

QUESTIONNAIRE FOR
DEEP SEA SIDE SCAN SONAR TOWING WINCH (MARINE SYSTEM)

- Q.1. List the regulations and standards that would be complied in design, development and operation in marine environment of the system? For example International Maritime Organisation/ Indian Register of Shipping/ Lloyd's Register, IEC, IEEE etc., applicable to various sub-assemblies of the system.
- Q.2. What is the Principle of Operation of the Winch?
- Q.3. What will be the type of Winch being supplied? E.g., Electro-hydraulic or electro-mechanical.
- Q.4. What will be the material used for construction of the winch?
- Q.5. Will the winch be able to support a minimum of 2000 meters of double armoured coaxial tow cable of dia 8-12 mm and support the load of towing approximately 100 kgs at a speed of 10 knots in sea states 3-4?
- Q.6. What kind of spooling arrangement will be provided for reeling the armoured cable with the winch?
- Q.7. What mechanism will be provided for prevention of fouling of armoured cable during cable spooling operations using winch?
- Q.8. What arrangement will be available for end-to-end connectivity of armoured cable in the winch?
- Q.9. What kind of material/ measures will be provided for protecting the winch and sub-assemblies from marine environment?
- Q.10. What is the maximum load that the winch be able to handle whilst towing the side scan sonar at max speed of 10 knots, with 1500m armoured cable paid out and in sea state 4?

Q.11. Specify the following:-

Sr	<u>SPECIFICATIONS</u>	
	<u>Technical Specifications</u>	
(a)	Capacity of Winch (Amount and dia of Cable)	
(b)	Electric Motor	
(c)	Pump	
(d)	Hydraulic Motor	
(e)	Line Pull & speed variables	
(f)	Bearings	
(g)	Controls	
(h)	Breaking System	
(j)	Handling	
	<u>Dimensions</u>	
(k)	Width	
(l)	Length	
(m)	Height	
(n)	Drum Diameter	
(p)	Flange Diameter	
(q)	Drum Width	
(r)	Total weight	

Q.12. Indicate the type of built-in safety mechanism (day and night) for operation from local and remote position.

Q.13. Indicate the levels of multi-speed operation for paying-out & heaving-in.

Q.14. Confirm the provision of a manual arrangement for operation in case of failure of primary mode.

Q.15. Indicate the type of connecting mechanism likely to be provided to ensure real time connectivity between the dry end of the sea cable to the deck control unit.

Q.16. Confirm the provision of load test certificates for the winch.

Q.17. What are the Environmental and Quality Parameters (DGQA letter 66301/Policy-25/DQA(N)/QA-18 dated 22 Aug 13) being followed by the manufacturers? Vendors are requested to provide information on the following in respect of the equipment:-

(a) Criterion/ Specification to which the equipment has been designed/ produced.

(b) Standards adopted for implementation of navigation features (IMO standards etc).

(c) Environmental specifications to which the equipment complies (e.g. IEC 60945/EN 60068). Alternatively, the following details may be forwarded to confirm the extent of ruggedisation to withstand marine/ ship borne environment:-

- (i) High and low temperature (Operation and Storage)
- (ii) Thermal shock and Vibration
- (iii) Corrosion
- (iv) Water Immersion and Solar Radiation
- (v) Bump/ Drop
- (vi) Ingress Protection Rating
- (vii) Software Development
- (viii) MTBF and MTTR
- (ix) EMI/EMC