Annexure-B

QUALITATIVE REQUIREMENTS OF DIGITAL NIGHT VISION GOGGLES (STANDARD / BASIC VERSION)

SL/No.	SPECIFICATION	
1	**General**	
	a	DNVG standalone allows a complete hands free operation and no blurred vision with normal head movement.
	b	The ergonomic design should allow comfortable use in motion, even during extended operation.
	c	Live firing or a flash bang should not create a building or blackout condition.
	d	DNVG standalone will facilitate locating and identifying targets during night and in dark closed/buildings in built up area.
	e	Should have High quality monochrome view for better target recognition and faster decision time.
	f	Instant dark to light or light to dark condition should be compensated by the device and the user should be unaffected.
SPECIFICATION(OPERATION AND MAINTENANCE)		
2	**Technology:-** Goggle with advanced photo sensitive sensor using highly sophisticated software algorithms and real time computing without any (image intensifier) II tube.	
3	**Image Capturing:-**Full Digital NIGHT vision Sensor System with resolution of 60 to 65IP/mm or better.	
4	**Detection Range: -** 100 meter or better for human target.	
5	Field replaceable 2X lens for static viewing.	
6	**Diopter Adjustment:-** -3 to +3 diopter.	
7	**Light Sensitivity:-** 0.00029 Lux up to daylight, passive operation.	
8	**Infrared Illuminator:-**	
	a	Should have per selective modes for active and passive IR control.
	b	There should be minimum 3 selective modes:
		(i) ON/OFF (ii) Dim IR (iii) Full IR
9	Focus: 30 cm to infinity.	
10	**Field Of View:-**	
	a	56 Deg ± 2 Deg with .8X Lens.
	b	43 Deg ± 2 Deg with 1X Lens.
	c	16 Deg ± 2 Deg with 2X Lens.
11	**Wearing Capability:-**	
	a	The DNVG should fully interface with combat and law enforcement helmet and can be worn underneath a visor.
	b	Can be worn with or without helmet just like a tactical goggle.

12	**Operating Conditions:-** The goggle can be used in night as well as daylight without harming the system and even without realizing the difference in picture quality as compared to night operation.	
13	**Operational Life and Operating Time:-**	
	a	The operational life of DNVG should be min 5 years.
	b	More than 7 hrs. with fully charged battery (on IR mode)
14	**Battery indicator**:- Should have suitable low battery indication, to indicate low battery status.	
15	**Battery type:-** lithium Ion/Lithium Polymer	
16	**Operating Temperature:-** -20^0C to $+55^0$C(OEM to provide a compliance certificate).	
17	**Ruggedness:-** As per MIL STD 810F or equivalent standards.	
18	**Weight:-**Weight of DNVG Goggles should not exceed 500 gms (including accessories and battery.)	
Miscellaneous		
19	**Accessories:-** The accessories to be provided:-	
	a	Battery Pack-01
	b	Battery Charger-01
	c	User Manual (Quick Guide)-01
	d	Goggle Cleaning Kit-01
	e	Rugged Carrying Case-01
	Optional Accessories:-	
	a	2 X filed replaceable lens.
	b	Additional battery pack
	c	Video output on a RJ45 or USB Port.

TRIAL DIRECTIVES OF DIGITAL NIGHT VISION GOGGLE (STANDARD / BASIC VERSION)

SL. NO.	SPECIFICATION		Trial procedure suggested for BOOs	Result expected/desired	Compiled/not complied
1	General				
	a	DNVG standalone allows a complete hands free operation and no blurred vision with normal head movement.	To be checked by Board of Officers.	The DNVG,s should be as per the requirement mentioned the QR,s.	
	b	The ergonomic design should allow comfortable use in motion, Even during extended operation.	To be checked by Board of Officers.	The DNVG,s should be as per the requirement mentioned the QR,s.	
	c	Live firing or a flash bang should not create a building or blackout Condition.	To be checked by Board of Officers.	The DNVG,s should be as per the requirement mentioned the QR,s.	
	d	DNVG standalone will facilitate locating and identifying targets during night and in dark closed/ Buildings in built up area.	To be checked by Board of Officers.	The DNVG,s should be as per the requirement mentioned the QR,s.	
	e	Should have High quality monochrome view for better target recognition and faster Decision time.	To be checked by Board of Officers.	The DNVG,s should be as per the requirement mentioned the QR,s.	
	f	Instant dark to light or light to Dark condition should be compensated by the device and the user should be unaffected.	To be checked by Board of Officers.	The DNVG,s should be as per the requirement mentioned the QR,s.	

SPECIFICATION(OPERATION AND MAINTENANCE)				
2	**Technology:-** Goggle with advanced photo sensitive sensor using highly sophisticated software algorithms and real time computing without any (image intensifier) II tube.	To be checked by verifying the supporting documents provided by the OEM.	The DNVG,s should be as per the requirement mentioned the QR,s	
3	**Image Capturing:-**Full Digital NIGHT vision Sensor System with resolution of 60 to 65IP/mm or better.	To be checked by verifying the supporting documents provided by the OEM.	The DNVG,s sensor system should be as per the requirement mentioned the QR,s.	
4	**Detection Range: -** 100 meter or better for human target.	To be checked by Board of Officers	The System must detect the target at desired range	
5	Field replaceable 2X lens for static Viewing.	To be checked by verifying the OEM certificate confirming the same.	Lens should be as per the requirement mentioned in QRs.	
6	**Diopter Adjustment:-** -3 to +3 diopter.	The firm should submit national/ international accredited Lab.	The DNVG,s diopter adjustment should be as per the requirement mentioned the QR,s.	
7	**Light Sensitivity:-** 0.00029 Lux up to Daylight, passive operation.	To be checked by verifying the OEM certificate confirming the same.	Light sensitivity should be as per the requirement mentioned the QR,s	

8	**Infrared Illuminator:-**				
	a	Should have per selective modes for active and passive IR control.	To be checked by the board members by switching the goggle in passive mode and active mode by controlling the IR with the rotating potentiometer.	The DNVG,s infrared illuminator should be as per the requirement mentioned the QR,s	
	b	There should be minimum 3 selective modes:			
		I) ON/OFF			
		II) Dim IR			
		III) Full IR			
9	Focus: 30 cm to infinity.		To be checked by Board of Officers	The target at a distance from 30 meters or above must be focused easily.	
10	**Field Of View:-**		To be physically checked in the LAB as per the procedure.	The DNVG,s field of view should be as per the requirement Mentioned QR,s.	
	a	56 Deg ± 2 Deg with .8X Lens.			
	b	43 Deg ± 2 Deg with 1X Lens.			
	c	16 Deg ± 2 Deg with 2X Lens.			
11	**Wearing Capability:-**				
	a	The DNVG should fully interface With combat and law enforcement helmet and can be worn underneath a visor.	To be physically checked by board of officers.	The DNVG,S wearing capability should be as per the requirement mentioned the QR,s.	
	b	Can be worn with or without Helmet just like a tactical goggle.			
12	**Operating Conditions:-** The goggle can be used in night as well as daylight without harming the system and even without realizing the difference in picture quality as compared to night operation.		Check the certificate submitted by the firm in respect of the system accuracy under different environments under harsh weather condition.	The certificate submitted by the firm must confirm the same.	

13	**Operational Life and Operating Time:-**				
	a	The operational life of DNVG Should be min 5 years.	To be checked by verifying the supporting documents provided by OEM.	The certificate submitted by the firm must confirm the same.	
	b	More than 7 hrs. with fully charged battery (on IR mode)	To be physically checked by BOO.	Battery life should not be less than 07 Hrs.	
14	**Battery indicator**:- Should have suitable low battery indication, to indicate low battery status.		To be physically checked by board of Officer.	Battery indicator should be as mentioned the QRs.	
15	**Battery type:-** lithium Ion/Lithium Polymer		To be physically checked by board of Officer.	Batteries should be as per the requirements mentioned the QRs.	
16	**Operating Temperature:-** -20^{0}C to +55^{0}C(OEM to provide a compliance Certificate).		The firm has to submit National / international accredited Lab report / certificate in respect of the same.	The DNVG must be operable in Operating temperature: 20^0 C to ±55^{0}C.	
17	**Ruggedness:-** As per MIL STD 810F or equivalent standards.		Check the National/ International accredited lab certification /report in respect of DNVG ruggedness, comply with Mil STD 810 F or better.	National/ International accredited lab certificate/ repot must confirm the same of the same may be	
18	**Weight:-**Weight of DNVG Goggle should not exceed 500 gms (including accessories and battery.)		BOO to measure the weight with the help of weighing machine.	The weight of DNVG Goggles should not be more than 500 gms including accessories.	

Miscellaneous					
19	**Accessories:-** The accessories to be provided:-		To be physically checked by board of Officer.	The DNVG's accessories should be as per the requirement mentioned the QRs.	
	a	Battery Pack-01			
	b	Battery Charger-01			
	c	User Manual (Quick Guide)-01			
	d	Goggle Cleaning Kit-01			
	e	Rugged Carrying Case-01			
	Optional Accessories:-				
	a	2 X filed replaceable lens.	To be physically checked by board of Officer.	The DNVG's accessories should be as per the requirement mentioned the QRs.	
	b	Additional battery pack			
	c	Video output on a RJ45 or USB Port.			