

Electrical Technologies Panel Ship Design & Material Technologies Panel

Joint Panel Meeting
May 5-6, 2026

Southwest Research Institute
San Antonio, TX



Agenda

Day 1 – Tuesday, 5/5/2026

Time	Presentation	Speaker
8:00 AM	Breakfast	
8:30 AM	Convene Meeting	
8:30 AM	Welcome & Introductions	Jason Farmer, Electrical Technologies Panel Chair Steve Scholler, Ship Design & Material Technologies Panel Chair
8:45 AM	NSRP Update	Mark Smitherman, ATI
9:00 AM	Welcome to Southwest Research Institute (SwRI)	Karen Carpenter, SwRI
9:30 AM	Unmanned System Integration	Ron McClellan, Ingalls Shipbuilding Amitai Peleg, SEALARTEC
10:00 AM	Distributed Temperature Sensing (DTS) Integration into Ship Electrical Plant Monitoring and Controls	Gio Tomasi, RSL Fiber Systems
10:30 AM	Break	
10:45 AM	USCG Product Lifecycle Management Data Requirements Interface Mapping RA project	John Walks, Rob Parker, SSI
11:15 AM	Panel Project Update: 15kV MIL-SPEC Cable Development for U.S. Navy Ships	Greg Keyes, Ingalls Shipbuilding Kyle Codere, Marmon Aerospace and Defense
12:00 PM	Lunch	

* Times listed are Central Time Zone

Agenda

Day 1 (Continued)

Time	Presentation	Speaker
1:00 PM	Navy Fiber Optic Specs and Standards Update	Joshua Carter, NSWC Dahlgren Division
1:30 PM	ShockIQ – Digital Transformation of the Navy Shock Qualification Process	Justin Caruana, Cardinal Engineering
2:00 PM	Portable Shipyard Pipe Inspection	Christen Leggett, Ingalls Shipbuilding
2:30 PM	NAVSEA 05Z3 Update	Chris Nemarich, NAVSEA 05Z33
3:00 PM	Project Update: Integrate MAESTRO Ship Structural Design Software with Femap/Nastran Software	Tobin Mcnatt, Ming Ma, Ph.D., MAESTRO Marine
3:30 PM	Break	
3:45 PM	Project update: Shipboard Fiber Optic Cables Enhancements	Gio Tomasi, RSL Fiber Systems
4:15 PM	Project update: High Density Blown Optical Fiber Cable and Tooling for Shipboard Installations Qualification	Adair Brown, Sumitomo Electric
4:45 PM	Review Day 1 Action Items / Closing Remarks	Walt Skalniak, ET Panel Vice-Chair
5:00 PM	Adjourn	

Agenda

Day 2 – Wednesday, 5/6/2026

Time	Presentation	Speaker
8:00 AM	Convene Meeting	
8:00 AM	Tour of Southwest Research Institute Laboratories** <ul style="list-style-type: none"> • Fire Technology Department • Materials Engineering Lab • Marine Structures and Engineering • Robotics Lab **Must be pre-registered	Karen Carpenter, SwRI Vicky Poenitzsch, SwRI Mark Waldron, SwRI Cody Porter, SwRI
12:00 PM	Lunch	
1:00 PM	Southwest Research Institute Defense and Intelligence Solutions Division Overview	Bob Heidinger, SwRI
1:30 PM	Automation and Robotics	Jim Hansen, EWI
2:00 PM	Overview of FY'26 Panel Project New Starts:	
	Development and Implementation of an AI Island within a Shipyard Network (SDMT)	Christopher Bennettson, NASSCO
	Multiphysics-Driven Arc-Fault Detection for Shipboard Electrical Systems (ET)	Dr. Philip Pong, NJIT
	Evaluate Nord-Lock Wedge Washers for Electrical Applications on Navy Ship (ET)	Jim Cunard, Ingalls Shipbuilding
3:30 PM	For the Good of the Panel / Open Discussion	All
4:15 PM	Review Action Items / Closing Remarks	Vicky Dlugokecki, SDMT Panel Vice-Chair
4:30 PM	Adjourn	

Ship Design & Material Technologies – Panel Mission

- The SDMT panel focuses on providing increased capabilities and cost reduction initiatives across the complete spectrum of design processes and the identification of materials **and technologies** to support rapid and efficient development, constructions, sustainment, and disposal **of ships and their components**.

Electrical Technologies Panel

Purpose

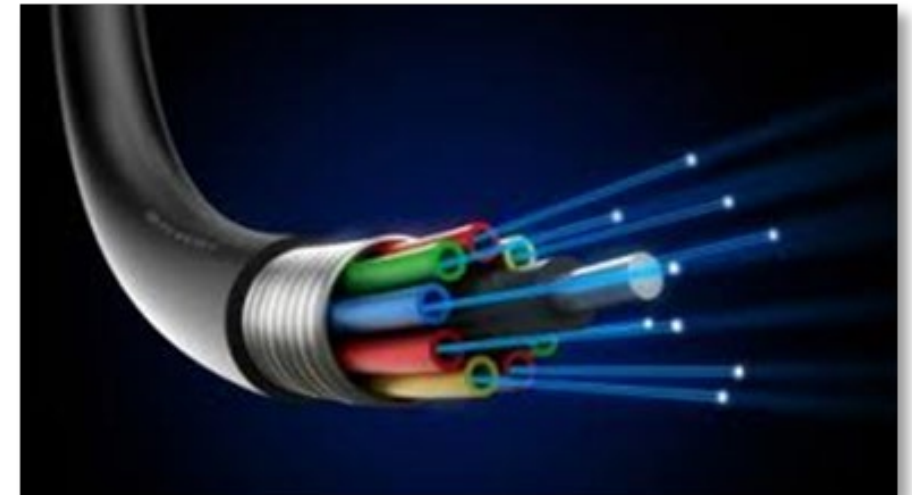
- Evaluate & transition improved electrical system technologies, installation processes, and electrical system specifications.
- Facilitate collaboration with the Navy and industry to identify & implement electrical technologies, processes, and best practices.

Goal

- The goal of the Electrical Technologies Panel is to improve shipboard electrical systems and installation processes to achieve reduced cost, improved performance, and improved safety.

Focus Areas: The panel's focus is to identify and implement technologies and processes that improve:

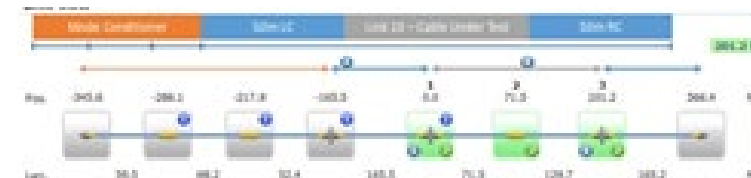
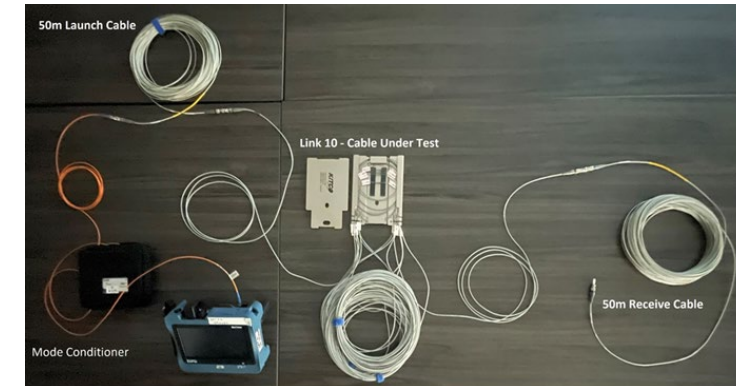
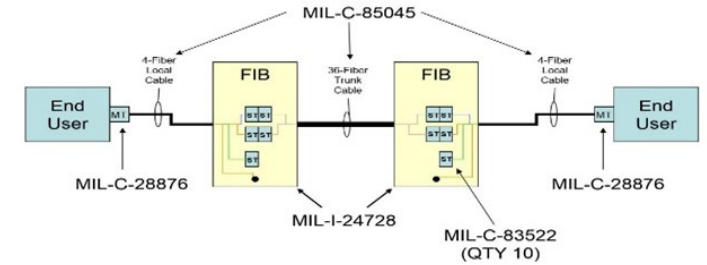
- Total Ownership Cost
- Energy Efficiency
- Electrical System Performance
- Safety of Workforce and Ship's Crew



Panel Projects

- Fiber Optic Testing Enhancement for Cost Reduction
- DOD-HDBK-289 Modernization Support

Source Launching Conditions	Source Type	Input Beam	Fiber	Output Beam
Overfilled (LED)				
Slightly under-filled (ideal conditions)				
Under-filled (VCSEL)				



METRIC
 DOD-HDBK-289(SH)
 26 November 1986
 SUPERSEDING
 NAVSEA 0964-000-2000
 15 July 1974

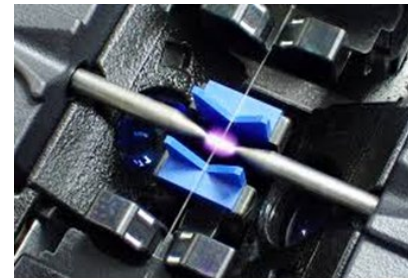
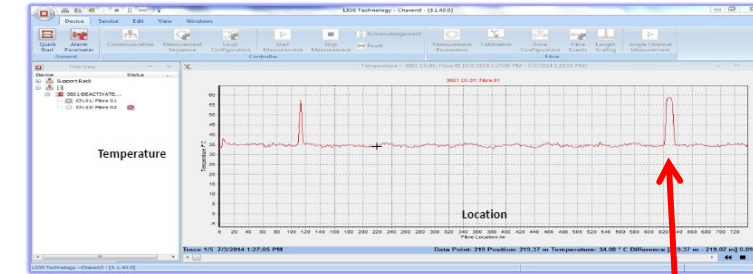
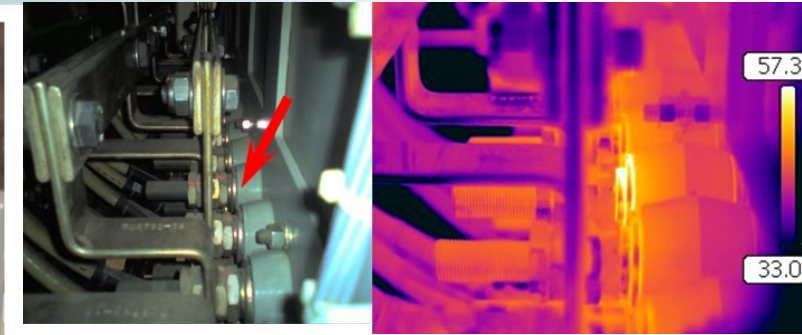
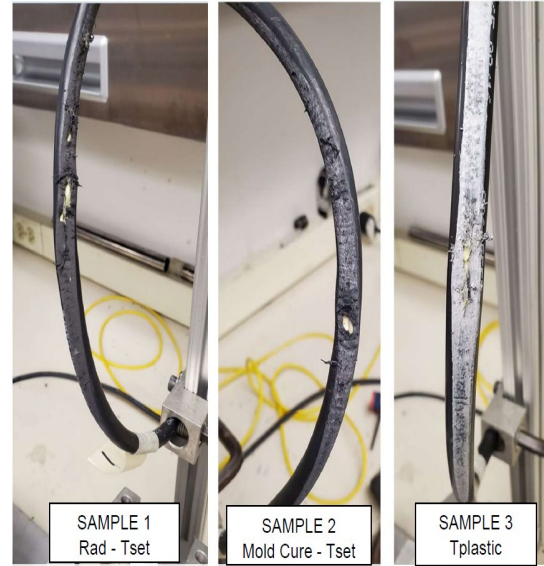
MILITARY HANDBOOK

LIGHTING
 ON
 NAVAL SHIPS
 (METRIC)

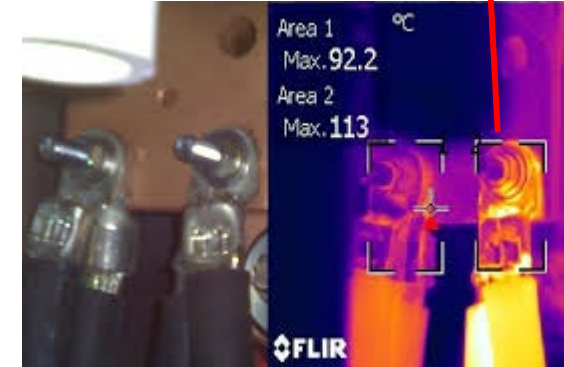
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 DISTRIBUTION STATEMENT A Approved for public release, distribution unlimited

Panel Projects

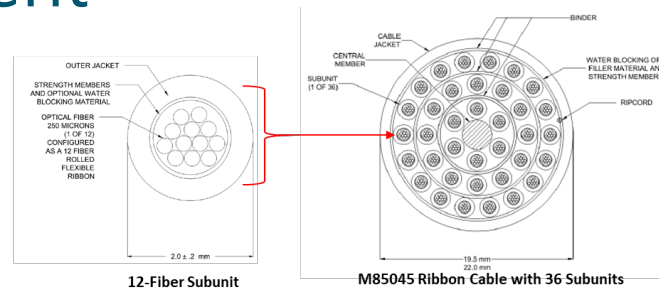
- DTS Integration Into Ship Electrical Plant Monitoring & Controls
- High-Density Ribbon Fiber Optic Cable & Tooling
- Shipboard Fiber Optic Cables Design Enhancements
(Joint Project with SWSI)
- 15kV MIL-SPEC Cable Development



Fusion Splicer Individual Fiber



Fusion Splicer Ribbon Fiber



M85045 Ribbon Cable Example

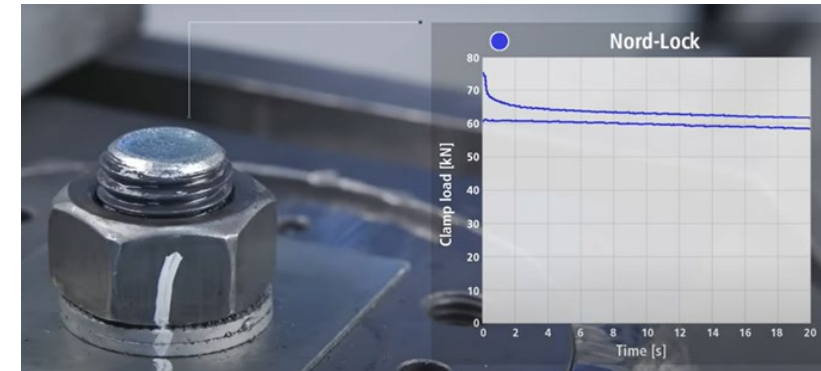
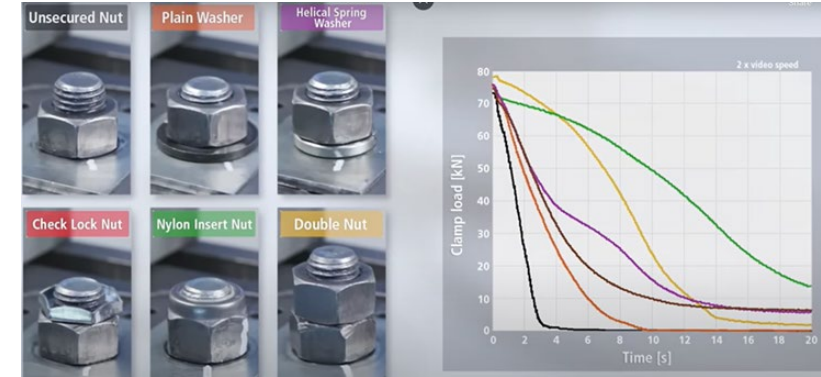
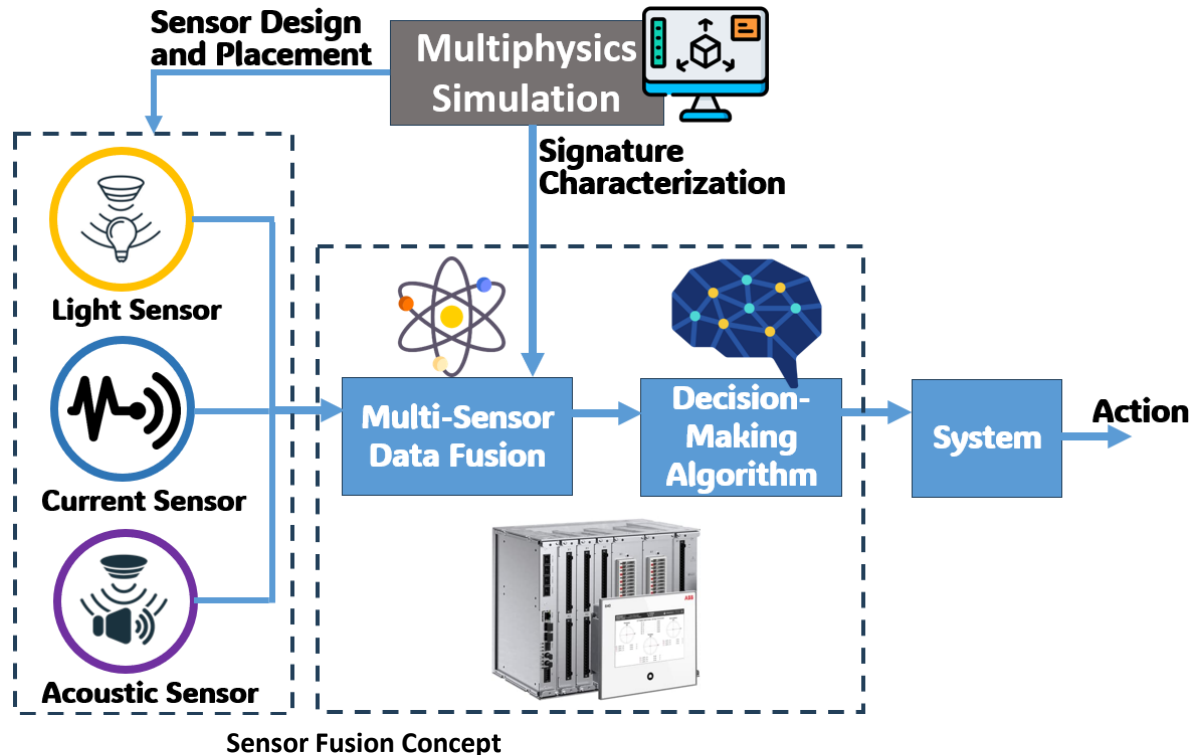


Standard M85045 Cable Example

**Project Teams will present updates during the meeting*

Panel Projects – FY'26 New Starts

- Evaluate Nord-Lock Wedge Washers for Electrical Applications on Navy Ship
- Multiphysics-Driven Arc-Fault Detection for Shipboard Electrical Systems



Nord-Lock Wedge Washer

Upcoming...

- Panel Project Solicitation
- Electrical Technologies FY'26 Meetings
 - Summer Panel Meeting
 - Late July/Aug
 - Winter Panel Meeting
 - Nov/Dec (Virtual)

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Questions?

