Best Practices in Contracting for Models, Simulations, and Associated Data

Dennis Shea Julianne Nelson



Background: reasons for this project

OSD concerns:

- Desire to use existing M&S resources effectively
- Need for continued access to M&S resources over time and among programs
- Need to maintain existing M&S resources and acquire new resources as appropriate
- Need to adapt acquisition practices to changing IT state of the art
- Need to support recent OSD initiatives to streamline and improve DoD contracting practices
 - WSARA
 - "Better Buying Power" memo and subsequent guidance from OSD(AT&L)
 - Proposed revisions of DFARS treatment of intellectual property (DFARS Case 2010-D001 concerning DFARS Parts 212, 227, 246 and 252)



Example of the problem:

Text of the license rights section in an RFP management plan for M&S services:

"The **non-commercial** hardware, software, imaging and audio developed under this effort will be delivered to the Government with unlimited rights in accordance with DFARS 252.227-7014."

Note: *no* other data rights clauses are mentioned.

Unresolved issues:

- Is the contractor allowed to identify and use any <u>commercial</u> M&S resources? (and deliver with less than unlimited rights)
- Is the contractor allowed to identify and use <u>pre-existing</u> non-commercial M&S resources? (Under -7014, software developed in whole or in part with private funding is generally delivered with <u>less</u> than unlimited rights.)

<u>Note</u>: The DFARS clause cited applies <u>only</u> to software and software documentation (i.e., not hardware, imaging, audio or technical data generally).



Approach: emphasize the "HOW" rather than the "WHAT"

The HOW: the process of acquiring M&S assets by

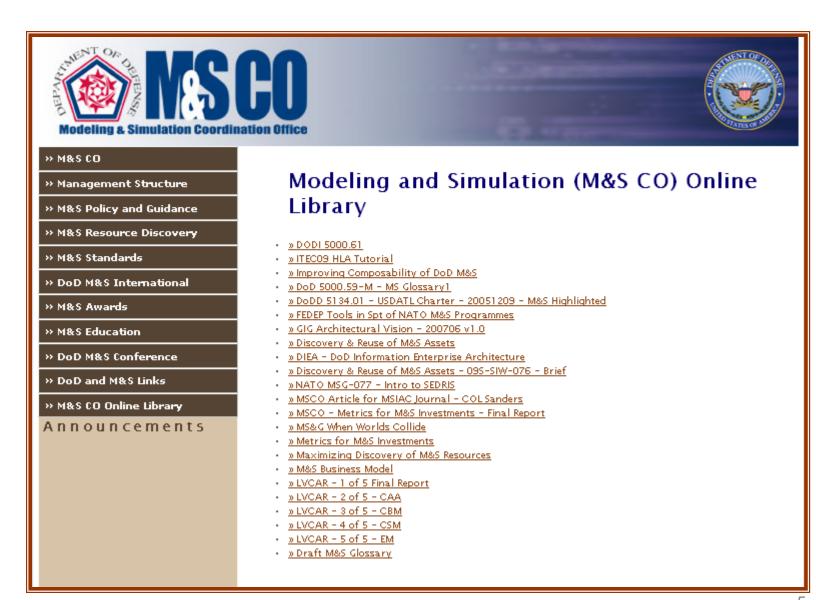
- identifying needs
- developing solicitations
- selecting a vendor
- negotiating an agreement and
- monitoring contractor performance

Our approach: create support materials for DoD program staff

- that provide a synthesis of the laws, regulations, policy, and guidance on contracting for M&S resources
- that can be readily updated as these laws and policies evolve
- that provide access to focused guidance on specific aspects of the acquisition process (DP, SE, T&E, etc.)
- that provide concrete examples of contract language and acquisition strategies



Status quo – Brief M&S Co Online library





Deliverable: M&S contracting resources organized by topic



Links to Policy, Guidance, and Research on M&S Acquisitions

DoD Policy

Access to current statutes, regulations, and policies relating to M&S acquisitions

DoD Guidance

Recommended strategies for DoD acquisitions of M&S assets and/or software deliverables

Proposed Language

Recommended practices for those drafting RFPs, RFIs, and other solicitation documents

Solicitation Examples

Downloadable examples of solicitations involving M&S assets and/or software deliverables

DoD Contract Examples

Downloadable text of DoD contracts involving M&S assets and/or software deliverables

DoD Program Reviews

Downloadable reports on contracting practices in specific DoD programs

Government Research

Analysis of DoD contracting practices by GAO, CRS, and other public sector organizations

Academic Research

Research on DoD contracting practices published by university faculty and non-profit research centers

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Next steps: add references to M&S CO web site





- » M&S CO
- >> Management Structure
- » M&S Policy and Guidance
- >> M&S Resource Discovery
- » M&S Standards
- » DoD M&S International
- >> M&S Awards
- » M&S Education
- >> DoD M&S Conference
- >> DoD and M&S Links
- » M&S CO Online Library
- >> M&S Contracting References

Announcements

Modeling and Simulation Contracting References

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and policies relating to M&S acquisitions

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- 1 Introduction
- 2 Using M&S to enhance program efficiency
- 3 Developing M&S requirements
- 4 The "make-or-buy" decision for M&S capabilities
- 5 Solicitation planning and market research
- 6 Specifying contract deliverables
- 7 Rights to intellectual property in M&S
- 8 Financial incentives and contractor performance
- 9 Evaluating bids and awarding the contract
- 10 Conclusions and lessons learned
- Appendix A: Roles for M&S within DoD
- Appendix B: Twenty questions to plan a CBA
- Appendix C: Solicitation examples
- Appendix D: Requirements descriptions
- Appendix E: Patent examples
- Appendix F: Policy directives
- Appendix G: Data rights clause examples
 - Problematic data rights claims
 - Tailored data rights clauses



Back-up slides:

M&S contracting web site



Deliverable: M&S contracting resources organized by topic



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M&S policy references – with "mouse-over"



DoD Acquisition Policy

Directive-Type Memorandum 09-027: USD(AT&L), "Implementation of the Weapon Systems Acquisition Reform Act of 2009"

DoD Directives and Instructions: On-line collections of current issuances

DoD Directive 5000.01: USD(AT&L), "The Defense Acquisition System"

DoD Directive 5000.59: USD(AT&L), "DoD Modeling and Simulation (M&S) Management"

... some directives & instructions deleted here ...

Directive issued 8 August 2007 identifying Modeling and Simulation (M&S) Verification, Validation, M&S as a key enabler of DoD activities.

Air Force Instruction 51-303: SECAF, "Intellectual Property -- Patents, Patent-Related Matters, Trademarks and Copyrights"

PRS Pamphlet 61-201: Commander AFRL, "Management of Scientific and Technical Information: Preparation of Technical Reports"

Federal Regulations

Federal Acquisition Regulations (FAR)

Defense Federal Acquisition Regulations Supplement (DFARS)

Other Agency Supplements

United States Code: Index

WSARA: Weapon Systems Acquisition Reform Act of 2009 (P.L. 111-23)

Title 10: Armed Forces

Title 15, Chapter 22: Trademarks

Title 17: Copyright

Title 18, Chapter 90: Trade Secrets

Title 35: Patents

Title 41: Public Contracts

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M&S contracting guidance



Guidance on Software Acquisition

USD(AT&L): Intellectual Property: Navigating through Commercial Waters (2001)

ASN(RD&A): Guidebook for Acquisition of Naval Software Intensive Systems (2008)

DUSD(A&T): Guide for Integrating Systems Engineering into DoD Acquisition Contracts (2006)

SAF(AQ): Weapon Systems Software Management Guidebook (August 2008, Ver. 1)

General Acquisition Guidance

ASN(RD&A): Contracting for the Rest of Us (2000)

USD(AT&L): Other Transactions (OT) Guide for Prototype Projects (2000)

Defense Acquisition University: Comparison of Major Contract Types (2008)

Defense Acquisition University: Defense Acquisition Guidebook (current)

Defense Acquisition University: Introduction to Defense Acquisition Management, 8th ed. (2008)

Defense Acquisition University: Solicitation Preparation Guide for the Acquisition of Commercial Items in DoD (current)

Defense Acquisition University: Source Selection Best Practices (May 2004)

ASN(RD&A): Software Process Improvement Initiative (SPII) Human Resources Focus Team (2007)

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Proposed language for M&S contracts



Proposed Language for Government Contracts

Air Force Model Contract References: A collection of links to on-line USAF examples of proposed contract language; organized by size of business and size of contract.

Air Force Model Contracts: over \$1 million and under \$1 million

Naval Open Architecture Contract Guidebook: The 2007 PEO-IWS guidebook released to the general public; contains contract language designed to implement the Navy's Open Architecture initiative.

Net-Centric Enterprise Solutions for Interoperability (NESI), Netcentric Implemention,
Part 6: Contracting Guidance for Acquisition (Version 3.0, May 21, 2009). This
guidebook provides specific recommendations for RFP clauses, organized by sections
defined on Standard Form 33 ("Solicitation, Offer and Award")

Navy Open Architecture Initiative, "OAET Success Stories" (2009)

Robert Stavros et al. Engineering Governance (Version 1.0, December 6, 2007)

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Sample of solicitations involving M&S resources



Omnibus Solicitations: Professional IT Services

Air Force Materiel Command

Consolidated Acquisition of Professional Services (CAPS) small business BPA RFP (May 2005) and performance work statement (June 2005)

Missle Defense Agency

RFP forfull and open competition

RFP for small business set aside

Naval Sea Systems Command

Seaport-e homepage and 2008 admissions RFP (February 2008)

DoD Inspector General report on Seaport-e (May 2009)

ASA(AL&T), PEO Simulation, Training and Instrumentation (STRI)

PEO STRI Omnibus Contract, Lot II (STOC II) homepage

PEO STRI acquisition strategy (June 2009)

STOC II RFP and User's Guide (March 2008)

ITAS: Draft Statement of Work for STOC II procurement (March 2009)

Solicitations: Major Systems

AEGIS Test and Evaluation Support

2004 RFP and attachments (awarded); 2008 RFP (cancelled)

The 2004 T&E contract was awarded to Northrop Grumman and is due to expire in 2010. The draft RFP for follow-on work was cancelled after it was decided that the recompete for this contract would be conducted through Seaport-e. The details of this recompete will only be made available to vendors holding Seaport-e contracts. RFPs for admission to the Seaport-e approved vendor list may be announced annually.

Air Force Space and Missile Systems (LTRS) Center

Launch and Test Range Systems Engineering and Integration Contract RFP

This contract includes the responsibility to lead LTRS modeling and simulation planning and assessment.

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Sample contracts involving M&S resources



Documents from Awarded Contracts

Air Force Task Order:

Electronic Warfare Mission Planning Modeling & Simulation Support

NMCI Contract:

EDS-NMCI Transition Plan. Note: The terms of this contract allow the contractor to determine the scope of proprietary information (i.e., what it does and does not own).

Examples of Commercial Terms and Conditions

Boeing:

A .pdf file indicating the standard terms and conditions for Boeing subcontractors.

ESRI:

A .pdf file indicating the standard terms and conditions for 3rd parties wishing to use ARC-GIS data.

Harris fixed price and cost reimbursement contracts:

Two .pdf files outlining the terms and conditions for "sellers" providing products that Harris requires to fulfill government contracts. These conditions include a *blanket prohibition* on the use of open source software.

Lockheed-Martin

An MSWord file indicating the default terms and conditions for Lockheed suppliers and subcontractors. These conditions include a *blanket prohibition* on the use of open source software.

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Reviews of programs involving M&S



DoD Program Reviews

Commission on Army Acquisition and Program Management in Expeditionary Operations: "Urgent Reform Required: Army Expeditionary Contracting" (October 31, 2007)

Navy SBIR Program: A Report on the Navy SBIR Program: Best Practices, Roadblocks and Recommendations for Technology Transition (2008)

DoD Inspector General

June 27, 2007: Air Force Network-Centric Solutions Contract (DoD IG Report D-2007-106)

October 25, 2007: Air Force Network-Centric Solutions Contract Task Orders (DoD IG Report D-2008-007)

January 21, 2009: FY 2007 DoD Purchases Made through the U.S. Department of Veterans Affairs (DoD IG Report D-2009-043

March 24, 2009: FY 2007 DoD Purchases Made through the National Institutes of Health (DoD IG Report D-2009-064)

May 6, 2009: Seaport Enhanced Program (DoD IG Report D-2009-082)

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Government reports on IT and M&S contracting



General Accountability Office (GAO)

July 2006: Weapons Acquisition: DOD Should Strengthen Policies for Assessing Technical Data Needs to Support Weapon Systems

February 2008: Defense Acquisitions: DOD's Practices and Processes for Multiyear Procurement Should Be Improved

Congressional Research Service (CRS)

January 2007: Innovation and Intellectual Property Issues in Homeland Security
November 2008: Other Transaction (OT) Authority

DoD Policy Analysis

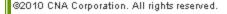
Data & Analysis Center for Software (DACS): Intellectual Property and Software (August 2008)

Defense Science Board: Buying Commercial: Gaining the Cost/Schedule Benefits for Defense Systems (2009).

Defense Science Board: DoD Policies and Procedures for the Acquisition of Information Technology (2009).

Dungan, C. Peter. "Less is More: Encouraging Greater Competition in Computer Software Procurement by Simplifying the DFARS Licensing Scheme" (March 16, 2009). JAG School master's thesis downloaded from SSRN: http://ssrn.com/abstract=1365919

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Academic research on IT and M&S contracting



University and Non-Profit Research Organizations

Brian Carver, Berkeley School of Law. Intellectual Property Links and Wiki Project Intellectual Property Law (Berkeley 2009)

Committee on Modeling and Simulation Enhancements for 21st Century Manufacturing and Defense Acquisition, National Research Council. **Modeling and Simulation in Manufacturing and Defense Acquistion: Pathways to Success.** (A link to a downloadable version of the book.) Washington, D.C.: The National Academies Press, 2002.

Committee on Modeling and Simulation for Defense Transformation, National Research Council. **Defense Modeling, Simulation, and Analysis: Meeting the Challenge.** (A link to a downloadable version of the book.) Washington, D.C.: The National Academies Press, 2006.

Computer Science and Telecommunications Board. Modeling and Simulation: Linking Entertainment and Defense. (A link to a downloadable version of the book.)

Washington, D.C.: The National Academies Press, 1997.

Dennis Goldenson and Matthew Fisher, CMU/SEI. Improving the Acquisition of Software Intensive Systems (August 2000)

 Michael Greenberger and Michael S. Kane. "Rights-in-Data Policies Affecting DoD Acquisition of Computer Software and Related Products" Computer Law Journal (1989)

Mark Lemley "Intellectual Property Rights and Standard Setting Organizations," UC Berkeley School of Law, Public Law and Legal Theory Research Paper No. 84 (2002)

Anne C. Martin and Kevin Deasy "Seeking the Balance Between Government and Industry Interests in Software Acquistions Volume I: A Basis for Reconciling DoD and Industry Needs for Rights in Software," Technical Report CMU/SEI-TR-87-114 (June 1987)

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Back-up slides:

Contracting incentives web site



Next steps: add materials on contracting incentives



Links to Policy and Research on the Incentive Structure of DoD Contracts

Legislation and White House Initiatives

Downloadable text of enacted and proposed legislation relating to DoD contracting

GAO Reports

Downloadable text of research reports from GAO

Policy Proposals

Downloadable text of policy proposals from DoD and industry representatives

OMB Memos & Reports

Downloadable text of OMB policy memos and reports

DoD Policy & Guidance

Downloadable text of DoD policy memos and quidance documents

Research & Analysis

Analysis of DoD contracting practices by independent research organizations

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Backup slides:

Contracting language examples



Problematic language

Very broad data rights claims by the government:

<u>Contract Example:</u> 17.0. Proprietary Rights. All proprietary rights to all materials produced by Contractor personnel shall become the sole property of the US Government.

RFP Example: As such, no analysis or data provided under this contract shall constitute or be construed as company proprietary or owned by the contractor. Upon termination of the contract, all related hardware, software, data and materials shall become property of the United States Government and shall not be disclosed except upon written authority by the Task Order Manager (TOM).



Problematic language: inconsistent clauses

Contract example:

H-13 Software and data rights

H-13.I. The Government shall be provided with unlimited rights to all data and automated models developed in support of this contract in accordance with the policy expressed in DFARS 227.71, and the requirements of DFARS Clause 252.227-7015, **Technical Data - Commercial Items**, and DFARS Clause 252.227-7013, Rights to Technical Data - Noncommercial Items. Proprietary models must not be used for any task order under this contract without the specific, written approval by the COR, prior to start of any work.

Problems:

- The commercial items clause ('7015) cited above does <u>not</u> specify unlimited data rights for the government.
- All of the clauses cited explicitly <u>exclude</u> computer software (contrary to the implication of the section title).



Problematic language (continued)

Contract example:

H-14.2. DFAR22.227-7013 (June 1995) Rights in technical data and computer software shall apply to those monthly reports and other documents that are not characterized as "Special Works."

Problems:

- Clause DFAR22.227-7013 does not exist.
- Clause DFARS 252.227-7013 does not apply to computer software.



Consistent language – scope of rights

RFP Example: Technical Data Package/Rights -

- Provide the appropriate SOW tasking in Annex F for delivery of the technical data and rights sufficient to accomplish the objectives in SOO paragraph 3.1.3.4 and, in this paragraph, demonstrate the extent to which the objectives can be met.
- Provide a description of the level of data and rights separately with regard to (a) meeting Title 10 U.S.C., Chapter 146, Section 2464, CORE logistics capabilities (CLIN 0101); (b) a competitively selected PBL support environment (CLIN 0102); and (c) the source data and data rights for a mission control system to enable use and modification for other UASs (CLIN 0103).
- For each, the Offeror shall propose their approach for providing technical data from both the prime and subcontractors, with sufficient rights and licenses provided to the Government. Specifically identify the data and the rights that will be provided, clearly identifying the additional data and rights to be provided that are above what will be provided as part of the effort under CLINs 0002 and 0202. Also, if any, identify data and rights that are required to meet the objectives but will not be provided.



Consistent language – classifying deliverables

RFP Example: Intellectual Property Deliverable Restrictions.

For each task order to be issued under the contract, the Contractor shall identify, prior to award of the affected task order(s) to the best of its ability, noncommercial and commercial technical data and computer software that it intends to deliver with restrictions on the Government's right to use, release or disclose such identified technical data and/or computer software.



Consistent language – Cost of data rights

RFP Example: 7.2.2.9 Software Parametric Data.

...Software costs shall be included in the Basis of Estimate (RFP Section J Attachment 18), including, license costs for COTS items, and costs for providing Government unlimited rights for software developed by the offeror and its suppliers.



Lessons learned (best practices) thus far:

- Request appropriate level of data rights (don't ask for the universe!)
- Use contract language that recognizes the contractor's copyright ownership
- Discuss data rights issues at the beginning of the contract
- Plan for a smooth transition at the end of a contract (avoid a hostage crisis)
- Consider a registration process to inform others on data rights previously obtained



RFP and contract examples

- Air Force M&S Training Toolkit (Pre-Solicitation FA8731-10-R-0001)
- TRADOC Support: (Contract No: GS-00F-0014N)
- Modeling And Simulation and Analytically Based Warfare Analyses (Solicitation N00024-09-R-3145)
- Marine Corps Studies System (Solicitation M00264-06-D-0006)
- NMCI Transition Plan
- System Development and Demonstration (SDD) Phase for the Broad Area Maritime Surveillance (BAMS) Unmanned Aircraft System (UAS) Program (Solicitation 00019-07-R-0001)
- Engineering Technical And Support Services For Naval Warfare Center And Other NAVSEA Field Sites (Solicitation N00178-04-R-4000)
- F-16 Mission Training Center (MTC) Program (Solicitation FA8621-07-R-6291)
- BLCSE TECHNICAL SUPPORT EFFORT Solicitation W912SU-07-R-0002



Backup slides on data rights



Data rights for project involving OneSAF

3.3.1 Within scope of TICC and BEST activities (paragraph 3.1.1 above) the contractor shall modify, integrate and/or install simulation-independent HLA Middleware software packages, Gateways, Adaptors or Interfaces, permitting existing BLCSE simulations to interact with 3CE and/or Lead System Integrator (LSI) federates. Middleware, Gateways, Adaptors and Interfaces not provided as GFE will be developed and delivered with complete documentation, operating instructions, and with complete government proprietary rights. OOS-based or developed, or other GFE available, Middleware, Gateways, Adaptors and Interfaces will be utilized unless prior written agreement is received from COTR that no OOS or other GFE Middleware, Gateways, Adaptors and Interfaces are available or suitable to the integration task.



Data rights for project involving NSS, STORM

RFP Example: As such, no analysis or data provided under this contract shall constitute or be construed as company proprietary or owned by the contractor. Upon termination of the contract, all related hardware, software, data and materials shall become property of the United States Government and shall not be disclosed except upon written authority by the Task Order Manager (TOM).

