



# A Description of the Defense Systems Engineering Career Competency Model

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# Outline

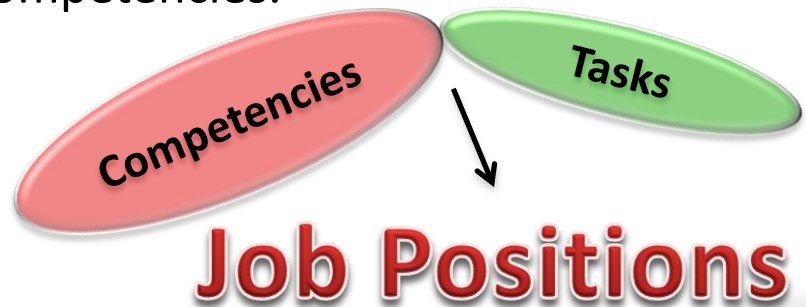
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- Introduction
- SECCM 1.0 Competency and Task Example
- Uniform Guidelines on Employee Selection Procedures
- OPM Occupational Analysis Survey Methodology
- Department of the Defense Survey Analysis
  - Critical Competencies
  - Critical Tasks
- USA Staffing Information
- Summary and Recommendations

# Introduction

The DoD has developed a Systems Engineering Career Competency Model (SECCM), which represents the capabilities of the current SE workforce. The model identifies critical SE tasks and competencies.

## Individuals



# SECCM 1.0

## Systems Engineering Career Competency Model

### Technical Management

- Acquisition
- Risk Management
- Requirements Management
- Configuration Management
- Technical Assessment
- Data Management
- Software Engineering Management
- Decision Analysis
- Interface Management
- Technical Planning

### Business Acumen

- Industry Awareness
- Organization
- Cost Estimating
- Proposal Process
- Supplier Management
- Negotiations
- Cost, Pricing and Rates/Cost Management
- Financial Reporting and Metrics
- Business Strategy
- Industry Motivation, Incentives, Rewards
- Contract Negotiations

### Analytical

- Transition
- Integration
- Design Considerations
- Tools and Techniques
- Stakeholders Requirements Definition
- Requirements Analysis
- Validation
- Verification
- Mission-Level Assessment
- Architecture Design
- Implementation
- Engineering Disciplines
- Requirements Analysis

### Professional

- Communication
- Leading High Performance Teams
- Personal Effectiveness/Peer Interaction
- Problem Solving
- Professional Ethics
- Strategic Thinking
- Coaching & Mentoring
- Managing Stakeholders
- Mission and Results Focus
- Sound Judgment
- Continual Learning

# Example: SECCM Competency and Task Descriptions

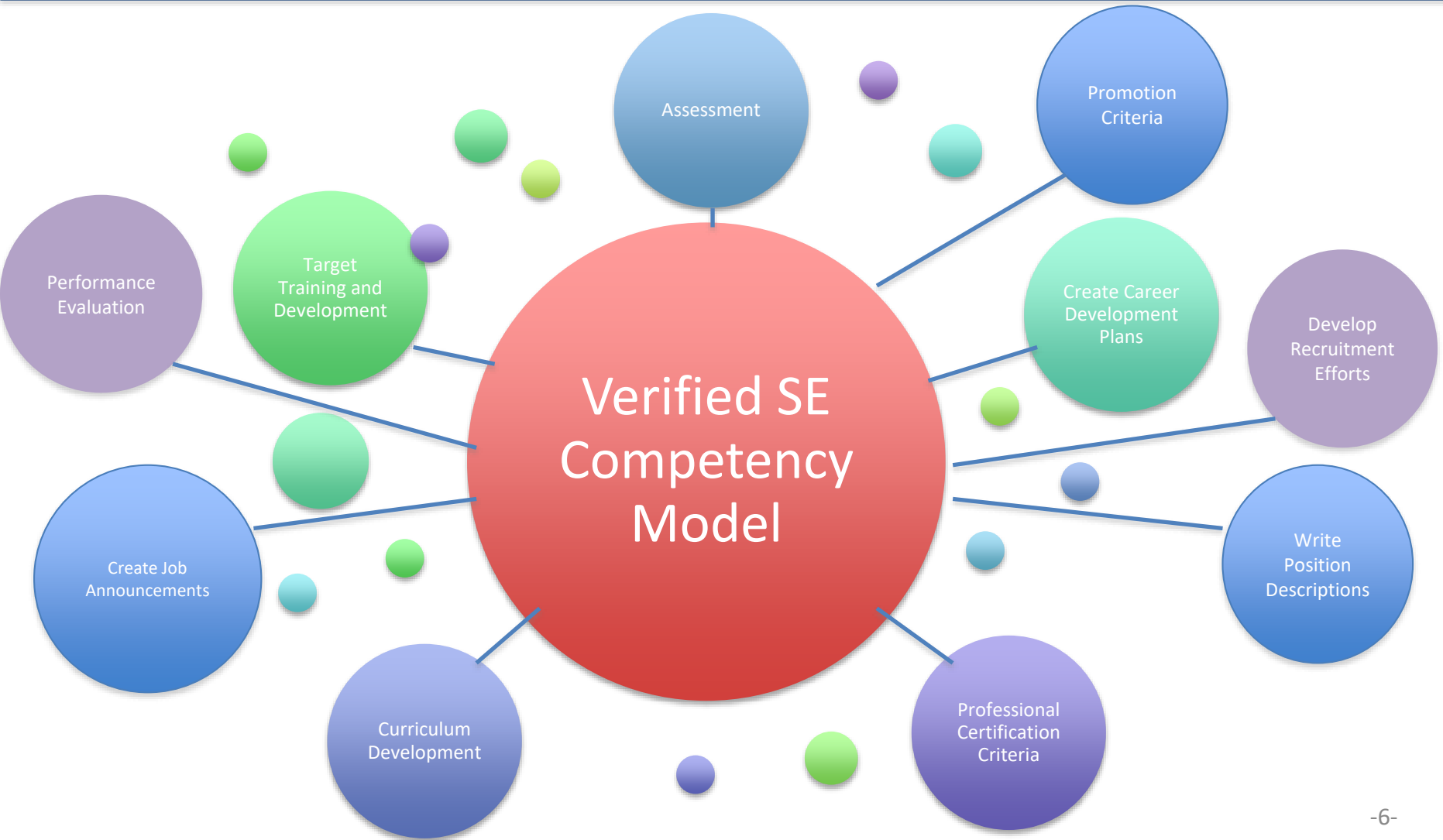
No.	Competency	Description
1	MISSION-LEVEL ASSESSMENT	Collaborates with user community to assess mission areas end-to-end, across system and platform boundaries, to identify and close integration and interoperability (I&I) gaps in mission critical capabilities.

No.	Task
MISSION-LEVEL ASSESSMENT	
1	Analyzes gaps between mission objectives, mission threads, existing or planned capabilities, and available funding to enable program decisions.
2	Analyzes mission-level requirements to determine if they are feasible across programs or an enterprise (e.g., component, DOD, federal agencies, international coalitions).
3	Analyzes the solution space to identify potential solutions that meet mission requirements and leverage opportunities.
4	Conducts trade analysis to refine a proposed solution to meet mission requirements.
5	Contributes to the development of various scenarios for system use, functions, and performance in line with the Concept of Operations.
6	Contributes to the development of operational and top-level systems requirements that are traceable to mission-level requirements, feasible, complete, and verifiable.
7	Identifies and analyzes mission technical problems, issues, risks, and opportunities to enable informed program decisions.





# Uniform Guidelines on Employee Selection Procedures

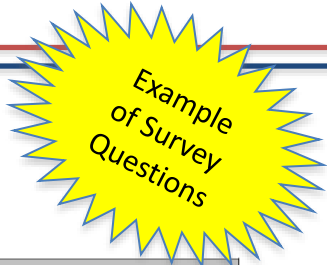


# OPM Job Analysis Survey - Methodology

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- 6,011 employees and 1,519 supervisors across DoD were surveyed. Survey participants were asked to evaluate competencies and tasks based on:
  1. Frequency – “How often...”
  2. Importance – “How important...”
  3. Required Immediately (upon entry into the position)
  4. Need for training
- Employees rated the **FREQUENCY** of the tasks and competencies
- Supervisors rated the **IMPORTANCE** of the tasks and competencies, along with the average importance for each tasks and competency for each grade level: GS-7, GS-9, GS-11, GS-12, GS-13, GS-14 and GS-15

# OPM Occupational Analysis Survey



**EXAMPLE**

EXAMPLE TASKS	IMPORTANCE RATING						
	GS-7	GS-9	GS-11	GS-12	GS-13	GS-14	GS-15
1 Contacts others orally to obtain information.	① ① ② ● ④ ⑤	① ① ② ● ④ ⑤	① ① ② ● ④ ⑤	① ① ② ● ④ ⑤	① ① ② ③ ● ⑤	① ① ② ③ ● ⑤	① ① ② ③ ● ⑤
2 Reads charts, graphs, diagrams, or tables.	① ① ② ● ④ ⑤	① ① ② ● ④ ⑤	① ① ② ● ④ ⑤	① ① ② ● ④ ⑤	① ① ② ● ④ ⑤	① ① ② ③ ● ⑤	① ① ② ③ ● ⑤

For the first task statement, Contacts others orally to obtain information, the supervisor indicated that the task was “Important” for GS-7, GS-9, GS-11, and GS-12 employees by selecting the option corresponding to 3 and “Very important” for GS-13, GS-14, and GS-15 employees by selecting the option corresponding to 4. For the second task statement, Reads charts, graphs, diagrams, or tables, the supervisor indicated that the task was Important for GS-7, GS-9, GS-11, GS-12, and GS-13 employees, and “Very important” for GS-14 and GS-15 employees.

**Please rate all of the tasks listed, beginning on the next page, using the Importance scale.**



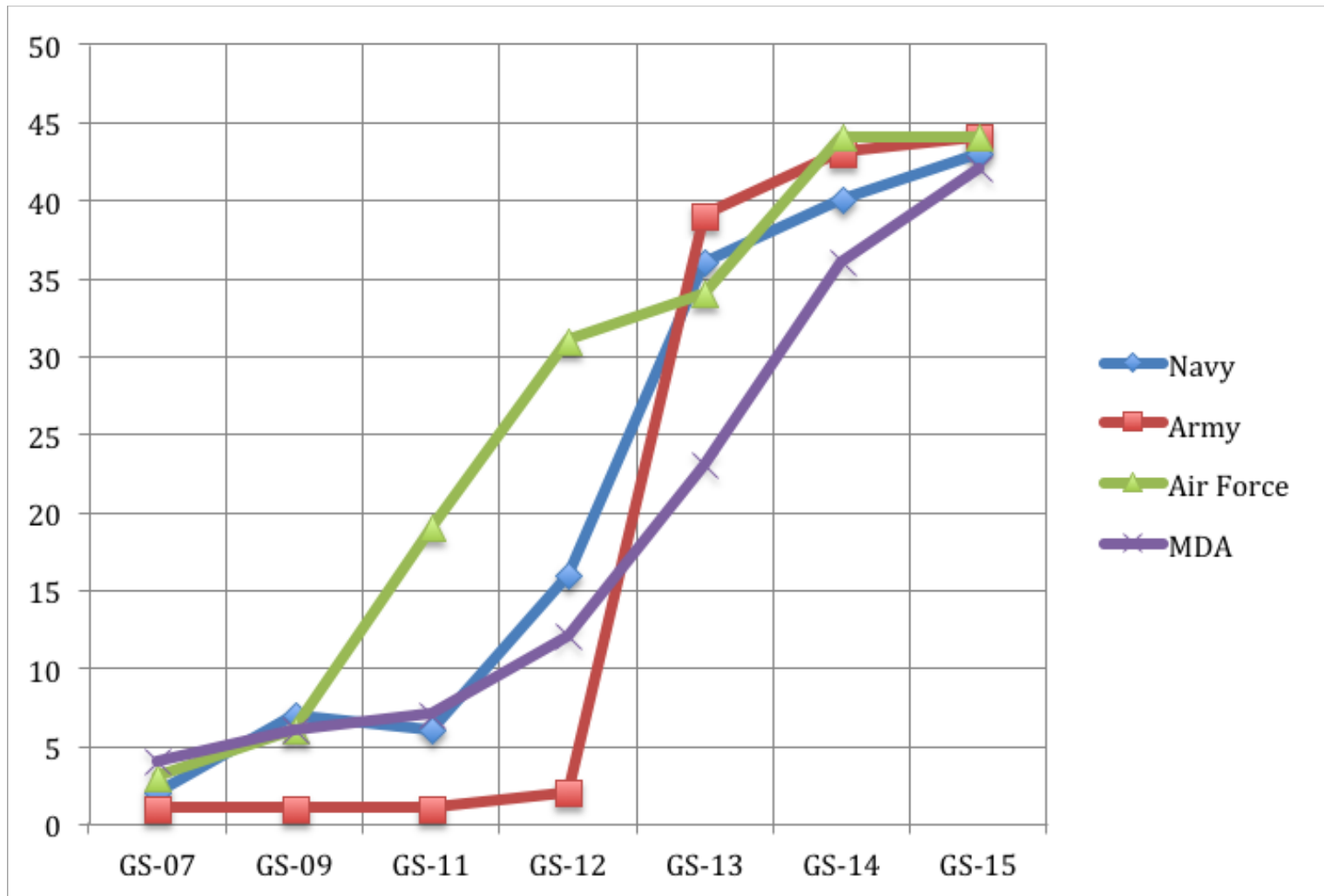
# DoD Survey Analysis: Number of Critical Competencies by Service and Grade

Grade Level	Navy	Army	Air Force	MDA
GS-07	2	1	3	4
GS-09	7	1	6	6
GS-11	6	1	19	7
GS-12	16	2	31	12
GS-13	36	39	34	23
GS-14	40	43	44	36
GS-15	<b>43</b>	<b>44</b>	<b>44</b>	<b>42</b>

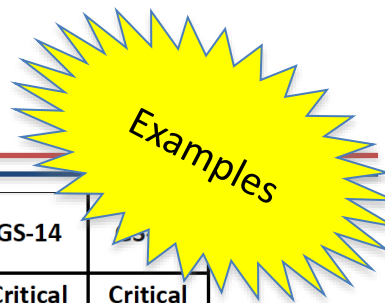
Systems Engineering  
Competencies



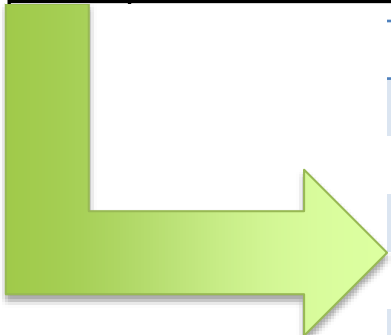
# DoD Survey Analysis: Number of Critical Competencies by Service



# DoD Survey Analysis: Number of Critical Tasks by Service and Grade

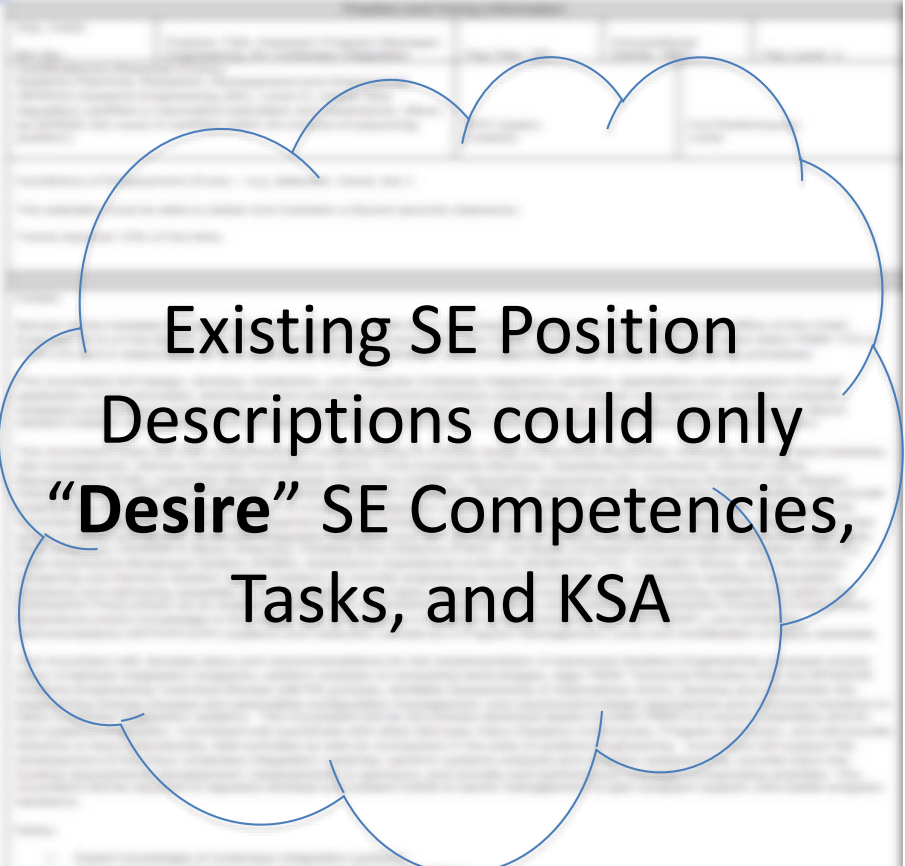


No.	Task	GS-7	GS-9	GS-11	GS-12	GS-13	GS-14	GS-15
		Critical	Critical	Critical	Critical	Critical	Critical	Critical
127	Contributes to the strategic planning process by providing input on the feasibility of organizational goals.				√	√	√	√
128	Converts organization-wide strategies and policy direction into action items.				√	√	√	√
129	Complies with governing ethics and standards of conduct in engineering and business practices to ensure integrity across the acquisition life-cycle.	√	√	√	√	√	√	√
130	Demonstrates ethical practices by showing consistency among principles, practices, and behaviors.	√	√	√	√	√	√	√
131	Maintains the confidentiality of information.	√	√	√	√	√	√	√



Grade Level	Navy	Army	Air Force	MDA
GS-07	18	23	35	62
GS-09	19	38	47	79
GS-11	76	109	102	85
GS-12	165	176	163	126
GS-13	174	179	155	163
GS-14	175	175	171	145
GS-15	176	172	179	164

# SECCM 1.0 Impact on Position Descriptions



Existing SE Position Descriptions could only **“Desire”** SE Competencies, Tasks, and KSA

- SECCM 1.0 will be in the USA Staffing system, available to be used as a resource to:



1. **“Require”** SE Critical Competencies and Tasks for a position
2. **Identify** Critical Competencies and Tasks by GS level for any engineering occupational series

*This is possible because SECCM 1.0 is now verified IAW  
**Uniform Guidelines***

# SECCM 1.0 on the USA Staffing System



## Competency Model Tier 2



### ➤ USA Staffing:

- Validated models submitted for the following functional communities:

#### Environmental Management

- 0028, ENVIRONMENTAL PROTECTION
- 0401, GEN NATURAL RESOURCES MGMT AND BIOLOGICAL SCIENCES
- 0819, ENVIRONMENTAL ENGINEERING

#### Facility Engineering and Management

- 1173, HOUSING MANAGEMENT
- 1601, EQUIPMENT, FACILITIES AND SERVICES
- 1640, FACILITY OPERATIONS SERVICES – Feb 2015
- 5306, AIR CONDITIONING EQUIPMENT MECHANIC (WG)

#### Law Enforcement

- 0085, SECURITY GUARD
- 1801, GENERAL INSPECTION & INVESTIGATION
- 1805, INVESTIGATIVE ANALYSIS
- 1811, CRIMINAL INVESTIGATING

#### Financial Management

- 0501, FINANCIAL ADMIN & PROGRAM
- 0503, FINANCIAL CLERICAL & ASSISTANCE
- 0505, FINANCIAL MANAGEMENT
- 0510, ACCOUNTING
- 0511, AUDITING
- 0525, ACCOUNTING TECHNICIAN
- 0530, CASH PROCESSING
- 0540, VOUCHER EXAMINING
- 0544, CIVILIAN PAY
- 0545, MILITARY PAY
- 0560, BUDGET ANALYSIS
- 0561, BUDGET CLERICAL & ASSISTANCE
- 0599, FM STUDENT TRAINING

#### Systems Engineering

- 08XX, Engineering

Pending

- Pending DCAT Phase III/ MCOs will be submitted AFTER the completion of DCAT Phase III (NTL A4, 2016).

### ➤ SHCPD Website – Competency Information

- Validated Competency Models can be found at the SHCPD Website:  
<https://dodhrinfo.cpmis.osd.mil/Directorates/HRSPAS/Strategic-Human-Capital-Management/Pages/Competency-Management.aspx>

# SECCM 1.0 on the USA Staffing System – Competencies and Tasks as identified by OPM



## Competency Model

**Developed by IO Psychologists for career lifecycle**

### Competencies

- Measureable pattern of skills, knowledge, abilities, behaviors, and other characteristics which an individual needs to perform work
- Categorized as General or Technical
- Identified in the job analysis and used in the assessment questionnaire

### Tasks

- Used in Job Analysis to identify the duties associated with the occupation
- Tasks are rated by the hiring manager for importance and frequency
- Tasks are linked to competencies in the job analysis



# SECCM 1.0 on the USA Staffing System – Example of Competency Network



## Competency Network

Comp ID	Competency Title	Competency Description
<b>1.0</b>	<b>Benefits and Work Life Programs (DoD Tier 2)</b>	<b>Provide guidance and consultation to stakeholders regarding retirement, insurance, work life, leave, workers' compensation, and other related programs.</b>
		1.01 Advise employees on payment options for health benefits coverage while on Leave Without Pay (LWOP) or after separation.
		1.02 Advise managers on reasons to challenge Federal Employees' Compensation Act (FECA) claims.
		1.03 Advise managers or employees regarding the services provided by the Civilian Employee Assistance Program (CEAP).
		1.04 Analyze employee benefits programs and services (e.g., retirement, health insurance, life insurance) to identify areas requiring improvement.
		1.05 Analyze Office of Workers' Compensation Programs (OWCP) chargeback reports to identify cost trends.
		1.06 Assess legislative proposals to determine the impact upon an organization's civilian employee assistance program (e.g., Telework, work life, Alternative Dispute Resolution [ADR]).
		1.07 Authorize payment of bills (e.g., drug, doctor, hospital) in accordance with compensation management regulatory guidance.

- **The 0201 Competency Network:**
- **First Competency and First Seven Items**

# SECCM 1.0 on the USA Staffing System: Benefits



## Assessment Library Benefits

- Provides easy access to competencies searchable by PD number, position title, series, grade, and **keyword**
- Stores items linked to competencies for efficient re-use of content
- Promotes a common competency/KSA language across your component
- Minimizes inconsistency and redundancy
- Opportunity to enforce accuracy and quality standards
- Creates new reporting capabilities on how, when, by whom and to what effect assessment are used
- Facilitates the use of competencies, tasks, and items supported by job analysis
- Helps hiring managers use and remain consistent with the assessment tools used within their functional community

# Summary and Recommendations

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- For the first time, DoD has a verified competency model for systems engineering.
  - significant because a verified competency model is required for “high stakes” HR functions like creating (and maintaining) position descriptions, creating job announcements, assessing job candidates, hiring, and providing a basis for employee performance assessments and ratings.
- The SECCM consists of 44 systems engineering competencies and 179 systems engineering tasks. Critical competencies and tasks are identified for systems engineers at the GS-07 to GS-15 grade levels.
- It is recommended that the SECCM be widely distributed across DoD using the USA Staffing system used by HR specialists. This is important until an occupational series for systems engineering can be created.
- It is recommended that an occupational series for systems engineering be created.
- The Office of the Secretary of Defense has started the process to create an occupational series for systems engineering based in part on the SECCM. This process will take time, possibly on the order of years, as the series has to be reviewed and approved for use by government agencies in addition to DoD.



# Questions...



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