



Naval Open Architecture

Data Management Strategies

AIR



C4I



SPACE



SUBS



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MARINES



4 June 2009

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PEO IWS 7B**



Agenda

- Government Accountability Office (GAO) Report on DOD Technical Data Needs
- DOD and Navy Policy Requiring a Data Management Strategy (DMS)
- DMS Incorporation into the Two-Pass/Six-Gate Review Process
- Technical Data and Intellectual Property Rights
- *Naval OA Contract Guidebook for Program Managers* Intellectual Property Rights Guidance
- Conclusion



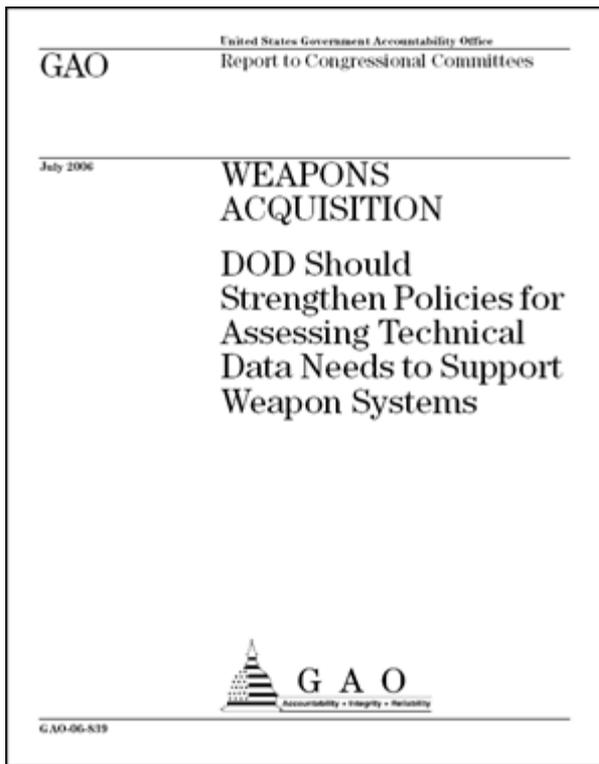
GAO Report on DOD Technical Data Needs: The Data Management Strategy Imperative



A 2006 GAO report was the impetus behind DOD's move to require programs to develop a Data Management Strategy

GAO Findings:

- The Army and the Air Force have encountered limitations in their sustainment plans for some fielded weapon systems because they lacked needed technical data rights.
- The lack of technical data rights has limited the services' flexibility to make changes to sustainment plans that are aimed at achieving cost savings and meeting legislative requirements regarding depot maintenance capabilities.
- As a result of the limitations encountered due to the lack of technical data rights, the services had to alter their plans for developing maintenance capability at public depots, new sources of supply to increase production, or competitive offers for the acquisition of spare parts and components to reduce sustainment costs.



*Source: "DOD Should Strengthen Policies for Assessing Technical Data Needs to Support Weapon Systems," GAO Report GAO-06-839



GAO made two important conclusions in its study ...

• a standard template for contract solicitations, to be used to guide the acquisition workforce in securing technical data rights;

• contract language to include a priced option for the delivery of technical data and rights for use of data, which would be negotiated and included as part of the system development and demonstration solicitation; and

• an independent logistics assessment process, to provide an objective review of the acquisition program office's sustainment support plans before major milestone decisions.

In May 2006, the Secretary of the Air Force directed that the acquisition of technical data and associated rights be addressed specifically in all acquisition strategy plans, reviews, and associated planning documents for major weapon system programs and subsequent source selections. The Secretary stated these actions are needed to address challenges in meeting legislative requirements to maintain a core logistics capability and to limit the percentage of depot maintenance funds expended for contractor performance. The competitive source selection process, according to the Secretary, provides the best opportunity to address technical data requirements while at the same time brokering the best deal for the government in regard to future weapon systems sustainment.

Conclusions

Under current DOD acquisition policies, the military services lack assurance that they will have the technical data rights needed to sustain weapon systems throughout their life cycle. We have previously made recommendations that DOD enhance its policies regarding technical data. DOD has concurred with these recommendations but has not implemented them. In fact, DOD has de-emphasized the acquisition of technical data rights as part of the department's acquisition reforms and performance-based strategies. Our current work, however, shows that the services face limitations in their sustainment plans for some fielded weapon systems due to a lack of needed technical data rights. Furthermore, program managers face numerous challenges in making decisions on technical data rights—decisions that have long-term implications for the life-cycle sustainment of weapon systems. Army and Air Force logistics officials have recognized weaknesses in their approaches to assessing and securing technical data rights, and each service has begun to address these weaknesses by developing more structured approaches. However, current DOD acquisition policies do not facilitate these efforts. Unless DOD assesses and secures its rights for the use of technical data early in the weapon

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- “We have previously made recommendations that DOD enhance its policies regarding technical data. DOD has concurred with these recommendations but has not implemented them. In fact, DOD has de-emphasized the acquisition of technical data rights as part of the department’s acquisition reforms and performance-based strategies.”

- “Unless DOD assesses and secures its rights for the use of technical data early in the weapon system acquisition process when it has the greatest leverage to negotiate, DOD may face later challenges in developing sustainment plans or changing these plans as necessary over the life cycle of its weapon systems.”

*Source: “DOD Should Strengthen Policies for Assessing Technical Data Needs to Support Weapon Systems,” GAO Report GAO-06-839



... and recommended changes in DOD's acquisition of technical data ...

system acquisition process when it has the greatest leverage to negotiate, DOD may face later challenges in developing sustainment plans or changing these plans as necessary over the life cycle of its weapon systems. Delaying action in acquiring technical data rights can make these data cost-prohibitive or difficult to obtain later in the weapon system life cycle, and can impede DOD's ability to comply with legislative requirements, such as core capability requirements.

Recommendations for Executive Action

To ensure that DOD can support sustainment plans for weapon systems throughout their life cycle, we recommend that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology, and Logistics) to specifically require program managers to assess long-term technical data needs and establish corresponding acquisition strategies that provide for technical data rights needed to sustain weapon systems over their life cycle. These assessments and corresponding acquisition strategies should:

- be developed prior to issuance of the contract solicitation;
- address the merits of including a priced contract option for the future delivery of technical data;
- address the potential for changes in the sustainment plan over the weapon system's life cycle, which may include the development of maintenance capability at public depots, the development of new sources of supply to increase production, or the solicitation of competitive offers for the acquisition of spare parts and components; and
- apply to weapon systems that are to be supported by performance-based logistics arrangements as well as to weapon systems that are to be supported by other sustainment approaches.

We also recommend that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology, and Logistics) to incorporate these policy changes into DOD Directive 5000.1 and DOD Instruction 5000.2 when they are next updated.

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- GAO recommended improvements in DOD's acquisition policies regarding the acquisition of technical data.
- “To ensure that DOD can support sustainment plans for weapon systems throughout their life cycle, we recommend that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology, and Logistics) to **specifically require program managers to assess long-term technical data needs and establish corresponding acquisition strategies that provide for technical data rights needed to sustain weapon systems over their life cycle.**” (emphasis added)

... which was the impetus for the USD(AT&L) policy

*Source: “DOD Should Strengthen Policies for Assessing Technical Data Needs to Support Weapon Systems,” GAO Report GAO-06-839



DOD and Navy Policies Requiring a Data Management Strategy (DMS)



In 2006, Congress directed DOD to require all major weapons systems to assess their long-term technical data needs

Section 802 of the John Warner National Defense Authorization Act for FY 2007, Public Law 109-364, states:

“The Secretary of Defense shall require program managers for major weapon systems and subsystems of major weapon systems to assess the long-term technical data needs of such systems and subsystems and establish corresponding acquisition strategies that provide for technical data rights needed to sustain such systems and subsystems over their life cycle.”

Assessments and acquisition strategies developed pursuant to this statute shall:

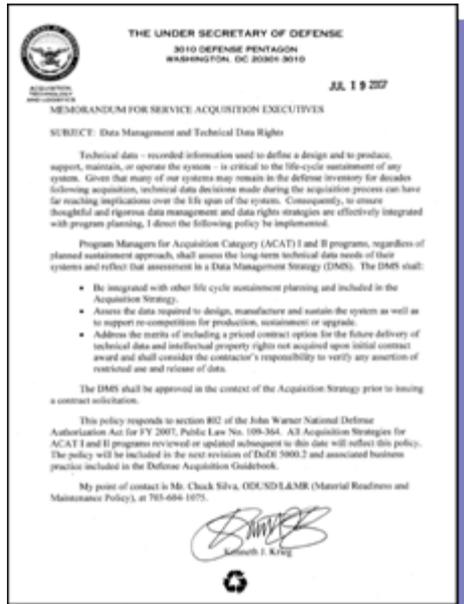
- Be developed before issuance of the contract solicitation;
- Address the merits of including a priced contract option for the future delivery of technical data not acquired upon award;
- Address the potential for changes in the sustainment plan over the life cycle of the weapons system; and
- Apply to systems that are to be supported by performance-based logistics arrangements as well as those supported by other sustainment approaches.



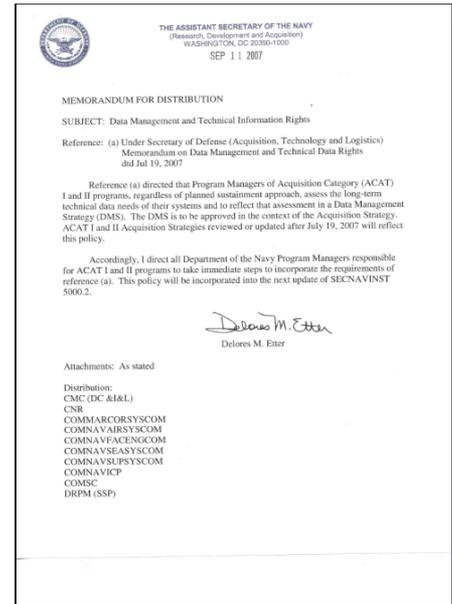
To implement the Act, DOD required Program Managers for all ACAT I and II programs to develop a Data Management Strategy

July 17, 2007 USD (AT&L) Memo requires all DOD ACAT I & II Program Managers to assess the long-term technical data needs of their systems and include it in a Data Management Strategy (DMS)

September 11, 2007 ASN (RD&A) Memo directing Navy Program Managers for all ACAT I & II programs to incorporate the requirements of the USD (AT&L) Memo



ASN (RD&A) implemented the policy for the Navy



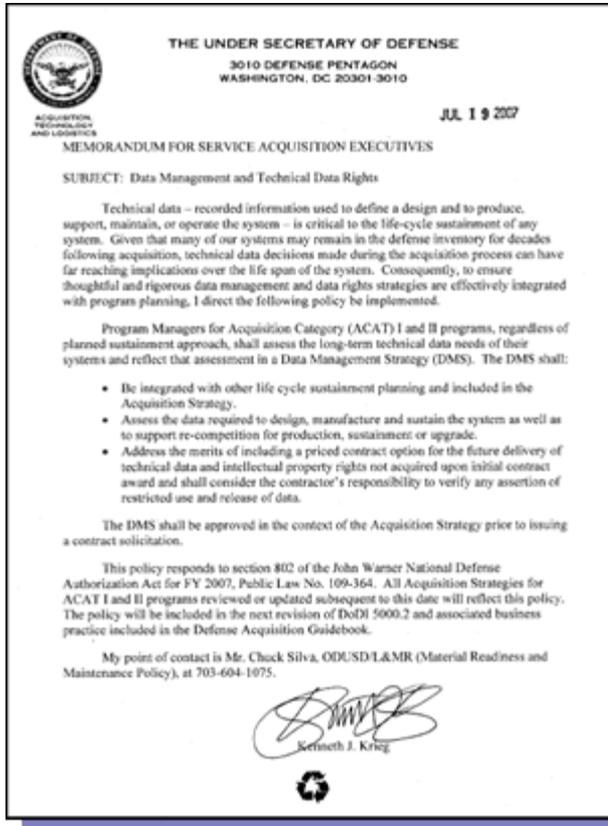
These policies have been included in revisions of DOD Instruction 5000.02 and SECNAVINST 5000.2, respectively



The AT&L Memo explains what a Data Management Strategy should include, including *future delivery of technical data*

The Data Management Strategy (DMS) must:

- Be integrated with other life cycle sustainment planning and included in the Acquisition Strategy;
- Assess the data required to design, manufacture and sustain the system as well as to support re-competition for production, sustainment or upgrade;
- Address the merits of including a priced contract option for the future delivery of technical data and intellectual property rights not acquired upon initial contract award and shall consider the contractor's responsibility to verify any assertion of restricted use and release of data.



The OAET believes all programs, not just ACAT I & II, should have a DMS



The latest version of DOD Instruction (DEC 2008) implementing DOD Directive 5000.02 includes the requirement to develop a DMS



Department of Defense INSTRUCTION

NUMBER 5000.02
December 8, 2008

USD(AT&L)

SUBJECT: Operation of the Defense Acquisition System

References: See Enclosure 1

1. PURPOSE. This Instruction:

- a. Reissues Reference (a) to implement DoD Directive 5000.01 (Reference (b)), the guidelines of Office of Management and Budget (OMB) Circular A-11 (Reference (c)), and the various laws, policy, and regulations listed in Enclosure 1 of this issuance.
- b. Establishes a simplified and flexible management framework for translating capability needs and technology opportunities, based on approved capability needs, into stable, affordable, and well-managed acquisition programs that include weapon systems, services, and automated information systems (AISs).
- c. Consistent with statutory requirements and Reference (b), authorizes Milestone Decision Authorities (MDAs) to tailor the regulatory information requirements and acquisition process procedures in this Instruction to achieve cost, schedule, and performance goals.

2. APPLICABILITY AND SCOPE. This Instruction applies to:

- a. OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the Department of Defense (hereafter referred to collectively as the "DoD Components").
- b. All defense technology projects and acquisition programs, including acquisitions of services. Some requirements, where stated, apply only to Major Defense Acquisition Programs (MDAPs) or Major Automated Information System (MAIS) programs.
- c. Highly sensitive classified, cryptologic, and intelligence projects and programs shall follow this Instruction and Reference (b) to the extent practicable.

DoDI 5000.02, December 8, 2008

ENCLOSURE 12

SYSTEMS ENGINEERING

1. SYSTEMS ENGINEERING ACROSS THE ACQUISITION LIFE CYCLE. Rigorous
8. MODULAR OPEN SYSTEMS APPROACH (MOSA). Program managers shall employ MOSA to design for affordable change, enable evolutionary acquisition, and rapidly field affordable systems that are interoperable in the joint battle space.
9. DATA MANAGEMENT AND TECHNICAL DATA RIGHTS
 - a. Program Managers for ACAT I and II programs, regardless of planned sustainment approach, shall assess the long-term technical data needs of their systems and reflect that assessment in a Data Management Strategy (DMS). The DMS shall:
 - (1) Be integrated with other life-cycle sustainment planning and included in the Acquisition Strategy;
 - (2) Assess the data required to design, manufacture, and sustain the system, as well as to support re-competition for production, sustainment, or upgrades; and
 - (3) Address the merits of including a priced contract option for the future delivery of technical data and intellectual property rights not acquired upon initial contract award and shall consider the contractor's responsibility to verify any assertion of restricted use and release of data.
 - b. The DMS shall be approved in the context of the Acquisition Strategy prior to issuing a contract solicitation.
10. IUID. To enhance life-cycle management of assets in systems acquisition and sustainment, and to provide more accurate asset valuation, all PMs shall plan for and implement IUID to identify and track applicable major end items, configuration-controlled items, and Government-furnished property. IUID planning and implementation shall be documented in an IUID Implementation Plan and summarized in the program's SEP (Reference (ao)) and DoD Directive 8320.03 (Reference (ca)).
11. SPECTRUM SUPPORTABILITY. For all electromagnetic spectrum-dependent systems, PMs shall comply with U.S. and host nation spectrum regulations. They shall submit written determinations to the DoD Component CIO or equivalent that the electromagnetic spectrum necessary to support the operation of the system during its expected life cycle is, or will be,



SECNAV 5000.2D cites the DMS in Table E3T1

SECNAVINST 5000.2D
October 16, 2008

Table E3T1 STATUTORY INFORMATION AND MILESTONE REQUIREMENTS (cont'd)					
Program Information and Reports	Presentation Form	ACAT	Applicability ***	Prepared By	Approved By
COMPONENT PREPARED (cont'd)					
Clinger-Cohen Act (CCA) Compliance (all information technology (IT) - including national security systems (NSS) programs)	See DODI 5000.2, Encl 4, Table E4T1	I, IA, II, III, IV (IT, including NSS)	MS A Pgm Initiation for Ships MS B MS C FRP DR or equivalent	PM (coordinated with DASN(C4I & Space) for ACAT I/IA/II)	DOD CIO (ACAT IA) DON CIO (ACAT I/IA/II) Cmd IO (ACAT III/IV)
Competition Analysis (Depot-level Maintenance \$SM rule)	Acqn Strat	I, IA, II, III, IV	MS B MS C (if no MS B)	PM	MDA
Congressional Annual Notification of MAIS program cost, schedule, and performance information	Report to Congress	IA	Annually, 45 days after President's Budget is submitted to Congress after achieving MS B	PM	ASD(NII)/DOD CIO
Congressional Quarterly Notification of variances in MAIS program cost, schedule, and performance parameters ^{6/}	Report to Congress	IA	Quarterly following MS B	PM	Senior Official ^{9/}
Congressional Notification of a MAIS Significant Program Change ^{4/}	Letter	IA	Not later than 45 days after receiving a PM's report of a Significant program change	PM	CARE/Senior Official (after coordination with ASD(NII)/DOD CIO or USD(AT&L) when MAIS is above MDAP threshold)
Congressional Notification of a MAIS Program Cancellation or Significant Reduction in Scope	Letter	IA	60 days prior to an MDA decision to cancel or significantly reduce the scope of a fielded or post-MS C MAIS program	PM	ASD(NII)/DOD CIO
Consideration of Technology Issues	TDS (MS A) Acqn Strat	I, IA, II, III, IV	MS A/B/C	PM	MDA
Cooperative Opportunities	TDS (MS A) Acqn Strat	I, IA, II, III, IV	MS A MS B/C	PM	MDA
Core Logistics Analysis/ Source of Repair Analysis	Acqn Strat	I, IA, II, III, IV	MS B MS C (if no MS B)	PM	MDA
Data Management Strategy	Acqn Strat	I, IA, II	MS B/C FRP DR or equivalent	PM	MDA

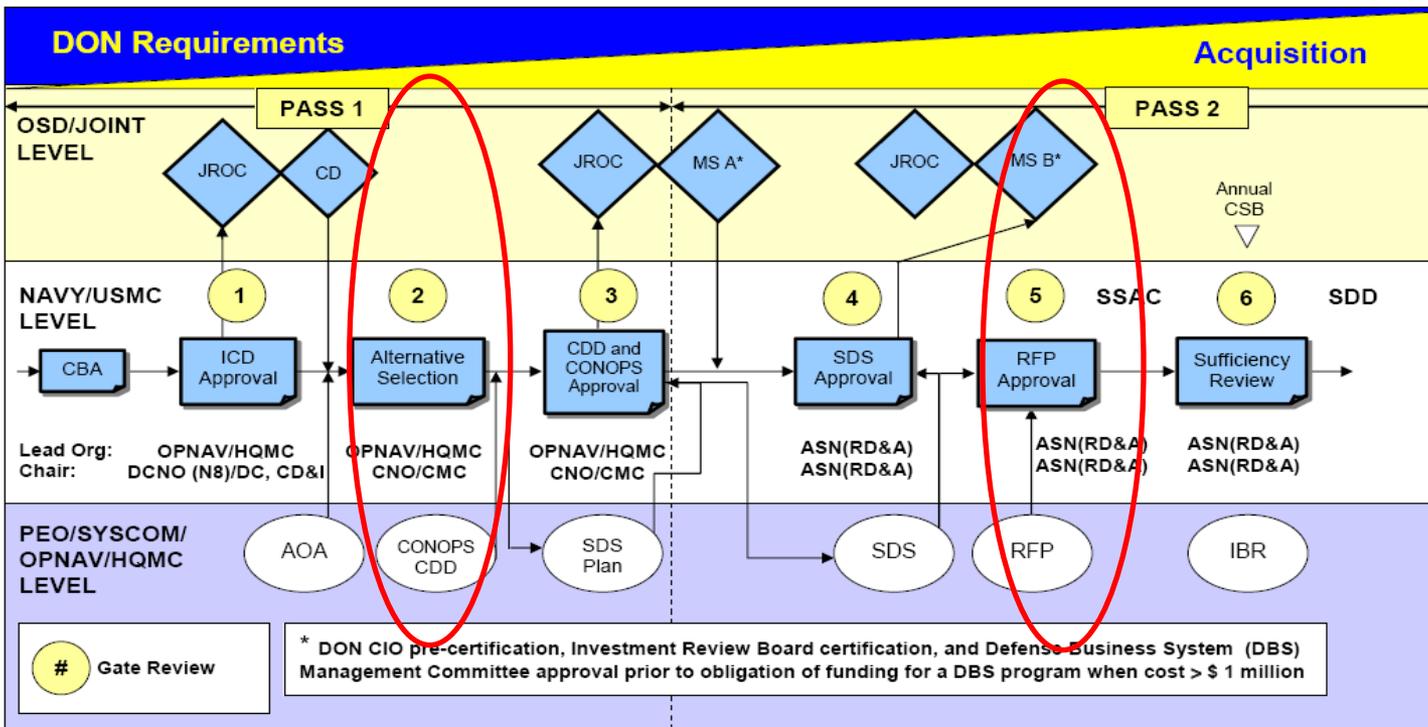
The OAET is working on including additional DMS information as part of the revisions to SECNAV 5000.2D



Inclusion in Navy Two-Pass/Six-Gate Review Process



The OAET has proposed that the Navy include the DMS in its Two-Pass, Six-Gate Review Process



- The requirement to develop and reach concurrence on a Data Management Strategy (DMS) should be done in conjunction with the Acquisition Strategy – which will be driven by the Technology Development Strategy (See SECNAV 5000.2D section 3.4.1)
- Both the Acquisition Strategy and the Technical Development Strategy are part of the “Core Brief”



We believe there are additional touch points between the DMS and the Gate Review Process at Gates 2 and 5

- Gate 2: Analysis of Alternatives (AoA) Validation
 - The review process includes leveraging common development and exploring reuse
 - Is there extensive use of proprietary or non-standard technologies?
 - The DMS discusses how the Government will enforce its intellectual property rights and support design disclosure and component reuse

- Gate 5: Request for Proposal (RFP) Approval. This is the point to update the DMS initially developed at Gate 2 to ensure it manages IP appropriately, including determining:
 - Requiring the correct deliverables;
 - A process for reviewing and accepting deliverables;
 - How decisions for acquiring IP rights for privately-funded (e.g. IRAD) items are made;
 - What repositories and design tools being used;
 - How “early and often” design disclosure is being accomplished; and,
 - How deliverables are being made available to other programs or third parties for their use (consistent with Government’s data rights).



Technical Data and Intellectual Property Rights



To understand how to craft a Data Management Strategy, we must first understand what is meant by “Technical Data” ...

The Defense Federal Acquisition Regulations Supplement (DFARS) defines the term:

DFARS 252.227-7013 Rights in Technical Data—Noncommercial Items

- (a)(14) “Technical data” means recorded information, regardless of the form or method of the recording, of a scientific or technical nature (including computer software documentation). The term does not include computer software or data incidental to contract administration, such as financial and/or management information.

DFARS 252.227-7102-2 Rights in Technical Data

- (a) The clause at 252.227-7015, Technical Data--Commercial Items, provides the Government specific license rights in technical data pertaining to commercial items or processes. DoD may use, modify, reproduce, release, perform, display, or disclose data only within the Government. The data may not be used to manufacture additional quantities of the commercial items and, except for emergency repair or overhaul, may not be released or disclosed to, or used by, third parties without the contractor's written permission. Those restrictions do not apply to the technical data described in 227.7102-1(a).
- (b) If additional rights are needed, contracting activities must negotiate with the contractor to determine if there are acceptable terms for transferring such rights. The specific additional rights granted to the Government shall be enumerated in a license agreement made part of the contract.



... and be aware that, generally, the DFARS prescribes the Government's rights in technical data with several exceptions:

252.227-7013 Rights in Technical Data--Noncommercial Items.

- (b) *Rights in technical data.* The Contractor grants or shall obtain for the Government the following royalty free, world-wide, nonexclusive, irrevocable license rights in technical data other than computer software documentation (see the Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation clause of this contract for rights in computer software documentation):
 - (1) Unlimited rights. The Government shall have unlimited rights in technical data that are—
 - (i) Data pertaining to an item, component, or process which has been or will be developed exclusively with Government funds;
 - ...
 - (2) Government purpose rights.
 - (i) The Government shall have government purpose rights for a five-year period, or such other period as may be negotiated, in technical data—
 - (A) That pertain to items, components, or processes developed with mixed funding
 - ...
 - (3) Limited rights.
 - (i) Except as provided in paragraphs (b)(1)(ii) and (b)(1)(iv) through (b)(1)(ix) of this clause, the Government shall have limited rights in technical data—
 - (A) Pertaining to items, components, or processes developed exclusively at private expense and marked with the limited rights legend
 - ...

This is SEA00L and SEA02's area of expertise – get them involved early!



However, it is important to remember that the DMS covers more than just technical data, it also includes *intellectual property rights*

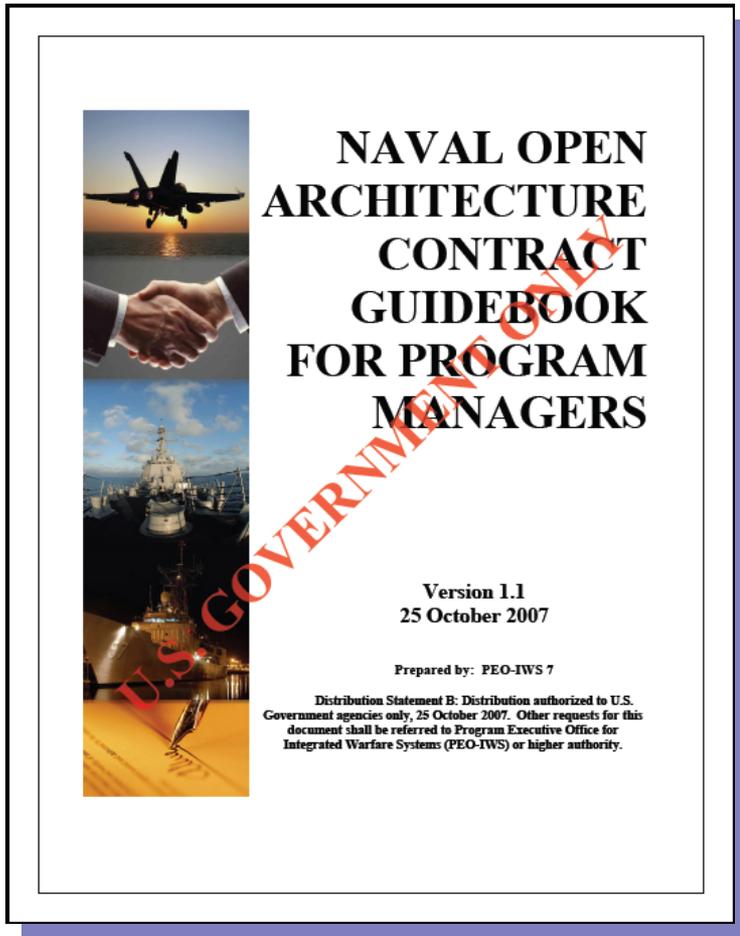
- Intellectual Property Rights (IPR) of interest to DOD programs include:
 - Copyright – It is the standard legal protection for software. The government must obtain rights in copyrighted software so that it may reproduce or distribute the data
 - Patent – Patent law protects inventions by giving the inventor exclusive rights to exclude others from manufacturing, using, or selling the invention for a limited period of time
- Program Managers must ensure they consider technical data rights, copyrights, and patent rights when determining their IPR needs for the Program's life cycle
 - Must also consider implications of COTS and Open Source materials on the overall DMS



Naval OA Contract Guidebook for Program Managers
Intellectual Property Rights Guidance



NOA Guidebook IPR-Management-Related Sections



- Chapter B: Examples of Section H Language (special clauses)

Example:

- Clause H - _____: Specially Negotiated License Rights

“1. The United States Government has Special License Rights in the Data, Special License Rights in the Data. Special License Rights means the right to: (i) Use, modify, reproduce, perform, display, or disclose the Data within the Government without restriction ...”

- Chapter C: Recommendations for Section L Language

Example:

- “The Offeror shall propose the extent to which the rights in technical data (TD), computer software (CS), computer software documentation (CSD), and inventions/patents offered to the Government ensure unimpeded, innovative, and cost effective production ...”



NOA Guidebook IPR-Management-Related Sections (continued)

- Chapter D: Recommendations for Section M Language
 - **“Factor (): Data Rights, Computer Software Rights and Patent Rights.** In evaluating the Data Rights and Patent Rights, the Government will use information in the proposal to assess the extent to which the rights in technical data (TD), computer software (CS), computer software documentation (CSD), and inventions/patents offered to the Government ensure unimpeded, innovative, and cost effective production, operation, maintenance, and upgrade of the *[SYSTEM NAME]* throughout its life cycle.”
- Appendix 1: Recommended NOA CDRL and Deliverable Items
 - “It is recommended that the Program Office perform an assessment of its Intellectual Property Rights needs ... and craft its CDRL and Deliverable requirements accordingly. If the Program Office, PEO, Domain or Sponsor believes that the program deliverables would be of such interest that they warrant inclusion in the appropriate Repository (such as Surface’s SHARE or PEO C4I’s NESI) then the CDRL and deliverables should include those design, developmental, or diagnostic items needed to reproduce or recreate the asset.”
- Appendix 2: Assessing A Program’s Intellectual Property Rights Needs
 - **“Goals:** Programs should work within their PEOs and their Communities of Interest in considering their future needs for data and other IPR in a structured, focused manner.”

CONSULT LEGAL COUNSEL – They will help you navigate these issues



Linking the RFP to the Data Management Strategy

- The RFP should be consistent with the Program's Data Management Strategy.

- The RFP and DMS should address:
 - The process for reviewing and accepting deliverables;
 - The Navy's intentions regarding acquiring Intellectual Property rights for privately-funded (e.g. IRAD) or SBIR items;
 - The Navy's requirements for Contractor repositories, design tools, and artifacts;
 - How "early and often" design disclosure will be accomplished; and,
 - The mechanisms for making deliverables available to other programs or third parties for their use (consistent with Government's data rights).

- The DMS should explain the COTS license and Open Source Software management approach, including processes for rationalizing COTS licensing outside of program.



Deliverables as defined in the RFP should be consistent with the DMS

- Address the steps that the Navy is taking to obtain appropriate IP rights to everything the Government needs to compete upgrades or replacements of a system or component (consistent with FAR and DFARS and the System Life Cycle Sustainment Plan).
- Significant CDRLs and DIDs defined by the Program should be consistent with the Program's life cycle management plan. Specific items to address include:
 - Software Development Process
 - Open System Management Plan
 - Interface Control Documents and Requirements Specification
 - Results of OA Assessments
 - Testing information, test programs, and results
 - Data models
 - Source code, executable code, tools and binaries
 - Software Requirements Specifications and Development Files (SPS, SIP, STP, STR, SUM, STD, etc)
 - And many others....



Conclusion

- GAO found shortcomings in DOD's policies regarding the technical data needs of weapons systems
- USD(AT&L) promulgated a policy requiring ACAT I & II programs to develop a Data Management Strategy
- ASN(RD&A) implemented the policy
- The OAET is working to have the requirement (for all programs) included in the Navy's Two-Pass/Six-Gate Review Process
- The *Naval OA Contract Guidebook* gives Program Managers guidance regarding assessing their Program's IPR needs
- The Open Architecture Enterprise Team strongly recommends that all programs, regardless of their ACAT classification, create and use a Data Management Strategy

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