



DEENDAYAL PORT AUTHORITY
(Erstwhile Kandla Port Trust)
Mech. Engg. Deptt.



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Office of the Chief Mechanical Engineer
Port & Customs Building,
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No. MS/WK/4062/Gim-PC/145

Date : 15.02.2023

To,

'Expression of Interest'

Sub: "Supply, installation, testing & commissioning of Berthing Aid System including Operation & Maintenance for five years at Oil Jetty No. 08 of DPA"– reg.

Sir,

Deendayal Port Authority, an autonomous body under Ministry of Ports, Shipping & Waterways, Govt. of India, intends to install Berthing Aid System including Operation & Maintenance for five years at Oil Jetty No. 08 of DPA.

Kindly submit your Expression of interest alongwith budgetary-offer for the subject work on the basis of the scope of work enclosed herewith. Expression of Interest should include profile of your firm, work experience in similar works, summary of financial reports, technical brochure (if any), and your comments/suggestions (if any) regarding the proposal etc. on the above mentioned E-mail Ids.

The rates quoted must be inclusive of all costs such as tools, tackles, labour, transportation, insurance, customs fees (if any) and other auxiliary charges for successful completion of the work excluding GST. The GST applicable shall be shown separately, which shall not be considered for evaluation purposes

Your EOI with budgetary offers for the above work should reach this office via either courier or email mentioned above, till **23.02.2023 on or before 1500 hours due to exigency of the work.**

Thanking you

Yours faithfully,

Sd/-

Superintending Engineer (Mech.)
Deendayal Port Authority

1. GENERAL

The Deendayal Port Authority proposes to carry out the works Supply, installation, testing & commissioning of Berthing Aid System (BAS) including Operation & Maintenance for five years at Oil Jetty No. 08 of DPA, at Old Kandla of Deendayal Port Authority. The BAS shall be complying relevant codes, standard and applicable regulations. The tentative & indicative technical specification and terms and condition are mentioned below.

2. SCOPE OF WORK AND SUPPLY OF MATERIAL FOR BAS

The broad scope of work (not limited to) shall include the following:

The Berthing Aid System (BAS) shall be used for safe berthing of vessels at Oil Jetty No. 08 (OJ08) by measuring the distance, speed and angle of the ship's bow and stern section in relation to the berth fenders and shall trigger alarms during the final sideways berthing phase.

a) The BAS shall consist (not limited to) of:

02 nos. Lasers

02 nos. Rotating Large Numeric LED Display

05 nos. Portable Display Units (iPad) for Pilots, Tugs, On-board Masters etc., with updated for latest edition of navigation chart for the area.

01 no. Oceanography sensor

Associated network, Control system, display and controls in Control Room of OJ08

- b) The contractor shall mount the Anchor Bolts, base plates, washers & nuts, etc. with the help of template of the BAS units. For this purpose, necessary grout mixture may be used for fixing of the base plate and anchor bolts and bonding may be ensured according to the Load.
- c) The contractor shall ensure that while doing the grout work, necessary chemical bonding agents shall be used for structure for water proofing as guided by Civil Engineering Dept.
- d) After the Anchor Bolts mounted; the firm shall install the components of BAS units at the berthing dolphins/ central platform with proper installation procedure furnished by the manufacturer.
- e) For operation of the equipment, the firm shall supply, install and connect the power cable from the nearest available power source & communication cables with the BAS units.
- f) The firm shall conduct the pre-test before commissioning of the BAS units in the presence of TPI & DPA officials.
- g) All the materials required for carrying out the works shall have to be supplied by the firm. The BAS system must be certified by third party or independent international classification

agency such as IRS, BV, DNV or any Classification Society who is a member of International Association of Classification Society, for use in an Oil Jetty to handle LPG & Class A - Petroleum Products.

- h) The designed life of the BAS shall be not less than 15 years. The BAS unit system shall be supplied with minimum twelve months guarantee for any manufacturing defects (for repair and new work including supplied items) with effect from the date of acceptance of the work and/or services by DPA.
- i) All the equipment shall be capable of working under the following conditions Voltage variation: $\pm 15\%$. The system shall have overload protection. The isolating switches shall be rated accordingly.
- j) The contractor shall provide Central Computer System (CCS) at Control room of OJ08. All B.A.S. data and alarms shall be shown on a CCS.
- k) All the cables, steel structures at the jetty shall be provided with flame proof cables and fire proof painting shall be provided.
- l) The technical details, specifications etc. in the document are indicative only. It is the responsibility of the contractor to prepare the Technical Data sheets, Detailed Engineering calculations, Designs as per the relevant standards, codes & norms etc., taking into account the Employers requirements specified in the document and submit the same for the prior approval of the Employer before commencement of the work.

2.1 Laser Sensor

The lasers shall have the following minimum indicative specifications:

- Laser Range: 0 to 300 meters.
- Measuring Accuracy: $\pm 1 \text{ cm} < 10 \text{ m}$, $\pm 1 \text{ m} < 200 \text{ m}$
- Area Classification: Hazardous Zone-1
- Resolution: 1 cm.
- Velocity Range: 0 – 99 cm/s
- Velocity Accuracy: $\pm 1 \text{ cm/s}$
- Temperature Range: -10 to + 60 degrees Celsius.
- Eye Safety: Class 1
- Beam Divergence: 3.0 mrad
- Laser Classification: Class 1 EN60825-1: 2003-10
- Power Supply: 110V AC 50 Hz (UPS).
- IP Rating: IP65

The lasers shall be provided with digital network interface to send/receive the data via the digital network to/from the CCS. Priority shall be given in design to install Fixed Lasers on Berthing Dolphin at OJ08. All equipment of BAS shall be suitable for Hazardous area classification. All mounting accessories for all instruments shall be of MOC SS316, including plate, sheet, nut, bolt, screw, chain, clamp etc.

2.2 Large Numeric LED Displays

The Large Numeric Displays shall be LED type and shall consist of two times LED digits for displaying distance and speed for bow and stern or otherwise as approved by DPA.

Distance measurement

Measurement range: 0 - 300m

Number of digits: 3 (xxx m)

Minimum increment: 1000mm

Measuring interval: 1sec

Speed measurement

Measurement range: 99 cm/s (m/min)

Number of digits: 2 (xx cm/s)

Minimum increment: 10mm/s

Measuring interval: 1sec

Angle measurement

Measurement range: 0-99°

Number of digits: 2 (xx degrees)

Min. increment: 1°

Fender deflection: 1m

Range of float away alarm: 10m

The display assembly shall be furnished complete with a vertical display board with an integrally mounted swivel. The display assembly will be capable of sustaining 60 m/s wind loads in all directions including gusts. All required nuts, bolts, washers and screws shall be of stainless steel SS316.

The Display shall be designed to operating in -10°C to 55°C.

Two sets of three lamps (one set for stern and one set for the bow) will be installed on the display frame for speed indication as follows:

Green: Safe Speed

Amber: Cautionary Speed

Red: Dangerous Speed

The actual speed limits shall be system adjustable. The information presented on the pilot display unit shall be clearly visible with the naked eye, during the day and night, at a minimum distance of 300 m under "normal weather conditions". The digit type shall be LED and the digit size shall be minimum 450 mm.

Once berthed the drift off/fender compression distances are displayed on screen. During berthing, the speed tendency (+/- acceleration) shall also be indicated on the large display unit. The display shall be capable of sustaining 60 m/s wind gusts.

The light power shall be dimmable to daylight and weather conditions.

IP rating for display and junction box shall be IP.56.

The display shall be provided with atleast 2.5 meters high pedestal and electric turn table which can be operated locally and remotely from the Control Room.

All local cabling from junction box to display shall be included.

The Large LED Display shall be provided with digital network interface to send/receive the data via the digital network to/from the Control Room.

A swivel assembly consisting of a swivel main frame, thrust bearings and lock assembly shall hold the display board in place. The swivel assembly shall be motor driven and be capable of allowing $\pm 45^\circ$ turn for optimum view from the berthing vessel. The actual position of the display can be viewed and changed from the system at Local Panel and Control Room. It shall also be possible to operate the display locally, by means of a turn button.

The swivel, display frame and frame finish shall be in Stainless steel suitable for the heavily corrosive marine environment.

The system includes a local "high speed" audible alarm from the ship (500 m) with automatic acknowledge.

Vendor shall propose Large Display positioning in order to maximize the effectiveness of the system. There should be sufficient space for maintenance access at the location.

2.3 Portable Display Units (iPad)

Portable Display Units (iPad) shall be provided for Pilots, Tugs, On-board Masters etc., with updated for latest edition of navigation chart for the area. The use of personal digital assistant i.e. latest iPad with large colourful display and updated better applications will have ease of communication for the Pilots, Tugs, On-board Masters etc. for the safe and smooth berthing operation of the vessel at OJ08.

All data related to distance, speed, berthing angle, oceanography data etc. shall be displayed in the ipad with licensed application.

2.4 Oceanography sensor

The oceanography sensor shall be capable of measuring the following:

- Significant wave height
- Long wave height

- Short wave height
- Period of significant waves
- Water level
- Measuring range: 2.5 to 30 m
- Multiple cells for current Readings at different depths
- Current speed
- Current direction
- Water temperature
- Max wave height
- Mean wave period
- Significant wave frequency (long and short)
- Significant wave height (long and short)
- Peak wave period (long and short)
- Wave direction (optional)
- Tide level
- Indicative ranges:

Current Speed	0 to 5 m/s
Current Direction	0 to 360°
Water Temperature	-5 to +45°C
Conductivity Range	1 s
Depth Rating	200 m
Accuracy	<2%
Resolution	<0.5 degree
- The system shall be customized software Scada based. Current speed and direction data to be displayed directly on custom Scada software
- Data logging of 1-year backup facility shall be available

3. **SIZE OF TANKERS TO BE HANDLED**

- The jetty has been designed for the following type of vessel:

Vessel Parameters	Vessel Specifications
	Tanker
Size	140- 275
Draught (m)	15.0
Height (m)	18.0
Beam Width (m)	25-50 m
Site Condition	Sheltered
Berthing velocity (m/s)	0.15 (As per Table 2 of IS 4651 -Part III)
Berthing angle	10° (As per 5.2.1.3 (b) of IS 4651 -Part III)
Berthing condition	Difficult
DWT (tons)	upto 1,00,000

4. **ELECTRIC PROTECTION:** All electrical accessories shall be provided suitable protection for installation at hazardous area.

5. TESTING & INSPECTION:

- a) The BAS must be certified by independent international classification agency such as IRS, BV, DNV or any Classification Society who is a member of International Association of Classification Society, for use in an Oil Jetty to handle LPG & Class A - Petroleum Products.
- b) Third party Inspection Agency (TPIA) for the supply, installation, testing & commissioning and subsequently for the O&M work shall be engaged by DPA at own cost. TPIA shall inspect and certify the materials, systems and works as per the scope and specification mentioned for the work.

6. OPERATION AND MAINTENANCE (O&M)

- a. The O&M shall commence from the date of acceptance of the system for a period of 05 years. The Contractor shall have to supply all the spares and consumables required during the O&M period. All other relevant points such as preventive maintenance and break down maintenance, housekeeping, record keeping, report generation etc. shall be taken care by the Contractor as per OEM manual & in consultation with the EIC within 30 days of commissioning and acceptance of the system. The Contractor shall install two set of latest Desktop Computer with UPS and laser printer for report generation and O&M management purpose.
- b. The contractor has to deploy suitable number of experienced persons for round the clock O&M of the complete Berthing Aid System with approval of Engineer-In-Charge.
- c. The Contractor shall paint the BAS components with appropriate anticorrosive paints once in a year 2nd year onwards. However, in case there is sign of corrosion on any component at any point of time during the O&M period, the Contractor shall have to take immediate steps to check it by applying anticorrosive paints.

7. GENERAL CONDITIONS

- 1. The materials/ equipment/ items to be installed for the said supply shall be latest, original, interchangeable & of relevant standards.
- 2. The contractor is expected to have full knowledge of supply of items, work site and nature of application work and no claim what-so-ever shall be entertained in this regard.
- 3. The Port will not be responsible for any damage or loss of any of the materials and for any damage / accident to the contractor's personnel.
- 4. The firm shall arrange necessary watch and ward for their materials till the completion of work.
- 5. Essential Port Entry Permit for the workers shall be arranged by the firm.

6. The contractor's vehicle viz. van / lorry / cranes should be fitted with spark arrester unit in the exhaust pipe of the vehicle.
7. The firm shall engage lifting crane, hydra etc. arrangement for installing BAS by their own arrangement and also for tools and tackles. The tools & tackles, required for doing the work, shall be provided by the contractor i.e. sufficient spanner-sets, torque-wrenches, Allen-keys, tester, screw driver set, safety belts etc.
8. The firm shall comply the safety standards for welding works and shall arrange welding set if required at their own cost and obtain necessary fire permission from the Port Fire Officer and Safety Officer.
9. The contractor shall be required to execute the work in such a way so as not to cause any damage, hindrance or interference to the activities and work going on in the area adjoining thereof. Any damages shall be repaired by him at his own cost. If he does not repair the damages in reasonable time period, the same will be repaired by DPA at the sole risk and cost of contractor and amount will be recovered from the bill due.
10. Party shall also visit and inspect site and acquaint himself with all local condition and working condition at and around the site. No dispute/claims what-so-ever shall be entertained for the work of any nature arising out of local conditions
11. All the rules and regulations in force for entry inside the port premises shall be observed and following by the contractor and by his employee staff etc. All the applicable labour laws shall be followed by the contractor.
12. The complete responsibility for safe working of the staffs will be borne by the Contractor. DPA will not be responsible for any loss, damage or accident to any of the staff. The Contractor have to provide insurance coverage of engaged manpower.
13. The staffs should have a sober behavior and obedient. Any staff coming in intoxicated condition will not be accepted by the administration, and, if not replaced shall be marked as absent, and, accordingly, penalty shall be levied.
14. Contractor must issue an identity card to their staff before commencement of work. And also apply for the entry-pass of the staffs in the ports. All the rules and regulations in force for entry inside the port premises shall be observed and following by the contractor and by his employee staff etc.
15. The period for completion of the work shall be three months, from the date of issue of work order.
16. The Contractor shall examine carefully the condition of contract, scope, site etc. He shall also visit and inspect site of work and acquaint himself with all local condition inside the port, working condition at and around the site. No dispute/claims what-so-ever shall be entertained for the work of any nature arising out of local conditions.
17. Electricity for execution of the DPA work at site shall be provided free of cost by the employer subject to availability. If DPA is unable to provide electricity the same will be arranged by the contractor at his own cost. The contractor shall arrange for water and transportation of staffs & materials if required from work site to repair site and vice-a-

versa.

18. All fooding, lodging & transportation cost should be solely bear by the contractor. The contractor shall also arrange for transportation of staffs & materials if required from work site to repair site and vice-versa.
19. The contractor shall ensure that the wages paid by him to the personnel deployed by him are not less than the prevailing Minimum Rates of Wages per person per day in respect of Area-C as notified by the Chief Labour Commissioner (C), Ministry of Labour & Employment, New Delhi, from time to time in respect of the Skilled Category and Highly Skilled Category.
20. At any point of time during the currency of the contract if it is found that, the wages are not being paid in accordance with the prevailing statutory rates of minimum wages notified from time to time by the Chief Labour Commissioner (C), Ministry of Labour & Employment, New Delhi, the contract shall be terminated forthwith and the performance security shall be forfeited.
21. The contractor shall not engage/employ persons below the age of 18 years. The details of the engaged staffs shall be submitted to E-I-C.
22. The contractor has to provide the required PPE kit to his engaged staffs viz. helmet, safety shoes, gloves, masks, ear-buds etc.
23. No Lien/Claim:

The personnel provided by the contractor shall have no lien of claim in any manner on DPA, after their services are no more required by the DPA or during their deployment. The personnel of contractor will not take part in any activity of DPA employee's union/Association as well as visitors.
24. Income Tax and surcharge as applicable will be deducted as per the prevailing rules.
25. The firm shall submit their rates as per the Schedule 'B'. Rate should be inclusive of all taxes, excluding GST. Applicable GST on the taxable value of supply of Goods or Services or both covered in this tender/contract will be paid by Port on production of bill mentioning GSTIN. Applicable Statutory recoveries including TDS under Income Tax, TDS under GST acts will be deducted/ recovered while accounting for or making payments to the Vendor as per the applicable laws. Contractor / Service provider / Supplier etc. has to ensure timely and proper filling of GSTR-1 so that Deendayal Port Authority can avail input tax credit in timely manner. In case DPA not allowed input tax credit due to failure on part of the contractor/Service provider/Supplier etc., it will be a financial loss to the DPA and therefore same shall be recovered from the payment/deposit of the contractor/service provider/supplier
26. Any other conditions/ obligations must be followed strictly as and when instructed.

Contractor

**Sd/-
Superintending Engineer (M)
Deendayal Port Authority**

Form - B
Schedule – B

Sub: “Supply, installation, testing & commissioning of Berthing Aid System (BAS) including Operation & Maintenance for five years at Oil Jetty No. 08 of DPA”

BOQ Part-I: Supply, installation, and commissioning Berthing Aid System (BAS) at Oil Jetty No. 08.

Sl. No.	Description	Unit	Qty.	Rate/ Unit	Amount (Rs.)
1.	Supply of the complete components of Berthing Aid System (BAS) unit as per the details mentioned in the scope of work.	Unit	01		
2.	Charges for installation, testing & commissioning of complete Berthing Aid System (BAS) including all civil grouting works, anchor bolts base plates, washers and all electrical works, remote control system, as detailed in scope of work at each location.	Unit	01		
Total BOQ (Part –I) in Rs.					

BOQ Part-II:- Operation & Comprehensive Maintenance Contract for period of 5 years of complete Berthing Aid System (BAS) at Oil Jetty No. 08.

Sl. No.	Description	Unit	Qty	Rate/ Unit	Amount (Rs.)
1.	Operation & Maintenance of the complete Berthing Aid System (BAS) including supply of all materials as per the mentioned scope of work for the 1 st year.	Months	12		
2.	Operation & Maintenance of the complete Berthing Aid System (BAS) including supply of all materials as per the mentioned scope of work for the 2 nd year.	Months	12		
3.	Operation & Maintenance of the complete Berthing Aid System (BAS) including supply of all materials as per the mentioned scope of work for the 3 rd year.	Months	12		
4.	Operation & Maintenance of the complete Berthing Aid System (BAS) including supply of all materials as per the mentioned scope of work for the 4 th year.	Months	12		

5.	Operation & Maintenance of the complete Berthing Aid System (BAS) including supply of all materials as per the mentioned scope of work for the 5 th year.	Months	12		
TOTAL (BOQ, Part-II)					
Grand Total (BOQ, Part –I + Part –II)					

Total Amount in Words (excluding GST)

_Only)

GST: _____% extra.

Note: -

1. The rates to be quoted shall be inclusive of all charges, taxes, Cess, Duty etc. except GST, if any.
2. All above mentioned items in BOQ are including mobilization & demobilization complete in all respects and ready to use as per approved designs, drawings and specifications including installation, testing, inspection, commissioning, defect rectifications and Operation & Maintenance.
3. The scope of work specified in the document are Indicative only requirements. Any piece of unit or equipment not specifically mentioned in the scope of work, but required as per shall be provided by the contractor at no extra cost and shall be deemed to have been specified.
4. Contractor has to visit the site for actual quantification of the proposed job and quantum of the job.
5. Contractor shall carry out site visit for complete understanding of the scope of work.
6. All the cables, steel structures at the jetty shall be provided with flame proof cables and fire proof painting shall be provided.

Contractor

**Sd/-
Superintending Engineer (M)
Deendayal Port Authority**

Oil Jetty No. 08 Layout

