Integrating Brazilian Suppliers into Defense Supply Chain Strategy and Partnering Targets

Graydon Myhre, International Sourcing and Localization
BAE Systems, Inc.

Led by Jerry DeMuro, President and CEO, the U.S.-based business delivers a full range of products and services for air, land and naval forces, as well as advanced electronics, security, and IT solutions and support services.

BAE Systems, Inc. is a top-ten prime contractor to the U.S. Department of Defense, well positioned to support customers in what is the world’s largest defense market

Key facts:

- Employs approximately 32,300 (28,800 in the U.S.)
- Recorded 2015 sales of approximately $10.4bn
- Operates under a Special Security Agreement
- Holds more than 2,100 U.S. and foreign patents across technology domains
- Comprises three U.S.-headquartered sectors:
  - Electronic Systems
  - Intelligence & Security
  - Platforms & Services
Platforms & Services
Sites

*Sites with 30+ employees represented above

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Primarily tracked vehicle market servicing U.S. and international customers

Portfolio includes the tracked and wheeled combat vehicles for the U.S. military and international customers as well as amphibious vehicles, accessories, and protection systems.

In addition, this business unit includes Support and Tactical Services servicing U.S. customers.
Combat Vehicles Supply Chain

- Performs procurement of all goods and services required for contract performance or business operations
- Direct Contract goods (engines, hydraulics, electronics, metal plate) and services (Engineering, design, labor) are purchased to perform on a specific deliverables (build or upgrade of M113, M109 Paladin, AAV, etc.).
  - The Supply Chain group that manages these efforts is located at each BAE operating site (York, PA, Sterling Heights, MI, Anniston, AL, etc.).
  - Requirements for what to purchase are flowed down via Oracle from specific contract performance requirements and individual Material Requisitions.
Supply Chain Regulations

1. US Government issued contracts are subject to two major regulations:
   - Federal Acquisition Regulations (FAR)
     https://www.acquisition.gov/?q=browsefar
   - Defense Federal Acquisition Regulations Supplement (DFARS)

2. Direct Commercial Sales come under Uniform Commercial Code (UCC) and/or local country procurement regulations.

3. US Technology Transfer, outside of existing indigenously produced (Brazil) or Commercial Off The Shelf (COTS) articles, is handled through either the Commerce Department (Export Administration Regulations (EAR)) or State Department (International Traffic in Arms Regulation (ITAR)).
   - Export Control Reform Act of 2016 has shifted a majority of material from ITAR to EAR. Typical combat vehicles parts are now 95% or greater covered by EAR.
Combat Vehicles Potential
Brazil Localization Opportunities
Examples of BAE Localization Efforts

- India M777 Towed Howitzer where final Assembly, Integration & Test efforts to be performed in India.
- Saudi Arabia utilized US OEM and Saudi firms to facilitate “teaming” technology transfer with co-work content, promoting US OEM formation of Joint Ventures with Saudi Firms, and capitalizing of existing US engine overall facilities in Riyadh.
- South Korea co-production of M109 Self-Propelled Howitzers (SPH) via Manufacturing License Agreement (MLA) with BAE Combat Vehicles
- Hägglunds Combat Vehicles CV90 localization “formula” provides base vehicle and where integrates their own Complete Turret Assembler (CTA) solutions.
- Licensed production of the MK 45 Naval Gun in South Korea -- started as partial Korean localization that progressed into a Manufacturing Licensing Agreement (MLA)
- Manufacture of MK 45 Naval Guns and MK 41 Vertical Launcher System (VLS) in Japan – via an MLA.
- Spain MK 38 minor caliber naval gun, localized the gun’s Optical sight was localized by facilitating a teaming arrangement between a Spanish and Israeli OEM.
BAE Combat Vehicles Localization Opportunities within Brazil

Material:
- Metal plate, bar stock, forgings and castings
- Hydraulic systems
- Automotive components including Powerpacks and running gear (suspension, road wheels, track, etc.)
- Cable Harnesses
- Rubber products, Gaskets & Seals
- Gears, Gearboxes, Shafts & Joints
- Motors, Generators, Controllers & Inverters
- Hardware (Fasteners, Shims, Washers, etc.)

Services:
- Armor Modification (Aluminium & Steel)
- Welding
- Machining
- Plating
- Sand Blasting and Painting
- Motor rewinding
- Rubber vulcanization
Path Forward on Brazil Localization

Executive Summary:

• BAE CV is pursuing combat vehicle programs within Brazil. Such programs may include the remanufacture of existing vehicles (M113, M109, AAV-P7, etc.) fielded in Brazil or transferred from US inventories plus potential additional new vehicles. Most likely route to contract is through US Government managed FMS contracts. BAE sees opportunities to acquire increased material and services in future programs through reasonable localization efforts where quality, cost, logistics and quality are maintained or improved by using indigenous suppliers.

Considerations:

• Technology transfers are properly licensed through normal channels.
• Intellectual Property (IP) ownership is respected and safeguarded in accordance with transfer agreements.
• Maintain, if not making some level of improvements on quality, cost and schedule of material and services procured from Brazilian sources instead of US sources leads to success.
• Reduce logistics cost and schedule by sourcing Brazilian material and services.
• Localization requirements may be accomplished through any or all of the below:
  • Local procurement of commercially available tools, fasteners, and raw material
  • Investigating the practicality (cost, schedule, quality) of shift of Line Replaceable Units (LRU’s) procurement from US OEM’s to Brazilian suppliers. Such efforts may include: hydraulics, cables, automotive components, etc.
  • Local procurement of outside services (e.g., Heat Treatment, Plating, Welding, Painting)
  • Team with US OEM’s to establish their own Brazilian presence/entities to perform work in Brazil (e.g., MTU/Detroit Diesel)