



2016 Acquisition Symposium
Naval Postgraduate School
Monterey, CA
May 4th, 2016

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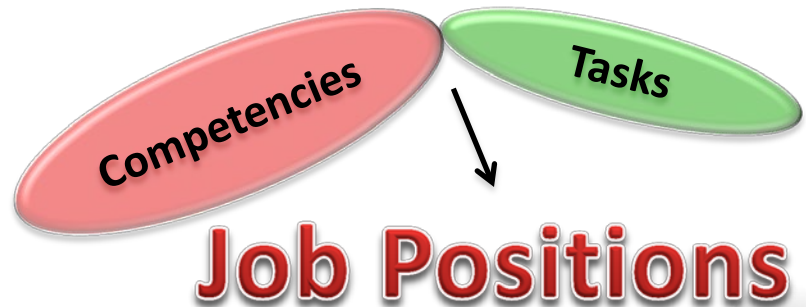
Outline

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- Uniform Guidelines on Employee Selection Procedures
- OPM Occupational Analysis Survey
- Department of the Navy Survey Analysis
 - Critical Competencies
 - Critical Tasks
- SECCM 1.0
 - Available Supplemental Resources
 - Impact on Position Descriptions
- Future Research
- Summary

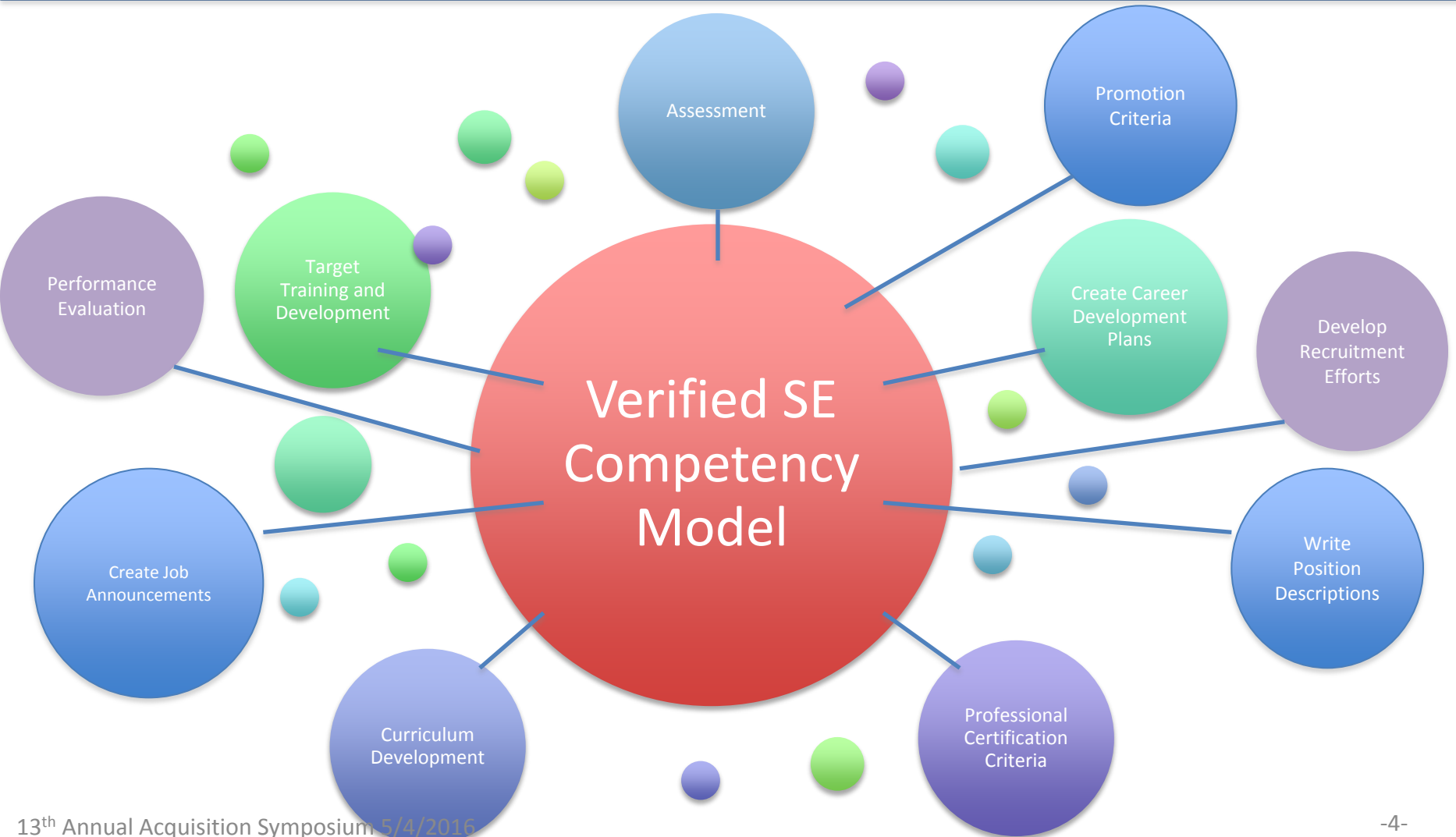
Introduction

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

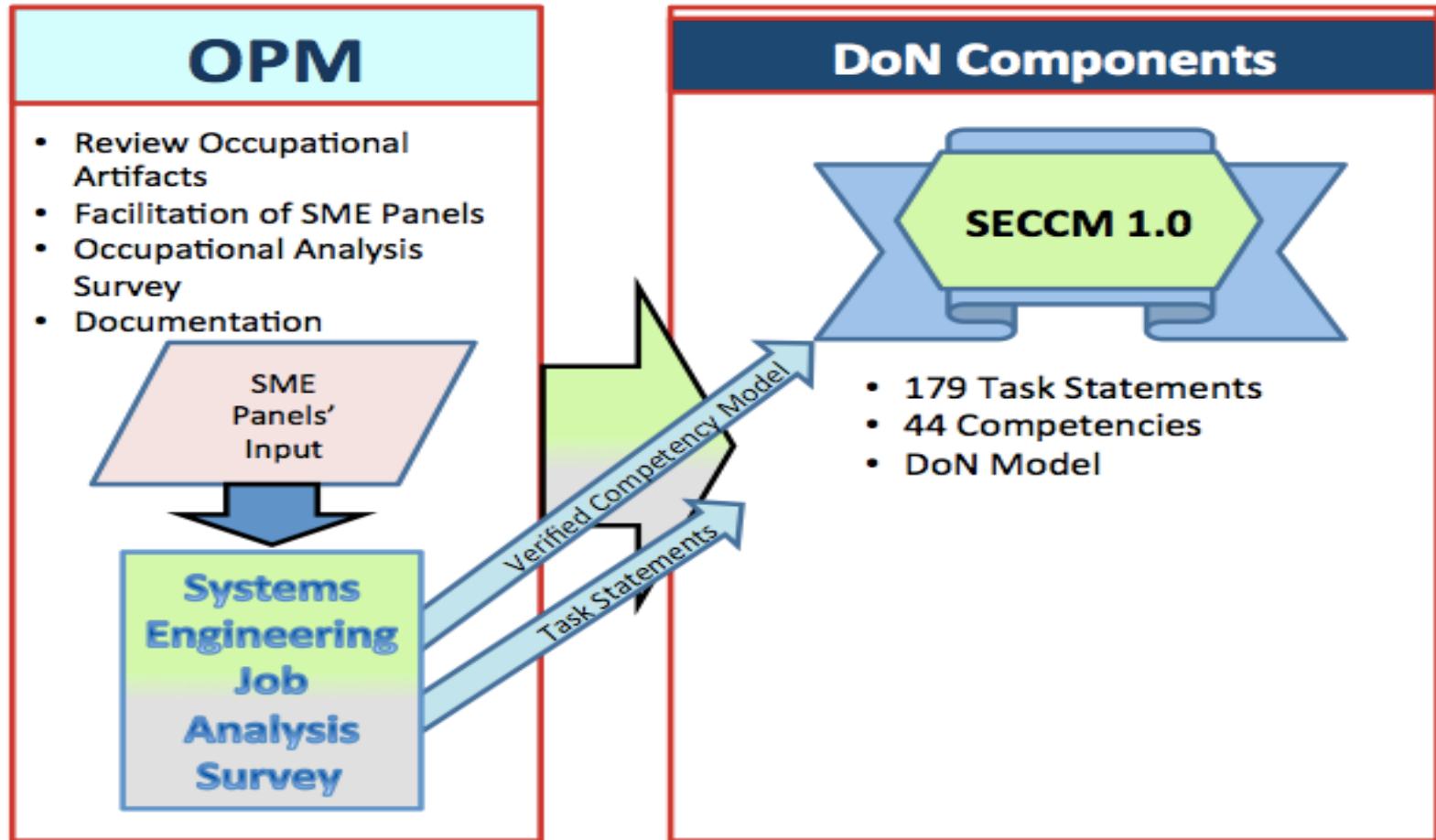
Individuals



Uniform Guidelines on Employee Selection Procedures



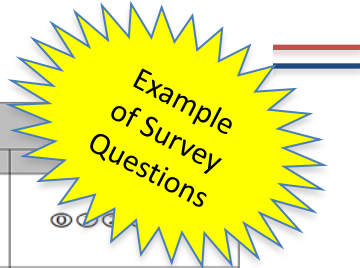
OPM Occupational Analysis Survey



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.	①①②●④⑤	①①②●④⑤	①①②●④⑤	①①②●④⑤	①①②③●⑤	①①②③●⑤	①①②③●⑤
2 Reads charts, graphs, diagrams, or tables.	①①②●④⑤	①①②●④⑤	①①②●④⑤	①①②●④⑤	①①②●④⑤	①①②③●⑤	①①②③●⑤

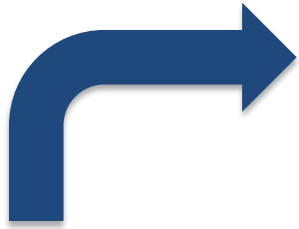


For the first task statement, Contacts others orally to obtain information, the supervisor indicated that the task was “Important” for GS-7, GS-9, GS-11, and GS-12 employees by selecting the option corresponding to 3 and “Very important” for GS-13, GS-14, and GS-15 employees by selecting the option corresponding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

Total Surveys Administered	Incumbents		Supervisors	
	N	%	N	%
Usable Responses	697	17.45	26	4.03
Non-Responses	2,788	69.79	480	74.42
Not Submitted	333	8.34	133	20.62
Did Not Meet Tenure and/or Duty Requirements	177	4.43	6	0.93

Department of the Navy Survey Analysis: Critical Competencies



Grade Level	Critical Competencies
GS-07	2
GS-09	7
GS-11	6
GS-12	16
GS-13	36
GS-14	40
GS-15	43



Systems Engineering Competencies



Department of the Navy Survey

Analysis: Critical Tasks

Examples

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	Critical Tasks
GS-07	18
GS-09	19
GS-11	76
GS-12	165
GS-13	174
GS-14	175
GS-15	176

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
- Requirements Analysis
- Cost, Pricing and Rates/Cost Management
- Financial Reporting and Metrics
- Business Strategy
- Industry Motivation, Incentives, Rewards

Analytical

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

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

Developing Supplemental Resources

SECCM User Guide



SECCM 1.0 Database

Competency Number	Competency	ID	KSA	Category	Cognitive Level	Affective Level
31.0	SOUND JUDGEMENT	SECCM0001	Accept accountability for decisions	Professional		Value
30.0	PERSONAL EFFECTIVENESS/PEER	SECCM0002	Accept responsibility for decisions	Professional		Value
22.0	PERSONAL EFFECTIVENESS/PEER	SECCM0003	Accept responsibility for outcomes (positive or negative) of one's work	Professional		Value
22.0	PROBLEM SOLVING	SECCM0004	Account for interdependencies	Professional	Remember	Value
30.0	PERSONAL EFFECTIVENESS/PEER	SECCM0005	Achieve problem resolution between differing parties including influential stakeholders	Professional	Apply	Value
2.0	STAKEHOLDER REQUIREMENTS DE	SECCM0006	Achieve stakeholder understanding and agreement about systems requirements	Analytical	Apply	Value
30.0	PERSONAL EFFECTIVENESS/PEER	SECCM0007	Acknowledge individual, questions and concerns	Professional		Value
30.0	PERSONAL EFFECTIVENESS/PEER	SECCM0008	Acknowledge others' contributions	Professional		Value
22.0	PROBLEM SOLVING	SECCM0009	Acknowledge what is unknown and seek greater understanding from appropriate sources	Professional		Value
25.0	LEADING HIGH-PERFORMANCE TEA	SECCM0010	Act as a consultant on business organization	Professional		Characterize
28.0	COMMUNICATION	SECCM0011	Act as an arbitrator in marginal cases	Professional		Characterize
7.0	VERIFICATION	SECCM0012	Act as an authority in the development of systems integration and verification strategies	Analytical		Characterize
8.0	VALIDATION	SECCM0013	Act as an authority in the development of validation strategies	Analytical		Characterize
25.0	LEADING HIGH-PERFORMANCE TEA	SECCM0014	Act as an authority on theory, opinions and the implications of the lifecycle on the project/program	Professional		Characterize
25.0	LEADING HIGH-PERFORMANCE TEA	SECCM0015	Act as troubleshooter by discovering and eliminating causes of organizational or employee problems	Professional		Characterize
24.0	PROFESSIONAL ETHICS	SECCM0016	Act concisely in a manner that conveys organizational, social, and moral values at the highest standard	Professional		Characterize
28.0	COMMUNICATION	SECCM0017	Adapt communication methods and style based on the players involved	Professional	Apply	Value
28.0	COMMUNICATION	SECCM0018	Adapt communication style	Professional	Apply	Value
1.0	MISSION-LEVEL ASSESSMENT	SECCM0019	Adapt spatial and temporal boundaries as new information is discovered	Analytical	Apply	Value
22.0	PROBLEM SOLVING	SECCM0020	Adapt spatial and temporal boundaries as new information is discovered	Professional	Apply	Value
30.0	PERSONAL EFFECTIVENESS/PEER	SECCM0021	Address team conflicts in a timely fashion	Professional	Apply	Value
24.0	REQUIREMENTS ANALYSIS	SECCM0022	Address unarticulated requirements tacitly, including unstated items as well as those that are not explicitly stated	Business Acumen	Apply	Organize
30.0	PERSONAL EFFECTIVENESS/PEER	SECCM0023	Adhere to ethics in conduct	Professional		Organize
30.0	PERSONAL EFFECTIVENESS/PEER	SECCM0024	Adhere to the team's expectations and guidelines	Professional		Organize
30.0	PERSONAL EFFECTIVENESS/PEER	SECCM0025	Adopt behavior	Professional		Organize
30.0	PERSONAL EFFECTIVENESS/PEER	SECCM0026	Adjust behavior to respect observed differences in others	Professional	Apply	Value
28.0	COMMUNICATION	SECCM0027	Adjust message to the audience	Analytical	Apply	Value
4.0	ARCHITECTURE DESIGN	SECCM0028	Adjust solutions when they do not meet customers' needs or fit the situation	Analytical	Apply	Value
30.0	PERSONAL EFFECTIVENESS/PEER	SECCM0029	Admit mistakes	Professional		Value
30.0	PERSONAL EFFECTIVENESS/PEER	SECCM0030	Admit mistakes and refuse efforts when appropriate	Professional		Value
27.0	COACHING AND MENTORING	SECCM0031	Advance ideas	Professional	Apply	Value
17.0	TECHNICAL ASSESSMENT	SECCM0032	Advance the capabilities of others through the use of coaching, mentoring, and training	Professional	Apply	Value
9.0	TRANSITION	SECCM0033	Advance the system elements to the next level in the physical architectural lifecycle	Analytical	Apply	Value
17.0	RISK MANAGEMENT	SECCM0034	Advise customers and senior program managers on concurrency issues and risks	Technical Management		Characterize
4.0	ARCHITECTURE DESIGN	SECCM0035	Advise on complex issues and resolve conflicting design requirements	Analytical		Characterize
4.0	ARCHITECTURE DESIGN	SECCM0036	Advise on concurrency issues and risks	Analytical		Characterize
14.0	TECHNICAL ASSESSMENT	SECCM0037	Advise on potential areas and implications of engineering change	Technical Management		Characterize
17.0	RISK MANAGEMENT	SECCM0038	Advise on systems engineering tasks and their mitigation	Technical Management		Characterize
14.0	TECHNICAL ASSESSMENT	SECCM0039	Advise on the allocation of technical margins	Technical Management		Characterize
25.0	LEADING HIGH-PERFORMANCE TEA	SECCM0040	Advise on the effectiveness of the enterprise as a system	Professional		Characterize
25.0	LEADING HIGH-PERFORMANCE TEA	SECCM0041	Advise on the organization of special functions	Professional		Characterize
25.0	LEADING HIGH-PERFORMANCE TEA	SECCM0042	Advise on the relative requirements negotiations on major programs	Professional		Characterize
11.0	TECHNICAL ASSESSMENT	SECCM0043	Advise on the usability and simulations of models and simulations	Analytical		Characterize
4.0	ARCHITECTURE DESIGN	SECCM0044	Advise on the suitability of system solutions	Analytical		Characterize
12.0	DECISION ANALYSIS	SECCM0045	Advise practitioners in techniques for selection of preferred solutions	Technical Management		Characterize
24.0	LEADING HIGH-PERFORMANCE TEA	SECCM0046	Advise program management on the implication of theory issues	Professional		Characterize

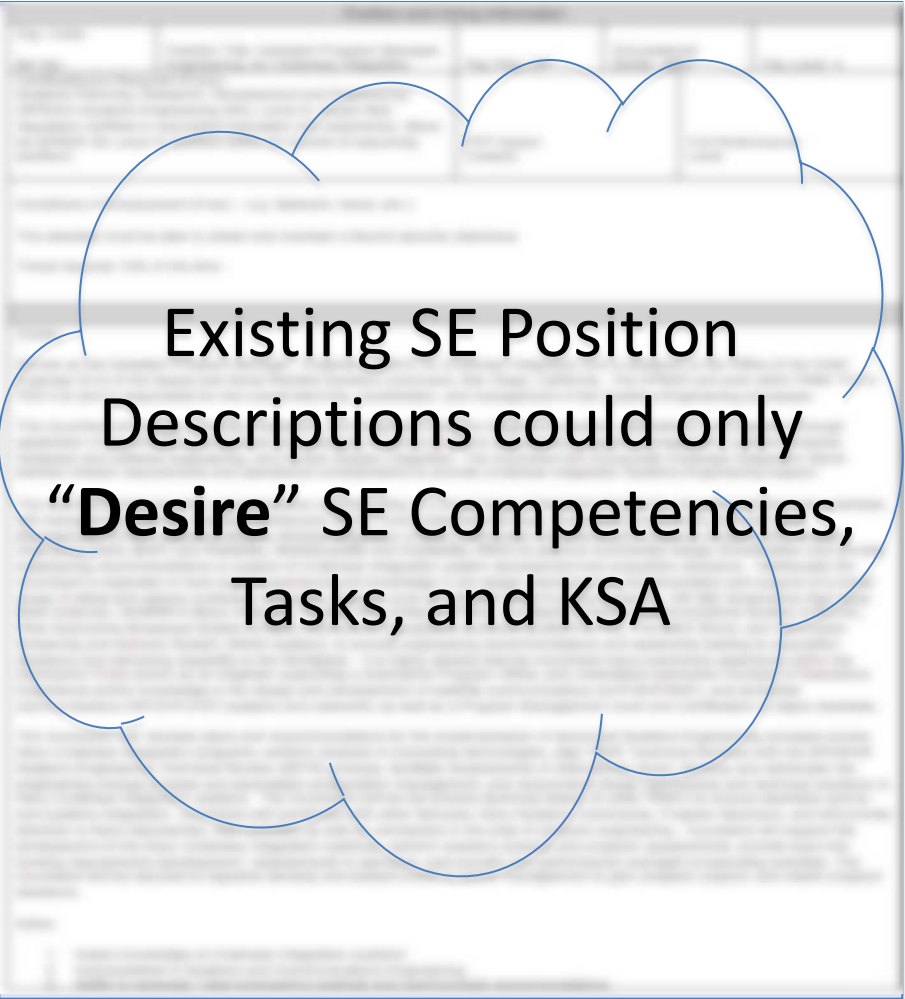
Describes how to use the information for:

- Job announcements
- Position descriptions
- Skill gap analyses
- Career development plans
- Career path models

Provides access to the following

- 44 competencies & 3,272 KSAs
- Overview of critical tasks
- Overview of critical competencies
- Critical tasks & critical competencies per GS-Level

Example: SECCM 1.0 Impact on Position Descriptions



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

- SECCM 1.0 can now be used as a resource to
 - **“Require”** SE Critical Competencies and Tasks for a position
 - Identify Critical Competencies and Tasks by GS level

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

Future Research

- Study how the SECCM could be used to shape the SE Workforce
- Assist OSD in the development of an occupational series for SE

Summary

- The SECCM 1.0 is a verified model that can be used for high stakes HR activities
 - Job announcements, position descriptions, Skill gap analysis, career development plans, career path models
- The Department of the Navy Survey Analysis identified Systems Engineering
 - Critical Tasks
 - Critical Competencies
- There is a User Guide & SECCM Database



Questions...



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