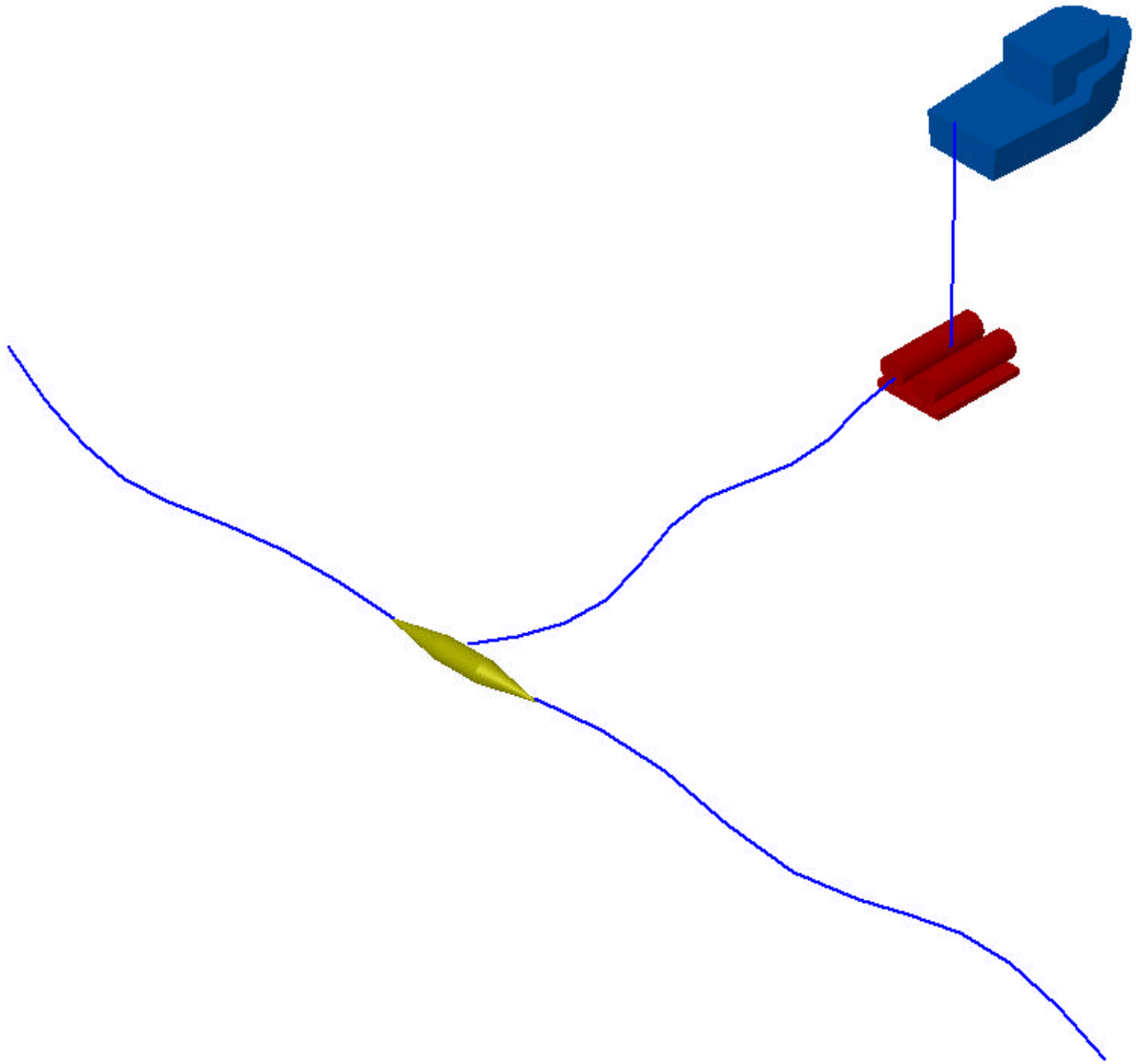
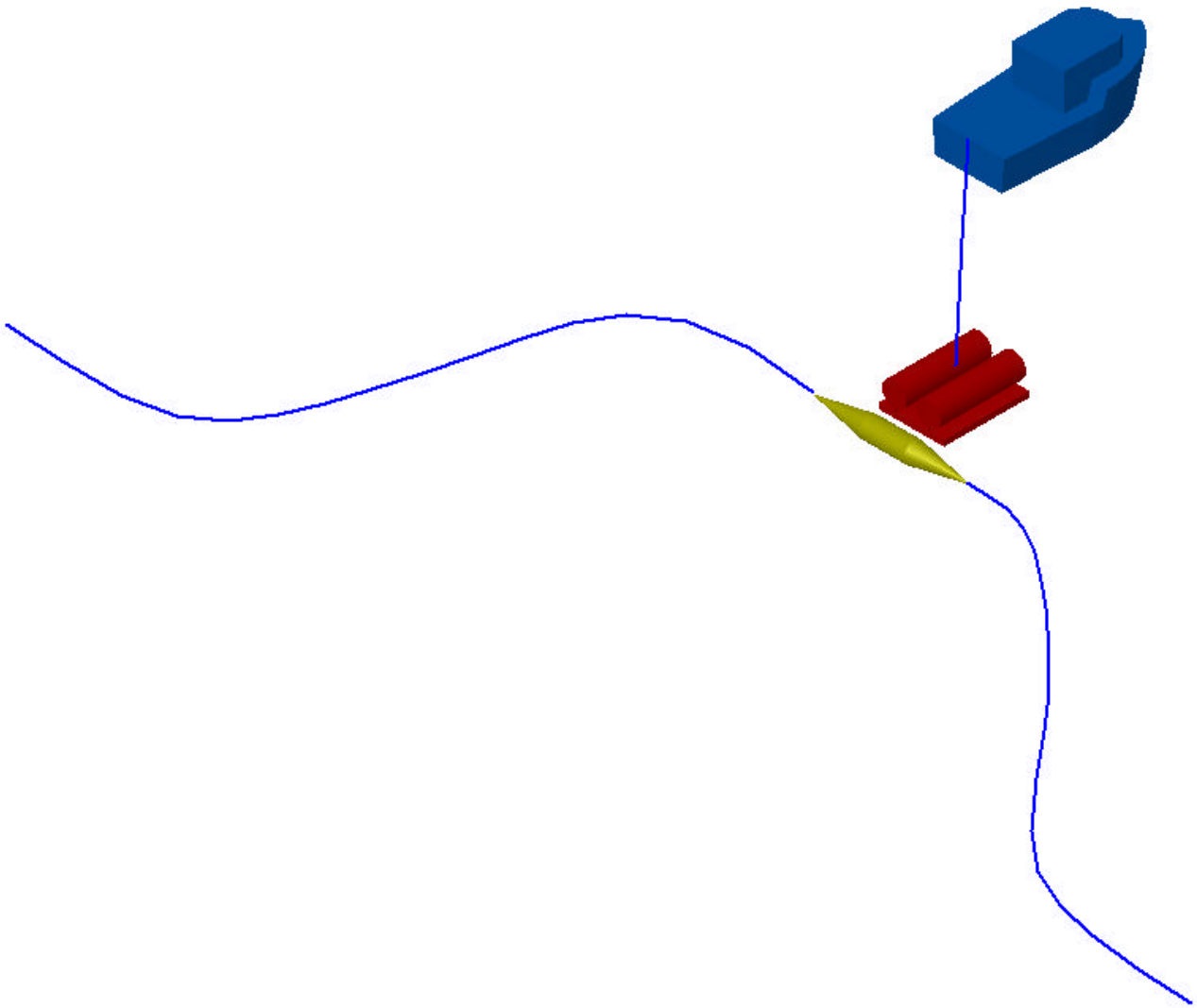
NEPTUNE BASELINE DESIGN SUPPORT/REPAIR SHIP NEEDS

- SIGNIFICANT COST SAVINGS TO OBS. OPERATORS IF WE CAN USE A UNOLS VESSEL e.g., TT OR REVELLE
- RECOVER, REPAIR AND RE-DEPLOY NODES DEPTHS TO 4000m
  - NODE WEIGHT - APP 2000 lbf, 2.5m x 1.5m x 1m
  - CABLE WEIGHT – 3300 lbf for 4000m
- EXPERIMENT SUPPORT – TYPICAL VESSEL/ROV OPERATIONS
- EXTENSION CABLE DEPLOYMENT – CAN WE TURN A UNOLS VESSEL INTO A SHIP OF OPPORTUNITY CABLE LAYER?

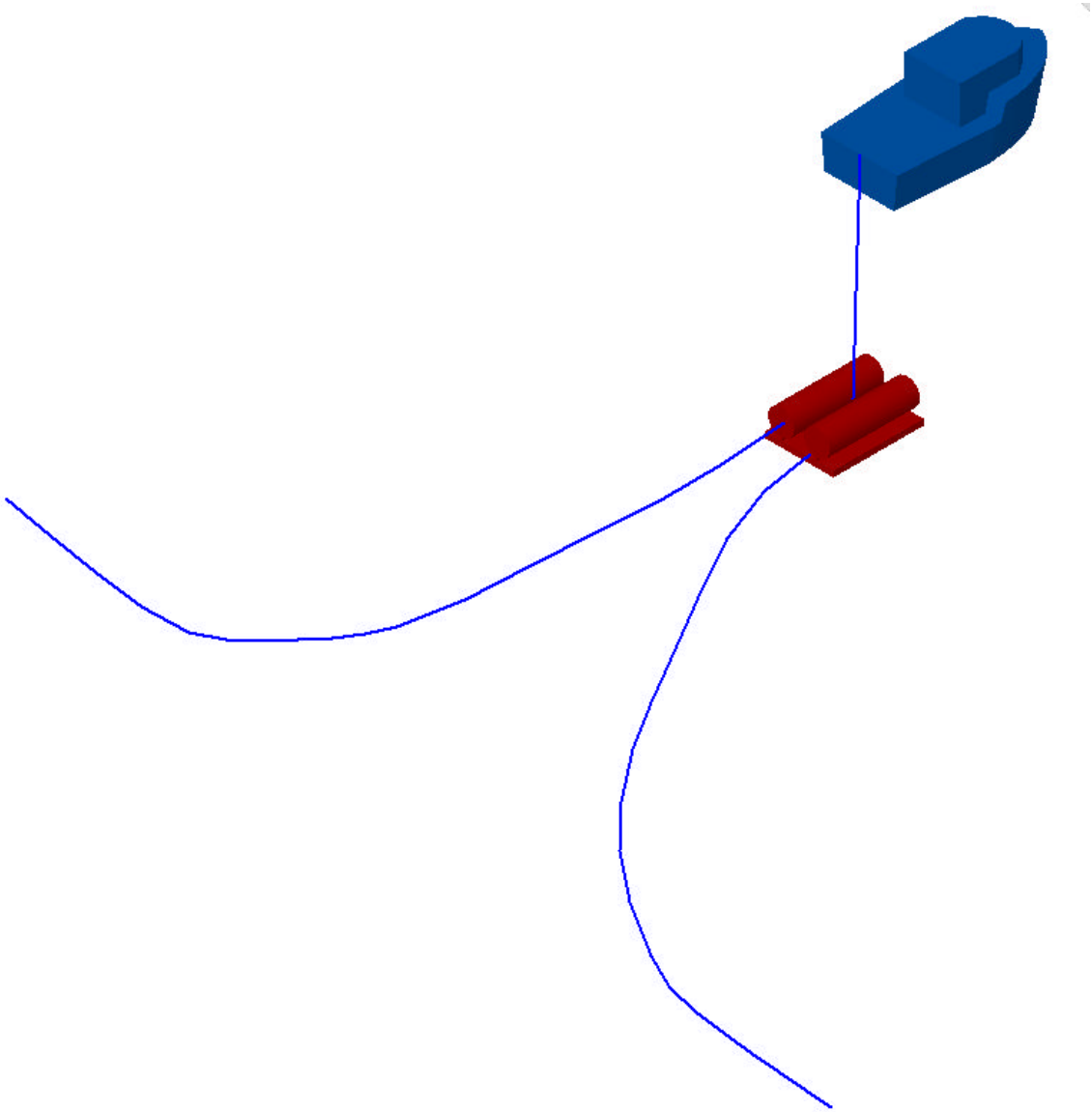
BASELINE REPAIR SCENARIO



ALTERNATE SCHEME v1



ALTERNATE SCHEME v2



HANDLING EQUIPMENT POSSIBILITIES

- MINIMAL HANDLING EQUIPMENT
  - CHUTE, 20000 LBF SWL WINCH AND 2 CAPSTANS (10000 LBF SWL EACH FOR HANDLING SOFT LINE) AND STOPPERS APPLIED ON DECK.
- BETTER HANDLING EQUIPMENT
  - 20000 LBF SWL (WHILE ROTATING) A-FRAME. PROBABLY REQUIRED FOR DOUBLE ENDED NODE
- BEST HANDLING SYSTEM
  - ABOVE PLUS EITHER 2 LCEs OR 2 CABLE DRUMS (2-3M DIAMETER, 3M REQUIRED FOR ROUTINE PASSAGE OF A JOINT)
- GENERIC EQUIPMENT
  - CAPSTANS/TUGGERS, GRAPPLING GEAR, HARD/SOFT STOPPERS, CABLE SPLICING GEAR (SEVERAL TRANSPORTAINERS), DECK SPACE

‘TYPICAL’ CABLE REPAIR SHIP

MAERSK RESPONDER

Maersk R

[close window]

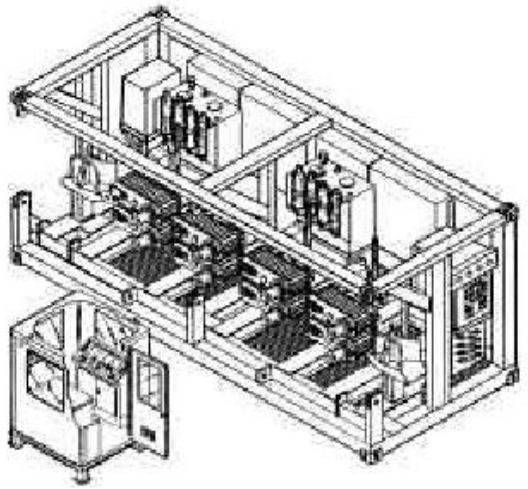
Specification	
Date built	2000
Flag	Denmark
Length overall	105.8m
Breadth	20m
Design draft	8.5m
Submersible capability	equipped to deploy a variety of subsea vehicles
Speed and fuel consumption	Maximum : 14.5 knots Estimated service speed : 13.5 - 14 knots
Navigational aids	1 off S Band Radar, 1 off x Band Radar, 2 off DGPS, 3 off Gyro Compasses, 1 off Auto pilot, 2 off Echo sounders, 1 off DP System, 1 off Independent Joystick system, 1 off Navigational system, 1 off Navtex, 1 off Weatherfax and 1 off ECDIS
Station keeping	Main engine : 2 x 3240 kW Shaft generator : 2 x 3000kW Auxiliary generators : 2 x 760kW Emergency generator : 1 x 184kW Propellers : 2 x 4-blade Controllable Pitch (CPP) Thrusters - 2 x 1200kw Aft Tunnels Thrusters - 1 x 1200kW Fwd Tunnel Thrusters - 1 x 1000kW Fwd Retractable Azimuth
Cable handling equipment	1 off (port) Electric 25 tonne SWL 4m-diameter cable drum with hydraulic cable diverter 1 off (port) Electric 4WP Draw Off/Hold Back (DOHB) 2 off (P&S) 2WP Electric Drive Cable Transporters 1 off (Stbd) 20WP 20 tonne SWL Linear Cable Engine
Deck equipment	60 tonne SWL 'A' frame 35 tonne SWL double telescopic swinging boom 35 tonne SWL hoisting 60 tonne SWL tow winch 45 tonne SWL auxiliary winch deck crane aft port deck crane amidships stbd deck crane fwd port
Communication facilities	2 off Inmarsat B 2 off Inmarsat B Fax 1 off GMDSS A1, A2, A3 1 off Satcom C 1 off MF/HF Station Portable VHFs 1 off Aircraft Radion System
Accommodation availability	3 off single Captain Class cabins 6 off single Officer Class cabins 27 off single Crew Class cabins 12 off double Crew Class cabins Hospital : 1 x 2 beds Total number of berths : 60

Actual performance is dependent upon environmental conditions prevailing at the time of operation.

OTHER CABLE LAY GEAR

Capabilities:

Will handle fiber-optic and copper type cables from .25 (6 mm) to 6 inches (152 mm) in diameter at a continuous speed of 400 fpm (122 mpm). Maximum operating speed is 500 fpm (152 mpm). The maximum hold back capacity of each engine is 6000 lbs (2720 kg) with a total capacity for the system of 12,000 lbs (5440 kg). The actual hold back capability will depend upon specific cable characteristics (i.e. cable diameter and jacket composition, etc.). Each machine will pass an inline body with a maximum height of 14 inches (355 mm) and a maximum width of 30 inches (762 mm).



Physical Specifications:

LCE Van:

Length: ..... 20 ft. (6.09 m)
Width: ..... 8 ft. (2.43 m)
Height: ..... 8.5 ft (2.59 m)
Weight: ..... 44,500 lbs (20,185 kg)
Power req: ..... 440 v, 3 phase, 150 kw

Control Cabin:

Length: ..... 5.5 ft. (1.68 m)
Width: ..... 5 ft. (1.5 m)
Height without feet: ..... 88 in. (2.235 m)
Height with feet: ..... 101 in. (2.56 m)
Weight: ..... 2,100 lbs (950 kg)

OTHER GEAR cont

CONTROLLED PICKUP: 133440N (30000 lbf) @ 1.7 KTS
CONTROLLED PAYOUT: 89250N (20000 lbf) @ 3 KTS
DRUM DIA: 3.0m WEIGHT: 15873 KG (35000 LBS)