

DIRECTORATE GENERAL BORDER SECURITY FORCE
(TRAINING DIRECTORATE)

EXPRESSION OF INTEREST

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The Sub-Group of Technical Experts constituted by MHA vide their letter No.IV-24011/12/2011-Prov-1 dated 13 June, 2012 and Letter No.IV-24011/12/2011-Prov-1 dated 28 Dec, 2012 held its meeting at HQ DG BSF on 06 Dec'2013, 05 Mar'2014, 24 Jun'2014, 22 Aug'2014, 14 Nov'2015, 15 Jan, 2015, 24 Mar'2015, 16th Oct'2015, 20 May'2016, 16th Feb'2017 and 12th May'2017 to formulate the QRs and TDs of "ELECTRONIC SHOOTING RANGE".

2. After detailed deliberations, the referred Sub-Group has formulated the QRs of "ELECTRONIC SHOOTING RANGE" which are as under:-

QUALITATIVE REQUIREMENTS – "ELECTRONIC SHOOTING RANGE"

S.No	QRs/Technical Specifications
01.	<p><u>INTRODUCTION</u></p> <p>The Electronic Shooting Range has been projected for all the CAPFs in order to modernize the regular ranges. This system will facilitate in imparting training to the Recruits as well as for professional purposes. The system will reduce the time consumed as well as manpower engaged in the range.</p> <ol style="list-style-type: none"> a) The system should detect and record all bullets of supersonic velocity. b) For detecting subsonic bullets, system should have additional target system. c) The system having operation based on sensors should be programmed for precision, turning, popup target and timed practices as given in Range Course of the users for supersonic bullets. d) System should accurately detect record and instantaneously display the score & give printout (if required) of the exact location of hits having facility to display them both on grid and silhouette pattern of the target, for supersonic as well as subsonic. e) For training analysis, the system must be capable to replay the sequence of shots. f) The system must have facility to designate the scoring area on the lines of expected scoring area (ESA) defined in range course. g) The system should be programmable by the user to include any number of firing practices in future.

02.	The system should accurately record hit of all bullets having velocity of supersonic and subsonic range. The accuracy of the system should be upto 10mm anywhere on the target at normal wind condition.
03.	<p>System be able to programme and function with all type of targets used in the range course, namely</p> <ul style="list-style-type: none"> i) Fig-11 Combat Target ii) 1' x 1' Grouping Target iii) 4' x 4' Combat Target iv) 4' x 4' Grouping Target v) 4' x 4' Bunker Target vi) Close Quarter Battle Target vii) Any other target used in CAPFs <p>Should have facility for up gradation to programme the increase number of practices in future. Pop up and rotation movements are required only for Fig 11 and 12 target.</p> <p>(Note:- Drawing / specification of the targets employed for firing practices will be specified by the concerned CAPF at the time of tender).</p>
04.	It should be capable to accurately record firing in single shot mode, three round burst and automatic burst fire mode, showing time lapse between successive shots.
05.	System should be capable of recording Groups and their sizes. It should locate MPI of group and indicate the extent of correction required if any for realistic zeroing of the weapons used specifically on the targets defined in the users range course.
06.	<p>The system should be effective for all type of targets i.e. stationary, pop-up, turning. The system should have such facility wherein the timing of popping up and turning of target, sequence of their appearance, both individually and collectively can be pre arranged by the instructor. Target end should have up to sixteen Pop-up target mechanisms.</p> <p>Note :- Pop up and rotation movements are required only for Fig 11 and 12 target.</p>
07.	System should be capable to detect late shots (beyond timed practices) and crossfire shots and those hitting outside expected scoring area so as not to consider them for the purpose of calculating score. Similarly it should detect indicate and not score stone hits/debris or ricocheting bullets.
08.	The system should work on 220V (\pm 20V) 50 Hz AC mains power supply. System should also be capable to run on rechargeable battery for minimum 08 hours. System should have inbuilt facility to switch over between AC to DC supply automatically.
09.	System should have inbuilt night firing arrangements with target illumination system with variable adjustable intensity.

10.	The system must be designed to be used and function in the following conditions without affecting the performance, temperatures varying between +50 degrees C and -10 degrees C, under rain or snow, humidity and in dust/windy conditions. System should comply IP – 67.
11.	System from target end to control room including at all firing points (i.e.100 mtrs/200mtrs/300 mtrs/400 mtrs/500 mtrs & 600 mtrs) to be wired with the option of wireless.
12.	a) The cable connecting various eqpts from Target end to Control Room including all firing points. should be vermin proof/weather proof, sturdy and covered with Metallic mesh. b) The cordless/ wireless connectivity between system/eqpts at target end, firing points and control room should be interference free and work upto range of 1000 mtrs.
13.	System should be user friendly, easy to operate and sturdy.
A)	SYSTEM AT TARGET END
14.	Should have all types of weatherproof target mechanism which can be easily set up. The target mechanism should accommodate and control all types of targets as used by CAPFs.
15.	Target mechanism should have bullet detection system based on sensors. The target mechanism should be bullet proof so as to ensure its complete safety from the ensuing firing activity.
16.	The system should work on 220V (\pm 20V), 50 Hz AC mains power supply. System should also be capable to run on rechargeable battery for minimum 08 hours. System should have inbuilt facility to switch over between AC to DC supply automatically.
B)	SYSTEM AT FIRING POINT
17.	i) Should have a sturdy weather proof portable display unit protected with toughened glass cover near the shooter where he should be able to see location of the shots on graphical representation as well as on the silhouette of the target with scores, MPI, group size, target to firer distance (ranges). ii) Total shots fired in that practice and exact location of shots, score of each shots with simultaneous total score of that practice etc. iii) Visual display unit should allow clear visibility in all weather conditions i.e. Dim light, Bright sun light etc. and also give clear viewing of data from all the firing position i.e. Kneeling, prone, standing and battle crouch. iv) Monitor for each firing point should indicate the status of the target – whether it is 'ready' for shots or not as well as in terms of firing sighter shots or scoring shots as applicable for application and classification fire respectively.

	Note :- The option of individually setting up of monitor at firing point including zooming, clearing up of screen and resetting the firing practices
18.	Should have facility to give command to print out individual practices of a particular lane and comparative chart of all clubbed lanes for further print out at control room.
19.	Should have facility to programme individual lane as well as clubbing of different lanes simultaneously.
20.	Display unit/key board should have the following functions :- i) Zoom – At least up to 4x size. ii) Pause – To pause the exercise in between at any time. iii) Continue – To continue the exercise after the required pause. iv) Replay – Shot by shot replay of the exercise. v) Quit – To terminate the exercise at any time. vi) Save – To save the exercises, so that it can be revisited any time.
C)	SYSTEM AT CONTROL ROOM
21.	A computer with latest configuration and a separate LED monitor of minimum 42" to display events for visiting officers/supervisory staff.
22.	Control room system should be capable to perform all the tasks performed by the firing point system which is covered under heading "SYSTEM AT FIRING POINT" above.
23.	Control unit should be capable of controlling fire practices in all the lanes in the range. It should be able to programme target lanes individually as well as collectively as per the requirement of specific firing practice. Scoring area designated on the target should be able to be altered by the instructor in accordance with the different firing practices.
24.	The display unit should show the following data:- <ul style="list-style-type: none"> - Graphical representation of the target - Firer – Target distance (in meters) - Name of exercise/fire with exercise No. - Name/Type of weapon being fired. - Identification of firer. (Regt No./Rank/Name) - Standard size of group (As per user Range Course). - Group size achieved. - State of system-Ready/ Pause/ Stop - X-Y coordinate of each hit & MPI - Max. score Actual score with classification of firer as MM, FC, SS & FAIL. Note:- User to provide Range Course to the vendors at the time of tender.
25.	System at target end, system at firing point, system at control room and all cables and wire should be all weather proof, rain/water proof, vermin proof, dust proof and lightening proof.

26.	<u>MISC</u> i) The software with Hindi (Devnagri) Script shall also be supplied. ii) The Computer and accessories with the latest configuration be provided as specified by the user at the time of procurement
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3. After detail deliberations on the comments/suggestions received from vendors, the sub group has decided to again upload the QRs on BSF as well as MHA website for 15 days to invite views/suggestions from bidders to assess the market viability as well as to make the QRs broad based and generic.

4. All the interested firms are once again requested offer their comments / suggestions on the draft QRs and Trial Directives before 01st June 2017 and furnish brochure / catalogue of their products from the OEMs.


(HIMANSHU SHEKHAR)
2IC (TRG-I)
___ MAY 2017