

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

<u>Technical Specification</u> <u>Title: Supply and Delivery of Service Rig Ministry of Finance</u> <u>Addis Ababa</u>	
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 sturdy steel frame,
Driver seat	Air suspended driver seat, safety belts,
Cab color	Preferably BLUE
Mirror	tinted glass.
Hook-Front	Front service hook
Hook- Rear	Rear Manoeuvring Hook
In cabin instrumentation panel list but not limited to	
	Tachometer
	Speedometer

Indications

	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	Vendor 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 2 1/2" 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 1/2" IF box	10 pcs
Double swab for 2 1/2" casing 3 1/2" IF box	10 pcs
Double swab for 3" casing 3 1/2" IF box	5 pcs
Double swab for 4" casing 3 1/2" IF box	5 pcs
Brush for 2" casing, 3 1/2" IF box	5 pcs
Brush for 2 1/2" casing, 3 1/2" IF box	5 pcs
Brush for 3" casing, 3 1/2" IF box	5 pcs
Brush for 4" casing, 3 1/2" 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 1/2" IF box, 1,5 m length, open bottom, with air inlet for air lift	5 pcs
Polyethylene 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
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UNOPS Sustainability, Deliver, and the right to vary — Comparative Data Table	
UNOPS Requirements	
	<p>The bidder shall demonstrate that its organisation has an environmental management system in place which as a minimum shall provide information on the following:</p> <ul style="list-style-type: none"> - 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 I	
	<p>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.</p>
Sustainability Requirements II	
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