



# Major ASVAB R&D Efforts Milestones and Project Schedules

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# Projects

- **ASVAB Development**
  - Item Development Efforts
  - New CAT-ASVAB Item Pools
  - New P&P-ASVAB Forms\*
  - Evaluations of CAT-ASVAB and Form Development Methodologies\*
  - Implementation of Calculators\*
- **ASVAB and Enlistment Testing Program (ETP) Revision**
  - Next Generation ASVAB/ASVAB Evaluations
    - Adverse Impact Analyses\*
    - Differential Prediction Analyses
    - Training Relevance Survey
    - High School Curriculum Study\*
    - Focus Groups
    - Validity Frameworks
    - Norming Investigations

\*Asterisked topics will be presented/discussed at this meeting.

NOTE: Dates given in this document are subject to change depending on available resources, unexpected issues that arise, and other factors that may be beyond our control. Any changes will be communicated as soon as possible.

# Projects

- **ASVAB and ETP Revision**
  - Evaluating New Cognitive Tests/Composites for ASVAB
    - Complex Reasoning\*
    - Computational Thinking\*
    - Cyber Test
    - Mental Counters
  - Adding Non-Cognitive Measures to Selection and/or Classification
    - TAPAS Validity Framework
    - Joint-Service TAPAS\*
- **Career Exploration Program\***
- **Military Compatibility Assessment**
- **Expanding Test Availability**
  - Web/Cloud Delivery of ASVAB and Special Tests
  - Device Expansion

\*Asterisked topics will be presented/discussed at this meeting.

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# Item Development Efforts

- **Objective**

- Develop new items for the ASVAB

- **Projected Completion**

- Ongoing

- **Subtasks**

- Develop items and graphics for GS, AR, WK, PC, MK, EI, AI, SI, and MC subtests using the ASVAB item bank platform (ongoing)
- Conduct copy edits (ongoing)
- Conduct sensitivity reviews, content review, and content edits (ongoing)
- Develop training materials for the ASVAB item bank (ongoing)
- Convert AO item graphics for alternate device compatibility (PiCAT, APT, and special tests complete; others in progress)

# Item Development Efforts

- **Predecessors**
  - Development of ASVAB item bank
- **Successors**
  - Item tryouts on CAT-ASVAB platform
  - CAT-ASVAB form development

# New CAT-ASVAB Item Pools

- **Objective**
  - Develop CAT-ASVAB item pools from new items
- **Projected Completion**
  - CAT-ASVAB Forms 16–20 implementation: TBD
- **Subtasks**
  - Conduct item tryouts ✓
  - Conduct calibration and scaling ✓
  - Conduct item analyses and screening (in progress)
  - Assemble item pools and prepare for online administration (TBD)
  - Collect Initial Operational Test & Evaluation (IOT&E) data (TBD)
  - Conduct final equating analyses and evaluations (TBD)
  - Update software for operational implementation (TBD)
  - Implement Forms 16–20 operationally (TBD)

# New CAT-ASVAB Item Pools (cont.)

- **Predecessors**

- ASVAB item development
- CAT-ASVAB Forms 11–15 implementation (Feb 2024) ✓

- **Successors**

- Use of CAT-ASVAB Forms 5–9 in CEP, AFCT, PiCAT, overseas ✓
- Documentation of CAT-ASVAB Forms 11–15 development in a technical bulletin (May 2024) ✓

# New P&P-ASVAB Forms\*

- **Objective**

- Develop P&P-ASVAB Forms 29F/G, 30F/G, 31F/G, 32F/G from new items

- **Projected Completion**

- New form implementation: TBD

- **Subtasks**

- Conduct item tryouts ✓
- Conduct scaling ✓
- Assemble test forms ✓
- Resolve issues with PC, AS, and AO (in progress)
- Assemble test booklets (TBD)
- Print test booklets (TBD)
- Update scanning and scoring systems (TBD)
- Prepare for operational implementation (TBD)
- Implement P&P-ASVAB Forms 29–32 operationally (TBD)



# New P&P-ASVAB Forms\* (cont.)

- **Predecessors**

- Development of CAT-ASVAB Forms 11–15

- **Successors**

- Implementation of new P&P-ASVAB forms in the ETP
- Implementation of new P&P-ASVAB forms in the CEP
- Documentation of P&P-ASVAB Forms 29–32 development in a technical bulletin

# Evaluation and Implementation of Calculators\*

- **Objective**
  - Move forward with incorporating calculator use on the ASVAB
- **Projected Completion**
  - TBD
- **Subtasks**
  - Identify calculator-sensitive items via SME review\* (Feb 2024) ✓
  - Conduct data collection and evaluate calculator impact\* (Sep 2024) ✓
  - Conduct needs assessment with Services\* (Feb 2025)
  - Determine next steps<sup>†</sup> (TBD)
- **Predecessors**
  - Development of MK and AR items and CAT-ASVAB pools

<sup>†</sup> Next steps will depend on findings in the initial phases and on receipt of funding.

# Evaluation and Implementation of Calculators\* (cont.)

- **Successors**

- Possible equating (if no multidimensionality or other measurement issues are found in impact analysis)
- Possible new MK, AR, or special purpose test (if multidimensionality or other issues are identified in impact analysis)

# Evaluation of CAT-ASVAB and Form Development Methodologies\*

- **Objective**

- Evaluate CAT-ASVAB methodologies and ways to streamline form development efforts

- **Projected Completion**

- TBD

- **Subtasks**

- Evaluate modernized options for CAT-ASVAB and technical approaches to test administration and scoring (Mar 2023) ✓
- Explore the efficacy of using machine learning methods to streamline the form assembly process (Sep 2023) ✓
- Develop and carry out a Bayesian item calibration sample size reduction study (June 2024) ✓
- Conduct evaluation of Differential Item Functioning approaches (Apr 2025)

- **Predecessors**

- Transition form development responsibilities from the government to the contractor

# Evaluation of CAT-ASVAB and Form Development Methodologies\* (cont.)

- **Successors**
  - Possible adjustments to item seeding practices
  - Possible adjustments to item calibration practices
  - Possible adjustments to item analysis practices
  - Possible adjustments to form assembly practices
  - Possible adjustments to form equating practices

# Next Generation ASVAB/ASVAB Analyses\*

- **Objective**

- Evaluate state of the ASVAB and prepare for the next generation of ASVAB and special purpose tests to be administered on the ASVAB platform in the ETP

- **Projected Completion**

- Ongoing

- **Subtasks**

- Conduct training relevance survey (June 2022) ✓
- Conduct differential prediction analyses for the AFQT (Mar 2023) ✓
- Conduct focus groups with stakeholders (Mar 2023) ✓
- Refine validity argument for the AFQT (Sep 2023) ✓
- Develop and implement a plan for annually evaluating the need for re-norming the ASVAB (Sep 2023) ✓
- Conduct a norming needs assessment (Mar 2024) ✓

# Next Generation ASVAB/ASVAB Analyses\* (cont.)

- **Subtasks** (continued)
  - Conduct differential prediction analyses for Service-specific classification composites (Sep 2024) ✓
  - Conduct adverse impact analyses for the ASVAB and special tests on FY 2023 applicants\* (Oct 2024) ✓
  - Conduct Next Generation ASVAB workshop (Nov 2024)
  - Conduct high school curriculum study\* (Dec 2024)
  - Develop a roadmap for next generation ASVAB (Apr 2025)
  - Refine validity argument for the ASVAB (Sep 2025)
- **Predecessors**
  - Prior revisions to ASVAB contents
  - Evaluations of special tests of interest
- **Successors**
  - Possible revisions to ASVAB contents

# Evaluating New Cognitive Tests: Complex Reasoning\*

- **Objective**

- Develop a non-verbal reasoning assessment and evaluate for possible inclusion in the ASVAB
- Develop an item generator for Complex Reasoning

- **Projected Completion**

- Oct 1, 2024, to meet NDAA Computational Thinking requirement ✓
- Ongoing evaluations after NDAA milestone is met

- **Subtasks**

- Evaluate existing, non-proprietary item generator ✓
- Generate items and conduct pilot study ✓
- Finalize Complex Reasoning Item Generation Tool ✓
- Generate items for a follow-up pilot study and evaluation of refined Complex Reasoning capability ✓
- Conduct follow-up pilot study (Sep 2023) ✓
- Provide test forms, tryout items, and programming requirements for implementing on ASVAB platform (Sep 2023) ✓



# Evaluating New Cognitive Tests: Complex Reasoning\* (cont.)

- **Subtasks** (continued)
  - Provide research and development/maintenance plan (Mar 2024) ✓
  - Program Complex Reasoning application for administration on the ASVAB test delivery platform and conduct QA (Aug 2024) ✓
  - Implement Complex Reasoning test operationally (Aug 2024) ✓
  - Develop and pilot new items (Jan 2025)
  - Develop CAT pools and conventional forms (Jun 2025)
  - Identify refinements for blueprints, item generation, and form assembly procedures (TBD)
  - Design studies to evaluate Complex Reasoning scores (TBD)
- **Predecessors**
  - Evaluation of Abstract Reasoning Test
- **Successors**
  - Evaluate operational Complex Reasoning scores
  - Possible operational implementation of a CAT version of Complex Reasoning test

# Evaluating New Cognitive Tests: Computational Thinking\*

- **Objective**

- Develop a Computational Thinking composite score to meet National Defense Authorization Act (NDAA) requirement to address Computational Thinking skills

- **Projected Completion**

- Oct 1, 2024, to meet NDAA Computational Thinking requirement ✓
- Ongoing evaluations after NDAA milestone is met

- **Subtasks**

- Conduct alignment study to establish Computational Thinking composite(s) from existing ASVAB and military tests (Dec 2023) ✓
- Program necessary modifications to Complex Reasoning application to compute Computational Thinking composite scores and QA (Aug 2024) ✓
- Implement Computational Thinking composite scores operationally (Aug 2024) ✓
- Conduct empirical validation study of Computational Thinking composite scores using Shippers (Sep 2024) ✓
- Design studies to evaluate Computational Thinking scores (TBD)

# Evaluating New Cognitive Tests: Computational Thinking\* (cont.)

- **Predecessors**

- Development and evaluation of Cyber Test
- Development and evaluation of Complex Reasoning test

- **Successors**

- Evaluation of operational Computational Thinking scores
- Possible inclusion of Computational Thinking composite scores into selection and classification decisions

# Non-Cognitive Measures for Selection & Classification: Joint-Service TAPAS\*

- **Objective**

- Integrate the use of non-cognitive measures in the military selection and classification process to open the aperture and widen diversity of military service eligible applicants

- **Projected Completion**

- Ongoing

- **Subtasks**

- Establish a validity argument for TAPAS ✓
- Refine the validity argument for TAPAS (ongoing)
- Develop a joint-Service version of TAPAS (JS-TAPAS)
  - Explore TAPAS effect on adverse impact (May 2023) ✓
  - Develop research plan for a criterion data collection (Summer 2023) ✓
  - Make recommendations for an interim joint-Service composite (Fall 2023) ✓
  - Add joint-Service facets to Service-specific TAPAS versions (where needed) and program interim (Phase 0) joint-Service composite (Sep 2024) ✓
  - Implement JS-TAPAS and Phase 0 composite operationally (Sep 2024) ✓
  - Evaluate initial composite (TBD)

# Non-Cognitive Measures for Selection & Classification: Joint-Service TAPAS\* (cont.)

- **Subtasks** (continued)
  - Select Service-specific facets for inclusion in JS-TAPAS (Service task)
    - Army (Fall 2024) ✓
    - Air Force/Space Force (Fall 2024) ✓
    - Marine Corps (Fall 2024) ✓
    - Navy (Fall 2024) ✓
- **Predecessors**
  - Program TAPAS for administration on the cloud platform
- **Successors**
  - Phase 1 JS-TAPAS instrument refinement
  - Phase 1 JS-TAPAS enlistment composite refinement

# Non-Cognitive Measures for Selection & Classification: Military Compatibility

- **Objective**

- Integrate the use of non-cognitive measures in the military selection and classification process to ensure military compatibility among enlisted and officer populations

- **Projected Completion**

- Ongoing

- **Subtasks**

- Identify TAPAS-based compatibility composite for initial operational test and evaluation (IOT&E) with applicants (Sep 2023) ✓
- Identify possible alternate compatibility composites (Sep 2023) ✓
- Make software changes to TAPAS/update facets and implement on cloud platform (Sep 2024) ✓
- Program interim (Phase 0) military compatibility composite for enlisted personnel and implement on cloud platform (Sep 2024) ✓
- Begin data collection for enlisted population (Sep 2024) ✓
- Develop plans for evaluating applicable tests and feasibility of clinical/holistic evaluation for enlisted accessions (Sep 2024) ✓

# Non-Cognitive Measures for Selection & Classification: Military Compatibility (cont.)

- **Subtasks** (continued)
  - Review avenues for non-cognitive assessment in the officer population (ongoing)
  - Evaluate IT options for implementation with officers (ongoing)
  - Conduct research on non-cognitive assessment methodologies (ongoing)
- **Predecessors**
  - Develop TAPAS Conduct composite (Army)
  - Data collections on Service-specific versions of TAPAS (Army, Air Force, Marine Corps)
- **Successors**
  - Develop and implement a roadmap for officer implementation and evaluation
  - Phase 1 JS-TAPAS instrument refinement
  - Phase 1 JS-TAPAS military compatibility composite refinement

# Career Exploration Program\*

- **Objective**

- Revise/maintain all CEP materials (websites & print materials), conduct program evaluation studies, and conduct research studies, as needed

- **Projected Completion**

- Ongoing

- **Subtasks**

- Develop CEP briefings and materials for external sources, as needed (ongoing)
- Revise program materials as suggested by expert panel and evaluation efforts (ongoing)
- Refresh the Find Your Interests (FYI) inventory items (in progress)
- Monitor state usage of ASVAB and ASVAB CEP as related to legislative changes (ongoing)
- Monitor CEP *i*CAT usage in schools (ongoing)
- Update standard operating procedures for collecting and analyzing military occupational data (in progress)
- Assess incorporating AI into occupational analysis (in progress)
- Increase touch points with stakeholders and formalize program lead tracking (ongoing)



# Career Exploration Program\* (cont.)

- **Subtasks** (continued)
  - Develop, enhance, and deliver training (SY 2024–2025)
    - Website enhancements
    - Post-Test Interpretation recertification
    - Update Education Services Specialist training
    - Coordinate with Services to include ASVAB CEP in Recruiting School curriculum
    - Develop ASVAB CEP MEPS Commanders training
  - Launch new research initiative to investigate potential future program enhancement (in progress)
- **Predecessors**
  - Seeded new items for the FYI
  - Collated authoritative data sources for the OCCU-Find
  - Conducted Post-Test Interpretation training and expanded to Europe
  - Developed enhancements to ASVAB CEP website
- **Successors**
  - Expand ASVAB CEP to the Pacific

# Expanding Test Availability: Device Expansion

- **Objective**

- Expand *i*CAT test delivery application to run on additional operating systems and browsers for desktops/laptops
- Expand PiCAT and APT to run on tablets and smartphones

- **Projected Completion**

- Summer 2025

- **Subtasks**

- Initiate development of implementation plan (Jun 2023) ✓
- Update *i*CAT to run on additional browsers and operating systems for desktops and laptops (Fall 2023) ✓
- Expand PiCAT/APT to run on 3 tablets with touchscreen capabilities (May 2024) ✓
- Monitor operational performance across desktops/laptops and tablets (ongoing)
- Expand PiCAT/APT to run on select smartphones (Summer 2025)
- Implement new interface for all *i*CAT applications (Summer 2025)

# Expanding Test Availability: Device Expansion (cont.)

- **Predecessors**

- Evaluation of ASVAB performance across different devices

- **Successors**

- Monitor operational performance across desktops/laptops, tablets, and smartphones
- Evaluate need and feasibility of expanding delivery of special tests to additional devices

# **Appendix List of Acronyms**

## List of Acronyms (cont.)

AFCT	Armed Forces Classification Test
AFQT	Air Force Qualification Test
AI	Auto Information
APT	AFQT Predictor Test
AR	Arithmetic Reasoning
ASVAB	Armed Services Vocational Aptitude Battery
ATO	Authority to Operate
CAT-ASVAB	Computerized Adaptive Testing version of the ASVAB
CEP	Career Exploration Program
CS	Coding Speed
CT	Cyber Test
DMDC	Defense Manpower Data Center
EI	Electronics Information
ETP	Enlistment Testing Program
FYI	Find Your Interests inventory
GS	General Science
iCAT	Internet-based CAT-ASVAB
iCAT-A&R	iCAT Authorization and Registration
IOT&E	Initial Operational Test and Evaluation

## List of Acronyms (cont.)

MEPS	Military Entrance Processing Stations
MET	Military Entrance Test site
MC	Mechanical Comprehension
MCt	Mental Counters test
MEPCOM	Military Entrance Processing Command
MEPS	Military Entrance Processing Stations
MET	Military Entrance Test site
MK	Math Knowledge
NDAA	National Defense Authorization Act
OCCU-Find	Occupational Finder
PC	Paragraph Comprehension
P&P	Paper and Pencil
PiCAT	Pending Internet CAT-ASVAB
PV-ETP	Post-VTest ASVAB
QA	Quality Assurance
R&D	Research and Development
TAPAS	Tailored Adaptive Personality Assessment System
TBD	To Be Determined
VTest	Verification Test
WinCAT	Windows-based CAT-ASVAB
WK	Word Knowledge