IG (Prov) FHQ BSF
Dy No 2054 Dtd 13/8/15

F.No. IV-17017/13/06-Prov-I 1554
Bharat Sarkar/Government of India
Griha Mantralaya/Ministry of Home Affairs
PM Division

26, Man Singh Road, Jaisalmer House
New Delhi, Dated 10th August, 2015

To,

DsG: AR (through LOAR), BSF, CISF, CRPF, ITBP, SSB, NSG & BPR&D.

Subject: QRs and Trial Directive for 81 MM Mortar Simulator.

The revised QRs and Trial Directives in respect of "81 MM Mortar Simulator" as per Annexure have been accepted by the Competent Authority in MHA.

2. The CAPFs concerned will be accountable for correctness of the QRs/Trial Directives.

3. Henceforth, all the CAPFs should procure the above item required by them strictly as per the laid down Technical Specifications/QRs.

Yours faithfully,

Encl: As above

(Manohar N. Sukole)
Under Secretary to the Govt of India
Tel: 23381278

HQ DG BSF N./Delh
Office DIG (Prov)
Diary No. 803
Date 13-8-15

Copy forwarded for necessary action to :-

The Section Officer (IT), MHA: It is requested to host the QRs and Trial Directives (soft copy attached) on the MHA website (under the page of Organizational Set up- Police Modernization Division- Qualitative Requirement under Training Equipment by removing the earlier QRs dated 07.08.2006.

(R.K. Soni)
Section Officer (Prov-I)

Copy to: Director (Procurement), MHA.

Comdt (Ord)
DC (Ord)
SO (Ord)
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DIRECTOR GENERAL BORDER SECURITY FORCE
(TRAINING DIRECTORATE)

The Sub-group of Technical Experts on Weaponry Equipment constituted by MHA vide their letter No.IV-17017/18/2011-Prov-I dated 05 Jul 2002 and UONo.IV-24011/12/2011-Prov-I dated 31 Jan, 2013 held its meeting at BSF Headquarters on 25th June 2015 to revise the QRs of **"81 MM MORTAR SIMULATOR".**

After detailed deliberations the referred Sub-group has finalized the draft revised QRs of **"81 MM MORTAR SIMULATOR".**

QUALITATIVE REQUIREMENTS –"81 MM MORTAR SIMULATOR"

S/No.	QRs/Specifications
GENERAL	
01.	81 mm Mortar Simulator should be fully interactive computer generated imagery based system designed to replicate real experience for 50 to 80 trainees in a single classroom. It should be able to impart basic as well as advance training to Mortar Fire Controller (MFC) in the selection, prioritizing and engaging of targets. The simulator should provide a structured learning environment, where the trainee progresses according to his capability and where the environment can be controlled under the tutelage of an instructor. The training objectives should be achievable without the lessons being disrupted by the vagaries of weather, availability of ammunition and availability of field firing range conditions.
02.	The system should consist of mainly two stations. 1. Instructor/ control station 2. Mortar fire controller station. **Instructor station**-Instructor station should have three separate consoles (monitors).One for the visual screen, One for loading training exercise data & controlling exercise, One for loading map. **Mortar fire controller station**. There is requirement of maps(two sets) and binocular with graticule for MFC station. There is no requirement of replica 81 mm Mortar with MPC console in the system. The main aim of the system is to impart training to the Mortar fire controller, not to the Mortar detachment numbers and to the mortar position controller. There should be inbuilt system in the instructor console to calculate and apply the data for firing different amn. Range table for 81mm Mortar firing should be incorporated in the system.

	Instead of sending the data/correction to the MPC the fire controller will send the same to the instructor which will be directly applied on the computer. There is no requirement of applying the data on the replica mortars or actual mortars. Note :- The requirement of replica mortar with MPC Console will be specified by the user at the time of tender. There should be provision of integrating the simulator with replica mortar and MPC console.
03.	a) The system should have scope to incorporate the digital map of a particular area provided by the user to conduct exercises. b) The system should have provision to superimpose digital maps having features as obtainable in 1:5,0000 survey of India Map, features such as Easting, Northing and height all calculated to scale of any desired area, enable exercising the Fire Controller realistically, Digital maps (2 each) of 20 x 20 Kms. The following terrain are to be provided by the firm for the purpose :- i) Mountainous (Normal mountain & high altitude). ii) Snow bound area. iii) Plain (Punjab, West Bengal). iv) Riverine (Sunderban delta & Sir Creek area). v) Desert (Thar). vi) Marshy (Rann of Kutch) vii) Ground covered with Jungle. viii) Undulating / Broken ground. ix) Lakes, Ponds, Canals, Bundhs. x) Road and Track xi) Built up area.
FIRE CONTROLLER (OP/MFC)	
04.	The trainee detailed as MFC should have the battlefield scenario on a wall mounted screen projected by one high definition graphics projector, specification for high definition graphics projection-resolution – XGA (1024 x 768) or better, Brightness – 2000 lumens or more, No of Colours – 16.7million or more, Interface should be able to connect from Lap Top, Computer or any other device in which following facilities shall be provided:- a) **GROUND** Should be able to generate the type of ground as mentioned in Srl No.3 (i to xi). b) **AREA OF OBSERVATION AND DEPLOYMENT** i) Area of observation must cover at least 2 x 2 Kms from FC/MFC end. The lateral deviation calculated by hand method and by the specially modified Binocular with graticule, should be the same when the actual reading of ground is taken on the Screen, at all distance.

	ii)	Area of deployment of Mortar position can be shown and its exact location (GR- 6 figure) can be depicted.
	iii)	Area of observation should be observable by naked eye as well as specially modified binocular provided.
	iv)	Should have the capability to depict upto 20 x 20 Kms of Exercise area in panorama and through digital maps.
c)	**TERRAIN**	The battle field scenario should be developed for all types of terrain mentioned at Serial-3 (I to xi) which can be generated for deployment of Mortars.
d)	**TARGETS**	i) Be able to depict three dimensional static and moving targets on MFC console. The trainee should be able to see the target from different directions and from different elevations. ii) Facilitate locating pinpoint and area targets. iii) Can place static & dynamic objects (from object library) like infantry post / deployment, enemy gun/ mortar position, tactically important ground, movement and location of armoured vehicles as well as advancement of infantry & infantry vehicles. iv) Provide for displaying the effect of fall of shot to the trainees by zooming so that they can understand the fall of bombs on the target in a realistic manner. The time duration of impact of blast should be for minimum 5 seconds.
e)	**LAND MARKS**	Area of ops should have prominent features which can be used as land marks with the help of which trainees can take 'shoot' as part of MFC procedure.
f)	**JUNGLE**	To see the effect of Mortar fire in various types of jungle, there must be:- i) Facility to opt for primary forest (Dense forest) as well as secondary forest (forests having less trees and small open patches in between). ii) Bushy area with forest (forest having large trees, small trees and bushes).

g) **TARGET AREA**

Areas must contain:-

i) Survey tree
ii) Normal tree
iii) Groves of trees
iv) Line of tree
v) Cultivated areas
vi) The trainees/ instructor should have the option to choose the land marks (survey tree, normal tree, groves, line of trees, building) or vegetation (cultivated area having crops or green).

h) **WEATHER CONDITION**

Facility to call:-

i) All types of weather
ii) Change of weather at any time
iii) Weather means - Normal bright sun
Rain
Snow/Fog
Darkness

i) **DAY & NIGHT CAPABILITIES**

Enough capability to create:-

i) Day time situation
ii) Night conditions
iii) Luminous intensity of different phases of moon.
iv) Night firing capability

j) **NOs OF TARGETS**

Capability to store data of minimum 100 targets including Target Registration Form so that trainees can register targets after completion of ranging.

k) **LOCATION OF FC**

i) Enough vantage points are required in the area of operation selected for FC/MFC. Should depict the location of static OP and OP should be able to see the impact of bombs on the target.
ii) Facility to observe aerial view on target.

iii) Facility for air OP (who can observe from any helicopter) and Mobile fire controller. Movement of MFC can be shown along with infantry. Field of view of the MFC (Mobile fire controller who moves along with attacking troops or patrol party) to change as he changes his position. Display of OT bearing, (Observer to target line) OP/GR (Grid Reference), MP GR (Motor position grid reference) and Height should be displayed in screen.

l) **FLASH / SOUND / SMOKE EFFECT**

Various effects as below to be provided:-

i) Flash on impact of bombs on the target.
ii) Sound effect after explosion.
iii) Smoke effect for indication of target and for generating smoke screen.
iv) Blind effect.
v) Splinter effect.
vi) Dust effect.
vii) Flash, sound and dust effect at the Mortar end.

m) **SMOKE AND ILLUMINATING**

The effect of blast of High Explosive (HE) bombs, smoke generation by smoke bombs and illumination of the target area by Illu bombs should be generated by the system as it should be happening actually on the ground.

i) For indication of target with smoke.
ii) For generating target with smoke.
iii) Illumination effect on the object and cone (area of illumination) can be shown, so that trainee can adjust his Point of Burst.
iv) Use of smoke & Illuminating rounds for incendiary effect.

INSTRUCTOR CONSOLE

05. In the instructor console, the instructor should have both panorama and map view of the area of deployment. He should be able to select, start, control, monitor and stop the exercise at any time. Instructor console should provide for placing the observer and target any where on the terrain. An object library should be incorporated in the system, so that instructor can place various types of static and dynamic objects. The instructor console should provide for the following :-

a) **GENERAL FEATURES**

i) Select and create any types of exercise at any time.
ii) Start

	iii) Control iv) Video Monitor v) Stop and Pause vi) Area 20 x 20 Kms for the Instructor to see the entire map on his monitor. vii) Indication of target (both stationary & moving). viii) Location of OP as per the choice of instructor. ix) Reaction of MFC on introducing a fault on the simulator. x) Field of view of OP, when required. xi) To display score two circles of 50/100 Mtrs respectively to be marked for competition purpose and score to be evaluated by the system and to be shown in the individuals score sheet. xii) Can reload, modify and create any new exercise. xiii) Should be compatible with non AC Classroom environment. xiv) System should be capable of working min 8 hours continuously and system availability should ensure a minimum of 12 to 16 hours operation in a day. xv) Software backup to be provided on a CD. xvi) Built in test facility should be provided down to module level. Repair should preferably involve mere change of module. xvii) System to be configured to latest version of Operating System. xviii) UPS (Branded) with ISI mark and 01 hr backup.	
	b) **SCORE & DISPLAY** i) Auto scoring system of all positions used in the Exercise to include score of FC. ii) Individual / group evaluation should be possible, as per format to be generated by the instructor. iii) The instructor should be able to see the progress of shoot at any time as playback i.e. the absence of instructor should not hamper the practice.	
	c) **FEEDBACK AND ANALYSIS OF EXERCISE** The instructor should be able to analyze the exercise and give feedback to the trainee as below:- i) Audio visual and replay ii) Printed performance / score sheet.	
06.	**TRAINING** The firm will arrange and conduct training of 25 personnel for the duration of 2 weeks in operation and maintenance at respective consignee location free of cost.	

07.	**MISC** (i) The software with Devnagri Script shall also be supplied (ii) The firm shall provide Proof/certificate/ undertaking of after sale service of the eqpt. (iii) The firm must have service Centre in India. (iv) The system shall be portable. (v) The Computer and accessories with the latest configuration be provided as specified by the user at the time of procurement.

25/6/15
(M F Khan, DIG(Trg) FHQ)

(Himanshu Shekhar) DC(Trg) FHQ

Rajesh Elda Dy Dr v DCPW

(A.K. Shukla AC(Cust))

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Suman Sahoo DC TC&S BSF, HZB

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25/6/15
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(RAJESH DIMRI) Insp (I) BSF

APPROVED / NOT APPROVED

(D K PATHAK) IPS
DIRECTOR GENERAL
BORDER SECURITY FORCE

APPENDIX – 'B'

RESTRICTED

TRIAL DIRECTIVE

FOR

81 MM MORTAR SIMULATOR

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INTRODUCTION :-

Due to non-availability of Field Firing Ranges, troops are not able to carry out Field Firing of 81 mm Mortar properly. Therefore, to improve the firing skills of the men, 81 MM Mortar Simulators are required. 81 MM Mortar Simulators will give adequate opportunity for practice of 81 mm Mortar Firing.

81 mm Mortar Simulator should be fully interactive computer generated imagery based system designed to replicate real experience for 50 to 80 trainees in a single classroom. It should be able to impart basic as well as advance training to Mortar Fire Controller in the selection, prioritizing and engaging of targets. The simulator should provide a structured learning environment, where the trainee progresses according to his capability and where the environment can be controlled under the tutelage of an instructor. The training objectives should be achievable without the lessons being disrupted by the vagaries of weather, availability of ammunition and availability of field firing range conditions.

AIM :-

To frame Trial Directives to facilitate Board of Officers to carry out physical / technical evaluation of Tender sample of 81 MM Mortar Simulators at the time of procurement.

GENERAL INSTRUCTIONS :-

1. This Trial Directive is issued to assist and guide the evaluation committee. Nothing in this Trial Directive absolves the BOOs from their responsibility to ensure that the evaluation is carried out strictly as per the specifications in every respect.

2. The Evaluation Committee may carry out additional test which they consider necessary after seeking approval of Competent Authority, to verify the quality of the tender sample with the specifications.

3. The Evaluation Committee should ensure proper safety of men and equipment during evaluation to avoid any damage.

4. Trial / evaluation will be conducted in presence of firm representative only.

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COMPOSITION OF THE BOARD :-

The physical evaluation of the tender samples of 81 MM Mortar Simulators will be carried out by the Board of Officers detailed by the Competent Authority.

GENERAL REQUIREMENT:-

Following test instruments should be available during the trial / evaluation:-

1. Measuring tape.
2. Stop watch.
3. Binocular.

TRIAL DIRECTIVE FOR "81 MM MORTAR SIMULATOR"

S/ No.	QRs/Specifications	Procedure suggested for Trial by Board of Officers	Result expected / desired	Complied / Not complied
GENERAL				
01.	81 mm Mortar Simulator should be fully interactive computer generated imagery based system designed to replicate real experience for 50 to 80 trainees in a single classroom. It should be able to impart basic as well as advance training to Mortar Fire Controller (MFC) in the selection, prioritizing and engaging of targets. The simulator should provide a structured learning environment, where the trainee progresses according to his capability and where the environment can be controlled under the tutelage of an instructor. The training objectives should be achievable without the lessons being disrupted by the vagaries of weather, availability of ammunition and availability of field firing range conditions.	The system will be checked by the BOO after installation in the presence of Technical Experts of the concerned firm. The BOO should check all the features specified in the QRs physically.	The system should able to perform in accordance to the QRs.	
02.	The system should consist of mainly two stations. 1. Instructor/ control station 2. Mortar fire controller station. **Instructor station**-Instructor station should have three separate consoles (monitors).One for the visual screen, One for loading training exercise data & controlling exercise, One for loading map. **Mortar fire controller station**. There is requirement of maps(two sets) and binocular with graticule for MFC station. There is no requirement of replica 81 mm Mortar with MPC console in the system. The main aim of the system is to impart training to the Mortar fire controller, not to the Mortar detachment numbers and to the mortar position controller.	The board should check the console as specified in the QRs.	The consoles should be as per QRs.	

	There should be inbuilt system in the instructor console to calculate and apply the data for firing different amn. Range table for 81mm Mortar firing should be incorporated in the system. Instead of sending the data/correction to the MPC the fire controller will send the same to the instructor which will be directly applied on the computer. There is no requirement of applying the data on the replica mortars or actual mortars. Note :- The requirement of replica mortar with MPC Console will be specified by the user at the time of tender. There should be provision of integrating the simulator with replica mortar and MPC console.			
03.	a) The system should have scope to incorporate the digital map of a particular area provided by the user to conduct exercises. b) The system should have provision to superimpose digital maps having features as obtainable in 1:5,0000 survey of India Map, features such as Easting, Northing and height all calculated to scale of any desired area, enable exercising the Fire Controller realistically, Digital maps (2 each) of 20 x 20 Kms. The following terrain are to be provided by the firm for the purpose :- i) Mountainous (Normal mountain & high altitude). ii) Snow bound area. iii) Plain (Punjab, West Bengal). iv) Riverine (Sunderban delta & Sir Creek area). v) Desert (Thar). vi) Marshy (Rann of Kutch) vii) Ground covered with Jungle. viii) Undulating / Broken ground. ix) Lakes, Ponds, Canals, Bundhs. x) Road and Track xi) Built up area.	The BOO should check the compatibility of Digital Maps provided by the user in the system. The board should also check digital maps provided by the firm and various terrains display as specified in the QRs.	All types of terrains as specified in the QRs should be displayed and size of two digital maps should be as per QRs.	

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FIRE CONTROLLER (OP/MFC)				
04.	The trainee detailed as MFC should have the battlefield scenario on a wall mounted screen projected by one high definition graphics projector, specification for high definition graphics projection-resolution – XGA (1024 x 768) or better, Brightness – 2000 lumens or more, No of Colours – 16.7million or more, Interface should be able to connect from Lap Top, Computer or any other device in which following facilities shall be provided:- a) **GROUND** Should be able to generate the type of ground as mentioned in Srl No.3 (i to xi).	The board should check projection on screen. The firm will submit the National / International accredited lab test report for high definition graphics projection – resolution as per QRs.	The projector specification must be as per minimum required parameters. Proper display of CGI terrain.	
	b) **AREA OF OBSERVATION AND DEPLOYMENT** i) Area of observation must cover at least 2 x 2 Kms from FC/MFC end. The lateral deviation calculated by hand method and by the specially modified Binocular with graticule, should be the same when the actual reading of ground is taken on the Screen, at all distance. ii) Area of deployment of Mortar position can be shown and its exact location (GR- 6 figure) can be depicted. iii) Area of observation should be observable by naked eye as well as specially modified binocular provided. iv) Should have the capability to depict upto 20 x 20 Kms of Exercise area in panorama and through digital maps.	The board should measure area of observations East-West and North South by digitally planting markers on the visual screen. The board shall also check left of arc, right of arc, ability to change the area of observations, safety circle around MFC position and the farther edge of the observations.	The system should able to perform in accordance to the QRs.	
	c) **TERRAIN** The battle field scenario should be developed for all types of terrain mentioned at Serial-3 (I to xi) which can be generated for deployment of Mortars.	The board should check the deployment of military objects on two digital maps provided by vendor. Obtain certificate from the vendor	The system should able to perform in accordance to the QRs.	

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		that the same will be available for all other terrains mentioned in the QRs.		
d)	**TARGETS** i) Be able to depict three dimensional static and moving targets on MFC console. The trainee should be able to see the target from different directions and from different elevations. ii) Facilitate locating pinpoint and area targets. iii) Can place static & dynamic objects (from object library) like infantry post / deployment, enemy gun/ mortar position, tactically important ground, movement and location of armoured vehicles as well as advancement of infantry & infantry vehicles. iv) Provide for displaying the effect of fall of shot to the trainees by zooming so that they can understand the fall of bombs on the target in a realistic manner. The time duration of impact of blast should be for minimum 5 seconds.	The board should check deployment of military objects on maps and list out items demonstrated. The board should also check capability to zoom at the target and see it at less than 10 m distance from target, revert to MFC position complete engagement and again zoom to the target to see the effect. Check view of target at ground level from MFC position, elevated (bird eye view) from vertically above the target. Check fall of bomb, the blast should be realistic for few seconds as in actual, leave mark on ground and cause destruction on built up areas. Check and record effect before and after firing.	The system should able to perform in accordance to the QRs.	
e)	**LAND MARKS** Area of ops should have prominent features which can be used as land marks with the help of which trainees can take 'shoot' as part of MFC procedure.	The board should check availability of natural land marks with prominent features as specified in the QRs.	The system should able to perform in accordance to the QRs.	

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f)	**JUNGLE** To see the effect of Mortar fire in various types of jungle, there must be:- i) Facility to opt for primary forest (Dense forest) as well as secondary forest (forests having less trees and small open patches in between) ii) Bushy area with forest (forest having large trees, small trees and bushes).	The board should check jungle terrain, bushy area, thick forest and deploy mortars in such area.	The system should able to perform in accordance to the QRs.	
g)	**TARGET AREA** Areas must contain:- i) Survey tree ii) Normal tree iii) Groves of trees iv) Line of tree v) Cultivated areas vi) The trainees/ instructor should have the option to choose the land marks (survey tree, normal tree, groves, line of trees, building) or vegetation (cultivated area having crops or green).	The board should check all the target specified in the QRs on visual screen.	The system should able to perform in accordance to the QRs	
h)	**WEATHER CONDITION** Facility to call:- i) All types of weather ii) Change of weather at any time iii) Weather means - Normal bright sun Rain Snow/Fog Darkness	The board should check availability of different weather conditions as specified in the QRs.	The system should able to perform in accordance to the QRs.	

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i)	**DAY & NIGHT CAPABILITIES** Enough capability to create:- i) Day time situation ii) Night conditions iii) Luminous intensity of different phases of moon. iv) Night firing capability	The board should check the capability of projecting day/ night situation on the screen as specified in the QRs.	The system should able to perform in accordance to the QRs.	
j)	**NOs OF TARGETS** Capability to store data of minimum 100 targets including Target Registration Form so that trainees can register targets after completion of ranging.	The board should check target registration form and record the columns provided. Check capability of facility provided to store target data. Conduct a shoot, record it and store it, start another shoot, retrieve the data of the target and fire on it.	The system should able to perform in accordance to the QRs.	
k)	**LOCATION OF FC** i) Enough vantage points are required in the area of operation selected for FC/MFC. Should depict the location of static OP and OP should be able to see the impact of bombs on the tartet. ii) Facility to observe aerial view on target. iii) Facility for air OP (who can observe from any helicopter) and Mobile fire controller. Movement of MFC can be shown along with infantry. Field of view of the MFC (Mobile fire controller who moves along with attacking troops or patrol party) to change as he changes his position. Display of OT bearing, (Observer to target line) OP/GR (Grid Reference), MP GR (Motor position grid reference) and Height should be displayed in screen.	The board should check the facility provided to deploy MFC around the impact area on all sides. Check capability of projecting aerial view on screen. Check display of disha, charge and unchain. OT, OP GR, MP GR and height on screen.	The system should able to perform in accordance to the QRs.	

	l) **FLASH / SOUND / SMOKE EFFECT** Various effects as below to be provided:- i) Flash on impact of bombs on the target. ii) Sound effect after explosion. iii) Smoke effect for indication of target and for generating smoke screen. iv) Blind effect. v) Splinter effect. vi) Dust effect. vii) Flash, sound and dust effect at the Mortar end.	The board should check effects of blast on screen as specified in the QRs.	The system should able to perform in accordance to the QRs.	
	m) **SMOKE AND ILLUMINATING** The effect of blast of High Explosive (HE) bombs, smoke generation by smoke bombs and illumination of the target area by illu bombs should be generated by the system as it should be happening actually on the ground. i) For indication of target with smoke. ii) For generating target with smoke. iii) Illumination effect on the object and cone (area of illumination) can be shown, so that trainee can adjust his Point of Burst. iv) Use of smoke & Illuminating rounds for incendiary effect.	The board should check the blast effect on the screen as specified in the QRs.	The system should able to perform in accordance to the QRs.	
INSTRUCTOR CONSOLE				
05.	In the instructor console, the instructor should have both panorama and map view of the area of deployment. He should be able to select, start, control, monitor and stop the exercise at any time. Instructor console should provide for placing the observer and target anywhere on the terrain. An object library should be incorporated in the system, so that instructor can place various types of static and dynamic objects. The instructor console should provide for the following :-	The board should check all the features as specified in the QRs and record observations.	The system should able to perform in accordance to the QRs.	

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	a) **GENERAL FEATURES** i) Select and create any types of exercise at any time. ii) Start iii) Control iv) Video Monitor v) Stop and Pause vi) Area 20 x 20 Kms for the Instructor to see the entire map on his monitor. vii) Indication of target (both stationary & moving). viii) Location of OP as per the choice of instructor. ix) Reaction of MFC on introducing a fault on the simulator. x) Field of view of OP, when required. xi) To display score two circles of 50/100 Mtrs respectively to be marked for competition purpose and score to be evaluated by the system and to be shown in the individuals score sheet. xii) Can reload, modify and create any new exercise. xiii) Should be compatible with non AC Classroom environment. xiv) System should be capable of working min 8 hours continuously and system availability should ensure a minimum of 12 to 16 hours operation in a day. xv) Software backup to be provided on a CD. xvi) Built in test facility should be provided down to module level. Repair should preferably involve mere change of module. xvii) System to be configured to latest version of Operating System. xviii) UPS (Branded) with ISI mark and 01 hr backup.	The board should check all types of shoots. During each shoot change environmental conditions, weather conditions. The shoot should not be affected. Operate the simulator in non AC hall/room for trial. Take certificate from the vendor to the effect that the system does not require Air-conditioned Room for operation. Take certificate from the vendor that software backup will be provided at the time of installation.	The system should able to perform in accordance to the QRs.	

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	b) **SCORE & DISPLAY** i) Auto scoring system of all positions used in the Exercise to include score of FC. ii) Individual / group evaluation should be possible, as per format to be generated by the instructor. iii) The instructor should be able to see the progress of shoot at any time as playback i.e. the absence of instructor should not hamper the practice.	The board should check the score on the screen.	The system should able to perform in accordance to the QRs	
	c) **FEEDBACK AND ANALYSIS OF EXERCISE** The instructor should be able to analyze the exercise and give feedback to the trainee as below:- i) Audio visual and replay ii) Printed performance / score sheet.	The board should check the feedback and analysis of exercise as per QRs by getting a printed performance of a particular exercise.	The system should able to perform in accordance to the QRs.	
06.	**TRAINING** The firm will arrange and conduct training of 25 personnel for the duration of 2 weeks in operation and maintenance at respective consignee location free of cost.	-	-	
07.	**MISC** (i) The software with Devnagri Script shall also be supplied. (ii) The firm shall provide Proof/certificate/ undertaking of after sale service of the eqpt. (iii) The firm must have service Centre in India. (iv) The system shall be portable.	-	-	

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	(v)	The Computer and accessories with the latest configuration be provided as specified by the user at the time of procurement.			

25/6/15
(M F Khan, DIG (Trg) RHQ BSF

(Himanshu Shekhar) DC (Trg) RHQ

25/6/15
Rishipal Singh, DC BSF

25/6/15
Suman Sahra, DC TC&S BSF, H2B

25/6/15
Abhijit Singh Rathore T.C. NSG

26/6/2015
(Y.K. Sharma) SSA (W) BPRD

(A.K. Shukla AC CISPF

25/6.
(Jatinder Singh AC ITBP

Rajesh Elda

25/6/15
(R. R. Mau) SAO (Pty) SSB

25/6/15
(S.S. MANRAL, AC SIO BSF)

25/6
(RAJESH DIMRI) Insp (T)

APPROVED / NOT APPROVED

(31)

(D K PATHAK) IPS
DIRECTOR GENERAL
BORDER SECURITY FORCE