

T R A D E



New Approaches for Selling to the Military

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IFAI Fall Conference
October 6th, 2015

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Critical Components to the Presentation

- A basic over of OTEXA and its host of services for domestic and international marketing and sales.
- U.S. textile industry revival.
- Advancing technical textiles in the U.S.
- National Network for Manufacturing Innovation (NNMI).
- Military segment outlook.
- The Internet of Things (IOT).
- U.S. Military demand for textiles and apparel.
- Smart fabrics.
- Selling to the Federal Government.
- **OSD Foreign Comparative Test**
- Selling to the UK Ministry of Defence (MOD)
- **Canadian Defence and Security Procurement**
- Selling to NATO
- Foreign Military Sales
- **Trade Shows**

U.S. Department of Commerce Office of Textiles and Apparel (OTEXA)



- Develops programs and strategies to improve the domestic and international competitiveness of the U.S. fiber, textile, apparel, footwear and travel goods industries.
- DAS/OTEXA is Chairman of the Committee for the Implementation of Textile Agreements (CITA).
- Responsible for textile trade policy.

Transatlantic Trade and Investment Partnership (T-TIP)

A comprehensive trade and investment agreement between the United States and the European Union that offers significant benefits in promoting U.S. international competitiveness, jobs, and growth.



www.euintheus.org

Transatlantic Trade and Investment Partnerships (T-TIP)

A successfully negotiated agreement would aim to boost economic growth in the United States and Europe and add to the over 13 million American and European jobs already supported by transatlantic trade and investment. In particular, the Partnership would aim to:

- •Further open EU markets to U.S. goods and services
- •Grow investments through strengthened rules
- Eliminate tariffs on trade
- •Reduce costly non-tariff barriers that impede the flow of goods
- •Reduce the cost of differences in regulations and standards by promoting greater compatibility, transparency, and cooperation
- •Develop rules, principles, and new modes of cooperation on issues such as intellectual property and market based disciplines addressing state-owned enterprises and discriminatory localization barriers to trade
- •Promote the global competitiveness of small- and medium-sized enterprises

Transatlantic Trade and Investment Partnership (T-TIP)

The U.S. and the European Union are the worlds two largest economies; account for almost 50% of global GDP

- •In 2014, the U.S. exported \$276 billion of goods and services to the EU.
- •Over \$3.4 trillion in investments (i.e. imports and exports) in each other's economies in between 2010 and 2014.
- •More than 13 million jobs tied to the transatlantic economic relationship.

Transatlantic Trade and Investment Partnership (T-TIP)

"the greatest opportunity — and the greatest challenge — of T-TIP is in the area of regulation and standards..."

U.S. Trade Representative Michael Froman, September 30, 2013

Trans-Pacific Partnership (TPP)

Negotiations Are Ongoing

Negotiating Objectives:

- Separate textile and apparel chapter to provide clarity and transparency
- Yarn-forward rule of origin with certain flexibilities
- **Strong Customs enforcement language**
- Safeguard mechanism specific to textiles and apparel
- Full cumulation among the TPP partner countries



Source: Talking points OTEXA; https://ustr.gov/about-us/policy-offices/pressoffice/reports-and-publications/2015/update-trans-pacific-partnership

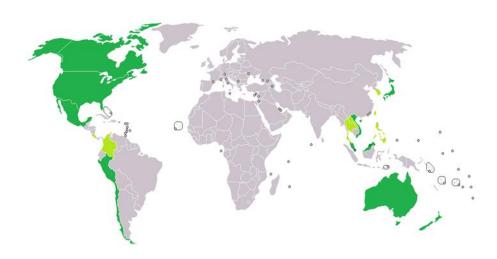
TPP Region has Substantial Textile and Apparel Production (2014)



Total TPP textile exports - \$34.3 billion

Total TPP apparel exports - \$40.4 billion

The four largest TPP textile exporters – the U.S., Japan, Vietnam and Mexico – represent over 83 percent of total TPP textile exports



Exports by TTP Country (2014)

| | <u>Textiles</u> | <u>Apparel</u> | Total |
|----------------|-----------------|----------------|----------------|
| United States: | \$14.3 billion | \$6.1 billion | \$20.4 billion |
| Vietnam: | \$5.2 billion | \$19.5 billion | \$24.7 billion |
| Japan: | \$6.3 billion | \$622 million | \$6.9 billion |
| Mexico: | \$2.5 billion | \$4.6 billion | \$7.1 billion |
| Malaysia: | \$1.8 billion | \$4.7 billion | \$6.5 billion |
| Canada: | \$1.8 billion | \$1.3 billion | \$3.1 billion |
| Peru: | \$490 million | \$1.2 billion | \$1.7 billion |
| Singapore: | \$877 million | \$1.3 billion | \$2.2 billion |
| Chile: | \$174 million | \$370 million | \$544 million |
| Australia: | \$214 million | \$221 million | \$435 million |
| New Zealand: | \$257 million | \$261 million | \$518 million |
| Brunei: | \$1 million | \$6 million | \$7 million |

Source: WTO Statistics Database, "Time Series on International Trade"/OTEXA

OTEXA Export Services = New Trade Opportunities



OTEXA has over 40 years of experience facilitating exports for small and medium-sized companies:

- **Export counseling & assistance**
- Market research
- Emphasis on niche markets (e.g., technical, advance textile materials for industrial & military end-uses), higher-end producers & suppliers, and FTA partnerships
- U.S. Pavilions at established trade shows overseas
- Cost-efficient catalog/sample booths at overseas trade shows
- Trade missions
- **Match-making**

Source: http://otexa.trade.gov

OTEXA Overview

- Compiles industry data
- Conducts research and analysis
- Assists in trade negotiations
- Promotes U.S. textile and apparel companies at trade events
- Develops supply chain and sourcing strategies
- Executes U.S. textile and apparel trade policy
- Works to improve exports of U.S. textile and apparel companies in overseas markets
- Evaluates the current state of the domestic fiber, textile and apparel industries, and the impact of import competition





OTEXA Services: Conduit to Military Sales



- OTEXA, with its designated Trade Specialists, receives and disseminates military trade leads from 80 country offices of the U.S. Commercial Service
- OTEXA works with military offices that specialize in R&D and product commercialization
- OTEXA sponsors pavilions and sample booths at military trade shows around the world, such as MILPOL in Paris and Defense Systems & Equipment International in London (DSEi), to create market exposure, market entry, marketing and sales. Trade show follow-up consists of tailored company specific data sheets with leads and contact information
- OTEXA interfaces with Foreign Military Sales (FMS) offices overseas and in Washington to train, create awareness and seek new business opportunities
- OTEXA trains clients on Export Licensing and Controls and ITAR updates and changes

OTEXA Services: Conduit to Military Sales (cont.)

- OTEXA assists with marketing suggestions/strategies for international sales
- OTEXA offers seminars/webinars on specific topics



- OTEXA works as a match-maker when a company needs complementary product or expanded production capabilities
- OTEXA can tailor, develop and co-lead a trade mission for trade associations
- OTEXA works with relevant trade associations and military organizations to keep abreast of developments and promote your company's products
- OTEXA can interface with universities to facilitate R&D for co-development of your product

OTEXA Webpage (otexa.trade.gov)



Contact Us | About OTEXA | Site Map | Home

OFFICE OF TEXTILES AND APPAREL (OTEXA)

Tuesday Sept. 29, 2015 3:24:46 PM

Trade Data

Textiles and Apparel Footwear, Leather & Travel

The Textile Correlation

Trade Agreements

Free Trade Agreements CAFTA-DR

TPLs

Cumulation

Trade Preference Programs

AGOA

ATPDEA

CBTPA

Haiti

U.S. Imports/TRQs

Earned Import Allowance

Dom. Rep. 2 x 1

Haiti 2 x 1

Commercial Availability

Australia FTA

Bahrain FTA

CAFTA-DR

Colombia TPA

Korea FTA

NAFTA

Panama TPA

Peru TPA

Singapore FTA

AGOA/ATPDEA/CBTPA

Wool TRQ

QIZs

Export Information

Export Opportunities Made in U.S.A. database OTEXA Trade Events Market Reports/Tariffs

Announcements

- 09/28/2015 Limitations of Duty- and Quota-Free Imports of Apparel Articles Assembled in Beneficiary Sub-Saharan African Countries From Regional and Third-Country Fabric. The AGOA caps for duty-free, quota-free imports are increased for the one-year period from October 1, 2015 to September 30, 2016.
- 09/11/2015 Increase of Haiti HOPE knit apparel TPL from 70 million SMEs to 200 million SMEs for the annual period from October 1, 2014 to September 30, 2015. In accordance with the Haiti HELP legislation, because imports under the knit apparel TPL exceeded 52 million SMEs during the month of July 2015, the applicable quota level for the 2014/2015 annual period is automatically increased to 200 million SMEs. The guota level for the new annual period, from October 1, 2015 to September 30, 2016, will be 70 million SMEs until such time as imports reach or exceed 52 million SMEs.
- 09/10/2015 The Office of the United States Trade Representative (USTR) requests written comments from the public identifying Internet and physical markets based outside the United States that should be included in the 2015 Notorious Markets List. The annual list identifies online and physical marketplaces that reportedly engage in or facilitate substantial copyright piracy and trademark counterfeiting. The deadline for interested parties to submit written comments is October 5. 2015
- 09/03/2015 July 2015 Textile and Apparel Import Report
- 09/01/2015 2015 U.S. International Trade Commission to hold public hearing on October 14, 2015 related to the investigation "WTO Environmental Goods Negotiations: Advice on the Probable Economic Effect of Providing Duty-Free Treatment, Second List of Articles"
- ▶ <u>08/19/2015</u> Request for Public Comments to Compile the National Trade Estimate Report on Foreign Trade Barriers. Comments due to the Office of the Trade Representative no later than October 28, 2015.
- 08/05/2015 Public comment is requested on a new Commercial Availability Request under the U.S.-Chile FTA. Comments must be received by August 24, 2015.
- ▶ 07/28/2015 Indonesia increases tariffs on many products, including clothing, footwear, home furnishings and some fabrics. See Minister of Finance Regulation No. 132 / PMK.010 / 2015, dated July 8, 2015 for a list of the new tariff rates.
- ▶ 07/23/2015 Mexico has invited interested parties to comment on proposed revisions to its Textile Labeling Standards. Comments must be received by August 29, 2015.
- 07/16/2015 Commerce Department Releases New Reports Ranking Top Export Markets New!
- 05/08/2015 Call for Applications for the International Buyer Program Select Service for Calendar Year 2016
- ▶ 04/10/2015 Now available for download: Recording and slide presentation from "New Textile and Apparel Measures in Mexico" webinar

Past Announcements

DoD Procurement of Clothing & Textiles (the Berry Amendment)



The Department of Defense (DoD) required by law (the "Berry Amendment", 10 USC 2533a) to procure domestically-manufactured clothing and textiles:

- Purpose to maintain an active industrial base in times of war
- Generally applied on a fiber-forward basis
- In FY 2014, the Defense Logistic Agency's sales of clothing, textiles & equipment to military personnel worldwide surpassed \$1.9 billion
- Over 8,000 different items procured, ranging from uniforms, footwear and undergarments to ecclesiastical items, individual equipment, flags, tents
- OTEXA provides match-making services to U.S. companies wishing to sell to the military, both here and overseas
- Visit the OTEXA Berry Amendment website at <u>www.otexa.trade.gov</u>, side bar "Berry Amendment"

The U.S. textile industry is, in the words of one former Secretary of Defense, "Second only to steel in importance to the Armed Forces of the United States."

Contact for the Berry Amendment

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The Buy American Act of 1933



Federal agencies are required to buy domestic goods/construction materials.

- Domestic is defined as being manufactured in the United States and the cost of domestic components must exceed 50 % of the cost of all components.
- Establishes price preferences for domestic. Federal agencies can waive the domestic requirement for reasons of price, non-availability of domestic, and public interest ("public interest" is undefined).
- Under the Trade Agreement Act of 1979, if a procurement is covered under a trade agreement, then the Buy American Act of 1933 is waived.
- In those situations, Federal agencies can only buy either the domestic products or products from trade agreement countries. Trade agreements include all of our FTA's (except the U.S.-Jordon FTA) or the WTO Agreement on Government Procurement (GPA).

The Buy American Act of 1933 (Cont.)



- GPA is a plurilateral agreement that includes 46 countries including the United States. Mostly developed nations such as Canada, the EU member states, Japan, Korea, Singapore, Switzerland.
- Important note: what is "covered" and what is excluded from our trade agreements. For purposes of textiles, there are exclusions that can be found in all our trade agreements.

Annex 1 (central government entities) GPA states for the DoD the Agreement doesn't cover:

- FSC 83 Textiles, Leather, Furs, Apparel, Shoes, Tents, and Flags (all elements other than pins, needles, sewing kits, flagstaffs, flagpoles and flagstaff trucks)
- FSC 84 Clothing, Individual Equipment, and Insignia (all elements other than sub-class 8460 - luggage)

The Buy American Act Contact Information

Mr. Brian Woodward

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Trade Agreements, Negotiation and Compliance

U.S. Department of Commerce

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"Made in the U.S.A." Database

Search by Supplier, Manufacturer, or Service Provider

http://otexa.trade.gov/MadeInUSA





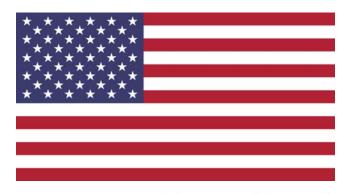
Promoting "Made-in-USA"

- With increasing demands by consumers, brands and retailers for "Made-in-USA" products, OTEXA has developed an online registry that will showcase domestic manufacturers, suppliers of apparel, textiles, and footwear.
- To register as a supplier or manufacturer, or to locate domestic producers and suppliers, contact:



Kim-Bang Nguyen

kim-bang.nguyen@trade.gov or on 202-482-4805 www.otexa.ita.doc.gov



Why People Buy "Made in USA"?

Why the world prefers and buys US brands and products:

- Quality is the number one factor in decision making
- The perceived value of the product, its engineering etc.
- Design and trendsetting
- We deliver what we promise
- We do not overstuff containers with non-ordered "filler" goods
- Order quantities, timely deliveries
- Transparency throughout the system
- Safety perceptions of products: that which touches the skin such as linens etc.
- Cultural attractiveness/Snob factor
- Design vignettes—the theme in fabrics, furnishing and carpets
- Cultural savvy and awareness (colors, images and ability to adapt and adjust to markets)



The United States: A Global Leader





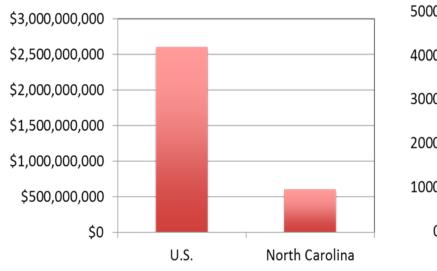
- A strong and diverse **textile and apparel industry** producing a range of high-quality products.
- An important economic sector in terms of output and investment with a highly productive workforce:
 - Output of \$71 billion in 2014.
 - \$1.8 billion on capital expenditures in 2014. -up \$300 million from 2013.
 - 372,400 employees in 2014, 3% of the total manufacturing workforce.
- Fourth largest single country exporter of **textiles**, with \$14.3 billion in exports in 2014.
- Largest single country importer of apparel, with imports of \$93.1 billion in 2014, 18% of total global imports.

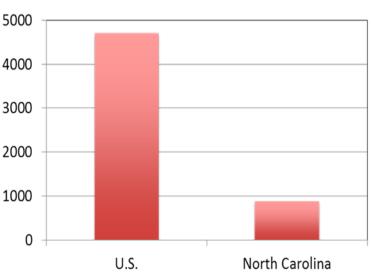
¹Following China, India and Germany. Source: Time Series on International Trade, WTO. ²Source: Time Series on International Trade. WTO http://www.ncto.org/industry-facts-figures/

Resurgence in the US Textiles Industry New Textiles Investment in the Last 18 Months

Capital Investment

tment New Employment





U.S. Textiles and Apparel Industry Revival

U.S. Total Exports of Textiles and Apparel

| | 2009 | 2014 | Percent Change |
|----------|-------|--------|-------------------|
| Textiles | 9,930 | 14,374 | 44.7 |
| Apparel | 4,187 | 6,109 | 45.9 |

^{*}Figures in Millions USD



indolinkenglish.wordpress.com



www.textileturc.com

Top 10 Export Markets For the U.S. in Technical **Textiles**

July 2015 Top Markets Report from the Department of Commerce ranked the following countries based on volume of exports in four categories of Technical Textiles:

- Non-Wovens
- Specialty and Industrial Fabrics
 - Medical Textiles
 - Protective Apparel



- 2. Canada
- 3. China
- 4. Germany
- 5. Japan
- 6. Hong Kong
- 7. United Kingdom
- 8. Belgium
- 9. Brazil
- 10. Honduras





Protecting Intellectual Property (IP)

The IP awareness assessment tool (USPTO.gov) helps businesses understand how an intellectual property strategy may be best for their company, based on their needs.



Awareness Assessment

The IP Awareness Assessment, developed under the joint efforts of United States Patent and Trademark Office (USPTO) and National Institute of Standards and Technology/Manufacturing Extension Partnership (NIST/MEP), allows you to assess your intellectual property awareness. Following the completion of the assessment, you will receive a customized training material. Learn more

Feedback

Your <u>feedback</u> and comments are crucial for improving the IP Awareness Assessment.

ventor Assistance Program

Important Notice

Please note that any information provided here does not constitute legal advice, but is intended to increase your IP awareness. When filing an application for obtaining specific IP rights, it is recommended that you obtain professional legal assistance. The IP Awareness Assessment contains links to external websites. USPTO does not maintain those external sites and is not responsible for the material found therein.

Welcome to the Intellectual Property Awareness Assessment Tool. The IP Assessment includes the below five general categories, that are included in all assessments.

- · IP Strategies & Best Practices
- · International IP Rights
- IP Asset Tracking
- · Licensing Technology to Others
- · Using Technology of Others

There are five additional categories that all can take or, which may be customized through a Pre-assessment. These five categories include:

- Copyrights
- Design Patents
- Trademarks
- Trade Secrets
- Utility Patents

Not all businesses have all categories of IP Assets so they have an opportunity to opt out of certain categories by using the customizer or Pre-assessment or may opt to take the full assessment of ten categories containing 62 questions.

The full assessment requires about 20-30 minutes to complete. The customizer or Pre-assessment can reduce the required time by 10-15 minutes.

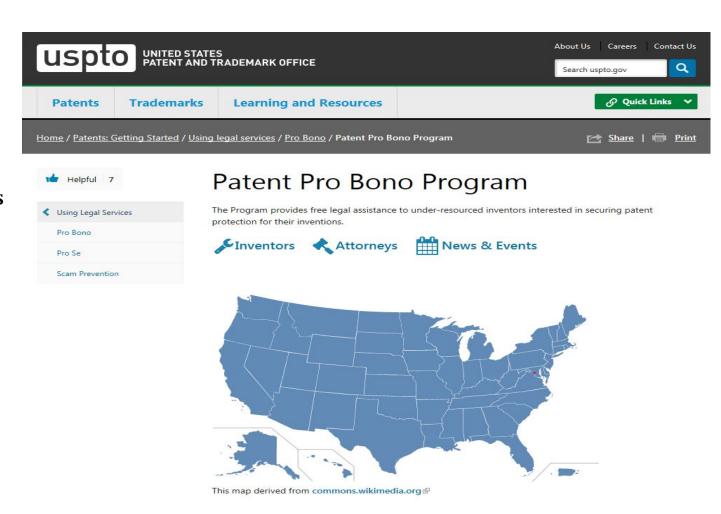


Before starting the assessment, please note:

- · Save the link for this page as a favorite/bookmark on your browser.
- In the "Internet Options" of your browser, deselect/uncheck history on exit. This will allow you to return and resume your assessment session in case you
 cannot finish it in one sitting. This will also allow you to access your training materials and assessment results at your convenience.
- As you are answering the assessment questions, choose the answer that best applies to your business or circumstances as an independent inventor or individual. Where applicable, choose all the responses that apply to your situation.
- · Responses or data collected in the assessment are not stored or used by the USPTO or NIST MEP.

United States Patent and Trademark Office (USPTO)

USPTO.gov has a Patent Pro Bono network with regional bar associations and attorneys to help under-resourced inventors navigate the patent system



OTEXA: Catalyst to Innovation

- Functions as a one-stop shop for international companies seeking U.S.-based partners to share their innovation as well as manufacture goods to comply with Berry Amendment requirements.
- Works with international companies that require Berry compliant components.
- Strives to spark innovation among U.S. textile companies in order to maintain the global comparative advantage and assure the ultimate protection of our warfighters.

OTEXA:

- Amplifies U.S. technical textile innovation globally
- Interfaces with U.S. Textile Universities for product development and testing
- Promotes concept to finished product development





Navy Research Lab—It's Conception

"Government should maintain a great research laboratory ... In this could be developed ... all the technique of military and naval progression without any vast expense."

-- Thomas Edison, May 1915



Navy Research Lab—A Brief History

- The Navy Research Lab was the first modern research institution created within the U.S. Navy. It began operations at 11:00 a.m. on July 2, 1923.
- The Navy Research Lab further expanded with the rise of WWII



Advancing Technical Textiles in the U.S.A.

- Studies show that "small manufacturers lag behind larger competitors when it comes to adapting to new technology and business practices, negatively affecting productivity and competitiveness."
- "The federal government is now working on facilitating public-private partnerships to help small manufacturers compete."
- The Obama Administration launched the National Network for Manufacturing Innovation (NNMI) to help domestic companies compete.



National Network for Manufacturing Innovation (NNMI)

- The NNMI provides the infrastructure needed for manufacturing research
- NNMI is a network of institutes for manufacturing innovation who each have a distinct focus, but common goal to create new advanced technologies and processes to increase commercial productivity
- The nine manufacturing institutes are:
 - 1. America Makes
 - 2. Digital Manufacturing & Design (DMDII)
 - 3. Lightweight Metal Manufacturing (LIFT)
 - 4. Power America
 - 5. IACMI
 - 6. Integrated Photonics
 - 7. Flexible Hybrid Electronics
 - 8. Smart Manufacturing
 - 9. Revolutionary Fibers and Textiles

Nine Manufacturing Institutes

America Makes -3D/Additive (8/2012)

- Public-private membership organization that manages a portfolio of \$60 million in public and private funds for members to advance in additive (3D) manufacturing.
- Help collaborate on innovation, maximize applied research and development funding, Accelerate time to market, and more.



Digital Manufacturing & Design (DMDII) (2/2014)

- Awarded more than \$70 million by the U.S. government.
- Goal is to provide U.S. factories with tools, software, and expertise needed to build things more quickly, less expensive, and overall more efficient.
- Works to increase R&D through competitive programs, increase economic development, and expand education among digital manufacturing.



Source: https://americamakes.us/membership/become-a-member http://dmdii.uilabs.org/the-institute/vision

Nine Manufacturing Institutes (Cont.)

Lightweight Metal Manufacturing (LIFT) (2/2014)

- Supports innovative manufacturing technologies through costeffective "weight-cutting" of components used in transportation systems
- Target sectors consist of automotive, aerospace, defense, rail, and more.
- Recognizes priorities for technology, workforce, and supply chain development.
- Financial support for precompetitive research.

Power America – Wide Bandgap Semiconductors (1/2015)

- Drives down the cost of and build the U.S. manufacturing leadership in wide bandgap (WBG) semiconductor-based power electronics.
- Establishing an effective education and workforce development program to support the industry.





Nine Manufacturing Institutes (Cont.)

IACMI (1/2015)

- Development of innovative manufacturing technologies for low-cost, energy efficient manufacturing of advanced polymer composites for vehicles, wind turbines, and compressed gas storage
- Focus on developing a strong supply chain to support the growing advanced composites industry.



AIM Photonics (2/2015)

- Works to accelerate the transition of integrated photonic solutions from the innovation process to manufacturing ready systems in commercial and defense applications.
- Provides cutting edge fabrication, packaging, and testing capabilities to create an adaptive photonic manufacturing chain.



Nine Manufacturing Institutes (Cont.)

Flexible Hybrid Electronics (10/2015)

- Provide education and training on FHE manufacturing through community colleges, research universities, etc.
- FHFMII
- FHE manufacturing allows the integration of thin silicon electronic devices, sensing elements, communications, and more.
- Benefit a variety of markets such as defense, automotive, communications, consumer electronics, medical devices.

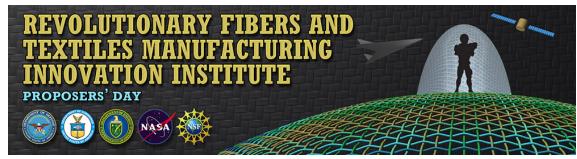
Smart Manufacturing (9/2015)

- Goal is to reduce the cost of using technology such as sensors, controls, platforms, and modeling.
- Implement these technologies in manufacturing processes to increase energy efficiency by a minimum of 15% and improve energy productivity by 50%.
- Could impact industries such as oil/gas, aerospace, steelmaking, solar, chemical, and more.

Nine Manufacturing Institutes (Cont.)

• Revolutionary Fibers and Textiles Manufacturing Innovation Institute (RFT-MII) (12/2015)

- Will ensure that the U.S. leads the manufacturing of cutting edge innovation in fiber science, commercializing fibers and textiles with unique properties.
- Vision of supporting the entire ecosystem of U.S. advanced fibers and textiles manufacturing with hope of leveraging domestic manufacturing sites to develop and increase manufacturing processes.
- Intend to capitalize on the rebound of the American textile industry by creating global export opportunities and building leadership of sophisticated fibers and textile technologies here in the U.S.



Worldwide Military Expenditures (2014)

Country

Mil Expenditure (Billions USD)

• World \$1776

United States \$610

• China \$216 (est.)

• Russia \$84.5 (est.)

Saudi Arabia \$80.8

• France \$62.3

United Kingdom \$60.5

India \$50

• Germany \$46.5



Source: Stockholm Institute for Peace.

Military Segment Outlook

- Spending on Military textiles and clothing decreased 6% in 2014, and is expected to be flat in 2015.
- Due to Defense budget cuts, there is an expectation of marginal growth in clothing and textiles for military in 2015.
 - Although an expected marginal growth, it's still a substantial amount of \$1.6 billion (estimated) in 2015
- Given this outlook, the U.S. will still be the largest spender on Military products for at least the next 10 years.
 - New initiatives to enhance the U.S. Army military base in Europe



www.element14.com

R&D Spending U.S. Government

- DoD plans to spend \$69.9 billion on research, development, testing, and engineering in 2016.
- It has identified 17 technology portfolios which are described as "communities of interest" because each includes representatives from the Pentagon's laboratories, organizations like DARPA, and from each branch of the military.
- Included in the 17 portfolios are human systems.
- In 2016 the Pentagon will have to work outside of its traditional comfort zone. It is seeking industry's help in fielding new capabilities.

DoD Historical Funding Budget

FY 2016 - FY 2020 TOPLINE

The historical funding picture is summarized in Figure 1-2:

Figure 1-2. Department of Defense Topline Since September 11th Attacks

| (\$ in billions) | FY 2001 | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Base | 287.4 | 328.2 | 364.9 | 376.5 | 400.1 | 410.6 | 431.5 | 479.0 |
| oco | 22.9 | 16.9 | 72.5 | 90.8 | 75.6 | 115.8 | 166.3 | 186.9 |
| Other | 5.8 | | | 0.3 | 3.2 | 8.2 | 3.1 | |
| Total | 316.2 | 345.1 | 437.5 | 467.6 | 478.9 | 534.5 | 600.9 | 665.9 |

| (\$ in billions) | FY 2009 | FY 2010 | FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Base | 513.2 | 527.9 | 528.2 | 530.4 | 495.5 | 496.3 | 496.1 | 534.3 |
| oco | 145.7 | 162.4 | 158.8 | 115.1 | 82.0 | 84.9 | 64.2 | 50.9 |
| Other* | 7.4 | 0.7 | | | 0.1 | 0.2 | 0.1 | |
| Total | 666.3 | 691.0 | 687.0 | 645.5 | 577.6 | 581.4 | 560.4 | 585.3 |

^{*}Other non-war supplemental funding

Numbers may not add due to rounding

Source: http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2016/FY2016_Budget_Request_Overview_Book.pdf

Fiscal Year 15-16 DoD Budget

Table A-10. DoD Total Budget by Appropriation Title

| \$ in Thousands Base Budget | FY 2015 Enacted | FY 2016 Request | Delta FY16 - FY15 |
|--------------------------------|--------------------|--------------------|----------------------|
| Military Personnel | 139,993,999 | 139,939,434 | -54,565 |
| Operation and Maintenance | 246,345,015 | 250,041,175 | 3,696,160 |
| Procurement | 101,273,354 | 114,992,064 | 13,718,710 |
| RDT&E | 63,822,806 | 69,976,397 | 6,153,591 |
| Revolving and Management Funds | 2,225,830 | 1,875,582 | -350,248 |
| Defense Bill | 553,661,004 | 576,824,652 | 23,163,648 |
| Military Construction | 5,652,265 | 7,024,439 | 1,372,174 |
| Family Housing | 1,126,735 | 1,413,181 | 286,446 |
| Military Construction Bill | 6,779,000 | 8,437,620 | 1,658,620 |
| Total | 560,440,004 | 585,262,272 | 24,822,268 |

Note: Reflects Discretionary Budget Authority

Numbers may not add due to rounding

Source: http://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2016/FY2016_Budget_Request_Overview_Book.pdf

The Proposed DoD Budget FY16-20

Figure 1-3 presents the proposed FY 2016 – FY 2020 DoD base budget topline for this year's President's budget, as compared to last year's FY 2015 President's budget.

Figure 1-3. DoD Proposed Outyear Topline for the Base Budget

| Current \$ in Billions | FY 2016 | FY 2017 | FY 2018 | FY 2019 | FY 2020 | FY16 - FY20 TOTAL |
|---------------------------|-------------------|---------|---------|---------|---------|----------------------|
| FY 2015 PB | 535.1 | 543.7 | 551.4 | 559.0 | 567.6 | 2,756.9 |
| Change | -0.8 ¹ | +3.5 | +5.0 | +5.4 | +2.4 | +15.5 |
| FY 2016 PB | 534.3 | 547.3 | 556.4 | 564.4 | 570.0 | 2,772.4 |
| FY16 PB % Real Change | +6.2% | +0.8% | -0.2% | -0.6% | -1.0% | +1.0% ² |

Numbers may not add due to rounding.

¹The FY 2015 President's budget request included plans to allocate \$1.4 billion from DoD's FY 2016 topline to the National Nuclear Security Administration in support of DoD's requirements for nuclear weapons and naval reactors. The FY 2016 request reallocates these funds as planned, and this is the cause of DoD's topline decrease in the FY 2016 President's budget request, as compared to the FY 2016 level in the FY 2015 request, after a \$0.6 billion increase.

²Average annual real growth of the FY 2016 President's Budget for FY 2016 - FY 2020.

U.S. Military Apparel and Footwear Exports (End Use CODE 50060)

| Country | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------------|-------------|-------------|-------------|-------------|---------------|
| World Total | 577,554,868 | 674,226,504 | 625,297,855 | 689,512,544 | 1,172,696,149 |
| United Kingdom | 69,111,634 | 30,025,755 | 19,829,805 | 106,729,933 | 184,958,245 |
| United Arab Emirates | 8,756,819 | 10,601,962 | 2,054,374 | 8,312,381 | 15,786,430 |
| Saudi Arabia | 57,438,890 | 130,094,340 | 72,153,779 | 165,933,540 | 187,068,426 |
| Pakistan | 13,256,060 | 35,132,568 | 76,486,658 | 68,502,855 | 65,305,448 |
| Netherlands | 2,428,122 | 10,308,137 | 4,232,518 | 7,589,562 | 17,608,368 |
| Mexico | 1,035,915 | 33,973,498 | 9,362,221 | 11,199,125 | 51,994,821 |
| Japan | 95,549,562 | 63,695,325 | 10,508,978 | 32,595,921 | 114,692,713 |
| Italy | 4,123,265 | 2,615,778 | 3,745,718 | 7,975,653 | 2,896,969 |
| Israel | 42,618,744 | 50,140,584 | 22,351,929 | 36,608,869 | 26,034,036 |
| Germany | 13,801,261 | 13,515,147 | 22,211,828 | 30,927,014 | 58,948,844 |
| France | 6,547,889 | 546,797 | 1,743,275 | 679,388 | 1,202,753 |
| Finland | 209,572 | 671,233 | 370,119 | 1,222,580 | 904,672 |
| Brazil | 394,256 | 1,210,741 | 601,306 | 3,668,890 | 2,005,290 |
| Belgium | 973,443 | 225,443 | 475,896 | 1,480,901 | 2,520,668 |
| Australia | 27,699,191 | 114,073,443 | 170,219,209 | 79,713,803 | 143,352,351 |
| Argentina | 494,979 | 197,341 | 227,339 | 417,419 | 172,824 |

^{*}figures in thousands USD

Source: U.S. bureau of Census http://www.census.gov/foreign-trade/statistics/product/enduse/exports/index.html

U.S. military Apparel and Footwear Exports (Cont.)

Here are examples of radical increases and decreases over the last year

| Country | 2013 | 2014 | Numerical Change | Percentage Change |
|--------------------------|-------------|-------------|------------------|-------------------|
| United Kingdom | 106,729,933 | 184,958,245 | 78,228,312 | 73% |
| United Arab Emirates | 8,312,381 | 15,786,430 | 7,474,049 | 90% |
| Netherlands | 7,589,562 | 17,608,368 | 10,018,806 | 132% |
| Mexico | 11,199,125 | 51,994,821 | 40,795,696 | 364% |
| Japan | 32,595,921 | 114,692,713 | 82,096,792 | 252% |
| Israel | 36,608,869 | 26,034,036 | -10,574,833 | -29% |
| Germany | 30,927,014 | 58,948,844 | 28,021,830 | 91% |
| Brazil | 3,668,890 | 2,005,290 | -1,663,600 | -45% |
| Aust <mark>ral</mark> ia | 79,713,803 | 143,352,351 | 63,638,548 | 80% |



*figures in millions USD





Source: U.S. bureau of Census http://www.census.gov/foreign-trade/statistics/product/enduse/exports/index.html

The Future

"Futurists say that 90% of what will be known 50 years from now has yet to be discovered."

Matthew Freedman, Defense Intelligence Agency



www.flickr.com

The Internet of Things: Game Changers

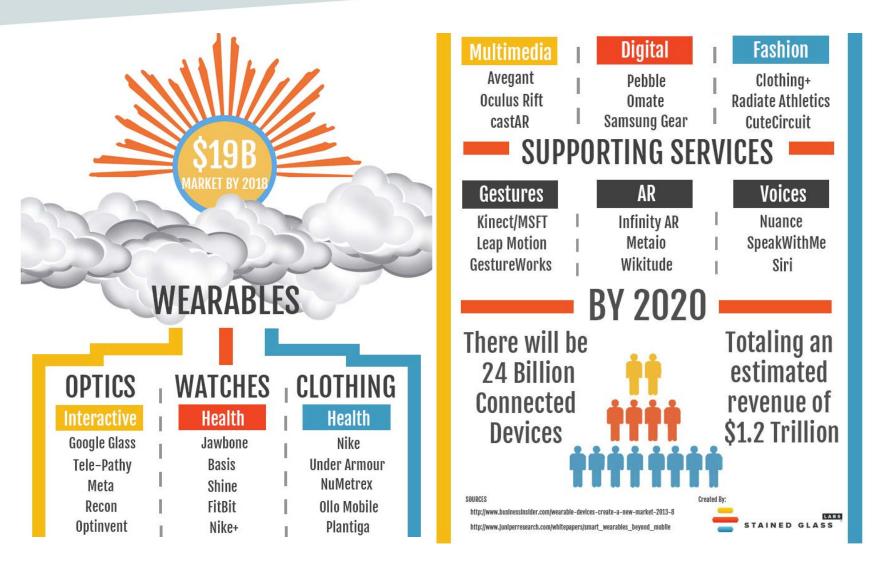
THE INTERNET OF THINGS



- - - WHAT WE KNOW- - -

Source: Stained Glass Labs

The Internet of Things: Game Changers



Source: Stained Glass Labs

Military Procurement: A Shifting Paradigm

- The Federal Government is concerned about keeping up with the tech boom and innovation.
- This is leading to a shift of federal procurement to the private sector.
 - Defense department wants to be a "smart customer of commercial" technology."
- In the 2016 National Defense Authorization Act (NDAA), there are parts that would allow the Defense Department to behave increasingly more like a commercial customer.
- "If we want to get nontraditional suppliers, we have to be willing to change the way we do business in DoD"- retired Air Force Lt. Gen. Charles R. Davis

Military Procurement: A Shifting Paradigm (Cont.)

- Defense Secretary Ashton Carter recently travelled to Silicon Valley.
 - Announced a \$75 million investment plan in a "new manufacturing technology consortium that produces next generation electronics for commercial and military use"
- Carter is firm on making significant alliances with the private sector in an effort to increase defense innovation.
- Carter's strategy is to prove "the Pentagon can be a nimble buyer, willing to play by the rules of the private sector."



U.S. Military Demand In Textiles and Apparel

- The U.S. Army's Natick Soldier Research, Development and Engineering Center (NSRDEC) listed some demanded properties in textiles:
 - Fiber reinforced
 - Insect repellent
 - Modular
 - Ergonomic
 - Chemical resistant
 - Thin but tough
 - **Omniphobic**
- **Highest demand** includes lightweight materials with ballistic/blast protection along with low-cost flame resistant materials.

U.S. Military Demand In Textiles and Apparel (Cont.)

Ballistic and Blast Protection

 A goal of 10% reduction in armor weight and improved ergonomic design within 1-5 years

Tropical Protection

- Insect resistant textiles to protect soldiers from vector-borne (caused by infectious microbes) illness
- Thick spacer fabric, tortuous nonwoven fabric, and fabric with densely woven pore size
- Interfaces between jackets, hoods, respirators, gloves, boots connected by zippers, Velcro, or elasticized material.
 - Polymer development
 - Operational under all environmental conditions

U.S. Military Demand In Textiles and Apparel (Cont.)

Camo

 Army says it will continue to "evaluate camouflage in the visible, nearinfrared, shortwave infrared, and thermal-infrared electromagnetic spectral regions"

Smart Connections

- Incorporate electronically conductive threads into fabrics
- Design ways to streamline the process of manufacturing e-textiles

Temperature-Adaptive Fibers

- Improve warmth in soldier's clothing, sleeping bags, and blankets with adaptive insulation
- Non-clothing applications for temperature-adaptive insulation
- Non-Insulation applications for temperature-adaptive fibers

U.S. Military Demand In Textiles and Apparel (Cont.)

Chemo/Bio Protection

- Looking to "balance chemical warfare agent protection with water vapor transport and air permeability using fabric composites"
- Developing catalysts that are effective against chemical and biological agents in all types of weather

Fire-Resistant Protection

Develop and advance materials that are durable, lightweight, comfortable, flexible, cost-effective, nontoxic, and environmentally friendly

Lightweight, High Performance Tents

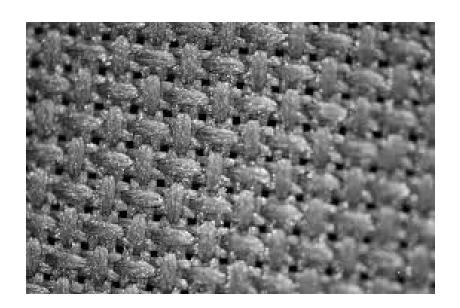
- Tents with high strength to weight ratios
- Flexible tents that can be rigid during and after deployment
- Collaboration with textile industry experts to take part in superomniphobic coating and fiber developments, coating applications, fabric weaving, and optimizations of coating processes

Source: http://advancedtextilessource.com/2014/11/u-s-army-wish-list/

Industrial Definition: Technical Textiles

"Textile materials and products manufactured primarily for their technical performance and functional properties rather than their aesthetic or decorative characteristics."

> - Textile Terms and Definitions The Textile Institute



Steve Warner: www.beaverlake6.com

Smart Fabrics

- The defining characteristic of smart fabrics is their ability to interact with their user or environment. According to smart textiles researcher Rebeccah Pailes-Friedman, this can include everything from the ability to transform themselves, conduct energy, communicate with other devices, and, in some cases, even grow
- On a very basic level, smart fabrics can be categorized according to whether or not sensors have been embedded into the textile. Sensor-embedded smart textiles are also referred to as "e-textiles," and examples include textile electrodes that can be knit or woven directly into clothing to monitor heart rate and other vital signs

Smart Fabrics (Cont.)

- According to Business Day at the NY Times, there is "an arms race to offer the newest, most high-tech garments as often as possible."
 - active wear has become popular street wear.
 - A major focus of textile innovation in this field is centered around "anti-odor" technology.
- Applications for sports and fitness include clothing that can monitor biometrics such as heart activity zones, breathing rates, and muscle activity, as well as physicality including movement and gait.
 - currently developing headgear for concussion monitoring.
 - The advantages of using smart fabrics rather than smart watches, wristbands, or other types of wearable devices include more accurate biometric data, increased comfort, and the ability to integrate sensors into fashionable clothing and accessories.



Spools of Lycra fiber at the Invista Applied Research Center in Delaware. Credit Jessica Kourkounis for The New York Times

Harris, Elizabeth A. "Workout Clothes With High Tech Twist Sell Briskly." www.nytimes.com. N.p., 28 July 2014. Web., Aditya Kaul and Clint Wheelock, "Research Report: Smart Clothing and Body Sensors," Tractica, accessed May 6, 2015, https://www.tractica.com/wp-content/uploads/2015/05/SCBS-15-Executive-Summary.pdf;, "Woven Electronics: An Uncommon Thread," Economist, March 8, 2014, https://www.economist.com/news/technology-quarterly/21598328-conductive-fibres-lighter-aircraft-electric-knickers-flexible-filaments, Cobb, "The Smart Fabrics Conference..."

Smart Fabrics (Cont.)

- Forrester Research predicts that 2015 will be a breakout year for wearables as the technology becomes more appealing for consumers
- Another research firm, Tractica LLC, projects that the world market for smart clothing will grow from a base of \$17.2 million in 2013 to approximately \$600 million by 2020, an increase of nearly 3,400 percent
- This growth is likely to be driven by sporting goods manufacturers adopting smart clothing as a part of their product mix, though Tractica's research indicates that it will probably remain a premium product for now and account for a very small percentage of the overall sports apparel market

Sources: JP Gownder, "The Data Digest: Five Urgent Truths about Wearables," JP Gownder's Blog, December 9, 2014, http://blogs.forrester.com/jp_gownder/14-12-09-the_data_digest_five_urgent_truths_about_wearables

Growth of Specialty Fabrics

"The world market for specialty fabrics grew about 2.6 percent in 2014 and is expected to achieve sales growth of about 2.8 percent in 2015."

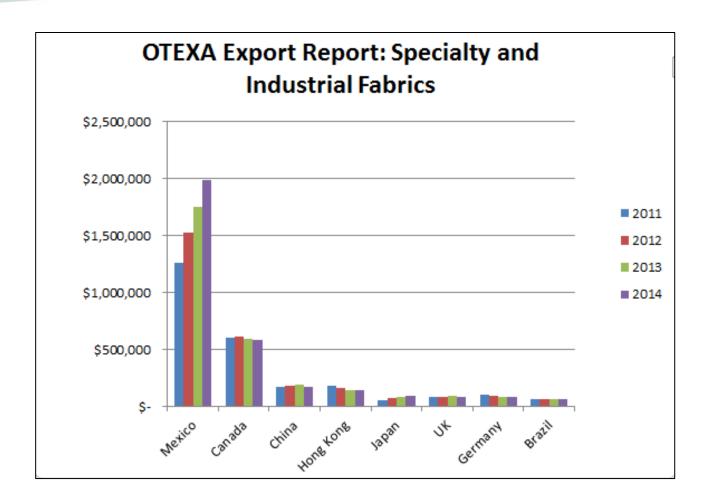
--Jeff Rasmussen, Market Research Manager for Industrial Fabrics Association International (IFAI) based in Minnesota, USA.





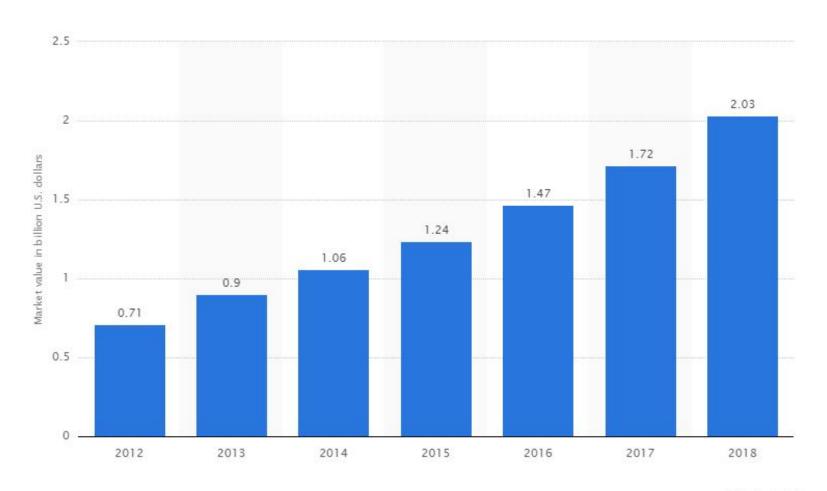
Source: http://advancedtextilessource.com/2015/01/the-state-of-the-u-s-and-canadian-fabric-industry/

U.S. Domestic Manufacturing Base



Source: http://otexa.ita.doc.gov/explist.htm - Group 206

Global Smart Fabric/Textile Market Revenue **Projection (in billions USD)**

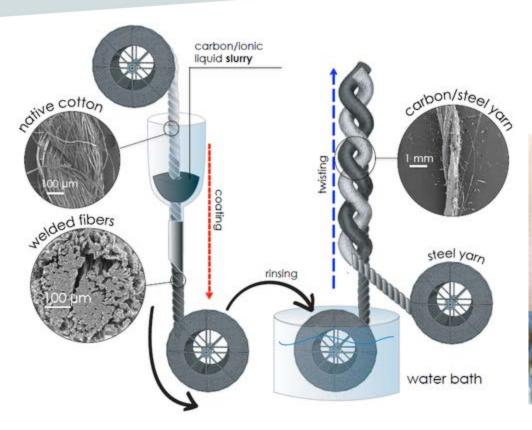


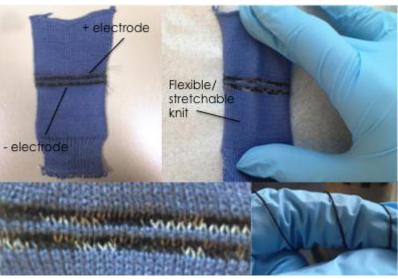
© Statista 2015

Capacitive Yarn

- Developed by a team at Drexel University, capacitive yarn converts fabric into an "energy storage device."
- Done through Natural Fiber Welding (NFW)
 - NFW developed by Paul Trulove at the US Naval Academy.
 - Allows functional materials to be implanted into textile fibers.
 - Done at the molecular level.
- "[...] Can use any commercially available yarn made of cellulose—cotton, linen, bamboo, viscose, rayon" Genevieve Dion, director of Drexel's Shima Seiki Haute Technology Laboratory
- "Natural Fiber Welding is proving to be highly effective in producing yarns that we can tune for particular uses, including energy storage." — Kristy Jost, PhD, project leader and materials scientist

Capacitive Yarn Images



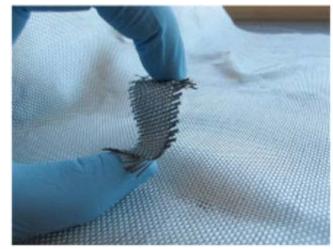


 $(Source: Kristy\ Jost,\ PhD,\ and\ Drexel\ University)$

(Source: Kristy Jost, PhD, and Drexel University)

Conductive Fiber Applications

- Intelligent Textiles, based in London, are testing combat fatigues with conductive fibers to deliver power to equipment for the British and Canadian Military.
- Some companies want to use to technology to conceal RFID tags in retail clothing.
- Adidas is has begun knitting conductive fibers into clothing to make "textile electrodes."
 - These electrodes would pick up heart and muscle signals.
 - These signals would transfer to a clip-on device and relay information to one's smart phone, for example.



www.nanowerk.com

High Tech Apparel

- Innovators within the apparel industry are finding ingenious ways to leverage technology in creating thoughtfully designed products that enhance the user's experience
- Sewing electronic components such as sensors into soft goods and garments is challenging. The apparel manufacturing industry isn't set up to make radical changes—"Cycles are short and margins low," Dr. Lucy Dunne, Associate Professor at the University of Minnesota and head of the school's apparel design program and the Wearable Technology Lab. Further she said, "It doesn't make sense to make big investments in completely restructuring the manufacturing process"
- Dr. Dunne is investigating ways to adapt existing cut and sew processes to manufacture smart clothing—its makes sense to adapt existing scalable processes to produce smart garments more efficiently—could also be boon for domestic apparel production sector
- Dr. Dunne's lab has produced "bend and stretch sensor" that's sewn into fabrics with a cover stitch swapping out one line of regular thread for a conductive thread.

Technology in Fabrics

Nanotechnology

- » Nanoparticles are microscopic particles with specific physical and chemical properties; nanoparticles incorporated into fabrics to enhance/change properties, e.g. – fire-resistant fabric; can be electronic/conductive fabrics for sensing someone's vital signs
- » Potential of nanotechnology in the development of new materials in the textile industry is considerable
 - Military uniforms that change color to match the environment
 - Light weight battlesuits including bullet-resistant vests
 - U.S. Army developing bullet resistant nanobattlesuit; thin as spandex with health monitors and communication equipment
 - Smart nanomaterials respond to injuries deliver drugs/antibiotics
 - Medicine will use sensors that warn people of cancer and blood clots

Markets for Wearable Technologies

- Medical
- Military
- Athletic/Performance Measurements
- Leisure markets
- Firefighters/First Responders
- Police and Law Enforcement
- Employee Performance Tracking

Selling to the Federal Government

In order to do business with the Federal Government to include the Department of State, there are required procedures you must follow.



The first and most critical step is online registration with the Federal Government's System for Award Management (SAM).

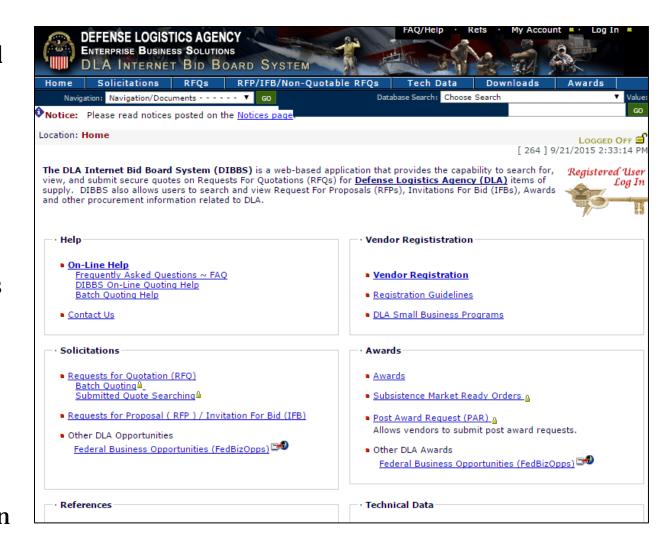
Once registered, your company will be able to sell to all Federal Agencies that may have an interest in your products. Registration enables purchase orders to be sent to your company as well as payments to be made via electronic funds transfer (EFT) for goods received.

- Visit the System for Award Management website at http://www.sam.gov
- Acquire your DUNS number at http://fedgov.dnb.com/webform or call at 1-866-705-5711.
- 3) Obtain the North American Industrial Classification System (NAICS) industry codes for your business http://www.census.gov/eos/www/naics/index.html

Defense Logistics Agency (DLA) and DIBBS

DLA Internet Bid Board System (DIBBS)

- Provides access to DLA's solicitations.
- Can search, view, and submit secure quotes on Requests For Quotations (RFQs) for DLA items of supply.
- Can search and view
 Requests for Proposals
 (RFPs), Invitations For
 Bid (IFBs), and other
 procurement information



Defense Logistics Agency (DLA) and DIBBS (Cont.)

DLA Internet Bid Board System (DIBBS)

- Search the Awards through the DLA Awards Database.
- Can find all the Mil Specs
 - Go to "Technical Data"
 - Find "ASSIST Quick Search"
 - Search for item via document ID, document number, keyword, etc.





Defense Logistics Agency (DLA) and DIBBS (Cont.)

www.quicksearch.dla.mil



Example of ASSIST Quick Search for "Socks"

Enter search criteria in one or more of three text fields: Document ID, Document Number, Find Term(s). Filter search results by selecting Status or FSC/Area from drop-down lists, or by checking the box and specifying a range of document dates. Click a label for a detailed description and sample search results.

| Basic Search Text Search | |
|--------------------------|--|
| Document ID: | Document Number: Status: All ▼ |
| Find Term1,Term2, SOCKS | For All Terms ▼ In Title or Keywords or Scope ▼ |
| FSC/Area: Select All | ▼ Document Date: 29-Sep-2014 Through 29-Sep-2015 |
| | |

Search Reset

Total records: 28

| Filter | | | Values | | |
|--|--------------------|---------------|--------------|-------------|--|
| All Terms In Title or Keywords or Scope: socks | | | | | |
| <u>Imq</u> | Document ID | <u>Status</u> | FSC/ Area | Doc Date | <u>Title</u> |
| Y | MIL-S-48L NOT 1 | С | 8440 | 28-Jul-1995 | SOCKS, MEN'S, CUSHION SOLE, STRETCH TYPE (S/S BY A-A-55079) |
| <u>N</u> | JAN-S-384 | С | 8440 | 07-Apr-1952 | SOCKS, FELT |
| Y | MIL-S-405H NOT 1 | С | 8440 | 11-Feb-1999 | Socks, Men's, Winter (Wool and Cotton)(S/S by A-A-55302) |
| <u>N</u> | MIL-S-3022A | С | 8440 | 14-Jul-1954 | Socks, Men's, Woolen, Lightweight (Navy) |
| N | MIL-S-4328A | С | 8440 | 02-Jul-1952 | SOCKS, WOOL&NYLON, WINTER |
| Y | MIL-S-12549H NOT 1 | С | 8440 | 19-Sep-1991 | SOCKS, MEN'S, NYLON AND COTTON, RIBBED, STRETCH TYPE (S/S BY A-A-50015) |
| Y | MIL-S-14210G NOT 1 | С | 8440 | 07-Jun-1997 | Socks, Men's, Nylon and Cotton, Knee-Length, Stretch-Type (No S/S Document) |
| <u>N</u> | MIL-S-17649A | С | 8440 | 01-Mar-1961 | SOCKS, COTTON (ANKLE LENGTH) |
| N | MIL-S-22102 | С | 8440 | 15-Jul-1959 | Socks, Men's, Ribbed, Nylon and Wool, Stretch Type, Universal Size (Use MIL-S-12549) |
| | | _ | | | |

DIBBS Contact Information

Teresa Bouchonnet

Business Development Specialist North Carolina Military Business Center

bouchonnett@ncmbc.us (828) 349-3878



Procurement Technical Assistance Centers

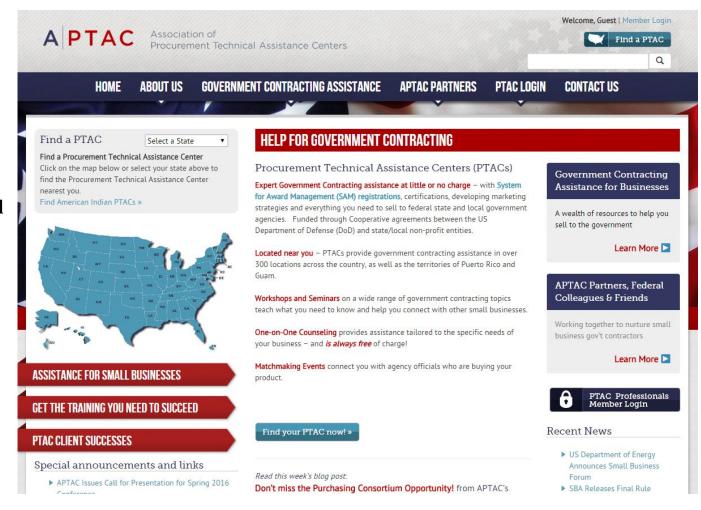
dla.mil

- The Defense Logistics
 Agency, on behalf of the
 Secretary of Defense,
 administers the DoD
 Procurement Technical
 Assistance Program
 (PTAP).
- PTA Centers are a local resource available at no or nominal cost that can provide assistance to business firms in marketing products and services to the Federal, state and local governments.



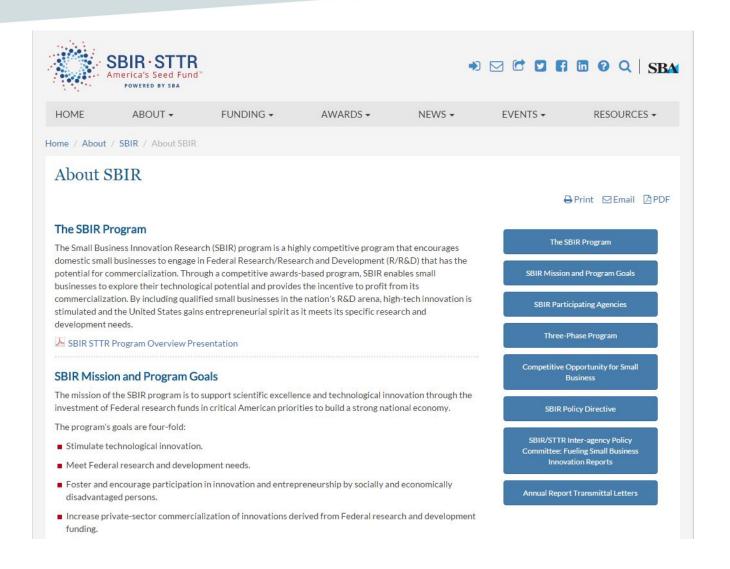
Association of Procurement Technical Assistance Centers (APTAC)

Supports the PTACs by providing information, professional networking, training opportunities, and influence in national government contracting assistance.



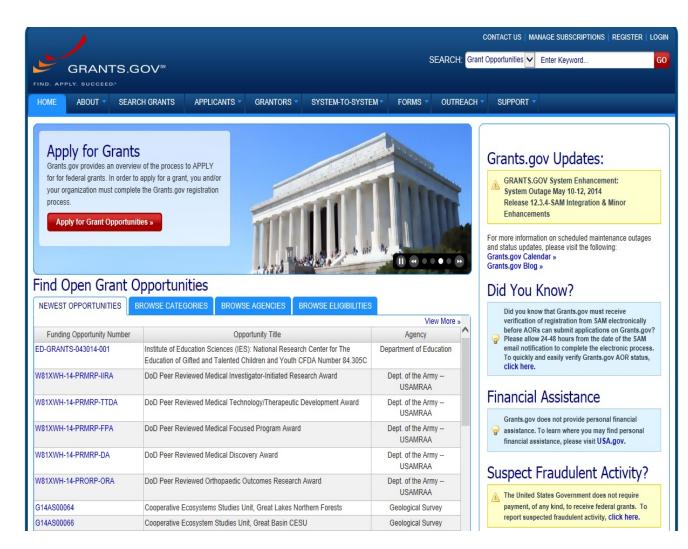
Source: http://www.aptac-us.org/

- Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)
 - Encourages domestic small businesses to engage in Federal Research/Research and Development (R/R&D) that has the potential for commercialization.
 - Through a competitive awards-based program, SBIR enables small businesses to explore their technological potential and provides the incentive to profit from its commercialization.
 - Small Business Technology Transfer (STTR) expands funding opportunities in the federal innovation research and development (R&D) arena. Expands public/private sector partnership to include the joint venture opportunities for small businesses and nonprofit research institutions. STTR requires small business to collaborate with a research institution in Phase I and Phase II.
 - STTR bridges the gap between performance of basic science and commercialization of resulting innovations.



Grants.gov

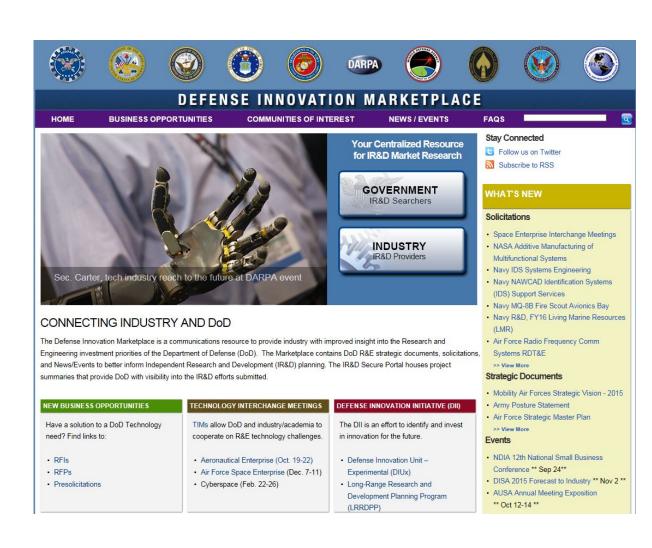
 Centralized website to find and apply for federal grants.



Source: http://www.grants.gov/web/grants/home.html;jsessionid=vXG1ThLBCdNTsm4LVc0Xknywjlljzhj2DgJx8BJQJPFtrDTypcLT

Defense Innovation Marketplace

- resource that provides industries with Research and Engineering (R&E) investment priorities of the DoD.
- Provides R&E strategic documents, solicitation, and news/events.



Source: http://www.defenseinnovationmarketplace.mil/index.html

The Rapid Innovation Fund (RIF)

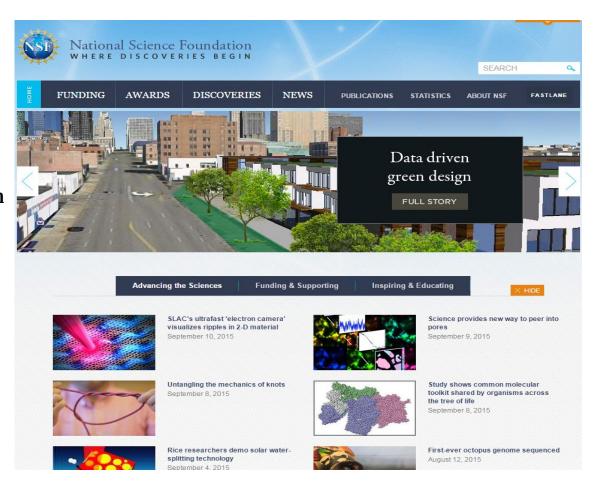
 is designed to transition innovative technologies, primarily from small businesses, that resolve Department of Defense operational challenges.



Source: http://www.defenseinnovationmarketplace.mil/rif.html

National Science Foundation

• Increases the incentive and opportunity for undertake cutting-edge, high quality science/engineering research that would have a high potential economic payoff if the research is successful.



Small Business Administration (SBA)

U.S. Small Business Administration (SBA): www.sba.gov

- SBA Programs: Small business is America's most powerful engine of opportunity and economic growth. SBA offers a variety of programs and support services to help you navigate the issues you face with your initial applications, and resources to help after you open for business.
- <u>Small Business Development Center:</u> No-cost, extensive, one-on-one professional business advising <u>www.sba.gov/content/small-</u> business-development-centers-sbdcs
 - Find a mentor: http://www.sba.gov/content/find-business- mentor#

Other helpful links:

- **OTEXA:** http://otexa.ita.doc.gov
- Fabric Link: www.fabriclink.com

Rethinking Innovation Strategies

The Foreign Comparative Technologies program is an excellent entry point to DoD for the foreign company thereby gaining access to the U.S. military market that would otherwise have been prohibited due to the Berry Amendment.

Foreign Comparative Testing



Send Us Your Product Information



Product Template

- Product
- Company Name
- Country
- **POC Information**
- Website
- TRL
- Countries Using
- Application (So What?)
- Science (How it works)
- Data (key performance metrics)
- **US Partners**
- Previous Work w/ DoD

OSD Foreign Comparative Test - Product Template

Product: XX mm High Velocity (HV) Airburst Munitions System (ABMS)

Company Name: Advanced Systems (AS) Country: Republic of Antarctica Point of Contact: Mr. Jones Phone: (555) 555-5555

Website: www.abcd.com Email: abcd@abcd.com



Short Description: The HV ABMS consists of a Fire Control System, an Ammunition Programmer and XX x XX mm Air Burst Munitions. High explosive, Flash and Bang, Counter defilade, increased lethality, improved accuracy.

Technology Readiness Level (fielded, lab tested, operational test): TRL: 9 The HV ABMS is qualified and in production.

Countries using the technology: Madagascar, Dominican Republic, Greenland, etc.

Application: (the so what?) The HV ABM is specially designed to allow soldiers to effectively engage enemies in defilade and to provide improved accuracy and higher lethality through a technologically improved muzzle velocity compensation capability.

Science (how it works): Muzzle velocity compensation for the immediate round fired. The 40mm HV ABMS is an upgrade kit to existing launchers to provide Air Bursting Precision capability. The FCS accurately lazes the target and the ballistic card computes the time to burst. The computed time to burst based on the measured velocity is programmed into the fuze only upon exit at the ammunition programmer. Enhanced safety with its built-in self-destruct mode and gives ABM the ability to function as a point detonating HE cartridge as well as an Air-Burst cartridge.

- Grenade Length: XX mm Weight: XXX gm
- Muzzle Velocity: XXX m/s Maximum Range: XXXX m
 Lethal Radius: X m Arming Distance: XX to XX m
- Fuze Type : Programmable Time Fuze

U.S. Partner: AS does not currently have a relationship with a US company

Previous work with DoD: Technology developed through US DoD laboratory funding.

Technical Readiness Level lowered to 6

Contact Information for Foreign Comparative Testing

Robert Thompson

OSD Comparative Technology Office
Office of the Deputy Assistant Secretary of Defense
for Emerging Capability & Prototyping
4800 Mark Center Drive
Suite 17H08-09
Alexandria, VA 22350-3600
571-372-6822
DSN 372-6822
Fax 571-372-6725

http://www.acq.osd.mil/cto

SIPR: robert.thompson.ctr@osd.smil.mil

Areas of Interest

- Electro-Magnetic Spectrum (EMS) Agility
 - Autonomous Systems
- Space Capability Resilience
- Asymmetric Force Application

For more information on the areas of interest, please click <u>here</u>



OTEXA's London, UK Commercial Services Partner in Selling to The Ministry of Defense

- Provides introductions for U.S. companies to the UK MOD Defense Suppliers Service.
- Offers counseling and literature to U.S. companies on selling to the UK MOD.
- Monitors UK MOD opportunities and distributes them to U.S. companies in a data base as well to OTEXA.
- Provides introductions for U.S. companies to UK clothing/fabric companies who are known to sell to the UK MOD.



Contact Information for OTEXA's London, UK Commercial Services Partner

PJ Menner

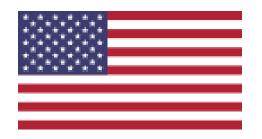
U.S. Department of Commerce International Trade Administration

U.S. Commercial Service

U.S. Embassy, London

Phone: 011-44-20-7894-0470

pj.menner@trade.gov





Logistics Commodities Support (Transformation) Contract

- UK Ministry of Defence realised it needed to transform the Logistics Commodities supply chain and instigated an outsourcing project to appoint an industry partner to deliver this multi-billion £ program.
- In April 2015, Team Leidos were selected as the successful industry partner to deliver the transformation and the contract went live on August 1st 2015.



 A 13 year contract is now underway to deliver the benefits outlined as part of the Team Leidos bid.

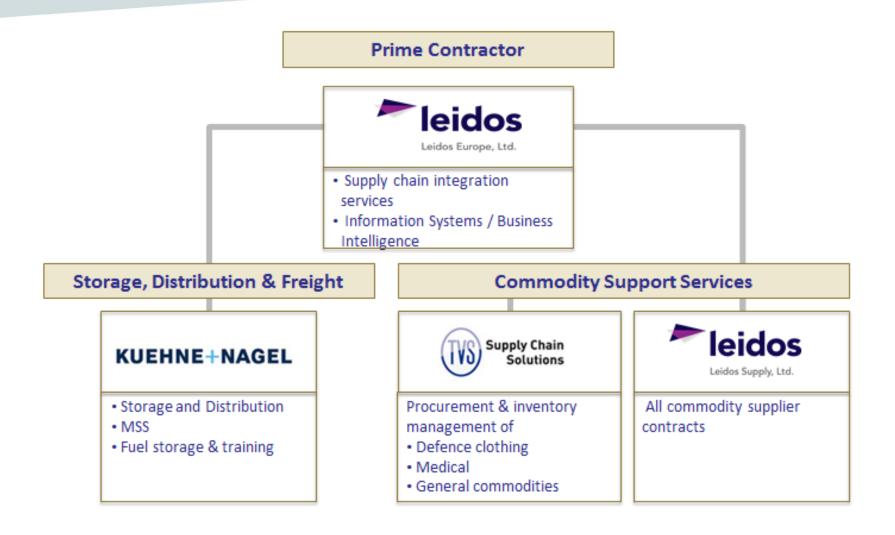
Logistics Commodities Support (Transformation) Contract (Cont.)

- The program is headed by Barbara Doornink, former 1* General in the US Army, who has significant experience of similar programs run by the US Department of Defense.
- The contract comprises both procurement of commodities and their storage, distribution & freight.



The main commodity groupings are Defence Clothing, Medical Equipment & Consumables, General Supplies, Oils/Lubricants/Gases and Food.

Who are Team Leidos?



Team Leidos – Overview

Investing in:

- Better infrastructure
- Better equipment
- Better systems
- Better flexibility
- People development





To provide:

- Improved visibility & control
- Improved speed & reliability
- Improved service at less cost

To ensure that FLCs get:

what they want, when they want it

Defense Clothing – What Leidos Needs From You!

- Defense Clothing are responsible for broad sub-categories including:
 - Footwear
 - Parade Uniforms
 - Working Uniforms
 - Headwear
 - Woollen Garments
 - Ceremonial Items

[not currently responsible for Combat Equipment e.g. Helmets, Load Carriage etc.]

- Looking for suppliers who can deliver:
 - Quality products
 - Surety and security of supply
 - Competitive pricing

And above all...

Innovation and continuous improvement

Leidos Contact Information

Danny Harris

Head of Category, Commodity Support Services

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Jill Evans

Defense Clothing Team Leader, Commodity Support Services

jill.evans@tvsscs.com

OTEXA's Ottawa, Canada Commercial Services Partner in Selling to The Canadian Government

The Federal Players in Canada

Major Purchasers

- Department of National Defence
- Canadian Coast Guard
- · Canadian Space Agency
- Public Safety
- Royal Canadian Mounted Police
- Canadian Security Intelligence Service
- Communications Security Establishment

Supports buyers and suppliers

- Public Works and Government Services Canada
- Industry Canada
- Department of Foreign Affairs, Trade and Development
- Canadian Commercial Corporation
- Regional Development Agencies

OTEXA's Ottawa, Canada Commercial Services Partner in Selling to The Canadian Government (Cont.)

For more information, please find the attached presentation on selling to the Canadian Government, provided by Lucy Latka.

Canadian Defense and Security Procurement



Defence and Security Procurement

Presented by the Office of Small and Medium Enterprises – National Capital Region (OSME-NCR)

Public Works and Government Services Services ouvernments Services Services ouvernments Services Services ouvernments Services Service

Contact Information for OTEXA's Ottawa, Canada Commercial Services Partner

Lucy Latka

Senior Commercial Specialist (Government Procurement, Defense and Security)

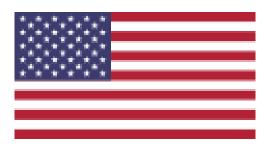
U.S. Department of Commerce

International Trade Administration

U.S. Embassy Ottawa

(613) 688-5219

Lucy.latka@trade.gov





National Contract Management Association (NCMA)

- The worlds leading resource for professionals in contract management.
- Committed to growth and educational advancement of procurement and acquisition personnel around the globe.
- Important source for current events, regulations, laws, research studies, standards, etc.
- Currently has 22,000 members from 2,000 organizations



Contact Information for NCMA

www.ncmahq.org

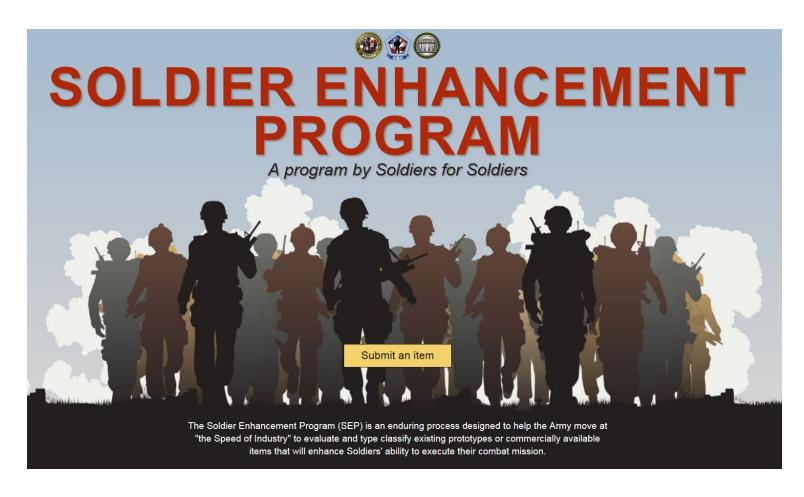
Jessie Charter

Member Services Coordinator and Program Support Specialist (571) 382-1121



99

Soldier Enhancement Program (SEP)



Source: http://www.peosoldier.army.mil/sep/

Soldier Enhancement Program (SEP)

Established in 1990

- Enhances tactical field equipment worn, carried or consumed by troops
- SEP collaborates with Marine Corps program Marine Enhancement **Program (MEP)**
- Over two decades of consistent/moderate funding
- PEO Soldier has been solely dedicated to the American Soldier for the past decade and will continue into an uncertain future.
- PEO Soldier manages more than 450 products and programs that are a manifestation of that dedication. Our four Project Management (PM) Offices are dedicated to providing the very best equipment.
- These four offices are: PM Soldier Protection and individual Equipment, PM Soldier Sensors and Lasers, PM Soldier Warrior and PM Soldier Weapons.

Mission

- Identify/enhance anything that improves military tactical advantage and
 - survival
- Commercial-off-the-shelf (COTS)
- Government-off-the-shelf (GOTS)
- Non-development items (NDI)
- Weapons, gear etc...



U.S. Department of Commerce International Trade Administration







SEP: Product Portfolio FY2014 (continued)

Clothing (uniforms)

- Hand & Foot wear
- Individual equipment
- Load carriage
- Personnel airdrop

Protective equipment

- Body protection
- Eyewear
- Head protection

Sensors & Lasers

- Maneuver sensors
- Precision targeting devices

Warrior technology

- Air warrior
- Ground soldier
- Soldier systems integration

Weapons

- Crew served
- Individual



Source: http://www.peosoldier.army.mil/portfolio/

SEP: How it Works (continued)

Solicits suggestions from

- Troops
- Commercial manufacturers
- Combat and material developers worldwide
- Reviews submissions / prioritizes items for potential field testing to standardize and issue to soldiers in the field

Rules & Constraints

Rules:

COTS/GOTS/NDI, test and evaluate to confirm or deny applicability for soldiers use

Constraints:

Will not re-invent technology/launch long development efforts or produce large numbers of major items for use



A Brief Overview of the NATO Support Agency (NSPA)

Because the U.S. is a NATO nation, U.S. companies are eligible to bid for contracts with the NATO Support Agency. However, companies need to register at the NATO Support Agency (NSPA) registration site.



NATO Procurement Processes: Resources

- NSPA buys a fair number of services and general items from office supplies to marketing services. In addition to reviewing NSPA's list of Systems and Equipment, you should review the Logistics Services drop down menu located here:
 http://www.nspa.nato.int/en/organization/Logistics/Logistics.ht
- For an idea of what goods and services you might have an opportunity to sell to the agency in the future you can find listings of contracts that NSPA has awarded in the past several years here:

 <u>https://eportal.nspa.nato.int/eProcurement/Content/AllProcurementContents.aspx?r=3</u>.
 - US suppliers that want to compete for NSPA contracts can register at: https://eportal.nspa.nato.int/eProcurement/default.aspx



NATO Procurement Processes: Summary

- Businesses interested in procuring contracts with NATO headquarters or operational divisions are advised to use various resources to increase the probability of getting their company details into vendors' databases.
- NATO has a number of different agencies that have their own acquisition processes, and the procurement of goods is generally based on the identification of a particular budgetary line instead of the needs of particular agencies.
 - Most prominent agencies are NSPA, NC3A, NCSA, NACMA and NAPMA, along with procurement from NATO headquarters.
 - NSPA is the most appropriate self registration site for many commodities and services, including textile and textile related products.
- NATO procurement offers great potential trade opportunities for U.S. companies in sectors ranging from security and defense to maintenance and repair services.



Foreign Military Sales (FMS)

What Is FMS?

- The Foreign Military Sales (FMS) program is the U.S. Government's program for transferring defense articles, services, and training to other sovereign nations and international organizations.
- Under FMS, the U.S. government procures defense articles and services on behalf of the foreign customer.
- Countries approved to participate in this program may obtain defense articles and services by paying with their own national funds or with funds provided through U.S. government-sponsored assistance programs.
- In certain cases, defense articles, services and training may be obtained on a grant basis. The Defense Security Cooperation Agency (DSCA) administers the FMS program for the Department of Defense (DoD).



Find out more about the FMS program at www.dsca.mil



How Does FMS Operate?

- FMS is managed and operated by DoD on a no-profit and no-loss basis.
- Countries and international organizations participating in the program pay for defense articles and services at prices that recoup the actual costs incurred by the United States. This includes a fee (currently 3.8% of what the defense articles and/or services cost, in most instances) to cover the cost of administering the program.
- When defense articles and/or services are required, the requesting country's representative provides a Letter of Request (LOR) to their U.S. counterpart.
- Copies are sent to the Department of State (DoS) Bureau of Politico-Military Affairs and the DSCA. The original is furnished to the DoD Military Department or other implementing Defense Agency that will prepare the response in the form of a Letter of Acceptance (LOA).

How Does FMS Operate? (Cont.)

LOAs take three forms:

- 1. **Defined Line.** Certain defense articles and services can be provided only on Defined Line LOAs, which offer items at individually estimated prices and delivery dates.
 - The U.S. Government, where necessary, in turn contracts for the defense articles and services that are required to fulfill the LOA.
- **2. Blanket Order.** Most repair parts and routine services can be offered under Blanket Order LOAs.
 - These LOAs are perfectly suited for addressing recurring needs (i.e., where the customer will require additional defense articles or services on a periodic or frequent basis).
 - Once established, the Blanket Order LOA reduces the time needed for processing an order and contracting for the items and/or services required.
- 3. Cooperative Logistics Supply Support Arrangement (CLSSA). Under the CLSSA, the customer acquires access to the U.S. logistics pipeline for the support of specified end items.
 - allows supply of repair parts from existing U.S. stocks, without waiting for completion of a procurement cycle.
 - CLSSAs are normally established for countries with well-developed logistics systems and with larger quantities of end items to be supported.

Differences Between FMS and Direct Commercial Sales of U.S. Defense Articles or Services

- With few exceptions, the U.S. does not mind whether a customer acquires its defense articles and services under FMS or through Direct Commercial Sales (DCS).
- In general, LOAs promote standardization (by providing customers with defense articles identical to those used by U.S. forces), provide contract administration services which may not be readily available otherwise, and potentially help lower costs by consolidating FMS buys with U.S. purchases.
- DCS allow the purchaser more direct interface during contract negotiation (and likely more opportunity for firm-fixed priced contracting), and acquire non-standard defense articles where special requirements demand tailoring the articles to meet a particular need.
- One common misperception: Although the extent of DoD involvement is different, technology release approvals, and third country transfer approval requirements are the same for both methods of purchase.



FMS Step-by-Step

- The Security Assistance Management Manual (SAMM) is managed by DSCA and located on their website.
- Chapter 4 of the SAMM provides general information on the FMS process and is a good starting point for review:

http://www.samm.dsca.mil/chapter/chapter-4

• In addition, the below link from a DISAM course provides a thorough overview of the FMS with some visuals that may be helpful:

http://www.disam.dsca.mil/pubs/DR/05%20Chapter.pdf

Action

U.S. Embassy

Combatant Command

Agency

Proceed

Department of State

DSCA

Department of State

DSCA

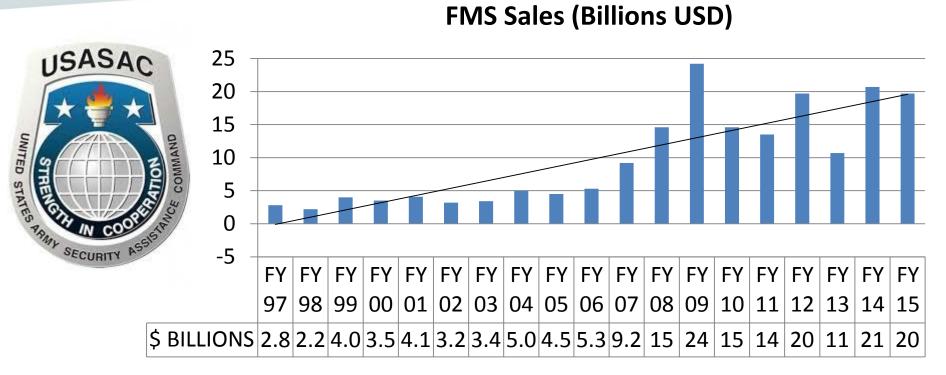
Prepare LOA

Www.dsca.mil

International Trade Administration

U.S. Department of Commerce

Army FMS New Business



- Starting with FY 2008,FMS sales skyrocket to \$14.6 billion. These large numbers include Attack Helicopters, Radar and Missile systems, etc.
- FMS sales in FY 2014 were \$20.7 billion.
- As of 9/30/2015, FY 2015 FMS sales were \$19.7 billion.

Foreign Military Sales: Proactive and Reactive

Foreign Military Sales:

 OTEXA is often contacted by our Commercial Service Posts overseas with leads for Foreign Military Sales. An example of this would be Morocco, with whom we've been working 3½ years.

Non-Foreign Military Sales:

 OTEXA is exposed to military buyers at international shows. As a result we have been able to interface our companies with military procurement from the UK, Brazil, Denmark, the UAE, Saudi Arabia, South Africa, Chile, Czech Republic, Libya, Colombia, and Morocco.



U.S. Army Security Assistance Command Handles the **Following FMS Items**

FMS non-standard items, i.e. inactive/obsolete items such as previous issue helmets and body armor (SAPI and OTV).

Long lead time standard items (Nan's) that are commercially available such as BDU's in Woodland and Desert camo.

Items the SPD does not support:

- Command managed items Weapons, Ammo, Vehicles, Parachutes
- Night Vision Equipment
- Classified, Sensitive, and Special Forces items
- Other service managed items (Air Force, Navy, Marine)



How to Involve Your Company in the FMS Process

- Check solicitations on FedBizOpps.gov
- Participate in international and domestic military shows
- Word of mouth
- Have a good vendor website
- Send samples and product information to Ms. Campbell for their files and resource library
- Companies should send samples, information on the company, contact details etc. This information would cover active and inactive, new and older products
- **Ensure items supplied are Berry Compliant**
- Small purchases exception applies equally to FMS as it does to DoD requirements. For DoD or FMS requirements, under the Simplified Acquisition Threshold (SAT), typically \$150,000, the restrictions of Berry Amendment do not apply



Guidelines on State-of-the-Art Military Products for FMS Sales

- If a country wants to procure an item currently used by US soldiers, Defense Security Cooperation Agency approval is required.
- The country can work with the US military attaché in said country to help route the request to Defense Security Cooperation Agency (copy USASAC Country Program Manager).



Contact Information for Product Introduction and Mailing of Samples

Ms. Colleen Belack Campbell

Chief, Services & Products Division
USASAC, Services & Products Division
AMSAC-LAS-P
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New Cumberland, PA 17070

(717) 770-7912, DSN 771-7912 colleen.b.campbell.civ@mail.mil



*Please note: Ms. Campbell accepts small, inexpensive samples, catalogs and product brochures. Please do not send expensive bulky items.

FMS: Summary of Key Points

- The FMS program is a fundamental US foreign policy tool with the goal of achieving world peace and strengthening the security of the United States.
- The Foreign Military Sales (FMS) program is the U.S. Government's program for transferring defense articles, services and training to other sovereign nations and international organizations.
- The Secretary of State determines which countries will have programs. The Secretary of Defense executes the program.
- FMS is a program of the U.S. Department of Defense (DoD) with the Defense Security Cooperation Agency (DSCA) administering the FMS program for DOD.
- The FMS program is conducted through formal contracts or agreements between the US government(USG) and an authorized foreign purchaser.
- FMS requirements ARE restricted by the Berry Amendment. 10 USC 2533a states that funds appropriated or otherwise made available to DoD shall apply the restrictions of the Berry Amendment. When a country deposits funds into the FMS trust fund (US Treasury Account) these funds take on the same form and function as US Appropriations, thus the Berry requirement.

Outreach Assistance

Outreach Assistance:

Department of Commerce:

Bureau of Industry and Security

- Stephen B. Hall (202) 482-4017; stephen.hall@bis.doc.gov
- or 202 482-4811
- Western Regional Office Director: Michael Hoffman (949) 660-0144



Web: www.bis.doc.gov www.export.gov/ecr

Comprehensive Screening List: http://export.gov/ecr/eg_main_023148.asp

State Department:

Office of Defense Trade Controls

Response Team – (202) 663-1282; ddtcresponseteam@state.gov

Web: <u>http://www.pmddtc.state.gov</u>



Trade Show Schedule: 2015-2016

Milipol: Paris, France November 17th-20th, 2015



http://www.destination360.com/europe/france/paris

Def Expo: GOA, India March 28th-31st, 2016

OTEXA Participation To Be Confirmed



http://2015holidays.com/?p=682

Heimtextil: Frankfurt, Germany January 12th-15th, 2016



http://www.resolutiontweet.com/best-cities-in-the-world

Expo Seguridad: Mexico City, Mexico April 26th-28th, 2016



http://www.tropicaldiscovery.com/regions mexico/mexico city museums/vacations.php

Trade Show Schedule (cont.): 2015-2016

SHOWTIME: High Point, North Carolina June 5th-8th, 2016



 $\underline{http://www.solarsquadnc.com/areas-of-service/high-point/}$

Eurosatory: Paris, France June 13th-17th, 2016



http://www.destination360.com/europe/france/paris

Offshore Norther Seas: Stavanger, Norway August 29th-September 1st, 2016 **OTEXA Participation To Be Confirmed**



www.cruisin.me

Techtextil North America: Atlanta, GA April 26th-28th, 2016



http://www.proshred.com/georgia

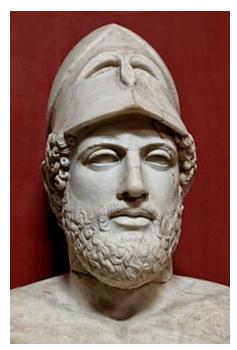
Salient Points of Presentation

- Basic understanding of OTEXA services, website, and relevant trade show events.
- A quick review of government contracting, access to funding, and resources.
- The Internet of Things (IOT) and its multiplier effect on innovation and changes in technology.
- The U.S. Government's role in stimulating advanced manufacturing.
- Smart fabrics as a game changer.
- FMS sales, NATO procurement, and SEP—new avenues for sales.
- Country specific contracting and sales guidelines, highlighting the UK and Canada.
- U.S. Military demands in technical textiles.



Freedom

"Freedom is the sure possession of those alone who have the courage to defend it."



-Pericles

OTEXA Contact for Technical Textiles

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U.S. Department of Commerce

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