DEFENSE ACQUISITION UNIVERSITY
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Defense Exportability Features

Better Buying Power Initiative

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Background

US Defense Exportability Objectives

Political	Strengthen alliances and other relationships with friendly countries; encourage willingness to act collectively; promote international legitimacy in coalition operations
Industrial	Bolster domestic and allied defense industrial base
Technical	Ensure access to the best global technologies; help minimize capabilities gap with allies/coalition partners
Operational	Achieve interoperability that facilitates combined operations, reduces operational hazards and minimizes OPSEC compromises
Economic	Share (reduce) costs for new system development, and for short and long-term support of fielded systems

US Defense Exportability

The Challenge

How can the U.S. best balance these considerations?

Provide required capabilities to allies and partners

What is the USG's "decision trade space"?

Protect U.S. Defense technology

- What are our strategic objectives wrt to the partner?
- What are the partner's capability requirements?
- How urgent is the need?
- What is the partner's capacity to absorb and effectively employ the capabilities in question?
- What strategic benefits does the U.S. gain by providing the requested / required capabilities?

- How sensitive is the technology in question?
- What is the partner's capability and will to protect sensitive U.S. technology?
- What are the risks to the U.S. or its allies/partners if the technology / system is compromised?
- How serious are these risks?
- Can these risks be mitigated satisfactorily?

International Programs Through an Affordability Lens

Affordability

International Programs

- Access to leading technology
- Access to foreign test facilities
- Use of foreign-funded modifications
- Shared risk
- Shared costs (leverage Other People's Money)
  - Technology development
  - RDT&E
  - Production non-recurring
  - Sustaining engineering
  - Modification/upgrade non-recurring
  - Training and sustainment infrastructure
- Economies of scale
- Lower G&A rates
- Maintain production lines
- Interoperability

Key US GDE Mechanisms & Controls

Transfer Mechanisms:

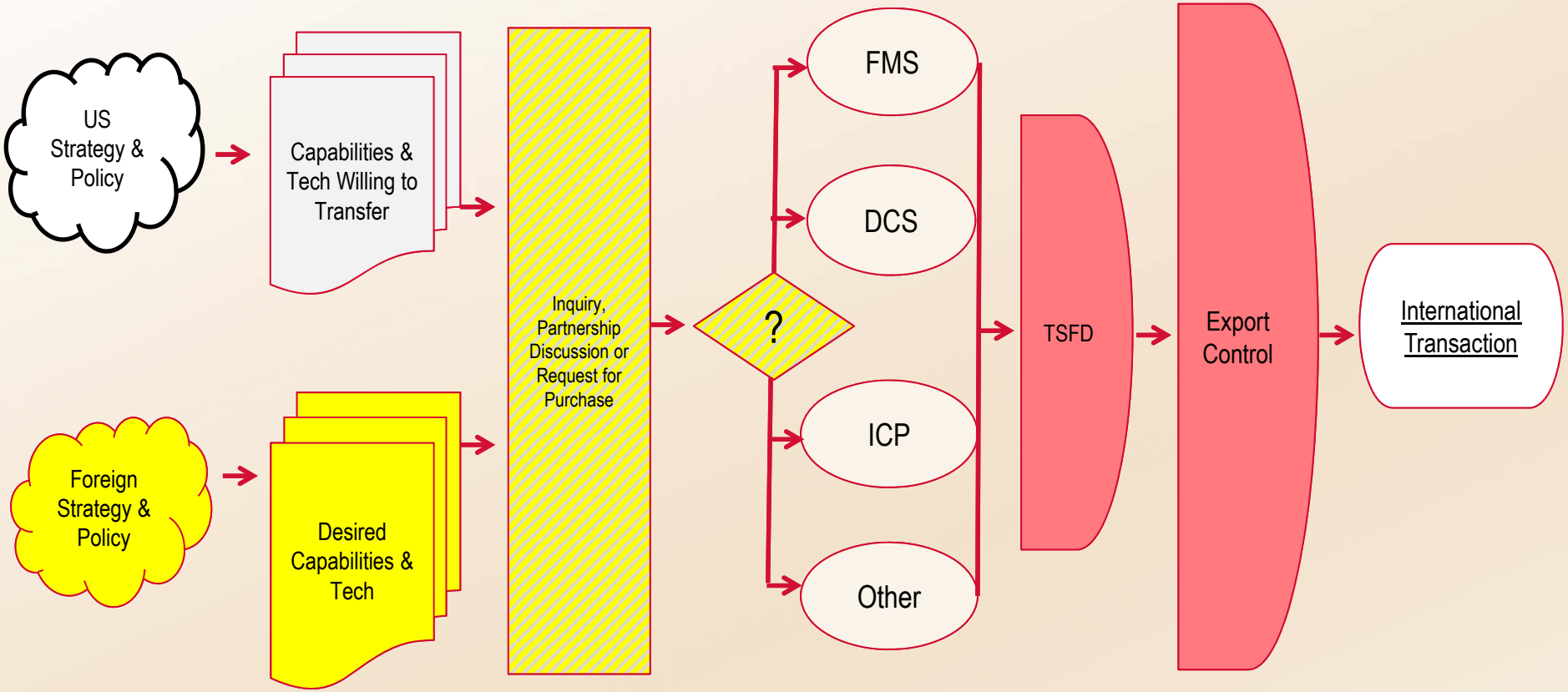
- Foreign Military Sales (FMS)
- Direct Commercial Sales (DCS)
- International Cooperative Programs (ICP)
- Other Building Partner Capacity (BPC) Transfers

versus

Control Mechanisms:

- Technology Security & Foreign Disclosure *(TSFD)*
- Export Control *(Defense & Dual Use)*

International Transaction Overview



Defense Exportability Features

Defense Exportability Features

What are they?

- Design efforts—such as program protection and differential capability—which protect:
  - Critical Program Information (CPI) and Critical Technology (CT)
  - TSFD-approved capabilities for export
- Efforts fall into two mutually supportive areas:
  - Program protection measures: AT, IA, SA, SSE, etc.
  - Differential capabilities: the modification or removal of capabilities, information, or technology for exportable configurations

Defense Exportability Features Initiative

What are its objectives?

- **Defense Exportability Features initiative is designed to improve outcomes in four key areas**:
  - **Enhance Program Protection for U.S. and foreign partners/ customers**
  - **Lower U.S. and foreign partner/customer production and sustainment costs through economic order quantities and benefits**
  - **Enhance coalition interoperability with foreign partners**
  - **Increase availability of systems for foreign sales and cooperation, resulting in more competitive U.S. exports**

Current Exportability Initiatives

OSD Exportability Policy Initiatives

- Defense Exportability Features (DEF) Pilot Program
- Better Buying Power 2.0 – "incorporate defense exportability features in initial designs"
- Interim DoDI 5000.02 – new exportability requirement language
- Defense Acquisition Guidebook revision - will provide more detailed exportability analysis guidance
- Export Control Reform Initiatives

DEF Pilot Program

Section 243 of the FY11 NDAA established the DEF Pilot Program:

> *The Secretary of Defense shall carry out a pilot program to develop and incorporate technology protection features in a designated system during the research and development phase of such system.*

- The FY12 NDAA added an amendment to Section 243 requiring that vendors contribute at least 50% of the costs of developing and implementing DEF.
- FY14 NDAA extended the DEF program 5 years through FY19.
- FY15 NDAA Legislative Proposal would change 50% industry share to “an appropriate share” determined by OSD.

Better Buying Power 2.0

- BBP 2.0 includes "Increase the incorporation of defense exportability features in initial designs" as one of its controlling cost initiative goals.
- In the past, our general practice has been to provide for exportability features, anti-tamper, and exportable capability levels after a product has been designed, tested, and put into production for U.S. customers.
- The Defense Exportability Features (DEF) initiative focuses on the opportunity for DoD program management and contractor teams to build in potential exportability 'up front' by assessing, designing, developing, and incorporating defense exportability features in their systems during the early development phases.
- The DEF initiative is continuing under BBP 3.0.

DoDI 5000.02

- New International Acquisition and Exportability section adds new Program Management responsibilities:
  - "Integrate international acquisition and exportability considerations into the program's Acquisition Strategy at each major milestone and decision point"
  - "Consider the potential demand and likelihood of cooperative development or production, Direct Commercial Sales, or Foreign Military Sales early in the acquisition planning process"
  - "Programs will pursue cooperative opportunities and international involvement throughout the acquisition life cycle"

Defense Acquisition Guidebook

- Rewrote International Programs section into a new International Acquisition and Exportability (IA&E) section in Chapter 11
- Includes total rewrite or update of the following subsections:
  - Identifying IA&E during Acquisition Phases
  - Acquisition Strategy International Involvement section
  - International Cooperative Programs (ICPs)
  - AT&L International Agreement Procedures
  - Technology Security and Foreign Disclosure (TSFD)
  - Defense Exportability Integration
  - Sales and Transfers
  - Acquisition and Cross-Servicing Agreements (ACSAs) and Cooperative Logistics

DEF Pilot Program

DEF Pilot Program Overview

- AT&L selected 17 programs (16 MDAPs/1 non-MDAP) from Service nominations between FY12-15
- Average DEF funding/yr: $1.7M (FY12-13); $3.2M (FY14-20)
- Total number of DEF studies completed to date: 15
- Ongoing DEF studies: (6)
  - MQ-4C Triton (CPI and design analysis)
  - Army IAMD (EMD design development)
  - Height of Burst Fuzing (HOBF) (design development and implementation)
  - P-8A (export configurations and anti-tamper plans)
  - 3DELRR (EMD design development)
  - SDB II (EMD design development)

DEF Pilot Program Selections

FY12-15

FY 12 Pilot Programs

- **Air Force (1)**
  - **Three Dimensional Expeditionary Long Range Radar (3DELRR)**
- Army (4)
  - Joint Proximity/Height of Burst Fusing (HOBF)
  - Army Integrated Air and Missile Defense (AIAMD)
  - Indirect Fires Protection Capability, Increment 2 – Intercept (IFPC2-I)
  - Common Infrared Counter Measures (CIRCM)
- Navy (1)
  - MQ-4C Triton

FY 13-15 Pilot Programs

- Air Force (3)
  - Small Diameter Bomb II (SDB II)
  - MQ-9 Reaper
  - Joint Air-to-Surface Standoff Missile (JASSM)
- Army (4)
  - Joint Air to Ground Missile (JAGM)
  - Armored Multi-Purpose Vehicle (AMPV)
  - Armed Aerial Scout (AAS)
  - Ground Combat Vehicle (GCV)
- Navy (4)
  - P-8A Poseidon
  - Next Generation Jammer (NGJ)
  - Air & Missile Defence Radar (AMDR)
  - E2D Advanced Hawkeye

FY15 DEF Pilot Studies

Continuing or Follow-on studies:

- 3DELRR (going through EMD contract award protest review)
- Height of Burst Fuzing (HOBF) (DEF design implementation)
- SDB II (DEF EMD design development)
- MQ-4C Triton (DEF design)
- AIAMD (DEF EMD design development)

Potential studies:

- Joint Air-to-Ground Missile (JAGM) (pre-MS B)
- Armored Multi-Purpose Vehicle (AMPV) (pre-MS B)
- Indirect Fires Protection Capability, Inc. 2-Intercept (post-MS A)

DEF Pilot Program Process

- Service Acquisition Executives (SAEs) nominate programs to be DEF Pilot Program “designated systems” to the Director, AT&L/IC.
- Director, AT&L/IC selects DEF Pilot Programs.
- Selected programs notify AT&L when ready to commence DEF studies.
- AT&L/IC funds DoD share of DEF funding to program, and industry partner matches.
- Study commences – typically 12 months, but can run longer.
- At completion of study, program may request follow-on studies (feasibility analysis and/or DEF design work).

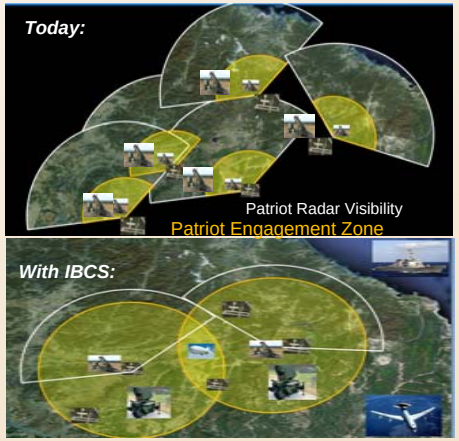
DEF Pilot Program Participant

Integrated Air & Missile Defense Systems

IAMDS Program Overview

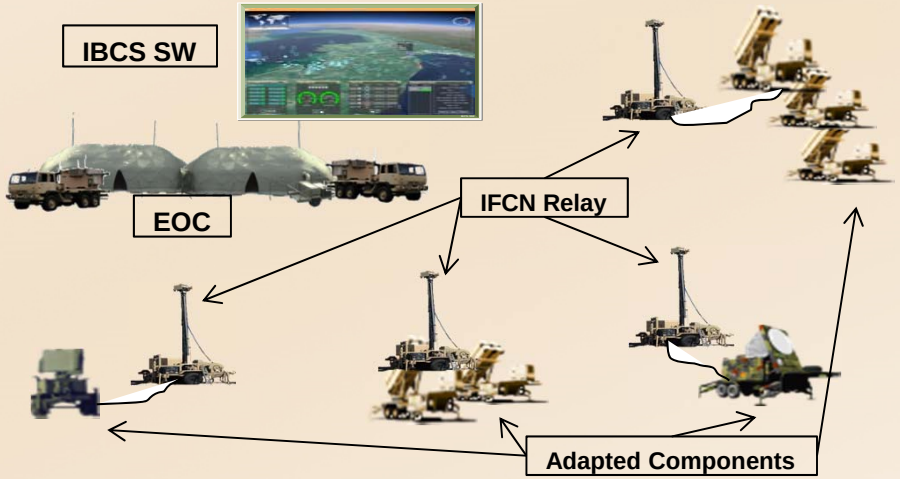
Program Description:

- Provides common mission command across all Army AMD echelons and integrates with Joint IAMD architecture.
- Critical enabler addressing TRADOC Warfighting Operational Gaps
  - Single Integrated Air Picture (SIAP)
  - Integrated Fire Control (IFC)
  - Critical asset defense against full range of threats
- Architecture provides flexibility to respond to evolving threat (sensor, interceptor, EW)



Program Components:

- Engagement Operations Center (EOC)
  - Army AMD mission command center provides AIAMD command, staff and engagement functions
- Integrated Fire Control Network (IFCN)
  - WIN-T based network with WIN-T configuration managed Tactical Mast Trailers equipped with IBCS B-side adaptation kits
- IBCS Software
  - Common mission command software
- Adaptation Kits (A-Kits)
  - Adapts sensors/shooters to the IFCN (Sentinel, PATRIOT, IFPC/Avenger)



AIAMD is much more than integrating sensors and shooters

Phase I: Assess Feasibility

FY12

- Received $1M initial funding ($500K each from OSD(IC) & Industry)
- Screened IBCS HW/SW configuration items for export characteristics.
- Developed concepts for interoperability.
- Investigated advanced protection features.
- Assessed feasibility of IBCS HW export approach:
  - Range of FMS configurations with maximum commonality.
- Assessed feasibility of IBCS SW export approach:
  - Tailor software approach based on requirements.

Phase II: Refine Designs

FY13

- Received $300K in additional funding ($150K each from OSD(IC) & Industry).
- Continued to modify HW architecture:
  - Reviewed impact on exportability.
  - Based emerging design on export considerations.
- Completed SW prototyping.
- Completed initial draft of summary technical report.
- Developed initial performance estimates for application SW.
- Continued investigation of advanced protection features.

Designing in Exportability Features

IBCS Common SW Configuration Items (CSCIs) / Design Components (DCs)

CSCI 1	Configuration Item #1	CSCI 2	Configuration Item #2	CSCI 3	Configuration Item #3	CSCI 4	Configuration Item #4	CSCI 5	Configuration Item #5	CSCI 6	Configuration Item #6	CSCI 7	Configur Item 7
DC 1.1	Design Component 1.1	DC 2.1	Design Component 2.1	DC 3.1	Design Component 3.1	DC 4.1	Design Component 4.1	DC 5.1	Design Component 5.1	DC 6.1	Design Component 6.1	DC 7.1	Design Compon 7.1
DC 1.2	Design Component 1.2	DC 2.2	Design Component 2.2	DC 3.2	Design Component 3.2	DC 4.2	Design Component 4.2	DC 5.2	Design Component 5.2	DC 6.2	Design Component 6.2		
DC 1.3	Design Component 1.3					DC 4.3	Design Component 4.3			DC 6.3	Design Component 6.3		
						DC 4.4	Design Component 4.4			DC 6.4	Design Component 6.4		
						DC 4.5	Design Component 4.5			DC 6.5	Design Component 6.5		
						DC 4.6	Design Component 4.6			DC 6.6	Design Component 6.6		
						DC 4.7	Design Component 4.7			DC 6.7	Design Component 6.7		
										DC 6.8	Design Component 6.8		
										DC 6.9	Design Component 6.9		

Designing in Exportability Features

IBCS Common SW Configuration Items (CSCIs) / Design Components (DCs)

CSCI #8	Configuration Item #8	CSCI #9	Configuration Item #9	CSCI #10	Configuration Item #10	CSCI #11	Configur Item #11	CSCI #12	Configur Item #12	CSCI #13	Configuration Item #13	CSCI #14	Configuration Item #14
DC 8.1	Design Component 8.1	DC 8.1	Design Component 9.1	DC 10.1	Design Component 11.1	DC 11.1	Design Compon 11.1	DC 12.1	Design Component 12.1	DC 13.1	Design Component 13.1	DC 14.1	Design Component 14.1
DC 8.2	Design Component 8.2	DC 8.2	Design Component 9.2					DC 12.2	Design Component 12.2	DC 13.2	Design Component 13.2		
DC 8.3	Design Component 8.3	DC 8.3	Design Component 9.3										
DC 8.4	Design Component 8.4	DC 8.4	Design Component 9.4										
DC 8.5	Design Component 8.5	DC 8.5	Design Component 9.5										
DC 8.6	Design Component 8.6												

Defense Exportability Features

Summary

Defense Exportability Features

FY15 Presidents Budget Request

- Includes $3.763M in RDTE funds for DEF pilot program feasibility studies.
- Enables additional MDAPs for the pilot program starting in FY15.
- Program funding:

DEF Program Element ($M)					
	2015	2016	2017	2018	2019
Total PE	3,244	3,295	3,391	3,267	3,143

POCs

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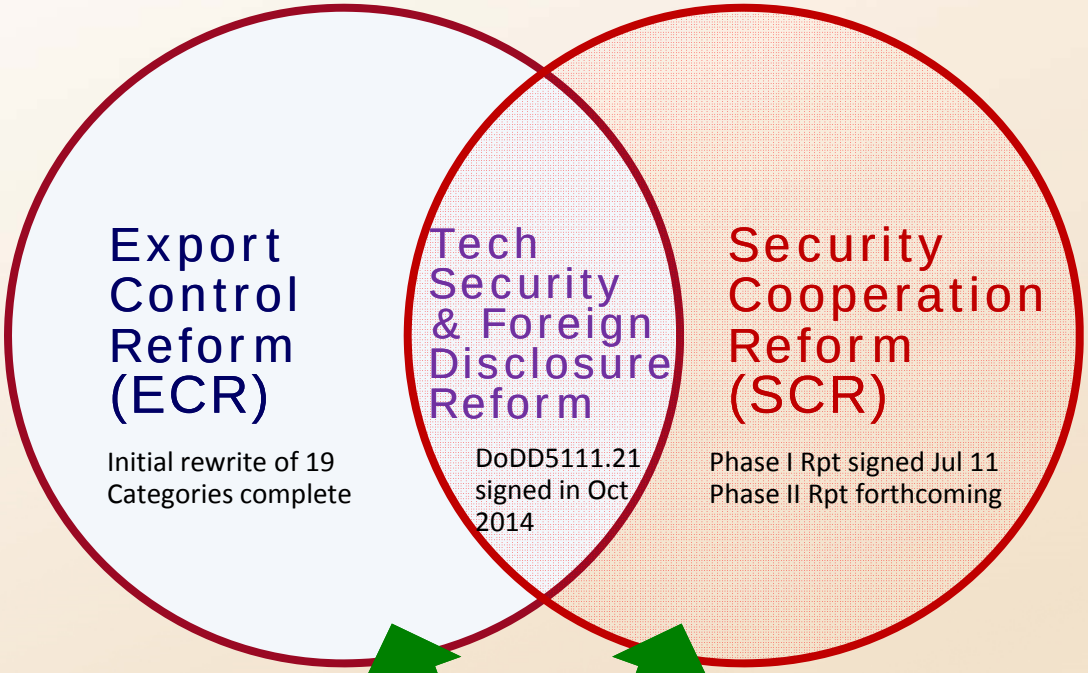
Questions?

Backup

Context - Major Reform Efforts

Owners of key reform initiatives are working together



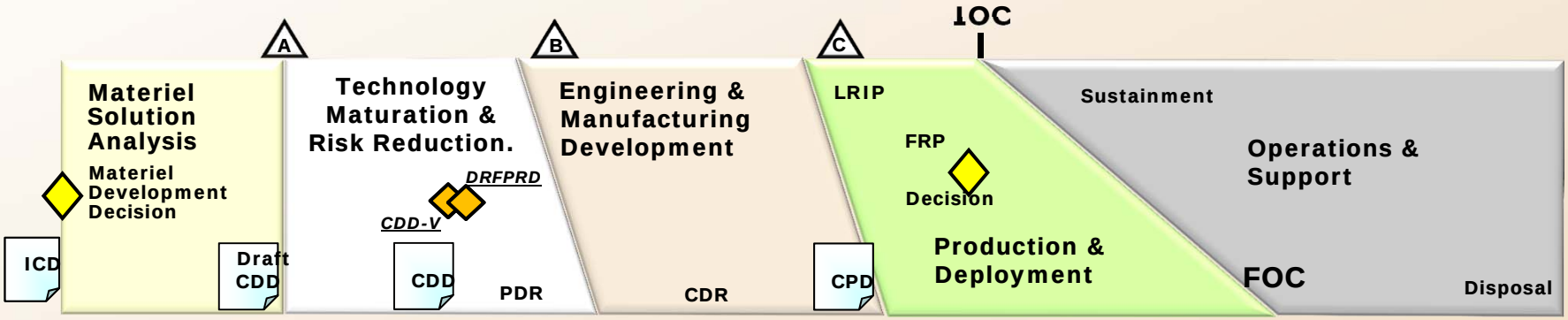
Important Complementary Efforts

- **DoD Acquisition (e.g., DEF, BBP alignment/integration efforts)** (DEF Pilot Program authorized by Congress in FY2011)
- **Congressional Notification Reform (State)** (Provided to Hill in Apr 12)

Ongoing Major Reform Efforts

- **ECR – Major Initiatives (4)**
  - Single Export Control List
  - Single Enforcement Agency
  - Single IT System
  - Single Licensing Agency
- **TSFD – Major Initiatives (4)**
  - Upfront guidance / ATTR SSG policies
  - Triage/track/process High-Level Decisions
  - Consolidate processes and decisions
  - Empower ATTR SSG / Common Escalation process
- **SCR – Major Focus areas (5)**
  - Conduct Better SC Planning – anticipate better
  - Generate More Precise Partner Reqm'ts
  - Improve/accelerate FMS-related processes
  - Generate a "fast track" process for urgent needs
  - Improve SC workforce's skills / knowledge
- **AT&L – Major Initiatives (2)**
  - Defense Exportability Features
  - Better Buying Power – Foreign Initiatives
- **State – Major Initiative (1)**
  - Compress Congressional Notification

Defense Exportability Activities



Activities Require MDA Approval

Exportability Assessment	**Exportability Feasibility Studies**	Exportable Designs	Exportable Version Production	Exportable Version Depot & Spares
• Projected sales • Technology complexity	• Conducted with program contractor • Included in TMRR contract • Funded by program or DEF PE • **Industry provides 50%**	• Funded by program, cooperative program or customer, or industry (or combination) • May be multiple configurations	• Funded by customer • May be multiple configurations	• Funded by customer

DEF Feasibility Studies

<u>If MDA established DEF requirements at MS A</u>

- DEF feasibility studies should be conducted by Program Management Office (PMO) and program contractors:
  - Based on available DoD funding and the willingness of the contractor to enter into DEF cost-sharing arrangements
  - Consistent with USG/DoD TSFD plans (if known, if available)
  - Conducted jointly by the PMO, DoD Component IPO, and OUSD(AT&L)/IC
- Program may apply for DEF Pilot Program status and funding through their DoD Component IPO
- TMRR phase RFPs should contain mutually acceptable DEF feasibility study requirements

DEF Feasibility Studies *(cont.)*

Scope of Study

- Assess the international market for potential foreign sales during Full Rate Production (FRP)
- Identify the DEF non-recurring engineering (NRE) efforts and costs
- Perform a Business Case Analysis (BCA) by assessing DEF RDT&E costs versus P&D and O&S phase savings
- Use the BCA to inform the MDA's decision at the Pre-MS B decision point on potential EMD phase efforts to develop one or more exportable configurations

Exportable Configuration Development During EMD

- At the Pre-Milestone B and Milestone B decisions, the MDA should determine if one or more exportable configurations should be developed
  - Informed by feasibility studies; requirements included in RFP
  - Funding sources must be identified
- Exportable configurations should only be developed if there is a firm commitment such as:
  - One or more signed ICP international agreements
  - DSCA use of Special Defense Acquisition Funding (SDAF) in anticipation of FMS cases (under consideration)
  - One or more signed FMS LOAs
  - A USG-approved export of proposed U.S. industry DCS transactions