GOA SHIPYARD LIMITED
VASCO-DA-GAMA, GOA 403 802

REQUEST FOR PROPOSAL (RFP)
INDIGENISATION OF TRANSMISSION GEARBOX FOR FAST PATROL VESSEL UNDER MAKE – II POLICY OF GSL

1.	Department	Technical Services
2.	RFP Ref No.	GSL/RFP/MAKEII/2022/01
3.	RFP date	07 JUNE, 2022
4.	RFP closing date & time	07 JULY, 2022, 17:00 HRS
5.	Description	**INDIGENISATION OF TRANSMISSION GEARBOX FOR FAST PATROL VESSEL**

Introduction

1. GSL invites **Request For Proposal (RFP)** from reputed Indian manufacturers for indigenous development, Prototype manufacturing and type approval **of Transmission Gearbox for Fast Patrol Vessel platform.**

2. The equipment shall be developed under Make II procedure at GSL. It gives opportunity to Indian firms (called as Development Agencies (DAs)) to indigenously develop the prototype which will make the firms eligible for the supply of equipment for its upcoming projects upon successful development in specified time frame.

3. The item developed should have Indigenous content of not less than 50%.

4. The technical specification of TRANSMISSION GEARBOX FOR FAST PATROL VESSEL is enclosed at Annexure A.

Qualification Criteria

5. The interested firms must fulfill the following minimum pre- qualification criteria and shall necessarily submit the relevant documents to support their claim.

(a) Technical Qualification

(i) Company profile and valid shop & Establishment registration certificate.

(ii) List of equipment held by them with model, year/ working status along with details of their manufacturing facilities suitable for Gearbox manufacturing and personnel with designation qualification and experience to determine their capabilities.

(iii) Extent & source of import content for the subject requirement if any.

(iv) Draft quality Assurance plan (QAP). The QAP should contain all the activities with timelines necessary to develop and produce the prototype of the equipment.

(v) The proposed development of prototype & type approval of the equipment is to be completed within the period of 12 Months from Go-ahead.

(b) Commercial Qualification

(i) The bidder shall be an Indian registered firm having its registered office & manufacturing facilities in India. Self-attested copy of the registration certificate to be submitted with RFP application.

(ii) The bidder shall be an original Indian designer, developer & manufacturer of Gearbox/similar item.

(iii) The entity has to be controlled by resident Indian citizens. Entity with excess of 49% foreign investment will not be eligible.

(iv) Copies of Audited / certified Balance sheet, Profit / Loss account for past 3 years and valid solvency certificate / Banker's opinion issued by Nationalized / reputed international / scheduled bank, should be submitted with RFP application.

(v) Traders / Agents / Dealers / foreign Bidders / consultant shall not be considered.

FUTURE BUSINESS POTENTIAL:

6. Once the prototype is successfully developed and Type approved by IACS Class member in specified time frame, the developed equipment may be considered for procurement from the Vendor for use in future projects. The future indicative requirement of the equipment for the period of next 2-3 years is envisaged to be 42 Nos for the future FPV projects.

<u>Instruction to bidders responding to RFP</u>

7. GSL reserves the right to consider placement of order/ contract in part or in full against the quantity mentioned in scope of supply or reject any or all bids without assigning any reason. GSL also reserves the right to cancel this expression of interest without assigning any reason.

8. GSL reserves the right to make inquiries with any of the clients listed by the bidders in their previous experience record. Further GSL may ask the firm to make presentation to understand the capability of the firm w.r.t project planning, capability, experience, approach methodology etc.

9. Vendor should design, develop, manufacture prototype and undertake type testing for equipment by Class as per Technical Specifications provided by GSL.

Vendor may collect the additional technical information during Design & Development by examining the existing equipment installed on IN / ICG ships.

10. The equipment will be Indigenized under GSL Make-II procedure. As per Make-II procedure, no funding will be made available by GSL to Development Agency/s (DAs) for development of prototype (including trials & type testing) but firm will be considered for the supply of equipment for upcoming projects on successful development & trials of the prototype.

11. Shortlisted firms will be jointly inspected by GSL for ascertaining capacity and capability to undertake indigenous development of the item.

12. This invitation of RFP is not an assurance for order.

13. The item that are to be indigenously developed are to be jointly inspected by GSL and Class as per approved QAP by Class & GSL. All tests required for certification by Class as per QAP shall be carried out by vendor at his own cost.

14. The shortlisted firm/ Firms will issued with the development order by GSL indicating the timelines, Deliverables and technical specification requirements. The Firm/ Firms will develop the equipment as per the timelines. On completion of development of the prototype, prior type testing, sealed commercial bids will be invited from the firm/ firms. The firm/ Firms can then proceed with the testing of the prototype. Upon successful testing of prototype, the commercial bids of only the firms, which have successfully tested prototype, will be opened. The lowest bidder will be considered for the supply of equipment for its upcoming project. The remaining firms who have successful completed the trials will be issued certificate by GSL for the capability to supply the equipment for the FPV platform and firms name will be included in the vendor panel of future projects accordingly.

Bid Rejection Criteria

15. GSL may at its sole discretion and at any time during the evaluation of proposal, disqualify any bidder, if:

(a) Bids have been received after due date.

(b) Bidder's failure to furnish sufficient or complete details for evaluation of the bids within the given period.

(c) Incomplete / misleading / false / ambiguous proof of eligibility requirements.

(d) Failed to produce timely clarifications related thereof, when sought.

(e) Declared ineligible by the Government of India. I State govt. I Public sector undertaking.

16. In case of any queries/clarifications please contact
Mr. D S Patekar, Additional General Manager (Technical Services),
Tel: +91 832 2512152, Ext-4200, Direct: +91 832 2514194
E-mail - dspatekar@goashipyard.com
OR
Mr. Rayson Botelho, Senior Manager (Technical Services),
Tel: 0832 2512152, Ext-4215
E-mail - raysonbotelho@goashipyard.com

17. **SUBMISSION OF RESPONSE TO RFP:**

The RPF proposal document duly completed and signed should be sent to:

Mr Thomas Verghese
General Manager,
Technical Services
Goa Shipyard Limited,
Vasco, 403802, INDIA
Email: thomasverghese@goashipyard.com

As an advance copy, e-mail may be sent to above email IDs and later on Hard copy of RFP response may be sent to above address with mention of RFP reference on envelope.
The due date for submission of RFP proposal is 07 JULY, 2022 **@ 17:00 Hrs IST.**

GOA SHIPYARD LTD		
TECHNICAL SPECIFICATION OF GEARBOX FOR FAST PATROL VESSEL		
Clause No	**Technical Specifications**	**Remarks**
1	**DESCRIPTION :**	
	Marine reverse reduction gear box, having PTO for hydraulic pump and with vertically offset shafting (340 mm) suitable for installing on rigid mounts complete with all standard accessories, tools and controls etc.	
2	**QTY/SHIP : THREE NOS**	
3	**OPERATING CONDITION:**	
3.1	**Ship motion:**	
	Rolling : Max + /- 20 deg.	
	List (permanent relative to water line) : Max 22.5 deg.	
	Trim : Max. 5 deg.	
	Pitching : Max +/- 10 deg.	
3.2	**Tropical condition:**	
	Air inlet maximum temperature : 45 deg. C.	
	Sea water maximum temperature : 35 deg. C	
	Relative humidity : 100% at 35 deg. C.	
	Atmospheric pressure : 750 mm of Hg. (1000 m. bar)	
	CLASSIFICATION	
	The equipment to be type approved by any of the IACS cclass member	
4	**MATERIAL**	
	Material used in the manufacture and fabrication should be of highest marine quality and should conform to ABS requirement. Brittle material should not be used. Material specifications of critical components should be as follows:-	
	Housing : Aluminium alloy	
	Shafts : Case hardened steel	
	Gears : Case hardened steel	
5	**TECHNICAL SPECIFICATION:**	
	Input power (P) : 2720 KW maximum	
	Input speed (nl) : 2100 rpm.	
	Output speed (n2) : 950 rpm +/- 2%	
	Gear Ratio : 2.231	
	Gear box efficiency : Approx. 98% at maximum power	
	Sense of rotation: Reversing arrangement should be provided necessary clutches. Shaft speed with sensors should be provided for indication of output speed and sense of rotation	
	Capacity of oil : approx. 75 litres	

Clause No	Technical Specifications	Remarks
6	**SCOPE OF SUPPLY (FOR ONE GEAR BOX)**	
6.1	Free-standing Gear box (with reversing component)	
	Marine reverse-reduction gearbox for unirotation and counter rotation with vertically offset shafting (340 mm) and the following scope of supply:	
	Light metal housing	
	Output flange	
	Oil-to-raw water heat exchanger (only in connection with engine-mounted heat exchanger)	
	Oil filter	
	Oil pump (s) for lube oil/clutch oil	
	Hydraulically operated multi-disk clutches	
	Integrated propeller thrust bearing	
	Mechanical emergency control, without remote control unit.	
	Additional Equipment	
	Gearbox input flange	
	Gearbox controls for electric remote control	
	Following Sensors gearbox to be mounted:	
	Temperature transmitter (PT1000) for gearbox oil	
	Temperature transmitter (PT1000) for gearbox thrust bearing	
	− Pressure transmitter (0 - 30 bar / 4 - 20 mA) for gearbox control oil	
	− Pressure transmitter (0 - 7 bar / 4 - 20 mA) for gearbox lube oil	
	− Pressure monitors (3-pole) for:	
	− Gearbox control oil before filter	
	− Gearbox control oil (engine stop)	
	− Clutch oil pressure ENGINE WISE OUTPUT ROTATION	
	− Clutch oil pressure COUNTER ENGINE WISE OUTPUT ROTATION	
	− Limit switch for gearbox clutch position NEUTRAL	
	Level probe for gearbox oil	
	2 Shaft speed transmitters	
	Hose lines (flame-proof) for flexible raw water connection to gearbox oil cooler	
	On-gearbox connecting parts for lube oil extraction	
	Auxiliary PTO, SAE C (i.e. A10VO71), 650 Nm, permanently engaged, for hydraulic pump (without pump)	
	Trailing pump	
	Rigid gearbox mounts	
6.2	**Gear Box Control / Monitoring**	
	Gear Box monitoring and control comprising:	
	Electronic gear box control and monitoring unit	
	Gear box control and monitoring unit (GCU/GMU) for separate installation in engine room, sheet metal housing with plug connector for wiring GCU/GMU to Local Operating Panel (LOP) with the following functions.	
	Data processing logic for gear box clutch control.	
	Data processing logic in GMU for binding and analog signal inputs, binary signal outputs and for data transfer (fieldbus CAN) for remote control and ship side monitoring.	
	On-Gear Box Sensors /Wiring.	
	Set of sensors including Wiring, comprising.	
	Temperature transmitter for gear box oil (PT 1000 double system)	

Clause No	Technical Specifications	Remarks
	Pressure transmitter for gear box control oil (4-20mA)	
	Pressure monitors (3-pole) for:	
	Gear Box control oil before filter	
	Gear box control oil	
	Clutch oil AHEAD	
	Clutch oil ASTERN	
	Switch for gear box – DISENGAGED signal	
	Terminal box (GTB)	
6.3	Local operating panel (LOP) for Gear Box to be included in scope.	
	All the sensors should be wired upto the terminal/junction box on gear box upto the GB LOP. All relevant functions for monitoring of gearbox parameters and controls will be provided on the GB LOP.	
6.4	All the sensors mounted on gear box indicating its features and characteristic are placed at Enclosure-"A". Further, any other sensors required to conform to class rule requirement should be provided by MTU.	
6.5	Any other item as per class requirement and OEM recommendation to be provided and included in the scope of supply.	
	Enclosure- `A`	
	List of sensors for gear box	
	Range	
	Speed sensors	
	Shaft speed : 0 – 1200 rpm	Gear box mounted
	Temperature sensors	
	Lube oil : - 40 – 150 deg.C	Gear box mounted
	Pressure sensors	
	Lube oil : 4 – 20 mA	Gear box mounted
	Clutch oil : 4 – 20 mA	Gear box mounted
	Switches	
	Lube oil filter differential	Gear box mounted
	Clutch uni-rotating	Gear box mounted
	Clutch counter –rotating	Gear box mounted
	Clutch neutral	Gear box mounted
	Clutch oil pressure	Gear box mounted