

Major ASVAB R&D Efforts Milestones and Project Schedules

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Projects

- **ASVAB Development**
 - New CAT-ASVAB Item Pools*
 - New P&P-ASVAB Forms*
 - Evaluations of CAT-ASVAB and Form Development Methodologies

- **ASVAB and 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*

*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
- **Career Exploration Program***
- **Military Compatibility Assessment**
- **Expanding Test Availability**
 - Web/Cloud Delivery of ASVAB and Special Tests
 - Device Expansion*

*Will be presented/discussed at this meeting.

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New CAT-ASVAB Item Pools*

- **Objective**

- Develop CAT-ASVAB item pools (designated as Forms 11–15) from new items

- **Projected Completion**

- New item pool implementation: Summer 2023

- **Subtasks**

- Conduct item tryouts ✓
 - Conduct calibration and scaling ✓
 - Conduct item analyses and screening ✓
 - Assemble item pools and prepare for online administration ✓
 - Collect Initial Operational Test & Evaluation (IOT&E) data ✓
 - Conduct final analyses and evaluations (Feb 2023)
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New CAT-ASVAB Item Pools* (continued)

- **Subtasks** (continued)
 - Prepare for operational implementation (Apr 2023)
 - Obtain approvals (June 2023)
 - **Predecessors**
 - ASVAB item development
 - **Successors**
 - Operational administration of CAT-ASVAB Forms 11–15
 - Use of CAT-ASVAB Forms 5–9 in CEP, AFCT, PiCAT, overseas
 - Documentation of CAT-ASVAB Forms 11–15 development in a technical bulletin
 - Development of CAT-ASVAB Forms 16–20
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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 analyses ✓
 - Conduct scaling (in progress)
 - Assemble test forms (in progress)
 - Assemble and print test booklets (TBD)
 - Prepare for operational implementation (TBD)
 - Obtain approvals (TBD)
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New P&P-ASVAB Forms* (continued)

- **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
-

Evaluations of CAT-ASVAB and Form Development Methodologies

- **Objective**

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

Projected Completion

- TBD

- **Subtasks**

- Evaluate modernization 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 (Dec 2023)
-

Evaluations of CAT-ASVAB and Form Development Methodologies (continued)

- **Predecessors**

- Transition form development responsibilities from the government to the contractor

- **Successors**

- Possible adjustments to item calibration practices
- Possible adjustments to CAT-ASVAB algorithms

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 military's Enlistment Testing Program

- **Projected Completion**

- Ongoing

- **Subtasks**

- Conduct adverse impact analyses for the ASVAB and special tests on FY 2021 applicants* (Oct 2022) ✓
- Conduct differential prediction analyses for the AFQT* (Mar 2023)
- Conduct differential prediction analyses for Service-specific classification composites (Sep 2024)
- Conduct training relevance survey* ✓

Next Generation ASVAB/ASVAB Analyses*

(continued)

- **Subtasks** (continued)

- Conduct focus groups with stakeholders* (Mar 2023)
- Conduct high school curriculum study (Jun 2024)
- Establish and refine validity argument for the AFQT* (ongoing)
- Establish and refine validity argument for the ASVAB* (ongoing)
- Develop and implement a plan for annually evaluating the need for re-norming the ASVAB* (June 2023)
- Conduct a norming needs assessment* (June 2023)

- **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**

- TBD

- **Subtasks**

- Evaluate existing, non-proprietary item generator ✓
 - Generate items for pilot study ✓
 - Pilot items with a non-military sample ✓
 - Refine item generation tool (TBD)
 - Program final improvements to item generator (Sep 2023)
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Evaluating New Cognitive Tests: Complex Reasoning* (continued)

- **Subtasks** (continued)

- Generate items for a follow-up study (TBD)
- Conduct data collection for follow-up study (Apr 2023)
- Conduct data analyses for follow-up study (Jun 2023)
- Document findings from follow-up study (Aug 2023)

- **Predecessors**

- Evaluation of Abstract Reasoning Test

- **Successors**

- Program Complex Reasoning application for administration on the ASVAB test delivery platform
 - Development of Computational Thinking composite
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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**

- TBD

- **Subtasks**

- Conduct alignment study to establish Computational Thinking composite from existing ASVAB and military tests (Sep 2023)
 - Program necessary modifications to ASVAB test delivery application (Oct 2024)
 - Conduct empirical validation study of Computational Thinking composite score (TBD)
-

Evaluating New Cognitive Tests: Computational Thinking* (continued)

- **Predecessors**

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

- **Successors**

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

Evaluating New Cognitive Tests: Cyber Test

- **Objectives**

- Develop a CAT version of the Cyber Test and program for administration on DTAC's cloud platform

- **Projected Completion**

- TBD

- **Subtasks**

- Develop CAT item pools ✓
 - Evaluate feasibility of CAT-Cyber Test ✓
 - Program CAT-Cyber for administration on the cloud platform (TBD)
-

Evaluating New Cognitive Tests: Cyber Test

- **Predecessors**

- Development of conventional version of Cyber Test
- Programming of conventional Cyber Test for cloud platform

- **Successors**

- Conduct additional validation studies
 - Tryout of new seed item set
 - Possible revisions to ASVAB content
-

Evaluating New Cognitive Tests: Mental Counters

- **Objective**

- Refine the Mental Counters test of working memory and program for administration on DTAC's cloud platform

- **Projected Completion**

- TBD

- **Subtasks**

- Investigate psychometric properties ✓
- Refine instructions and practice items to eliminate floor effect ✓
- Evaluate new instructions and practice items ✓
- Gather IT requirements for the cloud platform ✓
- Program for administration on the cloud platform (in progress)

Evaluating New Cognitive Tests: Mental Counters (continued)

- **Predecessors**

- Program Mental Counters for administration on DTAC's WinCAT platform (now decommissioned)

- **Successors**

- Conduct additional validation studies
 - Possible revisions to ASVAB content
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Adding Non-cognitive Measures to Selection and/or Classification: TAPAS

- **Objective**

- Evaluate the use of the Tailored Adaptive Personality Assessment System (TAPAS) in the military selection and classification process

- **Projected Completion**

- Ongoing

- **Subtasks**

- Empirically evaluate Service-specific versions of TAPAS
 - Army (Ongoing)
 - Air Force/Space Force (Ongoing)
 - Marine Corps (Ongoing)
 - Navy (TBD)

Adding Non-cognitive Measures to Selection and/or Classification: TAPAS (continued)

- **Subtasks** (continued)

- Establish and refine a validity argument for TAPAS (ongoing)
- Develop a joint-Service version of TAPAS
 - Explore TAPAS effect on adverse impact (Dec 2022)
 - Create an initial joint-Service composite (May 2023)
 - Develop research plan for a criterion data collection (Jun 2023)
 - Identify best approach for a joint-Service TAPAS with regard to versions/facets (Aug 2023)
 - Determine joint composite for enlistment use (Sep 2024)

- **Predecessors**

- Program TAPAS for administration on the cloud platform

- **Successors**

- Possible revisions to the ASVAB or addition of new special tests
- Possible software updates

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 program briefings and materials for external sources, as needed (ongoing)
 - Revise program materials as suggested by expert panel and evaluation efforts (ongoing)
 - Develop enhancements to the ASVAB CEP website (in progress)
 - Cross-walk civilian and military occupations for inclusion in the OCCU-Find (in progress)
 - Conduct continuing education sessions (Monthly, every 3rd Thursday)
 - Refresh of Find your Interests (FYI) inventory items (item writing, tryout, analysis) (in progress)
-

Career Exploration Program*

(Continued)

- **Subtasks** (continued)
 - Develop and deliver training (Spring 2023)
 - Website enhancements
 - Post-Test Interpretation recertification
 - New Test Coordinator Essentials
 - Monitor state usage of ASVAB and ASVAB CEP as related to legislative changes (ongoing)
 - Develop plans for expanding CEP iCAT usage in schools (ongoing)
 - **Predecessors**
 - Seeded new items for the FYI
 - Collated authoritative data sources for OCCU-Find
 - Redesigned website and launched new functionalities
 - Conducted Post-Test Interpretation training
 - **Successors**
 - Onboard new ASVAB CEP program manager
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Military Compatibility Assessment

- **Objective**

- Inform the future development of an evidence-based accessions instrument

- **Projected Completion**

- Ongoing

- **Subtasks**

- Develop plans for evaluating applicable tests and feasibility of clinical/holistic evaluation for enlisted accessions (Sep 2023)
 - Identify TAPAS-based compatibility composite for initial operational test and evaluation (IOT&E) with applicants (Sep 2023)
 - Identify possible alternate compatibility composites (Sep 2023)
 - Refine TAPAS validity argument (Sep 2023)
 - Make software changes to TAPAS and implement on cloud platform (June 2024)
 - Begin data collection for enlisted population (Sep 2024)
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Military Compatibility Assessment (Continued)

- **Subtasks** (continued)
 - Review avenues for non-cognitive assessment in the officer population (Feb 2023)
 - Conduct research on non-cognitive assessment methodologies (Sep 2024)
- **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
 - Possible software updates

Expanding Test Availability: Web/Cloud Delivery of ASVAB and Special Tests

- **Objective**

- Program ASVAB and special tests for delivery on DTAC's web-based/cloud-based platform and introduce enhancements

- **Projected Completion**

- Ongoing

- **Subtasks**

- Program CEP *i*CAT login enhancements and refactor code ✓
 - QA CEP *i*CAT login enhancements on the cloud platform (in progress)
 - Program CAT version of the Cyber Test (in progress)
 - QA CAT-Cyber on the cloud platform (TBD)
 - Deploy CAT-Cyber to production in the cloud (TBD)
 - Program Mental Counters for the cloud platform (in progress)
 - QA Mental Counters on the cloud platform (TBD)
-

Expanding Test Availability: Web/Cloud Delivery of ASVAB and Special Tests (Continued)

- **Predecessors**

- Cyber hardening and code modernization (ongoing)
- Develop cloud infrastructure ✓
- Migrate *i*CAT test delivery suite to the cloud platform ✓
- Migrate TAPAS, Cyber Test, and Coding Speed to the cloud platform ✓

- **Successors**

- Program and QA Complex Reasoning test
 - Evaluate additional CEP *i*CAT enhancements
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Expanding Test Availability: Device Expansion*

- **Objective**

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

- **Projected Completion**

- TBD

- **Subtasks**

- Update *i*CAT to run on additional browsers and operating systems for desktops and laptops (Aug 2023)
 - Expand *Pi*CAT/APT to run on 1–2 tablets with touchscreen capabilities (Feb 2024)
 - Expand *Pi*CAT/APT to run on additional tablets (TBD)
 - Expand *Pi*CAT/APT to run on select smartphones (TBD)
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Expanding Test Availability: Device Expansion*

(Continued)

- **Predecessors**

- Evaluation of ASVAB performance across different devices

- **Successors**

- Program interface changes
 - Evaluate need and feasibility of expanding delivery of special tests to additional devices
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Appendix A

List of Acronyms

List of Acronyms

AFCT	Armed Forces Classification Test
AFQT	Air Force Qualification Test
APT	AFQT Predictor Test
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
ETP	Enlistment Testing Program
FYI	Find Your Interests inventory
iCAT	Internet-based CAT-ASVAB
iCAT-A&R	iCAT Authorization and Registration
IOT&E	Initial Operational Test and Evaluation
MCt	Mental Counters
MEPCOM	Military Entrance Processing Command
MEPS	Military Entrance Processing Stations
MET	Military Entrance Test site

List of Acronyms (continued)

NDAAs	National Defense Authorization Act
OCCU-Find	Occupational Finder
P&P	Paper and Pencil
PiCAT	Pending Internet CAT-ASVAB
QA	Quality Assurance
R&D	Research and Development
TAPAS	Tailored Adaptive Personality Assessment System
TBD	To Be Determined
WinCAT	Windows-based CAT-ASVAB