

29 JAN 2016

No. IV-21011/11/2009-Prov-I 97

भारत सरकार/Government of India

गृह मंत्रालय/Ministry of Home Affairs

पुलिस आधुनिकीकरण प्रभाग /Police Modernization Division

संभरण-I डेस्क/Prov.I Desk

26, Man Singh Road, Jaisalmer House,
New Delhi, the 25th January, 2016.


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

Subject : Revised QRs and Trial Directives of Target Systems (Electronic Pop-up Target, Electronic Turning Target System, Electronic Moving Target System).

The QRs and Trial Directives in respect of Target Systems (Electronic Pop-up Target, Electronic Turning Target System, Electronic Moving Target System) as per the Annexure-I and Annexure-II respectively have been accepted by the Competent Authority in MHA.

- Henceforth, all the CAPFs should procure the above item required by them strictly as per revised laid down Technical Specifications/QRs.
- Concerned CAPF will be accountable for correctness of the QRs/Trial Directives.
- MHA letter of even number dated 05-02-2015 is rescinded.

Yours faithfully,



(M. N. Sukole)

Under Secretary (Prov-I)

म. नि. (संभरण)	
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उ. म. नि. (संभरण)	
DIG (Prov)	
मुख्य कर्मा (संभरण)	
G C (Prov)	
मुख्य कर्मा (संभरण)	
G C (Prov)	
सहायक कर्मा	
Sub. Cdr	
टीम कर्मा	
Team Cdr	
मुख्य लिपिक	
Head Clerk	

Encl.: As above.

Copy to : SO(IT), MHA : with the request to host the revised QRs and Trial Directives of Target Systems (Electronic Pop-up Target, Electronic Turning Target System, Electronic Moving Target System) on the MHA website (under the page of Organizational Set up-Police Modernization Division-Qualitative Requirements-QRs-training.html), soft copy being sent through email.


(M. N. Sukole)

Under Secretary (Prov-I)

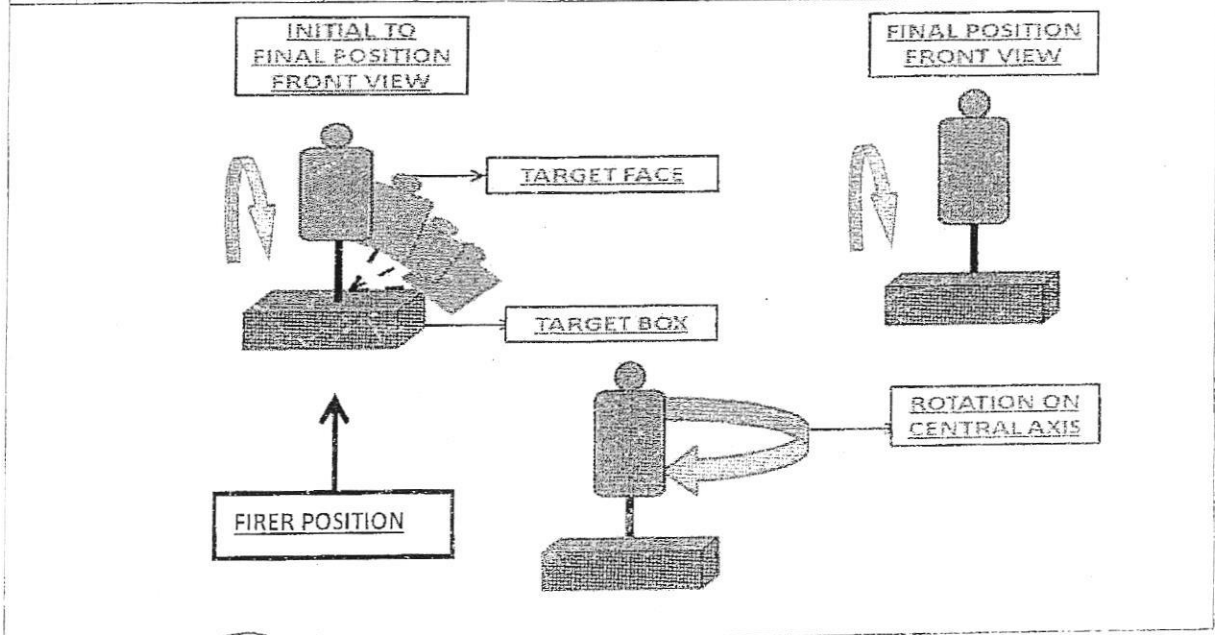
Copy to : DDG(Procurement), MHA.

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REVISED QRs OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM)

SR No	QRs	Parameter
QUALITATIVE REQUIREMENT (QR) & TRIAL DIRECTIVES (TD) FOR ELECTRONIC POP-UP TARGET.		
1.	<u>General.</u>	Electronic pop-up target are targets that can be activated remotely so that they can appear, fall and rotate at preprogrammed condition. The target system should consist of:- (a) Target Box Mechanism & Target Boards. (b) Wireless Remote Control Unit. (c) Sensors.
2.	<u>Target Box & Mechanism.</u> (a) Modes of Operation (expose & hide).	The target should be able to move from a horizontal position from the ground i.e zero degrees to 90 degrees while the target face is square to the firer to depict a 'Pop Up' action (refer diagram below). The square face of the target should be able to rotate through 90 degrees on its central axis.



<i>Amir Hussain</i> 25/10	<i>✓</i>	<i>AKH</i>	<i>WAK</i>
<i>Asad</i> 25/10	<i>✓</i>	<i>✓</i>	<i>AK</i>
<i>Suait</i>			

REVISED QRs OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

<u>Ser No</u>	<u>QRs</u>	<u>Parameter</u>
	(b) Time to Expose Target.	1 sec or lesser.
	(c) Time to Retreat Target.	1 sec or lesser.
	(d) Time Target remains Exposed/hidden (for both Pop Up & Rotation on central axis).	Exposure time should be controllable as under:- (i) Programmable from one sec up to at least two mins. (ii) Exposure/hidden action should be controllable by pressing of switch on remote. (iii) Programmable to take particular number of hits before 'hide' action (as opposed to exposed).
	(e) <u>Control Unit</u> . Should consist of the target control remote and means to see the bullet hits on the target. This means can be integrated along with the remote or provided separately.	(i) Should be capable of controlling minimum 20 targets remotely from a distance up to 1 Km and the targets should pop up and rotate collectively or individually at a programmed time. (ii) Should display, store hit of bullet on the target with provision of printing the result. (iii) Should have a ruggedized display which should be visible in clear day light. (iv) Should control the entire system of sensors of the product as specified (motion, proximity & light). (v) Control unit should be inter compatible with all kinds of targets (i.e. Pop Up, Turning and Moving) mentioned in this QR. (vi) Total Number of Control Units – for every ten targets one control unit.
	(f) Target Illumination for Night Firing.	(i) The system should provide controlled target illumination for night firing. (ii) Facility to switch lights on/off should be available on the remote control. (iii) It should simulate moonlight (dim white light), hit on target & retaliatory fire. (iv) Light should be dimmable (manually on the target and/or remote controlled).
	(g) Targets.	(i) Should be able to hold all types of standard military targets currently in use (Fig 11, Fig 12, Rubia Target, Hostage Target A & Hostage Target B). (ii) Vendor will supply targets as specified by the user. (iii) Should not shake or bend when in upright position (in any plane) up to a wind load of minimum 15 Kms per hour. (iv) Targets should be printed on acrylic sheet. Vendor to provide few numbers of targets (to be specified by user for each type of target). Vendor to provide number and contact details of vendor manufacturing these types of targets.

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REVISED QRs OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

<u>Ser No</u>	<u>QRs</u>	<u>Parameter</u>
3.	Physical Characteristics.	
	(a) Weight.	Weight of the complete target system including the accessories but excluding the battery compartment should not be more than 30 Kgs.
	(b) Color.	Black/Green/Camouflage color to be specified by user.
4.	Power Source.	
	(a) Power (AC/DC as per user requirement).	220 volts to 240 volts.
	(i) AC Mains	(i) 12 volts Sealed Maintenance Free (SMF) rechargeable battery.
	(ii) DC	(ii) SMF battery should be commercially available in Indian Market.
	(b) Battery Life.	(i) 4 hrs continuous pop up and 6 hrs of idle time. (ii) Minimum 2 yrs battery life and should last upto minimum 500 cycles of recharging.
	(c) Charging Time.	6 hrs or less.
	(d) Ingress Protection.	Battery should be separate in a detachable box (weather proof IP 67 encasement) attached to the target with robust connectors.
	(e) Operating Temperature.	-10 degrees C to +60 degrees C.
5.	Accessories.	
	Sensors (as per user requirement).	(i) Motion sensors – targets should automatically pop-up or rotate when a person crosses the IR beam sensors. Target should stay exposed for a programmable time after activation by sensors. (ii) Sensors should be separate from the target. (iii) Sensors should have its own power supply & should have wired/wireless connectivity with the target system.
QUALITATIVE REQUIREMENT (QR) FOR ELECTRONIC TURNING TARGET.		
1.	General.	Electronic turning target are targets that can be activated remotely so that they can slice/scissor & rotate at preprogrammed condition.

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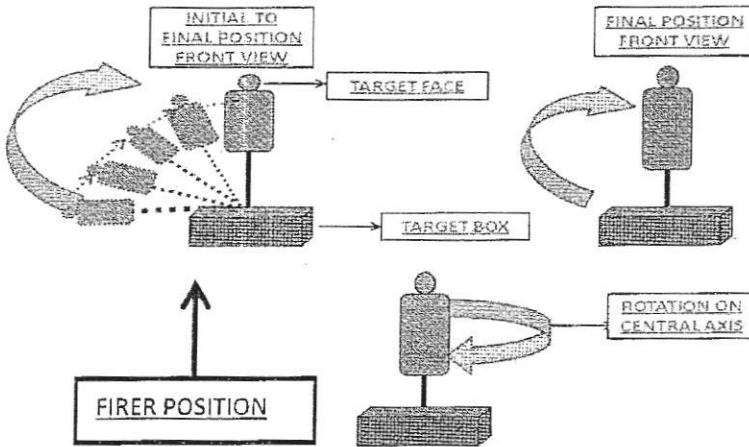
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REVISED QRs OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

Ser No	QRs	Parameter
2.	Target Box & Mechanism.	
	(a) Modes of Operation.	<p>The target should be able to move from a horizontal position from the ground i.e zero degrees to 90 degrees while the target face is square to the firer to depict a 'Slice/Scissor Action' (refer diagram below). The square face of the target should be able to rotate through 90 degrees on its central axis.</p>
	<p>(b) Time to Expose Target.</p> <p>(c) Time to Retreat Target.</p> <p>(d) Time Target remains Exposed/hidden (for both Slice Action & Rotation on central axis).</p> <p>(e) <u>Control Unit</u>. Should consist of the target control remote and means to see the bullet hits on the target. This means can be integrated along with the remote or provided separately.</p>	<p>1 sec or lesser.</p> <p>1 sec or lesser.</p> <p>Exposure time should be controllable as under:-</p> <ul style="list-style-type: none"> (i) Programmable from one sec up to at least two mins. (ii) Exposure/hidden action should be controllable by pressing of switch on remote. (iii) Programmable to take particular number of hits before 'hide' action (as opposed to exposed). <ul style="list-style-type: none"> (i) Should be capable of controlling minimum 20 targets remotely from a distance up to 1 Km and the targets should pop up collectively or individually at a preprogrammed time. (ii) Should display, store hits on the target with provision to take printouts (iii) Should have a ruggedized display. (iv) Should control the entire system of various sensors of the product (motion, proximity & light). (v) Control unit should be inter compatible with all kinds of targets (i.e. Pop Up, Turning and Moving) mentioned in this QR. (vi) Total Number of Control Units – for every ten targets one control unit.



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REVISED QRs OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

Ser No	QRs	Parameter
	<p>(f) Target Illumination for Night Firing.</p> <p>(g) Targets.</p>	<p>(i) The system should provide controlled target illumination for night firing.</p> <p>(ii) The target should only be illuminated when exposed and simulate moonlight (dim white light), hit on target & retaliatory fire.</p> <p>(iii) Light should be dimmable (manually on the target and/or remote controlled).</p> <p>(i) Should be able to hold all types of standard military targets currently in use (Fig 11, Fig 12 and Rubia Target, Hostage Target A & Hostage Target B).</p> <p>(ii) Targets should be printed on acrylic sheet. Vendor to provide few numbers of targets (to be specified by user for each type of target). Vendor to provide number and contact details of vendor manufacturing these types of targets.</p> <p>(iii) Should not shake or bend when in upright position (in any plane) up to a wind load of minimum 15 Kms per hour.</p>
3.	Physical Characteristics.	
	(a) Weight.	Weight of the complete target system including the accessories but excluding the battery compartment should not be more than 30 Kgs.
	(b) Color.	Black/Green/Camouflage color to be specified by user.
4.	Power Source.	
	<p>(a) Power (AC/DC as per user requirement).</p> <p>(i) AC Mains</p> <p>(ii) DC</p> <p>(b) Battery Life.</p> <p>(c) Charging Time.</p> <p>(d) Ingress Protection.</p> <p>(e) Operating Temperature.</p>	<p>220 volts to 240 volts.</p> <p>(i) 12 volts Sealed Maintenance Free (SMF) rechargeable battery.</p> <p>(ii) SMF battery should be commercially available in Indian Market.</p> <p>(i) 4 hrs continuous pop up and 6 hrs of idle time.</p> <p>(ii) Minimum 2 yrs battery life and should last upto minimum 500 cycles of recharging.</p> <p>6 hrs or less.</p> <p>Battery should be separate in a detachable box (weather proof IP 67 encasement) attached to the target with robust connectors.</p> <p>-10 degrees C to +60 degrees C.</p>

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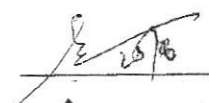
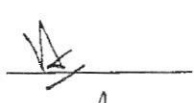
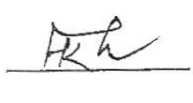
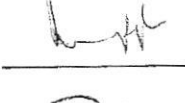


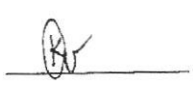

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REVISED QRs OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

Ser No	QRs	Parameter
5.	<p>Accessories. Sensors (as per user requirement).</p>	<p>(i) Motion sensors – targets should automatically pop-up or rotate when a person crosses the IR beam sensors. Target should stay exposed for a programmable time after activation by sensors. (ii) Sensors should be separate from the target. (iii) Sensors should have its own power supply & should have wired/wireless connectivity with the target system.</p>
QUALITATIVE REQUIREMENT (QR) FOR ELECTRONIC MOVING TARGET.		
1.	<p>General.</p>	<p>Electronic moving target are targets that can be activated remotely so that they can move to & fro on its rail at preprogrammed condition. The moving platform should be able to handle all types of multifunctional targets (pop up and turning). With each platform one multifunction target as described above will be supplied.</p>
2.	<p>Target Platform & Mechanism.</p> <p>(a) Maximum Speed. (b) Length of Rail Sections. (c) Maximum Length. (d) Safety. (e) <u>Control Unit</u>. Should consist remote to control the target carrier (on rail), control the multifunctional target mounted on the carrier and means to see the bullet hits on the target. This means can be integrated along with the remote or provided separately.</p>	<p>Speed should be programmable, minimum 1ft in 3 sec. Mechanism should have Detachable rail sections with sensors at both ends (length of each section will be intimated at the time of tendering). 50 mtrs. Sensors at end of the rail to stop the carrier once it reaches the end. (i) User should be able to stop, start and vary speed of the platform at any time of the motion using the control unit. (ii) Should have a ruggedized display. (iii) Control unit should display battery status of the platform/rail. (iv) Control unit should be inter compatible with all kinds of targets (i.e. Pop Up, Turning and Moving) mentioned in this QR. (v) Total Number of Control Units – for every ten targets one control unit.</p>

			
			
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REVISED QRs OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

Ser No	QRs	Parameter
3.	Power Source.	
	(a) Power.	The system should have its independent power source.
	(i) AC Mains	(i) 110V to 250V 50/60Hz with 5% variation in frequency.
	(ii) DC Mains	(ii) 12V Sealed Maintenance Free (SMF) Rechargeable Battery. (iii) SMF battery should be commercially available in Indian Market. (iv) Battery should be separate & detachable box attached to the target with military spec connectors. It should be encased within a weather proof IP 67 encasement.
	(b) Battery Life	Moving platform with fully charged battery will be provided by the firm/OEM. Platform will be programmed to move 40 rounds on a 50 mtrs rail at a speed of 1mtr per sec. The same will be activated and actions will be checked by the BOO
	(c) Battery Charging Time.	6 Hrs or less.
	(d) Operating Temperature.	-10 degrees C to +60 degrees C.
4.	Physical Characteristics.	
	(a) Weight.	Weight of the platform along with the battery should not be more than 35 kgs.
	(b) Color.	Black/Green/Camouflage color to be specified by user.
5.	Accessories.	
	Sensors.	Sensors should be attached to the end of the rail sections to enable the carrier to move back once it reaches the rail end.

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Defect Dept
3C FOS, T-1 Centre

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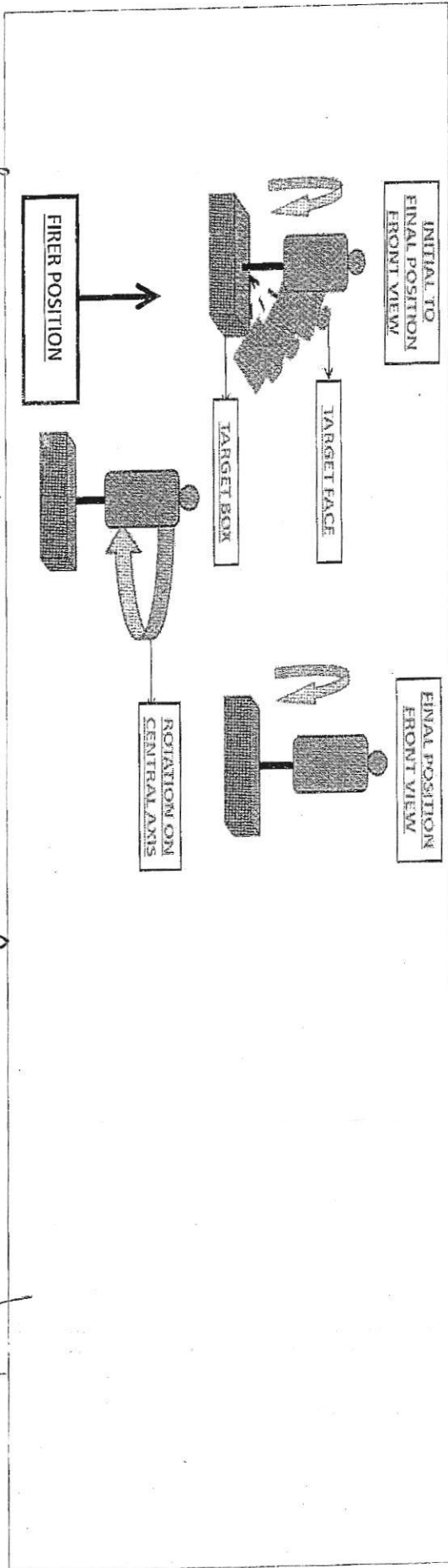
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REVISED TRIAL DIRECTIVES OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM)

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Ser No	QRs	Parameter	Trial Directive
1.	QUALITATIVE REQUIREMENT (QR) & TRIAL DIRECTIVES (TD) FOR ELECTRONIC POP-UP TARGET. General. Electronic pop-up target are targets that can be activated remotely so that they can appear, fall and rotate at preprogrammed condition. The target system should consist of:- (a) Target Box Mechanism & Target Boards. (b) Wireless Remote Control Unit. (c) Sensors.		
2.	Target Box & Mechanism. (a) Modes of Operation (expose & hide).	The target should be able to move from a horizontal position from the ground i.e zero degrees to 90 degrees while the target face is square to the firer to depict a 'Pop Up' action (refer diagram below). The square face of the target should be able to rotate through 90 degrees on its central axis.	To be physically checked by the BOO.



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REVISED TRIAL DIRECTIVES OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

<u>Ser No</u>	<u>QRs</u>	<u>Parameter</u>	<u>Trial Directives</u>
	<p>(b) Time to Expose Target.</p> <p>(c) Time to Retreat Target.</p> <p>(d) Time Target remains Exposed/hidden (for both Pop Up & Rotation on central axis).</p> <p>(e) <u>Control Unit</u>. Should consist of the target control remote and means to see the bullet hits on the target. This means can be integrated along with the remote or provided separately.</p> <p>(f) Target Illumination for Night Firing.</p>	<p>1 sec or lesser.</p> <p>1 sec or lesser.</p> <p>Exposure time should be controllable as under:-</p> <p>(i) Programmable from one sec up to at least two mins.</p> <p>(ii) Exposure/hidden action should be controllable by pressing of switch on remote.</p> <p>(iii) Programmable to take particular number of hits before 'hide' action (as opposed to exposed).</p> <p>(i) Should be capable of controlling minimum 20 targets remotely from a distance up to 1 Km and the targets should pop up and rotate collectively or individually at a programmed time.</p> <p>(ii) Should display, store hit of bullet on the target with provision of printing the result.</p> <p>(iii) Should have a ruggedized display which should be visible in clear day light.</p> <p>(iv) Should control the entire system of sensors of the product as specified (motion, proximity & light).</p> <p>(v) Control unit should be inter compatible with all kinds of targets (i.e. Pop Up, Turning and Moving) mentioned in this QR.</p> <p>(vi) Total Number of Control Units – for every ten targets one control unit.</p> <p>(i) The system should provide controlled target illumination for night firing.</p> <p>(ii) Facility to switch lights on/off should be available on the remote control.</p> <p>(iii) It should simulate moonlight (dim white light), hit on target & retaliatory fire.</p> <p>(iv) Light should be dimmable (manually on the target and/or remote controlled).</p>	<p>To be physically checked by the BOO.</p>

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REVISED TRIAL DIRECTIVES OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

<u>Ser No</u>	<u>QRs</u>	<u>Parameter</u>	<u>Trial Directives</u>
	(g) Targets.	(i) Should be able to hold all types of standard military targets currently in use (Fig 11, Fig 12, Rubia Target, Hostage Target A& Hostage Target B). (ii) Vendor will supply targets as specified by the user. (iii) Should not shake or bend when in upright position (in any plane) up to a wind load of minimum 15 Kms per hour. (iv) Targets should be printed on acrylic sheet. Vendor to provide few numbers of targets (to be specified by user for each type of target). Vendor to provide number and contact details of vendor manufacturing these types of targets.	To be physically checked by the BOO.
3.	Physical Characteristics.		
	(a) Weight.	Weight of the complete target system including the accessories but excluding the battery compartment should not be more than 30 Kgs.	To be physically checked by the BOO.
	(b) Color.	Black/Green/Camouflage color to be specified by user.	
4.	Power Source.		
	(a) Power (AC/DC as per user requirement). (i) AC Mains (ii) DC	220 volts to 240 volts. (i) 12 volts Sealed Maintenance Free (SMF) rechargeable battery. (ii) SMF battery should be commercially available in Indian Market.	To be physically checked by the BOO with a multi meter.
	(b) Battery Life.	(i) 4 hrs continuous pop up and 6 hrs of idle time. (ii) Minimum 2 yrs battery life and should last upto minimum 500 cycles of recharging.	Targets system with fully charged battery will be provided by the firm/OEM. Target will be programmed on pop up mode. The same will be activated and left in location for 4 hrs. Actions will be checked by the BOO.

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REVISED TRIAL DIRECTIVES OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

<u>Ser No</u>	<u>QRs</u>	<u>Parameter</u>	<u>Trial Directives</u>
	(c) Charging Time	6 hrs or less.	Fully discharged battery will be provided and the same will be checked using multi meter. It will be checked weather the battery is fully charged after 6 hrs.
	(d) Ingress Protection.	Battery should be separate in a detachable box (weather proof IP 67 encasement) attached to the target with robust connectors.	A certificate to the effect to be submitted by the vendor from National / International/NABL accredited laboratory. The same will be checked by the BOO.
	(e) Operating Temperature.	-10 degrees C to +60 degrees C.	-do-
5.	Accessories. Sensors (as per user requirement).	(i) Motion sensors – targets should automatically pop-up or rotate when a person crosses the IR beam sensors. Target should stay exposed for a programmable time after activation by sensors. (ii) Sensors should be separate from the target. (iii) Sensors should have its own power supply & should have wired/wireless connectivity with the target system.	To be physically checked by the BOO.
QUALITATIVE REQUIREMENT (QR) FOR ELECTRONIC TURNING TARGET.			
1.	General.	Electronic turning target are targets that can be activated remotely so that they can slice/scissor & rotate at preprogrammed condition.	

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REVISED TRIAL DIRECTIVES OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

<u>Ser No</u>	<u>QRs</u>	<u>Parameter</u>	<u>Trial Directives</u>
	<p>(b) Time to Expose Target.</p> <p>(c) Time to Retreat Target.</p> <p>(d) Time Target remains Exposed/hidden (for both Slice Action & Rotation on central axis).</p> <p>(e) <u>Control Unit</u>. Should consist of the target control remote and means to see the bullet hits on the target. This means can be integrated along with the remote or provided separately.</p>	<p>1 sec or lesser.</p> <p>1 sec or lesser.</p> <p>Exposure time should be controllable as under:- (i) Programmable from one sec up to at least two mins. (ii) Exposure/hide action should be controllable by pressing of switch on remote. (iii) Programmable to take particular number of hits before 'hide' action (as opposed to exposed).</p> <p>(i) Should be capable of controlling minimum 20 targets remotely from a distance up to 1 Km and the targets should pop up collectively or individually at a preprogrammed time. (ii) Should display, store hits on the target with provision to take printouts. (iii) Should have a ruggedized display. (iv) Should control the entire system of various sensors of the product (motion, proximity & light). (v) Control unit should be inter compatible with all kinds of targets (i.e. Pop Up, Turning and Moving) mentioned in this QR. (vi) Total Number of Control Units – for every ten targets one control unit.</p>	<p>To be physically checked by the BOO.</p>

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REVISED TRIAL DIRECTIVES OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

<u>Ser No</u>	<u>QRs</u>	<u>Parameter</u>	<u>Trial Directives</u>
	(f) Target Illumination for Night Firing. (g) Targets.	(i) The system should provide controlled target illumination for night firing. (ii) The target should only be illuminated when exposed and simulate moonlight (dim white light), hit on target & retaliatory fire. (iii) Light should be dimmable (manually on the target and/or remote controlled). (i) Should be able to hold all types of standard military targets currently in use (Fig 11, Fig 12 and Rubia Target, Hostage Target A& Hostage Target B). (ii) Targets should be printed on acrylic sheet. Vendor to provide few numbers of targets (to be specified by user for each type of target). Vendor to provide number and contact details of vendor manufacturing these types of targets. (iii) Should not shake or bend when in upright position (in any plane) up to a wind load of minimum 15 Kms per hour.	To be physically checked by the BOO. -do- A certificate to the effect to be submitted by the vendor from National / International / NABL accredited laboratory. The same will be checked by the BOO.
3.	Physical Characteristics.		
	(a) Weight.	Weight of the complete target system including the accessories but excluding the battery compartment should not be more than 30 Kgs.	To be physically checked by the BOO.
	(b) Color.	Black/Green/Camouflage color to be specified by user.	-do-

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REVISED TRIAL DIRECTIVES OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

<u>Ser No</u>	<u>QRs</u>	<u>Parameter</u>	<u>Trial Directives</u>
4.	Power Source.		
	(a) Power (AC/DC as per user requirement). (i) AC Mains (ii) DC	220 volts to 240 volts. (i) 12 volts Sealed Maintenance Free (SMF) rechargeable battery. (ii) SMF battery should be commercially available in Indian Market.	To be physically checked by the BOO with a multi meter.
	(b) Battery Life.	(i) 4 hrs continuous pop up and 6 hrs of idle time. (ii) Minimum 2 yrs battery life and should last upto minimum 500 cycles of recharging.	Targets system with fully charged battery will be provided by the firm/OEM. Target will be programmed on pop up mode. The same will be activated and left in location for 8 hrs. Actions will be checked by the BOO.
	(c) Charging Time.	6 hrs or less.	Fully discharged battery will be provided and the same will be checked using multi meter. It will be checked weather the battery is fully charged after 6 hrs.
	(d) Ingress Protection.	Battery should be separate in a detachable box (weather proof IP 67 encasement) attached to the target with robust connectors.	A certificate to the effect to be submitted by the vendor from National/International/NABL accredited laboratory. The same will be checked by the BOO.
	(e) Operating Temperature.	-10 degrees C to +60 degrees C.	-do-

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REVISED TRIAL DIRECTIVES OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

Ser No	QRs	Parameter	Trial Directives
5.	Accessories.		
	Sensors (as per user requirement).	(i) Motion sensors – targets should automatically pop-up or rotate when a person crosses the IR beam sensors. Target should stay exposed for a programmable time after activation by sensors. (ii) Sensors should be separate from the target. (iii) Sensors should have its own power supply & should have wired/wireless connectivity with the target system.	To be physically checked by the BOO.
QUALITATIVE REQUIREMENT (QR) FOR ELECTRONIC MOVING TARGET.			
1.	General.	Electronic moving target are targets that can be activated remotely so that they can move to & fro on its rail at preprogrammed condition. The moving platform should be able to handle all types of multifunctional targets (pop up and turning). With each platform one multifunction target as described above will be supplied.	To be physically checked by the BOO.
2.	Target Platform & Mechanism.		
	(a) Maximum Speed.	Speed should be programmable, minimum 1ft in 3 sec.	To be physically checked by the BOO.
	(b) Length of Rail Sections.	Mechanism should have Detachable rail sections with sensors at both ends (length of each section will be intimated at the time of tendering).	-do-
	(c) Maximum Length.	50 mtrs.	-do-
	(d) Safety.	Sensors at end of the rail to stop the carrier once it reaches the end.	-do-
	(e) Control Unit. Should consist remote to control the target carrier (on rail), control the multifunctional target mounted on the carrier and means to see the bullet hits on the target. This means can be integrated along with the remote or provided separately.	(i) User should be able to stop, start and vary speed of the platform at any time of the motion using the control unit. (ii) Should have a ruggedized display. (iii) Control unit should display battery status of the platform/rail. (iv) Control unit should be inter compatible with all kinds of targets (i.e. Pop Up, Turning and Moving) mentioned in this QR. (v) Total Number of Control Units – for every ten targets one control unit.	-do-

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REVISED TRIAL DIRECTIVES OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

Ser No	QRs	Parameter	Trial Directives
3.	Power Source.		
	(a) Power.	The system should have its independent power source.	
	(i) AC Mains	(i) 110V to 250V 50/60Hz with 5% variation in frequency.	
	(ii) DC Mains	(ii) 12V Sealed Maintenance Free (SMF) Rechargeable Battery.	To be physically checked by the BOO using a multi meter.
		(iii) SMF battery should be commercially available in Indian Market.	
		(iv) Battery should be separate & detachable box attached to the target	OEM to provide certificate and the same will be checked by the BOO for authenticity.
	(b) Battery Life	Minimum 2Kms running on the rail with speed of 1 mtr per sec (i.e 40 rounds of to and fro motion on a 50mtrs rail) on a fully charged battery with target load.	Moving platform with fully charged battery will be provided by the firm/OEM. Platform will be programmed to move 40 rounds on a 50 mtrs rail at a speed of 1mtr per sec. The same will be activated and actions will be checked by the BOO.
	(c) Battery Charging Time.	6 Hrs or less.	Fully discharged battery will be provided and the same will be checked using multi meter. It will be checked whether the battery is fully charged after 6 hrs.

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REVISED TRIAL DIRECTIVES OF TARGET SYSTEMS (ELECTRONIC POP-UP TARGET, ELECTRONIC TURNING TARGET SYSTEM & ELECTRONIC MOVING TARGET SYSTEM) (Contd....)

Ser No	QRS	Parameter	Trial Directives
	(d) Operating Temperature.	-10 degrees C to +60 degrees C.	A certificate to the effect to be submitted by the vendor from National / International / NABL accredited laboratory. The same will be checked by the BOO.
4.	Physical Characteristics.		
	(a) Weight.	Weight of the platform along with the battery should not be more than 35 kgs.	To be physically checked by the BOO.
	(b) Color.	Black/Green/Camouflage color to be specified by user.	-do-
5.	Accessories.	Sensors.	To be physically checked by the BOO.
		Sensors should be attached to the end of the rail sections to enable the carrier to move back once it reaches the rail end.	

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