



# Reducing Barriers to Uptake of Commercial Technology: COTS, COTS-Based, and Managed Open-Source Software

NRO Industry Advisory Working Group  
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USGIF's NRO Industry Advisory Working Group (NIAWG) is a volunteer group organized to address matters of strategic importance to the NRO industry base. Recognizing the presence of barriers to adoption of commercial computer software, NIAWG volunteers conducted an informal root cause assessment study. Key observations included programmatic barriers such as lack of accountability on development risk and total cost of ownership; cost of change as an inhibitor to adoption; concern over corporate viability; and budget structures and execution policies that favor development over procurement. However, the most potentially impactful observation was unintentional barriers found in acquisition solicitation documents. This paper explores solicitation language as a potential root cause underlying the challenge of incorporating commercial computer software in NRO programs. In the interest of time and minimizing organizational variables, the authors focused on Ground Enterprise Directorate (GED) solicitations with readily accessible documentation. A few solicitations outside of GED were included as available. Based on this limited data set, a more comprehensive look at solicitation language across Directorates is in order to identify contracts clauses, terms and conditions that may be ripe for improvement.

# Introduction: The Value of Commercial Technology

In the era of great power competition, rapidly evolving threats and geopolitical instability are reducing decision timelines and increasing the need to field capability at the speed of need. The rapid evolution of technology, driven by massive private sector investment, offers a path to keep pace. This is especially the case with rapidly evolving Artificial Intelligence, Machine Learning, and Generative AI capabilities. Government investment is insufficient to keep pace with technology or our adversaries' use of it. Commercial computer software, to include Commercial Off-the-Shelf Software (COTS), COTS-based Software, and Managed Open-Source Software (MOSS), offers speed to delivery and affordability benefits, namely:

- Proven production use and standards-based interoperability, accelerating time to delivery in comparison to custom-built solutions.
- Government benefit from extensive commercial R&D—billions of dollars—leveraging best-in-class engineering and innovations developed in open-source software communities.
- Government benefit from feature improvements developed for other customers but that can meet new and emerging requirements without a change to the baseline.
- Government ability to deploy enhancements rapidly without additional contract changes when new tools and capabilities are added to a commercial solution.
- Delivery under a FFP model allows for predictable pricing and transfers development risk to the commercial provider, who assumes responsibility for operational overhead and maintenance.
- Government entitled to software updates that create efficiencies, add features, and address issues (bug fixes, security vulnerabilities, etc.), as part of regular software updates.

## Terms of Reference

For purposes of this discussion:

- “COTS” is commercial computer software whose product base is developed, owned, and maintained by the product provider.
- “COTS-based” is COTS commercial computer software with implementation and configuration varying based on unique government customer requirements.
- “MOSS” is commercial computer software developed by an open source community with specific core functionality releases managed and maintained by the product provider for a fee. MOSS differs from FOSS in that MOSS includes government-required functions involving security, hardening, and scalability not required by the open source community.
- “FOSS” is free, open-source software, typically components, developed by an open-source community and not controlled or maintained by a product provider. FOSS components are typically used to build custom systems. Government-required functions such as security, hardening, and scalability must be custom-coded as part of a system development.

Government and industry alike understand the value and endorse use of commercial computer technology. However, government programs only realize the benefits of COTS, COTS-based, and MOSS commercial computer software if the programs can successfully incorporate them into software-centric systems. The Department of Defense, Intelligence Community, and numerous Federal watchdog organizations have regularly documented the presence of barriers to implementing commercial technology in government programs. Effective reduction of these barriers requires assessment of root causes and identification of proposed solutions.

## Study Approach and Finding

### Finding: Procurement Solicitation Language Can Unintentionally Discourage Use of Commercial Software Technology

At any given time, there are hundreds of procurement activities ongoing across the NRO. Standardized language is used to improve consistency across acquisitions, reduce the effort required to conduct a source selection, and advance acquisition tradecraft across the workforce. Given the complexity and nuances surrounding software development, software licensing, and intellectual property and use rights, having standardized language is a key tool in ensuring consistent and effective procurement of commercial technology.

With this in mind, NIAWG volunteers conducted interviews with numerous systems integrators doing business in the NRO regarding use of commercial computer software in their offerings and competitive bids. Every integrator was open to bidding these products in their NRO proposals but expressed wariness that doing so would result in an unsuccessful offer. These sentiments point to solicitation language as a root cause. Specifically, they noted:

- “COTS/MOSS will make me lose on price. I need to bid a zero-dollar bill of materials.”
- “The government hates paying for licenses. Besides, contracting for labor is easier.”
- “Requests for Proposals (RFPs) discourage the use of COTS/MOSS. We will only use it if government directs it.”
- “Why use commercial software when it reduces my development headcount?”

Based on this feedback, NIAWG volunteers researched recent solicitations to identify language that might drive these offeror concerns. The research revealed consistent language across multiple acquisitions, indicating a desirable degree of standardization. However, there is substantial language observed across programs that effectively discourages the use of COTS, COTS-based, and MOSS commercial computer software in favor of Free and Open-Source Software (FOSS).

Numerous industry partner questions submitted to the NRO Acquisition Research Center to clarify intent of the language following Draft/Final RFP release were answered with circular instructions to “refer to the SOW and RFP.” The following examples provide context and recommended improvements to ensure NRO programs have access to the widest swath of technology available to solve mission challenges.

In conducting this research, the basis of our observations is rooted in the Federal Acquisition Regulation (FAR) Part 12, specifically:

**FAR 12.212:** (a) Commercial computer software or commercial computer software documentation shall be acquired under licenses customarily provided to the public to the extent such licenses are consistent with Federal law and otherwise satisfy the Government’s needs. Generally, offerors and contractors shall not be required to-

(1) Furnish technical information related to commercial computer software or commercial computer software documentation that is not customarily provided to the public; or

(2) Relinquish to, or otherwise provide, the Government rights to use, modify, reproduce, release, perform, display, or disclose commercial computer software or commercial computer software documentation except as mutually agreed to by the parties.

(b) With regard to commercial computer software and commercial computer software documentation, the Government shall have only those rights specified in the license contained in any addendum to the contract. For additional guidance regarding the use and negotiation of license agreements for commercial computer software, see 27.405-3.

# Examples of Solicitation Language that Discourage Use of Commercial Technology and Recommended Alternatives

A general observation across all solicitations is that language is overwhelmingly oriented to development (i.e., “create”) and the associated general purpose or unlimited rights. Language related to commercially licensed (i.e., paid) software appears lacking. If commercial language is included “by reference” it is not obvious. This in itself can be perceived as a preference for custom software.

The following examples of NRO solicitation language run counter to the application and intent of FAR12.212:

1. *Solicitation Language:* “The Government shall be entitled to a **perpetual license** for all commercial technical data, **computer software**, and computer software documentation listed by the Offeror. The Government shall have the right to use, **modify, reproduce**, release, perform, display, or disclose that commercial **computer software** and computer software documentation, in whole or in part, within the Government. The Government may not without the written permission of the contractor, release or disclose the commercial item technical data, and commercial computer software for manufacture. Computer software will not be released to any third party except as set forth in N52.227-001 and FAR 52.227-19.”<sup>i</sup>

- *Impact to Mission:* The request for perpetual licenses and the overly broad right to use language likely deters commercial software providers from participating in the competition. This limits the choices available to the Government to solve a mission need.
- *State of the Market:* COTS, COTS-based, and MOSS offerings have evolved whereby most providers license their software on a term (e.g., subscription or Software-as-a-Service (SaaS) license basis), not in perpetuity. Term licenses offer advantages that perpetual licenses do not (see Appendix). Additionally, commercial software licenses generally restrict users from modifying or reproducing the software unless authorized, so language suggesting the Government will have this right is counter-productive to securing commercial vendor participation.
- *Recommended changes:* Incorporate language stating the Government accepts the use of commercial

software to satisfy the requirements, consistent with FAR Part 12, and encourages suppliers to consider the use of commercial capabilities where appropriate and/or beneficial to this effort. Incorporate language compatible with term licensing and subscription-based approaches, as well as appropriate rights for use versus modification and reproduction within the Government. For example, “the Government shall be entitled to a license consistent with the commercial software provider’s licensing and services agreement.” The Government could consider adopting the following as core principles:

- The Government retains all rights, title, and interest, including all intellectual property rights, in and to any data or other content that is solely created or provided by the Government.
  - Consistent with FAR 12.212 (cited above), if the Government is acquiring commercial computer software, they should leverage the commercial License & Service Agreement (LSA).
  - If there is any deliverable requirement beyond the commercial product, IP property rights should be reduced to a deliverables schedule defining those rights.
2. *Solicitation Language:* “Any license that is to be paid for by the Government and is associated with any technical data, computer software, or computer software documentation delivered under the [Contract Line Item Numbers (CLINs)] of the contract shall *transfer upon delivery of that [Contract Data Requirements List (CDRL) or CLIN] to the Government.*”<sup>ii</sup>
- *Impact to Mission:* The italicized text above is typically embedded with language specifying perpetual use licenses and may be interpreted to mean the transfer of license ownership in perpetuity, even beyond a period of performance, carrying the same issues as Example 1. This interpretation could drive unnecessarily high bid costs impacting assessment of total lifecycle costs and negatively impact offerors’ competitiveness in best-value determinations.
  - *State of the Market:* COTS, COTS-based, and MOSS commercial computer software has evolved whereby most providers license their software on a term (e.g., subscription or Software-as-a-Service (SaaS) license basis), not in perpetuity. “Transfer of license” language should be consistent with these software-use licensing models.

- *Recommended change:* Clarify language to reflect “right to use” transfers to the Government upon delivery of the CDRL or CLIN. Consider separating language on rights for “computer software” (which may or may not come with perpetual rights) from “technical data and documentation” language (which always comes with perpetual rights).
3. *Solicitation Language:* “We are seeking innovative approaches that include...reduced dependencies on licensed software products through the use of free and open-source (FOSS) software.” “Attributes for [the desired] architecture” include “maximizing use of FOSS.”<sup>iii</sup>
- *Impact to Mission:* The focus on maximizing use of FOSS deters COTS, COTS-based, and MOSS commercial software providers from participating in competitions and discourages prime vendors from teaming with said providers to deliver important capabilities at the speed of mission. As written, the language equates “innovation” with FOSS, a narrow definition that does not afford COTS, COTS-based, and MOSS commercial software providers a similar opportunity to demonstrate their own innovative capabilities. Additionally, solicitation language that specifies preference for FOSS for its “open, non-proprietary characteristics” also specifies a preference to “avoid custom code.” However, the only way to build a mission system from FOSS components is by implementing custom code. Hence these preferences are inherently contradictory and discourage use of COTS, COTS-based, and MOSS commercial computer software, potentially limiting choices available to the Government to solve a mission need.
  - *State of the Market:* COTS, COTS-based, and MOSS commercial software providers take full advantage of FOSS available in the community as part of their product evolution and roadmap. Of note, most FOSS is licensed and has specified usage restrictions which are incorporated into the commercial licensing strategy. Once developed, COTS, COTS-based, and MOSS commercial software providers take full responsibility for patching, upgrades, and maintenance.
  - *Recommended Change:* Recognize that FOSS-based systems are inherently custom coded and will require a higher overall life cycle cost. Revise language to ask for the full range of FOSS, MOSS, COTS-based, and COTS commercial computer software solutions, with the qualifying requirement instead being that solutions must utilize open APIs and demonstrate loose coupling, modularity, and interoperability.
4. *Solicitation Language:* “The Contractor shall design and integrate to **preclude** long-term dependence on closed/vendor unique or **proprietary** interface standards, **technologies, products** or architectures.” (*italics added for applicability*)<sup>iv</sup>
- *Impact to Mission:* By the inclusion of “interface standards”, this language enables open-systems architecture and mitigates risk of vendor lock. However, directing the Contractor to exclude **proprietary technologies and products** effectively excludes commercial software from consideration. Of note, the term “proprietary” in conjunction with technologies or products is often misused and pejorative, connoting “vendor lock.” In fact, the issue driving vendor lock is not proprietary code or products but proprietary interfaces and invasive implementations that bind the commercial solution to the system. Specifying that proprietary technologies or products are precluded is not in keeping with the FAR’s preference for commercial items at best and can be construed at worst as anti-competitive.
  - *State of the Market:* COTS, COTS-based, and MOSS commercial computer software is licensed in terms consistent with, and favorable to, the Government’s goals of maintaining Modular, Open Systems Architecture (MOSA) to support frequent technological advancement. Commercial capability providers must build their products to be as open and as modular as possible to satisfy the widest set of requirements possible. By definition, commercial capabilities are trying to capture a large segment of the total addressable market and build their tools in a way that is complementary to that strategy.
    - Commercial software providers often proactively work to mitigate the perception of “vendor lock-in” by demonstrating data export capabilities and providing contractual protections to enable the Government to transition data and associated capabilities (e.g., analytics, developed AI/ML models) out of their software.
    - Commercial software providers issue licenses pursuant to their commercial LSAs, which contain favorable terms reinforcing government ownership of its data and content. These LSAs are drafted in consistency with all relevant procurement laws and concretely define and reinforce the desired scope of government data rights.

- *Recommended Change:* Remove language suggesting only non-proprietary development is acceptable. Reorient language to focus on minimizing proprietary application interfaces while allowing for proprietary software built on open architecture standards.
5. *Solicitation Language:* “The use of software requiring paid commercial licenses shall be minimized, and only shall be used with prior Government approval. Use of industry standard open-source offerings, GED Enterprise offerings (e.g., S2P, DI2E), or [Intelligence Community Information Technology Enterprise, (IC ITE)] offerings is encouraged over in-house developed solutions. The Contractor shall provide to the Government rationale and justification when forgoing a FOSS, government, or commercial software offering for an alternative offering or when planning to develop in-house or procure the same or similar capability already publicly available.”<sup>v</sup>
- *Impact to Mission:* The intent of the language for offerors to utilize existing capabilities and environments is sound. However, the language is internally contradictory: offerors must justify why they would build a capability that is publicly available (last sentence) but they must obtain government approval to use commercially available (paid) software (first sentence). Language that actively discourages offerors from utilizing software requiring paid commercial licenses communicates a “create first” government preference for customized systems and acceptance of longer development cycles, increased development risk, and lifecycle cost. In doing so the Government misses the opportunity to leverage private sector investments in hardening, security controls, and deployment readiness. Ironically, the complexity and bespoke nature of FOSS-based systems drives outcomes the Government is trying to avoid: increased technical debt and vendor lock to the developer.
  - *State of Industry:* Use of FOSS for prototyping and initial capability development is an efficient approach with advantages including the broadest community of innovators and freely available source code that is easy to access, inspect, and incorporate. However, FOSS software relies on a community of voluntary contributors who may not have the same level of subject matter expertise or security clearances as COTS, COTS-based, and MOSS providers. Building scaled, hardened production mission system from FOSS components requires recreating capabilities that are commercially available. In fact, unique security, patching, and version compatibility requirements of the Intelligence Community drive significant development risk, time, and cost of ownership to FOSS-based production programs. By leveraging cleared engineering talent from COTS, COTS-based, and MOSS commercial providers, the Government can develop and implement solutions that meet the unique requirements of the mission. This collaboration ensures a well-balanced solution that combines the advantages of COTS and MOSS with the expertise of experienced engineers.
  - *Recommended Changes:* Incorporate language that encourages the use of MOSS, COTS, COTS-based, and FOSS commercial software collectively based on program objectives (i.e., prototyping vs production). In the interest of speed to mission, establish delivery timelines reflecting use of existing enterprise offerings and off-the-shelf software. Recognize that “free” OSS is not free: the cost is shifted to development labor and program schedule. For production systems, require offerors to communicate the life cycle cost, security, development risk, and schedule impacts owing to use of FOSS over COTS, COTS-based, and MOSS commercial software alternatives.
6. *Solicitation Language:* Solicitation clauses requiring NRO permission for non-FOSS software and unlimited rights as a condition of delivery.
- Example 1: “The SPEAR software will be developed, deployed, and maintained using NRO provided environments and tools, and the software will be stored in NRO controlled cloud-based repositories. Consequently, the Government intends all software created under this contract to be delivered with unlimited data rights. **The contractor must obtain NRO permission before delivering software under this contract which incorporates any other software that is not free and open source.**” (bold added to identify applicable language)
- Example 2: “Proposals asserting anything other than unlimited rights will be evaluated for their suitability for award.” (While this section in this solicitation specifies “non-commercial” it creates bias because there is not a similar clause applicable for commercial computer software options).<sup>vi</sup>
- *Impact to Mission:* This Solicitation language communicates government intent to develop the software.

While requiring permission to use other than FOSS is sensible for understanding future cost of such software, it lacks context. Based on the specified intent to develop, this language ignores the FAR's commercial item preference, demonstrates a clear bias in favor of FOSS, and establishes two different sets of expectations. Additionally, solicitations containing this language offer no identified pathway to obtaining NRO "permission" to deliver COTS, MOSS, or COTS-based software. This in turn creates ambiguity with potential tacit or inferred evaluation criteria and the precise timing need of "receiving permission" (i.e., award negotiation vs left of RFP), which ultimately discourages the participation of commercial software providers. Contractors without existing work at NRO may perceive they are doubly disadvantaged in that they lack "open channels" to the government to have this dialog.

- *Recommendation:* Provide information in the solicitation if appropriate market research has been conducted that determines that COTS, COTS-based, or MOSS software cannot meet any of the requirements, even at the component level as required by the FAR. This will justify the requirement to develop over procure. If market research has not conclusively ruled out COTS, COTS-Based, or MOSS, recommend breaking out two alternative paths (paragraphs) for offerors to pursue, one for FOSS-based and the other for COTS, COTS-based, and MOSS. Include the language that applies to each type of approach separately.
7. *Solicitation Language:* Program Solicitation Focus: "Leveraging low-cost alternatives to COTS products." <sup>vii</sup>
- *Impact to Mission:* Specific language could be interpreted by bidders as a preference not to use MOSS, COTS, or COTS-based software and implying that bidding MOSS, COTS, or COTS-based solutions would be scored negatively. The language implies that COTS, COTS-based, and MOSS commercial software is by definition more expensive than FOSS, which is not the case over the life cycle. This language ignores Total Cost of Ownership and encourages offerors to reproduce what is commercially available. The fact this language was part of this particular program's Industry Day drove offerors away from utilizing commercial computer software in their solution sets. If this language was corrected in the Final RFP, it was too late to make a difference.
- *Recommendation:* If the Government is trying to articulate that COTS, COTS-based, MOSS, and commercial computer software is acceptable but that they have concerns with licensing costs, recommend that clarification be provided up front and articulated throughout the acquisition cycle. This could include several approaches to include setting floor and ceiling thresholds for licensed products and user limitations, articulated within the cost and pricing instructions.
8. *Solicitation Language:* "If offeror proposes software requirement with cost impact...additional proposed commercial software licenses must include adequate technical justification of why the product is needed, specifically product name/version and impacts if product not provided." <sup>viii</sup>
- *Impact to Mission:* There is nothing inherently wrong with asking for details on the cost required to deliver the proposed solution. However, offerors are disincentivized to propose any technology that requires additional explanation even if it results in higher mission performance or lower life cycle cost. Applying additional justification requirements only to paid software discourages the use of COTS, COTS-based, and MOSS commercial software by communicating to offerors a preference for custom, FOSS-based solutions. Specifically, bid cost templates requiring additional work, complex calculations, or justifications (as opposed to a "zero dollar bill of materials") have been known to reduce offerors' cost competitiveness. The result is unintended direction to create custom, FOSS-based systems with acceptance of commensurate development risk, delivery timelines, and life cycle cost.
  - *Recommendations:* Utilize the cost volume to communicate the impacts of all design choices including FOSS, MOSS, COTS, or COTS-based commercial computer software.
    - Require offerors to justify their elections based on delivery schedule, system performance, development risk, license risk, security patching risk, and total life cycle cost. Specifically with respect to life cycle cost, require projection of labor costs across the life cycle to maintain, patch, upgrade, and refresh systems using a FOSS design vs a COTS, COTS-based or MOSS design. Requiring bidders to "show their math" on why they made the choices they made provides key insights into the bidders'



knowledge of the state of commercial technology and the inherent balance between bespoke custom solutions and those leveraging commercial technology.

- Consider leveraging the Constructive Cost Model (COCOMO) model for cost estimation for software projects. This is a validated and proven method for evaluating total lifecycle cost for software development. Offerors proposing a FOSS-based development would provide a detailed COCOMO estimation of total life cycle cost as compared to leveraging a comparable COTS, COTS-based, or MOSS solution.
- Finally, consider ways to remove the cost competitiveness stigma from paid software. For example, provide a “proposal Other Direct Costs (ODC)” software allowance for all offerors. Identifying a fixed dollar value for paid software provides a level playing field, encourages use of commercial technology at the component level and incentivizes offerors to identify where COTS, COTS-based, and MOSS commercial computer software can have the biggest benefit in their proposed solution. By neutralizing license costs as a competitiveness issue, the Government encourages a broader range of solutions from industry.

9. *Solicitation Language:* “A robust commercial license evaluation process is in place and explained in the proposal to avoid and mitigate commercial terms and conditions contrary to Federal Law and Government RFPs.”<sup>ix</sup>

- *Impact to Mission:* Commercial companies have no motivation to provide terms that are inconsistent with statutes. Additionally, the FAR recognizes and allows for exceptions based on commercial item classification. As a result, this wording comes across as pejorative, suggesting commercial terms that are not compatible with all FAR clauses are disqualifying. The wording also discourages the use of COTS, COTS-based, and MOSS commercial software by creating additional evaluation criteria, in this case a significant legal review guided by the proposal before such software can be used. As a result, offerors may be reticent to use COTS, COTS-based, and MOSS commercial computer software despite the software being white-listed or in use by the Government elsewhere. Similar to the previous example (“Cost Template”), verbiage that communicates a “higher bar” for use of licensed technology in RFP responses is an inherent barrier to uptake.
- *Recommendation:* Consider separating out solicitation language applicable to COTS, COTS-based, and MOSS vs. FOSS respectively. Provide separate language that applies to offerors proposing FOSS versus those proposing COTS, COTS-based, and MOSS solutions. This will bring clarity and balance to the solicitation by removing a disincentive for use of commercially licensed software. In addition, it allows offerors to propose the full spectrum of COTS, COTS-based, MOSS, and FOSS approaches.

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## Authors:

Nick Buck, Chair, USGIF NRO Industry Advisory Working Group  
Sam Unger (SAP NS2)  
Tim Lerow (Palantir)  
Bruno Mahlmann  
Douglas Hartmann (Red Hat)  
Jessica O'Rourke  
Anita Weber (IBM)  
Marc Kriz (GitLab)  
Chris Arroyo  
Colin Thomas (Broadcom)  
Matt Madigan (ESRI)  
Jarrod Gazarek  
Nicole Pierce

## Peer Reviewers:

Ken Melero (Elastic)  
Brendan Houlton (Ansys)  
Connie Cappadonna (MicroFocus Government Solutions)  
Joel Weninger

## USGIF Staff:

Ronda Schrenk, Chief Executive Officer  
Christy Monaco, Vice President of Programs  
Sarah Ramsey, Director of Communications

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# Appendix

## Clarification and Considerations to Enable Increased Use of Commercial Technology

The drivers behind anti-competitive language and barriers to MOSS, COTS, and commercial computer software uptake may be justifiably rooted in past negative experiences on the part of government programs. The vast majority of these experiences are from five to ten years ago, when use of proprietary interfaces and perpetual licensing models were still a standard among commercial software companies. Vendor lock (either through proprietary interfaces or data accesses) is a justifiable and fiscally responsible concern, particularly when mission needs/priorities fluctuate over time and/or crises.

Fortunately, today's software providers recognize the criticality of interoperability as a function of their own viability and sustainability. In fact, in today's market, companies must demonstrate open standards and interfaces or face extinction.

The Government has openly acknowledged the need to improve its "adopt, buy, create" models and criteria. While much progress has been made, several key areas of discussion remain:

### 1. Realities and Value of COTS-Based Software

- Open-Source vs "Proprietary" software. The authors perceive a misunderstanding (and misuse) of the term "proprietary." Recently an NRO official stated that they are "moving away from proprietary software to open-source software due to expense and vendor lock." To this point, we ask that the Government consider:
  - The FAR prohibits biasing against proprietary solutions. However, the data packages for the software solution must come with non-proprietary, open interfaces in order to ensure loose coupling and the ability to remove and replace the software with an alternative solution. Interoperability and ease of integration are the two critical criteria that should be emphasized and evaluated for future procurements to maximize the probability of working software within the enterprise while reducing the total cost of ownership across several factors.
  - Building software systems from FOSS components inherently creates a custom system for which the

Government is the only adopter. Scalability and enterprise hardening for Intelligence Community and Department of Defense consumers are often unattainable due to infrastructure and platform sustainability requirements coupled with dedicated resource limitations. As a result operators must focus more on the technical baseline than the mission at hand.

- Commercial software is often designed with a microservices-based architecture that can quickly add new abilities or change large components without requiring rearchitecting.
- In contrast, the complexity of GOTS can become a liability for the Government if there is a need to evolve to a new architecture or set of services. Furthermore, maintaining cyber security patching, version control, and zero trust requirements is virtually impossible in a bespoke, custom system with only a single (government) adopter.
- Most MOSS, COTS, and commercial computer software companies utilize FOSS components in constructing their software anyway.
- Open-source software has both "free" and "managed" variants.
- COTS and commercial software platforms are licensed in terms consistent with and favorable to the Government's goals of maintaining MOSA to support frequent technological advancement.
- Commercial software providers often proactively work to mitigate the perception of "vendor lock" by demonstrating data export capabilities and providing contractual protections to enable the Government to transition data and associated capabilities (e.g., analytics, developed AI/ML models) out of their software.
  - For data export capabilities, commercial software providers are amenable to and have successfully met government competition-phase "burn-it-down requirements" to validate that the Government can securely access its data even upon a contract conclusion, transition, or identification of new requirements. Ideally, a burn-down exercise demonstrates that the commercial software can securely export and preserve government data and associated work product in open and non-proprietary formats, to an external system of the Government's choice, and with no additional cost to the Government while meeting mission-simulating time constraints.

- For contractual protections, commercial software providers are amenable to and have successfully eased concerns of vendor lock by incorporating “data export” clauses into the CDRL sections of contracts. These contractual protections for the Government’s access to its data reinforce the providers’ obligations to securely, expeditiously, and transparently export data from its software to a government or third-party hosted system.
- Commercial software providers issue licenses pursuant to their commercial LSAs, which contain favorable terms reinforcing government ownership of its data and content. These LSAs are drafted to be consistent with all relevant procurement laws and concretely define/reinforce the desired scope of government data rights.

## 2. Term versus Perpetual Licenses

Term, or subscription/consumption-based licenses offer key differentiators in their value proposition:

- **Allow the customer to attain price efficiencies and greater lifecycle cost predictability.** There is greater up-front license cost transparency and budget predictability, and the Government will receive the same level of capability and support across the period of performance (PoP) with the added benefit of a streamlined and predictable price structure. A term license effectively spreads the license price of software across the PoP, reducing what would otherwise be a very high “Year 1” price under a perpetual license structure—as well as variable operations and maintenance (O&M) costs thereafter and the added responsibility of “owning” the product’s performance, security surface area, etc.
- **Support risk management by including all software O&M costs** bundled within the annual term license fee. The Government does not need to purchase additional O&M year over year. Therefore, the Government will not incur additional costs beyond the annual FFP-based term license fee, pre-fixed associated services, and (typically) cloud hosting costs, reducing the risk of cost overruns associated with additional labor hours, maintenance, or surprise fees.
- **Offer flexibility.** If a new workflow/capability is required for a specific term/period of time later in a PoP (as opposed to perpetually), term licensing offers the flexibility to address this need.

## Endnotes

<sup>i</sup> Appeared in: Machwave AOI-4 Pri-P (GED/I2SPO, May 2023); Machwave Pri-L/M (GED/I2SPO, Feb 2023); Winterstreet Phase 2 DRFP (SAO, Jan 2023); War Pig FRFP (GED, July 2023); Minerva FRFP (GED, July 2023); AIML BAA (COMM, Feb 2023).

<sup>ii</sup> Appeared in: Machwave AOI-4 Pri-P (GED/I2SPO, May 2023), Machwave Pri-L/M (GED/I2SPO, Feb 2023).

<sup>iii</sup> Appeared in: Opus Request for Information (RFI) (GED/I2SPO, June 2022); Machwave AOI-4 Pri-P (GED/I2SPO, May 2023).

<sup>iv</sup> Appeared in: Ember Hawk (GED/I2SPO, 2021).

<sup>v</sup> Appeared in: Ember Hawk (GED/I2SPO, 2021).

<sup>vi</sup> Appeared in: SPEAR RFP (GED/SG), Sept 2021).

<sup>vii</sup> Appeared in: SISU Industry Day – Slide 11 (GED/G2SPO,2021) (solicitation document not available to determine if language persisted).

<sup>viii</sup> Appeared in: Concerto Cost Template – Appendix 8 (GED/I2SPO, 2022).

<sup>ix</sup> Appeared in: Willowcroft – Evaluation Section M (COMM/CAO, January 2022).