

ORV SAGAR KANYA

TENDER FOR DRYDOCKING 2022 - DRYDOCK SERVICES AND AFLOAT REPAIRS

ANNEXURE I to Tender document ref: No. NCPOR/VOM/12/1/2022 dt. 24/6/2022

SCOPE OF WORK / PRICE BID (UPDATED VIDE CORRIGENDUM OF 18/8/2022)

LINE ITEM NO./SL. NO. (I)	MATERIAL/SERVICE DESCRIPTION (II)	UNIT OF MEASURE (III)	QTY/ AREA/ VOLUME (IV)	UNIT PRICE IN INR (V)	TOTAL COST IN INR (VI)
	The estimated dry-dock and afloat repairs duration is 90 days from the date of handing over the vessel to Shipyard.				
	Yards to quote their cost/ rates as given in this format only at columns "V" and "VI" against all the items specified below wherever unit of measure is stated at column III. Grand total specified at T3 including tax shall be considered for arriving at L1 bidder. Invoicing & payments shall be as per actual quantity.				
	All paints and spares shall be yard supply. Any spares requirement for satisfactorily completing the jobs (irrespective of whether the same is listed in the spares list in this tender) under workscope should be considered and included in the prices to be quoted.				
	Kindly go through all the terms and conditions in the tender document and model agreement before making the price bid.				
1	GENERAL SERVICES AND WHARFAGE: Vessel to be safely berthed at a suitable repair berth of the yard when vessel is not in drydock. Services indicated in paras 2 to 17 below are to be provided at the repair berth as well as in the drydock as required. Please quote number of day basis for availing berth & drydock including wharfage. Payment will be paid at actual no of days.	DAYS	90		
2	MOORING AND UNMOORING : Mooring, unmooring and shifting with the assistance of pilot, required number of tugs, riggers and boatsman.				
2.1	For berthing on repair berth on vessels arrival	PER OPERATION	1		
2.2	For unberthing to enter drydock	PER OPERATION	1		
2.3	For berthing at the repair berth again only if required after undocking	PER OPERATION	1		
2.4	For unberthing from repair berth for sailing	PER OPERATION	1		
	Note: if vessel is shifted for yard's convenience, owners would not be liable for charges for same.				
3	FIRE PRECAUTIONS :				
3.1	To supply salt water for ship's fire main lines at all times. Pressure in the fire main line on deck to be maintained at least at 28 kgs per cm sq so that minimum 2 fire hoses can be used simultaneously.	LUMPSUM	1		
3.2	To provide one fire watchman during entire period of vessel's stay in yard premises	LUMPSUM	1		
4	SECURITY GUARD :				
4.1	One security guard to be provided daily for the duration of vessel's stay at the yard	LUMPSUM	1		



5	SHORE POWER SUPPLY :				
5.1	Total estimated consumption requirement 390 kwh/day for days of vessel in drydock well or/until vessels power restored (vessel's power requirement would be : 390V, 50 hertz, 600 amperes, three phase). NOTE: Yard to show vessel's Electrician supply meter readings at the beginning and the end.	DAY	30		
6	GARBAGE DISPOSAL :				
6.1	To remove galley refuse once per day (05 m3 per day) including waste and debris from deck/ER	LUMPSUM	1		
6.2	To provide one sewage holding portable tank and the same to be connected to main sanitary line till the ship`s sewage treatment plant remains non-operational (during stay in DD)	LUMPSUM	1		
7	CRANE SERVICES :				
7.1	At the written request of ship's staff to provide as and when required shore crane services for lifting of ship's items provisions etc on board. Quote charges inclusive of slings and riggers estimated requirement 3 hrs daily. (this is not applicable for the items supplied by the yard and for the services provided by the yard). Yard must get the total time crane used for each occasion certified by ship's staff, showing therein date and hrs. Of each crane usage.	DAY	10		
8	GAS FREE / HOT WORK CERTIFICATES :				
8.1	Yard to arrange govt / authorised explosive inspectors for obtaining gas free certificate / hot work certificate for compartments / tank on board as required during the repair period. It may also be required to certify two compartments at a time for carrying out the jobs concurrently.	LUMPSUM	1		
9	TELEPHONE CONNECTION :				
9.1	Yard to provide one temporary telephone onboard vessel for Master's use during the entire repair period (international call subscriber dialing barred) for entire repair period.	LUMPSUM	1		
10	FRESH WATER :				
10.1	Yard to supply fresh water for ship's domestic use as and when required. Approx 10T daily	TON	900		
10.2	300 tons supply at final stage prior sailing out.	TON	300		
11	COOLING WATER :				
11.1	Sea water cooling connections -3 nos for AC, LT cooler, PM, AC etc. Pressure to maintain 2 to 3 bar. Connection /disconnection may be req whenever necessary. Yard to supply cooling water for fridge and/or air conditioning units during the time when vessel is in dry dock consider 30 tons per day (supply through one line). Please Note: In case cooling water supply as above is common with fire main line, yard to maintain adequate pressure in fire main line at all times.	LUMPSUM	1		
12	COMPRESSED AIR :				
12.1	Yard to supply compressed air for ship's pneumatic tools/equipments during the entire repair period	LUMPSUM	1		
13	BALLAST WATER :				
13.1	Yard to fill ballast water using yard's pumps in 24 ballast tanks. Estimated quantity of ballast water to fill in 1500 tons. Note : yard to quote rate including rigging / unrigging of yard's pumps and due attendance during the ballasting operation.	LUMPSUM	1		
14	DE-BALLASTING :				
14.1	Yard to de-ballast water using yard's pumps for de-ballasting & estimated quantity of ballast water to pump out 1400 tons in 24 number of ballast tanks . Note : yard to quote rate including rigging / unrigging of yard's pumps and due attendance during the deballasting operation.	LUMPSUM	1		
15	WOODEN PLUGS :				

15.1	Yard to provide and fix 20 numbers of wooden plugs with spouts to scuppers and pipes of the vessel in drydock	PER PLUG	20		
16	BERTH TRIALS :				
16.1	Yard to arrange and provide all needful and assistance for successful berth trials after undocking from drydock.	LUMPSUM	1		
17	SCRAP REMOVAL :				
17.1	Yard to arrange for removal of scrap/condemned stores from all decks on daily basis. Scrap estimated to be removed is 10 tons. The value of the scrap is to be considered and deducted while quoting this cost.	LUMPSUM	1		
18	PLASTIC PROTECTION:				
18.1	Plastic sheets to be placed on entire alleyways, Port and Stbd sides on all decks in the beginning of the drydocking to protect the vinyl sheets or carpets etc. Plastic sheets to be also placed on the floor and or covering equipment etc before commencing any work or repairs jobs in the accommodations and labs. Total approx Area 800 sq.m.	LUMPSUM	1		
19	DRYDOCKING :				
	Vessel to be safely docked in a suitable drydock on blocks of adequate height. 1) Please note work to be continued on weekends and holidays. 2) Above should include charges for all required shoring & diver. 3) While estimating total time required in dry dock, work specified in our total repair scope should be taken into consideration.	LUMPSUM	1		
20	STAINS REMOVAL :				
	All oil and grease stains on shipsides should be removed before commencing painting. Chemicals etc as may be required are to be supplied by the yard. Estimated area for stain removal is 400 sq mts Estimated requirement of chemical is 250 ltrs	LUMPSUM	1		
21	GRIT BLASTING AND PAINTING :				
	Transducer 30 nos., marked in the dock plan to be kept clear while cleaning and grit blasting and grease coating to be applied while painting.				
	Grit blasting to be carried out to sa2.5 standard and edge of grit blasted areas to be smoothed back to a firm edge.				
	Grit sweeping to be carried out to sa1.0 standard and edge of sweeping				
	All ventilation intakes on the main deck to be covered prior grit blasting. All port holes to be covered before grit blasting and during painting and cleaned after completion of works.				
	Areas to be smoothed back to a firm edge				
	Owner's representative will inspect all blasted areas before application of any paint.				
	Total Hull surface area is 5400 sqm. Above water area is 3350 sqm and under water area is 2050 sqm.				
	Note: while painting the super structure all the stencil marking and light shades are to be covered with masking tapes. All port holes on the ship side and super structure to be covered while blasting / painting total 187 nos.				
21.1	ABOVE WATER AREA : From 5.6 mtrs draft to main deck (area 3350 sqm). Area to be grit blasted to SA 2.5	LUMPSUM	1		
	Estimated area for grit blasting is 2500 sqmtrs. Area to be grit blasted to SA 2.5				
	Estimated area for grit sweeping is 600 sqmtrs				
	HP washing (3350 sqm)				
	FW hose down two times (6700 sqm)				
	Painting total 5 full coats(paint application - airless spray				
	1 coat of rust coverter paints -50 microns (3350 sqm)				
	2 coats of CRP anti corrosive - 100 microns each coats (6700 sqm)				
	2 coats of CRP ship side glossy red/ enamel gulf red -50 microns each coat) (6700 sqm)				

21.2	UNDER WATER AREA: Upto 5.6 mtrs draft (Area 2050 sqm)	LUMPSUM	1		
	HP washing (2050 sqm)				
	Grit blasting to sa 2.5 (1000 sqm)				
	FW hose down two times (4100 sqm)				
	Painting total 5 full coats (paint application - airless spray) (2050 sqm)				
	1 coat of rust converter paints -50 microns (2050 sqm)				
	2 coats of CRP anti corrosive - 100 microns each coats (4100 sqm)				
	2 coats of antifouling - 50 microns each coat (4100 sqm)				
21.3	WHITE SUPER STRUCTURE: Port and stbd 350 sq. Mtrs each side, power tooling hydroblasting , 2 coats finished type 75 microns each	LUMPSUM	1		
	HP washing (700 sqm)				
	Power tool hydroblasting (700 sqm)				
	Fresh water hose down one time (700 sqm)				
	Painting full 2 coats (paint application - airless spray)				
	2 coats of CRP primer (1400 sqm)				
	Full area with 2 coats of CRP white (1400 sqm)				
21.4	FUNNEL (AREA 250 MSQ)	LUMPSUM	1		
	HP washing 250 m2				
	Grit blasting to sa 2.0 (150 m2)				
	FW hose down 1 time 250 m2				
	Painting full 2 coats 500 m2 with all markings on funnel.				
21.5	Following marking of port and stbd fwd and aft to be chipped scrapped wire brushed and painted	LUMPSUM	1		
	Ships name - in English and in Hindi				
	Port of registry in English and in Hindi				
	Bow thruster - Symbols				
	Draft marks in English				
	Plimsol marks - in English				
21.6	GRATING ON THE MAIN DECK AFT BELOW A FRAME TO BE GRIT BLASTED AND PAINTED APROX. AREA - 38 SQ. MTRS	LUMPSUM	1		
	Estimated area for grit sweeping - 100 sqmtrs				
	HP washing - 50 sqmtrs				
	Spot grit blasting to sa 20- 25 sqmtrs				
	FW hose down 1 time - 50 sqmtrs				
	Painting full 2 coats - 100 sqmtrs				
22	To remove re-fit and seal bottom plugs 42 nos to carry out satisfactory vacuum test as per class defective bottom plugs to be replaced (yard supply)	Nos	42		
23	Remove manhole covers and box up same with new rubber packing joint for ballast/ fresh water tanks/oil tanks, void spaces and trunking area.				
23.1	Estimated manhole covers to be opened /boxed up is as required	NOS	50		
23.2	To renew damaged stainless steel studs 23mm dia for approx 300 nos studs and nuts -300 nos	NOS	300		
23.3	To replace missing cap nut for approx 500 nos	NOS	500		
23.4	Mud, oil sludge, oily water etc to be pumped out from tanks	LUMPSUM	1		

24	ANCHOR, CABLES ,CHAIN LOCKER AND WINDLASS FOLLOWING WORKS TO BE UNDERTAKEN ON ANCHOR /SURVEY ITEMS				
	ANCHOR CHAIN INFORMATION: Total length of chain: 509.8 mtrs. Dia of the chain: 48 mm Length of the link: 288 mm Breath of the link: 173 mm				
24.1	Cables and chain lockers (staging required) range down port and stbd anchor and cables in drydock cleaning with high pressure FW jet (each anchor is having 9 shackles).	LUMPSUM	1		
24.2	The chains to be calibrated and cert to be provided from class split pin of anchor joining shackles to be examined renewed if necessary with SS pinmarking to be done using SS band and by paint.	LUMPSUM	1		
24.3	Studs of cable to be checked to be refitted wherever found loose.	LUMPSUM	1		
24.4	Painting of anchors and cables with bituministic paint cables to be renewed (yard supply).	LUMPSUM	1		
24.5	Swivel of port and stbd anchor to be checked to be faired as reqd.	LUMPSUM	1		
24.6	Bow stopper to be chipped and painted (02 nos approx area : 04 sq mtrs) gypsy roller housing thinned down to be cropped & renewed	LUMPSUM	1		
24.7	Gypsy of both windlass to be chipped and painted approx area: 04 sq mtrs	M2	4		
24.8	Windlass break liner holding gypsy drum platings thinned down, same to be renewed. Plate thickness 16mm, 2500mm x 100mm for port and stbd sides	KG	100		
24.9	Port side windlass break handle supporting thinned down, same to be renewed. Thickness 16mm, 650mmx150mm	KG	100		
24.10	Brake liner to be checked / renewed as reqd of both windlass	LUMPSUM	1		
24.11	Both spurling pipe coaming to be chipped and painted area : 01 sqm	M2	1		
24.12	Windlass foundation plates, angles and bolts to be checked and renew if required.	LUMPSUM	1		
24.13	Spare anchor securing lashing plate clamps corroded and thinned down, same to be made as per size and fitted. Approx 12mmx3600mmx120mm	KG	50		
24.14	2 nos sheaves of bow stopper to be chipped painted and lubricated, chain locker to be demucked including sump descaling of chain lockers and painting with bituministic paint to be done	NOS	2		
24.15	01 spare anchor (03 tons weight) -to be removed from place. D-shackle to be freed flukes eased off anchor to be chipped/grit blasted & painted with epoxy/bituminous paint.	LUMPSUM	1		
24.16	Securing pins to be renewed if necessary	NO	1		
24.17	New handle to be fitted & over hauled for hand pumps for chain locker	LUMPSUM	1		
24.18	Windlass to be load tested & certificate to be provided	LUMPSUM	1		
24.19	Forepeak store both deck to be chipped & painted	LUMPSUM	1		
24.20	All winches & capstain greasing to be done & brake holding /rendering test to be done.	LUMPSUM	1		
25	ULTRASONIC THICKNESS MEASUREMENT AND RENEWAL OF PLATES/ALL ARE SURVEY ITEMS				
	To provide IRS approved gauging measurement to various areas such as main deck, F-deck, A-deck, B-deck and bridge deck, fpk stores lower and upper, super structure bulkhead, shell plating frames brackets and ballast tank & fresh water tank & hatch no 1 & 2 internal structure as required. Indicative locations are provided below:	POINTS	5000		
	Focsle deck: focsle deck floor plating gauging to be done, plate renewal if thickness less than as required. Plate thickness 8mm – 300 points				

	Bridge deck: fwd bridge deck walkaway plate and surroundings required gauging & renewal plate if thickness less than required. Approx area 70sqm 1800mm x 1800mm thickness of plate=8mm : 200 points			
	Main deck wooden planks to be removed, deep sea winch area, port and stbd station area to be gauged. Approx 45 sq m : 1000 points			
	Fpk store: upper fpk and lower store floor plating thickness gauging to be done, approx area 70sqm and plate thickness 08mm : 300 points			
	Chain locker port and stbd thickness gauging to be done. Apporx area 80sqm : 200 points			
	Bridge / forecastle deck super structure thickness measurement to be done. Approx area 77sqm plate thickness 6mm : 150 points			
	Main deck aft stbd side deck house to be gauged. Approx area 42sqm, plate thickness 8mm : 120 points			
	Fore castle and bridge tween deck space platings to be gauged. Approx area 200 plate thickness 8mm : 500 points			
	2nd deck fwd store space 60 sqm : 80 points			
	2nd deck midship accommodation space 100sqm : 150 points			
	2nd deck no. 2 cargo 200sqm : 300 points			
	2nd deck port aft rope store 60sqm : 100 points			
	3rd deck fwd store space 60sqm : 80 points			
	3rd deck stbd aft store space 60sqm : 80 points			
	4th deck fwd store space 50sqm : 80 points			
	4th deck fwd echo sounding space 20sqm : 50 points			
	Fwd rope store port side floor plate gauging required and plate renwel if thickness measurement less than required, approx area 12sqm, plate thickness 10mm : 50 points			
	Monkey island: substantial corrosion of plating on monkey island deck area same to be gauged for thickness measurement if required renewal(approx area : 150 sq mtrs) : 500 points			
	Gauging required on ctd winch deck area upto funnel, renewal of plating if required 20sqm plate thickness 8mm : 400 points			
	Ctd winch deck port side gauging required, approx area 25sqm thickness 8mm : 100 points			
	A-deck stbd side complete gauging required, renew plates if thickness gets less that required. 150sq m, plate thickness 8mm : 400 points			
	A-deck port side complete gauging required, renew plates if thickness gets less that required. 120sq m. Plate thickness 8mm : 400 points			
	B-deck port side complete deck plating pitting & corroded to be gauged deck area thinned down require gauging & renewal of plate a if required. Approx area= 35 sq mtr : 200 points			
	B-deck stbd side near gmdss battery room deck plate required gauging& renew if gauging reading getting less than required appro area 10 mtr sq : 100 points			
	Balloon hall top deck plating pitting & corroded to be gauged. Approx area= 40 sq mtr plate thickness 8mm : 100 points			
	In engine room all ballast tank top & do tank top & internal structure to be gauged. Plate thickness=8 mm : 50 points			
	In engine room ro plant deck plating to gauged and renewal as required. Thickness=8 mm approx area 60sqm : 150 points			
	Other miscellaneous locations - 4000 points			
26	STEEL RENEWAL & MISC. JOBS STEEL RENEWAL AREAS WITH APPROXIMATE QUANTITY.			
26.1	Hull area (10 tons) thickness : 10 mm if required by thickness gauging result	TON	10	
26.2	Superstructure (5 tons) thickness : 6 mm if required by thickness gauging result	TON	5	
26.3	Bottom plating (10 tons) thickness : 16 mm if required by thickness gauging result	TON	10	

26.4	Ballast tanks (5 tons) thicknessness : 10 mm if required by thickness gauging result	TON	5		
26.5	Deck floor platings, ladders, bulkheads and other miscellaneous jobs in various decks. Thicknessness : 08-10 mm if required by thickness gauging result. (indicative list below)	TON	15		
26.5.1	Focsle deck floor plate substantial corrosion and pittings, suspected plate renewal approx 15sqm. Plate thickness 8mm				
26.5.2	Fwd bridge deck walkaway plate and surrounding platings thinned & suspected plate renewal. Approx area 16000mm x 1800mm thicknessness of plate=8mm				
26.5.3	Main deck after removal of wooden sheething, suspected plate renewal approx area 5sqm				
26.5.4	Main deck: stbd side aft station deck floor plate substantial corrosion, suspected renewal plates aprox area 2sqm. Plate thickness 8-9mm				
26.5.5	Main deck around the deep sea winch & below the deep sea winch is thinned down, suspected plate renewal approx 5sqm, thicknessness=8mm				
26.5.6	Main deck: stbd side aft station deck floor plate substantial corrosion and thinned down, suspected renewal plates approx area 01 sqm, thickness 8-9mm				
26.5.7	Fpk store: upper fpk store port side floor substantial corrosion and suspected thinned down, renewal of plate, approx area 10sqm and plate thickness 08mm				
26.5.8	A-deck aft stbd side above dsw control room. Suspected plate completely thinned down needs renewal, approx plate renewal 25sqm. Plate thickness 8mm				
26.5.9	A-deck stbd side deck plating corroded suspected thinned down. To be renewed. Corroded plant box (2050mm x 1200mm x 670mm)				
26.5.10	Port side ctd winch deck area aft bulkhead thinned down and holed, same to renewed, approx 2 Sqm thickness 8-10mm.				
26.5.11	A-deck aft near jib boom end, suspected plate completely thinned down needs renewal, approx. plate renewal 10sqm. Plate thickness 8mm				
26.5.12	B-deck port side complete deck plating pitting & corroded & thinned down suspected renewal of plate. Approx area= 5 sq mtr				
26.5.13	Ctd wicnh deck port side suspected floor plate thinned down, complete renewal required. Approx 15sqm. Plate thickness 8mm				
26.5.14	Balloon hall top deck plating pitting & corroded & suspected renewal of plate approx area= 2 sq mtr plate thickness 8mm				
26.5.15	Vertical coaming support plate corroded and holed above ctd winch, 10mm, 4m				
26.5.16	Bridge deck port side light holding angle bars corroded and wasted, same to be renewed. 06mm x 200mm x 50mm - 01no				
26.5.17	Monkey island gps antenna holding plate corroded and wasted, same to be renewed. 10mmx400mmx100mm and holding pipe dia 01inchx l 300mm				
26.5.18	Monkey island railing pipe corroded and wasted, same to renewed. Dia 1.5inch x l 20000mm				
26.5.19	Oilwell crane platform climbing ladder detached by 01mtr from placed, same to fitted back.				
26.5.20	Antenna post near gps antenna port side supporting clamps corroded and wasted, same to be renewed. Angle bars 8mmx6mmx200mm				
26.5.21	Bridge front port side weather shied plate corroded and holed, same to be renewed. 12mmx600mmx300mm				
26.5.22	Bridge front stbd side weather shied plate corroded and holed, same to be renewed. 12mmx700mmx200mm				
26.5.23	Bridge front port and stbd side isps light stands corroded and wasted, same to be renewed. 10mmx200mmx300mm - 02nos				

26.5.24	Bridge wing port side search light stand to be repaired, holding clamps broken.
26.5.25	Bridge wing stbd side nav light door corroded, holed and thinned down, same to be renewed. 8mmx400mmx650mm
26.5.26	Bridge fwd stbd side railing vertical pipe holed, same to be renewed. Pipe dia 1.5 inch x l 250mm
26.5.27	Bridge deck stbd side near nav side light fish plate corroded and thinned down, same to be renewed. 10mmx1000mmx100mm
26.5.28	Bridge fwd midship grating lower bar corroded, same to be renewed. 6mmx1400mmx38mm
26.5.29	B-deck port side near life rafts fish plate to be renewed. 12mmx6000mmx100mm
26.5.30	B-deck stbd side near nav locker conduit pipe corroded and thinned down, same to be renewed. Ms pipe dia 01 inch x 4000mm
26.5.31	Focsle deck port side fw 16c air vent pipe corroded and thinned down. Same to be renewed. Pipe dia 2.5 inch x l 300mm
26.5.32	Focsle deck stbd side fpk tank ballast air vent corroded and thinned down, same to be renewed. Pipe dia 4.5 inch x l 300mm
26.5.33	Port side hawse pipe inside fpk store crack holed, same to be cropped and renewed, presently cementing done to restrict any leakage. 12mmx150mmx150mm
26.5.34	A-deck stbd side met lab wx tight door frame compression lips corroded and thinned down, same to renewed. 10mmx500mmx100mm
26.5.35	A-deck stbd side met lab wx tight door above water drainage channel corroded and wasted, same to be renewed. 10mmx1100x100mm
26.5.36	Fwd rope store bilge well plate completely corroded, holed and thinned down, same to be renewed. Bilge well dia 300mm, deep 300mm, thickness 10mm approx
26.5.37	A-deck stbd side near co2 room door above conduit pipe completely corroded and wasted, same to be renewed. Pipe dia 2 inch x l 4000mm
26.5.38	Port side pilot ladder securing eye(ring) to be renewed dia- 100mm
26.5.39	Balloon hall bulkhead port side deck lights holding stand corroded and thinned down, same to be renewed. Total 05nos. 10mmx200mmx150mm
26.5.40	Top of balloon hall safety railing port side completely corroded and thinned down, same to renewed. Pipe dia 01 inch x l 7000mm
26.5.41	Top of balloon hall port side antenna post supporting pipes corroded and thinned down, same to be renewed. Pipe dia 1.5 inch x l 3000mm
26.5.42	A-deck stbd side companion ladder steps corroded and need to renewed. 05nos steps 8mmx700mmx250mm
26.5.43	A-deck port side met lab outside port hole frame and bulkhead corroded and thinned down, same to be renewed. Bulkhead 6mmx600mmx200mm and port hole frame 10mmx600mmx100mm
26.5.44	A-deck to bridge deck companion ladder steps corroded and thinned down, same to renewed. 02nos. Steps, 8mmx700mmx250mm
26.5.45	Garbage drum lids corroded and thinned down, same to be renewed with handle. Dia 610mm 3mm plate thickness, 50mm lips. 10nos.
26.5.46	A-frame operating platform railing corroded and thinned down, same to be renewed. Pipe dia 1inch x l 12000mm and railing support flat bars 10mmx5000mmx60mm over all.
26.5.47	Aft station stbd side capstan operating lever assembly holding plate and angle support corroded,same to be renewed. Plate 10mmx450mmx250mm and angle support 10mmx400mmx400mm

26.5.48	Aft station stbd side steering gear vent flap corroded and thinned down, same to be renewed. 6mmx400mmx300mm
26.5.49	Aft station stbd side paint store vent flap corroded and thinned down, same to be renewed. 6mmx400mmx300mm
26.5.50	Aft station stbd side 01no. Pair bollard set corroded and thinned down, same to be renewed. Dia320mmx h 750mm, upper plate dia 400mm thickness 12mm. Should bear 157kn bollard pull.
26.5.51	Aft station stbd side paint store pulley arrangement plates corroded and thinned down, same to be renewed. 8mmx450mmx100mm
26.5.52	Aft station stbd side paint store hand holding rod corroded, same to be renewed. Round bar 18mmx500mm
26.5.53	Main deck stbd side fish plate corroded and thinned down, same to be renewed. 10mmx13000mmx100mm
26.5.54	Main deck stbd side colapsable railing pipes with eyes corroded and thinned down, same to be renewed. Pipe dia 1.5inch x L 1200mm - 05nos.
26.5.55	Metallic rope guard to be replaced at the end of the stern gratings. L=6m in the curved shape
26.5.56	Aft station port side rope store booby hatch butterfly nut locking plates and hinges corroded and wasted, same to be renewed. 8mmx100mmx50mm and 12mmx150mmx150mm
26.5.57	Aft atlas crane deck port side railing bent, same to be straightened.
26.5.58	Main deck port side ctd area on aft bulkhead, 01no blanked drain pipe corroded and wasted, same to be removed from place.
26.5.59	Drainage line a-deck to ctd winch deck port side completely corroded and wasted, same to be renewed. Pipe dia 2 inch x 3000mm
26.5.60	Jib boom aft end trunk bottom plate corroded and wasted, same to be renewed. 10mmx1200mmx600mm
26.5.61	Midship atlas crane fwd bulkhead deck light stand corrded and thinned down, same to be renewed 10mmx300mmx150mm - 02 nos.
26.5.62	A-deck aft stbd side safety railing pipes corroded and holed, same to be renewed. Pipe dia 1.5inch x L 3000mm, dia 1.5inch x l 2000mm.
26.5.63	A-deck above met lab wx tight door bulkhead deck light stand corrded and thinned down, same to be renewed 10mmx300mmx150mm - 01 nos.
26.5.64	L/boat no. 1 and 3 davit supporting pipe corroded and wasted same to be renewed. Pipe dia 4.5 inch x L 3000mm
26.5.65	L/boat no. 2 and 4 davit supporting pipe corroded and wasted same to be renewed. Pipe dia 4.5 inch x L 3000mm
26.5.66	L/boat no. 2 and 4 davit to bulkhead supporting pipe corroded and wasted same to be renewed. Pipe Dia 4.5 inch x l 1800mm
26.5.67	A-deck balloon hall front stbd side fish plate corroded and thinned down, same to be renewed. 8mmx1500mmx100mm
26.5.68	CTD winch deck safety railing corroded and same to be renewed. Pipe dia 01 inch x 6000mm
26.5.69	Paint room floor plating corroded & wasted 5 x 10 m thicknessness 7 mm
26.5.70	Hold 1 & 2 floor plate suspected thinned down, to be gauged and renew plating if required.
26.5.71	Rope store floor plating found corroded 5 x 10 m thicknessness 7 mm
26.5.72	Scupper drain line of midship atlas crane deck towards main deck on stbd side choked, same to be cleared.

26.5.73	CTD winch area ceiling plate support corroded
26.5.74	Portable davit for mot ladder to be spot chipped & renewed as required
26.5.75	Deck plate to be renewed at b-deck store 10mmx1200mmx2000mm
26.5.76	Stern light wire supporting plate corroded and thinned down (2500mm x 50mm)
26.5.77	A frame levers supporting frame corroded (l-400mm,b-300mm,thickness-10mm) & (l-400mm,b-100mm) *2nos
26.5.78	2nd deck crew galley port side near port holes, ship side plate suspecting corrosion and required to be renewed. 10mm x 1500mm x 800mm and suspecting complete port hole to be renewed
26.5.79	2nd deck chemical lab stbd side port holes, ship side plate suspecting corrosion and required to be renewed. 10mm x 1500mm x 800mm
26.5.80	Focsle deck port side fwd fair lead supporting strengthening plate corroded and holed, same to be renewed. (10mm x 350mm x 500mm) x 2 sides
26.5.81	Aft station stbd side nat vent flaps plate corroded and thinned same to be renewed. (4mm X 400mm x 300mm) x 4 nos.
26.5.82	Aft station port side 14P ballast tank air pipe corroded and thinned down, same to be renewed. Pipe dia 4.5 inch x 400mm
26.5.83	Aft station port side 15C ballast tank air pipe corroded and thinned down, same to be renewed. Pipe dia 4.5 inch x 400mm
26.5.84	Aft station stbd side 14S ballast tank air pipe corroded and thinned down, same to be renewed. Pipe dia 4.5 inch x 400mm
26.5.85	Aft station stbd side 15C ballast tank air pipe corroded and thinned down, same to be renewed. Pipe dia 4.5 inch x 400mm
26.5.86	Baloon deck top sat-c dome holding foundation plate, corroded and to be chipped and renewal if required.
26.5.87	Bridge aft stbd side light holding angles corroded and wasted, same to be renewed. 6mm x 50mm/50mm x 300mm
26.5.88	Port side CTD winch deck head light holding angles corroded and wasted, same to be renewed. 6mm x 50mm/50mm x 300mm
26.5.89	CTD winch deck port side funnel bulkhead hand holding railing corroded and thinned down, same to be renewed. Pipe dia 1 inch x 1500mm
26.5.90	Near deep sea winch port side bulkhead light box sheared off from to be fixed.
26.5.91	Jib boom post port side near port side wet lab, at vertical ladder attachment plating got holed and thinned down, same to be renewed. 8mm x 500mm x 500mm
26.5.92	Jib boom post vertical ladder on port side square bars corroded and thinned down, same to be renewed. 05 no. Steps. 24mm x 300mm

26.5.93	Funnel deck port side aluminium ladder holding and locking arrangement plates to be chipped and renew as required.				
26.5.94	Main deck aft near deck house electric breaker box cover to fabricated and fitted. 2mm x 150mm x 150mm				
26.5.95	Aft deck house stbd side vent flap channels corrded and holed, same to be renewed. 6mm x 300mm x 300mm x 50mm				
26.5.96	Aft stbd side deck house u neck vent pipe corroded and wasted, same to be renewed. Pipe Dia 6 inch x 600mm				
26.5.97	Balloon deck aft heat expansion mushrrom vent plates corroded and thinned down, same to be chipped and renewed as required approx. 6mm x 1500mm x 1200mm				
26.5.98	Focsle deck aft goose neck pipe corroded and holed same to be renewsd. Pipe dia 2 inch 1500mm				
26.5.99	1) Main deck surrounding floor area near bunker hose connection & deep sea winch suspected holed/pitted. Water through which falling on 2nd deck (near E/RM entrance) through skylight area. Same water from 2nd deck falls on top of generators in E/RM. But presently area on 2nd deckhas been cemented which prevents water falling on top of generators. Rectification to be done rebuilt skylight on main deck near deep sea winch & on 2nd deck area near ECR entrance, it will rectify max. leakage. Surrounding floor plates below wooden deck to be cropped & renewed.				
26.5.100	Fwd FPK upper store port side anchor stowage pocket platings corroded and thinned down sameto renewed with strengthening plates/angles, plate thickness 10-12mm. Area 0.5sqm				
26.5.101	A frame ladder stbd side on main deck thinned down and corroded. Vertical ladder alongwith the fall protection frame to be replaced with new ladder (ms). Approx length 20m				
26.5.102	Main deck stbd side alleyway near hospital: deck plate seems to be damaged. Ut to be done and if required steel plate of 8mm thickness to be renewed. Approx area 15msq.				
26.6	Stern grating platform corroded and thinned down, same to be renewed. Foundation (platform) for the gratings to be strengthened (new MS bars to be welded) and new gratings to be placed in place of damaged gratings with nut and bolts. Approx area 45 sqm. Approx size of each grating 6mmx1200mmx 2000mm. Thickness of MS bars of the platform 16mm approx.	LUMPSUM	1		
27	LIFE SAVING APPLIANCES				
	LIFEBOAT NO 1, 2, 3 AND 4 LIFE BOAT – 04 NOS.: DAVIT / WINCH. L/B NO. 1 & 2 MAKE: DAVIT COMPANY BV MODEL: NDP 87.45/20 L/B NO. 3 & 4 MAKE: DAVIT COMPANY BV MODEL: NDP 62/16 LIFE BOAT MAKER: ROBERT HETECHE				
27.1	04 nos lifeboats to be landed ashore for maintenance	NOS	4		
27.2	Bilge pump damaged diaphragm for all 4 life boats damaged, same to be renewed.	LUMPSUM	1		

27.3	All 1 & 2 life boat canopy cover frame corroded need to be renewed dia=25 cm, l=30 mtrs	KG	20		
27.4	Life boat no. 1& 2 port both railings corroded dia=3 cm ; l=5 mtrs. To be renewed.	KG	20		
27.5	Life boat no 3 & 4 canopy cover frame corroded need to be renewed	KG	7		
27.6	All 4 lifeboats plugs thread to be checked / faired	LUMPSUM	1		
27.7	Water tightness of provision locker in all lifeboats to be checked	LUMPSUM	1		
27.8	To hand chip all corroded metal frames in all boats and apply one coat of primer and 2 full coats of CR paint	LUMPSUM	1		
27.9	Lifeboat bilge pumps in all 4 lifeboats to be overhauled for satisfactory operation	LUMPSUM	1		
27.10	Wooden chokes of life boat no1 2 3 &4 to be renewed (dim-155cms x 15cms x 5cms) material-wooden	LUMPSUM	1		
27.11	Life boat lowering instruction fittings to be renewed (for all 4 lifeboats)	LUMPSUM	1		
27.12	Lifeboat & launching appliances thorough examination to be carried out.	LUMPSUM	1		
27.13	8no of crutches to be checked and renewed as required (semicircular shape dia 25cms with connecting 15cms)	NOS	8		
27.14	All 38 nos. Pulleys (l/boat 1 & 2- 20 nos and 3 &4-18 nos) and 8 floating blocks to be removed and overhauled worn out bushes to be renewed on completion. All davits to be hand chipped power brushed and painted with one coat of primer and missing grease nipples to be provided (20 nos)	LUMPSUM	1		
27.15	Span beam to be renewed for all 4 lifeboats dimension length 600cms & dia 16cms(hollow pipe)	LUMPSUM	1		
27.16	Brake assembly to be renewed for all 4 lifeboats dimension 370cmsx14cms	LUMPSUM	1		
27.17	Lifeboat falls drum to be renewed (outer dia 66cms dist between drums 35cms & thicknesses 4mm)(for lifeboat no 1 2 3 & 4)	LUMPSUM	1		
27.18	Lifeboats resting plate and wooden chokes to be renewed, 08 nos of resting plate to be changed(200mm x 200mm, thickness-15mm), wooden block (200mm x 150mm x 70mm with cushion)	KG	40		
27.19	L/boat no. 2 platformaft supporting pipe corroded and thinned down, same to be renewed. Pipe dia 3 inch x 1000mm	KG	20		
27.20	All l/b limit switch and base plate to be checked & renew if nessesary.	LUMPSUM	1		
27.21	Complete servicing & inspection of all 4 lifeboats, davits, winches etc for carrying out annual and five yearly surveys.	LUMPSUM	1		
27.22	New safety helmets with straps etc are to be supplied (white colour 40 nos, yellow / blue 10 nos)	NOS	50		
27.23	Life jackets to be cleaned.	NOS	50		
28	HOLD NO.1 & 2, PAINT STORE AND AFT ROPE STORE NOTE: NO-1 HATCH OPENING SIZE: 6900 MM X 3400 MM WITH 02 PONTOONS NO-2 HATCH OPENING SIZE : 4600 MM X 4000 MM RUBBER PACKING SIZE:: 600 MM X 400MM				
28.1	HOLD NO 1 : Both pontoons to be grit blasted thoroughly & painted no-1 hatch opening size: 6900 MM X3400 MM (2 PONTOONS)	LUMPSUM	1		
28.2	Hold no. 1 stbd side bilge not taking suction same to be rectified.	LUMPSUM	1		
28.3	Hold no.1 and no.2 compression bar weariness to be checked and rubber retaining channel renewal if required and rubber packing to be changed. Rubber packing ship supply.	LUMPSUM	1		
28.4	Pumping out arrangement for paint room and aft rope store, pumping out to be carried out.	LUMPSUM	1		

28.5	Port side pontoon aft 01 no. Cleat sheared off from place same to be renewed.	LUMPSUM	1		
28.6	Vessels hatch covers of no1 & no2 holds to be operated for opening closing and checked for following				
28.6.1	A- Alignment of hatchcover	LUMPSUM	1		
28.6.2	B- Wear down of compression bar	LUMPSUM	1		
28.6.3	C- Watertightness of hatchcover	LUMPSUM	1		
28.6.4	D-Condition of rubber retaining channel	LUMPSUM	1		
28.6.5	E- Hatch cleats	LUMPSUM	1		
28.6.6	F-Drain pipes to be cleaned and tested	LUMPSUM	1		
28.7	No2 hatch drain channel clogged and water accumulation taking place same to be rectified damaged packing to be renewed	LUMPSUM	1		
28.8	Following sky light openings to be made water tight (a) on main deck near P/S entrance to accommodation, (b) B deck fwd side, c) forecastle deck	LUMPSUM	1		
28.9	Coaming to be made around BT room skylight opening (2700 mm x 2000 mm) on focsle deck fwd & around engine room sky light opening (1200 mm x 1200 mm on main deck handles to be fitted on all three skylight for handling all sky light opening damaged packing to be renewed	LUMPSUM	1		
28.10	On completion of the above jobs hatch covers to be presented for satisfactory operation and water tightness to owners/surveyors chalk test of rubber packings with compression bar to prove perfect before hose test by water	LUMPSUM	1		
28.11	Hold no 1 & 2 pontoon stoppers corroded and thinned down, same to be renewed. Total 08 nos (1500mm x 80mm). Same to be renewed. Safety pins also to be provided for the same.	Lumpsum	1		
28.12	L/boat and l/raft embarkation ladder water proof canvas covers torned off and damaged, same to be fabricated and renewed. Material-water proof canvas. Area to cover - 03 sq mtr - 04nos.	Lumpsum	1		
29	FRESH WATER TANKS : 15 C,16 (P, S & C) SURVEY ITEMS				
29.1	Cleaning of port, centre and stbd drinking water tanks (total: 312 cu.m) hosing down with fresh water	M3	312		
29.2	Tanks to be hand chipped wherever found rusted (staging required)	M2	500		
29.3	Chipped areas to be primered with polyamide epoxy (staging required)	M2	500		
29.4	Fresh water tanks (4 nos) to be washed cleaned & dried for painting fresh water tanks to be painted with two coats of approved epoxy paints suitable for drinking water tanks as required by the paint manufacturer`s specifications blowers may be provided for this job fresh water tanks to be washed with fresh water prior to refilling with fresh water for consumption on completion ofthe job.	LUMPSUM	1		
29.5	Fresh water tank (16p, 16s & 16c) suction valves to be overhauled/renewed specification of valves- 3 nos of gate v/v 15"bore material bronze & working pressure 5 bars	LUMPSUM	1		
29.6	Examination and testing of all fw tanks to be shown to surveyor and any recommendation to be made good to his satisfaction	LUMPSUM	1		
30	BALLAST TANK CLEANING / CHIPPING /PIPE LINES (STAGING REQUIRED)				

30.1	33 nos. Size of valve 125 mm & 09 nos of size of valve 175mm ballast line valve (globe type) are to be overhauled complete ballast lines to be pressure tested VJ coupling to be renewed where necessary if we fill up 13 p & s and 14 p & s more than 50% capacity. VJ coupling required to be renewed (yard supply)	NOS	42		
30.2	Fore peak tank permanent pumping out arrangement to be made as same suction/ discharge is not taking place through ballast/deballast system	LUMPSUM	1		
31	TANKS FOR INSPECTION & REPAIRS/SURVEY ITEMS: 24 NOS BALLAST TANKS: ALL TANKS MANHOLE COVERS TO BE OPENED AND BOXED UP ON COMPLETION OF THE BELOW MENTIONED JOBS.				
31.1	Fresh water & ballast tanks to be cleaned after opening plug and draining. Water may be required to be pumped out in case all the water does not get drained off. All tanks to be hydro-blasted to remove rust and solid mud etc.	LUMPSUM	1		
31.2	All manhole covers' rubber packings, nut & bolts, manhole handles for lifting them (whichever are damaged) to be renewed	LUMPSUM	1		
31.3	UTM of all suction mouth area in the tanks and bilge well areas to be carried out and plates to be renewed as required.	LUMPSUM	1		
31.4	The v-j couplings of ballast tank lines to be checked for loose and condition of the ballast line to be checked and damaged one required to be renewed. (v-j coupling ship's supply)	NOS	10		
31.5	Examination and test of all ballast tanks to be shown to surveyor and any recommendation to be made good to his satisfaction	LUMPSUM	1		
31.6	Cleaning, demucking, hp washing, spot chipping and painting (2 coats of coal tar epoxy) to be done in the following ballast tanks:	LUMPSUM	1		
	TANK NAME	CAPACITY (CBM)			
	1. FPK	91.70			
	2. 2C	56.14			
	3. 3P&3S	39.57 EACH			
	4. 4P&4S	42.38 EACH			
	5. 5P&5S	76.18 EACH			
	6. 6P&6S	58.18 EACH			
	7. 7P&7S	33.64 EACH			
	8. 8P&8S	22.14 EACH			
	9. 9P&9S	19.83 EACH			
	10. 10P&10S	33.92 EACH			
	11. 13P&13S	47.81 EACH			
	12. 15P& 15S	39.34 EACH			
	13. 14S-	153.77			
	14. 14P	143.75			
	15. NO.15 (C) AFT PEAK	113.78			
32	WODDEN SLEEPERS ON MAIN DECK				
32.1	Damaged wooden sleepers are requiring to be replaced. New sleepers of good quality hard wood for heavy deck work to be supplied by yard & installed size= 2.5inch thk x 6inch width of various lengths at various locations, all wooden sleepers to be properly fitted with studs and nuts welded to plating. Total deck area 640sq mtrs (40x16).	M2	640		

33	A-FRAME				
33.2	'A' frame to be manually chipped & painted (3 coats) approx area 30 sq meter [staging required upto 12m] 	LUMPSUM	1		
33.3	Hydraulic system of 'A' frame to be checked & renewed if required (pipe dia 22mm & approx length renewal 15 mtrs) and joysticks 2 nos to be serviced overhauled and fitted back and tested. Damaged parts to be replaced.	LUMPSUM	1		
34	AIR VENTILATORS				
34.1	Following air vents to be removed, sand swept, painted with one coat of primer and two coats of finish paint and fitted with new joints, nuts & bolts. Details of the vents as follows:				
34.1.1	Fuel oil tank air pipes-2 nos	NOS	2		
34.1.2	Ballast tank air pipes-8 nos	NOS	8		
34.1.3	Fresh water tank air pipes-5nos	NOS	5		
34.2	Mesh & spark arrestors				
34.2.1	50 MM DIA	MM	50		
34.2.2	75 MM DIA	MM	75		
34.2.3	100 MM DIA	MM	100		
34.2.4	125 MM DIA	MM	125		
34.2.5	150 MM DIA	MM	150		
34.3	Ball of approved type according to pipe sizes				
34.3.1	50 MM DIA	MM	50		
34.3.2	75 MM DIA	MM	75		
34.3.3	100 MM DIA	MM	100		
34.3.4	125 MM DIA	MM	125		
34.3.5	150 MM DIA	MM	150		
35	FORWARD MAST				
35.1	Horn & motor base plate to be renewed (approx dim-50cmsx40cmsx8mm)	LUMPSUM	1		
35.2	Guard railing of lower platform for forward masthead corroded and holed (length-620mm; dia-42mm). Same to be renewed.	LUMPSUM	1		
35.3	On fwd mast conduit pipe line corroded same to be renewed. Pipe dia 2inch x length 12000mm	LUMPSUM	1		
36	MAIN MAST,RADAR MAST AND MONKEY ISLAND				

36.1	Chipping & painting required for supports including walkway & railing [staging required] of met dome.	LUMPSUM	1		
36.2	On monkey island – meteorological observation dome structures supports and other masts to be sand blasted chipped and painted approx surface area : 20 sqm various conduit pipes/boxes are corroded at various levels-heights same to be removed or renewed various pipe/angle/flat bar supports to various structures on the mast to be renewed as required. Staging required for doing various jobs on monkey island 15mtrsx4mtrsx4mtrs	LUMPSUM	1		
					
37	MOORING WINCHES AND ACCESSORIES				
37.1	Rollers on dead-man (2 nos) on forecastle and fairlead rollers on foc'sle (4 nos) to be opened up for inspection axle/bush pin to be checked, greased & boxed back, circular cover plate to be made & fitted in place.	NOS	2		
37.2	Rollers /base plating below rollers to be thoroughly chipped/primered and painted before fitting back the rollers 08 nos	NOS	8		
38	NAVIGATIONAL /RADIO/ELECTRONIC EQUIPMENTS				
38.1	Helm indicator to be checked by surveyor	LUMPSUM	1		
38.2	Echo sounder JFE 582: Transducer surrounding area to be cleaned/greased	LUMPSUM	1		
38.3	Antenna feeder wire from antenna to radio room bulkhead to be cleaned	LUMPSUM	1		
38.4	Pa system to be serviced for optimum performances as audio output is very low	LUMPSUM	1		
38.5	Gyro compass annual servicing maker: Anschutz Model: Digital Gyro STD 22 Steering gyro repeater on port side not working (not synchronizing with main gyro heading). To be rectified.	LUMPSUM	1		
38.6	New DGPS (same model of existing onboard c-nav 3050 DGPS) for DP system including antenna, cables, display etc with 1 year correction service subscription to be procured , installed, commissioned and interfaced to the Kongsberg DP system.	LUMPSUM	1		
38.7	Supply, installation & commissioning of anemometer sensor & display of Kongsberg DP system. (parts details provided in spares list).	LUMPSUM	1		
38.8	SRT survey to be carried out, following equipment annual inspection/test to be done:	LUMPSUM	1		

	<p>1. EPIRB — 02 nos. Annual inspection Make: ACR electronics. Inc. Model: Global fix pro 406mhz GPS EPIRB sr no. 1241 & 1232</p> <p>2. SART — 02 nos. Annual inspection, Make: Memurdo Model: S4 rescue sart, sr no. S4/1457203</p> <p>3. AIS annuals testmaker:- IRC model: JHS-180 Sr no. Bb42986</p>				
38.9	Antenna arrangement for Christmas tree corroded at many places need to be repaired.	LUMPSUM	1		
38.10	Trial of navigation and communication equipment- all navigation and communication equipment to be checked for proper operation and functionality by OEM / OEM authorized engineers. If any fault is identified, same to be rectified.	LUMPSUM	1		
39	FIRE FIGHTING APPLIANCES				
39.1	Fire line relief valve to be overhauled and tested to 65 kg	NOS	1		
39.2	All fire hydrant globe valves (size 100k) to be overhauled and boxed back leaking and damaged valves to be renewed (at 23 locations)	NOS	100		
39.3	Bridge stbd side fire hydrant line near relief valve corroded and thinned down same to be renewed. Pipe dia 2.5 inch x 300mm	KG	5		
39.4	Focsle deck fire hydrant line corroded and thinned down, same to be renewed. Pipe dia 2.5 inch x L 200mm	KG	5		
39.5	Focsle deck port side aft l/buoy si light stand corroded, same to be renewed. 6mmx250mmx160mm	KG	5		
39.6	F-deck alleyway fwd fire hose box bottom corroded and thinned down, same to be renewed 03mmx600mmx250mm	KG	5		
39.7	A-deck port side alleway fire hose box bottom plating and angle frame corroded and wasted, same to be renewed. 4mm x 800mm	KG	5		
39.8	A-deck stbd side below boat fire hose box support angles corroded and wasted, same to be renewed. 8m x 50mm x 500mm	KG	5		
39.9	2nd deck fire hydrant near crew galley blanked no fire hydrant found, same to be renewed. Spare Fire hydrant in lsa/ffa store.	NO.	1		
39.10	02 nos of scba cylinders hydrostatic pressure test – 5 yearly Make: SHM Working pressure: 300 bars type: AETHER	NOS	2		
40	CTD DAVIT/DEEP SEA WINCH/JIB-BOOM CRANE				
40.1	Stbd side A-frame operating platform railing corroded and thinned down, same to be renewed. Pipe dia 1 inch x l 12000mm and railing support flat bars 10mmx5000mmx600mm over all	LUMPSUM	1		

40.2	Stbd side aft A-frame vertical ladder corroded and thinned down, same to be renewed. 10mm thickness 7000mmx80mm and square bar 24mmx3000mm over all	LUMPSUM	1		
40.3	Stbd side fwd A-frame vertical ladder corroded and thinned down, same to be renewed. 10mm thickness 7000mmx80mm and square bar 24mmx3000mm over all	LUMPSUM	1		
40.4	Stbd side A-frame foot step corroded and thinned down, same to be renewed. Thickness plate 10mm, 700mmx400mm.	LUMPSUM	1		
40.5	Stbd side A-frame boom vertical ladder corroded and thinned down, same to be renewed. 10mmx6000mmx80mm, square bars 24mmx1800mm	LUMPSUM	1		
40.6	CTD davit to be grit blasted/hand chipped and to be painted.	LUMPSUM	1		
40.7	CTD davit arm foundation plates, angles and nut bolts corroded, to be chipped and suspected thinned down, if required same to be renewed. Foundation plate thickness 12mm and approx area 12 sqm. 2 nos foundation plates to be replaced.	LUMPSUM	1		
40.8	Main deck core gantry to be chipped and wasted parts to be renewed	LUMPSUM	1		
40.9	Jib-boom crane: All structural members to be grit blasted/hand chipped and apply two coats of primer and two coats of finish ADFT 75 micron (staging may be required upto 10m height)	LUMPSUM	1		
					
40.10	CTD A frame: wooden fenders 2 nos are to be made and installed. Size 200mm x 70mm x 80mm.	LUMPSUM	2		
40.11	2 nos Atlas cranes to be serviced, oil leakage from the hydraulic hoses to be arrested, corroded parts to be renewed.	LUMPSUM	2		
41	SURVEYS				
41.1	Docking survey	LUMPSUM	1		

41.2	<ul style="list-style-type: none"> -Renewal survey of following certificate -Cargo ship safety construction certificate -Cargo ship safety equipment certificate (SEQ) -Cargo ship safety radio certificate (SRT) -Compliance to AFS certificate -International air pollution prevention certificate -International loadline certificate -International oil pollution prevention (IOPP) cert. -International sewage pollution prevention cert. -Special purpose ship (SPS) - Safety certificate continuous survey hull -Intermediate surveyannual survey -Continuous survey machinery -Dynamic positioning system - annual survey - Tail shaft (oil lubricated), port - Tail shaft (oil lubricated), starboard -Dynamic positioning system - special survey 	LUMPSUM	1		
41.3	Ships bottom inspection	LUMPSUM	1		
41.4	MOT & ACCM ladder load test	LUMPSUM	1		
42	MISCELLANEOUS				
42.1	Full ship pest control fumigation to be carried out accommodation (volume for disinfestation/fumigation) (including alleyways, galleys, pantries, toilets, stores, mess, labs and common rooms and all spaces other than those used for cargo and heavy boatswains stores) - 4700cbm holds and twin decks (volume for disinfestation) – 730 cbm. Chemicals to be used should be safe for electronic instruments onboard.	M3	5430		
42.3	All toilets exhaust system not effective, same to checked in all accommodation area and to rectify.	LUMPSUM	1		
42.4	Light weight water proof canvas or rexine covers (exact size to be measured onboard)to be fabricated to the required size for 02 nos. CTD winch, CTD operating joystick position and deep sea winch to protect from the weather. Approx volume 10cbm overall	Nos	2		



43	SOUNDING PIPES/STRIKER PLATE/SUCTION PIPES (DB TANKS, PEAK TANKS, COFFERDAM)				
43.1	All sounding pipes 26 nos striker plates 26 nos & suction pipes inside ballast tanks(22 nos) of peak tanks Cofferdams to be checked for corrosion if reqd portions to be cropped and renewed renewal expected : sdg pipe total length may require renewal : 20 mtrs x 5 cms dia pipe striker plate : 30% all sounding pipe covers with chain should be in location in good working condition & those which are missing to be fitted by new ones	LUMPSUM	1		
44	SACRIFICIAL ZINC ANODES				
44.1	All sacrificial zinc anode to be cleaned if reqd to be renewed new anodes to have analytical certificates total nos - 66 (size - 350 x 100 x 50 mm) each bar	NOS	66		
44.2	Anticipated anodes to be change in ballast tanks 50. Yard supply	NOS	50		
45	PORT HOLES MAINT. & RENEWAL				
45.1	Rubber packing & compression bar thinned down same to be renewed as mentioned below: Chalk test and hose test to be carried out for satisfactory water leakage rectification (labs and cabinsare included). 1. FIRST DECK (Below Main Deck) -Circle Shape - 25 NOS 2. MAIN DECK- CIRCLE SHAPE- 57NOS 3. F-DECK- RECTANGLE SHAPE - 56 NOS 4. F-DECK-RECTANGLE SHAPE- 8 NOS (Winch Control Room) 5. A-DECK-RECTANGLE SHAPE-36 NOS 6. B-DECK-RECTANGLE SHAPE-12 NOS	NOS	194		
46	ACCOMODATION DEFECTS				
46.1	F-deck cabin no. 453 copper fresh water line holed and leakage, same to be renewed. Copper dia 35mm x l 3000mm pipe line should hold 4bar pressure. Presently temporarily leakage arrested.	LUMPSUM	1		
46.2	F-deck cabin no. 453 ceiling panel corroded, same to be renewed. 1800mm x 1200mm	LUMPSUM	1		
46.3	Main deck stbd side wet lab water leakage from ceiling, for same ceiling panels to be removed andleakage point to be identified. Suspected leakage due to deck head plates corroded and water seepage from cabin no. 455 bath room. Ceiling deck plate is corroded. Plate to be renewed around4mx4m and ELO bathroom floor and sides to be made watertight.	LUMPSUM	1		

46.4	Main deck port side wet lab water leakage from ceiling, for same ceiling panels to be removed and leakage point to be identified. Suspected leakage due to deck head plates corroded and water seepage from CTD winch deck and EMG. Gen room. Same to be rectified.	LUMPSUM	1		
46.5	Cabin no. 455 bathroom complete cementing and tiling to be done. 2000mmx1400mm	LUMPSUM	1		
46.6	B-deck fwd alleyway vinyl sheeting damaged, same to renewed. Area 900mmx3000mm.	LUMPSUM	1		
46.7	Main deck stbd side alleyway near hospital vinyl sheeting damaged, same to renewed. 900mm x 2000mm	LUMPSUM	1		
46.8	Main deck near cabin no. 537 vinyl sheeting damaged, same to be renewed. 900mm x 2000mm	LUMPSUM	1		
46.9	Main fwd deck common toilet port and stbd side entrance door foot holding vertical plates corroded and wasted, same to be renewed. 6mm x 800mm x 300mm	KG	10		
46.10	Main deck fwd common toilet fwd bath room door bottom gi sheet damaged front and back side, same to be renewed. 2mm x 750mm x 600mm	KG	1		
46.11	Main deck fwd common toilet fwd bathroom door support bulkhead/partition corroded and thinned down. Same to be renewed. 6mm x 400mm x 500mm.	KG	1		
46.12	Main deck stbd side entrance wooden door lock and conference room door lock with the handle are to be replaced.	NOS	2		
46.13	F-deck midship stair case alleyway near door vinyl sheeting damaged, same to be renewed. 800mm x 1000mm	LUMPSUM	1		
46.14	Off galley port side ceiling exhaust mesh missing, same to fabricated to the size and fitted back. 500mmx 400mm	LUMPSUM	1		
46.15	Galley port side port hole frame corroded and sheared off from place, same to be repaired and fit	LUMPSUM	1		
46.16	Off galley near sink tiles broken, same to be fitted. 300mm x 800mm	LUMPSUM	1		
46.17	Off mess room fwd port side port hole bottom plywood damaged, same to be renewed. 12mm x 720mm x 480mm	LUMPSUM	1		
46.18	Off mess room stbd side cup board drawer broken, same to be repaired. 130mm x 500mm x 500mm	LUMPSUM	1		
46.19	Off mess room dining table cloth/fancy plastic cover sheet to be replaced for all tables. 1200mm X 1400mm over all.	LUMPSUM	1		
46.20	F-deck fwd common toilet port side WC flush water line tap corroded. Same to renewed. 0.5 inch SS tap to be used.	LUMPSUM	1		
46.21	F-deck stbd side toilet bathroom partition door frame bottom corroded. Same to renewed. 6mm x 150mm x 600mm	LUMPSUM	1		
46.22	Main deck cabin no. 546 commode cracked, same to renewed.	LUMPSUM	1		
46.23	Main deck stbd side wire open at top of bulkhead, same to panned. Area 300mm x 900mm	LUMPSUM	1		
46.24	Main deck fwd common toilet port side 01 no door of bathroom not closing fully, same to be repaired.	LUMPSUM	1		
46.25	Main deck aft common toilets 01 no. Bathroom door not closing fully, same to be repaired.	LUMPSUM	1		
46.26	B-deck computer lab inside DP electrical panel room wires hanging and panel removed, same to tied up and panel to fix back in place.	LUMPSUM	1		
46.27	B-deck toilet scupper not working, same to be rectified.	LUMPSUM	1		
46.28	A-deck stair case alleyway aft bulkhead skirting required. 2500mm x 300mm	NOS	1		
46.29	A-deck connecting port stbd alleyway fwd bulkhead skirting required. 8000mm x 300mm	NOS	1		
46.30	A-deck connecting port stbd alleyway aft bulkhead skirting required. 3000mm x 300mm	LUMPSUM	1		
46.31	Deputy scientist cabin bathroom floor tiling to be done. Area 2.5sqm	LUMPSUM	1		
46.32	Deputy scientist cabin bathroom wash basin drainage line corroded and wasted, same to be renewed. Pipe dia 1inch x L 1200mm should hold cold and hot water.	LUMPSUM	1		

46.33	A-deck stbd side near fire hose box bulkhead damaged, same to be reneved with fire proof bulkhead. 01 sqm.	LUMPSUM	1		
46.34	A-deck port side alleway bulkhead skirting required to be done. 3000mm x 300mm	LUMPSUM	1		
46.35	F-deck port side near cabin no. 422 alleway bulkhead damaged, same to be renewed. 2500mm x 700mm, fire material to be used.	LUMPSUM	1		
46.36	F-deck port side near cabin no. 422 bulkhead skirting to be done. 5000mm x 300mm.	LUMPSUM	1		
46.37	F-deckport side common toilet indian WC no. 3 not working, same to be made operational.	LUMPSUM	1		
46.38	F-deck port side common toilet bathroom no. 6 aft steel bulkhead corroded and thinned down, same to be renewed. 6mm x 600mm x 600mm	LUMPSUM	1		
46.39	F-deck port side common toilet bathroom no. 5 side steel corrugated bulkhead corroded and thinned down, same to be renewed. 6mm x 700mm x 300mm.	LUMPSUM	1		
46.40	F-deck cabin no. 414, faucet and flush water line choked, no water, same to be repaired.	LUMPSUM	1		
46.41	F-deck cabin no. 414, wash basin support angles to be provided. 6mm x 50mm x 500mm. L 1000mm	LUMPSUM	1		
46.42	F-deck cabin no. 414, cementing to be done at bottom of door to arrest water seepage into cabin.	LUMPSUM	1		
46.43	F-deck alleway near cabin no. 427 bulkhead bottom skirting and bidding required. 1.5inch x 2000mm	LUMPSUM	1		
46.44	F-deck stbd side common toilet 02 nos. Wash basin cracked, same to be replaced, wash basin of same Size yard supply.	LUMPSUM	1		
46.45	F-deck stbd side common toilet 03 nos. Wash basin support angles corroded and wasted, same to be Renwed. 8mm x 500mm x 50mm	NOS.	3		
46.46	F-deck stbd side common toilet no. 4 mid partition bulkhead corroded and thinned down, same to Be renwed. 6mm x 1000mm x 300mm	KG	10		
46.47	F-deck stbd side common toilet 02 nos. Indian wc's not working, same to be rectfied.	NOS.	2		
46.48	F-deck stbd side common toilet no.4 bottom door frame corroded and wasted, same to be renewed. 6mm x 300mm x 300mm.	KG	2		
46.49	F-deck cabin no. 453 inside cabin bulkhead skirting required. 2000mm x 300mm	LUMPSUM	1		
46.50	F-deck cabin no. 453 toilet door bottom cementing to be done. 900mm x 100mm	LUMPSUM	1		
46.51	F-deck outside cabin no. 453 alleway vinyl sheeting to be done. 2000mm x 900mm	LUMPSUM	1		
46.52	F-deck cabin no. 443 commode back panle damaged, same to be renewed. 900mm x 300mm	LUMPSUM	1		
46.53	F-deck aft port side alleway skirting to be done. 10000mm x 300mm	LUMPSUM	1		
46.54	F-deck deep sea winch control room door bottom skirting required. 900mm x 100mm	LUMPSUM	1		
46.55	F-deck deep sea winch control room front glass stbd side drainage to choked, same to be cleared.	LUMPSUM	1		
46.56	F-deck near mid stair case alleway vinyl sheeting damaged, same to be renewed. 5000mm x 900mm	LUMPSUM	1		
46.57	Main deck near mid stair case alleway vinyl sheeting damaged, same to be renewed. 2500mm x 900mm	LUMPSUM	1		
46.58	Main deck near cabin no. 523 alleway vinyl sheeting damaged, same to be renewed. 2500mm x 900mm	LUMPSUM	1		
46.59	Main deck crew laundry room vinyl sheeting damaged, same to be renewed. Area 25sq m.	LUMPSUM	1		
46.60	Main deck fwd stbd laundry aft bulkhead tiles skirting to be renewed. 2000mm x 100mm	LUMPSUM	1		
46.61	Main deck crew laundry aft steel bulkhead bottom corroded, same to be renewed. 6000mm x 200mm	LUMPSUM	1		
46.62	A-deck second officer cabin wash basin support angles to be provided, 6mm x 50mm x 500mm. L 1000mm	LUMPSUM	1		

46.63	A-deck second officer cabin faucet tap line leakage, tab to be removed and rectified.	LUMPSUM	1		
46.64	Deputy scientist cabin bathroom wash basin drainage line corroded and wasted, same to be renewed. Pipe dia 1inch x L 1200mm should hold cold and hot water.	LUMPSUM	1		
46.65	F-deck stbd side aft alleyway vinyl sheeting damaged, same to be renewed. 5000mm x 900mm.	LUMPSUM	1		
46.66	Main deck port side fwd cabin 518 ceiling panels to completely scrapped and paint coat to be applied. 12 sqm.	LUMPSUM	1		
46.67	Main deck fwd port side alleyway vinyl sheeting damaged, same to be renewed. 4000mm x 900mm	LUMPSUM	1		
46.68	2nd deck near cold storage 709 floor tiles to renewed, 01 sqm.	LUMPSUM	1		
46.69	2nd deck near cold storage 709 aft stair case door bottom frame corroded and wasted, same to be renewed. 6mm x 900mm x 100mm.	LUMPSUM	1		
46.70	2nd deck towards 3rd deck stair steps plating corroded and wasted, same to be renewed. 8mm x 900mm x 250mm. 03 nos.	NOS.	3		
46.71	2nd deck gym floor complete surface even to be done by cementing and vinyl sheeting to be provided. Area 25 sqm.	LUMPSUM	1		
46.72	2nd deck crew galley pantry scupper not working, same to be repaired.	LUMPSUM	1		
46.73	2nd deck crew galley and pantry taps not working, same to check and rectify. Required plumbing items to be yard supply.	LUMPSUM	2		
46.74	2nd crew galley port side below port holes, plating corroded and thinned down, same to be renewed. 4mm x 1500mm x 600mm	KG	20		
46.75	A-deck 3rd officer cabin floor vinyl sheeting to be renewed. Area 12 sqm.	LUMPSUM	1		
46.76	2nd deck rec room fwd bulkhead near port hole damaged, same to be renewed with fire proof material. 2 sqm.	LUMPSUM	1		
46.77	Chief engineer and chief officer cabin aft of commode seat bulkhead damaged, same to be renewed. 1sqm	LUMPSUM	1		
46.78	Main deck port side entrance vinyl sheeting to be renewed. 3000mm x 900mm	LUMPSUM	1		
46.79	2nd deck geo physical lab port side water leakage from ceiling, for same ceiling panel to be removed and identify the leakage and rectify.	LUMPSUM	1		
46.80	F-deck common toilets port and stbd hot water not coming, supply connections to be checked and rectify.	LUMPSUM	1		
46.81	Main deck hospital bed supporting pipe corroded, to be renewed. Pipe dia 2 inch x l 500mm	LUMPSUM	1		
46.82	F-deck cabin 409 wood under porthole is damaged, to be renewed. 1m x 0.4m	LUMPSUM	1		
46.83	40 nos pillows are required for scientist cabins	NOS	40		
46.84	50 nos ventilation mesh fixed on cabin doors to be cleaned.	NOS	50		
46.85	30 nos wall mounted fans are required for cabins	NOS	30		
46.86	20 nos sofa sets to be secured with the bulkhead with screws (3 screw in each sofa)	NOS	20		
46.87	3 nos office chairs for 8 nos scientific labs are required.	NOS	24		
46.88	3 nos plastic mid back chairs are required for 2 nos wet labs	NOS	6		
46.89	30 nos chairs of good quality for scientific cabins are required	NOS	30		
46.90	F-deck cabin 411 2 nos ceiling panels are damaged, to be replaced. L=3m, b=0.1m	NOS	2		
46.91	F-deck cabin 411 2 nos mattresses are damaged, to be replaced. Size l=2.5m, b=0.8m, thickness= 6 inch	NOS	2		
46.92	F-deck cabin 415 wood under porthole is damaged, to be renewed. 1m x 0.4m	LUMPSUM	1		
46.93	F-deck cabin 415 night lamp wiring to be arranged properly with new conduit/cable tray for 1.5m length.	LUMPSUM	1		

46.94	F-deck cabin 415 and 416 door handle is damaged. New handle with lock is required.	NOS	2		
46.95	F-deck cabin 417 floor vinyl sheet to be replaced. Size 5x4msq	NOS	1		
46.96	F-deck cabin 419 sofa to be repaired.	NOS	1		
46.97	F-deck cabin 419 electrical socket is damaged. To be replaced with new one (three pin type)	NOS	1		
46.98	F-deck cabin 419 cupboard locked to be replaced.	NOS	2		
64.99	F-deck cabin 419 ceiling panel is damaged.to be replaced. L=4m, b=10cm	NOS	1		
46.100	F-deck cabin 421 water leakage from the ceiling panels of the cabin. Suspected to leak from the above deck attached bathroom of 2/o.	LUMPSUM	1		
46.101	F-deck cabin 421 ceiling panels are damaged. All panels to be replaced with new panels. L=3.8m,b=10cm each panel for the entire length of cabin which is 3.8m. (38 panels may be required).	NOS	38		
46.102	F-deck cabin 421 and 423 new phone is required. Its existing connection is not working and to be repaired. Conduit pipe also required for the phone connection cable of l=1m.	NOS	2		
46.103	F-deck cabin 421 vinyl sheet is damaged and to be replaced along with the skirting. Size 3.8m x 2.4m	LUMPSUM	1		
46.104	F-deck cabin 421 and 423 electrical switches are to be replaced 2 nos of 3 pin type in each cabin.	NOS	4		
46.105	F-deck cabin 423 vinyl sheet is damaged and to be replaced alongwith the skirting. Size 3.8m x 2.4m	NOS	1		
46.106	F-deck cabin 423, 443, 447 and 427 table sunmica required. Size 1m x 0.5m each	NOS	4		
46.107	F-deck cabin 423 bed lamps to be repaired 2 nos.	NOS	2		
46.108	F-deck cabin 425 ac diffucer is missing. New required.	NOS	1		
46.109	F-deck cabin 425 telephone junction box is out of place, to be fixed properly with the bulkhead.	NOS	1		
46.110	F-deck cabin 425 vinyl sheet is damaged and to be replaced alongwith the skirting. Size 3.8m x 2.4m	NOS	1		
46.111	F-deck cabin 425 ceiling panels to be painted withs cream colour. 10 nos l=2.4m, b=10cm each panel	NOS	10		
46.112	F-deck cabin 427 celing panels are damaged, to be replaced. 16 nos panels of length 2.4m and breadth 10cm each.	NOS	16		
46.113	F-deck cabin 427 cable tray/conduit required for the cables. L=2.5m.	NOS	1		
46.114	F-deck cabin 427 sofa set to be replaced with new sofa set alongwith additional cloth cover (washable). Length of sofa= 2m, breadh= 0.8m	NOS	1		
46.115	F-deck cabin 418, 423, 427, 447, 453 and 443 mattresses are to be replaced. Size l=2.5m, b=0.8m, thickness= 6 inch	NOS	6		
46.116	F-deck cabin 443 vinyl sheet out of place, to be pasted. Length 1m.	NOS	1		
46.117	F-deck cabin 443 cupboard hinge is broken, to be replaced.	NOS	1		
46.118	F-deck cabin 443 silica gel required on the wood around porthole. Length 1m	NOS	1		
46.119	F-deck cabin 443 wiring the switch board is from outside to be put inside the panel. Length 40cm	NOS	1		
46.120	F-deck cabin 443 attached bathroom panel damaged, required behind the commode. Size 0.6m x 0.6m.	NOS	1		
46.121	F-deck cabin 443, 447, 449 and 453 attached bathroom doors frame are damaged. Same to be repaired. Length 1m , width 10cm.	NOS	8		
46.122	F-deck cabin 443 tiles of the attached bathroom are to be cleaned with cleaning chemical. Area 2m X 1m	NOS	1		

46.123	F-deck cabin 443 attached bathroom shower with the hose to be replaced.	NOS	1		
46.124	F-deck cabin 443 attached bathroom commode is old and to be replaced including lids and flush button.	LUMPSUM	1		
46.125	F-deck cabin 443, 449, 412, 300, 312 attached bathrooms are to be painted (including their doors)	LUMPSUM	5		
46.126	F-deck cabin 449 3 ceiling panels are damaged. To be replaced. L=1.7m, b=0.1m.	NOS	3		
46.127	F-deck cabin 449 2 nos cupboard hinges are damaged, to be replaced.	NOS	2		
46.128	F-deck cabin 453 27 nos ceiling panels are damaged, to be replaced. L=2.1m, b=0.1m (area of room 1.4m X 2.1m)	NOS	27		
46.129	F-deck cabin 453 table sunmica to be replaced. 0.5m x 0.6m.	NOS	1		
46.130	F-deck cabin 453 conduit/ cable tray required for 1m telephone cable.	NOS	1		
46.131	F-deck cabin 453 vinyl sheet to be replaced. 4m x 2.2m	NOS	1		
46.132	F-deck cabin 453 attached bathroom tiles to be replaced. Area 1.4 m x 2.1m.	NOS	1		
46.133	F-deck cabin 453 attached bathroom wash basin along with the supporting frames, mixer tap and base plate (1.1m x 0.6m) to be replaced.	LUMPSUM	1		
46.134	F-deck cabin 453 attached bathroom mixer tap with shower head and hose to be replaced	LUMPSUM	1		
46.135	F-deck cabin 453 attached bathroom tube light fitting to be replaced.	LUMPSUM	1		
46.136	Scientist recreation room 6 nos panels are damaged, to be replaced. Size 3.75m x 0.1m.	NOS	6		
46.137	Scientist recreation room 3 plugs socket to be fixed.	NOS	1		
46.138	Scientist recreation room wall paper required for the bulkhead panels. Near TV. Size 4.6m x 2m.	MSQ	10		
46.139	F deck alleyway near cabin 453, 10 nos ceiling panels to be changed. 1.1m x 0.1m.	NOS	10		
46.140	Winch control room: 8 nos window glasses (porthole glasses) to be cleaned for clear visibility. Size of glass 1.5m x 1m each	NOS	8		
46.141	Winch control room: Tube light fitting to be fixed properly on the ceiling panel.	NOS	1		
46.142	F-deck cabin 412 porthole is damaged. Porthole to be renewed round type.	NOS	1		
46.143	F-deck cabin 412 table sunmica to be replaced. 1m x 0.5m	NOS	1		
46.144	F-deck cabin 412 vinyl sheet to be replaced. 3.1m x 3.8m	NOS	1		
46.145	F-deck cabin 414 6 nos panels are damaged, to be replaced. 2.4m x 0.1m each	NOS	6		
46.146	F-deck cabin 414 vinyl sheet to be changed. 3.5m x 2.4m	NOS	1		
46.147	F-deck cabin 414 AC diffuser is to be replaced.	NOS	1		
46.148	F-deck cabin 414 attached bathroom cold water line pressure is very low. Choke to be cleared or new line to be laid from the nearby FW copper line around 4m.	NOS	1		
46.149	F-deck cabin 414 attached bathroom water supply is not there in commode line. To be rectified.	LUMPSUM	1		
46.150	F-deck cabin 416 2 nos ceiling panels to be changed. 2.4m x 0.1	NOS	2		
46.151	F-deck cabin 416 sofa covers are required for 2 sets of sofa (bottom and back rest for both). Length and breadth of sofas are 2.1m x 0.8m and 1m x 0.8m	NOS	2		
46.152	F-deck cabin 418 1 no. Socket to be replaced with 3 pin type.	NOS	1		
46.153	F-deck cabin 418 phone connection and telephone required.	NOS	1		
46.154	Water leakage in cabin nos 416 and 421 from the ceiling panels. Suspected from the upper deck attached bathrooms. Leakage to be arrested. Ceiling deck plate in each cabin 2m x 2m may be required to be changed.	NOS	2		
46.155	Officer's mess room: 7 AC diffusers are to be replaced.	NOS	7		

						
46.156	Officer's mess room: cleaning of vinyl sheet. 10m x 10m		NOS	1		
46.157	Officer's mess room: 17 nos dining chairs are to be provided for scientists (with arm rest and proper cushioning on bottom and back and bush caps).		NOS	17		
46.158	Officer's mess room: Washable covers will be required for the new dining chairs		NOS	17		
46.159	Officer's mess room: bulkhead/ wall paper required for the bulkheads of the mess room. L= 40m and H=2.1m		NOS	1		
46.160	Water purifier (RO) with hot water and cold water supply with 15 to 20 L capacity to be arranged and installed in officer's pantry. 4 sets of spare cartridges are also to be supplied for the purifier.		NOS	1		
46.161	A deck cabin 300: 2 nos carpet shampoo/dry cleaning 4m x 4m and 4m x 2m.		MSQ	24		
46.162	A deck cabin 300: seat cover of commode to be replaced.		NOS	1		
46.163	A deck cabin 300: bathroom tiles to be cleaned. 3m x 2m		MSQ	6		
46.164	A deck cabin 300: 3 nos AC diffusers are to be replaced.		NOS	3		
46.165	A deck cabin 300: bed wooden ply to be replaced. 1.5m x 2.1m		NOS	1		
46.166	A deck cabin 300: new mattress is required. 1.5m x 2.1m x 6inch		NOS	1		
46.167	A deck cabin 300: 2 nos ceiling panel are to be replaced. L=4 m , b=0.1m		NOS	2		
46.168	A deck cabin 312: new tiles to be placed in the attached bathroom. Area 2m x 1.5m		MSQ	3		
46.169	A deck cabin 312: table sunmica to be replaced. 2.1m x 1.5m		MSQ	3.15		
46.170	A deck cabin 312: 2 nos high back executive chairs are required for Ch. and Dy. Scientist. Their washable covers are also required		NOS	2		
46.171	A deck cabin 312: 2 nos carpet shampoo/dry cleaning 4m x 4m and 4m x 2m.		NOS	2		
46.172	2 nos water purifier to be arranged and installed in the alleyway of F-deck and a deck of min 10L capacity. 4 nos sets of spare cartridges for each purifier are also to be supplied.		NOS	2		
46.173	Copy of ga and other ship plans to be laminated for displaying in the alleyways.		NOS	10		
46.174	TT room (2nd deck): new table tennis table of good quality required along with 8 nos of rackets (bats) and 20 nos balls		LUMPSUM	1		
46.175	TT room (2nd deck): 3 nos ac diffusers are to be replaced.		NOS	3		
46.176	TT room (2nd deck): tube light fittings are old and damaged, 6nos old fittings to be removed and new fittings are required with led lights.		NOS	6		
46.177	Crew mess room (2nd deck): 16 nos new dining chairs of good quality are required for the crew dining room.		NOS	16		
46.178	Crew mess room (2nd deck): 3 nos wooden cabinets and 1 nos drawer to be repaired. 11 nos handles are also required for the cabinets and drawers.		NOS	4		
46.179	Crew mess room (2nd deck): 6 nos ac diffusers are to be replaced.		NOS	6		
46.180	Crew mess room (2nd deck): 11 nos ceiling panels are damaged, and to be replaced. L=11m and B=10cm each.		NOS	11		
46.181	Crew mess room (2nd deck): 4 nos flykill are required for the mess room and galley.		NOS	4		
46.182	Crew mess room (2nd deck): 5 nos tubelight fittings to be repaired and tubelights to be fitted in them. 2 tubelights in each fitting.		NOS	5		

46.183	Crew mess room (2nd deck): 6 nos wall mounted fans are to be supplied and installed.	NOS	6		
46.184	Crew mess room (2nd deck): 2 nos new water purifiers to be arranged and installed in the crew pantry and on main deck for crew in the alleyway of minimum 10l capacity. 4 nos sets of spare cartridges for each purifier are also to be supplied.	NOS	2		
46.185	Crew galley (2nd deck): Exhaust to be made operational of the crew galley.	NOS	1		
46.186	Crew galley (2nd deck): EEW steel mixer tap is required for the sink.	NOS	1		
46.187	Crew galley (2nd deck): New wet grinder to be supplied and installed.	NOS	1		
46.188	Crew galley (2nd deck): New oven to be supplied and installed.	NOS	1		
46.189	Crew galley (2nd deck): New refrigerator of around 190l capacity to be supplied and installed for crew.	NOS	1		
46.190	Crew galley (2nd deck): New deep freezer of 500L capacity to be supplied and installed.	NOS	1		
46.191	Crew galley (2nd deck): Tube light fittings are damaged, to be repaired or new fittings to be supplied.	NOS	9		
46.192	Crew galley (2nd deck): Mesh cover is required for the vent near porthole. It is missing. 0.5m x 0.3m	NOS	1		
46.193	Crew galley (2nd deck): 10 nos AC diffusers are missing/damaged, new to be supplied and fitted.	NOS	10		
46.194	Crew galley (2nd deck): bulkhead is damaged, FRP is done. Damaged plate to be replaced with new plate. L=1.6m , b=2m	NOS	1		
46.195	Crew galley (2nd deck): one telephone in galley and one phone required in the crew mess room with new cable connection.	NOS	2		
46.196	Gym (2nd deck): new set of 2 dumbbells is required of following weights: 2.5, 5, and 10 kg each set.	LUMPSUM	1 SET EACH		
46.197	Gym (2nd deck) frame/rack/stool for bench press along with following weights with the bar bell rod: 5, 10 and 15 kg plates each of 2 plates.	LUMPSUM	1 SET		
46.199	Gym (2nd deck): 1 fan to be supplied and installed wall mounted type.	NOS	1		
46.200	2nd deck alleyway: bottom frame for fire door is damaged near crew rec room, to be repaired.	LUMPSUM	1		
46.201	Crew recreation room (2nd deck): 4 nos wall mounted fans are to be supplied and installed.	NOS	4		
46.202	Crew recreation room (2nd deck): 4 nos tube light fittings are to be repaired and lights to be fitted. 2 tube lights in each fitting.	NOS	4		
46.203	Crew recreation room (2nd deck): 2 nos night lamps with bulb to be supplied and installed.	NOS	2		
46.204	Crew recreation room (2nd deck): bulkhead panel under the porthole is holed, to be replaced with new one. L=2m, b=0.6m.	NOS	1		
46.205	Crew recreation room (2nd deck): wooden frame of the porthole is damaged, to be renewed. L=0.7m, b=6cm.	NOS	1		
46.206	(2nd deck): tube light fitting to be repaired near the staircase and 2 tubelight fittings are to be fitted in it.	NOS	1		
46.207	F deck cabin 420 and alleyway: lid/cover for the heat detector is required.	NOS	3		
46.208	F deck: F'scle deck aft entrance wooden door's bottom frame is missing, new to be fabricated and fixed under 2 nos doors. Size of the frame 1m x 0.2m	NOS	2		
46.209	Main deck cabin no. 519: tubelight cover is missing, new required of acrylic sheet (or any compatible translucent material for tube lights). Size l=70cm, b=30cm	NOS	2		
46.210	Main deck cabins: ac diffusers missing, new to be fitted in cabin no. 524, 520	NOS	2		
46.211	Main deck cabin no. 519 and 518 : curtain 2 nos required for the 2 portholes in the cabin along with the bar and to be fixed. Height of the curtains= 5 feet. 2 in each cabin	NOS	4		

46.212	Main deck cabin no. 521: tubelight not working, it's fitting to be repaired or new fitting to be fixed along with 2 sets of 2 tubelights.	NOS	1		
46.213	Main deck cabin no. 521: new night lamp to be fitted.	NOS	1		
46.214	Main deck cabin no. 521: cupboard hinge 1 nos and locking arrangement is required for the cupboard door.	NOS	1 EACH		
46.215	Ceiling panels outside the cabin no. 521 is damaged, same to be replaced. L=1m , b=10cm	NOS	2		
46.216	New mattresses for the cabin no. 518, 521 and 524 required. Size l=2.5m, b=0.8m, thickness= 6 inch 2 Nos each	NOS	6		
46.217	New mattress for the cabin no. 520, 522, 527 and 531 required. Size l=2.5m, b=0.8m, thickness= 6 inch	NOS	4		
46.218	Main deck cabin no. 527 and 522: 5 pin type socket to be fixed in the cabin.	NOS	2		
46.219	Main deck cabin no. 533: cupboard door is damaged, new door required of height 6 feet and breadth 0.5m along with handle and lock and hinges.	NOS	1		
46.220	Main deck cabin no. 535, 522 and 524: curtain 2 nos required for the 2 portholes in each cabin along with the bar and to be fixed. Height of the curtains= 5 feet.	NOS	6		
46.221	Main deck cabin no. 535: vinyl sheet is damaged, new vinyl sheet to be laid on the floor of the cabin along with the skirting. Area 4m x 3m.	NOS	1		
46.222	Main deck: plastic cable tray is broken/damaged of the alleyway stbd side, same to be renewed. L=50m and cables to be properly secured.	NOS	1		
46.223	Main deck store no. 545 near aft lavatory: 3 nos panels are corroded. To be replaced. Size l=3m, B=10cm	NOS	3		
46.224	Main deck alleyway near dry lab (p): ceiling panels are corroded, to be replaced. Size l=1m , b=10cm	NOS	5		
46.225	Main deck cabin no. 520, 552 and 524: sofa set to be replaced with new sofa set along with additional cloth cover (washable). Length of sofa= around 1.8m, breadth= 0.8m	NOS	3		
46.226	Main deck cabin no. 552: tiles to be placed in the attached bathroom. Area 2.5m x 1.5m and tiles skirting also required inside the bathroom of 10cm height.	NOS	1		
46.227	Main deck cabin no. 552: bulkhead panel behind the commode is damaged, to be replaced. 0.5m x 1m in the attached bathroom	LUMPSUM	1		
46.228	Main deck cabin no. 552: wash basin frame/ stand is corroded, to be replaced in the attached bathroom	LUMPSUM	1		
46.229	5 nos sofa covers are required for the crew cabins. Lenth 2m approx.	LUMPSUM	5		
46.230	Main deck cabin no. 536 and 534: bulkhead is painted with cream colour paint over the current red paint. Area 2m x 6m in each cabin.	NOS	2		
46.231	Main deck cabin no. 518, 522 and 536: night lamp is required.	NOS	3		
46.232	Main deck cabin no. 536: 1 nos tube light fitting and mirror cabinet is required in the attached bathroom.	NOS	1		
46.233	Main deck port side alleyway: sink outside the cabin 522 to be removed and frames also to be removed. Water line to be blanked.	NOS	1		
46.234	Main deck port side alleyway: 1 no ceiling panel is corroded near cabin 522 and to be replaced. L=1.2m , b=10cm	NOS	1		
46.235	Main deck cabin no. 522: one no. Ceiling panel is damaged, to be replaced. L=3m, b=10cm	NOS	1		
46.236	Main deck cabin no. 522 and 518: tube light fitting is damaged, same to be repaired or new fitting to be fitted along with 2 tube lights.	NOS	2		
46.237	Main deck cabin no. 522: all the ceiling panels are damaged, same to be renewed. L=3m. B=10cm. 34 nos panels	NOS	34		

46.238	Main deck cabin no. 522: vinyl sheet of the cabin is damaged, to be replaced. Area 5m x 4m	NOS	1		
46.239	Main deck cabin no. 522: mirror cabinet is required in the cabin and be fixed.	NOS	1		
46.240	Main deck cabin no. 522: 3 pin socket to be fixed.	NOS	1		
46.241	Main deck cabin no. 522: cupboard hinge is broken, new required and fixed.	NOS	3		
46.242	Main deck alleyway near laundry: tube light fitting is damaged. New fitting is required along with 2 tube lights and surrounded frame.	NOS	1		
46.243	Officer's galley f deck: water leaking from the ceiling panels near the lift. Leaking from the ahu room on the upper deck. Same to be rectified. Deck plate of 2m x 1m may be required to be renewed.	NOS	1		
46.244	Officer's galley f deck: 3 nos oven to be repaired including attached to the hot plates.	NOS	3		
46.245	Officer's galley f deck: mixer tap of the sink is leaking, same to be rectified or renewed.	NOS	1		
46.246	Officer's galley f deck: dough mixer to be serviced/ repaired.	NOS	1		
46.247	Officer's galley f deck: m seal is applied on the panel near port hole, same to be renewed. L-1m, b- 0.4m	NOS	1		
46.248	Officer's galley f deck: top plate of the table missing, new to be fabricated, (wooden or metallic). L-0.4m x 0.65m	NOS	1		
46.249	Officer's pantry f deck: sunmica for the cabinet to be replaced. 0.8m x 0.8m x 0.4m	NOS	2		
46.250	F deck: 6 nos indian type toilet connected to evac system are not working, all to be made operational. Damaged parts/ pipes to be renewed.	LUMPSUM	6		
46.251	Officer's mess room F-deck: Sunmica of the table in near the entrance to be replaced. 2.4m x 0.8m	NOS	1		
47	SCIENTIFIC LABS:				
47.1	Meteorology lab a deck: water leakage from the ceiling panels of the lab. Suspected from the officer's toilet on the upper deck. Leakage to be arrested and 3 nos panels to be cleaned and painted. Deck plate of ceiling or upper bathroom may be renewed. Approx size 2m x 2m	LUMPSUM	1		
47.2	Tape store F deck: there is 1m cable having live power. Same to be blanked and chopped off.	NOS	1		
47.3	Tape store f deck: ceiling panel of apprx 2m x 2m size to be fitted near the door.	NOS	1		
47.4	Computer lab B deck: unused electrical junction box to be cut and removed.	NOS	1		
47.5	Computer lab B deck: 2 nos portholes are leaking. Same to be rectified and hose test to be carried out for satisfactory repairs.	NOS	2		
47.6	DP server room B deck: 1 no celing panel to be closed and 2 other panels to be fixed properly with rivets.	NOS	3		

47.7	Met lab B deck: sunmica on 2 tables to be placed of size 2.5m x 1.1m and 1.8m x 1m.	NOS	2		
47.8	Met lab B deck: old tube light fittings to be replaced with new fittings.	NOS	8		
47.9	Met lab B deck: door to dp server room is not closing completely, same to be repaired.	NOS	1		
47.10	Computer lab B deck: table frame under the porthole is corroded, ms bar to be replaced. L= 1.7m, B=0.6m	LUMPSUM	1		
47.11	Computer lab B deck: 6 nos tube light fittings to be renewed.	NOS	6		
47.12	Computer lab B deck: sunmica of the tables to be renewed. L=1.7m, b=0.8m and l=0.5m, b=0.8m	NOS	2		
47.13	Computer lab B deck: wooden cupboards to be painted/polished. Area 3.4m x 1.7m	LUMPSUM	3		
47.14	Vinyl sheet of F deck staircase to be replaced. Area 3.7m x 2m	LUMPSUM	1		
47.15	Vinyl sheet on main deck near hospital to be replaced. Area 6.2m x 1m	LUMPSUM	1		
47.16	Dry lab (stbd side): table sunmica to be replaced. 0.8m x 1.4m	LUMPSUM	1		
47.17	Magnetometer pulley's swivel is corroded, to be renewed of 2t capacity with eye on the top and bolt with the nut in the bottom (as per sample)	NOS	2		
47.18	Wet lab (stbd side): core lift is not working (tripped during operation), defect to be identified and repaired and serviced. 150 kg capacity.	LUMPSUM	1		
47.19	Wet lab (s side): support frame of wash basin to be renewed. L=1.8m, b=0.7m, h=0.9m.	LUMPSUM	1		
47.20	Wet lab (s side): 4 hinges of the cupboards are damaged, to be renewed. New 2 sets of latches with handles are to be fixed on the cupboards.	NOS	4		
47.21	Wet lab (s side): sunmica to be placed on the cupboards. 1.8m x 0.7m x 0.9m	NOS	3		
47.22	Wet lab (s side): angle bar of the porthole frame is corroded, to be replaced. L=1.4m	NOS	1		
47.23	Wet lab (s side): sunmica of the middle table to be replaced. Area 7.1m x 0.9m and corner table area 1m x 0.7m	LUMPSUM	2		
47.24	Wet lab (s side):sunmica of the table drawers/cabinets are to be renewed as per below details:				
47.24A	Area 0.5m x 0.5m x 0.6m each – 6 nos cabinets including 1 handle and 1 latch in each.	NOS	6		
47.24B	Area 0.5m x 0.5m x 0.5m each – 8 nos drawers including 1 handles in each.	NOS	8		
65.25	Wet lab (s side): sunmica of table drawers of middle table to be renewed. Size 7.1m x 0.6m x 0.9m.	LUMPSUM	1		
47.26	Wet lab (s side): following wooden table defects to be repaired:				
47.26A	Bottom plate of 1 table is loose, to be repaired.	LUMPSUM	1		
47.26B	1 small drawer to be repaired.	NOS	1		
47.26C	4 drawers not closing properly, to be repaired.	NOS	4		
47.27	Main deck: 4 nos container platforms (shoes) to be renewed.	LUMPSUM	4		
47.28	Main deck: sea water line on main deck to be secured properly outside wet lab (s). Tap to be fitted on same PVC pipe. And corroded pipe to be cut and removed near to it.	LUMPSUM	1		
47.29	Dry lab (port side): water leaks on the floor of the lab, source for the same to be identified and rectified.	LUMPSUM	1		
47.30	Dry lab (port side): vinyl/rubber skirting required around the 4 sides of lab. Total l=19m, h=20cm.	LUMPSUM	1		
47.31	Dry lab (port side): table sunmica to be replaced. 8m x 0.8m	LUMPSUM	1		
47.32	3 nos fume hood exhaust fans and motors to be serviced. Duct to be cleaned with compressed air of both the wet labs and chemical lab.	NOS	3		

47.33	Wet lab (port side): water leaks from the ceiling panel of the lab, suspected from the upper deck Emergency generator room. Leakage to be arrested. Deck plate may be required to be renewed. Approx size 4m x2m.	LUMPSUM	1		
47.34	Wet lab (port side): table legs are corroded and broken, same to be repaired. 8 nos 1.5 m length each leg.	LUMPSUM	1		
47.35	Wet lab (port side): sunmica of middle table to be renewed. 1m x 1.5m. And corner table sunmica 1.7m x 1m.	LUMPSUM	1		
47.36	Wet lab (port side): oil leaks from the emgy gen room from the upper deck. Same to be rectified. Deck plate may be required to be renewed. Approx size 4m x 2m	LUMPSUM	1		
47.37	Wet lab (port side): 2 nos drawers of the table to be repaired.	NOS	2		
47.38	Wet lab (port side): sunmica of the table drawers/cabinets are to be renewed as under				
47.38A	Area 0.5m x 0.5m x 0.6m each – 4 nos cabinets including 1 handle and 1 latch in each.	NOS	4		
47.38B	Area 0.51m x 0.6m x 0.5m each – 10 nos drawers including 4 handles in each.	NOS	10		
47.39	Loose cables to be properly secured using cable tray in 5 nos labs. Approx length of the tray may be 30m	LENGTH IN M	30		
47.40	Wet lab (port side): frame of weather tight door is holed, same to be renewed. L=1.3m, b= 30cm	LUMPSUM	1		
47.41	Wet lab (port side): sink plate is corroded, same to be renewed with AL or SS plate. L=1m, b 30cm.	LUMPSUM	1		
47.42	Wet lab (port side): servicing of a/c and renewal of corroded parts of the a/c. Renewal plate may be of size l= 1.5m, b=15cm	LUMPSUM	1		
47.43	Servicing of 15 nos split AC fitted in labs and cabins. (cleaning/ refilling coolant wherever required etc).	NOS	15		
47.44	Chemical lab 2 nd deck: steel plates (like sunmica) to be placed on the tables of the lab as perbelow dimensions:				
47.44A	Table 1- 0.8m x 1.7m	LUMPSUM	1		
47.44B	Table 2 – 1.6m x 1.2m	LUMPSUM	1		
47.44C	Table 3 – 3.1m x 0.9m	LUMPSUM	1		
47.44D	Table 4 – 0.8m x 0.9m	LUMPSUM	1		
47.44E	Table 5 – 0.9m x 1.8m	LUMPSUM	1		
47.45	Chemical lab 2 nd deck: 1 no. Hinge to be replaced of the wooden cupboard.	NOS	1		
47.46	Chemical lab 2 nd deck: sunmica of the table drawers/cabinets are to be renewed as under:				
47.46A	Area 0.5m x 0.5m x 0.6m each – 12 nos cabinets including 1 handle and 1 latch in each.	NOS	12		
47.46B	Area 0.51m x 0.6m x 0.5m each – 5 nos drawers having 4 handles in each.	NOS	5		
47.47	Chemical lab 2 nd deck: PVC pipe of evac leaks in the lab, leakage to be rectified. And marks of theleaked water are there on the vinyl sheet of the lab, same to be cleaned with cleaning chemical.Area of the floor is 5m x 3m.	LUMPSUM	1		
47.48	Chemical lab 2 nd deck: 2 nos angle bars under the porthole are damaged, same to be renewed. L=1.5m each.	NOS	2		
47.49	Geophysical lab 2 nd deck: 8 nos tube light fittings are to be renewed with new led tube lights.	NOS	8		
47.50	Multibeam lab 2 nd deck: 1 nos cupboard hinge is broken, same to be replaced.	NOS	1		

47.51	Multibeam lab 2 nd deck: 2 nos portholes leaks, to be repaired. Round types.	NOS	2		
47.52	Multibeam lab 2 nd deck: floor of the lab seems to be corroded under the vinyl tiles. Same may be required to be renewed. Area of the deck plate 6m x 5m. Vinyl tiles to be pasted back after the repairs.	MSQ	30		
47.53	Multipurpose lab 2 nd deck: sunmica of the cupboards are to be replaced. Size 2m x 2m x 0.7m.	LUMPSUM	1		
47.54	Multipurpose lab 2 nd deck: table sunmica to be replaced near porthole as under				
47.54A	Size 0.8m x 1.4m	LUMPSUM	1		
47.54B	0.7m x 1.3m	LUMPSUM	1		
47.54C	0.7m x 0.9m	LUMPSUM	1		
47.55	Multipurpose lab 2 nd deck: angle bar of the porthole frame is corroded, same to be replaced. 1.5mlength.	NOS	1		
47.56	Multipurpose lab 2 nd deck: 1 nos table drawer to be repaired and 2 nos handle to be fixed.	NOS	1		
47.57	Multipurpose lab 2 nd deck: rubber bush required for 8 nos rectangular frames (rods) of size 2cm x5cm.	NOS	8		
47.57A	Multipurpose lab 2 nd deck: fibre/glass cabinet to be made for the autoanalyser table like a sliding door. Area l=5m for two sides and h=1.5m	LUMPSUM	1		
47.58	Core store 2 nd deck: floor tiles to be cleaned. Area 2m x 3m	MSQ	6		
47.59	Electrical lab 2 nd deck: wash basin to be removed and water connection to be blanked.	LUMPSUM	1		
47.60	Electrical lab 2 nd deck: 1 cupboard to be repaired and 2 nos handles to be fixed.	NOS	2		
47.61	Electrical lab 2 nd deck: 1 nos ceiling panel to be fixed in the corner size 20cm x 20cm.	NOS	1		
47.62	Electrical lab 2 nd deck: Metallic door of the lab touches the floor and is tight to open, same to be rectified.	LUMPSUM	1		
47.63	Main deck: electrical sockets weather proof to be fixed on the deck outside both wet labs with New switchboard having 5 pin + 5 pin plugs suitable for 220v	NOS	2		
47.64	Spare keys to be made for the locks of doors of various cabins. New keys to be made for the locks (fixed with door handle) whose keys are missing.	NOS	60		
47.65	New fridge of 95L capacity for Dy. Ch. Scientist cabin with auto defrost.	NOS	1		
47.66	24 nos ceiling panels are to be replaced on main deck alleyway.	NOS	24		
47.67	F deck (forecastle) : 100m skirting for the alleyway of stbd side of height 15cm	LENGTH IN M	100		
47.68	F deck (forecastle) : 30m skirting for the port side alleyway of height 25cm.	LENGTH IN M	30		
47.69	F deck (forecastle) : Door handle with lock is required for the door of LSA/FFA store on port side alleyway.	NOS	1		
47.70	F deck (forecastle) : Water purifier to be replaced (ro type) of 10l capacity on port side alleyway. 2 set of spare cartridges are also be supplied. And new draining arrangement is required to the adjacent common lavatory.	LUMPSUM	1		
47.71	F deck (forecastle) : Bulkhead panel to be replaced under the water purifier on port side alleyway. 1m x 0.5m.	NOS	1		
47.72	F deck (forecastle) : 24 nos ceiling panels are corroded and wasted on port side alleyway, same to be renewed outside cabin no. 422 of 1m length and 10cm breadth	NOS	24		
47.73	F deck (forecastle) : 3 pin socket is to be fitted outside cabin no. 422. Connecting wire is available in the alleyway.	NOS	1		

47.74	Conference room (main deck): carpet to be cleaned with shampoo or dry clean of 20 sqm area.	LUMPSUM	1		
47.75	Conference room (main deck): water leaks from the ceiling panels. Suspected from the upper deck galley scupper/ drain. Leakage to be identified and rectified.	LUMPSUM	1		
47.76	Conference room (main deck): ceiling panel to be cleaned/scrapped and white painted and fit back. L=2m, b=0.7m	1	1		
47.77	Conference room (main deck): skirting is required around sides of the room. L=30m, b=20cm	LENGTH IN M	30		
47.78	Conference room (main deck): table cloth cover required preferable white. Size of the table l=3m, B=2.4m. (covers should be slightly bigger than the size of table)	NOS	2		
47.79	Conference room (main deck): mild current comes on bulkhead panel near the computer table. Source to be identified and rectified the issue.	LUMPSUM	1		
47.80	Conference room (main deck): new 5 pin type socket is required and to be fitted for the projector.	NOS	1		
47.81	Conference room (main deck): chair legs/frames (metallic) to be painted black. Total 22 nos chairs(16 conference room and 6 nos scientist mess room and all to be kept in conference room)	NOS	22		
47.82	Conference room (main deck): name plate of plastic with 'conference room' required of size 30cm x 8cm and to be fixed on the door.	NOS	1		
47.83	No smoking' stickers required for the labs and conference room. Small size.	NOS	20		
47.84	Transceiver room 2nd deck: ac duct is damaged, to be repaired for 0.5m length.	LUMPSUM	1		
47.85	Transceiver room 2nd deck: bulkhead panel stbd side is missing, to be fixed of size l=2m, b=1.5m (wood or metallic)	LUMPSUM	1		
47.86	Transceiver room 2nd deck: frp is required on the ceiling plate of the room. Hole visible. Repair was done from top side. Area required is 2m x 2m	MSQ	4		
47.87	Echo sounder room 2nd deck fwd: deep sea echosounder cable pipe condition to be checked inside the tank in pure sea water pump room. If corroded/ damaged, to be renewed. Expected length= 6m, Dia 6cm.	LUMPSUM	1		
47.88	Echo sounder room 2nd deck fwd: pvc pipe line damaged pure sea water pump, to be renewed including T joint and 1 PVC valve for isolation. L=2.5m, dia=6cm	LUMPSUM	1		
47.89	Echo sounder room 2nd deck fwd: old pvc pipe of pure sea water pump not in use to be cut and removed and blank to be put in the line. Dia 6cm.	NOS	2		
47.90	Echo sounder room 2nd deck fwd: 1.5 m long drain pipe of pvc to be fitted to be nearest scupper of TSG alongwith requisite connectors. Dia around 4 cm.	LUMPSUM	1		
47.91	Low cooling issue in winch control room from ac duct to be rectified. Leak in the ac line if any to be arrested or blower may be checked for any other issue. Supply is from ship's centra ac.	LUMPSUM	1		
47.92	Ac duct line of the ahu room on f deck to be checked. Damaged part to be repaired/replaced. Approx length of duct 40m for the accommodation.	LENGTH IN M	40		
47.93	Multipurpose lab 2nd deck: flooring is damaged/hogged (bumped), same to be replaced or repaired and vinyl sheet to be replaced of same area. Approx area of floor is 5m x 3m	MSQ	15		
47.94	Dy. Ch. Scientist cabin 312 a deck: wooden cabinet for keeping fridge is damaged from the bottom. Same to be repaired.	LUMPSUM	1		
47.95	Wet lab main deck port side: floor is bumped/damaged. Same to be renewed and new vinyl sheet is to be placed. Area 4m x 2m	MSQ	8		

48	OTHER MISCELLANEOUS DECK JOBS:				
48.1	50m flexible hose with reel required.	NOS	1		
48.2	Deck washing HP machine required.	NOS	1		
48.3	Bridge deck (c deck):co2 room water tight door handle is broken, to be renewed.	NOS	1		
48.4	A deck (balloon deck): 3 nos tubelight fittings are to be replaced.	NOS	3		
48.5	A deck ceiling panels of alleyway near staircase to be fit back properly.	NOS	12		
48.6	A deck ceiling panels of alleyway near staircase are to be renewed of 1m length, 10 cm breadth	NOS	7		
48.7	CTD winch area: 2 nos tubelight fittings are old and to be replaced.	NOS	2		
48.8	CTD winch area: beam of the deck plate above the winches is damaged, to be replaced. L=4m.	NOS	1		
48.9	CTD winch area: fresh water arrangement with flexible hoses and valves for the pulleys of a frame for cleaning the cable while heaving it. For 2 nos pulleys. Existing water arrangement is damaged. Water supply is available near the winches. FW hose length may be 5m approx.	LUMPSUM	2		
48.10	Rope guider of the both CTD winches, deep sea winch and storage winch are to be serviced and fit back.	NOS	4		
48.11	Metallic top roof shade for AC outdoor unit for weather protection to be fabricated and fitted. L=2m, b=0.8m, H=1.2m near CTD winches.	NOS	2		
48.12	Cable of Gallow winch fitted on jib boom to be rewound of 50 m length. Presently it is wound in the wrong direction.	LUMPSUM	1		
48.13	Drain of the funnel to be cleared. And to be renewed if required.	LUMPSUM	1		
48.14	Main deck: foldable platform to be serviced. Corroded parts/mesh to be renewed and strengthening of the supporting bars to be done. Size 3m x 1.5m and 3m x 2m. Load test to be carried out and certificate to be provided.	LUMPSUM	1		
48.15	Monkey deck: stand/frame of the deck light on port and stbd sides are corroded, same to be renewed.	NOS	2		
48.16	Monkey deck: weather dome to be cleaned with fresh water and detergent/cleaning agent. Rad=3m, csa-110msq approx. Staging/crane may be required upto height of 20m	LUMPSUM	1		
48.17	Monkey deck: FRP to be done around the boundary of the vent/exhaust on the deck. L=3m, h=0.3m	LUMPSUM	1		
48.18	Monkey deck: chipping and painting of railings of the deck. Approx length 40m, h=1m	SQM	40		
48.19	Bridge deck (C deck): UT gauging of aft deck plate is required. To be renewed if required after gauging. Approx. area 9m x 2m.	SQM	18		
48.20	Bridge deck (C deck): new wooden gratings required on the bridge wings. Area 4m x 3m each wing.	SQM	24		
48.21	Balloon hall: main deck: electrical socket to be fixed outside both wet labs with new switchboard having 5 pin + 5 pin plugs .220v	NOS	1		
48.22	Bridge deck (C deck): corroded bottom part of plate in the corner near port side light housing to be replaced. Size 0.3m x 0.2m	LUMPSUM	1		
48.23	Wooden door outside computer lab is damaged, to be replaced along with handle and latch etc. H- 6feet	LUMPSUM	1		
48.24	Acrylic plate/ plastic plate on which lifeboat launching procedure is written are to be renewed.6 nos of plate with the launching procedure written on it as per sample are required and to be fixed.	NOS	6		
48.25	Embarkation platforms of lifeboats including ladders are to be chipped and painted. Wasted/corroded part to be replaced of 4 nos platforms. Approx area 5m x 4m	SQM	20		

48.26	A deck (balloon deck):bulkhead on the portside near accommodation entrance door is having FRP work done, same bulkhead to be renewed. Approx size 3m x 1m and 2.5m x 1.5m.	LUMPSUM	1		
48.27	A deck (balloon deck): lifeboat motor electrical panel box is corroded and wasted. Same to be replaced. Approx size 0.8m x 0.5m x 0.4m	NOS	2		
48.28	A deck (balloon deck): bottom part of the plate near electrical panel of the portside lifeboat is corroded and wasted. Same part to be cropped and renewed. Size 0.6m x 0.4m	NOS	1		
48.29	A deck (balloon deck): H2 cylinder room floor plate has FRP work done, same plate to be renewed with new MS plate along with scupper at the entrance of the door. Size to be renewed is 0.8m x 0.8m. And 2m x 1.5m inside the room near vents.	LUMPSUM	1		
48.30	A deck (balloon deck): door stopper for the weather tight door of H2 room is damaged, same to be renewed.	NOS	1		
48.31	A deck (balloon deck): box made of MS for plants is corroded and wasted. Old box to be cut and removed from the base. New box to be made and plants and mud to be shifted to the new box and to be welded at the same place of old box. Dimensions of the box 2m x 1.2m x 0.6m	LUMPSUM	1		
48.32	A deck (balloon deck): support pipe/rod for the davit no.1 and 3 is corroded. Same to be renewed of 2m length. 6 inch dia	NOS	2		
48.33	A deck (balloon deck): drain pipe near aft life raft stbd side is damaged, same to be renewed. L=4m and dia 6cm.	NOS	1		
48.34	Beam of the deck plate under stbd side bridge wing is corroded, wasted. Same to be replaced. L=3m	NOS	3		
48.35	Foldable type eye (D shape) to be fixed/welded on main deck near stern gratings for buoy operations. Of 12mm thickness.	NOS	4		
48.36	B deck: outdoor unit for the split ac of master's cabin is corroded and wasted, same to be renewed with the unit of 1T capacity.	NOS	1		
48.37	Top covers for AC outdoor unit for weather protection to be fabricated and fitted. L=2m, b=0.5m, H=1.2m near on B deck and C deck AC	NOS	7		
48.38	B deck: flag mast bottom foundation is rusted and wasted, same to be renewed.	NOS	1		
48.39	B deck: deck plate outside store is cemented. Same to be renewed. 2m x 1m.	SQM	2		
48.40	B deck: bulkhead plate outside computer lab has FRP on it, same plate to be renewed. Area 4.5m x 1m	SQM	4.5		
48.41	Mast for the dome type antenna (JRC) is corroded and thinned down, corroded parts to be renewed on the balloon hall. H=3m	LUMPSUM	1		
48.42	B deck: gauging of the plate required on port side, if required plate to be renewed. Size 7m x 3m	LUMPSUM	1		
48.43	B deck: vinyl sheet is damaged in the alleyway outside the radio room to be replaced. 5m x 1m and 5m x 1m in l shape	LUMPSUM	1		
48.44	Main deck: wasted parts/frames of the CTD deployment MS gate to be renewed. 2 nos door. 2m x 2.5m. Gates from the hinges are tight while moving, same to be made free.	LUMPSUM	2		
48.45	Wooden door for fcsle deck entrance is damaged, to be replaced along with handle and latch etc. H=6feet	LUMPSUM	1		
48.46	2 nos eyes foldable type for tying pilot ladder near CTD deployment area are to be renewed of 8mm thickness.	NOS	2		
48.47	Hole on the ceiling beam near CTD deployment area, same beam to be renewed. L=1.2m	NOS	1		
48.48	Corroded/wasted MS drain pipe not in use to be cut and removed.	LUMPSUM	1		
48.49	Damaged socket not in use outside wet lab p is to be cut and removed.	LUMPSUM	1		

48.50	Main deck: crawler/dome of oil well crane has 4 holes, same to be rectified with the help of FRP. 8cm holes each	NOS	4		
48.51	Main deck: foot platform (ms) outside wet lab (s) is corroded and wasted, same to be renewed. 2.2m X 1m x 0.3m	LUMPSUM	1		
48.53	F deck (forecastle) : eye near the entrance door is wasted, to be renewed on the bulkhead.	NOS	1		
48.54	F deck (forecastle) : stand for the deck light is wasted, to be renewed.	NOS	1		
48.55	F deck (forecastle) : 3 nos deck lights to be fitted. Stands and wiring is available. Connections to be made.	NOS	3		
48.56	F deck (forecastle) : angle bars for securing cable along the deck/inner side shell to be welded and AWS cable to be laid properly along the bars. Length of the bar required 0.7m each and breadth is 5cm each.	NOS	20		
48.57	F deck (forecastle) : electrical socket weather proof to be fixed on the deck with new switchboard having 5 pin + 5 pin plugs suitable for 220v	NOS	1		
48.58	F deck (forecastle) : skylight cover's 4 nos eyes and 1 handle are corroded and wasted, to be renewed. Skylight cover to be serviced, made water tight and fit back.	LUMPSUM	1		
48.59	F deck (forecastle) : servicing of scientific davits 2 nos. Angle bars 4 nos to be welded on the davits for securing the davit horizontal mast. Angle bars should be foldable type. Load test to be done and certificate to be provided.	LUMPSUM	2		
48.60	F deck (forecastle) : lashing arrangement with the bottle screw is required for the AWS mast.	NOS	2		
48.61	Main deck: metallic platform for scientific machineries athwart ship to be partly removed (4m x 1.5m), smoothing the surfaces of remaining part. Wooden sleepers to be laid/fitted in the above area, new sleepers of good quality hard wood for heavy deck work to be supplied by yard & installed size= 2.5inch thk x 6inch width of various lengths to be properly fitted with studs and nuts welded to plating.	LUMPSUM	1		
48.62	Metallic fender/rope guard in curved shape as per sample to be replaced on the stern grating. L=6m, outer curved side=0.4m. Welding will be required for fixing the new one.	LUMPSUM	1		
48.63	Vinyl sheets of 10 nos labs to be cleaned with cleaning agents. Approx area 20msq each lab	MSQ	200		
48.64	Spotlight/focus light on bridge wings to be repaired.	NOS	1		
48.65	Two new telephones are required in wet lab (stbd) and cabin no. 418. Lines also to be examined repaired for frequent connection issues in these two rooms.	NOS	2		
48.66	Water leaks in geophysical lab from the ceiling panels. Suspected to leak from toilet on upper Deck. Leak to be identified and leakage to be arrested and panels to be fitted back after satisfaction job done. 3 nos panels may be required to open and fit back.	NOS	3		
48.67	Canvas covers (water proof) required for 2 nos ctd frames (rosette) and 2 nos atlas cranes joysticks operating panels, approx sizes: joysticks 1mx0.5m each, ctd frames 2m dia height 7m each frames. (actual measurement to be taken onboard)	NOS	4		
48.68	Wooden planks near ctd deployment area are irregular. Levelling of the planks to be done for easy dragging of the ctd frame. Approx area 3mx4m. Defective planks to be replaced.	SQM	12		
48.69	Railings bent near aft atlas crane and near funnel to be repaired/ replaced.	LUMSUM	10		
48.70	Deep sea winch and its storage winch teflon winding rollers to be replaced. 8 nos as per samples already fitted.	NOS	8		
48.71	Door closing damper for staircase on fcsle deck aft stbd side to be replaced	LUMPSUM	1		
48.72	A deck: top cover/lid of the box for lifeboat batteries is damaged/ sagged. New cover to be made of Fiberglass of size around 1.8m x 0.8m.	NOS	1		

48.73	2 nos portholes of deep sea winch control room leak during rains, same to be repaired.. Rectangualr type. Compression bars/frames and gasket to be replaced. Approx size l=1.5m, b=1.2m. Hose test to be carried out for confirming the repairs.	NOS	2		
48.74	Bottom plate of porthole (stbd side) of winch control room is damaged, same to be renewed. L=1.2m x 0.3m	NOS	1		
48.75	Scientific store II (3rd deck): UV measurement of the deck plate of the store and plates near staircase are to be done. To renew if required. Pitting on the deck plate. Approx area 10m x 5m	SQM	50		
48.76	Scientific store II (3rd deck): wooden racks are to be removed near the door of the store. Not in use those racks. Around 10 racks.	LUMPSUM	1		
48.77	Main deck alleyway near conference room: deck plate is damaged. Plate to be renewed and vinyl sheet to be replaced on it. Approx area: 2m x 1.2m	LUMPSUM	1		
48.78	Supporting frame is damaged near ctd winch area celing deck plate. Same to be renewed. Approx l=4m , 16mm thickness	LUMPSUM	1		
49	SCIENTIFIC MACHINERIES/EQUIPMENT				
49.1	Sub-bottom profiler : water filling pipe (if corroded) to be replaced by the yard and rubber seal to be supplied and fitted on the hull for SBP dome (transducer) as per sample already fitted in place. Approx length of pipe 3m, dia 8cm. Outer dia of gasket 2m, inner dia 1.8m. (approx 80 holes to be made in the gasket for fitting the bolts). Staging may be required for upto 1m	LUMPSUM	1		
49.2	Neoprene rubber gasket of sonar dome for ADCP to be renewed as per sample. Ring shape outer dia around 40cm. Staging may be required for upto 1m	NOS	1		
49.3	Renewal of ADCP acoustic window and filling fresh water in the chamber. Capacity of the chamber for FW is around 40L. Make the transducer compartment water tight using rubber gasket, silicon sealant etc. Specs of acoustic window is as under which is to be procured from the OEM and install in place as per sample already fitted in place on the hull. Specs of acoustic window are given under spares list also. PN: 840-1001-08 is a 9.525mm (0.375") thick x 48" x 48" window make of the equipment is Teledyne.	LUMPSUM	1		
49.4	Pulleys and guide rollers near storage winch has to be serviced	NOS	1		
49.5	TV monitor in winch control room f deck: top cover to be made to protect it from the rain water from ceiling panels. Plate of acrylic to be fixed on the top of TV of size 90cm x 30cm.	NOS	1		
49.6	Hempel's antifouling paint required with water base (not with petrol base) required for Scientific transducers mounted on hull. Qty 5 L.	LTR	5		
49.7	High pressure washing near to the installed acoustic sensors area on hull bottom in the presence of AMC engineer. With the guidance of AMC engineer the sensor installed area may be get cleaned by the high pressure water washing with a reduced/controlled pressure including SBP dome chamber.	NOS	12		
49.8	New CCTV to be supplied, installed and commissioned of below specs: - 5.0 MP 8-channel digital video recorder 1 sata port - 1 no. - 8.0 MP day/night bullet camera (for open deck) - 1 no. - 5.0 MP day/night bullet camera (other areas) - 6 nos. - 14 inch displays - 4 nos. Additional 4 connections to be made to the existing displays. - Suitable processing unit for storage, distribution to displays and retrieval of video. - Surveillance hard disk- min 6 TB -1 no. - CAT6 outdoor cable- unarmoured to be used - approx 275 m - Outdoor installations on main deck to be safely covered. - Requisite power supplies, interfaces, junction boxes, cables, connectors, baluns, are to be supplied and installed as part of the commissioning. Cabling, panel removals/fitting back are to be done.	LUMPSUM	1		

49.9	SBP dome's drain plug (bolt) made of Teflon to be inspected and renewed if damaged.	NOS	2		
49.10	Multibeam echo sounder: Removal of old transducers/equipment and installation of new Multibeam echo sounder under the supervision of OEM engr. Supply of equipment will be by owner. Following jobs may be considered in this work scope: <ul style="list-style-type: none"> • Generate construction drawings for fairing and casings & modify drawings as per requirements • Manufacture and install fairings, cases, protection pipes etc. • Modifications as per owner rep/OEM engineers instructions • Removal of old transducers and cables and other accessories/equipment on hull as well as decks/labs (transmitter and receiver arrays- 16 nos transducers) • Installation of transducers, cables and other related equipment/ accessories under supervision of OEM engineers/owner rep. Modifications as required for installation of new transducers are to be done. • Final drawings of equipment installation/location of transducers etc. 	LUMPSUM	1		
50	FWD LAVATORY F-DECK				
50.1	Switch for lights is damaged, to be replaced.	NOS	1		
50.2	Shower with hose to be replaced.	NOS	1		
50.3	Hinge of the bathroom door is damaged, to be replaced.	NOS	1		
50.4	2 nos mixer taps of washbasins to be replaced.	NOS	1		
50.5	Tube light fittings over wash basins to be replaced with new fittings.	NOS	2		
50.6	Indian type toilet connected to evac system are not working, all to be made operational. Damaged parts/ PVC pipes to be renewed.	LUMPSUM	1		
51	AFT LAVATORY STBD SIDE F-DECK				
51.1	Bathroom tiles to be cleaned. 6 nos bathroom of area 1.2m x 1m each	NOS	6		
51.2	Switch for the lights is damaged, new required.	No	1		
51.3	Lavatory to be painted including doors. Approx size 5.5m x 5.5m x 2.5m	LUMPSUM	1		
51.4	Bathroom door frames are cracked/holed. Same to be repaired.	NOS	5		
51.5	Bathroom no.6 has holes on the ceiling plate same to be covered with fibre 1m x 1m (doubler was put)	NOS	2		
51.6	Partition plate of toilet no. 4 & 5 is damaged. Same to be renewed. 40cm x 30 cm.	NOS	1		
51.7	Side plate of toilet no. 5 and 6 are damaged. Same to be renewed. 1.5m x 1m each.	NOS	2		
51.8	4 nos commodes to be replaced with toilet seat flush button, hose pipe etc	NOS	2		
51.9	1 wash basin is cracked. To be replaced (rectangular type)	NOS	4		
51.10	Unused PVC pipes to be cut and removed.	NOS	1		
51.11	Wash basin support is corroded. To be renewed.	NOS	2		
51.12	3 nos steel soap case to be renewed.	NOS	3		
52	PORT SIDE LAVATORY F-DECK				
52.1	Mirror cabinet is required	NOS	1		
52.2	2 nos seat covers of commodes are to be replaced.	NOS	2		
52.3	Mixer tap of bathroom no. 4 to be replaced.	NOS	1		
52.4	Hot water doesn't come from the taps, earlier it was there. Issue to be identified and be resolved including stbd side lavatory.	LUMPSUM	1		
52.5	1 no. New washing machine required to be installed with draining arrangement.	NOS	1		
52.6	2 nos separation plates of the toilets are corroded and holed. To be replaced. 0.3 x 0.3	NOS	2		
52.7	Tiles of the bathroom are to be properly clean with the cleaning chemicals. 5m x 3m area.	MSQ	15		
52.8	Indian type toilets connected to EVAC system are not working, all to be made operational. Damaged parts/ PVC pipes to be renewed. 4 nos on this deck	NOS	4		

53	FWD LAVATORY MAIN-DECK				
53.1	Separation MS plate 4 nos are damaged, to be replaced. L=0.4m, h=0.4m each.	NOS	4		
53.2	Bottom part of the toilet doors damaged. Door to be repaired. L=0.5m x 0.5m	NOS	2		
53.3	Wash basin is old and damaged, to be replaced with the new wash basin and mixer tap. Drain line of 3m may be fixed to the nearby scupper.	NOS	1		
53.4	Side panel under the door of the bathroom is damaged (port and stbd side), same to be repaired. Size 1m x 0.2m.	NOS	2		
53.5	Floor tiles of the bathroom to be cleaned with chemical/ cleaning agent. Area 5m x 4m	NOS	1		
54	AFT LAVATORY STBD SIDE MAIN-DECK				
54.1	Bulkhead of the bathroom is damaged/holed near the door. Same to be renewed. Area 1m x 0.5m plate.	NOS	1		
54.2	One washbasin is required along with the mixer tap and to be fixed.	NOS	1		
54.3	Floor tiles of the bathroom to be cleaned with chemical/ cleaning agent. Area 5m x 4m	MSQ	20		
55	EVAC SYSTEM				
55.1	Complete evac system pipe line including black & grey water to be thoroughly flushed with chemical if the lines are found choked entire system to be in working condition deck wise and and shown to ship staff it may be necessary to repair/adjust commode evac machine box type or scupper evac machine	LUMPSUM	1		
55.2	All gate valves in the evac system in the E/R and on deck to be opened and overhauled Total nos in accommodation=24 size 160k Total main line v/vs in engine room=13 size 200 k	LUMPSUM	1		
55.3	Black water and grey water tanks to be cleaned , thinned down plating to be renewed and painting as per paint specifications.(black water tank -1150mm x 1500mm x 1950mm),(grey water tank- 1150mm x 1500mm x1950mm)	M3	7		
55.4	E/R evac tank pipe lines near black and grey water pumps, corroded and holes same to be renewed as required. Presently temporarily arrested. Pipe dia 4 inch and 2 inch over L 2000mm	KG	25		
56	SANITIZATION				
56.1	Effective sanitization needs to be done as per standards / covid-19 guidelines. This scope to be done at the end of the repair works before handing over the vessel. The complete ship to be sanitized to safeguard the ship's crew and scientists against covid-19. A government certified service provider should be engaged for this scope of work.	LUMPSUM	1		

ENGINE ROOM DEFECTS					
E1	DRY DOCKING SERVICES - ENGINE				
E1.1	After dry docking and on completion of all repairs of machinery and equipment, sea trial to be arranged by the shipyard to ensure / test of all machineries, scientific equipment and navigation and communication equipment etc.	LUMPSUM	1		
E1.2	Sludge & ER bilges to be removed regularly, and shore reception.	M3	100		
E1.3	Air chutes to be provided in ER whenever requested for and ventilation purposes cooling	LUMPSUM	1		
E2	Propeller to be removed and aft seal to renew propeller dia. 2750 mm, 4 blades maker: Schaffran. All spares yard supply. Stbd propeller: clockwise, port propeller :anti-clockwise	LUMPSUM	2		
E2.1	Port and stbd propellers tail end shafts to be removed. Tail shafts intermediate shafts thrust bearings oil glands and stern bushes to be checked	LUMPSUM	2		
E2.2	Arrangements to be made for draining oil from port and stbd stern tube systems including FWD and aft seals approx 1200 ltrs of oil is in stern tube allow for collection/ disposal of the drained oil & certificate to be produced. The propellers to be removed from tail shaft and all the shafts to be withdrawn outward after disconnection of respective muff couplings.	NOS	3		
E2.3	Before withdrawing the propeller shafts the propeller drop to be taken and recorded and after complete assembly dye penetration test to be carried out	NOS	2		
E2.4	Proper clearance propeller hub and shaft area in way of propeller some parts may require surface grinding boring etc to attain rope guard along with net cutter to be chipped and painted. A new one to be fabricated if required	LUMPSUM	2		
E2.5	Both fwd and aft stern tube bushes are to be calibrated along with propeller shaft and be presented to attending superintendent / surveyor before refitting the shaft the stern tube is to be thoroughly cleaned both fwd and aft stern tube seals are to be renewed	LUMPSUM	2		
E2.6	Propellers are to be mounted back on tail shafts and propellers nut to be tightened as per makers procedures propellers blades to be polished propellers nut to be locked in presence of ships staff and propellers cones to be filled with fresh tallow. All blade roots and tips to be checked for crack	LUMPSUM	2		
E2.7	Approx 6 mtrs high staging is required for the propeller to approach pad eyes to be required to weld on ships side for lifting tackles same are to be removed after the job is completed necessary tools lifting tackles are to be provided by the yard	LUMPSUM	1		
	Note: All spares and fresh oil yard supply				
E2.8	Spare propellers kept on the fwd of forecastle deck spare propeller blades damaged the blades require grinding to make into proper shape the blades are also to be polished propellers to be dynamically balanced (ship yard) and certificates to be produced	LUMPSUM	1		
E2.10	Damaged rope guard to be removed new rope guard to make and fit after completion of work	NOS	2		
E2.11	Remove aft seal plugs and drain oil from aft seal chamber	NOS	2		
E2.12	Aft seal renewal	LUMPSUM	2		
E2.13	Loosen propeller nut and remove propeller following maker's instruction lower /hang Propeller dismantled aft seal along with chrome liner and transport to yard shop along with chrome liner and transport to yard shop renew the aft seal with new seal	NOS	2		
E2.14	Chrome liner to be machined or renewed as per the recommendation of class surveyor	LUMPSUM	2		
E2.15	Propeller blades to be smeared with fish oil to protect from paint splashes	SETS	2		

E2.16	Propeller to be surveyed by class surveyor and all recommendations to be complied with	SETS	2		
E2.17	Note: staging of 6mtr high is reqd for above job.	SETS	2		
E3	Life boat engine 3 & 4 make : Farymann diesel, w. Germany type: A14 0450, N=3000.	NOS	2		
E3.1	Engines are not running fuel pump and injector to be overhaul	NOS	2		
E3.2	Lowering handles to be o'hauled same to be renewed if required with yard supply	NOS	2		
E4	Sea chest and gratings:				
	Following sea chest gratings to be removed. Sea chests to be cleaned, painted and new anodes to be fitted.				
E4.1	Thickness gauging of sea chests to be carry out. Surveyor's recommendation to comply with.	NOS	4		
E4.2	On completion gratings to be fitted back with nuts and lock consider renewal of studs & nuts (SS)24 nos20mm staging (5mtr high) is to be erected for the work (quote including staging)	NOS	24		
E4.3	Port fwd low sea suction (in stabiliser room)	NOS	1		
E4.4	Stbd fwd high sea suction (in stabiliser room)	NOS	1		
E4.5	Port aft high sea suction (in aux engine room)	NOS	1		
E4.6	Stbd aft low sea suction (in aux engine room)	NOS	1		
E4.7	Emg fire p/p sea suction	NOS	1		
E4.8	Pure sea water (TSG)p/p suction (no grating)	NOS	1		
E4.9	Bow thruster gratings (port & stbd)	NOS	1		
E5	Ship side valves:				
	The following ship side v/vs to be opened, overhauled and to be boxed up with new joints and gland packings. Valves to be shown to class surveyor & ship staff in opened up condition. Surveyor's recommendation. Valve and seat to be tested for necessary repairs/ reconditioning of parts to be carried out as water tightness. Valve cover stud & nut to be renewed if found wasted. Gland packing stud & nut to be renewed if found wasted.				
E5.1	Low sea suction v/v port Fwd 350 mm globe	NOS	1		
E5.2	Low sea suction blow off v/v 25 mm globe	NOS	1		
E5.3	Low sea suction air vent v/v 65 mm globe	NOS	1		
E5.4	High sea suction v/v stbd fwd 350 mm globe	NOS	1		
E5.5	High sea suction blow off v/v 25 mm globe	NOS	1		
E5.6	High sea suction air vent v/v 65 mm globe	NOS	1		
E5.7	High sea suction v/v port aft 350 mm globe	NOS	1		
E5.8	High sea suction blow off v/v 25 mm globe	NOS	1		
E5.9	High sea suction air vent v/v 65 mm globe	NOS	1		
E5.10	Low sea suction v/v stbd aft 350 mm globe	NOS	1		
E5.11	Low sea suction blow off v/v 25 mm globe	NOS	1		
E5.12	Low sea suction air vent v/v 65 mm globe	NOS	1		
E5.13	Pure sea water p/p suction v/v 100 mm globe 2 no	NOS	2		
E5.14	Emergency fire p/p suction v/v 100mm globe	NOS	1		
E5.15	Bilge/ballast p/p no1 OBD discharge v/v 125 mm globe	NOS	1		
E5.16	Bilge/ballast p/p no2 OBD discharge v/v 125 mm globe	NOS	1		
E5.17	ECR ac p/p OBD discharge v/v (ECR plat) 75 mm globe	NOS	1		
E5.18	RO plant OBD v/v 25 mm globe	NOS	1		
E5.19	Sewage p/p OBD disch v/v 80 mm globe	NOS	1		

E5.20	OWS 15 ppm OBD disch v/v 100 mm globe	NOS	1		
E5.21	Chemical evac tk OBD disch v/v 60 mm globe	NOS	1		
E5.22	Main AC SW cooling OBD v/v 200 mm globe	NOS	1		
E5.23	MSW p/p obd disch v/v ecr plat 200 mm flap	NOS	1		
E5.24	Pure s w (TSG) p/p o/b v/v (hyd pp room) 45 mm globe	NOS	1		
E5.25	Pure s w (TSG) p/p suction v/v- 02 nos 100 mm globe	NOS	2		
E5.26	OWS 100 ppm obd v/v 50 mm globe	NOS	1		
E5.27	Tk no15 c obd disch v/v (stg compt) 80 mm gate	NOS	1		
E5.28	Bilge/fire p/p no1 obd discharge v/v 125 mm globe	NOS	1		
E5.29	Bilge/fire p/p no2 obd discharge v/v 125 mm globe	NOS	1		
E5.30	A/E low sea suction filter outlet butterfly v/v dia 350 mm	NOS	1		
E5.31	A/E high sea suction filter outlet butterfly v/v dia 350 mm	NOS	1		
E5.32	Stbd low sea suction filter outlet butterfly v/v dia 350 mm	NOS	1		
E5.33	Stbd high sea suction filter outlet butterfly v/v dia 350 mm	NOS	1		
E5.34	Fwd MSW p/p suction butterfly v/v dia 350 mm	NOS	1		
E5.35	Fwd & aft MSW p/p disch gate v/v dia 200 mm	NOS	2		
E5.36	Aft MSW p/p suction butterfly v/v dia 350 mm	NOS	1		
E6	Intermediate valves:				
	Following intermediate S.W. v/vs open,all parts to be shown to s/staff. Valve and seat to be ground. V/v to be tested for water tightness. Valves to be boxed back with new joints and wasted nuts & bolts to be renewed (yard supply) packings. Valve to be renewed if found beyond economical repair.				
E6.1	ECR AC condensor I/L & O/L v/vs globe	NOS	2		
E6.2	Fire p/p suc v/v (com) globe 150 mm	NOS	1		
E6.3	Fire line interconnection with PM AC line butterfly v/v dia 70 mm	NOS	1		
E6.4	Emcy bilge suction valve pm room port	NOS	1		
E6.5	Ballast and bilge valves:- Following ballast and bilge line valves to be taken out along with individual group valve chest.All valves to open, overhaul and to be fitted back with new joints, packing, studs and nuts. All valve chest to be pressure tested to 5.0 bar in presence of ships staff and the chest to be fitted inplace. All fittings & joints are yard supply.				
E6.6	Ballast tanks				
	V/v chest Tank nos v/v size No. of v/vs				
E6.6 A	26 9S,4S,3S,2C,8S 125 dn 05	NOS	5		
E6.6 B	27 8P,9P FPK,3P,4P 125 dn 05	NOS	5		
E6.6 C	28 6P,5P,6S,5S 125 dn 04	NOS	4		
E6.6 D	29 10S,13S,7S,14S,15S 125 dn 05	NOS	5		
E6.6 E	31 15C,15P,4P,13P,7P,10P 125 dn 06	NOS	6		
E6.6 F	Succh 2731292628SW BIL 175 dn 07	NOS	7		
E6.7	Ballast p/p disch. Chest				
E6.7 A	Port tk p/p 1 disch stb tk pp1 obd 125 dn 04	NOS	4		
E6.7 B	Port tk p/p 1 disch stb tk pp1 obd 125 dn 04	NOS	4		
E6.7 C	BALLAST P/P 1&2 SUC V/Vs FLAP PIPEDIA 190 MM	NOS	2		
E6.7 D	BAL P/P NO2 DISCH V/V GLOBE PIPE DIA 125 MM	NOS	1		

E6.8	Bilge System				
E6.8 A	CH1CH2CH (P) SG (P) PAINT RM (SB) CH2 (CC) 100DN 06	NOS	6		
E6.8 B	PM (P)AE (P) PUR RM 100DN 06	NOS	6		
E6.8 C	AE (P)AE (SBAE (SBPM (SB) 100DN 06	NOS	6		
E6.8 D	ECHO RM CD RO RM (SB & P) 100DN 04	NOS	4		
E6.8 E	BILGE AND FIRE P/P SUC V/V FLAP PIPE DIA 152 MM	NOS	1		
E6.8 F	BILGE AND FIRE P/P DISCH GLOBE PIPE DIA 100 MM	NOS	1		
E6.8 G	BILGE P/P DISCH CHEST FIRE LINE DISCH V/V PIPE 150 M	NOS	1		
E6.9	BUNKER DO VALVE CHEST	NOS	6		
E7	CENTRIFUGAL PUMP - O'HAULING :				
	Following centrifugal P/Ps to be removed to yard shop. P/Ps to be dismantled and to be shown to class surveyor. Fit back by yard. Worn out parts to be renewed from ship supply or to be made by theyard. P/P casing to be repaired if required. Pump to be boxed up and aligned with el motor. P/P and motor couplings and coupling pads to be renewed by yard if found worn wasted studs, bolts & nutsto be renewed by yard. Joints & gaskets yard supply. Pump stool to be chipped thoroughly and painted. Pump stool to be renewed if found excessively, by the yard.				
E7.1	A/C Sea Water Cooling Pump	NOS	3		
E7.1A	Make- IRON A/S COPENHAGEN. Type-QVKL-4/300,90M3/HR				
E7.2	LT Cooling Water Pump	NOS	2		
E7.2A	Make- IRON A/S COPENHAGEN. Type-QVKL-8/800, 370M3/HR				
E7.3	Fire & Bilge P/P	NOS	2		
E7.3A	Make-IRON A/S COPENHAGEN, Type-QV -2-4/300 EA, 80m3/HR				
E7.4	Bilge & Ballast P/P	NOS	2		
E7.4A	Make-IRON A/S COPENHAGEN, Type-QV -2-4/300 EA, 80m3/HR				
E7.5	DO transfer pump to overhauled & all gaskets seals to be renewed shaft alignment is needed if required	NOS	2		
E7.6	Chiller Pump	NOS	2		
E7.6A	Make-IRON A/S COPENHAGEN, Type- QVKL 4/3020, 30M3/HOUR.				
E7.7	Harbour Sea Water Pump	NOS	1		
E7.7A	Make-IRON A/S COPENHAGEN, Type-80-65/250,30m3/HR				
E8	DECK MACHINERY				
E8.1	A - frame aft (stern gantry): make: MACGREGOR MG 2896 to be overhauled and serviced. Leakages to be rectified cylinder seals to renew (yard supply) if leakage observed. Damaged hoses, hyd pipe lines to renew. Dynamic load test to be carried out (SWL 22.5 tons) and certificate to be provided.	NOS	1		
E8.2	CTD WINCH: FWD, MAKE : SEA MAC MARINE PRODUCTS INC HOUSTON TEXAS MODEL: 3560 EHLWR-60 S/N 760 AFT MAKE: DT MARINE PRODUCT INCORPORATED. TYPE: 2 SK 181085. Servicing of both the winches to be carried out. Both ctd winch pumps to overhaul and direct acting guided poppet type relief v/v to renew. Pull test of 15 tons to carry out on both and certificates to be procured. All hydraulic pipe line leakage to be rectify. Material to supplied by yard. Load test of the winch cables to be also carried out. SWL - 1 T each cable.	LUMPSUM	1		

E8.3.1	WINDLASS: HATLAPA TYPE : ANKONA VI E CHAIN PULL : 242 ton windlass gear box to open inspection to carry out overhaul and boxed back and satisfactory trial to be shown	NOS	2		
E8.3.2	2 nos brake bands to be opened up for inspection	NOS	2		
E8.3.3	The brake linings to be renewed if found worn out yard to supply spare. Brake lining size: l= 2800mm, b= 90mm, thickness= 18mm. All surveyors' recommendations to comply with.	NOS	2		
E8.4	Ac duct of ahu no. 2 on f'cle deck to be repaired. Ac duct (metallic) is damaged and have holes. Approx lenght to repair- 10m	LUMPSUM	1		
E8.5	National oil well crane make: National Oil well Norway type: OC1800KTE T3722				
E8.5A	Rocking test to be carried out as per makers recommendation and certificate to be provided.	LUMPSUM	1		
E8.5B	Load test to be done & certificate produced by yard (10T SWL)	LUMPSUM	1		
E8.6	Jib boom crane housing and jib, frame and stiffeners to be gauged by UT. Based on results of UT cropand renew plates. End stoppers to be fabricated all material yard supply. All hydraulic pipes including greasing tubes to be inspected and renewed by yard. Function and loadtest to be carried out after checking all safety devices.	LUMPSUM	1		
E8.7	Capstan to be serviced by service engineer and load test to be carried out yard to supply spares	NOS	2		
E8	Removal of unused equipment: the following equipment to be taken out from engine room.	LUMPSUM	1		
E8 A	Gyro room AC plant to be removed (below stabiliser room ladder). It has to be cut and detached.				
E8 B	Stabiliser & associated pumps. It has to be cut and detached.				
E8 C	Fuel oil supply pumps & lines. It has to be cut and detached.				
E9	Cathelco anodes:				
E9.1	Cathelco system anodes to be removed after removing electrical connections anodes which are wasted to be renewed	NOS	1		
E9.2	TYPE: CA-4590, weld in sleeve mounting.				
E9.2 A	MG anodes copper dia 825 mm x 508 mm long	NOS	2		
E9.2 B	TC aluminium anodes dia 825 mm x 508 mm long -	NOS	2		
E9.3	Cable connection to be fitted back simulation to carry out for the control panel to switch on the system after undocking and to check for satisfactory operations to carry out adjustments as per manufacturer`s instruction and to be shown to ship staff.	LUMPSUM	1		
E10	Auxiliary engines job to be carried out by Wartsila service engineer. Make : WARTSILA-W6L20 D2 4-stroke turbocharged direct fuel injection, non-reversible diesel engine- 5x1080kw @1000rpm. All spares and consumables yard supply.				
E10.1	5 nos. AEs ,camshaft bearing bush clearances to be taken bearings renew based on inspection(16000hrly)	LUMPSUM	1		
E10.2	5 nos. AEs ,conrod bolts to renewed big end bearings to be renewed as per inspection.(16000hrly)	LUMPSUM	1		
E10.3	A/e #2 shaft seal (v ring) leaking same to renew	LUMPSUM	1		
E10.4	5 nos. A/Es fuel pump and fuel valves to be overhauled with ship supplied spares. Tappets to be set as per manual	LUMPSUM	1		
E10.5	5 nos. AEs Woodward Governor (ug-8) to be replaced with overhauled one 12000hrly.	LUMPSUM	1		

E10.6	Spare governor to be overhauled.723 digital control module on all AEs located in respectivecontrol cabinet to be checked for correct functioning rectify defects or replace module.	LUMPSUM	1		
E10.7	5 nos. Aes pneumatic control for start and safety devices to be inspected and defects rectified With ship supplied spares.	LUMPSUM	1		
E10.8	Complete instrumentation and control system to be checked for flaws and defects rectified alarm/trips to be tested as per makers recommendation.	LUMPSUM	1		
E10.9	5 nos. AEs , PCB cards c1,c2 and c3 to be renewed with ship supplied spares. Necessary set points to be adjusted.	LUMPSUM	1		
E10.10	On all AEs inductive pickups to be checked for correct functioning replace defective ones with ship supplied spares.	LUMPSUM	1		
E10.11	All alternators to be cleaned in situ by dry ice method varnished& baked, air gap & insulation resistance to checked before & after cleaning winding shown to ship staff	LUMPSUM	1		
E11	RUDDER (FLAP RUDDER) MAKER : M/S HEINZHINZE, GMBH. TYPE : 10-45-25				
E11.1	The port and stbd rudder clearances to be taken and inspection to be carried out pintle bushes to be renewed if required	NOS	2		
E11.2	Rudder drop to be taken and recorded jumping clearances to be checked and if any damage to the jumping clearances limiting bars sameto be renewed. All clearances has be shown to chief engineer	NOS	2		
E11.3	Float coat to be given to both rudders internally zinc anodes to be renewed as required.	NOS	2		
E11.4	Also consider unshipping the rudders if required consider pressure testing of rudders to 02 bar building up of rudder weld seams/ pittings	NOS	2		
E11.5	Rudder foundation bolts to renew yard supply	SETS	2		
E12	Plate above do tank (below hyd sweep lab) holed to renew	SQM	4		
E13	EVAC SYSTEM AND SEWAGE PLANT				
E13.1	Evac tanks of 3 cu mtr capacity to be cleaned and wasted internals to renew	M3	3		
E13.2	Float switches are malfunctioning and same to be renewed yard supply	NOS	2		
E13.3	Electromechanical actuator motors for evac black and grey water discharge control to overhaul and satisfactory trial to be shown	NOS	2		
E13.4	Sewage tank has to be cleaned	LUMPSUM	1		
E13.5	All the ejectors (6 nos) to o'haule nozzle & n/r flap v/v to check and repair / renew (yard supply)	NOS	6		
E13.6	4 nos tank g/glasses to renew (l=1 mtr dia=20mm)	NOS	4		
E14	Following valves for grey & black water p/p to be overhauled.				
E14.1	Grey & black water p/p suction v/vs type: gate v/v dn 100 mm pcd-180mm pipe dia-115mm	NOS	6		
E14.2	Grey & black water p/p ejector suction v/vs type: gate v/v dn 65 mm pcd-145mm pipe dia-76mm	NOS	6		
E15	Bow thruster: type: fu-80-ltc-2250 make: Brunvoll as Norway all oil leakages to be rectified inspection and overhaul to be carried out under the supervision of maker's service engineer (brunvoll) spares yard supply. To be presented for survey.	NOS	1		

E16	Accommodation air handling units all four nos air handling units heat exchangers to be removed and chemically cleaned to improve their efficiency chilled water lines to all the heat exchangersto be washed thoroughly to clear off minute particles as this is causing chilled water pumps mechanical seals renewal frequently all blower housing got corroded and wasted same to be renew as necessary.	NOS	4		
E17	Azimuth thruster: type: fu-80-ltc-2250 at: make: brunvoll as norway all oil leakages to be rectified inspection and overhaul to be carried out under the supervision of maker's service engr. Spares yard supply allow for collection and disposal of oil approx 1200lts. Certificate to be issued. To be presented for survey.	NOS	1		
E17.1	A/t locking block pin to dismantle and to renew locking block and assemble. Lubricate with grease, new split pins 2 nos. To install.(spares yard supply)	NOS	1		
E18	DOMESTIC FRIDGE FISH ROOM & MEAT ROOM (2nos) DOOR				
E18.1	Fish room door packing damaged and ice formation on door packing noticed causing door getting jammed	NOS	2		
E18.2	Door to repair and packing to renew (packing yard supply) door lock of fish room to repair/renew	NOS	2		
E19	Fabricate and supply following filters: AC blower wire mesh filters with holding frame:				
E19.1	AC blower no1 and no3 : length-690mm breadth-595mm thickness-35mmqty-4nos frame and 8nos wire mesh	NOS	4		
E19.2	AC blower no2: length-710mm breadth-300mm thickness-35mm qty-2nos frame and 4nos wire mesh	NOS	4		
E19.3	AC blower no4 : length-1115 mm breadth-620 mm thickness-35mm qty-2nos frame and 4nos wire mesh	NOS	4		
E19.4	E/R bilge well suction filters: outer dia-252 mm height-202mm	NOS	4		
E19.5	E/R blower intake filters:				
E19.5 A	Length-110cm height-105cm	NOS	3		
E19.5 B	Length-96cm height-105cm	NOS	1		
E20	Following areas to be cleaned.				
E20.1	E/R bilges & tank top painting required approx 12m x 10m	LUMPSUM	1		
E20.2	Stabilizer room bilges & tank top painting required approx 12m x 7m	LUMPSUM	1		
E20.3	Pm room bilges & tank top painting required approx 12m x 10	LUMPSUM	1		
E20.4	Purifier room bilges & tank top painting required approx 7m x 8m	LUMPSUM	1		
E20.5	BT room bilges & tank top painting required approx 12m x 5m	LUMPSUM	1		
E20.6	A/c condenser end covers to remove fabricate, coat with glass flake tubes to clean defective tubes to renew assemble with new gaskets and pressure test	NOS	3		
E20.7	Fridge condenser to clean and pressure test required	NOS	2		
E20.8	Hydrosweep lab a/c condenser pressure test required	NOS	2		
E20.9	Core fridge a/c condenser pressure test required	NOS	2		
E20.10	ECR A/C condenser to clean end covers to repair if necessary coat with glass flake assemble and pressure test	NOS	1		
E20.11	PM A/C condenser to clean end covers to repair if necessary coat with glass flake assemble and pressure test	NOS	2		
E20.12	Alternators FW coolers to clean in situ	NOS	5		

E20.13	A/E lube oil coolers to clean after dismantling	NOS	5		
E20.14	A/E air coolers chemical cleaning required	NOS	5		
E20.15	LT coolers to be dismantled plates to clean defective joints to renew on assembly carry out pressure test rectify leaks if any.	NOS	2		
E20.16	HT coolers chemical cleaning required	NOS	2		
E22	Following pipelines to fabricated. Valves has to renew/repair if required by yard. All hot work permit to obtained by yard				
E 22.1	DO tank 24(p) vent line leaking same to be renewed if required approx 10m	MTRS	10		
E 22.2	DO tank 19(s) line leaking same to be renewed if required approx 15m with 5 bends	MTRS	15		
E 22.3	Emcy bilge suction(p) line to e/r fire p/p #1 to renewed	MTRS	10		
E 22.4	AT bunker station fabricate flange and bend with blank to accommodate sampler material yard supply.	MTRS	15		
E 22.5	A/E #4 expansion line to tank approx 2m	MTRS	2		
E 22.6	PM a/c condensate drain system to fabricate through deck to e/r bilge well approx 25m	MTRS	25		
E 22.7	PM a/c sea water line approx 25m	MTRS	25		
E 22.8	Fabricate & fit service air line as per ship staff requirement (one line to deck, one line to hydrphore tank, one line to work shop, one line to OWS, one line to QCV) approx 100m	MTRS	100		
E 22.9	Air handling units drains also to be make direct obd as required	NOS	4		
E 23	All gauges to calibrated. Certificates to given.	NOS	120		
E 24.1	HT expansion tank gauge glass and valves to be renewed	NOS	2		
E 24.2	LT expansion tank gauge glass and valves to be renewed	NOS	1		
E25	Following a/c compressor to be overhauled. Renew parts if required with yard supply. Bearings to be renewed if required.				
E 25.1	ECR AC compressor make: DEUTSCHE BRONSWERK GMBH TYPE-GRDW-96/2R5 spares yard supply	NOS	1		
E 25.2	Geophysical lab a/c compressor to be renewed make: Emerson Climate Technologies type: CR72KQM- TFM-233DM	NOS	1		
E 25.3	Fridge compressors. Shaft alignment if required. Make: SABROE-TCMO 18, Serial No: 76-058-59,R-22.	NOS	2		
E 25.4	Entire cold storage system to be pressure tested by nitrogen and vacuum. Any gas leakage from the system to be rectified system to be charged with gas (ship supply) dryer cartridge to be renewed. All evaporators securing brackets to repair consider 6 nos. Satisfactory trial to be given with meat room veg room & fish room. Expansion valves along with orifices to renew. Spares to be supplied by yard	LUMPSUM	5		
E 26	E/R blowers to be overhauled blower flap checked & repaired shown to ship staff	NOS	8		
E 27	Funnel ladder safety guard to fit	LUMPSUM	1		
E 28	All A/C blowers evaporator to be chemically cleaned	NOS	4		
E 29	Dry lab and wet lab blower units corroded same to renew	NOS	2		
E 30	Expansion valve and drier element on ECR AC to renew. Evaporator coil to renew yard to supplyspares. Pressure and vacuum test to be carried out leakage to be rectified. Refrigerant to be charged yard supply. Function test to be carried out in the presence of ship staff.	LUMPSUM	1		
E 31.1	Following split ac units, full servicing to be carried out including pressure and vacuum tests. Leakage to rectify if coils are beyond repair split units to be replaced optimum gas to be charged. Spares, material and gas, yard supply.				
E 31.2	O general capacity 7.29kw	NOS	6		
E 31.3	Hitachi capacity 6445 w	NOS	1		

E 31.4	Lloyds capacity 6400	NOS	1		
E 31.5	Carrier capacity 8000 w	NOS	1		
E 31.6	Daikin capacity 9.35kw	NOS	1		
E 31.7	GREE capacity 1125 kw	NOS	1		
E 31.8	O General capacity 7.15kw	NOS	1		
E 31.9	Voltas capacity 1000w	NOS	1		
E 31.10	Wet lab deep freezer defective requires servicing spares yard supply. Model CHF500A. Blue star	NOS	1		
E 32	DC Propulsion Motors Make: AEG-TELEFUNKEN, Type: DC Motor G(C) 354/./4(g) to G(C) 3127/./10(g) ,750V DC, 908A,615KW,160-220RPM.				
E 32.1	Complete servicing of all propulsion motors in situ. To check brushes, brush holders, skimming of commutators to be done if necessary to renew carbon brushes of shorter length air gap and insulation to measure and record. Work to be carried out under supervision of maker's service engineer. Windings to be cleaned, varnish and bake bearings to renew. Commutator to overhaul insulation to be checked with megger before and after installation. All PMs to be tested for optimum functioning at basin and sea trials to the satisfaction of ship staff. Spares yard supply.	LUMPSUM	4		
E 32.2	PM 1,2,3 ventilation fan to be dismantled impellers to be cleaned and dynamically balanced motors to be overhauled with new sealed bearings. Yard supply. Ventilation fans to install and function test to be carried out. Pm attached blowers motors to be overhauled	LUMPSUM	3		
E 32.3	All PM tuning and sea trial for 185 rpm to be done.	LUMPSUM	1		
E 32.4	Thrust bearing (port & stbd): both thrust bearings to be opened up for survey. Clearances to be taken and recorded and shown to surveyor surveyor's recommendation to be complied with.	LUMPSUM	1		
E 33.1	AC NO#1 condenser sea water outlet reducer length=46 CM DIA =16.5CM AND 11CM to be renewed.	NOS	2		
E 33.2	LT cooler port side sea water inlet ,distance piece size l=7cm,both end flange dia =27.5cm ,flange Thickness -adjacent to cooler =2cm,opposite side =2.5cm , no. of holes =8, hole dia =1.6cm,pcd24cm to berenewed	NOS	2		
E 33.3	HT cooler SW outlet reducer length 270 mm, big end dia 220mm,small end dia 118 mm, PCD 290/180 mm need to be renewed	NOS	2		
E 34	ELECTRICAL REPAIRS				
	Following motors to be overhauled, bearings to renew, bearing housing to build up if necessary, motors to fit back and tried out by yard.				
E 34.1	FW (LT) cooling pumps motors: 660v, 36kw, 40amps, 1475rpm bearing no 6213	NOS	2		
E 34.2	Bilge & fire p/p motors 390v,22kw,45amps,1470rpm bearing no 6210c3	NOS	1		
E 34.3	Ballast & fire p/p motors 390v 22kw 45amps1470rpm bearing no 6210c3	NOS	1		
E 34.4	Acc. A/c compressor motors 660v 175kw 188amps 1488rpm bearing no 6220	NOS	3		
E 34.5	Chilled water p/p motors 660v 12kw 145amps1470rpm bearing no 6210C3	NOS	2		
E 34.6	Provision fridge comp motors 390v 175kw 35amps 1975rpm bearing no 6212	NOS	2		
E 34.7	Windlass motor 380v15/30/30kw40/58/53amps330/700/1440rpm	NOS	2		
E 34.8	Capstan motors 390v 12kw 28amps 1480rpm	NOS	2		
E 34.9	BT vent fan motors 390v/660v 68kw35/79am p2890 rpm dynamic balancing of impeller to be done bearing no 6206z6208z	NOS	1		

E 34.10	Accom A/C blower motors: 390v22kw 14kw69kw and 4kw	NOS	4		
E 34.11	SAN exhaust fan EF/5 3kw 73amps 1400rpm bearing no 6205ZZ and 6206ZZ	NOS	2		
E 34.12	Galley exhaust fan (EF617each) 390v 22kw 49amp 1420rpm BRG no 6205ZZ	NOS	2		
E 34.13	Engine room supply fans 390v 14kw 30amps 975rpm bearing no 6210c3	NOS	2		
E 34.14	Seperator Room Fan EF26 390V 22KW49AMP 1450RPM BEARING NO 6205ZZ	NOS	2		
E 34.15	Auxengine Room Fan EF 21 390V51KW115AMPS 1450RPM	NOS	3		
E 34.16	Rotary Converters 390V60AMPS405KW1500RPM	NOS	4		
E 34.17	Zet Horn Motor & Compr 400V55 KW BRG NOS6206-2RS 6207- 2RS 6205-Z 6206-Z	NOS	2		
E 34.18	Life boat motors 41/22 kw 3 phase 380 v 50 hz	NOS	2		
E 34.19	Life boat motors 41/22 kw 3 phase 380 v 50 hz	NOS	2		
E 34.20	AC cooling sw p/p motors 660v 12kw 145amps 1470 rpm bearing no 6210c3	NOS	3		
E 34.21	CTD boom pump motors 3 phase 660v,4 kw,5.4 a,50 hz	NOS	2		
E 34.22	Pre lube oil pump motor	NOS	5		
E 34.23	Main sea water cooling pump motor	NOS	2		
E 34.24	Starting air compressor motor	NOS	2		
E 34.25	Ventilation blower for pm	NOS	3		
E 34.26	Bow thruster motor	NOS	1		
E 34.27	Bow thruster servo pump motor	NOS	1		
E 34.28	Bow thruster cooling motor	NOS	2		
E 34.29	Bow thruster ventilation blower motor	NOS	1		
E 34.30	D.O transfer pump motor	NOS	2		
E 34.31	Evac vacuum pump motor	NOS	6		
E 34.32	Steering gear pump motor	NOS	2		
E 34.33	Chilled water pump motor for ac	NOS	3		
E 34.34	Deep sea winch hyd.pump motor	NOS	1		
E 34.35	Deep sea winch motor	NOS	1		
E 34.36	Storage winch motor	NOS	1		
E 34.37	Exhaust fan motor	NOS	4		
E 34.38	Stbd aft deck crane motor	NOS	1		
E 34.39	Hydraulic pump motor	NOS	6		
E 34.40	Hydro combination winch motor CTD	NOS	2		
E 34.41	Domestic fridge compressor panel wire, components, terminals need to be renewed spares yard supply. Function test to be carried out to the satisfaction of ship staff	NOS	2		
E 34.42	AC compressor panel complete wiring, components, terminals need to be renewed spares yard supply wiring diagram to be provided. Function test to be carried out to the satisfaction of shipstaff	NOS	3		
E 35	PMS (MEGACON) inoperative maker's service engineer to carry out servicing spares as per engineer's advice to be supplied by yard. System to be made fully operational and function tested in harbour and during sea trials.	NOS	1		
E 35.1	A/E alarms cutouts & shutdown to be calibrated & tested	LUMPSUM	1		
E 35.2	LO low pressure alarms & shut down	NOS	5		
E 35.3	Cooling water low pressure alarms & shutdown	NOS	5		

E 35.4	Cooling water high temperature and shut down	NOS	5		
E 35.5	Over speed shut down	NOS	5		
E 35.6	Auto start/stop of pre LO pump	NOS	5		
E 35.7	All AE voltage setting to be checked and adjusted to 660V and trial to be shown during sea trial	NOS	5		
E 35.8	All AEs voltage drops by 30v while sharing as load is increased defect to investigate and rectify.	NOS	1		
E 35.9	AE 4 ACB, immediately trips on synchronizing fault to be investigated suspect defective trip coils or power supply module for generator protection, fault to be rectified spares yard supply. Wartsila service engineer to attend and supervise the job.	NOS	1		
E 36	Emergency-generator Type:DKBH 4403/06400V 400KVA 577AMPS 1000RPM 340KW CATERPILLAR ENGINE:1000RPM ALT MAKE : AEG 400V 400KVA 50HZ				
E 36.1	Emergency alternator to cleaned in situ by dry ice method varnished& baked, air gap & insulation resistance to checked before & after cleaning winding shown to chief engineer	NOS	1		
E 36.2	Emergency generator starting switch (Auto/Manual) needs to be changed for automatic operation	NOS	1		
E 37	ADDITIONAL ELECTRICAL DEFECTS				
E 37.1	660 insulation meter showing less ohmic value during pm manoeuvring fault to be trace and rectify	LUMPSUM	1		
E 37.2	Insulation meter for 390 v panel and 220 v panel working condition need to be checked	LUMPSUM	2		
E 37.3	ECR and bridge telegraphs giving erratic output voltage for reference RPM. Manual levers not sending proper command signals. Supply and commissioning of new levers, complete interfacing, programming, cabling, calibration etc and satisfactory sea trials YARD supplied spares. (job to be carried out under supervision of GE power service engineer) Propulsion driver contact details: M/s GE Power conversion India Pvt. Ltd. Chennai. (tharun.koshy@ge.com) 044-49680289	NOS	4		
E 37.4	Main switch board and emergency switch board insulation mat deteriorated to be renewed ship supply	METERS	30		
E 37.5	Main-switch-board & emcy switchboard to clean and-tight-all-the-terminals insulation resistance of bus bars to check and record	NOS	3		
E 37.6	SALWICO fire detection system to be checked all defects regarding wire breakage etc are to be rectified spare smoke detectors shall be provided by yard. System to be fully tested with each detector and call point. The alarm location to be checked on bridge fire alarm panel to the satisfaction of ship staff.	NOS	1 SYSTEM		
E 37.7	Bow Thruster Pitch Indicator fluctuates without command. PLC no3 and feedback unit needs to be checked and changed if required.	LUMPSUM	1		
E 38	TRANSFORMER. Following transformers to clean and terminals to be inspected / fixed.				
E 38.1	Transformers 660v/390v 630kva	NOS	5		
E 38.2	Emergency 390v/230v 30kva	NOS	1		
E 38.3	Main and emergency : 390v/230v 125kva	NOS	5		
E 39	Air circuit breakers				
	Following air circuit breakers to overhaul no volt trip overload trip reverse power trip short circuit to calibrate and test and breakers to be fitted in place and tested				

E 39.1	Alternators breakers:660v 1600amp stype: AEG ME 1600	NOS	5		
E 39.2	Propulsion motors:660v 1600amps	NOS	5		
E 39.3	Tranformers: 660v 630amps	NOS	5		
E 39.4	Tranformers:390v 630amps	NOS	1		
E 39.5	Non essential breaker: 390v 1000amps	NOS	1		
E 39.6	Transfer line breaker: 390v630 amps	NOS	1		
E 39.7	Bow thruster breaker: 660v 800amps	NOS	1		
E 39.8	Azimuth thruster breakers:660v 800amps	NOS	1		
E 39.9	Spare ACB in engine control room to be serviced	NOS	1		
E 40	CALIBRATION : Following meters on main switch board to be calibrated and certificates to be provided				
E 40.1	Double frequency meter 45 to 55hz	NOS	5		
E 40.2	Double volt meters 0 to 800volts ac	NOS	5		
E 40.3	Ammeters 0 to 3000amps ac	NOS	5		
E 40.4	Kilowatt meters 0 to 1200kw	NOS	5		
E 40.5	Following ammeters, voltmeters, pressure and temperature indicator in ECR console to be calibrated and certificates to be produced				
E 40.5 A	Voltmeters	NOS	5		
E 40.5 B	Ammeters 0 to 3000amps AC	NOS	5		
E 40.5 C	Pressure indicators	NOS	5		
E 40.5 D	Temperature indicators	NOS	4		
E 40.5 E	Shaft tachometer of main electrical propulsion motors on bridge and ECR	NOS	2		
E 40.6	The following electrical measuring instruments to be calibrated and certificates to be produced				
E 40.6 A	Multimeter:make: motwane dm3540	NOS	1		
E 40.6 B	Megger:make: meco 2853	NOS	2		
E 40.6 C	Tong tester:make: kyroitsu 2805	NOS	1		
E 41	BOW THRUSTER AND AZIMUTH THRUSTER				
E 41.1	Bow Thruster: Make: Brunvoll AS, Norway. BT: Make: Brunvoll AS, Norway. Bow thruster: type: FU-80-LTC-2250				
E 41.1A	Propeller to clean polish and varnish as required all clearances drops to be measured and recorded	LUMPSUM	1		
E 41.1 B	Electrical motor: type: LOHER INWA 450L X06M. To overhaul. Voltage-6603 phase 50hz si cont duty effect-1200kw full load current: 1305amps Starting current- 1600amps auto transformer starter	LUMPSUM	1		
E 41.2	Azimuth thruster: type: fu-80-ltc-2250				

E 41.2 A	Propeller to clean, polish and varnish as required all clearances drops to be measured and recorded. Electrical motor: type: LOHER ANWA 450L N06M To overhaul voltage-6603 phase50hzsi Contduty effect-1000kw Full load current: 1090amps Starting current- 1420amps auto transformer starter	NOS	1		
E 41.2 B	Sea water leakage from Azimuth Thruster seal. Seal to be replaced and leakage to be rectified. (spares yard supply)	LUMPSUM	1		
E 41.2 C	A/R servo pump no1 breaker to renew	NOS	5		
E 42	ALARM MONITORING SYSTEM				
	Type/capacity/details: Make: BJORGE SMART CHIEF-11 Alarm monitoring system: Make-BJORGE MOLAND ASSUPPLIED BY - WARTSILA FINLAND OY PROJECT NO 8110 INTEGRATED AUTOMATION SYSTEM				
E 42.1	Alarm monitoring system (HMI version CITECT V6.0.operating system windows NT) defective maker's service engineer (bjorge) to carry out the job to check system and rectify all defects for correct functioning, additional inputs may be connected. Upgrade system if necessary. New wall mounted monitor to install on ECR console yard supply.	NOS	1		
E 43	Provision lift for galley				
E 43.1	Not in operation. Same to be made operational. Spares yard supply	NOS	1		
E 44	Insulation:-				
E 44.1	Engine room bulkhead and ship side insulation lagging and perforated protection sheet corroded and damaged same to renew at the following locations.				
E 44.1 A	Behind bilge and fire p/p in stabilizer room -3×3 - 9 m2	SQM	10		
E 44.1 B	Behind ballast p/p # 2 in stabilizer room - 2×2 - 4m2	SQM	6		
E 44.1 C	Near low sea chest in stabilizer room-4×2 - 8m2	SQM	8		
E 44.1 D	Stbd side in pm room - 1×2 - 2 m2	SQM	2		
E 44.1 E	Near OBS obd in A/E room -1×1 - 1 m2	SQM	1		
E 44.1 F	Near SW harbour p/p - 1×2 - 2 m2	SQM	1		
E 44.2	Life boat engine no1 exhaust manifold lagging to renewexhaust manifold pipe dia-55mm length-16mtr silencer pipe dia-220mm length-900mm	LUMPSUM	1		
E 44.3	Life boat engine no2 exhaust manifold lagging to renewexhaust manifold pipe dia-55mm length-16mtr silencer pipe dia-220mm length-900mm	LUMPSUM	1		
E 44.4	Emergency fire p/p exhaust pipe lagging to renewpipe dia- 76mm length-15 mtr Emergency fire p/p exhaust pipe lagging to renewpipe dia- 76mm length-15 mtr	LUMPSUM	1		
E 44.5	Lagging of ac chilled water pipe above core fridge to renew pipe dia-110mm length-5mtrs	LUMPSUM	1		
E 45	ITEMS DUE FOR SURVEY IN - 2022				
	The following items to be opened for survey as per IRS surveyor`s requirements. Recommendations of IRS surveyor if any to be attended and to be dealt with. After survey all items to be boxed back with new joints, packings etc. As required, same to be tried out and handed over in good working order				
E 45.1 A	Port tail shaft	NOS	1		

E 45.1 B	Stbd tail shaft	NOS	1		
E 46	STEERING GEAR				
E 46.1	Linkage to stbd rudder from steering ram not in place same to be fit in dry dock	NOS	1		
E 46.2	S/G port side foundation bolts to be renew	LUMPSUM	1		
E 47	Hanging required to renew cable securing tray approx 10 meters (length) and approx 6 inch and 3 inch width	LUMPSUM	1		
E 48	Wipers on bridge navigational glass to be renewed	NOS	3		
E 49	All eight nos limit switches for lifeboat to be overhauled and tried out	NOS	8		
E 50	Starter cabinet rusted corroded holed two speed 41/22 kw 3φ 380 v 60 hz for lifeboat motor to be made new and fitted back (t = 4 mm l=60 cm b = 56 cm depth = 21 cm)	NOS	2		
E 51	Starter cabinet rusted corroded holed two speed 66 kw 3φ 380 v 60 hz for lifeboat motor to be made new and fitted back (T = 4 MM L = 31 CM B= 25 CM DEPTH = 15 CM)	NOS	2		
E 52	All flood lights b-deck near engine room funnel bracket broken same to be renewed	NOS	5		
E 53	Plug socket AJMERA type for navigational light and aft anchor light to be renewed	NOS	6		
E 54	Stern anchor navigation light fitting to renew	NOS	2		
E 55	Weather proof switch for lifeboat (emergency) embarkation light to be renewed	NOS	6		
E 56	Stbd side fog horn manual switch to renew	NOS	1		
E 57	Weather proof socket for monkey island to be renewed	NOS	1		
E 58	Defective deck light fittings to renew as reqd by ship staff	NOS	20		
E 59	Ship`s laundry machine to repaired	NOS	1		
E 60	All stern flood light wire to renew	LUMPSUM	1		
E 61	Ac comp starting control cabinet with switch malfunctioning same to renew	NOS	1		
E 62	Evac pump electrical panel all wiring to be renewed	LUMPSUM	1		
E 63	Steel plate renewal basis ut gauging, following works for steel plate renewal. All old plates Renewed with yard supply.lagging also renewed by yard if required. Hot work permit should be obtained by yard.*-all values approx.				
E 63.1	A/e #1 top(1.5m x 1.5m)	SQM	2.25		
E 63.2	Crew mess room (1.5m x 2.5 m)	SQM	3.75		
E 63.3	AT room (1m x 2m)	SQM	2		
E 63.4	Hydrosweep lab (3m x 3m)	SQM	9		
E 63.5	ECR front area (1.5m x 3.2m)	SQM	4.8		
E 63.6	Near tank 19c 19s	SQM	5		
E 63.7	Near main sea water p/p (1.5m x 2m)	SQM	3		
E 63.8	Near LT cooler (stbd)	SQM	4		
E 63.9	Hydraulic room (1.4m x 3.4m)	SQM	4.76		
E 63.10	ECR door (1.2m x 4m)	SQM	4.8		
E 63.11	Near fridge compressor	SQM	4		
E 63.12	Defective floor checkered plating and support angles in the engine room to renew. All to be secured to angle supports with new screws. Material yard supply.	SQM	10		

E 64	Tank cleaning & pressure testing, following tanks has to cleaned & pressure tested shown to shipstaff. Hot work permit & enclosed space entry should be obtained by yard. Ventilation blower supplied by yard. All manhole door to be checked. Renew door & gasket if required by yard.	LUMPSUM	1		
E 64.1	MDO storage tank 19C (cap:7798m3)				
E 64.2	MDO storage tank 19S (cap:11021m3)				
E 64.3	Settling tank 20 (cap 1896m3)				
E 64.4	Settling tank 21 (cap 2210m3)				
E 64.5	Overflow tank 22C (cap 1946m3)				
E 64.6	MDO storage tank 19P (cap 11273m3)				
E 64.7	MDO storage tank 25C (cap 8326m3)				
E 64.8	MDO storage tank 24P (cap 4217m3)				
E 64.9	MDO storage tank 24S (cap 4292m3)				
E 64.10	Service tank 28(cap 2016m3)				
E 64.11	Service tank 29(cap 2016m3)				
E 64.12	Sludge tank 33C (cap 2110m3)				
E 64.13	Dirty oil tank 18C (cap 1316m3)				
E 65	Pipeline, steel plate renewal and lagging following pipeline has to renew as per ship staff instruction. Line to pressure tested shown to ship staff. Valve has to renew/repair in pipeline if required by yard.				
E 65.1	Tank 19P to MDO manifold approx 15m with 5 bends	LUMPSUM	1		
E 65.2	Tank 22C to MDO manifold approx 8m with 5 bends	LUMPSUM	1		
E 66	Following areas insulation to be renewed material yard supply				
E 66.1	Auxiliary engine room platform top lagging to renew	SQM	10		
E 66.2	Crew mess room in E/R lagging to renew	SQM	10		
E 66.3	AT room lagging to renew	SQM	20		
E 66.4	ECR front plat form steel plates to renew	LUMPSUM	1		
E 66.5	A/C compressor platform holed plates to renew	LUMPSUM	1		
E 66.6	Main sea water p/p side bulk head lagging to renew	SQM	15		
E 66.7	LT cooler side bulk head lagging to renew	SQM	20		
E 66.8	A/c comp room sealing plate above A/C: 2 to renew	LUMPSUM	1		
E 66.9	Calorifier top platform holed plates to renew	LUMPSUM	1		
E 66.10	Expansion tank area lagging to renew	SQM	8		
E 66.11	Core A/C top platform sealing plate to renew	KWH	1		
E 66	Complete machinery spaces to be cleaned prior to completion of docking period to ship staff's satisfaction	LUMPSUM	1		
E 67	Following oil pumps are to be dismantled repaired and put up for survey after renewal of Defective parts yard supply and fitted back. Function test to be carried out to the satisfaction of shipstaff after fitment.				
E 67.1	Port fwd inner pm LO pp	NOS	1		
E 67.2	Port fwd outer pm LO pp	NOS	1		
E 67.3	Port aft inner pm LO pp	NOS	1		
E 67.4	Port aft outer pm LO pp	NOS	1		
E 67.5	Stbd fwd inner pm LO pp	NOS	1		

E 67.6	Stbd aft inner pm LO pp	NOS	1		
E 67.7	Port fwd outer thrust LO HP pp	NOS	1		
E 67.8	Port aft inner thrust LO circulating pp	NOS	1		
E 67.9	Stbd fwd inner thrust LO HP pp	NOS	1		
E 67.10	Stbd aft outer thrust LO circulating pp	NOS	1		
E 67.11	Stbd aft inner thrust LO circulating pp	NOS	1		
E 67.12	Emergency fire pump	NOS	1		
E 68	Proper draining arrangement to be made for the ac water in the AHU room (AC blowers 4 nos) to the scuppers in the same compartment on "A" deck, 'F' deck and main deck.	NOS	4		
E 69	ECR: tubelight cover is cracked/missing, new required of fibreglass/acrylic sheet (or any Compatible translucent material for tube lights). Size l=70cm, b=30cm	NOS	25		
E 70	ECR: 2 nos office chairs required.	NOS	2		
E 71	Engine mess: ceiling panel is missing, new panels to be fitted. Size 4m x 3m	LUMPSUM	1		
E 72	Engine mess: drain pipe required for the washbasin to the succper. L-2m	NOS	1		
E 73	Engine mess: corroded pipe to be renewed near wash basin. Size 40cm, dia 6cm	NOS	1		
E 74	Deck plate outside ecr near staircase is damaged, same to be renewed.size 0.6m x 2.5m	NOS	1		
E 75	ECR: 10 nos tubelight fittings to be repaired and 2nos tube light in each fitting to be fixed.	NOS	10		
E 76	Floor plate of ro room looks thinned down. Thickness gauging of floor plate of ro room to be Done and plate replacement if required. Area 5mx6m	LUMPSUM	1		
E 77	Supply and installation of depth counter sensor/display, rope tension sensor/display for Deep Sea Winch (Winch Make: Willi Baensch) 18mm wire rope.	LUMPSUM	1		
E 78	Air compressor to be commissioned for RO plant. New compressor is already installed and to be put In service with the help of OEM. Make (ATLAS COPCO)	LUMPSUM	1		
E 79	DSW secondary hydraulic gearbox to be repaired and fitted back to restore normal operating Speed of the winch in winch storage room.	LUMPSUM	1		
E 80	Jibboom: The sheave fitted on the end of the jib boom should move freely in fore and aft direcction and load test to be carried out including all 3 pulleys and gallow winch. 2 sheaves and one pulley to be removed , serviced and fit back after overhauling of the machinery.	LUMPSUM	1		
E 81	Servicing and pressure test of SSV ball valve	LUMPSUM	1		
E 82	Servicing and pressure test of hi-pap gate valve	LUMPSUM	1		
E 83	Servicing and pressure test of Thermosalinograph remote temperature sensor ball valve	LUMPSUM	1		
E 84	Pulleys near storage winch has to be serviced	LUMPSUM	4		
E 85	2 nos atlas cranes to be serviced, oil leakage from the hydraulic hoses to be arrested, corroded Parts to be renewed. Load test to be done (swl 2t each)	LUMPSUM	2		
E 86	Deep sea winch: traction winch on the main deck to be serviced, leakage from the hoses to be Arrested and its pump and motor to be also serviced and fit back.	LUMPSUM	1		



E 87	CTD A frame: one pump of the CTD A frame is not working, to be made operational.	LUMPSUM	1		
E 88	CTD A frame: servicing of the A frame including its parts. Corroded parts/eye/plate/angle Bars/bottle screws etc to be replaced. H= 4m of the a frame.	LUMPSUM	1		
E 89	DP integraton with the main propulsion. Interfacing of recently upgraded main propulsion to Dynamic Positioning (DP) system including all hardware, cabling, softwares, installation, sea trial and complete documentation. i) Propulsion drive. Contact : M/s GE Power conversion India Pvt. Ltd. Chennai. (tharun.koshy@ge.com) 044-49680289 ii) DP OEM: M/s Kongsberg Maritime India. Contact: (mohandas.makkinati@km.kongsberg.com)	LUMPSUM	2		
E 90	2nd deck fwd: 1 no pure sea water pump (middle one) is not working, same to be made operational and requisite spares to be arranged. Discharge line is also leaking from the flange (PVC), same also to be arrested.	LUMPSUM	1		
E 91	Ceiling panels of Chief Engineer cabin are corroded and to be replaced. Size: L=4m, B= 0.1m as per sample.	NOS	1		
E92	Renewal of damaged/unservisable/non-durable old sea-chest valves	NOS	3		
E93	Main deck, port side aft station, mooring fair lead supporting strengthening plate corroded and holed, same to be renewed. (10mmx300mmx400mm) x 2 sides. The bulkhead area is also holed, same to be renewed.	LUMPSUM	1		
E94	Settling tank no 21, tank top is holed, if tank is filled above 17 m3, the fuel overflows and settles on the floor plate when the ship lists. The tank is near the entrance on purifier room.	LUMPSUM	1		
E95	Transformer for Lighting circuit of Laboratory need to be changed (Vc-280, Va-220/24, 0.05 kVA, 50/60 Hz). The transformer is inside the panel (Right side once you enter, DB K 21) in Rotary convertor room. Once the above transformer is replaced the Working condition of transformers (2 NOS) for laboratory lighting need to be checked. (Ve-390V, Va-230V, 50/60 Hz, 13KVA).	NOS	1		
E96	RPM meters for AE # 1, 2, 4 & 5 need to be renewed and made operational. The RPM meters are located on each generator.	NOS	4		
E97	Testing board in Electrical workshop needs to be made operational.	NOS	1		

E98	Maintenance is needed for UV sterilizers and lamps need to be changed. Whenever the sterilizer is started, it shows lamp failure indication.	LUMPSUM	1		
E99	Servicing/maintenance of transformers for laboratory lighting. (660V/400V, 50Hz, 50KVA). (transformers inside rotary convertor room)	NOS	2		
E100	Port Wet lab: Fume cupboard acrylic door damaged to be renewed and blower need to be serviced (air filter cleaning). Dimension:- 960mmx640mm-1 nos 420mmx490mm-2 nos Thickness 6mm	LUMPSUM	1		
E101	Chemical lab: Fume cupboard side acrylic sheet to be renewed and blower need to be service. Dimension:- 500mmx770mm-1 Nos Thickness 6mm	LUMPSUM	1		
E102	Chemical lab: Titration unit wooden box handle to be renewed.	LUMPSUM	1		
E103	Chemical lab: fridge need to be secure.	LUMPSUM	1		
E104	Multipurpose Lab: fridge power supply socket to be renewed. 3 pin socket and switch needed.	NOS	1		
E105	Photo Lab tube light with fittings need to be renewed	NOS	4		
E106	Magnetometer winch and Side scan sonar winch drum corroded and holed, needs to be renewed.(total 2 nos) Material: Mild steel. Dimension: refer image.	LUMPSUM	1		
E107	Tank 2C-WB tank (frame 114-122), Tank 16P-FWT (frame 90-98) - Frame buckling at frame 96/95 towards deck and side shell and at frame 118/119 towards bottom below the excess manholes on frames. Same to be rectified. Coating found chipped out at various places. Same to be rectified. (Area- 20 Sqr Mtr)	LUMPSUM	1		
E108	All pipings passing through tanks (2C WBT and 16 P FWT) are to be traced / identified and damaged piping to be rectified. (Dia- 25mm, L-3000mm)	LUMPSUM	1		
E109	Access ladder for tanks (2C WBT and 16 P FWT) found thinned down. Same to be rectified. (Thickness flatbars- 10mm, Dimension- W-70mm x L-4000mm; Thickness Solid Sqr bars-25mm x L-4000mm)	LUMPSUM	1		
E110	Hull structure adjacent to scientific store # 602 stowage found corroded and wasted at bottom edges. Same to be rectified. (Dimension: 12000x200mm, Area-40sqr M, Thickness-8mm)	LUMPSUM	1		
E111	Few IMO stickers found damaged/removed. Same to be renewed.	NOS	300		
E112	Structure holding the A frame is thinned down at various isolated areas and electrical switches for lighting inside the structure found damaged. Same to be rectified. (Area-25 Sqr Mtr, Thickness of plate-12mm)	LUMPSUM	1		

E113	Funnel exhaust vent grills at F Deck (P) – damaged frames to be repaired. (Grills towards inboard of funnel). (Thickness approx- 3mm, Dimension- L-1300 x W-1200mm)	LUMPSUM	1		
E114	Wasted and holed structure adjacent to funnel exhaust to be repaired. (Thickness-12mm,Dimension: L-900 x W-600mm)	LUMPSUM	1		
E115	Thinned down and wasted access ladders external of accommodation to be renewed.	LUMPSUM	1		
E116	Cemented accommodation bulkhead adjacent to access ladder for F deck to A deck to be removed and structure to be renewed. (Thickness-10mm, Dimension: L-6000 x 200mm)	LUMPSUM	1		
E117	Muster station to be marked as identified in approved LSA plan.	LUMPSUM	1		

SPARES AND EQUIPMENTS ETC TO BE PROCURED AND SUPPLIED					
<p>Below list of spares or consumables which are required for overhauling/ servicing of machinery or paints etc are provided and the same to be procured by the shipyard.</p> <p>Note: The list provided below are indicative only. Any additional spares / consumables [apart from this list] if required for competing all the jobs listed above in this defect list, shall be procured and supplied by the shipyard within the quoted price. Yard may accordingly consider all required spares and consumables as part of the job while quoting.</p>					
S1	PAINTS				
S1.1	U/W PRIMER FOR SLF POLISHING A/F -FOR EPOXY SYSTEM - UNDER WATER +TOP SIDE	LTR	900		
S1.2	SEALER PAINT (FOR PRIOR APPLICATION OF TEEN FREE A/F) - UNDER WATER	LTR	350		
S1.3	TIN FREE-TOP OF THE RANGE SUITABLE FOR 36MONTHS - UNDER WATER	LTR	1280		
S1.4	EPOXY PRIMER -COMPLETE SUPER STRUCTURE, DECK AND EQUIPMENTS AND E/R	LTR	1265		
S1.5	POLYURETH FINSH PNT FOR EXTR OF DK HOUSE WHITE - SUPER STRUCTURE	LTR	380		
S1.6	EPOXY FINISHING RED BROWN - TOP FINISH COAT	LTR	460		
S1.7	EPOXY FINISHING BLACK - TOUCH UPS	LTR	40		
S1.8	BITUMINOUS - ANCHOR CHAINS AND CHAIN LOCKER	LTR	100		
S1.9	TAR FREE EPOXY - BALLAST TANKS	LTR	860		
S1.10	EPOXY PRIMER - FW TANKS	LTR	150		
S1.11	PURE EPOXY H.B. FINISH (FW CERT) - FW TANKS	LTR	100		
S1.12	EPOXY HOLD PAINT - FOR HOLDS	LTR	100		
S1.13	MODIFIED EPOXY FINISH GREY --E/R BILGES	LTR	200		
S1.14	INTERNATIONAL ORANGE (CRP) - L/BOATS FINISH	LTR	80		
S1.15	EPOXY FINISHING DARK GREEN - FOR DECKS	LTR	160		
S1.16	EPOXY FINISHING DARK GREY -L/BOAT DAVITS	LTR	40		
S1.17	EPOXY FINISHING BUFF - VENTS	LTR	120		
S1.18	Thinner for Tin Free SPC AF	LTR	140		
S1.19	Thinner for Tar Free Epoxy	LTR	400		

S1.20	THINNER FOR POLYURETHANE PAINTS	LTR	60		
S1.21	CRP SIGNAL RED - FIRE LINES	LTR	20		
S1.22	CRP PRIMER	LTR	20		
S1.23	CRP THINNER	LTR	20		
S2	ANODES				
S2.1	SACRIFICIAL ZINC ANODES (SIZE- 350 X100 X 50)MM --- TYPE - 60Z (30 NOS-EACH 10 KG)- Stern/Hull	KG	300		
S2.2	TYPE -35Z (4 NOS- EACH 10 KG) - Rudder	KG	40		
S2.3	TYPE - 26Z (12 NOS -EACH 10 KG) - Bow thruster & Fin boxes	KG	120		
S2.4	TYPE - 15Z (16 NOS-EACH 10 KG) - SEA CHEST	KG	160		
S2.5	TYPE - 2Z (4 NOS-EACH 10 KG) - Rudder	KG	40		
S2.6	(For Rope Guard)08 NOS -EACH 2KG	KG	16		
S2.7	SACRIFICIAL ZINC ANODES FOR BALLAST TANKS --- TYPE 35Z, WEIGHT 3.2KG, 47PCS - BALLAST TANKS	KG	150		
S3	FOR EVAC VACCUM SYSTEM - MASKINFABRIKENIRON A.S 10,GENERATORVEJ DK 2730 HERLEV-DENMARK TEL, +452916788, TELEX 35212 IRON DK				
S3.1	Pressure guage - PART/CODE NO. 5437623	NOS	2		
S3.2	Pressure Switch - PART/CODE NO.5437598	NOS	4		
S3.3	Level switch - PART/CODE NO.5430612	NOS	2		
S3.4	Control Mechanism - PART/CODE NO. 5775500	NOS	12		
S3.5	Mini Check Valves - PART/CODE NO. 5959902	NOS	12		
S3.6	Discharge valve set(w/c) - PART/CODE NO. 5435015	NOS	10		
S3.7	Hose to Push Button - PART/CODE NO.5805900	NOS	10		
S3.8	Hose Clamp - PART/CODE NO.5433594	NOS	6		
S3.9	Water Hose - PART/CODE NO.5778992	NOS	6		
S3.10	Scupper Nozzle - PART/CODE NO.5439534	NOS	10		
S3.11	Float Ball - PART/CODE NO.5439523	NOS	12		
S3.12	TOILET BOWL WHITE COLOR - PART/CODE NO.5801201	NOS	3		
S4	WASH BASINS	NOS	5		
S5	BILGE LINE VALVE				
S5.1	GLOBE VALVE FOR LOWER FPK STORE BILGE LINE 40MM, 16-PN, FLANGE TO FLANGE 195MM, PCD 120MM, 04 HOLES.	NOS	1		

S6	FOR NATIONAL OIL WELL CRANE - Make: NATIONAL OIL WELL NORWAYCRAWLER CRANE KNUCKLE BOOM CRANE WITH TELESCOPE					
	TYPE: 1800 SIZE: OC1800KTE -7-14.5(8)(12-9) Complete address of actual manufacturer:NATIONAL OIL WELL NORWAY AS SERVICE BOX 401 N-2604 KRISTIANSAND, NORWAY, PHONE- +41 38 19 20 00					
	S6.1	OVERHAUL KIT FOR MAIN BOOM CYLINDER, DRAWING NO.:T3722-C1800K-G0001, SPARE NO./PART NO.141724	NOS	120		
	S6.2	OVERHAUL KIT FOR KNUCKLE BOOM CYLINDER, DRAWING NO.:T3722-C1800K-G0001, SPARE NO./PART NO.15352	NOS	180		
	S6.3	OVERHAUL KIT FOR TELESCOPIC BOOM CYLINDER, DRAWING NO.:T3722-C1800K-G0001, SPARE NO./PART NO.94320	NOS	180		
	S6.4	OVERHAUL KIT FOR LATCHING FRAME LOCKING CYLINDER, DRAWING NO.:T3722-C1800K-G0001, SPARE NO./PART NO.10323	NOS	50		
	S6.5	OVERHAUL KIT FOR LATCHING FRAME PENDULUM DAMPING CYLINDER, DRAWING NO.:T3722-C1800K-G0001, SPARE NO./PART NO.14367	NOS	50		
S6.6	SET OF HOSES , DRAWING NO.:T3722-C1800K-G0001	NOS	01 SET			
S7	FOR PURE SEA WATER PP					
	MODEL-PPE-32N-200 (3.7KW, 5HP, CAP:2M3/HR HEAD 40M RPM - 2900) SERIAL NO.- G2394 MANUFACTURER- RAJE-DIA PUMPS PVT LTD					
S7.1	INJECTION MOULDED POLYPROPYLENE PUMP SET COMPLETE (PPE), SPARE NO./PART NO.PPE-32N-200	NOS	2			
S8	FOR STERN TUBE					
	MODEL Type: SIMPLEX COMPACT SEAL SC2ORDER NO: 02402841 OTHERS: Material-PERBUNAN SN. 2829928300 MANUFACTURER: HOWALD TSWERKE-DEUSTSCHE WERFT,AKTIENGESELLSCHAFT HAMBURG UND KIEL, 2000 HAMBURG 11.PO BOX 11 14 80 TYPE; SIMPLEX COMPACT SEAL					
S8.1	SIMPLEX COMPACT -ABDICHTUNG-260 COMPLETE SET OF AFT STERN TUBE SEAL(INCLUDING CHROME LINER,SEALS,INTERMEDIATE RING,FLANGERING,COBER RING, ANODES ETC.),SIZE- 260MM	NOS	2 SETS			

S8.2	SIMPLEX COMPACT –ABDICHTUNG-240 COMPLETE SET OF FWD STERN TUBE SEAL(INCLUDING CHROME LINER,SEALS,INTERMEDIATE RING,FLANGERING,COBER RING,ETC.,)SIZE- 240MM	NOS	2 SETS		
S9A	FOR JIB BOOM Model: 624-0800-03(0) Type: 10T ORDER NO.6240 Manufacturer: NMF, D 2101 HAMBURG 96 FAHRDEICH TEL:040 7459791				
S9A.1	SLIDE, DRAWING NO.:624-0806-02(4), SPARE NO./PART NO.POS 06	NOS	18		
S9A.2	LUBRICATING BOLT, DRAWING NO.:624-0809-02(4), SPARE NO./PART NO.POS 09	NOS	18		
S9A.3	TEMPER SCREW, DRAWING NO.:624-0810-02(4), SPARE NO./PART NO.POS 10	NOS	24		
S9A.4	PLAIN BOLT, DRAWING NO.:624-0825-00(4), SPARE NO./PART NO.POS 25	NOS	2		
S9A.5	BUSHING, DRAWING NO.:624-0828-00(4), SPARE NO./PART NO.POS 28	NOS	4		
S9A.6	PLAIN BOLT, DRAWING NO.:624-0829-00(4), SPARE NO./PART NO.POS 29	NOS	2		
S9A.7	BUSHING, DRAWING NO.:624-0838-00(4), SPARE NO./PART NO.POS 38	NOS	1		
S9A.8	BUSHING, DRAWING NO.:624-0839-00(4), SPARE NO./PART NO.POS 39	NOS	1		
S9A.9	PLAIN BOLT, DRAWING NO.:624-0846-00(4), SPARE NO./PART NO.POS 46	NOS	1		
S9A.10	OVERHAUL KIT FOR AXIAL PISTON MOTOR TYPE MF 75, SPARE NO./PART NO.POS 64	NOS	2 KITS		
S9A.11	ROPE SHEAVE RING, DRAWING NO.:624-2400-02(3), SPARE NO./PART NO.POS 01	NOS	1		
S9A.12	BUSHING, DRAWING NO.:624-2400-02(3), SPARE NO./PART NO.POS 02	NOS	1		
S9A.13	DISK, DRAWING NO.:624-2400-02(3), SPARE NO./PART NO.POS 03	NOS	2		
S9A.14	ROPE SHEAVE DIA 1150/DIA 1200MM, DRAWING NO.:624-2400-02(3), SPARE NO./PART NO.POS 05	NOS	2		
S9A.15	CYLINDER ROLLER BEARING,SL 04 166 PP, DRAWING NO.:624-2400-02(3), SPARE NO./PART NO.POS 06	NOS	1		
S9A.16	SPRING RING, WR220, DRAWING NO.:624-2400-02(3), SPARE NO./PART NO.POS 07	NOS	2		
S9A.17	HP HOSES FULL SET, DRAWING NO.:624-4900-05(1)	NOS	1 SET		
S9A.18	RETURN OIL FILTER LFPS 160-G10-B1.0 BYP, DRAWING NO.:624-4900-05(1), SPARE NO./PART NO.POS 15	NOS	1		
S9A.19	MANOMETER 250BAR, DRAWING NO.:624-4900-05(1), SPARE NO./PART NO.POS 17	NOS	2		
S9B	JIB BOOM CONTROL PANEL				
S9B.1	PILOT LAMPS, RED 02-902.7(LUMITAS), DRAWING NO.:220104/2122-2, SPARE NO./PART NO.	NOS	2		
S9B.2	PILOT LAMPS, GREEN, DRAWING NO.:220104/2122-2	NOS	2		
S9B.3	PUSH BOTTON ,RED, DRAWING NO.:220104/2122-2	NOS	1		
S9B.4	PUSH BOTTON ,GREEN, DRAWING NO.:220104/2122-2	NOS	1		
S9B.5	PUSH BOTTON,WHITE, DRAWING NO.:220104/2122-2	NOS	2		
S9B.6	PILOT LAMPS,GREEN 02-902.7(LUMITAS), DRAWING NO.:220104/0122-2	NOS	2		
S9B.7	CONTACTOR ,3 POLE,220V,50 HZ(TYPE:LS 36/L 44.22),MAKER:AEG, DRAWING NO.:220104/0122-2	NOS	1		
S9B.8	AUX.CONTACTOR :220V, 50 HZ(TYPE:LS 02.22),MAKER:AEG, DRAWING NO.:220104/0122-2	NOS	1		

S9B.9	TRANSFORMER(PRIM.660V,50HZ, SEC: i.220V-300 VA ii. 30V-200VA),TYPE: IST, MAKER: I smet, DRAWING NO.:220104/0122-2	NOS	1		
S10	PM LO PUMP	NOS	2		
	<p>MODEL AND MANUFACTURER: SIG SCHWEIZERISCHE INDUSTRIE-GESELLSCHAFT CH-8212 NEUHAUSEN AM RHEINFALL SN: 438390 TYPE; HDF 15-6 HR</p> 				
S11	FOR ATLAS CRANE				
	<p>Type : 300 VCS GL Serial no. : 0300P00990 Address of actual manufacturer:ATLAS Maschinen Gmbh Stendinger Strabe 324 D-27747 Delmenhorst ,www.atlasgmbh.com Tel. +49(42 21)491-0. Fax :+49 (4221) 491 - 213</p>				
S11.1	ROPE PULLEY, DRAWING NO.:180.108.15.00.6005/01	NOS	4		
S11.2	SET OF HOSES (FULL SET), DRAWING NO.:070.240.15.00.6005/04	NOS	2 SETS		
S11.3	OVERHAUL KIT 1ST BOOM CYLINDER, DRAWING NO.:6005.240.15.00.000	NOS	2 KITS		
S11.4	OVERHAUL KIT 2ND BOOM CYLINDER, DRAWING NO.:6005.240.15.00.000	NOS	2 KITS		
S11.5	OVERHAUL KIT EXTENSION RAM, DRAWING NO.:6005.240.15.00.000	NOS	2 KITS		
S12	DYNAMIC POSITIONING SYSTEM				
	<p>MODEL: SDP 21 MANUFACTURER ADDRESS: KONGSBERG MARITIME 24/7 FOLLOW THE SUN SUPPORT NORWAY TEL:+4733032407 EMAIL: KM.SUPPORT@KONGSBERG.COM</p>				
S12.1	UPGRADATION PACKAGE K-POS 21	NOS	1		
S13	PROPULSION MOTOR CONTROL PANEL				
	OEM: GE POWER CONVERSION,TAMILNADU (INDIA)				
S13.1	RENEWAL OF CONTROL CIRCUIT WIRES, TERMINALS, CHANGE OVER SWITCHES AND ELECTRICAL COMPONENTS. UPGRADATION KIT FOR ALL FOUR PROPULSION MOTORS DRIVE	NOS	1		

S14	PM AC PANEL				
	MODEL: SABROE CMO 14 MANUFACTURER: DEUTSCHE BRONSWERK GMBH Wilhelm-Stein-Weg 15, 2000 Hamburg 63				
S14.1	CRANKCASE HEATER-220V,225 W, SPARE NO./PART NO.3181+018	NOS	1		
S14.2	DIFFERENTIAL PRESSURE CONTROL MP 55, SPARE NO./PART NO.1373+103	NOS	1		
S14.3	PRESSURE CONTROL HP- KP 5, SPARE NO./PART NO.1373+123	NOS	1		
S14.4	PRESSURE CONTROL LP- KP 1, SPARE NO./PART NO.1372+103	NOS	1		
S14.5	MOTOR CONTACTOR:220V,50 HZ(TYPE LS36/44.22,MAKER:AEG), SPARE NO./PART NO.KM4	NOS	2		
S14.6	MOTORCONTACTOR:220V,50 HZ(TYPE:LS6/L11-22,MAKER:AEG), SPARE NO./PART NO.KM1	NOS	1		
S14.7	TIME RELAY 220V,10 MIN, SPARE NO./PART NO.K2	NOS	1		
S14.8	CONTACTOR 220V,50 HZ(TYPE LS6/L11-01), SPARE NO./PART NO.K1	NOS	1		
S14.9	ISOLATING TRANSFORMER(400/220V ,50 HZ)POWER 0.5 KW, SPARE NO./PART NO.T1	NOS	1		
S15	AUXILIARY ENGINE MAKE/MODEL: WARTSILA TYPE: WARTSILA 6L20 ADDRESS; WARTSILA FINLAND OY, VASSA FACTORYTARHAAJANTEE-2, FIN-65101, VASSA FINLAND. TEL:+308107709000				
S15.1	DC/DC CARD, DRAWING NO.:231-003, SPARE NO./PART NO.231 003	NOS	5		
S15.2	NDE CARD, DRAWING NO.:231-003, SPARE NO./PART NO.231 004	NOS	5		
S15.3	REL 1-CARD, DRAWING NO.:231-003, SPARE NO./PART NO.231 005	NOS	5		
S15.4	TC-CARD, DRAWING NO.:231-003, SPARE NO./PART NO.231 006	NOS	5		
S15.5	MOTHERBOARD, DRAWING NO.:231-003, SPARE NO./PART NO.231002	NOS	5		
S15.6	OVERSPEED TRIP MODULE, DRAWING NO.:501-013, SPARE NO./PART NO.501 020	NOS	5		
S15.7	CABLE(1) L=2000mm, DRAWING NO.:231-0002, SPARE NO./PART NO.231 011	NOS	5		
S15.8	CABLE(2) L=6000mm, DRAWING NO.:231-0002, SPARE NO./PART NO.231 012	NOS	5		
S15.9	SPEED PICK-UP FOR ENGINE, DRAWING NO.:231-0002, SPARE NO./PART NO.SE167	NOS	5		
S15.10	SPEED PICK-UP FOR ENGINE, DRAWING NO.:231-0002, SPARE NO./PART NO.SE168	NOS	5		
S15.11	SPEED PICK-UP FOR TC, DRAWING NO.:231-0002, SPARE NO./PART NO.SE518	NOS	5		
S15.12	SPEED PICK-UP FOR ENGINE, DRAWING NO.:231-0002, SPARE NO./PART NO.ST173	NOS	5		
S15.13	SPEED PICK-UP FOR ENGINE, DRAWING NO.:231-0002, SPARE NO./PART NO.ST174	NOS	5		
S15.14	connecting rod screw, DRAWING NO.:111-0001, SPARE NO./PART NO.111004	NOS	60		
S15.15	big end bearing shell lower, DRAWING NO.:111-0001, SPARE NO./PART NO.111005	NOS	30		
S15.16	big end bearing shell upper, DRAWING NO.:111-0001, SPARE NO./PART NO.111006	NOS	30		
S15.17	air cooler gasket., DRAWING NO.:156-0037, SPARE NO./PART NO.476002	NOS	5		
S15.18	flexible hose 3000mm including quick coupling, DRAWING NO.:886-001, SPARE NO./PART NO.861165	NOS	2		
S15.19	flexible hose 360mm including quick coupling, DRAWING NO.:886-001, SPARE NO./PART NO.861164	NOS	2		

S15.20	USIT-RING, DRAWING NO.:886-0001, SPARE NO./PART NO.861010	NOS	10		
S15.21	Connecting rod nut, DRAWING NO.:111-0001, SPARE NO./PART NO.111 003	NOS	6		
S15.22	Distance sleeve, DRAWING NO.:3V86B0226, SPARE NO./PART NO.861156	NOS	2		
S15.23	High pressure pump manometer (1000BAR), DRAWING NO.:4V51L0085, SPARE NO./PART NO.860150	NOS	2		
S15.24	V Ring spare part kit	NOS	1		
S15.25	OVERHAUL KIT(AIR STARTER), DRAWING NO.:110-002, SPARE NO./PART NO.110016	NOS	5		
S15.26	PRESSURE GAUGE, DRAWING NO.:218-0014, SPARE NO./PART NO.218110	NOS	2		
S15.27	PRESSURE GAUGE, DRAWING NO.:516-011, SPARE NO./PART NO.516047	NOS	3		
S15.28	PRESSURE GAUGE, DRAWING NO.:516-011, SPARE NO./PART NO.516048	NOS	3		
S15.29	PRESSURE GAUGE, DRAWING NO.:516-011, SPARE NO./PART NO.516049	NOS	3		
S16	ENGINE ROOM TELEGRAPH MAKE/MODEL: HAGENUK TYPE: KZP 24V DC ADD: HAGENUH GmbH. Westering 431.Postf.11 49.Dept.ENV-D.2300 Kiel 1				
S16.1	DC TRANSMITTER(TYPE 634), DRAWING NO.:61 D 3520.9030	NOS	4		
S16.2	DC RECEIVER (TYPE 640), DRAWING NO.:61 D 3520.9030	NOS	4		
S16.3	SYNCHRONY CHECK BOARD	NOS	4		
S17	DOMESTIC FRIDGE MODEL: SABROE CMO 14 MANUFACTURER: DEUTSCHE BRONSWERK GMBH, Wilhelm-Stein-Weg 15, 2000 Hamburg 63				
S17.1	PRESSURE CONTROL HP-KP5(DANFOSS),SPARE NO./PART NO.1373+123	NOS	2		
S17.2	PRESSURE CONTROL LP-KP1(DANFOSS), SPARE NO./PART NO.1373+103	NOS	2		
S18	MAIN AC MODEL: SABROE CMO 14 MANUFACTURER: DEUTSCHE BRONSWERK GMBH ,Wilhelm-Stein-Weg 15, 2000 Hamburg 63				
S18.1	PRESSURE CONTROL HP-KP5(DANFOSS), DRAWING NO.:1373+123	NOS	3		
S18.2	PRESSURE CONTROL LP-KP1(DANFOSS), DRAWING NO.:1371+103	NOS	3		
S19	BRUNVOLL AZIMUTH THRUSTER SYSTEMS SN: BRUNVOLL PROJECT NO.16881,UNIT Sno.6901 TYPE: AR-80-LNC-2100 MANUFACTURER: BRUNVOLL AS - STRANDGT.4- 6 - N - 6415 MOLDE, NORWAY. PHONE: +47 71 21 96 00 EMAIL: service@brunvoll.no				
S19.1	COMPLETE OVERHAUL KIT FOR INBOARD AND OUTBOARD DRY DOCK OVERHAUL	NOS	1 KIT		

S19.2	SPLIT PIN 18X55, DRAWING NO.:6771.75 1023, SPARE NO./PART NO.023-001561	NOS	4 PCS		
S19.3	ROD FEED BACK , DRAWING NO.:7756.86 1028, SPARE NO./PART NO.028-015357	NOS	1PC		
S20	BROUNVOLL BOW THRUSTER SN: BRUNVOLL PROJECT NO.16881,UNIT Sno.6900 TYPE: FU-80-LTC-2250 MANUFACTURER: BRUNVOLL AS - STRANDGT.4- 6 - N - 6415 MOLDE , NORWAY. PHONE: +47 71 21 96 00				
S20.1	COMPLETE OVERHAUL KIT FOR INBOARD AND OUTBOARD DRY DOCK OVERHAUL	NOS	1 KIT		
S21	A/C COOLING SEA WATER PUMP Make : IRON PUMP, MODEL: QVKL-4/300-EA Manufacture:MASKINFABRIKEN IRON A.S 10,GENERATORVEJ, DK 2730, HERLEV-DENMARK				
S21.1	PUMP SHAFT, DRAWING NO.:21519, SPARE NO./PART NO.210	NOS	2		
S21.2	MECHANICAL SEAL, DRAWING NO.:21519, SPARE NO./PART NO.433	NOS	6		
S21.3	WEAR RING , DRAWING NO.:21519, SPARE NO./PART NO.502	NOS	8		
S21.4	IMPELLER, DRAWING NO.:21519, SPARE NO./PART NO.234	NOS	3		
S21.5	PUMP CASING BOTTOM, DRAWING NO.:21519, SPARE NO./PART NO.102.1	NOS	2		
S21.6	BEARING BUSH, DRAWING NO.:21519, SPARE NO./PART NO.545	NOS	3		
S21.7	BEARING CARRIER, DRAWING NO.:21519, SPARE NO./PART NO.381	NOS	3		
S21.8	RETAINING SPLIT RING, DRAWING NO.:21519, SPARE NO./PART NO.505	NOS	3		
S21.9	BEARING BRACKET, DRAWING NO.:21519, SPARE NO./PART NO.341.2	NOS	2		
S21.10	BEARING HOUSING, DRAWING NO.:21519, SPARE NO./PART NO.340	NOS	2		
S21.11	SHOULDER RING, DRAWING NO.:21519, SPARE NO./PART NO.551	NOS	3		
S21.12	BEARING HOUSING TOP, DRAWING NO.:21519, SPARE NO./PART NO.572	NOS	3		
S21.13	RADIAL BALL BEARING, DRAWING NO.:21519, SPARE NO./PART NO.321	NOS	6		
S21.14	PUMP CASING TOP, DRAWING NO.:21519, SPARE NO./PART NO.102.2	NOS	2		
S21.15	SHAFT SEAL RING, DRAWING NO.:21519, SPARE NO./PART NO.420	NOS	6		
S22	OILY WATER SEPARATOR Type : CPS 25 B 5 FARM INDUSTRIAL Serial no. : - 3080/82/C+D Other details : DESIGN PR.3.5 BAR,FLOW RATE 5 CU.M/HR address of manufacturer: FARM EUROPE B.V. DRAAIBRUGWEG 10,IND.TERR.DE VAART ZUID 1332 AD ALMERE-HOLLAND TEL 03240-200 04,TELEX-70481				
S22.1	FILTER PC 0614 DMC 76733 ISSUE 1, DRAWING NO.:21B-12180, SPARE NO./PART NO.49	NOS	4		

S23	LT COOLING FRESH WATER PUMP Make : IRON PUMP, MODEL: QVKL-8/300- Manufacture:MASKINFABRIKEN IRON A.S 10,GENERATORVEJ, DK 2730, HERLEV-DENMARK				
S23.1	PUMP SHAFT, DRAWING NO.:21519, SPARE NO./PART NO.210	NOS	2		
S23.2	MECHANICAL SEAL, DRAWING NO.:21519, SPARE NO./PART NO.433	NOS	6		
S23.3	WEAR RING , DRAWING NO.:21519, SPARE NO./PART NO.502	NOS	8		
S23.4	IMPELLER, DRAWING NO.:21519, SPARE NO./PART NO.234	NOS	3		
S23.5	PUMP CASING BOTTOM, DRAWING NO.:21519, SPARE NO./PART NO.102.1	NOS	2		
S23.6	BEARING BUSH, DRAWING NO.:21519, SPARE NO./PART NO.545	NOS	3		
S23.7	BEARING CARRIER, DRAWING NO.:21519, SPARE NO./PART NO.381	NOS	3		
S23.8	RETAINING SPLIT RING, DRAWING NO.:21519, SPARE NO./PART NO.505	NOS	3		
S23.9	BEARING BRACKET, DRAWING NO.:21519, SPARE NO./PART NO.341.2	NOS	2		
S23.10	BEARING HOUSING, DRAWING NO.:21519, SPARE NO./PART NO.340	NOS	2		
S23.11	SHOULDER RING, DRAWING NO.:21519, SPARE NO./PART NO.551	NOS	3		
S23.12	BEARING HOUSING TOP, DRAWING NO.:21519, SPARE NO./PART NO.572	NOS	3		
S23.13	RADIAL BALL BEARING, DRAWING NO.:21519, SPARE NO./PART NO.321	NOS	6		
S23.14	PUMP CASING TOP, DRAWING NO.:21519, SPARE NO./PART NO.102.2	NOS	2		
S23.15	SHAFT SEAL RING, DRAWING NO.:21519, SPARE NO./PART NO.420	NOS	6		
S24	BILGE & BALLAST PUMP Make : IRON PUMP, MODEL: QVKL-2,4/300 EA Manufacture:MASKINFABRIKEN IRON A.S 10,GENERATORVEJ, DK 2730, HERLEV-DENMARK				
S24.1	PUMP SHAFT, DRAWING NO.:21519, SPARE NO./PART NO.210	NOS	2		
S24.2	MECHANICAL SEAL, DRAWING NO.:21519, SPARE NO./PART NO.433	NOS	6		
S24.3	WEAR RING , DRAWING NO.:21519, SPARE NO./PART NO.502	NOS	8		
S24.4	IMPELLER, DRAWING NO.:21519, SPARE NO./PART NO.234	NOS	3		
S24.5	PUMP CASING BOTTOM, DRAWING NO.:21519, SPARE NO./PART NO.102.1	NOS	2		
S24.6	BEARING BUSH, DRAWING NO.:21519, SPARE NO./PART NO.545	NOS	3		
S24.7	BEARING CARRIER, DRAWING NO.:21519, SPARE NO./PART NO.381	NOS	3		
S24.8	RETAINING SPLIT RING, DRAWING NO.:21519, SPARE NO./PART NO.505	NOS	3		
S24.9	BEARING BRACKET, DRAWING NO.:21519, SPARE NO./PART NO.341.2	NOS	2		
S24.10	BEARING HOUSING, DRAWING NO.:21519, SPARE NO./PART NO.340	NOS	2		
S24.11	SHOULDER RING, DRAWING NO.:21519, SPARE NO./PART NO.551	NOS	3		
S24.12	BEARING HOUSING TOP, DRAWING NO.:21519, SPARE NO./PART NO.572	NOS	3		

S24.13	RADIAL BALL BEARING, DRAWING NO.:21519, SPARE NO./PART NO.321	NOS	6		
S24.14	PUMP CASING TOP, DRAWING NO.:21519, SPARE NO./PART NO.102.2	NOS	2		
S24.15	SHAFT SEAL RING, DRAWING NO.:21519, SPARE NO./PART NO.420	NOS	6		
S25	HARBOUR SW PUMP Make : Maskinfabriken IRON A/S MODEL: RS-80-65/250 Manufacture: MASKINFABRIKEN IRON A.S 10,GENERATORVEJ, DK 2730, HERLEV-DENMARK				
S25.1	PUMP SHAFT, DRAWING NO.:26.246, SPARE NO./PART NO.210	NOS	1		
S25.2	MECHANICAL SEAL, DRAWING NO.:26.246, SPARE NO./PART NO.433	NOS	4		
S25.3	CASING WEAR RING, DRAWING NO.:26.246, SPARE NO./PART NO.502.1	NOS	2		
S25.4	IMPELLER, DRAWING NO.:26.246, SPARE NO./PART NO.230	NOS	2		
S25.5	CASING WEAR RING, DRAWING NO.:26.246, SPARE NO./PART NO.502.2	NOS	2		
S25.6	VOLUTE CASING, DRAWING NO.:26.246, SPARE NO./PART NO.102	NOS	1		
S25.7	CASING - COVER, DRAWING NO.:26.246, SPARE NO./PART NO.161	NOS	1		
S25.8	SUCTION - COVER, DRAWING NO.:26.246, SPARE NO./PART NO.162	NOS	1		
S25.9	DISCHARGE COVER, DRAWING NO.:26.246, SPARE NO./PART NO.163	NOS	1		
S25.10	INSPECTION COVER, DRAWING NO.:26.246, SPARE NO./PART NO.164	NOS	1		
S25.11	RADIAL BALL BEARING, DRAWING NO.:26.246, SPARE NO./PART NO.320.1	NOS	2		
S25.12	RADIAL BALL BEARING, DRAWING NO.:26.246, SPARE NO./PART NO.320.2	NOS	2		
S25.13	SHAFT SEALRING, DRAWING NO.:26.246, SPARE NO./PART NO.420	NOS	4		
S25.14	O-RING, DRAWING NO.:26.246, SPARE NO./PART NO.412	NOS	6		
S26	BOW THRUSTER FRESH WATER COOLING PUMP Make : Maskinfabriken IRON A/S MODEL: RS-80-65/250 Manufacture: MASKINFABRIKEN IRON A.S 10,GENERATORVEJ, DK 2730, HERLEV-DENMARK				
S26.1	PUMP SHAFT, DRAWING NO.:26.246, SPARE NO./PART NO.210	NOS	1		
S26.2	MECHANICAL SEAL, DRAWING NO.:26.246, SPARE NO./PART NO.433	NOS	4		
S26.3	CASING WEAR RING, DRAWING NO.:26.246, SPARE NO./PART NO.502.1	NOS	2		
S26.4	IMPELLER, DRAWING NO.:26.246, SPARE NO./PART NO.230	NOS	2		
S26.5	CASING WEAR RING, DRAWING NO.:26.246, SPARE NO./PART NO.502.2	NOS	2		
S26.6	VOLUTE CASING, DRAWING NO.:26.246, SPARE NO./PART NO.102	NOS	1		
S26.7	CASING - COVER, DRAWING NO.:26.246, SPARE NO./PART NO.161	NOS	1		
S26.8	SUCTION - COVER, DRAWING NO.:26.246, SPARE NO./PART NO.162	NOS	1		
S26.9	DISCHARGE COVER, DRAWING NO.:26.246, SPARE NO./PART NO.163	NOS	1		
S26.10	INSPECTION COVER, DRAWING NO.:26.246, SPARE NO./PART NO.164	NOS	1		

S26.11	RADIAL BALL BEARING, DRAWING NO.:26.246, SPARE NO./PART NO.320.1	NOS	2		
S26.12	RADIAL BALL BEARING, DRAWING NO.:26.246, SPARE NO./PART NO.320.2	NOS	2		
S26.13	SHAFT SEALRING, DRAWING NO.:26.246, SPARE NO./PART NO.420	NOS	4		
S26.14	O-RING, DRAWING NO.:26.246, SPARE NO./PART NO.412	NOS	6		
S27	HULL MOUNTED ADCP TRANSDUCER MAKE: TELEDYNE MARINE MODEL: OS150 Contact details (Local authorized dealer): ASB systems Pvt. Ltd. Address: 203A VIP Plaza, of new link road, Andheri West, Mumbai 400053. Tel No: 02242301919/ 02242301930.				
S27.1	PN: 840-1001-08 is a 9.525mm (0.375") thick x 48" x 48" window (ACOUSTIC WINDOW)	NOS	1		
S28	SPARES FOR DYNAMIC POSITIONING (DP) SYSTEM OEM: KONGSBERG				
S28.1	WIND OBSERVERII, 2M (90158000)	NOS	1		
S28.2	OMC-140 MULTIDISPLAY (90158000)	NOS	1		
S29	Meter wheel Counter for CTD winch to be procured and installed Specification:- 01. Indicate cable length: -9999.99 To 9999.99 02. Unit of measurement: meters. 03. Display size: (3" X 4"); 7-Segment display or equivalent with the same size or higher sizes. 04. Data Display: The Encoder pulse signal to be converted to cable pay out and system should have capability to perform length to pay out per revolution. 05. Indicate Cable pay out speed: 000.00 To 999.99. 06. Unit of measurement: meter / second or meter/minute. 07. Display type: 2"; 7-segment display or equivalent. 08. Power input: 230 V 50Hz. 09. Signal source: Encoder input. Encoder to be supplied. Encoder shaft: 8mm diameter. 10. Memory: Last data should be restored if a power failure occurs. 11. Slave Display: Repeater of the main display. Two slave units are to be supplied. 12. Safety Alarm: User to be alerted for maximum/minimum length crossed while pay out / heave in. Alarm to be provided with hooter. 13. Reset to zero or any prescribed value: Provision to reset the value to zero or any user selected values. 14. Cabinets: The main/slave counter should be intact in a splash proof cabinet in SS or equivalent for open sea environment. 15. Connectors: All cable connectors should be splash proof connectors (Amphenol or equivalent type). Encoder connectors are also should be in a splash proof casing.	LUMPS UM	1		
T1	Total value of all items (deck, engine & spares) at Column VI				
T2	Tax applicable as per Govt. norms, for T1				
T3	GRAND TOTAL (T1 + T2)				