Primary Recommendation C1
Organic Development Groups

Line of Effort	Create new paths for digital talent (especially internal talent).
Recommendation	**Create software development units in each Service consisting of military and civilian personnel who develop and deploy software to the field using DevSecOps practices.**
Stakeholders	USD(A&S), USD(P&R), SAE, Service HR
Background	DoD's capacity to apply modern technology and software practices to meet its mission is required in order to remain relevant in increasingly technical fighting domains, especially against peer adversaries. While DoD has both military and civilian software engineers (often associated with maintenance activities), the IT career field suffers from a lack of visibility and support. The Department has not prioritized a viable recruiting strategy for technical positions, and there is no comprehensive training or development program that prepares the technical and acquisition workforce to adequately deploy modern software development tools and methodologies.
Desired State	DoD recruits, trains, and retains internal capability for software development, including by service members, and maintains this as a separate career track (like DoD doctors, lawyers, and musicians). Each Service has organic development units that are able to create software for specific needs and that serve as an entry point for software development capability in military and civilian roles (complementing work done by contractors). The Department's workforce embraces commercial best practices for the rapid recruitment of talented professionals, including the ability to onboard quickly and provide modern tools and training in state-of-the-art training environments. Individuals in software development career paths are able to maintain their technical skills and take on DoD leadership roles.
Role of Congress	Congress should receive regular "readiness" reports that include organic software development capability and provide budget required to maintain desired capability level and resources for modern software development.

	Draft Implementation Plan	Lead Stakeholders	Target Date
C1.1	Exercise existing acquisition and cybersecurity hiring authorities to increase the number of software developers in DoD programs with vacant positions.	SAE, PEO, with CIO (cyber excepted service ability)	Immediately
C1.2	Create new military occupational specialty (MOS) and core occupational series plus corresponding career tracks for each Service; use to grow digital talent for modern software development (e.g., Agile, DevSecOps).	J1 and comparable X1 for each Service with USD(P&R)	Q1 FY20
C1.3	Create regulations to allow standard identification, recruitment, and onboarding of experienced civilian software talent, especially on rotation from private sector roles.	USD(P&R)	Q1 FY20

C1.4	Create mechanism for tracking software development expertise and use as preferred experience for promotion into software engineer and acquisition roles.	A&S, CIO	Q2 FY20
C1.5	Obtain additional manpower authorizations for military and civilian SW developers.	USD(A&S), with USD(P&R), SAE	FY20, FY21
C1.6	Stand up one or more software factories within each Service, tied to field needs that can be satisfied through organic software development groups.	SAEs, with PEOs Digital	FY20 (create), FY21 (scale)

SWAP concept paper recommendations related to this recommendation

10C	Establish Computer Science as a DoD core competency.
D&D	Hire competent people with appropriate expertise in software to implement the desired state and give them the freedom to do so ("competence trumps process").

SWAP working group inputs (reflected in Appendix F) related to this recommendation

M&S	The definition of "core capabilities" in 10 USC 2464 should be revisited in light of warfighter dependence on software-intensive systems to determine the scope of DoD's core organic software engineering capability, and we should engage with Congress on the proposed revision to clarify the intent and extent of key terminology used in the current statute.
M&S	Revise industrial base policy to include software and DoD's organic software engineering capabilities and infrastructure. Start enterprise planning and investment to establish and modernize organic System Integration Labs (SILs), software engineering environments, and technical infrastructure; invest in R&D to advance organic software engineering infrastructure capabilities.
Wkf	Develop a core occupational series based on current core competencies and skills for software acquisition and engineering.
Wkf	Overhaul the recruiting and hiring process to use simple position descriptions, fully leverage hiring authorities, engage subject matter experts as reviewers, and streamline the onboarding process to take weeks instead of months.
Wkf	Embrace private-sector hiring methods to attract and onboard top talent from non-traditional backgrounds that may require special authorities to join the Department.
Wkf	Develop a strategic recruitment program that targets civilians, similar to the recruitment strategy for military members, [including] prioritizing experience and skills over cookie-cutter commercial certifications or educational attainment.
Wkf	The Department should incentivize and provide software practitioners access to modern engagement and collaboration platforms to connect, share their skills and knowledge, and develop solutions leveraging the full enterprise.
Wkf	Allow for greater private-public sector fluidity across the workforce while empowering the existing workforce to create a place where they want to work.
Wkf	Modify Title 10, §1596a to create a new Computer-language proficiency pay statute.
Wkf	Pilot a cyber-hiring team with the necessary authorities to execute report recommendations and that can serve as a Department-wide alternative to organization's traditional HR offices and will provide expedited hiring and a better candidate experience for top-tier cyber positions.

Related recommendations from previous studies

DSB87	Rec 26: Each Service should provide its software Product Development Division with the ability

	to do rapid prototyping in conjunction with users.
DSB87	Rec 36: Establish mechanisms for tracking personnel skills and projecting personnel needs.
DSB87	Rec 37: Structure some office careers to build a cadre of technical managers with deep technical mastery and broad operational overview.
SEI10	Improve compensation and advancement opportunities to increase tenure.