



# The New Era of Intellectual Property (IP), Data Rights (DR) and Open System Architecture (OSA)

**Bill Decker**

Defense Acquisition University  
7115 Old Madison Pike, Huntsville, AL 35806  
[bill.decker@dau.mil](mailto:bill.decker@dau.mil)

---

*Learn. Perform. Succeed*

- What is an Open System Architecture (OSA)?
- Effectively Managing Data Rights to promote OSA
- How does DoD use OSA to promote competition?
- Why do we need OSA?
- Examples of Successful OSA Programs
  - Anti-Submarine Warfare's (ASW) Advanced Processing Build (APB)/Acoustic-Rapid COTS Insertion (A-RCI)/Tactical Control System (TCS) Programs (Navy Program)
- Identifying data needed
- What to do if you don't have the data
- Summary

# Frank Kendall Memo, April 16

---

- **Effectively Manage Intellectual Property:**
- Going back to BBP 1.0, we have worked hard to mature our collective understanding of how to protect the government's interests while also respecting industry's property rights. This is a complex area of law and one in which the DoD was at a longtime disadvantage relative to industry. I occasionally still wrestle with cases of "vendor lock" based on proprietary content. Hopefully, we have all but stopped the practice of just accepting industry assertions of property rights. We need to continue to grow our expertise in this area and spread the best practices associated with effective management of intellectual property.
- It's perfectly legitimate for a company to expect a reasonable return on the intellectual property it has developed or acquired. In general, that return should be in the competitive advantage conveyed by superior technology or lower costs. On the other hand, the use of intellectual property by a firm to sustain a decades-long grip on the aftermarket for a product is something the DoD should and can work to prevent. We're getting better at this, but our efforts need to be sustained and broadened.

- **Acquire Modular Designs and Open Systems:**
- This idea is anything but new. However, our practice has traditionally not matched our policy. It takes active technical management of design architectures and interfaces to make both open systems and modularity a reality. This is “owning the technical baseline,” and the devil really is in the details. Assertions of modularity and openness are not always valid. There are also always cost impacts and design trades that work against achieving these goals. We can point to a few successes in this area over the last several years; each Military Service can take credit for programs to provide open architectures in general and modular designs on some specific platforms. The Long Range Strike Bomber is a notable example. This effort should continue and expand, but success will require a technical management workforce that is trained, experienced and empowered.



# Better Buying Power

“A guide to help you think”

## Achieve Affordable Programs

- Mandate affordability as a requirement
- Institute a system of investment planning to derive affordability
- Enforce affordability caps

## Promote Effective Competition

- Emphasize competition strategies and create and maintain competitive environments

## Control Costs

- Implement
- Eliminate
- Institute a
- Build strong
- Increase technical designs

## Promote Effective Competition

- Emphasize competition strategies and create and maintain competitive environments
- Enforce open system architectures and effectively manage technical data rights
- Increase small business roles and opportunities
- Use the Technology Development phase for true risk reduction

## Incentivize Pro

- Align prof
- Employ a
- Increase t

- Better define value in “best value” competitions

- When Lowest Technically A
- Institute a su
- Increase effe
- Reduce back
- Expand prog

## **BBP 3.0**

**Use Modular Open Systems Architecture to stimulate innovation**

**Promote Effective Competition**

- Create and maintain competitive environments
- Improve technology search and outreach in global markets

## Eliminate Unprodu

- Reduce frequ
- Re-emphasiz authority, and accountability
- Reduce cycle times while ensuring sound investment decisions



# Better Buying Power 3.0

Achieving Dominant Capabilities through Technical Excellence and Innovation

## Achieve Affordable Programs

- Continue to set and enforce affordability caps

## Achieve Dominant Capabilities While Controlling Lifecycle Costs

- Strengthen and expand “should cost” based cost management
- Anticipate and plan for responsive and emerging threats by building stronger partnerships of acquisition, requirements

## Eliminate Unproductive Processes and Bureaucracy

- Emphasize acquisition chain of command responsibility, authority and accountability
- Reduce cycle times while ensuring sound investments
- Streamline documentation requirements and staff reviews
- Remove unproductive requirements imposed on industry

## Incentivize Innovation in Industry and Government

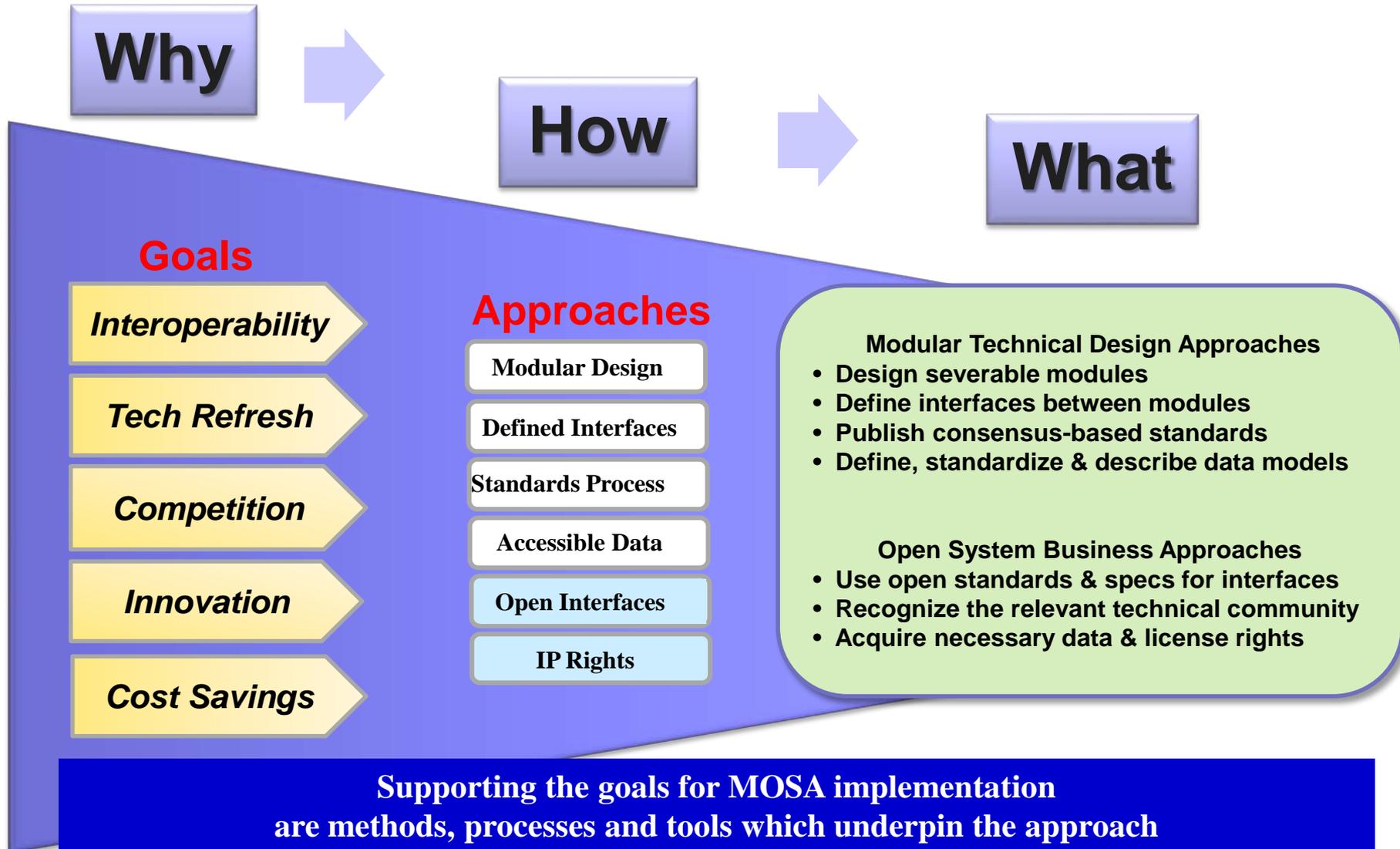
- Increase the use of prototyping and experimentation
- Emphasize technology insertion and refresh in program planning
- Use Modular Open Systems Architecture to stimulate innovation
- Increase the return on and access to small business research and development
- Provide draft technical requirements to industry early and involve industry in funded concept definition
- Provide clear and objective “best value” definitions to industry

- Increase the return on and access to small business research and development
- Provide draft technical requirements to industry early and involve industry in funded concept definition
- Provide clear and objective “best value” definitions to industry

- Strengthen organic engineering capabilities
- Ensure development program leadership is technically qualified to manage R&D activities
- Improve our leaders’ ability to understand and mitigate technical risk
- Increase DoD support for STEM education

**Continue Strengthening Our Culture of:  
Cost Consciousness, Professionalism, and Technical Excellence**

# Modular Open Systems





# Effectively Managing Data Rights

---

*Learn. Perform. Succeed*

- Review of Data Rights (brief)
- Technical and Computer Software Data Rights
- Data Delivery
  - New contracts
  - Current contracts
- Data Rights as part of Technology Development Strategy/Acquisition Strategy
- Questions/discussion

- Patent
- Copyright
- Trade Secret
- Trademark

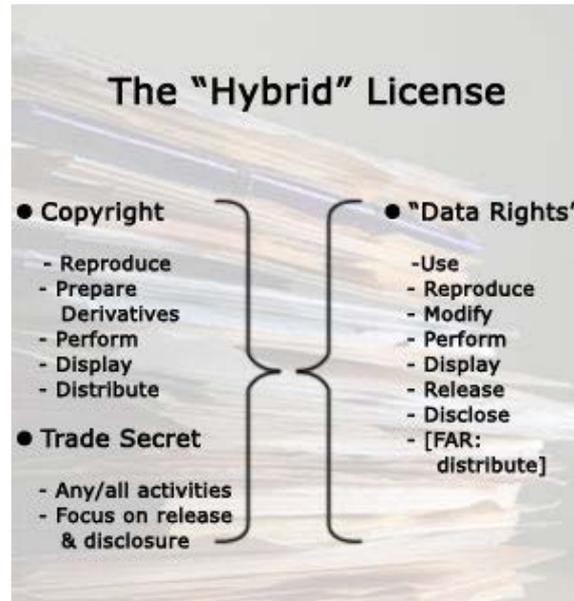
# Government License Rights

## Within Government

- Modify, reproduce, use, display, perform:
  - Unlimited Rights
  - Gov't Purpose Rights
  - SBIR
  - Restricted Rights (SW)
  - Limited Rights

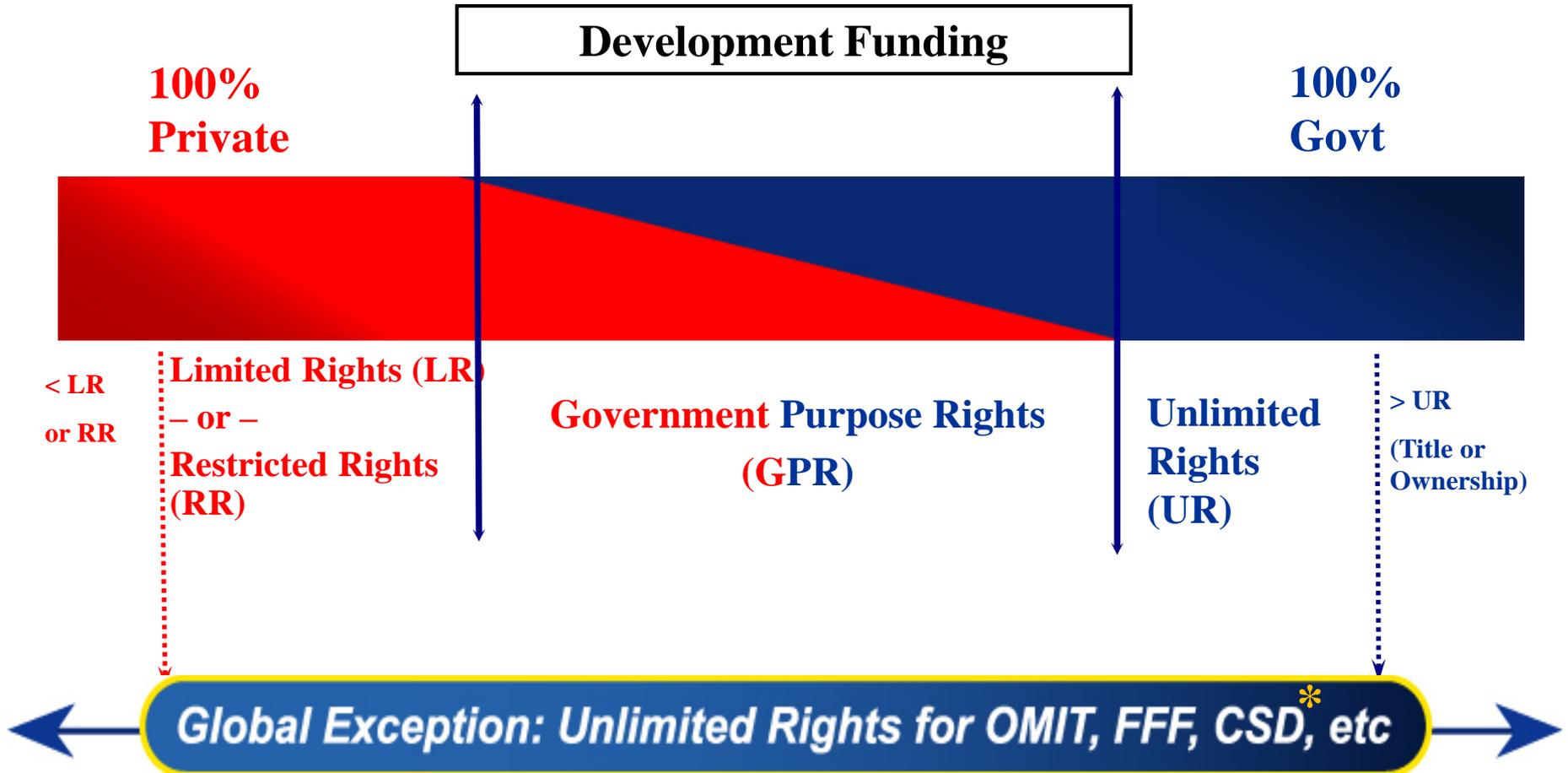
## Release or Disclose to Third Parties

- Unlimited Rights
- GPR (with NDA and for Government purposes)
- Modify, reproduce, use, display, perform



**New rules for "Covered Government support contractors."**

# Quick Review of Data Rights



**\* Operations, Maintenance, Installation and Training; Form, Fit and Function; Computer Software Documentation**

- The Government must "own" the technical data in order to use it.
  - With few exceptions, the Government does not own data. The *Government merely takes a license* in the data that allows us certain use and release rights.
  - The Government only has rights to data/SW delivered under the contract

- All technical data is costly and separate from the cost of acquisition program development.
  - The Government "automatically" takes unlimited rights in certain categories of technical data (commercial and noncommercial) and in noncommercial computer software regardless of funding source. These categories of delivered data include: Form, Fit, and Function (FFF); installation, operation, maintenance, and training (IOMT); computer software documentation and a few others.

- The data must be proprietary because it all had "proprietary" stamped on each page or file.
  - Legends such as "PROPRIETARY" or "COMPANY CONFIDENTIAL" are nonconforming legends for delivered data pertaining to a noncommercial software and should be ordered removed.

- The contractor modified some of the technical data we provided to them and now claim it is proprietary.
- - The Government has data rights in "corrections and changes" to Government Furnished Information (GFI) technical data or software provided to a contractor as Government Furnished Information (GFI), and retains its original rights in GFI.
  - The Government should keep formal records of all technical data and software provided to the contractor.

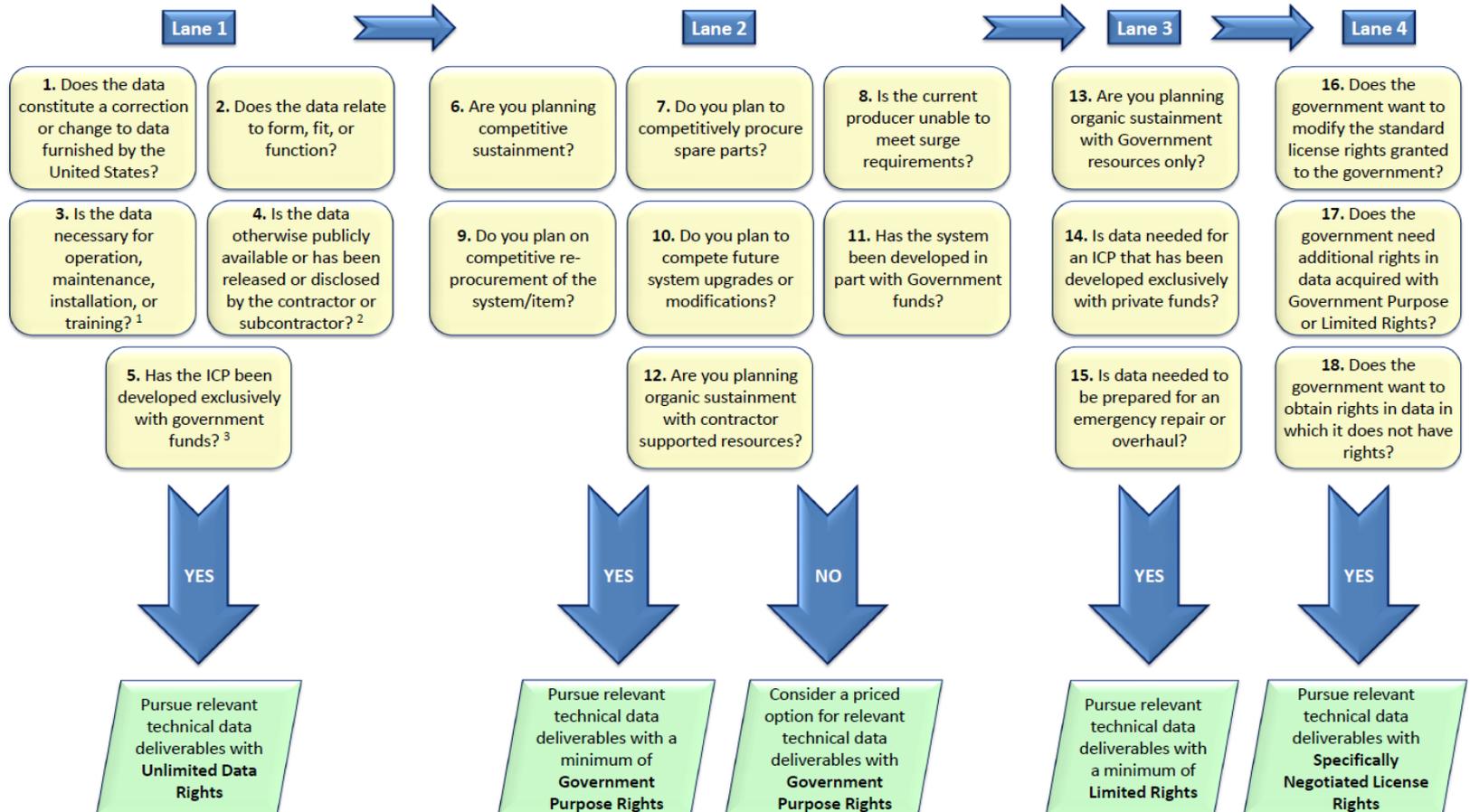
- Technical data "access" is sufficient.
  - By law, any enforceable right to see, access, or have a copy of data requires an OMB approved DID or FAR/DFARS Clause.
  - DoD cannot assume it has any useable rights in data that is informally provided unless such rights are explicitly granted by the contractor and reviewed by legal counsel. All data access provisions must be reviewed by counsel and the data rights and accessed information must be addressed in the contract.

# Product Data & Data Rights Decision Tree Item, Component or Process (ICP)

## Product Data & Data Rights Decision Tree Item, Component, or Process (ICP)

USAF PDAQ  
11 Oct 2012

All questions should be asked during the acquisition planning process prior to any contracting actions.  
If any answer in a lane is yes, please take the indicated action for the lane.



**Notes**

1. other than detailed manufacturing or process data
2. without restriction on further release or disclosure
3. It is permissible to acquire less than unlimited rights (down to limited rights) for data funded exclusively with government funds as long as that data doesn't fit within boxes #1, #2, #3, or #4.

**Sources**

- 10 USC 2320 – Rights in Technical Data
- DFARS Subpart 227.71 – Rights in Technical Data
- DODI 5000.02 – Operation of the Defense Acquisition System

# What is an Open System Architecture (OSA)?

- OSA is a strategic “Business and Technical” acquisition approach that leverages the commercial market-place in a way to control and optimize design features to ensure that a level-field of competition provides the best valued product for our war-fighter in a timely basis. Key design features include:

## **BUSINESS**

- Create a Competition-focused Environment (A **CULTURE** of Competition)
  - Open Design Disclosure for All Stakeholders (Data Rights)
  - Enterprise Strategy
- Ensure Government Access to Data for Reduced Life-Cycle Sustainment Costs

## **TECHNICAL**

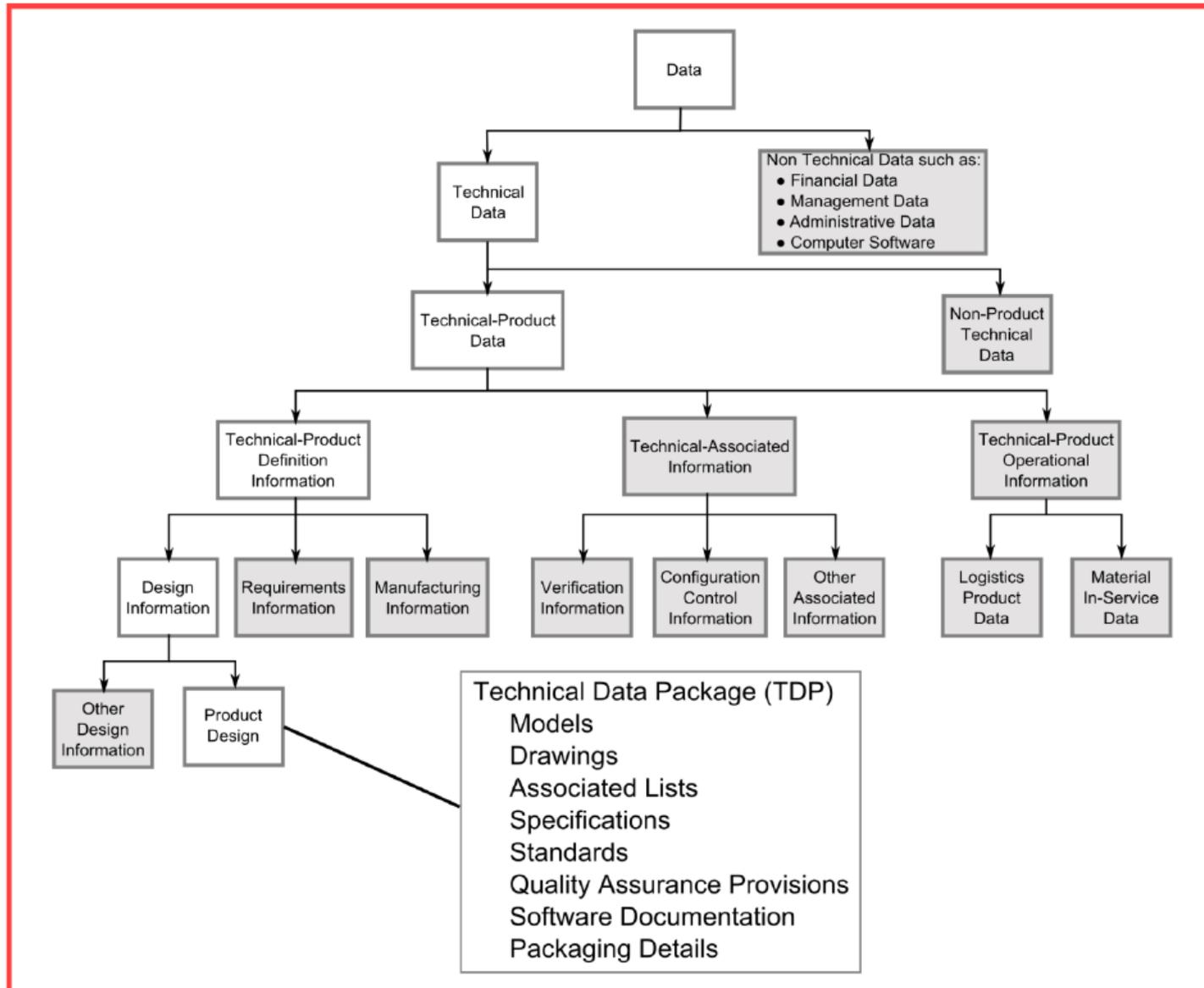
- Use a Modular Design (Loose Coupling with High Cohesion)
  - Use of Open Standards (Public, Published and Popular (The Three P’s))
- A successful OSA implementation allows for competition and ease of change that provides the best value to our war-fighters.

- **Performance**
  - Continuous competition yields best of breed applications (Better Quality Solutions/Capabilities for the war-fighter)
  - Able to focus on war-fighter priorities
- **Schedule**
  - System integration of OA compliant software happens quickly
  - Rapid update deliveries driven by user operational cycles (tailored for war-fighter)
- **Cost avoidance mechanisms --~\$500M for ASW programs**
  - Software –develop once, use often, upgrade as required
  - Hardware –use high volume COTS products at optimum price points
  - Training systems use same tactical applications and COTS hardware
  - Design for Maintenance Free Operating Periods (MFOP)
    - Install adequate processing power to support “fail-over”w/o maintenance
    - Schedule replacement with improved COTS vice maintaining old hardware
    - Reduced maintenance training required
  - Consolidate Development and Operational Testing for reused applications
- **Risk reduction**
  - Field new applications only when mature
  - Don't force the last ounce of performance
    - Deploy less (but still better than existing) performance or wait until next update

- **Open Systems Architecture Is An Integrated Business and Technical Strategy**
  - An Open Business Model (A CULTURE of Competition)
    - Transparency and leveraging of innovation across the Enterprise
    - Sharing risk, asset reuse and reduced total ownership costs
  - A Technical Architecture
    - Open standards, publishing of key interfaces, full design disclosure
    - Modular, loosely coupled and highly cohesive system structure
  - Data Rights = License Rights for Technical Data and Computer Software
  - Vendor Lock – Can't bring in new players or exercise acquisition choices
  - A Successful Open System Architecture can be;
    - Added to
    - Replaced
    - Supported
    - Modified
    - Removed
  - ... by different vendors throughout the life cycle



# Technical Data Package (Relationship to other Technical Data)



# Technical Data Package (TDP)

(Definition from MIL-STD-31000a)

- Technical Data Package (TDP): A technical description of an item adequate for supporting an acquisition, production, engineering and logistics support (e.g. Engineering Data for Provisioning, Training and Technical Manuals). The description defines the required design configuration or performance requirements and procedures required to ensure adequacy of item performance. It consists of applicable technical data such as models, drawings, associated lists, specifications, standards, performance requirements, QAP, software documentation and packaging details.

**Note what is not included: Software source code, manufacturing processes**

# Key Definitions from MIL-STD 31000A

---

- Computer software: Computer programs, source code, source code listings, object code listings, design details, algorithms, processes, flow charts, formulae and related material that would enable the software to be reproduced, recreated or recompiled. Computer software does not include computer data bases or computer software documentation.
- Computer software documentation: Owner's manuals, user's manuals, installation instructions, operating instructions, and other similar items, regardless of storage medium, that explains the capabilities of the computer software or provide instructions for using the software.
- Both of the above are from DFARS Clause 252.227-7014

- Commercial-Off-The-Shelf (COTS) software is available for many functions
- Consider:
  - Maturity of the software
  - Modifications/additions likely required to meet military requirements
  - Configuration Management of COTS software
  - Long term availability of support for COTS software
  - Most COTS software licenses do not provide the customer with access to the source code or software design documentation
  - Any other factors you believe impact the program

- Open source software
  - Sounds great – free software
  - You get what you pay for with **strings!!!**
    - License is often very confusing, hard to negotiate
    - Example – software could have been written outside of US (not subject to our laws) and require that all changes/mods be provided to the original developer with no restrictions
  - For example: Linux – an open source operating system
    - Buying a Red Hat (or other vendor's version) might provide some legal protection and configuration management support
  - Get legal/contracts involved before you commit to OSS

- OMIT – Operations, Maintenance, Installation and Training
- FFF – Form, Fit and Function (Interface Control Documents are usually included in FFF)
- CSD – Computer software documentation – Owner’s manuals, user’s manuals, installation instructions, operating instructions, and other similar items - does not include source code or design documentation

# Discussion of OSA Alternatives



# Turning Data Requirements into Deliverables

---

- Use AS, Life Cycle Sustainment Strategy, Architecture to:
  - Define data deliverables
    - Technical data packages
    - Form, Fit, Function & Operations, Maintenance, Installation and Training documents
    - Interface documents/specifications
    - Computer Software/Computer Software Documentation
  - For each, define required rights in technical data and software
  - For data needed in future, use options
  - Use CLINs, Deferred Ordering Clause, Data Accession List
    - Permits ordering data not explicitly described in RFP CDRLs
- Helpful Guide: **Army Guide for the Preparation of a Program Product Data Management Strategy (DMS) with 2012 addendum**
- Additional guidance including RFP Language: **DoD Open Systems Architecture Contract Guidebook for Program Managers**

# Approach to Breaking Vendor Lock

## Establish an Environment for Change

- Publish the intent to compete
- Establish Gov't/Industry/Academia forum
- Establish a Flexible Contracting Approach

## Leverage and Exercise Data Rights

- Assess what you have and what you need
- Determine where the Government has unlimited rights
- Verify delivery of all CDRLs, confirm that markings are correct and challenge questionable assertions

## Change approach to Systems Engineering

- Develop a common architecture across a product line or similar Programs of Record
- Functionally decompose legacy programs

## Hold Competition

- Create an alternative
- Limit integrator role
- Use GPR for next competition
- Inject OSA through technical insertions
- Use government labs for integration

## Establish an Environment for Change

- Vendor-to-vendor cooperation as part of past performance evaluation
- Associate contractors sink/swim together

## Establish an Environment for Change

- Incentive fees
- Include OSA and data rights as part of evaluation
- Reward reuse in evaluation criteria



# What if - we don't have the Data

---

- Mod contract to add CDRLs for needed data
  - Regardless of limitations on rights
  - Cost of delivery of existing data may be as little as cost of reproduction/delivery (actual cost dependent upon many factors)
  - Require delivery to the Government
    - Verify markings
    - Challenge as appropriate
- Contractor obligated to deliver all data and software developed partially or completely at Government expense
  - May be expensive



# What if - we don't have the Data

---

- Delivery should be:
  - Hard copy
  - Disc
  - Electronic to a Government (not contractor) server
- Contractor format will minimize cost
  - Ensure Government can read/use now and in future

# What if – Gov't has the Data, but not Sufficient Rights

---

- Can contractor prove all privately funded? If not, challenge assertion
- Use law to challenge/negotiate change for:
  - Operations, Maintenance, Installation & Training
  - Form, Fit and Function
  - Computer Software Documentation
- Is consideration owed the Government for some prior contractor shortfall? If so, use this leverage.
- Negotiate options to increase rights to GPR

# Other points to remember

---

- Verify markings on data match contract
  - Should be paragraph by paragraph, not blanket
  - Challenge where appropriate
- Include conditions where no cost to go to GPR

# Possible actions on existing and follow-on contracts

---

- Design replacement as appropriate (reverse engineer)
  - Customer can always design or contract for replacement (SBIR??)
  - Sometime just the plan to reverse engineer will influence contractor
  - May not be an option for some software
- Follow-on contracts need not have same data rights clauses
  - Chance to re-negotiate
  - Data rights can be a source selection criteria (technical and cost)
- Ensure you take delivery of all data – even if delivered with less than Gov't Purpose Rights
  - Why:
    - Abandoned product
    - Company goes out of business
    - Retirement/death of key person(s)
    - Company is less than forthcoming when facing re-compete
  - Use “escrow account” if necessary (especially useful with commercial product technical data/software)



# Additional Resources

---

## Points of contact:

**Bill Decker, DAU South, 724-612-0999**  
**[william.decker@dau.mil](mailto:william.decker@dau.mil)**

**Richard Fowler, DAU HQ, 705-805-5809**  
**[richard.fowler@dau.mil](mailto:richard.fowler@dau.mil)**

**Kurt Web, DAU South, 256-922-8779**  
**[kurt.webb@dau.mil](mailto:kurt.webb@dau.mil)**

## Web sites of interest:

**<https://acc.dau.mil/osa>**

**<https://dap.dau.mil/career/log/blogs/default.aspx>**

# Summary

- Biggest challenge is determining Government's needs (present and future)
  - Acquisition Strategy – Business Considerations
  - Logistics Support Strategy
  - Architecture (interactions both internal and external)
- Document requirements in AS
- Incorporate into RFP & subsequent contract
- Ensure delivered as agreed to in contract
- Include a Deferred Ordering Clause & Data Accession List
- When necessary modify existing contracts to get required data

**Addition Training on Intellectual Property and Data Rights available in CLE 068 and DAU**