

ANNEXE 3. Plan d'étude océanographique et plan de navigation

3-1. Situation actuelle

Survey Zone	Mediterranean	Atlantique Nord	Atlantique Centre	Atlantique Sud	Total
	Saidia - Ceuta	Tanger - Safi	Safi - Cap Bojador	Cap Bojador - Cap Blanc	
Coastal Line (mile)	197	305	520	390	
	190	270	495	165+204(Dakhla-Blanc)	
A. Pelagics & Oceanography					
Ave. distance (D=20-500m) (mile)	12	30	30	45	117
No. of survey transects (vertical to coast)	49	30	53	36	168
No. of survey stations	35	50	80	80	245
Total survey distance (mile)	785	1,205	2,110	2,010	6,110
Required survey hours (hours)					
1) Acoustic survey	79	121	211	201	611
2) Mid-trawl sampling	35	50	80	80	245
3) Oceanographic survey	23	23	35	35	115
Required No. of survey days (days)	11.3	16.1	27.2	26.3	80.9
TOTAL Required No. of survey days (days)	14.1	18.1	29.2	29.5	90.8
B. Demersals					
Ave. distance (D=20-1,500m) (mile)	25	40	35	55	155
No. of survey stations (10x10miles)	65	105	*	120	290
Total survey distance (mile)	1,728	2,448	*	3,312	7,488
Required survey hours (hours)					
1) Trawling	144	204	*	276	624
2) Cruise	144	204	*	276	624
Required No. of survey days (days)	12.0	17.0	*	23.0	52.0
TOTAL Required No. of survey days (days)	13.9	20.7		30.6	65.2
Nav. days from Agadir to Saidia	2.8				9.9
Repos at Tanger / Laâyoune		2.0	2.0		
Nav. days from Cap Blanc to Agadir				3.2	
Nav. Days from Casa to Saidia	1.9				13.2
Repos at Tanger / Dakhla		2.0		0.5	
Nav. Days from Tangier to Larache & Ifni to Casa		1.7			
Nav. Days from Casa to Tarfaya & Lagouira to Casa				7.1	
Technical assumptions:					
1. Survey hours per day	: 12 hours /day (day time)				
2. Survey speed					
1) For cruise	: 10 knot				
2) For acoustic survey	: 10 knot				
3) For surface & mid-trawling	: 4 knot				
4) For bottom trawling	: 3 knot				
5) Oceanographic survey	: 0 knot (at fixed point)				
3. Survey time					
1) Acoustic survey	Along transects at speed of 10 knot.				
2) Surface & mid-trawling	1 hour/time at every survey station.				
3) Oceanographic survey	0.5 hours/time at every survey station: CTD (30 min.)				
4) Bottom trawling	1,5 hour/time at every survey station.				

3-3. Plan d'étude et de navigation des navires de recherche existants

(1) N/R « AMA »

SCENARIO AL AMIR (PRINTEMPS)												
Type de recherche	fréquence des opérations en nombre						Evaluation de la durée en heures					
	Atl. Sud (Cap Blanc~Cap Boujidor)	Atl. Centre (Cap Boujidor~Cap Cantin)	Atl. Nord (Cap Cantin~Cap Sparteil)	Méd (Cap Sparteil~Saïda)	Total	Atl. Sud (Cap Blanc~Cap Boujidor)	Atl. Centre (Cap Boujidor~Cap Cantin)	Atl. Nord (Cap Cantin~Cap Sparteil)	Méd (Cap Sparteil~Saïda)	Total		
Nbr Radiales	35	92	30	49	166							
Stations démersales	0	0	0	0	0	0	0	0	0	0		
CTD / rosette	132	148	90	91	461	50	50	41	37	178		
Bongo / multinet	52	66	40	56	216	26	34	20	28	108		
Sédiment (berme/carottier)	0	0	0	0	0	0	0	0	0	0		
Stations pélagiques	80	80	50	35	245	80	80	50	35	245		
Stations mésopélagiques	0	0	0	0	0	0	0	0	0	0		
Scan multifaisceau	0	0	0	0	0	0	0	0	0	0		
Parcours prospection (nm)	2087	2516	1228	692	6523	209	252	123	69	652		
Inter-radiales (nm)	435	794	392	214	1834	23.7	26.2	14.3	9.8	73.9		
										91.1		

SCENARIO AL AMIR (AUTOMNE) (limité à 200 m)												
Type de recherche	fréquence des opérations en nombre						Evaluation de la durée en heures					
	Atl. Sud (Cap Blanc~Cap Boujidor)	Atl. Centre (Cap Boujidor~Cap Cantin)	Atl. Nord (Cap Cantin~Cap Sparteil)	Méd (Cap Sparteil~Saïda)	Total	Atl. Sud (Cap Blanc~Cap Boujidor)	Atl. Centre (Cap Boujidor~Cap Cantin)	Atl. Nord (Cap Cantin~Cap Sparteil)	Méd (Cap Sparteil~Saïda)	Total		
Nbr Radiales	0	0	0	0	0	0	0	0	0	0		
Stations démersales	120	25	55	30	230	180	38	83	45	345		
CTD / rosette	0	0	0	0	0	0	0	0	0	0		
Bongo / multinet	20	8	15	5	48	10	4	8	2	24		
Sédiment (berme/carottier)	0	0	0	0	0	0	0	0	0	0		
Stations pélagiques	0	0	0	0	0	0	0	0	0	0		
Stations mésopélagiques	0	0	0	0	0	0	0	0	0	0		
Scan multifaisceau	0	0	0	0	0	0	0	0	0	0		
Parcours prospection (nm)	1200	250	550	300	2300	120	25	55	30	230		
						20.7	4.4	9.7	5.2	43.9		
										57.4		

SCENARIO AL HASSANI (AUTOMNE) (entre 200 et 800 m)

Type de recherche	fréquence des opérations en nombre						Evaluation de la durée en heures					
	Atl. Sud (Cap Blanc~Cap Boujodor)	Atl. Centre (Cap Boujodor~Cap Cantin)	Atl. Nord (Cap Cantin~Cap Sparte)	Méd (Cap Sparte~Saïda)	Total	Atl. Sud (Cap Blanc~Cap Boujodor)	Atl. Centre (Cap Boujodor~Cap Cantin)	Atl. Nord (Cap Cantin~Cap Sparte)	Méd (Cap Sparte~Saïda)	Total		
Nbr Radiales	0	0	0	0	0	0	0	0	0	0		
Stations démersales	34	15	50	30	129	68	30	100	60	258		
CTD / rosette	5	4	10	10	29	2	2	5	5	15		
Bongo / multinet	0	0	0	0	0	0	0	0	0	0		
Sédiment (benne/carottier)	0	0	0	0	0	0	0	0	0	0		
Stations pélagiques	0	0	0	0	0	0	0	0	0	0		
Stations mésopélagiques	0	0	0	0	0	0	0	0	0	0		
Scan multifaisceau	0	0	0	0	0	0	0	0	0	0		
Parcours prospection (mn)	340	150	500	300	1290	34	15	50	30	129		
						70	3.1	10.3	6.3	26.3		
										64.3		

Calcul du travail de nuit (AMA-printemps)

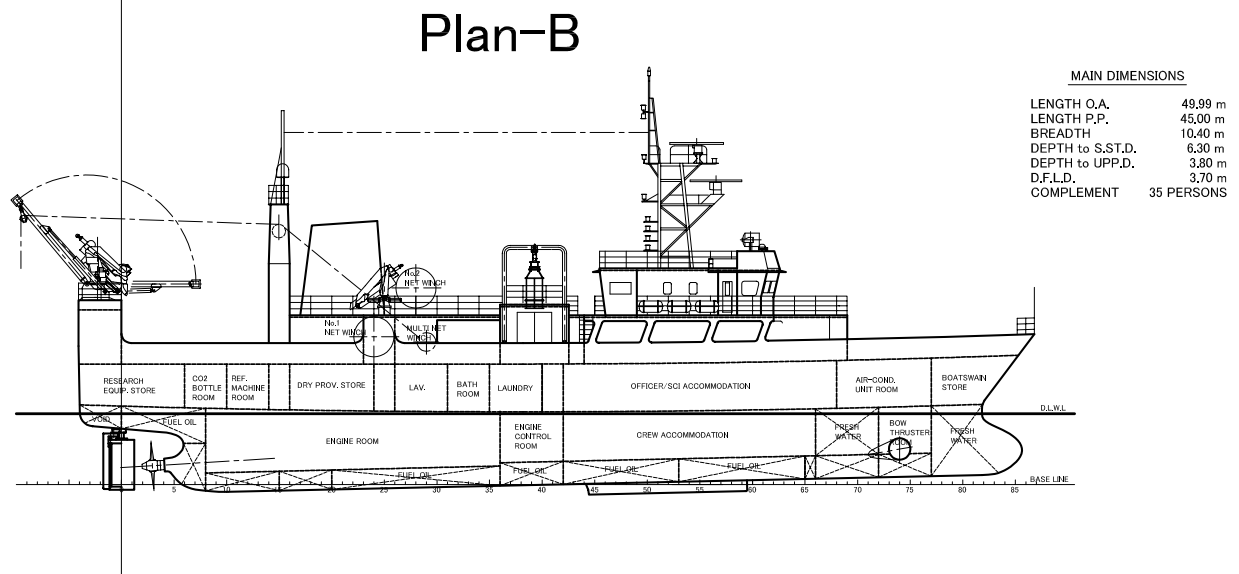
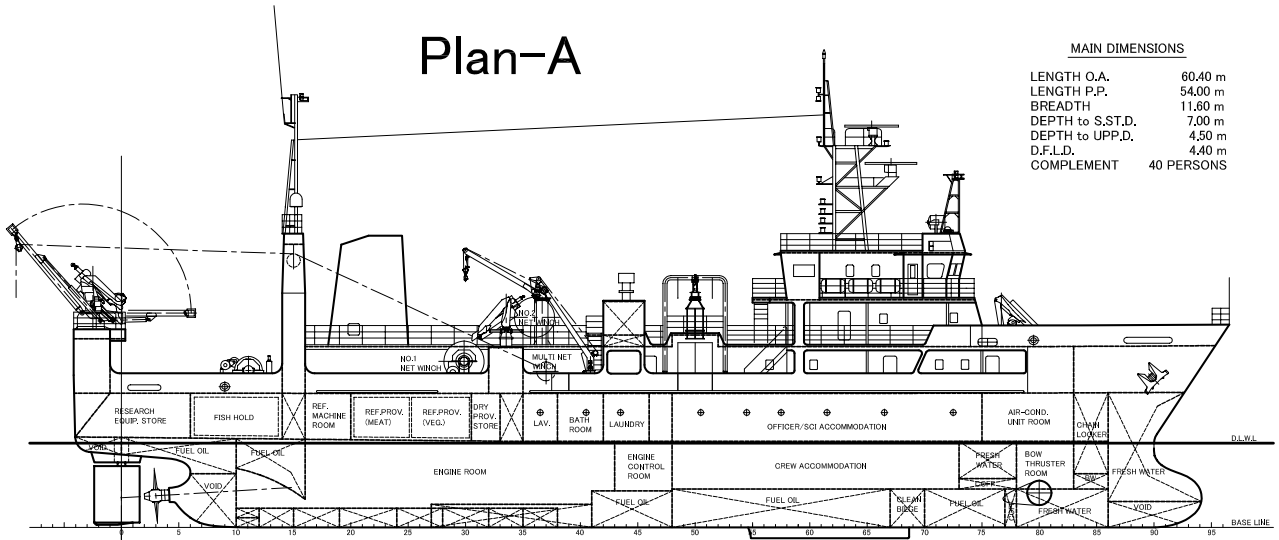
	1 station pélagique/j	1/2 de CTD	1/2 du Bongo	1/2 inter-radiales	Heures de nuit	Heures de travail par nuit
Atl.Sud	24	25	13	22	3.5	2.6
Atl.Centre	26	25	17	40	4.1	2.6
Atl.Nord	14	21	10	20	4.5	3.1
Méd	10	18	14	11	5.4	4.3
Total	74	89	54	92	18	13

Intercalibrations avec le nouveau bateau (Deuxième anée)										
Stations										
Durée (heure)										
Demersal (<200 m)	1.5									
Demersal profond (200 à 1000 m)	2									
CTD	0.5									
Moyenne distance interstations=	10									
Vitesse de croisière	7									
Navigation										
Nombre d'heurs d'activité	15									
Sortie/entrée ports	23									
Zones d'évaluation Demersale										
Zone	Chalutage			Océanographique		Navigation prospection (mn)	Nombre de jours			
	0-1500m	800-1500m	0-800m	CTD			Recherche	Déplacement entre points	Navigation	Total
Cap Blanc - Cap Boujodor	110	0	87	0	0	870	8.7	8.3	4.5	21.5
Cap Boujodor - Sidi Ifni	125	0	103	0	0	1032	10.3	9.8	1.2	21.3
Sidi Ifni - Cap Spartel	88	0	62	0	0	618	6.2	5.9	3.5	15.6
Cap Spartel - Saïdia	80	0	72	0	0	716	7.2	6.8	2.5	16.5
Total stations	403	0	324	0	0	3236	32.4	30.8	11.7	74.9
Evaluation Demersale (en heures)										
Zone	Chalutage			Océanographique		Navigation prospection (heures)	Nombre de jours			
	0-800m	800-1500m	0-800m	CTD			Recherche	Déplacement entre points	Navigation	Total
Cap Blanc - Cap Boujodor	131	0	0	0	0	124	8.7	8.3	4.5	21.5
Cap Boujodor - Sidi Ifni	155	0	0	0	0	147	10.3	9.8	1.2	21.3
Sidi Ifni - Cap Spartel	93	0	0	0	0	88	6.2	5.9	3.5	15.6
Cap Spartel - Saïdia	107	0	0	0	0	102	7.2	6.8	2.5	16.5
Total stations	485	0	0	0	0	462	32.4	30.8	11.7	74.9
Aires strates										
Casa-Saïdia	385	2.29								Aire strate (0-1500)
Frideq - Spartel	43	0.26								Aire strate (0-800-1000)
Escale Tanger			2							
Sidi Ifni - Casa - Sidi Ifni	588	3.50	8							
Escale Casa										
Lagouira-Dakhla	198	1.18	1							
Escale Dakhla										
Dakhla - Casa	755	4.49	11							
Total		11.72								
Total										
Total										
22.72										

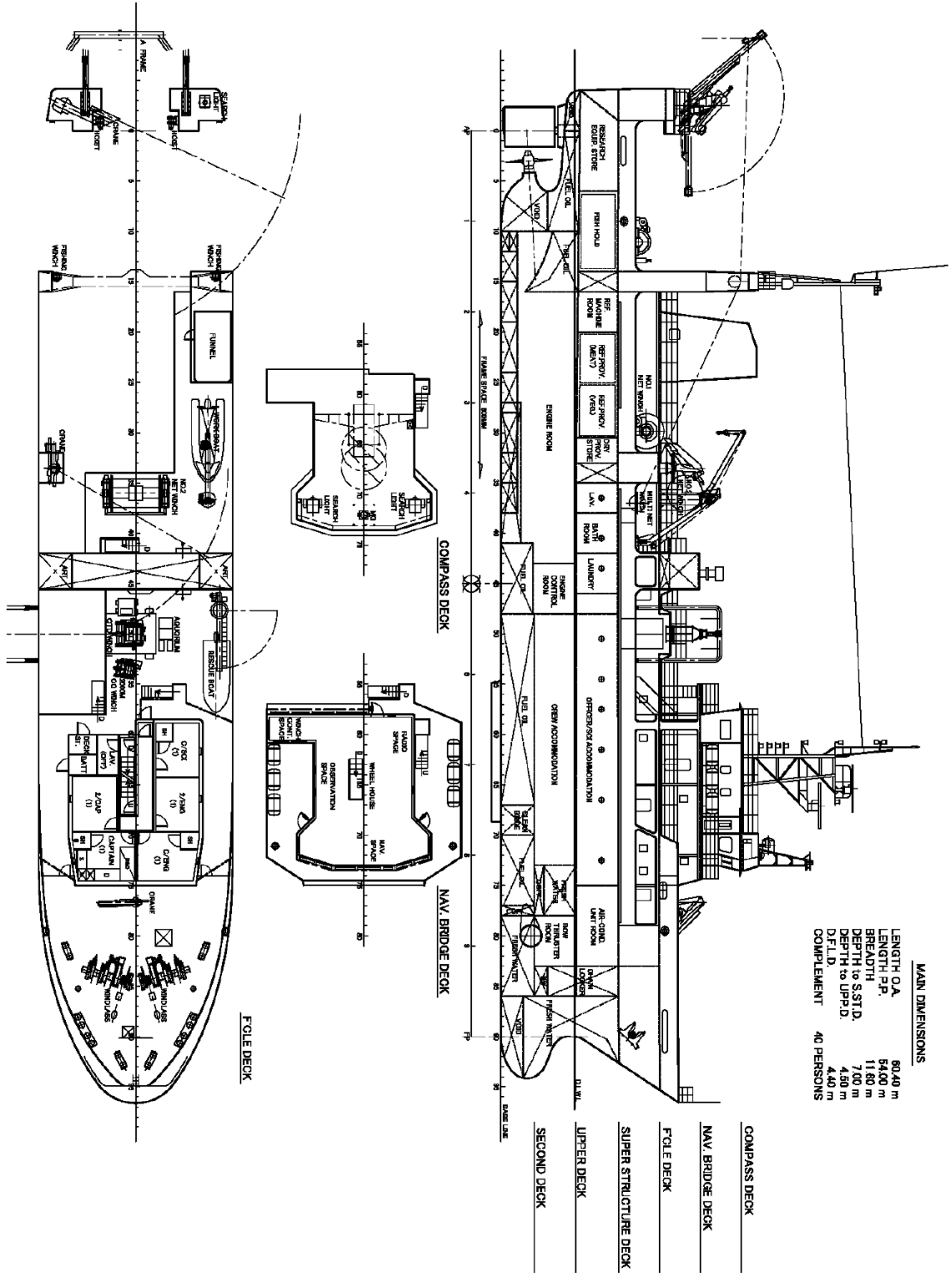
ANNEXE 4. Plan du navire et caractéristiques de base

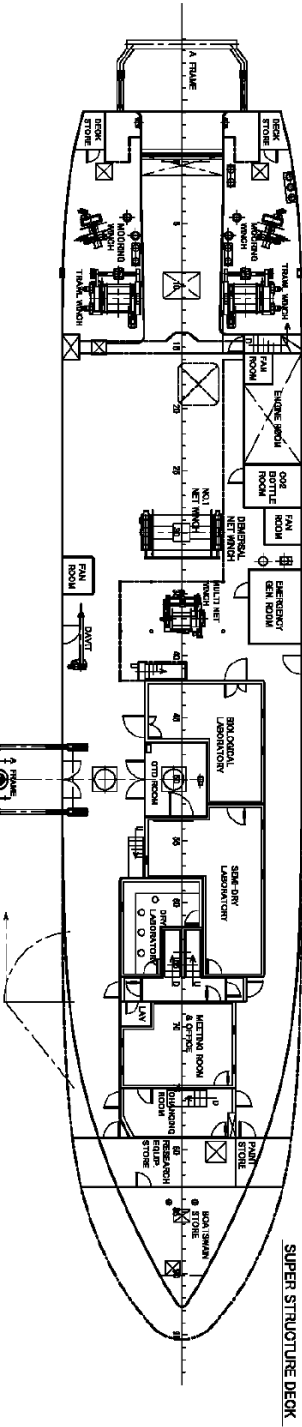
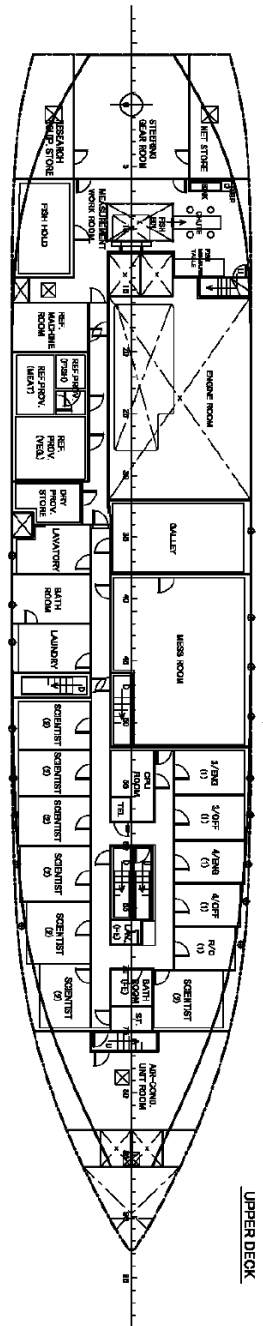
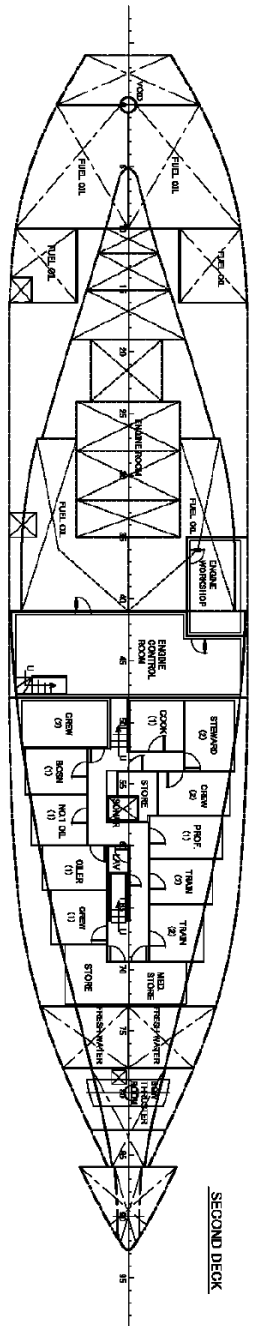
4-1. Plan du navire

(1) Comparaison de taille entre le Plan A et le Plan B

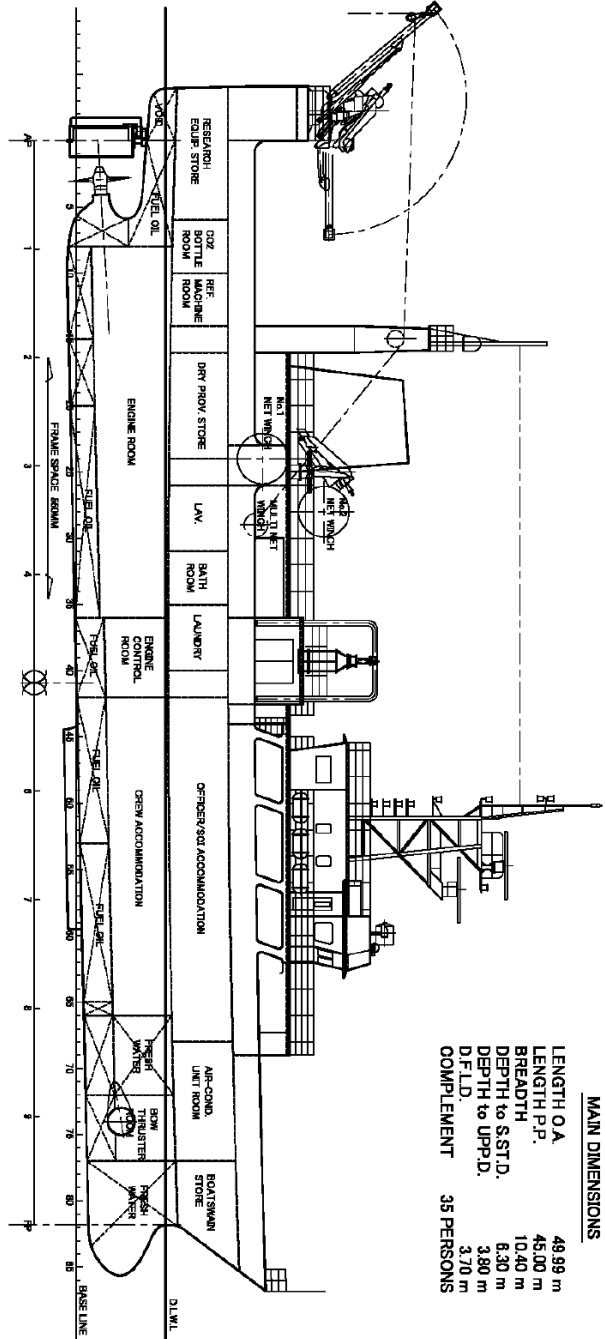
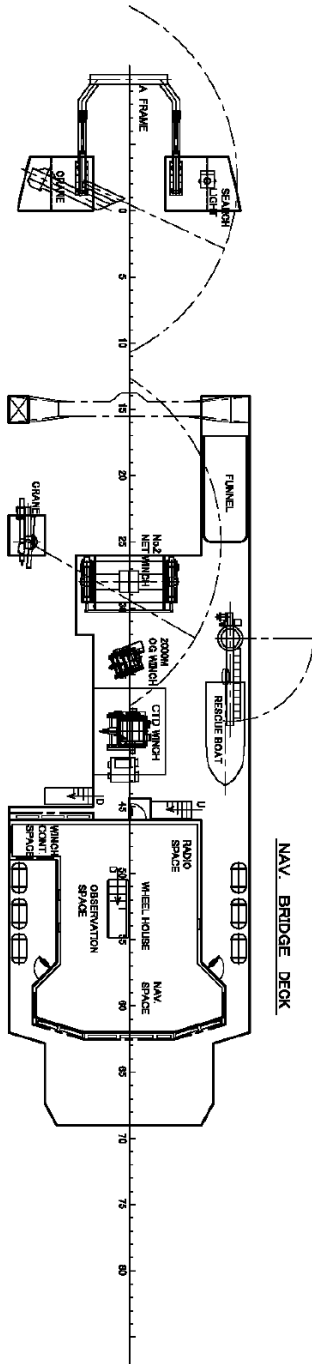


(2) Plan A





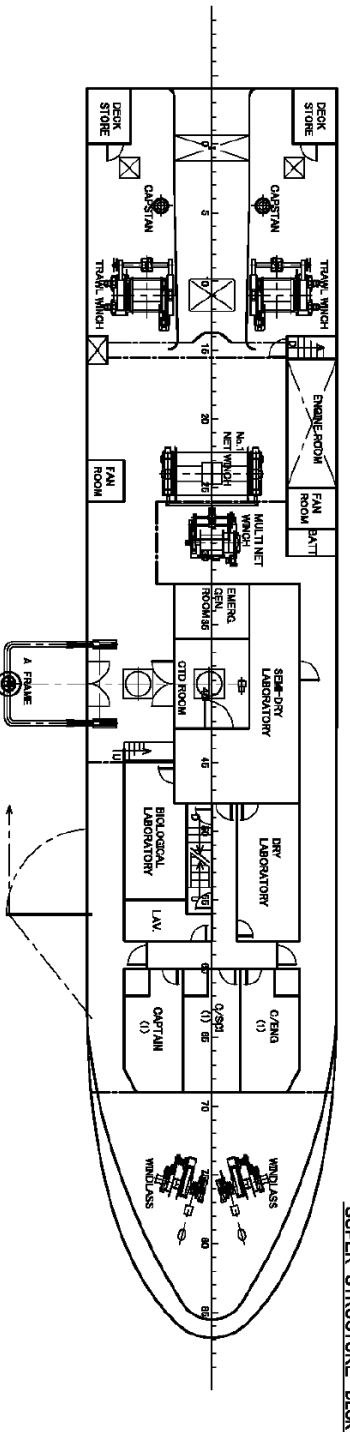
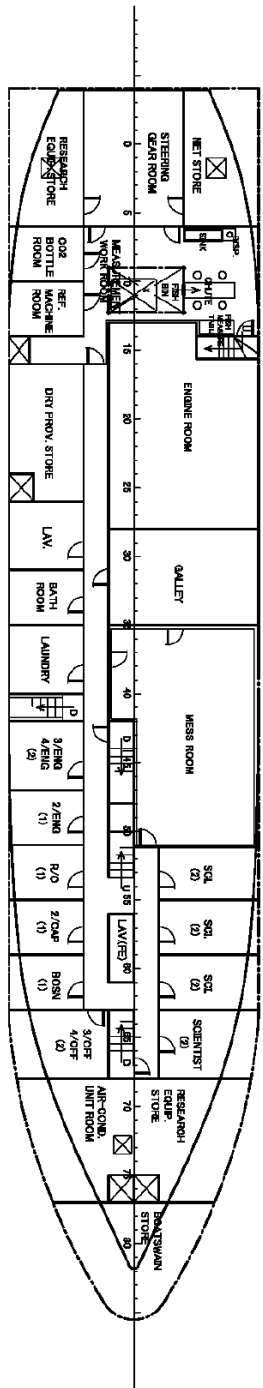
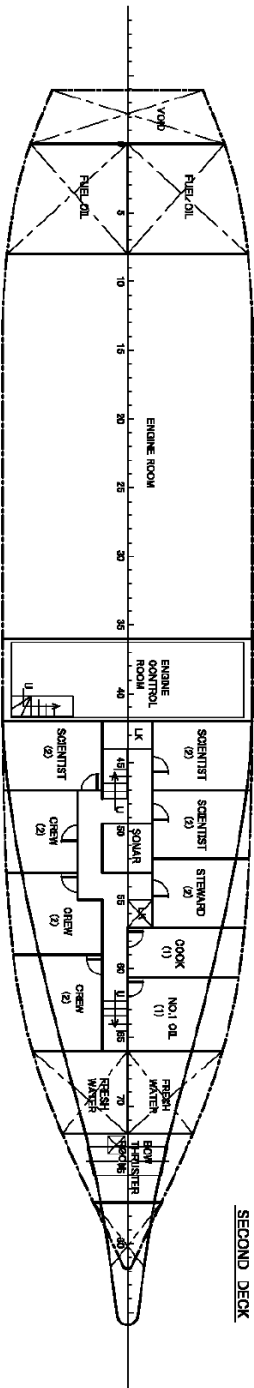
(3) Plan B



MAIN DIMENSIONS

LENGTH O.A.	49.99 m
LENGTH P.P.	45.00 m
BREADTH	10.40 m
DEPTH to S.S.T.D.	8.30 m
DEPTH to U.P.P.D.	3.90 m
D.F.L.D.	3.70 m
COMPLEMENT	35 PERSONS

- COMPASS DECK
- NAV. BRIDGE DECK
- SUPER STRUCTURE DECK
- UPPER DECK
- SECOND DECK

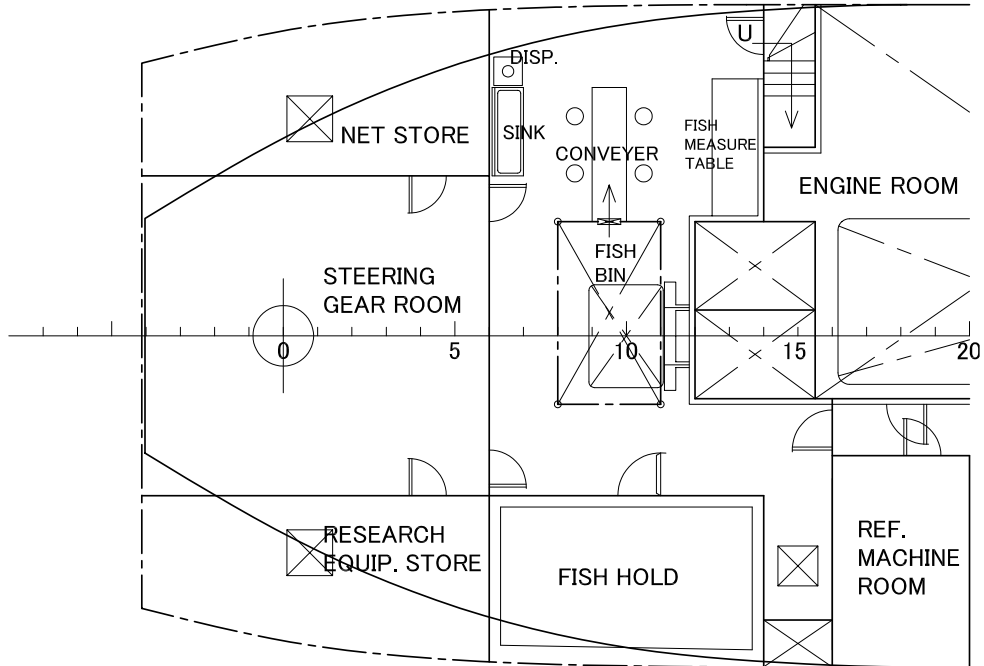


(4) Laboratoire humide

Plan A

MEASUREMENT WORK ROOM (Detail)

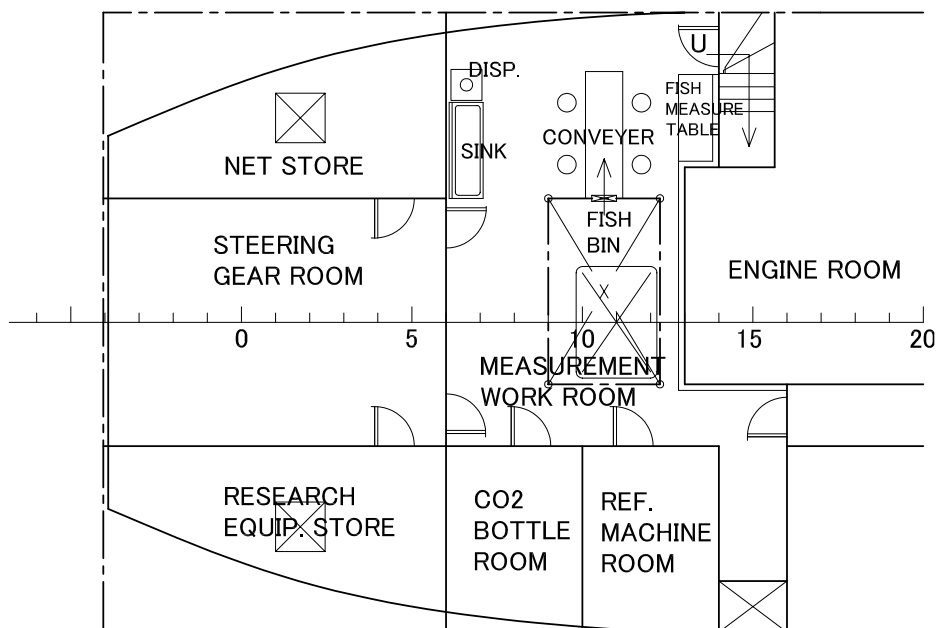
UPPER DECK



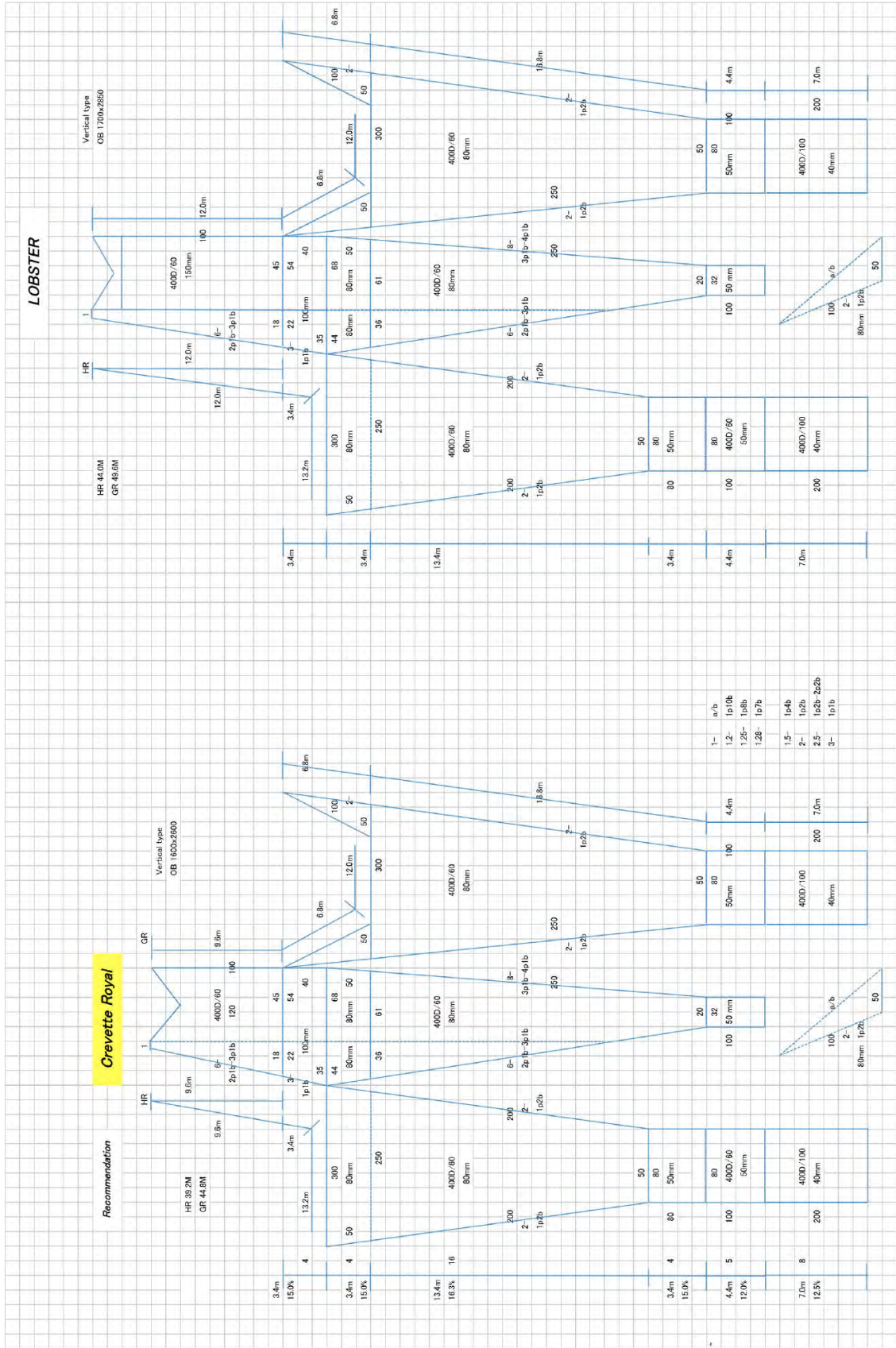
Plan B

MEASUREMENT WORK ROOM (Detail)

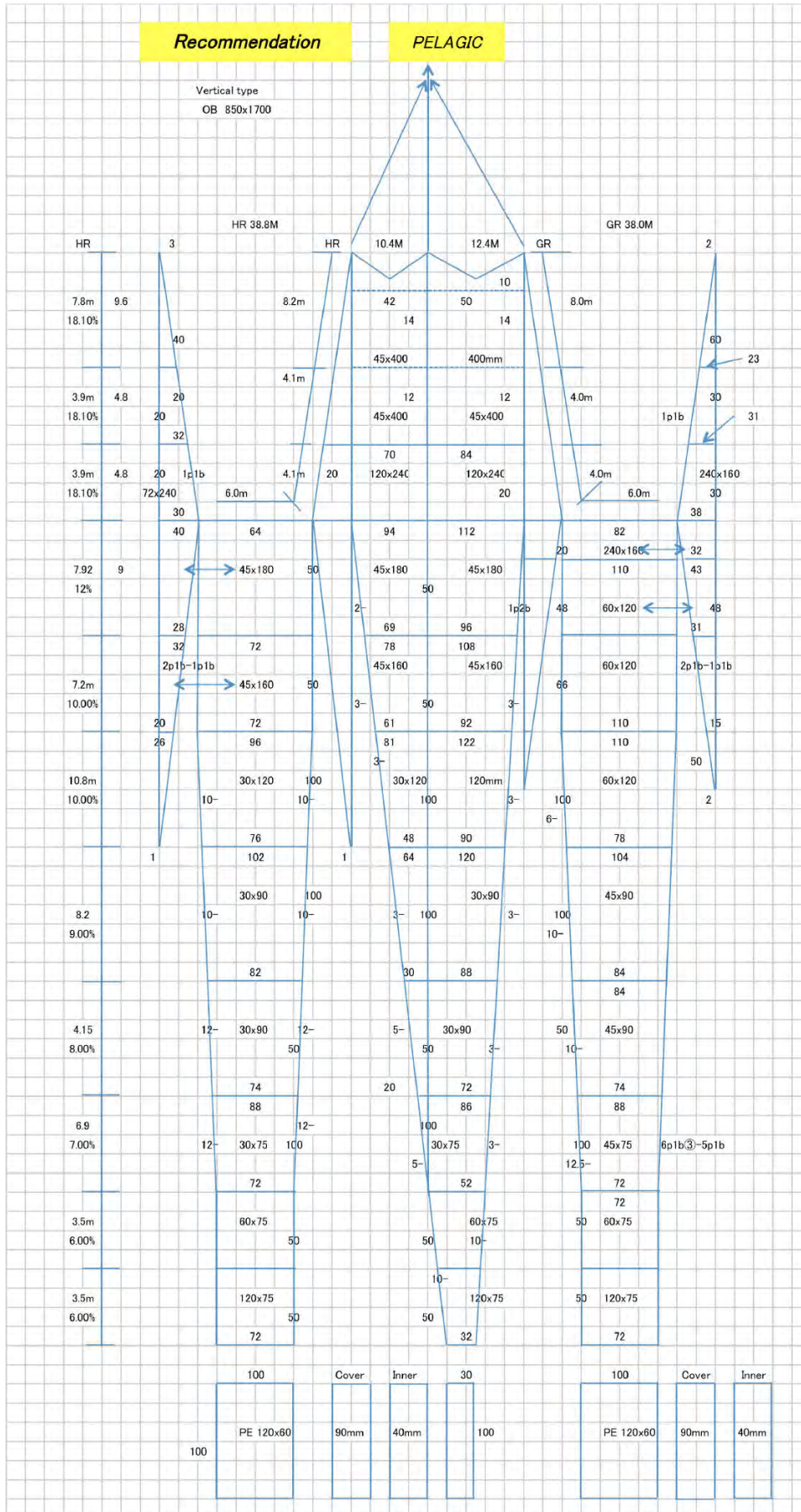
UPPER DECK



Chalut de fond (pour crevettes / langoustes)



Chalut pélagique



4-2. Tableau comparatif des caractéristiques de base

1/7

Ship Name	AL AMIR MOULAY ABDALLAH	CHARIF AL IDRISSE	Projected Vessel (Plan-A)	Projected Vessel (Plan-B)	YOKO MARU
Type	Single Decker with long F'csl	Single Decker with long F'csl	Double Decker with F'csl	Double Decker with Deck house	Double Decker with F'csl
Type of Ship	Fisheries Research Vessel	Fisheries Research Vessel	Fisheries Research Vessel	Fisheries Research Vessel	Fisheries Research Vessel
Shipyard	SUMITOMO H.I.	NAGASAKI SHIPYARD	-----	-----	NIIGATA S&R
Delivered	Jan. 15, 2001	Jun. 18, 1986	-----	-----	Nov. 30, 2010
Port of Registry	AGADIR	CASABLANCA	-----	-----	NAGASAKI / JAPAN
Gross Tonnage	293	397	abt. 1,100	abt. 800	991
Navigation Area	Ocean Going International Voyage	Ocean Going International Voyage	Ocean Going International Voyage	Ocean Going International Voyage	Great Coasting International Voyage
GMDSS	A1+A2+A3	A1+A2+A3	A1+A2+A3	A1+A2+A3	A1+A2+A3
Class	NK / LR	NK / LR	NK / LR	NK / LR	JG
L(overall)	38.50	41.00	abt. 60.40	abt. 49.99	58.60
L(between pp)	33.50	35.00	54.00	45.00	52.30
Breadth	7.80	8.80	11.60	10.40	11.00
Depth(upper)	-----	-----	7.00	6.30	6.85
Depth(lower)	3.50	3.92	4.50	3.80	4.50
Designed Draft	3.00	3.20	4.40	3.70	4.40
Fishing for Research	Trawl(pelagic) Long line	Trawl (bottom)	Trawl (bottom and pelagic)	Trawl (bottom and pelagic)	Trawl (bottom and pelagic)
Complement	Crew 14	Crew 16	Crew 20	Crew 20	Crew 22
	Scient. 7	Scient. 9	Scient. 15	Scient. 11	Scient. 9
			Others 5	Others 0	Others 2
	Total 21	Total 25	Total 40	Total 31	Total 33
$V_{trial} / V_{service}$ (kts)	13.18/ abt. 12.2	12.47/ abt. 10.9	14.0 / abt. 13.0	13.5 / abt. 12.5	14.61 / abt. 13.0
Survey Speed (kts)	abt. 10		abt. 10	abt. 10	abt. 10
Fuel Oil(m ³)	90.77	111.27	250.00	210.00	232.97
Fresh Water(m ³)	18.47	53.52	80.00	40.00	106.38
Fish Hold(m ³)	16.21(-20°C)	24.05	12.00(-20°C)	Nil	Nil
O&M Fish Samples	-----	-----	28.0	26.0	32.0
Biological Labo.	7.8	10.4	22.0	11.5	22.0
Dry Laboratory	7.8	-----	12.0	12.0	12.0
Semi-dry Labo.	-----	-----	29.0	23.0	29.0
Acoustic Labo.	9.7	9.8	6.0	5.0	6.0
Total(m ²)	25.3	20.2	97.0	77.5	101.0
Windlass	2CD-2WE×1 24.5kN×12m/min	2CD-2WE×1 29.4kN×9m/min	1CD-2HD-1WE×2 44.1kN×12m/min	1CD-1HD-1WE×2 25.5kN×12m/min	1CD-2HD-1WE×2 44.1kN×12m/min
Capstan / Mooring Winch	Capstan×2 14.7kN×20m/min	Capstan×2 14.7kN×20m/min	1HD-1WE×2 29.4kN×15m/min	Capstan×2 19.6kN×20m/min	1HD-1WE×2 29.4kN×15m/min
Rudder	K7 Flap rudder	Kort nozzle rudder	Schilling rudder	Flap rudder	Schilling rudder
Steering Gear	24.7kN-m, 2.2kW 35°(P)+35°(S)	72.5kN-m, 3.7kW 35°(P)+35°(S)	149.5kN-m, 7.5kW 70°(P)+70°(S)	58.8kN-m, 3.7kW 45°(P)+45°(S)	149.5kN-m, 7.5kW 70°(P)+70°(S)

- Note) 1. Showing the particulars at the time of delivery except Plan-A and Plan-B
2. Makers and types of machinery/equipment indicated in Plan-A and Plan-B are only for reference.

Ship Name	AL AMIR MOULAY ABDALLAH	CHARIF AL IDRISSI	Projected Vessel (Plan-A)	Projected Vessel (Plan-B)	YOKO MARU
Warp Winch	34.3/17.6kN× 80/160m/min×2 20mmΦ×2,000m	44.1kN× 80/min×2 22mmΦ×3,000m	85/59/36kN× 55/80/130m/min×2 18mmΦ×5,000m	85/59/36kN× 55/80/130m/min×2 18mmΦ×5,000m	85/59/36kN× 55/80/130m/min×2 22mmΦ×2,500m
Net Winch	34.3kN×45m/min 1 drum, 5m ³	29.4kN×30m/min 1 drum, 2sets	Bottom × 1 Pelagic × 1	Bottom × 1 Pelagic × 1	29.4/19.6kN× 40/60m/min×1 2 drums, 8m ³ + 8m ³
Line/Net hauler	4.9kN×80m/min×1	-----	-----	-----	-----
Deck Crane	157kN-m× 1 cargo w. 19.6kN (telescopic type)	102kN-m× 1 cargo w. 19.6kN (folding type)	24.5/20.0kN × 11.5/14.1m × 1 (folding & telescopic)	24.5/20.0kN × 11.5/14.1m × 1 (folding & telescopic)	24.5/20.0kN × 11.5/14.1m × 1 (folding & telescopic)
Fore Crane (general use)	-----	-----	8.82/3.92kN × 7.5/11.0m × 1 (telescopic type)	-----	8.82/3.92kN × 7.5/11.0m × 1 (telescopic type)
Mid Space Crane (fishing operation)	-----	-----	8.82/14.7kN × 9.0/6.4m × 1 (folding & telescopic)	8.82/14.7kN × 9.0/6.4m × 1 (folding & telescopic)	8.82/14.7kN × 9.0/6.4m × 1 (folding & telescopic)
Research Winches	-----	-----	-----	-----	2,000m Armored W. 3.92kN×67m/min 6.4Φ×2,000m
	500m Hydrog. W. 7.8kN×50m/min 6.0Φ(SUS)×500m	Electric motor winch 1.96kN×114m/min	2,000m Hydrog W. 5.9kN×60m/min 5Φ(SUS)×2,000m	2,000m Hydrog W. 5.9kN×60m/min 5Φ(SUS)×2,000m	3,000m Hydrog W. 4.9kN×67.5m/min 5Φ(SUS)×3,000m
	-----	-----	-----	-----	5,000m Hydrog W. 49kN×79.5m/min 12Φ×5,000m
	CTD W. 7.8kN×50m/min 6.4Φ×500m (armored cable)	-----	2,000m CTD W. 7.84kN×60m/min 6.4Φ×2,000m (armored)	2,000m CTD W. 7.84kN×60m/min 6.4Φ×2,000m (armored)	7,000m CTD W. 22kN×60/120m/min 8.03Φ×7,000m (armored)
	-----	-----	Multi Net W. 25.5kN×60m/min 10.52Φ×2,000m (armored)	Multi Net W. 25.5kN×60m/min 10.52Φ×2,000m (armored)	MOCNESS Net W. 53.9kN×59m/min 10.52Φ×2,500m (armored)
A Frame (aft)	-----	-----	SWL 53.9kN outreach 3.0m	SWL 53.9kN outreach 3.0m	SWL 53.9kN outreach 3.0m
A Frame (midship)	SWL 5.9kN outreach 1.7m	-----	SWL 29.4kN outreach 3.0m	SWL 29.4kN outreach 3.0m	SWL 29.4kN outreach 3.0m
Hyd. Oil Pump	driven by main engine 215L/min×2	driven by main engine 162L/min×1	electro-hydraulic 37kW for windlass and fore crane	electro-hydraulic 22kW for windlass	electro-hydraulic 37kW for windlass and fore crane
	electro-hydraulic 57L/min×1, 37kW	electro-hydraulic 31L/min×1, 5.5kW	electro-hydraulic 90kW for warp/net winch, etc.	electro-hydraulic 90kW for warp/net winch, etc.	electro-hydraulic 90kW for warp/net winch, etc.
	electro-hydraulic 70L/min×1, 11kW	-----	electro-hydraulic 22kW for control	electro-hydraulic 22kW for control	electro-hydraulic 22kW for control
	-----	-----	electro-hydraulic 55kW for mooring winch, cranes, etc.	electro-hydraulic 45kW for capstan, cranes, etc.	electro-hydraulic 55kW for mooring winch, cranes, etc.
Air Condition Unit	compressor 11kW fan 3.7kW, 1 set	compressor 11kW fan 3.7kW, 2 sets	5 sets for 5 zones	5 sets for 5 zones	5 sets for 5 zones
Bow Anchor / Chain Cable	stockless 480kg / 19Φ×275m	stockless 685kg / 22Φ×302.5m	stockless 965kg / 32Φ×275m	stockless 675kg / 26Φ×275m	stockless 965kg / 32Φ×275m
Anti-Rolling Tank	-----	-----	Semi-active	-----	Semi-active

Ship Name	AL AMIR MOULAY ABDALLAH	CHARIF AL IDRISSI	Projected Vessel (Plan-A)	Projected Vessel (Plan-B)	YOKO MARU
Main Engine	YANMAR 6N21A-UN 736kW(1,000PS) × 800/287min ⁻¹ ×1	NIIGATA 6MG-22LX 809kW(1,100PS) × 900/329min ⁻¹ ×1	1,838kW(2,500PS) × 750/262min ⁻¹ ×1	1,471kW(2,000PS) × 750/285min ⁻¹ ×1	NIIGATA 6MG28HX 1,838kW(2,500PS) × 750/262min ⁻¹ ×1
Propeller	4CPP×1 D=2,100mm	4CPP×1 D=1,850mm	4CPP & PBCF×1 2,700φ	4CPP & PBCF×1 2,550φ	4CPP & PBCF×1 2,700φ
Generator Engine	YANMAR 6HAL2-N×2 115kW×1,500min ⁻¹	NIIGATA 6NSAK-G×2 147kW×1,500min ⁻¹	2 sets 441kW×1,200min ⁻¹	2 sets 245kW×1,200min ⁻¹	NIIGATA 6NSD-G×2 441kW×1,200min ⁻¹
Generator	AC385V, 50Hz 125kVA × 2	AC385V, 50Hz 160kVA × 2	AC385V, 50Hz 500kVA × 2	AC385V, 50Hz 275kVA × 2	AC450V, 60Hz 500kVA × 2
Harbour Use Generator	-----	-----	200kW×1,500min ⁻¹ AC385 250kVA×1	-----	-----
Emergency Generator set	-----	-----	AC385V 50kVA × 1 50kW×1500min ⁻¹	AC385V 50kVA × 1 50kW×1500min ⁻¹	AC450V 50kVA × 1 50kW×1800min ⁻¹
Fresh water Generator	4t/day (distilling)	1.5t/day (distilling)	10t/day(distilling) 5t/day(reverse)	5t/day(distilling) 5t/day(reverse)	10t/day(distilling) 5t/day(reverse)
Bowthruster	-----	4FPP×500Φ T=7.84kN(Hyd. oil)	4CPP×1,250Φ T=39.2kN(Hyd. oil)	4CPP×1,100Φ T=29.4kN(Hyd. oil)	4CPP×1,250Φ T=39.2kN(Hyd. oil)
Shore Connection Box	AC220V, 3-phase, 50Hz, 60A	AC385V, 3-phase, 50Hz, 60A	AC220V, 3-phase, 50Hz, 120A	AC220V, 3-phase, 50Hz, 120A	AC440V, 3-phase, 60Hz, 300A
Magnetic Compass	Desk mount type × 1 Portable type × 1	Stand type × 1 Table type × 1	Reflector type × 1	Reflector type × 1	Reflector type × 1
Auto Pilot	TOKIMEC PR-2022-SL-025S	TOKYO KEIKI GYLOT-101	ST Mode 1. Automatic, 2. Manual, 3. Lever, 4. Remote, 5. Joystic	ST Mode 1. Automatic, 2. Manual, 3. Lever, 4. Remote, 5. Joystic	YOKOKAWA PT500A-N2
Gyro Compass	TOKIMEC 1-Master 2-Repeaters	TOKYO KEIKI 1-Master 3-Repeaters	IMO approved type 1-Master, 7-Repeaters	IMO approved type 1-Master, 7-Repeaters	YOKOKAWA 1-Master, 7-Repeaters
Joystic Control System	-----	-----	Rudder, CPP, Bowthruster control	Rudder, CPP, Bowthruster control	Rudder, CPP, Bowthruster control
NO.1 Marine Radar	FURUNO X band, 25kW, 96n.m. with ARPA	FURUNO 25kW, 127n.m.	X band, 25kW, 96 n.mile with ARPA	X band, 25kW, 96 n.mile with ARPA	FURUNO X band, 25kW, 96 n.mile with ARPA
NO.2 Marine Radar	FURUNO X band, 6kW, 48n.m.	FURUNO 25kW, 100n.m.	SAME AS ABOVE	SAME AS ABOVE	SAME AS ABOVE
GPS Compass	-----	-----	LCD with DGPS function	LCD with DGPS function	FURUNO SC-110, 1set with DGPS function
Radio Direction Finder	FURUNO FD-160	TAIYO TD-A202B	-----	-----	-----
ECDIS (Chart Plotter)	Sodena, Turbo 2000 Chart plotter	-----	Color LCD, Position Calculation, Nav. Plan./Record.	Color LCD, Position Calculation, Nav. Plan./Record.	FURUNO FEA-2107 Color LCD
GPS Navigator	FURUNO GP-500MkII×1 GP-280×1	FURUNO FSN-80	2 sets LCD with DGPS function	2 sets LCD with DGPS function	FURUNO GP-150, 2 sets with DGPS function
Echo Sounder	FURUNO FE-1282	FURUNO FE-824	IMO approved type Range : 400m	IMO approved type Range : 400m	FURUNO FE-700
Doppler Log	FURUNO DS-70	JRC JLN-202	Speed range ; -10.0 to 40.0 kn	Speed range ; -10.0 to 40.0 kn	FURUNO -10.0 to 40.0 kn
Weather Facsimile Receiver	FURUNO FAX-210	FURUNO FAX-14311	Auto channel select. Thermal printing	Auto channel select. Thermal printing	JRC, JAX-91 Thermal printing
MF/HF Radio Telephone	FURUNO 250W, with DSC	JRC, SSB Radio Tel 400W, 1.6-25MHz	IMO approved type with DSC/NBDP	IMO approved type with DSC/NBDP	JRC, JSS-296 with DSC/NBDP
INMARSAT-C	FURUNO FELC.12 with EGC	JRC, Inmarsat-A JUE-35B	For duplicate equip. with EGC	For duplicate equip. with EGC	JRC, JUE-85 with EGC

Ship Name	AL AMIR MOULAY ABDALLAH	CHARIF AL IDRISSI	Projected Vessel (Plan-A)	Projected Vessel (Plan-B)	YOKO MARU
VHF Radio Telephone	FURUNO, 2 sets 25W, 57C with DSC	JRC, 1 set JHV-229, 12ch	2 sets 25W, 57C with DSC	2 sets 25W, 57C with DSC	JRC, 2 sets 25W, 57C with DSC
Inmarsat Fleet Broadband	-----	-----	for Tel, Fax & Data	for Tel, Fax & Data	JRC JUE-500 for Tel, Fax & Data
V-Sat	-----	-----	Ku-band VSAT Internet & e-mail	Ku-band VSAT Internet & e-mail	-----
AIS	-----	-----	IMO Approved Type	IMO Approved Type	FURUNO, FA-150 IMO approved type
Ship LAN System	-----	-----	IPv4 & 5e standards Info. & Data servers, PCs&Printer, UPS,	IPv4 & 5e standards Info. & Data servers, PCs&Printer, UPS,	M. H. I. Info. & Data servers, PCs&Printer, UPS,
Spare Parts Management System	-----	-----	1 set of PC Display&Print of Stock	1 set of PC Display&Print of Stock	JRCS Display&Print of Stock
Bottom Trawl Net	-----	* 2 sets for Fishes * 2 sets for Shrimp	* 2 sets for Fishes * 2 sets for Cephalopods * 2 sets for Shrimp/Hake	* 2 sets for Fishes * 2 sets for Cephalopods * 2 sets for Shrimp/Hake	NICHIMO 1 set
Otter Board for bottom trawl	-----	2 pairs	1 pair for Fishes and Cephalopods 1 pair for Shrimp/Hake	1 pair for Fishes and Cephalopods 1 pair for Shrimp/Hake	Single Type 1 pair
Pelagic Trawl Net	Taito Seiko 1 set	2 sets for Fishes	2 sets for Fishes	2 sets for Fishes	NICHIMO 1 set
Otter Board for pelagic	1 set	2 pairs	1 pair	1 pair	Double Plate(Al) 1 pair
Auto Tension Winch System	-----	-----	Same System as YOKO MARU	Same System as YOKO MARU	NICHIMO/SONIC Auto Tension Winch System
Scanbas System	SCANMER CGM-05	-----	SCANMAR depth/temp, distance trawl speed, trawleye	SCANMAR depth/temp, distance trawl speed, trawleye	SCANMAR depth/temp, distance trawl speed, trawleye
CTD System	Sea Bird SBE 911plus CTD 1) Under water unit SBE9plus*1 a) Option Sensor • Altimeter • DO sensor b) Carousel Water Sampler(SBE-32) c) Sample Bottle 2.5liters*12 2) Deck Unit SBE11plus*1 3) Software	-----	Sea Bird SBE 911plus CTD 1) Under water unit SBE9plus*1 a) Option Sensor • Fluorometer b) Carousel Water Sampler(SBE-32) c) Sample Bottle Rosette 5liters*24 2) Deck Unit SBE11plus*1 3) Software Seasoft [®]	Sea Bird SBE 911plus CTD 1) Under water unit SBE9plus*1 a) Option Sensor • Fluorometer b) Carousel Water Sampler(SBE-32) c) Sample Bottle Rosette 5liters*24 2) Deck Unit SBE11plus*1 3) Software Seasoft [®]	Sea Bird SBE 911plus CTD 1) Under water unit SBE9plus*1 a) Option Sensor • Altimeter(PSA -916D) • DO sensor(SBE43) • Fluorometer (ECO-FL) • Sediment(OBS-3) b) Carousel Water Sampler(SBE-32) c) Sample Bottle Niskin 10liters*12 2) Deck Unit SBE11plus*1 3) Software Seasoft [®]
Alkalinity & Dissolved Inorganic Carbon Extraction	-----	-----	MARIANDA VINDTA 3C	MARIANDA VINDTA 3C	-----

Ship Name	AL AMIR MOULAY ABDALLAH	CHARIF AL IDRISSEI	Projected Vessel (Plan-A)	Projected Vessel (Plan-B)	YOKO MARU
OPCS (Optical Particle Counting and Sizing System)	-----	-----	CUFES Continuous Underway Fish Egg Sampler	CUFES Continuous Underway Fish Egg Sampler	Sea-Bird SBE-45 MicroTSG ·Fluorometer (WET-STAR) ·Deck sensor ·Precision thermo- meter(SBE-38)
Thermometer Salinometer	Digital thermometer	Bathy thermograph Induct. salinometer	Thermosalinometer	Thermosalinometer	TSURUMI XBT/XCTD SYSTEM
Net Sampling System	Plankton net (Ocean Ins.) 0.333/0.145mm mesh with flow meter /depressor	-----	Hydro-Bios MultiNet Type Midi Net opening 0.25m ² 5 net bags with zippers, 150μ mesh both Vertical and Horizontal Collection	Hydro-Bios MultiNet Type Midi Net opening 0.25m ² 5 net bags with zippers, 150μ mesh both Vertical and Horizontal Collection	MOCNESS(BESS) ·1 & 4m ² Net system 1m ² (150μ mesh)×9 4m ² (800μ mesh)×5 ·1m ² Net system 1m ² (150μ mesh)×9
VMPS	-----	-----	-----	-----	TSURUMI Vertical Multiple-opening Plankton Sampler
ADCP (Acoustic Doppler Current Profiler) Vessel Mount Type	ADCP Sunwest SW2000-115 115kHz Water depth 500m Max.128 layer	-----	ADCP T. RD Instruments Ocean Surveyor 150kHz Water depth 375-400m	ADCP T. RD Instruments Ocean Surveyor 150kHz Water depth 375-400m	ADCP T. RD Instruments Ocean Surveyor 38kHz, 150kHz Water depth 300-1,000m Max. 128 layer
LADCP (Lowered ADCP)	-----	-----	T. RD Instruments beam angle 20 deg 4 beams, 64MB M.	T. RD Instruments beam angle 20 deg 4 beams, 64MB M.	-----
Doppler Current Meter	AANDERAA, 3 sets RCM-9 2,000m	TSURUMI MTCM-4	SEAGUARD, 4 sets RCM, 2,000m Option sensor 1) Temperature 2) Conductivity 3) Pressure 4) Turbidity 5) DO	SEAGUARD, 4 sets RCM, 2,000m Option sensor 1) Temperature 2) Conductivity 3) Pressure 4) Turbidity 5) DO	-----
Weather Station	-----	-----	NIPPON ELE. INST. Automatic Weather Observation Station	NIPPON ELE. INST. Automatic Weather Observation Station	NIPPON ELE. INST. Automatic Weather Observation Station
Gyrocompass and Motion sensor	-----	-----	KONGSBERG Seapath 300	KONGSBERG Seapath 300	OCTANS(IXSEA)
Scientific Fish Finder	SIMRAD EK60 38kHz split beam 120kHz split beam	SIMRAD Scientific Sounder System	SIMRAD EK60 18kHz split beam 38kHz split beam 120kHz split beam 200kHz split beam	SIMRAD EK60 18kHz split beam 38kHz split beam 120kHz split beam 200kHz split beam	SIMRAD EK60 18kHz split beam 38kHz split beam 70kHz split beam 120kHz split beam
Scientific Multibeam Sonar	-----	-----	SIMRAD ME70 45 split beam 70-120kHz	SIMRAD ME70 45 split beam 70-120kHz	SIMRAD ME70 45 split beam 70-120kHz
Multibeam echo sounder (seabed mapping)	-----	-----	SIMRAD EM710 70-100kHz Depth 1,500m	SIMRAD EM710 70-100kHz Depth 1,500m	-----
Fish Finding Sonar	FRUNO CSH-53 1-15"CRT 1-Transceiver 1-TDR(50kHz) Range 75-2,000m	FURUNO CH-12 Range 50-1,500m	FURUNO FSV-35 1-CRT 1-Transceiver 1-TDR(24kHz) Range 60-5,000m	FURUNO FSV-35 1-CRT 1-Transceiver 1-TDR(24kHz) Range 60-5,000m	SIMRAD SX90 1-CRT 1-Transceiver 1-TDR(26kHz) Range 50-4,500m

Ship Name	AL AMIR MOULAY ABDALLAH	CHARIF AL IDRISI	Projected Vessel (Plan-A)	Projected Vessel (Plan-B)	YOKO MARU
Synchronous Transmitter	-----	-----	SIMRAD SU16 ADCP, EK60, ME70, EM710, FSV-35	SIMRAD SU16 ADCP, EK60, ME70, EM710, FSV-35	SIMRAD SU16 ADCP, EK60, ME70, SX90
Fish Finder	FURUNO FCV-1500 1-Display unit 1-Transceiver 2-TDR(28/68kHz)	-----	-----	-----	Furuno FCV-1500L 1-Display unit 1-Transceiver 2-TDR(28/88kHz)
Tide Meter	-----	-----	SEAGUARD WLR, 4647C-300m	SEAGUARD WLR, 4647C-300m	-----
Particle Analysis and Imaging	-----	-----	FlowCAM	FlowCAM	FlowCAM
Particle Size Analyzer	-----	-----	Micromeritics SediGraph 5120 Spec 0.1-300µm option 300-2,000µm	Micromeritics SediGraph 5120 Spec 0.1-300µm option 300-2,000µm	-----
Fast Repetition Rate Fluorometer	Turner Designs 10AU Field Fluorometer	-----	Turner Designs 10AU Field Fluorometer	Turner Designs 10AU Field Fluorometer	KIMOTO DF-03
FluoroProbe	-----	-----	-----	-----	BBE FluoroProbe
pH Meter	-----	Portable Type	Portable Type	Portable Type	-----
DO Meter	-----	Portable Type	-----	-----	-----
DO Field Recorder	-----	2 sets	-----	-----	-----
Multiple Corer	-----	Core sampler Gravity type 2 sets	4 transparent PVC tubes	4 transparent PVC tubes	RIGOSHA Core Tube×4 82×400
Bottom Grab	-----	Ekman-Berge type 2 sets	Van Veen Grab Sampler	Van Veen Grab Sampler	-----
Ultra-Pure Water Generator	-----	-----	Aquarius FRU414CA/CB 0.65L/min	Aquarius FRU464CA/CB 0.65L/min	MILLIPORE Direct-Q UV
Reverse osmosis water purifier	-----	-----	Aquarius RFP542HA 25L/h at 25°C	Aquarius RFP742HA 25L/h at 25°C	-----
Sediment Electric Grinder	-----	-----	1 set Precision Grinder	1 set Precision Grinder	not supplied by Shipbuilder
Onboard Sediment Sieving System	-----	-----	1 set	1 set	not supplied by Shipbuilder
Drying Oven	-----	-----	1 set 99ℓ, max. 250°C	1 set 99ℓ, max. 250°C	-----
Sample Storage Freezer	-----	-----	-25°C 365ℓ × 1	-25°C 365ℓ × 1	-20~-30°C 504ℓ × 3 -20~-35°C 540ℓ × 1
Deep Freezer	-45°C, 506ℓ	-----	-86°C, 35ℓ×1	-86°C, 35ℓ×1	-85°C, 86ℓ×1
Medical Refrigerator	-----	-----	100~200ℓ 2 point temp. alarm	100~200ℓ 2 point temp. alarm	+2°C~+14°C 177ℓ×1
Inverted Microscope	-----	-----	Leica DM IL LED 2 sets	Leica DM IL LED 2 sets	not supplied by Shipbuilder
Stereoscopic Microscope	Nikon SMZ645-3 with lamp house, Nikon α photo2 YS2-H with lamp house	OLYMPUS BHT-321, 2 sets	Nikon SMZ 1000, 2 sets Nikon camera benthos Ocular micrometer (10 mm/0,1mm) Monitor TV	Nikon SMZ 1000, 2 sets Nikon camera benthos Ocular micrometer (10 mm/0,1mm) Monitor TV	not supplied by Shipbuilder

Ship Name	AL AMIR MOULAY ABDALLAH	CHARIF AL IDRISI	Projected Vessel (Plan-A)	Projected Vessel (Plan-B)	YOKO MARU
Ichtyometer	1 set 0-50cm	-----	2 sets	2 sets	not supplied by Shipbuilder
Marine Precision Scale	Max. 1,200g 1 set Max. 6,000g 1 set	-----	Max. 800g, 2 sets precision 0.01g	Max. 800g, 2 sets precision 0.01g	not supplied by Shipbuilder
Scale(big)	Max. 50kg 2 sets Max. 20kg 1 set	-----	Max. 60kg, 1 set precision 5g	Max. 60kg, 1 set precision 5g	not supplied by Shipbuilder
Scale(small)	Max. 5kg 1 set	-----	Max. 3kg, 2 sets precision 0.1g	Max. 3kg, 2 sets precision 0.1g	not supplied by Shipbuilder

ANNEXE 5. Services de consultants

5-1. Calendrier de travaux

STEP Loan	2014					2015					2016					2017					2018																																							
	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8																				
Project Implementation	① Detail Design Stage																				② Tendering Stage																				③ Construction Stage (continued)																			
1. Project Manager	-----																				-----																				-----																			
2. Assist. Project Manager & Tender Docu. Specialist	-----																				-----																				-----																			
3. Naval Architect (Manager of Design Team)	-----																				-----																				-----																			
4. Hull Structure & Fitting Design	-----																				-----																				-----																			
5. Machinery Fitting Design	-----																				-----																				-----																			
6. Electric Fitting Design	-----																				-----																				-----																			
7. Fishing Gear & Machinery Design	-----																				-----																				-----																			
8. Survey Equipment Study & Evaluation	-----																				-----																				-----																			

STEP Loan (continued)	2018					2019					2020					Man-Month																																															
	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	Morocco	Abroad	Total																																							
Project Implementation	-----																				-----																				-----																						
1. Project Manager	-----																				-----																				-----																				9.50	19.25	28.75
2. Assist. Project Manager & Tender Docu. Specialist	-----																				-----																				-----																				8.50	13.75	22.25
3. Naval Architect (Manager of Design Team)	-----																				-----																				-----																				8.50	21.35	29.85
4. Hull Structure & Fitting Design	-----																				-----																				-----																				3.00	14.85	17.85
5. Machinery Fitting Design	-----																				-----																				-----																				1.00	14.40	15.40
6. Electric Fitting Design	-----																				-----																				-----																				1.00	14.40	15.40
7. Fishing Gear & Machinery Design	-----																				-----																				-----																				1.00	2.85	3.85
8. Survey Equipment Study & Evaluation	-----																				-----																				-----																				0.00	2.85	2.85
Total(m.m)																																																													32.50	103.70	136.20

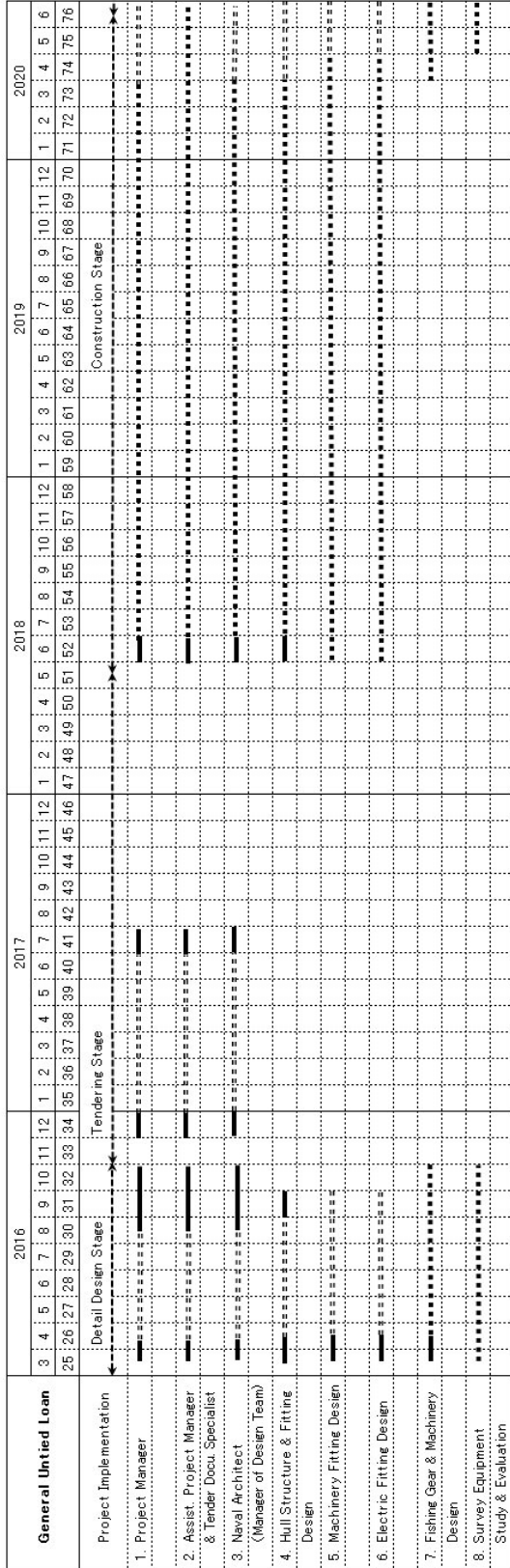
Note:

----- continuous work in Morocco

----- intermittent work in Morocco

----- continuous work abroad

----- intermittent work abroad



Note:

- continuous work in Morocco
- ▨ intermittent work in Morocco
- ===== continuous work abroad
- ▨ intermittent work abroad

General United Loan (continued)	2020												Man-Month											
	6	7	8	9	10	11	12	6	7	8	9	10	11	12	Moro-cco	Abroad	Total							
Project Implementation	Delivery																							
1. Project Manager	=====												9.50	19.25	28.75									
2. Assist. Project Manager & Tender Docu. Specialist	=====												8.50	13.75	22.25									
3. Naval Architect (Manager of Design Team)	=====												8.50	21.35	29.85									
4. Hull Structure & Fitting Design	=====												3.00	14.95	17.95									
5. Machinery Fitting Design	=====												1.00	14.40	15.40									
6. Electric Fitting Design	=====												1.00	14.40	15.40									
7. Fishing Gear & Machinery Design	=====												1.00	2.85	3.85									
8. Survey Equipment Study & Evaluation	=====												0.00	2.85	2.85									
Total(m·m)													32.50	103.70	136.20									

5-2. Détail des frais de consultants

1) STEP(Detail Design Stage)

	Man-Month		Labour Cost		Travel Expenses in Morocco			Air Fare Tokyo/Casablanca			Travel Expenses(Supervision at Shipyard)			Domestic Travel Fee(Train/Bus)					
	Morocco (m·m)	Abroad (m·m)	Total (m·m)	Billing Rate (¥1,000/m·m)	Amount (¥1,000)	Allowance (¥1,000/d)	Hotel (¥1,000/d)	Duration (m·m×30)	Amount (¥1,000)	Round Ticket (¥1,000/t)	Times	Amount (¥1,000)	Allowance (¥1,000/d)	Hotel (¥1,000/d)	Duration (days)	Amount (¥1,000)	Round Ticket (¥1,000/t)	Times	Amount (¥1,000)
1. Project Manager	3.50	4.00	7.50	2562.000	19,215,000	4,500	13,500	105.0	1,890,000	724,000	2	1,448,000	2,200	11,000	0	0,000		0	0,000
2. Assist. Project Manager & Tender Docu. Specialist	3.50	4.00	7.50	2562.000	19,215,000	3,800	11,600	105.0	1,617,000	724,000	2	1,448,000	2,200	11,000	0	0,000		0	0,000
3. Naval Architect & Manager of Design Team	3.50	4.00	7.50	2562.000	19,215,000	4,500	13,500	105.0	1,890,000	724,000	2	1,448,000	2,200	11,000	0	0,000		0	0,000
4. Hull Structure & Fitting Design	2.00	4.50	6.50	2562.000	16,653,000	3,800	11,600	60.0	924,000	724,000	2	1,448,000	2,200	11,000	0	0,000		0	0,000
5. Machinery Fitting Design	1.00	5.50	6.50	2562.000	16,653,000	3,800	11,600	30.0	462,000	724,000	1	724,000	2,200	11,000	0	0,000		0	0,000
6. Electric Fitting Design	1.00	5.50	6.50	2562.000	16,653,000	3,800	11,600	30.0	462,000	724,000	1	724,000	2,200	11,000	0	0,000		0	0,000
7. Fishing Gear & Fishing Machinery Design	1.00	1.95	2.95	2562.000	7,557,900	3,800	11,600	30.0	462,000	724,000	1	724,000	2,200	11,000	0	0,000		0	0,000
8. Survey Equipment Study & Evaluation	0.00	2.25	2.25	2562.000	5,764,500	3,800	11,600	0.0	0,000	724,000	0	0,000	2,200	11,000	0	0,000		0	0,000
TOTAL	15.50	31.70	47.20		120,926,400			465	7,707,000		11	7,964,000				0,000		0	0,000

2) STEP(Tendering, Construction and Delivery Stage)

	Man-Month		Labour Cost		Travel Expenses in Morocco			Air Fare Tokyo/Casablanca			Travel Expenses(Supervision at Shipyard)			Domestic Travel Fee(Train/Bus)					
	Morocco (m·m)	Abroad (m·m)	Total (m·m)	Billing Rate (¥1,000/m·m)	Amount (¥1,000)	Allowance (¥1,000/d)	Hotel (¥1,000/d)	Duration (m·m×30)	Amount (¥1,000)	Round Ticket (¥1,000/t)	Times	Amount (¥1,000)	Allowance (¥1,000/d)	Hotel (¥1,000/d)	Duration (days)	Amount (¥1,000)	Round Ticket (¥1,000/t)	Times	Amount (¥1,000)
1. Project Manager	6.00	15.25	21.25	2562.000	54,442,500	4,500	13,500	180.0	3,240,000	724,000	4	2,896,000	3,000	15,000	45	810,000	50,000	6	300,000
2. Assist. Project Manager & Tender Docu. Specialist	5.00	9.75	14.75	2562.000	37,789,500	3,800	11,600	150.0	2,310,000	724,000	4	2,896,000	3,000	15,000	30	540,000	50,000	4	200,000
3. Naval Architect & Manager of Design Team	5.00	17.35	22.35	2562.000	57,260,700	4,500	13,500	150.0	2,700,000	724,000	4	2,896,000	3,000	15,000	45	810,000	50,000	6	300,000
4. Hull Structure & Fitting Design	1.00	10.35	11.35	2562.000	29,078,700	3,800	11,600	30.0	462,000	724,000	1	724,000	3,000	15,000	45	810,000	50,000	6	300,000
5. Machinery Fitting Design	0.00	8.90	8.90	2562.000	22,801,800	3,800	11,600	0.0	0,000	724,000	0	0,000	3,000	15,000	40	720,000	50,000	4	200,000
6. Electric Fitting Design	0.00	8.90	8.90	2562.000	22,801,800	3,800	11,600	0.0	0,000	724,000	0	0,000	3,000	15,000	40	720,000	50,000	4	200,000
7. Fishing Gear & Fishing Machinery Design	0.00	0.90	0.90	2562.000	2,305,800	3,800	11,600	0.0	0,000	724,000	0	0,000	3,000	15,000	20	360,000	50,000	1	50,000
8. Survey Equipment Study & Evaluation	0.00	0.60	0.60	2562.000	1,537,200	3,800	11,600	0.0	0,000	724,000	0	0,000	3,000	15,000	20	360,000	50,000	1	50,000
TOTAL	17.00	72.00	89.00		228,018,000			510	8,712,000		13	9,412,000			285,000	5,130,000		32	1,600,000

1) GENERAL UNTIED(Detail Design Stage)

	Man-Month		Labour Cost		Travel Expenses in Morocco			Air Fare Tokyo/Casablanca		Travel Expenses(Supervision at Shipyards)			Europe Travel Fee(Train/Bus)						
	Morocco (m.m)	Abroad (m.m)	Total (m.m)	Billing Rate (¥1,000/m.m)	Amount (¥1,000)	Allowance (¥1,000/d)	Hotel (¥1,000/d)	Duration (m.mx3D)	Amount (¥1,000)	Round Ticket (¥1,000/t)	Times	Amount (¥1,000)	Duration (days)	Amount (¥1,000)	Round Ticket (¥1,000/t)	Times	Amount (¥1,000)		
1. Project Manager	3.50	4.00	7.50	2562.000	19,215.000	4,500	13,500	105.0	1,890,000	724,000	2	1,448,000	4,500	13,500	0	0,000	50,000	0	0,000
2. Assist. Project Manager & Tender Docu. Specialist	3.50	4.00	7.50	2562.000	19,215.000	3,800	11,600	105.0	1,617,000	724,000	2	1,448,000	3,800	11,600	0	0,000	50,000	0	0,000
3. Naval Architect & Manager of Design Team	3.50	4.00	7.50	2562.000	19,215.000	4,500	13,500	105.0	1,890,000	724,000	2	1,448,000	4,500	13,500	0	0,000	50,000	0	0,000
4. Hull Structure & Fitting Design	2.00	4.50	6.50	2562.000	16,653.000	3,800	11,600	60.0	924,000	724,000	2	1,448,000	3,800	11,600	0	0,000	50,000	0	0,000
5. Machinery Fitting Design	1.00	5.50	6.50	2562.000	16,653.000	3,800	11,600	30.0	462,000	724,000	1	724,000	3,800	11,600	0	0,000	50,000	0	0,000
6. Electric Fitting Design	1.00	5.50	6.50	2562.000	16,653.000	3,800	11,600	30.0	462,000	724,000	1	724,000	3,800	11,600	0	0,000	50,000	0	0,000
7. Fishing Gear & Fishing Machinery Design	1.00	1.95	2.95	2562.000	7,557.900	3,800	11,600	30.0	462,000	724,000	1	724,000	3,800	11,600	0	0,000	50,000	0	0,000
8. Survey Equipment Study & Evaluation	0.00	2.25	2.25	2562.000	5,764.500	3,800	11,600	0.0	0,000	724,000	0	0,000	3,800	11,600	0	0,000	50,000	0	0,000
TOTAL	15.50	31.70	47.20		120,926.400			465	7,707,000		11	7,964,000			0.000		0,000	0	0,000

2) GENERAL UNTIED(Tendering, Construction and Delivery Stage)

	Man-Month		Labour Cost		Travel Expenses in Morocco			Air Fare Tokyo/Casablanca&Europe		Travel Expenses(Supervision at Shipyards)			Europe Travel Fee(Train/Bus)						
	Morocco (m.m)	Abroad (m.m)	Total (m.m)	Billing Rate (¥1,000/m.m)	Amount (¥1,000)	Allowance (¥1,000/d)	Hotel (¥1,000/d)	Duration (m.mx3D)	Amount (¥1,000)	Round Ticket (¥1,000/t)	Times	Amount (¥1,000)	Duration (days)	Amount (¥1,000)	Round Ticket (¥1,000/t)	Times	Amount (¥1,000)		
1. Project Manager	6.00	15.25	21.25	2562.000	54,442.500	4,500	13,500	180.0	3,240,000	724,000	8	5,792,000	3,000	15,000	60	1,080,000	50,000	4	200,000
2. Assist. Project Manager & Tender Docu. Specialist	5.00	9.75	14.75	2562.000	37,789.500	3,800	11,600	150.0	2,310,000	724,000	7	5,068,000	3,000	15,000	50	900,000	50,000	3	150,000
3. Naval Architect & Manager of Design Team	5.00	17.35	22.35	2562.000	57,260.700	4,500	13,500	150.0	2,700,000	724,000	8	5,792,000	3,000	15,000	60	1,080,000	50,000	4	200,000
4. Hull Structure & Fitting Design	1.00	10.35	11.35	2562.000	29,078.700	3,800	11,600	30.0	462,000	724,000	4	2,896,000	3,000	15,000	50	900,000	50,000	3	150,000
5. Machinery Fitting Design	0.00	8.90	8.90	2562.000	22,801.800	3,800	11,600	0.0	0,000	724,000	3	2,172,000	3,000	15,000	50	900,000	50,000	3	150,000
6. Electric Fitting Design	0.00	8.90	8.90	2562.000	22,801.800	3,800	11,600	0.0	0,000	724,000	3	2,172,000	3,000	15,000	50	900,000	50,000	3	150,000
7. Fishing Gear & Fishing Machinery Design	0.00	0.90	0.90	2562.000	2,305.800	3,800	11,600	0.0	0,000	724,000	1	724,000	3,000	15,000	20	360,000	50,000	1	50,000
8. Survey Equipment Study & Evaluation	0.00	0.60	0.60	2562.000	1,537.200	3,800	11,600	0.0	0,000	724,000	1	724,000	3,000	15,000	20	360,000	50,000	1	50,000
TOTAL	17.00	72.00	89.00		228,018.000			510	8,712,000		25	34,000,000			360,000	6,480,000		22	1,100,000