



# **IA Personnel Readiness: Training, Certification and Workforce Management**

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# Outline



Department of Defense  
DIRECTIVE

NUMBER 8570.1  
August 15, 2004


ASD(NID)/DoD CIO

SUBJECT: Information Assurance Training

References: (a) [DoD Directive 8500.1](#)  
(b) [DoD Instruction 8500](#)  
February 6, 2003  
(c) DoD Directive O-853  
January 8, 2001  
(d) Section 3544 of title  
(e) through (h), see enclosure

**1. PURPOSE**  
This Directive:  
1.1. Establishes policy and assigns  
through (d) for Department of Defense  
certification, and workforce management  
1.2. Authorizes the publication of

**2. APPLICABILITY AND SCOPE**  
This Directive applies to:  
2.1. The Office of the Secretary of  
Chairman of the Joint Chiefs of Staff, the  
Inspector General of the Department of  
Department of Defense Field Activities  
Department of Defense (hereafter referred to as the DoD)



**DoD 8570.1-M**

**Information Assurance  
Workforce Improvement  
Program**

**19 December 2005**  
**Assistant Secretary of Defense for  
Networks and Information  
Integration/Department of Defense Chief  
Information Officer**

- ◆ Policy
- ◆ Objectives & Impact
- ◆ Governance & Oversight
- ◆ Making it Work
- ◆ Schedule
- ◆ Near Term Actions
- ◆ Moving Forward



# IA Training & Certification in DoD

◆ Military Communications/Electronics Board (MCEB) endorses certification (Aug 97)

HR

◆ ASD/C3I & USD/P&R memo: *IA Training & Certification* (29 June 98)

HR

System Administrators, maintainers and end users

◆ OSD, *IA/IT HR IPT Report: IA and IT Training, Certification and Personnel Management in the Department of Defense*. (27 Aug 99)

HR

◆ DepSecDef memo: *Implementation of the Recommendations of the IA & IT HR IPT on Training, Certification, and Personnel Management in the Department of Defense* (14 July 00)

End State: sustained pool of skilled IA/IT professionals

◆ CJCSI 6510.01C *Information Assurance & Computer Network Defense* (May 01)

◆ DoD D 8500.1 *Information Assurance* (24 Oct 02)

◆ DoDI 8500.2 *IA Implementation* (7 Feb 03)

◆ CJCS 6510M *IA & CND Manual* (Apr 03)

◆ ASD/NII Policy Memo: *DAA Training & Certification Requirements* (15 July 03)

HR

◆ DoDD 8570.1 *IA Training, Certification and Workforce Mgmt* (15 Aug 04)

HR

◆ DoD 8570.1M *IA Workforce Improvement Program (IA WIP)* (19 Dec 05)

1997 1998 1999 2000 2001 2002 2003 2004 2005



# IA Personnel Readiness

## *Vision*

A professional, **efficiently managed** IA workforce with knowledge and skills to **securely configure** information technology, **effectively employ** tools, techniques and strategies to defeat adversaries, and **proactively identify and mitigate** the full spectrum of rapidly evolving threats and vulnerabilities in order **to protect the network**

## *The Road Ahead*

- ◆ Provide Components the capability to identify, tag, track and manage their IA workforce
- ◆ Establish a DoD enterprise-wide baseline IA certification requirement to validate knowledge, skills of IA personnel
- ◆ Leverage private sector capabilities to facilitate training; raising the bar for IA knowledge and skills needed by DoD
- ◆ Provide corporate oversight and enforcement capability
- ◆ Extend the discipline to non-IA/IT leadership at all levels

***"Operational controls are IT security methods that are primarily implemented and executed by people – not systems...."*** Naval Audit Service



# Policy

## DoDD 8570 (signed 15 Aug 04)

- ◆ Identify, train and certify privileged users & IA managers to DoD baseline requirement
- ◆ Assign position specialty code/skill identifiers to personnel with privileged access; track key data in Component personnel/manpower databases of record
- ◆ Identify positions in manpower databases
- ◆ Record, track contractors IA certification status in DEERS
- ◆ Require IA in all levels of professional military education
- ◆ Applies to civilian, military, local national, contractor; full time or "as assigned"; regardless of series

## DoD 8570.1M (signed 19 Dec 05)

- ◆ Defines IA workforce categories, levels, and functions
- ◆ Mandates use of commercial certifications to validate DoD baseline knowledge and skills
- ◆ Requires certifications be accredited under ISO/IEC 17024, *General requirements for bodies operating certification of persons*
- ◆ Requires continuous learning or re-test necessary to maintain certification status
- ◆ Specifies reporting requirements
- ◆ Establishes Oversight Advisory Council



# Objectives and Impact

## Objectives

## Impact on DoD

### *Certify the Workforce*

- ◆ Improved IA posture
- ◆ Foundation of a professional IA workforce
- ◆ Mechanism to rapidly “raise the bar” on IA skills

### *Manage the Workforce*

- ◆ Ability to place trained/capable personnel in IA jobs
- ◆ Basis for defining standard IA personnel requirements

### *Sustain the Workforce*

- ◆ Elevate priority of IA for training dollars
- ◆ Enable personnel to hone IA skills, keep current with latest technology, threats and vulnerabilities, tools and techniques

### *Extend the Discipline*

- ◆ Leaders at all levels who understand the impact of IA on mission accomplishment
- ◆ A model for Allies and coalition partners
- ◆ IA literacy for other critical workforces (e.g., acquisition)

***“Technical certifications are part of our personnel development and are considered...investment in our employees” (private sector best practice)***



# IA Training and Certification Requirements



Training & Certification Requirement	Technical Category	Management Category	
	Level I - III	Level I - III	DAA (US Gov't Employee only)
Initial Training	Yes	Yes	Yes
IA Certification (From approved list)	Yes (within 6 months)	Yes (within 6 Months)	Yes (DISA WBT or IRMC 4012)
OJT/Familiarization	Yes (for initial position)	No	No
Local OS Cert	Yes	No	No
Refresher Training/ Continuing Ed	Yes (as required by Certification)	Yes (as required by Certification)	No
Re-certification	Yes (as required by Certification)	Yes (as required by Certification)	Yes (every 3 years)



# What's Changed Due to SD106 Process

- ◆ Stronger oversight by OSD;
  - ◆ *Review and validate/approve* Component plans for implementing 8570/DoD baseline
  - ◆ *Methodologies* used to identify employees performing IA functions
  - ◆ *Tracking processes* used to determine specialized training received
  - ◆ *Impact* of using particular methodologies/processes
  - ◆ *Reliability and relevance* of Component reported metrics & information
  - ◆ *Components to provide a plan* (POA&M) for implementing 8570
  - ◆ Components to provide plan to track, monitor completion of security awareness training
  - ◆ Components to report on Component specific training and certification activities
- ◆ Advisory Council minimum composition, role defined
- ◆ Continuous learning linked to requirement to maintain certification
- ◆ Waivers permitted in combat zone (except Level I)
- ◆ DAA re-certification requirement; IRMC/CNSS 4012 certificate as alternative
- ◆ COCOM/subordinate joint command 8570 implementation treated as part of responsible Military Department per DoDD 5100.3





# H.R.1815

## National Defense Authorization Act for Fiscal Year 2006



**Amends Chapter 101 of title 10, United States Code, to allow Services to use appropriated funds to pay for commercial certifications**

### Subtitle C – Education and Training

#### Part IV – Other Matters

### **SEC. 538. PAYMENT OF EXPENSES OF MEMBERS OF THE ARMED FORCES TO OBTAIN PROFESSIONAL CREDENTIALS.**

(a) In General- **Chapter 101 of title 10, United States Code, is amended** by adding at the end the following new section:

Sec. 2015. Payment of expenses to obtain professional credentials

(a) Authority- The Secretary of Defense and the Secretary of Homeland Security, with respect to the Coast Guard when it is not operating as a service in the Navy, **may pay for--**

**(1) expenses for members of the armed forces to obtain professional credentials, including expenses for professional accreditation, State-imposed and professional licenses, and professional certification; and**

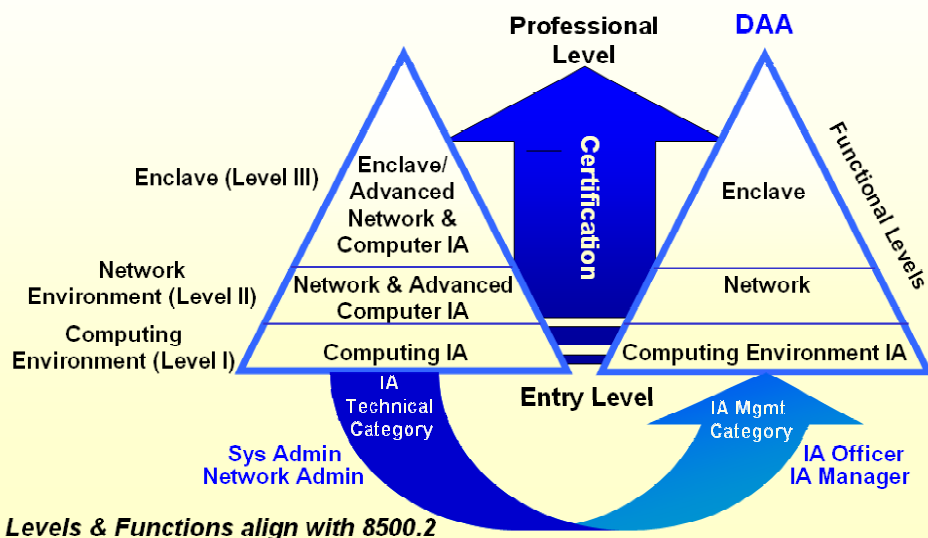
**(2) examinations to obtain such credentials.**

(b) Limitation- The authority under subsection (a) may not be used to pay the expenses of a member to obtain professional credentials that are a prerequisite for appointment in the armed forces.

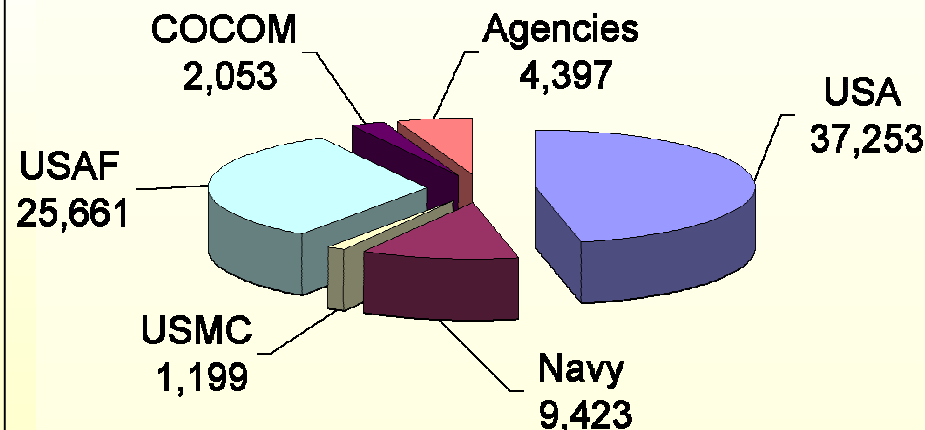


# IA Workforce Focus

## Defining the IA Workforce Structure

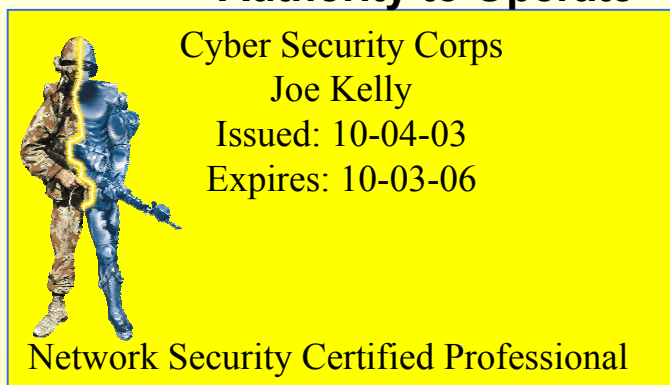


## Identifying Workforce Size, Distribution\*



\* Based on 05 FISMA Report; excluding NSA, DIA;

## Equating Certification to Personnel "Authority to Operate"

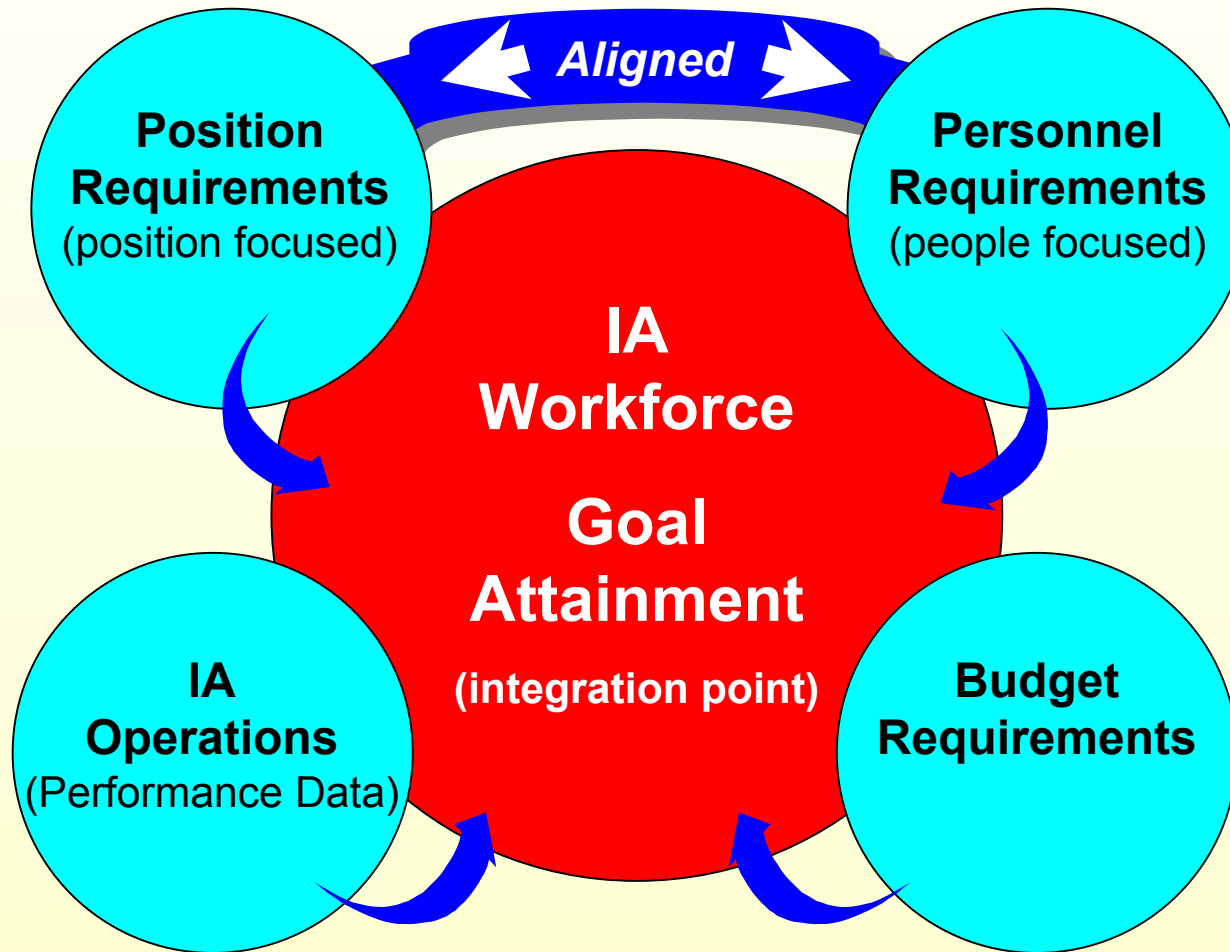


## Planning future areas for IA certification

- ◆ Certification and Accreditation
- ◆ IDS analysts
- ◆ Auditors
- ◆ CND/SP members
- ◆ IA architects, engineers



# Making it Work

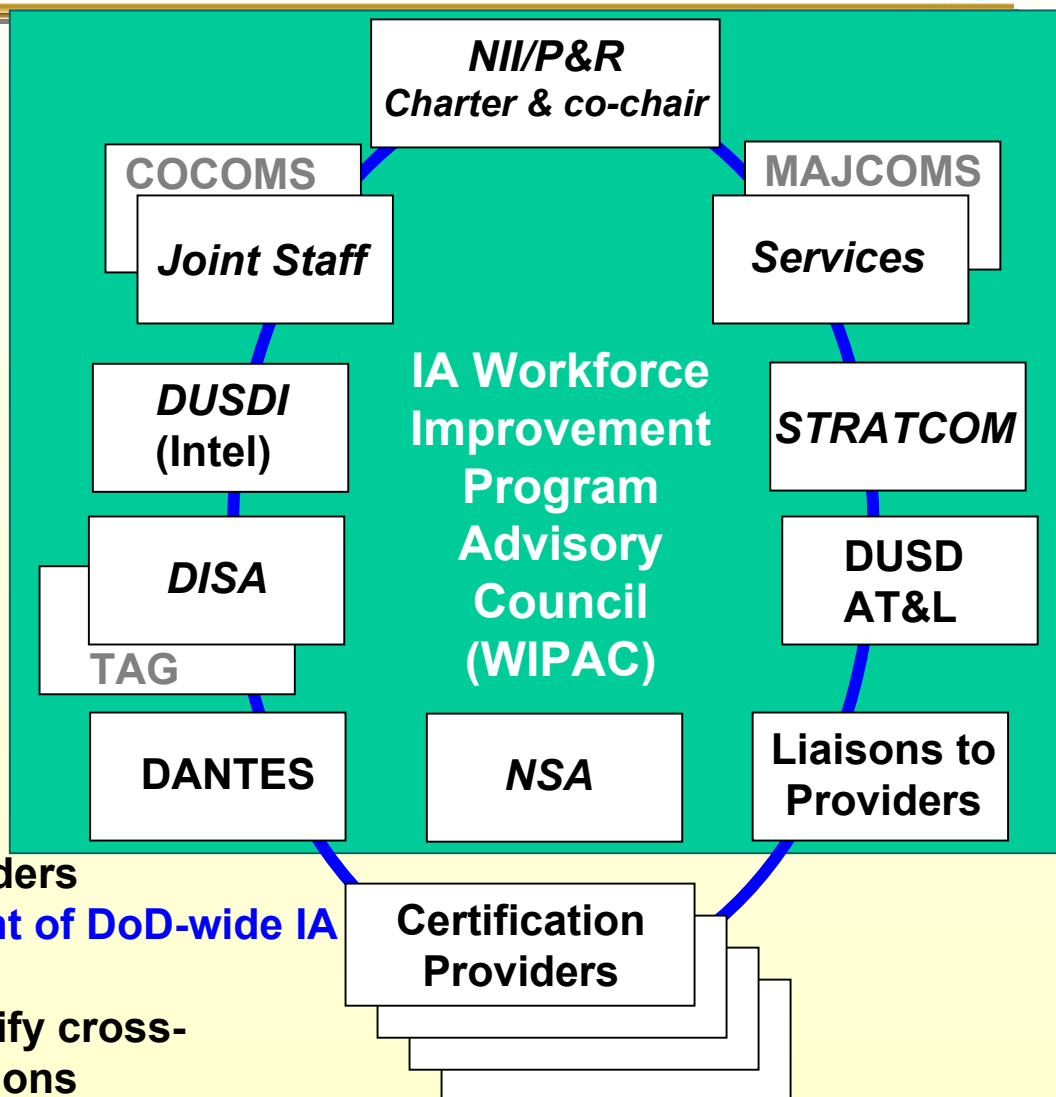


***"Operational controls are IT security methods that are primarily implemented and executed by people – not systems...."*** Naval Audit Service



# Governance and Oversight

- ◆ Establish process to add/delete certifications
- ◆ Review/update levels & functions
- ◆ Monitor program progress; impact on IA posture
- ◆ Review Component programs & plans to validate compliance
  - ◆ Implementation & sustaining plans
  - ◆ Plans, methodologies to track, monitor, document personnel awareness and training completion
- ◆ Conduct assessments to ensure validity of functions, training & certification requirements per 29CFR1607
- ◆ Provide feedback to certification providers
- ◆ Prioritize requirements for development of DoD-wide IA training content
- ◆ Engage IA training community to identify cross-Component IA training issues & solutions





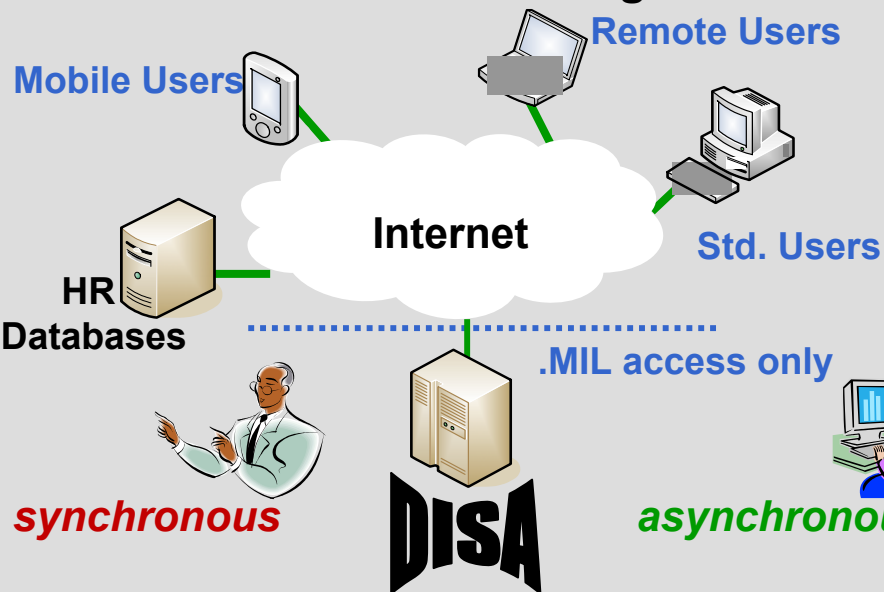
# Robust Advanced Distributive Training

## IA Training & Awareness (NII)

(Policy, Concepts, Procedures;  
Professionalization)



## Distributive training & mentoring



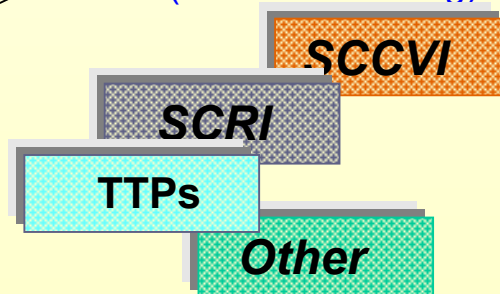
## Rapid Experience Builder

### System Administrator Simulation Trainer (SAST)

Filling the experience deficiency in cyber security staff through simulation



### IA Tools ("How to" Training)



## COTS Training Products, Libraries



## Certification Pre-Tests



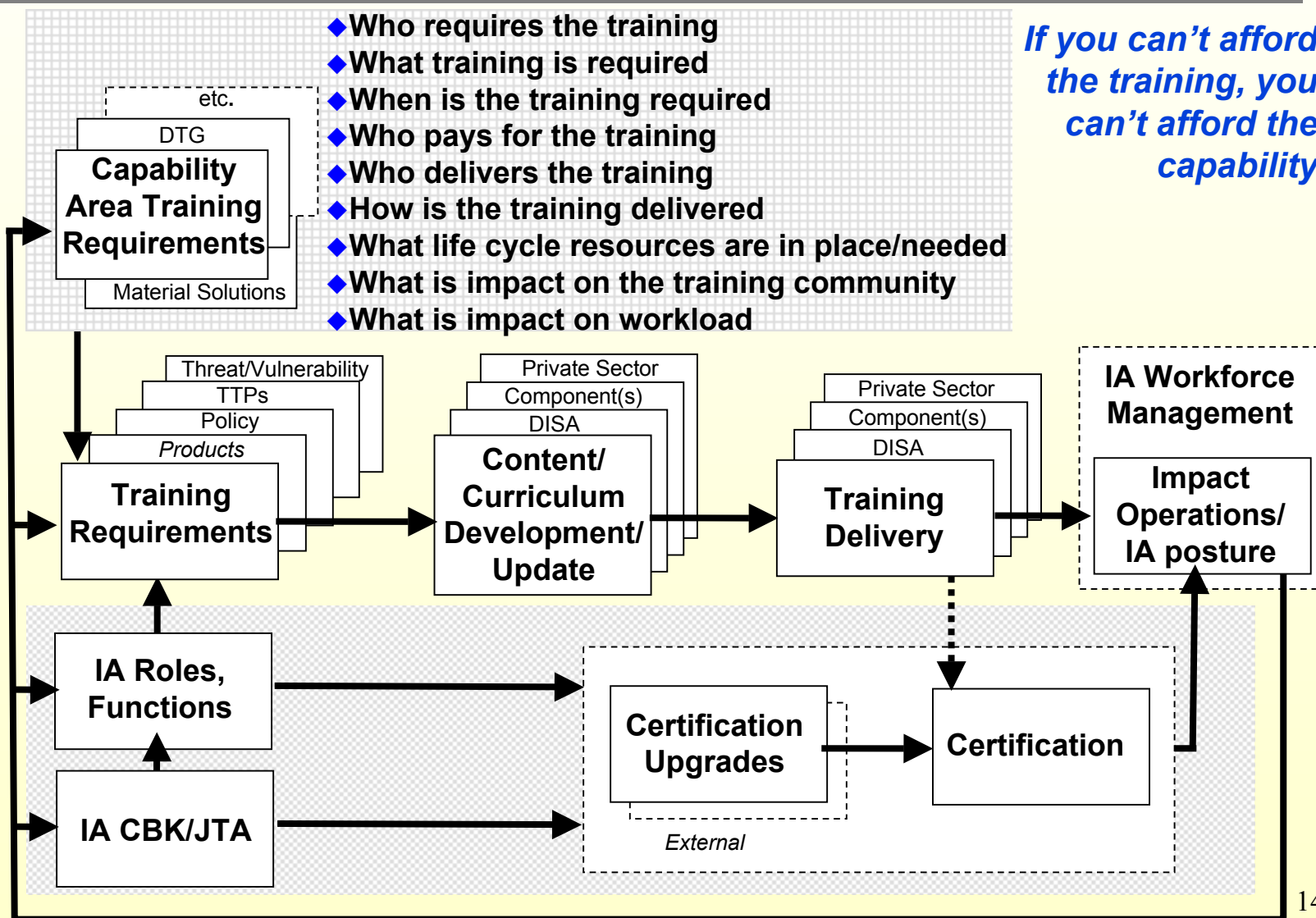


# Foundational Activities: Training

- ◆ Who requires the training
- ◆ What training is required
- ◆ When is the training required
- ◆ Who pays for the training
- ◆ Who delivers the training
- ◆ How is the training delivered
- ◆ What life cycle resources are in place/needed
- ◆ What is impact on the training community
- ◆ What is impact on workload

*If you can't afford the training, you can't afford the capability*

Real-world events  
CNDSP findings  
Red Team findings  
DOT&E events  
IA training exercises  
Job surveys/analyses  
Operational performance metrics







# DANTES:



## Orchestrate Certification Testing

### *Defense Activity for Non-Traditional Education Support*



### Certification Program



- ✦ DANTES test sites administer 15,000 to 20,000 certification exams each year.
- ✦ Certification examination fall into the basic categories listed below.

Medical	Electronics
Engineering	Automotive
Information Technology	Construction
Finance	Environmental
Food/Hotel Management	Physical Fitness

- ◆ Existing voluntary certification support program for military personnel
- ◆ Partnerships with critical players:
  - ◆ Education Centers on military bases world-wide
  - ◆ Test providers (Nat'l Test Centers)
  - ◆ Certification providers
  - ◆ OSD/NII and OSD/P&R

- ◆ Paperless voucher system
- ◆ Database to track usage; report test results
- ◆ Ability to extend support to civilians

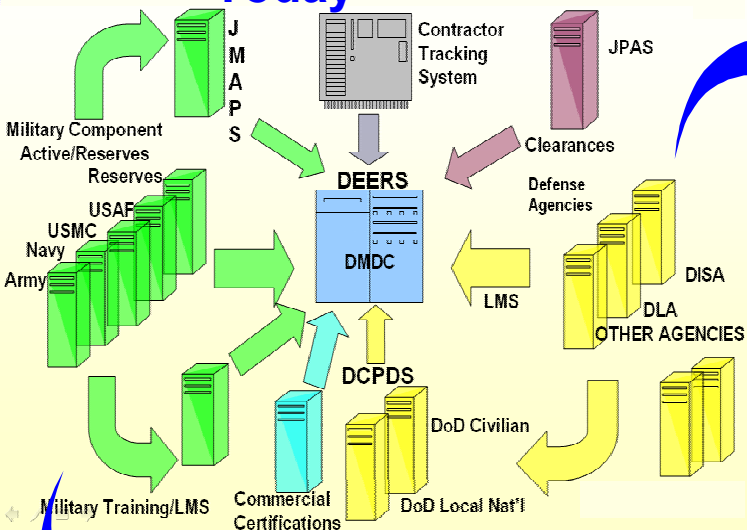
Tech I*	Tech II	Tech III
<b>A+</b> <b>Network+</b> <b>SSCP</b>	<b>GSEC</b> <b>Security+</b> <b>SCNP</b> <b>SSCP</b>	<b>CISSP</b> <b>SCNA</b> <b>CISA</b> <b>GSE</b>
<b>Mgmt I</b>	<b>Mgmt II</b>	<b>Mgmt III</b>
<b>GSLC</b> <b>Security+</b> <b>GISF</b>	<b>CISSP</b> <b>GSLC</b> <b>CISM</b>	<b>CISSP</b> <b>GSLC</b> <b>CISM</b>



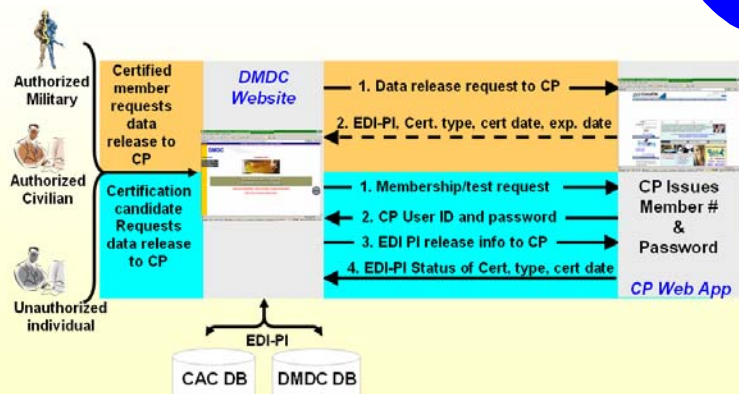
# DMDC: Streamline IA Training & Certification Data Exchange



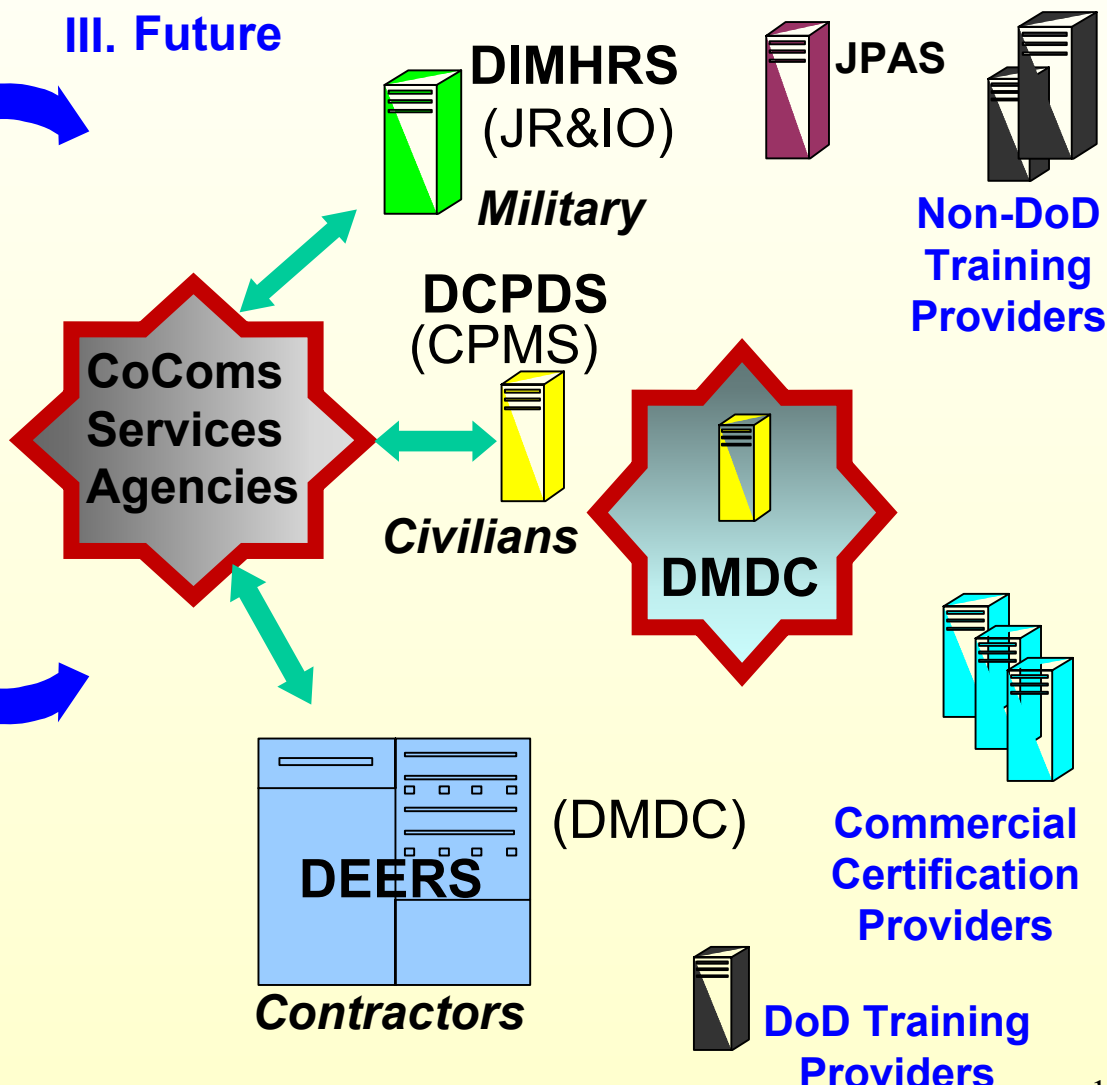
## I. Today



## II. Proposed Pilot



## III. Future



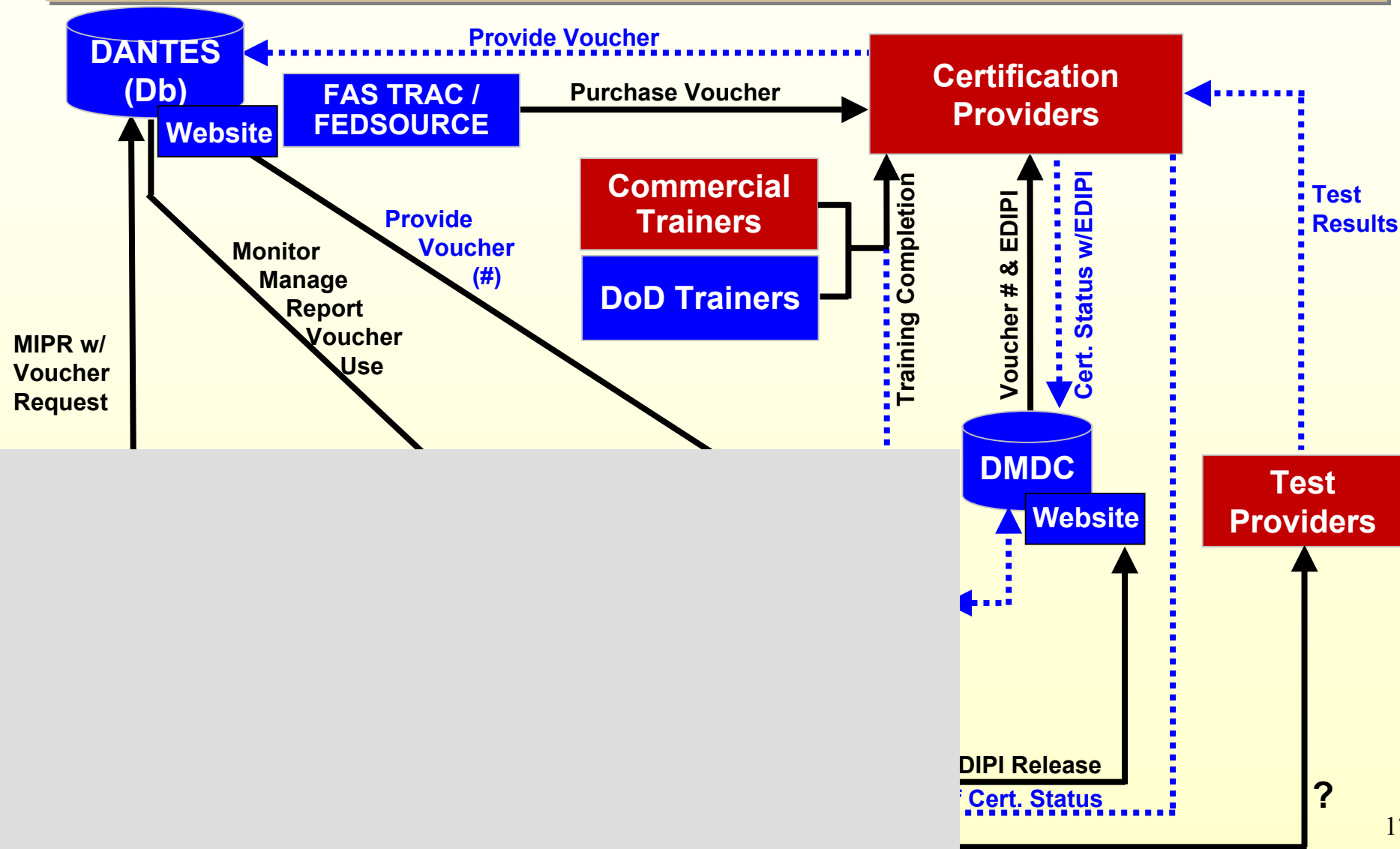
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Defense Manpower Data Center (DMDC)



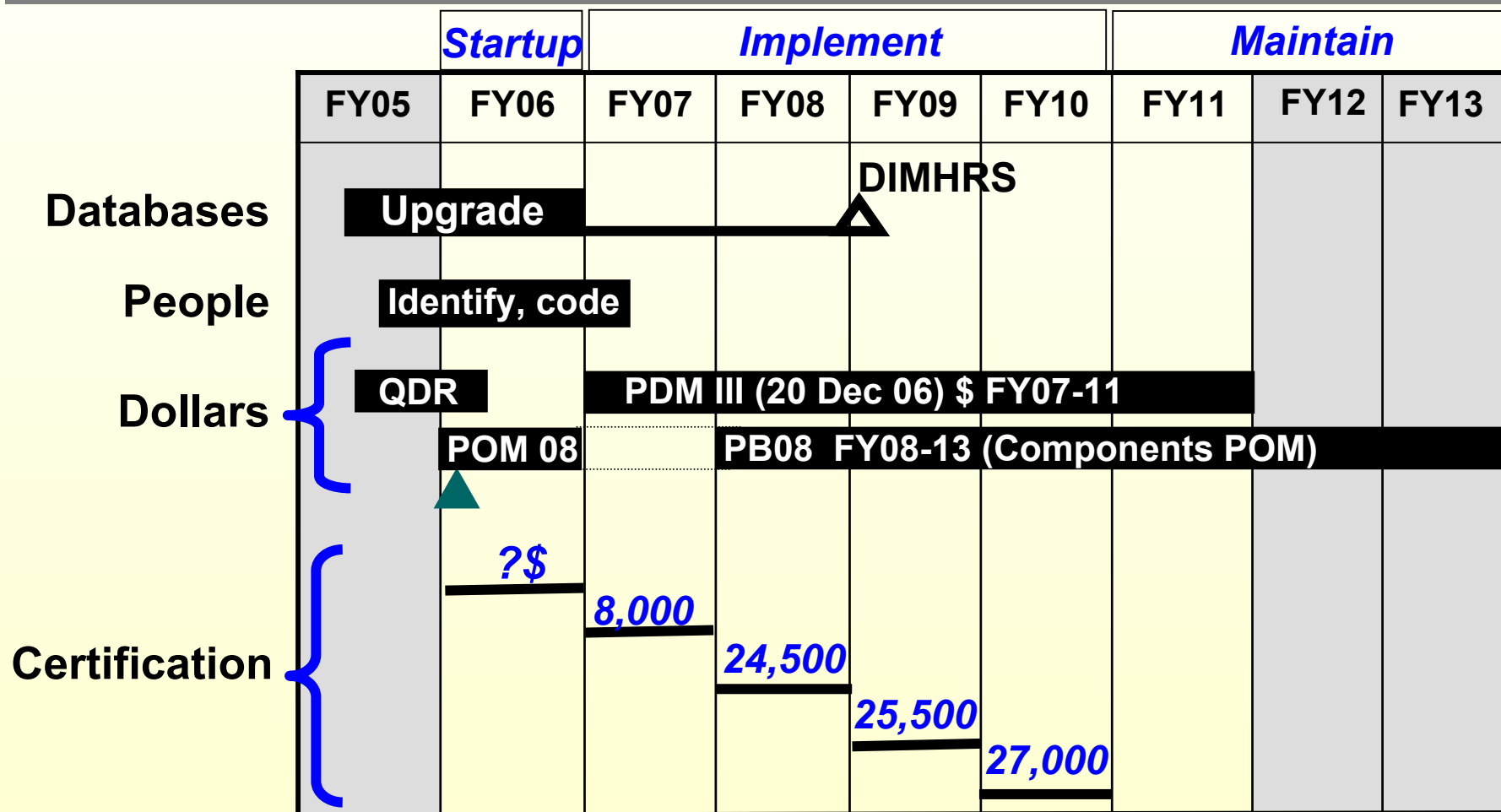


# Notional Process Flow For Governance & Management





# Schedule (DoDD 8570.1; 8570.1M)



*It [getting the certification] REALLY wasn't a big deal once we got past the idea that it HAD TO BE DONE which was a bigger issue at the employee level than with the management. (COL, US Army )*



# Dollars

<b>Funding Request Details (Millions)</b>	
<b>Activity</b>	<b>FY07 – 11</b>
<b>1. Certifications</b>	<b>49.0</b>
<b>2. Database Updates</b>	<b>2.4</b>
<b>3. ADL</b>	<b>21.4</b>
<b>4. Mobile Training/ Instructor Augmentation</b>	<b>6.9</b>
<b>Total</b>	<b>77.7</b>

- ◆ Based on FISMA reporting
- ◆ Assumptions:
  - ◆ 100,000 total military & civilian IA personnel
  - ◆ Certify 10% first year; 30% each year for next 3 years
  - ◆ 5% annual attrition rate
  - ◆ Average \$300/certification test; \$75/year for fees



# Near-Term Actions

Due Date	Requirement	Explanation
04/14/06	Identify the Office of Primary Responsibility (OPR)	Identify the Office of Primary Responsibility (OPR) for implementing requirements of the references and a specific individual point of contact (POC). The OPR and its POC must be able to represent and integrate human resources/training, budget/finance, operations, as well as information assurance requirements of their Component.
04/30/06	Submit quarterly progress report	Submit the first quarterly progress report to DIAP
04/30/06	Identify IA WIPAC Representative	Components listed ...as members of the Information Assurance Training, Certification, and Workforce Management Advisory Council identify their representative. This Council's name will be changed in its Charter to the Information Assurance Workforce Improvement Program Advisory Council (IA WIPAC). Component representatives to the IA WIPAC must have sufficient authority to effectively represent their Component including human resources/training, budget/finance, operations, and information assurance matters. The Reference establishes the IA WIPAC and its responsibilities.
07/15/06	Submit draft Implementation Plan	Submit draft implementation plan to the IA WIPAC. Include plans for budget; work breakdown structure; milestones to identify, train, and certify the IA workforce; and plans for updating and populating personnel and manpower databases.
10/01/06	Initiate IA WF data solutions	Initiate solutions for tagging and tracking IA personnel status.
12/30/06	10% IA Workforce Certified	Complete certification of 10% of the IA Workforce.
12/30/06	Submit Final Implementation Plan	Submit updated implementation plan to the IA WIPAC to include progress in 2006 and planned actions for 2007.



# The Year Ahead

- ◆ Publish language in DFARS for contractors to meet requirements
- ◆ Institutionalize IA workforce management capability
  - ◆ Existing database upgrades (personnel, manpower, training, other)
  - ◆ Data flow/processes between private sector and DoD and within DoD
- ◆ Charter the DoD IA workforce improvement program advisory council (WIPAC)
- ◆ Continue the DoD-wide Job-Task Analysis (JTA); document DoD IA skills
  - ◆ Define a common language of IA-related work and worker requirements
  - ◆ Enable better mapping of certifications against job functions
  - ◆ Enable a common basis for accreditation
  - ◆ Support validation studies per 29CFR1607
- ◆ Engage vendor specific certifications (e.g., Microsoft, CISCO)

We had bad luck with one CISSP class...and only 10% passed the exam .... That was a function of poor exam prep by the students, not a bad class or instructor. It took a while to get everyone over their fear of the exam, but as some passed, they started training the rest and it all fell in place.



# More to Do

- ◆ Integrate DoD schools, CNSS standards & certificates, training exercises, conferences and other knowledge sharing into program as:
  - ◆ Source of training for certifications (A+, Security+, CISSP etc.)
  - ◆ DoD/Component layer of a comprehensive certification/professional program; address policy, processes & tactics & techniques
  - ◆ Satisfy continuous learning requirement
- ◆ Address training and certifications requirements of other portions of the IA workforce (e.g., CNDSP team members; engineering and architecture)
- ◆ Promote rigor and use of DoD best practices in commercial certifications to enhance DoD IA readiness
  - ◆ ISO 17024 accreditation is basic requirement imposed on IA certifications
  - ◆ Performance-based element to testing (vice multiple choice)
  - ◆ Continuing learning/re-test requirement to maintain certification status
  - ◆ Better define what is accepted for continuing learning credit
  - ◆ Incorporate DoD IA best practices (DISA STIGS, NSA Guidelines)

**“Within...[our company’s] IT Security Office, credentials such as the CISSP are valued, acknowledged and celebrated.”** (private sector best practice)



# More to Do

## ◆ Pursue initiatives with enterprise-wide potential to increase ROI/Leverage capabilities/pool resources

- ◆ Expand performance-based training (e.g., Simulation Trainers, BULWARK DEFENDER IA combat training exercises)
- ◆ Provide access to on-line training/self-assessment/certification
- ◆ Manage test voucher usage

## ◆ Other considerations

- ◆ Structure (e.g., reduce personnel performing IA as an “other duty”)
- ◆ Who we assign (and train) (e.g., aptitude, skill); and who instructs
- ◆ What we train (e.g., content, currency, relevance)
- ◆ How we train (e.g., traditional classroom, web, simulation, **study time**)

**On certification: “It...forced me to finally buckle down and do a bit of studying and focus on some areas where I was a bit lacking.” (Devin, US Army, Kwajalein)**



# Moving Forward

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- ◆ Culture change -- leadership commitment and communication essential
- ◆ Governance and management crucial to success
- ◆ Human Resources (HR) needs to be a full partner
- ◆ Treat as opportunity to dramatically improve IA workforce/IA posture
- ◆ Protect dollars