

# Net-Centric Implementation

## Part 6: Contracting Guidance for Acquisition

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Net-Centric Enterprise Solutions for Interoperability (NESI) is a collaborative activity of the USN PEO for C4I and Space, the USAF Electronic Systems Center, and the Defense Information Systems Agency.

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## P1117: NESI Executive Summary

**Net-Centric Enterprise Solutions for Interoperability (NESI)** provides, for all phases of the acquisition of net-centric solutions, actionable guidance that meets DoD Network-Centric Warfare goals. The guidance in NESI is derived from the higher level, more abstract concepts provided in various directives, policies and mandates such as the *Net-Centric Operations and Warfare Reference Model* (NCOW RM) [R1176] and the **ASD(NII) Net-Centric Checklist** [R1177]. As currently structured, NESI implementation covers architecture, design and implementation; compliance checklists; and a collaboration environment that includes a repository.

More specifically, NESI is a body of architectural and engineering knowledge that guides the design, implementation, maintenance, evolution, and use of the Information Technology (IT) portion of net-centric solutions for military application. NESI provides specific technical recommendations that a DoD organization can use as references. Stated another way, NESI serves as a reference set of compliant instantiations of these directives.

NESI is derived from a studied examination of enterprise-level needs and, more importantly, from the collective practical experience of recent and on-going program-level implementations. It is based on today's technologies and probable near-term technology developments. It describes the practical experience of system developers within the context of a minimal top-down technical framework. Most, if not all, of the guidance in NESI is in line with commercial best practices in the area of enterprise computing.

NESI applies to all phases of the acquisition process as defined in DoD Directive 5000.1 [R1164] and DoD Instruction 5000.2 [R1165] and to both new and legacy programs. NESI provides explicit counsel for building in net-centricity from the ground up and for migrating legacy systems to greater degrees of net-centricity.

NESI subsumes a number of references and directives; in particular, the Air Force C2 Enterprise Technical Reference Architecture (C2ERA) and the Navy Reusable Applications Integration and Development Standards (RAPIDS). Initial authority for NESI is per the Memorandum of Agreement between Commander, Space and Naval Warfare Systems Command (SPAWAR); Navy Program Executive Officer, C4I & Space (now PEO C4I); and the United States Air Force Electronic Systems Center (ESC), dated 22 December 2003, Subject: Cooperation Agreement for Net-Centric Solutions for Interoperability (NESI). The Defense Information Systems Agency (DISA) formally joined the NESI effort in 2006.

### Content Structure

Perspectives	NESI <b>Perspectives</b> describe a topic and encompass related, more specific Perspectives or encapsulate a set of Guidance and Best Practice details, Examples, References, and Glossary entries that pertain to the topic.
Guidance	NESI <b>Guidance</b> is in the form of atomic, succinct, absolute and definitive Statements related to one or more Perspectives. Each Guidance Statement is linked to Guidance Details which provide Rationale, relationships with other Guidance or Best Practices, and Evaluation Criteria with one or more Tests, Procedures and Examples which facilitate validation of using the Guidance through observation, measurement or other means. Guidance Statements are intended to be binding in nature, especially if used as part of a Statement of Work (SOW) or performance specification.
Best Practices	NESI <b>Best Practices</b> are advisory in nature to assist program or project managers and personnel. Best Practice Details can have all the same parts as NESI Guidance. The use of NESI Best Practices are at the discretion of the program or project manager.
Examples	NESI <b>Examples</b> illustrate key aspects of Perspectives, Guidance, or Best Practices.
Glossary	NESI <b>Glossary</b> entries provide terms, acronyms, and definitions used in the context of NESI Perspectives, Guidance and Best Practices.
References	NESI <b>References</b> identify directives, instructions, books, Web sites, and other sources of information useful for planning or execution.

### Releasability Statement

## Part 6: Contracting Guidance for Acquisition

NESI *Net-Centric Implementation* v3.0 is cleared for public release by competent authority in accordance with DoD Directive 5230.9; [R1232] *Distribution Statement A: Approved for public release; distribution is unlimited* applies to the documentation set. Obtain electronic copies of this document at <http://nesipublic.spawar.navy.mil>.

### Vendor Neutrality

The NESI documentation sometimes refers to specific vendors and their products in the context of examples and lists. However, NESI is vendor-neutral. Mentioning a vendor or product is not intended as an endorsement, nor is a lack of mention intended as a lack of endorsement. Code examples typically use open-source products since NESI is built on the open-source philosophy. NESI accepts inputs from multiple sources so the examples tend to reflect whatever tools the contributor was using or knew best. However, the products described are not necessarily the best choice for every circumstance. Users are encouraged to analyze specific project requirements and choose tools accordingly. There is no need to obtain, or ask contractors to obtain, the tools that appear as examples in this guide. Similarly, any lists of products or vendors are intended only as references or starting points, and not as a list of recommended or mandated options.

### Disclaimer

Every effort has been made to make NESI documentation as complete and accurate as possible. Even with frequent updates, this documentation may not always immediately reflect the latest technology or guidance. Also, references and links to external material are as accurate as possible; however, they are subject to change or may have additional access requirements such as Public Key Infrastructure (PKI) certificates, Common Access Card (CAC) for user identification, and user account registration.

### Contributions and Comments

NESI is an open project that involves the entire development community. Anyone is welcome to contribute comments, corrections, or relevant knowledge to the guides via the Change Request tab on the NESI Public site, <http://nesipublic.spawar.navy.mil>, or via the following email address: [nesi@spawar.navy.mil](mailto:nesi@spawar.navy.mil).

## P1121: Part 6: Contracting Guidance for Acquisition

*Part 6: Contracting Guidance for Acquisition* is the final of six parts of the *NESI implementation document set*. Part 6 is intended for Program Managers and Department of Defense (DoD) contractors and focuses on contracting guidance to support software reusability.

Programs in the DoD acquisition community must comply with numerous statutory and regulatory requirements that support the overarching goal of a connected, interoperable and open information system architecture including the **Global Information Grid** (GIG) Architecture, [R1166] **Net-Centric Enterprise Solutions** (NCES), **Modular Open Systems Approach** (MOSA), [R1178] **ASD(NII)** Net-Centric Checklist, [R1177] and the **Net-Centric Operations and Warfare Reference Model** (NCOW RM). [R1176]

Whether a Program is a new start or developing a new increment of capability as part of an evolutionary acquisition strategy, most Programs will at some point need to craft effective language in the various contracting artifacts which are part of the DoD acquisition process. As a result, the Program Manager (PM) will have to balance the requirement to provide enough detail to potential Offerors to describe what the objective of the acquisition is without over-prescribing the technical solution, thus limiting commercial innovation. Under the umbrella of the **Request for Proposal** (RFP) process, there are many different approaches for soliciting contractor performance. The PM, in coordination with the Contracting Office, must develop a source selection strategy which emphasizes the importance of the requirements and evaluates those factors which the Government has determined most important and will result in the best value to the Government while attaining net-centric goals.

The guidance (in the form of Perspectives, Guidance and Best Practices) in Part 6 is not intended to duplicate the DoD guidance contained in the **Federal Acquisition Regulation** (FAR) or the **Defense Federal Acquisition Regulation Supplement** (DFARS); rather, it is intended to assist PMs with developing language appropriate for various contracting documents that will facilitate using NESI guidance to develop net-centric, interoperable solutions.

### ***Detailed Perspectives***

- [Contracting Guidance for Reuse \[P1123\]](#)
- [Contracting Guidance for Intellectual Property Rights \[P1324\]](#)

## P1123: Contracting Guidance for Reuse

This NESI perspective focuses on using recommended contracting language to guide the technical implementation for building reusability into DoD net-centric solutions. Component and service reuse is a fundamental design tenet required for building service orientation into **Network Centric Warfare (NCW)** capabilities.

The Government Accountability Office (GAO) Report to Congressional Committees titled *Weapons Acquisition DoD Should Strengthen Policies for Assessing Technical Data Needs to Support Weapon Systems* ([GAO-06-839](#) dated July 2006) recommends that DoD should strengthen policies for assessing and leveraging technical data needs to support reuse in future systems requirements. The intent of this policy includes the following points:

- provide incentives for demonstrating the use of existing components and/or services
- reduce the risk associated with cost and schedule by leveraging well defined components and services throughout the enterprise
- reduce the risk of cost and schedule associated with vendor-specific proprietary solutions
- reduce interoperability issues through reuse of commonly used functionality
- provide a library of composable software components and services

The engineering practice of separation of concerns builds on the principle of modularity by decomposing large modules into smaller ones that each address specific, individual concerns. When combined with the concept of loose-coupling - where these modules interact with each other via small, well-defined, and preferably standard interfaces - the system developer can attain a significant degree of overall flexibility, maintainability, and reuse and their associated cost-savings.

A DoD acquisition solicitation package provides information to prospective developers regarding what the Government seeks to buy (capabilities, objectives, work statements, and requirements), how the Government will buy it (acquisition strategy, contract type), how and what the Government will solicit from Offerors (solicitation in the form of a **Request for Proposal**), how the Government will determine the choice for developer (evaluation criteria), and how the Government will manage the program after contract award (Award Fee Plan, Contract Data Requirements List or **CDRL**, metrics).

### Detailed Perspectives

This perspective introduces additional perspectives concerning pre- and post-award Contract Sections:

- [Section C, Description/Specifications/Work Statement \[P1124\]](#) (specifically, the Statement of Work, Statement of Objectives and Technical Requirements Document)
- [Section J, List of Attachments \[P1125\]](#) (specifically, Contract Data Requirements List)
- [Section K, Representations, Certifications, and Other Statements of Offerors \[P1126\]](#) (specifically, Data Rights)
- [Section L, Instructions, Conditions, and Notices to Offerors \[P1127\]](#) (i.e., Proposal Instructions)
- [Section M, Evaluation Factors for Award \[P1128\]](#) (i.e., Proposal Evaluation Criteria)
- [Post-Award Contract Actions \[P1129\]](#)

## P1124: Section C: Description/Specifications/Work Statement

Section C of the **Request for Proposal (RFP)** and the resulting contract contains the detailed description of the products for delivery or the work the Offeror is to perform under the contract. Section C typically includes a **Statement of Work (SOW)** or **Statement of Objectives (SOO)**.

### Statement of Work (SOW)

The SOW specifies in clear, understandable terms, the work the contractor is to do in developing or producing the required goods or services. It defines all tasks, deliverables, and data requirements for the acquisition. It communicates work requirements (hardware, software, technical data and logistics support, goods or services) to the performing contractor. As part of the contract, it also forms the basis for determining successful performance by the contractor. An SOW can be prepared by the Government as part of the RFP package to provide specific, detailed instructions to the Offerors or can be provided by the Offerors in response to a SOO and technical requirements documents as part of their proposal.

### Statement of Objectives (SOO)

The SOO provides the basic, top-level, outcome-oriented objectives of the acquisition, their relative importance, and key risk areas that the Offeror needs to address in its proposal. It is provided in the RFP in lieu of a Government-written Statement of Work. This approach provides potential Offerors the flexibility to develop cost-effective solutions and the opportunity to propose innovative alternatives meeting the objectives. It also presents the Government with an opportunity to assess the Offeror's understanding of all aspects of the solicited effort. The SOO, along with the Technical Requirements Specification (covering the technical performance requirements), provides the Offeror guidance for proposing a solution to meet the user's needs.

### Technical Requirements Document (TRD)

The **Technical Requirements Document** (also known as Technical Requirements Specification or System Specification) states the technical and mission functional and performance requirements for the system.

### Best Practices

- **BP1789**: Include in the **Technical Requirements Document (TRD)** specific requirements extracted from the NESI *Net-Centric Implementation* documentation set based on the net-centric capabilities and functions the Government needs as part of the acquisition.
- **BP1792**: Include a reference to NESI *Part 3: Migration Guidance* in the SOW Section 2 *Applicable Documents*.
- **BP1793**: Include a reference to NESI *Part 4: Node Guidance* in the SOW Section 2 *Applicable Documents*.
- **BP1794**: Include a reference to NESI *Part 5: Developer Guidance* in the SOW Section 2 *Applicable Documents*.
- **BP1795**: Include a reference in the SOW Section 2 *Applicable Documents* to the NESI *Technical Evaluation Checklist* measuring net-centric compliance.

## P1125: Section J: List of Attachments

Lists of attachments expand on other sections of the solicitation and contract. Areas which may require particular attention include the consistency of definitions, the compatibility of cost eliminating relationships, the interface of equations, the establishment of contract milestones, and the Order of Precedence clause. Another attachment may include the **Contract Data Requirements List (CDRL)**, which contains detailed descriptions of the contract deliverables. The CDRL specifies the format of the deliverables (electronic, media format, etc.) and the number of copies to produce when a printed document is required.

Sample contract language supporting reusability follows:

- Contractors shall identify the data rights for products as a part this proposal in Section K - Representations and Certifications.
- Contractors shall post Section K - Representations and Certifications of the solicitation to a Government-prescribed repository (e.g., NESI Collaboration Site, <https://nesi.spawar.navy.mil> ; user access required).
- Contractors shall notify the Government in writing if there are any changes to the data rights specified in Section K of the **RFP**.
- Contractors shall use Government approved data rights labels for any deliverables that are classified as Unlimited and/or Government Purpose Rights.
- Contractors shall post all artifacts (i.e., components, source code, documentation, script files, IDE, Makefiles, instructions, processes, tools, test procedures and results, etc.) associated with final deliverables to a Government-prescribed repository (e.g., NESI Collaboration Site; user access required).

### Guidance

- **G1787**: Stipulate that the Offeror is to use the NESI *Net-Centric Implementation* documentation set to assess net-centric interoperability.
- **G1788**: Stipulate that the Offeror is to use Government approved data rights labels and markings for all deliverables that are identified as Unlimited or Government Purpose Rights.

## P1126: Section K: Representations, Certifications, and Other Statements of Offerors (Data Rights)

All contracts that require data to be produced, furnished, acquired or specifically used in meeting contractor performance requirements must contain terms that delineate the respective rights and obligations of the Government and the contractor regarding the use, duplication and disclosure of such data. Therefore, Program Managers must work with the Government Contracting Office to ensure these are specified in the **RFP** and resulting contract. Offers submitted in response to a solicitation need to identify, to the extent known at the time of submission to the Government, the technical data, computer software or other artifacts that the Offeror and its subcontractors or suppliers, or potential subcontractors or suppliers, assert should be furnished to the Government with restrictions on use, release, or disclosure. The Government honors the rights in data resulting from private developments and limits its demands for such rights to those essential for Government purposes. Therefore, include in Section K of the solicitation DFARS Clause 252.227-7017 Identification and Assertion of Use, Release, or Disclosure Restrictions which makes the contractors identify their assertions up front.

An example of contracting language follows:

- Contractors must identify and list the data rights for all products as a part this proposal in Section K - Representations and Certifications.

### Guidance

- **G1784**: Include a statement in the solicitation for Contractors to identify and list data rights for all proposed products.

# P1127: Section L: Instructions, Conditions, and Notices to Offerors

Section L of the **RFP** instructs the Offerors to provide information necessary to support Government review and evaluation of the proposal based on the criteria established in Section M of the RFP. In Section L, contractors should address the ability to reuse commonly used functionality in the technical proposal.

Examples of approaches to reusability with respect to software follow; similar examples are appropriate for the reusability of other artifacts:

- **Component-based software:** mission applications are architected as components integrated within a component framework.
- **Layered software architecture:** application software is separated into tiers that separate concerns; minimally, client, presentation, middle, and data tiers.
- **Service-oriented architecture (SOA):** services enable access to data and application functionality through public interfaces exposed to the enterprise.
- **Separation of implementation and interface:** services expose mission capabilities through well-defined interfaces and provide reliable and scalable components.

An example of language to include in Section L follows:

- All Contractors shall use NESI to assess the proposed technical solution.

## Best Practices

- **BP1790:** Stipulate that the Offeror is to describe how the proposed technical solution reuses services from other systems or demonstrates composeability and extensibility by building from existing reusable components and/or services.
- **BP1791:** Stipulate that the Offeror is to describe how the proposed technical solution demonstrates software practices that support reuse.

## P1128: Section M: Evaluation Factors for Award

In the proposal evaluation process, structure the contracting strategy to focus Government and contractor efforts on meeting cost, schedule, and performance requirements. To achieve a successful award fee contracting approach, Offerors should consider if the solution is designed toward a net-centric architecture that is robust and insensitive to source variations such as vendor-specific implementations, updates, product obsolescence or requirement volatility. Offerors should also demonstrate practices for building solutions that are modular, loosely coupled, standard based, support the separation of interface from implementation, sustainable, upgradeable, vendor independent, agile, and reuse pre-existing or commonly used functions where appropriate.

Program Managers can stress the importance of one factor over another by weighing what they believe to be the more important factor accordingly. Factor reuse into any criteria where there is an evaluation and score associated with the cost and schedules of deliverables deemed as proprietary to the Government. This could reside in factors such as: cost and schedule preservation, technical performance or risk management. Evaluate reuse and score high as a risk migration technique designed to reduce the risk associated with proprietary solutions.

### Guidance

- **G1785:** Stipulate that evaluation criteria will include the extent to which an Offeror's proposed technical solution builds on reuse of common functionality.
- **G1786:** Stipulate that evaluation criteria will include the extent to which an Offeror's proposed technical solution builds on well defined services.
- **G1900:** Stipulate that evaluation criteria will include the extent to which an Offeror's proposed technical solution provides Unlimited Rights for **Key Interface** documentation.

# P1129: Post Award Contract Actions

There are occasions, as the DoD transitions to a net-centric environment, that the Government has already awarded a contract based on a solicitation that did not include language detailing the guidance in NESI Part 6 in the original **Statement of Work (SOW)**. If the Government will procure additional increments, add an appendix which will detail NESI Part 6 guidance for the SOW and **Contract Data Requirements List (CDRL)**. The CDRL contains detailed descriptions of the contract deliverables. The CDRL also specifies the format of the deliverables (electronic, media format, etc.) and the number of copies to produce when a printed document is required. Sample contract language supporting reusability follows:

- Contractors shall identify the data rights for products as a part of this proposal in Section K - Representations and Certifications.
- Contractors shall post Section K - Representations and Certifications of the solicitation to a Government-prescribed repository (e.g., NESI Collaboration Site; user access required).
- Contractors shall notify the Government in writing if there are any changes to the data rights specified in Section K of the **RFP**.
- Contractors shall use Government approved data rights labels for any deliverables that are classified as Unlimited and/or Government Purpose Rights.
- Contractors shall post all artifacts (i.e., components, source code, documentation, script files, **IDE**, makefiles, instructions, processes, tools, test procedures and results, etc.) associated with final deliverables to a Government-prescribed repository (e.g., [NESI Collaboration Site](#); user access required).

## Guidance

- **G1787**: Stipulate that the Offeror is to use the NESI *Net-Centric Implementation* documentation set to assess net-centric interoperability.
- **G1788**: Stipulate that the Offeror is to use Government approved data rights labels and markings for all deliverables that are identified as Unlimited or Government Purpose Rights.

## P1324: Contracting Guidance for Intellectual Property Rights

This perspective discusses topics relating to rights associated with Government acquisition of intellectual property, including the rights associated with non-commercial and Small Business Innovation Research (SBIR) contracted property acquisition. Areas of discussion include clarification of the concepts of Government ownership; contractually available intellectual property rights options; the use, disclosure and sustainment limitations associated with an acquired data item's intellectual property rights; and the benefits of distinct intellectual property rights treatments for different categories of data items.

Federal law includes basic concepts implemented in a **right** (essentially synonymous with the term **title**) defined as a **claim of control**. Ownership is **the state or fact of exclusive possession or control of property** (which may be an object, land/real estate, or a creative work). Ownership is the right to possess and use property to the exclusion of others. Ownership may also include the right to transfer title to specific rights of owner property.

**Copyrights, patents, and trademarks** are all examples of author rights protections contained in Intellectual Property law. A copyright is a legal device that gives the author or originator of creative work the sole right to control the reproduction, publication and selling of that work. Copyright law protects an author's original works fixed in tangible media of expression. It protects the **form of expression, but not ideas or facts**. Under the Copyright Act, the "author" of a work is the owner of copyright in the work. Depending on the circumstances, the author will be either the creator of the work or the entity (e.g., contractor, educational institution) that employs the creator or that has contracted with the creator for creation of the work as a "work for hire." Copyright is distinct from other forms of creator protection such as Patents, which give inventors exclusive rights to stop others from making, using and/or selling inventions. Trademarks, on the other hand, are a separate and distinct form of legally protected words, symbols and /or certain other distinguishing features that represent products or services.

### Acquisition of Intellectual Property Rights

Government acquisition typically involves the act of contracting to obtain capability from works created by a non-Government entity (e.g., contractor, educational institution). In this case since the Government does not create the work, the Government does not "own" the work. By acquisition, the Government actually obtains entitlements to the acquired work (the rights to use, modify, reproduce, release, perform, display, or disclose technical data, in whole or in part). **Intellectual Property (IP)** is a term that describes legal entitlements attached to certain names, written or recorded media, and inventions.

The **Federal Acquisition Regulation (FAR 52.227 [R1311])** regulates the acquisition of intellectual property. The **Defense Federal Acquisition Regulation Supplement (DFARS)** supplements (and supplants where appropriate) the FAR for Department of Defense concerns. The DFARS describes **Intellectual Property Rights (IPR)** as rights that relate the application of the entitlements delineated in the preceding paragraph (use, modify, etc.) as designated by the IP owner in compliance to contractual requirements. The DFARS regulates technical data and computer software intellectual property under commercial, non-commercial and SBIR types of contracts and defines several types of rights for these property types:

- Unlimited Rights
- Government Purpose Rights (GPR)
- Limited Rights
- Restricted Rights
- Small Business Innovation Research (SBIR) Data Rights
- Specifically Negotiated License Rights
- Prior Government Rights
- License Rights

The least restrictive rights type which provides the Government with the most utilization flexibility is **Unlimited Rights**. This IPR assertion essentially allows the Government to use and disclose all or any portion of the designated IP in any manner and for any purpose whatsoever, and to have or authorize others to do so. A more restrictive type of rights is **Government Purpose Rights (GPR)**. Under this more restrictive IPR assertion, the Government has full utilization and disclosure privileges within the Government but must perform disclosure

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procedures for distribution and use outside the Government. Limited, Restricted, SBIR Data and License Rights types are even more restrictive regarding the use and disclosure of the specific IPR asserted property.

One important consideration in determining the level of rights assertion available to the IP owner depends on the source of development funding of the affected property. Non-commercial IP developed exclusively under Government funding may only have Unlimited Rights assertion. IP developed exclusively at private expense may have a Limited Rights assertion. Non-commercial IP developed with a mixture of Government and private funding may have either Government Purpose Rights assertion or Unlimited Rights assertion. In another consideration in the available level of rights assertion, the Government has Unlimited Rights for IP necessary for installation, operation, corrections, maintenance, or training purposes (other than detailed manufacturing or process data). Further, the Government shall have Unlimited Rights in technical data that are Form, **Fit, and Function** data, essentially data which describes the replaceability of interchangeable IP.

**Note:** *Form, fit, and function data is technical data that describes the required overall physical, functional, and performance characteristics (along with the qualification requirements, if applicable) of an item, component, or process to the extent necessary to permit identification of physically and functionally interchangeable items.*

The IP rights treatment flexibility that the DFARS offers implements acquisition objectives with specific but separate benefits to both Contractors and the Government. Specific and distinct IPR options are available in acquisition strategy for association with individual works (delivery items in the acquisition sense). It is often to the Government's advantage not to have the same IPR option exercised for all items in a specific contract. Concerning the benefits and objectives, the optional restricted rights options such as GPR protect contractors who provide innovative capability using mixed or private development funds. The Unlimited Rights requirement provides the Government with the most utilization leverage for capability acquired exclusively at the Government's expense. The Unlimited Rights requirement for Form, Fit and Function data provides the Government with maximal third party collaboration capability to support architectural discussions and competitive component innovation and replacement opportunity. Further, IPR options such as GPR facilitate capability reuse with available but controlled third party disclosure flexibility.

### Distinction Between Computer Software and Technical Data IP Rights

Of particular interest in this discussion are the IP rights in the acquisition of technical data and computer software. The DFARS provides definitions which make a clear, mutually exclusive distinction between **Computer Software** and **Technical Data**. Computer Software is essentially **an executable set of instructions which is capable of causing a computer to perform operations**. This definition includes materials which can recreate or reproduce the specific set of executable instructions. Further, this definition explicitly excludes computer databases and software documentation. The DFARS defines Technical Data as **recorded information of a scientific or technical nature** (including computer software documentation but explicitly excluding computer software and financial and/or management data incidental to contract administration). Summarily in the DFARS context, software is not technical data; and likewise, technical data is not software.

### Importance of Unlimited Rights for Key Interfaces

Intellectual property restrictions on architecture documentation present a barrier to achieving Open Architecture (OA) objectives. The ability for the Government and Industry partners to collaborate in developing and applying architectures underlies every fundamental OA principle: interoperability, competitive affordability, upgrade responsiveness, asset reuse, and competitive innovation. Each of these OA principles is based on the tenet that the collective contribution from multiple sources provides benefits beyond the contribution of any single source. Unlimited Rights in Technical Data does not have the **Non-Disclosure Agreement (NDA)** requirement imposed with Government Purpose Rights, and consequently is more convenient for data distribution of the associated data to and between contractors. Therefore, It is recommended that new and sustaining non-commercial acquisition encourage Unlimited Rights in Technical Data be associated with the interface technical data documentation regarding **key interfaces**.

**Note:** *A fundamental premise of Open Architecture is that competition leads to more innovative and affordable systems. The sound engineering practice of separating interface and implementation documentation is an enabler (as opposed to being a barrier) to competition. The key point is that the separation of the interface and implementation isolates the externally exposed interface details from the internal implementation details. In this "Black Box" concept, usage requires external access to the interface. This concept also protects against the*

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*external usage requirement for detailed internal implementation information. As a consequence, implementation information may be afforded a private access treatment, thereby allowing IP protection for the implementation without affecting its unrestricted usage. This allows IP protection for the competitor providing a specific innovative component implementation. Concurrently in the competitive environment, other competitors may innovate independently using the separate interface documentation without the IP restrictions that are imposed on another competitor's implementation. IP rights treatment in an acquisition can take advantage of the interface and implementation separation by applying potentially distinct IP rights assertions for data, depending upon the type of data.*

### Intellectual Property Rights Labeling

The final point of this perspective concerns the labeling requirements that the DFARS describe. The Contractor is responsible for explicitly labeling each delivery item in order to assert the intended rights for each item. The Government is responsible for monitoring the labeled rights asserted for each delivered item to insure that the asserted rights match the contractual agreement.

### Guidance

- [G1882](#): Provide Government approved data rights labels and markings for all deliverables.

### Best Practices

- [BP1899](#): Obtain Unlimited Rights for **Key Interface** documentation.

## G1784

**Include a statement in the solicitation for Contractors to identify and list data rights for all proposed products.**

### Rationale:

Reusing GOTS requires understanding all the data rights associated with each artifact involved with the solution.

### Referenced By:

[NESI / Part 2: Traceability / Naval Open Architecture / Reusability](#)

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section K: Representations, Certifications, and Other Statements of Offerors \(Data Rights\)](#)

### Evaluation Criteria:

#### 1) Test:

Does the solicitation include a statement for the offerer to identify data rights for all proposed products?

#### Procedure:

Review the solicitation and identify statements that require the offerer to identify data rights for all proposed products.

#### Example:

Example data rights markings include markings for Unlimited Rights and Government Purpose Rights.

## G1785

**Stipulate that evaluation criteria will include the extent to which an Offeror's proposed technical solution builds on reuse of common functionality.**

### Rationale:

The Government must stipulate what evaluation criteria will be used to evaluate proposed solutions. Having the Offeror specify the extent to which proposed solutions build on reuse of common functionality aids in the evaluation of proposals and aids in identification of common functionality.

### Referenced By:

[NESI / Part 2: Traceability / Naval Open Architecture / Interoperability](#)

[NESI / Part 2: Traceability / Naval Open Architecture / Reusability](#)

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section M: Evaluation Factors for Award](#)

### Evaluation Criteria:

#### 1) Test:

Has the government stipulated that evaluation criteria will include the extent to which an Offeror's proposed technical solution builds on reuse of common functionality?

#### Procedure:

Check Section M for a statement that states reuse of common functionality will be used as an evaluation criterion for proposals.

#### Example:

None.

## G1786

**Stipulate that evaluation criteria will include the extent to which an Offeror's proposed technical solution builds on well defined services.**

### Rationale:

The Government must stipulate what evaluation criteria will be used to evaluate proposed solutions. Having the Offeror specify the extent to which proposed solutions build on reuse of well defined services aids in the evaluation of proposals and further improves service reuse.

### Referenced By:

[NESI / Part 2: Traceability / Naval Open Architecture / Interoperability](#)

[NESI / Part 2: Traceability / Naval Open Architecture / Reusability](#)

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section M: Evaluation Factors for Award](#)

### Evaluation Criteria:

#### 1) Test:

Has the government stipulated that evaluation criteria will include the extent to which an Offeror's proposed technical solution builds on well defined services?

#### Procedure:

Check Section M for a statement that states the extent to which the proposed solution builds on well defined services will be used as an evaluation criterion for proposals.

#### Example:

None.

## G1787

**Stipulate that the Offeror is to use the NESI *Net-Centric Implementation* documentation set to assess net-centric interoperability.**

### Rationale:

NESI guidance and its associated checklists are useful tools (used by themselves or in conjunction with other tools) for assessing how a program is meeting its net-centric and interoperability objectives.

### Referenced By:

[NESI / Part 2: Traceability / Naval Open Architecture / Interoperability](#)

[NESI / Part 2: Traceability / Naval Open Architecture / Reusability](#)

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section J: List of Attachments](#)

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Post Award Contract Actions](#)

### Evaluation Criteria:

#### 1) Test:

Has the Government stipulated that the Offeror is to use NESI to assess net-centricity and interoperability?

#### Procedure:

Identify statements in policy, RFPs, SOWs, or CDRLs that stipulate that the Offeror is to use NESI to assess net-centricity and interoperability?

#### Example:

PEO C4I uses the Technical Evaluation Checklist (<http://nesipublic.spawar.navy.mil/checklist>) as a means for Program Managers to assess how well their programs meet net-centric objectives.

## G1788

**Stipulate that the Offeror is to use Government approved data rights labels and markings for all deliverables that are identified as Unlimited or Government Purpose Rights.**

### Rationale:

Reusing deliverables or components of deliverables requires a full understanding of the data rights associated with each artifact in the deliverable. Identified data rights for each artifact through the use of data right labels are important in order to protect the legal rights of both the contractor and government during component reuse.

### Referenced By:

[NESI / Part 2: Traceability / Naval Open Architecture / Reusability](#)

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section J: List of Attachments](#)

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Post Award Contract Actions](#)

### Evaluation Criteria:

#### 1) Test:

Has the government stipulated that the Offeror is to use government approved data rights labels and markings for all deliverables that are identified as Unlimited or Government Purpose Rights.

#### Procedure:

Identify statements in the RFP, SOW, or CDRLs which mandate the use of government approved data rights labels for any deliverables that are identified as Unlimited or Government Purpose Rights.

#### Example:

None.

## G1882

**Provide Government approved data rights labels and markings for all deliverables.**

### Rationale:

Reusing deliverables or components of deliverables requires a full understanding of the data rights associated with each artifact in the deliverable. Identified data rights for each artifact through the use of data right labels are important in order to protect the legal rights of both the contractor and government during component reuse.

### Referenced By:

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Intellectual Property Rights](#)

### Evaluation Criteria:

#### 1) Test:

Do all deliverables have Government approved data rights labels and markings?

#### Procedure:

Check deliverables for the use of Government approved data rights labels and markings.

#### Example:

None.

## G1900

**Stipulate that evaluation criteria will include the extent to which an Offeror's proposed technical solution provides Unlimited Rights for **Key Interface** documentation.**

### Rationale:

The Government must stipulate what evaluation criteria it will use to evaluate proposed solutions. Having the Offeror specify the extent to which proposed solutions provide Unlimited Rights for **Key Interface** documentation aids in the evaluation of proposals.

Intellectual property restrictions on architecture documentation present a barrier to achieving Open Architecture (OA) objectives. The ability for the Government and Industry partners to collaborate is vital to ensure interoperability, competitive affordability, upgrade responsiveness, asset reuse and competitive innovation. Unlimited Rights in Technical Data do not have the Non-Disclosure Agreement (NDA) requirement imposed with Government Purpose Rights, and consequently, are more convenient for distribution of key interface documentation to and between contractors.

### Referenced By:

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section M: Evaluation Factors for Award](#)

### Evaluation Criteria:

#### 1) Test:

Has the government stipulated that evaluation criteria will include the extent to which an Offeror's proposed technical solution provides Unlimited Rights for **Key Interface** documentation?

#### Procedure:

Check Section M for a statement that states the extent to which the proposed solution provides Unlimited Rights for **Key Interface** documentation will be used as an evaluation criterion for proposals.

#### Example:

## BP1789

Include in the **Technical Requirements Document (TRD)** specific requirements extracted from the NESI *Net-Centric Implementation* documentation set based on the net-centric capabilities and functions the Government needs as part of the acquisition.

### Rationale:

The Technical Requirements Document provides Offerors with detailed information regarding what the proposal is requesting. Ask Offerors to comply with these technical and performance requirements as part of the competition. This information will be used as part of the award evaluation.

**Note:** The NESI Implementation Document Set is available at <http://nesipublic.spawar.navy.mil>.

### Referenced By:

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section C: Description/ Specifications/Work Statement](#)

### Evaluation Criteria:

#### 1) Test:

Does the TRD contain requirements extracted from the NESI *Net-Centric Implementation* documentation set?

#### Procedure:

Inspect the TRD looking for specific requirements based on NESI guidance.

#### Example:

None.

## BP1790

**Stipulate that the Offeror is to describe how the proposed technical solution reuses services from other systems or demonstrates composeability and extensibility by building from existing reusable components and/or services.**

### Rationale:

Reuse of existing components and services leads to reduced costs and promotes modularity and composeability. Reusable artifacts are common in large distributed networks. Future systems will be required to demonstrate composing new solutions from reusable components and services.

### Referenced By:

[NESI / Part 2: Traceability / ASD\(NII\): Net-Centric Guidance / Transport / Design Tenet: Layering and Modularity](#)  
[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section L: Instructions, Conditions, and Notices to Offerors](#)

### Evaluation Criteria:

#### 1) Test:

Does the Offeror demonstrate reuse of existing components or services?

#### Procedure:

Identify in the proposal the components or services identified as being reused.

#### Example:

None.

## BP1791

**Stipulate that the Offeror is to describe how the proposed technical solution demonstrates software practices that support reuse.**

### Rationale:

Service-oriented architecture approaches will shift the development environment from large stovepipe waterfall approaches to incremental approaches supporting highly reusable components and services.

### Referenced By:

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section L: Instructions, Conditions, and Notices to Offerors](#)

### Evaluation Criteria:

#### 1) Test:

Does the Offeror describe how the proposed technical solution demonstrates software practices that support reuse?

#### Procedure:

Using NESI guidance, evaluate the Offeror's proposal and identify software development practices based on loose coupling, component based frameworks, N-tiered approach, separation of implementation from interface, and well defined services.

#### Example:

None.

## BP1792

Include a reference to NESI *Part 3: Migration Guidance* in the SOW Section 2 *Applicable Documents*.

### Rationale:

NESI *Part 3: Migration Guidance* defines incremental migration strategies tailored according to the ASD(NII)/DoD CIO Net-Centric Category and NESI Migration Level of a program, project or application.

**Note:** *Part 3: Migration Guidance* is available at <http://nesipublic.spawar.navy.mil/docs/part3>.

Add this reference in an Appendix to the Statement of Work (SOW) for an additional acquisition increment, if not already in the original SOW, with the stipulation to follow NESI Part 3 guidance for all refresh and new start development activities for transitioning and developing software solutions.

### Referenced By:

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section C: Description/ Specifications/Work Statement](#)

### Evaluation Criteria:

#### 1) Test:

Does the SOW Section 2 *Applicable Documents* contain a reference to NESI Part 3?

#### Procedure:

Check the SOW in Section 2 *Applicable Documents* and look for a reference to NESI Part 3.

#### Example:

None.

## BP1793

Include a reference to NESI *Part 4: Node Guidance* in the SOW Section 2 *Applicable Documents*.

### Rationale:

*Part 4: Node Guidance* provides system engineering-level guidance for developing and implementing nodes. It also provides high-level guidance for how applications, services, data, and enterprise services interact in the context of a node.

**Note:** *Part 4: Node Guidance* is available at <http://nesipublic.spawar.navy.mil/docs/part4>.

Add this reference in an Appendix to the Statement of Work (SOW) for an additional acquisition increment, if not already in the original SOW, with the stipulation to follow NESI Part 4 guidance for all refresh and new start development activities for transitioning and developing software solutions.

### Referenced By:

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section C: Description/ Specifications/Work Statement](#)

### Evaluation Criteria:

#### 1) Test:

Does the SOW Section 2 *Applicable Documents* contain a reference to NESI Part 4?

#### Procedure:

Check the SOW in Section 2 *Applicable Documents* and look for a reference to NESI Part 4.

#### Example:

None.

## BP1794

Include a reference to NESI *Part 5: Developer Guidance* in the SOW Section 2 *Applicable Documents*.

### Rationale:

NESI *Part 5: Developer Guidance* provides chief engineers and software developers with detailed implementation guidance for applications, services, and data. This effort leverages current best practices from the software development community to enable the DoD to create net-centric, extensible, scalable enterprise applications.

**Note:** *Part 5: Developer Guidance* is available at <http://nesipublic.spawar.navy.mil/docs/part5>.

Add this reference in an Appendix to the Statement of Work (SOW) for an additional acquisition increment, if not already in the original SOW, the stipulation to follow NESI Part 3 and Part 5 guidance for all refresh and new start development activities for transitioning and developing software solutions.

### Referenced By:

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section C: Description/ Specifications/Work Statement](#)

### Evaluation Criteria:

#### 1) Test:

Does the SOW Section 2 *Applicable Documents* contain a reference to NESI Part 5?

#### Procedure:

Check the SOW in Section 2 *Applicable Documents* and look for a reference to NESI Part 5.

#### Example:

None.

## BP1795

Include a reference in the SOW Section 2 *Applicable Documents* to the NESI *Technical Evaluation Checklist* measuring net-centric compliance.

### Rationale:

Navy PEO C4I currently uses the *Technical Evaluation Checklist* as part of an assessment program for Program Managers to evaluate the degree to which their programs meet net-centric objectives.

**Note:** The checklist is available at <http://nesipublic.spawar.navy.mil/checklist/tool>.

Add this reference in an Appendix to the Statement of Work (SOW) for an additional acquisition increment, if not already in the original SOW, the stipulation to Use the Technical Evaluation Checklist for all refresh and new start development activities for transitioning and developing software solutions.

### Referenced By:

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Reuse / Section C: Description/ Specifications/Work Statement](#)

### Evaluation Criteria:

#### 1) Test:

Does the SOW Section 2 *Applicable Documents* contain a reference to a technical evaluation checklist?

#### Procedure:

For Navy PEO programs, check the SOW Section 2 *Applicable Documents* for a reference to a technical evaluation checklist.

#### Example:

Navy PEO checklist example located at <http://nesipublic.spawar.navy.mil/checklist/tool>.

## BP1899

Obtain Unlimited Rights for **Key Interface** documentation.

### Rationale:

Intellectual property restrictions on architecture documentation present a barrier to achieving Open Architecture (OA) objectives. The ability for the Government and Industry partners to collaborate is vital to ensure interoperability, competitive affordability, upgrade responsiveness, asset reuse and competitive innovation. Unlimited Rights in Technical Data do not have the Non-Disclosure Agreement (NDA) requirement imposed with Government Purpose Rights, and consequently are more convenient for distribution of key interface documentation to and between contractors.

### Referenced By:

[NESI / Part 6: Contracting Guidance for Acquisition / Contracting Guidance for Intellectual Property Rights](#)

# Glossary

Assistant Secretary of Defense for Networks and Information Integration	ASD (NII)	(Source: <a href="http://www.dod.mil/nii/">http://www.dod.mil/nii/</a> )
Community of Interest	COI	A COI is a collaborative group of users that must exchange information in pursuit of its shared goals, interests, missions, or business processes and therefore must have shared vocabulary for the information it exchanges. (Source: <a href="#">DoDD 8320.02</a> , 2 December 2004, <i>Data Sharing in a Net-Centric Department of Defense</i> )
Community of Interest Service		A service that may be offered to the enterprise, but is owned and operated by a <b>Community of Interest</b> to provide or support a well-defined set of mission functions and associated information.
Component-Based Software		Mission applications that are architected as components integrated within a component framework.
Contract Data Requirements List	CDRL	A list of contract data requirements that are authorized for a specific acquisition and made a part of the contract. (Source: <a href="http://www.dau.mil/pubs/glossary/12th_Glossary_2005.pdf">http://www.dau.mil/pubs/glossary/12th_Glossary_2005.pdf</a> )
Defense Federal Acquisition Regulation Supplement	DFARS	See the <b>OUSD</b> (AT&L) Defense Procurement and Acquisition Policy Web site DFARS page ( <a href="http://www.acq.osd.mil/dpap/dars/dfars/index.htm">http://www.acq.osd.mil/dpap/dars/dfars/index.htm</a> ).
Department of Defense	DoD	The Department of Defense is America's oldest and largest government agency. The DoD mission is to provide the military forces needed to deter war and to protect the security of the United States. (Source: adapted from <i>DoD 101, An Introductory Overview of the Department of Defense</i> ; <a href="http://www.defenselink.mil/pubs/dod101/">http://www.defenselink.mil/pubs/dod101/</a> ; accessed 30 April 2009)
Federal Acquisition Regulation	FAR	The Federal Acquisition Regulations System is established for the codification and publication of uniform policies and procedures for acquisition by all executive agencies. The Federal Acquisition Regulations System consists of the Federal Acquisition Regulation (FAR), which is the primary document, and agency acquisition regulations that implement or supplement the FAR (e.g., <b>DFARS</b> ). (Source: <a href="http://acquisition.gov/far/current/html/Subpart%201_1.html#wp1130776">http://acquisition.gov/far/current/html/Subpart%201_1.html#wp1130776</a> )
Global Information Grid	GIG	Globally interconnected, end-to-end set of information capabilities, associated processes, and personnel for collecting, processing, storing, disseminating, and managing information on demand to warfighters, policy makers, and support personnel. The GIG includes all owned and leased communications and computing systems and services,

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		software (including applications), data, security services, and other associated services necessary to achieve Information Superiority. It also includes National Security Systems (NSS) as defined in section 5142 of the Clinger-Cohen Act of 1996. The GIG supports all DoD, National Security, and related Intelligence Community (IC) missions and functions (strategic, operational, tactical, and business) in war and in peace. The GIG provides capabilities from all operating locations (bases, posts, camps, stations, facilities, mobile platforms, and deployed sites). The GIG provides interfaces to coalition, allied, and non-DoD users and systems.
Integrated Development Environment	IDE	
Interface		<p>The functional and physical characteristics required to exist at a common boundary or connection between systems or items. (Source: <i>Defense Standardization Program (DSP) Policies and Procedures</i>, <a href="#">DoD 4120.24-M</a>, March 2000)</p> <p>A Key Interface is a common boundary shared between system modules that provides access to critical data, information, materiel, or services; and/or is of high interest due to rapid technological change, a high rate of failure, or costliness of connected modules. (Source: <i>A Modular Open Systems Approach (MOSA) to Acquisition</i>, Version 2.0, September 2004; <a href="http://www.acq.osd.mil/osjtf/mosapart.html">http://www.acq.osd.mil/osjtf/mosapart.html</a>)</p>
Key Interface Profile	KIP	An operational functionality, systems functionality and technical specifications description of the Key Interface. The profile consists of refined Operational and Systems Views, interface control specifications, Technical View with SV-TV Bridge, and referenced procedures for KIP compliance. The key interface profile is the technical specification that governs access to the <b>GIG</b> . (Source: CJCSI 6212.01D[R1175], 8 March 2006, Glossary page GL-14)
Layered Software Architecture		Application software is separated into n-tiers that separate concerns; minimally, presentation, middle, and data tiers.
Modular Open Systems Approach	MOSA	a Modular Open Systems Approach (MOSA) is both a business and technical strategy for developing a new system or modernizing an existing one. It is an integral part of the toolset that will help DoD to achieve its goal of providing the joint combat capabilities required for 21st century warfare, including supporting and evolving these capabilities over their total life-cycle. (Source: <i>MOSA Program Manager's Guide</i> , Executive Summary, <a href="http://www.acq.osd.mil/osjtf/html/mosa_assessment.html">http://www.acq.osd.mil/osjtf/html/mosa_assessment.html</a> )
Net-Centric Enterprise Services	NCES	The NCES program provides enterprise-level Information Technology (IT) services and infrastructure components, also called Core Enterprise Services, for the Department of Defense (DoD) Global Information Grid (GIG).

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<p>Net-Centric Operations and Warfare Reference Model</p>	<p>NCOW RM</p>	<p>The NCOW RM describes the activities required to establish, use, operate, and manage the net-centric enterprise information environment to include the generic user interface, the intelligent-assistant capabilities, the net-centric service capabilities (core services, <b>Community of Interest (COI) services</b>, and environment control services), and the enterprise management components. It also describes a selected set of key standards that will be needed as the NCOW capabilities of the <b>Global Information Grid (GIG)</b> are realized. The NCOW RM represents the objective end-state for the GIG. This objective end-state is a service-oriented, inter-networked, information infrastructure in which users request and receive services that enable operational capabilities across the range of military operations; <b>DoD</b> business operations; and Department-wide enterprise management operations. The NCOW RM is a key compliance mechanism for evaluating DoD information technology capabilities and the <b>Net-Ready Key Performance Parameter</b>. (Source: CJCSI 6212.01D, 8 March 2006, Glossary pages GL-17 and GL-18)</p>
<p>Net-Ready Key Performance Parameter</p>	<p>NR-KPP</p>	<p>The NR-KPP assesses information needs, information timeliness, information assurance, and net-ready attributes required for both the technical exchange of information and the end-to-end operational effectiveness of that exchange. The NR-KPP consists of verifiable performance measures and associated metrics required to evaluate the timely, accurate, and complete exchange and use of information to satisfy information needs for a given capability. The NR-KPP is comprised of the following elements:</p> <ul style="list-style-type: none"> <li>• Compliance with the <b>NCOW RM</b>.</li> <li>• Compliance with applicable <b>GIG KIPs</b>.</li> <li>• Verification of compliance with DoD information assurance requirements.</li> <li>• Supporting integrated architecture products required to assess information exchange and use for a given capability.</li> </ul> <p>(Source: <a href="#">DoD Instruction 4630.8</a>, <i>Procedures for Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)</i>, 30 June 2004, <a href="#">[R1168]</a> Enclosure 2 Section E2.1.51)</p>
<p>Network Centric Warfare</p>	<p>NCW</p>	<p>NCW is an information superiority-enabled concept of operations that generates increased combat power by networking sensors, decision makers, and shooters to achieve shared awareness, increased speed of command, higher tempo of operations, greater lethality, increased survivability, and a degree of self-synchronization. In essence, NCW translates information superiority into combat power by effectively linking knowledgeable entities in the battlespace. (Source: <i>Network Centric Warfare: Developing and Leveraging Information Superiority</i>. David S. Alberts, John J. Garstka and Frederick P. Stien. DoD Command and Control Research Program Publication Series, available at <a href="http://www.dodccrp.org/files/Alberts_NCW.pdf">http://www.dodccrp.org/files/Alberts_NCW.pdf</a>)</p>
<p>Office of the Under Secretary of Defense</p>	<p>OUSD</p>	
<p>Request for Proposal</p>	<p>RFP</p>	<p>A Request for Proposal is a solicitation for offerors to submit a proposal for a product or service.</p>

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Service-Oriented Architecture	SOA	<p>NESI describes SOA as an architectural style used to design, develop, and deploy information technology (IT) systems based on decomposing functionality into services with well-defined interfaces.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>Note:</b> See the <a href="#">Service-Oriented Architecture [P1304]</a> perspective in Part 1 for additional information.</p> </div>
Statement of Objectives	SOO	<p>That portion of a contract that establishes a broad description of the government's required performance objectives. (Source: <a href="#">DoDAF v1.5 Volume I: Definitions and Guidelines</a>, 23 April 2007)</p>
Statement of Work	SOW	<p>That portion of a contract that establishes and defines all nonspecification requirements for contractor's efforts either directly or with the use of specific cited documents. (Source: <a href="#">DoDAF v1.5 Volume I: Definitions and Guidelines</a>, 23 April 2007)</p>
Technical Requirements Document	TRD	
Transmission Control Protocol	TCP	<p>One of the core protocols of the Internet protocol suite. Using TCP, programs on networked computers can create connections to one another, over which they can send data. The protocol guarantees that data sent by one endpoint will be received in the same order by the other, without any pieces missing. It also distinguishes data for different applications (such as a Web server and an email server) on the same computer. (Source: <a href="http://en.wikipedia.org/wiki/Transmission_Control_Protocol">http://en.wikipedia.org/wiki/Transmission_Control_Protocol</a>)</p>

# References

R1164	DoD Directive 5000.1, <i>The Defense Acquisition System</i> , 12 May 2003 (certified current as of 24 November 2003); <a href="http://www.dtic.mil/whs/directives/corres/pdf/500001p.pdf">http://www.dtic.mil/whs/directives/corres/pdf/500001p.pdf</a> .
R1165	DoD Instruction 5000.2, <i>Operation of the Defense Acquisition System</i> , 12 May 2003; <a href="http://www.dtic.mil/whs/directives/corres/pdf/500002p.pdf">http://www.dtic.mil/whs/directives/corres/pdf/500002p.pdf</a> .
R1166	DoD Directive 8100.1, <i>Global Information Grid (GIG) Overarching Policy</i> , 19 September 2002 (certified current as of 21 November 2003); <a href="http://www.dtic.mil/whs/directives/corres/pdf/810001p.pdf">http://www.dtic.mil/whs/directives/corres/pdf/810001p.pdf</a> .
R1167	DoD Directive 4630.05, <i>Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)</i> , 05 May 2004 (certified current as of 23 April 2007); <a href="http://www.dtic.mil/whs/directives/corres/pdf/463005p.pdf">http://www.dtic.mil/whs/directives/corres/pdf/463005p.pdf</a> .
R1168	DoD Instruction 4630.8, <i>Procedures for Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)</i> , 30 June 2004; <a href="http://www.dtic.mil/whs/directives/corres/pdf/463008p.pdf">http://www.dtic.mil/whs/directives/corres/pdf/463008p.pdf</a> .
R1170	<i>DoD Global Information Grid (GIG) Architecture</i> , Version 2.0, August 2003.
R1171	<i>DoD Architecture Framework (DoDAF)</i> , Version 1.5, 23 April 2007; <a href="https://dars1.army.mil/IER/index.jsp">https://dars1.army.mil/IER/index.jsp</a>
R1172	<i>DoD Net-Centric Data Strategy</i> , DoD Chief Information Officer, 9 May 2003, <a href="http://www.defenselink.mil/cio-nii/docs/Net-Centric-Data-Strategy-2003-05-092.pdf">http://www.defenselink.mil/cio-nii/docs/Net-Centric-Data-Strategy-2003-05-092.pdf</a>
R1173	CJCSI 3170.01F, <i>Joint Capabilities Integration and Development System</i> , 01 May 2007; <a href="http://www.dtic.mil/cjcs_directives/cdata/unlimit/3170_01new.pdf">http://www.dtic.mil/cjcs_directives/cdata/unlimit/3170_01new.pdf</a> .
R1174	CJCSM 3170.01C, <i>Operation of the Joint Capabilities Integration and Development System</i> , 01 May 2007; <a href="http://www.dtic.mil/cjcs_directives/cdata/unlimit/m317001.pdf">http://www.dtic.mil/cjcs_directives/cdata/unlimit/m317001.pdf</a> .
R1175	CJCSI 6212.01E, <i>Interoperability and Supportability of Information Technology and National Security Systems</i> , 15 December 2006; <a href="http://www.dtic.mil/cjcs_directives/cdata/unlimit/6212_01.pdf">http://www.dtic.mil/cjcs_directives/cdata/unlimit/6212_01.pdf</a> .
R1176	<i>Net-Centric Operations and Warfare Reference Model (NCOW RM)</i> , v1.1, 17 November 2005.
R1177	<i>Net-Centric Checklist</i> , V2.1.3, Office of the Assistant Secretary of Defense for Networks and Information Integration/Department of Defense Chief Information Officer, 12 May 2004; <a href="http://www.defenselink.mil/cio-nii/docs/NetCentric_Checklist_v2-1-3_.pdf">http://www.defenselink.mil/cio-nii/docs/NetCentric_Checklist_v2-1-3_.pdf</a> .
R1178	<i>A Modular Open Systems Approach (MOSA) to Acquisition</i> , Version 2.0, September 2004; <a href="http://www.acq.osd.mil/osjtf/mosapart.html">http://www.acq.osd.mil/osjtf/mosapart.html</a> .
R1179	<i>DoD IT Standards Registry (DISR)</i> ; <a href="http://disronline.disa.mil">http://disronline.disa.mil</a> .
R1180	<i>Net-Centric Attributes List</i> , Office of the Assistant Secretary of Defense for Networks and Information Integration/Department of Defense Chief Information Officer, 2 February 2007; <a href="http://www.defenselink.mil/cio-nii/docs/NetCentricAttributesOfficial.pdf">http://www.defenselink.mil/cio-nii/docs/NetCentricAttributesOfficial.pdf</a> .

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R1181	<i>Global Information Grid (GIG) Key Interface Profiles (KIPs) Framework (DRAFT)</i> , Version 0.95, 7 October 2005.
R1182	Office of the Under Secretary of Defense (USD) for Acquisition, Technology and Logistics (AT&L) memorandum, <i>Instructions for Modular Open Systems Approach (MOSA) Implementation</i> , 7 July 2004, available at <a href="http://www.acq.osd.mil/osjtf">www.acq.osd.mil/osjtf</a>
R1183	Assistant Secretary of the Navy (Research, Development and Acquisition) memorandum, <i>Software Process Improvement Initiative Contract Language</i> , 17 November 2006
R1184	Program Executive Office, Integrated Warfare Systems (PEO-IWS 7), <i>Naval Open Architecture Contract Guidebook</i> , Version 1.1, 25 October 2007 available via the Defense Acquisition University Acquisition Community Connection Web site ( <a href="https://acc.dau.mil/oa">https://acc.dau.mil/oa</a> ) by following the "Policy & Guidance" link.
R1185	GAO Report to Congressional Committees, Weapons Acquisition, <i>DOD Should Strengthen Policies for Assessing Technical Data Needs to Support Weapon Systems</i> , GAO-06-839, July 2006
R1186	<i>Providing Incentives for Spiral Developments: An Award Fee Plan</i> , Defense Journal, Supplemental Issue 2006 Vol. 12 No. 1
R1187	<i>Defense Federal Acquisition Regulation Supplement (DFARS) 252.227-7013, -7014 and -7015 Technical data # Commercial Items</i>
R1188	<i>Department of Defense Handbook for Preparation of Statement of Work (SOW)</i> , MIL-HDBK-245D, 10 September 1991, available at <a href="https://www.acqsolinc.com/mockups/7steps/library/DODhandbook.pdf">https://www.acqsolinc.com/mockups/7steps/library/DODhandbook.pdf</a>
R1189	For <i>Open Architecture Assessment Tool (OAAT)</i> information access the Defense Acquisition University (DAU) Web site located at <a href="https://acc.dau.mil/CommunityBrowser.aspx?id=18016">https://acc.dau.mil/CommunityBrowser.aspx?id=18016</a>
R1232	DoD Directive <a href="#">5230.9</a> , <i>Clearance of DoD Information for Public Release</i> , 09 April 1996
R1258	Assistant Secretary of Defense for Networks and Information Integration, Memorandum; <i>Joint Net-Centric Capabilities</i> , 15 July 2003
R1311	Federal Acquisition Regulation (FAR) Section 52.227 - Patents, Data, and Copyrights Provisions and Clauses; <a href="http://farsite.hill.af.mil/archive/Far/2001-20/52_227.htm#P2_48#P2_48">http://farsite.hill.af.mil/archive/Far/2001-20/52_227.htm#P2_48#P2_48</a>