



NDIA TWVC - 2025

(Tactical Wheeled Vehicle Conference)

Tech 10 Briefing

Michael Gromacki and Steve Mikes | 2025-02-26

APPROVED FOR PUBLIC RELEASE



McCLARIN Purpose and Strategies

McCLARIN Composites leads with Purpose, molding sustainable value with future-forward solutions for decarbonizing Mobility and the Built Environment.



Market Facing Strategies

- Disruptively lead design, material and process solutions for high growth segments in decarbonized Mobility.
- Innovate for decarbonization, resilience and accelerated construction in the Built Environment.
- Advance cleaner composites and circularity with our conversion to closed mold processing.
- Transform cost and productivity through automated processes.

Markets Served

McCLARIN is a leading Tier 1 supplier for segments in Mobility and the Built Environment.



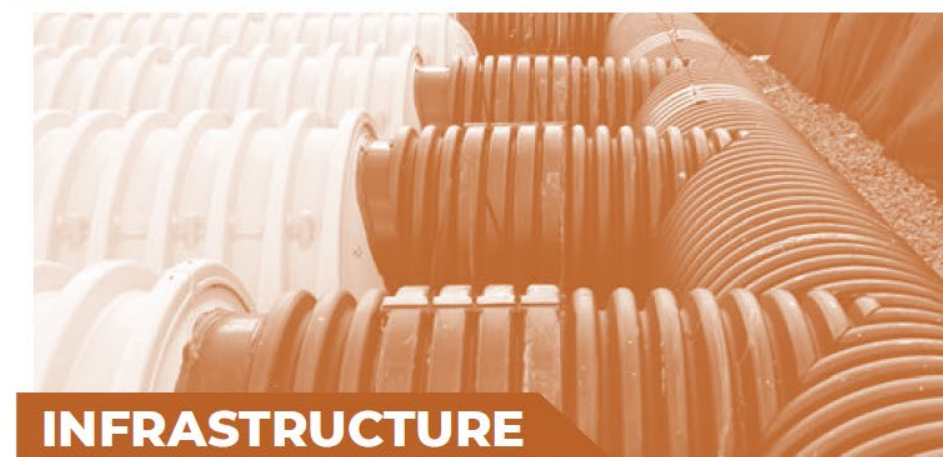
MOBILITY



McCLARIN delivers disruptive products in applications for the Mobility market that includes but are not limited to:

- Bumper Covers
- Exterior Cladding
- Fender Flares
- Hoods
- Front/Rear End Caps
- Interior Panels/Components
- Roof Fairings/Caps
- Wheel Wells

BUILT ENVIRONMENT

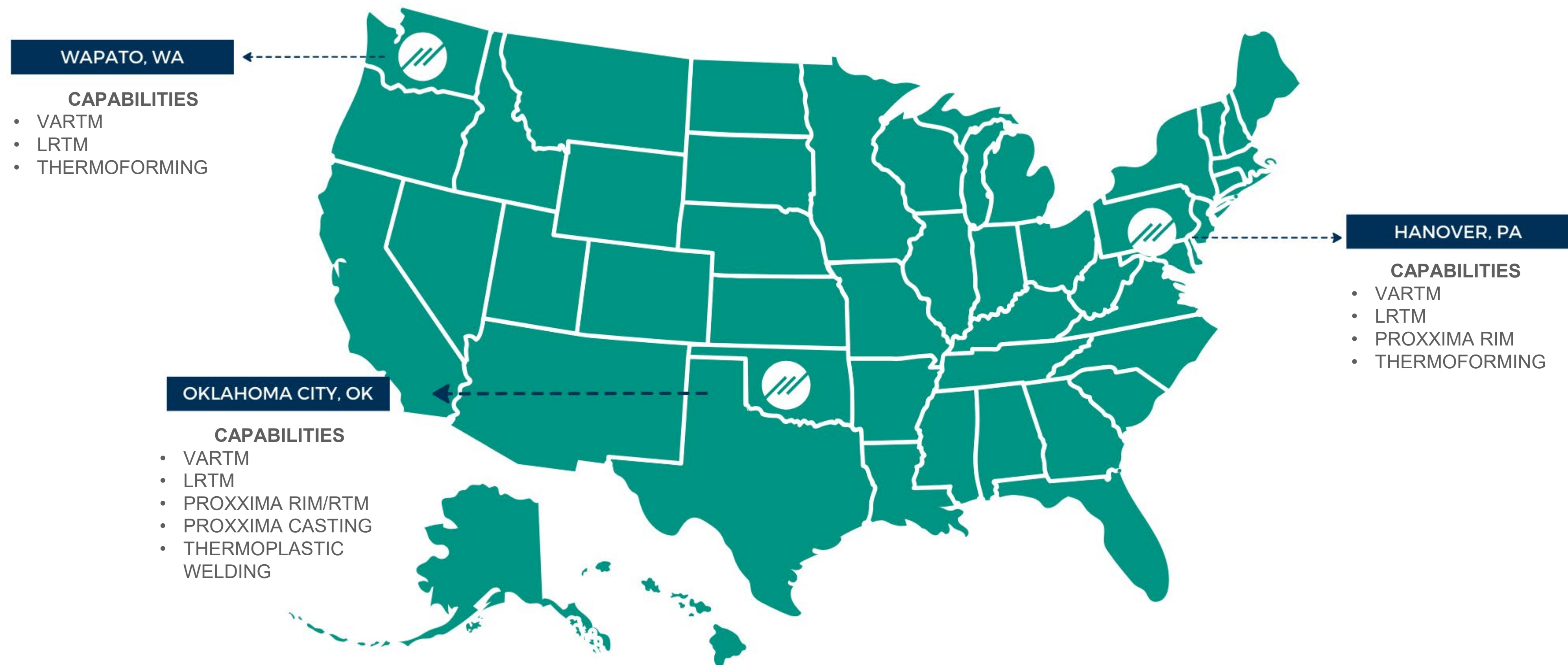


McCLARIN delivers disruptive products in applications for the Built Environment market that includes but are not limited to:

- Aerial Work Platforms
- Construction Equipment
- Cooling Tower Fan Stacks
- Cooling Tower Piping
- Utility Structures
- Drainage Systems
- Power Plants
- Concrete Reinforcement

Geographic Positioning

McClarín has three manufacturing locations, strategically located to serve our customers throughout North America and worldwide.



Market Position



- Geographic balance in North America, advantaged access to logistics, DLA distribution centers, and to major OEM heat maps
- Major OEM threshold for Tier 1: \$100 MM in Revenue, “Industry Bedrock” scale
- **Composites. Any Way, Shape or Form™**
 - ✓ Multi-material capabilities
 - ✓ Large, complex part molding, assembly
 - ✓ **Open Innovation** to establish optimal design and material basket
 - ✓ Fast processes – VARTM, LRTM, RTM, HP-RTM, RIM, Vacuum Thermoforming
- SCALABLE: Machine-driven molding and finishing: EAUs in 000s

Market Differentiation

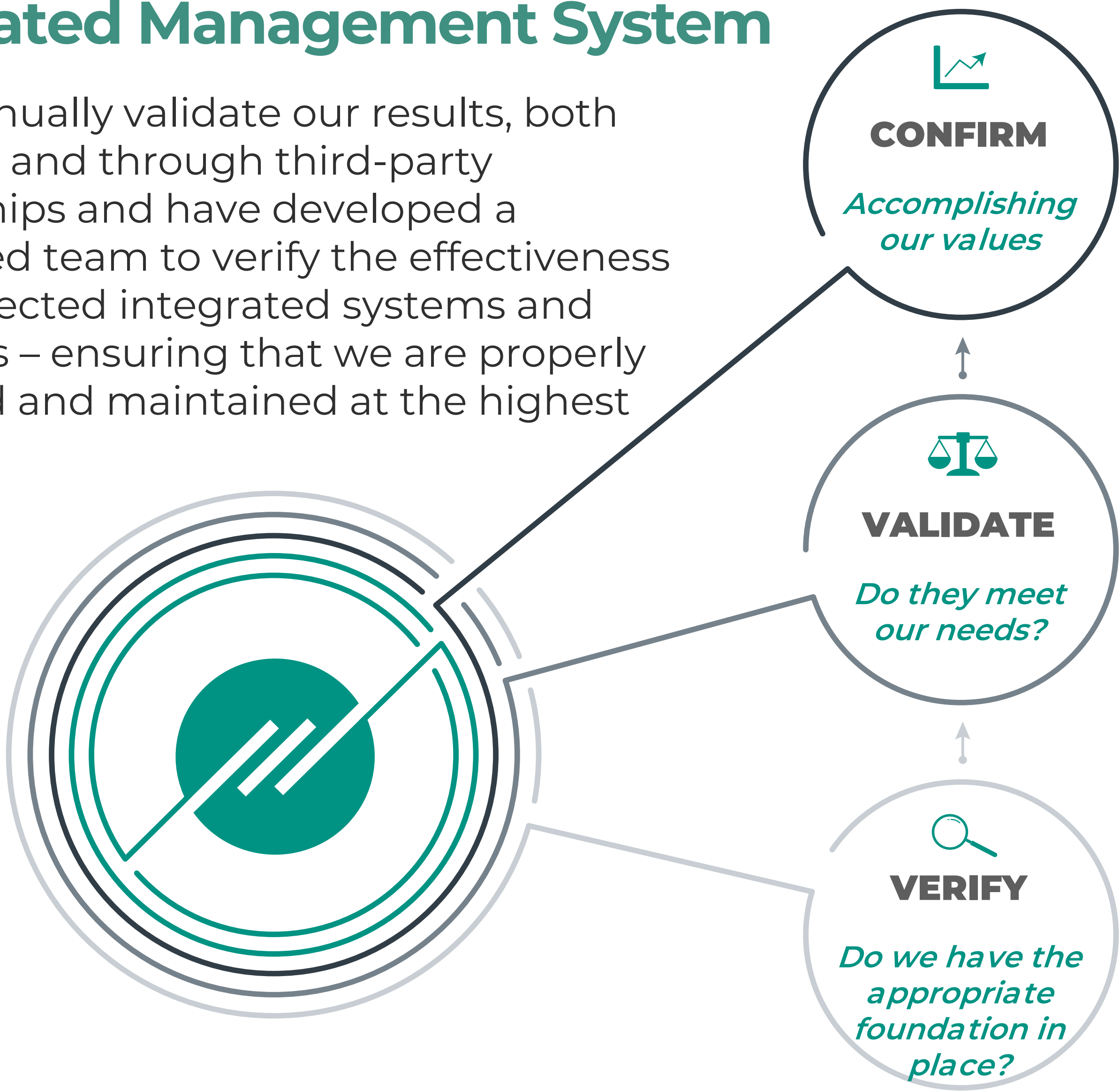


From concept to commercialization, we differentiate through:

- Design for Manufacturing / Design for Assembly (DfM/DfA)
- New Product Development (NPD) and Advanced Product Quality Planning (APQP)
- Integrated Management Systems (QHSE, Energy, Assets)
- Complex Tooling Development
- Multi-material Platforms
 - Thermoplastic – Thermoforming and Thermoplastic welding
 - Thermoset Composites – VARTM, LRTM, RTM, HP-RTM, RIM
 - Dual Laminate of thermoplastics and composites
- Machine Driven Molding for scalability, reliability, and consistency
- Robotic Value Add Applications – automated trim and bonding, prep paint
- Assembly and Paint, including CARC and intumescent coatings platforms

Integrated Management System

We continually validate our results, both internally and through third-party partnerships and have developed a specialized team to verify the effectiveness of our selected integrated systems and processes – ensuring that we are properly managed and maintained at the highest level.



SUSTAINABLE VALUE

- ▶ Ethics, Economics
- ▶ Environmental, Social, Governance (ESG)



VALIDATED RESULTS

- ▶ **Health, Safety and Environment (HSE)**
 - Effective Risk Management (*through DNV ISRS 9*)
- ▶ **Quality** (*through ISRS 9, ISO 9001*)
 - Reliable quality and delivery to our customers
- ▶ **Organization** (*through ISRS 9, EcoVadis*)
 - Engaged Leadership & Culture
- ▶ **Business** (*through ISRS 9, EcoVadis*)
 - Sustainable Profit and Growth
- ▶ **Supply** (*through ISRS 9, EcoVadis*)
 - Optimized, Secure and Sustainable Supply

MANAGEMENT SYSTEMS & PROCESSES

International Sustainability Rating System (DNV ISRS 9)

Continual Improvement Principles

Software Platforms:

- Upkeep
- ADP
- SharePoint
- Summit
- S2K
- Dakota
- Monday.com

Systematic Tools:

- Appreciative Inquiry
- APQP (Quality)
- SCAT/Root Cause Analysis

OEM Standard Cargo Covers

Common Failure Modes of Standard OEM Cargo Cover



OEM Standard Cargo Covers

Common Failure Modes of Standard OEM Cargo Cover



OEM Standard Soft Covers

While a flexible OEM feature, soft cargo covers face challenges in the field, particularly with sustained contact with elements or severe weather:



- Soft covers are vulnerable to tear in high winds
- Bows break under wind, snow or ice load
- Standard soft covers frequently leak despite fitted design, gear gets wet and ruined, undermining force readiness
- High cost to replace, approximately \$5,500 per kit (for FMTV)
- Unable to secure gear
- Cannot pre-position inventory or store emergency response gear

McCLARIN offers a resilient, flexible, and scalable solution for tactical vehicles, built on decades of composites expertise in Military and Mobility segments. *We have you covered..*

McCLARIN Helmet Hardtops™



Helmet Hardtops™



Helmet Hardtops™ and Cargo Bed Covers (CBCs)

Our HMMWV Helmet Hardtops™ produced since the 1990s.

- Over thirty (30) NSN units with additional non-NSN units in production
- Modularity and part crossover between units
- Customization / Special Builds manufactured for: SOCOM, EOD, SPAWARS, US Air Force, Marine Corps and Electronic Warfare Platforms

FMTV Helmet Hardtops™ developed in 2010; NSN assigned in 2023

JLTV M1279 and JLTV Trailer Helmet Hardtops™ currently in development

Helmet Hardtops™

Benefits of Helmet Hardtops™



- Lower overall life cycle cost, damage tolerance, and asset protection
- Lightweight, less than 850 lbs, does not materially contribute to Center of Gravity Shift
- Superior protection for Personnel, Gear, and Electronics from elements, insects, other hazards
- Durable, validated in the field on tactical vehicles for over 20 years
- Removal and reinstallation, integrated with OEM platform
- Securable and lockable
- Modular with optional equipment, common parts between units
- Removable lift-off doors for ease of cargo loading
- Can pre-position gear for Fast Reaction Emergency Response

FMTV - Helmet Hardtops™

Manufactured using VARTM Technology



FMTV - Helmet Hardtops™



NSNs Assigned for FMTV Hardtops through sponsorship by 11th Airborne

In 2022, w/ Contract facilitated through ManTech and Detroit Arsenal / TACOM, McCLARIN provided units for Testing and Evaluation in AK

- Twenty (20) units Tested / Approved at Fort Greely Alaska from Dec 2022 - Mar 2023
 - 2.5-Ton LMTV M1078 – M1082 Truck / Trailer
 - 5-Ton MTV M1083 – M1095 Truck / Trailer

Features Include:

- OD Green CARC Paint (Other colors available with Non-NSN units)
- Egress Windows Slide Open w/Window Screens and Internal Ambient Light (Black Out) Covers
- Lift Off / Removeable - Padlocked Rear Doors with Window Portals and Internal Ambient Light Covers
- 4 x Camo Net Pole Holders 2-Per-Side (Elevates Camo Net Poles off the ground)
- Additional Options available for Non-NSN units

FMTV - Helmet Hardtops™

2.5 T LMTV M1078 – M1082 Truck / Trailer



NSN: 2590-01-707-4266, Cover, Vehicular COM - PN: 218-0002E-1-C



FMTV - Helmet Hardtops™

5 T MTV M1083 – M1095 Truck / Trailer



NSN: 2590-01-707-4246, Cover, Vehicular COM - PN 218-0001E-1-C



C2 - Command and Control Set Up



Command and Control Set Up

New Developments



2.5-Ton Vans and 5-Ton Expansion Vans have been removed from inventory

With advances in Signal Tech, UAVs, and Forward Scouting, large “Immobile” unit Command Centers are now vulnerable and have “10 minutes to move”

McCLARIN partnered with EZ STAK, for internals to outfit our Helmet Hardtops™ as Mobile C2 “Command Centers”

C2 or C3 Unit Set Up using commercially available proven equipment

Development currently underway with 2nd SFAB (Fort Bragg)

McCLARIN / EZ STAK FMTV TOC

Tactical Mobility for the Future Fight



Rugged, rapidly deployable command and control solution, enhancing battlefield coordination, sustainment, and mission execution for conventional and SOF environments

Mission-Ready – Configurable as a TOC, UAV command center, or sustainment hub to support expeditionary operations

Scalable Power – Lithium-ion energy system and shore power integration ensure sustained operations even when vehicles are powered down

Rapid Mobility & Deployability – Convoy-capable for rapid response, enhancing TOC jump capabilities and reducing setup time

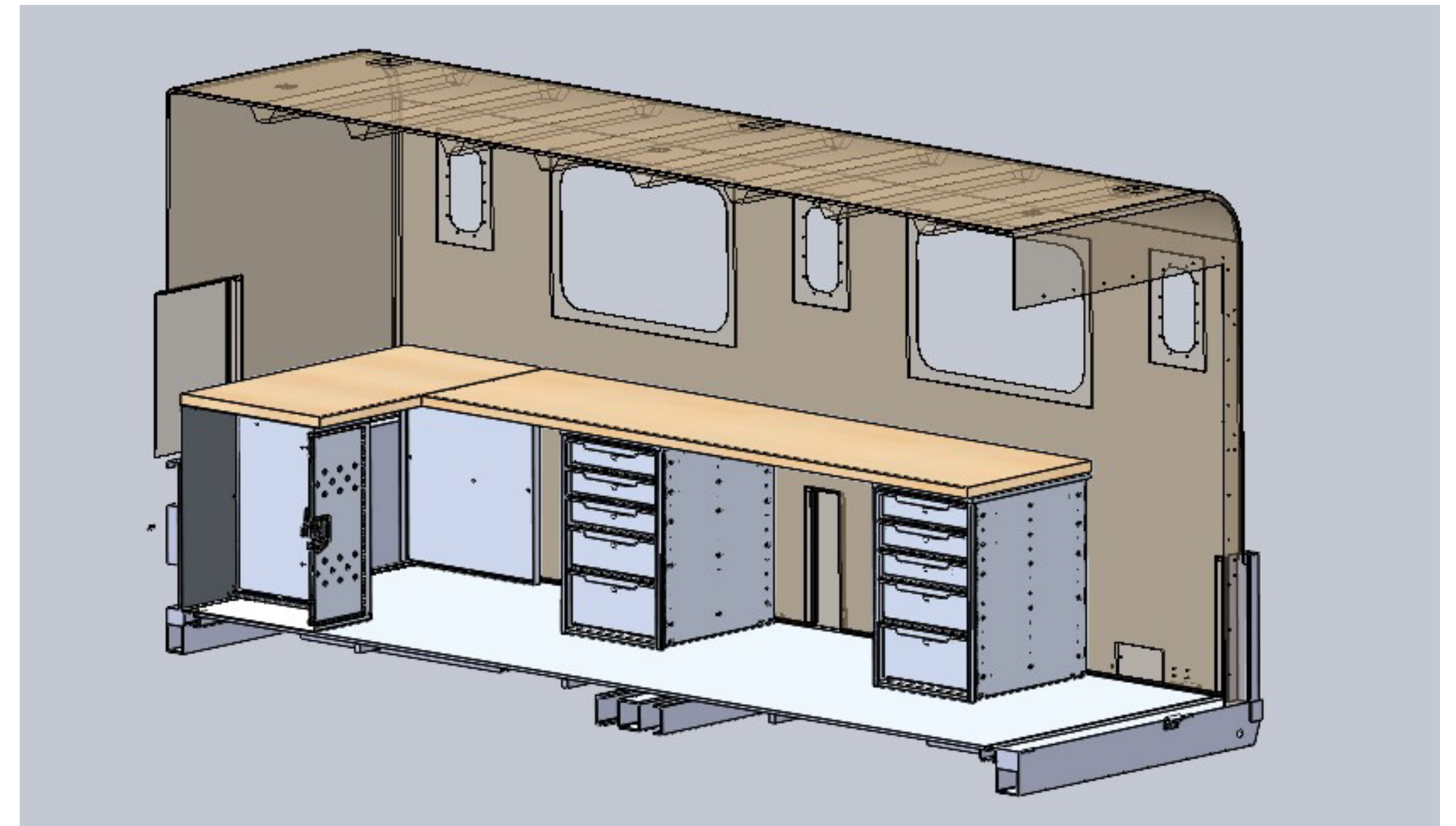
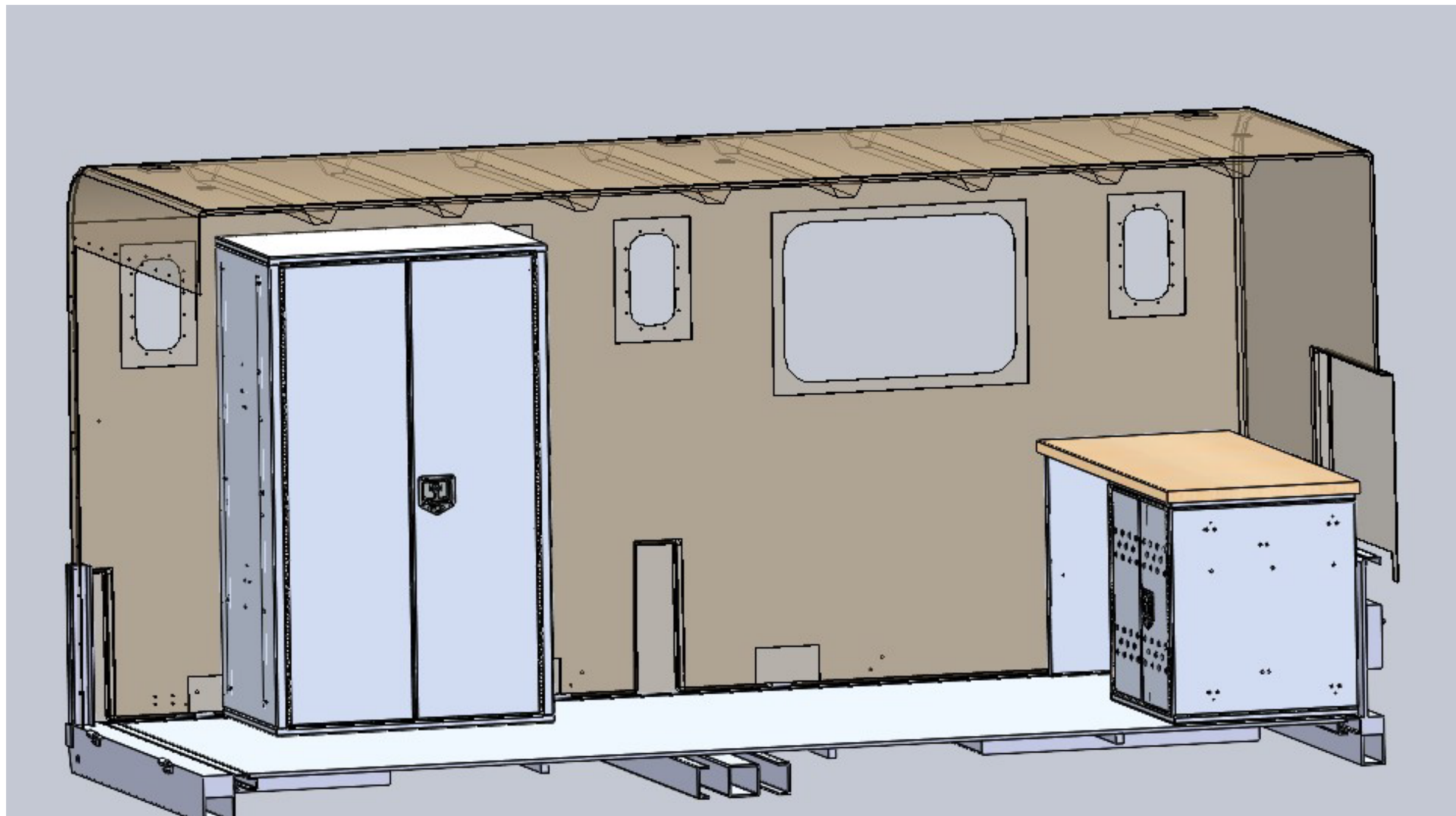
C2 & Comms Integration – Custom workstations, commo-ready racks, and climate-controlled workspace for sustained mission support

McCLARIN / EZ STAK FMTV TOC

Planned Layout



2nd SFAB C2 – “War Elephant” 6-2 Security Force Assistance Brigade (SFAB)



McCLARIN / EZ STAK FMTV TOC

Outfit with McCLARIN Hardtops

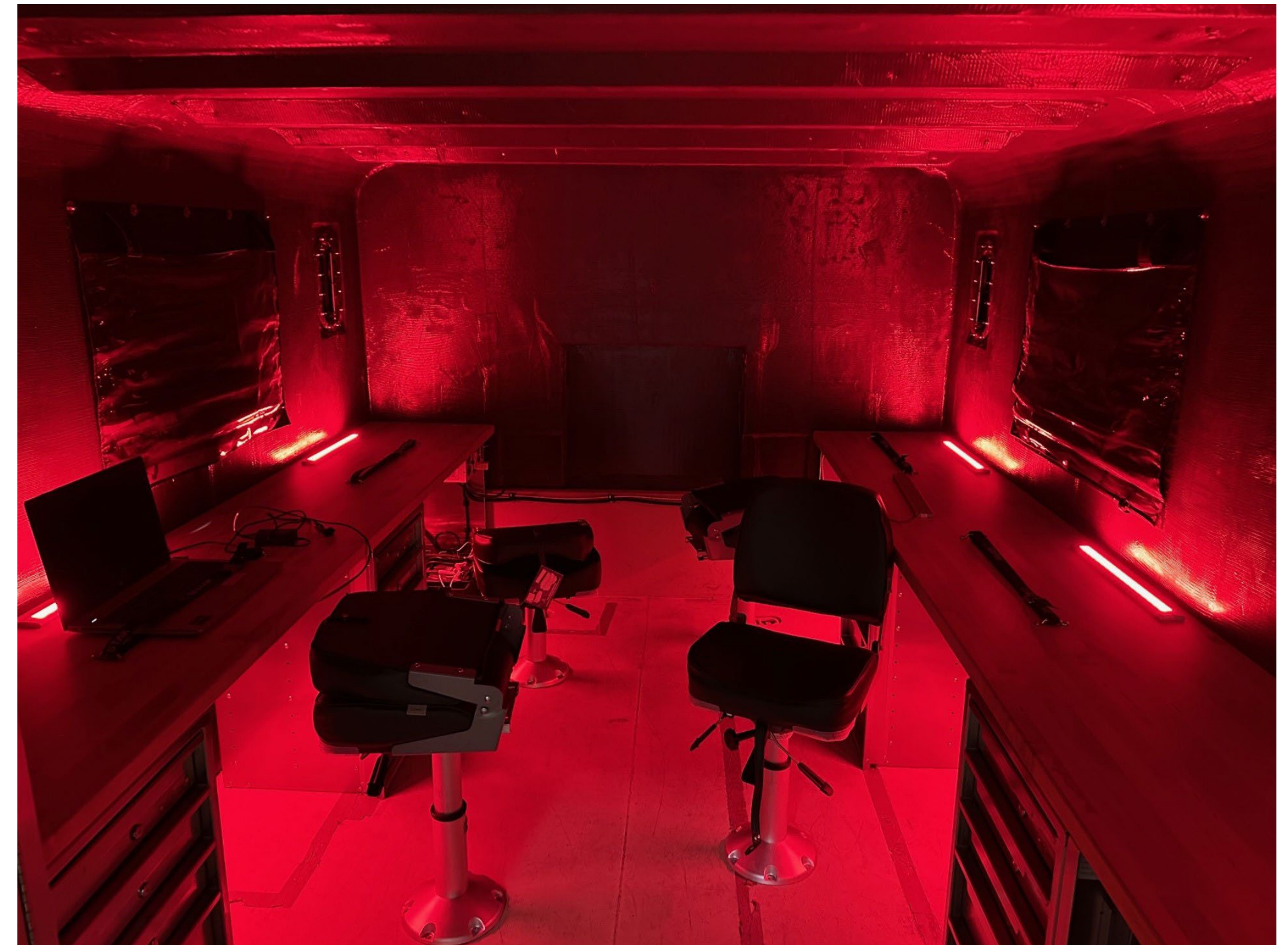


Six (6) - M1083 MTV 5-Ton Trucks and Six (6) - M1095 5-Ton Trailers



McCLARIN / EZ STAK FMTV TOC

Final Installation



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Questions?