**Section II: Schedule of Requirements**

**eSourcing reference:ITB/2024/53748**

**The ITB consists of three Lots for the procurement of Service Rig with Accessories**

**Lot 1-Service Rig with Accessories - Quantity 5**

**Lot 2-Service Rig with Accessories - Quantity 3**

**Lot 3-Service Rig with Accessories - Quantity 2**

**Technical specifications for Goods and Comparative Data Table**

| **Technical Specification**  **Title: Supply and Delivery of Service Rig Ministry of Finance**  **Addis Ababa** | |
| --- | --- |
| **Service Rig Minimum Specification - Final** | |
| **General Description of Service rigs** | |
| Working Conditions | The Service rig should be able to work in the following  conditions  Air Temperature 0°-55° c  Climate: Humid tropics - Arid desert  Altitude: above Sea level 1000m - 3000 m a.s.l. |
| **TRUCK SPECIFICATION** | |
| **HEAVY-DUTY CHASSIS Truck-MODEL – 6x6** | |
| **Description** | **UNOPS Minimum Technical requirement** |
| **Basic Information** | |
| Seating capacity | Minimum 2 Including Driver |
| Steering Orientation | LHD |
| Number Of Doors | 2 |
| Assembly of drilling rig onto | Suitable 6x6, 3 axle Truck |
| **Engine** | |
| Cooling system | Water cooled engine with belt driven fan and Tropical radiator with fan guards and shroud |
| Separate reserve tank |
| Direct/belt driven water pump equipped with topical type of thermostat with bypass valve |
| Cylinder Formation | in line |
| Number of cylinders | 6 |
| Net power | Minimum 380 HP turbo intercooler, turbo-charging, and inter-cooling |
| Engine brake | Turbo Brake |
| Engine type | turbo intercooler euro 3 diesel injection/cycle with electronic unit injection pumps, 4-stroke direct injection, Bore for stroke 135 x 150 mm. |
| Torque RPM | 1800 - 1900 Nm @ 900 - 1900 rpm |
| Valves per cylinder | four valves per cylinder |
| Power at RPM | 1000 - 1900 rpm |
| Engine Mount | Front Longitudinal |
| Aspiration | turbo intercooler |
| Air cleaner | Dry type multi stage cleaners with restriction gauge and dust remover |
| Emission control | Euro III |
| Displacement(cc) | 12880 - 13,000 cc |
| Transfer box ratio | 1:1.6 |
| Vertical exhaust | With muffler |
| 17” dry single disc clutch | Hydraulically controlled |
| **Transmission** | |
| Transmission | Gearbox mechanical synchro-mesh 8+8 speed forward and 1+1 reverse (16+2) |
| Gearbox | Manual Ecosplit 4 technology gearbox with servoshift |
| Differential lock between axles and wheels | Pneumatic control |
| Forward gears | 16 synchronised forward speeds |
| Transmission type | Mechanical with two ratios. Helical spur gears |
| High-low gear box | Vendor to Confirm |
| **Suspension & Steering** | |
| Extra heavy-duty suspension | front with shock absorbers, rear reinforced axles with double reduction, central Level gears and planetary hub reduction |
| Steering | Quadrilateral power steering on front axle wheels with  variable ratio 1:22.2/1:26.2 with auxiliary cylinder. |
| Front axles | 1st axle, driving and steering, in cast iron with double  reduction, central by bevelled pair, lateral by epicyclical  group in wheel hubs. |
| Rear Axles | Two drive axles in tandem |
| Front Suspension | 1st axle, parabolic springs, n°4 leaves 24x90 mm or equivalent standard, with hydraulic shock absorbers. |
| Rear Suspension | Parabolic springs, swivelling on central pin: n°4 leaves 40x100 mm or equivalent standard. |
| **Brakes** | |
| Engine Brake | Turbo brake - braking power max 255 kW ( max 342 HP). |
| Brakes | Front and rear “duo-duplex” self-adjusting wedge type  brakes with automatic play take-up. |
| Service brake: | Pedal controlled air brake, acting on all wheels. |
| emergency brake: | spring energy, compressed air operating on rear wheels |
| Parking brake : | Mechanical spring-type with pneumatic  control acting on 2nd and 3rd axle wheels. |
| Auxiliary brake: | Engine exhaust valve brake |
| Total net braking surface | Minimum 9.276 cm2. |
| **Electrical System** | |
| Voltage | 24V |
| Battery | 2x12v-170 Ah |
| Alternator | 28v , 80 A |
| Accumulators | 2 in series, 143 Ah. |
| Starting motor | 24v, 5.5 - 6.6 kW. |
| Hydraulically assisted | Power steering box or equivalent |
| Control Method | Mechanically controlled electrical circuit breaker |
| Electrical provision | Electrical provision for bodybuilders plug |
| Provision for diagnostics. |
| Provision of radio/cd (with speakers) |
| Glow plug for cold start. |
| **Tyre** | |
| Tyres dimensions, front axle | 13R22,5 156/150 |
| Tyres dimensions, rear axle | 13R22,5 156/150 |
| Tyres dimension, 2nd rear axle | 13R22,5 156/150 |
| Tyres, total number per unit (units): | 10 (with reinforced suspension and steering system) |
| Spare wheel, total number per unit (units): | One Spare wheel on the chassis. |
| Tyres with tube or tubeless | Tubeless |
| **Capacities** | |
| Ground Clearance(mm) | Minimum 380 mm |
| Wheel base (mm): | 5100 mm+1450mm |
| Tare Weight | Tare Vehicle weight - not less than 40000 kg |
| Gross Vehicle Weight(kg)/Gross Combination weight | 120,000 - 121500kg |
| **Vehicle Main Dimensions** | |
| (L x W x H)mm | (L x W x H)mm  L - 7670 - 9975,  W - 2010 -2550,  H - 3500 - 5100 |
| Wheel track (front/rear) (mm) | Wheel track front - 2021 mm-2022 mm |
| Approach/Departure angle(°) | 30°-32° |
| **Cab** | |
| CAB | Rust- free cab made in steel, build around a study steel frame, |
| Driver seat | Air suspended driver seat, safety belts, |
| Cab color | Preferably BLUE |
| Mirrior | tinted glass. |
| Hook-Front | Front service hook |
| Hook- Rear | Rear Manoeuvring Hook |
| **In cabin instrumentation panel list but not limited to** | |
| Indications | Tachometer |
| Speedometer |
| Odometer |
| Battery voltage |
| Fuel gauge |
| Engine temperature |
| Door open |
| Parking and light on |
| High beam light indication |
| Warnings | Low fuel level |
| Low coolant level |
| High engine temperature |
| Low oil pressure |
| Brake air |
| Battery charging alternator fail |
| Transmission /H4,L4/ status |
| **TRUCK Fuel tank** | |
| Fuel type | Diesel |
| Fuel tank (L) | Minimum 600 Litres with two different tank |
| Fuel System | Direct injection with |
| Fuel/ water separator & multi stage filters |
| Fuel delivery system, common rail or Inline injection pump |
| Diesel fuel tank with necessary level sensing equipment |
| **MAIN SERVICE RIG FRAMEWORK** | |
| BASIC RIG MADE UP OF | Shall be made out of electrically welded high-quality steel structural members and tubular pieces |
| **OUTRIGGER** | |
| Two Front fixed hydraulic stabilisers | Should have Stroke 1000 mm for levelling and positioning of rig, complete with check valve and ball joint support plate. |
| Two Rear fixed hydraulic stabilisers | Should have Stroke 1000 mm for levelling and positioning of rig, complete with check valve and ball joint support plate. |
| **COMPRESSOR DECK ENGINE** | |
| COMPRESSOR DECK ENGINE | Truck with ENT X20, TIER 3 / STAGE III A diesel, 6 cylinders in line, turbo-intercooler, water-cooled, complete of electrical system and battery 24 V |
| Displacement | 12,880 - 13,000 cc |
| Max power | 510 - 550 Hp @ 2000 - 2900 rpm |
| Alternator- detail spec. and Data sheet | Mandatory to be specified on the datasheet |
| Low oil pressure switch | Mandatory to be specified on the datasheet |
| Over temperature switch | Mandatory to be specified on the datasheet |
| Engine stop solenoid | Mandatory to be specified on the datasheet |
| Certified engine data- the Bidder shall submit net power and torque and specific fuel consumption curves at the governed RPM. | Mandatory to be specified on the datasheet |
| Fuel type | Diesel |
| compressor deck engine Fuel tank (L) | Minmum 300L |
| **AIR COMPRESSOR** | |
| Compressed air module | "PTO" version '2' Two-stage, with hydraulic insert clutches |
| Discharge pressure | 30-35 Bar bar (435 -507.6psi) |
| Free air delivery | 450 - 590 L/S |
| Revolutions RPM | 1800-1900 |
| Starting method | Electric, recoil, crank or spring well starting |
| Oil Capacity | 70 - 80 L |
| Wide temperature operation | -5°C to +50°C (23°F to 122°F) |
| **COMPRESSOR HYDRAULIC CLUTCH** | |
| Hydraulic clutch | Hydraulic clutch for driving the compressor with hydraulic operation |
| Nominal rated static torque | 3660 - 3670 NM @ 13.8 Bar |
| Working Pressure | From 10.3 bar To 13.8 bar |
| Maximum Operating Temperature | 150 F (83°C) to 200 F (93°C). |
| Valve integrated that operates the clutch with a logic of | Soft Start |
| **MAST** | |
| Box type construction | made out of electrically welded high-quality steel. It should be raised and lowered by two a hydraulic ram with safety valves |
| Mast clearance | Free space under the single clamp is more than 550 mm, free space between the upper clamp and the crown block more than 11m. |
| Mast capacity | 27,000-30,000kg (27-30 tons) |
| Mast Height | 12-13 metre |
| **TOP OF MAST (Crown block)** | |
| TOP OF MAST (Crown block) | With two rear sheaves (Ø 320-325 mm) and 3 front sheaves, two of which with Ø 320-325 mm and one with Ø 200 mm for the service winch |
| **MAIN WINCH** | |
| Line up 1st layer | 80 - 85 KN |
| Maximum back pressure on return line | 5 - 5.5 bar |
| Rope diameter | 18-20mm |
| Cable type | Stainless steel |
| Cable length | 110-130 metre |
| Rope speed( How fast the winch winds the cable on to the drum) | 60 - 80 m/min |
| **SERVICE WINCH** | |
| Direct max pull at first layer | 3600Kg-4000 Kg |
| Max line speed at first layer | 50m/min-60m/min |
| Direct max pull at fifth - seventh layer | 2500Kg-3000Kg |
| Max line speed at fifth - seventh layer | 75 - 80 M/min |
| Rope diameter | 12-14mm |
| Cable type | Stainless steel |
| Cable length | 420-440 metre |
| **CONTROL PANEL** | |
| CONTROL PANEL | Unified type, complete with valves, distributors, pressure gauges for hydraulic pump pressure, accessories pressure, and air pressure, diesel engine dial, proportional controls, 24V socket, emergency stop and air compressors controls (2 indicator lights for air filter clogging and high temperature) and water pump speed. The panel should come with a closure cover and footboard for the operator |
| **TRAVELLING BLOCK** | |
| TRAVELLING BLOCK | with 1 sheave with a rotating hook and connection for third line winch |
| Capacity | 25-40 tons |
| **COMPLETE HYDRAULIC CIRCUIT, MADE UP OF** | |
| Hydraulic oil tank | 350- 370 litres, completely covered for inspection and cleaning, vent filter, level indicator and temperature gauge |
| Variable displacement | Axial piston main pump. |
| Fixed displacement | Single geared pump 20 cc to engage the clutch and a triplex geared pump (22cc + 20cc + 4cc) for positioning, clamp, and pump drive oil cooling  Heat exchanger(air-oil) for cooling of hydraulic oil  Rigid and flexible pipe work, filters,unions. |
| **HYDRAULIC CLAMP** | |
| Equipment for guiding | Blocking drill pipes, bits and casing. High quality steel construction |
| Powered by | Two hydraulic cylinders |
| Max passage | Ø 250 -300 mm |
| Min clamping | Ø 50 mm - Max clamping Ø 250 mm |
| Force max clamping | 15,000 - 45,000kg |
| **LIGHTING SYSTEM** | |
| Hazardous light distance | Minimum 30 metre |
| All lighting circuits shall have RCBO/ RCD for current leakage sensitivity | Vendor to Confirm |
| **ASSEMBLY** | |
| Assembly of the Service rig | Assembly of drilling rig onto suitable 6x6, 3 axle Truck- Vendor to Confirm |
| **STANDARD PAINTING** | |
| STANDARD PAINTING | Vender to specify, |
| **MANUALS** | |
| The rig should be supplied | Must include user, operation and maintenance manuals, paper and interactive spare parts catalogue. |
| **Tools to be offered together with the Service Rig (for five Service Rigs)** | |
| Hoisting Swivel for D.P. 3 1/2” IF pin – rated 20 tons | 5 pcs |
| Hoisting Swivel of service – rated 5 tons | 5pcs |
| Casing Elevator for 2” Steel Casing – Capacity 10 tons | 10 pcs |
| Casing Elevator for 21/2” Steel Casing – Capacity 10 tons | 10 pcs |
| Casing Elevator for 3” Steel Casing – Capacity 1 tons | 5 pcs |
| Casing Elevator for 4” Steel Casing – Capacity 10 tons | 5 pcs |
| Set of Wire Cables and Shackles for above Elevator – rate 10 tons | 10 pcs |
| Double swab for 2” casing, 3 ½” IF box | 10 pcs |
| Double swab for 21/2” casing 3 ½” IF box | 10 pcs |
| Double swab for 3” casing 3 ½” IF box | 5 pcs |
| Double swab for 4” casing 3 ½” IF box | 5 pcs |
| Brush for 2” casing, 3 ½” IF box | 5 pcs |
| Brush for 21/2” casing, 3 ½” IF box | 5 pcs |
| Brush for 3” casing, 3 ½” IF box | 5 pcs |
| Brush for 4” casing, 3 ½” IF box | 5 pcs |
| Sub 3 1/2” Reg box x 3 1/2” IF box | 10 pcs |
| Sub 2 3/8” Reg box x 3 1/2” IF box | 10 pcs |
| Sub 4” NPT Box x 2” NPT Pin | 5 pcs |
| Hose for air lift discharge, 3” NPT box connection, 10 m length | 10 pcs |
| Air lift end tool, 3 ½” IF box, 1,5 m length, open bottom, with air inlet for air lift | 5 pcs |
| Polyetilene hose, PE100, 40 mm OD, 29 mm ID, 5.5 mm thickness, 10 m length PN25 Bar | 5 pcs |
| Pipe Wrench 18” | 10 pcs |
| Pipe Wrench 24” | 10 pcs |
| Pipe Wrench 36” | 10 pcs |
| Chain Wrench for Pipe Size max O.D. 6” | 5 pcs |
| 17 Tons alloy Shackle with nut and pin | 5 pcs |
| Complete fishing tools (manufacturer recommended tools which are required to make the service rig operational such as minimum electrical, mechanical, plumbing tools). the tools should include at minimum  1. Taper tap for 3 1/2" API IF Box drill pipe,  2. Die collar for 3 1/2" API IF Box drill pipe,  3. Fishing magnet OD 6 1/2" with pulling capacity of 350KG,  4. Rele and electric fuses | 5 sets |
| **SPARE PARTS** | |
| Set of suggested spare parts for the service rig for two years of operations (4000 hours) which at minimum includes Air cleaner, fuel filter, oil filter, shoe pad , bearings, rings , seals, gaskets etc | Mandatory to specify the list and Qty |
| Set of suggested spare parts for the carrier truck for two years of operations which at minimum includes Air cleaner, fuel filter, oil filter, shoe pad etc | Mandatory to specify the list and Qty |
| **TOOL BOX** | |
| TOOL BOX that has tools for preventive maintenance of Service rig ,Truck , Compressor and Deck engine | Vendor to Specify and List the tools |
| **Technical Information/Data Sheet** | |
| Detailed product datasheet/catalogue for all the equipment | Vendor must to provide datasheets with submission |
| **Additional Information** | |
| Manufacturer name and year of manufacture | Vender to specify |
| Brand and model of the Truck | Vender to specify |
| The truck and deck engine System shall be filled with professional coolant | Vender to confirm |
| First aid kit and fire extinguishers | Included (YES/NO) |
| Pre- Shipment Inspection | UNOPS at its discretion may conduct on site during assembly and pre-shipment inspection at the factory of the Service rig. |
| The manufacturer/supplier should have a local agent in Ethiopia  (If no local agent in Ethiopia, Can you commit/agree to arrange a local agent in Ethiopia within one month after award?) | Local agent agreement and contact address of the Agent  or commitment letter should be submitted |
| Warranty | Standard Manufacturer Warranty Minimum 12 months |
| ISO Certificates | Manufacturer's ISO Certificates, and ISO certificates for main components including Truck, Compressor and Deck Engine - ISO 9001 |

| **UNOPS Sustainability, Deliver, and the right to vary –– Comparative Data Table** |  |
| --- | --- |
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| **UNOPS Requirements** |  |
| **Sustainability Requirements I** | The bidder shall demonstrate that its organisation has an environmental management system in place which as a minimum shall provide information on the following:  - the environmental policy principles of the organisation;  - the management measures taken or that will be taken to assess and mitigate the environmental impacts of the business processes/products associated with the execution of the contract;  - procedures for monitoring environmental impacts and measures and revalued as a basis for continuous improvement;  - how attention is paid to the awareness and training/competency of employee(s) and supplier(s) with regard to dealing with the environmental aspects relevant to this bid;  - and that compliance with the environmental legislation applicable to the required performance(s) is guaranteed. |
| **Sustainability Requirements II** | The bidder shall provide documentation that details their approach to ensuring equal opportunity, diversity, and inclusion within their organisation (e.g. equal pay policy, parental leave, the ratio of female to male employees, % of females in management positions, grievances disaggregated by gender, transparency of promotion criteria, sexual harassment policies). Bidders are encouraged to take the WEPs Gender Gap Analysis Tool to identify strengths, gaps, and opportunities to improve their performance on gender equality. |
| **Delivery time- Lot 1-Service Rigs with Accessories- 5 Units** | Bidder must deliver the goods within within 34 to 40 weeks under FCA as per Incoterms 2020 after Contract signature |
| **Delivery time- Lot 1-Service Rigs with Accessories- 5 Units** | Bidder must deliver the goods within within 40 to 46 weeks under DAP as per Incoterms 2020 after Contract signature |
| **Delivery time- Lot 2-Service Rigs with Accessories-3 Units** | Bidder must deliver the goods within within 30 to 34 weeks under FCA as per Incoterms 2020 after Contract signature |
| **Delivery time- Lot 2-Service Rigs with Accessories-3 Units** | Bidder must deliver the goods within within 34 to 40 weeks under DAP as per Incoterms 2020 after Contract signature |
| **Delivery time- Lot 3-Service Rigs with Accessories -2 Units** | Bidder must deliver the goods within within 25 to 30 weeks under FCA as per Incoterms 2020 after Contract signature |
| **Delivery time- Lot 3-Service Rigs with Accessories -2 Units** | Bidder must deliver the goods within within 30 to 36 weeks under DAP as per Incoterms 2020 after Contract signature |
| **UNOPS Right to vary requirements** | At the time the Contract is awarded, UNOPS reserves the right to vary the quantity of the goods and associated services specified above, provided this does not exceed +/- 20%, without any change in the unit prices or other terms and conditions of the ITB |