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No. IV-21011/35/2009-Prov-I
Government of India
Ministry of Home Affairs

26, Man Singh Road, Jaisalmer House,
New Delhi, 27.8.2009

To


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

Subject: - QRs/Technical Specifications for the security related equipments -regarding

The QRs/Technical Specifications for the following security related equipments have been accepted and approved by the Competent Authority in MHA.

- (i) Corner Shot - Annexure-A
- (ii) Hostage Rescue for Bullet Proof Cover -Annexure-B
- (iii) General Purpose Machine Gun (GPMG)-Annexure-C
- (iv) Stun Grenade for all purpose -Annexure- D
- (v) Advance Weapon Simulator -Annexure-E

2. Henceforth, all the CPMFs should procure the above items required by them strictly as per the laid down Technical Specifications/QRs.


27/08/09
(R.S.Sharma)
Director (Prov)
O/c

Copy to:-

DD(Procurement),MHA

Copy for information to:-

PS to JS(PM),MHA

QRs FOR ADVANCED WEAPONS SIMULATOR

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Annexure - E

1. The QR required for systems are given in succeeding paras.
2. **Training Requirements**
 - (a) **Simultaneous Firing**. The system should be capable of enabling eight or more firers to fire simultaneously.
 - (b) **Multi Weapon Facilities**. Lanes should be capable of using different weapons. Each lane should have the facility to assign the number of bullets issued individually, with a facility to issue the same number of bullets to all the lanes simultaneously.
 - (c) **Squad Post Training**. Squad post training should be provided in two modes with visual feedback normal (regular target) and Advanced (moving pendulum). In normal mode the trainee has to view the bull's eye of the target. While the trainee is on bull's eye a visual indication should be given to the trainee. In advanced mode the trainee should continuously track a pendulum. The speed of the pendulum should be capable of being varied to change the complexity of the training. Feedback as to the percentage of time the trainee was on target should be displayed.
 - (d) **Application Fire**
 - (i) **Static Target Practice**. Static targets of application fire need to be provided in standard mode. Additional features in static targets should include :-
 - (aa) Exercise should be timed.
 - (ab) Facility should be provided to change the special effects (tactical scenarios like clouds, fog, wind velocity, dust, smoke, night condition etc).
 - (ac) Scores should be provided for inner, middle, outer hits, misses and the percentage of score attained. The scoring pattern should be customized to customer's needs and should be capable of defining more regions if necessary.
 - (ad) Should be capable of replaying all lanes simultaneously or individual lanes only. In the case of individual lanes, the replaying should be viewed in normal or zoom mode. Facility should be provided to view full trace, from the beginning of the session to the end of the session, where the movement of the weapons needs to be visually traced, giving an opportunity of time and motion study.

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(ae) Replaying should be provided as a short trace also. In short trace more, the point of aim and the point of impact (follow through) need to be displayed. In the case of individual lanes the replay should be viewed in normal and zoom mode. This should enable the instructor to interpret the mistakes and suggest corrective measures.

(af) Should be capable of controlling replay speed.

(ag) Should be performing bullet by bullet analysis.

(ah) Print out of the results of the exercise should include the targets used in the exercise. Print preview of the same should also be possible.

(aj) Graphical depiction of the hold of the weapons, giving both, the horizontal and vertical movements, should be provided.

(ak) Static targets, which rotate on being hit, should be provided.

(ii) **Moving Target Practice**. Moving target exercises should be provided, with the following feature :-

(aa) Any of the default of user defined target should be capable of being used for moving targets.

(ab) Should be capable of controlling the speed of the target

(ac) Replaying facility providing information on track and bullet numbers at the point of impact on the target, should be provided.

(ad) Instructor should be able to choose from the default paths provided or define their own path. An orthographic view should be provided for defining paths.

(ae) Facilities similar to static targets like changing special effects etc should also be provided.

(af) Target must appear in various profile i.e. head-on, oblique, lateral, random path etc.

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(iii) **Snapshot Practice**. Snapshot targets should be provided with the following features :-

(aa) For each snapshot target, uptime, downtime, number of exposures, and special effects should be capable of being controlled.

(ab) Targets with rotate option should be provided wherein, if the target is hit during the visibility phase (uptime), it should rotate.

(ac) Facilities similar to static targets like changing special effects, replaying etc, should be provided.

(ad) An exercise where the targets appear at random points should be provided. In this exercise, even the instructor should not be aware in advance where the target will appear.

(ae) An exercise similar to 2 (d) (iii)(ad) above should be provided wherein the instructor should be able to control points of appearance of the targets.

(af) An exercise where each track is assigned a target with different shape and colour combination should be provided. The target in this exercise should appear at random points on the screen.

(ag) An advanced snapshot exercise where each track is assigned a different coloured target should be provided. In this exercise the target should appear at random points on the screen.

(e) **Grouping Exercise**. A grouping exercise which judges the grouping of bullets fired by a trainee, and provides Hold, Aim and Trigger (HAT) feedback with percentage accuracy in each of the above aspects, should be provided.

(f) **Video Based Scenarios**. To include scenarios for hostage rescue, ambush, patrolling, VIP Security, CI Ops etc should be provided, Ranging from simple to Complex, these video scenarios should be relevant to Indian security forces customizable by the end user.

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(g) **Documentation.** Complete trainees details should be stored including their rank, score, etc. Their performance over a period of time should be stored and displayed as and when required. To accommodate specific needs of the organization the format should allow customization. The following documents should be provided :-

- (i) Software test procedure.
- (ii) Software user manual.
- (iii) Software installation procedure document.
- (iv) Software and hardware bilingual user handbook.
- (v) Software verification and validation and reliability document.
- (vi) Software should be upgradeable.

(h) **Operational Environment.** Different types of operational environment should be provided including built up area, high rise buildings, shopping malls, historical monuments, desert area, Jungle and mountainous terrain etc. These Operational Environments should be available for integration into the system as and when required during warranty period.

(i) **Targets.** Different types of targets should be provided including fig 11, Fig 12, Rubia target, Fig 1x1, Fig 2x2, Fig 4x4 Targets, Friend & Foe, bunker target etc. Vehicle targets such as Light, Medium & Heavy motor vehicles should be included. Furthermore, there should be facility to include user defined targets, if required.

3. **Technical Specifications**

(a) **Facility of Aimer.** An Aimer depicting point of aim with an option to disable the aimer should be provided.

(b) **Range.** Range should be upto 2000 metres.

(c) **Special Effects.** Special effects should be provided on the range to simulate :-

- (i) Different modes for sky cover like clear sky, dense clouds, sparse clouds, rain clouds etc.
- (ii) Configurable time of day, allowing instructor specify any point in day (for e.g : night, dusk / dawn and day).
- (iii) Configurable fog conditions, which once enabled should allow the visibility range, in metres to be set.

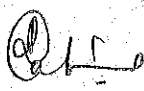
(d) **Preview.** Facility to preview the range should be provided in the setup, A range should be displayed without starting the exercise.

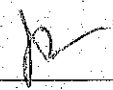
(e) **Weapon Calibration.** Facility for weapon calibration should be provided and the details of the calibration should be stored for current as well as future sessions.

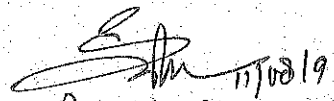
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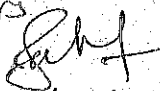
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- (f) **Annual Range Course.** Software should be provided to facilitate the end user to develop and incorporate annual range courses. Annual range course once designed should appear as integrated – as a menu item – in the software.
- (g) **3D Scenario.** 3D Scenario generator software to generate scenarios comprising of 3D human targets, 3D vehicles, 3D structures etc should be provided. The 3D human targets should be interactive i.e on being shot they should fall.
- (h) **Voltage Levels.** The system should work at the normal voltage of 220 volts AC, single phase/Generator/30 minutes UPS backup.
- (i) **Storage Capacity.** There should be adequate data storage capacity for minimum 5 years available in the simulator for use during its life span.
- (j) **Endurance.** It should be able to operate for 6 hours without a break and a minimum of 12 hours of operation in a day should be possible.
- (k) **Service Life.** The service life should be minimum 10 years.
- (l) **Temperature Range.** The simulator should be capable to operate effectively in the temperature ranging from (-) 2 degree Celsius to (+) 55 degree Celsius.
- (m) **Tropical Condition.** The system should be capable of operating upto (+) 35 degree Celsius with 90% relative humidity.

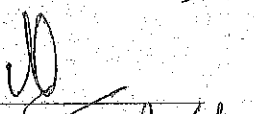

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