

**DIRECTORATE GENERAL BORDER SECURITY FORCE**

**(COMN AND IT) DIRECTORATE (EQPT CELL)**

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Draft QRs & TD in r/o Water Robot (ROWV) was uploaded on BSF website to invite the views/comments/suggestion of prospective bidder to make the QRs more broad based. Accordingly, comments were received from various firms. Based on the comments/suggestion received, QRs & TD has been suitably amended.

**Draft QRs and Trial Directive for Water Robot ( ROWV)**

<b>S. No.</b>	<b>General Specification</b>	<b>Trial Directive</b>
1.	a) System should consist of remote operated water vehicle with low light surface camera, operator display unit and control unit. Optional Sensors will be included as per operational requirement.	To be physically checked by the BOO.
	b) ROWV and all components should be Ruggedized as follows :-	
	(I) ROWV and Camera : JSS 55555 Std/ Mil Std 810F and IP 67.	Firm should submit National/International accredited lab report/ certificate in respect of JSS 55555 standards /Mil Std 810/F and IP 67.

	(II) Operator Display Unit and Control Unit must be robust and ruggedized .	To be physically checked by the BOO.
	(III) Optional Sensors/Pay load : TO be defined by the user at the time of tender.	To be physically checked by the BOO.
	c) Ability to deploy in flowing water (3 Knots or more) and static water of river.	To be physically checked by the BOO.
	d) Portability : System should be portable and easily operable by crew of 02 personnel.	To be physically checked by the BOO.
	e) Deployment time: Depending on different locations and site approaches. Should not be on higher side.	To be physically checked by the BOO.
	f) System accuracy : Location of ROWV (1 Mtr or better).	To be physically checked by the BOO.
2.	<b>Technical Specification :-</b>	
	<b>Remote operated Water vehicle : -</b>	
	a) Should have suitable thruster to smoothly negotiate in river current (3 knots or more) and Anti-weed propeller to avoid being twisted by the under water/ over surface weed.	To be physically checked by the BOO, in the main channel of the river in available condition.
	b) Should be equipped with water surface camera with mounting mechanism on echo boat.	To be physically checked by the BOO.
	c) Should be equipped with GPS/GNSS as per users requirement for positioning in river having high turbid water with an accuracy of $\pm 1\text{m}$	To be physically checked by the BOO
	d) Should have option for minimum 04 customized payloads / Sensors.	To be physically checked by the BOO.



5.	<b>Operational ( ROWV Camera ) :-</b>	
	a) Video control system should consist :-	
	i) IR Video camera to be gimbal stabilized on all three axis.	To be physically checked by the BOO.
	ii) Daylight video camera should have min.4X optical zoom.	To be physically checked by the BOO.
	iii) Resolution 4.0 Mega Pixel Full HD (1920X1080) or better.	To be physically checked by the BOO.
	iv) Video data to be encrypted over the RF.	To be physically checked by the BOO.
	b) Operational range : 500 mtr or better ( as per field requirement ) on water surface	To be physically checked by the BOO.
	c) Detection range : 100 Mtr or better on water surface	To be physically checked by the BOO.
	d) Capability of Omni Directional movement	To be physically checked by the BOO.
6.	Ability to integrate with available IP Network .	System will be physically checked for integration with available IP Network.
7.	<b>Power Source :-</b> It should function on DC .	To be physically checked by the BOO.
8.	<b>Miscellaneous :-</b>	
	a) Operating manual	An undertaking in this regard will be obtained from the firm.
	b) Technical manual	
	c) Spare parts list	
	d) Tools for minor repair and maintenance	
	e) If any special tools required for installation/fixing of ROWV	

	Camera must be provided. f) Copy of operating software (CD/DVD) required for the system should be provided .	
9.	<b>Training :-</b> Operator level training should be imparted to 04 persons @ each system at place of deployment.	An undertaking in this regard will be obtained from the firm.

**Note: All firms are requested to comment upon the above mentioned QRs and TD by Jan 2019.**

**BOO has decided upload QRs & TDs on BSF website for 15 days to invite the views/comments/suggestions from prospective bidder.**

**(Sanjeev Kumar)  
Commandant (C-Eqpt)**

