Refresh Knowledge, *Renew* Commitment, and *Refocus* Efforts

Crowdsourcing to Discover Lost in Translation Requirements

Breakout Session #E02

Mike Ipsaro, Technical Director, Integrity Management Consulting

December 13, 2016
Tuesday, 2:15PM–3:30PM

Agenda

1. Purpose
2. What could go wrong and why?
3. The art and science of requirements
4. Crowdsourcing in action
5. Can tailored crowdsourcing work for us?

PURPOSE

To dialogue about the art and science of requirements, particularly definition, including the application of the crowdsourcing concept to it.

Successful acquisition outcomes

- Enables Mission accomplishment
- Customer satisfaction, stakeholder acceptance
- Legal, regulatory, and policy compliance
- Demonstration of stewardship

Enabled by completeness and accuracy of requirements

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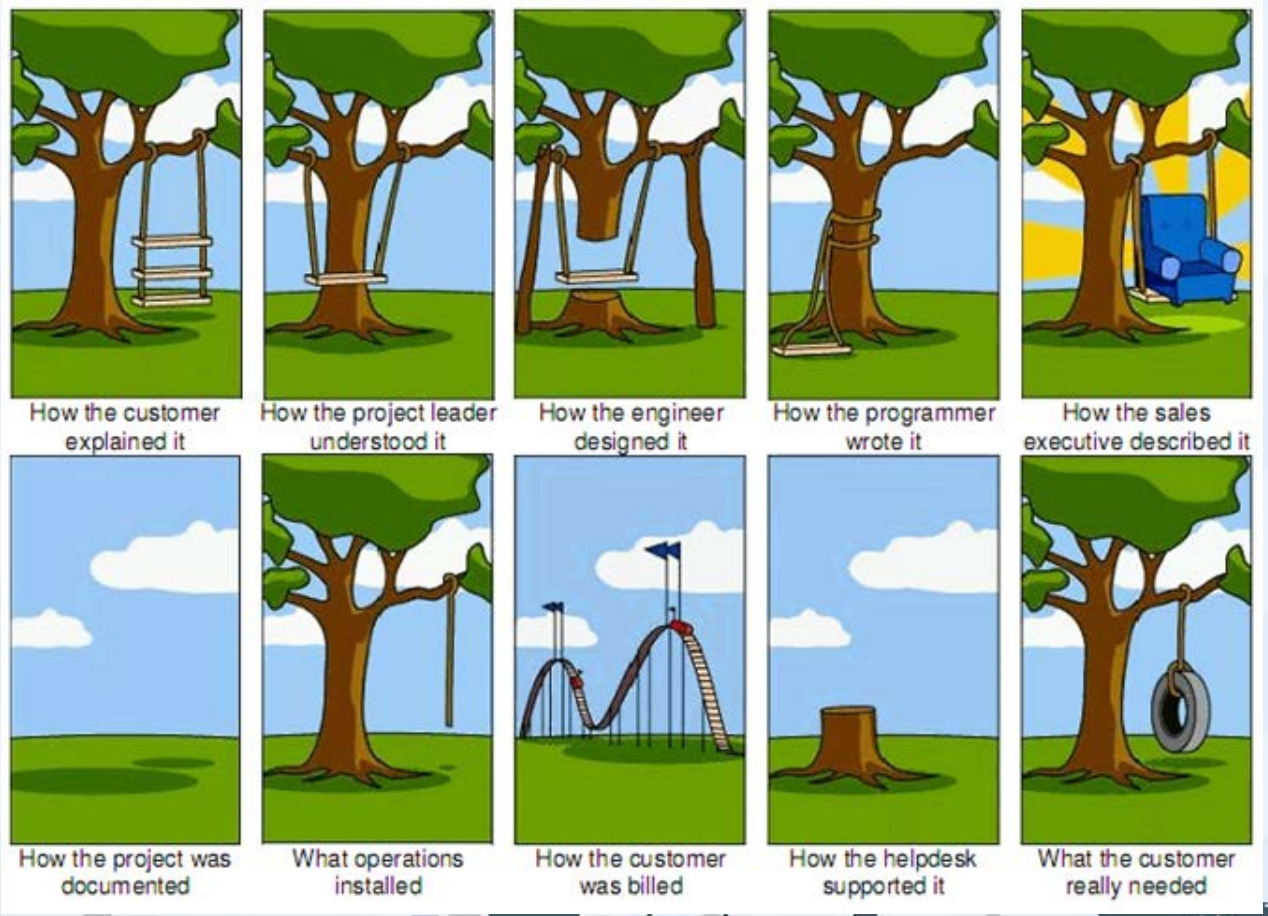
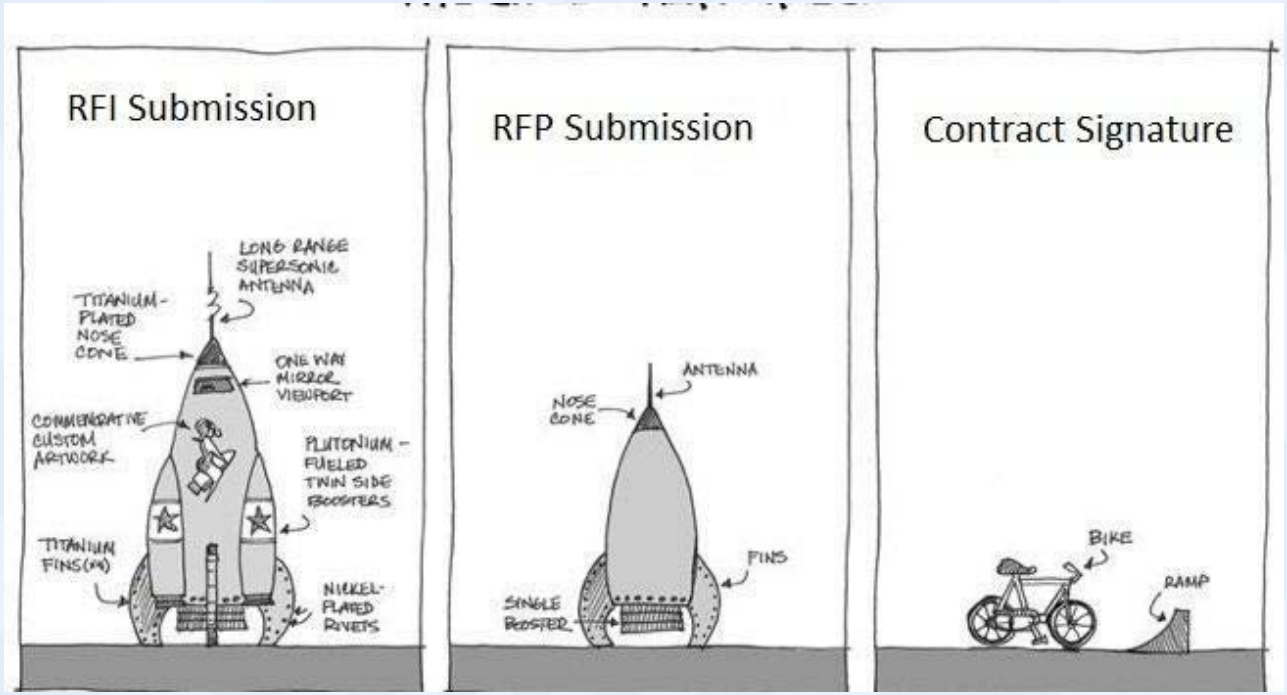
WHAT COULD GO WRONG AND WHY?

From the program/project perspective



What could go wrong

And from the perspective of the contract



Technically and non-technically speaking

Why do you think requirements get lost in translation or are just never found in the first place?

Inherent, common challenges

1. Longstanding communication paradigm
2. Many stakeholders
3. Many requirements

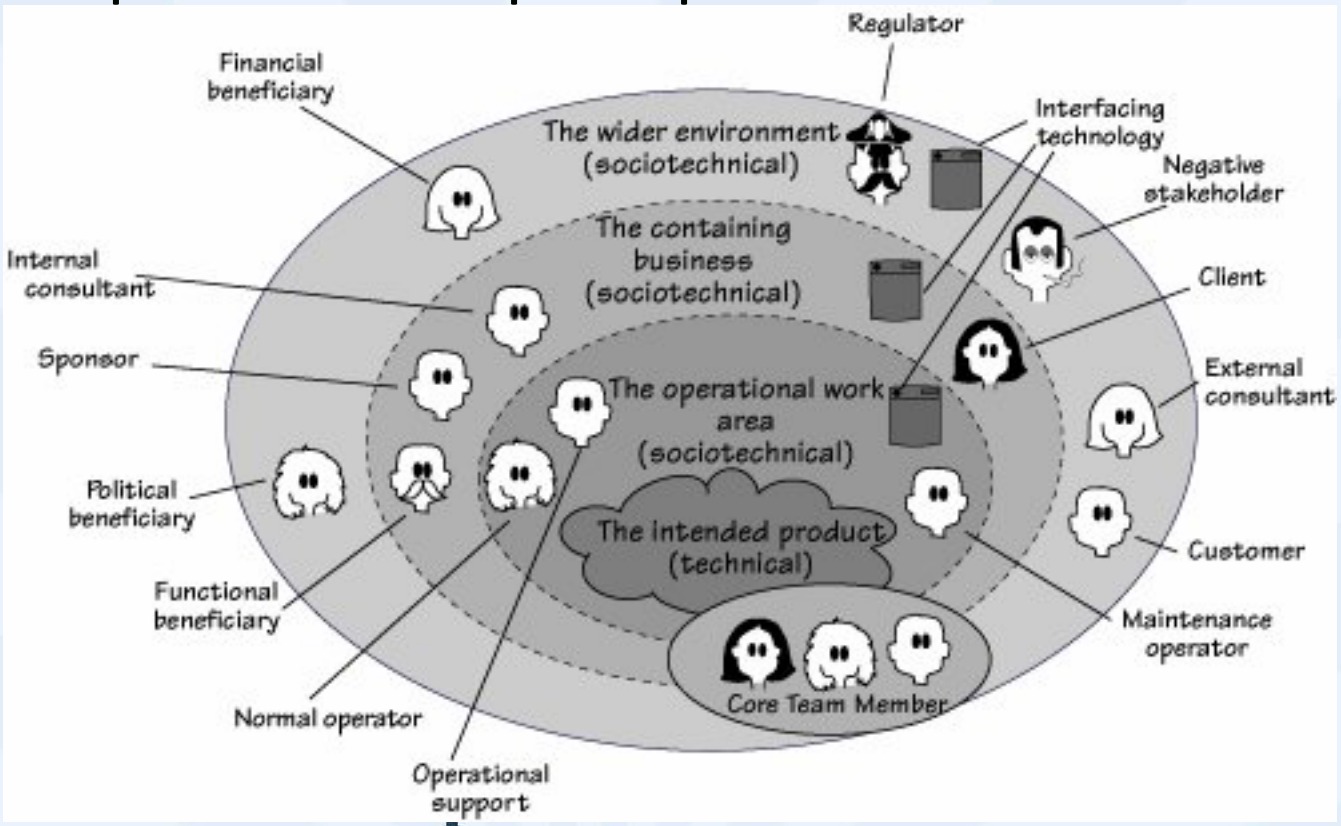
Generic acquisition process

Plan & Define (Requirement) → Solicit → Source Selection → Administration

Longstanding communication paradigm

Many Stakeholders

- Many perspectives and perceptions



Many requirements (documents)

Generally speaking, Requirement documents can be viewed on spectrum, from general to specific, qualitative to quantitative, or from operational to technical.

- Strategic Goals
- Mission Need Statement (MNS)
- Operational Requirements Document (ORD)
- Functional and System Requirements Document (FRD)
- Specifications (Design, Material)
- Statement of Work/Objectives / Performance Work Statement (PWS)

Many Requirements within document(s) (e.g., generic SOW)

1. **Requirement Information**
2. **Section II** – Purpose
   - Product, Service, or Outcome Required
   - Scope of the Product, Service, or Outcome
3. **Background**
4. **Technical Requirements/Tasks/Outcomes**
   - Deliverables
   - Special Delivery Instructions
   - Performance/Delivery Period
   - Place/Location of Performance/Delivery
   - Travel Requirements
   - Special Requirements
5. **Section V** – Applicable Documents
6. **Section VI** – Requirements for Handling Sensitive, Classified, and/or Proprietary Information
7. **Section VII** – Government-Furnished Resources and Information
8. **Section IX** – Performance Requirements/Quality Assurance Surveillance Plan (QASP)
   - Acceptable Quality Levels (AQLs)
   - Evaluation/Surveillance Methods
   - Incentives/Awards
9. **Section X – General Contact Information**

How do you approach this complexity?

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ART & SCIENCE

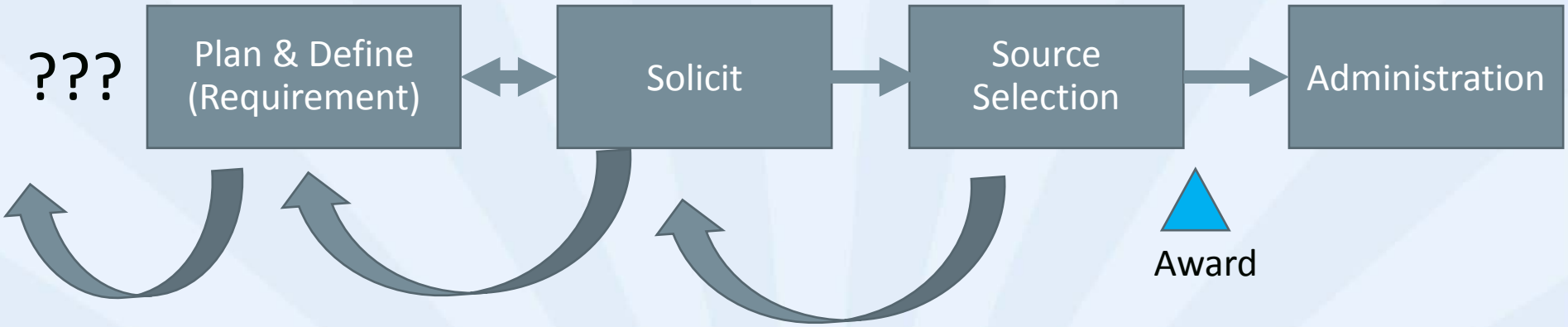
Approaching complexity of Requirements requires a blended approach

Asking the right questions (Define)

- What functions must the product/service perform?
- How well do the functions have to be performed?
- What characteristics, assumptions, constraints surround the functions?
- In what environment must the product perform?
- With what must the product interface?
- What are the sustainment issues?
- Is the requirement SMART?

Definition = Effective Communication

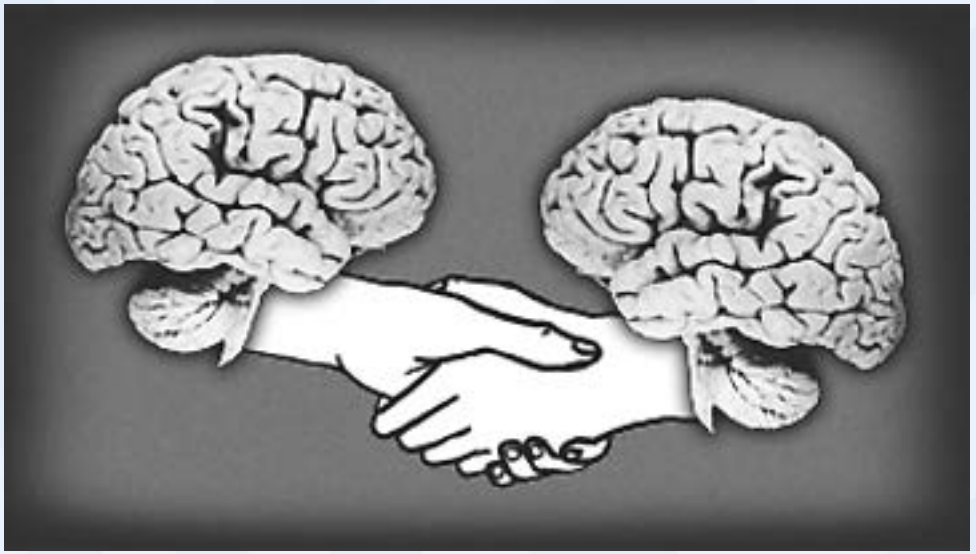
Asking the right questions at the right time



Redesigned/recast to change communication paradigm

Asking the right questions in the right way

- Understand and capture the perspectives behind the requirements
- How can you do that?



Effective Communication = Mutual Understanding

PERCEPTION

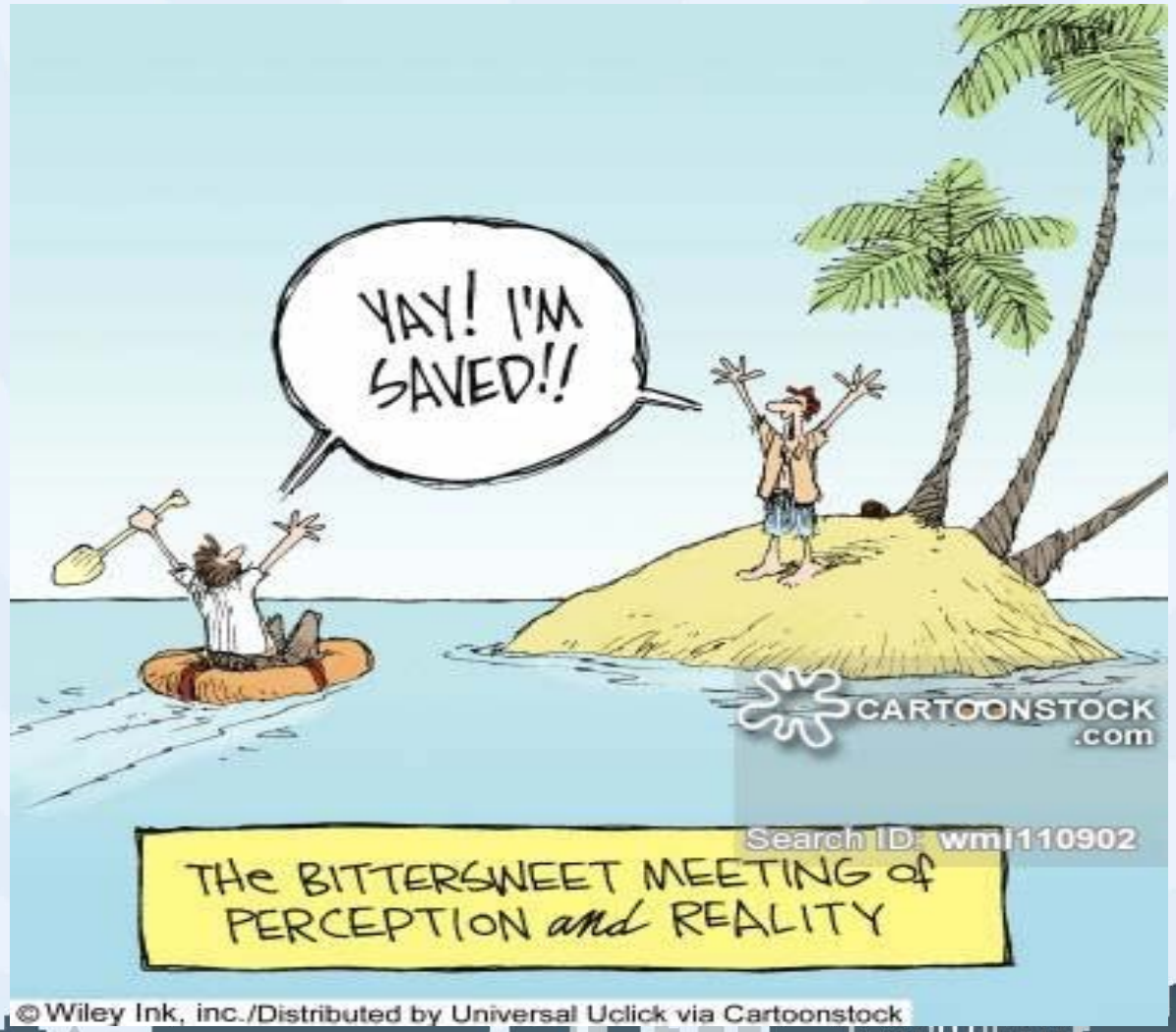
Could be the most important factor in understanding

- Textual vs. Contextual?
- Perhaps, single biggest reason of communication problems is misperception.
- Two people look at same picture, but each sees a different part.
- Two people look at same part but sees it differently.
- Different strokes for different folks

Understanding = seeing the picture(s) in the other's head

Perception and Reality

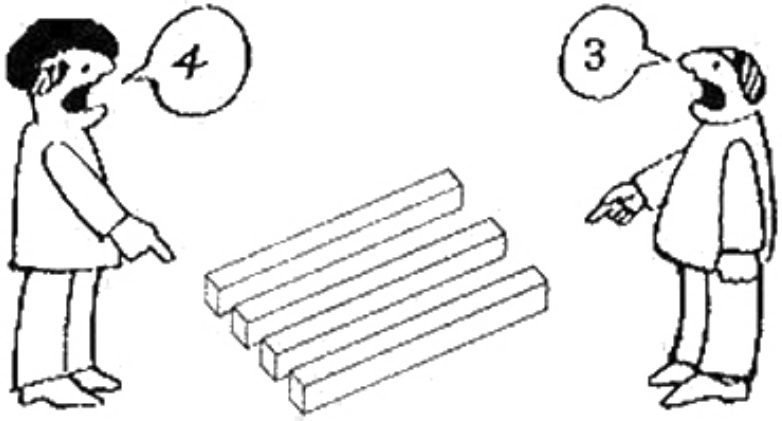
Are they always the same?



I think therefore I am

What's the difference?

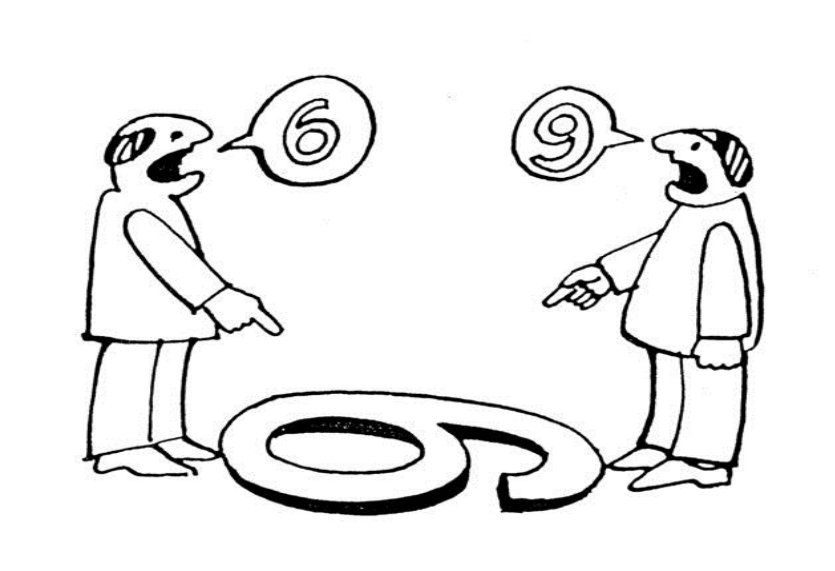
"We Don't See Things As They Are,



We See Them As We Are." - AN

0 if we both see it's 1?

Are we both right?

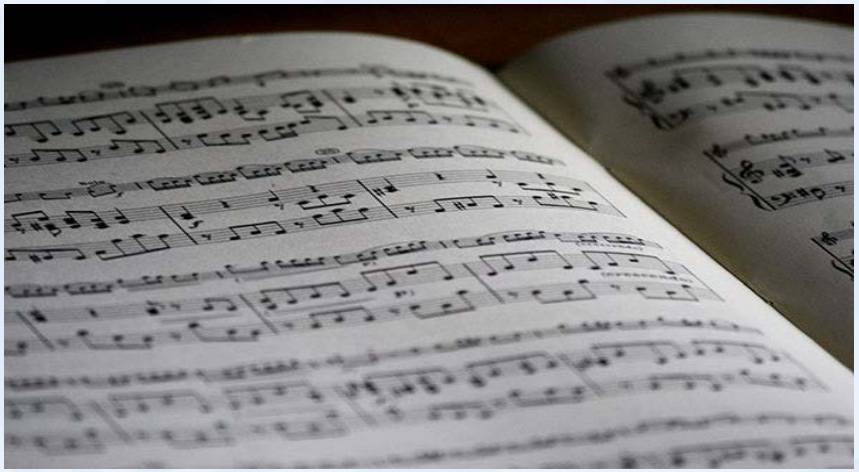


How about we agree to disagree?

Orchestration

Many *different* people playing *different* instruments…..

……but from the *same* sheet of music



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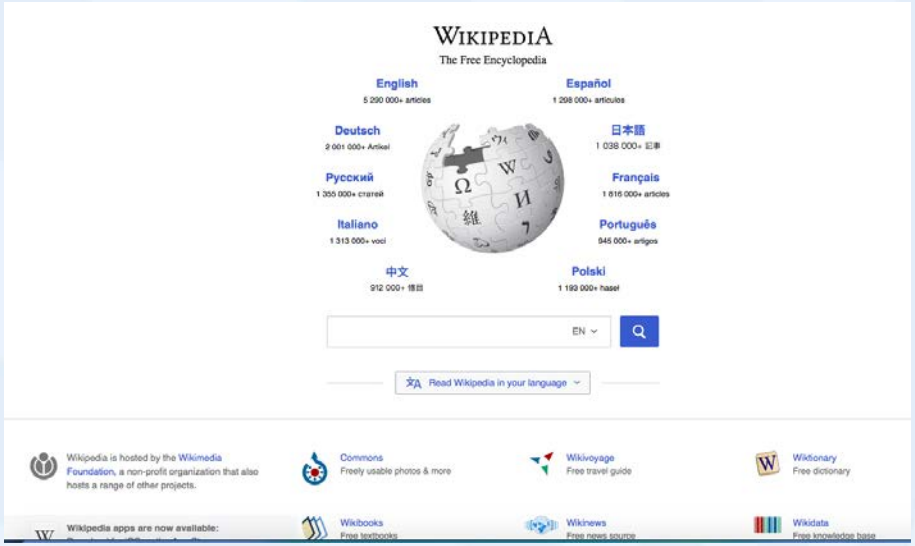
What is Crowdsourcing concept?

Here is what Meriam says…

"the practice of obtaining needed services, ideas, or content by soliciting contributions from a large group of people and especially from the online community rather than from traditional employees or suppliers".

The concept is all around us

- Wiki, Yelp, Waze, DHS "*see something, say something*", Intellipedia



https://www.wethinq.com/en/blog/2014/08/12/39-Great-Crowdsourcing-Examples.html

Can the crowdsourcing concept be *tailored* or adapted?

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Tailored Crowdsourcing in action across the spectrum…

- Crowdsourcing principles at all levels to enable better requirements definition
  - NIST Cybersecurity Framework
  - DHS Strategic Principles
  - President's Cybersecurity Commission
  - OMB Mythbuster's campaign
  - Organizational level requirements management
  - Working group/tactical micro level (building a requirements document)

Rosetta Stone

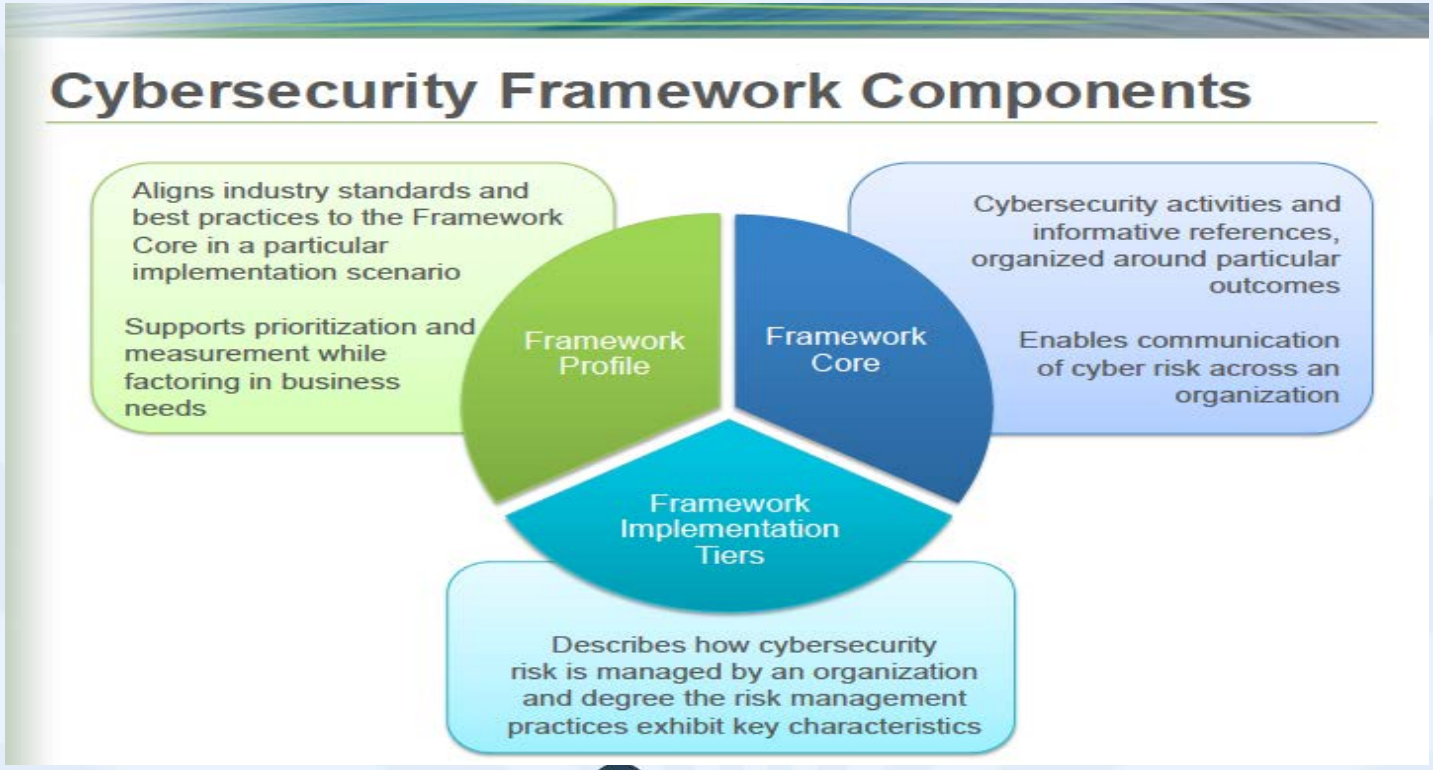
Critical Infrastructure Sectors

1. Chemical	9. Financial Services
2. Commercial Facilities	10. Food and Agriculture
3. Communications	11. Government Facilities
4. Critical Manufacturing	12. Healthcare and Public Health
5. Dams	13. Information Technology
6. Defense Industrial Base	14. Nuclear Reactors, Materials, and Waste
7. Emergency Services	15. Transportation Systems
8. Energy	16. Water and Wastewater Systems

How do you communicate or translate Cybersecurity Requirements in 16 languages?

A framework for requirements

How do you define cybersecurity requirements?



A kind of rosetta stone

The Framework is risk-based, and is composed of three parts: the Framework Core, the Framework Profile, and the Framework Implementation Tiers.

Function Unique Identifier	Function	Category Unique Identifier	Category
ID	Identify	ID.AM	Asset Management
		ID.BE	Business Environment
		ID.GV	Governance
		ID.RA	Risk Assessment
		ID.RM	Risk Management Strategy
PR	Protect	PR.AC	Access Control
		PR.AT	Awareness and Training
		PR.DS	Data Security
		PR.IP	Information Protection Processes and Procedures
		PR.MA	Maintenance
		PR.PT	Protective Technology
DE	Detect	DE.AE	Anomalies and Events
		DE.CM	Security Continuous Monitoring
		DE.DP	Detection Processes
RS	Respond	RS.RP	Response Planning
		RS.CO	Communications
		RS.AN	Analysis
		RS.MI	Mitigation
		RS.IM	Improvements
RC	Recover	RC.RP	Recovery Planning
		RC.IM	Improvements
		RC.CO	Communications

Function	Category	Subcategory	Informative References
IDENTIFY (ID)	Asset Management (ID.AM): The data, personnel, devices, systems, and facilities that enable the organization to achieve business purposes are identified and managed consistent with their relative importance to business objectives and the organization's risk strategy.	ID.AM-1: Physical devices and systems within the organization are inventoried	• CCS CSC 1 • COBIT 5 BAI09.01, BAI09.02 • ISA 62443-2-1:2009 4.2.3.4 • ISA 62443-3-3:2013 SR 7.8 • ISO/IEC 27001:2013 A.8.1.1, A.8.1.2 • NIST SP 800-53 Rev. 4 CM-8
		ID.AM-2: Software platforms and applications within the organization are inventoried	• CCS CSC 2 • COBIT 5 BAI09.01, BAI09.02, BAI09.05 • ISA 62443-2-1:2009 4.2.3.4 • ISA 62443-3-3:2013 SR 7.8 • ISO/IEC 27001:2013 A.8.1.1, A.8.1.2 • NIST SP 800-53 Rev. 4 CM-8
		ID.AM-3: Organizational communication and data flows are mapped	• CCS CSC 1 • COBIT 5 DSS05.02 • ISA 62443-2-1:2009 4.2.3.4 • ISO/IEC 27001:2013 A.13.2.1 • NIST SP 800-53 Rev. 4 AC-4, CA-3, CA-9, PL-8
		ID.AM-4: External information systems are catalogued	• COBIT 5 APO02.02 • ISO/IEC 27001:2013 A.11.2.6

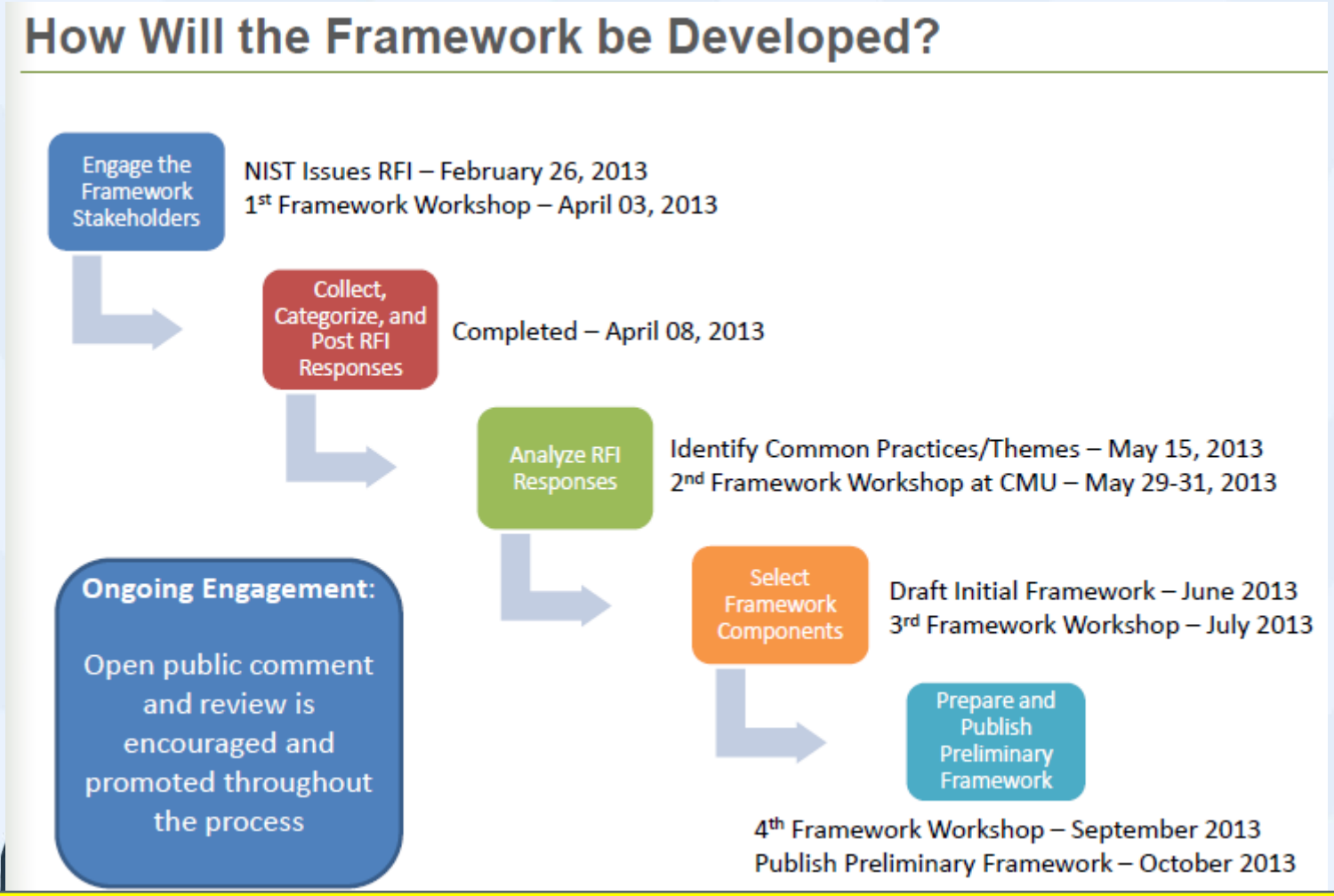
TIER 1
Partial

Tier 2
Risk Informed

Tier 3
Repeatable

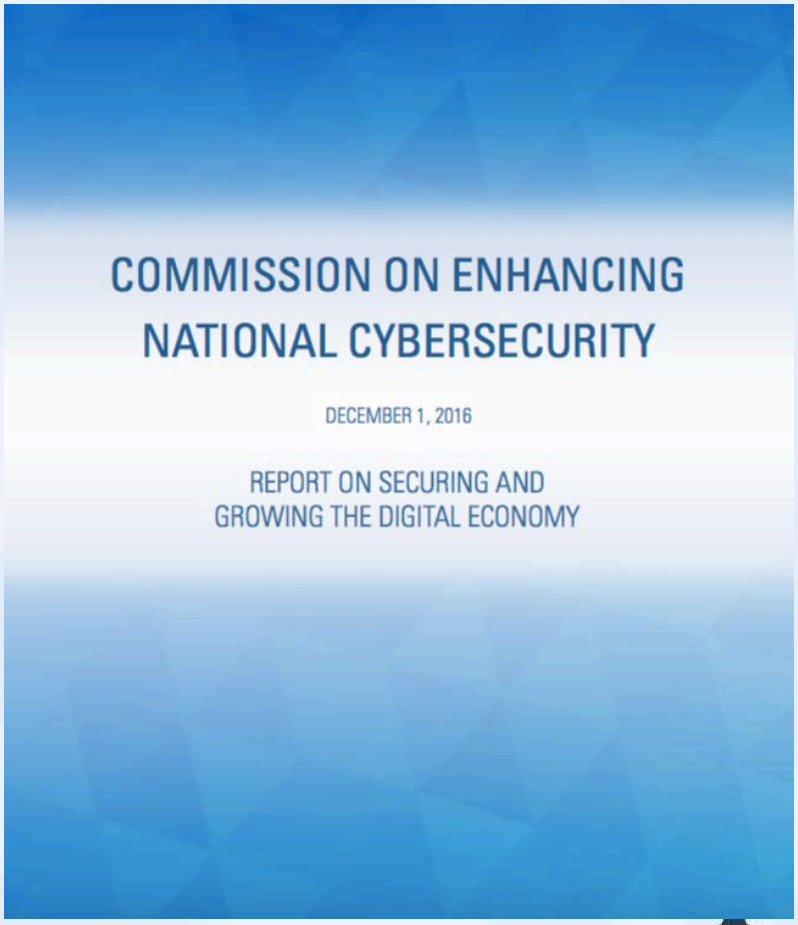
TIER 4
Adaptive

Requirements for the Framework



Enabled through tailored crowdsourcing

Other recent examples



CROWDSOURCING IN ACTION

In addition to the adaptation of crowdsourcing at the macro level, it can be adapted at more micro levels.

1. **Organizational level**:
   - People/teams, practices, tools (sharepoint), training
   - Communication paradigm (Draft) RFIs, Draft RFPs, Vendor Conferences (online) as part of market research
   - IPTs including users, A/B testing, data analytics

2. **Requirements Document/Writer level**:
   - Writing Contract-level requirements docs (SOWs, SOOs)

Organizational Level

Writer level - guidelines

- ✓Think – What, when, where, how (how many, how much, how well…)
- ✓Think outcomes (“what you want”) vs. Process (“how to do it”
- ✓Think alignment

OMB's Mythbusting Campaign

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

OFFICE OF FEDERAL PROCUREMENT POLICY

May 7, 2012

MEMORANDUM FOR CHIEF ACQUISITION OFFICERS
SENIOR PROCUREMENT EXECUTIVES
CHIEF INFORMATION OFFICERS

FROM: Lesley A. Field
Acting Administrator for Federal Procurement Policy

SUBJECT: "Myth-Busting 2": Addressing Misconceptions and Further Improving Communication During the Acquisition Process

Early, frequent, and constructive engagement with industry leads to better acquisition outcomes, which is why it is one of the key tenets of the Office of Management and Budget's 25 Point Implementation Plan to Reform Federal IT Management.[1] Such engagement is especially important for complex, high-risk procurements, including (but not limited to) those for large information technology (IT) projects.

To that end, the Office of Federal Procurement Policy (OFPP) last year issued the "Myth-Busting" memorandum on "Addressing Misconceptions to Improve Communication with Industry during the Acquisition Process."[2] In the subsequent months, Federal agencies have taken significant additional steps to improve communications between Federal agencies and the vendor community. These developments are discussed further below.

To continue to make progress in improving these communications, OFPP is issuing this second "Myth-Busting" memorandum. Whereas we focused last year on the misconceptions on the part of Federal agencies, we want to continue the discussion by addressing in this memorandum the misconceptions that may be held by some in the vendor community. As we did last year, we highlight the misconceptions in the Attachment and, for each one, provide the facts about the Federal procurement process, with the goal of improving the productivity of our communications. The Attachment also provides additional information and strategies for both agencies and vendors to promote more effective communication.[3]

We encourage you to share this information with current and potential industry partners – especially those new to government contracting – as part of your outreach efforts to ensure that we are collectively making the best use of our engagement opportunities.

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

OFFICE OF FEDERAL PROCUREMENT POLICY

February 2, 2011

MEMORANDUM FOR CHIEF ACQUISITION OFFICERS
SENIOR PROCUREMENT EXECUTIVES
CHIEF INFORMATION OFFICERS

FROM: Daniel I. Gordon
Administrator for Federal Procurement Policy

SUBJECT: "Myth-Busting": Addressing Misconceptions to Improve Communication with Industry during the Acquisition Process

With expenditures of over $500 billion annually on contracts and orders for goods and services, the federal government has an obligation to conduct our procurements in the most effective, responsible, and efficient manner possible. Access to current market information is critical for agency program managers as they define requirements and for contracting officers as they develop acquisition strategies, seek opportunities for small businesses, and negotiate contract terms. Our industry partners are often the best source of this information, so productive interactions between federal agencies and our industry partners should be encouraged to ensure that the government clearly understands the marketplace and can award a contract or order for an effective solution at a reasonable price. Early, frequent, and constructive engagement with industry is especially important for complex, high-risk procurements, including (but not limited to) those for large information technology (IT) projects. This is why increasing communication, in the form of a "myth-busters" educational campaign, is one of the key tenets of the Office of Management and Budget's 25 Point Implementation Plan to Reform Federal IT Management.[1]

The Federal Acquisition Regulation (FAR) authorizes a broad range of opportunities for vendor communication[2], but agencies often do not take full advantage of these existing flexibilities. Some agency officials may be reluctant to engage in these exchanges out of fear of protests or fear of binding the agency in an unauthorized manner; others may be unaware of effective strategies that can help the acquisition workforce and industry make the best use of their time and resources. Similarly, industry may be concerned that talking with an agency may create a conflict of interest that will preclude them from competing on future requirements, or industry may be apprehensive about engaging in meaningful conversations in the presence of other vendors.

CROWDSOURCING IN ACTION

- Current Proposed Federal Rule
- Federal Register Vol. 81, No. 229 / 29 NOV 2016. FAR Case 2016-005
- *FAR: Effective Communication between Government and Industry*

85914 **Federal Register** / Vol. 81, No. 229 / Tuesday, November 29, 2016 / Proposed Rules

substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);

- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- Does not provide the EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, the SIP is not approved to apply on any Indian reservation land or in any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the proposed rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Lead, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur dioxide, Volatile organic compounds.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: November 16, 2016.

Ron Curry,

Regional Administrator, Region 6.

[FR Doc. 2016–28673 Filed 11–28–16; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF DEFENSE

GENERAL SERVICES ADMINISTRATION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

48 CFR Part 1

[FAR Case 2016–005; Docket No. 2016–0005, Sequence No.1]

RIN 9000–AN29

Federal Acquisition Regulation: Effective Communication between Government and Industry

AGENCY: Department of Defense (DoD), General Services Administration (GSA), and National Aeronautics and Space Administration (NASA).

ACTION: Proposed rule.

SUMMARY: DoD, GSA, and NASA are proposing to amend the Federal Acquisition Regulation (FAR) to implement a section of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2016. This rule clarifies that agency acquisition personnel are permitted and encouraged to engage in responsible and constructive exchanges with industry, so long as those exchanges are consistent with existing law and regulation and do not promote an unfair competitive advantage to particular firms.

DATES: Interested parties should submit comments to the Regulatory Secretariat Division at one of the addresses shown below on or before January 30, 2017 to be considered in the formulation of a final rule.

ADDRESSES: Submit comments in response to FAR case 2016–005 by any of the following methods:

- *Regulations.gov: http://www.regulations.gov.* Submit comments via the Federal eRulemaking portal by entering "FAR Case 2016–005" under the heading "Enter Keyword or ID" and selecting "Search." Select the link "Comment Now" that corresponds with "FAR Case 2016–005." Follow the instructions provided on the screen. Please include your name, company name (if any), and "FAR Case 2016–005" on your attached document.
- *Mail:* General Services Administration, Regulatory Secretariat Division, ATTN: Ms. Flowers, 1800 F Street NW., 2nd Floor, Washington, DC 20405.

Instructions: Please submit comments only and cite "FAR Case 2016–005: Effective Communication between Government and Industry" in all correspondence related to this case. Comments received generally will be posted without change to *http://www.regulations.gov,* including any personal and/or business confidential information provided. To confirm receipt of your comment(s), please check *www.regulations.gov,* approximately two to three days after submission to verify posting (except allow 30 days for posting of comments submitted by mail).

FOR FURTHER INFORMATION CONTACT: For clarification of content, contact Mr. Michael O. Jackson, Procurement Analyst, at 202–208–4949. For information pertaining to status or publication schedules, contact the Regulatory Secretariat Division at 202–501–4755. Please cite "FAR Case 2016–005."

SUPPLEMENTARY INFORMATION:

I. Background

DoD, GSA, and NASA (the "Councils") are proposing to amend the FAR to implement section 887 of NDAA for FY 2016. The rule clarifies that agency acquisition personnel are permitted and encouraged to engage in responsible and constructive exchanges with industry, in a manner that is consistent with existing law and regulation, and does not promote an unfair competitive advantage.

FAR 1.102 establishes the guiding principles within the FAR to—

(1) Satisfy the customer in terms of cost, quality, and timeliness of the delivered product or service;

(2) Minimize administrative operating costs;

(3) Conduct business with integrity, fairness, and openness; and

(4) Fulfill public policy objectives.

FAR 1.102–2 provides the requirements or "performance standards" for transforming these principles into positive, results-oriented acquisition strategies. A communication policy that takes into account a range of approaches for effectively describing the Government's requirements to private industry is an essential component of the Federal acquisition process. This concept is in keeping with the direction expressed by Congress in section 887 of the NDAA for FY 2016.

II. Discussion and Analysis

The proposed rule will amend FAR 1.102–2(a)(4) to specifically state that Government acquisition personnel are permitted and encouraged to engage in responsible and constructive exchanges with industry, so long as those exchanges are consistent with existing laws and regulations, and promote a fair competitive environment. This revision,

Contact Information

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References

- DAU Requirements/SOW class
- NIST Cybersecurity Framework
- Presentation on developing NIST framework
- DHS Strategic Principles of Cybersecurity
- Google images
- Wikipedia
- Wharton School of Business Negotiation class - *Getting More* by Stuart Diamond
- OMB Mythbusters Memo
- Federal Register Volume 81