Outline

• Introduction
• 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
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.
Uniform Guidelines on Employee Selection Procedures

Verified SE Competency Model

- Assessment
- Promotion Criteria
- Create Career Development Plans
- Develop Recruitment Efforts
- Write Position Descriptions
- Professional Certification Criteria
- Curriculum Development
- Create Job Announcements
- Performance Evaluation
- Target Training and Development

OPM Occupational Analysis Survey

- Review Occupational Artifacts
- Facilitation of SME Panels
- Occupational Analysis Survey
- Documentation

SME Panels’ Input

Systems Engineering Job Analysis Survey

Verified Competency Model

Task Statements

SECCM 1.0

- 179 Task Statements
- 44 Competencies
- DoN Model

DoN Components
OPM Occupational Analysis Survey

Total Surveys Administered

<table>
<thead>
<tr>
<th></th>
<th>Incumbents</th>
<th>Supervisors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Contacts others orally to obtain information.</td>
<td>3,995</td>
<td>100</td>
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<tr>
<td>Reads charts, graphs, diagrams, or tables.</td>
<td>697</td>
<td>17.45</td>
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<tr>
<td>Non-Responses</td>
<td>2,788</td>
<td>69.79</td>
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<tr>
<td>Not Submitted</td>
<td>333</td>
<td>8.34</td>
</tr>
<tr>
<td>Did Not Meet Tenure and/or Duty Requirements</td>
<td>177</td>
<td>4.43</td>
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Example of Survey Questions

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.
Department of the Navy Survey Analysis: Critical Competencies

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Critical Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS-07</td>
<td>2</td>
</tr>
<tr>
<td>GS-09</td>
<td>7</td>
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<tr>
<td>GS-11</td>
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<td>GS-12</td>
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<tr>
<td>GS-13</td>
<td>36</td>
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<tr>
<td>GS-14</td>
<td>40</td>
</tr>
<tr>
<td>GS-15</td>
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</table>

Systems Engineering Competencies
# Department of the Navy Survey Analysis: Critical Tasks

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

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Critical Tasks</th>
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<tbody>
<tr>
<td>GS-07</td>
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<tr>
<td>GS-09</td>
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<tr>
<td>GS-12</td>
<td>165</td>
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<tr>
<td>GS-13</td>
<td>174</td>
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<tr>
<td>GS-14</td>
<td>175</td>
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<tr>
<td>GS-15</td>
<td>176</td>
</tr>
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</table>
### 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

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Developing Supplemental Resources

SECCM User Guide

Describes how to use the information for:
- Job announcements
- Position descriptions
- Skill gap analyses
- Career development plans
- Career path models

SECCM 1.0 Database

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

- 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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