



ACQUISITION  
AND SUSTAINMENT

## UNDER SECRETARY OF DEFENSE

3010 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3010

### MEMORANDUM FOR CHAIR OF THE WHITE HOUSE COMPETITION COUNCIL

SUBJECT: Department of Defense Lifecycle Sustainment Efforts in Support of Organic Repair

The Department of Defense (DoD) is pleased to provide the attached report in response to the requirements of Executive Order (EO) 14036, "Promoting Competition in the American Economy." The EO requires a report be submitted to the chair of the White House Competition Council, on a plan for avoiding contract terms in procurement agreements that make it challenging or impossible for the Department or service members to repair their own equipment.

The Department strongly supports the concept of a "right to repair," and believes it important that DoD and its service members be able to repair their own equipment. To address this challenge, the Department is taking a series of actions to ensure it acquires and maintains the necessary rights and data to support the sustainment strategy. Overall, DoD efforts and investments to effectively support an organic sustainment strategy, inclusive of field-level repair, will enable greater competition throughout the sustainment lifecycle to advance the goals of the EO.

The report provides information on how the Department is developing sustainment strategies that allow for optimal mix of organic and commercial support to effectively and efficiently sustain systems or equipment throughout their lifecycle. Our focus is on making sound sustainment strategy decisions based on a disciplined and thorough business case analysis. The DoD is committed to pursuing the principles underlying the EO throughout its procurement and sustainment processes. These efforts will also enhance the Department's capability to meet mission demands and national security requirements

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# DEPARTMENT OF DEFENSE REPORT

## DoD Lifecycle Sustainment Efforts in Support of Organic Repair



Office of the Under Secretary of Defense for  
Acquisition and Sustainment  
JUNE 2023

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## Reporting Requirement

The Department of Defense (DoD) furnishes this report, consistent with the requirements in Section 5 of Executive Order (EO) 14036, *Promoting Competition in the American Economy*. The EO requires a report to the chair of the White House Competition Council on a plan for avoiding contract terms in procurement agreements that make repairing equipment challenging or impossible for DoD or service members, particularly in the field.

## Executive Summary

To effectively field and sustain systems and equipment, DoD must have flexibility in how it maintains its equipment throughout the product's useful life. The Department strongly supports the concept of a "right to repair" and believes it is important that the Department and its service members are able to repair their own equipment. To that end, the Department is developing sustainment strategies that allow for the optimal mix of organic and commercial support to effectively and efficiently sustain systems or equipment throughout their lifecycle.

During the development of new systems and equipment, the Department undertakes a deliberate analysis to determine the appropriate sustainment strategy. This analysis is shaped by extensive policy, guidance, and processes to evaluate how a system or equipment item will be sustained throughout its lifecycle. These efforts—performed by product support managers (PSMs) with logistics, sustainment, and acquisition experts—produce reports on the Depot Source of Repair (DSOR) and Level of Repair Analysis (LORA). The analysis also considers business factors, such as personnel requirements, depot capacity, training, surge, special tooling, spare parts requirements, use of the system or equipment item, the cost of acquiring, and the effort required in maintaining the necessary technical data to support the source of repair and level of repair decisions.

While completion of early assessments, planning, and acquiring the resources, materials, and technical data needed to support organic repair have been challenging, the Department emphasizes the criticality of making sustainment decisions earlier in the acquisition cycle. This emphasis and improved guidance enable the Department to anticipate and contract more effectively for the needed staffing, resourcing, training, and necessary Intellectual Property (IP) deliverables. Timely development of these requirements is critical to ensuring the Government secures competitive pricing for any specialized equipment, training, technical data, and license rights necessary to support any contractor proprietary IP or technologies.

The outcomes of these early assessments include the necessary IP deliverables, technical data, and licensing rights to support organic repair and competition throughout the system's life. The complexity and depth of these challenges are highlighted by DoD's assessment of 100 fielded systems, in which about half of these systems showed insufficient technical data or IP data rights that negatively affected the military's capability to maintain and repair its equipment. To address this challenge, the Department is taking a series of actions to ensure it acquires and maintains the necessary rights and data to support the sustainment strategy. In addition to early acquisition planning, the Department established an IP Cadre and six core principles for guiding the Department's IP program support and workforce training activities, which will be supported by a forthcoming new guidebook, *Intellectual Property: A Strategic and Tactical Guidebook*. The DoD is implementing core IP principles for lifecycle product support through a variety of

mechanisms, including conducting rulemaking in multiple pending cases to revise the IP coverage in the Defense Federal Acquisition Regulation Supplement (DFARS). These collective efforts will serve as the underpinning of revised defense workforce training and support.

Another key challenge is the Department's increased reliance on commercial or commercial-derivative technologies. These commercial and commercial-derivative products come with customary commercial IP rights in technical data and warranties. Although leveraging commercial products reduces acquisition lead time, speeds solutions to the warfighter, and lowers costs through robust competition, DoD's reliance on commercial solutions erodes its ability to secure the specialized capabilities (e.g., equipment, training, detailed proprietary technical data and IP rights) needed for organic or competitive support for that commercial system or item. While the Department cannot overcome all the challenges presented by the use of commercial items and the associated IP framework, it can ensure policy, guidance, and training to its acquisition workforce take full advantage of the IP rights afforded to it.

The Department is updating its IP policy, regulations, guidance, and training. DoD has developed an instruction to govern and unify the acquisition, licensing, and management of IP. One of the core principles in this instruction is to negotiate specialized provisions for IP deliverables and associated license rights whenever doing so will balance DoD and industry interests more effectively than the standard or customary commercial license rights. This is most effective early in the lifecycle, when competition is more likely and can provide greater leverage.

In summation, the Department's efforts are focused on making sound sustainment strategy decisions based on a disciplined and thorough business case analysis. Where the analysis points to organic support, the Department will acquire sufficient IP deliverables, special tooling, manuals, test equipment, and other needed capabilities to enable effective and efficient maintenance and repair. Where commercial support is needed, the Department will seek sufficient data and IP rights to promote competition for that support throughout the lifecycle of the equipment.

## **Introduction**

Sustainment is a key component of system performance. Including lifecycle sustainment planning early during design and procurement enables the requirements, acquisition, and sustainment communities to develop a system with optimal availability and reliability for the warfighter at an affordable lifecycle cost. Measuring and incentivizing performance over the program lifecycle assists in sustaining and improving system reliability and maintainability required to achieve the availability and cost objectives.

The DoD has a statutory requirement and a mission-essential need to maintain and repair its equipment.<sup>1</sup> In addition, the DoD, consistent with EO 14036, *Promoting Competition in the American Economy*, dated July 9, 2021, believes in the importance of a "right to repair." That principle is manifested in these three statutes that set forth requirements for depot-level maintenance, ensuring the Government retains critical sustainment capabilities, also known as core logistics capability. These statutory requirements include:

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<sup>1</sup> See, e.g., Title 10, United States Code (U.S.C.), section 2464 requires that the DoD maintain core depot-level maintenance and repair capability, as discussed in the following sections.

- Title 10 United States Code (U.S.C.) 2460 defines “depot maintenance and repair” as materiel maintenance or repair requiring the overhaul, upgrading, or rebuilding of parts, assemblies, or subassemblies, and the testing and reclamation of equipment as necessary, regardless of the source of funds for the maintenance or repair or the location at which the maintenance or repair is performed. This definition includes all aspects of software maintenance classified by the DoD as depot-level maintenance and repair as of July 1, 1995.
- Title 10 U.S.C. 2464 describes the critical need for a core logistics capability: it is essential for the national defense that the DoD maintain a Government-owned and Government-operated (including Government personnel and Government-owned and Government-operated equipment and facilities) core logistics capability to ensure a ready and controlled source of technical competence and resources for effective and timely response to a mobilization, national defense contingency situations, and other emergency requirements.
- Title 10 U.S.C. 2466 details the limitation that not more than 50 percent of the funding for depot maintenance in a fiscal year may be used to contract for performance of depot maintenance. 50 percent or more of the workload must be performed in a DoD organic depot maintenance facility by Government employees.

In addition to these statutory requirements, the Department has also revised its previous policy regarding acquisition of technical data packages. Until the early 1990s, the Department’s practice was to routinely acquire complete technical data packages. In addition to repair, these fully detailed packages supported any future breakout decisions (i.e., providing data packages to a different vendor for manufacturing or repair purposes). Beginning in the mid-1990s, the DoD decided not to routinely acquire complete data packages as a matter of course for the following three reasons:

- The consolidation of the defense industry led to fewer opportunities for breakout decisions such that different vendors could participate in the manufacturing and repair processes.
- Large original equipment manufacturers (OEMs) changed from manufacturers to integrators. Procuring fully detailed technical data packages required OEMs to purchase data from sub-tier manufacturers, adding cost and complexity to the repair process.
- With the emphasis on acquisition streamlining and using commercial and non-developmental technologies, acquiring complete data packages (including sufficient license rights for competition) may be too expensive to purchase and to maintain. The DoD did not always maintain data packages given the expense and effort to do so. This conclusion was supported by difficulties in seeking to use data packages that had not been kept current for sustainment support. Although the answer is not always to acquire fully detailed data packages and license rights, as was the DoD’s previous practice, acquiring sufficient data rights and data deliverables provides the maximum amount of flexibility in sustainment. Failure to secure sufficient repair data and rights can lead to DoD personnel being unable to maintain equipment in the field or unable to send systems back to Government-owned and -controlled depots for repair. This concern underpins



efforts that the DoD is making to secure technical data and computer software deliverables and rights early, during the acquisition phase, once requirements are known and the data and rights can be sought in a competitive environment more favorable to the Department.

Defense systems' and equipment items' complexity and their associated technical data and software requirements, coupled with the volume of sustainment considerations that evolve over a program's lifecycle, require a deliberate and disciplined process. This places increased importance on the proper application of the foundational sustainment concepts, as well as performing in-depth business case analyses, and source and level of repair analyses, led by dedicated, experienced, knowledgeable, and lifecycle-logistics-certified PSMs to develop the optimal sustainment strategy.

## Foundational Sustainment Concepts

### Overview

The DoD sustainment community seeks an optimal balance between weapon systems' readiness and the associated operating and support costs for targeted readiness goals. The decisions made early in acquisition and planning to develop the acquisition and sustainment strategies, the product support business case analysis (PSBCA), lifecycle sustainment plan (LCSP), LORA, DSOR, and others analyses that significantly affect the Government's repair capability for new systems or equipment items. Changing sustainment strategy decisions during fielding is possible, but requires engineering analysis, cost-benefit analysis, and revalidating the PSBCA.

One key element of delivering that performance at the optimal cost to the warfighter has been establishing a competitive environment for that support. Through the Defense Acquisition Workforce Improvement Act, the DoD recognized Congress' goal of creating a professional acquisition workforce to implement the lifecycle requirements for shaping, developing, and sustaining major weapon and information systems.

The Weapons Systems Acquisition Reform Act (WSARA), signed into law in 2009, emphasized the requirement for consideration of competition in sustainment:

*(d) CONSIDERATION OF COMPETITION THROUGHOUT OPERATION AND SUSTAINMENT OF MAJOR WEAPON SYSTEMS.—Whenever a decision regarding source of repair results in a plan to award a contract for performance of maintenance and sustainment of a major weapon system, the Secretary shall take actions to ensure that, to the maximum extent practicable and consistent with statutory requirements, contracts for such maintenance and sustainment are awarded on a competitive basis and give full consideration to all sources (including sources that partner or subcontract with public or private sector repair activities).<sup>2</sup>*

In response to this congressional direction, the DoD established the Product Support Assessment Team (PSAT), which analyzed product support strategies and processes and offered key

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<sup>2</sup> Weapon System Acquisition Reform Act, 2009, Section 202(d).



recommendations for next generation product support strategies. The resulting report, signed by the then-Under Secretary of Defense for Acquisition, Technology and Logistics, initiated objectives and implementing actions, such as creating policies and governance processes, to ensure all major weapon systems strategies and sustainment plans considered the optimal balance of organic and commercial activities to accomplish all sustainment support tasks.

Section 805 of the National Defense Authorization Act (NDAA) for FY 2010, (Public Law 111-84), “Life-Cycle Management and Product Support,” requires that each major weapon system be supported by a PSM. PSMs promote opportunities to maximize competition and develop and implement a comprehensive, outcome-based product support strategy for best-value long-term outcomes for the warfighter. In developing the product support strategy, the PSM formulates and implements appropriate product support arrangements, including the best-value mix of DoD and industry product support providers (PSPs) at the system, subsystem, and component levels.

### *Integration of Product Support Elements*

To enable organic repair, the PSM must collaborate with stakeholders, product support integrators, and PSPs to deliver a product support package with effective and affordable operational materiel readiness addressing all 12 Integrated Product Support (IPS) elements.<sup>3</sup>

The product support package must deliver everything for personnel to accomplish maintenance at the point of need. A shortfall in any product support element can negatively affect organic repair. As such, all “sustainment requirements must be ‘baked into’ the design of a material solution in order to deliver long-term operational availability and to better support warfighters.”<sup>4</sup> Engaging organic maintenance subject matter experts (SMEs) during request for proposal development, source selections, and contract execution (e.g., working groups and technical or design reviews) uncovers or eliminates product support element risks and issues affecting organic repair.

### *Levels of Repair*

DoD maintenance activities are categorized at two different, yet complementary, levels—depot- and field-level maintenance activities.

The purpose of field-level maintenance is to return systems rapidly to users in a ready status. It encompasses the organizational-level and on-system maintenance and repair necessary for day-to-day operations as well as the intermediate, off-system repair of components and end items for weapons systems and supply chains. Field-level maintenance is less complex than depot-level maintenance and is predominately performed by uniformed personnel of the Military Departments.

Depot-level maintenance entails materiel maintenance requiring major repair, overhaul, or complete rebuilding of parts, assemblies, and subassemblies and end items. It is the most

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<sup>3</sup> The integrated product support elements are product support management; design interface; sustaining engineering; supply support; maintenance planning and management; packaging, handling, storage, and transportation; technical data; support equipment; training and training support; manpower and personnel; facilities and infrastructure; and information technology (IT) systems continuous support.

<sup>4</sup> “To Better Equip Warfighters, Sustainment Must Be Built In,” 2 April 2021, DoD News.

complex and extensive level of maintenance performed and includes the manufacture of parts, modification, repair, testing, and reclamation as required. It provides a source of serviceable equipment and parts, and supports field-level maintenance organizations by providing technical assistance, and by performing maintenance beyond their level of competency and authority. To meet statutory core logistics capability requirements, the majority of DoD depot-level maintenance is performed by government personnel at the organic industrial sites within the Military Departments.

### Options for Sustainment

Three broad approaches sustain military systems at the field or depot level: industry-centric, blended DoD-industry (or organic-industry), or DoD-centric (organic). All approaches are dependent on having the requisite technical data and computer software, instructions, equipment, facilities, and the necessary license rights for the data and software. Each of these options can be broken into the level of system sustainment—platform, subsystem, or component—as highlighted in the 2009 *Weapon Systems Acquisition Reform Product Support Analysis* report (Figure 1).

Figure 1. Decision Matrix for Product Support—Options Framework Examines the Intersection of Integration and Weapon System Strategy



Source: *Weapon Systems Acquisition Reform Product Support Analysis*, 2009.

One critical factor enabling flexibility in Government decisions across any area within the above matrix is access to sufficient technical data and data rights for maintenance via organic capability or through competition among industry. Without sufficient technical data and associated rights, the government must rely on industry, especially for depot maintenance.

## **Analysis for Determining the Lifecycle Sustainment Plan**

### *Product Support Business Case Analysis*

The PSBCA aids decision-making through finding and comparing sustainment alternatives by examining the mission and business effects (financial and non-financial), risks, and sensitivities. Unless predetermined, the sustainment alternatives generally include mixes of organic and contractor maintenance. The PSBCA evaluates risks to implementing different alternatives, including product support elements and data and IP rights procured to support organic maintenance. In accordance with Title 10 U.S.C. 4324, the PSBCA must be revalidated prior to each change in the product support strategy or every 5 years, whichever occurs first.

### *Lifecycle Sustainment Plan*

The LCSP is the primary program management plan governing operations and support planning and execution from program inception to disposal. The LSP is the principal document that establishes a system's product support planning and sustainment. The LCSP assesses the 12 IPS elements to achieve system and material readiness in accordance with section 4324, Title 10 U.S.C. and ensures the IPS elements are properly planned, resourced, and implemented. The 12 IPS elements are: product support management; design interface; sustaining engineering; maintenance planning and management; supply support; support equipment; technical data; training and training support; IT systems continuous support; facilities and infrastructure; package, handling, storage, and transportation; and manpower and personnel.

The program managers are responsible for developing and maintaining an LCSP, consistent with their program's product support strategy and are accountable for DoD systems support and total life cycle system's management. The LCSP describes sustainment influences on system design and the technical, business, and management activities to develop, implement, and deliver a product support package that maintains affordable system operational effectiveness over the weapon system's lifecycle. The LCSP also describes the program's strategy to reduce cost without sacrificing necessary levels of program support. In addition to the LCSP, the program acquisition strategy will also include an overview of the IP strategy, product support strategy, and sustainment-related contracts. Development of a lifecycle product support strategy and a detailed LCSP are critical steps in the delivery of the product support package. The LCSP will evolve throughout the acquisition process with the maturity of the system and provide clarity for the program's product support strategy. The LCSP remains an active management tool throughout the life of a program and is updated as needed to meet the warfighter's sustainment performance needs.

### *Level of Repair Analysis*

The LORA is an analytical method to assist in developing maintenance concepts and establish the maintenance level at which to replace, repair, or discard components based on economic or

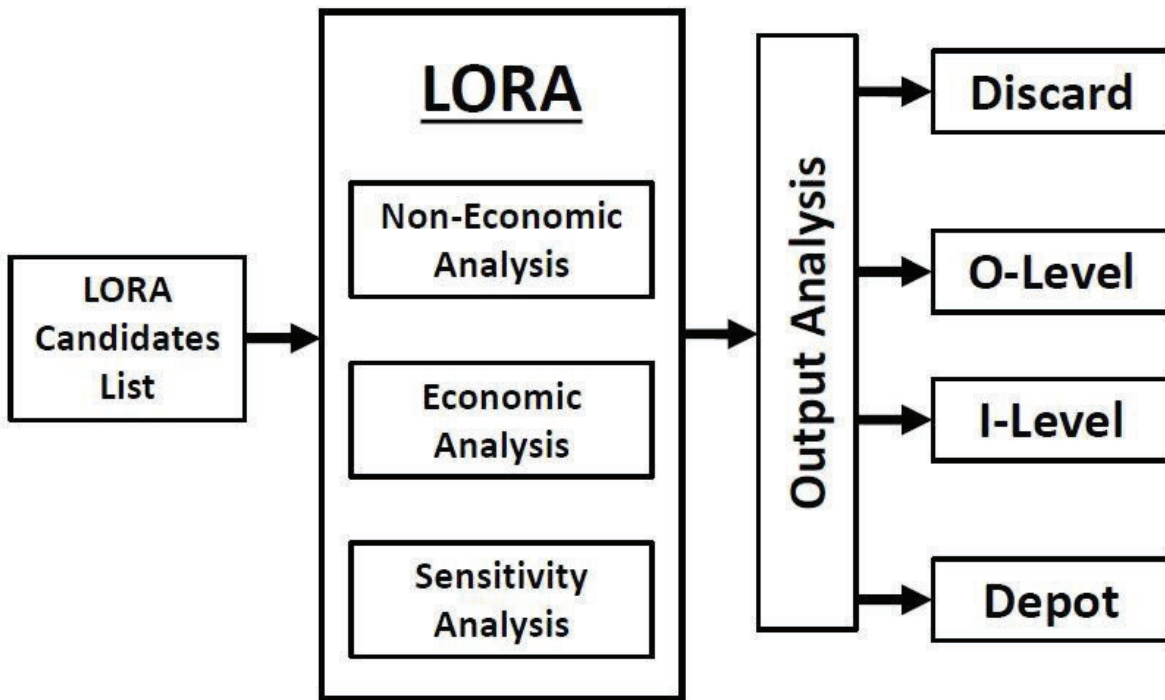
noneconomic constraints and operational readiness requirements. The LORA answers how to support a system or component through two steps:

1. Noneconomic decision criteria to make the initial support decisions, and
2. An economic model to calculate the most cost-effective alternative for support of the system.

For weapon systems and equipment items with thousands of assemblies, subassemblies, and components organized into several levels of indenture and with numerous possible repair decisions, the LORA seeks to set an ideal provision of repair and maintenance facilities to minimize overall lifecycle costs. The analysis not only considers the cost of the part to be replaced or repaired, but all elements required to return the part to a ready-for-use condition correctly, including the skill level of personnel required to perform the repairs, tools to perform the task, test equipment to test the repaired product, and the facilities to house the entire operation.

Figure 2 shows the LORA process and potential results of the analysis.

Figure 2. The LORA Process



### *Depot Source of Repair*

Statutes require the military services to perform DSOR analysis to select the optimal location to perform depot maintenance, regardless of source (e.g., commercial, organic, or mixed). For systems declared as a core logistics capability in accordance with 10 U.S.C. 2464, organic depots perform this work. Organic DSOR requires sufficient technical data and computer software.

Without sufficient data and software, the default option becomes contractor support, given the lack of access to sufficient detailed instructions and specification to perform the work in house. Ideal cost-efficient outcomes, such as working in organic depots to maintain core repair capability or competing sustainment across multiple industry partners, are more likely when the Government acquires the requisite technical data to conduct requirement maintenance.

### *Sustainment Review Policy*

Sustainment reviews (SRs) assess the execution of LCSPs, the product support strategy, and review operational performance, available and planned resources, and operating and support costs for major systems. They assess sustainment cost and performance of fielded systems after initial operational capability. SRs, governed by Title 10, U.S.C. 4323, are required for all active and in-service covered weapon systems. The requirement to conduct SRs begins at five years after the initial operational capability date and repeat every five years throughout the life cycle of the program. The requirement to conduct SRs end five years before a covered system's planned end-of-service date. The military services chair the SR, focus on statutory sustainment elements, and track Operations & Sustainment cost growth. The SRs occur in coordination with a revalidated PSBCA and an update to the LCSP.

### *Manpower Analysis*

Procurement contracts should include requirements to supply data and analyses to assist the PSM, warfighter, and other organic sustainment providers (e.g., depots) in developing the manpower estimate and calculating related maintenance manpower requirements (e.g., knowledge, skills, and abilities [KSAs], specialties, and experience). Contract deliverables may include manpower modeling, human engineering design analysis documents, and training analyses and plans.

## **Sustainment Reviews**

### *Examples—Planning and Technical Data Challenges Restrict DoD Flexibility*

Several defense programs have not procured the data deliverables and data rights necessary to enable maintenance required to support various weapons systems at an ideal cost and performance over the system's lifecycle. Following are two such examples.

1. For a new missile system, in contrast to earlier variants, the Department's contract did not secure sufficient technical data to organically repair the new missile. With the planned divestment of the earlier missiles, DoD sought to substitute that workload with newer workload, but lacked sufficient technical data to perform subsystem repairs. The vendor refused to sell the necessary technical data to DoD as a negotiated modification to the awarded contract; thus, the plan for organic repair capability was limited to disassembly of the end-item and then shipping any major or minor subsystems to the industry vendors for support.
2. A RAND study of one program offered at least three factors that influence the cost and difficulty of obtaining technical data critical to establishing the ability to support organic repair capability:



- The amount of privately funded technology, which gives rise to contractor assertions of license rights restrictions.
- The cost and difficulty of obtaining technical data is influenced by whether the government negotiated contract requirements for delivery of repair instructions during the development phase of the program. When the planned sustainment approach was contractor logistics support, as a cost-saving measure, the component did not secure the contract options for the repair instructions, at least on some platform contracts. Given the program is in the sustainment phase presently and is in a less-favorable negotiating position, the price of the repair instructions will likely be higher.
- Discussions with many weapon system contractors and component personnel indicated that it has been difficult for many contractors to give up the expectation of a stream of revenue from selling parts or repairs under a traditional arrangement for sustainment. They may view the negotiation of data deliverables and rights as representative of lost business and so may be less inclined to negotiate. A willingness to provide sustainment-related technical data (such as repair instructions) at reasonable prices seems to be part of the change in expectations. The lesson to be learned here is to plan early for the execution of the 12 Integrated Product Support elements and establish priced options for acquiring the necessary technical data while competition still exists.

### *DoD Sustainment Best Practices and Actions*

The DoD is committed to supplying the enterprise with policy, processes, and guidance for effective product support planning and execution. Department of Defense Instruction (DoDI) 5000.91, “*Product Support Management for the Adaptive Acquisition Framework*,” establishes policy, assigns responsibilities, and sets procedures for product support factors early in the requirements development and acquisition process in order to achieve effective weapon system capability and life cycle management. This new instruction underpins and lays the foundation for product support management in all six adaptive acquisition pathways.<sup>5</sup> It also details the statutory, directive, and regulatory requirements for major pathways and enables a more tailored product support approach in each adaptive acquisition pathway. Section 4.6 emphasizes the importance of developing an IP strategy to address acquisition of tailored data deliverables and license rights to enable competition for lifecycle product support and organic depot maintenance.

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<sup>5</sup> The Adaptive Acquisition Framework enables the Program Managers to choose the right pathway to deliver their capability to the warfighter as quickly as possible. It empowers innovation and common-sense decision-making throughout the process while maintaining discipline in practices and procedures. The six pathways are: (1) urgent capability acquisition—to field capabilities to fulfill urgent existing or emerging operational needs or quick reactions in less than two years; (2) middle tier of acquisition—to rapidly develop fieldable prototypes in an acquisition program to demonstrate new capabilities or rapidly field production quantities of systems with proven technologies requiring minimal development; (3) major capability acquisition—to acquire and modernize military unique programs for enduring capability; (4) software acquisition—to facilitate rapid and iterative delivery of software capability (e.g., software-intensive systems or software-intensive components or subsystems) to the user; (5) defense business systems—to acquire information systems supporting DoD business operations; and (6) acquisition of services—to acquire services from the private sector, including knowledge-based, construction, electronics and communications, equipment maintenance, facilities, product support, logistics, medical, research and development, and transportation services.

## IP: Planning for and Supporting Sustainment

### *Challenges*

The lack of sufficient IP (e.g., technical data and computer software, and the associated necessary license rights), is frequently the Achilles' heel of DoD's effort to enable organic sustainment. The government must require the development of the necessary data, *require delivery* of that data, ensure the delivered data complies with the order (e.g., inspection and acceptance), and confirm the granting of the appropriate license rights. However, the inherent framework of U.S. legal IP protections, the unique defense sector system for allocating rights based on the party funding development of the technology, and the defense acquisition rules covering technical data and computer software rights segregated by commercial and noncommercial, while all founded on historic statutory and regulatory bases, challenge DoD's ability to acquire the necessary technical data and licensing rights.

The legal framework of IP protections, as a return-on-investment (ROI) model, both encourages and restricts competition. From a technology standpoint, the framework drives competition to create innovative technology as a prerequisite to qualify for IP protection. But from a business standpoint, the resulting IP protection itself establishes a form of limited monopoly to commercialize that new technology, creating tension with competition. IP, as a form of legal protection, grants exclusive rights to individuals (e.g., inventors or authors) for their intellectual creations, such as inventions, works of art or music, or technical know-how.

Further, in the defense sector, procurements operate under a unique system for allocating rights for DoD use of technical data and computer software based on a combined-licensing of the underlying copyrights and trade secret protection—collectively referred to as “data rights.” This data rights regime generally allocates greater rights to the entity (government or contractor) that funded the development of the underlying technology (hardware or software). These rules, requested and long supported by industry, enable industry to limit competition in DoD purchasing by asserting IP restrictions on privately developed components, potentially also limiting government-funded technologies through privately developed subsystems or components of a larger system. This practice of modular licensing results in the most significant license restrictions on these privately developed items (e.g., limited rights in technical data, or restricted rights in computer software), generally preventing release of the data or software for competition and leaving the government with gaps in its data rights.

Finally, the rules of engagement for IP acquisitions through procurement contracting are in the DFARS. The DFARS uses a modular approach to address data and data rights, distinguishing the two major data types or categories of technical data and computer software and, for each of those, further classifying the technology as commercial or noncommercial.<sup>6</sup> These rules

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<sup>6</sup> DFARS Subpart 227.71 prescribes the policies and procedures for the acquisition and use of technical data, with commercial data in section 227.7102 and noncommercial data in section 227.7103. Similarly, coverage for computer software (DFARS 227.72) prescribes the policies and procedures for the acquisition and use of computer software and software documentation with commercial software in section 227.7202 and noncommercial software in section 227.7203.



establish permitted and non-permitted IP criteria in source selection. Statutory and regulatory restrictions prohibit requiring greater than DFARS regulatory standard data rights licenses as a condition of awarding a contract and from discouraging the offer of proprietary technology with data right restrictions. This becomes a greater challenge when the Department is acquiring commercial items or commercial computer software, affording only customary commercial data and license rights. For commercial procurements, even though DoD may seek additional technical data and licensing rights under competitive pressures, it is often one of many commercial customers, where the DoD revenue will not outweigh the value of the IP, data, and sustainment services to the commercial vendor.

The inherent challenges outlined above and discussed further in the appendix<sup>7</sup> are the precise reason the Department is continuing its concerted effort for early assessment, planning, and acquiring the necessary IP rights, technical data, and licensing rights to enable both efficient and effective organic sustainment and competition. In addition to these efforts, the Department is updating its IP guidance, regulations, training, and processes. For new systems in development, while multiple contractors are vying for the initial contract, the Department can leverage its buying power for noncommercial technologies. This can be accomplished through employment of source selection criteria and evaluation practices that will incentivize offerors to furnish the needed data and right to ensure future competition. This technique is best combined with negotiations of special licenses that permit DoD to release the data to support competition during sustainment. These collective efforts, as discussed below, will modernize DoD's overall approach to acquiring the necessary IP rights, technical data, and licensing to support organic sustainment requirements and field level repair, where directed.

### *Modernizing DoD IP Policy, Regulations, Guidance, and Training*

The Department's efforts to modernize its IP policy, guidance and training began with creating the IP Cadre and the six core principles for guiding their program support and workforce training activities:<sup>8</sup>

1. Integrate IP planning fully into acquisition strategies and product support strategies to protect core DoD interests over the entire lifecycle.
2. Ensure acquisition professionals have relevant knowledge of how IP matters relate to their official duties.
3. Negotiate specialized provisions for IP deliverables and associated license rights whenever doing so will balance DoD and industry interests more effectively than the standard or customary license rights. This is most effective early in the lifecycle, when competition is more likely.
4. Communicate clearly and effectively with industry regarding planning, expectations, and objectives for system upgrade and sustainment. Avoid requirements and strategies that limit the DoD's options in accessing vital technology and commercial solutions available from industry.

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<sup>7</sup> See report Appendix: The Evolution of Challenges and Solutions in Contracting for IP, page 17.

<sup>8</sup> See Department of Defense Instruction, 5010.44, Intellectual Property (IP) Acquisition and Licensing, October 16, 2019.

5. Respect and protect IP resulting from technology development investments by the private sector and the Government.
6. Clearly define and match data deliverables with the license rights in those deliverables. Data or software deliverables are of no value unless and until the license rights to use it are attached and the government obtains and accepts those deliverables.

The DoD is implementing these core IP principles through a variety of mechanisms, including conducting rulemaking in seven pending cases to revise the IP coverage in the DFARS. Six of the cases relate to data rights statutory and government-wide policy changes, addressing issues such as IP valuation, negotiation of special licenses, modular open systems approach (MOSA),<sup>9</sup> and data rights in the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. This rulemaking will take years due to its extensive scope and “enhanced engagement”<sup>10</sup> approach to offer industry greater opportunities to provide input during the Department’s drafting of regulatory changes, but this investment will modernize (within statutory constraints) many aspects of DoD acquisition of IP rights.

As part of these overall efforts, the DoD IP Cadre is drafting a new guidebook, *Intellectual Property: A Strategic and Tactical Guidebook*, as a complement to the new policy in DoDI 5010.44, “*Intellectual Property (IP) Acquisition and Licensing*.” The guidebook will emphasize techniques for establishing flexible contract terms and conditions to support relevant product support strategies while balancing the interests of the DoD and industry in MOSA, specially negotiated licenses, and customized commercial licenses promoting competition. The guidebook will inform the DoD on the appropriate level of rights in technical data required to support the DSOR decisions through sufficient repair rights and capabilities. Also, as part of this and the Section 801 IP Evaluation Pilot effort, the DoD is harmonizing its mandatory and general source selection procedures with the DFARS data rights specific constraints discussed in Table 1.

In addition to the guiding principles cited in the new IP policy, other focus areas to improve the DoD’s IP posture to enable product support throughout the system lifecycle include the following:

- Implementing Section 804(a)(1)(B) of the NDAA for FY21, “Implementation of Modular Open System Approaches,” and 10 U.S.C. 4402 by coordinating with the Joint Staff, Defense Cost Assessment and Program Evaluation, and Military service capability developers, including users and sustainment SMEs in the development of the analysis of alternatives to understand the force structure training and skills and analyze the effects of proposed models of systems. In support of organic repair, this analysis informs the requirements for new skill sets, cost associated with these new maintenance skills, enables accurate funding to support development of training, and informs the exact level and type of technical data (e.g., data necessary for operations, maintenance, installations,

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<sup>9</sup> See the report Appendix: The Evolution of Challenges and Solutions in Contracting for IP, Section: The Doctrine of Segregability and its Relation to Modularity and MOSA, page 21.

<sup>10</sup> The DoD agreed to implement an “enhanced engagement” approach to DFARS IP revisions as part of its assessment and implementation of issues and recommendation of the Government-Industry Advisory Panel established pursuant to Section 813 of the NDAA for FY 2016. This approach functions as an exception to the normal rulemaking process, including inviting industry to participate in public meetings earlier in the drafting stages of the rule.

and training (OMIT), which may require form, fit, and function (FFF) or detailed manufacturing or processing data (DMPD data). Finally, to drive requirements, DoD must assess its operational data, digital engineering, and modeling tools to develop economic and noneconomic level-of-repair analyses and sparing requirements, rather than let the vendor classify elements as an organic-versus depot-level repair.

- Implementing Section 804(a)(1) of the NDAA for FY21 to ensure requirements documents incorporate MOSA for informed acquisition strategies that require the right interfaces and account for the timing of technology insertion to incorporate MOSA. This implementation establishes a competitive environment at the component level during the competition phase of the program.
- Mapping the weapon system's initial IP strategy to align with the product support strategy based on a weapon system's capability development document and classifying the type of technical data, computer software, and IP rights necessary requires a series of actions.
  - During an initial request for proposals, at program inception, when product support strategies are based on historical data and models, contractually require delivery of necessary technical data and computer software (e.g., OMIT or FFF data, DMPD, computer software documentation (CSD)) through contract mechanisms that enable future flexibility (e.g., priced contract options, escrow agreements, deferred delivery, deferred ordering, specially negotiated licenses) based on preliminary Government LORA analyses.
  - Ensure engineers and logisticians (after appropriate modeling and support analyses to select the type and level of data required to implement the system's product support strategy) understand how to articulate the requirement for the data and software (and associated license rights) needed to support specific use cases for the data; the format, quality, and timing of delivery of the data or software; and acceptance and rejection criteria.
  - Facilitate collaboration among software developers, engineers, and logisticians in the development of the software product support strategy. Early discussion amongst technical SMEs helps convey software effects on user operator and maintenance instructions, procedures, and support equipment. This discussion early in the process informs the contracting officer and legal counsel of required license agreements or arrangements to support continuous software development over the system lifecycle.
- Collaborating with program SMEs on the unique and specific data deliverables to support organic field-level repair, citing the appropriate data item description, and working with the contracting officer to list the appropriate DFARS clauses required to document in the contract. Negotiation of specialized licenses is another tool for tailoring of licenses and agreements to implement an interim contractor logistics support effort until organic repair capability is established.

## Efforts in Support of Flexible Sustainment to Mitigate the Challenges

### *Early Lifecycle Analysis*

The DoD sustainment community seeks an optimal balance between weapon systems' readiness and the associated costs for targeted readiness goals. The complexity of defense systems, equipment items and the associated technical data to include software requirements evolves over its lifecycle. Conducting early lifecycle analysis and sustainment planning is critical to determining the best value of strategic sourcing and support alternatives. These analyses address each of the 12 IPS elements in a program from a set of potential solutions. The process is iterative; it evolves as the data, support infrastructures, and availability of support providers and alternatives mature.

Since the 2009 WSARA PSAT report, the Department has taken numerous actions to improve sustainment planning early in systems' lifecycles, including updating policy, regulation, and guidance. One such action was the recent publication of DoDI 5000.91, "*Product Support Management for the Adaptive Acquisition Framework*." Overall, this effort includes the requirement for early planning for organic repair capabilities and the need to maintain competition into sustainment.

Acquisition planning now includes robust analysis of program complexity, staffing, training, spare parts, tooling, and warranties. Planning early prevents restrictive designs, unnecessary special tooling, and warranties that limit the DoD to OEM provided support. This strategic sustainment approach considers cost, schedule, and performance when deciding whether to employ organic repair versus contractor maintenance and repair, or a combination of contractor and organic repair. With the proper planning and sufficient sustainment IP data and rights, every DoD contract that includes sustainment can supply exactly what the Government needs for a fiscally responsible price while supporting competition.

### *Modernization of Regulations, Guidance, and Training to Support Organic Sustainment*

As discussed, the Department is modernizing its IP policy, regulations, guidance, and training. DoDI 5010.44, *Intellectual Property (IP) Acquisition and Licensing*, established the IP Cadre, and published six core principles for guiding the Department's IP program support and workforce training. The forthcoming guidebook, *Intellectual Property: A Strategic and Tactical Guidebook*, provides practical guidance to the DoD's acquisition workforce and programs on the appropriate level of rights in technical data required to support the depot source of repair decisions through sufficient repair rights and capabilities. The DoD is implementing core IP principles for lifecycle product support through a variety of mechanisms, including conducting rulemaking in multiple pending cases to revise the IP coverage in the DFARS. A new IP Credential has been established for the acquisition workforce based on eight continuous learning modules.

During the acquisition planning phase, the Defense Acquisition University (DAU) IP and Data Rights Community of Practice (COP) is available for insight and support. The COP connects acquisition professionals and supplies a comprehensive source of information on IP, data rights, and related topics to support development of IP-related elements of program acquisition

strategies. Further, support of the IP Cadre network, adding new regulatory guidance, the forthcoming IP guidebook, and new credential training will build upon the training and tools currently available to the workforce.

### *Mitigating the Impact of Commercial Item and Commercial Computer Software IP Rights*

The Department is focusing efforts to mitigate the challenges in rapidly integrating cutting-edge commercial technologies into DoD systems and ensuring cost-effective support for those systems. To proactively mitigate against these challenges, DoD is emphasizing the increased use of MOSA to manage the proprietary commercial components as “black boxes,” the negotiation of customized commercial license agreements, or a combination of the two. DoD will also implement best practices for developing IP Strategies that identify and support DoD’s long-term IP needs earlier in the competitive phases of acquisition programs. These best practices will help ensure IP is used as an evaluation factor in competitive awards and a negotiation objective in sole source awards, better enabling the Department to contract with cutting-edge technology vendors that are willing and able to provide the Government the IP deliverables and rights it needs.

### **Conclusion**

The Department’s report outlined three major challenges. First, the report discussed the importance of early assessment and planning to determine the IP deliverables and rights (e.g., technical data, computer software, licensing rights, tooling, manuals), and other resources and materials, required to enable organic repair and promote greater competition. Second, the report provides a review of the difficulties, based on that determination, in acquiring the necessary rights, resources, and materials to support the sustainment strategy and competition. Third, the report examines how those challenges are compounded when procuring commercial items and commercial computer software. However, the report also highlighted the DoD’s extensive efforts to apply disciplined sustainment concepts and analyses to develop optimal sustainment strategies, as well as modernize its IP guidance, regulations, processes, and training to combat these challenges. These efforts will provide a foundation of training and support to the DoD’s acquisition workforce to address these challenges.

Through these existing and revised guidance and processes, program managers, PSMs, and other acquisition specialists are developing sustainment strategies that provide appropriate flexibility and enable ongoing competition to drive down cost and increase effectiveness. Overall, DoD efforts and investments to effectively support an organic sustainment strategy, inclusive of field-level repair, and to enable greater competition throughout the sustainment lifecycle support will advance the goals of the executive order.



## **Appendix: The Evolution of Challenges and Solutions in Contracting for IP**

The funding-based approach to allocating IP rights has a statutory foundation dating to the mid-1980s. These rules, requested and long supported by industry, enable industry to limit competition in DoD purchasing by asserting IP restrictions on privately developed components, potentially also limiting government-funded technologies. Industry's strategic approach relies on inherent features of the data rights rules, the economics of the defense marketplace, and the fact that early action, or lack of early action, by the Government under these rules can create long-term vendor lock (i.e., lack of competition for weapons systems, components, repair, or overhaul services), which frustrate flexibility in sustainment and enabling greater competition.

To do so, the procurement agreement (contract) must contain the necessary statement of work tasks, contract line items (CLINs), including required options, contract data requirements list (CDRLs) calling out the data products needed with appropriate data item descriptions, clauses, lists of asserted restrictions on deliverable data, and any associated commercial licenses or specially negotiated license agreements. The contractor's list of asserted restrictions on the use, release, or disclosure of IP must be evaluated during source selection and managed throughout the contract to ensure appropriate delivery and marking of the required data. Inadequate flow-down of data requirements from primes to subcontractors and vendors is a common difficulty, typically after contract award. In-process reviews and reviews of sample data deliverables (e.g., 3D models) are a best practice to resolve differences in formats, markings, etc., prior to final delivery of data. Use of IP specialists (e.g., IP attorneys) is another best practice to address IP matters, although the goal is to better utilize broader cross-functional teams of SMEs with IP expertise tailored to their underlying functional area of responsibility (e.g., leveraging the DoD IP Cadre's federated model).

Further, complex dynamics and procurement policies have evolved over decades, with military systems in service even longer and many competing demands and challenges on DoD program managers. These challenges include focus on near-term costs, schedule, and performance to align with annual budget authorities, combined with unstable budgets with start and stop funding. Because of fundamental challenges inherent in the data rights rules and contracting, contractors can leverage the dynamics of the system. Programs can end up without the technical data and computer software necessary to perform organic sustainment or to use or release data for competitive sustainment activities.

### ***Determining Requirements: Technical/Operational Needs and ROI***

One well-known challenge for the government is early identification of its IP requirements over the entire lifecycle. Government personnel focus almost entirely on defining the government's technical or operational needs for a particular lifecycle activity (e.g., what type of detailed data is needed for full-spectrum organic depot-level maintenance). The data requirement is the full set of data that an entity needs to perform a particular operation or service.

The Government's actual requirement for such data must consider the license rights to enable that entity to perform that operation by using the identified data—such as whether the activity is performed organically by Government personnel (which is generally enabled by even the most restrictive IP licenses in the DFARS), or whether the data is released for competitive award of

the activity (which requires greater license rights allowing release and use of the data outside of the government). To set the Government's requirements, the Government must have a technical enabler (e.g., delivery of data with the necessary technical detail and content) and a legal or business enabler (e.g., license rights that authorize the government to use and release the delivered data as needed).

One key additional consideration is often overlooked when defining the government's requirements: the requirement for an appropriate ROI—more specifically for technology development. When the Government has paid in whole or in part for the development of the relevant technology, the standard funding-based rights allocations (see Table 1) grant the Government significant license rights (e.g., government-purpose rights or unlimited rights), as a recognition of the fundamental underpinnings of the IP law and policy: IP rights serve as a mechanism to incentivize and reward investments in innovative technology. Thus, when the Government has made the developmental investment and has been granted significant IP rights under the applicable statutory and regulatory framework, the Government must consider this ROI in deciding how to meet its overall mission requirements. The objective is not solely to acquire the minimum deliverables and rights necessary to support a particular sustainment event or activity, but to consider the compelling interest in the Government taking full advantage of the technology and IP rights it has already paid for as part of the technology development efforts.

### *No Compulsory Licensing Beyond the Regulatory Standard Rights and the New Preference for Negotiation of Specialized Licenses*

Statutory and regulatory restrictions, summarized in Table 1, prohibit requiring greater than the DFARS regulatory-standard data rights licenses as a condition of awarding a contract and discouraging the offer of proprietary technology with data rights restrictions. DoD personnel and defense contractors often misunderstand or misconstrue rules that carve out DMPD from DoD's ability to require unlimited rights in data for OMIT activities.

Other than exercising authorities like eminent domain or the Defense Production Act (or other specialized authorities), the fundamental principle of freedom to contract (or not to contract) results in DoD being unable to require (other than by mutual agreement) any contractor to agree to sell data or data rights, regardless of DoD's needs. If DoD claims rights to data not in its possession without the ability to obtain the data, such rights are effectively useless (i.e., the Government cannot exercise its license rights if it does not possess or otherwise control that data). For systems already sole sourced for sustainment or re-procurement, whether for data rights or other reasons, contractors have little market-driven incentive to sell DoD the data and associated rights to facilitate competitive procurement of parts, sustainment services, or upgrades, at any price economically justifiable or fiscally possible.

For new systems in development, while multiple contractors are vying to compete for the first contract to be awarded, smart and careful source selection evaluation practices can incentivize, but not guarantee, that offerors furnish the necessary data and rights (such as through priced options) to ensure future competition. This technique is best combined with negotiations of special licenses to tailor terms to Government needs. While the government can leverage this market power in competitive procurements involving noncommercial technologies, DoD cannot violate statutory or regulatory prohibitions for requiring greater rights or fail to recognize critical components relying on commercial or commercial-derivative technologies.



Another key evolution in this area is the emerging preference for negotiating specialized license agreements more tailored to better address the Government's and contractors' interests—as compared to the standard or default license rights that otherwise applies (see Table 1). To further encourage this practice, Congress amended the DoD data rights statutes to add a preference for specially negotiated licenses, which is being implemented in pending revisions to the DFARS. The increased use of this more adaptive, agile, tailored, and cost-effective approach to licensing is a core focus area in DoD's ongoing efforts to modernize its guidance and training for the acquisition workforce.

### ***Focus on Innovating for IP Evaluation and Valuation in Source Selections and Negotiations***

For many years, acquisition personnel took the statutory and regulatory prohibitions on requiring greater than standard or commercial data rights or discouraging the offer of rights-restricted items or software as gospel, meaning the Government was prohibited from evaluating the offered data deliverable and license rights in a competitive source selection.

However, this discounts DFARS policy authorizing the evaluation of such IP-based restrictions on the government's ability to use or disclose technical data or computer software. Today, DoD's IP acquisition and licensing policies and procedures (DoDI 5010.44) clearly direct DoD component heads to “[i]ncorporate consideration of types of IP deliverables and level of associated license rights into source selection evaluation factors, and as negotiation objectives in sole-source awards, as appropriate.” However, fulfilling this requirement can be complex, as illustrated by the fact that the 2018 report of the Section 813 Joint Government-Industry Advisory Panel could not firmly recommend how to value and evaluate IP in DoD source selections. Rather, the 813 Panel recommended a pilot program to consider best practices and methods for IP valuation and evaluation. This recommendation, in turn, led to Section 801 of the FY 2023 NDAA, “Pilot Program on Intellectual Property Evaluation for Acquisition Programs,” authorizing the pilot program. The DoD is leveraging Section 801 for a multiple-year pilot program to investigate innovative approaches to evaluation of IP restrictions, including the adoption or adaptation of commercially available IP valuation techniques. The DoD will produce annual reports on the activities of this pilot program through FY 2023. The DoD's initial annual report, dated March 2021, furnished an implementation plan for the pilot activities and anticipates the following results from the pilot:

- Drive IP strategic planning earlier in the program lifecycle, with a focus on preserving flexibility proactively and competitive options to address uncertainty in the early assessments of long-term IP needs throughout the entire lifecycle.
- Reinforce the critical need for tailoring a program's IP strategy to balance the interests of DoD and industry, including using specially negotiated licenses and MOSA.

### ***Demonstrate the need to formulate and tailor IP strategy models for each acquisition program. The Doctrine of Segregability and its Relation to Modularity and MOSA***

Defense contractors frequently leverage data rights to allocate license rights based on source of development funding. This feature has been known historically and formally as the doctrine of segregability, and more recently and informally as the doctrine of modularity, or modular

licensing. This concept allocates license rights based on the source of funding for the development of the technology with the assessment of the funding source at the lowest practicable segregable level of the system architecture.

This practice can result in a small number of discrete subsystems or components of a larger system being categorized as developed exclusively at private expense and, therefore, subject to the most significant license restrictions (e.g., limited rights in technical data, or restricted rights in computer software). Since these license rights generally do not allow release of the data or software for competition, this practice creates gaps in data rights for government systems or subsystems—sometimes referred to as “Swiss cheese” data rights. In this scenario, an overall system or subsystem is mostly funded at government expense (subject to licensing allowing use and release for competition) but has specific or discrete subsystems or components treated as privately developed (and subject to licensing prohibiting such competitive use or release); thus, the corresponding data package and data rights is deemed to have holes in it, rendering overall use for competition impracticable. This circumstance limits competition on much larger systems funded substantially by the government.

One countermeasure to such practices that the DoD is emphasizing and seeking to enable more broadly is MOSA. MOSA combines system engineering open architecture techniques with open licensing and related legal and business considerations to isolate proprietary technology and prevent overleveraging of limited private investments from undermining return on government investment. MOSA enables the Government to include privately developed technology in a military system by treating that technology as proprietary “black boxes” with well-defined and described interfaces. If the Government needs to ensure capability to repair or replace components on the “inside” of such a black box (i.e., within a component for which the Government does not have detailed design or component information), MOSA does not directly enable that activity, but it offers a useful tool in limiting the effect of such proprietary restrictions to only that component directly subject to those IP restrictions. DoD is improving its implementation of MOSA through a wide variety of mechanisms, including implementing MOSA-related statutory changes throughout the DFARS and enhancing DoD’s guidance and training for the acquisition workforce.

Certain practices surrounding IP and data rights have been used to limit competition in DoD purchasing and to induce “vendor-lock” and other undesirable results. The DoD will implement best practices for identifying its long-term IP needs early in the competitive phases of acquisition programs, increasing the use of MOSA and specially negotiated licenses and customized commercial licenses, ensuring IP is an evaluation factor in competitive awards and a negotiation objective in sole source awards, and contracting with vendors who are willing to provide the government the IP deliverables and rights it needs to retain flexibility in sustainment, promote greater competition, and where directed, perform field-level repair.

Table 1. Prohibited Requirements and Permitted IP Criteria for Source Selection

Type of data	Prohibited requirements	Expressly permitted evaluation	Source
Noncommercial item technical data	<ul style="list-style-type: none"> <li>• Requiring rights beyond standard DFARS license rights as a condition of award or responsiveness.</li> <li>• Prohibiting or discouraging items developed exclusively at private expense solely because of license rights restrictions.</li> </ul>	Impact on evaluation factors created by restrictions on the government’s ability to use or disclose technical data.	<ul style="list-style-type: none"> <li>• 10 U.S.C. § 3771(b)(8)</li> <li>• DFARS 227.7103-1(c) and (d)</li> <li>• DFARS 227.7103-10(a)(5)</li> </ul>
Noncommercial computer software	<ul style="list-style-type: none"> <li>• Requiring rights beyond standard DFARS license rights as a condition of award or responsiveness.</li> <li>• Prohibiting or discouraging software developed exclusively at private expense solely because of license rights restrictions.</li> </ul>	Impact on evaluation factors created by restrictions on the government’s ability to use or disclose computer software.	<ul style="list-style-type: none"> <li>• DFARS 227.7203-1(c) and (d)</li> <li>• DFARS 227.7203-10(a)(5)</li> </ul>
Commercial item technical data	Requiring data deliverables or license rights beyond customary commercial, except as mutually agreed and for: <ul style="list-style-type: none"> <li>• form, fit, and function (FFF) data;</li> <li>• data needed for repair, maintenance, installation, and operation (other than detailed manufacturing or process data [DMPD], for which DoD can require delivery but not unlimited rights for privately developed technologies);</li> <li>• data on U.S. government (USG)-funded modifications; and</li> <li>• licenses authorizing release outside the government for emergency repairs.</li> </ul>		<ul style="list-style-type: none"> <li>• 10 U.S.C. § 3771(b)(8)</li> <li>• DFARS 227.7102-1</li> </ul>
Commercial computer software and software documentation	Requiring software or related documentation deliverables or license rights beyond customary commercial, except as required by law or to meet agency needs, as mutually agreed by negotiation, and for data on USG-funded modifications.		<ul style="list-style-type: none"> <li>• DFARS 227.7202-1</li> <li>• DFARS 227.7202-3</li> </ul>
Small Business Innovation Research (SBIR)/ Small Business Technology Transfer (STTR) data	Requiring more than standard DFARS license rights, including more than SBIR data rights in SBIR data.	See SBIR/STTR policy directive language.	<ul style="list-style-type: none"> <li>• DFARS 227.7104</li> <li>• SBIR/STTR Policy Directive 8(b)(6)</li> </ul>