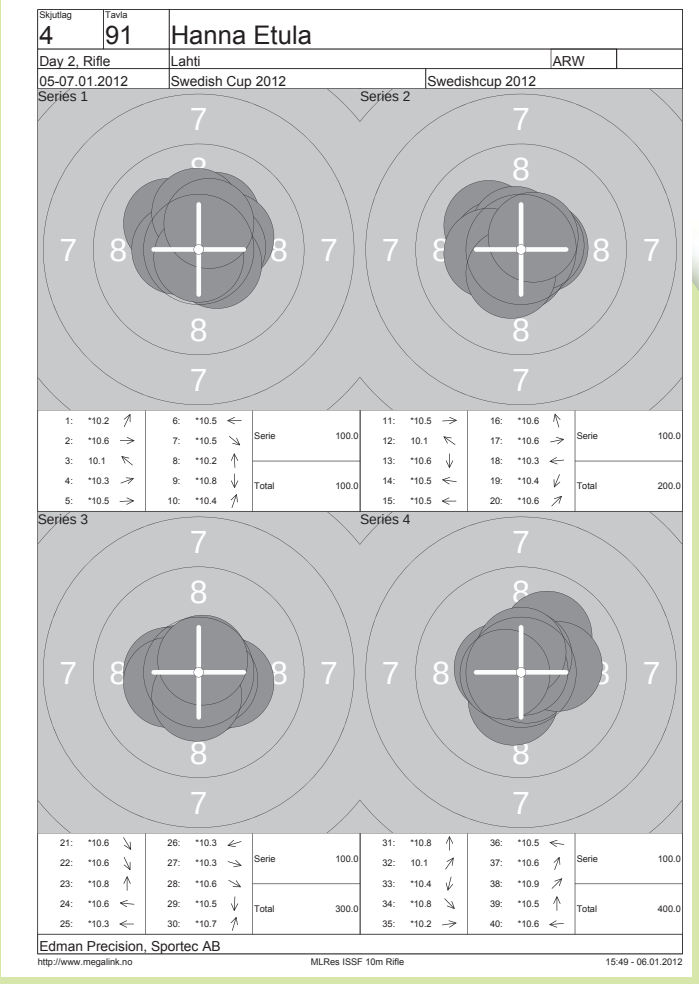


Range management - MLRange

The PC program MLRange is used for managing the range during competitions. The user interface is extremely easy to handle even for unskilled staff. The program still has a lot of functions to handle a range of shooting variants. MLRange covers the following key functions:

- Configuration of the system before shooting events
- Corrections after faults, penalties etc.
- Control the marking on the display units
- Controlling the light signal for pistol targets
- Insert new relay or single shooter
- Shooters clock
- Monitoring the status of the system and the shooting
- Sending results to the back-office systems
- Distribute information to audience systems
- User defined shooting programs

Some functions are automated, but a main idea has been to give the range officer the ability to control the system (instead of trying to figure out what the system has done…). The software has several control mechanisms to secure that the configuration and operation of the system is done properly.



Graphic printout

The shooters will appreciate to receive a nice printout with graphical presentation of all shots on their own score card. This printout can be initiated from MLRange or from other back office programs. For practice shooting the printout can be initiated from the display unit without any PC knowledge. The graphical presentation will automatically adapt to the current configuration for optimal result.

Specifications for MLRange:

- Windows XP or newer operating system
- Minimum 1024x768 screen resolution with 256 colour.
- PIII 800MHz, 1Gb RAM, 300Mb available disk space
- Optionally a windows printer with sufficient graphical capacity
- Standard USB connection

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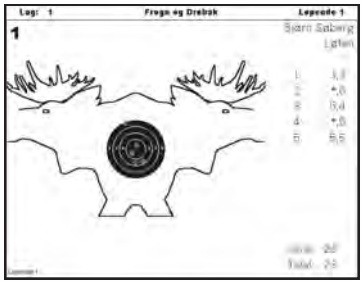
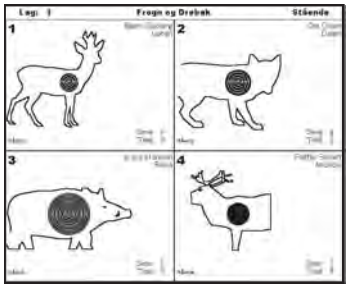
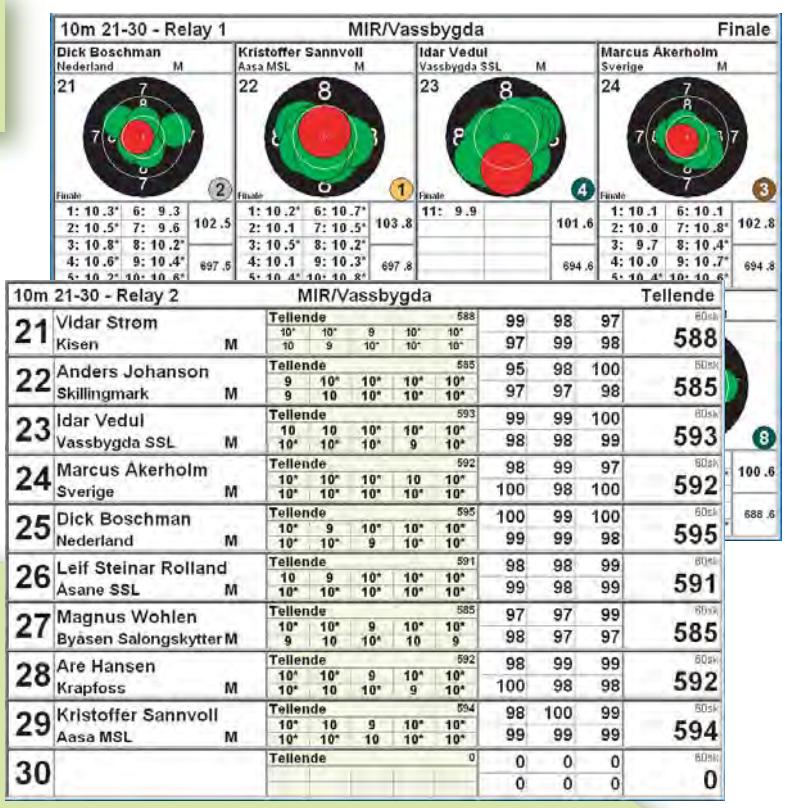
MLView

Pc software for audience services







10m 21-30 - Relay 2		MIR/Vassbygda								Tellende
21	Vidar Strøm Kisen M	Tellende				588	99 97	98 99	97 98	588
22	Anders Johanson Skillingmark M	Tellende				585	95 97	98 97	100 98	585
23	Idar Vedul Vassbygda SSL M	Tellende				593	99 98	99 98	100 99	593
24	Marcus Åkerholm Sverige M	Tellende				592	98 100	99 98	97 100	592
25	Dick Boschman Nederland M	Tellende				595	100 99	99 99	100 98	595
26	Leif Steinar Rolland Åsane SSL M	Tellende				591	98 99	98 98	99 99	591
27	Magnus Wohlen Byåsen Salongskytter M	Tellende				585	97 98	97 97	99 97	585
28	Are Hansen Krapfoss M	Tellende				592	98 100	99 98	99 98	592
29	Kristoffer Sannvoll Aasa MSL M	Tellende				594	98 99	100 99	99 99	594
30		Tellende				0	0 0	0 0	0 0	0

Audience display

A solution to please the audience is crucial for successful competitions with electronic shooting targets. This has always been a driving force in our product development, Megalink has been the market leader with state of the art solutions in this area as well.
Our solution for audience is based on standard PC-technology. This platform gives the customer a wide range of possibilities to balance the audience service against cost and effort. Solutions ranging from one PC with a 17" screen to a large number of PCs with projectors and standard screens can easily be handled.

Completely automatic

The audience program MLView is easy to configure to display the information required for each occasion. With MLView you can define individual profiles with one or more pictures (views) that the audience screen will toggle through. The number of targets that can be in one picture is only limited by the resolution of the display in use and the kind of view selected. 10-20 lanes in graphical mode or 20-50 lanes in list mode will work well in most systems. Different view modes can be selected pr. lane in each view and lanes from different ranges can be mixed (e.g. 10m and 50m).

Once configured, the system will automatically follow the activity on the shooting range. If the configuration is changed in MLView or at the shooting range, the display will automatically adjust accordingly.

Screens for all shooting variants!

MLView will adapt to a wide range of shooting variants. On this page a few examples of possibilities are shown.

Finals

For competitions with finals there are several mechanisms to enhance the audience service (e.g. include sum from qualification, display ranking number, postpone marking until speaker opens). Two main variants are used for finals:
- Open marking for single shot finals (ISSF style). In this mode all targets are displayed graphically in a single view, with ranking number, name, total, shot information etc.
- No marking during shooting. After firing (single or series shooting) each target can be marked individually. MLView will automatically switch to single target view and each shot will be marked for a single target on both the audience screens and at all display units at the range. After marking one lane, the view is switched to the next lane until all lanes have been marked.

Specifications for MLView:

- Windows XP or newer operating system
- PIII 700MHz, 1Gb RAM, 100MB disk
- Minimum 1024x768 resolution for limited number of lanes
- Minimum 1280x1024 resolution for larger ranges
- Minimum 10Mbs switched LAN.

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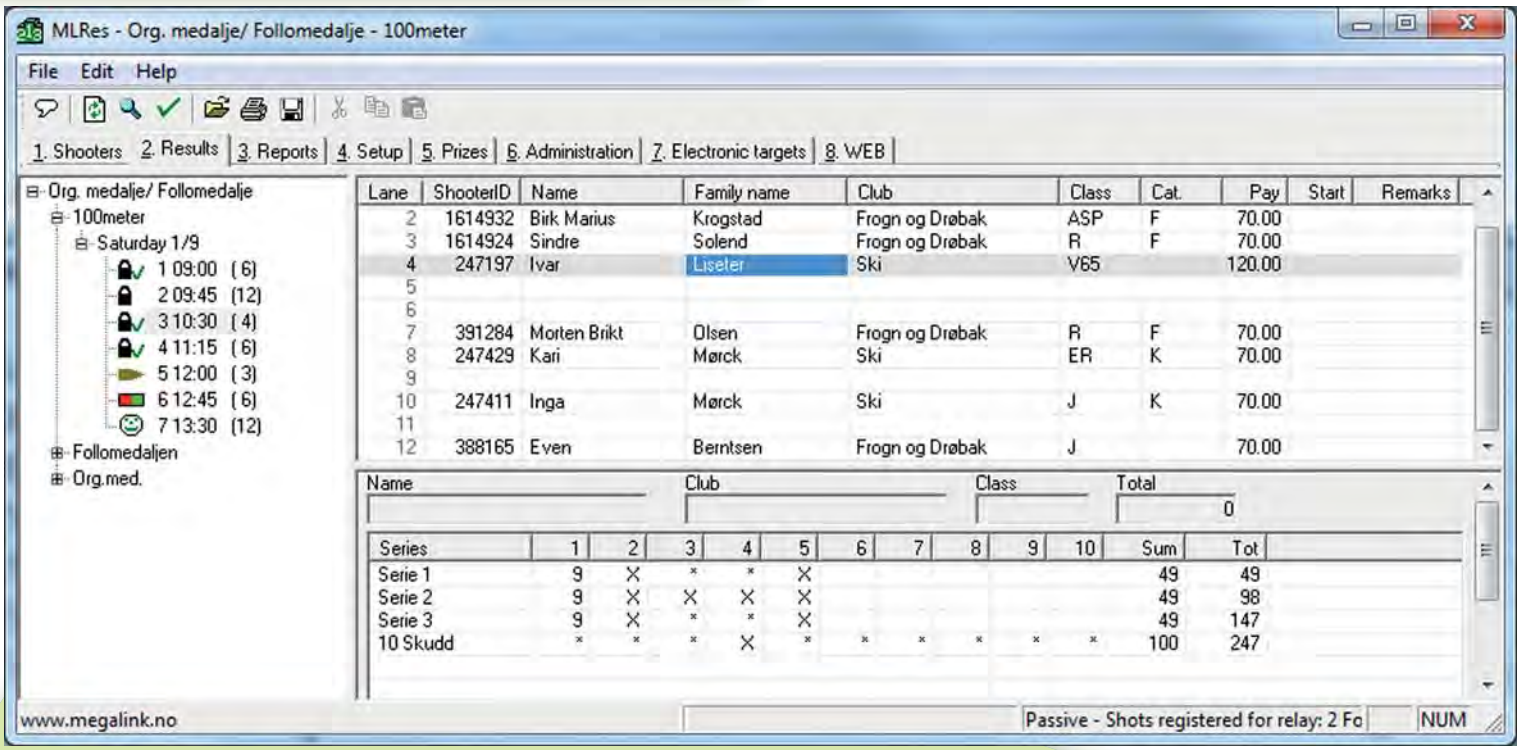
MLRes

Pc software for result management



MLRes = Result management

MLRes is the result program in the ML2000 system. The system is extremely flexible and allows you to manually set anything that you want, so that you can create exactly the kind of competition that you desire. Normally you will only want to make minor changes to the system's many available Course of Fire and Event templates.

MLRes supports major organizations shooting requirements (ISSF, DFS, FSR, NJFF, DDS) as well as any kind of custom shooting event that you could want to create.

Superior oversight

The user interface is ground breaking in the oversight it offers with regards to data and functionality. The program is divided into three main areas:

- A tree view on the left-hand side displays all range activities and when they are scheduled to occur. A selection here changes the focus of the application (event, day/time, participants involved, prizes offered, etc.)
- The tabs at the top group the above named areas of interest so you can make and review your changes.
- The center work area will change based on your tree and tab selection.

Some of the advantage for MLRes

- The application fully supports multi-user environments
- Full network support
- Web pages for automatic public display
- Web pages for automatic results to the internet
- Full freedom with definition of prizes
- Shooter database that grows over time
- Import/export of name and results
- User defined class and categories

Specifications for MLRes:

- Windows XP or newer operating system
- PIII 700MHz, 1Gb RAM, 100MB disk
- Minimum 1280x1024 resolution for larger ranges
- Minimum 100Mbs switched LAN.

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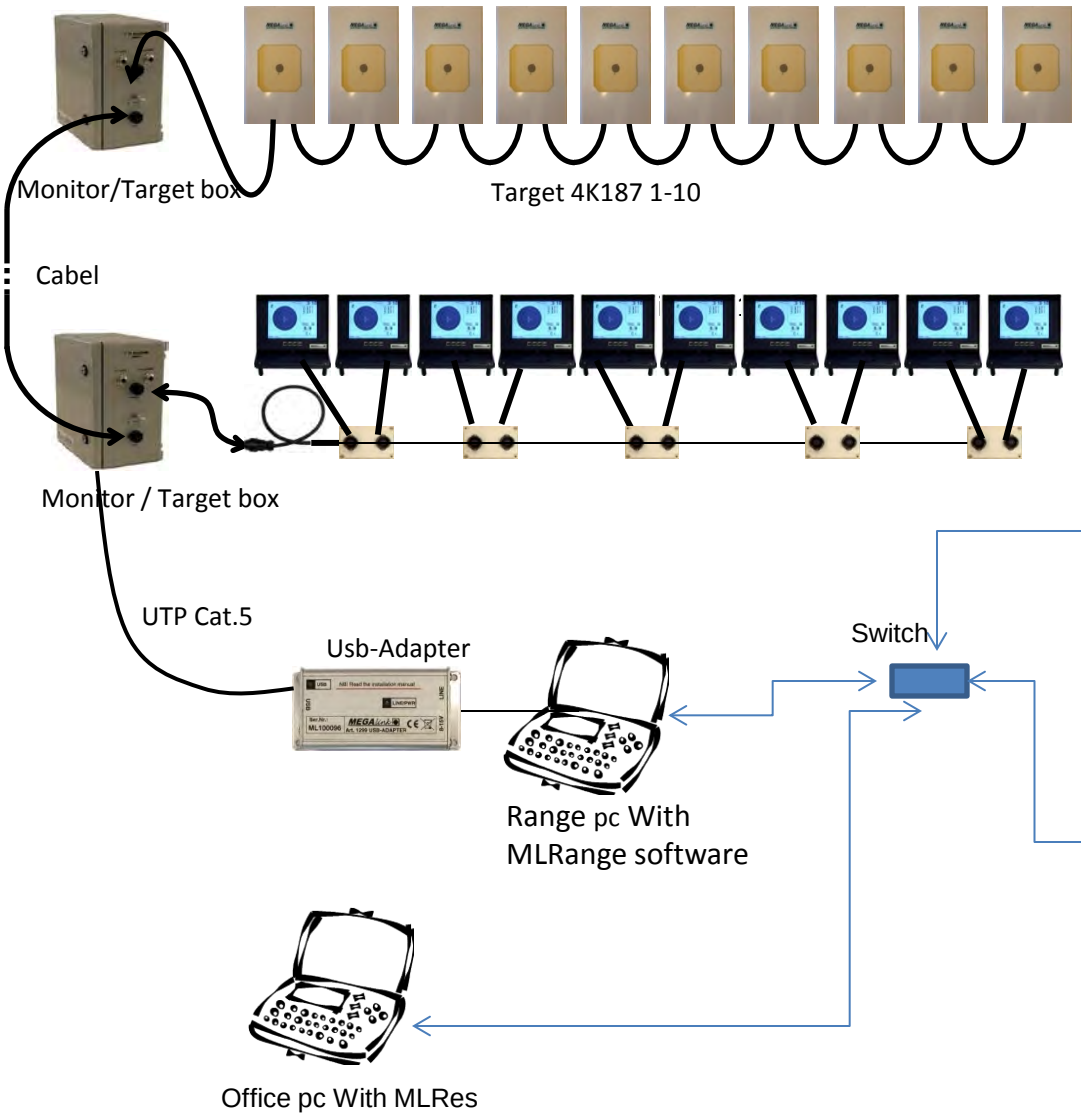
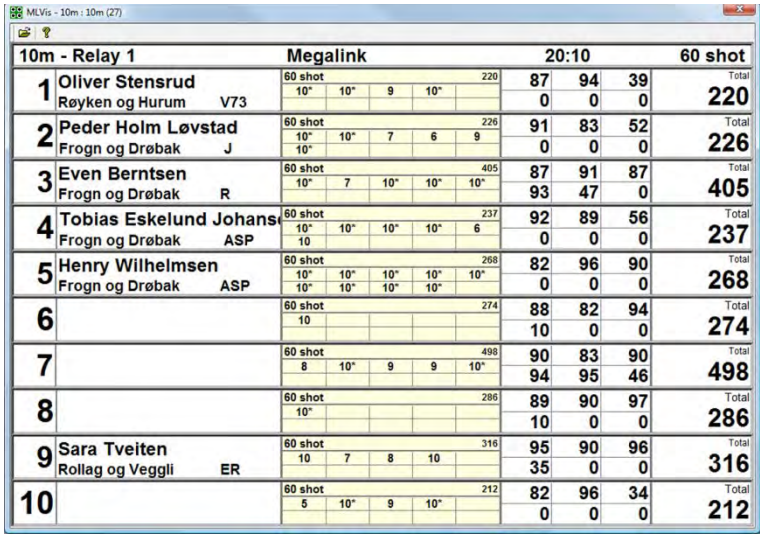
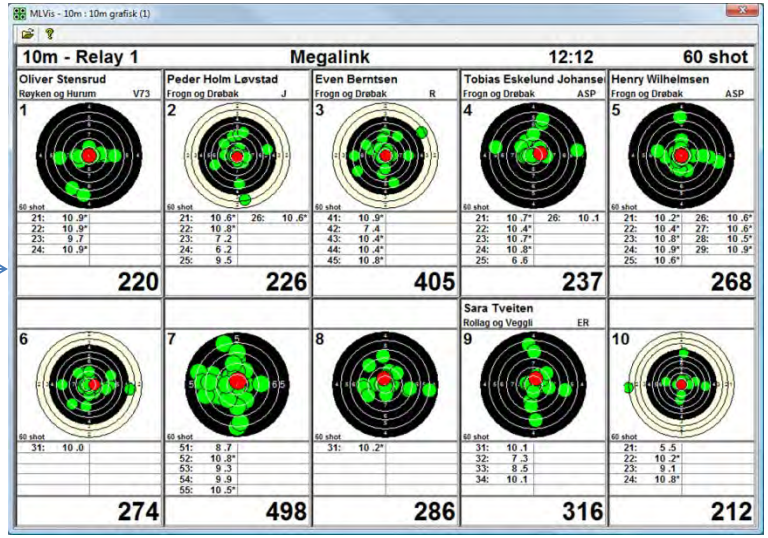
System overview 10 targets 10-50m





Pc With MLView in List view



Pc With MLView in Graphics view

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