NDIA Systems Engineering Division

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Director, Systems and Software Engineering

Office of the Under Secretary of Defense (A&T)

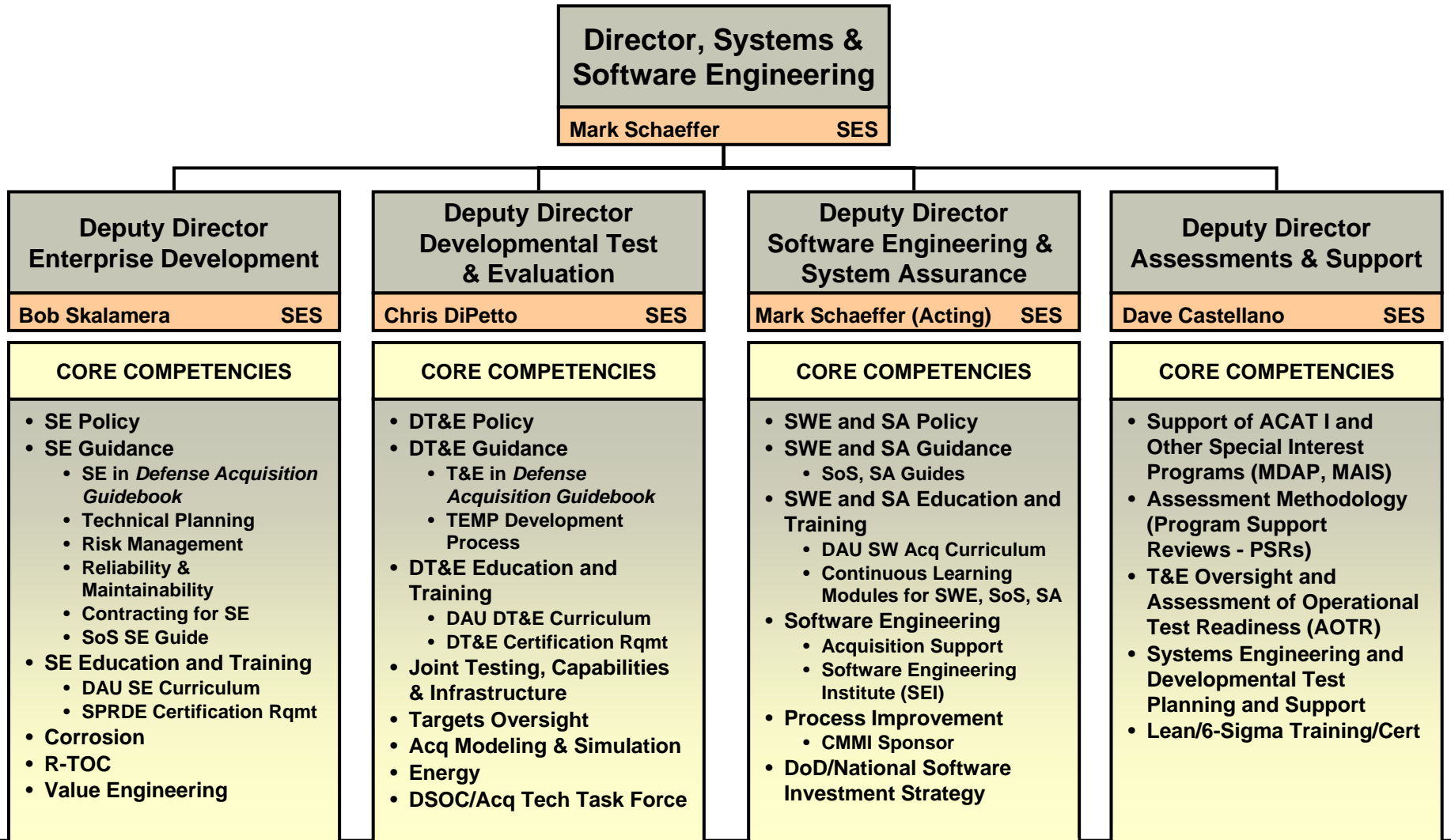# Systems and Software Engineering
Mission Statement

- ➢ Shape acquisition solutions and promote early technical planning

- ➢ Provide leadership and advocacy for sound systems and software engineering, developmental test and evaluation, and related disciplines

- ➢ Promote application of effective systems and software engineering and drive the state-of-the-practice into program planning and execution

- ➢ Establish policy, guidance, best practices, education, and training in collaboration with academia, industry, and government communities (SE, T&E, SW, System Assurance, Safety, Risk, R&M, Quality …)

- ➢ Provide technical insight to program managers and leadership to support decision making

Driving Technical Excellence into Programs!

Systems and Software Engineering
Organizational Core Competencies

Director, Systems & Software Engineering

Mark Schaeffer	SES

Deputy Director Enterprise Development

Bob Skalamera	SES

CORE COMPETENCIES

- SE Policy
- SE Guidance
  - SE in *Defense Acquisition Guidebook*
  - Technical Planning
  - Risk Management
  - Reliability & Maintainability
  - Contracting for SE
  - SoS SE Guide
- SE Education and Training
  - DAU SE Curriculum
  - SPRDE Certification Rqmt
- Corrosion
- R-TOC
- Value Engineering

Deputy Director Developmental Test & Evaluation

Chris DiPetto	SES

CORE COMPETENCIES

- DT&E Policy
- DT&E Guidance
  - T&E in *Defense Acquisition Guidebook*
  - TEMP Development Process
- DT&E Education and Training
  - DAU DT&E Curriculum
  - DT&E Certification Rqmt
- Joint Testing, Capabilities & Infrastructure
- Targets Oversight
- Acq Modeling & Simulation
- Energy
- DSOC/Acq Tech Task Force

Deputy Director Software Engineering & System Assurance

Mark Schaeffer (Acting)	SES

CORE COMPETENCIES

- SWE and SA Policy
- SWE and SA Guidance
  - SoS, SA Guides
- SWE and SA Education and Training
  - DAU SW Acq Curriculum
  - Continuous Learning Modules for SWE, SoS, SA
- Software Engineering
  - Acquisition Support
  - Software Engineering Institute (SEI)
- Process Improvement
  - CMMI Sponsor
- DoD/National Software Investment Strategy

Deputy Director Assessments & Support

Dave Castellano	SES

CORE COMPETENCIES

- Support of ACAT I and Other Special Interest Programs (MDAP, MAIS)
- Assessment Methodology (Program Support Reviews - PSRs)
- T&E Oversight and Assessment of Operational Test Readiness (AOTR)
- Systems Engineering and Developmental Test Planning and Support
- Lean/6-Sigma Training/Cert

Acquisition program excellence through sound systems and software engineering

Systems and Software Engineering
Issues and Closure Plans

➢ **Continue SE Revitalization - State-of-the-Practice shortfalls/adoption**
- Institutionalize SE WIPTs with Services and Agencies to drive early, effective adoption

➢ **Establish Software Engineering and System Assurance focus across DoD**
- Standup SSA Directorate

➢ **Defense Safety Oversight Council**
- Issue Joint System Safety and UMS Safety guidance

➢ **Institutional reform and governance**
- Support CD, RBSS, TD, and Capability Portfolio efforts

➢ **Support OIPT and DAES revitalization**
- Use independent technical reviews to provide advice and counsel in support of corporate investment and programmatic decisions

➢ **Continue to champion life-cycle approach to technical and acquisition planning**
- Implement Systems Engineering during program formulation, technical planning prior to RFP, and full consideration of sustainment during SDD

➢ **Energy advocacy and policy development**
- Support Energy DSB, champion platform energy/fuel efficiency and fully- burdened fuel cost

SSE Activities

➢ Policy/Guidance/Education & Training

- Update DoD 5000-series policy and Defense Acquisition Guidebook in Systems Engineering, Software, Test and Evaluation, and System Assurance areas
- Publicize updated Risk Management Guide http://www.acq.osd.mil/se/publications.htm
- Develop/publish: SoS for SE Guide, Contracting for SE Guide
- Develop/publish revised templates for TES and TEMP
- Finalize changes to SPRDE career field certification requirements
- Complete courses: TST101, 202, 301; SYS101, 202, 203, 302; SAM101, 201, 301
- Complete CLMs: Tech Planning, Modular Open Sys Approach, Test & Eval, Modeling & Sim
- KPPs: Materiel Availability (Materiel Reliability, Mean Downtime, Cost/Unit of Usage)

SSE Activities

➢ **Program Support**

- Conduct Program Support Reviews as scheduled

- Conduct AOTRs of: Stryker, LPD-17, MPS

- Stand-up SE-WIPTs for BAMS, HLR, and EFV

- Complete DAB task regarding H-1 Upgrade Production Decision

- Provide requested production support to V-22 and ARH programs

- Update DAPS methodology to expand software and system assurance issues

SSE Activities

➤ Safety

- Publish SOCOM and DoD Joint Safety Review Process Guides

- Publish Unmanned Systems Safety Precepts Guide

- Publish Program Review Safety Evaluation Criteria Guide

SSE Activities

➤ Energy

- Executive Secretary to Energy DSB
- Lead Energy Security IPT Platform Sub Panel

DoD-wide

- Policy and Vision
  - Services, Joint Staff, AT&L
- Defense Science Board on Energy Strategy
  - Broad strategic review
- Energy Security IPT – Investment Roadmap (POM-08)
- Technology - JASONs
- Fully Burdened Cost of Fuel – PA&E, IDA
- DESC RFI for 200M gal of FT-spec fuel in FY08
- Services
  - AF POM initiative (assured fuel, efficiency,..)
- Outreach – OSD-sponsored Energy Conversation Seminar

SSE Activities

➢ **Software Engineering and System Assurance (SSA) Directorate**

- Communicate SSA Organization and Mission
  - Co-Chair the NDIA Software Committee
  - Capture ideas from the Top 5 Software Issues Workshop

- Host a Senior Software Summit
  - 18-19 October, Sheraton Crystal City
  - Purpose: build a strategy for software engineering, investment and resources

- Continue focused projects
  - Complete Software Industrial Base Study
  - CMMI Integrity efforts, CMMI-ACQ
  - SoS Systems Engineering Guide
  - System Assurance Guidebook (need authors)

Software Engineering and System Assurance (SSA):
Organizational Tenets

➢ **Support Acquisition Success**

- Ensure effective and efficient software solutions across the acquisition spectrum of systems, SoS and capability portfolios

➢ **Improve the State-of-the-Practice of Software Engineering**

- Advocate and lead software initiatives to improve the state-of-the-practices through transition of tools, techniques, etc.

➢ **Lead the DoD and National Software Investment Strategy**

- Implement at Department and National levels, a strategic plan for meeting Defense software requirements

➢ **Implement Global Outreach and Leadership**

- Enable the US and global industrial base capability to meet Department software needs, in an assured and responsive manner

Be a World-Class Leader in Software Engineering

Complete Concept Decision Toolkit

RISK-BASED SOURCE SELECTION
- Reducing Risk and Improving Source Selection

Tri-Chair Capability Area Review (CAR)
- Portfolio Based Review of capabilities

B'
- *Direct program adjustments as necessary to stabilize program outcomes*

TRI-CHAIR CONCEPT DECISION
- Focused on Department Investment Decision Options
- Improved Process Alignment
- Time Defined determinations

CAPITAL ACCOUNTS
- Program Funding Stability

MS A

MS B

MS C

CD

B'

FRP DR

Strategic Planning Guidance	Joint Concepts	FAA	FNA	JCD	E O A	EOA Rpt	Tech Dev	CDD		SDD	CPD	PD		O&S
									PDR					

OSD/JCS *COCOM* *FCB*

KNOWLEDGE OVER TIME
- Achieve data transparency across departmental processes

Stronger Emphasis

TIME DEFINED ACQUISITION STRATEGY
- Multiple Customer-Focused Paths to Speed Fielding of Capability
- Post-Initiation Stability Initiatives

Technology Development—TRL/IRL   MRL

Science and Technology Base

CD Methodology—Broad Acquisition Initiatives