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No.IV-17017/13/06-Prov.I
Ministry of Home Affairs
Prov.I

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New Delhi the 1st September, 2006

To

The DGs: Assam Rifles/BSF/CISF/CRPF/ITBP/NSG/SSB/BPR&D.

Subject: Finalization of QRs/Specifications for
Weaponary/security Equipments

The Sub-Group constituted by MHA vide Memorandum No. IV.17017/18/2001-Prov.I dated 5-7-2002 for laying down QRs/specifications of various items/equipments has since submitted its recommendations in respect of following weaponary/security equipments:

- i) Deep Search Mine/Metal Detector
- ii) Infantry Weapons Effect Simulator System(IWESS)-

2. These recommendations have been accepted by MHA. The QRs finalized by the Sub-Group and accepted by MHA in respect of the above equipments are enclosed herewith.

3. Henceforth, all the CPMFs should procure the above items required by them to meet their operational needs strictly as per the laid down QRs/specifications.

Yours faithfully,

Alok
(Alok Mukhopadhyay)
Under Secretary(Prov.I)
Tele. No.23381278

copy to : DD(Procurement), MHA

Copy for information to:

1. PS to JS(PM), MH
 2. Dir(Prov), MHA
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Appendix A

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ORS OF INFANTRY WEAPONS EFFECT SIMULATOR SYSTEM (IWESS)

GENERAL

- (i) The system should be able to withstand the vagaries of all type of climates including altitudes of 10,000 feet, temperature from - 10 to 50 degree Centigrade and weather conditions such as rain, fog, dust, snow during day and night time.
- (ii) Capable to simulate effect of 7.62mm GM(MAG), 7.62mm LMG, 5.56mm INSAS LMG, 7.62mm SLR, 5.56mm INSAS Rifle, 7.62mm SSG-69, CM 9mm and 7.62mm AK-47/AKM.
- (iii) Capable to handle upto 100 trainees together/individually.
- (iv) Be capable of real time tracking of movement of all participants as mentioned at Ser-(iii) above, in 2x2 Kms area of exercise.
- (v) ~~(May)~~ also provide visual display of area of exercise on instructor control unit.
- (vi) Should provide for 03 years warranty period including 100% repair and refit in situ, followed by repair and maintenance on payment for 10 years or on AMC basis.
- (vii) Provide for training of 05 personnel per set of equipment free of cost.
- (viii) Should provide for low battery indicator on all sub systems.
- (ix) System should not get activated due to firing of other weapons in near vicinity or due to use of bicat strips and crackers.
- (x) Software backup to be provided on a CD.

Should also

TRAINEES' HARNESS

- (i) Should be light weight, easy to wear and merging with standard camouflage dress. Weight should not exceed 2000 gms.
- (ii) Should not interfere in any manner with the normal handling of 7.62mm GM(MAG), 7.62mm LMG, 5.56mm INSAS LMG, 7.62mm SLR, 5.56mm INSAS Rifle, 7.62mm SSG-69, CM 9mm, 7.62mm AK-47/AKM and web equipments carried during operations.
- (iii) Should be tamper proof and indicate tamper, if attempted by trainees.
- (iv) Be capable of differentiating between kills and injuries.
- (v) Should de-activate the weapon of the trainee after registering a kill.
- (vi) The battery should be replaceable/rechargeable and last for a duration of min 48 hours of continuous use after recharge/replacement.
- (vii) The censor should be sensitive enough to record laser beams fired from distances at par with the effective range of standard small arms being used in the force i.e. :-

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<u>S/No.</u>	<u>Range</u>	<u>Weapon</u>
(a)	Upto 1000 Meters	GM(MAG)7.62mm & 7.62mm LMG on Tripod
(b)	Upto 800 Meters	5.56mm INSAS LMG and 7.62mm SSG-69
(c)	Upto 500 Meters	7.62mm LMG on Bipod
(d)	Upto 400 Meters	5.56mm INSAS Rifle
(e)	Upto 300 Meters	7.62mm SLR and AK 47
(f)	Upto 100 Meters	CM 9mm

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QRs OF INFANTRY WEAPONS EFFECT SIMULATOR SYSTEM
(IWESS)

GENERAL

- (i) The system should be able to withstand the vagaries of all type of climates including altitudes of 10,000 feet, temperature from - 10 to 50 degree Centigrade and weather conditions such as rain, fog, dust, snow during day and night time.
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- (iv) Be capable of real time tracking of movement of all participants as mentioned at Ser-(iii) above, in 2x2 Kms area of exercise.
- (v) *Should also* (May) also provide visual display of area of exercise on instructor control unit.
- (vi) Should provide for 03 years warranty period including 100% repair and refit in situ, followed by repair and maintenance on payment for 10 years or on AMC basis.
- (vii) Provide for training of 05 personnel per set of equipment free of cost.
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- (v) Should de-activate the weapon of the trainee after registering a kill.
- (vi) The battery should be replaceable/rechargeable and last for a duration of min 48 hours of continuous use after recharge/replacement.
- (vii) The censor should be sensitive enough to record laser beams fired from distances at par with the effective range of standard small arms being used in the force i.e. :-

<u>S/No.</u>	<u>Range</u>	<u>Weapon</u>
(a)	Upto 1000 Meters	GM(MAG)7.62mm &7.62mm LMG on Tripod
(b)	Upto 800 Meters	5.56mm INSAS LMG and 7.62mm SSG-69
(c)	Upto 500 Meters	7.62mm LMG on Bipod
(d)	Upto 400 Meters	5.56mm INSAS Rifle
(e)	Upto 300 Meters	7.62mm SLR and AK 47
(f)	Upto 100 Meters	CM 9mm

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- (viii) Should provide for registering hits from 360 degrees all around, both on the body and head.
- (ix) Should provide audible indications to the wearer about registering of a kill or injury separately.
- (x) Should be rugged enough to withstand stress caused due to activities like quick running, debussing, crawling, jumping from heights upto 12 feet, adopting lying position and rolling over.

INSTRUCTOR CONTROL UNIT

- (i) Be capable of re-programming the trainees' harness individually upto a distance of 500 meters.
- (ii) Be capable of simulating all battlefield conditions such as Artillery and Mortar fire, explosion of grenades, IEDs and mines.
- (iii) The power source should be replaceable/rechargeable battery, which should last for 24 hours on standby mode and generate 1000 shots after it is recharged/replaced.
- (iv) Should be programmable for disabling all participants together/individually.
- (v) Should be programmable to get feedback from all trainees harness simultaneously, in groups of any size or individually.

WEAPON ALIGNMENT SYSTEM

- (i) Should be compatible with normal weapon sights of 7.62mm GM(MAG), 7.62mm LMG, 5.56mm INSAS LMG, 7.62mm SLR, 5.56mm INSAS Rifle, 7.62mm SSG-69, CM 9mm, 7.62mm AK-47/AKM, telescopic sight of SSG-69, day light telescope of INSAS Rifle, day light telescope of INSAS LMG, passive night sight INSAS Rifle, passive night sight INSAS LMG and passive night weapon sight of 7.62mm SLR/LMG and KN-250/SIMRAD of SSG-69.
- (ii) Should provide for similar degree of accuracy as achieved during normal zeroing of weapons as shown below: -

<u>S/No.</u>	<u>Weapon</u>	<u>Range</u>	<u>Group size</u>
(a)	7.62mm SLR	100 Yards	20 cms for 5 shots
(b)	7.62MM LMG	100 Yards	16 cms for 5 shots in single shot mode and 32 cms for burst mode.
(c)	9mm CM	35 Yards	5 cms for 5 shots
(d)	5.56mm INSAS Rifle	100 Yards	12 cms for 5 shots
(e)	5.56mm INSAS LMG	100 Yards	16 cms for 5 shots in single shot mode and 32 cms for burst mode
(f)	7.62mm SSG-69	100 Yards	7 cms for 5 shots
(g)	7.62mm GM(MAG)	25 Yards	4 cms for 5 shots

- (iii) Should provide real time display of the required correction.
- (iv) The power source should be replaceable/rechargeable battery, which should last for 48 hours in standby mode or 5000 uses of the alignment systems after recharge/replacement.

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CONTROL STATION

- (i) Should have video monitor to depict real time movement of participants.
- (ii) Should have the capability to track movement of participants upto 2x2 kms of exercise area.
- (iii) Should provide for direct communication between the control station and one designated leader in a group of 25 participants.
- (iv) Provide for post action analysis of the complete exercise both individually and collectively.
- (v) Should depict co-relation between projector and trainee harness individually, for sub units of programmable strength and the entire group indicating the following: -
 - (a) Two way records of hits or near misses scored/sustained by both groups.
 - (b) Identity and type of weapon used by and against.
 - (c) Number of shots fired from each weapon and hits/misses thereof.
 - (d) Number of reactivations indicating identity of instructor control unit.
 - (e) Attempted tampering with the harness and use of weapons after de-activation.
 - (f) Time of each occurrence.
- (vi) Should have the capability of installing printers of all types i.e. Laser, Dot Matrix and Inkjet.
- (vii) Should provide for 220 Volt AC Power Supply and rechargeable power unit, which should last for 4-5 hours of use in normal mode and 1-2 hours of printing.
- (viii) CPU of the system should have storage capacity of minimum 80 GB or above, upgradable and compatible with multi media system.

LASER PROJECTOR

- (i) Be compatible with all weapons in use in BSF i.e. 7.62mm GM(MAG), 7.62mm LMG, 5.56mm INSAS LMG, 7.62mm SLR, 5.56mm INSAS Rifle, 7.62mm SSG-69, CM 9mm and 7.62mm AK-47/AKM.
- (ii) Should have the range for various weapons being used in BSF as under: -

<u>S/No.</u>	<u>Range</u>	<u>Weapon</u>
(a)	Upto 1000 Meters	GM(MAG) 7.62mm & 7.62mm LMG on Tripod
(b)	Upto 800 Meters	5.56mm INSAS LMG and 7.62mm SSG-69
(c)	Upto 500 Meters	7.62mm LMG on Bipod
(d)	Upto 400 Meters	5.56mm INSAS Rifle
(e)	Upto 300 Meters	7.62mm SLR and AK 47/AKM
(f)	Upto 100 Meters	CM 9mm

(iii) Should be programmable for single / burst shot.

(iv) The lasers used in the IWESS should be of class 1 type, eye safe laser & should not be harmful to the human eye even from point blank range.

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(v) The laser projector should get de-activated when the trainee is hit by hostile fire.

(vi) The power unit should be replaceable/rechargeable battery, which should last for 24 hours on standby mode and should be able to fire following number of shots in respective weapons:-

S/No.	Weapons	No of Shots
(a)	Rifles and Carbine	100 Shots
(b)	LMGs	750 Shots
(c)	MMG	4000 Shots

(vii) Should be compatible with normal weapon sights of 7.62mm CM(MAG), 7.62mm LMG, 5.56mm INSAS LMG, 7.62mm SLR, 5.56mm INSAS Rifle, 7.62mm SSG-69, CM 9mm, 7.62mm AK-47/AKM, telescopic sight of SSG-69, day light telescope on INSAS Rifle, day light telescope of INSAS LMG passive night sight INSAS Rifle, passive night sight INSAS LMG, passive night weapon sight of 7.62mm SLR/LMG and KN-250/SIMRAD of SSG-69.

(viii) Weight should not exceed 500 gms, mountable on the weapon in such a manner that normal use of weapon is not hampered.

(ix) Should be directly de-activatable by the umpire/instructor.

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