Primary Recommendation D1
Source Code Access

Line of Effort	Change the practice of how software is procured and developed.
Recommendation	**Require access to source code, software frameworks, and development toolchains—with appropriate IP rights—for DoD-specific code, enabling full security testing and rebuilding of binaries from source.**
Stakeholders	USD(A&S), CIO, SAE
Background	For many DoD systems, source code is not available to DoD for inspection and testing, and DoD relies on suppliers to write code for new compute environments. As code ages, suppliers are not required to maintain codebases without an active development contract, and "legacy" code is not continuously migrated to the latest hardware and operating systems.
Desired State	DoD has access to source code for DoD-specific software systems that it operates and uses to perform detailed (and automated) evaluation of software correctness, security, and performance, enabling more rapid deployment of both initial software releases and (most importantly) upgrades (patches and enhancements). DoD is able to rebuild executables from scratch for all of its systems, and it has the rights and ability to modify (DoD-specific) code when new conditions and features arise. Code is routinely migrated to the latest computing hardware and operating systems and routinely scanned against currently known vulnerabilities. Modern IP language is used to ensure that the government can use, scan, rebuild, and extend purpose-built code, but contractors are able to use licensing agreements that protect any IP that they have developed with their own resources. Industry trusts DoD with its code and has appropriate IP rights for internally developed code.
Role of Congress	N/A

	Draft Implementation Plan	**Lead Stakeholders**	**Target Date**
D1.1	Work with industry to modernize policies for software code ownership, licensing, and purchase. See 2018 Army IP directive as an example.	USD(A&S)	Q3 FY19
D1.2	Modify FAR/DFARS guidance to require software source code deliverables for GOTS and for government-funded software development. Obtain rights for access to source code for COTS wherever possible (and useful).	USD(A&S)	Q3 FY20
D1.3	Modify DoDI 5000.02 and DoDI 5000.75 to make access to code and development environments the default.	USD(A&S)	Q3 FY20
D1.4	Develop a comprehensive source-code management plan for DoD including the safe and secure storage, access control, testing, and field of use rights.	USD(A&S), with CIO	Q4 FY20

SWAP concept paper recommendations related to this recommendation

10C	Every purpose-built DoD software system should include source code as a deliverable.

D&D	Require source code as a deliverable on all purpose-built DoD software contracts. Continuous development and integration, rather than sustainment, should be a part of all contracts. DoD personnel should be trained to extend the software through source code or API access.

Related recommendations from previous studies

DSB87	Rec 22: DoD should follow the concepts of the proposed FAR 27.4 for data rights for military software, rather than those of the proposed DoD 27.4, or it should adopt a new “Rights in Software” Clause as Recommended by Samuelson, Deasy, and Martin in Appendix A6.
DSB18	Rec 6b: Availability, cost, compatibility, and licensing restrictions of [the proposed software factory] framework elements to the U.S. Government and its contractors should be part of the selection criteria for contract award.
DSB18	Rec 6c: All documentation, test files, coding, application programming interfaces (APIs), design documents, results of fault, performance tests conducted using the framework, and tools developed during the development, as well as the software factory framework, should be delivered to the U.S. Government at each production milestone; OR escrowed and delivered at such times specified by the U.S. Government (i.e., end of production, contract reward).
DSB18	Rec 6d: Selection preference should be granted based on the ability of the United States to reconstitute the software framework and rebuild binaries, re-run tests, procedures, and tools against delivered software and documentation.