Applying the DOD Information Assurance C&A Process (DIACAP) – Overview



C&A, Risk, and the System Life Cycle



The C&A Challenge

- DOD's IA Framework
- Making C&A Dynamic & Net-Centric
- The DIACAP
 - DIACAP Process & Package
 - Understanding DOD's Concept of Enterprise Risk and Risk Management
 - DITSCAP DIACAP Analysis: Similarities & Differences
 - DITSCAP to DIACAP Transition
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- Supporting Tools
 - Knowledge Service Overview
 - eMASS Overview
- Summary and Questions

Part 2

Part 1

Part 3









Let's Start with a Common Vocabulary

- Certification: Comprehensive evaluation of the technical and non-technical security features of an IS to support the accreditation process that establishes the extent to which a particular design and implementation meets a set of specified security requirements. (CNSSI 4009)
- Accreditation: Formal declaration by a Designated Approving Authority (DAA) that an IS is approved to operate in a particular security mode at an acceptable level of risk, based on the implementation of an approved set of technical, managerial, and procedural safeguards. (CNSSI 4009)









Let's Start with a Common Vocabulary

- Certification & Accreditation: A set of procedures and assessments leading to a determination of the suitability of the system to operate in the targeted environment.
 - Procedures encompass the entire life cycle of the system
 - Required before operations begin and at least every three years thereafter, or whenever major securityrelevant changes occur
 - Requires an annual IA Controls review









The Security Landscape





Reputation

- Confidence and credibility of clients, partners, investors
- Litigation
 - Business interruption, confidentiality
- Compliance
 - GLBA, SOX, HIPAA, NERC, etc
 - · Directors, management, auditors
- Service
 - Capacity to serve customers and maintain confidential data
- Productivity
 - Employee dependency
- Technology
 - IT Staffing, expertise, infrastructure



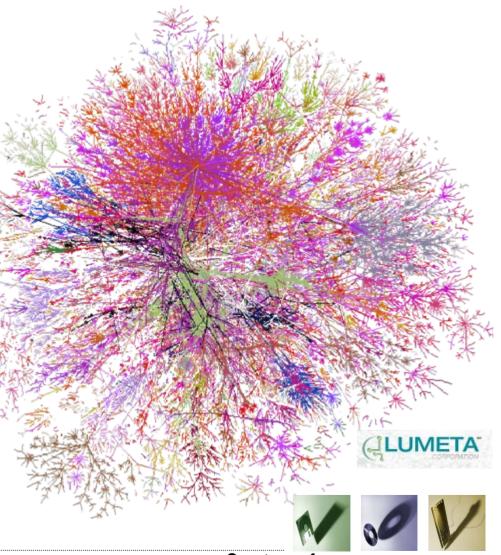






Security Needs are Continuously Evolving, Which Makes C&A Increasingly Challenging

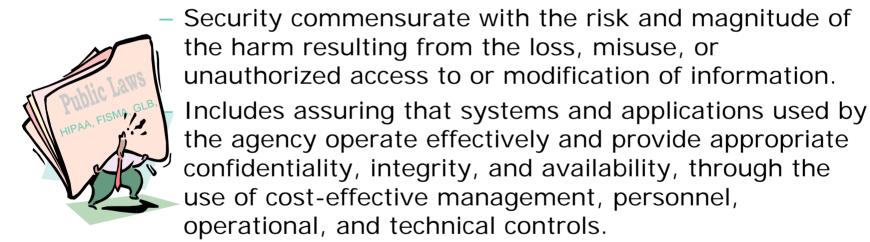
- Global interconnection
- Massive complexity
- Release of beta versions of software
- Exploitable vulnerabilities in technology
- Holes at the application layer
- Organizations and critical infrastructure increasingly rely upon the Internet for operations





Courtesy of:

- Federal Requirements and Guidelines
 - OMB A-130
 - Requires systems and applications provide "adequate security"















- Federal Information Security Management Act (FISMA) was part of the E-Government Act 2002
- FISMA required government agencies and components to improve security
- Title III of the E-Government Act, Federal Information Security Management Act (FISMA), requires Federal departments and agencies to develop, document, and implement an organization-wide program to provide information assurance.









DESCRIPE

SAME PARTY

SAME PAR

- DOD IA Implementation
 - DODD 8500.1 (2002)
 - Establishes policy and assigns responsibilities to achieve DOD IA [DODD 8500.1]
 - DODI 8500.2 (2003)
 - Defined the Security Controls required to ensure that the confidentiality, integrity, and availability of an information system were being met, monitored, and managed.
 - Security Controls outlined in the DODI 8500.2 are mandatory. [DODI 8500.2]
- DIACAP ensures DOD C&A is consistent with FISMA, DODD 8500.1 and DODI 8500.2









- DOD Transformation
 - Information Technology is changing; the way DOD acquires, uses, and operates IT is changing; Federal requirements and guidelines have changed
- Global Information Grid (GIG)
 - C&A is a central component of GIG IA Strategy.
 - The GIG requires a dynamic, enterprise risk-based C&A process and net-centric applications which cannot be met with the current C&A methodology









Motivation —Cost!!! And Questionable ROI

- The cost of C&A is high:
 - "Millions of dollars and thousands of hours are spent on C&A... In reality C&A is a 20-year-old paperwork exercise that does not yield improved security." (Richard Bejtlich, President & CEO of TaoSecurity)
- The return on C&A was questionable:
 - Existing processes are not sufficiently flexible
 - to facilitate dynamic information sharing
 - To facilitate interoperability of enterprise systems
 - Each system determines its IA requirements and solutions independent of the larger environment
 - Paper-based "fire-and-forget" C&A documentation provides limited assurance that security information is current









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The Solution Begins with the DOD IA Policy Framework

 DOD has aligned all IM/IT policy, including IA policy to the 8000 series under the responsibility of the DOD CIO

8000 Capstone IM/IT Policy & Procedures			
8100 Information Resources Management			
8200 Mission & Functional Processes			
8300 Information Infrastructure Design			
8400 Information Technology			

8500	Information Assurance
გ 510	IA Certification & Accreditation
8520	Security Management
8530	Computer Network Defense
8540	Interconnectivity/Multiple Security Levels
8550	Network and Web
8560	Assessments
8570	Education, Training & Awareness
8580	Other IS (Integration)
	/









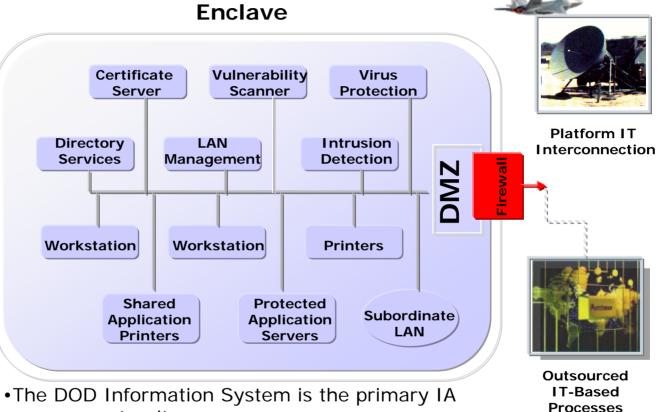
In the 8500 series, DOD has redefined IA & Information Systems



AIS **Applications**



Core Enterprise Services



- management unit
- Enclave is central
 - Provides majority of IA services/capabilities
 - Enables 100% IA accountability at a manageable unit









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There are Significant Differences Between Traditional and Net-Centric C&A

Traditional	Net-Centric
IA requirements are locally established and are focused on mitigating perceived threat, vulnerabilities.	IA requirements are driven by enterprise architectures and are focused on delivery and operation of enabling capabilities.
Fixed-document formats, formal phases, stove-piped IA-unique processes, and off-line workflow and information management.	Distributed online collaboration to accomplish IA transactions that are integrated into planning, programming, requirements, architecture, system engineering, acquisition, and operations.
Information is "authored" by a team of IA professionals and has little reuse value, if any.	Most information is "fused" from distributed GIG services, data sources, and IA transactions.
Security authorizations are exchanged offline as paper documents (e.g., SSAAs).	Digital-security credentials are associated with authenticated digital identifiers, and are dynamically asserted to enable connection, access to resources, or information exchange.
Operating authority is on/off based on manual 3-year assessment cycle.	Entity priviliges are dynamically adjusted based on the network's validation of conformance to security policies.
HATHA	

The C&A Challenge DOD's IA Framework Part 1 Making C&A Dynamic & Net-Centric The DIACAP DIACAP Process & Package Understanding DOD's Concept of Enterprise Risk and Risk Management Part 2 DITSCAP – DIACAP Analysis: Similarities & Differences DITSCAP to DIACAP Transition Applying DIACAP in the System Life Cycle Supporting Tools Part 3 Knowledge Service Overview eMASS Overview **Summary and Questions**







The DIACAP was released as policy on 18 July



DEPARTMENT OF DEFENSE

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MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS. CHAIRMAN OF THE JOINT CHIEFS OF STAFF UNDER SECRETARIES OF DEFENSE COMBATANT COMMANDERS ASSISTANT SECRETARIES OF DEFENSE GENERAL COUNSEL OF THE DEPARTMENT OF

DIRECTOR, OPERATIONAL TEST AND EVALUATION INSPECTOR GENERAL OF THE DEPARTMENT OF

ASSISTANTS TO THE SECRETARY OF DEFENSE DIRECTOR, ADMINISTRATION AND MANAGEMENT DIRECTOR, PROGRAM ANALYSIS AND EVALUATION DIRECTOR, NET ASSESSMENT DIRECTOR, FORCE TRANSFORMATION DIRECTORS OF THE DEFENSE AGENCIES DIRECTORS OF THE DOD FIELD ACTIVITIES

SUBJECT: Interim Department of Defense (DoD) Information Assurance (IA) Certification and Accreditation (C&A) Process Guidance

- References: (a) DoDD 5025.1, "DoD Directives System," July 14, 2004 (b) DoD Instruction 5200.40, "DoD Information Technology Security Certification and Accreditation Process (DITSCAP)," December 30, 1997
 - (c) DoD 8510.1-M, "DoD Information Technology Security Certification and Accreditation Process (DITSCAP) Application Manual," July, 2000
 - (d) Section 3541 of title 44, United States Code, "Federal Information Security Management Act of 2002" (FISMA)

This memorandum establishes interim guidance for the IA certification and accreditation of DoD information systems in accordance with reference (a) to achieve an enterprise process for identifying, implementing and managing IA capabilities and services. It supersodes references (b) and (c), and was developed through more than eighteen months of coordination of a draft Instruction.



Directive-Type Memorandum

Interim Department of Defense (DoD) Certification and Accreditation (C&A) Process Guidance

SUBJECT: DoD Information Assurance Certification and Accreditation Process (DIACAP)

References: (a) Section 3541 of title 44, United States Code, "Federal Information Security Management Act of 2002" (FISMA)¹
(b) DoD Directive 8500.1, "Information Assurance (IA)," October 24, 2002

- (c) DoD Directive \$100.1, "Global Information Grid (GIG) Overarching Policy," September 19, 2002
- (d) DoD Instruction 5200.40, "DoD Information Technology Security Certification and Accreditation Process (DITSCAP)," December 30, 1997, (hereby canceled)
- (e) through (bb), see enclosure 1

1. PURPOSE

This Instruction:

- 1.1. Establishes the DoD information assurance (IA) certification and accreditation (C&A) process for susherizing the operation of DoD information systems consistent with the Federal Information Security Management Act (FISMA) (reference (a)), DoD Directive (DoDD) 8500.1 (reference (b)), and DoD Directive \$100.1 (reference(c)).
- 1.2. Supersedes DoD Instruction (DoDI) 5200.40 and DoD 8510.1-M, (references (d) and
- 1.3. Supports net-centricity 2 through an effective and dynamic IA C&A process
- 1.4. Provides visibility and control of the implementation of IA capabilities and services, the C&A process, and accreditation decisions authorizing the operation of DoD information systems, to include core enterprise services (CES) and web services-enabled software systems and

2. APPLICABILITY AND SCOPE

- 2.1. This Instruction applies to:
- 2.1.1. The Office of the Secretary of Defense (OSD), the Military Departments, the Chairman of the Joint Chiefs of Staff (CJCS), the Combatant Commands, the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other
- Available at http://iase.disa.mil/policy.html#PublicLaw
- ² See for example the Department of Defense Net-Centric Data Strategy, prepared by the DoD Chief Information Officer (CIO), (May 9, 2003).

DIACAP FREQUENTLY ASKED QUESTIONS (FAQs)

1. How do I access the DIACAP Knowledge Service (KS)?

Instructions for DoD Personnel (Government and Military)
(Must have a DoD PKI Certificate in the form of a Common Access Card (CAC) Soft Certificate)

- Enter the following URL in your web browser (MS Internet Explorer):
- A Security Alect box will pop up, and ask if you want to proceed. Click on the box entitled 'Yes'.
- You will be taken to the DIACAP Knowledge Service (KS) Splash Page. This page contains access requirements, a 'Login' button and detailed login instructions. Click on the link in the middle of the page that reads 'Detailed Login Instructions for DoD PKI Certificate Holders
- From here, you will be taken to a page containing detailed step-by-step guidance accompanied by screenshots to aid you in accessing the DIACAP Knowledge Service. If you have more than one certificate, be sure to choose your DoD PKI certificate. This will establish an account with the Navy Enterprise Single Sign
- At the bottom of this page, click on the button that reads 'Login to DIACAP Knowledge Service' once you have read and understand the login instructions.
- This entire process is only necessary the first time you access the KS. On subsequent login, execute steps one an two above. You will be taken to the Splash Page. The Login button will then take you directly to the KS.

structions for DoD Contractors in Direct Support of DoD clients;

(Must have a valid ECA PKI Certificate and must attain sponsorship from a DoD

- Enter the following URL in web browser (MS Internet Explorer):
- 2. A Security Alset box may pop up, and will ask you if you want to proceed. Click on the box entitled "Yes
- You will be taken to the DIACAP Knowledge Service Splash Page. This page contains access requirements, a 'Login' button and detailed login instructions. Click on the link in the middle of the page that reads 'Detailed Login Instructions for ECA PKI Certificate Holders'.
- From here, you will be taken to a page containing detailed step-by-step guidance accompanied by screenshots to aid you in accessing the DIACAP Knowledge Service. If you have more than one certificate, be sure to choose your DoD ECA certificate. Once an account with the NESSO has been created, ECA Certificate holders must attain sponsorship from a DIACAP Team Member before being granted access. The DIACAP Team is defined in the Interim Guidance. A sponsorship request form is also accessed from this page. This form requires

DIACAP FAQ

Interim C&A Guidance

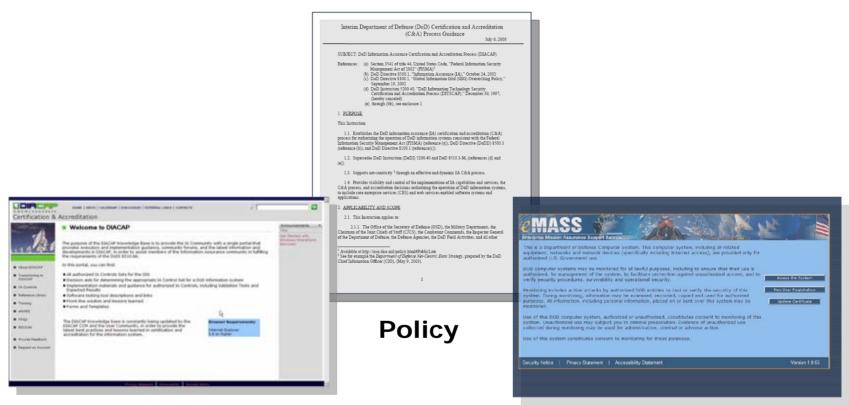








The DIACAP combines with Tools to Offer a Dynamic, Net-Centric Approach to C&A



Web-Based Knowledge Service eMASS -Automated C&A Management

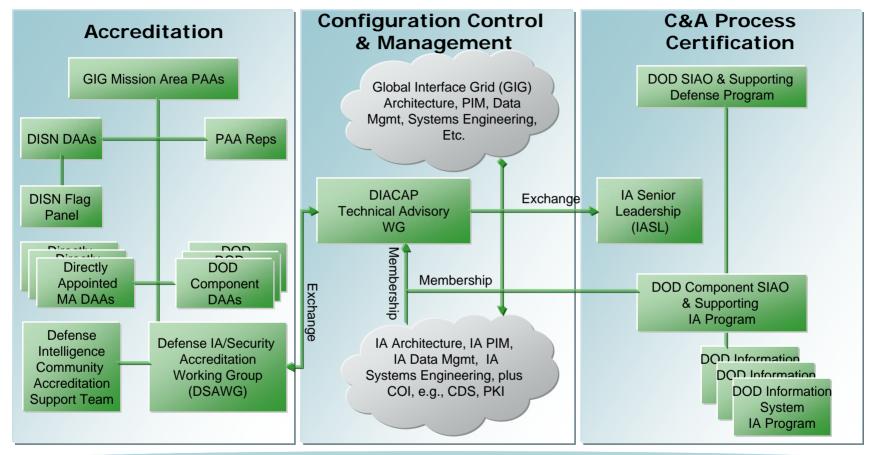








DIACAP Has a New Governance Structure



DIACAP Knowledge Service

Enterprise Content Managed by the DIACAP TAG COI-, DOD Component IA Program, & DSAWG Content managed by Owning Entity according to DIACAP TAG Protocols





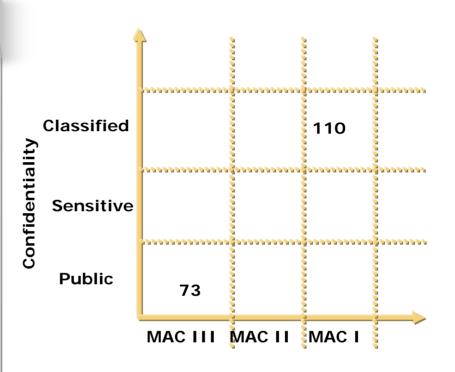




The IA Controls are the foundation of the DIACAP

SUBJECT AREAS

- Security Design & Configuration
- Identification & Authentication
- Enclave & Computing Environment
- Enclave Boundary Defense
- 5. Physical & Environmental
- Personnel
- 7. Continuity
- 8. Vulnerability & Incident Management



Importance to Warfighter Integrity, Availability

MAC = Mission Assurance Category

GOAL: Adequate security, Scalable, interoperable IA capabilities, Visibility/Situational Awareness, Federal compliance

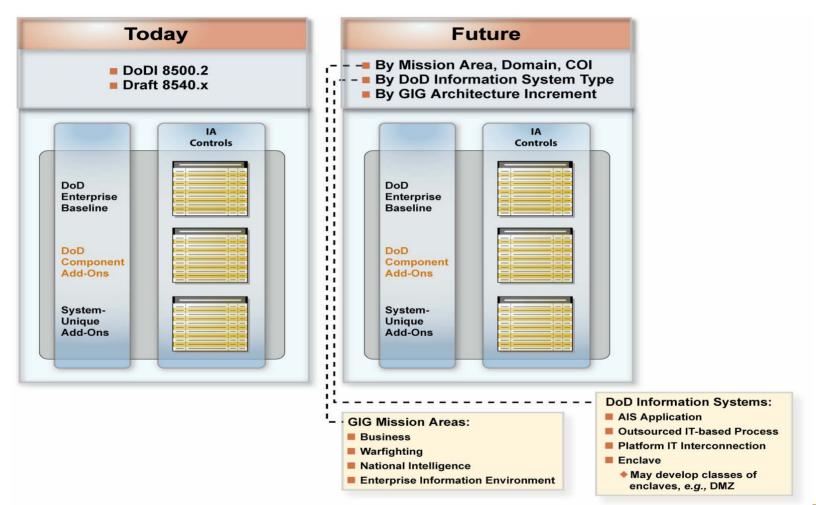








Future IA Controls Will Be Developed To Support Other Functions



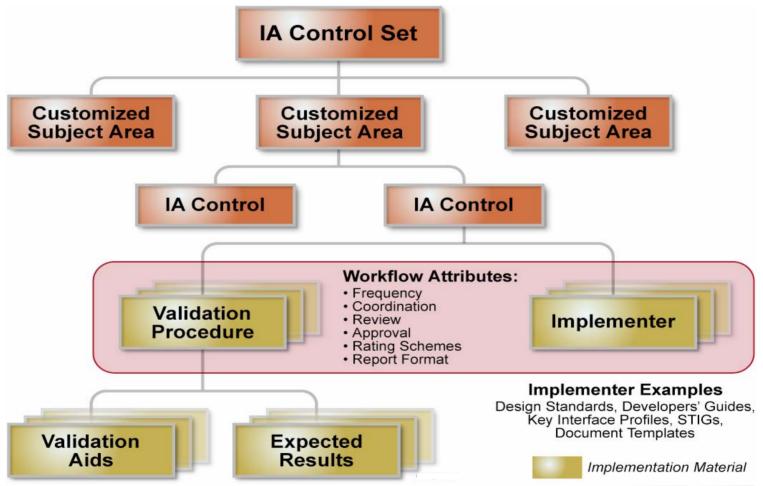








The DOD IA Controls Provide Comprehensive Guidance



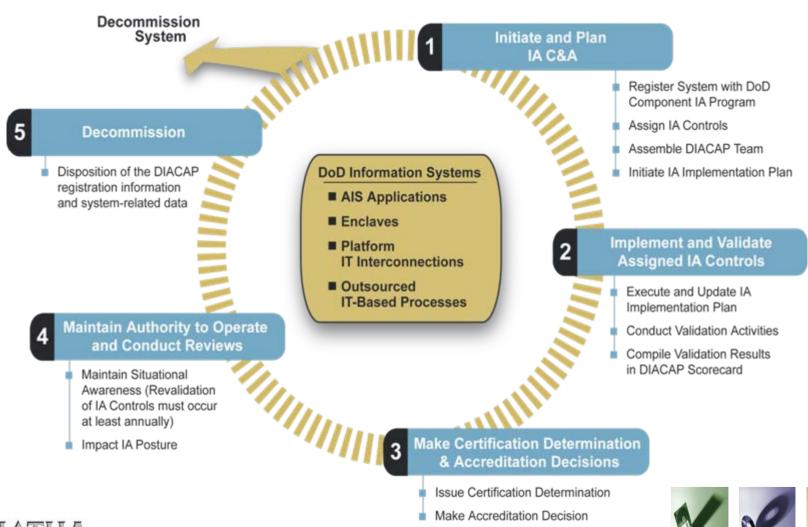








The DIACAP is Distinguished by a Continuous Set of **Activities**











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DIACAP Approach to Risk Management

IA controls defined in DoDI 8500.2 are the result of a DoD enterprise level threat and vulnerability

Enterprise

Threat and Vulnerability

Assessments

Local or System

Threat and Risk

Assessments

Unique Capability.

Capability, Threat

and Vulnerability

Regional Capability,

Assessments

assessment

Implementation IA Controls Materials DoD DoD **Baseline Enterprise** Baseline Regional Regional Add-Ons System-System Unique Unique Add-On

RISK

Less than Fully Implemented IA Controls = Residual Risk

Operational Impact Must be Assessed at All Levels

Component and System-Level IA controls are the result of a component/system level threat and vulnerability assessment.









The DIACAP Risk Decision

- The risk decision is based on an analysis of the vulnerabilities/threat posed by the partial or unsatisfactory implementation of the IA Controls
- The analysis is based on three factors:
 - The IA Control status (C/NC/NT/NA)
 - The Impact Code
 - The Severity Code









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Fundamental Differences between DITSCAP and DIACAP

Category	DITSCAP	DIACAP
System Security	 Security requirements and standards are uniquely defined by each system 	Baseline IA/Security Levels (Architecture and Controls) are established by the Enterprise
Accreditation Status	 Accreditation status is communicated via letter and status code (ATO, IATO) 	 Accreditation status is communicated by assigned IA Controls and compliance ratings
Authorization Schedule	 System operation must be re- authorized not less than every three years 	 IA posture must be continuously monitored and reviewed not less than annually.
C&A process	 Policy advocates tailoring, but process is hard-coded to phases. 	 Steps are flexible, modular and continuous. Each system works to a POAM that aligns to SDLC
C&A Decision Structure	 Varies from component to component and from system to system DAA and Certifier selected by/for the each system 	 Is standardized and determined by the Enterprise Certifier is a qualified, resourced, and permanent member of CIO staff
Package Format	 Narrative documents (e.g., reports and plans) 	Structured data elements that are defined by the Enterprise
	Manual process	Automated tools, Enterprise managed knowledgebase



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DOD faces numerous challenges to implement or transition to DIACAP effectively

- Transitioning Systems transitioning legacy systems, and systems certified under the DITSCAP.
- Transitioning Organizations transitioning organizations with expertise and familiarity with DITSCAP to the new DIACAP processes.
- New Starts Implementing DIACAP for systems with no prior DITSCAP accreditation.

Addressing the need for immediate implementation and adoption of a significantly different C&A process.









DITSCAP to DIACAP Transition Timeline

- Unaccredited/new start
- Initiate DIACAP now

DIACAP initiated

- Start transition now
- Phase I signed SSAA & identified IA Controls
- Continue DITSCAP; develop DIACAP Implementation Plan
- Phase I signed SSAA & I NO identified IA Controls
- Continue DITSCAP; identify IA Controls & develop DIACAP Implementation Plan

- ATO current within 3 years
- Within 180 days, develop

 DIACAP Implementation Plan
- ATO not current within 3 —— Initiate DIACAP years









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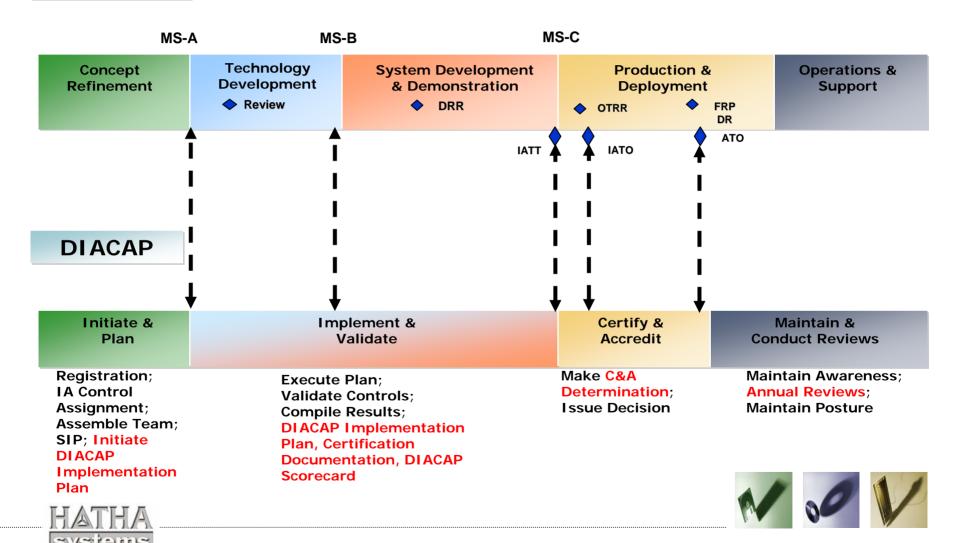






DIACAP – SLC Alignment & Activities

DODI 5000.2



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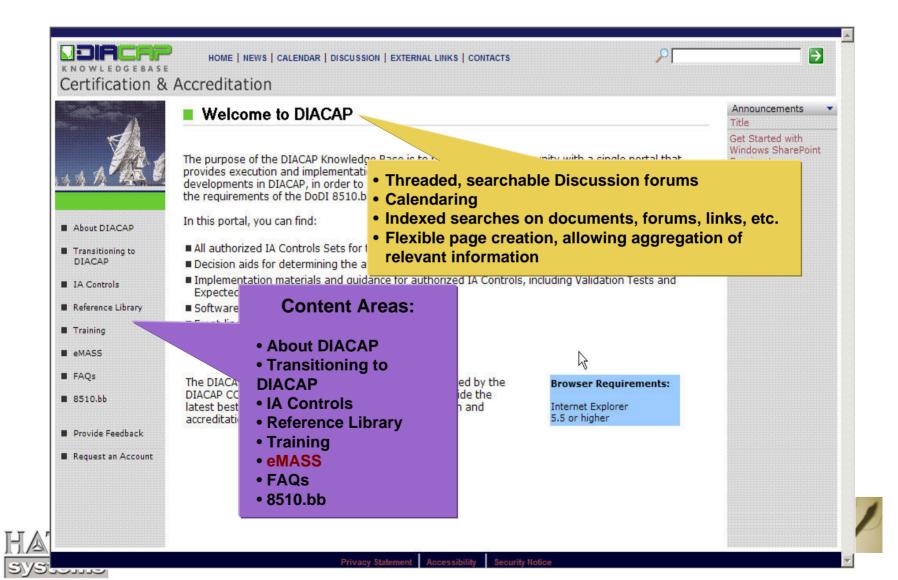




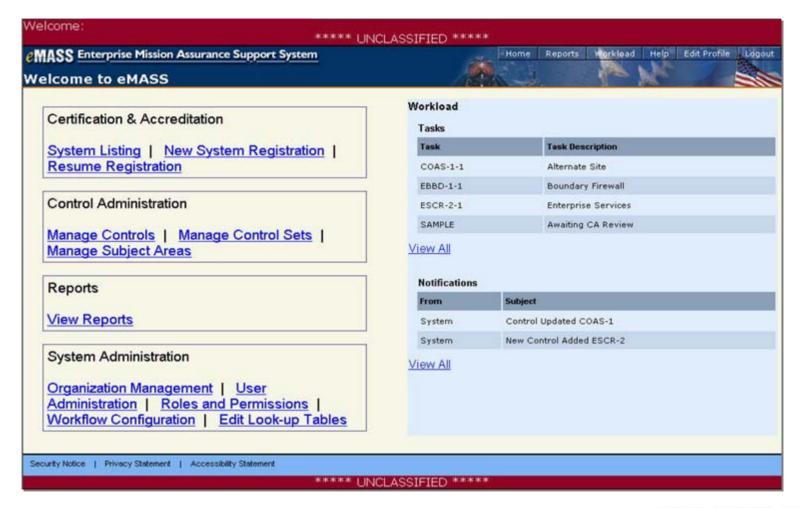




The Knowledge Service provides the gateway to DIACAP resources and content



eMASS Landing Page Is The Gateway To Automated C&A Workflow



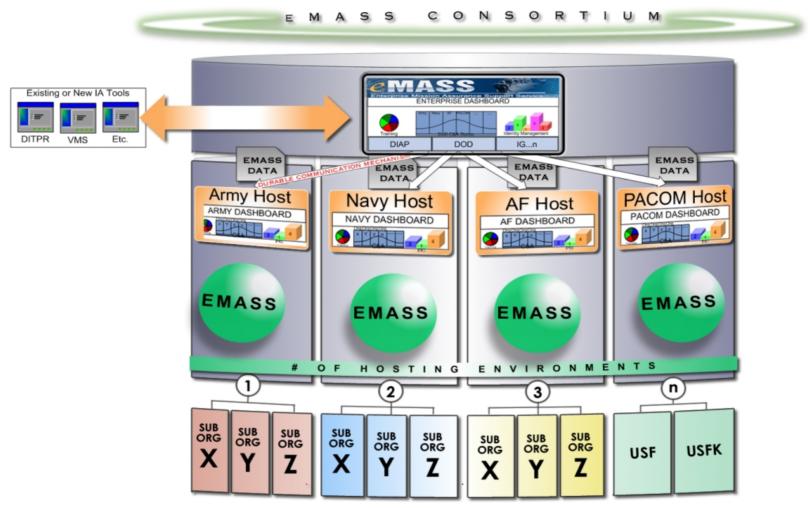








eMASS Implementation Model





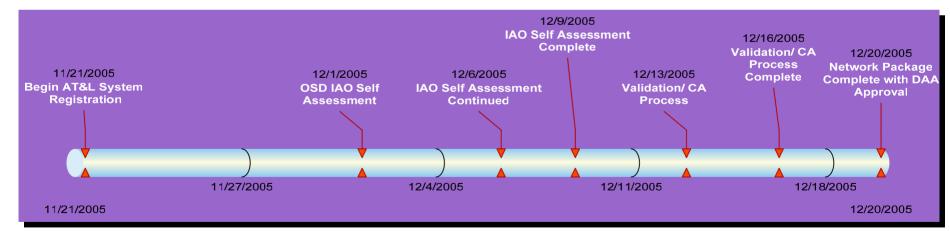






Using eMASS, a DOD agency was able to streamline a multi-system enclave to an IA Controls-based C&A process

- Transition timeline depicted assumed preliminary preparation:
 - Business process analysis & establishment of streamlined organization
 - Designation of responsibility & dedicated personnel
 - Training
 - Availability of comprehensive documentation



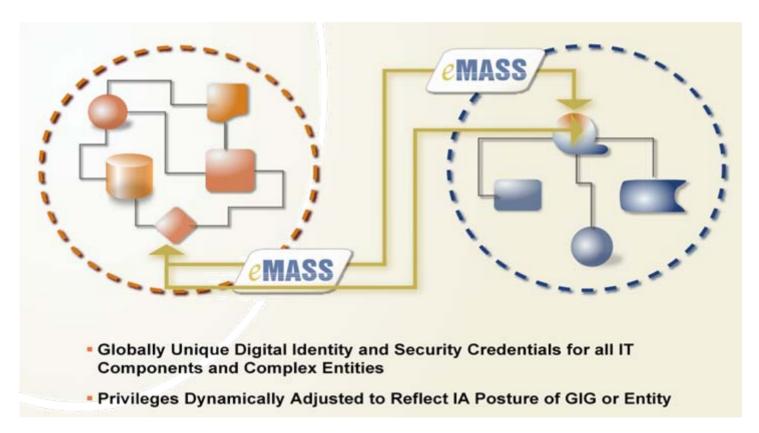








eMASS Anticipates Net-Centric need to fuse system security identity and enable the secure exchange of security credentials





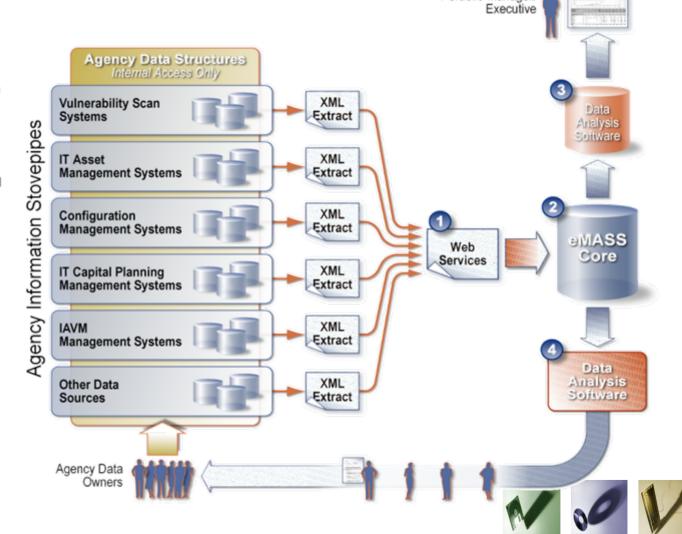






An evolving suite of technologies will enable eMASS to act as an information integrator

- eMASS reaches into existing systems to gather information from various sources
- Data comes back to eMASS, where it is organized and combined as required to answer critical business questions
- 3 Data Analysis software displays data in detailed reports for Agency Executives
- Data Analysis software uses eMASS data to support more efficient IA PM





References

- ASD NII Briefing, Department of Defense Information Assurance Workshop, February 2005
- IATAC Briefing to the FISMA IPT, June 2006









Questions & Discussion







