UNOLS



New Cable Design Project Proposal





Cable Project Engineer

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Education

M.S. University of Darmstadt, Germany, 1961, Mechanical Engineering and Economics

Ph.D. University of Hannover, Germany, 1967, Mechanical Engineering

Research Interests Technology of fiber and wire ropes; electro–mechanical and electro-optical-mechanical cables; fiber reinforced elastic rubber tether hoses and stretchy conductors.



Cable Project Goals

- Develop and test an improved small diameter electro-mechanical (EM) or electro-optical (EOM) cable for the UNOLS community
- May replace or augment capability provided by current 0.322 "CTD" Cable
- Develop uniform SWL & Retirement criteria for this and other wires or cables

Cable Project Goals

- Increase payload at full ocean depth
- Increase data bandwidth
- Maintain or increase power transmission
- Support multiple operations
- Minimize impact on existing winch & overboarding capabilities
- Goals may conflict



Cable Project Timeline

Activity Name	Start	Finish Date					20	003											20	04									2005					
	Date		М	Α	М	J	J	A	S	0		N	D	J	F	М	Α	м	J	J	Α	S	0	Ν	D	J	F	М	Α	М	J	J	Α	S
2.1 Create Functional Requirements for New Cable Design(s)																																	\square	
Initial Draft of Functional Requirments	5/1/03	5/31/03			-	•																												
2.1.4 Review requirements by DAC, STAC and community DAC	6/1/03	6/30/03			1	╧━	Ż				Ĩ																							
Refine Funcitional Requiremtns	7/1/03	8/31/03				1	-		•									100	- SH	60 - 66	~				2		·~	1		~				
2.1.8 Review requirements by DAC, STAC and community DAC	9/1/03 9/24/03	9/20/03 9/24/03						1		Ì								10 25	10 10		6) 33													
2.5 Develop Cable Design Qualification Test Requirements and Test Program for Improved Cables																																		
Create Draft Test Procedures and Qualification criteria	7/1/03	8/30/03					-		•	8	22	8						0 	0 4		6) 32						2	ar ar						
Review Testing Program by DAC	8/1/03	8/30/03					1	┆━	7																								\square	
Finalize Test and qualification program	7/1/03	10/28/03					-			-	•																	Ĩ						
2.2 Create Design Specifications and Sample Designs for One or More Cables																																	\square	
Create Initial Draft of specifications and sample designs	8/31/03	10/31/03				2 			-					3				25 	8		10 A				8		8	96 64						
2.2.6 Evaluate design tradeoffs DAC	11/1/03	11/30/03									4	- ¢																						
2.2.7 Evaluate impact of the new design on existing winches and operations. DAC	11/1/03	11/30/03									4																						\square	
2.2.8 Prepare memorandum: Justifications for Improved Cable Design Approaches - Circulate strawman cable designs and specifications (as draft) for review by Working Group (and major users) WP 20	11/1/03	11/30/03							10		0	•	8					10	10		0						0							
2.2.9 Review specs and draft designs by DAC, STAC, Testing Contractor and community (what about wire manufacturers?) DAC	11/30/03	1/15/04	5 8						10 10	35		Ċ							е 								16 10	90						
2.2.10 Incorporate reviewer comments into revised documentation as needed. WP 20	1/16/04	1/31/04												œ	`																			
2.3 Draft RfP for test cable sample(s), obtain vendor offers, test (prototype) cable procurement									8	2	35 72		Î					2 	92 		2 2						282 102							
RFP and Selection of candidate test cables	1/1/04	2/29/04												2.1																				
Evaluate cable proposals from vendors	3/1/04	3/31/04																																
2.3.7 Evaluate cable prototype proposals DAC	3/8/04	3/31/04							39 	Ĩ		~					2	~	~		~						~	Ĩ		~				
Procure test cables	3/26/04	6/30/04						Ĩ.	8	1		~				V	-				~				2	1	~	1	1					
2.4 Determine Cable Termination Techniques	3/1/04	3/30/04						1	0			0			1			0	0	00 - 00	0	1					0	22		0				
2.4.7 Procure Terminations for testing JA	4/1/04	5/31/04																	i.	<u>ie - 16</u>								20						
2.6 Design Verification Test (DVT) Effort Support	7/15/04	10/31/04				2			8			3			_	<u>. </u>		9 <u>.</u>	2	-	_				8		<u>.</u>							
2.7 Field Testing	11/1/04	4/15/05		T				Ī				-						-						-					-					
2.8 Writing Final Report								ſ																		1		1			Γ			
2.8.1 Evaluate tests and make final selection of cables or go back to the drawing board. DAC	10/1/04	4/15/05							10			~						19	5.		~							2		~				
Prepare Final Report and Communicate Results	10/1/04	7/31/05				í.		6	2	2		- 2						2	10 		98 22													
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