

## — INTERACTIVE CATALOG —

- [Introduction](#)
- [Block Diagram](#)
- [Ranges](#)
- [Control Room](#)
- [Main Hall](#)
- [Chip Card System](#)
- [Club Web Page](#)
- [Communication System](#)

## — Introduction —

[Index](#)

### Description

The *Multi-Pull* system allows the complete and automatic management of a clay pigeon shooting club.

It consists of several units, all communicating with each other, to manage the launch of the targets, the organization of the competitions, the visualization of the results through graphic scoreboards and monitors and the sending of the salient data of the competitions to a cloud.

It allows to automatically manage the training sessions of athletes with the use of chip cards for access to the shooting ranges.

It gives the manager the possibility to check the receipts and the use of equipment in real time.

The characteristics of the *Multi-Pull* system are:

- ♦ Modularity
- ♦ Ease of use
- ♦ Ability to manage all official disciplines and many for training
- ♦ Multilingual system
- ♦ Reliability and long life
- ♦ Constant updating
- ♦ Customer support

*Multi-Pull* is the Olympics system of:

\* Athens 2004

\* Beijing 2008

\* London 2012

\* Rio 2016

\* Tokio 2021

The *Multi-Pull* system is approved by Fitasc, Issf  
and compatible with Beretta Shooting Data



Shooting Data is a registered trademark of Fabbrica d'Armi Pietro Beretta spa - All rights reserved



Elettronica Progetti

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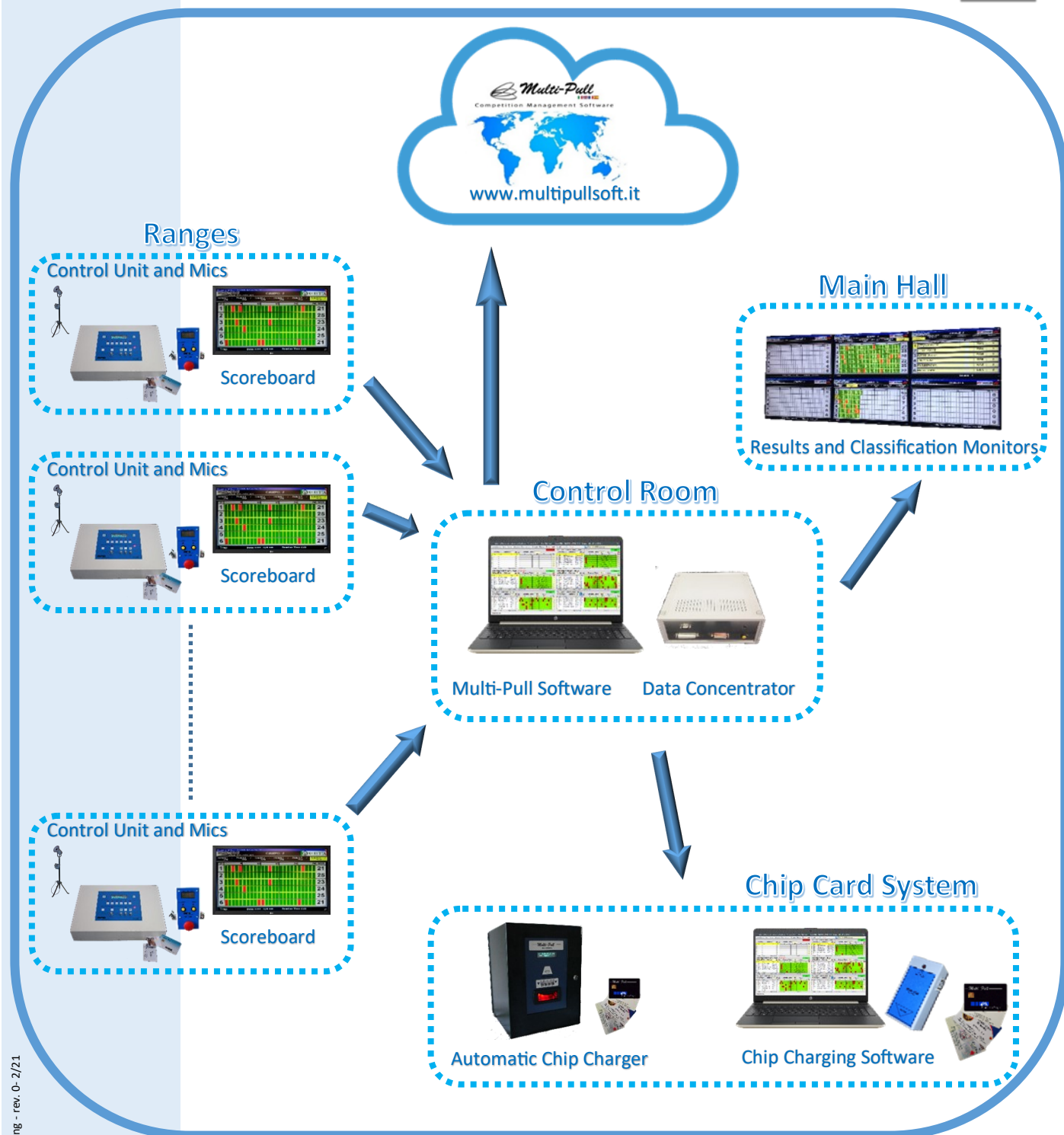
# Multi-Pull

THE SYSTEM FOR SHOOTING

GROUND AUTOMATION

## — Block Diagram —

[Index](#)



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# Multi-Pull

THE SYSTEM FOR SHOOTING  
GROUND AUTOMATION

## — Ranges —

[Index](#)

### Description

The equipment that can never be missing on a clay pigeon shooting range is the "Control Unit".

The *Multi-Pull* system has Control Units (**EP095M Series**) capable of driving any model of trap machine, interfacing highly sensitive microphones so that athletes can launch the targets and transmit to the rest of the system all the information useful for the correct management and visualization of results.

The control unit can operate even in the absence of personnel, having the ability to read chip cards and therefore operate in a completely automatic way.



### Composition

A clay pigeon shooting range normally consists of the following equipment:

- ◆ One Control Unit (**EP095M Series**)
- ◆ A set of tripods (**EP096AT Series**) with microphones (**EP096AF Series**)
- ◆ One Junction Box for an easy installation (**EP096I Series**)
- ◆ A scoreboard or a monitor for viewing the results (**EP098T or EP099T or EP096M Series**)



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## — Control Room —

[Index](#)

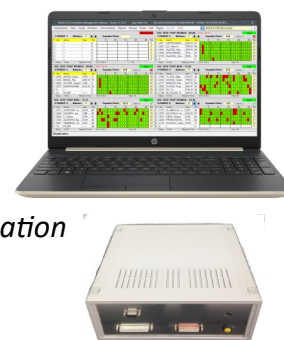
### Description

The "heart" of the system resides in the Control Room, in fact it is from here that the Manager can keep his entire Club under control, both during the events, managing the competition with results and rankings and during the training sessions, being constantly informed about the occupation of the shooting ranges. The Multi-Pull system allows the Club Manager to always manage his resources accurately, allowing him to optimize the system

### Composition

The control room is normally composed of the following elements:

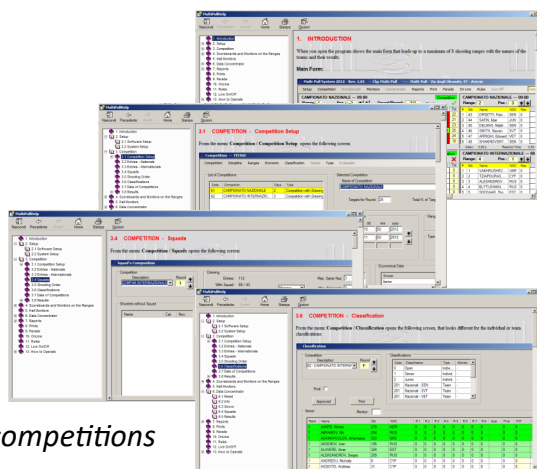
- ◆ A PC running the **Multi-Pull Management Competition Software**
- ◆ A **Data Concentrator** mod. **EP096GM** connected to the PC with a USB cable and connected to the remaining elements of the system with cables, optical fibers or mesh network, according to the chosen communication



### Performance

**Multi-Pull Management Competition Software** description:

- ◆ Designed with the latest generation language with separate windows
- ◆ Competition Management till 12 ranges
- ◆ Entry List
- ◆ Squad Composition
- ◆ Shooting Order
- ◆ Results: manually or automatically from the ranges
- ◆ Classifications, individual and team
- ◆ Prints and export files in .pdf or .xls
- ◆ Reports and Statistics
- ◆ Multi Language Software
- ◆ Manual instruction and "Help on line"
- ◆ All Issf, Fitasc and Fedecat disciplines
- ◆ Link to [www.multipullsoft.it](http://www.multipullsoft.it) web site for real time competitions



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# Multi-Pull

THE SYSTEM FOR SHOOTING  
GROUND AUTOMATION

## — Main Hall —

[Index](#)

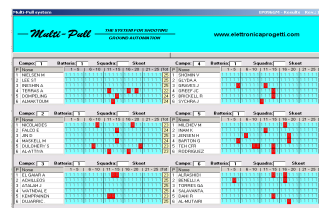
### Description

- ♦ The Multi-Pull system allows to have large monitors in the main hall of the Club, where athletes and visitors usually meet during breaks, where results and rankings are presented in real time during competitions. This allows everyone to keep up to date on the correct progress of the events.
- ♦ The monitors are driven by the system automatically through small interfaces based on a micro-PC with HDMI output that automatically adapts to the resolution of the screens used
- ♦ During the days when there are no competitions, the monitors with results from the ranges allow to view which shooting ranges are occupied and which are available

### Composition

- ♦ The interfaces used in the main hall are basically of two types:

⇒ The mod. **EP096M-RAS-RS** to drive a monitor where the results of the various ranges appear. It can be configured to display the results of a single range or up to 6 ranges



TRAP	
Rank	Name
1	1. BEL
2	2. BEL
3	3. BEL
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6	6. BEL
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99	99. BEL
100	100. BEL

⇒ The mod. **EP096M-RAS-RK** to control a monitor showing the rankings that scroll leaving the best shooters in the first places. The rankings to be displayed, the scroll speed, the number of shooters in the top are all values that can be controlled from the control room



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## — Chip Card System —

[Index](#)

### Description

- ◆ The use of chip cards allows athletes to access the ranges without surveillance personnel
- ◆ The manager of the Club is able to know in real time the names of the athletes on the shooting ranges, the amount spent on their respective chip cards and the balance
- ◆ Each "movement" of money on the chip cards is stored with date and time in the system
- ◆ The security system is guaranteed by a specific password of the club and another intrinsic to the card which changes continuously

### Composition - Main Station

The main station for managing the chip cards is made up of a PC running the **Multi-Pull Chip Cards software**, connected to a programmer mod. **EP096AG3**.

This configuration allows to initialize new Chip Cards, create price lists and then Master Cards, manage the Athletes archive and view Reports and also upload Chip Cards to Athletes with direct payment.

This station is the primary one that can never be missing. Beyond this it is possible to insert other accessories into the system to make it more versatile and usable by athletes.



### Performances

- ◆ Chip cards of the athletes numbered and monitored constantly
- ◆ Ability to manage different currencies with 6 digits (####,00)
- ◆ Possibility of different prices for each discipline and for different types of athletes
- ◆ Define any "bonuses" for top-ups that exceed certain amounts
- ◆ Management of a "black-list" of athletes, automatically transferred to all units
- ◆ Possibility to limit the maximum recharge of the cards to a pre-set value
- ◆ Price lists transferred to the ranges by a Master Card or cable or wifi
- ◆ Real-time reports on the money collected and spent on the ranges, with revenues by day, month, year, or given periods, also divided by range, or by athlete, or by discipline
- ◆ Loading of chip cards in different positions always referring to a single database
- ◆ Multilanguage Chip Card Software



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## — Chip Card System —

Up

### ■ Composition - Automatic Chip Card Loader



The chip cards can also be recharged with an automatic chip card loader mod. **EP096AG5W**, capable of accepting banknotes and/or coins.

These units can be positioned in various points of the Club to give the possibility to athletes who want to recharge their chip cards, to do it in a simple and immediate way, without having to return to the main station, as shotgun Clubs are generally large in size.

All the "movements" of these units, with athlete code, date and time, are recorded in the central system in different ways depending on the chosen communication configuration: i.e. via LAN or Mesh WiFi or manually with a pen drive.

### ■ Composition - Manual Chip Card Loader

Another possibility that the *Multi-Pull* system offers to reload the athletes' chip cards is represented by the manual loader mod. **EP095CM-Loader**. Normally this unit is managed by the staff of the Club, in fact it allows to recharge a chip card in a simple and immediate way with direct payment to the operator.



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## — Chip Card System —

Up

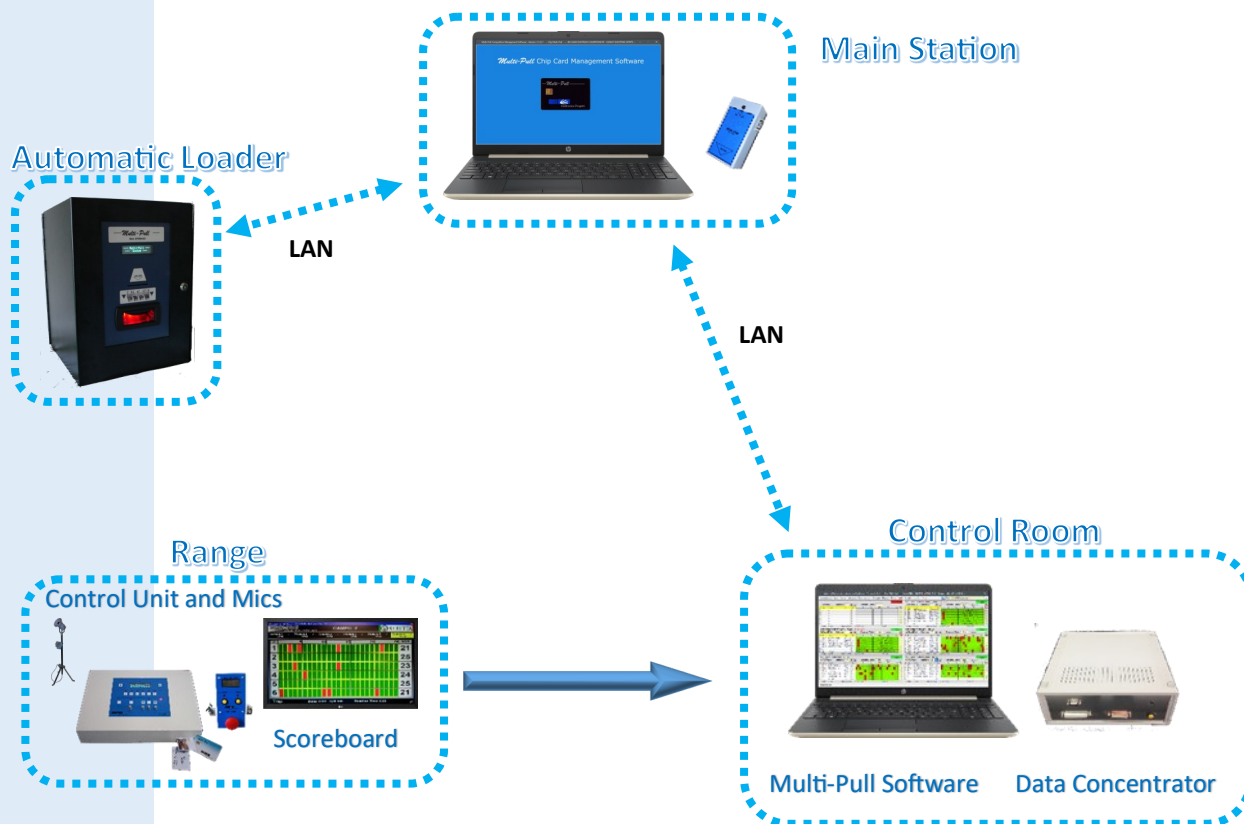
### ■ Accounting Management

One of the most important features of the *Multi-Pull* Chip Card system is the possibility of storing in a database all the loading and unloading operations of the chip cards, with date and time and therefore being able to carry out daily balances of what has been collected and how much spent on the shooting ranges by members of the Club equipped with chips.

The DataBase in which all the operations on the chip cards are recorded usually resides in the PC of the main station.

Therefore any other charging stations and all shooting ranges where the chip cards are used must be connected to the main station.

### ■ Typical Chip Card System Interconnection



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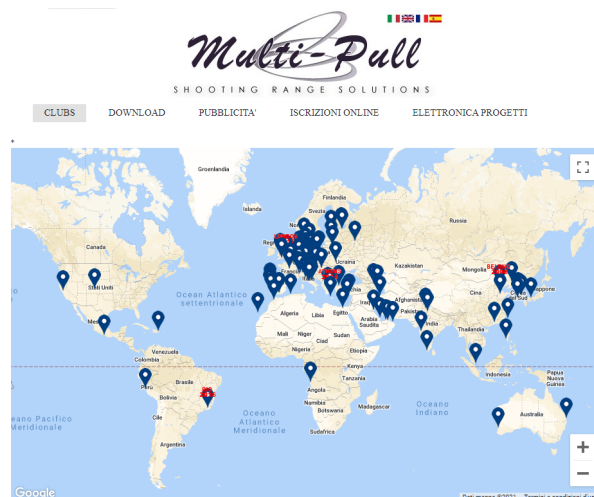
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## — Club Web Page —

[Index](#)

### Description

On the website: [www.multipullsoft.it](http://www.multipullsoft.it) each Club that uses the **Multi-Pull Management Competition Software** can have a dedicated web page on which all the competitions it plays are visible. The results and rankings are presented in real time, together with .pdf documents relating to the competition: for example, list of entries, squads composition, order of shooting, poster with prizes, etc.



### Performance

The advantages for a Club of having a dedicated web page with the results and rankings of all the competitions carried out can be summarized as follows:

- ◆ Offering a service that is in great demand today for athletes and visitors
- ◆ Possibility to insert sponsors' logos on one's own web page and therefore to obtain funds
- ◆ Inclusion of the Club in national and international visibility

### OnLine Entries

The use of the **Multi-Pull Management Competition Software** entitles the Club to use the "Online Registration" service. This service allows you to:

- ◆ Advertise the Club's upcoming matches on the web
- ◆ Collect the registrations and / or payments of athletes in online mode
- ◆ Simplify the organization of the competition



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## — Communication System —

[Index](#)

### Description

- ◆ In the *Multi-Pull* system all the units are interconnected with each other with a communication system that can be different depending on the configuration adopted:
  - ⇒ via cable with an RS485 protocol
  - ⇒ via optical fiber
  - ⇒ via 825MHz mesh network, capable of traveling long distance



### Composition

- ◆ While if the RS485 protocol is used the major units have integrated a suitable transmitter / receiver, for the other types of communication it is necessary to adopt specific interface components.
- ◆ The fiber optic system requires specially developed drivers, which are very reliable and economical.
- ◆ The new innovative communication system via mesh network makes use of receivers-transmitters installed in special units near each control unit on the shooting ranges, which also have a clock and a large capacity non-volatile memory inside. These specific units, mod. **EP096TM-C**, can also be used for other communication systems, in order to take advantage of their possibilities of storing the transmitted data, always recorded with date and time

### Performance

- ◆ The use of the **EP096TM-C** units on the shooting ranges allows the manager to always know how much he is spending on his Club, being able to retrieve data even after days. In fact, these units store all the "movements" on a non-volatile memory for over 800 squads and therefore even if the system has been switched off for a given period, the Club Manager is able to retrieve the data about all the movements that would otherwise be been lost
- ◆ Operations in Training and/or Competition:
  - ⇒ Ability to lock or unlock the ranges and change rates during a day
  - ⇒ Possibility to modify the customs paths of the control unit through the Multi-Pull software
  - ⇒ All ranges and secretarial operations registered with date and time
  - ⇒ During the competitions it is possible to acquire the results from the ranges and project them on the scoreboards and monitors of the system



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