



Gujarat University

TECHNICAL SPECIFICATIONS

AUTOMATIC ELECTRONIC TARGET FIRING, SCORING, DATA ACQUISITION & RANKING SYSTEM

Tender No: GU/ESTATE/SPSC/2021-22/02

**TENDER DOCUMENT
FOR
INFRASTRUCTURE, EQUIPMENT, INTERIOR AND ALLIED
WORKS OF SPORTS COMPLEX AT GUJARAT UNIVERSITY,
AHMEDABAD.**

**DETAILED SPECIFICATIONS FOR 10M AUTOMATIC ELECTRONIC TARGET
FIRING, SCORING, DATA ACQUISITION &
RANKING SYSTEM CONFORMING TO ISSF PHASE III APPROVED
REGULATIONS**

The whole system is divided into 4 segments:

1. The Target Segment
2. Cable and Power Supply Segment
3. Firing Point Segment
4. Software for Data Acquisition & Ranking Segment

Each lane must have a target set and firing point set. The cable and power supply set should be supplied in such a way that it can connect 10 lanes of target sets and firing point sets. Licensed software is a part of the above.

1. Target Set for Air rifles/pistols

- The target should be designed for 10 Meter air rifle/pistol events
 - Target must consist of optoelectronic measurement system, which must evaluate the signals transmitted and the information should be carried over from the LON network to the control unit.
 - Target must be able to score automatically without the use of paper roll and should have an option to use the paper roll in case of matches.
 - Must have accuracy and reliability as per ISSF Phase III standards.
 - Integrated target illumination.
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- Size (W x H x D) : 450 x 460 x 70 mm
 - Weight : 6.5 kgs
 - Consumption : 12 W
 - Detection Surface : 170 x 170 mm

2. All the cabling & connectors of 10 m should be water protected and dustproof.

3. Firing Point Set

Monitor

- Monitor must display the graphic image of the target
- Must display the score
- Must display the x & y coordinates of the shots
- Must be visible in any type of light
- Must be a 10.4” touch screen.

Control Unit

- Control unit must be preprogrammed for all disciplines of 10 M, 25 M, 50 M, & 300 M as per ISSF regulations and must have Phase III ISSF approval.
- Control unit must have functions like zoom, clear screen etc.
- Must have the facility for Log prints
- Must have a bar code scanner to instantly select the programme.

Remote Control

- The remote control can be plugged into the Control Unit.

- Must permit the control of important functions directly from the position of the shooter.
- Must have the Zoom function to select the next zoom level.
- Must have the Menu function which on activation, calls up the menu on the screen in which the following functions can be selected among others
 1. Delete screen
 2. Print hard copy
- Must have Match function to switch from “Practice” to “Match” operation

Command Desk should have a set of laptop with necessary software and laser printer to print the results of individual lanes. It must be able to print the Graphic image and scores of each lane automatically immediately on conclusion of the match. One system should control 10 Lanes.

4. Software for Data Acquisition, Ranking System and LCD Show

The structure of installation should comprise of 10 lanes in one set in the event of number of lanes exceeding than 10 lanes then these lanes will be connected in multiple of 10 lanes through Routers and Lon Dongle to one single data acquisition and ranking system.

If the number of lanes are more than 10 lanes but the total number of lanes are not in the multiple of 10 then the remainders will be grouped in one set (e.g., if there are 34 lanes, it will have 3 sets of 10 lanes and 1 set of 4 lanes).

Data Acquisition and Ranking system must conform to latest ISSF regulations and specifications and must have Phase III approval of ISSF.

Data Acquisition Programme allows shooting data from control units to be recorded to computer it must progressively import the shooting and must present it in a grid format.

Functions:

- Acquisition and processing of shots (practice and match)
- Display of exceptions (zeros, targets errors, etc.)
- Control overview, individual view, participant overview
- Simultaneous remote control of all control units (command shooting)
- Comfortable preview and printer function for individual lanes
- Data export for shooting accountabilities
- Data security and reconstitution
- Must have provision of draw of lots as per ISSF regulations
- It should be possible to import shooting data into a excel format and then process.

Ranking system is an essential component for all ISSF and CISM elimination and qualification competitions, therefore, during the competition the Ranking System must processes the data and show the change in the ranking/standings after every shot, which can be displayed to the spectators. Ranking system must support the import and export of starting lists and ranking lists to Microsoft Excel, which ensures that the preparation for a competition is much easier. The rankings can be printed out in Microsoft Word whereby it can be processed further without any problems. It should be possible to insert sponsor logos at any time.

TV Box PC must display the results calculated with the Ranking System.

TV Box System for LCD Show must comprise:

- LCD video projector
- Windows PC with current hardware and software
- VGA splitter 2 outputs to 65m
- Cable extension VGA/RGB, 1m
- Cable connection PC-RS232 crossed, 2m
- Existing monitor cable

VGA Splitter

- It is required to project current rankings onto a large screen via a projector.
- Consumption : 3 W
- Connections : 1 input
4 outputs

IMPORTANT: Software for Data Acquisition and Ranking must be in conformity with latest ISSF rules. In case of changes in rules by ISSF supplier should agree to upgrade the software free of charge for at least 2 years from the date of supply.

The system must have Phase III Test Approval from ISSF. Supplier must provide a certificate to this effect from ISSF.

**DETAILED SPECIFICATIONS FOR 25 M LS25/50 AUTOMATIC ELECTRONIC
TARGET FIRING, SCORING, DATA ACQUISITION & RANKING SYSTEM
CONFORMING TO ISSF PHASE III APPROVED REGULATIONS**

The whole system is divided into 4 segments:

1. Group Target Line
2. Group Firing Line
3. Group Segment Control
4. Group Control Room including Software for Data Acquisition & Ranking

Each lane must have a target set and firing point set. The STYX cable and network connector and power supply set should be supplied in such a way that it can connect 10 lanes of target sets and firing point sets. Additional STYX cables are required for the connectivity in four segments mentioned above. Licensed software should be part of the above. Target system should be ISSF phase III approved.

1. Group Target Line (Target Set 25 M for Pistol events)

- The target should be designed for 25 M Pistol events
- Target should be equipped with an integrated red/green light signal as used for 25 M disciplines, just the display mirror (non-splintering material) must be mounted.
- Target 25/50 should be fully optical target for 25 M pistol events.
- Optical multi-precision measurement over the entire pane.
- The contactless projectile detection with 160,000 measurements per second.
- Consumable material such as rubber rolls should not be required.
- No mechanically moving parts.
- Must have accuracy and reliability as per ISSF Phase III standards.
- Weatherproof, can also be used outdoors.
- Complete target incl. reinforced front frame for calibers 22, 32, 38 (except steel shell projectiles), incl. connection cable length 1.4m.
- Target system must be in compliance with ISSF guidelines mentioned at page 4, point 4.1 as per following link on ISSF website

https://www.issf-sports.org/getfile.aspx?mod=docf&pane=1&inst=455&iist=113&file=Annex_1_-_Guidelines-for-Organizing-ISSF-Championships.pdf

- Size (W x H x D) : 660 x 775 x 125mm
- Weight : 16 kg
- Consumption : 7.6 W
- Detection Surface : 520 x 531mm

2. Group Firing Line (Cable and Power Supply Segment)

- All the STYX cabling & connectors of 25 M target System should be waterproof and dustproof.

3. Group Segment Control (Firing Point Set)

Monitor

- Monitor must display the graphic image of the target
- Must display the score
- Must display the x & y coordinates of the shots
- Must be 10.4" touch screen.

Control Unit

- Control unit must be preprogrammed for all disciplines of 10 M, 25 M, 50 M, & 300 M as per CISM & ISSF regulations must have Phase III ISSF approval.
- It must have a standard LON cabling of 10 control units, which has to be connected with the segment control (10 lane command desk).
- Control unit must have functions like zoom, clear screen etc.
- Must have the facility for Log prints.

Remote Control

- The remote control can be plugged into the Control Unit.
- Must permit the control of important functions directly from the position of the shooter.
- Must have the Zoom function to select the next zoom level
- Must have the Menu function which on activation, calls up the menu on the screen in which the following functions can be selected among others
 1. Delete screen
 2. Print hard copy
- Must have Match function to switch from "Practice" to "Match" operation

Time Control Unit

- Time control unit must control the red/green light signal installation of the targets for 25m disciplines.
- One device must control the light signals for a maximum of 40 targets with slave units.
- Time control unit must have the provision for adjustment of brightness of the red and green lights separately.
- All the international 25M pistol disciplines in accordance with CISM and ISSF must be programmed in the time control unit.
- The device must contain two independent channels, each channel must control from 5 to a maximum of 20 targets.
- Must be STYX based.
- Size (W x H x D) : 300 x 160 x 300mm
- Weight : 3.8 kg
- Consumption : 150 W

Command Desk (10 lane command desk)

It must be a combination of STYX and LON cabling. It must comprise of Router RTR5000, Laptop with inbuilt necessary TLCD software and a Printer.

Connection of the router RTR5000

The router RTR5000 must have two LON-connections:

- Backbone (link to next TLCDBOX)
- Segment (link to control units)

Laser printer is to print the results of individual lanes. It must be able to print the Graphic image and scores of each lane automatically immediately on conclusion of the match. One system should control 10 Lanes.

4. Group Control Room including Software for Data Acquisition & Ranking and LCD Show

Control Room equipment must comprise of:-

- Rack SR01 (19" Rack)
- Computer System including two monitors with necessary Data Acquisition and Ranking Software
- Laser Printer
- SNI CR Control Room Lon Dongle
- Cabling

Rack SR01 (19"Rack)

The Rack is delivered assembled (without devices). Arrangement of devices from top to bottom:

- 1 x SNM01 STYX network master
- 3 x SNC02 STYX network Connector
- 3 x SNC01 STYX network Server
- UPS001 uninterrupted power supply

The cabling of the control room is made according to the STYX network. System must have the capability for maintenance support via internet access. Access to the internet must be provided by the STYX Network Master. The Ethernet of the central computer must be exclusively for the STYX network (Ethernet DHCP network setting) and is connected via special adapter. The computer may not be logged in to an additional LAN (e.g. via second Ethernet connection, USB adapter, wifi etc).

The structure of installation should comprise of 10 lanes in one set in the event of number of lanes exceeding than 10 lanes then these lanes will be connected in multiple of 10 lanes through Routers and Lon Dongle to one single data acquisition and ranking system.

If the number of lanes are more than 10 lanes but the total number of lanes are not in the multiple of 10 then the remainders will be grouped in one set (e.g., if there are 34 lanes, it will have 3 sets of 10 lanes and 1 set of 4 lanes).

Data Acquisition and Ranking system must conform to latest ISSF regulations and specifications and must have Phase III approval of ISSF.

Data Acquisition Programme allows shooting data from control units to be recorded to computer it must progressively import the shooting and must present it in a grid format.

Functions:

- Acquisition and processing of shots (practice and match)
- Display of exceptions (zeros, targets errors, etc.)
- Control overview, individual view, participant overview

- Simultaneous remote control of all control units (command shooting)
- Comfortable preview and printer function for individual lanes
- Data export for shooting accountabilities
- Data security and reconstitution
- Must have provision of draw of lots as per ISSF regulations
- It should be possible to import shooting data into a excel format and then process.

Ranking system is an essential component for all ISSF and CISM elimination and qualification competitions, therefore, during the competition the Ranking System must processes the data and show the change in the ranking/standings after every shot, which can be displayed to the spectators. Ranking system must support the import and export of starting lists and ranking lists to Microsoft Excel, which ensures that the preparation for a competition is much easier. The rankings can be printed out in Microsoft Word whereby it can be processed further without any problems. It should be possible to insert sponsor logos at any time.

TV Box PC must display the results calculated with the Ranking System.

TV Box System for LCD Show must comprise:

- LCD video projector
- Windows PC with current hardware and software
- VGA splitter 2 outputs to 65m
- Cable extension VGA/RGB, 1m
- Cable connection PC-RS232 crossed, 2m
- Existing monitor cable

VGA Splitter

- It is required to project current rankings onto a large screen via a projector.
- Consumption : 3 W
- Connections : 1 input,
4 outputs

IMPORTANT: Software for Data Acquisition and Ranking must be in conformity with latest ISSF rules. In case of changes in rules by ISSF supplier should agree to upgrade the software free of charge for at least 2 years from the date of supply.

The system must have Phase III Test Approval from ISSF.

The Target System for 25M must have been used in Asian Games, Olympic Games, and Commonwealth Games.

**DETAILED SPECIFICATIONS FOR 50 M LS25/50 AUTOMATIC ELECTRONIC
TARGET FIRING, SCORING, DATA ACQUISITION & RANKING SYSTEM
CONFORMING TO ISSF PHASE III APPROVED REGULATIONS**

The whole system is divided into 4 segments:

5. Group Target Line
6. Group Firing Line
7. Group Segment Control
8. Group Control Room including Software for Data Acquisition & Ranking

Each lane must have a target set and firing point set. The STYX cable and network connector and power supply set should be supplied in such a way that it can connect 10 lanes of target sets and firing point sets. Additional STYX cables are required for the connectivity in four segments mentioned above. Licensed software is a part of the above. LS2550 target is ISSF phase III approved. For your conveyance we are providing the link for easy access.

https://www.issf-sports.org/getfile.aspx?mod=docf&pane=1&inst=455&iist=113&file=Annex_1_-_Guidelines-for-Organizing-ISSF-Championships.pdf

1. Group Target Line (Target Set 50 M for Rifle and Pistol events)

- The target should be designed for 50 M Rifle and Pistol events
- Target LS25/50NLASERSCORE is fully optical target for 50 M Rifle and pistol events.
- Optical multi-precision measurement over the entire pane.
- The contactless projectile detection with 160,000 measurements per second.
- No wear rubber rollers.
- No mechanically moving parts.
- Sensational accuracy.
- Weatherproof, can also be used outdoors.
- Complete target incl. reinforced front frame for calibers 22, 32, 38 (except steel shell projectiles), incl. connection cable length 1.4m.
- Size (W x H x D) : 660 x 775 x 125mm
- Weight : 16 kg
- Consumption : 7.6 W
- Detection Surface : 520 x 531mm

2. Group Firing Line (Cable and Power Supply Segment)

- All the STYX cabling & connectors of 50 M target System should be waterproof and dustproof.

3. Group Segment Control (Firing Point Set)

Monitor

- Monitor must display the graphic image of the target
- Must display the score
- Must display the x & y coordinates of the shots

- Must be 10.4" touch screen.

Control Unit

- Control unit must be preprogrammed for all disciplines of 10 M, 25 M, 50 M, & 300 M as per CISM & ISSF regulations must have Phase III ISSF approval.
- It must have a standard LON cabling of 10 control units, which has to be connected with the segment control (10 lane command desk).
- Control unit must have functions like zoom, clear screen etc.
- Must have the facility for Log prints.

Remote Control

- The remote control can be plugged into the CU951.
- Must permit the control of important functions directly from the position of the shooter.
- Must have the Zoom function to select the next zoom level
- Must have the Menu function which on activation, calls up the menu on the screen in which the following functions can be selected among others
 1. Delete screen
 2. Print hard copy
- Must have Match function to switch from "Practice" to "Match" operation

Command Desk (10 lane command desk)

It is a combination of STYX and LON cabling. It comprises of Router RTR5000, Laptop with inbuilt necessary TLCD software and a Printer.

Connection of the router RTR5000

The router RTR5000 has two LON-connections:

- Backbone (link to next TLCDBOX)
- Segment (link to control units)

Laser printer is to print the results of individual lanes. It must be able to print the Graphic image and scores of each lane automatically immediately on conclusion of the match. One system should control 10 Lanes.

4. Group Control Room including Software for Data Acquisition & Ranking and LCD

Show

Control Room comprises of:-

- Rack SR01 (19" Rack)
- Computer System including two monitors with necessary Data Acquisition and Ranking Software
- Laser Printer
- SNI CR (Network Interface Control Room)
- Cabling

Rack SR01 (19"Rack)

The Rack is delivered assembled (without devices). Arrangement of devices from top to bottom:

- 1 x SNM01 STYX network master
- 3 x SNC02 STYX network Connector
- 3 x SNC01 STYX network Server
- UPS001 uninterrupted power supply

The cabling of the control room is made according to the STYX network. Internet access for broadcasting and support is recommended. Access to the internet is provided by the STYX Network Master SNM01. The Ethernet of the central computer is exclusively for the STYX network (Ethernet DHCP network setting) and is connected via the STE01 adapter. The computer may not be logged in to an additional LAN (e.g. via second Ethernet connection, USB adapter, WiFi etc).

The structure of installation should comprise of 10 lanes in one set in the event of number of lanes exceeding than 10 lanes then these lanes will be connected in multiple of 10 lanes through Routers and Lon Dongle to one single data acquisition and ranking system.

If the number of lanes are more than 10 lanes but the total number of lanes are not in the multiple of 10 then the remainders will be grouped in one set (e.g., if there are 34 lanes, it will have 3 sets of 10 lanes and 1 set of 4 lanes).

Data Acquisition and Ranking system must conform to latest ISSF regulations and specifications and must have Phase III approval of ISSF.

Data Acquisition Programme must allows shooting data from control units to be recorded to computer it must progressively import the shooting and must present it in a grid format.

Functions:

- Acquisition and processing of shots (practice and match)
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- Must have provision of draw of lots as per ISSF regulations
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Ranking system is an essential component for all ISSF and CISM elimination and qualification competitions, therefore, during the competition the Ranking System must processes the data and show the change in the ranking/standings after every shot, which can be displayed to the spectators. Ranking system must support the import and export of starting lists and ranking lists to Microsoft Excel, which ensures that the preparation for a competition is much easier. The rankings can be printed out in Microsoft Word whereby it can be processed further without any problems. It should be possible to insert sponsor logos at any time.

TV Box PC must display the results calculated with the Ranking System.

TV Box System for LCD Show must comprise:

- LCD video projector
- Windows PC with current hardware and software
- VGA splitter 2 outputs to 65m
- Cable extension VGA/RGB, 1m
- Cable connection PC-RS232 crossed, 2m
- Existing monitor cable

VGA Splitter

- It is required to project current rankings onto a large screen via a projector.
- Consumption : 3 W
- Connections : 1 input,
4 outputs

IMPORTANT: Software for Data Acquisition and Ranking must be in conformity with latest ISSF rules. In case of changes in rules by ISSF supplier should agree to upgrade the software free of charge for at least 2 years from the date of supply.

The system must have Phase III Test Approval from ISSF. Supplier must provide a certificate to this effect from ISSF.

The Target System for 50M must have been used in Asian Games, Olympic Games, Commonwealth Games, World Cup and World Championship Finals.