Defense Production Act Title III

Defense Industrial Base Seminar and Workshops

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DPA Background

- **Defense Production Act provides unique economic authorities to expedite supply and expand U.S. production capabilities to promote the "national defense"**
- **The U.S. industrial base represents a critical element of the economic power of our country which impacts our strategic and diplomatic interests**
- **"National defense" includes:**
  - Military, energy, stockpiling, and space programs
  - Homeland security
  - Critical infrastructure protection and restoration

The Defense Production Act

(50 U.S.C. App. § 2061 *et seq*.)

Enacted in 1950

Provides broad authorities to the President to assure the ability of the domestic industrial base to supply materials and services for the national defense

DPA authorities delegated to Federal agencies via E.O. 12919

Title I – Priorities & Allocations

Provides the authority to order priority performance (delivery) on defense contracts and allocate materials to meet national security requirements (DO/DX ratings)

Title III – Expansion of Productive Capacity and Supply

Authorizes appropriate incentives to create, expand or preserve domestic industrial manufacturing capabilities for technologies, items and materials needed to meet national security requirements (includes homeland security)

Title VII – General Provisions

Exon-Florio (CFIUS)

Voluntary Agreements – authorizes business competitors to form alliances for disaster planning and response and provides antitrust protection for actions pursuant to voluntary agreements

National Defense Executive Reserve – provides for employment of private sector experts to support Federal Gov't preparedness planning and disaster response programs

DPA not permanent law – must be periodically reauthorized

Expires September 30, 2014

Under jurisdiction of Banking Committees

Title III of the Defense Production Act

- Title III provides a set of broad economic authorities, found nowhere else in law, to incentivize the creation, expansion or preservation of domestic manufacturing capabilities for technologies, components and materials needed to meet national defense requirements.
- Title III actions stimulate private investment in production resources by reducing the risks associated with the capitalization and investments required to establish the needed production capacity.
- Title III is a Government-wide statutory authority. DOD is only federal agency using Title III authorities. Focus is on defense-wide/multi-platform applications.
- Title III establishes viable industrial capabilities for defense and commercial markets.

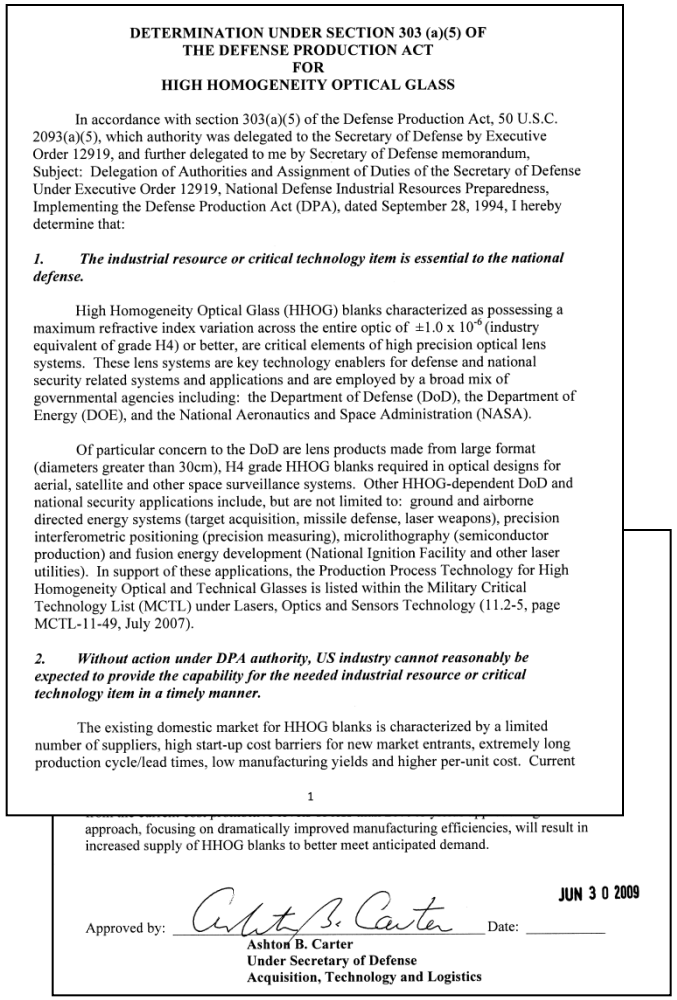
These authorities enable Title III to CHANGE the domestic industrial base.

Title III Authorities

Incentives to ensure viable productive capacities

- **Purchases/Purchase Commitments *(Sec. 303a)***
  - **Purchases provide direct subsidy to company to assist in establishing production capacity**
    - Purchase and installation of production equipment
    - Engineering support to improve quality and yield of production facility
    - Sample quantities for process validation and customer qualification testing
    - Costs to develop business and marketing plans
  - **Purchase Commitments**
    - Guaranteed market to incentivize companies to establish, expand or maintain production capability
    - Company may use internal funding or obtain external funding i.e., loan
    - Government is buyer of last resort. Some or all of funds may not be expended
- **Installation of Production Equipment in Gov't or Privately Owned Facilities *(Sec. 303e)***
- **Development of Substitutes *(Sec. 303g)***
- **Loans/Loan Guarantees *(Sec. 301; Sec. 302)***

Title III
Statutory Requirements



DETERMINATION UNDER SECTION 303 (a)(5) OF THE DEFENSE PRODUCTION ACT FOR HIGH HOMOGENEITY OPTICAL GLASS

In accordance with section 303(a)(5) of the Defense Production Act, 50 U.S.C. 2093(a)(5), which authority was delegated to the Secretary of Defense by Executive Order 12919, and further delegated to me by Secretary of Defense memorandum, Subject: Delegation of Authorities and Assignment of Duties of the Secretary of Defense Under Executive Order 12919, National Defense Industrial Resources Preparedness, Implementing the Defense Production Act (DPA), dated September 28, 1994, I hereby determine that:

1. The industrial resource or critical technology item is essential to the national defense.

High Homogeneity Optical Glass (HHOG) blanks characterized as possessing a maximum refractive index variation across the entire optic of $\pm 1.0 \times 10^{-6}$ (industry equivalent of grade H4) or better, are critical elements of high precision optical lens systems. These lens systems are key technology enablers for defense and national security related systems and applications and are employed by a broad mix of governmental agencies including: the Department of Defense (DoD), the Department of Energy (DOE), and the National Aeronautics and Space Administration (NASA).

Of particular concern to the DoD are lens products made from large format (diameters greater than 30cm), H4 grade HHOG blanks required in optical designs for aerial, satellite and other space surveillance systems. Other HHOG-dependent DoD and national security applications include, but are not limited to: ground and airborne directed energy systems (target acquisition, missile defense, laser weapons), precision interferometric positioning (precision measuring), microlithography (semiconductor production) and fusion energy development (National Ignition Facility and other laser utilities). In support of these applications, the Production Process Technology for High Homogeneity Optical and Technical Glasses is listed within the Military Critical Technology List (MCTL) under Lasers, Optics and Sensors Technology (11.2-5, page MCTL-11-49, July 2007).

2. Without action under DPA authority, US industry cannot reasonably be expected to provide the capability for the needed industrial resource or critical technology item in a timely manner.

The existing domestic market for HHOG blanks is characterized by a limited number of suppliers, high start-up cost barriers for new market entrants, extremely long production cycle/lead times, low manufacturing yields and higher per-unit cost. Current

1

approach, focusing on dramatically improved manufacturing efficiencies, will result in increased supply of HHOG blanks to better meet anticipated demand.

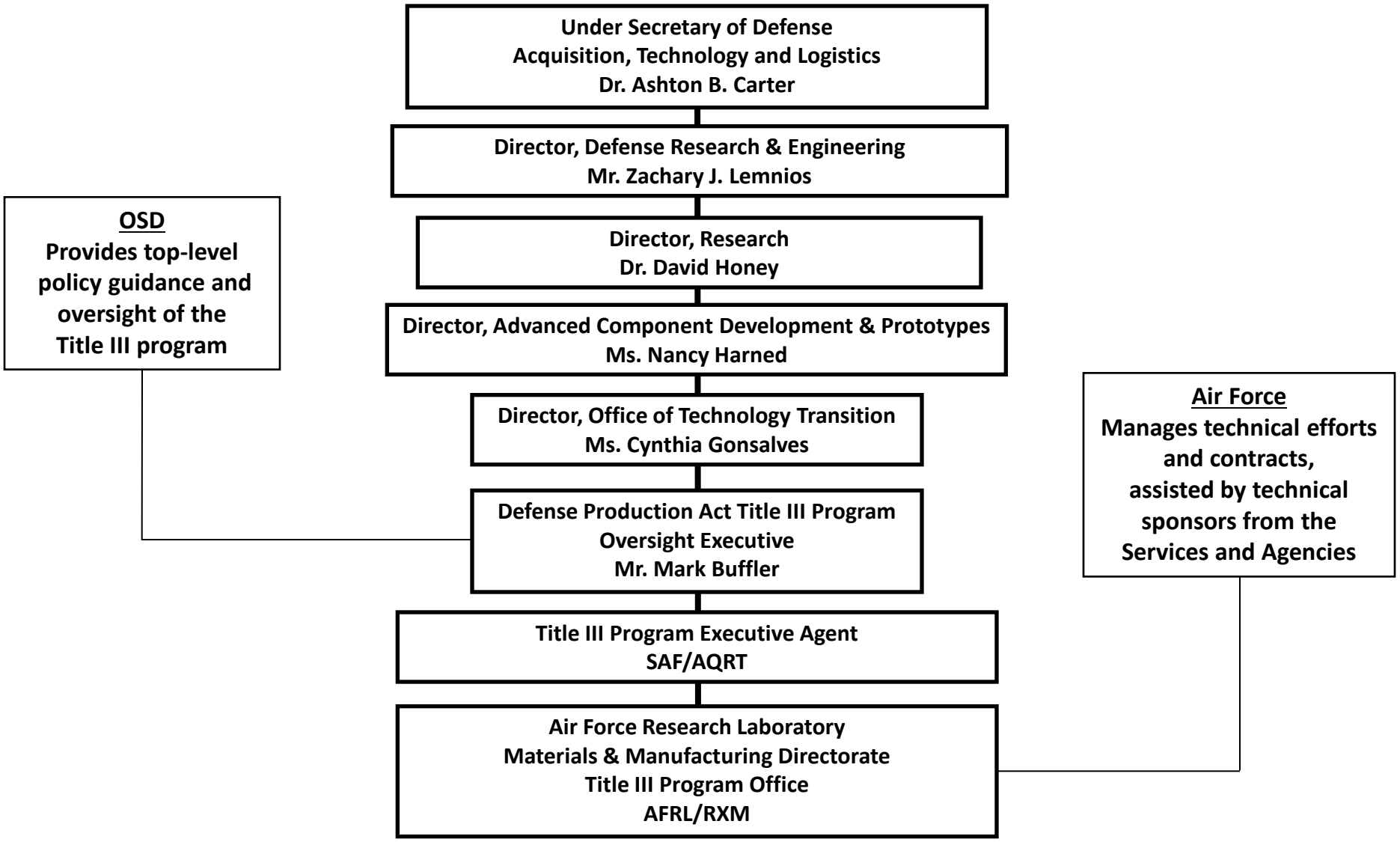
JUN 3 0 2009

Approved by: _____ Date: _____

Ashton B. Carter
Under Secretary of Defense
Acquisition, Technology and Logistics

1. **Obtain "Presidential Determination"**
   - **Industrial resource or technology item is essential for national defense**
   - **Industry cannot/will not provide needed capability in a reasonable time without Title III assistance ….. and domestic capacity is insufficient to meet Defense and non-defense demand**
2. **Provide written notification to Congress**
2. **Wait 30 days to allow for Congressional comment**

Title III Organization



Title III is an authority, not a source of funds

Funding for Title III initiatives is provided by the Joint or Service Program Offices of Record, Defense Agencies or other Federal Agencies as funding offsets for specific Title III efforts.

Title III Funds

- **Title III appropriations are "no-year" funds and are <u>valid until expended</u>**
- **DPA Fund established in the Treasury for Title III activities**
  - Title III appropriations credited to the Fund – (Procurement Funds)
  - Usually made in DoD appropriations but can be included in other appropriations bills
  - By law may only be used for Title III purposes
- **Funds not expended on project are returned to Fund for reuse**
- **DPA contains its own authorization of appropriations**
  - Funds appropriated for Title III are automatically authorized. Title III initiatives are not normally included in authorization bills for this reason.

Pathways to Title III Projects

- **Core Projects:** Title III authorities drawn upon to address defense-wide industrial base issues.
  - Funding placed into Title III budget by senior-level OSD management
  - Title III Program Office builds multiple stakeholder-IPTs to execute
- **Partnering Projects:** Development of initiatives with Service and other Departments' acquisition programs
  - Unites shared interests to address common issues
  - Partnering programs transfer funding to Title III through budget process
  - PMs/PEOs retain close coordination on project execution and management of transferred funds
- **Annual RFI to Industry:** Supplements identification process

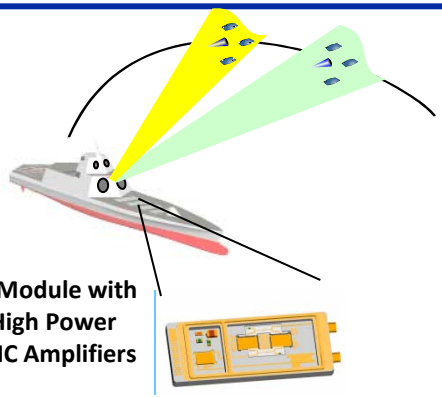
Core Projects

- **Beryllium Supply Initiative**
  - Re-establishing lost domestic production capability for high-purity beryllium
    - Essential for electro-optic systems; missile guidance systems, satellites, nuclear weapons, nuclear power plants
  - Project value: $90.1M through FY11
  - Brush Wellman building new plant in Elmore, OH
    - $23.3 M cost sharing
- **Radiation Hardened Microelectronics CAPEX**
  - Modernized two obsolete semiconductor fabs
  - Accelerated the transition of RH microelectronic production capabilities by 2 generations
  - Title III funding $170M over 3 years
    - Capital Expansion through purchase of equipment & facility expansion
    - Dual contractors: Honeywell & BAE Systems
  - Coordinated with DTRA's technology development program

Key Partnership Projects

Silicon Carbide (SiC) Devices: MDA & Navy

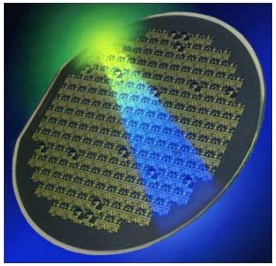
- Government/Contractor Contribution - $22.7M/$33.5M
- Establish supplier of low-cost, high performance SiC devices for advanced radar applications



T/R Module with SiC High Power MMIC Amplifiers

Lithium Ion Batteries: OGA, MDA, & USAF SMC

- Government/Contractor Contribution - $35.6M/$6.7M
- Establish source for space-quality Li Ion batteries/materials



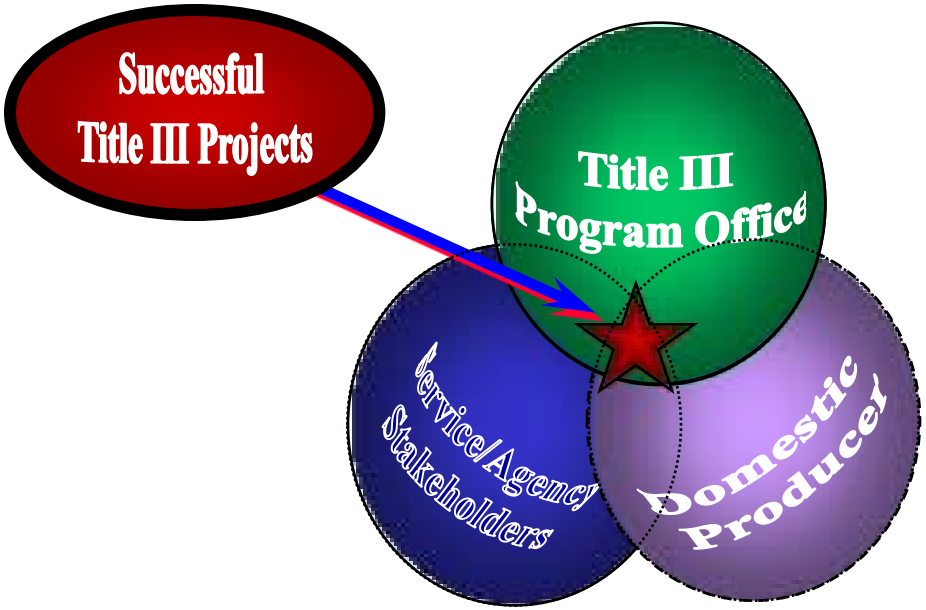
Gallium Nitride X-Band MMICs: MDA

- Government/Contractor Contribution - $9.0M/$2.3M
- Establish source of GaN MMICs for high-performance radar systems

Projects in Development

- **Gallium Nitride Advanced EW & Radar-EW MMICs: Title III & Navy**
- **Space Industrial Base Council: Title III & Multiple Agencies**

TITLE III BUSINESS PARTNERSHIP
Service-Agency Partnerships



- Stakeholders provide technical insight in project planning and execution
- Facilitate insertion of Title III industry partner products into Service systems

Stakeholders Essential to Successful Technology Transition & Capability

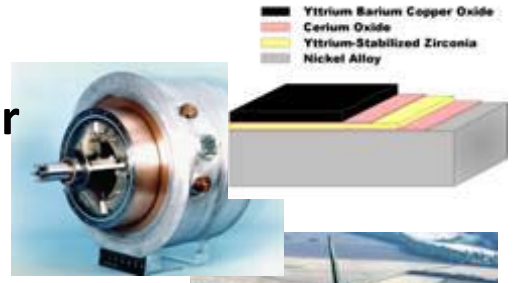
Title III Contract Objectives

Typical Tasks

- Contracting instrument: TIA
- Install, commission, and qualify production equipment
- Implement strategic business plans
- Improve & optimize processes
  - Yield, cycle time, Lean processes
- Deliver samples to customers for evaluation & qualification testing
- Market and sell to new customers
- Implement purchase commitments if appropriate
- Usual period of performance: 3-4 years

An Example

Superconducting Yttrium Barium Copper Oxide (YBCO) Coated Conductors



Key Objectives

Establish one or more domestic suppliers, that can deliver:

Parameter	Threshold	Target	How to Demonstrate
Conductor Length	≥ 100m	1,000m	Demonstrate Current Capacity End to End
Price	≤ $50/kA-m	$25/kA-m	Actual Price
Critical Current	≥ 300A/cm width	500A/cm width	Critical Current Conduction Test, End to End
Engineering Current Density (J_e)	10,000 A/cm^2 at 65K, 3 Telsa	16,667 A/cm^2 at 65K, 3 Telsa	Conduction Test, End to End
Annual Sales (2007)	≥ $10M	$20M	Actual Sales
Annual Production Capacity (2007) per Supplier	≥ 200,000 kA-m	400,000 kA-m	Capacity Demonstration ≥ X,000 kA-m / week
Number of Sources	1	2	Actual Sources

Why Use Title III

- **Title III focuses on Gov't-wide/Department-wide/Multi-platform industrial base issues that are beyond the capabilities of individual agencies or programs to rectify.**
- **Single tool to directly address industrial production shortfall issues.**
  - Title III investments injected directly into industrial base – no intermediaries
- **Provides a bridge from R&D arena to affordable, volume production; supports development of engineering specifications to qualify new materials in defense applications.**
- **DPA Fund enables great flexibility – non-expiring, re-use are unique capabilities**
- **Enhances Affordability**
  - Reduced costs through efficient, lean processes
  - Improved quality driven by modern production technologies
- **Enables trusted sources for uncompromised components for critical defense applications.**
- **Accelerates availability of emerging technologies years ahead of "normal" availability**
- **Maintains secure domestic sources vice potentially unreliable foreign sources**
- **Strengthens the economic & technological competitiveness of the U.S. industrial base**
- **Creates U.S. based jobs**

Defense Production Act Title III Initiatives

ALON Transparent Armor

- Expanded production of ALON transparent armor
- ⅓ the thickness and ½ the weight of glass-based transparent armor.
- Improved ballistic protection, performance, and reliability for vehicles equipped with ALON.
- Stops .50 cal AP.

Radiation Hardened Electronics Capital Expansion Project

- Modernized two obsolete semiconductor foundries to maintain a critical technology for defense space & missile systems
- 0.15-micron rad hard electronics enable advanced processing & performance capabilities
- Preserves a critical domestic industrial resource needed for national security

Advanced Explosives Detection Technology

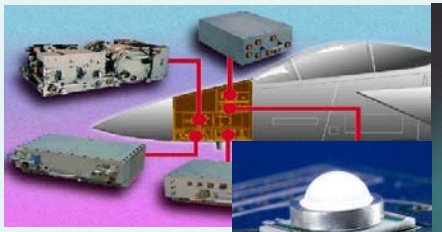
- Successfully scaled up production of the Fido IED Detection device
- Provides compact, superior detection capabilities against explosives & IED threats
- Facilitates new non-military markets – e.g., first responder, customs, homeland security

Silicon Carbide Substrates

- Established viable production base for SiC MMIC devices & accelerating insertion of SiC based technology into DoD systems
- Enabler for next-generation radar systems, electronic warfare systems & advanced communications systems
- Enabled installation of LED lighting in Pentagon & other Federal buildings
- Enabled GaN-on-SiC MMICs for next generation CREW Counter Improvised Explosive Device system

Thermal Battery Project

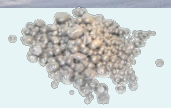
- Establishing domestic manufacturing capacity for advanced thermal batteries for tactical and strategic defense systems
- Partnering with domestic providers to expand production capacities
- Significant performance advantages over current battery technology w/lower maintenance costs



LED Light

Re-establishing Domestic Beryllium Production Capability

- Re-establishing domestic manufacturing capability for high-purity Beryllium
- Critical enabling material for defense applications including: electro-optic systems; missile guidance systems, satellites, missile defense systems, nuclear weapons, nuclear power plants



Light-Weight Polymer Ammunition

- Developing a production capability for light-weight polymer-based ammunition.
- ~30% lighter than conventional ammunition.
- Drop-in replacement for existing systems – no redesign required.
- Reduces soldier burden
- Improves battlefield mobility and survivability
- Reduces fuel consumption, increases range
- Improves battlefield logistics.
- Supports Lighten-the-Load Initiative

Summary

Title III provides powerful authorities that enable the Government to rectify industrial base shortfalls

Synergy of technical and business objectives focused on long-term economic viability and technology insertion

Broad participation enhances leverage

Title III Program has a proven record of performance and innovative execution

Defense Production Act
Title III Program Contacts

web site:
http://www.acq.osd.mil/ott/dpatitle3/

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