

R/V Langseth MLSOC/EROCC

- Outfitting in Texas, Is this another Shipyard?
- Dock chosen for Seismic Equipment Loading, Availability of Lay Berth, and Proximity to MCS Equipment and Industry Support
- Subcontractor's Required for:
 - Lab Outfitting
 - Minor Hydraulic Pipe Run Modifications
 - Minor HP Air System Modifications
 - Assistance in Loading and Handling Science Gear
 - Small Scale Local Welding in Support of Outfitting
 - Wire Running Labor

R/V Langseth Conversion and Outfitting
 Funds to Finish by Certainty Code

3/12/2007

Description Grouping can be Referenced from R/V Langseth Conversion and Outfitting Funds to Finish 3/5/2007

Description	Budget	Code	Explanation Notes	Total
Universal 2950 spares	\$7,200	1	2 Servers at same price as 4 already purchased	-
Universal 850 spare	\$1,350	1	1 Server at same price as 7 already purchased	-
General server hardware spares	\$4,000	1	Power Supplies, Hard Disk Spares, Network Interface cards	-
RS-232 serial multiplexers	\$2,000	1	2 multiplexers (have purchased 7) with serial connection hardware	-
Console half-racks	\$3,000	1	4 racks at \$700 plus mounting hardware	-
Fiber Termination kit	\$2,500	1	Quoted kit	-
Cisco 2811	\$2,250	1	PO on hold for HighSeasNet routing gear	-
WAPs	\$2,000	1	4 more at same price, 6 already purchased	-
Cisco POE blade exchange (2)	\$8,000	1	PO pending for POE blade	-
Cisco POE blade exchange	\$4,000	1	PO pending for POE blade	-
WiFi Voip phones	\$1,600	1	8 phones @ \$200 each	-
SDLT drives	\$6,000	1	2 Drives requesting final quotes	-
Console LCD TV monitors	\$7,500	1	15 monitors with extended cables	-
Lab Monitors	\$1,800	1	6 x Lab Desk Monitors @\$300	-
KVM gear	\$5,000	1	Video Network Hardware, TV converters, Cables, VGA Splitters	-
Printers	\$7,000	1	2 x Color Laser Jet Printers	-
PC	\$8,000	1	8 x Dell PC	-
Mac	\$6,000	1	4 x Mac eMacs	-
Omega meters for Fischer valves	\$1,200	1	Omega Pressure from 0-20ma Converter	-
Cisco Supervisor II-plus spare	\$6,000	1	Spare to unit already purchased	-
Cisco Catalyst 4506 Chassis	\$4,000	1	Spare to unit already purchased	-
Xserve NAS Head	\$5,000	1	Spare to unit already purchased	-
Secondary Sound Speed Sensor	\$1,000	1	Mounting Hardware	-
Winch Second Block	\$5,000	1	Similar size as turning block	-
UPS Systems	\$12,000	1	Twelve 3KVA UPS (have purchased 3)	-
Tail Buoy Stic Cable Connections	\$1,000	1	6 x 5m connection cable with molded connectors	-
Tail Buoy Stic Cable Connections	\$4,500	1	6 x 75m connection cable with molded connector	-
Acoustic Pos System Batteries	\$18,000	1	Lithium C and D Cell Batteries for SIPS pods	-
Streamer Weights	\$5,000	1	180 x \$30 Lead Seemap weights for Cable	-
Bird Floats	\$10,000	1	20 x \$500 for SIPS ballast off setters	-
Source Sub Array Hoses/Fittings	\$17,500	1	Aeroquip Fittings and Crimp Machine and Dies and Hose	-
Life rafts	\$9,000	1	2X 16 person rafts	-

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3/12/2007

Description	Budget	Code	Explanation Notes	Total
Life raft Service	\$10,000	1	Service for 6 Life Rafts	-
Galley Fixed Fire System	\$7,500	1	Hiller System Equipment and Installation	-
Incinerator/Paint Locker CO2	\$15,000	1	Hiller System Equipment and Installation	-
Man Overboard Raft	\$3,500	1	4 man raft with cradle and relief mechanism	-
Hydraulic Control Valves	\$6,250	1	New Equipment remote control valve	-
Pipe Insulation on Flanges	\$5,000	1	Settlement #CR-027 (Chilled water piping insulation completion)	-
Fan Room Drain	\$3,000	1	Settlement #CO-038 (Deck Drain from AC Room)	-
Drain for Tween Deck Lab Units	\$14,600	1	Settlement #CO-044 (Fan coil drains in seismic lab)	-
Weight Control	\$20,000	1	Settlement #CR-011 (Weight control record)	-
Chilled Water Pipe in Movie Room	\$5,000	1	Settlement #CO-023 (Chilled water new movie room...)	-
Berth and Desk Lights	\$1,000	1	Settlement #CR-024 (Stateroom light fixtures for berths, desks)	-
Dirty Dish Station	\$3,500	1	Settlement #CR-020 (Mess Deck; dirty dish station)	-
Broken Equipment	\$5,000	1	Settlement #CR-025,026,028,029 (Replace and Repair...)	-
Portable Furniture Mounting	\$2,000	1	Settlement #CR-017 (Stateroom furniture; secure) Settlement \$4k, work 1/2 completed	-
Turning Block Support	\$2,100	1	Settlement #CO-024 (Turning block pedestal reinforcement) Settlement for \$3.5k, just over 1/3 of work completed	-
HP Air Muffler	\$5,000	1	Settlement #CO-043 (HP Air System) Settlement + \$2k for existing bulkheads	-
HP Air Line	\$8,000	1	Settlement #CO-036 (HP Air to Deck) Settlement + \$5k for complexities of HP SS tube	-
HVAC in Accommodation/ Chilled Water/ Toilet Exhaust	\$40,000	1	Settlement #CR-003 (HVAC in accommodation spaces) Settlement for \$75k, work almost half done	-
Vessel Inclining and Related Testing, Dock Trials	\$18,000	1	Settlement #CR-001 (Vessel inclining and related testing: Dock Trials) - Settlement minus expenses thus far	-
Finish Pod Transits	\$2,000	1	Settlement #CR-014, 015 (Pod transit and Wires) Settlement for 015 was \$3k, work half done. Settlement for 014 was \$0.5k	-
Console monitor arms	\$1,000	1	Flat Bar and Fasteners	-
Copper Patch Panels	\$2,000	1	Patch Panels and SS Tie Wraps for Remaining network Wires	-
VGA Cables	\$1,000	1	Main Console to Racks	-
CF Adapters for Bathy2000	\$100	1	Connectors	-
XBT System and Spaces	\$1,000	1	Mounting USB Spare	-
Back-up Software	\$1,000	1	Main Networked Back-up	-
Final Network Installation	\$2,000	1	supplies, patch cables	-
Maggie Installation	\$1,000	1	Towing Hardware and Fasteners	-
Mammal Booth Outfitting	\$2,500	1	Desk, Monitors, Cable	-
Winch Control System/Booth	\$5,000	1	Monitors, Winch run Cabling	-
Finish Cameras	\$4,500	1	Mounting Hardware, Fasteners	-
Video	\$6,250	1	Cable, Connectors, Bridge Back Deck Screens	-

R/V Langseth Conversion and Outfitting
 Funds to Finish by Certainty Code

3/12/2007

Description	Budget	Code	Explanation Notes	Total
Gun System Materials	\$5,000	1	Fasteners and Misc Hardware, Jumper Cables for Slip Rings (6*\$401)	-
Fire Station Hardware	\$1,000	1	Hardware for extinguisher and hose box mounting	-
DC Locker Equipment	\$3,000	1	Misc DC locker equipment above minimal	-
MSD Spares	\$2,000	1	Recommended year one spares	-
HIAB final installation	\$3,000	1	Hose and 24V power supply to control valve	-
DP System Ulstein Interfaces	\$10,000	1	Wire Interfaces and Cable runs	-
Western Technical Support	\$30,000	1	Field Tech \$1200/day for 20 man days plus expenses	-
Concept System Support	\$20,000	1	Field Tech \$1200/day for 15 man days plus expenses	-
Training MCS Systems	\$25,000	1	\$1000 per person per day for 20 days for Syntrak, Digicourse, SiesNet, Sonardyne plus expenses	-
Final Lab AC commissioning	\$7,500	1	Bailey Refrigeration Final Commissioning and Travel	-
MSD Commissioning	\$4,000	1	ORCA Final Commissioning	-
Air Compressor Cat Engines	\$3,000	1	Training for three days	-
Shipping GST Delay	\$20,000	1	Vendor Quote on Air Shipment	-
Electrical Subcontracting	\$30,000	1	Lab Wiring and Stern Lighting , 40 ten hour days @\$75/hour	-
Electrical Fixtures and Wiremold	\$4,000	1	Wiremold and Fixture percent over projection as per accommodation	-
Clean Power and MG Set Wire	\$20,000	1	Vendor Support @\$5k, 20 ten hour electrician days @\$75/hour	-
Freight Lift made Permanent	\$15,000	1	Machinist 10 ten hour days @\$50/day and Welder team(2+equipment) for 10 ten hour days @100/day	-
Security and Ship Cleaning	\$4,000	1	Carpet replacement in staterooms	-
Western and Galveston Shipping	\$60,000	1	Streamers, Vanes, Recording System from Norway and Singapore to Galveston	-
International Shore Connections	\$2,500	1	1 days work for welding team on each connection @\$100/day	-
Wire Path Protection	\$4,000	1	4 days for welding team @\$100/day	-
HiSeasNet Installation	\$7,000	1	Dome Installation with AC and power and communication wiring	-
B and F Installation	\$5,000	1	Pedestal Installation and communication wiring	-
VIS Installation	\$4,000	1	Bridge Vendor Installation	-
Work Boat Final Overhaul	\$5,000	1	Streamer Handling Hardware, Skid Plates	-
				\$676,200

R/V Langseth Conversion and Outfitting
 Funds to Finish by Certainty Code

3/12/2007

Description	Budget	Code	Explanation Notes	Total
Lab Outfitting	\$316,912	2	Lamont	-
				\$316,912

Description	Budget	Code	Explanation Notes	Total
Hydraulic Modifications	\$23,000	3	Settlement #CO-035 - (Hiab Crane and A-Frame hydraulics) Equivalent System 1 Hydraulic work	-
Galveston Air Systems	\$20,000	3	Fisher Valve and HP piping around relocated seismic bottles	-
Additional Fire Protections	\$15,000	3	Remove wood passageways, A deck store room insulation	-
Additional Safety	\$10,000	3	Life Jackets, Suits, Breathing apparatus	-
Hydraulic Lines Deck Machinery	\$20,000	3	New Hoses on Deck Machinery	-
Kongsberg DP Supervision	\$18,000	3	Final DP Commissioning vendor cost estimate	-
Naval Arch Fees	\$35,000	3	Reflagging remaining items	-
ABS Fees	\$50,000	3	Drawing review and Inspections	-
Galveston Dockage and Services	\$60,000	3	\$35k for dockage and \$24k for services for 60 days	-
Final MCT Order	\$6,000	3	Replace blank blocks with network blocks main lab and main deck labs	-
Handling System Final Outfitting	\$70,000	3	Wire Guard and Tow Point Move, Spooling Device work, Labor for loading, Towing Hardware clamps, PMI rods, 50Ton Winch Repair, Sala SRL blocks	-
Air Compressors	\$15,000	3	Inspecting and Repairs	-
Marine Surveyor Start Up List	\$10,000	3	Operation issues, including seals, coils, pumps, gaskets, and valves	-
Galveston Misc Support	\$100,000	3	Crane, Forklift, and 8 labors 50 hours per week for 4 weeks and a supervisor 20 hours per week (\$86k)	-
Bridge Deck	\$12,000	3	Pending Decision, Cost to Replace Wood on Deck	-
Overflow Alarm	\$25,000	3	Pending Decision, Cost to put alarms in new fuel tanks	-
Shipping Shelburne/Lamont	\$30,000	3	\$10k containers from Lamont to Galveston, \$18k containers from Shelburne	-
Travel	\$20,000	3	Travel before operations	-
Uncontaminated Water	\$25,000	3	15 days for fitting/welding team @\$100/day	-
				\$564,000

CODE 1 \$676,200

CODE 2 \$316,912

CODE 3 \$564,000

TOTAL \$1,557,112

Science Outfitting
- Network

Description	Budget	Note	Grouping			
			1	2	3	4
Server Hardware						
Universal 2950 spares	\$7,200		\$7,200			
Universal 850 spare	\$1,350		\$1,350			
General server hardware spares	\$4,000		\$4,000			
RS-232 serial multiplexers	\$2,000		\$2,000			
Console half-racks	\$3,000		\$3,000			
Network						
Fiber Termination kit	\$2,500		\$2,500			
Copper Patch Panels and tie wraps	\$2,000		\$2,000			
Cisco 2811	\$2,250		\$2,250			
WAPs	\$2,000		\$2,000			
Cisco POE blade exchange (2)	\$8,000	2	\$8,000			
Cisco POE blade exchange (spare)	\$4,000	3		\$4,000		
Phone system						
WiFi Voip phones	\$1,600		\$1,600			
Tape Drives						
SDLT drives	\$6,000		\$3,000	\$3,000		
Monitors						
Console LCD TV monitors	\$7,500		\$7,500			
Visualization screens (large LCD panels)	\$9,530	1			\$9,530	
Lab Monitors	\$1,800		\$1,800			
Console monitor arms	\$1,000		\$1,000			
KVM gear	\$5,000		\$5,000			
Printers						
Printers	\$7,000		\$3,500	\$3,500		
Vessel PCs						
PC	\$8,000		\$4,000	\$4,000		
Mac	\$6,000		\$3,000	\$3,000		
Additional						
VGA Cables	\$1,000		\$1,000			
CF Adapters for Bathy2000	\$100		\$100			
Omega meters for Fischer valves	\$1,200		\$1,200			
Cisco Supervisor II-plus spare	\$6,000	3		\$6,000		
Cisco Catalyst 4506 Chassis	\$4,000	3		\$4,000		
Xserve NAS Head	\$5,000	3		\$5,000		
XBT System and Spaces	\$1,000	3		\$1,000		
Back-up Software	\$1,000	3		\$1,000		

Science Outfitting (continued)
- General Purpose Equipment

Description	Budget	Note	Grouping			
			1	2	3	4
Multibeam						
Recommended Spares	\$81,600	1				\$81,600
Final Network Installation	\$2,000		\$2,000			
Shipping GST Delay	\$20,000		\$10,000	\$10,000		
Secondary Sound Speed Sensor	\$1,000		\$1,000			
Science General						
Maggie Installation	\$1,000		\$1,000			
Mammal Booth Outfitting	\$2,500		\$2,500			
Winch Control System and Booth Outfitting	\$5,000		\$5,000			
Winch Second Block	\$5,000				\$5,000	
Uncontaminated Water	\$25,000	2	\$15,000		\$10,000	
Wire Path Protection	\$4,000				\$4,000	
Satellite Communication						
HiSeasNet Installation	\$7,000		\$7,000			
B and F Installation	\$5,000		\$5,000			
Vessel Identification System Installation	\$4,000	2	\$4,000			
DP						
Kongsberg DP Installation Supervision	\$18,000		\$9,000	\$9,000		
DP System Ulstein Interfaces	\$10,000		\$5,000	\$5,000		
Educational Networked Video						
Finish Cameras	\$4,500		\$4,500			
Video	\$6,250		\$6,250			
UPS Systems						
	\$12,000		\$12,000			

- MCS Systems

Description	Budget	Note	Grouping			
			1	2	3	4
MCS Systems						
Tail Buoy Stic Cable Connections	\$1,000		\$1,000			
Tail Buoy Stic Cable Connections	\$4,500		\$4,500			
Acoustic Positioning System Batteries	\$18,000		\$18,000			
Streamer Weights	\$5,000		\$5,000			
Bird Floats	\$10,000		\$10,000			
Western and Galveston Shipping	\$60,000	2	\$30,000	\$30,000		
Source Sub Array Hoses and Fittings	\$17,500		\$17,500			
Gun System Materials	\$5,000		\$5,000			
Western Technical Support on Rigging and Trials	\$30,000			\$30,000		
Concept System Support and Trials	\$20,000			\$20,000		
Work Boat Final Overhaul	\$5,000		\$5,000			
Handling System Final Outfitting	\$70,000	2	\$35,000	\$35,000		
Training MCS Systems	\$25,000		\$12,500	\$12,500		

Conversion and Operations
- Lab Outfitting

Description	Budget	Note	Grouping			
			1	2	3	4
Lab Outfitting						
Lab Outfitting A Deck Port Fwd	\$26,534	1				\$26,534
Lab Outfitting A Deck Port Aft	\$23,469	1				\$23,469
Lab Outfitting Gun	\$73,180					
Lab Outfitting Main Deck Port Side	\$44,420					
Lab Outfitting Main Deck Stbd Side	\$235,061					
Lab Outfitting Seismic Lab	\$117,621					
Unistrut	-\$12,236					
Lonseal	-\$9,283					
Dexotex	-\$22,566					
Joiner System Panels	-\$55,300					
Lab Butcher Block	-\$2,807					
Flat Stock	-\$176					
floor	-\$43,000					
insulation1	-\$2,500					
insulation2	-\$2,500					
pin welder	-\$3,000					
TOTAL	\$316,912		\$102,980	\$213,932		

- Reflagging

Description	Budget	Note	Grouping			
			1	2	3	4
Life rafts	\$9,000			\$9,000		
Life raft Service	\$10,000		\$10,000			
Galley Fixed Fire System	\$7,500		\$7,500			
Incinerator/Paint Locker CO2	\$15,000		\$15,000			
Bridge Deck	\$12,000	2	\$12,000			
Additional Fire Protections	\$15,000		\$7,500	\$7,500		
Additional Safety	\$10,000		\$5,000	\$5,000		
Fire Station Hardware	\$1,000		\$1,000			
International Shore Connections	\$2,500		\$2,500			
DC Locker Equipment	\$3,000		\$3,000			
Man Overboard Raft	\$3,500			\$3,500		
MSD Spares	\$2,000			\$2,000		

Conversion and Operations (continued)
- Other

Description	Budget	Notes	Grouping			
			1	2	3	4
Pipe Insulation on Flanges	\$5,000		\$5,000			
Fan Room Drain	\$3,000		\$3,000			
Drain for Tween Deck Lab Units	\$14,600		\$14,600			
Vessel Inclining and Related Testing, Dook Trials	\$18,000		\$9,000	\$9,000		
HVAC in Accommodation/ Chilled Water/ Toilet	\$40,000		\$40,000			
Weight Control	\$20,000		\$10,000	\$10,000		
Finish Pod Transits	\$2,000	2	\$2,000			
HP Air Muffler	\$5,000		\$5,000			
Turning Block Support	\$2,100		\$2,100			
Chilled Water Pipe in Movie Room	\$5,000		\$5,000			
HP Air Line	\$8,000	2	\$8,000			
Berth and Desk Lights	\$1,000		\$1,000			
Dirty Dish Station	\$3,500		\$3,500			
Broken Equipment	\$5,000		\$2,500	\$2,500		
Portable Furniture Mounting	\$2,000		\$2,000			
Removable Streamer Deck	\$15,000	1				\$15,000
Final MCT Order	\$6,000		\$3,000	\$3,000		
Electrical Subcontracting	\$30,000		\$15,000	\$15,000		
Final Lab AC commissioning	\$7,500		\$7,500			
MSD Commissioning	\$4,000		\$4,000			
Overflow Alarm	\$25,000		\$12,500	\$12,500		
Electrical Fixtures and Wiremold	\$4,000		\$4,000			
Naval Arch Fees	\$35,000	2	\$17,500	\$17,500		
ABS Fees	\$50,000	2	\$25,000	\$25,000		
Clean Power and MG Set Wire	\$20,000		\$10,000	\$10,000		
Freight Lift made Permanent	\$15,000		\$7,500	\$7,500		
Air Compressors	\$15,000		\$7,500	\$7,500		
Air Compressor Cat Engines	\$3,000		\$3,000			
Marine Surveyor Start Up List	\$10,000		\$5,000	\$5,000		
Security and Ship Cleaning	\$4,000		\$4,000			
Galveston Air Systems	\$20,000		\$20,000			
HIAB final installation	\$3,000		\$3,000			
Hydraulic Control Valves	\$6,250		\$6,250			
Hydraulic Lines Deck Machinery	\$20,000		\$10,000	\$10,000		
Hydraulic Modifications Gun Reels/Spares Winch	\$23,000		\$23,000			
Shipping from Shelburne and Lamont to Texas	\$30,000	2	\$30,000			
Galveston Misc Support	\$100,000	2	\$50,000	\$50,000		
Galveston Dockage and Services	\$60,000	3	\$30,000	\$30,000		
Travel	\$20,000	3	\$10,000	\$10,000		

Total - All Items \$1,713,245

Less Group 4 Items \$156,133

FUNDS to FINISH Group 1,2,3 \$1,557,112

Group SubTotals (1,2,3) \$886,685 \$651,442 \$19,015

Notes

- 1: Low Priority Item Previously Identified
- 2: Cost Budget has Changed
- 3: New Item Added to Budget

Conversion Items Deferred

- 1 Complete Conversion
- 2 Spares for Multibeam EM120/122
- 3 A Deck Labs
- 4 Active Marine Mammal Sonar
SP70/HiPAP
Visualization Screens
- 5 Sub-bottom Profiler SBP120
Portable High Resolution System
- 6 Removable Streamer Deck