Buy America Transit Supply Chain Connectivity Forum

APTA Rail Conference
Baltimore, MD
June 14, 2017
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WELCOME TO MARYLAND

Mike Kelleher
Chief Financial Officer/Chief Operations Officer

www.nist.gov/mep
mfg@nist.gov
(301) 975-5020
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BUY AMERICA OVERVIEW

Cecelia Comito
Assistant Chief Counsel, General Law Division
Federal Transit Administration
Buy America 101

  "The Secretary may obligate an amount to be appropriated to carry out this chapter for a project only if the steel, iron, and manufactured goods used in the project are produced in the United States."
(C) when procuring rolling stock (including train control, communication, traction power equipment, and rolling stock prototypes) under this chapter--

(i) the cost of components and subcomponents produced in the United States

(I) for fiscal years 2016 and 2017, is more than 60 percent of the cost of all components of the rolling stock;

(II) for fiscal years 2018 and 2019, is more than 65 percent of the cost of all components of the rolling stock; and

(III) for fiscal year 2020 and each fiscal year thereafter, is more than 70 percent of the cost of all components of the rolling stock; and

(ii) final assembly of the rolling stock has occurred in the United States;
Buy America 101

- Rolling stock procurements are subject to the pre-award and post-delivery Buy America audit provisions
  - 49 U.S.C. § 5323(m) and 49 CFR part 663.
  - Discussed in updated Handbook
• 49 CFR 661.3: *Rolling stock* means transit vehicles such as buses, vans, cars, railcars, locomotives, trolley cars and buses, and ferry boats, as well as vehicles used for support services.

• Final Assembly must occur in the U.S.
  – 49 CFR § 661.11
What’s new in Buy America

- FAST Act Amendments to 49 U.S.C. § 5323(j)
  - Phased increase in domestic content for rolling stock
    - Section 5323(j)(2)(C)
  - Inclusion of U.S. steel and iron in domestic content for car body
    - 49 U.S.C. § 5323(j)(5)
- Executive Order (April 18, 2017)
FTA Final Policy Statement

• Issued on September 1, 2016 – 81 Fed. Reg. 60278
• Addresses phased increase for contracts entered into before October 1, 2015 (FAST Act implementation date)
• Addresses contracts entered into during the transition period, between October 1, 2015 and December 4, 2015 (enactment date)
What’s New in Buy America

• FTA will adjust the calculation for determining whether a component is of domestic origin under 49 CFR 661.11 to accommodate the increase in domestic content for FY2018 and beyond.
  – For vehicles subject to the more than 65% domestic content, more than 65% of the subcomponents of that component, by cost, must be of domestic origin, and for FY2020 or beyond, more than 70 percent of the subcomponents of the component must be of domestic origin.
  – Manufacture of the component must take place in the United States.

• Additionally, if a component is determined to be of domestic origin, its entire cost may be used in calculating the cost of content of an end product.
Cost of Domestic Steel & Iron

• The FAST Act, which added 49 U.S.C. 5323(j)(5), allows domestic content to include steel and iron produced in the United States and incorporated into a rolling stock frame or car shell outside the United States, provided that the frame or car shell is imported back into the United States for final assembly.
  – Only applies to vehicles that cost more than $300,000.

• Manufacturers may include the cost of domestic steel and iron on vehicles produced after October 1, 2015, the effective date of the FAST Act.
Buy America Handbook
Buy America Handbook

• Addresses pre-award and post-delivery audits of rolling stock procurements (49 CFR part 663)

• Handbook is guidance and does not promulgate new requirements
  – Discusses best practices that recipients may adopt
  – Does not require anything beyond what is in the Buy America statute and regulations

• Effective Date: March 21, 2017
2017 Handbook

• Reflects FAST Act changes with respect to domestic content percentage increases
• Handbook does not apply to overhauls, rebuilds, or refurbished vehicles
• Provides templates and examples for pre-award and post-delivery audits
• Does not define who is a “qualified” auditor, leaves that determination up to recipient
Pre-Award Audits

• What’s the purpose of a pre-award audit?
  A. To unnecessarily increase the cost of procurement of rolling stock.
  B. To provide jobs for auditors: “Buy American, Hire American”
  C. To confirm before contract award that the bidder has a plan for meeting the Buy America rolling stock requirements
  D. To drive Laura and Richard crazy
Pre-Award Audits

• 49 CFR 663.21-27
• Auditor must be independent from the manufacturer
• Auditor must review documentation from bidder to support domestic content calculation and final assembly
• Documents do not need to be included with, or attached to, pre-award audit report
Post-Delivery Audits

- 49 CFR 663.31-39
- Verifies that vehicle delivered meets Buy America requirements
- Domestic content calculation is set forth in 49 CFR 661.11 – READ IT!
- Handbook walks through application of section 661.11
Proprietary Information

• Manufacturers do not want to disclose pricing information
• OK for auditor to review documentation at manufacturer’s facility
• No requirement that auditor retain a copy of the documents it reviews; however, manufacturer needs to be prepared to show information to FTA, should it request it
• Final Report may be expressed in terms of percentages
More Information

• Buy America Policy Statement, 81 Fed. Reg. 60278 (Sept. 1, 2016)

• Buy America Page
  https://www.transit.dot.gov/buyamerica

• Sign up for GovDelivery Emails on Buy America
  • Richard.Wong@dot.gov
  • Laura.Ames@dot.gov
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Transit Original Equipment Manufacturer and Tier 1 Supplier Panel

- Kiepe Electric
- Knorr Brake Company
- Proterra
- United Rail
Buy America Transit Supply Chain Connectivity Forum
Baltimore, MD

June 14, 2017

John Andreas
Est. 1906, Kiepe Electric specializes in the design and manufacture of:

- Electric Traction Systems for Rail and Bus Applications
- Auxiliary Power Systems for Rail and Bus Applications
- Electrical System Upgrades for Obsolete Equipment
- Electrical Components, such as Contactors, Relays, Switches, etc.

Contact Information;
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Neal Carmichael
Supply Chain Manager
Kiepe Electric
359 Curie Drive
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Kiepe Electric U.S. Headquarters
Alpharetta, Georgia

www.knorr-bremse.com
mfg@nist.gov (301) 975-5020
www.Kiepe.knorr-bremse.com

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### Kiepe Electric Products

<table>
<thead>
<tr>
<th>Product Applications</th>
<th>Product Features</th>
</tr>
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<tbody>
<tr>
<td>Light Rail Vehicles/Streetcars</td>
<td>Voltages up to 1500V</td>
</tr>
<tr>
<td>Subway/Metro</td>
<td>Wide Range of Power Outputs</td>
</tr>
<tr>
<td>Commuter/Regional</td>
<td>IGBT Technology</td>
</tr>
<tr>
<td>Trolley Bus</td>
<td>AC And DC(Upgrade) Applications</td>
</tr>
<tr>
<td>Hybrid Bus</td>
<td>Integrated Energy Management</td>
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<tr>
<td>Battery Bus</td>
<td>Monitoring And Diagnostics</td>
</tr>
<tr>
<td>Fuel Cell Bus</td>
<td>Off Wire Applications</td>
</tr>
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- **Complete Electrical Systems Including**
- **Traction And Auxiliary Power Systems**

Contact Information:
John Andreas
Kiepe Electric
359 Curie Drive
Alpharetta, GA 30005
Phone: (770) 557-6343

john.andreas@kiepe.knorr-bremse.com

www.Kiepe.knorr-bremse.com

Vehicle Integration
Dayton Dual-Mode Trolley Bus

www.nist.gov/mep
mfg@nist.gov
(301) 975-5020

[ MEP Overview ]
Kiepe Electric U.S. References:

PCC car AC drive and APS upgrade – SEPTA / Brookville Locomotive
Subway IGBT chopper traction power upgrade – SEPTA direct
Electrical systems for new trolley buses – SEPTA / New Flyer
Traction power system for new LRVs – Houston Metro / CAF
Vehicle system integrator for Dayton dual mode trolley buses
Electrical systems for new trolley buses – King County Metro / New Flyer
Electrical systems for new trolley buses – San Francisco MTA / New Flyer
The Knorr-Bremse Group

INTRODUCTION TO THE COMPANY 2017

Making mobility safe – Knorr-Bremse’s daily mission.
112 years of Knorr-Bremse

1905 - 1945

- Knorr-Bremse GmbH established in Berlin by Georg Knorr in 1905
- Development of compressed air brake for freight trains enables Knorr-Bremse to become the largest manufacturer of rail vehicle brakes in Europe
- First Knorr air brake for road trucks is patented

1945 - 1985

- Confiscation of Berlin plant at end of Second World War
- Munich becomes company’s new headquarter
- KE control valve becomes new UIC standard
- Entrance into the U.S. market with AAR DB-60 valve for rail vehicles

1985 - 2017

- 1985: Heinz Hermann Thiele takes over the company
- Development into world’s leading manufacturer of braking systems for rail and commercial vehicles
- Radical restructuring and expansion strategy and consolidation of market by Knorr-Bremse
Knorr-Bremse is based in 30 countries around the world at more than 100 locations, some 80 of which are manufacturing facilities.
Development of sales

**Development of sales (in € million)**

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<tbody>
<tr>
<td>Sales</td>
<td>520</td>
<td>740</td>
<td>1,494</td>
<td>2,743</td>
<td>4,241</td>
<td>4,300</td>
<td>4,303</td>
<td>5,206</td>
<td>5,831</td>
<td>5,494</td>
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**2015** | **2016** | **Δ**
--- | --- | ---
Sales | 5,831 Mio. € | 5,494 Mio. € | -5.8%
Net income | 645 Mio. € | 550 Mio. € | -14.7%
Return on sales | 11.1% | 10.0% | -1.1%-P.
Investments | 210 Mio. € | 195 Mio. € | -7.4%
Research and development expenditure | 347 Mio. € | 328 Mio. € | -5.4%
Employees (incl. leasing; as per Dec. 31) | 24,275 | 24,565 | +1.2%
Sales by regions

### Sales by regions 2016 (in %)

<table>
<thead>
<tr>
<th>Region</th>
<th>2015</th>
<th>2016</th>
<th>Δ</th>
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<tbody>
<tr>
<td>Americas</td>
<td>22%</td>
<td>50%</td>
<td>+28%</td>
</tr>
<tr>
<td>Europe</td>
<td>50%</td>
<td>28%</td>
<td>-22%</td>
</tr>
<tr>
<td>Asia/Australia</td>
<td>28%</td>
<td>22%</td>
<td>-6%</td>
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### Sales by regions

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<td>5,831 Mio. €</td>
<td>5,494 Mio. €</td>
<td>-6%</td>
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<tr>
<td>Europe*</td>
<td>2,618 Mio. €</td>
<td>2,728 Mio. €</td>
<td>+4%</td>
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<tr>
<td>The Americas*</td>
<td>1,433 Mio. €</td>
<td>1,219 Mio. €</td>
<td>-15%</td>
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<tr>
<td>Asia/Australia*</td>
<td>1,780 Mio. €</td>
<td>1,547 Mio. €</td>
<td>-13%</td>
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*sales to third parties
Customer Orientation – Connected Systems to enhance the Value of Customers
Safety and quality have top priority

MAIN FEATURES / OUR GOAL

- The customer is the main focus of all our actions
- Top quality – benchmark for the sector
- Strong focus on continual improvement
- Learning from mistakes
- Defect-free products
- Quality is everyone’s responsibility
Corporate values

Entrepreneurship
- Knorr-Bremse regards challenges as opportunities for generating long-term, profitable growth

Passion
- We are passionate about what we do

Reliability
- Safety is the basis for everything we do – and we do not compromise on this

Responsibility
- As a globally operating company Knorr-Bremse incorporates a workforce with a wide range of cultures and strengths

Technological Excellence
- Knorr-Bremse stands for technological expertise and competence in all company divisions
Group – Corporate responsibility

Operating and doing business in a sustainable and socially responsible manner

WITH ITS CORPORATE RESPONSIBILITY (CR) STRATEGY KNORR-BREMSE UNDERTAKES

- to behave responsibly towards customers, employees, the environment, and society
- to make sparing use of natural resources
- to develop sustainable technologies and products
- to engage with society

The aim is to ensure that the company is future-proof but also maintains a proper economic, ecological, and social balance.
Knorr-Bremse Global Care e.V. – better prospects for people in need

- In 2016 more than €1.9 million spent on development projects
- 650,000 beneficiaries since organization set up in 2005
- Knorr-Bremse workforce involved in volunteering for local projects
Proterra’s Mission
Advancing electric vehicle technology to deliver the world’s best-performing transit vehicles

- Founded in 2004
- Offices and manufacturing in CA and SC
- 300+ employees, strong executive management team
- Backed by industry-leading VC and corporate investors
- 38 customers; >400 vehicles sold
- >100 vehicles delivered; >3,300,000 service miles
- >12,000,000 pounds of CO2 emissions avoided

Strong Executive Team

Solid Financial Backing
OUR CUSTOMERS

290 announced orders from 31 customers
100+ orders not yet announced
PROTERRA CATALYST®—DIFFERENT BY DESIGN
INTRODUCING THE PROTERRA CATALYST™ PLATFORM

Proterra Catalyst®

Highest Performance

Flexible Energy System

Ultimate Flexibility

Multiple Charging Options

Meet Every Route Need

Financing & Services

Ease of Ownership
THE PROTERRA CATALYST’S RANGE

*Depending on model. Nominal range = total energy/ projected Altoona efficiency. Actual range will vary with route conditions, battery configuration and driver behavior.
Proterra Supplier Expectations

• Provide Best in Class Quality
  - Robust Quality and Manufacturing Systems

• On Time Delivery
  - Consistent Delivery and Communication

• Cost & Cash
  - BOM Cost Reductions, VA/VE, Lead-time Reductions, Payment Terms, Consignment, Capacity
  - Ability and Desire to Scale to meet the future

• Attitude
  - Partnering Approach, Focus on Continuous Improvement, Long Term Supply Agreements
### Actively Looking for DBEs - NAICSs

<table>
<thead>
<tr>
<th>NAICS Code</th>
<th>NAICS Description</th>
<th>Description of Components/Parts</th>
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<tbody>
<tr>
<td>326299</td>
<td>All Other Rubber Product Manufacturing</td>
<td>Battery Terminal Covers, Gaskets, Flooring</td>
</tr>
<tr>
<td>327215</td>
<td>Glass Product Manufacturing Made of Purchased Glass</td>
<td>Side Windows, Front and Rear Windshields, Door Closeout</td>
</tr>
<tr>
<td>332710</td>
<td>Machine Shops</td>
<td>Battery Box and Related Parts, Coolant Plates, Front and Rear Suspension Cradles, Rear Cage, Brackets</td>
</tr>
<tr>
<td>334220</td>
<td>Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing</td>
<td>Smart Bus System, Radios, Microphones, Antennas, Cameras, Monitors, Cables</td>
</tr>
<tr>
<td>335312</td>
<td>Motor and Generator Manufacturing</td>
<td>Specially-Designed Traction Motor and Controller</td>
</tr>
<tr>
<td>335912</td>
<td>Primary Battery Manufacturing</td>
<td>Specially-Designed Lithium Titanate Battery Modules</td>
</tr>
<tr>
<td>335991</td>
<td>Carbon and Graphite Product Manufacturing</td>
<td>Carbon Brushes</td>
</tr>
<tr>
<td>335999</td>
<td>All Other Miscellaneous Electrical Equipment and Component Manufacturing</td>
<td>Specially-Designed Charge Station, Fast Charge (Indoor and Outdoor)</td>
</tr>
<tr>
<td>336211</td>
<td>Motor Vehicle Body Manufacturing</td>
<td>Specially-Designed Composite Bus Body</td>
</tr>
<tr>
<td>336320</td>
<td>Motor Vehicle Electrical and Electronic Equipment Manufacturing</td>
<td>Wiring Harnesses, Driver's Display, Wiper System, Variable Frequency Drives, DC-DC Converter, Switches</td>
</tr>
<tr>
<td>336330</td>
<td>Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing</td>
<td>Suspension Components, Drive Shaft, Steering Column</td>
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<tr>
<td>336340</td>
<td>Motor Vehicle Brake System Manufacturing</td>
<td>Brakes &amp; Brake Valves, Brake Pedals</td>
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<tr>
<td>336360</td>
<td>Motor Vehicle Seating and Interior Trim Manufacturing</td>
<td>Stanchions, Overhead Lighting Panels, Flooring, Passenger and Driver's Seating</td>
</tr>
<tr>
<td>336390</td>
<td>Other Motor Vehicle Parts Manufacturing</td>
<td>Destination Signs, ADA Ramp, Mirrors, Defroster, Bike Rack, Fire Suppression</td>
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<tr>
<td>423610</td>
<td>Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers</td>
<td>High and Low Voltage Cable, Connectors, Terminals, Plugs, Sensors, Lugs, Relays</td>
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<tr>
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<tr>
<td>541430</td>
<td>Graphic Design Services</td>
<td>Bus Wrap Design Services</td>
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</tbody>
</table>
THANK YOU.

Annette Dean
Director of Procurement
adean@Proterra.com
(864) 214-7079
Not on the picture: Brad McLelland, Kelly LaLonde, Nicolaas Hoffman
Company Profile

ABOUT US

• A Florida Corporation inaugurated in 2012
• Privately held with no external investors
• Headquartered in Jacksonville, Florida, USA with a Branch office in Toronto, Ontario, Canada

OUR MISSION

• To be the best Engineering & Design Services, Products and Solutions partner to all segments of North America’s Rail industry
PORTFOLIO SEGMENTATION

SIGNAL ENGINEERING & DESIGN SERVICES
CONSULTING SERVICES
PROJECT MANAGEMENT
QUALITY, VALIDATION, CHECKING & DOCUMENTATION

PRELIMINARY ENG. (PARTNER – DB E&C)
CONSULTING SERVICES (PARTNER – DB E&C)

SIGNALLING PRODUCTS PORTFOLIO
- AXLE COUNTING CIRCUITS
- AUDIO FREQUENCY TRACK CIRCUITS
  - SWITCH BLOCKING CIRCUITS (PARTNER – BBR)
DIESEL INJECTION NOZZLES (PARTNER – GANSER CRS)

SENTINEL SOLUTIONS
SIGNALLING SYSTEMS PORTFOLIO (PARTNER – BBR)
LOCOMOTIVE FUEL INJECTION SYSTEMS (PARTNER – GANSER CRS)
OPERATIONS SIMULATION (PARTNER – OPENTRACK)
TRACK GEOMETRY SURVEYING SYSTEMS (PARTNER – AMBERG – TECH.)

Denotes United Rail’s Core Competencies
Signal Engineering Services

• Engineering Services focuses on signal design work on existing platforms such as VHLC, ElectroLogIXS, VPI, Microlock II, GEO, legacy Relay Based Systems, existing Switch Machines, etc.

• Engineering & Design Services:
  • Preliminary Engineering
  • Detailed Signal Design
  • Application Software Design & Test

• Engineering Support Services:
  • As-in service ("As-Built")
  • System validation (Checking)
  • P.E. or Canadian P.Eng. Services
  • CAD Services: Applications: Bentley MicroStation and Promise-e, Autodesk AutoCAD

• Projects range from small to highly complex including those with a high degree of urgency

• Customers approach us to resolve issues and recommend solutions focused on added value
International Technology & Services Partners

BBR Rail Automation GmbH

• A globally active German company founded in 1990
• 200+ Employees
• Signal solutions for LRT’s Streetcars, Subway and Yard Automation
• Passenger Information Systems
• Customer focus: Rail Operators, Design-Build Contractors and Vehicle Manufacturers
International Technology & Services Partners

Ganser CRS AG

• A globally active Swiss company founded in 1985
• Development and manufacturing of high performance Common Rail Fuel Injection Systems for larger (1,000+ kW) diesel engines
• Dual Fuel Systems (LNG)
• Fuel savings (5% - 15%) and/or improved emissions (EPA Tier levels)
• Successful test installation with NS is ongoing
International Technology & Services Partner

Amberg Technologies AG

• A globally active Swiss company with more than 35 years of history
• Provides comprehensive services for tunnel- and rail surveying
• Survey: Highly efficient systems for as-built survey of existing railway lines for documentation and future planning purpose
• Tamping: High-performance system solution for track alignment data or control-point-based tamping
• Slab Track: Integrated surveying solution optimized for the typical requirements during construction, monitoring and maintenance of slab track
• Clearance: Modular system solution for manual and automatic clearance survey including sophisticated engine for static and dynamic clearance analysis
Prover Technology AB

• A globally active Swedish company founded in 1989
• Leading Processes, Languages and Software for Control and Signaling Engineering
• Prover is digitizing railway signaling systems
  – Reduce time to market and cost in development and verification of rail control signaling systems
  – Provides solutions (methods, tools and processes)

• We help our customers to
  – Capture and maintain mission-critical know-how
  – Reduce project lead time and costs
  – Prove safety

• Products:
  – Prover PiSPEC enables specification engineers to capture their signaling know-how using
    the leading, unambiguous and proven formal language
    • Ensure clear requirements
    • Overcome specification problems
    • Document tribal knowledge
  – Prover iLock Process is based on PiSPEC and Prover iLock, and covers the entire
    application lifecycle, from specification to revenue service and future updates
    • Improve operator/supplier relationship
    • Ensure standards compliance
    • Go formal!
International Services Partner

DB Engineering & Consulting Group

• Globally active German company founded in 1966

• Subsidiary of DB (Deutsche Bahn) with 4,500+ Employees

• Providing Project Management, Engineering and Project Execution for DB projects across Germany

• Provide Consulting Services and Engineering in all aspects of Rail operation to international customers

• All Market segments served
New international technology partners

Pixy AG, Switzerland
• Visualization solutions for the railway sector

EKE Electronics Ltd, Finland
• Train automation (TCMS), On board event recorder, etc.

RUF Telematic AG, Switzerland
• On-board Passenger Information Systems PIS

OpenTrack Railway Technology, Ltd, Switzerland
• Rail Networks operation simulation
United Rail’s Buy America support

In projects financed by the US or State government (tax money) complying with the ‘Buy America Act’ is a must and is not negotiable

United Rail is able to support:

• Provide assembly and factory testing
• Interface with Operators, Consultants and Integrators
• Legal support
• Identify / coordinate local materials sourcing
• Logistics
• Warehousing
• After Sales technical and commercial support
Bringing the World of Rail Together™

Thank you for your attention!

United Rail, Inc.
Jacksonville, FL 32224
Phone: 904 503 9757
e-mail: info@united-rail.com
www.united-rail.com

Canadian Branch Office
Phone: 416-492-3526
e-mail: nicolaas.hoffman@united-rail.com
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DON’T FORGET TO STOP BY THE REGISTRATION DESK TO SIGN UP FOR YOUR ONE-ON-ONE MEETINGS
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NIST Overview

• Serve as the National Metrology Institute for the U.S.
• Responsible for Nation’s measurement infrastructure – focused on measurements, standards, technology
• > 3,400 federal employees
• ~ 3,800 associates, facilities users
• > 1,200 field staff in partner organizations

Main programs:
-- **NIST Labs**
-- **Hollings Manufacturing Extension Partnership (MEP)**
-- **Baldrige Performance Excellence Program**

Boulder, CO

Gaithersburg, MD

Collaborations:
JILA, JQI, HML, IBBR, NCCoE, NIIMBL Mfg-USA Institute
**PROGRAM MISSION**

*To enhance the productivity and technological performance of U.S. Manufacturing*

---

**Local ➔ National Connection**

Network of Centers providing localized service to manufacturers in each State – with National reach and resources

---

**National Network**

- MEP Center in all 50 U.S. states plus Puerto Rico.
- System-wide non-Federal staff of over 1,200 individuals in ~600 service locations assisting U.S. manufacturers.
- Contracting with >2,500 3rd party service providers

---

**MEP Budget & Business Model**

$130M FY16 Federal Budget with Cost Share Requirements for Centers

---

**Partnership Model**

- Federal, State, Industry
- Managed by NIST at Federal level
- Well aligned with state and local economic development strategies

---

**MEP Strategy: Global Competitiveness and Growth**

Act as trusted advisors that provide direct, hands-on technical and business assistance to domestic manufacturers to help them compete and grow

---

**Contact Information**

- [www.nist.gov/mep](http://www.nist.gov/mep)
- mfg@nist.gov
- (301)975-5020
MEP National Network

In Maryland: MD MEP

- Independent non-profit funded by NIST MEP, industry, State of Maryland
- Primary location in Columbia with multiple points of service around state
- Make it in Maryland program
- Contact Mike Kelleher CFO/COO, 443-343-0085 mkelleher@mdmep.org www.mdmep.org
MEP: Connecting and Assisting U.S. Manufacturers

- Enhance business opportunities for U.S. manufacturers
- Connect products, capabilities, capacities of U.S. (small) manufacturers with:
  - Resources available from Nation’s technology sources, including NIST Labs and Mfg-USA Institutes
  - New market opportunities
  - Supply chain needs of OEMs, Tier 1s, gov agencies – such as those presented in Buy America Transit Supply Chain Connectivity Forum

- Provide assistance to manufacturers, including:
  - Technical manufacturing services for products, processes
    - Manufacturing Strategy, Scale-up, Plant Layout
    - Production Optimization, (Re)tooling (Lean/Quality/Automation)
    - Engineering Practices
    - Cybersecurity
  - Product/Process Development and Innovation
  - Supply Chain Development
  - Workforce Development
  - Marketing, IP Management, Financing/Access to Capital
  - Sustainability
  - Exporting, Market Diversification

www.nist.gov/mep  mfg@nist.gov  (301)975-5020
Delivering Impacts for Clients

25,445 Manufacturers reached in FY16

Data obtained from MEP Client Surveys - 2016
MEP Supplier Scouting

- Leverages nationwide network of Supplier Scouts in MEP Centers to connect capabilities, capacities, business interests of small U.S. manufacturers with needs and business opportunities of manufacturing supply chains.

- Includes connecting small U.S. manufacturers with procurement opportunities tied to gov. agency Buy America(n) requirements for domestic content.

- Identifies and connects domestic manufacturers with business opportunities for supply chains in the following industry sectors**:
  - passenger and freight rail cars and rail locomotives
  - railroad track and physical infrastructure
  - highway and waterborne transportation systems
  - defense weapon systems and defense support equipment
  - energy-related products
  - laboratory instruments
  - various consumer products
  - power utilities

**has included identifying small domestic manufacturers with particular demographic attributes – such as DBE, MOSB, VOSB, WOSB, etc.

15  Participating Supply Chain Scouting Customers

~200  Items Scouted

70+ Identified Suppliers

>$108M New Business Opportunities
MEP Supplier Scouting and Buy America Transit Supply Chain Connectivity and Development

The nationwide MEP Network is actively assisting in the development of more robust domestic supply base for transit equipment in the U.S.

✓ Interagency Agreement between DOT FTA and NIST MEP
✓ NIST MEP coordinates national, system-wide MEP efforts
✓ MEP Supplier Scouting conducted by Centers to ID manufacturers both capable of and interested in supplying needed manufactured goods
  • Include manufacturers currently serving transit industries + manufacturers from other sectors (auto, defense, aero, industrial controls / electronics, others ?)
✓ MEP available to assist domestic manufacturers with needs and requirements to enter transit supply chains and become suppliers
Buy America Transit Supply Chain Connectivity

Next Steps

• **Today’s Supply Chain Connectivity Forum**
  ✓ NIST MEP to post slides for access by participants, interested entities at www.nist.gov/mep

• **MEP Assistance to Manufacturers**
  ✓ Local MEP Centers available to work with manufacturers at the local level to provide assistance in response to needs – resulting from today’s Forum and other needs
    ▪ In MD, contact Maryland MEP: [www.mdmep.org](http://www.mdmep.org)
  ✓ NIST MEP available to coordinate national level MEP assistance resulting from today’s Forum, such as supplier scouting, supplier development and improvement, other, …
    ▪ NIST MEP: [www.nist.gov/mep](http://www.nist.gov/mep)
MD MEP Overview

June 14, 2017
About the MD MEP

• Part of the MEP National
• Leading provider of services and solutions for manufacturers in Maryland
• State-wide organization with access to 3,500+ manufacturers and resources for industry
• Built on outreach, partnership and engagement

MISSION: To grow manufacturing in Maryland by making Manufacturers Stronger and More Profitable
About the MD MEP

Part of a National Network

Built on Public / Private Partnership
What Does MEP Do?

**Operational Excellence**
- Lean
- Six Sigma
- Quality

**Growth Strategy**
- Market Development
- Product Development
- Marketing and Sales
- Strategic Planning

**Supplier Development**
- Supplier Scouting
- Supplier Capacity and Quality
- Supply Chain Management

**Coaching**
- Leadership Development
- Partner Development
- Culture Transformation

**Technology**
- Technology Transfer
- Technology Adoption
- Technology Scouting

**Training**
- Workforce Training
- Lean Training
- Technical Training
- Team Building

---

**Grow Profits**

**Improve The Process**

**Build Your People**
Supporting DOT Buy America Supply Chain

- Support and foster “local-for-local” manufacturing
- Identify and scout potential suppliers and partners at the local level
- Build capacity and technical capabilities of current and future local partners
- Provide training and workforce development solutions
- Leverage the national network for growth
Financial Resources for Maryland Manufacturers

• EARN
• Apprenticeship – Industrial Maintenance and Machining
• Maryland Business Works
• Partnership for Workforce Quality
Partners for Maryland Manufacturing

• Maryland Department of Commerce
• Maryland Department of Labor, Licensing and Regulation
• Regional Manufacturing Institute
Projects of Interest

**Under Armour**
Maryland MEP is working with the Under Armour team to conduct supplier development assistance with a supplier located in Tennessee. MD MEP team providing project support as well as identifying local resources through TN MEP that may be applicable to project.

*Potential Impact: Expansion of UA Domestic Supply Base, Proof of the Local for Local Manufacturing Model.*

**Volvo Truck**
MD MEP is assisting Volvo Truck in Hagerstown with the administration and delivery of State provided EARN funding. In this capacity, MD MEP is working with local (Hagerstown) Volvo suppliers and other companies to identify training needs and deliver customized solutions.

*Potential Impact: Incumbent Worker Training and Job Retention for the larger Hagerstown area (100+ Jobs).*

**Dixon Valve**
MD MEP is assisting Dixon Valve in the development of a comprehensive workforce training initiative consisting of skills development, career path and eventual Apprenticeship.

*Potential Impact: Training and Job retention for 100+ workers. 10+ New Hires.*
Projects of Interest

**Grace**
Maryland MEP is working with Grace Curtis Bay facility to develop a training program to meet the needs of the organization. Program will consist of evaluation of skills requirements, identification of training partners and skilled training for incumbent workforce.

*Potential Impact: Cost savings for Grace as well as 50+ jobs impacted.*

**Crystal Steel**
MD MEP is assisting Crystal Steel Corporation in their relocation to Maryland. MD MEP team will provide guidance on facility layout as well as significant efforts to develop the local workforce.

*Potential Impact: 50+ New Jobs*

**Murray Corporation**
MD MEP is working with Murray Corporation on a Market Research / Lead Generation program to expand Murray’s sales, identify new markets and contact potential customers in an effort to grow sales.
Questions?
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Intro to One-on-One Meetings and Closing Remarks

**Ten minute** introductory, private meetings between participating OEMs and prospective suppliers.

- These are **NOT** intended to be deal negotiation meetings – intended to be basics discussions on participating in transit OEM supply chains
- OEMs are encouraged be prepared to discuss the areas where they are seeking suppliers, highlights of what supplying to them means, and hear-term supply opportunities
- Participating suppliers are encouraged to meet with as many OEMs as possible

Introductory meetings will occur during the networking reception at 3:10pm
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October 11, 2017 in conjunction with APTA’s Annual Meeting and Expo

BUY AMERICA TRANSIT SUPPLY CHAIN CONNECTIVITY FORUM

U.S. Department of Transportation
Federal Transit Administration

MEP • MANUFACTURING EXTENSION PARTNERSHIP

GaMEP
Thank You

David Stieren
Acting Chief Programs & Partnerships

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Get the latest NISTMEP news at:
www.nist.gov/mep

Samm Bowman
General Business Specialist