DIRECTOR GENERAL BORDER SECURITY FORCE
(PROVISIONING DIRECTORATE (MOD CELL)

EXPRESSION OF INTEREST

Commandant (Ord)
HQ DG BSF, Prov Dte (Ord Sec)
Block No. 10, CGO Complex
Lodhi Road, New Delhi
(Tele/Fax No. 011-24367683)

The Sub-group of Technical Experts on Surveillance Equipment constituted by MHA vide their letter No. IV-24011/12/2011-Prov-I dated 13 Jun 2012, No. IV- 24011/12/2011-Prov-I dated 28 Dec 2012 & UO No. IV-24011/12/2011-Prov-I- 350 dated 27th Jun 2013 held its meeting at BSF Headquarters on 19th April 2017, 15th June 2017, 29th August 2017, 08th Nov 2017, 01st Jan 2018, 24th July 2018 and 16 January 2019 to revise the Qualitative Requirement of **'Passive Night Telescopic Sight For 5.56 mm INSAS Rifle and LMG'.**

QUALITATIVE REQUIREMENT OF PASSIVE NIGHT TELESCOPIC SIGHT FOR 5.56 MM INSAS RIFLE AND LMG

1.	**Description of Equipment**	The passive Night Telescopic Sight (PNTS) for 5.56 mm INSAS Rifle/LMG is a compact and light weight passive system for accurate weapon aiming and surveillance at night. The sight is suitable for fitment on weapon by use of special mounting bracket.
2.	**Terminology used in this QRs**	
i	II Tube	Image Intensify Tube, are used to amplify low light level image in a wide light spectrum.
ii	LP/mm	Line Pair per Millimeter, unit used to measure image intensifier resolution. Typically the highest the line pair, the better the image resolution.
iii	SNR	Signal to Noise Ratio, it is defined as the ratio of signal power to the noise power in a given bandwidth and compares the level of a desired signal to the level of background noise.
iv	AGC	Auto gated Control, it control the amount of light that gets through to the microchannel plate. The gating occurs at high frequency and by varying the duty cycle to maintain a constant current draw from the microchannel plate, it is possible to operate the tube during brighter condition such as day light without damaging the tube or leading to premature failure.
v	BSP	Bright Source Protection, protects the image tube from damage and enhances the life time. It reduces voltage to the photocathode rather than the micro channel plate.
vi	FOV	Field of View is the open observable area, a person can see through his or her eyes or via an optical device. In case of optical devices and sensors FOV describes the angle through which the devices can pick up electromagnetic radiation.

vii	IP	Stands for Ingress Protection and an IP rating is used to specify the level of environmental protection of electrical equipment against solids & liquids. In other words, it tells us what amount of size of solids or liquids can get inside the enclosure and possibly damage the device. IP ratings are displayed as a 2 digit number. The first digit reflects the level of protections against dust (0=No protection, 1=upto 50 mm, 2= 12 mm, 3= 2.5 mm, 4= 1 mm, 5= limited ingress, 6= total protection against dust). The second digit reflects the level of protection against liquids (Water) 0- No protection 1- against dripping water 2- against dripping water(tilted) 3- against water spray less than 60 degree from vertical 4- against water spray from any direction 5- against water jets 6- a nozzle under pressure 7- immersion (1 meter for 30 minutes) 8- submersion (at depth under pressure)
viii	Mil Grade	Mil standard/Grade are the standard issued by the United State Army's Developmental Test Command. There are two different type of Mil Standard given for II assembly, for 18 mm – Mil-I-49052F and for 25 mm –Mil-I-49140EL. These standard describe protection of II assembly against Shock, Vibration, Temperature etc.

S.No	Parameter				
1	Magnification	4x Min			
2	II Tube : All parameters of II Tube mentioned below should be supported by certificate of II Tube manufacturer and data sheet of each II Tube must be provided :-				
	a	Resolution	64lp/mm or better.		
	b	Signal to Noise Ratio (SNR)	22 or better.		
	c	Mean Time between Failure (MTBF)	Minimum 10000 operational hrs.		
	d	II tube standard	Mil Grade		
	e	It should have inbuilt AGC and BSP.			
	f	Permissible black spot level			
		Size of spot (in inches)	Zone 1	Zone 2	Zone 3
		0.003 to 0.006	0	1 (Max)	2 (Max)
		0.006 to 0.009	0	1 (Max)	1 (Max)
		>0.009	0	0	0
3	Field of View		8^0 Minimum		
4	Range		Single Man Size Target		
	a	Detection Range	400 Mtr Minimum		
	b	Recognition Range	300 Mtr Minimum		
5	Ingress protection level of equipment		IP67		
6	Diopter Adjustment		-4.5 to +2 Diopter or better		
7	Range of Focus		25m to infinity or better		
8	Low Bty Indicator		Should be provided on screen/display		

9	Operating Temp		-30°C to +55°C
10	Reticule		Should be provided
11	Reticule illumination On/Off		The reticule illumination should be capable of being turned ON/OFF with adjustable brightness level or brightness level can be bring down to zero level with a brightness control knob.
12	Azimuth and Elevation		
	a	Should be provided with the help of reticle on FOV screen.	
	b	The operational suitability of PNTS will be checked by firing on the target.	
13	Mount Kit		There should be a common mounting adaptor should be provided both for 5.56 INSAS Rifle and LMG or as specified by the user.
14	Weight including eye guard, light cover, adaptor, batteries & Picatinny		1.375 Kg Maximum.
15	Power Source		
	a	Should be operable independently on primary and rechargeable cells and battery. The equipment is to be supplied with one set of commercially available primary & rechargeable NiMH/Li-Ion cells or battery.	
	b	The cell/battery should be capable to run the equipment at least for 15 hrs in continuous mode.	
	c	A commercially available battery charger should be provided which should have the provision to charge the cells from 90-270 volt (50 Hrtz) AC mains supply as well as 12/24 Volt DC supply.	
16	Suitable cover for eye piece & OG.		
17	MIL grade (protection against shock/vibration and water) ruggedized transportation box to be provided.		
18	**Misc (To be a part of AT)**		
	a	Purging kit to be provided **(To be specified by the user)**	
	b	Operational (user) manual to be provided with each equipment.	
	c	Technical maintenance manual to be provided as specified by the user.	
	d	Operational training and base level repair & maintenance training to be provided to the user (trainees) as per number specified by the user department.	
	e	One spare eye guard & OG cover should be provided with each sight.	
	f	Supplier to agree to provide spare parts for next 07 years minimum from the date of supply.	

Note: - All firm are requested to comment upon the above mentioned parameters Srl No. 01 to 18 of QRs and furnish original OEM Brochures/catalogues.

The sub-group has decided to upload the QRs on BSF and MHA website for 15 days to invite the views/comments/suggestions of prospective bidders to make the QRs more broad based.

(Vikas Singh)
Deputy Commandant (Mod)