

GOVERNMENT OF INDIA :: DEPARTMENT OF SPACE
SATISH DHAWAN SPACE CENTER SHAR :: SRIHARIKOTA – 524 124
NELLORE DISTRICT (A.P)

TENDER NOTICE NO.SHAR/HPS/PT/12/2009

On behalf of President of India, Head Purchase and Stores, SDSC SHAR, SRIHARIKOTA invites sealed quotations for the following:

Sl. NO.	Ref. Nos.	Description	Qty	Tender Fee
01	SHVA 2009 00 0297 NOTE: TENDERS ARE INVITED ON TWO PART BID BASIS.	Design, Manufacture, Supply, & Commissioning of Hydraulically operated, Tyre mounted, all Terrain Heavy Duty Mobile Crane having minimum capacity of 120 Mt at 3.0 mts operating radius.	1 No.	Rs.220/-

Last Date for issue of tender documents : 20.07.2009
Due Date for receipt of tender : 22.07.2009 at 15:00 Hours
Tender Opening Date : 22.07.2009 at 15:30 Hours

Instructions to Tenderers:

Full details/scope of work and general instructions to be followed regarding submission of quotations are indicated in the tender document (Annexure-I & Annexure-II).

1. Tender documents can be obtained from the Senior Purchase & Stores officer, SCF Purchase, SDSC SHAR, Sriharikota –524 124, Nellore Dist. A.P.
2. Tender Fee shall be paid in the form of CROSSED DEMAND DRAFT ONLY. Any other mode of payment including Banker's Cheque is not ACCEPTABLE. The demand draft should be in favour of Accounts Officer, SDSC-SHAR, Sriharikota drawn on State Bank of India, Sriharikota. The Tender Fee is NON-REFUNDABLE. Your request letter along with Tender Fee (D.D) may be addressed to the Sr,Purchase and Stores Officer as indicated above.
3. Interested tenderers may, at the option, download the tender documents from the website and submit the offers along with the prescribed tender fee in the form of Bank DRAFT as per details given in the tender notification.
4. While requesting for Tender Documents, please super scribe on the cover as "Request for Tender document against PT.NO.SHAR/HPS/PT/12/2009".
5. Quotations received after the due date/time will not be considered.
6. While sending sealed quotation/offer, superscribe Tender Number and Due Date on the envelope.
7. SDSC-SHAR, Sriharikota is not responsible for any postal delays/loss of documents in transit.
8. Head, Purchase and Stores, SDSC-SHAR, Sriharikota reserves the right to accept or reject any/or all the quotations.

HEAD, PURCHASE AND STORES

**INSTRUCTIONS TO TENDERERS FOR SUBMITTING
TWO PART TENDERS**

File No. : SHVA 2009 00 0297

ITEM :DESIGN, MANUFACTURE, SUPPLY & COMMISSIONING OF
HYDRAULICALLY OPERATED, TYRE MOUNTED, ALL TERRAIN HEAVY
DUTY MOBILE CRANE HAVING MINIMUM CAPACITY OF 120MT – 1 NO.

Please note the following instructions and submit your Offer accordingly.

(a) **PART I – TECHNO – COMMERCIAL**

This Part shall contain only the technical details and specifications together with technical catalogues. All commercial conditions shall also be indicated in this part. Deviations, if any, to our specifications shall be brought out very clearly. Tenderers shall mention point-wise confirmation with regard to Technical Specifications given in our Enquiry. Price details should not be shown in this Part.

The TECHNO-COMMERCIAL Part (Part I) shall be submitted in a sealed cover duly super scribing as follows:-

PART I – TECHNO-COMMERCIAL
File No. SHVA 2009 00 0297
Due Date: 22.07.2009 at 15:00 HRS.

(b) **PART II - PRICE**

This part shall contain only the price.

The PRICE PART (Part II) shall be submitted in a sealed cover duly super scribing as follows:-

PART II – PRICE
File No. SHVA 2009 00 0297
Due Date: 22.07.2009 at 15:00 HRS .

Both Part I and Part II covers shall be kept in a separate cover duly super scribing as follows and sent to the following address:-

Part I and Part II covers individually sealed and kept in this cover.

To
File No. SHVA 2009 00 0297
Due Date: 22.07.2009 at 15:00 HRS
Sr.Purchase & Stores Officer
Tender Section - SCF Purchase
Satish Dhawan Space Centre SHAR
SRIHARIKOTA – 524 124,
S.P.S.Nellore District, A.P.,

In view of Two Part Tender, fax offers will not be accepted. The Offers submitted contrary to above instructions will be liable for rejection. Please take note of the above instructions and submit your offer before the Due Date i.e., 22.07.2009 by 15.00 Hrs.

Additional instructions:

1. In case of non-quoting, the suppliers are requested to send a regret letter giving reasons.
2. **Excise Duty:** We are eligible for Excise Duty Exemption under Notification No. 64/95-CS, Dt. 16.3.95 as amended by Notification No.15/2007-CS, dt.01.03.2007. We will issue necessary certificate under this notification. While quoting tenderers are requested to take into consideration the effect of MODVAT reversal, if any, in case MODVAT benefits are availed by them while procuring the input raw materials as per CENVAT Credit Rule No.6 (3) (b). No claim whatsoever for revision of prices will be entertained on this account at a later stage.
3. **CST / VAT:** With effect from 01.04.2007, the facility of inter-State purchases by Government Departments against Form-D has been withdrawn. Now the rate of CST on inter-State sale to Government Departments shall be the rate of VAT/State Sales Tax applicable in the State of the selling dealer. Accordingly, the Suppliers have to clearly indicate the percentage of CST/VAT applicable against each case in their tenders.
4. **Customs Duty** – SDSC SHAR is eligible for 100% Customs Duty exemption as per Notification No.21/2002, as amended by Notification No.20/2007, Customs Duty Exemption Certificate will be provided to the Indian suppliers for the imported items, if any. This may be taken into account while quoting for import items.
5. **Payment:** Our normal payment terms are 100% within 30 days. Advance Payments, if any, will be allowed only against submission of Bank Guarantee.
6. **Performance Bank Guarantee:** At the time of final payment Performance Bank Guarantee to cover the guarantee period for 10% of order value shall also be submitted.
7. **Liquidated Damages:** Liquidated Damages at the rate of ½% per week or part thereof will be levied for delayed delivery on the undelivered portion subject to a maximum of 5% of total order value. Here the delivery means supply of all the items at our site.

HEAD, PURCHASE & STORES

ANNEXURE - II

SECTION-I

TECHNICAL SPECIFICATIONS OF ALL TERRAIN TYRE MOUNTED HEAVY DUTY MOBILE CRANE

1. Scope of work :

- 1.1 Design, fabrication, manufacture and assembly of Mobile crane as per the specifications given in this document.
- 1.2 Quality assurance and Inspection in different stages of crane assembly
- 1.3 Performance and load testing of crane at Manufacturer's site
- 1.4 Delivery of the crane to SDSC SHAR, Sriharikota
- 1.5 Load testing and commissioning at SDSC SHAR, Sriharikota

2. Type of Mobile Crane:

- 2.1 All terrain, tyre mounted, Hydraulically operated Mobile Crane (as per the latest International Standards)
- 2.2 Rating shall be in compliance with ISO 4305 and DIN 15019.2
- 2.3 Design of the crane shall comply with DIN 15018.
- 2.4 Wind speed of max. 35 kmph shall be considered in design. (ISO 4305 and DIN 15019.2)
- 2.5 Crane shall be capable of working in a hot, humid and dusty atmosphere. Temperature range is expected to be 0 to 50 degrees C and humidity up to 100%.

3. Capacity of Mobile crane:

- 3.1 Minimum 50ton (50,000kgs) capacity at 8.0 mts operating radius and capable of lifting the object to a height of 10.0 mts from the ground level. (with minimum 85% rating).
- 3.2 Minimum 24ton (24,000 kgs) capacity at an operating radius of 14.0 mts and capable of lifting the object to a height of 14.0 mts from ground level (with minimum 85% rating).
- 3.3 In addition to the above ratings, the crane should have minimum capacity of 120 metric tonne at 3.0 mts operating radius.

Note: The capacities and lifts mentioned above are excluding the Hook block weight and hook block height.

- 3.4 The crane should be capable of handling rated load at 360° slew when in outriggers.
- 3.5 Capacity ratings of Mobile crane, at Outriggers fully extended condition, and at outriggers partly extended condition shall be mentioned.
- 3.6 Capacity ratings of the crane in Mobile duty (Pick 'n' Carry) mode at different operating radius shall be mentioned.
- 3.7 Maximum capacity of the crane at different operating radii shall be mentioned along with corresponding height of lift of the crane.

4. Tentative Dimensions of the Mobile crane:

- 4.1 Overall length -Should not be more than 16 mts
- 4.2 Overall width-Should not be more than 3.5 mts
- 4.3 Overall height-Should not be more than 4.5 mts
- 4.4 Distance between the Outriggers, lengthwise-Should not be more than 9.0 mts
- 4.5 Distance between the Outriggers, widthwise-Should not be more than 8.0 mts
- 4.6 Telescopic boom length when in fully retracted -Should not be more than 14.0 mts
- 4.7 Telescopic boom length when in fully extended -Should be minimum of 50.0 mts
- 4.8 Distance between the crane centre of rotation to the edge of the crane end-Should not be more than 5.0 mts

5. Frame

- 5.1 Torsion resistant box girder frame fabricated from high strength fine grain structural steel.

6.0 CARRIER (TRAVELLING)

6.1 Engine for Carrier

- 6.1.1 Suitable capacity water-cooled diesel engine for carrier and shall meet EURO 3 emission norms.
- 6.1.2 Preferable makes Benz, Deutz, Volvo, MAN or equivalent reputed makes.

6.2 Travel Speed

- 6.2.1 Should be upto 50 kmph in unladen condition

6.3 Gradeability

- 6.3.1 Should be minimum 25%

6.4 Transmission

- 6.4.1 Automatic transmission with integrated retarder. Make : ZF, DANA or equivalent reputed make only.
- 6.4.2 Shall be provided with minimum four forward speeds and One reverse speed

6.5 Axles

- 6.5.1 Sufficient number of axles of suitable capacity and shall be provided with differential locks.
- 6.5.2 The load per axle line shall not be more than 16 tonne (16,000 kgs).
- 6.5.3 The total numbers of axles, number of drive axles, number of steer axles shall be furnished.
- 6.5.4 Axles shall be of reputed make like ZF, DANA or equivalent.

6.6 Suspension system

- 6.6.1 All axles shall be provided with hydro pneumatic suspension with level adjustment.
- 6.6.2 Shall be lockable hydraulically for on-site travel.
- 6.6.3 All axles shall be provided with longitudinal transverse trailing arms.
- 6.6.4 Suspension system accessories shall be of standard / reputed makes shall only be used.

6.7 Wheels and Tyres

- 6.7.1 Suitable size, sufficient quantity & sufficient capacity pneumatic tyres / Tubeless tyres, which will be available readily in the INDIAN market, shall be provided.

Spare wheel (tyre, tube, flap & rim assembly) Assembly

- 6.7.2 Shall be provided with two nos. of spare wheel assembly, consisting of tyre, tube, flap and rim, shall be mounted at appropriate location on the crane. (The spare wheel assembly shall not interfere while handling objects)

6.8 Brake System

- 6.8.1 Brake system shall be provided with Dual circuit compressed air system.
- 6.8.2 Service brake shall be failsafe type and shall be provided with ABS system (Anti-lock brake system).
- 6.8.3 Auxiliary brakes with engine Exhaust brake shall be provided
- 6.8.4 Pneumatic system shall be provided with sufficient numbers of air dryer unit /units wherever applicable.
- 6.8.5 Sufficient quantity of Air reservoirs shall be provided to give a minimum of four brake applications with pressure drop from cut-out to cut-in pressure.
- 6.8.6 Brake system accessories shall be of reputed makes like WABCO or equivalent.

6.9 Steering

- 6.9.1 Steering system shall be provided with Power steering with dual circuit system
- 6.9.2 The hydraulic system shall be provided with safety relief valves to protect the system
- 6.9.3 Shall be provided with speed dependent steering in different modes
- 6.9.4 The hydraulic system shall be provided with check points with minimum couplings at appropriate locations easily accessible for measuring / checking the hydraulic pressures by connecting a quick coupler type suitable capacity hydraulic pressure gauge with hoses.
- 6.9.5 Steering system and Power steering system accessories shall be of reputed make like ZF or equivalent reputed make.

6.10 Driver's Cabin (preferably tilting cabin):

- 6.10.1 Shall be provided with tilting, adjustable type and cushioned operator's seat with suspension.
- 6.10.2 Shall be of rubber mounted steel / aluminium cab with corrosion resistance with suitable capacity hydraulic shock absorbers.
- 6.10.3 Shall be provided with standard dash board gauges such as engine oil temperature gauge, engine rpm meter, radiator water coolant temperature gauge, air reservoir pressure gauge, Speedo meter cum Odo meter, hour meter, fuel level gauge, battery charging indicator etc.,
- 6.10.4 Shall be provided with Engine electronic control system showing the health parameters of the Carrier engine (functioning of dash board gauges, low pressure indication for engine oil, hydraulic oil, air pressure in the air reservoir etc., low oil level indications for engine oils, hydraulic oil etc.,)
- 6.10.5 All the drive controls of the crane shall be provided in the operators hand reach distance and shall be accessible easily.
- 6.10.6 Shall be provided with a medium size fan with protection cage in-front of the operator.
- 6.10.7 Shall be provided tinted glass wind shield.
- 6.10.8 Internal paneling accessories are shall be of sound and heat resistance absorbing
- 6.10.9 Shall be provided with sufficient lighting inside the cabin
- 6.10.10 Shall be provided with adjustable type wide angle review mirrors at driver's side and co-driver sides.
- 6.10.11 Shall be provided with adjustable type air cushioned driver's seat & co-driver's seat.
- 6.10.12 Shall be provided with cushioned co-driver seat
- 6.10.13 Shall be provided with wind shield washer, wiper motor and wiper arms, horn, sun visor (spring loaded) etc.,
- 6.10.14 Shall be provided with a tow hook at the front of the crane for tying / locking of hook block while crane not in use or while in traveling
- 6.10.15 Shall be provided with safe access / way for safe escape from the cabin in all positions of the crane

6.11 Electrical system

- 6.11.1 Shall be provided with 24V DC with suitable capacity Automobile maintenance free batteries.
- 6.11.2 The crane shall be provided with lighting system for night operations.
- 6.11.3 The crane shall be provided with standard electrical accessories such as front head light assembly, tail light assembly, parking light assembly, side indicators, hazard warning light assembly, wiper motor, wind shield washer etc.,
- 6.11.4 Test lamps shall be provided near the Carrier engine and Super structure engine (underneath the bonnet), operated by one switch at the driver's cabin and another switch at the side of the test lamps at appropriate locations.

6.11.5 Rotating type emergency light shall be provided outside the cabin at appropriate location.

7.0 SUPER STRUCTURE:

7.1 Engine for super structure

7.1.1 Separate suitable capacity water-cooled diesel engine on super structure for crane operations and shall meet EURO 3 emission norms.

7.1.2 Preferable makes Benz, Deutz, Volvo, MAN or equivalent reputed makes.

7.2 Operator's Cabin

7.2.1 Shall be of Full vision type, all weather proof cabin made of metal

7.2.2 Crane super structure controls such as boom derricking (lift / lower), telescopic boom extraction / retraction, hoist rope lifting / lowering, out-riggers extraction / retraction etc., shall be located inside the operator's cabin and in hand reach location.

7.2.3 LCD colour display system clearly showing the rated capacity, hook load, operating radius, boom angle, boom length, lifting capacity an appropriate radius, outriggers position, slew position, over load indication, over hoist indication etc.,

7.2.4 Shall be provided with Graphical representation of crane with loading condition, boom angle and its boom elevation etc., in the LCD colour display screen.

7.2.5 Shall be provided with standard Dash board gauge such as Super structure engine oil temperature, oil pressure, radiator water coolant temperature etc., with necessary instruments for crane operating controls.

7.2.6 Electronic inclination indicator shall be provided in the crane operator's cabin which shows the inclination of the crane with respect to ground surface level.

7.2.7 Shall be provided with Engine electronic control system showing the health parameters of the Super structure engine

7.2.8 Shall be provided with wiper motor and wiper arms, wind shield washer unit, adjustable type wide angle rear view mirrors, spring loaded sun visors

7.2.9 Shall be provided with a medium size fan opposite the operators seat

7.2.10 Shall be provided with sufficient lighting inside the crane operator's cabin

7.2.11 Shall be provided with sun controlled film laminated safety glass for wind shield and side windows.

7.2.12 The control for attaching / detaching counter weight shall be provided in the operator's cabin

7.2.13 Escape route for the crane operator in any slew position to escape in case of emergency.

7.2.14 Shall be provided with a suitable approach ladder for climbing up the operator's cabin

7.2.15 Cabin shall be provided with cushioned rubbers for absorption of shocks / vibrations.

7.3 Hydraulic system

- 7.3.1 All the crane operations like hoisting, boom derricking, boom extension, outriggers extension / retraction shall work on individual circuits.
- 7.3.2 Hydraulic system shall be configured such that it ensures smooth and safe operation of crane functions without jerk.
- 7.3.3 The crane hydraulic controls shall be operated by joy stick / step less control for smooth operation.
- 7.3.5 The Hydraulic system shall be provided with Variable displacement axial piston pump type of suitable capacity and sufficient quantity to operate hoisting, derricking and telescoping independently and simultaneously.
- 7.3.6 Suitable capacity hydraulic pump shall be provided separately for slew system.
- 7.3.7 The hydraulic drive system shall be of closed loop system.
- 7.3.8 The hydraulic system shall be provided with safety relief valves to protect the system
- 7.3.9 Sufficient capacity hydraulic oil reservoir with level indicator shall be provided.
- 7.3.10 Sufficient quantity and suitable capacity oil coolers shall be provided to keep the hydraulic oil in appropriate temperature.
- 7.3.11 Suitable capacity and sufficient quantity of Full flow filters with by-pass protection shall be fitted at appropriate location easily accessible for removal and fitment.
- 7.3.12 The hydraulic system shall be provided with safety mechanism against hose rupture or pipe breakage.
- 7.3.13 The hydraulic system components such as hydraulic pumps, motors, valves, filters, gauges etc., shall be of reputed makes such as M/s Parker, M/s Eaton, M/s Rexroth, M/s Vickers or equivalent reputed make.

7.4 Boom derricking (Boom Lifting / Lowering)

- 7.4.1 Shall be provided with sufficient quantity, suitable capacity of heavy duty double acting boom cylinders which should be capable of lifting rated capacity of the crane to a maximum lifting height.
- 7.4.2 Shall be provided with load holding valve
- 7.4.3 The hydraulic boom lift / lower system shall be provided some means of mechanism to bring down the boom cylinder slowly and smoothly in case of Hose/ Pipe failure.
- 7.4.4 Shall be provided with some means of mechanism against hose rupture or pipe breaks
- 7.4.5 Provision shall be made for safe lowering of boom shall be ensured incase of failure of failure in hydraulic system.
- 7.4.6 Sufficient quantity and suitable capacity hydraulic oil filters shall be fitted at an appropriate location easily accessible for fitment / removal.

7.5 Boom Telescoping

- 7.5.1 Crane Boom shall be of Buckling and Torsion resistant design, and made with high-tensile structural steel. One base section with suitable number telescopic sections shall be provided for extending the boom.
- 7.5.2 Telescopic boom system shall be provided with sufficient quantity and suitable capacity heavy duty boom telescopic double acting cylinders which should be capable of lifting rated capacity of the crane to a maximum lifting height of the crane.
- 7.5.3 System shall be configured such that it ensures smooth and safe operation of crane without jerks.
- 7.5.4 All telescopic sections shall be operated hydraulically, extendable and retractable, independent of one another and shall be locked at selected working positions. Provision shall be made for safe lowering of telescopic boom shall be ensured in case of failure in hydraulic system.
- 7.5.5 Number of base sections and telescopic sections shall be mentioned in the offer.
- 7.5.6 The hydraulic control of telescopic boom system shall be operated by joy stick / step less control for smooth operation.

7.6 Hoisting system

- 7.6.1 Crane hoist system shall be driven smoothly by hydraulic motor. The hydraulic motor shall be of axial piston type constant displacement, mounted with planetary gear box.
- 7.6.2 Hoisting brake shall be of spring applied, multi disc brake and applies brake automatically when the hoisting motor stops.
- 7.6.3 Controlled creep speed shall be provided for hoisting motion of 0.25 m /min, which is independent of engine acceleration and joy stick motion.
- 7.6.4 Hoist rope drum shall be of grooved with flanged sufficiently to take care of the layers of the rope.
- 7.6.5 Wire rope shall be of high performance, non rotating type 35X7 or 18X7 or equivalent construction. Wire rope shall be of preformed and galvanized.
- 7.6.6 The hydraulic drive system shall be of closed loop system.
- 7.6.7 The hydraulic system shall be provided with two means of braking mechanism.
- 7.6.8 The hoist system shall be designed to have not less than two or three wraps of hoisting rope on the drum when the hook is in its extreme low position.
- 7.6.9 Hoisting system shall be provided with safety of anti-two blocking.
- 7.6.10 The hydraulic hoist system shall be provided with the following features.
 - Power up and Power Lowering
 - Automatic brakes for Hoist System (Spring loaded)
 - Failsafe Lock for Hoist system
 - Non rotating rope of suitable capacity and construction
 - Audible and visible Over Load Warning indicator for Hoist system
 - Limit switch for hoist

7.6.11 The Factor of Safety of the hoist rope shall be as per the standards and shall be mentioned in offer.

7.7 Slewing system

7.7.1 Shall be provided such that smooth controlled drive with locking system

7.7.2 Slew system shall be provided with sufficient quantity and suitable capacity separate axial displacement pump and constant displacement motor with multi stage planetary gear box.

7.7.3 Hydraulic 360° slew system shall be provided with

- Foot operated brake for slew system
- Positive lock for slew system

7.7.4 Shall be provided with positive lock for locking crane slew any position

7.8 Outriggers

7.8.1 Outriggers system shall be of 4 point supporting system, double acting, fully hydraulically extendable and retractable and can be independently operated.

7.8.2 The outriggers shall be hydraulically telescopable into horizontal and vertical direction.

8.0 Counter weight

8.1 Sufficient counter weight shall be provided, detachable type, in the machine to handle full rated capacity to ensure required stability.

9.0 HOOK & Hook Block Assembly

9.1 Sufficient capacity standard hook block shall be provided with safety latch.

9.2 Party shall mention the optional hook block with safety latch.

9.3 Shall be provided with suitable capacity, Rams horn hook capable of handling rated capacity of the crane

9.4 Shall be provided with a hook block with Rams Horn hook of capacity 50tonne (50,000 kgs)

9.5 Shall be provided with a hook block with Single Point hook of capacity 25tonne (25,000 kgs)

9.6 Standard accessories and Optional accessories shall be mentioned clearly in the offer with price.

10.0 Tow hooks

10.1 Front Tow Hook:

10.1.1 The crane shall be provided with suitable capacity tow hook at front side for towing the crane by another means in case of crane drive failure

10.2 Rear Tow Hook:

10.2.1 The crane shall be provided with suitable capacity tow hook at rear side for towing the crane by another means in case of crane drive failure

Note :

- 1) The tow hooks shall be of reputed make, preferably M/s Rockinger or M/s Ringfeder Germany.
- 2) The manufacturer shall furnish the D value calculations with model number of the tow hook both front and rear

11.0 Safety features

- 11.1 Operator's cabin shall be provided with Electronic safe load indicator with colour display, digital readout for hook load, rated load, boom length and angle, radius, monitoring code to assist in trouble shooting.
- 11.2 Hydraulic system shall be provided with dual circuit system
- 11.3 Hydraulic system shall be provided such that crane operations can be done smoothly (without jerk).
- 11.4 The hydraulic system shall be provided with safety relief valves to protect the system
- 11.5 The hydraulic system and pneumatic system pressure hoses / pipes shall be such that the hoses / pipes shall withstand to a three times the working pressure of the hydraulic system.
- 11.6 The hydraulic system shall be provided with check points at appropriate locations easily accessible for measuring / checking the hydraulic pressures by connecting a quick coupler type suitable capacity hydraulic pressure gauge with hoses.
- 11.7 The hydraulic system such as boom derricking, telescopic boom, Outriggers system shall be provided with some means of mechanism against hose rupture or pipe breaks
- 11.8 The crane Hoist system shall be provided with two means of braking, each capable of bringing a rated load to zero speed and holding it (with or without power).
- 11.9 A Heavy duty battery isolation switch shall be provided to the crane to shut-off the system.
- 11.10 Crane shall be provided with engine auto shut-off system while handling Overload.
- 11.11 At the exit of the exhaust system of carrier and super structure engines, a suitable capacity Spark arrestors shall be provided separately
- 11.12 Audible and visible Overload indicator
- 11.13 Limit switches for Hoisting and gantry
- 11.14 Safety against hose rupture.
- 11.15 Anti- two blocking device
- 11.16 Safe approach / provisions external and built-in for maintenance of all systems in all positions
- 11.17 Shall be provided with a indicator for giving audible and visible alarm while the hoist rope layers count on the rope drum comes to three or four layers. (wrap indicator)

12.0 Paint finish

- 12.1 Good Finish with necessary safety marking on front & rear and also counter weight as per the standards.
- 12.2 Standard Painting scheme options shall be given in the offer.

13.0 Recommended Spare parts / seal kits to be supplied along with the mobile crane

- 13.1 The supplier has to supply the following spare parts / seal kits along with the mobile crane. The cost of these spares shall be given in the offer:
 - a) Seal kit for Outriggers Cylinders – 4nos.
 - b) Seal kit for Telescopic boom cylinders – 4 nos.
 - c) Seal kit for Boom lift / lower cylinder – 02 nos.
 - d) Wheel hub oil seal set (both Outer and Inner oil seals) – 10 sets.
 - e) Filters set (Set consists of Engine oil filters, diesel fuel filters, hydraulic oil filters etc.,) – 04 sets
- 13.2 The supplier has to furnish the recommended list of spare parts / seal kits for TWO YEARS of trouble free service with part number, cost & quantity.
- 13.3 Necessary commissioning spares required shall be supplied at free of cost.

14.0 Standard Tools

- 14.1 The supplier shall supply 2 sets of the standard tools, in two tool boxes, to attend break-down maintenance of the crane and to attend regular maintenance which shall essentially include the following:
 - Wheel nut spanner
 - Wheel hub removal spanner
 - Filters removal and fitment spanner
 - Tools for assemble / removal of Boom cylinder
 - Tools for assemble / removal of Telescopic boom cylinders
 - Tools for assemble / removal of Hydraulic pumps
 - Tools for electrical and electronic equipment maintenance

List of tools shall be clearly specified in the offer

15.0 Special Tools:

The supplier shall mention Special tools, if any, with proper description, quantity and price.

16.0 Standard accessories:

The supplier must list out standard accessories, which shall be supplied along with the Crane.

17. Optional accessories:

The supplier shall furnish the list of optional accessories separately along with technical specifications, functional usage, quantity and price.

18. Crane diagnostic system:

The Party shall provide the crane diagnostic system which includes Laptop with necessary ports, cables etc., and USB connection for Crane for data downloading along with Necessary Software for diagnosis of carrier & super structure engine, crane sub systems etc and also for trouble shooting. The software shall be supplied in a separate CD / DVD for installing / uninstalling as and when required. Operating system should be compatible with Microsoft Windows "XP"

19. Quality Assurance, Inspection and Load testing of Crane:

19.1 Quality Assurance & Inspection

Supplier shall follow standard Quality assurance plan to ensure quality of Mobile crane at different stages like raw materials inspection, fabrication, manufacturing, assembly and Load testing.

19.2 Stage Inspections:

The equipment has to undergo stage inspections at different stages of fabrication, assembly.

19.3 Performance & Load testing of the Mobile crane at Manufacturer's site

a) The equipment has to be tested at Manufacturer's work site as per applicable standards, in the presence of Purchaser. The following conditions of load testing shall be carried out:

- 1) Functional & No load test
- 2) Rated Load test
- 3) Proof Load testing 1.25 times of rated capacity

o Necessary test loads & instruments for load testing shall be arranged by the supplier.

19.4 The following test certificates shall be submitted at the time of load testing:

- o Raw Materials test Certificates
- o Material test certificates for all load bearing members
- o Test certificates for Carrier Engine & Super structure engine
- o Test Certificates for Hydraulic pumps, motors, hoses, tubes
- o Test certificate for transmission
- o Test certificates for Suspension cylinders
- o Test certificate for Telescopic boom & boom cylinder.
- o Test certificate for wire rope
- o Test certificate for hook and pulleys
- o Test certificate for Outriggers and its cylinders
- o Test certificate for Drive & steer axles.
- o Approval certificate for spark arrestor for engines.
- o Test certificates of any other critical components

19.5 Load testing of the equipment at SDSC SHAR

(a) The equipment has to be load tested at SDSC SHAR, Sriharikota in presence of supplier's representatives.

1. Functional & No load test
2. Rated Load test

Note :

- o Necessary test loads for load testing shall be arranged by the department (Purchaser).

20. Details & Documents to be submitted along with the offer:

20.1 Technical specifications of the crane with General Arrangement Drawing

20.2 Technical Justification Calculations:

The supplier shall submit Technical Justification with calculations for the crane meeting the capacities as listed in PARA-2 of this specifications document. The above requirement shall be met from standard product range of the manufacturer. In this regard, Load charts shall be enclosed (clearly marked with highlighter) with above requirement.

20.3 Technical Literature and Catalogues

20.4 Rated capacity Load charts

20.5 Duly filled technical compliance statement as per section – II.

20.6 Standard quality assurance plan which is followed for fabrication, manufacturing & load testing of crane shall be submitted.

20.7 The supplier shall mention the Maintenance / service representatives, of crane all major sub systems, in INDIA along with offer.

20.8 The supplier shall furnish the list of parties in India as well as in abroad to whom they have supplied similar or higher capacity of All terrain Mobile cranes.

20.9 The tenderer should provide satisfactory evidence, acceptable to the purchaser, to show that he is a licensed manufacturer of Mobile cranes for the range of capacity, and has a Quality Assurance Programme designed to ensure in-house control of consistent quality standards.

21. Documents to be supplied after placement of Order:

Supplier shall submit the following information, drawings, documents etc., within One month of period after placement of firm Purchase Order, for purchaser's clearance.

21.1 Detailed technical specifications and General Arrangement drawing for clearance from purchaser before commencement of fabrication.

21.2 Stability calculations in both static and dynamic condition as per the relevant standards. Copy of the applicable standards shall be submitted along with Calculations.

- 21.3 Detailed quality assurance plan which is followed during fabrication, manufacturing, assembly shall be submitted.
Detailed plan of load testing at manufacturer site shall be submitted.
- 21.4 Technical write-up on working of major functions of crane like hoisting system, Boom extending system, Boom derricking system, Slewing system.
- 21.5 Technical write-up of all safety systems' functioning in Mobile crane.
- 21.6 Technical specifications & details of major subsystems like Engines, Transmission, Control & display system, Crane diagnostic system.
- 21.7 Above Details & technical write-up should be described with the help of drawings, if necessary.

22. Documents to be supplied along with the supply:

Supplier shall provide the following documents along with supply of Mobile Crane:

- 22. 1 2 sets of Quality Control & Assurance document along with all Test certificates in the form of Hard bound Book.
- 22. 2 4 Sets. of Crane Operator's Manuals containing instruction for the operators, operating controls, Rated capacity Charts, safety precautions for operating and usage of crane etc., in the form of Hard bound Books
- 22. 3 4 sets of crane Maintenance manuals containing the description of equipments, its sub systems details, maintenance procedures, disassembly and assembly procedures, lubrication charts etc. Maintenance manuals shall be provided for Engine, mechanical, hydraulic, electrical & electronic systems in the form of Hard bound Books
- 22. 4 4 sets of Spare parts catalogues containing the equipment sub systems spare parts such as carrier & super structure engines, transmission, suspension system, drive train, Hydraulic systems, boom system, telescopic boom, hoist, swing, Electrical & electronic systems etc., in the form of Hard bound Books.
- 22. 5 4 sets of equipment Rated capacity load charts, working range chart etc., in the form of laminated sheets.
- 22. 6 The following diagrams/drawings (in A2 size) shall be supplied in spiral bound books (4 sets) :
 - 22.6.1 Hoist wire rope reeving diagrams with different reeving arrangements with bill of materials.
 - 22.6.2 Complete hydraulic circuit diagrams (Hoist, Boom extension, Boom elevation, Slewing, Steering circuits) with bill of materials.
 - 22.6.3 Hydraulic tubing layout with bill of materials
 - 22.6.4 Pneumatic braking circuit diagram with bill of materials
 - 22.6.5 Electrical wiring circuit diagram with bill of materials
 - 22.6.6 Electronic components circuit layout with bill of materials

22.7 All the above documents, manuals, circuit diagrams, documents shall be supplied in the form of Soft copies on CD/DVD. Two nos. of CD/ DVDs shall be supplied.

23. Training during commissioning of crane at SDSC SHAR, Sriharikota

- a. The supplier shall impart training in both operation and maintenance to operators and Maintenance staff at our works site ie., SDSC SHAR, Sriharikota.
- b. Free servicing shall be carried out at fixed intervals by your service personnel during Warranty Period..

24. Annual Maintenance Contract for Mobile Crane:

- 24.1 The supplier shall carry-out annual maintenance Contract (AMC) for FIVE continuous years after completion of Warranty Period of the mobile crane at SDSC SHAR, Sriharikota by their Indian Service representatives.
- 24.2 Details & Price of the AMC (Annual Maintenance Contract) shall be submitted along with the offer. Year wise cost of maintenance contract shall be furnished.

25. Registration Documents:

The supplier shall submit documents ie., Sale certificate, Road worthiness certificate et.c., required for registering the Mobile crane under Motor vehicle Act (Rules)

26. First Fill Lubricants & Commissioning Spares:

First Fill Lubricants and Commissioning spares are in the scope of supplier and shall be provided at free of cost. First fill lubricants like Hydraulic Oil, Gear Oil, and Transmission Oil shall be filled adequately to required quantity till a change is due.

27. COMMERCIAL TERMS AND CONDITIONS:

27.1 TERMS AND CONDITIONS FOR SUPPLY OF CRANE MANUFACTURED IN INDIA AND SUPPLY FROM INDIA

27.1.1 The rate quoted shall be on FOR OUR SITE BASIS I.E, SRIHARIKOTA, NELLORE DIST. ANDHRA PRADESH.

27.1.2 Taxes: The % of taxes applicable for supply as well as erection and commissioning at our site shall be indicated separately and should not form part of the price.

27.1.3 Excise duty: We are eligible for ED exemption under notification No.15/2007 and we will issue Exemption certificate for the final product i.e, Crane only. Hence we will not allow payment of Excise duty. Due to exemption, tenderers may not be in a position to avail modvat benefits and Cenvat Reversal if any in this regard shall be taken into account by the tenderers in their offer. No extra claim in this regard will be allowed at a later date.

27.1.4 Payment: 30% shall be paid as advance on submission of Bank Guarantee valid till completion of commissioning and load testing at our site. 60% shall be paid on safe receipt of material at our site. 10% shall be paid on completion of commissioning and load testing at our site and against submission of Performance Bank Guarantee for 10% of total order value valid till warranty period. Both bank guarantees referred above shall be from a scheduled Bank only and shall be submitted as per our format.

No deviation in the above payment terms will be accepted. In case tenderers wish to seek for different milestone payments, their offers will be evaluated adopting Net Present value method discounted at the prime-lending rate of RBI.

27.1.5 Warranty: 18 months from the date of commissioning, load testing and acceptance at our site or 24 months from the date of supply whichever is earlier.

27.1.6 Delivery Schedule: 18 Months from the date of purchase Order. The period includes supply as well as assembly, erection, commissioning and load testing at our site. Tenderers shall give break-up period for supply and loading testing at our site.

27.1.7 Liquidated damages: In case of delay in adhering to the delivery schedule indicated, liquidated damages will be levied at the rate of ½ (half)% per week or part thereof subject to a maximum of 5% of total order value. No deviation for this term is acceptable.

27.1.8 All other terms and conditions shall be as per annexure enclosed.

27.1.9 Validity of Offer: Offer shall be kept valid for a period 4 months from its date.

27.2 TERMS AND CONDITIONS APPLICABLE FOR SUPPLY OF CRANE IN FOREIGN CURRENCY BY THE MANUFACTURERS OUTSIDE INDIA AND SUPPLY FROM ABROAD:

27.2.1 The price quoted by the tenderers shall contain the following as indicated in the price format:

- Ex-works price (including packing charges by sea freight)
- FOB Charges (Inland transportation charges from tenderer's place to International sea port of dispatching station)
- Freight charges from International sea port of dispatching station to Port of Destination i.e, Chennai, India.

27.2.2 Payment: 30% shall be paid as advance against submission of Bank Guarantee from a reputed bank valid till commissioning and load testing at our site by way of Wire transfer. 50% will be paid through Letter of Credit on shipment (L/C will be opened 2-3 months prior to shipment). 20% on completion of erection, commissioning and load testing at our site by wire transfer and on submission of Performance Bank Guarantee from a reputed bank valid till warranty period from a reputed bank. All bank charges within India will be to our account and outside India will be to tenderer's/beneficiary account.

No deviation in the above payment terms will be accepted. In case tenderers wish to seek for different milestone payments, their offers will be evaluated adopting Net Present value method discounted at the prime-lending rate of RBI.

Bank guarantees shall be submitted as per our formats only.

27.2.3 Mode of Despatch: By sea upto Chennai Sea port.

27.2.4 Transportation from Chennai Port to SDSC SHAR, Sriharikota: It is the responsibility of the tenderer to undertake transportation of crane from Chennai port to Sriharikota through their agency in India after customs clearance in India. The responsibility of customs clearance rests with us at our cost. Therefore the tenderer shall quote his rate for transportation through their agents in India in Indian rupees only (please refer price format in this regard). No payment in foreign currency will be allowed in this regard.

27.2.5 In case the tenderer has Indian Agent, he should indicate his details like name & full address and also the percentage of agency commission included in the quoted price. The agency commission will be paid within 30 days of receipt and acceptance of material at our site after load testing at the TT buying rate prevailing on the date of the order.

27.2.6 Customs clearance of the consignment when arrived at Chennai port will be taken care of by us at our cost.

27.2.7 Safe transportation of material from ex-works to Sriharikota is the responsibility of successful tenderer. We will not pay any insurance charges extra in this regard.

27.2.8 Warranty: 18 months from the date of commissioning, load testing and acceptance at our site or 24 months from the date of supply whichever is earlier.

27.2.9 Delivery Schedule: 18 Months from the date of purchase Order. The period includes supply as well as assembly, erection, commissioning and load testing at our site. Tenderers shall give break-up period for supply and load testing at our site.

27.2.10 Liquidated damages: In case of delay in adhering to the delivery schedule indicated, liquidated damages will be levied at the rate of ½ (half) % per week or part thereof subject to a maximum of 5% of total order value. No deviation for this term is acceptable.

27.2.11 All other terms and conditions shall be as per annexure enclosed.

27.2.12 Please specify the agency who will undertake load testing of the crane at our Site.

27.2.13 Validity of offer: The offer shall be kept valid for a period of 4 months from its date.

28. Submission of Bids:

The Bidder shall submit his quotation in two parts viz.

PART – I : TECHNICAL AND COMMERCIAL BID
PART – II : PRICE BID (in the prescribed format Section – III)

PART - I (TECHNICAL AND COMMERCIAL BID)

- This part should contain scope of the work and confirmation of the supplier to meet every condition specified in the tender.
- Technical Compliance statement as given in Section –II shall be submitted.
- All commercial terms and conditions applicable also should be indicated in this bid under separate heads. All commercial terms such as delivery terms, delivery period, warranty, validity of the offer, duties and taxes, payment terms etc.
- Technical specification, terms and conditions as above should be very clearly reflected item wise with reference to the items called for in the tender.
- Un priced 'PRICE BID' format shall only be enclosed in this Part.
- Deviations, if any shall be clearly mentioned in the remarks column of the Compliance statement (Section-II)

Technical and commercial part as described above shall be prepared and put in a sealed cover and super-scribed and addressed as follows.

Tender No	:	
Due Date	:	
PART-I	:	Technical and Commercial Bid
To:		The Head, Purchase & Stores Satish Dhawan Space Centre, SHAR Sriharikota – 524 124 (Nellore Dist.– AP) INDIA

PART – II : (PRICE BID)

The prices shall only be indicated in this part as given in the prescribed format given in the Section-III

Price part prepared as above shall be enveloped, sealed and superscribed as follows.

Tender No	:	
Due Date	:	
PART-II : PRICE BID		
	To:	
		The Head, Purchase & Stores Satish Dhawan Space Centre, SHAR Sriharikota – 524 124 (Nellore Dist.– AP) INDIA

The Technical and commercial envelope (Part-I) and the Price Bid envelope (Part-II) should be separately sealed and inserted in another envelope and superscribed as given below.

Tender No	:	
Due Date	:	
PART - I & PART - II : INDIVIDUALLY SEALED COVERS		
	To:	
		The Head, Purchase & Stores Satish Dhawan Space Centre, SHAR Sriharikota – 524 124 (Nellore Dist.– AP) INDIA

SECTION - II

TECHNICAL COMPLIANCE STATEMENT

(IS TO BE DULY FILLED BY BIDDER AND SHALL SUBMIT ALONG WITH THEIR QUOTATION)

Tender No. & Date:

Bidder's Name, Quotation No. & Date:

Sl. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
1.	Design, fabrication, manufacture and assembly of Mobile crane shall be as per the specifications given in section – I of this document.		
2.	All terrain, tyre mounted, Hydraulically operated Mobile Crane (As per the latest International Standards)		
3.	Mobile Crane Rating shall be according to with ISO 4305 and DIN 15019.2		
4.	Design of the crane shall comply with DIN 15018.		
5.	Wind speed of max. 35 kmph shall be considered in design.(ISO 4305 and DIN 15019.2)		
6.	Crane shall be capable of working in a hot, humid and dusty atmosphere. Temperature range is expected to be 0 to 50 degrees C and humidity up to 100%.		
7.	Maximum Capacity of Crane (in metric ton) & Operating radius (in meters) with 85% rating		
8.	At 8.0 meters operating radius: 8.1 Rated Capacity of Crane : 50ton (50,000kgs) (with 85% rating) 8.2 Hook height from the ground level : 10.0 mts. 8.3 At 360° slew when in outriggers		
9.	At 14.0 meters operating radius: 9.1 Rated Capacity of Crane : 24 ton (24,000kgs) (with 85% rating) 9.2 Hook height from the ground level : 14.0 m. 9.3 At 360° slew when in outriggers		

SI. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
10.	The capacities mentioned above (vide 8 & 9) are excluding the Hook block weight and height.		
11.	Capacity ratings of the Outriggers at fully extended condition and outriggers at partly extended condition shall be mentioned in the offer.		
12.	Capacity ratings of the crane in Mobile duty (Pick 'n' Carry) mode at different operating radius shall be mentioned in the offer.		
13.	Gross Weight of Mobile Crane (in kgs)		
14.	Dimensions of Mobile Crane		
	Overall Length : ~16000 mm		
	Overall width : ~ 3500mm		
	Overall height : ~ 4500mm		
	Distance between the Outriggers, lengthwise: ~ 9000mm		
	Distance between the Outriggers, widthwise: ~ 8000mm		
	Telescopic boom length when in fully retracted: ~14000mm		
	Telescopic boom length when in fully extended: -50000mm		
	Distance between the crane centre of rotation to the edge of the crane end : ~ 5000mm		
15.	Frame shall be fabricated in Torsion resistant box girders with high strength fine grain structural steel. Specification of steel		
16.	<u>CARRIER (TRAVELLING)</u>		
	Engine capacity :Max. Power & Torque		
	Engine Make and Model :		
	<u>Travel Speed : 50kmph in unladen condition</u>		
	<u>Gradeability :Should be minimum 25%</u>		
	<u>Transmission with integrated Retarder</u>		
	<u>Make of transmission : ZF or reputed make only</u>		
	<u>No of Speeds : Forward (4) / Reverse (1)</u>		
	<u>Number of Axles: (Drive/ Steer)</u>		
	<u>No of wheels per axle</u>		
	<u>Axle load : not more than 16000 kg.</u>		
	<u>Make of Axles : (ZF, DANA, or equivalent reputed make)</u>		
	All axles shall be provided with hydro pneumatic suspension with level adjustment.		

SI. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
	Type and Size of wheel Rim		
	Tyre Size & Ply rating		
	Type of Tyres : Tube less/ Radial/		
	No. of Spare Wheels (tyre, tube, flap & rim) : 2nos.		
	Brake system shall be provided with Dual circuit compressed air system.		
	Auxiliary brakes with engine Exhaust brake shall be provided		
	Service brake shall be failsafe type and shall be provided with ABS system (Anti-lock brake system).		
	Make of Brake System: WABCO		
	Steering system shall be provided with Power steering with dual circuit system		
	Steering system and accessories shall be of reputed make like ZF or equivalent.		
17.	Driver's Cabin (preferably tilting cabin):		
	Cab shall be of rubber mounted steel / alluminium cab with corrosion resistance with suitable capacity hydraulic shock absorbers		
	Dash board instruments as per 6.10.2 of specifications		
	Provided with Engine electronic control system showing the health parameters of the Carrier engine		
	A medium size fan with protection cage in-front of the operator is provided		
	CAB Internal paneling shall be of sound proof and heat resistant.		
18.	Electrical system: Shall be provided with 24V DC with suitable capacity Automobile maintenance free batteries.		
	Rotating type emergency light shall be provided outside the cabin at appropriate location.		
	All the electrical system of Crane as per 6.11 of Specifications.		
19.	Diesel Engine for super structure		
	Engine capacity :Max. Power & Torque		
	Engine Make and Model : Benz, Deutz, Volvo, MAN or any reputed makes.		

Sl. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
20.	Crane Operator's Cabin (preferably tilting cabin):		
	Cab shall be of rubber mounted steel / alluminium cab with corrosion resistance with suitable capacity hydraulic shock absorbers		
	LCD colour display system clearly showing the rated capacity, hook load, operating radius, boom angle, boom length, lifting capacity an appropriate radius, outriggers position, slew position, over load indication, over hoist indication etc.,		
	Shall be provided with Graphical representation of crane with loading condition, boom angle and its boom elevation etc., in the LCD colour display screen.		
	Electronic inclination indicator shall be provided in the crane operator's cabin which shows the inclination of the crane with respect to ground surface level.		
	The control for attaching / detaching counter weight shall be provided in the operator's cabin		
	Provided with Engine electronic control system showing the health parameters of the Carrier engine		
	Escape route for the crane operator in any slew position to escape in case of emergency.		
	A medium size fan with protection cage in-front of the operator is provided		
	CAB Internal paneling shall be of sound proof and heat resistant.		
21.	Hydraulic system :		
22.	All the crane operations like hoisting, boom derricking, boom extension, outriggers extension / retraction shall work on individual circuits.		
	The crane hydraulic controls shall be operated by joy stick / step less control for smooth operation.		
	The Hydraulic system shall be provided with Variable displacement axial piston pump type of suitable capacity and sufficient quantity to operate hoisting, derricking and telescoping independently and simultaneously.		

SI. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
	Suitable capacity hydraulic pump shall be provided separately for slew system.		
	The hydraulic drive systems shall be of closed loop systems.		
	The hydraulic system shall be provided with safety mechanism against hose rupture or pipe breakage.		
	The hydraulic system components such as hydraulic pumps, motors, valves, filters, gauges etc., shall be of reputed makes such as M/s Parker, M/s Eaton, M/s Rexroth, M/s Vickers or equivalent reputed make.		
23.	Boom derricking (Boom Lifting / Lowering)		
	Boom derricking speed (time & degrees) :		
	Shall be provided with sufficient quantity, suitable capacity of heavy duty double acting boom cylinders which should be capable of lifting rated capacity of the crane to a maximum lifting height		
	Hydraulic pump Flow rate : cc/rev Maximum pressure : Make & Model		
	No. Of Cylinders for Boom elevation		
	Cylinder bore and Stroke		
	Cylinder shall be provided with load holding valve		
	The hydraulic boom lift / lower system shall be provided some means of mechanism to bring down the boom cylinder slowly and smoothly in case of Hose/ Pipe failure.		
	Maximum working Pressure of Cylinder		
	Maximum Design pressure of Cylinder		
	Maximum Working Pressure of Hoses		
	Maximum Design Pressure of Hoses		
24.	Boom Telescoping (Boom Extension)		
	Boom telescoping speed (Time &range):		

Sl. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
	Shall be provided with sufficient quantity, suitable capacity of heavy duty double acting boom cylinders which should be capable of lifting rated capacity of the crane to a maximum lifting height		
	Boom shall be of Buckling and Torsion resistant design, made with high-tensile structural steel. One base section with suitable number telescopic sections shall be provided for extending the boom.		
	Material of Boom and Tensile strength		
	Number of Telescopic Sections		
	Hydraulic pump Flow rate : cc/rev Maximum pressure : Make & Model		
	No. Of Cylinders for Boom elevation		
	Cylinders bore and Stroke		
	All telescopic sections shall be operated hydraulically, extendable and retractable, independent of one another and shall be locked at selected working positions. Provision shall be made for safe lowering of telescopic boom shall be ensured incase of failure in hydraulic system.		
	The hydraulic boom extension system shall be provided some means of mechanism to bring down the boom slowly and smoothly in case of Hose/ Pipe failure.		
	Maximum working Pressure of Cylinder		
	Maximum Design pressure of Cylinder		
	Maximum Working Pressure of Hoses		
	Maximum Design Pressure of Hoses		
25.	Hoisting system:		
	Maximum Hoisting Speed:		
	Minimum Hoisting Speed :		
	Maximum line pull : (in kN)		

Sl. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
	Crane hoist system shall be driven smoothly by hydraulic motor. The hydraulic motor shall be of axial piston type constant displacement, mounted with planetary gear box.		
	The hydraulic winch drive system shall be of closed loop system.		
	Hoisting brake shall be of spring applied, multi disc brake and applies brake automatically when the hoisting motor stops.		
	Controlled creep speed shall be powered for hoisting motion of 0.25 m /min, which is independent of engine acceleration and joy stick motion.		
	Hoist rope drum shall be of grooved with flanged sufficiently to take care of the layers of the rope.		
	Wire rope shall be of high performance, non rotating type 35X7 or 18X7 or equivalent construction. Wire rope shall be of preformed and galvanized.		
	Factor of Safety of Wire rope (As per the standards and shall be mentioned in offer)		
	The hydraulic system shall be provided with two means of braking mechanism.		
	Hydraulic pump Flow rate : ----- cc/rev Maximum pressure : ----- Make & Model :		
	Hydraulic Motor details: Flow rate : ----- cc/rev Maximum pressure : ----- Maximum Torque : Make & Model :		
	Planetary Gear box ratio Make & Model		
	Maximum Working Pressure of system:		

SI. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
	Maximum Working Pressure of Hoses		
	Maximum Design Pressure of Hoses		
	The hoist system shall be designed to have not less than two or three wraps of hoisting rope on the drum when the hook is in its extreme low position.		
	Hoisting system shall be provided with safety of anti-two blocking.		
	<p>The hydraulic hoist system shall be provided with the following features.</p> <ul style="list-style-type: none"> ➤ Power up and Power Lowering ➤ Automatic brakes for Hoist System (Spring loaded) ➤ Failsafe Lock for Hoist system ➤ Non rotating rope of suitable capacity and construction ➤ Audible an visible Over Load Warning indicator for Hoist system ➤ Limit switch for hoist 		
26.	Slewing system:		
	Slewing Speed : (time/rotation)		
	Slew system shall be provided with sufficient quantity and suitable capacity separate axial displacement pump and constant displacement motor with multi stage planetary gear box.		
	The hydraulic drive system shall be of closed loop system.		
	<p>Hydraulic 360° slew system shall be provided with</p> <ul style="list-style-type: none"> ➤ Foot operated brake for slew system ➤ Positive lock for slew system 		
	<p>Hydraulic pump details: Flow rate : ----- cc/rev Maximum pressure : ----- Make & Model :</p>		

SI. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
	Hydraulic Motor details: Flow rate : ----- cc/rev Maximum pressure : ----- Maximum Torque : Make & Model :		
	Maximum Working Pressure of slewing system:		
	Maximum Working Pressure of Hoses		
	Maximum Design Pressure of Hoses		
27.	Outriggers		
	Outriggers system shall be of 4 point supporting system, double acting, fully hydraulically extendable and retractable and can be independently operated.		
	The outriggers shall be hydraulically extendable into horizontal and vertical direction.		
	Out trigger Bearing Pressure :		
	Max pressure in the Out trigger Hydraulic System		
	Out triggers arrangement is provided with Electronic level Indicator and Automatic Leveling system		
28.	Counter weight : Sufficient counter weight shall be provided, detachable type, in the machine to handle full rated capacity to ensure required stability.		
29.	HOOK & Hook Block Assembly		
	Make & Capacity of the Hook		
	Make & Capacity of the Hook block		
	Hook block with Rams Horn hook of capacity 50tonne (50,000 kgs)		
	Hook block with Single Point hook of capacity 25tonne (25,000 kgs)		
30.	Tow Hooks		
	Make & Capacity of the front tow hook		
	D Value of the front tow hook		

Sl. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
	Make & Capacity of the rear tow hook		
	D Value of the rear tow hook		
31.	Safety Features		
	Shall be provided with Electronic safe load indicator with colour display		
	Hydraulic system shall be provided with dual circuit system		
	The hydraulic system shall be provided with safety relief valves to protect the system		
	The hydraulic system and pneumatic system pressure hoses / pipes shall be such that the hoses / pipes shall withstand to a three times the working pressure of the hydraulic system.		
	The hydraulic system shall be provided with check points at appropriate locations easily accessible for measuring / checking the hydraulic pressures by connecting a quick coupler type suitable capacity hydraulic pressure gauge with hoses.		
	The hydraulic system such as boom derricking, telescopic boom, Outriggers system shall be provided with some means of mechanism against hose rupture or pipe breaks		
	The crane Hoist system shall be provided with two means of braking, each capable of bringing a rated load to zero speed and holding it (with or without power).		
	A Heavy duty battery isolation switch shall be provided to the crane to shut-off the system		
	Crane shall be provided with engine auto shut-off system while handling Overload		
	At the exit of the exhaust system of carrier and super structure engines, a suitable capacity Spark arrestors shall be provided separately		
	Audible and visible Overload indicator		
	Limit switches for Hoisting and gantry		
	Safety against hose rupture		
	Anti- two blocking device		

SI. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
	Safe approach / provisions external and built-in for maintenance of all systems in all positions		
	Shall be provided with a indicator for giving audible and visible alarm while the hoist rope layers count on the rope drum comes to three or four layers. (wrap indicator)		
32.	Painting scheme		
	Colour of the drive cabin		
	Colour of the crane cabin		
	Color of Crane structure & Boom		
	DFT (Dry film thickness) of drive cabin & Crane Structure		
	DFT (Dry film thickness) of crane cabin		
33.	Recommended Spare parts / seal kits to be supplied along with the mobile crane		
	Supplier shall provide detailed list of spare parts / seal kits which are essentially supplied along with the crane with cost as per Clause no.13.1 of Section-I		
	Supplier shall provide the recommended list of spare parts / seal kits for TWO YEARS of trouble free service with part number, cost & quantity as per clause no.13.2 of Section-I		
	Supplier shall provide the list of commissioning spares which shall be supplied free of cost as per clause no.13.3 of Section-I		
34.	Standard Tools		
	The supplier shall supply 2 sets of the standard tools, in two tool boxes, to attend break-down maintenance of the crane and to attend regular maintenance. List of tools with quantity shall be furnished in quotation.		
35.	Special Tools		
	The detailed list of Special tools, if any, with proper description, quantity and price shall be furnished in quotation		

Sl. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
36.	Standard Accessories		
	Detailed list of Standard accessories which shall be supplied along with the crane.		
37.	Optional Accessories		
	The supplier shall furnish the optional accessories along with functional usage, Technical specification and price.		
38.	Crane diagnostic system		
	The Party shall provide the crane diagnostic system which includes Laptop with necessary ports, cables etc., USB connection for Crane for data downloading along with Necessary Software for diagnosis of carrier & super structure engine, crane sub systems etc and also for trouble shooting. The software shall be supplied in a separate CD / DVD for installing / uninstalling as and when required. Operating system should be compatible with Microsoft Windows "XP'		
	Specifications of LAPTOP		
	Software details		
	Operating system shall be Compatible with Microsoft Windows 'XP'		
39.	Quality assurance, inspection and Load testing		
	Quality assurance:		
	Supplier shall follow standard Quality assurance plan to ensure quality of Mobile crane at different stages like raw materials inspection, fabrication, manufacturing, assembly and Load testing. (Supplier shall agree for this)		
	Stage Inspections:		
	Mobile Crane shall undergo stage inspections at different stages of manufacture, fabrication, assembly.		
	Performance and load testing of the crane at Manufacturer's site:		
Functional and No load test			

SI. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
	Rated load test		
	Proof load testing for 1.25 times the Rated capacity.		
	Necessary test loads & instruments for load testing shall be arranged by the supplier		
	Supplier shall submit material and Test certificates of all crane systems at the time of load testing.		
	Load testing of the crane at SDSC SHAR, Sriharikota		
	Functional and No load test		
	Rated load test		
40.	Documents & Information along with submission of Bid (Refer Section-1, Clause no: 20)		
	General arrangement drawing		
	Technical justification letter meeting the requirement para-2 of specification.		
	Technical literature & catalogues		
	Rated capacity load charts		
	Standard quality assurance plan		
	Detailed addresses of maintenance / service representatives in INDIA		
	List of parties to whom the supplier has supplied similar or higher capacity cranes in INDIA as well as in abroad.		
41.	Documents to be supplied after placing firm Purchase Order (Refer Section-1, Clause no: 21)		
	Shall be provided the detailed documents, drawings, technical literature, Stability calculations, Load test charts etc., within ONE month of period, after placement of firm Purchase Order Documents as per list given in clause. No. 21 of Section-I		

SI. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
42.	Documents to be supplied along with the supply (Refer Section -1, Clause. no: 22)		
	2 sets of Quality control and Assurance documents along with test certificate in the form of Hard bound book		
	4 sets of crane operator's manuals		
	4 sets of spare parts catalogues		
	4 sets of rated capacity load charts in the form of laminated sheets		
	4 sets of Maintenance manuals		
	Hoist wire rope reeving diagram with different reeving arrangements with bill of materials		
	Complete hydraulic circuit diagrams for hoist, boom derricking, Boom extension, Slewing, Steering etc.,		
	Hydraulic tubing layout		
	Pneumatic braking circuit diagram		
	Electrical wiring circuit diagram		
	Electronic components circuit & wiring diagram		
2 sets of CD / DVD containing all the above information			
43.	Training during commissioning of crane at SDSC SHAR, Sriharikota		
	Supplier shall impart training in both operation and maintenance to operators and Maintenance staff at our works site ie., SDSC SHAR, Sriharikota		
	Supplier shall carryout free services at fixed intervals by their service personnel during Warranty Period.		
44.	Annual Maintenance Contract (AMC)		
	Supplier shall agree to carry-out annual maintenance Contract (AMC) for FIVE continuous years, after completion of Warranty period, for the mobile crane at SDSC SHAR, Sriharikota by their Indian Service representatives		

Sl. No.	DESCRIPTION / TECHNICAL SPECIFICATIONS OF ISRO REQUIREMENT	SPECIFICATION OR CONFIRMATION BY THE BIDDER (YES / NO)	DEVIATIONS , IF ANY AND REMARKS
	Details & Price of the AMC (Annual Maintenance Contract) shall be submitted along with the offer. Year wise cost of maintenance contract shall be furnished.		
45.	Documents for Registration of Crane		
	Supplier shall submit documents ie., Sale certificate, Road worthiness certificate etc., required for registering the Mobile crane under Motor vehicle Act (Rules)		
46	Payment Terms such as payment, mode of despatch, transportation details, warranty, delivery schedule, validity of the offer etc., shall be furnished in the offer in the Section-1 clause no: 27.1 & 27.2 whichever is applicable.		
	Payment details		
	Warranty		
	The Mobile Crane & associated equipment shall be guaranteed by the Supplier for a period of 18 months from the date of commissioning at our site or 24 (twenty four) months from the date of supply whichever is earlier.		
	Mode of dispatch		
	Delivery Schedule		
	1) For Design & manufacture of Crane		
	2) Transportation from Ex. Works to Our site, SHAR		
	3) Time for Commissioning at our site, SHAR		
	Validity of the offer		
47.	Bid shall be submitted in two parts as per clause no.28 of Section - I. 1) Part - I Techno commercial Bid 2) Part - II Price Bid		

NOTE: - It is confirmed that all the terms and conditions stipulated in the Tender Enquiry have been fully understood by us and all clarifications & details have been obtained.

Signature & Office Seal of the bidder

Check List for Commercial Terms and Conditions
(To be filled and submitted along with Part-I : Techno Commercial Bid)

Sl. No	DESCRIPTION/ REQUIREMENT OF ISRO REQUIREMENT	SPECIFIED / CONFIRMED BY BIDDER	REMARKS
1	Technical confirmation/ compliance to Specifications as given in Section- II Format are furnished.		
2	Prices have been quoted item wise only as per the format in Section III.		
3	Validity of offer has been mentioned in the Offer.		
4	Delivery period & schedule has been mentioned in the offer.		
5	Confirmation for acceptance of Liquidated damages has been given in the offer.		
6	Confirmation for acceptance of Payment terms is available in the offer:		
7	Confirmation for submission of Performance Bank Guarantee (PBG) as available in the offer.		
8.	Confirmation that the Mobile Crane shall be guaranteed for a period 18 months from the date of commissioning or 24 (twenty four) months from the date of supply whichever is earlier .		
9.	Confirmation and any warranty replacement during warranty period shall be supplied free of charge.		
10	Confirmation that the vendor shall provide necessary drawings, Test Certificates and Operating, Maintenance & spare parts Manuals etc., as called for in the Technical Specification, in the required number of copies at no extra cost.		
11.	Country of origin of Equipments		

NOTE: -

It is confirmed that all the terms and conditions stipulated in the Tender Enquiry have been fully understood by us and all clarifications & details have been obtained.

Signature & Office Seal of the bidder

SECTION – III
PART-A (Applicable for Indian Rupee Quote)

BIDDERS PRICE BID FORMAT
(All Terrain Hydraulic Mobile Crane)

Note : Bidder shall submit Prices in the format given below,
Tender No. & Date:

Bidder's Name, Quotation No. & Date:

SL NO	DESCRIPTION OF ITEM	Unit (No/ Set)	Quantity	Price (with currency)
1	Design, manufacture & supply of All Terrain Hydraulic Mobile Crane including all standard accessories, standard tools as per specification (given in Section –I), Price at SDSC SHAR	No	01	
2.	Erection and commissioning Charges at our site, SHAR including training as per clause no.23 of Section-I	Lumpsum	---	
TOTAL PRICE including erection and commissioning (1+2)				
4.	Price of Spare parts for two years trouble free Maintenance (Separate sheets shall be enclosed giving List of spares, quantity, rate, and price) as per clause no.13.2 of Section-I	Set	01	
5.	Price of Special Tools (Separate sheet shall be enclosed giving List of special tools, quantity, rate, and price) as per clause no.15 of Section-I	Set	01	
6.	Price of each Optional Accessories shall be mentioned separately. (Separate sheets shall be enclosed furnishing List of optional Accessories, Specifications, quantity, rate and price) as per clause no.17 of Section-I			

SL NO	DESCRIPTION OF ITEM	Price (with currency)
7.	% of tax applicable on supply	
8.	% of tax applicable on erection and commissioning.	

1. Un-priced Price Bid Format to be submitted along with Part-I, Techno – Commercial Bid mentioning “quoted” against each item.
2. Detailed list of Spares, Tools and Special Tools to be given along with Part-I, Techno – Commercial Bid
3. The price bid should be submitted only as per the above format. No row shall be left blank. Please indicate NA, in case the item is “not applicable”.
4. Submission of Prices other than this format is not acceptable and the quotation is likely to be rejected.

Signature & Office Seal of the bidder

SECTION – III
PART-B (Applicable for Foreign Currency Quote)

BIDDERS PRICE BID FORMAT
(All Terrain Hydraulic Mobile Crane)

Note : Bidder shall submit Prices in the format given below.

Tender No. & Date:

Bidder's Name, Quotation No. & Date:

SL NO	DESCRIPTION OF ITEM	Unit (No/ Set)	Quantity	Price (with currency)
1	Design, manufacture, & supply of All Terrain Hydraulic Mobile Crane including all standard accessories, standard tools as per specification (given in Section –I), Price at Ex works	No	01	
2.	Erection and commissioning Charges at our site, SHAR including training as per clause no.23 of Section-I	Lumpsum	---	
3.	FOB Charges (Inland transportation charges up to International Sea Port within tenderer's country)	Lumpsum	---	
4.	Transportation charges by SEA to Chennai Port	Lumpsum	---	
5.	Transportation charges from Chennai Port to SDSC SHAR (in Indian Rupees)	Lumpsum	--	Rs.
TOTAL PRICE including erection and commissioning (1+2+3+4+5)				
6.	Price of Spare parts for two years trouble free Maintenance (Separate sheets shall be enclosed giving List of spares, quantity, rate, and price) as per clause no.13.2 of Section-I	Set	01	
7.	Price of Special Tools (Separate sheet shall be enclosed giving List of special tools, quantity, rate, and price) as per clause no.15 of Section-I	Set	01	
8.	Price of each Optional Accessories shall be mentioned separately.			

SL NO	DESCRIPTION OF ITEM	Unit (No/ Set)	Quantity	Price (with currency)
	(Separate sheets shall be enclosed furnishing List of optional Accessories, Specifications, quantity, rate and price) as per clause no.17 of Section-I			
9.	% of agency commissions included in the quoted price, if any			
10.	Name of the Indian agent, if any			

1. Un-priced Price Bid Format to be submitted along with Part-I, Techno – Commercial Bid mentioning “quoted” against each item.
2. Detailed list of Spares, Tools and Special Tools to be given along with Part-I, Techno – Commercial Bid
3. The price bid should be submitted only as per the above format. No row shall be left blank. Please indicate NA, in case the item is “not applicable”.
4. Submission of Prices other than this format is not acceptable and the quotation is likely to be rejected.

Signature & Office Seal of the bidder