TECHNICAL
JOINT CROSS SERVICE GROUP

ANALYSES
AND
RECOMMENDATIONS

(VOLUME XII)

19 May 2005

DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
3030 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-3030

MAY 10 2005

MEMORANDUM FOR SECRETARY OF DEFENSE

FROM: Chairman, Technical Joint Cross Service Group

SUBJECT: 2005 Base Realignment and Closure Recommendations

References: (a) Defense Base Closure And Realignment Act of 1990, Section 2903 (c)(5)

(b) Secretary of Defense Memorandum, "Transformation Through Base Realignment and Closure Memorandum" dated 15 November 2002

Enclosed is the Technical Joint Cross Service Group (JCSG) Base Realignment and Closure (BRAC) Report for BRAC 2005, as required by Section 2903(c)(5) of the Defense Base Closure and Realignment Act of 1990, as amended. I certify that the information contained in this report is accurate and complete to the best of my knowledge and belief. I look forward to working with the Commission as our recommendations proceed through the BRAC process.

Ronald M. Sega

Attachment:
As stated

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Part I

Executive Summary

"At a minimum, BRAC 2005 must eliminate excess physical capacity; the operation, sustainment, and recapitalization of which diverts scarce resources from defense capability. However, BRAC 2005 can make an even more profound contribution to transforming the Department by rationalizing our infrastructure with defense strategy. BRAC 2005 should be the means by which we reconfigure our current infrastructure into one in which operational capacity maximizes both warfighting capability and efficiency."

Donald H. Rumsfeld, Secretary of Defense
November 15, 2002[1]

As part of the 2005 Base Realignment and Closure (BRAC) process, the Secretary of Defense chartered the Technical Joint Cross Service Group (TJCSG) to evaluate and make specific recommendations to close or realign Department of Defense (DoD) technical facilities. Technical facilities under the purview of the TJCSG include all DoD assets that perform a research (R) function; a development and acquisition (D&A) function; or a test and evaluation (T&E) function, a set of functions that is commonly referred to as RDAT&E.

To guide its analysis and recommendation development, the TJCSG established two principles and an overarching strategic framework. The two principles were:

- Provide efficiency of operations by consolidating technical facilities to enhance synergy and reduce excess capacity, and,

- Maintain competition of ideas by retaining at least two geographically separated sites, each of which would have similar combination of technologies and functions. This will also provide continuity of operations in the event of unexpected disruption.

Consistent with these two principles, the TJCSG used a strategic framework to establish multifunctional and multidisciplinary technical RDAT&E Centers of Excellence which should provide the scientific and technical advances that should enable the Department to develop capabilities and weapons that are technologically superior to those of potential adversaries into the future. The multifunctional and multidisciplinary nature of the

[1] Secretary of Defense Memorandum, *Transformation Through Base Realignment and Closure Memorandum* dated November 15, 2002

Centers of Excellence should allow more rapid transition of technology and enhance integration of multiple technologies. The Centers of Excellence will be complemented by the Department's existing technical facilities that have a disciplinary focus.[2]

The TJCSG also recognized that to effectively accomplish the Department's RDAT&E functions, key partners outside of Department of Defense are essential, including other government organizations, industry, universities, and the international community. Finally, the rapidly changing and uncertain environment of the 21st Century required that the TJCSG analysis and recommendations ensure that sufficient surge capability would be available for the future Defense RDAT&E infrastructure and missions.

The TJCSG recommendations provide Centers of Excellence for the Department in the following three constructs:

- Defense Research Laboratories whose functions include, but are not limited to, basic and applied research; these research laboratories are inherently multidisciplinary.

- Integrated Research (R), Development and Acquisition (D&A), and Test and Evaluation (T&E) Centers across DoD technology areas that are involved with maturing platforms and capabilities. These include Ground, Maritime, Air, and Space platforms; Weapons and Armaments; and Chemical-Biological Defense Systems.

- Integrated Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Centers intended to enable an advanced joint battlespace awareness capability with a joint program management office and RDAT&E domain centers for land, maritime, air and space. This infrastructure should also enable a future joint management structure.

Using this approach, while retaining many technical disciplines support sites, the TJCSG developed recommendations to consolidate activities at the following:

- Defense Research Laboratories:

    - Major multidisciplinary laboratories at Aberdeen Proving Ground, MD; the Naval Research Laboratory, Washington, DC; Wright Patterson AFB, OH; supplemented by laboratories at Adelphi, MD; Stennis Space Center, MS; Rome, NY; and Kirtland AFB NM.

[2] Multifunction refers to those activities that perform more than one function (research, development and acquisition, and test and evaluation). Thus, a center that performs research and development and acquisition (RD&A) is multifunctional. Multidisciplinary refers to activities that operate in more than one technical discipline. For example, a center that conducts electronics, materials, and human factors research is a multidisciplinary research center. The BRAC recommendations enhance both the multifunctional and multidisciplinary nature of its laboratories.

- A center for research program managers at Bethesda, MD. This research center co-locates those organizations that primarily contract research. The co-location at Bethesda should also allow greater synergy in the biological and medical sciences due to proximity to the National Institutes of Health and a proposed National Military Medical Center.

- Integrated RDAT&E Centers:[3]

  - Ground: Detroit Arsenal, MI (RDAT&E) and Aberdeen Proving Ground, MD (RDAT&E).

  - Sea: Washington Navy Yard, DC (RD&A); Carderock, MD (RD&A); Philadelphia Navy Yard, PA (DAT&E); and Newport, RI (RD&A).

  - Air: Wright Patterson AFB, OH (RD&A); Naval Air Warfare Center, Patuxent River, MD (RDAT&E); and Redstone Arsenal, AL (RDAT&E).

    - Edwards AFB, CA and Arnold AFS, TN as specialty T&E sites for air and space, and,

    - Lakehurst Naval Air Station, NJ as a specialty site for catapults and traps (RD&A).

  - Space: Kirtland AFB, NM (R); Los Angeles Air Force Base, CA (D&A); and Naval Research Laboratory, Washington, DC (R); Arnold AFS, TN as a specialty test site for air and space.

  - Weapons and Armaments: Eglin AFB, FL (RDAT&E); Redstone Arsenal, AL (RDAT&E); and China Lake, CA (RDAT&E).

    - Weapons specialty sites at Picatinny Arsenal, NJ (small caliber gun RDAT&E); Naval Surface Warfare Center, Dahlgren, VA (large caliber gun T&E and Ship Weapons Integration); and Indian Head, MD (energetic materials RDAT&E).

  - Chem-Bio Defense: Aberdeen Proving Ground, MD (chemical defense RDAT&E); Fort Detrick, MD (biomedical RDAT&E).

- Integrated C4ISR Centers:

  - Joint Management Center: Fort Meade, MD (D&A).

[3]The Integrated Centers listed herein represent those Centers that conduct the preponderance of work, as measured in Full-Time Equivalent (FTE) work years

- Land Domain: Aberdeen Proving Ground, MD (RD&A); with capability at Adelphi, MD (R).

- Air and Space Domain: Hanscom AFB, MA (RD&A); with capability at Rome, NY (R).

- Maritime Domain: Naval Support Base Point Loma, San Diego, CA (RDAT&E); and Little Creek, VA (D&A).

Several TJCSG recommendations to realign technical activity contribute to closure recommendations. Some closure recommendations are found in this volume. Other closure recommendations are found in the volumes corresponding to other Joint Cross Service Groups or the Services who owned the installations. The installations are:

- Brooks City Base, TX: Realigned to the Defense Research Laboratory and Integrated RD&A center at Wright Patterson AFB, OH to enhance synergy through integration of air platforms and human systems.
- Corona Naval Support Activity, CA: Realigned to Ventura County Naval Base, CA to enhance synergies through Ship-Weapons Integration Activity at Ventura County.
- Mesa AFS, AZ: Realigned to the Defense Research Laboratory at Wright Patterson AFB, OH to enhance synergy through integration of air platforms and human systems.
- Ft Monmouth, NJ: Realigned to the Aberdeen Proving Ground, MD to create a Land RD&A center for Communications, Information Systems, and Materials. In addition, a Center of Excellence for Chemical Biological Defense RD&A is established at Aberdeen Proving Ground, MD.
- Research Triangle, NC: Realigned the Army Research Office to Bethesda, MD to allow the creation of a research site that co-locates research program managers at Bethesda, MD. See further remarks under the Assorted Leased Activity.
- Assorted activity in leased space in and around the Washington DC National Capital Region: Realigned to Bethesda, MD, to enhance force protection, and create a single research site that co-locates research program managers at Bethesda, MD. This research office co-locates the following activities from leased space: Defense Advanced Research Projects Agency, Office of Naval Research, Air Force Office of Scientific Research, Army Research Office, and elements of the Defense Threat Reduction Agency.

The result of these changes is a restructuring of the Department's technical abilities and assets. The Department's technical activity is currently located at 146 installations.[4] The annual RDAT&E budget authority was approximately $130 billion in FY2003. If the recommendations are enacted into law, the Department will retain technical facilities located at 122 of the 146 installations.

[4] Formally, the number of installations reporting technical activity was 282; of these, 146 installations did more than 30 full-time equivalent (FTE) work years. While the TJCSG examined all facilities, the group focused the analysis on installations with more than 30 FTE work years, and then looked at smaller units as adjuncts to larger realignment. The term "installation" refers to those locations with more than 30 FTE work years unless specifically stated otherwise.

Part II

Organization and Charter

Group Identity and Organization into Subgroups

The Secretary of Defense for Acquisition, Technology and Logistics (AT&L), in his role as the Chairman of the Infrastructure Steering Group (ISG), established the Technical Joint Cross Service Group (TJCSG) in March 2003. The Director, Defense Research and Engineering was designated as the Chair. The other TJCSG members were nominated by the Military Components and appointed by the ISG, one from each of the Services and one from the Joint Staff.

To organize its efforts, the TJCSG established five subgroups, each of which took responsibility for evaluating a set of technical activities. The subgroups are: Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR); Air, Land, Sea, and Space Systems (ALSS); Weapons and Armaments (Wpn); Innovative Systems (IS); and Enabling Technology (ET). As directed by the TJCSG, the subgroups conducted detailed analyses for capacity, military value, scenario development and analysis, and ultimately developed and evaluated candidate recommendations for submission to the ISG. At each stage of the analysis, the TJCSG reviewed subgroup findings and provided oversight and direction that shaped subsequent analysis. A Capability Integration Team (CIT) and an Analytical Team also supported the efforts of the subgroups.

The TJCSG also coordinated with the other JCSGs. The most frequent coordinations were with the Education and Training (E&T) JCSG; the Headquarters and Support Activity (H&SA) JCSG; the Medical JCSG; and the Intelligence (Intel) JCSG. Figure 1 shows the organization structure.

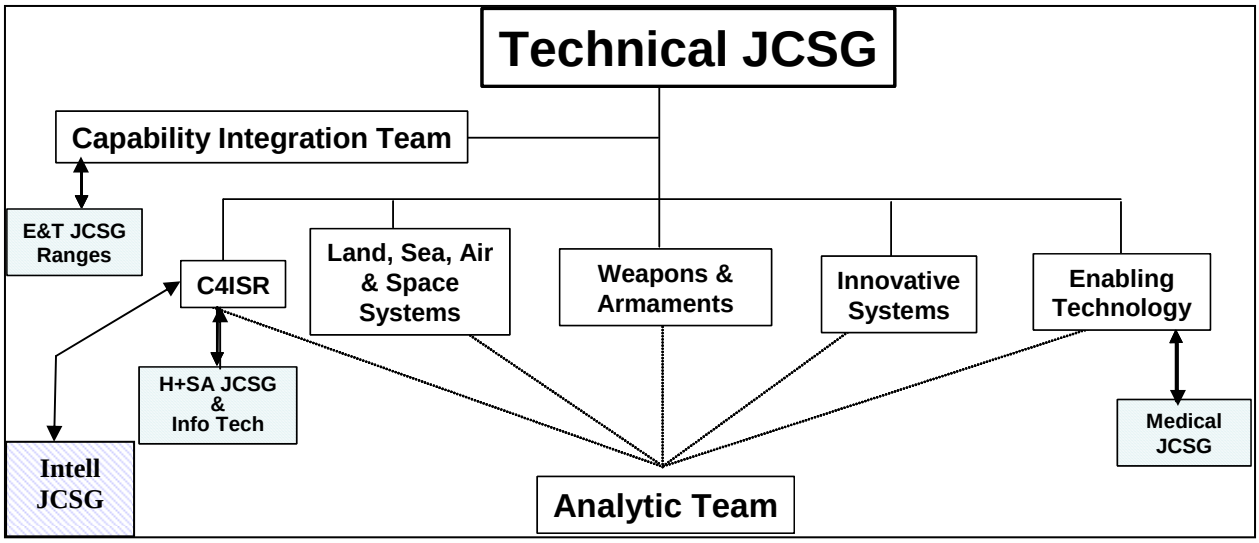

Figure 1. TJCSG organizational structure

Functions Evaluated

The TJCSG evaluated DoD technical facilities that performed any of three functions: Research (R), Development and Acquisition (D&A), and Test and Evaluation (T&E).

The Research function includes Basic Research, Exploratory Development, and Advanced Development.

The D&A function includes System Development and Demonstration; System Modifications; Experimentation and Concept Demonstration; Product/In-Service Life Cycle Support and Acquisition.

The T&E function includes Developmental Test and Evaluation (DT&E) and Operational Test and Evaluation (OT&E).

The TJCSG further delineated these functions by using the FY 2003 Defense Technical Area Plan (DTAP) to identify discrete technical facilities that could be appropriately compared to one another throughout the analysis. The DTAP has twelve technical capability areas. The TJCSG expanded this to thirteen technical capability areas because it was analytically useful to divide the single "land and sea vehicles" DTAP area into separate technical capability areas. The thirteen technical areas are:

- Air Platforms
- Battlespace Environments
- Biomedical
- Chemical & Biological Defense
- Ground Vehicles
- Human Systems
- Information Systems
- Materials & Processes

- Nuclear Technology
- Sea Vehicles
- Sensors, Electronics & Electronic Warfare
- Space Platforms
- Weapons and Armaments

The result of this approach was the creation of 39 "technical facility" categories which the TJCSG defined as "a collection of people and physical infrastructure that performs a technical function (or functions) in a specific technical capability area at a specific location." Figure 2 displays these categories graphically. It also indicates which subgroup had responsibility for each category's analysis. The Innovative Systems group did not have analytic responsibility in any of the 39 categories. The four remaining subgroups assumed responsibility to analyze closure and realignment scenarios that integrated RDAT&E across a technical domain. As the process evolved, the Innovative Systems group assumed responsibilities for development of scenarios and recommendations that cut across technical domains. This responsibility largely resulted in candidate recommendations for the Defense Research Laboratories.

Technical Capability Areas

Function	Air Platforms	Ground Vehicles	Sea Vehicles	Space Platforms	Weapons	Nuclear Technology	Materials & Processes	Biomedical	Human Systems	Battlespace Environment	Chemical & Bio Defense	Sensors, Electronics	Information Systems
Res	**ALSS**	**ALSS**	**ALSS**	**ALSS**	**Wpn**	**Wpn**	**ET**	**ET**	**ET**	**ET**	**ET**	**C4ISR**	**C4ISR**
D&A	**ALSS**	**ALSS**	**ALSS**	**ALSS**	**Wpn**	**Wpn**	**ET**	**ET**	**ET**	**ET**	**ET**	**C4ISR**	**C4ISR**
T&E	**ALSS**	**ALSS**	**ALSS**	**ALSS**	**Wpn**	**Wpn**	**ET**	**ET**	**ET**	**ET**	**ET**	**C4ISR**	**C4ISR**

Figure 2. Assignment of Technical Capability Areas to the Subgroups

Overarching Strategy and Recommendation Framework

The TJCSG was responsible for developing Base Realignment and Closure recommendations for all DoD technical facilities that perform RDAT&E. The TJCSG recognized the challenge of developing an RDAT&E infrastructure that would address the Department of Defense needs for the next 20 years in a global environment where knowledge and technology are changing rapidly. The needs for the next 20 years should be different than today. Technology is becoming increasingly multidisciplinary and multifunctional in nature, with maturation time in many disciplines becoming shorter. Knowledge creation is increasing globally. These factors suggested the need for an end state with greater agility and surge capability across disciplines and functions, and led to

an installation configuration that includes multidisciplinary and multifunctional Centers of Excellence. The desired end state is depicted in Figure 3 below.

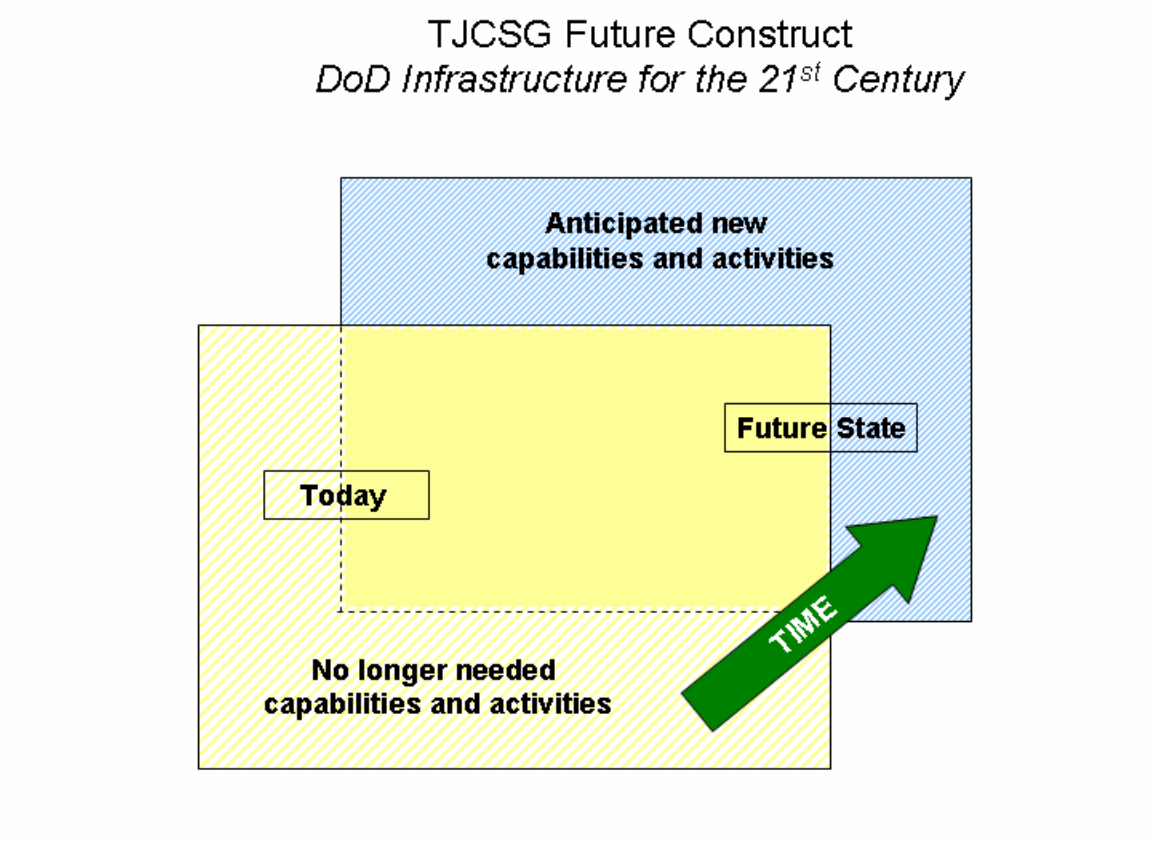

Figure 3. Transformed RDAT&E Capability and Military Value

The TJCSG began by developing characteristics to identify facilities that currently perform RDAT&E work. The ability to enable technical warfighting capability, synergy with other organizations (both inside and outside the DoD), and execution of Congressionally appropriated R, D&A or T&E funds were primary discriminators to differentiate among facilities. The DoD organizations that have these characteristics cover a domain of approximately 650 technical organizations, located at 146 installations[5]. These technical organizations employ approximately 158,827[6] full-time equivalent (FTE) government and on-site contractor personnel. DoD technical facilities executed approximately $130 billion in funding for fiscal year 2003, and by their efforts produced a number of new and enhanced technical capabilities and systems.

[5] Formally, the number of installations reporting technical activity was 282; of these, 146 installations did more than 30 full-time equivalent (FTE) work years. While the TJCSG examined all facilities, the group focused the analysis on installations with more than 30 FTE work years, and then looked at smaller units as adjuncts to larger realignment. The term "installation" refers to those locations with more than 30 FTE work years unless specifically stated otherwise.

[6] From the final capacity data call for FY03.

Principles & Strategies

The TJCSG developed guiding principles to supplement the BRAC principles established in Policy Memorandum Two (which can be found in Appendix E of Volume 1, submitted by the Secretary of Defense to the BRAC Commission)[7]. To guide its analysis and recommendation development, the TJCSG established two principles and an overarching strategic framework. The two principles were:

- Provide efficiency of operations by consolidating technical facilities to enhance synergy and reduce excess capacity, and,

- Maintain competition of ideas by retaining at least two geographically separated sites, each of which would have similar combination of technologies and functions. This will also provide continuity of operations in the event of unexpected disruption.

Increases in efficiency afforded by consolidating work done at separate facilities should allow the Department to experience gain from its investment in technical activities, and to recapitalize on excess funds to engage in additional activities to equip the future warfighter. Such consolidations carry the additional advantage of co-locating similar activities that may benefit from one another's work to create synergistic relationships among them.

Maintaining competition of ideas requires the Department to keep at least two distinct facilities doing similar work, which allows the independent work done at each to provide opportunities for collaboration and a means to spur competition among them. Such arrangements also carry the strategic benefit of providing continuity of operations should an unexpected disruption or emergency arise. In those few cases where the DoD only has one facility, the TJCSG verified that a similar capability exists in another government agency, industry, or academia, where appropriate.

Consistent with these two principles, the TJCSG also developed a strategic framework centered on establishing multifunctional and multidisciplinary technical (RDAT&E) Centers of Excellence. This strategy emphasized developing synergies, either cross-functional (for example, combining research with development and acquisition or test and evaluation) and/or cross-technical (for example, coupling materials and electronics platforms). These Centers of Excellence are designed to maximize the synergies and efficiencies of the work these facilities produce. These advantages, in turn, should produce advanced products more effectively, and will in turn provide a more effective "competitor" for other Centers of Excellence, thereby maximizing the gains the group envisioned by fostering the competition of ideas. In sum, these Centers should provide the scientific and technical advances that should enable the Department to provide

[7] Policy Memorandum 2, October 14, 2004, from the Chairman, Infrastructure Steering Group.

warfighters with future capabilities and weapons that are technologically superior to those of potential adversaries into the future.

Using these concepts and the strategic framework, the TJCSG provided recommendations that result in:

- Defense Research Laboratories that:
    - Conduct basic and applied (and in some cases more mature) research in multiple technology areas leading to scientific and technological discoveries and advances that will enable the United States to equip its warfighters with capabilities and weapons that are technologically superior to potential adversaries into the future.
    - Co-locate research program managers that primarily contract to industry, academia, or other government laboratories.
- Integrated Research (R), Development and Acquisition (D&A), and Test and Evaluation (T&E) Centers across DoD technology areas that are involved with maturing platforms and capabilities. These include:
    - Ground Systems
    - Maritime Systems
    - Air Systems
    - Space Systems
    - Weapons and Armaments and Energetic Materials
    - Chemical-Biological Defense Systems.
- Integrated C4ISR Centers intended to enable an advanced joint battlespace awareness capability while initially emphasizing RDAT&E domain centers for ground, maritime, air, and space. This recommended infrastructure should also enable a future joint management structure.

Strategic Framework

As the analytical process evolved, the TJCSG framed its analysis, consistent with the strategic framework, into the three constructs described above. The TJCSG further divided these three constructs into subsets, as depicted in Figure 4. This subdivision enabled the group to examine the DoD infrastructure required in two critical dimensions: the first being the RDAT&E functions required for a specific capability area (e.g., employing air platforms, weapons, information systems, etc.); and the second being the disciplines and functions required to draw from multiple capability areas (e.g., human systems research for air, land, sea, and space platforms).

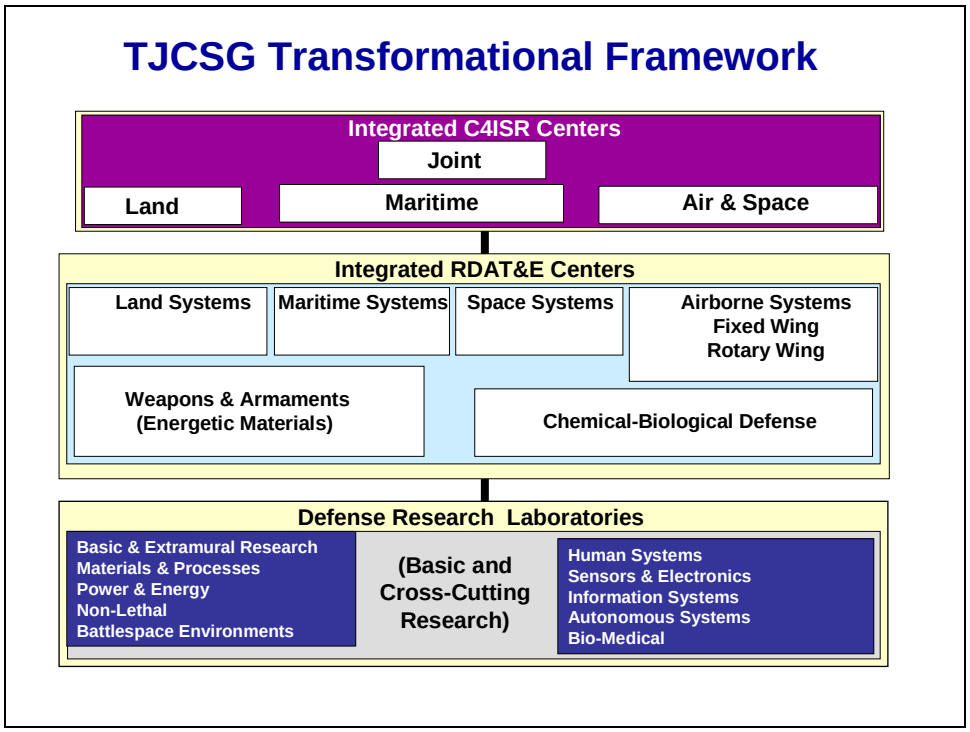

Figure 4. TJCSG Strategic Framework

In this way, a technical facility was evaluated both for military value for specific classes and types of weapon systems (corresponding to each of the 13 technical capability areas) and military value for its cross-cutting technical value (corresponding combinations of more than one technical capability area and more than one of the three technical functions) to enable or enhance warfighting capabilities.

The TJCSG developed strategy-driven scenarios that were analyzed using military value (both quantitative and qualitative; see Part III) and its assessment of technical capacity required to meet current and future needs. Throughout the process, the TJCSG interacted with the Services for single Service recommendations, plus the Intelligence JCSG for the Integrated C4ISR Centers, the Headquarters and Support Agency JCSG for specific movement of headquarters elements, the Medical JCSG for Chemical Biological Defense and Defense Research Laboratories, and the Education and Training JCSG for Test and Evaluation capability, particularly for the open air ranges.

Part IV of this report presents the "knitted" final products that would result from the group's recommendations for each RDAT&E activity.

Strategic Framework—Defense Research Laboratories

In accordance with its strategy to maintain competing sites, the TJCSG opted for consolidation to a major, multidisciplinary research laboratory for each Service, with supporting laboratories. As a result, the TJCSG candidate recommendations for the

research function consolidated the Department's research assets from fourteen major laboratory locations to ten major locations supported by a number of specialty sites and integrated research and development centers. In a broad sense, this strategy led the TJCSG towards an end state with a major, multidisciplinary research laboratory for each Service and many of the remaining research activities co-located or integrated with the Service product centers.

The proposed laboratories from this part of the BRAC analysis include:

- Army: Army Research Laboratories at Aberdeen Proving Ground, MD and Adelphi, MD. There are also medical laboratories at Edgewood Arsenal of Aberdeen Proving Ground, MD; Ft. Detrick, MD; and Forest Glen, MD; and the Army Research Institute, in Arlington VA.[8]

- Navy: Navy Research Laboratory at Washington Navy Yard, DC; Stennis Space Center, MS; and Monterey, CA.

- Air Force: Air Force Research Laboratory at Wright Patterson AFB, OH; Rome Laboratory, NY; and Kirtland AFB, NM. Elements of the Air Force Research Laboratory co-located with Air Force centers: i.e. Eglin AFB, FL (Weapons) and Hanscom AFB, MA (Battlespace Awareness C4ISR).

In addition, the TJCSG recommendations co-located a number of existing research offices currently in leased space and realigned them to a single campus in Bethesda, MD. This included realigning all of the Army Research Office, along with the Defense Advanced Research Projects Agency (DARPA), Office of Naval Research, Air Force Office of Scientific Research, and elements of the Defense Threat Reduction Agency and relocating them at a single center in Bethesda. This co-located research site should also enable synergy by proximity to the National Institutes of Health and the proposed National Military Medical Center.

Several locations that had previously conducted research were realigned based on capacity, military value, and the strategy to migrate to multidisciplinary, multifunction facilities.

- Brook City Base, TX and Mesa Air Force Station, AZ were realigned to Wright Patterson Air Force Base, OH to consolidate enabling research at Wright Patterson AFB, OH.

- Ft Monmouth, NJ was realigned to the Aberdeen Proving Ground, MD to create a Land RD&A center for Communications, Information Systems, and Materials.

[8] The US Army also has several research facilities under the U. S. Army Corps of Engineers, the Engineer Research and Development Center. Since the Corps Labs are not covered in Title X, USC, they were excluded from BRAC consideration;

In addition, a Center of Excellence for Chemical Biological Defense RD&A is established at Aberdeen Proving Ground, MD.

Strategic Framework—Integrated RDAT&E Centers

The TJCSG recommendations include integrated RDAT&E centers for ground, maritime, air, and space domains as well as weapons and armaments and chemical biological defense activities. Since several of the centers have co-located research, some centers could have multifunction RDAT&E capability across all 13 defense technology areas. Exceptions to this functional consolidation may occur at locations where there are open air range test and evaluation facilities or specialized physical infrastructure that must be maintained for specific reasons relating to the national defense.

TJCSG recommendations resulted in integrated RDAT&E centers at the locations listed below:

- Integrated RDAT&E Centers:[9]
    - Ground: Detroit Arsenal, MI (RDAT&E) and Aberdeen Proving Ground, MD (RDAT&E).
    - Sea: Washington Navy Yard, DC (RD&A); Carderock, MD (RD&A); Philadelphia Navy Yard, PA (DAT&E); and Newport, RI (RD&A).
    - Air: Wright Patterson AFB, OH (RD&A); Patuxent River, MD (RDAT&E); and Redstone Arsenal, AL (RDAT&E).
        - Edwards AFB, CA and Arnold Air Force Station, TN as specialty T&E sites for air and space, and,
        - Lakehurst Naval Air Station, NJ as a specialty site for catapults and traps (RD&A).
    - Space: Kirtland AFB, NM (R); Los Angeles Air Force Base, CA (D&A); and Naval Research Laboratory, Washington, DC (R); Arnold Air Force Station, TN as a specialty test site for air and space.
    - Weapons and Armaments: Eglin Air Force Base, FL (RDAT&E); Redstone Arsenal, AL (RDAT&E); and China Lake, CA (RDAT&E).
        - Weapons specialty sites at Picatinny Arsenal, NJ (small caliber gun RDAT&E); Naval Surface Warfare Center, Dahlgren, VA

[9] The Integrated Centers listed herein represent those Centers that conduct the preponderance of work, as measured in Full-Time Equivalents (FTE).

(large caliber gun T&E and Ship Weapons Integration); and Indian Head, MD (energetic materials RDAT&E).

- Chem-Bio Defense: Aberdeen Proving Ground, MD (chemical defense RDAT&E); Fort Detrick, MD (biomedical RDAT&E).

Strategic Framework—Integrated C4ISR Centers:

The TJCSG recommendations for Integrated C4ISR Centers of Excellence are at the locations listed below:

- Joint Management Center: Fort Meade, MD (D&A).

- Land Domain C4ISR: Aberdeen Proving Ground, MD (RD&A); with capability at Adelphi, MD (R).

- Air and Space Domain: Hanscom Air Force Base, MA (RD&A); with capability at Rome Laboratory, NY (R).

- Maritime Domain: San Diego (Point Loma), CA (RDAT&E); and Little Creek, VA (D&A).

Part III

Analytical Approach/Analysis

The TJCSG analysis comprised three discrete phases:

1. Capacity Analysis
    a. Current Capacity
    b. Future Capacity
    c. Surge Capacity Requirements
2. Military Value Analysis
3. Scenario Development and Analysis

In addition, the TJCSG had to consider surge requirements, review the Force Structure Plan, and identify how the future force structure would affect future technical capacity requirements. Each of these phases is described below.

Capacity Analysis

The "product" of the Department of Defense technical functions includes new knowledge and discoveries, advanced systems, and capabilities to enable continued operational superiority of U.S. forces and systems. These are abstract and complex concepts that depend on a number of additional factors. For example, assessing technical capacity is difficult because the linkage between possible metrics for capacity and output is indirect. As a result, the output of technical capabilities from a 2,000 square foot laboratory may be less than a 1,000 square foot laboratory, even if both are operating efficiently and effectively; the output depends on the product. Additionally, for research, development, and testing, there are different requirements for different types of systems. For example, the physical capacities for a laser laboratory and test site are different than the requirements for a nanotechnology facility.

While technical capacity is complex, the TJCSG strategic principle to *provide efficiency of operations by consolidating technical facilities to enhance synergy and reduce excess capacity* provides an impetus to examine capacity. As suggested in Figure 3 above, the TJCSG attempted to reduce excess capacity while simultaneously reshaping the existing infrastructure to meet future needs.

CAPACITY PARAMETERS

Because of the abstractness of directly measuring output capacity for technical functions, the TJCSG decided to focus on measuring those indirect parameters that are quantifiable,

yet still provide insight into the DoD technical capacity. To quantify technical capacity, the TJCSG identified eight parameters they believed were, when aggregated, an accurate reflection of a facility's technical capacity. These eight parameters, with their associated unit of measurement, were:

	PARAMETER	UNIT OF MEASUREMENT
1.	*Work Years*	*Number of Full Time Equivalents (FTEs)*
2.	*Test Resource Workload (non open air range)*	*Number of test hours*
3.	*Building Use*	*Net square feet of building used*
4.	*Equipment Use*	*Number of days equipment is available*
5.	*Facility Use*	*Number of days the facility is available*
6.	*Funding*	*Amount of funding*
7.	*Acquisition Category (ACAT) Funding*	*Amount of ACAT program funding*
8.	*Number of ACATs*	*# of ACAT programs being funded*

The capacity data were collected for each technical facility, which means the TJCSG obtained capacity measurements for each of the thirteen technical areas and each of the three functions. For instance, the TJCSG calculated capacity for air platform research, capacity for air platform development and acquisition, etc. This construct resulted in 39 capacity measures for each parameter (13 technical areas times 3 functions) per technical facility.

During the analysis phase, the TJCSG determined that ambiguities in definition and differences in business models among the Military Departments and Defense Agencies resulted in only two of the eight parameters having consistency needed for quantitative analysis. The remaining six parameters proved to be useful in scenario analysis and development. The capacity measures used to quantify technical capacity were:

1. Work Years: *Full Time Equivalents (FTEs*) characterize the number of people - technical and non-technical (military & government with occupational series, and on-site contractors) in each of the thirteen technical capability areas for each function.

2. Test Hours: *Test Hours* characterize the non-Open Air Ranges (OAR) test resource workload in FY01-FY03. OAR test resources were addressed separately by the E&T JCSG Range Subgroup.

The TJCSG also used a measure of the physical infrastructure capacity based on the number of FTE work years and an expert judgment estimate of average space used by those in the Research function (310 square feet/person), those in the D&A function (160 square feet/person) and those in the T&E function (310 square feet/person).

SURGE CAPACITY

Determining the surge for technical functions is not straightforward. For traditional military functions, surge is understood to represent the increase in some output in response to a military operation. Surge is fairly easy to understand when considering activities like airlift or sealift requirements. It is possible to measure the "historical" flow, and then compute what the difference would be for deployment of a force of some defined size.

Surge for the technical function is less precise than many other functions. The products of the technical functions are often intangible and may have long maturation time. The product of the technical functions also takes a variety of forms, from ideas to weapons systems matured and delivered, and so forth. For such cases, short-term surge requirements are difficult to assess or apply. The TJCSG difficulty establishing an analytic relationship to address surge was also due, in part, to the elasticity of the technical workforce and function. It does not take twice as many people to buy twice as many of a product. The typical response of the technical community to a surge requirement is to first reprioritize existing work to focus on the surge (war) requirements, then to increase manpower as time goes by and funds become available.

The TJCSG deliberated and decided a 10% increase above current technical capacity is a good historical estimate of surge—and subsequently defined surge capacity that way. The capacity data for work years supports this deliberative decision. The capacity data call for work years for FY01, FY02, and FY03 were 149,100, 154,400, and 158,800 FTEs respectively. Since these data reflect the number of people working at the end of the fiscal year, the data represents the technical workforce at the time of the September 11, 2001, attack on America, then one and two years later, or one and two years into a surge.

CAPACITY TERMS

The TJCSG examined current excess capacity. To do so, the TJCSG defined each of the following terms:

- **Current Capacity (CU;** current usage) was set as the average of the parameter (e.g. FTEs) over the period FY01 to FY03.

- **Peak Capacity (CP)** is the maximum value of a measured parameter.

- **Surge Capacity (CS)** was defined as 10% of the current capacity.

- **Current Excess Capacity (CE):** was defined as the Peak Capacity minus the Current Capacity minus the Surge Capacity, or:

  CE = CP – (CU + CS)

CAPACITY ANALYSIS RESULTS

As part of the scenario development process, the TJCSG validated that sufficient capacity existed for each potential scenario. Each recommendation also summarizes the aggregate physical capacity and work years of DoD facilities involved in the scenario.

While individual capacity measures were used in each scenario, it is important to look at the aggregated capacity measures across the DoD. The strategy employed by the TJCSG, to co-locate and consolidate activity to gain efficiency and synergy, has implications for capacity. Specifically, from a physical capacity standpoint, the strategy means that the department seeks to realign the technical functions from those sites with less capacity (people, infrastructure, etc) to sites with greater capacity. Additionally, to gain the synergies inherent with multidisciplinary and multifunctional activity, the TJCSG sought to realign activities from locations with lesser aggregated capacity at fewer technical facilities to those sites with greater aggregated technical facilities.

In the aggregate, the Department does have excess current capacity. The current Department of Defense capacity, as measured in full-time equivalent man-years is 154,178 man-years. The current required capacity (current plus surge capacity) is 169, 596 man-years. The current excess capacity is 13,169 man-years, leaving a 7.8 percent excess capacity across the Department of Defense. TJCSG recommendations reduce the FTEs of the technical functions by approximately 3,000 FTEs.

The TJCSG also examined the physical capacity, as measured in square feet, using the building use parameter. While there were qualitative differences in how respondents addressed the capacity, in the aggregate, the excess physical capacity exceeds 28,000,000 square feet. While it was not clear that all of this space was serviceable, there was excess physical capacity. Consequently, after implementation of the TJCSG recommendations, there should be sufficient physical and technical capacity to meet future Department of Defense technical.

Military Value Analysis

The TJCSG applied a similar process to obtain quantitative military value[10] for technical facilities as done with the capacity analysis. That is, each technical facility was given a quantitative military value for technical activity. These military values were calculated based on the selection criteria and associated attributes defined by the TJCSG. The TJCSG chose to normalize the military value scores within each of the 39 discrete "bins" (13 technical areas for each of its 3 functions), so the military value score represents a relative value of a technical facility compared with all other facilities in the same

[10] Quantitative military value is only one element of military value. The Department deliberated to define total military value as both quantitative military value and military judgment. Military judgment was applied during scenario analysis to develop the recommendations.

technical area and function. This approach provided flexibility in the scenario generation phase, because it allowed the TJCSG to examine multiple military value comparisons for each scenario, which proved important to develop multifunctional and multidisciplinary Centers of Excellence. For instance, in developing the Information Technology Centers of Excellence, the TJCSG needed to examine both C4ISR research military value scores and C4ISR development and acquisition military value scores. During scenario development, the TJCSG sought to increase the aggregated military value.

The TJCSG used the first four 2005 BRAC criteria to develop military value. These criteria are:

1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including the impact on joint warfighting, training, and readiness.

2. The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions), both at existing and potential receiving locations.

3. The ability to accommodate contingency, mobilization, surge, and future total force requirements, both at existing and potential receiving locations, to support operations and training.

4. The cost of operations and the manpower implications.

The TJCSG determined that criterion 1 included technical capabilities that are necessary to ensure operational readiness; criterion 2 included technical facilities; criterion 3 included technical capability giving support to future requirements and operations; and criterion 4 included impact on technical intellectual capital.

The TJCSG then developed specific attributes to assess specific technical military value. The five attributes the TJCSG approved were:

- People - measured intellectual capital through education, experience, certifications, patents, publications, and awards;

- Physical environment - measured special features of DoD technical facilities and encroachments upon them;

- Physical structures and equipment - measured the presence of physical structures unique within DoD, and the value, condition, and use of physical structures;

- Operational impact - measured output of the RDAT&E functions through the number and funding of their projects, and size of their staff;

- Synergy - measured factors such working on multiple functions and multiple technical capability areas, proximity to customer, jointness, and dual-use.

For each of these attributes the TJCSG developed the specific metrics, questions, and weights needed to compute the military value, and sent these out to installations in a Military Value data call. The result of this data call and analysis resulted in a rank order for each of the 39 technical facility categories as detailed in the military value report (Appendix B).

Scenario Development

The TJCSG scenario development was driven by its strategic framework, and followed the standard BRAC process of idea generation leading to proposals, which were reviewed to develop scenarios. As these proposals were developed, the TJCSG assessed the prospective scenarios using a set of qualitative decision factors. The TJCSG used selections criteria, capacity data, military value data, and these decision factors to isolate and refine scenarios. Additionally, the decision factors were used to compare proposal *sets* - that is, to compare the strategic implications of moving facility A to facility B with moving facility B to facility A.

As the TJCSG developed scenarios, it examined candidate scenarios for consistency with military value and capacity. Since its recommendations were based on strategy, the TJCSG needed to apply both military judgment and quantitative military value to evaluate scenarios.

The TJCSG registered 69 scenarios. TJCSG analysis of the 69 scenarios resulted in 23 candidate recommendations (13 Technical, 9 related actions involving the technical end state that were analyzed by other JCSGs or Services, and one disapproved by the ISG). The deliberations of the ISG and IEC resulted in the recommendations summarized in Part IV of this report.

Force Structure Plan

As stated in the discussion of the overarching strategy and recommendation framework, the TJCSG's focused its effort on developing an RDAT&E infrastructure to meet the needs of the warfighter 20 years in the future. The TJCSG examination of the 20-year force structure plan and, in particular, the threat assessment, revealed that the RDAT&E infrastructure must be one that is agile, has short system development cycle times, and is multidisciplinary. The examination of the force structure plan also revealed that the primary technical infrastructure pieces needed to meet the threats laid out in the plan already exist.

The 20-year force structure plan is a top level assessment and plan that is indirectly tied to the RDAT&E infrastructure. The method was the assessment by the TJCSG experts to project which of the defense technology areas would receive greater emphasis in the

future when projecting future capacity needs. The group completed this assessment by assessing the Future Year Defense Plan projections for the immediate future. For 20 year projections, subject matter experts met and assessed which of the 13 technology areas would likely see more emphasis in the future, and which would see less emphasis.

The group reviewed the recommendations using a number of forward looking documents to identify factors likely to contribute to future military value.

- *National Security Strategy of the United States (2001)*
- *Transformational Planning Guidance 2003*
- *The Joint Operations Concept, Technology 2003*
- *Joint Warfighting Science and Technology Plan 2003*
- *Defense Technology Area Plan (DTAP) 2003*
- *Defense Technology Objectives 2003*
- *DoD Advanced Technology Capability Demonstration Master Plan 2003*
- *The OSD Master Acquisition Plan*
- *Strategic Plan for Department of Defense Test and Evaluation Resources*

Based on these documents, the TJCSG decided that the following technologies are of sufficient importance to future warfighting capabilities. The TJCSG included these in the scoring plan, awarding additional credit to technical facilities working in these technologies. The technologies are:

- Advanced Detection and Mitigation of Chemical, Biological, Nuclear, Radiological and Explosives Materials and Weapons
- Advanced Guided Weapons
- Advanced Propulsion
- Anti-Materiel Weapons
- Directed Energy Weapons
- Distributed Netted Sensors
- Electro magnetic guns and Accelerators
- Fast, Survivable Sealift
- Hypersonics
- Information Warfare
- Integrated Warrior
- Laser Communication
- Network Centric Information Management
- Next Generation Stealth Enhanced Vehicles
- Non-Lethal Weapons and Effects
- Space
- Robotics and Autonomous Unmanned Vehicles

Part IV

Recommendations

The TJCSG developed the recommendations in this section through an ISG endorsed strategy-driven approach using the approved criteria and methodology presented earlier. All recommendations presented here represent a unanimous view from the TJCSG. Additional recommendations involving technical facilities are found in other places in this document and cross-referenced here.

The recommendations contained herein are organized according to the TJCSG Strategic Framework.

DEFENSE RESEARCH LABORATORIES

1. Defense Research Service Led Laboratories

2. Co-locate Extramural Research Program Managers

Auxiliary Recommendations Affecting the End State of the DoD Research Laboratories

A. Realign Walter Reed National Military Medical Center, DC
B. Establish Joint Center of Excellence for Chemical, Biological & Medical Research, Development and Acquisition
C. Close Brooks City Base, TX

INTEGRATED RDAT&E CENTERS

3. Consolidate Ground Vehicle Development & Acquisition in a Joint Center

4. Consolidate Sea Vehicle Development & Acquisition

5. Consolidate Navy Strategic Test & Evaluation

6. Establish Centers for Rotary Wing Air Platform Development & Acquisition, Test & Evaluation

7. Establish Centers for Fixed Wing Air Platform Research, Development & Acquisition, Test & Evaluation

8. Create an Air Integrated Weapons & Armaments Research, Development & Acquisition, Test & Evaluation Center

9. Create a Naval Integrated Weapons & Armaments Research, Development & Acquisition, Test & Evaluation Center

10. Create an Integrated Weapons & Armaments Specialty Site for Guns and Ammunition

Auxiliary Recommendations Affecting the End State of DoD Integrated RDAT&E Centers

A. Consolidate MDC and SMDC at Redstone Arsenal, AL
B. Close NSA Corona, CA

INTEGRATED C4ISR CENTERS

11. Consolidate Maritime C4ISR Research, Development & Acquisition, Test & Evaluation

12. Navy Sensors, Electronic Warfare, and Electronics Research, Development & Acquisition, Test & Evaluation

13. Consolidate Air and Space C4ISR Research, Development & Acquisition, Test & Evaluation

Auxiliary Recommendations Affecting the End State of DoD Integrated C4ISR Centers

A. Consolidate DISA at Ft Meade, MD
B. Close NSA Corona, CA
C. Close Ft Monmouth, NJ

Defense Research Service Led Laboratories

Recommendation: Close the Air Force Research Laboratory, Mesa City, AZ. Relocate all functions to Wright Patterson Air Force Base, OH.

Realign Air Force Research Laboratory, Hanscom, MA, by relocating the Sensors Directorate to Wright Patterson Air Force Base, OH, and the Space Vehicles Directorate to Kirtland Air Force Base, NM.

Realign Rome Laboratory, NY, by relocating the Sensor Directorate to Wright Patterson Air Force Base, OH, and consolidating it with the Air Force Research Laboratory, Sensor Directorate at Wright Patterson Air Force Base, OH.

Realign Air Force Research Laboratory, Wright Patterson Air Force Base, OH, by relocating the Information Systems Directorate to Hanscom Air Force Base, MA.

Realign Army Research Laboratory Langley, VA, and Army Research Laboratory Glenn, OH, by relocating the Vehicle Technology Directorates to Aberdeen Proving Ground, MD.

Realign the Army Research Laboratory White Sands Missile Range, NM, by relocating all Army Research Laboratory activities except the minimum detachment required to maintain the Test and Evaluation functions at White Sands Missile Range, NM, to Aberdeen Proving Ground, MD.

Justification: This recommendation realigns and consolidates portions of the Air Force and Army Research Laboratories to provide greater synergy across technical disciplines and functions. It does this by consolidating geographically separate units of the Air Force and Army Research Laboratories.

A realignment of Air Force Research Laboratory Human Factors Division from Brooks City Base, TX, research to Wright Patterson AFB was initially part of this recommendation, and still exists, but is presented in the recommendation to close Brooks City Base, TX.

This recommendation enables technical synergy, and positions the Department of the Defense to exploit a center-of-mass of scientific, technical, and acquisition expertise.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $164.6M. The net of all costs and savings to the Department during the implementation period is cost of $45.0M. Annual recurring savings to the Department after implementation are $41.1M, with a payback expected in 4 years. The net present value of the costs and savings to the Department over 20 years is a savings of $357.3M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 465 jobs (237 direct jobs and 228 indirect jobs) over the 2006-2011 period in the Phoenix-Mesa-Scottsdale, AZ Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 362 jobs (201 direct jobs and 161 indirect jobs) over the 2006-2011 period in the Utica-Rome, NY Metropolitan Statistical Area, which is 0.23 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 362 jobs (225 direct jobs and 137 indirect jobs) over the 2006-2011 period in the Cambridge-Newton-Framingham, MA Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 92 jobs (50 direct jobs and 42 indirect jobs) over the 2006-2011 period in the Cleveland-Elyria-Mentor, OH Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 382 jobs (186 direct jobs and 196 indirect jobs) over the 2006-2011 period in the Las Cruces, NM Metropolitan Statistical Area, which is 0.48 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 118 jobs (50 direct jobs and 68 indirect jobs) over the 2006-2011 period in the Virginia Beach-Norfolk-Newport News, VA-NC Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: An Air Conformity Analysis and a New Source Review and permitting effort is required at Aberdeen. This recommendation may impact cultural resources and threatened and endangered species at Aberdeen. Additional operations at Hanscom and Kirtland may impact cultural sites, which may constrain operations. This recommendation may require building on constrained acreage at Hanscom. Additional operations at Wright Patterson may further impact the Indiana Bat, a threatened and

endangered species. Additional operations at Hanscom, Kirtland, and Wright Patterson may impact wetlands, which may restrict operations. This recommendation has no impact on air quality; dredging; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; noise; waste management; or water resources. This recommendation requires spending approximately $0.4M for waste management and environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

Co-Locate Extramural Research Program Managers

Recommendation: Close the Office of Naval Research facility, Arlington, VA; the Air Force Office of Scientific Research facility, Arlington, VA; the Army Research Office facilities, Durham, NC, and Arlington, VA; and the Defense Advanced Research Project Agency facility, Arlington, VA. Relocate all functions to the National Naval Medical Center, Bethesda, MD. Realign Fort Belvoir, VA, by relocating the Army Research Office to the National Naval Medical Center, Bethesda, MD. Realign the Defense Threat Reduction Agency Telegraph Road facility, Alexandria, VA, by relocating the Extramural Research Program Management function (except conventional armaments and chemical biological defense research) to the National Naval Medical Center, Bethesda, MD.

Justification: This recommendation co-locates the managers of externally funded research in one campus. Currently, these program managers are at seven separate locations. The relocation allows technical synergy by bringing research managers from disparate locations together to one place. The end state will be co-location of the named organizations at a single location in a single facility, or a cluster of facilities. This "Co-Located Center of Excellence" will foster additional coordination among the extramural research activities of OSD and the Military Departments. Further it will enhance the Force Protection posture of the organizations by relocating them from leased space onto a traditional military installation.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $153.5M. The net of all costs and savings to the Department during the implementation period is a savings of $107.1M. Annual recurring savings to the Department after implementation are $49.4M with a payback expected in 2 years. The net present value of the costs and savings to the Department over 20 years is a savings of $572.7M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 193 jobs (122 direct jobs and 71 indirect jobs) over the 2006-2011 period in the Durham, NC, Metropolitan

Statistical Area, which is less than 0.1 percent of economic area employment. The aggregate economic impact of all recommended actions on this economic region of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: An Air Conformity determination may be required at National Naval Medical Center, Bethesda, MD. This recommendation has no impact on cultural, archeological, or tribal resources; dredging; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; noise; threatened and endangered species or critical habitat; waste management; water resources; or wetlands. This recommendation will require spending approximately $0.5M for environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

Consolidate Ground Vehicle Development & Acquisition in a Joint Center

Recommendation: Realign Redstone Arsenal, Huntsville, AL, by relocating the joint robotics program development and acquisition activities to Detroit Arsenal, Warren, MI, and consolidating them with the Program Executive Office Ground Combat Systems, Program Executive Office Combat Support and Combat Service Support and Tank Automotive Research Development Engineering Center. Realign the USMC Direct Reporting Program Manager Advanced Amphibious Assault (DRPM AAA) facilities in Woodbridge, VA, by relocating the Ground Forces initiative D&A activities to Detroit Arsenal, Warren, MI.

Justification: This recommendation consolidates those USMC and Army facilities that are primarily focused on ground vehicle activities in development and acquisition (D&A) at Detroit Arsenal in Warren, MI, to increase joint activity in ground vehicle development & acquisition. The D&A being consolidated is centered on manned and unmanned ground vehicle program management. In Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF), effectiveness in combat depends heavily on "jointness," or how well the different branches of our military can communicate and coordinate their efforts on the battlefield. This collection of D&A expertise will not only foster a healthy mix of ideas, but will increase the ground vehicle community's ability to develop the kinds of capabilities that can position us for the future as well as adapt quickly to new

challenges and to unexpected circumstances. The ability to adapt is critical where surprise and uncertainty are the defining characteristics of the new threats.

The Joint Center for Ground Vehicle D&A located at Detroit Arsenal will be the Department of Defense's premier facility for ground vehicle D&A. Detroit Arsenal is located in southeastern Michigan where the Research and Development headquarters reside for General Motors, Ford, Chrysler, General Dynamics Land Systems, Toyota-North America, Nissan-North America, Hino, Hyundai, Suzuki, Visteon, Delphi, Johnson Controls, Dana, and many others. The synergies gained from having a critical mass located in southeastern Michigan, and being able to leverage the world's intellectual capital for automotive/ground vehicle Research and Development & Acquisition, will ensure the Department is prepared to meet the future demands.

The end state of this recommendation is to consolidate Department of Defense expertise in Ground Vehicle D&A activities at Detroit Arsenal. It promotes jointness, enables technical synergy, and positions the Department of Defense to exploit a center-of-mass of scientific, technical, and acquisition expertise with the personnel involved in ground vehicle Research, Development & Acquisition that currently resides at Detroit Arsenal.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $3.8M. The net of all costs and savings to the Department during the implementation period is a cost of $1.9M. Annual recurring savings to the Department after implementation are $1.9M with a payback expected in 2 years. The net present value of the costs and savings to the Department over 20 years is a savings of $17.1M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 56 jobs (32 direct jobs and 24 indirect jobs) over the 2006-2011 period in the Washington-Arlington-Alexandria, DC VA-MD-WV Metropolitan Division, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 135 jobs (77 direct jobs and 58 indirect jobs) over the 2006-2011 period in the Huntsville, AL, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: This recommendation has no impact on air quality; cultural, archeological, or tribal resources; dredging; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; noise; threatened and endangered species or critical habitat; waste management; water resources; or wetlands. This recommendation will require spending approximately $0.1M for National Environmental Policy Act documentation at the receiving installation. This cost was included in the payback calculation. This recommendation does not otherwise impact the cost of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

Consolidate Sea Vehicle Development & Acquisition

Recommendation: Realign Detroit Arsenal, MI, by relocating Sea Vehicle Development and Acquisition to Naval Surface Warfare Center Carderock Division, Bethesda, MD, and Program Management and Direction of Sea Vehicle Development and Acquisition to Naval Sea Systems Command, Washington Navy Yard, DC.

Justification: This recommendation positions technical sites for jointness through co-location with functions at the receiving locations. It also increases efficiency by consolidating program management of Sea Vehicle Development and Acquisition (D&A) from three sites to two principal sites; the Naval Sea Systems Command (NAVSEASYSCOM) at the Washington Navy Yard (WNY), DC, and the Naval Surface Warfare Center (NSWC) Carderock Division, Bethesda, MD.

The consolidation and co-location leverages existing concentration of research, design and development, and acquisition support capabilities residing within the US Navy Headquarters and Warfare Center RD&A infrastructure. Program management for D&A will be at the Naval Sea Systems Command, Washington Navy Yard. In support of joint and transformational initiatives, this recommendation relocates management and direction of Theater Support Vessels (TSV) and other Sea Vehicle/Watercraft programs for US Army to the Naval Sea Systems Command, Washington Navy Yard. Consolidation of all program management of Sea Vehicle Programs at the Naval Sea Systems Command, Washington Navy Yard co-locates these functions and aligns with related program offices supporting Sea Vehicle Weapons and Combat systems, Hull Mechanical and Electrical, C4I integration and related sea vehicle equipment and support functions. This also places it near the principal technical direction and development agent for sea vehicles located at Naval Surface Warfare Center Carderock Division in Bethesda, MD. This recommendation is consistent with the existing partnership collaboration between the USA and the USN on Theater Support Vessels as reflected in a Memorandum of Understanding between the US Army Program Executive Office (PEO) for Combat Support and Combat Service Support (PEO CS & CSS) and the US Navy PEO for Ships Systems.

The recommendation will enhance synergy by consolidating Sea Vehicle functions to major sites, preserve healthy competition, leverage existing infrastructure, minimize environmental impact, and effect reasonable homeland security risk dispersal. The recommendation will increase efficiency by making a robust acquisition organization available to all DoD Sea Vehicle and watercraft program requirements and will increase efficiency by reducing overall manpower requirements.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $1.5M. The net of all costs and savings to the Department during the implementation period is a cost of $0.1M. Annual recurring savings to the Department after implementation are $0.2M with a payback expected in 7 years. The net present value of the costs and savings to the Department over 20 years is a savings of $2.0M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 57 jobs (36 direct jobs and 21 indirect jobs) over the 2006-2011 period in the Detroit-Livonia-Dearborn, MI, Metropolitan Division, which is less than 0.1 percent of economic area employment. The aggregate economic impact of all recommended actions on this economic region of influence was considered and is at Appendix B of Volume I.

Community Infrastructure Impact: A review of community attributes indicates no issues regarding the ability of the community's infrastructure to support missions, forces, and personnel.

Environmental Impacts: This recommendation has no impact on air quality; cultural, archeological, or tribal resources; dredging; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; noise; threatened and endangered species or critical habitat; waste management; water resources; or wetlands. This recommendation does not impact the costs of environmental restoration, waste management, and environmental compliance activities.

Consolidate Navy Strategic Test & Evaluation

Recommendation: Realign Patrick Air Force Base, Cape Canaveral, FL, by relocating Nuclear Test and Evaluation at the Naval Ordnance Test Unit to Strategic Weapons Facility Atlantic, Kings Bay, GA.

Justification: This recommendation realigns the stand-alone east coast facility working in full-scale Nuclear Test & Evaluation at Cape Canaveral into a fully supported Navy nuclear operational site at Kings Bay to gain synergy in security (Anti-Terrorism Force Protection- ATFP), Fleet operational support and mission support infrastructure. Since 1956, the Fleet Ballistic Missile (FBM) Program, in support of the TRIDENT (D-Series) Missile, has executed land-based (pad) as well as sea-based (SSBN) test launches supported by the Naval Ordnance Test Unit (NOTU) at Cape Canaveral, FL. This facility

provided both the launch support infrastructure as well as docking for sea-based pre- and post-launch events. Recent changes in ATFP requirements, the recent establishment of the Western Test Range in the Pacific, and the programmatic decision to no longer require land based (pad) launches at Cape Canaveral all lead to the realignment/relocation of this function to Kings Bay. This action aligns nicely with the overall Weapons and Armaments strategy to move smaller activities at remote sites into larger facilities to realize a significant synergy in support functions and costs while maintaining mission capability.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $86.4M. The net of all costs and savings to the Department during the implementation period is a cost of $76.7M. Annual recurring savings to the Department after implementation are $13.4M with a return on investment expected in 7 years. The net present value of the costs and savings to the Department over 20 years is a savings of $61.4M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 1013 jobs (571 direct jobs and 442 indirect jobs) over the 2006-2011 period in Palm Bay-Melbourne-Titusville, FL, Metropolitan Statistical Area which is 0.41 percent of economic area employment. The aggregate economic impact of all recommended actions on this economic region of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: This recommendation has the potential to impact cultural, archeological, or tribal resources; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; threatened and endangered species or critical habitat; water resources; and wetlands at Kings Bay. This recommendation has no impact on air quality; dredging; or noise. This recommendation will require spending approximately $0.1M on environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

Establish Centers for Rotary Wing Air Platform Development & Acquisition, Test & Evaluation

Recommendation: Realign Wright Patterson Air Force Base, OH, by relocating Air Force Materiel Command V-22 activities in rotary wing air platform development and acquisition to Patuxent River, MD. Realign the Naval Air Engineering Station Lakehurst, NJ, by relocating activities in rotary wing air platform development, acquisition, test and evaluation to Patuxent River, MD. Realign Ft. Rucker, AL, by relocating the Aviation Technical Test Center to Redstone Arsenal, AL, and consolidating it with the Technical Test Center at Redstone Arsenal, AL. Realign Warner-Robins Air Force Base, GA, by relocating activities in rotary wing air platform development and acquisition to Redstone Arsenal, AL.

Justification: This Air Land Sea & Space (ALSS) recommendation realigns and consolidates those activities that are primarily focused on Rotary Wing Air Platform activities in Development, Acquisition, Test and Evaluation (DAT&E). This action creates the Joint Center for Rotary Wing Air Platform DAT&E at the Redstone Arsenal, Huntsville, AL, and enhances the Joint Center at the Naval Air Warfare Center Aircraft Division (NAWCAD), Patuxent River, MD. The end state of this recommendation builds upon existing rotary wing air platform technical expertise and facilities in place at the two principal sites and provides focused support for future aviation technological advances in rotorcraft development.

The planned component moves enhance synergy by consolidating rotary wing work to major sites, preserving healthy competition, and leveraging climatic/geographic conditions and existing infrastructure, minimize environmental impact. These consolidations co-locate aircraft and aircraft support systems with development and acquisition personnel to enhance efficiency and effectiveness of rotary wing air platform design and development activities.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $49.4M. The net of all costs and savings to the Department during the implementation period is a cost of $40.2M. Annual recurring savings to the Department after implementation are $2.8M with a payback expected in 26 years. The net present value of the costs and savings to the Department over 20 years is a cost of $11.8M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 108 jobs (59 direct jobs and 49 indirect jobs) over the 2006-2011 period in the Dayton, OH, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment;

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 24 jobs (13 direct jobs and 11 indirect jobs) over the 2006-2011 period, in the Edison, NJ, Metropolitan Division, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 607 jobs (327 direct jobs and 280 indirect jobs) over the 2006-2011 period, in the Enterprise-Ozark, AL, Micropolitan Statistical Area, which is 1.26 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 82 jobs (50 direct jobs and 32 indirect jobs) over the 2006-2011 period in the Warner Robins, GA, Metropolitan Statistical Area, which is 0.13 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure Impact: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel.

Environmental Impact: This recommendation may have a minimal impact on cultural, archeological, and tribal resources and threatened and endangered species at both Patuxent River and Redstone Arsenal. Increased noise from aviation operations may result in operational restrictions on Redstone. Further evaluation is required. This recommendation has no impact on air quality; dredging; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; waste management; water resources; or wetlands. This recommendation will require spending approximately $0.5M for environmental compliance activities. The payback calculation includes this cost. This recommendation does not otherwise impact the costs of environmental restoration, waste management, or environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

Establish Centers for Fixed Wing Air Platform Research, Development & Acquisition, Test & Evaluation

Recommendation: Realign Tinker Air Force Base, OK, Robins, Air Force Base, GA, and Hill Air Force Base, UT, by relocating fixed wing related Air Platform Development and Acquisition to Wright Patterson Air Force Base, OH.

Realign Wright Patterson Air Force Base, OH, by relocating fixed wing related Live Fire Test and Evaluation to Naval Air Weapons Station China Lake, CA.

Justification: This recommendation completes the consolidation of all Fixed Wing Air Platform RDAT&E, begun during the previous BRAC rounds, at two principal sites: Naval Air Station (NAS) Patuxent River, MD, and Wright-Patterson Air Force Base

(AFB), OH, while retaining several specialty sites. Research and Development & Acquisition will be performed at NAS Patuxent River and Wright-Patterson AFB. Lakehurst will be retained as a dedicated RDAT&E facility for Navy Aircraft Launch and Recovery Equipment and Aviation Support Equipment.

This recommendation includes Research, Development & Acquisition and Test & Evaluation activities in Fixed Wing Air Platforms across the Navy and Air Force. The planned component moves will enhance synergy by consolidating to major sites, preserve healthy competition, leverage existing infrastructure, minimize environmental impact, and effect reasonable homeland security risk dispersal. The relocation of Fixed Wing Air Platform Research was previously accomplished in response to the S&T Reliance Agreements resulting in the consolidation at Wright Patterson AFB with the maritime related Fixed Wing Air Platform Research consolidated at NAS Patuxent River.

This recommendation consolidates Air Force Development & Acquisition functions currently resident at Logistic Centers (Hill AFB, Tinker AFB, and Robbins AFB) at Wright-Patterson AFB. These moves will increase efficiency by creating RD&A centers with all attendant support activity and a robust acquisition organization available to all Air Force Fixed Wing Air Platform D&A functions.

The consolidation of all Fixed Wing Air Platform Survivability Live Fire T&E at China Lake is driven by the inefficiencies that currently exist between the two sites (Wright Patterson AFB and China Lake), and the potential savings afforded by establishing a single live fire test range for fixed wing air platforms. China Lake has this capability and has been doing similar work related to weapons lethality for many years. This action will increase efficiency by reducing overall manpower requirements while also reducing redundancies that exist across the Live Fire Testing domain.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $17.7M. The net of all costs and savings to the Department during the implementation period is a cost of $7.9M. Annual recurring savings to the Department after implementation are $2.7M with a payback expected in 9 years. The net present value of the costs and savings to the Department over 20 years is a savings of $17.9M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 43 jobs (22 direct jobs and 21 indirect jobs) over the 2006-2011 period in the Ogden-Clearfield, UT, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 33 jobs (15 direct jobs and 18 indirect jobs) over the 2006-2011 period in the Oklahoma City, OK, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 67 jobs (41 direct jobs and 26 indirect jobs) over the 2006-2011 period in the Warner Robins, GA, Metropolitan Statistical Area, which is 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 1 job (3 direct jobs lost and 2 indirect jobs gained) over the 2006-2011 period in the Dayton, OH, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure Impact: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel.

Environmental Impact: A conformity analysis is required at Wright-Patterson. An initial analysis indicates a conformity determination is not required. Additional operations may impact archeological or historic areas, which may restrict operations. Additional operations at Wright Patterson may further impact the Indiana Bat, a threatened and endangered species. The hazardous waste program at Wright-Patterson will require modification. Additional operations at Wright Patterson may impact wetlands, which may restrict operations. This recommendation has no impact on dredging; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; noise; or water resources. This recommendation will require spending approximately $0.24M for waste management and environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

Create an Air Integrated Weapons & Armaments Research, Development & Acquisition, Test & Evaluation Center

Recommendation: Realign Hill Air Force Base, UT, by relocating Weapons and Armaments In-Service Engineering Research, Development & Acquisition, and Test and Evaluation to Eglin Air Force Base, FL. Realign Fort Belvoir, VA, by relocating Defense Threat Reduction Agency National Command Region conventional armament Research to Eglin Air Force Base, FL.

Justification: Eglin is one of three core integrated weapons and armaments RDAT&E centers (with China Lake, CA, and Redstone Arsenal, AL) with high MV and the largest concentration of integrated technical facilities across all three functional areas. Eglin

AFB has a full spectrum array of Weapons & Armaments (W&A) Research, Development & Acquisition, and Test & Evaluation (RDAT&E) capabilities. Accordingly, relocation of Hill AFB and DTRA NCR W&A capabilities will further complement and strengthen Eglin as a full spectrum W&A RDAT&E Center.

The overall impact of this recommendation will be to: increase W&A life cycle and mission related synergies/integration; increase efficiency; reduce operational costs; retain the required diversity of test environments; and facilitate multiple uses of equipment, facilities, ranges, and people. Hill AFB and DTRA NCR technical facilities recommended for relocation have lower quantitative MV than Eglin AFB in all functional areas.

This recommendation includes Research, D&A, and T&E conventional armament capabilities in the Air Force and DTRA NCR. It consolidates armament activities within the Air Force and promotes jointness with DTRA NCR. It also enables technical synergy, and positions the DoD to exploit center-of-mass scientific, technical, and acquisition expertise within the RDAT&E community that currently resides as DoD specialty locations. This recommendation directly supports the Department's strategy for transformation by moving and consolidating smaller W&A efforts into high military value integrated centers, and by leveraging synergy among RD&A, and T&E activities. Capacity and military value data established that Eglin AFB is already a full-service, integrated W&A RDAT&E center. Relocation of W&A D&A In-Service Engineering (ISE) from Hill AFB to Eglin AFB will increase life cycle synergy and integration. ISE encompasses those engineering activities that provide for an "increase in capability" of a system/sub-system/component after Full Operational Capability has been declared. ISE activities mesh directly with on-going RDAT&E at Eglin AFB.

Relocation of DTRA NCR W&A technical capabilities will increase life cycle synergy and integration at Eglin AFB. Conventional armament capabilities possessed by DTRA NCR directly complement on-going RDAT&E at Eglin AFB. Cost savings from the relocation of DTRA NCR to Eglin AFB will accrue largely through the elimination of the need for leased space, and by virtue of the fact that Eglin AFB can absorb the DTRA NCR (and Hill AFB) functions without the need for MILCON.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $2.7M. The net of all costs and savings to the Department during the implementation period is a savings of $4.9M. Annual recurring savings to the Department after implementation are $1.4M with payback expected in 2 years. The net present value of the costs and savings to the Department over 20 years is a savings of $17.9M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 64 jobs (33 direct jobs and 31 indirect jobs) over the 2006-2011 period in the Ogden-Clearfield, UT, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 114 jobs (67 direct and 47 indirect jobs) over the 2006-2011 period in the Washington-Arlington-Alexandria, DC-VA-MD-WV, Metropolitan Division, which is less than 0.1 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: Additional operations may impact archeological sites at Eglin AFB and restrict operations. Additional operations may compound the need for explosive safety waivers at Eglin AFB. Additional operations may further impact threatened and endangered species and/or critical habitats at Eglin AFB. Modification of Eglin AFB's treatment works may be necessary. This recommendation may impact wetlands at Eglin AFB. This recommendation has no impact on air quality; dredging; marine mammals, resources, or sanctuaries; noise; or water resources. This recommendation will require spending approximately less than $0.05M for environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

Create a Naval Integrated Weapons & Armaments Research, Development & Acquisition, Test & Evaluation Center

Recommendation: Realign Naval Surface Warfare Center Crane, IN, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation, except gun/ammo, combat system security, and energetic materials to Naval Air Weapons Station China Lake, CA.

Realign Naval Surface Warfare Center Indian Head, MD, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation, except gun/ammo, underwater weapons, and energetic materials, to Naval Air Weapons Station China Lake, CA.

Realign Naval Air Station Patuxent River, MD, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation, except the

Program Executive Office and Program Management Offices in Naval Air Systems Command, to Naval Air Weapons Station China Lake, CA.

Realign Naval Base Ventura County, Point Mugu, CA, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation to Naval Air Weapons Station China Lake, CA.

Realign Naval Weapons Station Seal Beach, CA, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation, except underwater weapons and energetic materials, to Naval Air Weapons Station China Lake, CA.

Realign Naval Surface Warfare Center, Yorktown, VA, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation to Naval Surface Warfare Center Indian Head, MD.

Realign Naval Base Ventura County, Port Hueneme, CA, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation, except weapon system integration, to Naval Air Weapons Station China Lake, CA.

Realign Fleet Combat Training Center, CA (Port Hueneme Detachment, San Diego, CA), by relocating all Weapons and Armaments weapon system integration Research, Development & Acquisition, and Test & Evaluation to Naval Surface Warfare Center Dahlgren, VA.

Realign Naval Surface Warfare Center Dahlgren, VA, by relocating all Weapons & Armaments Research, Development & Acquisition, and Test & Evaluation, except guns/ammo and weapon systems integration to Naval Air Weapons Station China Lake, CA.

Justification: This recommendation realigns and consolidates those facilities working in Weapons & Armaments (W&A) Research, Development & Acquisition, and Test and Evaluation (RDAT&E) into a Naval Integrated RDAT&E center at the Naval Air Warfare Center, China Lake, CA. Additional synergistic realignments for W&A was achieved at two receiver sites for specific focus. The Naval Surface Warfare Center, Dahlgren, VA, is a receiver specialty site for Naval surface weapons systems integration and receives a west coast site for consolidation. This construct creates an integrated W&A RDAT&E center in China Lake, CA, energetics center at Indian Head, MD, and consolidates Navy surface weapons system integration at Dahlgren, VA. All actions relocate technical facilities with lower overall quantitative Military Value (across Research, Development & Acquisition and Test & Evaluation) into the Integrated RDAT&E center and other receiver sites with greater quantitative Military Value.

Consolidating the Navy's air-to-air, air-to-ground, and surface launched missile RD&A, and T&E activities at China Lake, CA, would create an efficient integrated RDAT&E center. China Lake is able to accommodate with minor modification/addition both

mission and life-cycle/sustainment functions to create synergies between these traditionally independent communities.

During the other large scale movements of W&A capabilities noted above, Weapon System Integration was specifically addressed to preserve the synergies between large highly integrated control system developments (Weapon Systems Integration) and the weapon system developments themselves. A specialty site for Naval Surface Warfare was identified at Dahlgren, VA, that was unique to the services and a centroid for Navy surface ship developments. A satellite unit from the Naval Surface Warfare Center, Port Hueneme, San Diego Detachment will be relocated to Dahlgren.

The Integrated RDAT&E Center at China Lake provides a diverse set of open-air range and test environments (desert, mountain, forest) for W&A RDAT&E functions. Synergy will be realized in air-to-air, air-to-ground, and surface launched mission areas.

This recommendation enables technical synergy, and positions the Department of Defense to exploit center-of-mass scientific, technical and acquisition expertise with weapons and armament Research, Development & Acquisition that currently resides at 10 locations into the one Integrated RDAT&E site, one specialty site, and an energetics site.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $358.1M. The net of all costs and savings to the Department during the implementation period is a cost of $148.7M. Annual recurring savings to the Department after implementation are $59.7M with a payback expected in 7 years. The net present value of the costs and savings to the Department over 20 years is a savings of $433.4M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 375 jobs (258 direct jobs and 117 indirect jobs) over the 2006-2011 period in the Martin County, IN, economic area, which is 4.4 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 543 jobs (258 direct jobs and 285 indirect jobs) over the 2006-2011 period in the Lexington Park, MD, Micropolitan Statistical Area, which is 1.0 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 5012 jobs (2250 direct jobs and 2762 indirect jobs) over the 2006-2011 period in the Oxnard-Thousand Oaks-Ventura, CA, Metropolitan Statistical Area, which is 1.2 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 97 jobs (47 direct jobs and 50 indirect jobs) over the 2006-2011

period in the San Diego-Carlsbad-San Marcos, CA, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 76 jobs (45 direct jobs and 31 indirect jobs) over the 2006-2011 period in the Santa Ana-Anaheim-Irvine, CA, Metropolitan Division, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 142 jobs (61 direct jobs and 81 indirect jobs) over the 2006-2011 period in the Virginia Beach-Norfolk-Newport News, VA-NC, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 91 jobs (52 direct jobs and 39 indirect jobs) over the 2006-2011 period in the Washington-Arlington-Alexandria, DC-VA-MD-WV, Metropolitan Division, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 333 jobs (155 direct jobs and 178 indirect jobs) over the 2006-2011 period in the King George County, VA, economic area, which is 2.35 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: This recommendation has the potential to impact air quality at Indian Head and China Lake. Archeological and historical sites exist on NSWC Dahlgren, which may impact current construction and operations. This recommendation has the potential to impact land use constraints or sensitive resource areas at Indian Head and China Lake. This recommendation has no impact on dredging; marine mammals, resources, or sanctuaries; noise; threatened and endangered species or critical habitat; waste management; water resources; or wetlands. This recommendation will require spending approximately $0.177M for waste management activities and $1.1M for environmental compliance activities. These costs were included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

Create an Integrated Weapons & Armaments Specialty Site for Guns and Ammunition

Recommendation: Realign the Adelphi Laboratory Center, MD, by relocating gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ.

Realign Naval Surface Warfare Center Division Crane, IN, by relocating gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ.

Realign the Fallbrook, CA, detachment of Naval Surface Warfare Center Division Crane, IN, by relocating gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ.

Realign Naval Surface Warfare Center Division Dahlgren, VA, by relocating gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ.

Realign the Louisville, KY, detachment of Naval Surface Warfare Center Division Port Hueneme, CA, by relocating gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ.

Realign Naval Air Warfare Center Weapons Division China Lake, CA, by relocating gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ.

Realign Naval Surface Warfare Center Division Indian Head, MD, by relocating gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ.

Realign Naval Surface Warfare Center Division Earle, NJ, by relocating weapon and armament packaging Research and Development & Acquisition to Picatinny Arsenal, NJ.

Justification: This recommendation realigns and consolidates those gun and ammunition facilities working in Weapons and Armaments (W&A) Research (R), Development & Acquisition (D&A). This realignment would result in a more robust joint center for gun and ammunition Research, Development & Acquisition at Picatinny Arsenal, NJ. This location is already the greatest concentration of military value in gun and ammunition W&A RD&A.

Picatinny Arsenal is the center-of-mass for DoD's Research, Development & Acquisition of guns and ammunition, with a workload more than an order of magnitude greater than any other DoD facility in this area. It also is home to the DoD's Single Manager for Conventional Ammunition. Movement of all the Services' guns and ammunition work to Picatinny Arsenal will create a joint center of excellence and provide synergy in armament development for the near future and beyond, featuring a Joint Packaging, Handling, Shipping and Transportation (PHS&T) Center, particularly important in this

current time of high demand for guns and ammunition by all the services. Technical facilities with lower quantitative military value are relocated to Picatinny Arsenal.

This recommendation includes Research, Development & Acquisition activities in the Army and Navy. It promotes jointness, enables technical synergy, and positions the Department of Defense to exploit center-of-mass scientific, technical, and acquisition expertise within the weapons and armament Research, Development & Acquisition community that currently resides at this DoD specialty location.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $116.3M. The net of all costs and savings to the Department during the implementation period is cost of $81.2M. Annual recurring savings to the Department after implementation are $11.3M with a payback expected in 13 years. The net present value of the costs and savings to the Department over 20 years is a savings of $32.6M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 11 jobs (5 direct jobs and 6 indirect jobs) over the 2006-2011 period in Bakersfield, CA, Metropolitan Statistical Area which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 83 jobs (43 direct jobs and 40 indirect jobs) over the 2006-2011 period in the Bethesda-Frederick-Gaithersburg, MD, Metropolitan Division, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 421 jobs (289 direct jobs and 132 indirect jobs) over the 2006-2011 period in Martin County, IN, economic area, which is 4.94 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 126 jobs (67 direct jobs and 59 indirect jobs) over the 2006-2011 periods in the Edison, NJ, Metropolitan Division, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 506 jobs (296 direct jobs and 210 indirect jobs) over the 2006-2011 periods in the Louisville, KY-IN, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 302 jobs (146 direct jobs and 156 indirect jobs) over the 2006-2011 periods in the San Diego-Carlsbad-San Marcos, CA, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 76 jobs (43 direct jobs and 33 indirect jobs) over the 2006-2011 periods in the Washington-Arlington-Alexandria, DC-VA-MD-WV, Metropolitan Division, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 202 jobs (93 direct jobs and 109 indirect jobs) over the 2006-2011 periods in the King George County, VA, economic area, which is 1.43 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: This recommendation is expected to impact air quality at Picatinny, which is in severe non-attainment for Ozone. This recommendation may have a minimal effect on cultural resources at Picatinny. Additional operations may further impact threatened/endangered species at Picatinny, leading to additional restrictions on training or operations. This recommendation has no impact on dredging; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; noise; waste management; or wetlands. This recommendation will require spending approximately $0.3M for environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

Consolidate Maritime C4ISR Research, Development & Acquisition, Test & Evaluation

Recommendation: Realign Washington Navy Yard, DC, by disestablishing the Space Warfare Systems Center Charleston, SC, detachment Washington Navy Yard and assign functions to the new Space Warfare Systems Command Atlantic Naval Amphibious Base, Little Creek, VA.

Realign Naval Station, Norfolk, VA, by disestablishing the Space Warfare Systems Center Norfolk, VA, and the Space Warfare Systems Center Charleston, SC, detachment Norfolk, VA, and assign functions to the new Space Warfare Systems Command Atlantic Naval Amphibious Base, Little Creek, VA.

Realign Naval Weapons Station Charleston, SC, as follows: relocate Surface Maritime Sensors, Electronic Warfare, and Electronics Research, Development & Acquisition, and Test & Evaluation of the Space Warfare Center to Naval Surface Warfare Center Division, Dahlgren, VA; relocate Subsurface Maritime Sensors, Electronic Warfare, and Electronics Research, Development & Acquisition, and Test & Evaluation of the Space Warfare Center to Naval Station Newport, RI; and relocate the Command Structure of the Space Warfare Center to Naval Amphibious Base, Little Creek, VA, and consolidate it with billets from Space Warfare Systems Command San Diego to create the Space Warfare Systems Command Atlantic, Naval Amphibious Base, Little Creek, VA. The remaining Maritime Information Systems Research, Development & Acquisition, and Test & Evaluation functions at Naval Weapons Station Charleston, SC, are assigned to Space Warfare Systems Command Atlantic, Naval Amphibious Base, Little Creek, VA.

Realign Naval Base Ventura County, CA, Naval Surface Warfare Center Division, Dahlgren, VA, and Naval Station Newport, RI, by relocating Maritime Information Systems Research, Development & Acquisition, and Test & Evaluation to Naval Submarine Base Point Loma, San Diego, CA, and consolidating with the Space Warfare Center to create the new Space Warfare Systems Command Pacific, Naval Submarine Base Point Loma, San Diego, CA.

Realign Naval Submarine Base Point Loma, San Diego, CA, as follows: relocate Surface Maritime Sensors, Electronic Warfare, and Electronics Research, Development & Acquisition, and Test & Evaluation of the Space Warfare Center to Naval Surface Warfare Center Division, Dahlgren, VA; relocate Subsurface Maritime Sensors, Electronic Warfare, and Electronics Research, Development & Acquisition, and Test & Evaluation of the Space Warfare Center to Naval Station Newport, RI; disestablish Space Warfare Systems Center Norfolk, VA, detachment San Diego, CA, and assign functions to the new Space Warfare Systems Command Pacific, Naval Submarine Base Point Loma, San Diego, CA; disestablish Naval Center for Tactical Systems Interoperability, San Diego, CA, and assign functions to the new Space Warfare Systems Command Pacific, Naval Submarine Base Point Loma, San Diego, CA; and disestablish Space Warfare Systems Command San Diego, CA, detachment Norfolk, VA, and assign functions to the new Space Warfare Systems Command Atlantic, Naval Amphibious Base, Little Creek , VA.

Realign Naval Air Station Patuxent River, MD, by relocating Subsurface Maritime Sensors, Electronic Warfare, and Electronics Research, Development & Acquisition, and Test & Evaluation of the Naval Air Warfare Center, Aircraft Division to Naval Station Newport, RI.

Realign Naval Air Station Jacksonville, FL, by disestablishing the Space Warfare Systems Center Charleston, SC, detachment Jacksonville, FL.

Realign Naval Air Station Pensacola, FL, by relocating the Space Warfare Systems Center Charleston, SC, detachment Pensacola, FL, to Naval Weapons Station Charleston, SC.

Realign Naval Weapons Station Yorktown, VA, by relocating the Space Warfare Systems Center Charleston, SC, detachment Yorktown, VA, to Naval Station Norfolk, VA, and consolidating it into the new Space Warfare Systems Command Atlantic detachment, Naval Station Norfolk, VA.

Justification: These recommended realignments and consolidations provide for multifunctional and multidisciplinary Centers of Excellence in Maritime C4ISR. This recommendation will also reduce the number of technical facilities engaged in Maritime Sensors, Electronic Warfare, & Electronics and Information Systems RDAT&E from twelve to five. This, in turn, will reduce overlapping infrastructure increase the efficiency of operations and support an integrated approach to RDAT&E for maritime C4ISR. Another result would also be reduced cycle time for fielding systems to the warfighter.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $106.1M. The net of all costs and savings to the Department during the implementation period is a savings of $88.6M. Annual recurring savings to the Department after implementation are $38.7M with a payback expected in 1 year. The net present value of the costs and savings to the Department over 20 years is a savings of $455.1M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 74 jobs (28 direct jobs and 46 indirect jobs) over the 2006-2011 period in Charleston-North Charleston, SC, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 81 jobs (34 direct jobs and 47 indirect jobs) over the 2006-2011 period in Jacksonville, FL, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 78 jobs (34 direct jobs and 44 indirect jobs) over the 2006-2011 period in the Lexington Park, MD, Micropolitan Statistical Area, which is 0.2 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 286 jobs (127 direct jobs and 159 indirect jobs) over the 2006-2011 period in the Oxnard-Thousand Oaks-Ventura, CA, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 278 jobs (102 direct jobs and 176 indirect jobs) over the 2006-2011 period in the Pensacola-Ferry Pass-Brent, FL, Metropolitan Statistical Area, which is 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 4 jobs (2 direct jobs and 2 indirect jobs) over the 2006-2011 period in Providence-New Bedford-Fall River, RI-MA, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 88 jobs (44 direct jobs and 44 indirect jobs) over the 2006-2011 period in the San Diego-Carlsbad-San Marcos, CA, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 211 jobs (87 direct jobs and 124 indirect jobs) over the 2006-2011 period in the Virginia Beach-Norfolk-Newport News, VA-NC, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 302 jobs (172 direct jobs and 130 indirect jobs) over the 2006-2011 period in the Washington-Arlington-Alexandria, DC-VA-MD-WV, Metropolitan Division, which is less than 0.1 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: Naval Undersea Warfare Center, Newport is in serious non-attainment for Ozone (1hr) and proposed to be in serious non-attainment for Ozone (8hr). San Diego is in attainment for all criteria pollutants. Naval Surface Warfare Center, Dahlgren, VA, is in attainment for all criteria pollutants with the exception of 8 hour and 1 hour O3 and Pb, which are Unclassifiable. Naval Amphibious Base Little Creek, VA, Naval Station Norfolk, VA, and Naval Weapons Station Charleston, SC, are in attainment for all Criteria Pollutants. It is in a proposed non-attainment for Ozone (1 hour). Archeological and historical sites have been identified on Dahlgren that may impact current construction or current operations.
Norfolk has potential archeological restrictions to future construction. Threatened and endangered species are present at Newport and have delayed or diverted testing. There is a potential impact regarding the bald eagle at Dahlgren. This recommendation has the

potential to impact the hazardous waste and solid waste program at Dahlgren. Newport, Dahlgren, Little Creek, Charleston, Norfolk, and San Diego all discharge to impaired waterways, and groundwater and surface water contamination are reported. This recommendation has no impact on dredging; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; noise; waste management; water resources; or wetlands. This recommendation will require spending approximately $0.1M for waste management and environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

Navy Sensors, Electronic Warfare, and Electronics Research, Development & Acquisition, Test & Evaluation

Recommendation: Realign Naval Air Warfare Center, Weapons Division, Point Mugu, CA. Relocate the Sensors, Electronic Warfare (EW), and Electronics Research, Development, Acquisition, Test & Evaluation (RDAT&E) functions to Naval Air Warfare Center, Weapons Division, China Lake, CA.

Justification: Consolidating the Sensors, EW, and Electronics RDAT&E functions at China Lake will eliminate redundant infrastructure between Point Mugu and China Lake and provide for the more efficient use of the remaining assets including the Electronic Combat Range and other integration laboratories at China Lake.

Payback: The total estimated one-time cost to implement this recommendation is $72.7M. The net of all costs and savings to the Department of Defense during the implementation period is a cost of $50.9M. Annual recurring savings to the Department after implementation are $6.7M with a payback expected in 12 years. The net present value of the costs and savings to the Department over 20 years is a savings to the Department of $16.9M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 1075 jobs (479 direct jobs and 596 indirect jobs) over the 2006-2011 period in the Oxnard-Thousand Oaks-Ventura, CA, Metropolitan Statistical Area economic area, which is 0.26 percent of economic area employment. The aggregate economic impact of all recommended actions on this economic region of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: An air conformity determination will be needed. Industrial waste management permits may need to be amended and additional water resources may be necessary at China Lake to accommodate new mission. This recommendation has no impact on cultural, archeological, or tribal resources; dredging; land use constraints or sensitive resource areas; marine mammals, resources, or sanctuaries; noise; threatened and endangered species or critical habitat; waste management; or wetlands. This recommendation will require spending approximately less than $0.04M for waste management and environmental compliance activities. These costs were included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, or environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

Consolidate Air and Space C4ISR Research, Development & Acquisition, Test & Evaluation

Recommendation: Realign Wright-Patterson Air Force Base, OH, Maxwell Air Force Base, AL, and Lackland Air Force Base, TX, by relocating Air & Space Information Systems Research and Development & Acquisition to Hanscom Air Force Base, MA. Realign Eglin Air Force Base, FL, by relocating Air & Space Sensors, Electronic Warfare & Electronics and Information Systems Test & Evaluation to Edwards Air Force Base, CA.

Justification: This recommendation will reduce the number of technical facilities engaged in Air & Space Sensors, Electronic Warfare, and Electronics and Information Systems RDAT&E from 6 to 2. Through this consolidation, the Department will increase efficiency of RDAT&E operations resulting, in a multi-functional center of excellence in the rapidly changing technology area of C4ISR.

Payback: The total estimated one-time cost to the Department of Defense to implement this recommendation is $254.4M. The net of all costs and savings to the Department during the implementation period is a cost of $115.3M. Annual recurring savings to the Department after implementation are $36.2M with a payback expected in 8 years. The net present value of the costs and savings to the Department over 20 years is a savings of $238.0M.

Economic Impact on Communities: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 2250 jobs (1262 direct

jobs and 988 indirect jobs) over the 2006-2011 period in the Dayton, OH, Metropolitan Statistical Area, which is 0.44 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 384 jobs (220 direct jobs and 164 indirect jobs) over the 2006-2011 period in the Fort Walton Beach-Crestview-Destin, FL, Metropolitan Statistical Area, which is 0.32 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 3254 jobs (1971 direct jobs and 1283 indirect jobs) over the 2006-2011 period in the Montgomery, AL, Metropolitan Statistical Area, which is 1.57 percent of economic area employment.

Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 212 jobs (110 direct jobs and 102 indirect jobs) over the 2006-2011 period in the San Antonio, TX, Metropolitan Statistical Area, which is less than 0.1 percent of economic area employment.

The aggregate economic impact of all recommended actions on these economic regions of influence was considered and is at Appendix B of Volume I.

Community Infrastructure: A review of community attributes indicates no issues regarding the ability of the infrastructure of the communities to support missions, forces, and personnel. There are no known community infrastructure impediments to implementation of all recommendations affecting the installations in this recommendation.

Environmental Impact: This recommendation has the potential to impact air quality at Hanscom and Edwards. Additional operations at Hanscom and Edwards may impact archeological sites, which may constrain operations. This recommendation may require building on constrained acreage at Hanscom. Additional operations on Edwards may impact threatened and endangered species and/or critical habitats. The hazardous waste program at Hanscom will need modification. Additional operations may impact wetlands at Hanscom, which may restrict operations. This recommendation has no impact on dredging; marine mammals, resources, or sanctuaries; noise; waste management; or water resources. This recommendation will require spending approximately $0.5M cost for waste management and environmental compliance activities. This cost was included in the payback calculation. This recommendation does not otherwise impact the costs of environmental restoration, waste management, and environmental compliance activities. The aggregate environmental impact of all recommended BRAC actions affecting the bases in this recommendation has been reviewed. There are no known environmental impediments to implementation of this recommendation.

Part V

Appendices

Appendix A: Final Capacity Report

Appendix B: Final Military Value Report

Appendix C: Acronyms

Appendix D: Glossary

APPENDIX A

TECHNICAL

JOINT CROSS SERVICE GROUP

(TJCSG)

FINAL
CAPACITY ANALYSIS
REPORT

19 May 2005

Executive Summary

This report quantifies technical and physical capacity for technical facilities[1] in the Department of Defense, and stands as an appendix to the final report of the Technical Joint Cross Service Group (TJCSG). The organization and structure of the TJCSG is contained in Section II of the main body of the final report.

The TJCSG was responsible for identifying and assessing the technical and physical capacity of Department of Defense facilities conducting Research (R), Development and Acquisition (D&A), and Test and Evaluation (T&E). As described in the final report, the TJCSG divided the Department's technical work into 13 separate capability areas, each of which was measured for research, development and acquisition, and test and evaluation.

The TJCSG identified eight parameters to measure the technical capacity of DoD technical facilities. The parameters are work years, test resource workload, building use, equipment use, facility use, funding, number of acquisition category (ACAT) programs, and ACAT funding. These eight parameters were chosen to measure the physical infrastructure and the technical activity of the DoD technical facilities.

Two issues arose early in the capacity analysis phase. The first issue occurred because each Military Department and Defense Agency reported data differently. The data reported did not always align with the TJCSG definition of technical facility. The second issue arose due to different respondents interpreting and answering questions based on inconsistent understanding of the definitions.

The TJCSG addressed both issues through the use of a number of capacity clarification data calls. To address the issue of respondents answering by organization, the TJCSG decided to aggregate the data from all respondents in a technical capability area for a function by combining all records in the "bin" by physical location, as identified by zip code. To address the issue of respondents answering questions inconsistently, the TJCSG decided to assess technical capacity using work years, physical capacity, and test hours for the quantitative capacity analysis. The remaining five parameters were used qualitatively during proposal and scenario analysis.

Technical capacity was calculated based on work years and physical capacity was calculated using a combination of building use and Full Time Equivalents (FTEs) and standard estimates of square feet per person. Physical capacities were used in the scenario development phase as an initial, overall check on adequate building space and further refined through clarification questions for the COBRA analysis phase as a determinant for military construction. Work years and test hours were initially used for technical capacity but as the process matured, work years proved to be the more reliable measure.

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[1] *The TJCSG defined a technical facility as a collection of people and physical infrastructure that performs a technical function (or functions) in a specific technical capability area (there are 13 technical capability areas) at a specific installation. The TJCSG defined a technical function as Research; Development and Acquisition; or Test and Evaluation; and when grouped together, abbreviated as RDAT&E.*

The TJCSG determined current capacity, surge capacity, peak capacity, and current excess capacity from the respondent data. The TJCSG also estimated future excess capacity by taking the current capacity and projecting to the future using expert military judgment and adjustments for programmed funding and future force structure. The responses to the Technical Joint Cross Service Group Capacity and Supplemental Capacity Data Calls indicated that DoD has approximately 7.8% current excess technical capacity when measured in work years. The current excess workforce is 13,169 work years. The TJCSG candidate recommendations decrease the total workforce by approximately 3,000 work years.

The TJCSG also examined excess physical space. The current building (physical) excess capacity for technical facilities is estimated to be greater than 28,000,000 square feet.

If the candidate recommendations of the TJCSG were implemented, the technical activities in the Department of Defense should have sufficient technical and physical capacity.

Table of Contents

Introduction

References.

This report refers to the following documents:

a. Report, Technical Joint Cross Service Group, 11 Dec 04, subject: Capacity Analysis Report.
b. Memorandum, Chairman Infrastructure Steering Group, 15 Jul 04, subject: Infrastructure Steering Group (ISG) Comments on the Technical Joint Cross-Service Group Interim Capacity Analysis Report.
c. Memorandum, Chairman Infrastructure Steering Group, 14 May 04, subject: Results of Joint Cross-Service Group (JCSG) Capacity Analysis.
d. Memorandum, Chairman Infrastructure Steering Group, 16 July 03, subject: BRAC Guidance for the Technical Joint Cross-Service Group (JCSG).
e. Memorandum, Chairman Infrastructure Steering Group, 1 Apr 03, subject: Technical Joint Cross Service Group Report.
f. Defense Science and Technology Plans, Feb 2003.
g. BRAC 2005: Analysis Handbook (Rev 0.44), 17 May 2004.
h. Memorandum, 31 March 1994, Labs JCSG to the Components.
i. Report, 30 September 2001, Quadrennial Defense Review.

This Final Capacity Analysis Report presents calculations of measures of the technical capacity parameters that were originally defined in reference a and incorporates changes, data clarifications and recommendations to the rolling TJCSG Interim Capacity Analysis Reports that were submitted from May through December 2004.

The TJCSG organization and structure is outlined in the main body of this report. As explained in the main report, the TJCSG measured technical capacity for Technical Facilities, which are defined as: a collection of people and physical infrastructure that performs a technical function (or functions) in one of the 13 technical capability areas at a specific installation.

Technical Facilities Lists

The TJCSG issued supplemental capacity data call questions to refine answers to the initial set of capacity data call responses. The Supplemental Capacity Data Call identified 617 separate reporting entities - 21 Defense Agencies, 205 United States Army (USA), 167 United States Air Force (USAF), 223 United States Navy (USN), and 1 United States Special Operations Command (USSOCOM) - at 282 locations. Some of these locations contain multiple Services and Defense Agencies. Detachments with more than 30 people reported their information independently of their parent technical facility. Data from detachments with less than 30 people was reported by their parent technical facility.

Capacity Analyses Approach

As described in the main report, the TJCSG divided their data into 39 separate “bins”, obtained by aligning work in one of 13 technical capability areas across 3 functions. Therefore, there was

a separate capacity measurement for air platform research, air platform development and acquisition, and air platform test and evaluation, and so forth through all 13 technical areas. The TJCSG was responsible for identifying and assessing the technical and physical capacity of DoD facilities conducting Research, Development and Acquisition, and Test and Evaluation, with the exception of the capacity of open air ranges. They calculated technical capacity for measurements of *Current Capacity*, *Surge Capacity, Required Capacity (an additive of current and surge capacity), Peak Capacity* and *Excess Capacity*.

The 11 December 2004 TJCSG *Capacity Analysis Report* stated that the TJCSG would use the following independent measures for capacity: work years, equipment use, facility use, test resource workload, funding, building use, number of acquisition category (ACAT) programs and associated funding for acquisition programs. These 8 parameters were to be used to measure the physical infrastructure and the technical output of the DoD facilities. Early in the capacity analysis phase, two issues arose. The first was how the components reported data. Data were reported organizationally, which does not align specifically with the definition of technical facility. The second issue arose due to different respondents interpreting and answering questions based on inconsistent definitions.

The TJCSG dealt with both issues through the use of a number of capacity clarification data calls. To deal with the issue of respondents answering by organization, the TJCSG aggregated the data from all respondents in a technical capability area for a function by combining all records in the "bin" by physical location, as identified by zip code. The computation methodology was to sum all the metrics by Military Service or Defense Agency for all technical facilities sharing the same 5-digit Zip Code and doing the same function and working in the same technology area.

To deal with the issue of respondents answering questions inconsistently, the TJCSG assessed technical capacity using work years, physical capacity, and test hours for the quantitative capacity analysis. The remaining five parameters were used qualitatively during scenario analysis.

Capacity Analysis Definitions:

The TJCSG focused on assessing current capacity, with the intent of identifying excess capacity. Capacity data used was from the initial Capacity Data Call as well as Supplemental Capacity Data Call. Excess capacity is calculated using the following terms:

A. Current Capacity (C_C) and Current Usage (C_U) are equal if referring to Technical Capacity since it is a measure of workload. For technical capacity, the TJCSG chose to use the average of a parameter over the period FY01 to FY03 for Current Capacity (and Current Usage). This was done to better establish a steady state for current workload. The data were measured at the end of the fiscal year.

$$C_C = \textit{Current Capacity} = C_U = \textit{Current Usage} = \frac{\sum_{i=01}^{03} C_{FYi}}{3} = \text{average over FY01-FY03}$$

B. Peak Capacity (C_P) or Max Potential Capacity is the certified maximum measured parameter:

C_P = *Peak Capacity* = Max demonstrated capacity at any time in the past. As with other data, these data had to be certified, which kept the peak capacity as one shown generally over the past 10 years.

C. Surge Capacity (C_S) is a difficult term to quantize for the technical functions since surges are generally accomplished by the reallocation of resources and reprioritization of workflow. The TJCSG, through deliberations, used expert military judgment and decided that 10% of the current capacity was reasonable surge capability in the technical community.

C_S = *Surge Capacity* = 10% x C_C

This estimate was validated, after it was set, by looking at the parameter for workload. The aggregated workload in the DoD increased from 149,000 people in FY01 to 159,100 people in FY03. This period was one of long-term surge for the technical functions following the September 11, 2001 attack. The results from this analysis led the TJCSG to believe the 10% surge factor was reasonable.

1. **Capacity Required to Surge** (C_{RS}) is defined as Current capacity + Surge capacity

   C_{RS} = *Capacity Required to Surge* = $C_C + C_S$

2. **Capacity Available to Surge** (C_{AS}) is defined as Peak Capacity – Current Usage

   C_{AS} = *Capacity Available to Surge* = $C_P - C_U$

D. Current Excess Capacity Capacity (C_E) is the Peak Capacity minus the Current Capacity minus the Surge Capacity.

$C_E = C_P – (C_C + C_S)$

Capacity Measures and Metrics:

The table below defines the eight capacity measures initially identified to analyze both technical capacity and physical capacity.

	Measure	Metric
a.	Work Years	Number of FTEs (Table 4-1)
b.	Building Use	Net square feet of building used (Table 4-2)
c.	Test Resource Workload (non OAR)	Number of test hours (Table 4-3)
d.	Equipment Use	Number of days the equipment is available for use
e.	Facility Use	Number of days the facility is available for use
f.	Funding	Amount of funding
g.	Acquisition Category (ACAT) Funding	Amount of ACAT program funding
h.	Number of ACATs	Number of ACAT programs being funded

Although the TJCSG initially identified eight technical capacity measures, the different interpretations of some of the capacity questions and measures by the respondents caused the TJCSG to use only three of the capacity measures quantitatively in the scenario development, scenario analysis, and candidate recommendation analysis phases. The three measures were work years (as measured by full-time equivalent work years), test resource workload (as measured by test hours), and building use (as measured by square feet). The other five measures were used to formulate scenarios and qualitatively to refine candidate recommendations. Square footage, as reported by the respondents, was also refined during scenario analysis by developing an estimate of physical capacity needed at a location using FTEs and standardized space allocations per FTE. .

Physical Infrastructure Capacity Methodology. The TJCSG did not request data for peak demonstrated building use but instead, developed the following methodology to estimate a lower bound for physical infrastructure required at any gaining location as a standard for scenario analysis. That is, the physical infrastructure needed at a location was based upon the number of people and type of space (office or laboratory).

$$C_{E\,(Types)} = \textit{Excess Capacity (Type)} = \left(C_{P(FTE)} - C_{U(FTE)}\right) \times type\,\frac{ft^2}{FTE}$$

where

$C_{P(FTE)} \equiv$ *Peak Capacity (FTEs)*

$C_{U(FTE)} \equiv$ *Current Capacity (FTEs)*

Type = 160 sq ft for office space, and 310 sq ft for laboratories

where

$$C_{E(Offices)} \geq 0$$

Capacity Analyses Results

Current Excess Capacity

In the tables that follow, the columns are defined as:

Current Usage is Current Capacity (C_C),
Peak is the Peak Capacity (C_P), and
Current Excess is the Current Excess Capacity (C_E): Peak Capacity (C_P) – (Current Capacity (C_C) + Surge Capacity (C_S))

Research

Bin	Peak	Current Usage	Current Surge	Current Excess
Air Platforms	2,352	1,970	2,167	185
Battlespace Environments	1,102	1,014	1,115	-13
Biomedical	2,290	1,760	1,936	354
Chemical Biological Defense	2,199	1,884	2,072	127
Ground Vehicles	1,885	1,068	1,175	710
Human Systems	2,671	1,980	2,178	493
Information Systems Technology	3,752	3,319	3,651	102
Materials and Processes	1,996	1,731	1,904	92
Nuclear Technology	238	221	243	-5
Sea Vehicles	823	694	763	60
Sensors, Electronics, and EW	4,591	3,927	4,320	271
Space Platforms	1,878	1,652	1,818	60
Weapons Technology	5,319	4,400	4,840	479

D&A

Bin	Peak	Current Usage	Current Surge	Current Excess
Air Platforms	19,530	14,726	16,198	3,332
Battlespace Environments	560	488	537	23
Biomedical	286	171	189	98
Chemical Biological Defense	2,676	2,247	2,471	204
Ground Vehicles	3,253	2,613	2,874	379
Human Systems	3,980	3,266	3,593	387
Information Systems Technology	21,832	20,726	22,799	-967
Materials and Processes	1,097	917	1,009	88
Nuclear Technology	1,008	921	1,013	-6
Sea Vehicles	5,546	5,098	5,608	-61
Sensors, Electronics, and EW	9,833	8,960	9,856	-22
Space Platforms	6,647	5,083	5,591	1,055
Weapons Technology	30,696	26,791	29,470	1,226

T&E

Bin	Peak	Current Usage	Current Surge	Current Excess
Air Platforms	11,526	9,744	10,718	808
Battlespace Environments	487	366	403	84
Biomedical	232	212	233	-1
Chemical Biological Defense	1,046	866	952	93
Ground Vehicles	3,176	2,033	2,237	940
Human Systems	964	794	874	90
Information Systems Technology	4,044	3,435	3,779	265
Materials and Processes	451	394	433	18
Nuclear Technology	527	457	503	24
Sea Vehicles	1,524	1,406	1,547	-23
Sensors, Electronics, and EW	4,368	3,619	3,981	387
Space Platforms	981	652	717	264
Weapons Technology	15,526	12,547	13,802	1,724

Table 4-1. Current Technical Capacity - Work Years (FTEs).

Research

Bin	Peak	Current Usage	Current Surge	Current Excess
Air Platforms	2,715,476	610,724	671,796	2,043,680
Battlespace Environments	492,629	162,163	178,380	314,249
Biomedical	839,977	610,586	671,645	168,332
Chemical Biological Defense	976,953	583,948	642,343	334,610
Ground Vehicles	538,132	331,230	364,353	173,779
Human Systems	1,374,135	613,906	675,297	698,838
Information Systems Technology	1,359,375	1,028,804	1,131,685	227,690
Materials and Processes	867,554	536,526	590,178	277,376
Nuclear Technology	107,679	68,394	75,234	32,445
Sea Vehicles	321,690	215,125	236,638	85,053
Sensors, Electronics, and EW	2,826,363	1,217,483	1,339,232	1,487,131
Space Platforms	1,240,555	512,271	563,498	677,057
Weapons Technology	1,305,835	1,363,936	1,500,329	-194,494

D&A

Bin	Peak	Current Usage	Current Surge	Current Excess
Air Platforms	3,020,942	2,356,082	2,591,690	429,252
Battlespace Environments	185,234	78,094	85,904	99,330
Biomedical	76,674	27,428	30,171	46,502
Chemical Biological Defense	286,563	359,459	395,405	-108,841
Ground Vehicles	342,692	418,047	459,852	-117,159
Human Systems	798,471	522,583	574,842	223,629
Information Systems Technology	5,676,463	3,670,849	4,037,933	1,638,529
Materials and Processes	209,099	146,695	161,365	47,734
Nuclear Technology	1,466,485	147,378	162,116	1,304,369
Sea Vehicles	738,714	815,657	897,222	-158,508
Sensors, Electronics, and EW	4,488,449	1,570,858	1,727,944	2,760,506
Space Platforms	2,634,401	813,273	894,600	1,739,801
Weapons Technology	5,669,197	4,286,572	4,715,229	953,967

T&E

Bin	Peak	Current Usage	Current Surge	Current Excess
Air Platforms	5,668,143	1,558,994	1,714,894	3,953,249
Battlespace Environments	74,499	58,582	64,440	10,059
Biomedical	7,415	33,963	37,360	-29,944
Chemical Biological Defense	59,034	138,537	152,390	-93,356
Ground Vehicles	976,494	325,309	357,840	618,654
Human Systems	141,594	127,074	139,781	1,813
Information Systems Technology	875,646	549,623	604,585	271,060
Materials and Processes	439,595	62,968	69,265	370,330
Nuclear Technology	249,576	73,155	80,470	169,106
Sea Vehicles	949,067	224,988	247,487	701,580
Sensors, Electronics, and EW	1,567,737	579,099	637,009	930,728
Space Platforms	468,553	104,314	114,746	353,808
Weapons Technology	6,878,776	2,007,572	2,208,329	4,670,447

Table 4-2. Current Physical Capacity - Building Use estimate(Sq Ft).

T&E

Bin	Peak	Current Usage	Current Surge	Current Excess
Air Platforms	283,458	201,611	221,773	61,686
Battlespace Environments	2,000	2,000	2,200	-200
Biomedical	12,948	11,114	12,226	722
Chemical Biological Defense	131,541	49,886	54,874	76,667
Ground Vehicles	657,400	171,354	188,490	468,910
Human Systems	77,774	36,357	39,993	37,781
Information Systems Technology	413,371	329,322	362,255	51,116
Materials and Processes	189,045	167,734	184,508	4,537
Nuclear Technology	55,310	39,008	42,908	12,402
Sea Vehicles	111,806	99,542	109,497	2,309
Sensors, Electronics, and EW	401,704	311,304	342,435	59,270
Space Platforms	364,151	292,356	321,591	42,559
Weapons Technology	1,037,761	774,038	851,442	186,319

Table 4-3. Current Test Resource Workload (non OAR) (Test hours).

Capacity Analysis Summary

The Department of Defense has current excess capacity for both workload and building use (as well as test hours). Using aggregated measurements, the TJCSG found capacity for approximately 13,000 excess work years and approximately 28,000,000 excess square feet in building space. By function, the current technical capacity measures (for work years) are distributed among the three functions as shown in the following table:

	Peak Capacity	Current Usage	Current Required (Current Use + Surge)	Current Excess (relative to Current Required)
Research Work Years	31,168	25,517	28,069	3,099 (11.0%)
D&A Work Years	106,944	92,007	101,208	5,736 (5.7%)
T&E Work Years	44,852	36,654	40,319	4,533 (11.2%)
Total Work Years	182,964	154,178	169,596	13,168 (7.8%)

Observe the current usage (the average of FY-01, -02 and -03) was 154, 178. The currently usage increased from FY-01 to FY-02, and again from FY-02 to FY-03. The timeframe of the increases followed the September 11, 2001 attack on America. The work year capacity at the end of FY2003 was 158,826. A consequence is that at the end of FY-03 the Department was already using some of the technical surge capacity.

The TJCSG candidate recommendations reduce capacity by approximately 3,000 work years. The TJCSG recommendations provide the DoD with sufficient capacity to accommodate an RDAT&E workforce large enough to meet surge requirements and provide them adequate physical infrastructure such as laboratory and T&E space to support the current and future DoD RDAT&E requirements.

APPENDIX B

TECHNICAL

JOINT CROSS SERVICE GROUP (TJCSG)

FINAL

MILITARY VALUE

REPORT

Executive Summary

This report from the Technical Joint Cross Service Group (TJCSG) to the Infrastructure Steering Group (ISG) summarizes the approach used for determining the Military Value (MV) of Department of Defense (DoD) technical facilities in thirteen technical areas relative to each of three technical functions: Research, Development and Acquisition, and Test and Evaluation (RDAT&E). Prior to the first data call, the TJCSG defined a technical facility as *a collection of people and physical infrastructure that performs a technical function (or functions) in a specific technical capability area at a specific installation.*

The TJCSG based its Military Value scoring plan on the four 2005 BRAC Military Value criteria:

1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including the impact on joint warfighting, training, and readiness.

2. The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.

3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.

4. The cost of operations and the manpower implications.

The TJCSG identified five attributes (independent measures) to address these four criteria. The attributes are People, Physical Environment, Physical Structures and Equipment, Operational Impact, and Synergy. The weighting of the attributes was different for each of the functions. People were most heavily weighted for Research; Operational Impact most heavily weighted for Development and Acquisition; and Physical Structures and Equipment and Operational Impact equally and most heavily weighted for Test and Evaluation.

Using this construct, the TJCSG calculated a Military Value score for each technical facility. The TJCSG normalized the Military Value score for all facilities within a technical area and function. In that way, the Military Value scores provide a mechanism to compare the Military Value for any technical facility relative to all other technical facilities within the same technical area and function. A consequence of this construct is that the Military Value scores are not comparable when moving between technical areas and functions. That is, the Military Value score of a technical facility conducting air vehicle research is not comparable to the Military Value score of a technical facility conducting space vehicle development and acquisition.

Military Value data was received from 617 entities at 282 Military Service locations. The 282 locations were in 248 Zip Codes. The Military Service and Defense Agency responses to the Military Value questions were sometimes inconsistent with one another due to Service business

models, organization, or structure. Consequently, the data received did not always correspond to an analytic framework bassed on technical facilities as defined by the TJCSG.

Frequently, the TJCSG found it necessary to combine responses from multiple entities at the same Military Service location to enable the data to correspond to the JCSG definition of a technical facility. The combinations resulted in collections of people and physical infrastructure that were consistent with the definition of a technical facility. Tables 3-1 thru 3-39 in Section 3 (page B-13) of this appendix present the final Military Value score ranking for each location by technical capability area and function. The specific questions are found in Section 4 (page B-71). The specific weights applied to each question are found Section 5 (page B-127) of this appendix.

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Section 1 Introduction

This report is the Final Technical Joint Cross Service Group (TJCSG) Military Value (MV) report. It employs the Military Value analysis and scoring plan approved by the Infrastructure Steering Group (ISG).

The analytic design was to assign Military Value to each DoD technical facility. A technical facility was defined as *a collection of people and physical infrastructure that performs a technical function (or functions) in a specific technical capability area at a specific installation.* This ISG-approved methodology (addressing selection criteria, attributes, metrics, and weights, at technical facilities) and the TJCSG analytical framework forms the basis for the Military Value Scores that are found in the 39 tables (Tables 3-1 thru 3-39) in Section 3.

For each technical function this report provides:

- *Weights* of each Base Realignment and Closure (BRAC) selection criterion and a rationale for the criteria weighting scheme;
- *Attributes* corresponding to each of the four BRAC selection criterion the TJCSG associates with Military Value, the weighting of each attribute, and a rationale for the attributes weighting scheme;
- *Metrics* used in quantitatively measuring the Military Value of each attribute and the weighting for each metric;
- *Questions* whose answers quantify each metric.

The Military Value data call was sent to over 400 DoD locations that do at least some technical work. The TJCSG used the Capacity Data Call and experts from the Military Departments and Defense Agencies to determine where to send the data call.

Military Value data was received from 617 respondents (205 US Army, 223 US Navy, 167 US Air Force, 21 Defense Agencies, 1 US Special Operations Command) at 282 military locations. The 282 locations were in 248 Zip Codes. Because the Military Service and Defense Agency responses to the Military Value questions varied due to each organizational construct, the data received did not always correspond to the TJCSG analytic framework. The 617 respondents included multiple organizations at an installation working in the same combinations of functions and technical capability areas. The analytic framework requires counting everyone at an installation working in the same combinations of functions and technical capability areas as a single technical facility, regardless of the number of organizations on the installation.

The TJCSG determined that where the individual responses did not satisfy the definition of a technical facility, the combined responses from all the same Service entities at the location did satisfy the definition of a technical facility. The combinations resulted in collections of people and physical infrastructure that were consistent with the definition of a technical facility. The procedure selected by the TJCSG to aggregate data was to give each set of respondents from the same Military Service or Defense Agency sharing the same 5-digit US Postal Service Zip

Code a single Military Value score. The specific methodology used is found in Section 1.4 of this appendix.

1.1 TJCSG Analytical Construct

Section II-A of the main report describes the TJCSG organization. Section II-B of the main report describes the three functions (Research, Development & Acquisition, Test & Evaluation) and thirteen technology areas to be analyzed. Section III-B of the main report describes the Military Value analysis procedure.

Section 3 (page B-13) of this Appendix includes 39 tables giving the quantitative Military Value score of each technical facility in descending order. The 39 tables correspond to each possible combination of function and technology areas (see Figure 2 of the main report). Section 4 (page B-71) of this Appendix presents the entire set of Military Value data call questions. Section 5 (page B-127) of this Appendix provides the weights assigned to each Military Value question, metric, attribute, and selection criterion.

The Test and Evaluation (T&E) function includes Developmental Test and Evaluation (DT&E) and Operational Test and Evaluation (OT&E). There are six test resource categories: installed system test, measurement, digital modeling and simulation, hardware-in-the-loop, integration laboratory, and open-air range.

The ISG directed that the Education and Training JCSG be responsible for scoring the sixth T&E resource category: open-air ranges. This decision was consistent with the fact that open-air ranges (OARs) are used (or could be used) to support both test and training events. The TJCSG used the Education & Training JCSG open-air range Military Value scores. The TJCSG worked with the Education and Training JCSG to develop a scoring plan to account for the Military Value component of T&E technical facilities at locations with open-air ranges. The methodology is found in Section 1.3.

In addition to quantifying the Military Value of technical facilities developing known technologies, there is Military Value associated with innovation of new technologies and influencing how innovation and technology will contribute to future warfighting capability. The TJCSG used its expert military judgment to create a list of technologies that are likely to contribute to the transformation of military operations through 2025. The list is provided below.

The TJCSG used the following sources to identify technologies likely to contribute to future Military Value:

a) *National Security Strategy of the United States (2001)*
b) *Transformation Planning Guidance 2003*
c) *The Joint Operations Concept, Technology 2003*
d) *Joint Warfighting Science and Technology Plan 2003*
e) *Defense Technology Area Plan (DTAP) 2003*
f) *Defense Technology Objectives 2003*
g) *DoD Advanced Technology Capability Demonstration Master Plan 2003*
h) *The OSD Master Acquisition Plan*
i) *Strategic Plan for Department of Defense Test and Evaluation Resources*

Based on these sources, the TJCSG identified the following technologies as having significant importance to future warfighting capabilities. The TJCSG included these in the scoring plan, awarding additional credit to technical facilities working in these technologies. The technologies are:

Advanced Detection and Mitigation of Chemical, Biological, Nuclear, Radiological and Explosive Materials (and Weapons)
Advanced Guided Weapons
Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons
Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift
Hypersonics
Information Warfare
Integrated Warrior
Laser Communication
Network Centric Information Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space
Robotics and Autonomous Unmanned Vehicles

1.2 Selection Criteria, Attributes, Metrics, and Weights

The metric definitions, questions, and scoring plan methodology can be found in Section 4 (page B-71) of this Appendix. The entire set of weights for the selection criteria, attributes, and metrics can be found in Section 5 (page B-127) of this Appendix.

1.2.a Selection Criteria

The four Military Value BRAC 2005 selection criteria are:

1. The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including the impact on joint warfighting, training, and readiness.

2. The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.

3. The ability to accommodate contingency, mobilization, surge, and future total force requirements at both existing and potential receiving locations to support operations and training.

4. The cost of operations and the manpower implications.

The TJCSG determined that criterion 1 included technical capabilities that are necessary to ensure operational readiness; criterion 2 included technical facilities; criterion 3 included technical capability giving support to future requirements and operations; and criterion 4 included impacts on technical intellectual capital.

1.2.b Attributes

Based on input from the TJCSG subgroups, the TJCSG developed the following five attributes for Military Value:

People - measures intellectual capital through education, experience, certifications, patents, publications and awards;
Physical environment - measures special features of DoD technical facilities and encroachment;
Physical structures and equipment - measures the presence of physical structures unique within DoD; and the value, condition, and use of physical structures;
Operational impact - measures output of the RDAT&E functions through the number and funding of their projects; and size of their staff;
Synergy - measures factors like working on multiple functions and multiple technical capability areas, proximity to customer, jointness, and dual-use.

More details on these metrics are in Section 4, Metrics Definition and Scoring Plan.

1.2.c Selection Criteria Weights and Rationale

The TJCSG independently weighted the selection criteria against the three technical functions. The TJCSG determined that the weighting for each selection criterion are the same for research and D&A technical facilities (Table 1-1). The TJCSG determined that the weighting for each selection criterion is the same across all T&E technical facilities. However, the weighting of the selection criteria for T&E technical facilities differ from the weightings of selection criteria for research and D&A technical facilities due to differences in the type of work conducted by these facilities (e.g. test ranges vice research labs).

The TJCSG concluded that technical facilities made their greatest impact through contributions to current and future mission capabilities and impacts on operational readiness. Thus criteria 1 was weighted the highest. The T&E function is more dependent on the availability and condition of land than either the research function or D&A function. Criterion 2 was weighted more heavily for the T&E function than criterion 2 was weighted for Research and D&A functions. The weighting presented in Table 1-1 reflects the final disposition of ISG and TJCSG deliberations.

1.2.d Attribute Weights

With input from the subgroups, the TJCSG determined a common set of weights for the five attributes. There was a common weight for each attribute for each technical function. The weights for the attributes are shown in Table 1-2. The first number in each column (selection criterion) is the weight of each row (attribute) for research functions.

selection criterion / technical functions	Criterion 1 Current & future mission capabilities	Criterion 2 Availability & condition of land & facilities	Criterion 3 Future requirements	Criterion 4 Operating cost and manpower implications
Research	53%	12%	25%	10%
Development & Acquisition				
Test & Evaluation	53%	18%	19%	10%

Table 1-1. Weighting of technical functions relative to each selection criterion

The second number in each column is the D&A weight. The third number in each column is the T&E weight. The sum of the five numbers in each column (selection criterion) equals the weight of the selection criteria.

The last column indicates the relative importance of each attribute to each technical function. For example, for research the TJCSG rated people (intellectual capital) as the single most important attribute (30%). For D&A and T&E, the TJCSG valued operational impact as most important (32% for D&A and 26% for T&E). The TJCSG determined that some attributes had low correlation or impact on a selection criterion. A weight of "zero" was assigned to those attributes.

1.2.e Metric Weights

Due to the depth and breadth of the DoD technical activity and infrastructure, the subgroups identified different weights for the metrics across the subgroups. For example, a metric may have greater importance (be given greater weight) for the Weapons subgroup than for the C4ISR subgroup. The weighting of the metrics also varied between the functions. The TJCSG concurred with the subgroup recommendations for metric weights.

The weights for each metric are provided in Section 5.

selection criterion / attribute	Criterion 1 Current & future mission capabilities	Criterion 2 Availability & condition of land & facilities	Criterion 3 Future requirements	Criterion 4 Operating cost and manpower implications	Weight for each attribute, for each function, summed over selection criteria
Technical function	R / D&A / T&E	R / D&A / T&E	R / D&A / T&E	R / D&A / T&E	R / D&A / T&E
People	17%/13%/16%	0 / 0 / 0	10%/ 5%/ 2%	3%/ 3%/ 3%	30%/21%/21%
Physical Environment	2%/ 5%/ 7%	4%/ 6%/ 5%	1%/ 1%/ 3%	0 / 0 / 0	7%/12%/15%
Physical Structures and Equipment	7%/ 4%/ 5%	8%/ 6%/13%	5%/ 4%/ 5%	3%/ 3%/ 3%	23%/17%/26%
Operational Impact	15%/21%/17%	0 / 0 / 0	3%/ 9%/ 7%	2%/ 2%/ 2%	20%/32%/26%
Synergy	12%/10%/ 8%	0 / 0 / 0	6%/ 6%/ 2%	2%/ 2%/ 2%	20%/18%/12%
Sum of columns by function	53%/53%/53%	12%/12%/18%	25%/25%/19%	10%/10%/10%	100%/100%/100%

Table 1-2. Weights for the five attributes

1.2.f Scoring Plan

The mathematical basis for scoring Military Value (MV) used the following equations.

The first equation (using air vehicle research as an example) shows the total Military Value score as the summation of the Military Value scores for criteria 1-4.

$$MV_{\text{air vehicle research @ technical facility}} = MV_{\text{criterion 1}} + MV_{\text{criterion 2}} + MV_{\text{criterion 3}} + MV_{\text{criterion 4}}.$$

The Military Value of each criterion has components due to each of its attributes:

$$MV_{\text{criterion 1}} = MV_{\text{people}} + MV_{\text{physical environment}} + MV_{\text{structures \& equipment}} + MV_{\text{operational impact}} + MV_{\text{synergy}}.$$

There are three more similar equations for the other three selection criterion. The Military Value of each attribute has components due to each of its metrics:

$MV_{people} = MV_{education} + MV_{experience} + MV_{certifications} + MV_{patents,\ publications,\ awards}$

The Military Value of each metric is determined per the scoring plan as detailed in Section 4. There are four more similar equations for the other four attributes.

These equations can be written in the more general form of

$MV_{technical\ capability\ area/technical\ function\ @\ technical\ facility} = \Sigma\ W_i\ (\Sigma w_m(\Sigma\ \omega_p \mu_p))$.

Where: W_i, w_m, ω_p are the Weights of the selection criteria, attributes, and metrics respectively.
μ_p are the normalized values of the scored data.

1.3 Computing Military Value of Test & Evaluation Function

Department of Defense uses the six test resource categories named in Section 1.1 to characterize T&E facilities. The ISG assigned the responsibility and analysis for open-air ranges (OAR) to the Education & Training JCSG. The 5 non-OAR test categories (digital modeling and simulation, hardware in the loop, integration laboratory, installed system test, measurement facilities) were analyzed by the TJCSG. The TJCSG required a methodology for combining the non-OAR Military Value with the OAR Military Value from the E&T JCSG.

Based on the above, the TJCSG adopted the following approach to compute the total Military Value for the T&E function:

$MV_{T\&E/technical\ area} = (\alpha_i \bullet MV_{1\text{-}5\ Test\ Resources} + \beta_i \bullet MV_{OAR})$

Where,

α_i = relative worth of non-OAR (1-5) Test Resources on the overall T&E Military Value in a technical area.

β_i = relative worth of OAR, Test Resource 6, on the overall T&E Military Value in a technical area, given that the OAR performs at least 5% of the total OAR workload in that technical area.

The calculation of either α_i or β_i enables calculation of the other as the complement ($\alpha_i = 1 - \beta_i$). Prior to the initial Military Value data call, the TJCSG used military judgment to recommend independent α_i and β_i weights for each of the thirteen technical capability areas. (See Section 5, Table B-16, page B-157)

1.4 Computing Quantitative Military Values

Upon receiving the responses to the Military Value data call, the plan was to compute a quantitative Military Value for each technical facility. When the TJCSG computed and examined the data, it was observed that not all 617 respondents satisfied the TJCSG definition of a technical facility. There were sometimes responses from multiple organizations at the same geographic location that were doing work in the same combination of technology area and function.

The TJCSG observed that combination of the multiple organizations at the same geographic location provided groups that were consistent with the TJCSG definition of a technical facility. The TJCSG decided to compute one quantitative Military Value score for respondents from each Military Service or Defense Agency at the same geographic location by aggregating the data from all the respondents. For simplicity and clarity the TJCSG chose to use the 5-digit Zip Code as the definition of a geographic location. Military Value was assigned to 282 technical facilities located in 242 Zip Codes. Military Values were computed for each of the 39 combinations of technology areas and technical functions.

The following rules were developed for scoring data which did not logically lend themselves to being arithmetically summed:

1. Special Features - The unique special features within a location were counted only once. The final count of special features was the sum of unique features identified at a location.
2. Encroachment - The technical facility with the most restrictive environmental condition dictated the encroachment value for the location.
3. Depth of Application - The technical facility with the highest depth of application score dictated the aggregate value for the location.
4. Uniqueness - The physical structures and equipment be counted once at each location.
5. Value Utilization - When more than one technical facility being aggregated at a location used the same unique physical structure or equipment, the replacement value of the equipment was counted once for the location. The Maximum usage of 8760 hours per year was applied to each piece of equipment.
6. Jointness - The sum all of the data from all the respondents at the same location is use to compute the jointness value of the location.
7. Proximity- The value for a location was the average of the technical facilities being aggregated.
8. Duplicative Reporting of Rapid Response Actions - Duplicate responses were removed from the data.

Note the specific definitions of these metrics are found in section 4 (page B-71).

Data for detached units with 30 or fewer full time equivalent workyears in a function and technology area were combined with the parent unit and reported as a part of the parent unit's Military Value.

1.5 Overlaps with other JCSGs

The Technical JCSG overlapped with four JCSG groups: Education and Training (with respect to open-air ranges), Headquarters and Support Activities (with respect to information technology), Intelligence (with respect to C4ISR), and Medical (with respect to medical R&D). The TJCSG has a signed Memorandum of Agreement (MOA) with the other JCSGs to clarify roles and responsibilities. The results of the TJCSG analysis of the technical infrastructure relevant to

other JCSGs - including the TJCSG use of Military Values computed by other JCSGs for technical infrastructure - was coordinated with the staff of the four JCSGs as required.

Section 2. Issues Impacting Military Value Scoring Analysis

Some certified Military Value data were eliminated:

1. Data from foreign locations was removed from the database.
2. The TJCSG analyze technical facilities with more than 30 FTE workyears in a function and a technology area. Technical facilities with 30 and under FTE workyears were analyzed for specific reasons such as when they were not detachments of other organizations.
3. Unidentified data elements were removed from the database as specific elements were determined to be spurious.

Open-air range (OAR) Military Value Score: The OAR Score (obtained from the E&T JCSG) was incorporated in the Military Value scores for the T&E function. See Section 1.3 and Table B-16 in Section 5 (page B-157).

Database updates: Periodic Military Department and Defense Agency updates to the DoD Military Value data base and the receipt of data through scenario data calls required updating of the TJCSG Military Value database. Weekly updates and Military Value recalculations occurred until 28 February 2005. On February 28, the TJCSG froze data updates in order to complete development of candidate recommendations.

Zip Code Rollup: Since the Zip Code rollup computation methodology in Section 1.4 did not match the manner in which the questions had originally been posed to the Military Services and Defense Agencies, the data were regrouped to be consistent with the analytic plan before computing Military Values. This methodology introduced some errors into the final Military Values. After analysis by the subgroups and Analysis Team, the TJCSG decided that these errors were not sufficient to change the scenarios or the final recommendations.

Section 3: Quantitative Military Values Scores

The following 39 tables provide the Military Value for each technical facility as defined in Section 1. The values are determined using the certified answers to the Military Value data call and the scoring algorithm in Section 4. The data is presented in descending order, from highest Military Value to the lowest Military Value. Technical facilities executing 30 or fewer FTE workyears in each technology and each function are not included in the lists.

In the tables, the column labeled facility code is the Zip Code followed by an indicator of the Service or Defense Agency. In those cases where multiple organizations in the same Zip Code have been combined (so as to conform to the TJCSG definition of a technical facility) the entriy in the facility name column is a unique name entered into the data base to distinguish the summed data from the individual Service or Defense Agency respondents within the same Zip

Code. The name is not intended to correspond to a specific respondent from within the Zip Code.

Table 3.1: Air Platforms D&A

Rank MilVal	Facility Code	Facility Name	
1	20670 USN	USN_8_Pax (NAS Patuxent River)	0.6556
2	45433 USAF	Wright-Patterson AFB	0.5303
3	35898 USA	REDSTONE ARSENAL	0.3901
4	08733 USN	NAVAIRWARCENACDIV Lakehurst	0.2859
5	84403 USAF	Hill AFB	0.2464
6	73145 USAF	Tinker AFB	0.1845
7	31098 USAF	Warner Robbins AFB	0.1829
8	20375 USN	Naval Research Laboratory Washington DC	0.1621
9	01731 USAF	Hanscom AFB	0.1520
10	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.1459
11	23604 USA	FORT EUSTIS	0.1452
12	32212 USN	USN_3_Jacksonville	0.1426
13	33621 USAFoth	SOCOM	0.1412
14	22217 USN	OFFICE OF NAVAL RESEARCH	0.1387
15	21005 USA	ABERDEEN PROVING GROUND	0.1363
16	33040 USN	USN_3_Key West	0.1343
17	32826 USA	USA_3_Orlando	0.1329
18	23460 USN	USN_2_VABEACH.	0.1325
19	92135 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.1311
20	23511 USN	USN_7_Norfolk	0.1302
21	92145 USN	USN_2_San Diego	0.1292
22	98278 USN	USN_3_Oak Harbor	0.1291
23	36362 USA	FORT RUCKER	0.1273
24	20732 USN	NRL Chesapeake Bay Detachment	0.1211
25	85365 USA	YUMA PROVING GROUND	0.1100
26	85613 USA	FORT HUACHUCA	0.1099
27	92110 USN	USN_2_San Diego	0.1055
28	23651 USAF	Langley AFB	0.1002
29	94035 USA	REDSTONE ARSENAL Moffett Field	0.0975
30	22205 USN	COMNAVAIRSYSCOM_PATUXENT_RIVER_MD Arlington	0.0932
31	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.0915
32	96863 USN	NATEC_SAN_DIEGO_CA KANEOHE BAY	0.0899
33	76217 USN	NATEC_SAN_DIEGO_CA FORT WORTH	0.0899
34	33205 USN	DET NATEC CHERRY POINT	0.0899
35	04011 USN	DET NATEC BRUNSWICK	0.0899
36	93246 USN	USN_2_Lemoore	0.0899
37	92055 USN	MCB Camp Pendleton (DRPMAAA)	0.0899
38	30060 USN	DET NATEC ATLANTA	0.0899

Table 3.1: Air Platforms D&A

Rank MilVal	Facility Code	Facility Name	
39	29904 USN	DET NATEC BEAUFORT	0.0899
40	28545 USN	USN_2_Camp Lejeune	0.0899
41	85369 USN	YUMA PROVING GROUND	0.0899
42	37389 USN	Arnold AFS USN	0.0840
43	28533 USN	USN_3_Cherry Point	0.0827
44	45433 USN	USN_3_Wright-Pat	0.0817
45	23451 USN	DET NATEC VIRGINA BEACH	0.0813
46	20762 USN	DET NATEC WASHINGTON	0.0813
47	12550 USN	DET NATEC STEWART ANGB NY	0.0813
48	19090 USN	DET NATEC WILLOW GROVE	0.0813
49	32508 USN	USN_3_Penasacola	0.0813
50	19103 USN	DET NATEC NAVICP	0.0813
51	70143 USN	DET NATEC NEW ORLEANS	0.0813
52	32228 USN	USN-2_Mayport	0.0813
53	78418 USN	NATEC_SAN_DIEGO_CA CORPUS CHRISTI	0.0813
54	15902 USN	DET NATEC JOHNSTOWN	0.0813
55	88002 USA	WHITE SANDS MISSILE RANGE	0.0713
56	32544 USAF	HURLBURT FIELD AAF	0.0709
57	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.0585
58	36615 USN	NRL_WASHINGTON_DC Mobile	0.0580
59	93524 USAF	EDWARDS AFB	0.0580
60	99505 USA	REDSTONE ARSENAL ANCHORAGE	0.0578
61	20374 USN	USN_2_WNY	0.0577
62	87117 USAF	Kirtland AFB	0.0576
63	22134 USN	MCB Quantico	0.0575
64	78235 USAF	BROOKS CITY-BASE	0.0575
65	85706 USAF	Tucson IAP AGS	0.0575
66	21702 USA	FORT DETRICK	0.0575
67	39529 USN	NRL Detachment Stennis Space Ctr	0.0575

Table 3.2: Air Platforms Research

Rank MilVal	Facility Code	Facility Name	
1	45433 USAF	Wright-Patterson AFB	0.6556
2	20670 USN	USN_8_Pax (NAS Patuxent River)	0.5180
3	20375 USN	Naval Research Laboratory Washington DC	0.3108
4	22203 DARPA	DARPA	0.2441
5	23604 USA	FORT EUSTIS	0.2378
6	08733 USN	NAVAIRWARCENACDIV Lakehurst	0.2333
7	22217 USN	OFFICE OF NAVAL RESEARCH	0.2011
8	44135 USA	ADELPHI LABORATORY CENTER CLEVELAND	0.1667
9	37388 USAF	Arnold AFS	0.1604
10	23681 USA	USA_2_Hampton (W26201-Langley)	0.1578
11	27709 USA	ARO Durham NC	0.1567
12	22210 USAF	AFOSR	0.1349
13	94035 USA	REDSTONE ARSENAL Moffett Field	0.1258
14	93943 USN	NAVPGSCOL_MONTEREY_CA	0.1179
15	20732 USN	NRL Chesapeake Bay Detachment	0.1062
16	33040 USN	USN_3_Key West	0.1062
17	33621 USAFoth	SOCOM	0.1013
18	35898 USA	REDSTONE ARSENAL	0.0977
19	22130 USN	Marine Corps Warfighting Laboratory	0.0959
20	93524 USAF	EDWARDS AFB	0.0885
21	36362 USA	FORT RUCKER	0.0762
22	30303 USN	CNR_ARLINGTON_VA ATLANTA REGIONAL OFFICE	0.0746
23	37389 USN	Arnold AFS USN	0.0665
24	21005 USA	ABERDEEN PROVING GROUND	0.0572
25	84403 USAF	Hill AFB	0.0510
26	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.0507
27	36615 USN	NRL_WASHINGTON_DC Mobile	0.0357
28	39529 USN	NRL Detachment Stennis Space Ctr	0.0356
29	20783 USA	ADELPHI LABORATORY CENTER	0.0354
30	01760 USA	SOLDIER SYSTEMS CENTER	0.0353
31	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0351
32	22134 USN	MCB Quantico	0.0350
33	85365 USA	YUMA PROVING GROUND	0.0350
34	99505 USA	REDSTONE ARSENAL ANCHORAGE	0.0350
35	88002 USA	WHITE SANDS MISSILE RANGE	0.0350

Table 3.3: Air Platforms T&E

Rank	Facility Code	Facility Name	MilVal
1	20670 USN	USN_8_Pax (NAS Patuxent River)	0.6377
2	32548 USAF	Eglin AFB	0.5251
3	93524 USAF	EDWARDS AFB	0.5137
4	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.4821
5	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.4476
6	85613 USA	FORT HUACHUCA	0.3895
7	35898 USA	REDSTONE ARSENAL	0.3550
8	89191 USAF	NELLIS AFB	0.3410
9	96752 USN	PACMISRANFAC_HAWAREA_BARKING_SANDS_HI	0.3355
10	36362 USA	FORT RUCKER	0.3119
11	28310 USA	FORT BRAGG	0.3064
12	76542 USA	FT HOOD	0.2521
13	37388 USAF	Arnold AFS	0.1334
14	08733 USN	NAVAIRWARCENACDIV Lakehurst	0.0966
15	84403 USAF	Hill AFB	0.0805
16	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.0698
17	88310 USAF	USAF_2_Alamogorgo (Holloman)	0.0689
18	85706 USAF	Tucson IAP AGS	0.0638
19	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.0618
20	73145 USAF	Tinker AFB	0.0615
21	33040 USN	USN_3_Key West	0.0593
22	45433 USAF	Wright-Patterson AFB	0.0584
23	85365 USA	YUMA PROVING GROUND	0.0571
24	21005 USA	ABERDEEN PROVING GROUND	0.0567
25	88002 USA	WHITE SANDS MISSILE RANGE	0.0566
26	32403 USAF	Tyndall AFB	0.0564
27	87117 USAF	Kirtland AFB	0.0561
28	22202 USA	USA_4_Arlington	0.0547
29	71110 USAF	Barksdale AFB	0.0516
30	23604 USA	FORT EUSTIS	0.0497
31	78148 USAF	Randolph AFB	0.0480
32	32544 USAF	HURLBURT FIELD AAF	0.0468
33	30069 USAF	Dobbins ARB	0.0452
34	20670 USAF	USAF_4_Pax	0.0452
35	89496 USN	COMNAVAIRSYSCOM_PATUXENT_RIVER_MD Fallon	0.0449
36	32826 USA	USA_3_Orlando	0.0440
37	22205 USN	COMNAVAIRSYSCOM_PATUXENT_RIVER_MD Arlington	0.0430
38	22217 USN	OFFICE OF NAVAL RESEARCH	0.0430

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Table 3.3: Air Platforms T&E

Rank	Facility Code	Facility Name	MilVal
39	37389 USN	Arnold AFS USN	0.0382
40	84022 USA	DUGWAY PROVING GROUND	0.0334
41	23651 USAF	Langley AFB	0.0316
42	08640 USAF	Air Mobility Warfare Center (AMCW)	0.0307
43	31098 USAF	Warner Robbins AFB	0.0305
44	22302 USA	USA_3_Alexandria	0.0295
45	20903 USAF	Tunnel 9 White Oak	0.0294
46	07703 USA	FORT MONMOUTH	0.0291
47	93550 USAF	USAF_2_Palmdale (AF PLANT 41)	0.0290
48	85613 DISA	JITC Fort Huachuca	0.0287
49	89070 USAF	Eglin AFB Indian Springs	0.0286
50	99505 USA	REDSTONE ARSENAL ANCHORAGE	0.0286
51	32925 USAF	USAF_3_Cocoa Beach	0.0286

Table 3.4: Battlespace Environments D&A

Rank MilVal	Facility Code	Facility Name	
1	93943 USN	NAVPGSCOL_MONTEREY_CA	0.4394
2	20375 USN	Naval Research Laboratory Washington DC	0.4276
3	39529 USN	NRL Detachment Stennis Space Ctr	0.3800
4	22134 USN	MCB Quantico	0.2594
5	23651 USAF	Langley AFB	0.2577
6	20670 USN	USN_8_Pax (NAS Patuxent River)	0.2305
7	01731 USAF	Hanscom AFB	0.2299
8	35898 USA	REDSTONE ARSENAL	0.1566
9	22217 USN	OFFICE OF NAVAL RESEARCH	0.1537
10	33621 USAFoth	SOCOM	0.1141
11	87117 USAF	Kirtland AFB	0.0966
12	36362 USA	FORT RUCKER	0.0760
13	33040 USN	USN_3_Key West	0.0725
14	37389 USN	Arnold AFS USN	0.0523
15	88002 USA	WHITE SANDS MISSILE RANGE	0.0456
16	84403 USAF	Hill AFB	0.0258
17	85613 USA	FORT HUACHUCA	0.0176
18	20151 USN	SSFA_CHANTILLY_VA	0.0157
19	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0155
20	85365 USA	YUMA PROVING GROUND	0.0150
21	21005 USA	ABERDEEN PROVING GROUND	0.0150

Table 3.5: Battlespace Environments Research

Rank MilVal	Facility Code	Facility Name	
1	20375 USN	Naval Research Laboratory Washington DC	0.8189
2	39529 USN	NRL Detachment Stennis Space Ctr	0.5133
3	93943 USN	NAVPGSCOL_MONTEREY_CA	0.3662
4	22217 USN	OFFICE OF NAVAL RESEARCH	0.2633
5	22203 DARPA	DARPA	0.2300
6	27709 USA	ARO Durham NC	0.2293
7	20670 USN	USN_8_Pax (NAS Patuxent River)	0.1894
8	88002 USA	WHITE SANDS MISSILE RANGE	0.1836
9	20783 USA	ADELPHI LABORATORY CENTER	0.1787
10	20732 USN	NRL Chesapeake Bay Detachment	0.1662
11	35898 USA	REDSTONE ARSENAL	0.1565
12	22060 DTRA	National Capital Element DTRA	0.1241
13	33040 USN	USN_3_Key West	0.1215
14	36362 USA	FORT RUCKER	0.0762
15	45433 USAF	Wright-Patterson AFB	0.0739
16	22320 USA	ARO FT Belvoir	0.0733
17	30303 USN	CNR_ARLINGTON_VA ATLANTA REGIONAL OFFICE	0.0733
18	01731 USAF	Hanscom AFB	0.0536
19	32403 USAF	Tyndall AFB	0.0529
20	37389 USN	Arnold AFS USN	0.0520
21	84403 USAF	Hill AFB	0.0188
22	21005 USA	ABERDEEN PROVING GROUND	0.0173
23	92110 USN	USN_2_San Diego	0.0124
24	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.0041
25	85365 USA	YUMA PROVING GROUND	0.0040

Table 3.6: Battlespace Environments T&E

Rank MilVal	Facility Code	Facility Name	
1	20670 USN	USN_8_Pax (NAS Patuxent River)	0.2488
2	76542 USA	FT HOOD	0.1852
3	35898 USA	REDSTONE ARSENAL	0.1176
4	23651 USAF	Langley AFB	0.1077
5	87117 USAF	Kirtland AFB	0.0991
6	92147 USN	USN_2_San Diego	0.0833
7	36362 USA	FORT RUCKER	0.0768
8	45433 USAF	Wright-Patterson AFB	0.0742
9	33040 USN	USN_3_Key West	0.0737
10	01731 USAF	Hanscom AFB	0.0686
11	32548 USAF	Eglin AFB	0.0577
12	22217 USN	OFFICE OF NAVAL RESEARCH	0.0421
13	20375 USN	Naval Research Laboratory Washington DC	0.0411
14	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.0353
15	37389 USN	Arnold AFS USN	0.0350
16	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.0336
17	37388 USAF	Arnold AFS	0.0297
18	78234 USA	FT SAM HOUSTON	0.0282
19	84403 USAF	Hill AFB	0.0280
20	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0213
21	88002 USA	WHITE SANDS MISSILE RANGE	0.0210
22	85365 USA	YUMA PROVING GROUND	0.0210
23	21005 USA	ABERDEEN PROVING GROUND	0.0210

Table 3.7: Biomedical D&A

Rank MilVal	Facility Code	Facility Name	
1	21702 USA	FORT DETRICK	0.7143
2	20670 USN	USN_8_Pax (NAS Patuxent River)	0.1671
3	36362 USA	FORT RUCKER	0.1570
4	22217 USN	OFFICE OF NAVAL RESEARCH	0.1525
5	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.1200
6	21005 USA	ABERDEEN PROVING GROUND	0.1200
7	78235 USAF	BROOKS CITY-BASE	0.0755
8	92186 USN	NAVHLTHRSCHCEN_SAN_DIEGO_CA SAN DIEGO	0.0544
9	20375 USN	Naval Research Laboratory Washington DC	0.0349
10	20151 USN	SSFA_CHANTILLY_VA	0.0215
11	22134 USN	MCB Quantico	0.0208
12	92145 USN	USN_2_San Diego	0.0150
13	37389 USN	Arnold AFS USN	0.0150
14	88002 USA	WHITE SANDS MISSILE RANGE	0.0150
15	20910 USN	NAVMEDRSCHCEN_SILVER_SPRING_MD	0.0150

Table 3.8: Biomedical Research

Rank MilVal	Facility Code	Facility Name	
1	21702 USA	FORT DETRICK	0.4622
2	20910 USA	WALTER REED ARMY MEDICAL CENTER	0.4015
3	96718 USA	TRIPLER ARMY MEDICAL CENTER Pohakuloa	0.3979
4	96857 USA	Schofield Barracks	0.3979
5	01760 USA	SOLDIER SYSTEMS CENTER	0.3916
6	20375 USN	Naval Research Laboratory Washington DC	0.3524
7	78234 USA	FT SAM HOUSTON	0.2460
8	22217 USN	OFFICE OF NAVAL RESEARCH	0.2448
9	22203 DARPA	DARPA	0.2279
10	36362 USA	FORT RUCKER	0.2196
11	78235 USAF	BROOKS CITY-BASE	0.1896
12	20910 USN	NAVMEDRSCHCEN_SILVER_SPRING_MD	0.1783
13	92186 USN	NAVHLTHRSCHCEN_SAN_DIEGO_CA SAN DIEGO	0.1695
14	32407 USN	USN_2_Pannama City	0.1514
15	22130 USN	Marine Corps Warfighting Laboratory	0.1454
16	20670 USN	USN_8_Pax (NAS Patuxent River)	0.1429
17	60088 USA	USA_2_Great Lakes	0.1341
18	78235 USA	US Medical Research Detachment Brooks-City Base	0.1128
19	39534 USAF	USAF_2_Biloxi	0.0875
20	22210 USAF	AFOSR	0.0768
21	78235 USN	NAVHLTHRSCHCEN_SAN_DIEGO_CA BROOKS	0.0733
22	45433 USN	USN_3_Wright-Pat	0.0733
23	93943 USN	NAVPGSCOL_MONTEREY_CA	0.0523
24	22060 DTRA	National Capital Element DTRA	0.0521
25	37389 USN	Arnold AFS USN	0.0520
26	21005 USA	ABERDEEN PROVING GROUND	0.0478
27	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.0190
28	39529 USN	NRL Detachment Stennis Space Ctr	0.0099
29	45433 USAF	Wright-Patterson AFB	0.0040
30	88002 USA	WHITE SANDS MISSILE RANGE	0.0040

Table 3.9: Biomedical T&E

Rank MilVal	Facility Code	Facility Name	
1	36362 USA	FORT RUCKER	0.2770
2	20670 USN	USN_8_Pax (NAS Patuxent River)	0.2521
3	78235 USAF	BROOKS CITY-BASE	0.2202
4	87117 USAF	Kirtland AFB	0.1647
5	22302 USA	USA_3_Alexandria	0.1593
6	84022 USA	DUGWAY PROVING GROUND	0.1153
7	21005 USA	ABERDEEN PROVING GROUND	0.1041
8	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.1041
9	21702 USA	FORT DETRICK	0.0662
10	22217 USN	OFFICE OF NAVAL RESEARCH	0.0547
11	92186 USN	NAVHLTHRSCHCEN_SAN_DIEGO_CA SAN DIEGO	0.0490
12	32407 USN	USN_2_Pannama City	0.0388
13	78234 USA	FT SAM HOUSTON	0.0374
14	88002 USA	WHITE SANDS MISSILE RANGE	0.0359
15	73145 USAF	Tinker AFB	0.0282
16	78235 USN	NAVHLTHRSCHCEN_SAN_DIEGO_CA BROOKS	0.0274
17	20910 USN	NAVMEDRSCHCEN_SILVER_SPRING_MD	0.0270
18	45433 USAF	Wright-Patterson AFB	0.0270
19	37389 USN	Arnold AFS USN	0.0270

Table 3.10: Chemical Biological Defense D&A

Rank MilVal	Facility Code	Facility Name	
1	21005 USA	ABERDEEN PROVING GROUND	0.4654
2	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.4211
3	01760 USA	SOLDIER SYSTEMS CENTER	0.2787
4	92110 USN	USN_2_San Diego	0.2230
5	29419 USN	SPAWARSYSCEN_CHARLESTON_SC	0.2171
6	20670 USN	USN_8_Pax (NAS Patuxent River)	0.2121
7	20375 USN	Naval Research Laboratory Washington DC	0.2067
8	21702 USA	FORT DETRICK	0.1936
9	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.1845
10	47522 USN	NAVSURFWARCENDIV_CRANE_IN	0.1686
11	78235 USAF	BROOKS CITY-BASE	0.1584
12	01760 USN	NAVCLOTEXTRSCHFAC_NATICK_MA	0.1563
13	61299 USA	ROCK ISLAND ARSENAL	0.1215
14	85365 USA	YUMA PROVING GROUND	0.1192
15	22134 USN	MCB Quantico	0.1003
16	20910 USN	NAVMEDRSCHCEN_SILVER_SPRING_MD	0.0990
17	22217 USN	OFFICE OF NAVAL RESEARCH	0.0818
18	84022 USA	DUGWAY PROVING GROUND	0.0600
19	92055 USN	MCB Camp Pendleton (DRPMAAA)	0.0524
20	37389 USN	Arnold AFS USN	0.0523
21	20360 USN	SPAWARSYSCEN_CHARLESTON_SC Washington	0.0389
22	32212 USN	USN_3_Jacksonville	0.0366
23	20653 USN	SPAWARSYSCEN_CHARLESTON_SC Lexington Park	0.0366
24	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.0366
25	23464 USN	SPAWARSYSCEN Charleston – Little Creek	0.0366
26	23501 USN	USN_3_Norfold/Protsmouth	0.0366
27	88002 USA	WHITE SANDS MISSILE RANGE	0.0338
28	32508 USN	USN_3_Penasacola	0.0258
29	87117 USAF	Kirtland AFB	0.0245
30	36362 USA	FORT RUCKER	0.0218
31	36615 USN	NRL_WASHINGTON_DC Mobile	0.0187
32	93943 USN	NAVPGSCOL_MONTEREY_CA	0.0182
33	33621 USAFoth	SOCOM	0.0177
34	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0162
35	60088 USA	USA_2_Great Lakes	0.0156
36	32826 USA	USA_3_Orlando	0.0154
37	22202 USN	USN_3_Arlington	0.0150
38	85613 USA	FORT HUACHUCA	0.0150
39	90245 USN	SPAWARSYSCOM_SAN_DIEGO_CA EL SEGUNDO	0.0150
40	22060 USA	FORT BELVOIR	0.0150

Table 3.11: Chemical Biological Defense Research

Rank MilVal	Facility Code	Facility Name	
1	21005 USA	ABERDEEN PROVING GROUND	0.5890
2	21702 USA	FORT DETRICK	0.4690
3	20375 USN	Naval Research Laboratory Washington DC	0.3607
4	22203 DARPA	DARPA	0.3252
5	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.2761
6	01760 USA	SOLDIER SYSTEMS CENTER	0.2257
7	20670 USN	USN_8_Pax (NAS Patuxent River)	0.2223
8	01760 USN	NAVCLOTEXTRSCHFAC_NATICK_MA	0.2053
9	27709 USA	ARO Durham NC	0.2006
10	93943 USN	NAVPGSCOL_MONTEREY_CA	0.1603
11	22060 DTRA	National Capital Element DTRA	0.1579
12	78235 USAF	BROOKS CITY-BASE	0.1516
13	22217 USN	OFFICE OF NAVAL RESEARCH	0.1305
14	20910 USN	NAVMEDRSCHCEN_SILVER_SPRING_MD	0.1217
15	32403 USAF	Tyndall AFB	0.1205
16	47522 USN	NAVSURFWARCENDIV_CRANE_IN	0.0830
17	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.0700
18	85365 USA	YUMA PROVING GROUND	0.0700
19	87117 DTRA	Kirtland AFB	0.0700
20	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0521
21	61299 USA	ROCK ISLAND ARSENAL	0.0379
22	23501 USN	USN_3_Norfold/Protsmouth	0.0336
23	29419 USN	SPAWARSYSCEN_CHARLESTON_SC	0.0188
24	32212 USN	USN_3_Jacksonville	0.0188
25	23464 USN	SPAWARSYSCEN Charleston – Little Creek	0.0188
26	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.0188
27	20360 USN	SPAWARSYSCEN_CHARLESTON_SC Washington	0.0188
28	20653 USN	SPAWARSYSCEN_CHARLESTON_SC Lexington Park	0.0188
29	87117 USAF	Kirtland AFB	0.0184
30	39529 USN	NRL Detachment Stennis Space Ctr	0.0171
31	36362 USA	FORT RUCKER	0.0124
32	36615 USN	NRL_WASHINGTON_DC Mobile	0.0083
33	32925 USAF	USAF_3_Cocoa Beach	0.0071
34	84022 USA	DUGWAY PROVING GROUND	0.0057
35	20910 USA	WALTER REED ARMY MEDICAL CENTER	0.0055
36	22210 USAF	AFOSR	0.0046
37	45433 USAF	Wright-Patterson AFB	0.0040
38	35898 USA	REDSTONE ARSENAL	0.0040
39	22060 USA	FORT BELVOIR	0.0040
40	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0040
41	37389 USN	Arnold AFS USN	0.0040
42	88002 USA	WHITE SANDS MISSILE RANGE	0.0040

Table 3.12: Chemical Biological Defense T&E

Rank MilVal	Facility Code	Facility Name	
1	84022 USA	DUGWAY PROVING GROUND	0.6308
2	76542 USA	FT HOOD	0.2678
3	20670 USN	USN_8_Pax (NAS Patuxent River)	0.1757
4	21005 USA	ABERDEEN PROVING GROUND	0.1349
5	87117 USAF	Kirtland AFB	0.1345
6	32548 USAF	Eglin AFB	0.1242
7	01760 USN	NAVCLOTEXTRSCHFAC_NATICK_MA	0.0936
8	85365 USA	YUMA PROVING GROUND	0.0881
9	85613 USA	FORT HUACHUCA	0.0795
10	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.0793
11	92123 USN	NAVUNSEAWARCENDIV_KEYPORT_WA San Diego	0.0750
12	96792 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Waianae	0.0750
13	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.0750
14	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.0749
15	47522 USN	NAVSURFWARCENDIV_CRANE_IN	0.0703
16	22134 USN	MCB Quantico	0.0614
17	35898 USA	REDSTONE ARSENAL	0.0600
18	37388 USAF	Arnold AFS	0.0333
19	78235 USAF	BROOKS CITY-BASE	0.0330
20	22302 USA	USA_3_Alexandria	0.0287
21	29419 USN	SPAWARSYSCEN_CHARLESTON_SC	0.0252
22	20360 USN	SPAWARSYSCEN_CHARLESTON_SC Washington	0.0250
23	23501 USN	USN_3_Norfold/Protsmouth	0.0250
24	32212 USN	USN_3_Jacksonville	0.0250
25	23464 USN	SPAWARSYSCEN Charleston – Little Creek	0.0250
26	20653 USN	SPAWARSYSCEN_CHARLESTON_SC Lexington Park	0.0250
27	92055 USN	MCB Camp Pendleton (DRPMAAA)	0.0236
28	37389 USN	Arnold AFS USN	0.0225
29	36362 USA	FORT RUCKER	0.0224
30	88002 USA	WHITE SANDS MISSILE RANGE	0.0219
31	01760 USA	SOLDIER SYSTEMS CENTER	0.0202
32	32508 USN	USN_3_Penasacola	0.0200
33	78234 USA	FT SAM HOUSTON	0.0188
34	32826 USA	USA_3_Orlando	0.0179
35	99703 USA	YUMA PROVING GROUND Ft. Wainwright	0.0152
36	99737 USA	USA_2_Ft Greeley	0.0150
37	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0150
38	45433 USAF	Wright-Patterson AFB	0.0150
39	22217 USN	OFFICE OF NAVAL RESEARCH	0.0150

Table 3.13: Ground Vehicles D&A

Rank MilVal	Facility Code	Facility Name	
1	48397 USA	DETROIT ARSENAL	0.5644
2	21005 USA	ABERDEEN PROVING GROUND	0.3099
3	35898 USA	REDSTONE ARSENAL	0.2301
4	20670 USN	USN_8_Pax (NAS Patuxent River)	0.2206
5	85365 USA	YUMA PROVING GROUND	0.2206
6	22060 USA	FORT BELVOIR	0.1863
7	33621 USAFoth	SOCOM	0.1584
8	22134 USN	MCB Quantico	0.1574
9	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.1514
10	88002 USA	WHITE SANDS MISSILE RANGE	0.1459
11	22217 USN	OFFICE OF NAVAL RESEARCH	0.1453
12	85613 USA	FORT HUACHUCA	0.1256
13	31098 USAF	Warner Robbins AFB	0.1141
14	22192 USN	DRPM_AAA_WASHINGTON_DC	0.1020
15	01731 USAF	Hanscom AFB	0.0932
16	32826 USA	USA_3_Orlando	0.0930
17	37389 USN	Arnold AFS USN	0.0928
18	61299 USA	ROCK ISLAND ARSENAL	0.0835
19	36362 USA	FORT RUCKER	0.0823
20	84022 USA	DUGWAY PROVING GROUND	0.0655
21	33040 USN	USN_3_Key West	0.0593
22	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0589
23	20375 USN	Naval Research Laboratory Washington DC	0.0584
24	99505 USA	REDSTONE ARSENAL ANCHORAGE	0.0575
25	45433 USAF	Wright-Patterson AFB	0.0575

Table 3.14: Ground Vehicles Research

Rank MilVal	Facility Code	Facility Name	
1	48397 USA	DETROIT ARSENAL	0.7225
2	21005 USA	ABERDEEN PROVING GROUND	0.3505
3	22203 DARPA	DARPA	0.2304
4	20670 USN	USN_8_Pax (NAS Patuxent River)	0.2131
5	22217 USN	OFFICE OF NAVAL RESEARCH	0.1485
6	35898 USA	REDSTONE ARSENAL	0.1284
7	85365 USA	YUMA PROVING GROUND	0.1176
8	22130 USN	Marine Corps Warfighting Laboratory	0.1167
9	20375 USN	Naval Research Laboratory Washington DC	0.0930
10	32403 USAF	Tyndall AFB	0.0909
11	20783 USA	ADELPHI LABORATORY CENTER	0.0773
12	36362 USA	FORT RUCKER	0.0764
13	93943 USN	NAVPGSCOL_MONTEREY_CA	0.0630
14	88002 USA	WHITE SANDS MISSILE RANGE	0.0491
15	61299 USA	ROCK ISLAND ARSENAL	0.0443
16	33040 USN	USN_3_Key West	0.0367
17	22060 USA	FORT BELVOIR	0.0363
18	33621 USAFoth	SOCOM	0.0358
19	44135 USA	ADELPHI LABORATORY CENTER CLEVELAND	0.0357
20	13441 USAF	Rome Laboratory	0.0354
21	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0351
22	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.0350
23	37389 USN	Arnold AFS USN	0.0350
24	45433 USAF	Wright-Patterson AFB	0.0350

Table 3.15: Ground Vehicles T&E

Rank MilVal	Facility Code	Facility Name	
1	21005 USA	ABERDEEN PROVING GROUND	0.6844
2	85365 USA	YUMA PROVING GROUND	0.4784
3	84022 USA	DUGWAY PROVING GROUND	0.4144
4	76542 USA	FT HOOD	0.3488
5	73503 USA	FT SILL	0.3279
6	92055 USN	MCB Camp Pendleton (DRPMAAA)	0.2312
7	20670 USN	USN_8_Pax (NAS Patuxent River)	0.1018
8	88002 USA	WHITE SANDS MISSILE RANGE	0.1010
9	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.0708
10	32548 USAF	Eglin AFB	0.0666
11	35898 USA	REDSTONE ARSENAL	0.0653
12	22134 USN	MCB Quantico	0.0626
13	85613 USA	FORT HUACHUCA	0.0626
14	22302 USA	USA_3_Alexandria	0.0611
15	32826 USA	USA_3_Orlando	0.0548
16	36362 USA	FORT RUCKER	0.0511
17	33040 USN	USN_3_Key West	0.0449
18	22217 USN	OFFICE OF NAVAL RESEARCH	0.0430
19	48397 USA	DETROIT ARSENAL	0.0392
20	37389 USN	Arnold AFS USN	0.0382
21	99703 USA	YUMA PROVING GROUND Ft. Wainwright	0.0302
22	99737 USA	USA_2_Ft Greeley	0.0301
23	07703 USA	FORT MONMOUTH	0.0296
24	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.0288
25	20783 USA	ADELPHI LABORATORY CENTER	0.0288
26	99505 USA	REDSTONE ARSENAL ANCHORAGE	0.0286
27	45433 USAF	Wright-Patterson AFB	0.0286

Table 3.16: Human Systems D&A

Rank MilVal	Facility Code	Facility Name	
1	01760 USA	SOLDIER SYSTEMS CENTER	0.6529
2	32826 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL	0.5869
3	20670 USN	USN_8_Pax (NAS Patuxent River)	0.3664
4	32826 USA	USA_3_Orlando	0.3286
5	32407 USN	USN_2_Pannama City	0.3251
6	01760 USN	NAVCLOTEXTRSCHFAC_NATICK_MA	0.2907
7	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.2591
8	21005 USA	ABERDEEN PROVING GROUND	0.2447
9	70145 USN	SPAWARINFOTECHCEN_NEW_ORLEANS_LA	0.2436
10	85365 USA	YUMA PROVING GROUND	0.2269
11	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.2175
12	20375 USN	Naval Research Laboratory Washington DC	0.1794
13	23461 USN	USN_3_VABEACH	0.1774
14	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.1774
15	78235 USAF	BROOKS CITY-BASE	0.1493
16	22217 USN	OFFICE OF NAVAL RESEARCH	0.1329
17	93943 USN	NAVPGSCOL_MONTEREY_CA	0.1295
18	84403 USAF	Hill AFB	0.1290
19	23511 USN	USN_7_Norfolk	0.1244
20	20370 USN	SPAWARINFOTECHCEN_NEW_ORLEANS_LA	0.1202
21	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.1201
22	40214 USN	NAVSURFWARCENDIV_PORT_HUENEME_CA Louisville	0.1200
23	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.1200
24	08733 USN	NAVAIRWARCENACDIV Lakehurst	0.1200
25	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.1200
26	45433 USAF	Wright-Patterson AFB	0.1200
27	39529 USN	NRL Detachment Stennis Space Ctr	0.1200
28	99737 USA	USA_2_Ft Greeley	0.1200
29	20732 USN	NRL Chesapeake Bay Detachment	0.1200
30	07703 USA	FORT MONMOUTH	0.1143
31	22202 USN	USN_3_Arlington	0.1104
32	93524 USAF	EDWARDS AFB	0.1099
33	33040 USN	USN_3_Key West	0.1098
34	33621 USAFoth	SOCOM	0.0872
35	38053 USN	SPAWARINFOTECHCEN DET MEMPHIS	0.0821
36	36362 USA	FORT RUCKER	0.0778
37	32508 USN	USN_3_Penasacola	0.0724
38	96563 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL MCBH	0.0724

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Table 3.16: Human Systems D&A

Rank MilVal	Facility Code	Facility Name	
39	92136 USN	USN_3_San Diego	0.0724
40	96860 USN	USN_2_Pearl Harbor	0.0724
41	60088 USN	USN_2_Great Lakes	0.0724
42	32570 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL Milton	0.0724
43	92145 USN	USN_2_San Diego	0.0724
44	92132 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL San Diego	0.0724
45	92147 USN	USN_2_San Diego	0.0724
46	93246 USN	USN_2_Lemoore	0.0724
47	92135 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.0724
48	78363 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL Kingsville	0.0724
49	92055 USN	MCB Camp Pendleton (DRPMAAA)	0.0724
50	78419 USN	USN_2_Corpus Christi	0.0724
51	06349 USN	New London (Undersea/Sub Sch)	0.0724
52	20003 USN	NAVSEA (PMS-378 Future Carriers)	0.0724
53	35898 USA	REDSTONE ARSENAL	0.0724
54	28533 USN	USN_3_Cherry Point	0.0724
55	28542 USN	USN_2_Camp Lejeune	0.0724
56	28545 USN	USN_2_Camp Lejeune	0.0724
57	28547 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL Camp	0.0724
58	98315 USN	USN_2_Bangor	0.0724
59	23551 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL Norfolk	0.0724
60	98278 USN	USN_3_Oak Harbor	0.0724
61	23521 USN	USN_2_Norfolk	0.0724
62	32228 USN	USN-2_Mayport	0.0724
63	73145 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL Tinker AFB	0.0724
64	85212 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL Mesa	0.0724
65	92278 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL Twenty Nine	0.0724
66	39309 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL Meridian	0.0724
67	32212 USN	USN_3_Jacksonville	0.0724
68	31547 USN	USN_2_Kings Bay	0.0724
69	32003 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL TSD	0.0724
70	92106 USN	USN_2_San Diego	0.0724
71	23460 USN	USN_2_VABEACH.	0.0724
72	93044 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0724
73	92110 USN	USN_2_San Diego	0.0523
74	88002 USA	WHITE SANDS MISSILE RANGE	0.0347
75	37389 USN	Arnold AFS USN	0.0337
76	96782 USN	SPAWARSYSCOM_SAN_DIEGO_CA PEARL HARBOR	0.0337

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Table 3.16: Human Systems D&A

Rank	Facility Code	Facility Name	MilVal
77	22134 USN	MCB Quantico	0.0274
78	01731 USAF	Hanscom AFB	0.0240
79	20151 USN	SSFA_CHANTILLY_VA	0.0190
80	36615 USN	NRL_WASHINGTON_DC Mobile	0.0175
81	19111 USN	USN-2-Philadelphia	0.0156
82	66027 USA	FT LEAVENWORTH	0.0151
83	22041 DISA	DISA Development and Acquisition	0.0150
84	23501 USN	USN_3_Norfold/Protsmouth	0.0150
85	99737 MDA	MDA - Alaska	0.0150
86	85212 USAF	USAF_2_Mesa (AFRL MESA)	0.0150
87	22060 USA	FORT BELVOIR	0.0150

Table 3.17: Human Systems Research

Rank MilVal	Facility Code	Facility Name	
1	01760 USA	SOLDIER SYSTEMS CENTER	0.6502
2	45433 USAF	Wright-Patterson AFB	0.5101
3	78235 USAF	BROOKS CITY-BASE	0.4240
4	21005 USA	ABERDEEN PROVING GROUND	0.4053
5	20670 USN	USN_8_Pax (NAS Patuxent River)	0.3894
6	20375 USN	Naval Research Laboratory Washington DC	0.3553
7	22202 USA	USA_4_Arlington	0.3399
8	85212 USAF	USAF_2_Mesa (AFRL MESA)	0.3243
9	01760 USN	NAVCLOTEXTRSCHFAC_NATICK_MA	0.3240
10	32826 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL	0.3157
11	32407 USN	USN_2_Panama City	0.2731
12	22217 USN	OFFICE OF NAVAL RESEARCH	0.2580
13	93943 USN	NAVPGSCOL_MONTEREY_CA	0.2417
14	32826 USA	USA_3_Orlando	0.2195
15	36362 USA	FORT RUCKER	0.2180
16	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.2129
17	66027 USA	FT LEAVENWORTH	0.1784
18	22203 DARPA	DARPA	0.1777
19	27709 USA	ARO Durham NC	0.1690
20	92186 USN	NAVHLTHRSCHCEN_SAN_DIEGO_CA SAN DIEGO	0.1635
21	22130 USN	Marine Corps Warfighting Laboratory	0.1476
22	07703 USA	FORT MONMOUTH	0.1412
23	96718 USA	TRIPLER ARMY MEDICAL CENTER Pohakuloa	0.1393
24	96857 USA	Schofield Barracks	0.1393
25	22060 USA	FORT BELVOIR	0.1182
26	85365 USA	YUMA PROVING GROUND	0.1180
27	40121 USA	FORT KNOX	0.1144
28	20783 USA	ADELPHI LABORATORY CENTER	0.1006
29	22210 USAF	AFOSR	0.0849
30	33621 USAFoth	SOCOM	0.0803
31	85613 USA	FORT HUACHUCA	0.0768
32	22320 USA	ARO FT Belvoir	0.0747
33	48397 USA	DETROIT ARSENAL	0.0741
34	65473 USA	ADELPHI LABORATORY CENTER FT LEONARDWOOD	0.0738
35	07806 USA	PICATINNY ARSENAL	0.0735
36	35898 USA	REDSTONE ARSENAL	0.0735
37	28310 USA	FORT BRAGG	0.0735
38	31905 USA	FT BENNING	0.0735

Table 3.17: Human Systems Research

Rank MilVal	Facility Code	Facility Name	
39	30905 USA	FT GORDON	0.0735
40	79916 USA	FT BLISS	0.0735
41	73503 USA	FT SILL	0.0735
42	76544 USA	FT HOOD	0.0735
43	78234 USA	FT SAM HOUSTON	0.0735
44	45433 USN	USN_3_Wright-Pat	0.0733
45	83725 USA	Army G-1 BOISE	0.0733
46	28307 USA	Army G-1 ARI	0.0733
47	31995 USA	FT BENNING	0.0733
48	39529 USN	NRL Detachment Stennis Space Ctr	0.0703
49	23461 USN	USN_3_VABEACH	0.0700
50	08733 USN	NAVAIRWARCENACDIV Lakehurst	0.0700
51	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.0700
52	40214 USN	NAVSURFWARCENDIV_PORT_HUENEME_CA Louisville	0.0700
53	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0700
54	13441 USAF	Rome Laboratory	0.0700
55	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0700
56	99737 USA	USA_2_Ft Greeley	0.0700
57	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.0700
58	20732 USN	NRL Chesapeake Bay Detachment	0.0700
59	37389 USN	Arnold AFS USN	0.0520
60	33040 USN	USN_3_Key West	0.0520
61	96782 USN	SPAWARSYSCOM_SAN_DIEGO_CA PEARL HARBOR	0.0280
62	84403 USAF	Hill AFB	0.0188
63	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.0158
64	36615 USN	NRL_WASHINGTON_DC Mobile	0.0064
65	88002 USA	WHITE SANDS MISSILE RANGE	0.0040

Table 3.18: Human Systems T&E

Rank MilVal	Facility Code	Facility Name	
1	20670 USN	USN_8_Pax (NAS Patuxent River)	0.5649
2	32407 USN	USN_2_Pannama City	0.5466
3	21005 USA	ABERDEEN PROVING GROUND	0.4004
4	32826 USN	NAVAIRWARCENTRASYSDIV_ORLANDO_FL	0.3988
5	32548 USAF	Eglin AFB	0.3503
6	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.3211
7	85365 USA	YUMA PROVING GROUND	0.3119
8	01760 USN	NAVCLOTEXTRSCHFAC_NATICK_MA	0.3066
9	01760 USA	SOLDIER SYSTEMS CENTER	0.2636
10	36362 USA	FORT RUCKER	0.2467
11	84403 USAF	Hill AFB	0.2284
12	88310 USAF	USAF_2_Alamogorgo (Holloman)	0.2282
13	84022 USA	DUGWAY PROVING GROUND	0.2121
14	35898 USA	REDSTONE ARSENAL	0.2028
15	76542 USA	FT HOOD	0.1991
16	93524 USAF	EDWARDS AFB	0.1640
17	87117 USAF	Kirtland AFB	0.1537
18	85613 USA	FORT HUACHUCA	0.1535
19	99737 USA	USA_2_Ft Greeley	0.1418
20	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.1362
21	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.1350
22	40214 USN	NAVSURFWARCENDIV_PORT_HUENEME_CA Louisville	0.1350
23	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.1350
24	23461 USN	USN_3_VABEACH	0.1350
25	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.1350
26	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.1350
27	78235 USAF	BROOKS CITY-BASE	0.1192
28	33040 USN	USN_3_Key West	0.1127
29	73145 USAF	Tinker AFB	0.1044
30	79607 USAF	Eglin AFB Abilene	0.0975
31	71110 USAF	Barksdale AFB	0.0970
32	65336 USAF	USAF_2_Knob Noster	0.0967
33	85013 USAF	Eglin AFB Phoenix	0.0964
34	68113 USAF	USAF_2_Omaha	0.0956
35	85201 USAF	Eglin AFB Mesa City	0.0955
36	31201 USAF	Eglin AFB 29 TSS, OLB	0.0953
37	37388 USAF	Arnold AFS	0.0632
38	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.0631

Table 3.18: Human Systems T&E

Rank	Facility Code	Facility Name	MilVal
39	22217 USN	OFFICE OF NAVAL RESEARCH	0.0541
40	22302 USA	USA_3_Alexandria	0.0457
41	32403 USAF	Tyndall AFB	0.0451
42	37389 USN	Arnold AFS USN	0.0450
43	92186 USN	NAVHLTHRSCHCEN_SAN_DIEGO_CA SAN DIEGO	0.0377
44	88002 USA	WHITE SANDS MISSILE RANGE	0.0362
45	32826 USA	USA_3_Orlando	0.0330
46	99703 USA	YUMA PROVING GROUND Ft. Wainwright	0.0284
47	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0270
48	85212 USAF	USAF_2_Mesa (AFRL MESA)	0.0270
49	45433 USAF	Wright-Patterson AFB	0.0270

Table 3.19: Information Systems Technology D&A

Rank MilVal	Facility Code	Facility Name	
1	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.5941
2	07703 USA	FORT MONMOUTH	0.4845
3	92110 USN	USN_2_San Diego	0.4742
4	29419 USN	SPAWARSYSCEN_CHARLESTON_SC	0.4502
5	01731 USAF	Hanscom AFB	0.4398
6	20670 USN	USN_8_Pax (NAS Patuxent River)	0.3108
7	22041 DISA	DISA Development and Acquisition	0.3006
8	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.2956
9	98433 USA	Fort Lewis	0.2933
10	92110 USA	FORT MONMOUTH San Diego	0.2933
11	20375 USN	Naval Research Laboratory Washington DC	0.2808
12	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.2552
13	35898 USA	REDSTONE ARSENAL	0.2330
14	23501 USN	USN_3_Norfold/Protsmouth	0.2273
15	22060 USA	FORT BELVOIR	0.2268
16	23511 USN	USN_7_Norfolk	0.2264
17	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.2202
18	76544 USA	FT HOOD	0.2187
19	45433 USAF	Wright-Patterson AFB	0.2160
20	30905 USA	FT GORDON	0.2158
21	23464 USN	SPAWARSYSCEN Charleston – Little Creek	0.2014
22	20360 USN	SPAWARSYSCEN_CHARLESTON_SC Washington	0.1989
23	92055 USN	MCB Camp Pendleton (DRPMAAA)	0.1929
24	23461 USN	USN_3_VABEACH	0.1894
25	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.1890
26	39529 USN	NRL Detachment Stennis Space Ctr	0.1884
27	32407 USN	USN_2_Pannama City	0.1870
28	92136 USN	USN_3_San Diego	0.1833
29	85613 USA	FORT HUACHUCA	0.1821
30	20732 USN	NRL Chesapeake Bay Detachment	0.1815
31	22217 USN	OFFICE OF NAVAL RESEARCH	0.1815
32	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.1810
33	33621 USAFoth	SOCOM	0.1781
34	32212 USN	USN_3_Jacksonville	0.1758
35	32508 USN	USN_3_Penasacola	0.1733
36	73145 USAF	Tinker AFB	0.1732
37	21702 USA	FORT DETRICK	0.1691
38	22202 USN	USN_3_Arlington	0.1659

Table 3.19: Information Systems Technology D&A

Rank MilVal	Facility Code	Facility Name	
39	78235 USAF	BROOKS CITY-BASE	0.1653
40	85365 USA	YUMA PROVING GROUND	0.1622
41	21005 USA	ABERDEEN PROVING GROUND	0.1622
42	23337 USN	SURFCOMBATSYSCEN_WALLOPS_ISLAND_VA	0.1575
43	78243 USAF	Lackland AFB	0.1544
44	96782 USN	SPAWARSYSCOM_SAN_DIEGO_CA PEARL HARBOR	0.1471
45	88002 USA	WHITE SANDS MISSILE RANGE	0.1457
46	23801 USA	Fort Lee	0.1389
47	31098 USAF	Warner Robbins AFB	0.1313
48	32548 USAF	Eglin AFB	0.1302
49	90001 USA	FORT MONMOUTH Los Angeles	0.1301
50	31088 USA	Warner Robbins AFB	0.1301
51	36362 USA	FORT RUCKER	0.1296
52	79916 USA	FT BLISS	0.1294
53	20310 USA	JPM JTRS	0.1294
54	46802 USA	FORT MONMOUTH Fort Wayne	0.1294
55	92135 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.1294
56	01731 USA	ESC CIPO	0.1294
57	23691 USN	USN_3_Yorktown (WPNSTA_Yorktown)	0.1294
58	22331 USA	CECOM Acquisition Center- Washington	0.1294
59	33621 USA	CERDEC Tampa Field Ofc	0.1294
60	73503 USA	FT SILL	0.1294
61	33040 USN	USN_3_Key West	0.1294
62	20653 USN	SPAWARSYSCEN_CHARLESTON_SC Lexington Park	0.1263
63	22134 USN	MCB Quantico	0.1257
64	93524 USAF	EDWARDS AFB	0.1146
65	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.1127
66	93943 USN	NAVPGSCOL_MONTEREY_CA	0.1113
67	36112 USAF	Hanscom AFB Montgomery	0.1005
68	37389 USN	Arnold AFS USN	0.1000
69	80914 USAF	Peterson AFB	0.0999
70	23651 USAF	Langley AFB	0.0994
71	70145 USN	SPAWARINFOTECHCEN_NEW_ORLEANS_LA	0.0964
72	01735 USAF	Hanscom AFB	0.0920
73	32925 USAF	USAF_3_Cocoa Beach	0.0867
74	90245 USN	SPAWARSYSCOM_SAN_DIEGO_CA EL SEGUNDO	0.0860
75	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0860
76	84403 USAF	Hill AFB	0.0834

Table 3.19: Information Systems Technology D&A

Rank MilVal	Facility Code	Facility Name	
77	27709 USA	ARO Durham NC	0.0820
78	22302 USA	USA_3_Alexandria	0.0820
79	19111 USN	USN-2-Philadelphia	0.0784
80	33607 USN	SPAWARSYSCEN Charleston - Tampa	0.0780
81	90245 USAF	Los Angeles AFB	0.0772
82	32826 USA	USA_3_Orlando	0.0756
83	35758 USA	PM TOC/AMDCCS	0.0746
84	22202 USA	USA_4_Arlington	0.0733
85	24143 USA	FORT BELVOIR PM ALTESS	0.0727
86	20783 USA	ADELPHI LABORATORY CENTER	0.0723
87	98101 USAF	Hanscom AFB Seattle	0.0722
88	07703 USN	SPAWARSYSCOM HQ - DET FT. MONMOUTH	0.0721
89	68113 USAF	USAF_2_Omaha	0.0721
90	92145 USN	USN_2_San Diego	0.0721
91	23604 USA	FORT EUSTIS	0.0721
92	20001 USAF	USAF_5_DC	0.0720
93	92101 USAF	USAF_2_San Diego	0.0720
94	22201 USAF	USAF_3_Arlington	0.0720
95	07703 USAF	Hanscom AFB CX	0.0720
96	32801 USAF	Hanscom AFB Orlando	0.0720
97	32544 USAF	HURLBURT FIELD AAF	0.0720
98	01731 USN	SPAWARSYSCOM HQ - DET HANSCOMB AFB	0.0720
99	62225 USAF	SCOTT AFB	0.0720
100	84022 USA	DUGWAY PROVING GROUND	0.0720
101	96752 USN	PACMISRANFAC_HAWAREA_BARKING_SANDS_HI	0.0720
102	33416 USN	NAVUNSEAWARCENDIV_NEWPORT_RI West Palm Beach	0.0720
103	85613 DISA	JITC Fort Huachuca	0.0720
104	20640 DISA	JITC Indian Head	0.0720
105	02840 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0720

Table 3.20: Information Systems Technology Research

Rank MilVal	Facility Code	Facility Name	
1	20375 USN	Naval Research Laboratory Washington DC	0.6059
2	13441 USAF	Rome Laboratory	0.6053
3	07703 USA	FORT MONMOUTH	0.4574
4	93943 USN	NAVPGSCOL_MONTEREY_CA	0.3921
5	22203 DARPA	DARPA	0.3826
6	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.3671
7	20670 USN	USN_8_Pax (NAS Patuxent River)	0.3336
8	45433 USAF	Wright-Patterson AFB	0.2985
9	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.2959
10	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.2911
11	21005 USA	ABERDEEN PROVING GROUND	0.2864
12	20732 USN	NRL Chesapeake Bay Detachment	0.2743
13	20783 USA	ADELPHI LABORATORY CENTER	0.2563
14	39529 USN	NRL Detachment Stennis Space Ctr	0.2563
15	22217 USN	OFFICE OF NAVAL RESEARCH	0.2502
16	35898 USA	REDSTONE ARSENAL	0.2452
17	27709 USA	ARO Durham NC	0.2420
18	22060 DTRA	National Capital Element DTRA	0.2145
19	22210 USAF	AFOSR	0.2075
20	37388 USAF	Arnold AFS	0.1898
21	01760 USA	SOLDIER SYSTEMS CENTER	0.1865
22	22130 USN	Marine Corps Warfighting Laboratory	0.1849
23	20910 USA	WALTER REED ARMY MEDICAL CENTER	0.1527
24	36362 USA	FORT RUCKER	0.1518
25	87117 DTRA	Kirtland AFB	0.1516
26	92110 USN	USN_2_San Diego	0.1512
27	30301 USA	ADELPHI LABORATORY CENTER ARL CIS	0.1509
28	33040 USN	USN_3_Key West	0.1509
29	96857 USA	Schofield Barracks	0.1509
30	22331 USA	CECOM Acquisition Center- Washington	0.1509
31	85613 USA	FORT HUACHUCA	0.1509
32	96718 USA	TRIPLER ARMY MEDICAL CENTER Pohakuloa	0.1509
33	30303 USN	CNR_ARLINGTON_VA ATLANTA REGIONAL OFFICE	0.1509
34	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.1291
35	29419 USN	SPAWARSYSCEN_CHARLESTON_SC	0.1179
36	23501 USN	USN_3_Norfold/Protsmouth	0.1138
37	20360 USN	SPAWARSYSCEN_CHARLESTON_SC Washington	0.1089
38	23464 USN	SPAWARSYSCEN Charleston – Little Creek	0.0970

Table 3.20: Information Systems Technology Research

Rank MilVal	Facility Code	Facility Name	
39	78243 USAF	Lackland AFB	0.0949
40	20653 USN	SPAWARSYSCEN_CHARLESTON_SC Lexington Park	0.0787
41	32508 USN	USN_3_Pensacola	0.0787
42	32212 USN	USN_3_Jacksonville	0.0787
43	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0783
44	32403 USAF	Tyndall AFB	0.0752
45	22060 USA	FORT BELVOIR	0.0744
46	37389 USN	Arnold AFS USN	0.0740
47	22041 DISA	DISA Development and Acquisition	0.0651
48	96782 USN	SPAWARSYSCOM_SAN_DIEGO_CA PEARL HARBOR	0.0630
49	92110 USA	FORT MONMOUTH San Diego	0.0623
50	98433 USA	Fort Lewis	0.0623
51	88002 USA	WHITE SANDS MISSILE RANGE	0.0619
52	84403 USAF	Hill AFB	0.0603
53	23604 USA	FORT EUSTIS	0.0593
54	19111 USN	USN-2-Philadelphia	0.0580
55	32925 USAF	USAF_3_Cocoa Beach	0.0489
56	33621 USAFoth	SOCOM	0.0428
57	66027 USA	FT LEAVENWORTH	0.0426
58	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.0423
59	92186 USN	NAVHLTHRSCHCEN_SAN_DIEGO_CA SAN DIEGO	0.0422
60	01731 USAF	Hanscom AFB	0.0421
61	93524 USAF	EDWARDS AFB	0.0420
62	32407 USN	USN_2_Pannama City	0.0420
63	36112 USAF	Hanscom AFB Montgomery	0.0420
64	85365 USA	YUMA PROVING GROUND	0.0420
65	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0420
66	33416 USN	NAVUNSEAWARCENDIV_NEWPORT_RI West Palm Beach	0.0420
67	02840 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0420
68	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.0420

Table 3.21: Information Systems Technology T&E

Rank MilVal	Facility Code	Facility Name	
1	85613 DISA	JITC Fort Huachuca	0.4397
2	88002 USA	WHITE SANDS MISSILE RANGE	0.3922
3	20670 USN	USN_8_Pax (NAS Patuxent River)	0.3812
4	85613 USA	FORT HUACHUCA	0.3629
5	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.3611
6	92055 USN	MCB Camp Pendleton (DRPMAAA)	0.3504
7	32548 USAF	Eglin AFB	0.3174
8	87117 USAF	Kirtland AFB	0.3050
9	76542 USA	FT HOOD	0.2949
10	29419 USN	SPAWARSYSCEN_CHARLESTON_SC	0.2840
11	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.2789
12	73503 USA	FT SILL	0.2560
13	85365 USA	YUMA PROVING GROUND	0.2516
14	20375 USN	Naval Research Laboratory Washington DC	0.2454
15	92147 USN	USN_2_San Diego	0.2345
16	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.2241
17	20640 DISA	JITC Indianhead	0.2205
18	23461 USN	USN_3_VABEACH	0.2171
19	07703 USA	FORT MONMOUTH	0.2008
20	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.1991
21	37388 USAF	Arnold AFS	0.1960
22	21005 USA	ABERDEEN PROVING GROUND	0.1956
23	35898 USA	REDSTONE ARSENAL	0.1881
24	93524 USAF	EDWARDS AFB	0.1833
25	96752 USN	PACMISRANFAC_HAWAREA_BARKING_SANDS_HI	0.1769
26	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.1767
27	22134 USN	MCB Quantico	0.1729
28	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.1637
29	23651 USAF	Langley AFB	0.1564
30	78148 USAF	Randolph AFB	0.1535
31	32904 USAF	USAF_2_Melbourne	0.1452
32	32407 USN	USN_2_Pannama City	0.1445
33	89191 USAF	NELLIS AFB	0.1411
34	36362 USA	FORT RUCKER	0.1407
35	23511 USN	USN_7_Norfolk	0.1405
36	98433 USA	Fort Lewis	0.1405
37	92110 USA	FORT MONMOUTH San Diego	0.1405
38	33040 USN	USN_3_Key West	0.1405

Table 3.21: Information Systems Technology T&E

Rank	Facility Code	Facility Name	MilVal
39	23464 USN	SPAWARSYSCEN Charleston – Little Creek	0.1400
40	23337 USN	SURFCOMBATSYSCEN_WALLOPS_ISLAND_VA	0.1293
41	22302 USA	USA_3_Alexandria	0.1267
42	32826 USA	USA_3_Orlando	0.1233
43	20360 USN	SPAWARSYSCEN_CHARLESTON_SC Washington	0.1131
44	22217 USN	OFFICE OF NAVAL RESEARCH	0.1122
45	23501 USN	USN_3_Norfold/Protsmouth	0.1075
46	32508 USN	USN_3_Penasacola	0.1054
47	32212 USN	USN_3_Jacksonville	0.1042
48	20653 USN	SPAWARSYSCEN_CHARLESTON_SC Lexington Park	0.0978
49	79916 USA	FT BLISS	0.0957
50	37389 USN	Arnold AFS USN	0.0944
51	78234 USA	FT SAM HOUSTON	0.0858
52	96782 USN	SPAWARSYSCOM_SAN_DIEGO_CA PEARL HARBOR	0.0855
53	84022 USA	DUGWAY PROVING GROUND	0.0855
54	19111 USN	USN-2-Philadelphia	0.0854
55	45433 USAF	Wright-Patterson AFB	0.0841
56	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.0827
57	36112 USAF	Hanscom AFB Montgomery	0.0813
58	20783 USA	ADELPHI LABORATORY CENTER	0.0801
59	84403 USAF	Hill AFB	0.0796
60	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.0796
61	88310 USAF	USAF_2_Alamogorgo (Holloman)	0.0787
62	01731 USAF	Hanscom AFB	0.0781
63	32403 USAF	Tyndall AFB	0.0771
64	87117 DTRA	Kirtland AFB	0.0766
65	78243 USAF	Lackland AFB	0.0765
66	33416 USN	NAVUNSEAWARCENDIV_NEWPORT_RI West Palm Beach	0.0765
67	02840 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0765
68	06357 USN	NAVUNSEAWARCEN DET Niantic	0.0765
69	20903 USAF	Tunnel 9 White Oak	0.0765
70	99737 USA	USA_2_Ft Greeley	0.0765
71	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0765
72	99505 USA	REDSTONE ARSENAL ANCHORAGE	0.0765

Table 3.22: Materials and Processes D&A

Rank MilVal	Facility Code	Facility Name	
1	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.6367
2	20670 USN	USN_8_Pax (NAS Patuxent River)	0.4538
3	20375 USN	Naval Research Laboratory Washington DC	0.4391
4	20817 USN	NAVSURFWARCEN_CARDEROCKDIV_BETHESDA_MD	0.4278
5	21005 USA	ABERDEEN PROVING GROUND	0.3400
6	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.3070
7	20732 USN	NRL Chesapeake Bay Detachment	0.2732
8	35898 USA	REDSTONE ARSENAL	0.2510
9	19112 USN	NAVSURFWARCENSHIPSYSENGSTA_PHILADELPHIA_P	0.2256
10	39529 USN	NRL Detachment Stennis Space Ctr	0.2151
11	22217 USN	OFFICE OF NAVAL RESEARCH	0.1971
12	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.1941
13	84403 USAF	Hill AFB	0.1871
14	22134 USN	MCB Quantico	0.1783
15	22060 USA	FORT BELVOIR	0.1518
16	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.1200
17	07806 USA	PICATINNY ARSENAL	0.1200
18	01760 USN	NAVCLOTEXTRSCHFAC_NATICK_MA	0.1200
19	47522 USN	NAVSURFWARCENDIV_CRANE_IN	0.1200
20	07703 USA	FORT MONMOUTH	0.1200
21	78235 USAF	BROOKS CITY-BASE	0.1200
22	12189 USA	WATERVLIET ARSENAL	0.1200
23	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.1200
24	20640 USN	USN_3_Indian Head (IF NAVSURFWARCENDIV Indian	0.1200
25	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.1083
26	33040 USN	USN_3_Key West	0.1035
27	73145 USAF	Tinker AFB	0.0821
28	36615 USN	NRL_WASHINGTON_DC Mobile	0.0757
29	92123 USN	NAVUNSEAWARCENDIV_KEYPORT_WA San Diego	0.0506
30	32548 USAF	Eglin AFB	0.0472
31	37389 USN	Arnold AFS USN	0.0430
32	84022 USA	DUGWAY PROVING GROUND	0.0337
33	96792 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Waianae	0.0292
34	45433 USAF	Wright-Patterson AFB	0.0271
35	01760 USA	SOLDIER SYSTEMS CENTER	0.0258
36	27709 USA	ARO Durham NC	0.0258
37	33621 USAFoth	SOCOM	0.0228
38	20374 USN	USN_2_WNY	0.0227
39	20151 USN	SSFA_CHANTILLY_VA	0.0168
40	96782 USN	SPAWARSYSCOM_SAN_DIEGO_CA PEARL HARBOR	0.0150
41	02840 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0150
42	88002 USA	WHITE SANDS MISSILE RANGE	0.0150
43	85365 USA	YUMA PROVING GROUND	0.0150

Table 3.23: Materials and Processes Research

Rank MilVal	Facility Code	Facility Name	
1	20375 USN	Naval Research Laboratory Washington DC	0.8508
2	45433 USAF	Wright-Patterson AFB	0.5591
3	20670 USN	USN_8_Pax (NAS Patuxent River)	0.2895
4	20817 USN	NAVSURFWARCEN_CARDEROCKDIV_BETHESDA_MD	0.2777
5	32403 USAF	Tyndall AFB	0.2774
6	20732 USN	NRL Chesapeake Bay Detachment	0.2763
7	22203 DARPA	DARPA	0.2479
8	21005 USA	ABERDEEN PROVING GROUND	0.2373
9	22217 USN	OFFICE OF NAVAL RESEARCH	0.2361
10	19112 USN	NAVSURFWARCENSHIPSYSENGSTA_PHILADELPHIA_P	0.2182
11	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.2085
12	39529 USN	NRL Detachment Stennis Space Ctr	0.2059
13	01760 USA	SOLDIER SYSTEMS CENTER	0.1966
14	22060 USA	FORT BELVOIR	0.1709
15	27709 USA	ARO Durham NC	0.1630
16	22130 USN	Marine Corps Warfighting Laboratory	0.1453
17	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.1383
18	93943 USN	NAVPGSCOL_MONTEREY_CA	0.1367
19	33040 USN	USN_3_Key West	0.1238
20	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.1236
21	22210 USAF	AFOSR	0.0799
22	35898 USA	REDSTONE ARSENAL	0.0790
23	36615 USN	NRL_WASHINGTON_DC Mobile	0.0758
24	20783 USA	ADELPHI LABORATORY CENTER	0.0757
25	37388 USAF	Arnold AFS	0.0738
26	19111 USN	USN-2-Philadelphia	0.0733
27	30303 USN	CNR_ARLINGTON_VA ATLANTA REGIONAL OFFICE	0.0733
28	78235 USAF	BROOKS CITY-BASE	0.0710
29	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.0700
30	47522 USN	NAVSURFWARCENDIV_CRANE_IN	0.0700
31	32407 USN	USN_2_Pannama City	0.0700
32	36362 USA	FORT RUCKER	0.0700
33	20640 USN	USN_3_Indian Head (IF NAVSURFWARCENDIV Indian	0.0700
34	48397 USA	DETROIT ARSENAL	0.0700
35	01760 USN	NAVCLOTEXTRSCHFAC_NATICK_MA	0.0700
36	07806 USA	PICATINNY ARSENAL	0.0700
37	37389 USN	Arnold AFS USN	0.0520
38	23604 USA	FORT EUSTIS	0.0308
39	84403 USAF	Hill AFB	0.0189
40	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.0189
41	32925 USAF	USAF_3_Cocoa Beach	0.0085
42	20374 USN	USN_2_WNY	0.0052
43	13441 USAF	Rome Laboratory	0.0040
44	88002 USA	WHITE SANDS MISSILE RANGE	0.0040
45	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0040
46	85365 USA	YUMA PROVING GROUND	0.0040

Table 3.24: Materials and Processes T&E

Rank MilVal	Facility Code	Facility Name	
1	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.4673
2	20670 USN	USN_8_Pax (NAS Patuxent River)	0.4243
3	20817 USN	NAVSURFWARCEN_CARDEROCKDIV_BETHESDA_MD	0.3961
4	19112 USN	NAVSURFWARCENSHIPSYSENGSTA_PHILADELPHIA_P	0.3604
5	28310 USA	FORT BRAGG	0.3427
6	21005 USA	ABERDEEN PROVING GROUND	0.3248
7	37388 USAF	Arnold AFS	0.3176
8	84022 USA	DUGWAY PROVING GROUND	0.2862
9	88002 USA	WHITE SANDS MISSILE RANGE	0.2462
10	35898 USA	REDSTONE ARSENAL	0.2233
11	84403 USAF	Hill AFB	0.2161
12	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.2160
13	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.1422
14	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.1376
15	61299 USA	ROCK ISLAND ARSENAL	0.1350
16	36362 USA	FORT RUCKER	0.1350
17	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.1350
18	20640 USN	USN_3_Indian Head (IF NAVSURFWARCENDIV Indian	0.1350
19	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.1350
20	07806 USA	PICATINNY ARSENAL	0.1350
21	01760 USN	NAVCLOTEXTRSCHFAC_NATICK_MA	0.1350
22	47522 USN	NAVSURFWARCENDIV_CRANE_IN	0.1350
23	32548 USAF	Eglin AFB	0.1350
24	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.1350
25	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.1350
26	32407 USN	USN_2_Pannama City	0.1350
27	78235 USAF	BROOKS CITY-BASE	0.1350
28	22134 USN	MCB Quantico	0.1188
29	33040 USN	USN_3_Key West	0.0949
30	20903 USAF	Tunnel 9 White Oak	0.0791
31	92123 USN	NAVUNSEAWARCENDIV_KEYPORT_WA San Diego	0.0640
32	22217 USN	OFFICE OF NAVAL RESEARCH	0.0541
33	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0507
34	37389 USN	Arnold AFS USN	0.0450
35	01760 USA	SOLDIER SYSTEMS CENTER	0.0367
36	73145 USAF	Tinker AFB	0.0360
37	20374 USN	USN_2_WNY	0.0347
38	88310 USAF	USAF_2_Alamogorgo (Holloman)	0.0342
39	45433 USAF	Wright-Patterson AFB	0.0335
40	22302 USA	USA_3_Alexandria	0.0319
41	87117 DTRA	Kirtland AFB	0.0271
42	85365 USA	YUMA PROVING GROUND	0.0270
43	96792 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Waianae	0.0270
44	02840 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0270

Table 3.25: Nuclear Technology D&A

Rank MilVal	Facility Code	Facility Name	
1	20393 USN	DIRSSP_WASHINGTON_DC	0.4670
2	84403 USAF	Hill AFB	0.4107
3	20375 USN	Naval Research Laboratory Washington DC	0.3152
4	84044 USN	NAVPMOSSP_DET_MAGNA_UT	0.2347
5	01201 USN	NAVPMOSSP_PITTSFIELD_MA	0.2332
6	94039 USN	NAVPMOSSP_SUNNYVALE_CA Sunnyvale	0.1912
7	87117 USAF	Kirtland AFB	0.1433
8	33040 USN	USN_3_Key West	0.1256
9	20670 USN	USN_8_Pax (NAS Patuxent River)	0.1237
10	22217 USN	OFFICE OF NAVAL RESEARCH	0.1135
11	37389 USN	Arnold AFS USN	0.0988
12	32548 USAF	Eglin AFB	0.0905
13	01731 USAF	Hanscom AFB	0.0863
14	32920 USN	NAVORDTESTU_CAPE_CANAVERAL_FL	0.0776
15	73145 USAF	Tinker AFB	0.0650
16	33621 USAFoth	SOCOM	0.0643
17	88002 USA	WHITE SANDS MISSILE RANGE	0.0635
18	21005 USA	ABERDEEN PROVING GROUND	0.0635
19	88002 USN	WHITE SANDS MISSILE RANGE	0.0635
20	35898 USA	REDSTONE ARSENAL	0.0635
21	23337 USN	SURFCOMBATSYSCEN_WALLOPS_ISLAND_VA	0.0635

Table 3.26: Nuclear Technology Research

Rank MilVal	Facility Code	Facility Name	
1	20375 USN	Naval Research Laboratory Washington DC	0.7099
2	22060 DTRA	National Capital Element DTRA	0.4239
3	32925 USAF	USAF_3_Cocoa Beach	0.2562
4	93943 USN	NAVPGSCOL_MONTEREY_CA	0.1335
5	87117 DTRA	Kirtland AFB	0.1316
6	20670 USN	USN_8_Pax (NAS Patuxent River)	0.0930
7	22203 DARPA	DARPA	0.0799
8	39529 USN	NRL Detachment Stennis Space Ctr	0.0787
9	84403 USAF	Hill AFB	0.0554
10	20732 USN	NRL Chesapeake Bay Detachment	0.0459
11	21005 USA	ABERDEEN PROVING GROUND	0.0375
12	45433 USAF	Wright-Patterson AFB	0.0375
13	37389 USN	Arnold AFS USN	0.0375
14	37388 USAF	Arnold AFS	0.0375
15	88002 USA	WHITE SANDS MISSILE RANGE	0.0375

Table 3.27: Nuclear Technology T&E

Rank MilVal	Facility Code	Facility Name	
1	32920 USN	NAVORDTESTU_CAPE_CANAVERAL_FL	0.4046
2	84403 USAF	Hill AFB	0.3544
3	37388 USAF	Arnold AFS	0.2353
4	87117 USAF	Kirtland AFB	0.2022
5	88002 USA	WHITE SANDS MISSILE RANGE	0.1997
6	20670 USN	USN_8_Pax (NAS Patuxent River)	0.1707
7	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.1050
8	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.1050
9	33040 USN	USN_3_Key West	0.1050
10	37389 USN	Arnold AFS USN	0.1044
11	20903 USAF	Tunnel 9 White Oak	0.1043
12	87117 DTRA	Kirtland AFB	0.0775
13	73145 USAF	Tinker AFB	0.0769
14	21005 USA	ABERDEEN PROVING GROUND	0.0764
15	45433 USAF	Wright-Patterson AFB	0.0764
16	22217 USN	OFFICE OF NAVAL RESEARCH	0.0764
17	94039 USN	NAVPMOSSP_SUNNYVALE_CA Sunnyvale	0.0706

Table 3.28: Sea Vehicles D&A

Rank MilVal	Facility Code	Facility Name	
1	20817 USN	NAVSURFWARCEN_CARDEROCKDIV_BETHESDA_MD	0.5257
2	19112 USN	NAVSURFWARCENSHIPSYSENGSTA_PHILADELPHIA_P	0.4983
3	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.4930
4	20670 USN	USN_8_Pax (NAS Patuxent River)	0.2989
5	32407 USN	USN_2_Pannama City	0.2969
6	20375 USN	Naval Research Laboratory Washington DC	0.2847
7	33621 USAFoth	SOCOM	0.2324
8	83803 USN	NAVSURFWARCEN_CARDEROCKDIV_BETHESDA_MD	0.1795
9	98314 USN	USN_2_Bremerton	0.1755
10	22217 USN	OFFICE OF NAVAL RESEARCH	0.1743
11	33004 USN	NAVSURFWARCEN_CARDEROCKDIV_BETHESDA_MD	0.1666
12	38113 USN	NSWC CARDEROCK DIV DET MEMPHIS TN	0.1660
13	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.1557
14	23461 USN	USN_3_VABEACH	0.1405
15	23521 USN	USN_2_Norfolk	0.1392
16	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.1383
17	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.1300
18	96792 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Waianae	0.1200
19	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.1200
20	92123 USN	NAVUNSEAWARCENDIV_KEYPORT_WA San Diego	0.1200
21	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.1200
22	48397 USA	DETROIT ARSENAL	0.1029
23	21005 USA	ABERDEEN PROVING GROUND	0.0967
24	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.0957
25	37389 USN	Arnold AFS USN	0.0928
26	36615 USN	NRL_WASHINGTON_DC Mobile	0.0820
27	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.0783
28	22134 USN	MCB Quantico	0.0735
29	33040 USN	USN_3_Key West	0.0585
30	20732 USN	NRL Chesapeake Bay Detachment	0.0585
31	23460 USN	USN_2_VABEACH.	0.0578
32	39529 USN	NRL Detachment Stennis Space Ctr	0.0577
33	88002 USA	WHITE SANDS MISSILE RANGE	0.0575

Table 3.29: Sea Vehicles Research

Rank MilVal	Facility Code	Facility Name	
1	20817 USN	NAVSURFWARCEN_CARDEROCKDIV_BETHESDA_MD	0.6893
2	22217 USN	OFFICE OF NAVAL RESEARCH	0.3723
3	20375 USN	Naval Research Laboratory Washington DC	0.3688
4	19112 USN	NAVSURFWARCENSHIPSYSENGSTA_PHILADELPHIA_P	0.3676
5	20670 USN	USN_8_Pax (NAS Patuxent River)	0.2719
6	22203 DARPA	DARPA	0.2300
7	32407 USN	USN_2_Pannama City	0.2114
8	83803 USN	NAVSURFWARCEN_CARDEROCKDIV_BETHESDA_MD	0.1627
9	38113 USN	NSWC CARDEROCK DIV DET MEMPHIS TN	0.1614
10	33004 USN	NAVSURFWARCEN_CARDEROCKDIV_BETHESDA_MD	0.1537
11	93943 USN	NAVPGSCOL_MONTEREY_CA	0.1447
12	23461 USN	USN_3_VABEACH	0.1426
13	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.1214
14	22130 USN	Marine Corps Warfighting Laboratory	0.1167
15	98314 USN	USN_2_Bremerton	0.1144
16	23521 USN	USN_2_Norfolk	0.1057
17	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.1043
18	30303 USN	CNR_ARLINGTON_VA ATLANTA REGIONAL OFFICE	0.0746
19	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.0700
20	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0700
21	92123 USN	NAVUNSEAWARCENDIV_KEYPORT_WA San Diego	0.0700
22	96792 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Waianae	0.0700
23	21005 USA	ABERDEEN PROVING GROUND	0.0665
24	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.0662
25	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.0636
26	37389 USN	Arnold AFS USN	0.0630
27	39529 USN	NRL Detachment Stennis Space Ctr	0.0445
28	20732 USN	NRL Chesapeake Bay Detachment	0.0367
29	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0366
30	35898 USA	REDSTONE ARSENAL	0.0364
31	33040 USN	USN_3_Key West	0.0364
32	36615 USN	NRL_WASHINGTON_DC Mobile	0.0360
33	33621 USAFoth	SOCOM	0.0352
34	13441 USAF	Rome Laboratory	0.0350
35	88002 USA	WHITE SANDS MISSILE RANGE	0.0350
36	45433 USAF	Wright-Patterson AFB	0.0350

Table 3.30: Sea Vehicles T&E

Rank MilVal	Facility Code	Facility Name	
1	32407 USN	USN_2_Pannama City	0.4177
2	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.4075
3	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.3141
4	19112 USN	NAVSURFWARCENSHIPSYSENGSTA_PHILADELPHIA_P	0.2853
5	20817 USN	NAVSURFWARCEN_CARDEROCKDIV_BETHESDA_MD	0.2437
6	20670 USN	USN_8_Pax (NAS Patuxent River)	0.1401
7	83803 USN	NAVSURFWARCEN_CARDEROCKDIV_BETHESDA_MD	0.1049
8	98314 USN	USN_2_Bremerton	0.0976
9	33004 USN	NAVSURFWARCEN_CARDEROCKDIV_BETHESDA_MD	0.0928
10	38113 USN	NSWC CARDEROCK DIV DET MEMPHIS TN	0.0871
11	21005 USA	ABERDEEN PROVING GROUND	0.0754
12	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.0702
13	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.0619
14	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.0607
15	32548 USAF	Eglin AFB	0.0601
16	23521 USN	USN_2_Norfolk	0.0589
17	96752 USN	PACMISRANFAC_HAWAREA_BARKING_SANDS_HI	0.0536
18	92123 USN	NAVUNSEAWARCENDIV_KEYPORT_WA San Diego	0.0525
19	96792 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Waianae	0.0525
20	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0525
21	22134 USN	MCB Quantico	0.0490
22	33040 USN	USN_3_Key West	0.0478
23	22217 USN	OFFICE OF NAVAL RESEARCH	0.0376
24	20375 USN	Naval Research Laboratory Washington DC	0.0376
25	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0357
26	76542 USA	FT HOOD	0.0342
27	37389 USN	Arnold AFS USN	0.0334
28	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0331
29	23461 USN	USN_3_VABEACH	0.0286
30	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.0251
31	45433 USAF	Wright-Patterson AFB	0.0250
32	88002 USA	WHITE SANDS MISSILE RANGE	0.0250
33	32925 USAF	USAF_3_Cocoa Beach	0.0250

Table 3.31: Sensors, Electronics, and EW D&A

Rank MilVal	Facility Code	Facility Name	
1	20670 USN	USN_8_Pax (NAS Patuxent River)	0.6175
2	47522 USN	NAVSURFWARCENDIV_CRANE_IN	0.4834
3	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.4744
4	07703 USA	FORT MONMOUTH	0.4337
5	01731 USAF	Hanscom AFB	0.3965
6	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.3885
7	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.3811
8	20375 USN	Naval Research Laboratory Washington DC	0.3632
9	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.3495
10	35898 USA	REDSTONE ARSENAL	0.3402
11	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.3267
12	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.3001
13	29419 USN	SPAWARSYSCEN_CHARLESTON_SC	0.2944
14	23461 USN	USN_3_VABEACH	0.2680
15	92110 USN	USN_2_San Diego	0.2603
16	22060 USA	FORT BELVOIR	0.2524
17	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.2520
18	31098 USAF	Warner Robbins AFB	0.2510
19	39529 USN	NRL Detachment Stennis Space Ctr	0.2323
20	84403 USAF	Hill AFB	0.2287
21	21005 USA	ABERDEEN PROVING GROUND	0.2250
22	31088 USA	Warner Robbins AFB	0.2247
23	90001 USA	FORT MONMOUTH Los Angeles	0.2247
24	73145 USAF	Tinker AFB	0.2055
25	23337 USN	SURFCOMBATSYSCEN_WALLOPS_ISLAND_VA	0.2016
26	32212 USN	USN_3_Jacksonville	0.1944
27	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.1878
28	20732 USN	NRL Chesapeake Bay Detachment	0.1831
29	22217 USN	OFFICE OF NAVAL RESEARCH	0.1829
30	23464 USN	SPAWARSYSCEN Charleston – Little Creek	0.1799
31	92055 USN	MCB Camp Pendleton (DRPMAAA)	0.1781
32	92135 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.1744
33	23460 USN	USN_2_VABEACH.	0.1661
34	98278 USN	USN_3_Oak Harbor	0.1654
35	33621 USAFoth	SOCOM	0.1647
36	23511 USN	USN_7_Norfolk	0.1641
37	92145 USN	USN_2_San Diego	0.1638
38	85613 USA	FORT HUACHUCA	0.1604

Table 3.31: Sensors, Electronics, and EW D&A

Rank MilVal	Facility Code	Facility Name	
39	93943 USN	NAVPGSCOL_MONTEREY_CA	0.1583
40	85365 USA	YUMA PROVING GROUND	0.1582
41	08733 USA	CERDEC Flight Activity	0.1307
42	36362 USA	FORT RUCKER	0.1300
43	30905 USA	FT GORDON	0.1299
44	20755 USA	Army Cryptological Ops Field Ofc	0.1299
45	20186 USA	FORT MONMOUTH RF Analysis SPO	0.1297
46	32902 USA	FORT MONMOUTH Melbourne	0.1296
47	85615 USA	FORT HUACHUCA	0.1296
48	20762 USN	DET NATEC WASHINGTON	0.1294
49	76217 USN	NATEC_SAN_DIEGO_CA FORT WORTH	0.1294
50	93246 USN	USN_2_Lemoore	0.1294
51	70143 USN	DET NATEC NEW ORLEANS	0.1294
52	33040 USN	USN_3_Key West	0.1294
53	66027 USA	FT LEAVENWORTH	0.1294
54	33205 USN	DET NATEC CHERRY POINT	0.1294
55	19090 USN	DET NATEC WILLOW GROVE	0.1294
56	04011 USN	DET NATEC BRUNSWICK	0.1294
57	29904 USN	DET NATEC BEAUFORT	0.1294
58	22331 USA	CECOM Acquisition Center- Washington	0.1294
59	28545 USN	USN_2_Camp Lejeune	0.1294
60	96863 USN	NATEC_SAN_DIEGO_CA KANEOHE BAY	0.1294
61	12550 USN	DET NATEC STEWART ANGB NY	0.1294
62	32228 USN	USN-2_Mayport	0.1294
63	30060 USN	DET NATEC ATLANTA	0.1294
64	22134 USN	MCB Quantico	0.1283
65	01201 USN	NAVPMOSSP_PITTSFIELD_MA	0.1200
66	20640 USN	USN_3_Indian Head (IF NAVSURFWARCENDIV Indian	0.1200
67	96792 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Waianae	0.1200
68	98433 USA	Fort Lewis	0.1200
69	92123 USN	NAVUNSEAWARCENDIV_KEYPORT_WA San Diego	0.1200
70	90245 USAF	Los Angeles AFB	0.1200
71	08733 USN	NAVAIRWARCENACDIV Lakehurst	0.1200
72	07806 USA	PICATINNY ARSENAL	0.1200
73	92110 USA	FORT MONMOUTH San Diego	0.1200
74	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.1200
75	20360 USN	SPAWARSYSCEN_CHARLESTON_SC Washington	0.1126
76	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.1036

Table 3.31: Sensors, Electronics, and EW D&A

Rank MilVal	Facility Code	Facility Name	
77	20653 USN	SPAWARSYSCEN_CHARLESTON_SC Lexington Park	0.1026
78	23501 USN	USN_3_Norfold/Protsmouth	0.1020
79	32508 USN	USN_3_Penasacola	0.1020
80	37389 USN	Arnold AFS USN	0.1000
81	22202 USN	USN_3_Arlington	0.0960
82	23651 USAF	Langley AFB	0.0879
83	96782 USN	SPAWARSYSCOM_SAN_DIEGO_CA PEARL HARBOR	0.0878
84	88002 USA	WHITE SANDS MISSILE RANGE	0.0860
85	32826 USA	USA_3_Orlando	0.0854
86	80901 USAF	Hanscom AFB Colorado Springs	0.0786
87	80914 USAF	Peterson AFB	0.0780
88	45433 USAF	Wright-Patterson AFB	0.0777
89	08057 USN	AEGIS_TECHREP_MOORESTOWN_NJ	0.0760
90	02840 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0735
91	20151 USN	SSFA_CHANTILLY_VA	0.0734
92	36615 USN	NRL_WASHINGTON_DC Mobile	0.0726
93	78243 USAF	Lackland AFB	0.0724
94	39534 USAF	USAF_2_Biloxi	0.0723
95	96752 USN	PACMISRANFAC_HAWAREA_BARKING_SANDS_HI	0.0723
96	33621 USA	CERDEC Tampa Field Ofc	0.0722
97	20001 USAF	USAF_5_DC	0.0721
98	23604 USA	FORT EUSTIS	0.0721
99	87117 USAF	Kirtland AFB	0.0720
100	62225 USAF	SCOTT AFB	0.0720
101	68113 USAF	USAF_2_Omaha	0.0720
102	33416 USN	NAVUNSEAWARCENDIV_NEWPORT_RI West Palm Beach	0.0720
103	85706 USAF	Tucson IAP AGS	0.0720

Table 3.32: Sensors, Electronics, and EW Research

Rank MilVal	Facility Code	Facility Name	
1	20375 USN	Naval Research Laboratory Washington DC	0.8255
2	45433 USAF	Wright-Patterson AFB	0.5405
3	20783 USA	ADELPHI LABORATORY CENTER	0.5018
4	20670 USN	USN_8_Pax (NAS Patuxent River)	0.4809
5	22060 USA	FORT BELVOIR	0.3972
6	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.3660
7	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.3594
8	22203 DARPA	DARPA	0.3561
9	07703 USA	FORT MONMOUTH	0.3392
10	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.3152
11	01731 USAF	Hanscom AFB	0.3007
12	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.2811
13	22217 USN	OFFICE OF NAVAL RESEARCH	0.2750
14	20732 USN	NRL Chesapeake Bay Detachment	0.2611
15	47522 USN	NAVSURFWARCENDIV_CRANE_IN	0.2589
16	39529 USN	NRL Detachment Stennis Space Ctr	0.2578
17	27709 USA	ARO Durham NC	0.2440
18	35898 USA	REDSTONE ARSENAL	0.2378
19	13441 USAF	Rome Laboratory	0.2345
20	93943 USN	NAVPGSCOL_MONTEREY_CA	0.2204
21	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.2155
22	22210 USAF	AFOSR	0.1989
23	22060 DTRA	National Capital Element DTRA	0.1987
24	21005 USA	ABERDEEN PROVING GROUND	0.1783
25	20392 USN	NAVOBSY_WASHINGTON_DC	0.1756
26	22130 USN	Marine Corps Warfighting Laboratory	0.1750
27	86002 USN	NAVOBSY_WASHINGTON_DC Flagstaff	0.1551
28	85615 USA	FORT HUACHUCA	0.1517
29	36362 USA	FORT RUCKER	0.1517
30	30303 USN	CNR_ARLINGTON_VA ATLANTA REGIONAL OFFICE	0.1509
31	08733 USA	CERDEC Flight Activity	0.1509
32	22331 USA	CECOM Acquisition Center- Washington	0.1509
33	33040 USN	USN_3_Key West	0.1509
34	22210 USA	ARO Arlington	0.1509
35	29419 USN	SPAWARSYSCEN_CHARLESTON_SC	0.1079
36	20360 USN	SPAWARSYSCEN_CHARLESTON_SC Washington	0.0953
37	84403 USAF	Hill AFB	0.0867
38	23464 USN	SPAWARSYSCEN Charleston – Little Creek	0.0833

Table 3.32: Sensors, Electronics, and EW Research

Rank MilVal	Facility Code	Facility Name	
39	20653 USN	SPAWARSYSCEN_CHARLESTON_SC Lexington Park	0.0833
40	32508 USN	USN_3_Penasacola	0.0833
41	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.0833
42	32212 USN	USN_3_Jacksonville	0.0833
43	33621 USAFoth	SOCOM	0.0816
44	32826 USA	USA_3_Orlando	0.0783
45	23461 USN	USN_3_VABEACH	0.0700
46	92123 USN	NAVUNSEAWARCENDIV_KEYPORT_WA San Diego	0.0700
47	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.0700
48	07806 USA	PICATINNY ARSENAL	0.0700
49	96792 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Waianae	0.0700
50	37389 USN	Arnold AFS USN	0.0660
51	23501 USN	USN_3_Norfold/Protsmouth	0.0626
52	96782 USN	SPAWARSYSCOM_SAN_DIEGO_CA PEARL HARBOR	0.0543
53	23604 USA	FORT EUSTIS	0.0533
54	88002 USA	WHITE SANDS MISSILE RANGE	0.0533
55	90245 USAF	Los Angeles AFB	0.0430
56	36615 USN	NRL_WASHINGTON_DC Mobile	0.0426
57	32925 USAF	USAF_3_Cocoa Beach	0.0426
58	06357 USN	NAVUNSEAWARCEN DET Niantic	0.0424
59	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0422
60	96752 USN	PACMISRANFAC_HAWAREA_BARKING_SANDS_HI	0.0421
61	93524 USAF	EDWARDS AFB	0.0420
62	23651 USAF	Langley AFB	0.0420
63	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0420
64	87117 USAF	Kirtland AFB	0.0420
65	02840 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0420
66	92055 USN	MCB Camp Pendleton (DRPMAAA)	0.0420
67	85365 USA	YUMA PROVING GROUND	0.0420
68	33416 USN	NAVUNSEAWARCENDIV_NEWPORT_RI West Palm Beach	0.0420

Table 3.33: Sensors, Electronics, and EW T&E

Rank MilVal	Facility Code	Facility Name	
1	20670 USN	USN_8_Pax (NAS Patuxent River)	0.7402
2	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.5610
3	93524 USAF	EDWARDS AFB	0.5356
4	32548 USAF	Eglin AFB	0.4644
5	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.4009
6	88002 USA	WHITE SANDS MISSILE RANGE	0.3768
7	85613 USA	FORT HUACHUCA	0.3608
8	47522 USN	NAVSURFWARCENDIV_CRANE_IN	0.3355
9	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.3103
10	73503 USA	FT SILL	0.2905
11	88310 USAF	USAF_2_Alamogorgo (Holloman)	0.2865
12	08057 USN	AEGIS_TECHREP_MOORESTOWN_NJ	0.2774
13	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.2722
14	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.2643
15	85365 USA	YUMA PROVING GROUND	0.2630
16	96752 USN	PACMISRANFAC_HAWAREA_BARKING_SANDS_HI	0.2559
17	23461 USN	USN_3_VABEACH	0.2198
18	92055 USN	MCB Camp Pendleton (DRPMAAA)	0.2129
19	29419 USN	SPAWARSYSCEN_CHARLESTON_SC	0.1960
20	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.1944
21	76542 USA	FT HOOD	0.1846
22	35898 USA	REDSTONE ARSENAL	0.1800
23	20375 USN	Naval Research Laboratory Washington DC	0.1758
24	84403 USAF	Hill AFB	0.1390
25	23464 USN	SPAWARSYSCEN Charleston – Little Creek	0.1382
26	85706 USAF	Tucson IAP AGS	0.1358
27	31098 USAF	Warner Robbins AFB	0.1338
28	22134 USN	MCB Quantico	0.1276
29	23337 USN	SURFCOMBATSYSCEN_WALLOPS_ISLAND_VA	0.1275
30	87117 USAF	Kirtland AFB	0.1222
31	21005 USA	ABERDEEN PROVING GROUND	0.1126
32	32544 USAF	HURLBURT FIELD AAF	0.1114
33	32826 USA	USA_3_Orlando	0.1096
34	79916 USA	FT BLISS	0.1088
35	33416 USN	NAVUNSEAWARCENDIV_NEWPORT_RI West Palm Beach	0.1084
36	32925 USAF	USAF_3_Cocoa Beach	0.1079
37	36362 USA	FORT RUCKER	0.1078
38	06357 USN	NAVUNSEAWARCEN DET Niantic	0.1077

Table 3.33: Sensors, Electronics, and EW T&E

Rank	Facility Code	Facility Name	MilVal
39	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.1075
40	33040 USN	USN_3_Key West	0.1074
41	96792 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Waianae	0.0975
42	92123 USN	NAVUNSEAWARCENDIV_KEYPORT_WA San Diego	0.0975
43	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.0975
44	07806 USA	PICATINNY ARSENAL	0.0975
45	37388 USAF	Arnold AFS	0.0975
46	08733 USN	NAVAIRWARCENACDIV Lakehurst	0.0975
47	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0867
48	22217 USN	OFFICE OF NAVAL RESEARCH	0.0804
49	01731 USAF	Hanscom AFB	0.0748
50	07703 USA	FORT MONMOUTH	0.0735
51	45433 USAF	Wright-Patterson AFB	0.0732
52	93550 USAF	USAF_2_Palmdale (AF PLANT 41)	0.0698
53	37389 USN	Arnold AFS USN	0.0694
54	20360 USN	SPAWARSYSCEN_CHARLESTON_SC Washington	0.0663
55	32508 USN	USN_3_Penasacola	0.0644
56	23501 USN	USN_3_Norfold/Protsmouth	0.0644
57	20653 USN	SPAWARSYSCEN_CHARLESTON_SC Lexington Park	0.0644
58	32212 USN	USN_3_Jacksonville	0.0644
59	96782 USN	SPAWARSYSCOM_SAN_DIEGO_CA PEARL HARBOR	0.0641
60	23651 USAF	Langley AFB	0.0639
61	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0624
62	90245 USAF	Los Angeles AFB	0.0608
63	35824 USAF	Kirtland AFB Huntsville	0.0602
64	73145 USAF	Tinker AFB	0.0601
65	22302 USA	USA_3_Alexandria	0.0593
66	87117 DTRA	Kirtland AFB	0.0592
67	20374 USN	USN_2_WNY	0.0589
68	89191 USAF	NELLIS AFB	0.0587
69	32403 USAF	Tyndall AFB	0.0585
70	99505 USA	REDSTONE ARSENAL ANCHORAGE	0.0585
71	35898 MDA	REDSTONE ARSENAL MDA	0.0585
72	02840 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0585

Table 3.34: Space Platforms D&A

Rank MilVal	Facility Code	Facility Name	
1	90245 USAF	Los Angeles AFB	0.8406
2	20375 USN	Naval Research Laboratory Washington DC	0.2753
3	80914 USAF	Peterson AFB	0.2051
4	20732 USN	NRL Chesapeake Bay Detachment	0.1490
5	87117 USAF	Kirtland AFB	0.1473
6	92110 USN	USN_2_San Diego	0.1396
7	94089 USAF	Onizuka AFS Sunnyvale	0.1324
8	07703 USA	FORT MONMOUTH	0.1200
9	22217 USN	OFFICE OF NAVAL RESEARCH	0.1099
10	35898 USA	REDSTONE ARSENAL	0.1078
11	84403 USAF	Hill AFB	0.1009
12	01731 USAF	Hanscom AFB	0.0848
13	32925 USAF	USAF_3_Cocoa Beach	0.0841
14	78235 USAF	BROOKS CITY-BASE	0.0840
15	93437 USAF	Vandenberg AFB	0.0834
16	22202 USN	USN_3_Arlington	0.0818
17	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.0813
18	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.0783
19	20151 USN	SSFA_CHANTILLY_VA	0.0751
20	78243 USAF	Lackland AFB	0.0710
21	20670 USN	USN_8_Pax (NAS Patuxent River)	0.0708
22	80912 MDA	MDA - Colorado	0.0591
23	00000 USN	SSFA SPAFLDACT DET	0.0581
24	22046 USN	SSFA GBS SUPPORT OFFICE	0.0581
25	90261 USN	SSFA_CHANTILLY_VA LOS ANGELES	0.0580
26	22201 USAF	USAF_3_Arlington	0.0579
27	39534 USAF	USAF_2_Biloxi	0.0578
28	33621 USAFoth	SOCOM	0.0578
29	80011 USAF	Buckley AFB	0.0577
30	80301 USAF	Los Angeles AFB BOULDER	0.0576
32	78148 USAF	Randolph AFB	0.0575
33	90245 USN	SPAWARSYSCOM_SAN_DIEGO_CA EL SEGUNDO	0.0575
34	20001 USAF	USAF_5_DC	0.0575
35	35801 USAF	SMC OL:AH, HUNTSVILLE CITY	0.0575
36	45433 USAF	Wright-Patterson AFB	0.0575
37	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0575
38	22134 USN	MCB Quantico	0.0575
39	21005 USA	ABERDEEN PROVING GROUND	0.0575
40	85365 USA	YUMA PROVING GROUND	0.0575
41	88002 USA	WHITE SANDS MISSILE RANGE	0.0575

Table 3.35: Space Platforms Research

Rank MilVal	Facility Code	Facility Name	
1	20375 USN	Naval Research Laboratory Washington DC	0.5710
2	87117 USAF	Kirtland AFB	0.5191
3	93524 USAF	EDWARDS AFB	0.5164
4	01731 USAF	Hanscom AFB	0.5011
5	22203 DARPA	DARPA	0.2748
6	90245 USAF	Los Angeles AFB	0.1702
7	22217 USN	OFFICE OF NAVAL RESEARCH	0.1590
8	20732 USN	NRL Chesapeake Bay Detachment	0.1497
9	22210 USAF	AFOSR	0.1366
10	93943 USN	NAVPGSCOL_MONTEREY_CA	0.1241
11	37388 USAF	Arnold AFS	0.1166
12	45433 USAF	Wright-Patterson AFB	0.1120
13	35898 USA	REDSTONE ARSENAL	0.0746
14	85365 USA	YUMA PROVING GROUND	0.0746
15	78235 USAF	BROOKS CITY-BASE	0.0630
16	84403 USAF	Hill AFB	0.0506
17	39529 USN	NRL Detachment Stennis Space Ctr	0.0501
18	80914 USAF	Peterson AFB	0.0495
19	20670 USN	USN_8_Pax (NAS Patuxent River)	0.0490
20	32925 USAF	USAF_3_Cocoa Beach	0.0379
21	20001 USAF	USAF_5_DC	0.0353
22	23651 USAF	Langley AFB	0.0351
23	21005 USA	ABERDEEN PROVING GROUND	0.0350
25	85212 USAF	USAF_2_Mesa (AFRL MESA)	0.0350
26	88002 USA	WHITE SANDS MISSILE RANGE	0.0350

Table 3.36: Space Platforms T&E

Rank MilVal	Facility Code	Facility Name	
1	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.4008
2	37388 USAF	Arnold AFS	0.3717
3	88002 USA	WHITE SANDS MISSILE RANGE	0.3408
4	87117 USAF	Kirtland AFB	0.3090
5	80914 USAF	Peterson AFB	0.2312
6	96752 USN	PACMISRANFAC_HAWAREA_BARKING_SANDS_HI	0.2161
7	93437 USAF	Vandenberg AFB	0.1986
8	20903 USAF	Tunnel 9 White Oak	0.1458
9	90245 USAF	Los Angeles AFB	0.1345
10	84403 USAF	Hill AFB	0.1087
11	80011 USAF	Buckley AFB	0.0965
12	93524 USAF	EDWARDS AFB	0.0964
13	45433 USAF	Wright-Patterson AFB	0.0834
14	35824 USAF	Kirtland AFB Huntsville	0.0817
15	32548 USAF	Eglin AFB	0.0789
16	35898 USA	REDSTONE ARSENAL	0.0785
17	22302 USA	USA_3_Alexandria	0.0689
18	21005 USA	ABERDEEN PROVING GROUND	0.0677
19	20375 USN	Naval Research Laboratory Washington DC	0.0665
20	20670 USN	USN_8_Pax (NAS Patuxent River)	0.0585
21	20001 USAF	USAF_5_DC	0.0501
22	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.0501
23	88310 USAF	USAF_2_Alamogorgo (Holloman)	0.0501
24	85365 USA	YUMA PROVING GROUND	0.0501
25	22217 USN	OFFICE OF NAVAL RESEARCH	0.0501
26	32925 USAF	USAF_3_Cocoa Beach	0.0501
27	99505 USA	REDSTONE ARSENAL ANCHORAGE	0.0501

Table 3.37: Weapons Technology D&A

Rank MilVal	Facility Code	Facility Name	
1	35898 USA	REDSTONE ARSENAL	0.6155
2	07806 USA	PICATINNY ARSENAL	0.5251
3	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.4982
4	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.4669
5	20301 MDA	MDA - NCR	0.3725
6	20670 USN	USN_8_Pax (NAS Patuxent River)	0.3660
7	32548 USAF	Eglin AFB	0.3110
8	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.3103
9	35898 MDA	REDSTONE ARSENAL MDA	0.2874
10	20640 USN	USN_3_Indian Head (IF NAVSURFWARCENDIV Indian	0.2782
11	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.2729
12	32407 USN	USN_2_Pannama City	0.2309
13	47522 USN	NAVSURFWARCENDIV_CRANE_IN	0.2292
14	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.2252
15	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.2223
16	80912 MDA	MDA - Colorado	0.2155
17	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.2134
18	21005 USA	ABERDEEN PROVING GROUND	0.2085
19	23337 USN	SURFCOMBATSYSCEN_WALLOPS_ISLAND_VA	0.1865
20	35807 MDA	MDA - Alabama	0.1834
21	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.1824
22	93524 USAF	EDWARDS AFB	0.1742
23	85365 USA	YUMA PROVING GROUND	0.1692
24	23461 USN	USN_3_VABEACH	0.1673
25	99737 MDA	MDA - Alaska	0.1650
26	40214 USN	NAVSURFWARCENDIV_PORT_HUENEME_CA Louisville	0.1550
27	93437 MDA	MDA - California	0.1470
28	22217 USN	OFFICE OF NAVAL RESEARCH	0.1451
29	90740 USN	NAVSURFWARCENDIV_INDIAN_HEAD_MD Seal Beach	0.1424
30	88002 USA	WHITE SANDS MISSILE RANGE	0.1400
31	12189 USA	WATERVLIET ARSENAL	0.1386
32	33621 USAFoth	SOCOM	0.1368
33	22134 USN	MCB Quantico	0.1303
34	07722 USN	Colts Neck	0.1295
35	23691 USN	USN_3_Yorktown (WPNSTA_Yorktown)	0.1289
36	20783 USA	ADELPHI LABORATORY CENTER	0.1283
37	84403 USAF	Hill AFB	0.1264
38	31098 USAF	Warner Robbins AFB	0.1239

Table 3.37: Weapons Technology D&A

Rank MilVal	Facility Code	Facility Name	
39	73145 USAF	Tinker AFB	0.1211
40	88002 USN	WHITE SANDS MISSILE RANGE	0.1190
41	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.1185
42	92123 USN	NAVUNSEAWARCENDIV_KEYPORT_WA San Diego	0.1085
43	87117 MDA	MDA at Kirtland AFB	0.1055
44	84022 USA	DUGWAY PROVING GROUND	0.1052
45	61299 USA	ROCK ISLAND ARSENAL	0.1031
46	99737 USA	USA_2_Ft Greeley	0.1012
47	92028 USN	NAVSURFWARCENDIV_CRANE_IN Fallbrook	0.0972
48	96792 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Waianae	0.0960
49	22060 USA	FORT BELVOIR	0.0951
50	32542 USN	COMNAVAIRSYSCOM_PATUXENT_RIVER_MD Eglin	0.0905
51	35898 USN	COMNAVAIRSYSCOM_PATUXENT_RIVER_MD	0.0905
52	92135 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.0903
53	33040 USN	USN_3_Key West	0.0902
54	85369 USN	YUMA PROVING GROUND	0.0902
55	23511 USN	USN_7_Norfolk	0.0902
56	20374 USN	USN_2_WNY	0.0902
57	37389 USN	Arnold AFS USN	0.0900
58	20375 USN	Naval Research Laboratory Washington DC	0.0858
59	22202 USN	USN_3_Arlington	0.0829
60	01731 USAF	Hanscom AFB	0.0825
61	21010 USA	ABERDEEN PROVING GROUND	0.0778
62	23801 USA	Fort Lee	0.0768
63	87117 USAF	Kirtland AFB	0.0700
64	20393 USN	DIRSSP_WASHINGTON_DC	0.0668
65	22205 USN	COMNAVAIRSYSCOM_PATUXENT_RIVER_MD Arlington	0.0642
66	74501 USN	NAVSURFWARCENDIV_INDIAN_HEAD_MD McAlester	0.0642
67	99505 USA	REDSTONE ARSENAL ANCHORAGE	0.0642
68	01201 USN	NAVPMOSSP_PITTSFIELD_MA	0.0640
69	20301 USA	USA_3_Arlington	0.0638
70	80914 USA	REDSTONE ARSENAL Colorado Springs	0.0636
71	02840 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0636
72	92110 USN	USN_2_San Diego	0.0636
73	20640 USA	RDECOM-ARDEC, EXPLOSIVE ORDNANCE DISPOSAL	0.0636
74	20646 USA	ADELPHI LABORATORY CENTER LAPLATA	0.0636
75	23460 USN	USN_2_VABEACH.	0.0636
76	85613 USA	FORT HUACHUCA	0.0635
77	96752 USN	PACMISRANFAC_HAWAREA_BARKING_SANDS_HI	0.0635
78	33416 USN	NAVUNSEAWARCENDIV_NEWPORT_RI West Palm Beach	0.0635

Table 3.38: Weapons Technology Research

Rank MilVal	Facility Code	Facility Name	
1	87117 USAF	Kirtland AFB	0.5371
2	07806 USA	PICATINNY ARSENAL	0.5272
3	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.5062
4	35898 USA	REDSTONE ARSENAL	0.4609
5	32548 USAF	Eglin AFB	0.4448
6	20640 USN	USN_3_Indian Head (IF NAVSURFWARCENDIV Indian	0.3336
7	21005 USA	ABERDEEN PROVING GROUND	0.3094
8	32407 USN	USN_2_Pannama City	0.2851
9	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.2834
10	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.2724
11	20375 USN	Naval Research Laboratory Washington DC	0.2487
12	22060 DTRA	National Capital Element DTRA	0.2037
13	22217 USN	OFFICE OF NAVAL RESEARCH	0.2031
14	22203 DARPA	DARPA	0.1963
15	20670 USN	USN_8_Pax (NAS Patuxent River)	0.1826
16	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.1770
17	47522 USN	NAVSURFWARCENDIV_CRANE_IN	0.1754
18	96753 USAF	Kirtland AFB Kihei	0.1610
19	85365 USA	YUMA PROVING GROUND	0.1598
20	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.1558
21	20732 USN	NRL Chesapeake Bay Detachment	0.1462
22	20783 USA	ADELPHI LABORATORY CENTER	0.1433
23	27709 USA	ARO Durham NC	0.1401
24	93943 USN	NAVPGSCOL_MONTEREY_CA	0.1399
25	23691 USN	USN_3_Yorktown (WPNSTA_Yorktown)	0.1245
26	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.1156
27	88002 USN	WHITE SANDS MISSILE RANGE	0.1141
28	22130 USN	Marine Corps Warfighting Laboratory	0.1130
29	33040 USN	USN_3_Key West	0.1125
30	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.1077
31	22210 USAF	AFOSR	0.1016
32	87117 DTRA	Kirtland AFB	0.0945
33	40214 USN	NAVSURFWARCENDIV_PORT_HUENEME_CA Louisville	0.0938
34	88002 USA	WHITE SANDS MISSILE RANGE	0.0814
35	61299 USA	ROCK ISLAND ARSENAL	0.0812
36	23604 USA	FORT EUSTIS	0.0776
37	73503 USA	FT SILL	0.0769
38	37389 USN	Arnold AFS USN	0.0768

Table 3.38: Weapons Technology Research

Rank MilVal	Facility Code	Facility Name	
39	30303 USN	CNR_ARLINGTON_VA ATLANTA REGIONAL OFFICE	0.0731
40	99737 USA	USA_2_Ft Greeley	0.0592
41	07722 USN	Colts Neck	0.0580
42	21010 USA	ABERDEEN PROVING GROUND	0.0573
43	40121 USA	FORT KNOX	0.0572
44	78235 USAF	BROOKS CITY-BASE	0.0483
45	84403 USAF	Hill AFB	0.0445
46	92028 USN	NAVSURFWARCENDIV_CRANE_IN Fallbrook	0.0445
47	20301 MDA	MDA - NCR	0.0435
48	45433 USAF	Wright-Patterson AFB	0.0407
49	39529 USN	NRL Detachment Stennis Space Ctr	0.0404
50	12189 USA	WATERVLIET ARSENAL	0.0385
51	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.0376
52	22134 USN	MCB Quantico	0.0376
53	33621 USAFoth	SOCOM	0.0376
54	31905 USA	FT BENNING	0.0375
55	93524 USAF	EDWARDS AFB	0.0375
56	99505 USA	REDSTONE ARSENAL ANCHORAGE	0.0375
57	90740 USN	NAVSURFWARCENDIV_INDIAN_HEAD_MD Seal Beach	0.0375
58	02840 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0375
59	33416 USN	NAVUNSEAWARCENDIV_NEWPORT_RI West Palm Beach	0.0375
60	20910 USA	WALTER REED ARMY MEDICAL CENTER	0.0000

Table 3.39: Weapons Technology T&E

Rank MilVal	Facility Code	Facility Name	
1	88002 USA	WHITE SANDS MISSILE RANGE	0.7301
2	32548 USAF	Eglin AFB	0.6836
3	93555 USN	USN_2_China Lake(NAVAIRWPNSTA China Lake)	0.6391
4	93042 USN	USN_2_PT MUGU (NAVBASE VENTURA CTY PT MUGU)	0.6238
5	21005 USA	ABERDEEN PROVING GROUND	0.5511
6	98345 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Keyport	0.5197
7	84403 USAF	Hill AFB	0.5123
8	84022 USA	DUGWAY PROVING GROUND	0.5052
9	85365 USA	YUMA PROVING GROUND	0.4848
10	35898 USA	REDSTONE ARSENAL	0.4799
11	32407 USN	USN_2_Pannama City	0.4302
12	22448 USN	NAVSURFWARCENDIV_DAHLGREN_VA	0.4055
13	73503 USA	FT SILL	0.3704
14	79916 USA	FT BLISS	0.3479
15	36362 USA	FORT RUCKER	0.3053
16	20670 USN	USN_8_Pax (NAS Patuxent River)	0.1074
17	47522 USN	NAVSURFWARCENDIV_CRANE_IN	0.0930
18	93524 USAF	EDWARDS AFB	0.0804
19	92878 USN	NAVSURFWARCENDIV_CORONA_CA	0.0802
20	20640 USN	USN_3_Indian Head (IF NAVSURFWARCENDIV Indian	0.0787
21	23461 USN	USN_3_VABEACH	0.0718
22	02841 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0717
23	88310 USAF	USAF_2_Alamogorgo (Holloman)	0.0671
24	89191 USAF	NELLIS AFB	0.0645
25	96792 USN	NAVUNSEAWARCENDIV_KEYPORT_WA Waianae	0.0629
26	93043 USN	USN_3_Port Hueneme (NAVSURFWARCENDIV PORT	0.0622
27	87117 USAF	Kirtland AFB	0.0615
28	88002 USN	WHITE SANDS MISSILE RANGE	0.0609
29	92152 USN	USN_4_San Diego (NAVSTA_SAN_DIEGO)	0.0595
30	92028 USN	NAVSURFWARCENDIV_CRANE_IN Fallbrook	0.0582
31	90740 USN	NAVSURFWARCENDIV_INDIAN_HEAD_MD Seal Beach	0.0564
32	07806 USA	PICATINNY ARSENAL	0.0564
33	96752 USN	PACMISRANFAC_HAWAREA_BARKING_SANDS_HI	0.0532
34	23337 USN	SURFCOMBATSYSCEN_WALLOPS_ISLAND_VA	0.0531
35	99737 USA	USA_2_Ft Greeley	0.0515
36	76542 USA	FT HOOD	0.0510
37	32544 USAF	HURLBURT FIELD AAF	0.0508
38	92123 USN	NAVUNSEAWARCENDIV_KEYPORT_WA San Diego	0.0507

Table 3.39: Weapons Technology T&E

Rank MilVal	Facility Code	Facility Name	
39	80914 USA	REDSTONE ARSENAL Colorado Springs	0.0505
40	22134 USN	MCB Quantico	0.0477
41	85613 USA	FORT HUACHUCA	0.0458
42	20376 USN	USN_3_WNY (COMNAV DISTRICT Washington D.C.)	0.0448
43	32403 USAF	Tyndall AFB	0.0438
44	23691 USN	USN_3_Yorktown (WPNSTA_Yorktown)	0.0436
45	89023 DTRA	DTRA Nevada	0.0400
46	33040 USN	USN_3_Key West	0.0393
47	22217 USN	OFFICE OF NAVAL RESEARCH	0.0392
48	61299 USA	ROCK ISLAND ARSENAL	0.0382
49	23505 USN	COMOPTEVFOR_NORFOLK_VA	0.0362
50	07722 USN	Colts Neck	0.0359
51	87117 DTRA	Kirtland AFB	0.0356
52	22202 USA	USA_4_Arlington	0.0343
53	37389 USN	Arnold AFS USN	0.0339
54	80912 MDA	MDA - Colorado	0.0332
55	35898 MDA	REDSTONE ARSENAL MDA	0.0315
56	40214 USN	NAVSURFWARCENDIV_PORT_HUENEME_CA Louisville	0.0306
57	20783 USA	ADELPHI LABORATORY CENTER	0.0299
58	22302 USA	USA_3_Alexandria	0.0296
59	99505 USA	REDSTONE ARSENAL ANCHORAGE	0.0290
60	93550 USAF	USAF_2_Palmdale (AF PLANT 41)	0.0290
61	02840 USN	COMNAVUNSEAWARCEN_NEWPORT_RI	0.0288
62	45433 USAF	Wright-Patterson AFB	0.0287
63	20670 USAF	USAF_4_Pax	0.0287
64	89070 USAF	Eglin AFB Indian Springs	0.0287
65	99703 USA	YUMA PROVING GROUND Ft. Wainwright	0.0287
66	90245 USAF	Los Angeles AFB	0.0287
67	22205 USN	COMNAVAIRSYSCOM_PATUXENT_RIVER_MD Arlington	0.0287
68	33416 USN	NAVUNSEAWARCENDIV_NEWPORT_RI West Palm Beach	0.0287
69	85706 USAF	Tucson IAP AGS	0.0287
70	31098 USAF	Warner Robbins AFB	0.0287

Section 4. Metric Definitions & Scoring Plan

This Section lists the five attributes, the metrics for each attribute, the scoring plan for each component of the metric, and the questions intended to solicit answers providing the scoring information. The questions, part of a unified DoD Military Value data call, start with number 3001 and end with number 3027. Some of the data for scoring a metric may be from the capacity data call. Each question using capacity data makes clear the source of the data.

Definitions

a. The coefficients, k_j, are the weights assigned by TJCSG for the metric.

b. S(xxx) is the score for the metric of interest.

c. MV = S(people) + S(physical environment) + S(physical structure & equipment) + S(operational impact)+ S(synergy)

People

S(p) for a facility = [k_1S(edu) + k_2S(exp) + k_3S(cert) + k_4S(ppa)]

Where:
S(p) is the attribute score establishing a Military Value of people in executing a particular function in a specific Capability Area. This score relates to the total on-site facility government workforce (i.e., civilian and military).

1. Education – S(edu): Educational level of the Professional/Technical (P&T categories of the PATCOB) workforce expressed in terms of highest degree attained (Associates Degree, Bachelors, Masters, PhD, MD, DVM).

S(edu) = [Sum (F_i X ELi)/MAX Sum of (F_i X EL_i) for the like facility with the highest score], where i = 1/2 to 3
Sort Facility professional and technical workforce by highest degree attained

F_i		EL_i
0.5	X	Number of Professional/Technical government personnel (P&T categories of the PATCOB) workforce with an Associates Degree
1.0	X	Number of Professional/Technical government personnel (P&T categories of the PATCOB) workforce with a Bachelors Degree
2.0	X	Number of Professional/Technical government personnel (P&T categories of the PATCOB) workforce with a Masters Degree

3.0 X Number of Professional/Technical government personnel (P&T categories of the PATCOB) workforce with a PhD, MD, or DVM Degree

DOD#3001: Personnel Education (Govt) RD(A)T&E
Question: Report the count of the Highest College Education level achieved by each government person (civilian & Military) in the Professional and Technical community (P&T categories of the PATCOB) who has performed any RD(A)T&E work and was on-board on 30 September 2003.Individual personnel shall be reported by the function and technical capability area in which they did the majority of their work in FY03 (In the absence of a majority use plurality).

Rationale:	Education beyond high school contributes to Military Value. Scoring points are awarded based on the highest degree earned.

<u>2. Experience</u> – S(exp): Experience level of the professional/technical government workforce (civilian and military) expressed in terms of years, measured in years since first degree attained, or from service computation date, whichever is earlier.

S(exp) = Sum of (F_i X EXP_i)/MAX Sum of (F_i X EXP_i) for the like facility with the highest score

Sort the Professional/Technical (P&T categories of the PATCOB) workforce by years of experience since receipt of first degree, or by service computation date, whichever is earlier.

F_i EXP_i
1 X Number of Professional/Technical government personnel (P&T categories of the PATCOB) workforce

with greater than 0 years and less than or equal to 10 years of experience

2 X Number of Professional/Technical government personnel (P&T categories of the PATCOB) workforce with greater than 10 years
and less than or equal to 20 years of experience

3 X Number of Professional/Technical government personnel (P&T categories of the PATCOB) workforce with greater than 20 years of experience

DOD#3002: Professional/Technical Workforce Experience (Govt) RD(A)T&E

Question: Report the count of Professional and Technical (P&T categories of the PATCOB) workforce (military, government civilian) on board on 30 September 2003 into the following experience categories - less than or equal to 10 years, greater than 10 and less than or equal to 20 years, greater than 20 (Measured from date of receipt of first college degree, or from Service Computation Date, whichever is earlier) as of 30 September 2003 . Individual personnel shall be reported by the function and technical capability area in which they do the majority of their work in FY03 (In the absence of a majority use plurality).

Rationale:	Experience contributes to Military Value. Scoring points are awarded based on the number of years of experience.

<u>3. Certification</u> – S(cert): Count of Professional and Technical (P&T categories of the PATCOB) government workforce (civilians having the grade of GS-14 and above (or

its Pay band equivalent) and military) that have as their highest Defense Acquisition Workforce Improvement Act (DAWIA) certification levels as Level 1, Level 2, Level 3 or multiple Level 3 certifications on 30 September 2003. The count of Government (military & civilian) Professional and Technical (P&T categories of the PATCOB) workforce that are Test Pilot School graduates, or have a Software Engineering Certification from the following sources as of 30 September 2003: IEEE Certified Software Development Professional Program, International Institute for Software Testing for Certified Software Test Professionals, Rational Unified Process (RUP) Certification, Software Engineering Institute Certification Program.

$S(cert) = [\text{Sum of } (F_i \text{ X } CL_i) + \text{Sum of } (3 \text{ X } OC_j)] / \text{MAX } [\text{Sum of } (F_i \text{ X } CL_i) + \text{Sum of } (3 \text{ X } OC_j)]$ for the like facility with the highest score

F_i		CL_i
1	X	Number Professional/Technical (P&T categories of the PATCOB) government workforce (civilians having the grade of GS-14 and above (or its Pay band equivalent) and military) whose highest DAWIA Certification is Level 1
2	X	Number Professional/Technical (P&T categories of the PATCOB) government workforce (civilians having the grade of GS-14 and above (or its Pay band equivalent) and military) whose highest DAWIA Certification is Level 2
3	X	Number Professional/Technical (P&T categories of the PATCOB) government workforce (civilians having the grade of GS-14 and above (or its Pay band equivalent) and military) whose highest DAWIA Certification is Level 3

There are additional points for those with multiple level 3 certifications:

3 X Number of Professional/Technical (P&T categories of the PATCOB) government workforce (civilians having the grade of GS-14 and above (or its Pay band equivalent) and military) with multiple Level 3 DAWIA Certifications

$\underline{OC_j}$

3 X Number of Professional/Technical (P&T categories of the PATCOB) government personnel (civilian and military) that are Test pilot School graduates

3 X Number of Professional/Technical (P&T categories of the PATCOB) government personnel (civilian and military) that hold any of the approved Software Certifications

If employees have more than one of these “other certifications”, all instances are to be counted.

DOD#3003: Professional/Technical Workforce >= GS-14 DAWIA Certifications RD(A)T&E

Question: Report the count of Professional and Technical (P&T categories of the PATCOB) Civilian workforce having the grade of GS-14 (or its Pay band equivalent) and above on-board on 30 September 2003 that have as their highest (Defense Acquisition Workforce Improvement Act (DAWIA) certification levels as Level 1, Level 2, Level 3 or multiple Level 3 certifications on 30 September 2003. Individual personnel shall be reported by the function and technical capability area in which they do the

majority of their work in FY03 (In the absence of a majority use plurality).

DOD#3004: Professional/Technical Workforce Military DAWIA Certifications RD(A)T&E

Question: Report the count of Professional and Technical (P&T categories of the PATCOB) Military workforce on-board on 30 September 2003 that have as their highest (Defense Acquisition Workforce Improvement Act (DAWIA) certification levels as Level 1, Level 2, Level 3 or multiple Level 3 certifications on 30 September 2003. Individual personnel shall be reported by the function and technical capability area in which they do the majority of their work in FY03 (In the absence of a majority use plurality).

Question Rationale:	Education, training and experience requirements are establish for the DoD civilian and military workforce. The requirements are based on the complexities of the job. Requirements associated with complex jobs contribute to Military Value.
Scoring Rationale:	The scoring is designed to (1) give more MV to facilities with higher average quality workforces as measured by DAWIA level and (2) give more MV to the levels that are both more difficult to achieve and of more value to the RDAT&E community. The specific weights assigned to the DAWIA levels are the result of collective Professional Military Judgment.

DOD#3005: Professional/Technical Workforce Certifications (Govt) RD(A)T&E

Question: Report the count of Government (military & civilian) Professional and Technical (P&T categories of the PATCOB) workforce that are Test Pilot School graduates, or have a

Software Engineering Certification from the following sources as of 30 September 2003: IEEE Certified Software Development Professional Program, International Institute for Software Testing for Certified Software Test Professionals, Rational Unified Process (RUP) Certification, Software Engineering Institute Certification Program. Report by function (i.e., R, D&A, T&E) and technical capability area.

Test Pilot School graduates refer to any of the following Test Pilot training locations:
US Air Force Test Pilot School, Edwards AFB
US Navy Test Pilot School, Pax River MD
UK Empire Test Pilot School, Boscombe Down, England
National Test Pilot School, Mojave CA

Question Rationale:	Certifications in addition to DAWIA certifications contribute to Military Value. This question was designed to capture two additional categories – Test Pilot graduates due to their value to T&E and software certifications due to the major role software plays in DoD RDAT&E
Scoring Rationale:	The scoring is designed to (1) give more MV to facilities with higher average quality workforces as measured by test pilot school graduation and software certification and (2) give more MV to the levels that are both more difficult to achieve and of more value to the RDAT&E community. The specific weights assigned to the DAWIA levels are the result of collective Professional Military Judgment.

<u>4. Patents, Publication, Awards</u> – S(ppa): The number of patents awarded, patent licenses, software licenses, technical publications (each book, book chapter, and citations for papers appearing in refereed journals), invited presentations, national / international technical awards, and

technical society fellows by function and technical capability area. Government personnel only (civilian and military) in the Professional and Technical community (P&T categories of the PATCOB) who have performed RD(A)T&E.

Patents/Licenses/Publications/Presentations: All patents awarded, patent licenses, software licenses, technical publications (each book, book chapter, and citations for papers in refereed journals), and invited presentations must be limited to the 3-year period of FY01-03.

Each instance of an individual's patent awarded, patent licensed, software license awarded, technical publication (book, book chapter, citations for papers in refereed journals), and invited presentations will be counted. If patents, licenses, publications, or presentations are received by multiple personnel, each person will receive equal credit and shall be reported as associated with each person.

Only invited presentations at a national or international conference of a technical society (excluding local chapters) will be counted. Local or Regional chapter presentations are not to be included.

Citations must be for papers appearing in refereed journals. These journals are listed at the ISI Journal Master List website: http://www.isinet.com/cgi-bin/jrnlst/jlresults.cgi?PC=MASTER and the citations must be from that ISI database. Citations must be accessed only for those papers appearing within FY01-03.

A software license award refers to proprietary ownership of a software code.

Awards Group A & B / Technical Society Fellows: Listed National / International Technical Awards may be counted for any year for individuals that are on-board on 30 September 03 (i.e., they are not limited to the past 3 years). For awards received by multiple personnel, each person will receive equal credit and shall be reported as associated with each

person. Each person must be named in the award citation. Awards given (e.g., Collier Trophy) will count only once. Technical Society Fellowships are also not limited to the past three years.

Awards Group (A) are the: Nobel Prize, Robert J. Collier Trophy, National Medal of Science, National Medal of Technology, Draper Prize, Bower Award for Achievement in Science, member of National Academy of Sciences, and member of National Academy of Engineering

Awards Group (B) are the: Stellar Award, Goddard Astronautics Award, A.T. Waterman Award, William Streifer Award, Lord Rank Award, National Inventors Hall of Fame, Space Technology Hall of Fame

S(ppa) = [Sum of (NP + PL + SLA + PUB + IP + Fellows + EASM + PASM)]/ /MAX[Sum of (NP + PL + SLA + PUB + IP + Fellows + EASM + PASM)] for the like-facility with the highest score

<u>Over the last 3 FYs (01-03)</u>
NP = 1X number of Patents awarded at the facility
PL = 2X number of Patents licensed by the facility
SLA = 1X number of government created Software Licenses awarded by the facility
PUB = 1X number of Technical Publications (each book, book chapter, citations of papers in those journals listed at http://www.isinet.com/cgi-bin/jrnlst/jlresults.cgi?PC=MASTER)
IP = 1X number of Invited Presentations (limited to National or International Meetings of a National or International Technical Society)

<u>Awards may be counted for any year for individuals that are on-board on 30 September 03 (i.e., they are not limited to the past 3 years)</u>

EASM = 30X number of Elite National and International Technical Awards (if for an individual, individual must be on staff as of September 30, 2003; indicate name of individual; name of award; and year awarded) (e.g., Nobel Prize, Robert J. Collier Trophy, National Medal of Science, National Medal of Technology, Draper Prize, Bower Award for Achievement in Science), member of National Academy of Sciences, member of National Academy of Engineering

PASM = 10X number of Prestigious National and International Technical Awards (if for an individual, individual must be currently on staff as of September 30, 2003; indicate name of individual; name of award; and year awarded) (e.g., Stellar Award, Goddard Astronautics Award, A.T. Waterman Award, William Streifer Award, Lord Rank Award, National Inventors Hall of Fame, Space Technology Hall of Fame)

Fellows = 5X number society fellows

DOD#3006: Patents/Licenses, Invited Presentations, Awards, and Fellows (Govt) RD(A)T&E

Question: For workforce on-board on September 30, 2003, report the number of patents awarded, patent licenses, software licenses, technical publications (each book, book chapter, and citations for papers appearing in refereed journals), invited presentations, national / international technical awards, and technical society fellows by function and technical capability area. Report data for government personnel only (civilian and military) in the Professional and Technical community (P&T categories of the PATCOB) who have performed RD(A)T&E. Note: Do not include Federally Funded Research and Development Center personnel.

Rationale:	Awards relating to technical achievements contribute to

	the Military Value of technical organizations. The value of certain of these achievements is enduring and lifelong; the value of others disappears with the passage of time.

PHYSICAL ENVIRONMENT

S(pe) for a facility = [k_1S(sfea) + k_2S(enc)]

Where:
S(pe) is the total score establishing a Military Value of the physical environment associated with the technical infrastructure of the facility.

5. Special Features- S(sfea): Special features of the facility space (e.g., ground vehicles, live-ordnance capability, chem-bio capability, directed energy weapons (high power microwave and high energy laser) capability)

S(sfea) = Sum of (GV + SV + SP + WP + MP + BIO + HS + CB + SE)/MAX Sum of (GV + SV + SP + WP + MP + BIO + HS + CB + SE) of the like facility with the highest score

DOD#3007: Special Features at your Technical Facility RD(A)T&E
Question: Please identify the special features listed below that can be performed at your location.

Special Feature	Research (Yes/No)	D&A (Yes/No)	T&E (Yes/No)	
Biomedical (Data from Medical Capacity data Call) (BIO)				
BIO Level 3 labs with Aerosol Capability				Score 0.5
BIO Level 4 labs with Aerosol Capability				Score 1.0
BIO Hypobaric Man rated chambers				Score 0.7

occupancy >= 2 weeks				
BIO Non Human Primate Capacity >25				Score 0.7
Chem-Bio Defense (CB)				
Chem Bio Disperse and Analyze Chem Bio Simulants over a square mile				Score 1.0
Weapons				
WP Able to detonate projectiles in excess 120mm				Score 1.0
WP Able to handle/detonate live ordnance > 500lbs HE				Score 1.0
WP Able to operate high power laser and microwaves in non OAR				Score 1.0
Human Systems				
HS Chambers, courses, facilities, etc providing realistic mission environments for the evaluation of human systems				Score 1.0
Materials and Processes				
MP Demonstrated ability/capability through labs, test ranges, chambers, etc to				Score 1.0

evaluate/demonstrate the protection of military personnel and equipment, using advanced materials and processes				
Sensors, Electronics & Electronic Warfare				
SE Indoor radiating Facility > 100ft long X 30 ft wide 10ft tall				Score 1.0
Sea Vehicles				
SV able to operate, measure and control at < than 20% full scale				Score 0.7
SV able to operate, measure and control at >= to 20% full scale				Score 0.2
Space Platforms				
SP Able to monitor & control orbital/sub orbital operations				Score 0.5

Biomedical (BIO)

Biosafety level 3 labs with Aerosol Capability

Biosafety level 4 labs with Aerosol Capability

Hypobaric man rated chambers, occupancy for two weeks or more

AAALAC Accredited Animal Facilities (non human primate holding capacity >25)

Chem-Bio Defense (CB)

Ability to disperse and analyze Chemical-Biological simulants over a square mile.

Human Systems (HS)

Includes human-rated chamber facilities, facilities capable of simulating environmental conditions, facilities capable of testing human systems and equipment together, facilities/courses capable of evaluating operational/mission conditions (e.g. physical task and cognitive task performance), and facilities/unique capabilities for evaluating effects-based decision aids and information visualization systems.

Materials and Processes (MP)

Chambers, labs, facilities, etc, able to test and demonstrate the protection level/survivability of individual combatant and military equipment against against a wide range of threats including ballistic threats, laser, fire/flame, and chemical biological (using simulants or live agent)

Sensors, Electronics & Electronic Warfare (SE)

Indoor radiating facility no less than 100 feet long X 30 feet wide X 10 feet tall

Sea Vehicles (SV)

Ability to operate, measure signatures, and control surface or sub-surface vessels at 20% full scale and above

Ability to operate, measure signatures, and control surface or sub-surface vessels at less than 20% full scale

Space Platforms (SP)

Ability to monitor and control orbital and/or sub-orbital vehicles through the full spectrum of operations (launch, flight, and recovery)

Weapons (WP)

Ability to handle and detonate live ordnance in excess of 500 pounds HE.

Ability to operate high power laser and high power microwaves in a non open-air range environment

Ability detonate projectiles in excess of 120mm

Rationale:	Technical operations in support of the military sometimes need special features. Presence of special features at a location contributes to Military Value.

6. Encroachment– S(enc): Loss during FY01 – FY03 of operating envelop due to change in available operating space, frequency spectrum, and licenses.

S(enc) = [S(env) + S(lic)]/max [S(env) + S(lic))] for the largest like facility

Where

S(env) = 22-[S(end) + S(cul) + S(uxo) + S (freq) + S(marine) + S(air) + S(restrictions) + S(water) + S(wetlands) + S(noise) + S(urban) at a facility]/ MAX(22-[S(end) + S(cul) + S(uxo) + S (freq) + S(marine) + S(air) + S(restrictions) + S(water) + S(wetlands) + S(noise) + S(urban)]) of the like facility with highest score]

S(xxx): precludes = 2, can do with limitations = 1, no impact =0

Where:

S(end) = the constraint placed by threatened/endangered species and critical habitat.

S(cul) = the cultural constraint placed on use by the presence of national historic sites, archeological sites and Native American asserted interest.

S(uxo) = the constraint placed by the presence or generation of unexploded ordinance.

S(freq) = the frequency spectrum constraint placed on electromagnetic radiation and emissions.

S(marine) = the constraint resulting from the Marine Mammal Protection Act, Marine Sanctuaries, presence of marine animals or other marine restrictions.

S(air) = the clean air quality constraint based on air quality controls, emissions, or permits.

S(restrictions) = the constraint by laws, regulations, and policies.

S(water) = the constraint based upon ground water conservation or contamination requirements.

S(wetlands) = the constraint resulting from jurisdictional wetlands.

S(noise) = the constraint which prohibits, limits, delays, alters or cause modifications of operations.

S(urban) = the constraint as a result of urbanization and encroachment.

Where

S(lic) =2- Facility score

Scoring: Lost more than 1 operating license = 2; Lost 1 operating license = 1; Lost no operating Licenses =0

DOD#3008: Environmental Constraints

Question: Using the multiple choice, identify the impact of Endangered Species, Cultural, Unexploded Ordnance, Frequency Restrictions, Marine Mammals, air, water, wetlands, noise, and urban constraints in effect at any time between FY01 and FY03 that restrict(ed) mission related operations within each technical capability and function you perform.
Choose "Precludes", "Can do with Limitations", or "No Impact" to operations within a technical capability and function.

DOD#3009: Environmental Constraints (Licenses Lost) RD(A)T&E

Question: Provide the count of all licenses lost between FY01 and FY03 due to the environmental constraints:
Endangered Species
Cultural
Unexploded Ordnance
Frequency Restrictions
Marine Mammals
Air Quality
Community Restrictions
Water
Wetlands
Noise
Urban constraints
Identify the licenses lost by the Technical Capability and Function impacted by the loss.

Rationale:	Environmental constraints can restrict technical operations. Absence of constraints contributes to

	Military Value.

PHYSICAL STRUCTURE & EQUIPMENT

S(pse) for a facility = [k_1S(unq) + k_2 S(doa) + k_3S(vbc) + k_4S(vu)]

Where:

S(pse) is the total score establishing the Military Value for a facility's physical structures and equipment. Only use in these calculations facilities (physical structures) or equipment (e.g., office building, laboratory, wind tunnel, pilot plant, etc.) with replacement value greater than or equal to $3M. The totality of the facilities and equipment was reported in capacity data call questions #686 & #687.

7. Uniqueness – S(unq): Facilities (physical structures) and equipment which offers the only such technical capability within the DoD and the replacement cost exceeds $3M.

S(unq) = Sum of (all facility's UC)/MAX Sum of (all facility's UC) for the like facility with the most unique capabilities

UC = number of facilities (physical structures) and equipment that offer a DoD unique technical capability with a replacement cost of >$3M

Question: See value utilization question

Rationale:	Costly physical structures and equipment used to do technical functions contribute to Military Value

8. Depth of Application— S(doa): The aggregate use of people, physical environment, infrastructure and equipment by a technical facility performing integration/testing for each of the following above the component level: sub-systems, systems, and system-of-systems, with an aggregate annual

funding level >$10M for each reported level (sub-systems, systems and system-of-systems).

Sub Systems: RD(A)T&E effort that develops or improves the effectiveness of a subsystem (For instance Sensor, propulsion, weapons delivery, and communications). The results of this effort are integrated and optimized in the RD(A)T&E of Systems. Individual Key Performance Parameters (Interim Defense Acquisition Guidebook Section C1.4.3.1 Performance) often dictate the RD(A)T&E effort on subsystems. Examples: Laser Communication, Radar Absorbing Material Technology, weapon components and Supersonic Propulsion.

Systems: RD(A)T&E effort that develops or improves the effectiveness of a platform. The effort focuses on integrating subsystems (For instance Sensor, propulsion, weapons delivery, and communications) to optimize the operation of a platform or unit. The summary direction of Key Performance Parameters (Other than Net-Ready CJCSI 3170.01D sec 4.f(3)) and Configuration Control Boards often dictate the RD(A)T&E effort on systems. Examples: M-1 Abrams, F-18E, F-22.

System of Systems: RD(A)T&E effort that integrates more than one platform for simultaneous and linked operations. The Research, Development, and Test effort focuses on integrating systems (Platforms and Units) to optimize the operational affect of Joint Forces.

S(doa) = Reported Level/3

1 point for demonstrated ability to support subsystem, or system, or system-of-system level
2 points for demonstrated ability to support two of the levels
3 points for demonstrated ability to support all three levels

DOD#3010: Depth of Application Sub System RD(A)T&E
Question: Select the technical capability and function(s) performing RD(A)T&E efforts at the subsystem level and where the funding exceeds $10M and whose FTEs exceed 30 aggregated over the period FY01-03

DOD#3011: Depth of Application Systems RD(A)T&E
Question: Select the technical capability and function(s) performing RD(A)T&E effort at the system level and where the funding exceeds $10M and whose FTEs exceed 30 aggregated over the period FY01-03

DOD#3012: Depth of Application System of Systems RD(A)T&E
Question: Select the technical capability and function(s) performing RD(A)T&E effort at the System of Systems level and where the funding exceeds $10M and whose FTEs exceed 30 aggregated over the period FY01-03

Rationale:	These capabilities allow the warfighter to take advantage of all available information to meet a challenge in a rapid and flexible manner. Significant application of resources across the spectrum sub-system, system, and system of systems contributes to Military Value.

9. Building Condition—S(bc): Measured by the Facility Condition Index (FCI), square footage and value of the facility space using the equations below.

Metric: Building Condition (VBC)
Attribute: Physical Plant: Condition
BRAC Selection Criterion
Data Required: Building Facility Condition Index (FCI); Square

Footage & Value

Formula:

where

$$S(bc) = \left[1 - \sum_{n=1}^{m} \frac{(C_n)(SF_n)}{\text{Square Feet}_{Total}}\right] / \text{Maximum sum for the like facility by function and technical capability area with the highest score}$$

where C_n is a factor related to the FCI of the nth building (C = 0.0, 0.33, 0.67, or 1.0 for FCI = C-1, C-2, C-3, or C-4, respectively),

SF_n is the square footage of the nth building,

SF_{Total} is the combined total square footage of all buildings for the technical facility, and

%Used = equals percent of an 8760 hour year in which the building was used.

"Service Facility Condition Codes" will have to be converted to meet equation requirements:

USAF - 1 through 6 in accordance with USAF BRAC Library

USN - Adequate, Substandard, or Inadequate in accordance with INFADS

USA - Green, Amber, or Red

Rationale/Comments: Value is based on the weighted average condition across all buildings occupied by the activity, with weighting based on square footage. The condition score, C, is derived directly from the FCI, a four point scale based on the ratio of current capital investment required for a building to meet required/desired mission performance to the total replacement value of the building. A building with a low ratio (<.25, C-1) is in

good condition and requires little or no investment, while a building in poor condition has a high ratio (>.75, C-4).

DOD#3013: Infrastructure Utilization (Foot Print) RD(A)T&E
Question: For all buildings used for RDTE&A function that were occupied on September 30, 2003, provide the best approximation of Usable Square Feet and the count of RD(A)T&E workforce (civilian, military, and contractors on-site) employed for each function and technical capability performed in the building.

10. Value Utilization—S(vu): Measure of the Value of structures and physical equipment multiplied by their utilization.

Metric Value Utilization (vu)
Attribute: Physical Plant: Value and Utilization
BRAC Selection Criterion:
Data Required: Value of Physical Structures and Equipment, Utilization thereof
Formula: $$S(vu) = \frac{\sum_{i=1}^{N}(V_i * U_i)}{Max\_VU}$$ Where N is the number of structures and equipment reported Where V_i is the Replacement Cost of the i^{th} physical structure or equipment, Where U_i is the Utilization in days of the i^{th} physical structure or

equipment Where Max_VU is the Maximum Value*Utilization value reported by a like-facility.
Rationale: The Military Value of the physical structure and equipment is related to both the cost of the equipment & to its utilization. Costly infrastructure has Military Value which increases with the frequency the infrastructure is used.

DOD#3014: Replacement Cost Equipment and Days Used RD(A)T&E
Question: Provide the estimated FY03 replacement cost, to the nearest million dollars for Technical Equipment that is valued above $3MReport equipment valued at >$3M or requires special engineering for which disassembly/reassembly/installation costs would exceed $3M. Additionally, for each combination of function and technical capability area, provide the days used in FY01, FY02, and FY03.

DOD#3015: Replacement Cost Facilities and Days used RD(A)T&E
Question: Provide the estimated FY03 replacement cost, to the nearest million dollars for Facilities valued above $3M. Additionally, for each combination of function and technical capability area, provide the days used in FY01, FY02, and FY03.

OPERATIONAL IMPACT

$S(oi)\ R = [k_1S(ttda) + k_2S(actd) + k_3S(qrc) + k_4S(foc) + k_5S(fwc) + k_6S(OI\_Cost\_R)]$

$S(oi)\ D\&A = [k_1S(acat) + k_2S(qrc) + k_3S(foc) + k_4S(fwc) + k_5S(OI\_Cost\_DA)]$

$S(oi)\ T\&E = [k_1S(tiw) + k_2S(qrc) + k_3(foc) + k_4S(fwc) + k_5S(OI\_Cost\_TE)]$

Where:

S(oi): is the total score establishing a Military Value of the operational impact of the technical infrastructure of a facility.

S(oi) R

11. Technology Transition—S(ttda): Technologies transitioned into Development and Acquisition over the past three years.

S(ttda) = Sum of (technologies transitioned into development and acquisition by an R facility)/Sum of (technologies transitioned into development and acquisition) for the like facility with the highest number of transitions

Total of all technologies transitioned by a facility into Development and Acquisition over last 3 years (i.e., 2001 – 2003)

DOD#3016: Funded Research Transitioned to Development and Acquisition RD(A)T&E

Question: List by name each 6.1, 6.2 and 6.3 funded technology (e.g., hardware, software and processes) that has transitioned to development and acquisition or directly to a DoD military

organization (e.g., 82nd Airborne Division) or directly to a Commercial entity (e.g. copyright to 'XXXX Inc.') during FY01, FY02 and FY03, including the name of the development and acquisition program(s) that received the technology.

Question Rationale:	A recent history of the transition of technology contributes to Military Value
Scoring Rationale:	The scoring is designed to give more MV to those facilities that deliver more Operationally relevant products. As the value of a specific technology transition is subjective, all are treated equally.

12. Advanced Technology Demos Currently in work—S(actd): ACTD, ATD, DTO (Defense Technology Objective), and TTA (Technology Transition Agreement) currently in work.

S(actd) = Sum of total funding for FY01-02-03 (total of all ACTD/ATD/DTO/TTA by technical capability)/Max Sum of total funding for FY01-02-03 (total of all ACTD/ATD/DTO/TTA) for the like facility with the highest total funding of transitions

DOD#3017: Technology Demonstration, Development, Objectives Funding RD(A)T&E

Question: Provide a count and total funding for FY01-02-03 of all Advanced Concept Technology Demonstration (ACTD), Advanced Technical Demonstration (ATD), Defense Technology Objective (DTO), Technology Transfer Agreement (TTA) that were currently in work at the end as 30 September 2003. Indicate one technical capability area and function with which to associate each. Do not include TTAs for reported ACTDs, ATDs, or DTOs.

Rationale:	Ongoing technology demonstrations contribute to

	Military Value

13. Rapid Response—S(qrc): Capabilities delivered in rapid response to meet operational deficiencies over the past three years

S(qrc) = Sum of total funding for FY01-02-03 for all rapid fieldings by the technical facility)/Max Sum of total funding for FY01-02-03 for all rapid fieldings) for the like facility with the highest total funding of rapid responses to operational deficiencies

Each rapid response or fielding to meet operational deficiencies over last 3 years

DOD#3018: Rapid Response capability delivered to the warfighter RD(A)T&E

Question: List by name and total funding for FY01-02-03, broken down by technical capability area and function, each rapid response capability delivered in response to an urgent war fighter request (e.g. Urgent Need Statement, Urgent Material Release, Quick Response Capability) during the time frame FY01-03 that was delivered in less than 12 months from identification of operational need to the reporting technical facility. In addition, identify the operational command/unit that requested and received the capability along with the quantity/number of items fielded.

Rationale:	A recent history of rapid response capability (e.g. Urgent Need Statement, Urgent Material Release, Quick Response Capability) accepted by the operational command contributes to Military Value

<u>14. Workload Focus—</u> S(foc): The magnitude of work effort at a technical facility compared to the work effort of like technical facilities

S(foc) = [.9X(FTFEi/MTFEi$_i$) + .1X(FTFEe/MTFEe) + (FFTEs/MFFTEs)]/2

FTFEi = funding executed internally by the technical facility (includes personnel salaries) over the last three years (FY01-03)

MTFEi= maximum funding executed internally by any like-facility (includes personnel salaries) over the last three years (FY01-03)

FTFEe = funding executed externally by the technical facility over the last three years (FY01-03)

MTFEe = maximum funding executed externally by any like technical facility over the last three years (FY01-03)

FFTEs = In house FTEs at the technical facility over the last three years (FY01-FY03)

MFFTEs = maximum # of FTEs at any like facility over the last three years (FY01-FY03)

Question: Refer to Capacity Supplemental Data Call Question 4277 for counting FTEs and the funding executed by the facility for each technical capability area. .

Rationale:	The relative magnitude of the work effort at a technical facility is proportional to its Military Value

<u>15. Future Warfighting Capability</u>—S(fwc): The measure of a technical facility to meet the needs of the future warfighter. The following areas have been identified by as future high value warfighting capabilities/technologies that will be needed:

Advanced Detection and Mitigation of CBNRE
Advanced Guided Weapons
Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons
Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift
Hypersonics
Information Warfare
Integrated Warrior
Laser Communication
Network Centric Info Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space (Enhanced Domain)
Unmanned Vehicles

$S(fwc) = [.9X(FTFEi/MTFEi_i) + .1X(FTFEe/MTFEe) + (FFTEs/MFFTEs)]/2$

FTFEi = funding executed internally by the technical facility (includes personnel salaries) over the last three years (FY01-03)

MTFEi= maximum funding executed internally by any like-facility (includes personnel salaries) over the last three years (FY01-03)

FTFEe = funding executed externally by the technical facility over the last three years (FY01-03)

MTFEe = maximum funding executed externally by any like technical facility over the last three years (FY01-03)

FFTEs = In house FTEs at the technical facility over the last three years (FY01-FY03)

MFFTEs = maximum # of FTEs at any like facility over the last three years (FY01-FY03)

Rationale:	Efforts associated with the listed high value future warfighting capabilities/technologies provide Military Value.

DOD#3019: Technical Intramural Funding Focus RD(A)T&E
Question: Select the warfighter capability appearing on the list below and identify the funding that has been executed intramurally in each capability by year for FY01, FY02, FY03,. Report the amount of funding within each technical capability and function.

Advanced Detection and Mitigation of CBNRE
Advanced Guided Weapons
Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons
Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift
Hypersonics
Information Warfare
Integrated Warrior

Laser Communication
Network Centric Info Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space (Enhanced Domain)
Unmanned Vehicles

DOD#3020: Technical Extramural Funding Focus RD(A)T&E

Question: Select the warfighter capability appearing on the list below and identify the funding that has been executed extramurally in each capability by year for FY01, FY02, FY03,. Report the amount of funding within each technical capability and function.

Advanced Detection and Mitigation of CBNRE
Advanced Guided Weapons
Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons
Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift
Hypersonics
Information Warfare
Integrated Warrior
Laser Communication
Network Centric Info Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space (Enhanced Domain)
Unmanned Vehicles

DOD#3021: Technical Workload Focus by PATCOB RD(A)T&E

Question: Report the number of Professional and Technical FTE's for each of the Warfighter Capabilities listed below. Report the number of FTEs within in each technical capability and function by year for FY01, FY02, FY03.

Advanced Detection and Mitigation of CBNRE
Advanced Guided Weapons
Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons
Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift
Hypersonics
Information Warfare
Integrated Warrior
Laser Communication
Network Centric Info Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space (Enhanced Domain)
Unmanned Vehicles

16. Cost of Operations_Research – S(OI_Cost_R):

$S(OI\_Cost\_R) = [(k_1S(ttda) + k_2S(actd) + k_3S(qrc))/\text{Total Number of FTEs}]/MAX [(k_1S(ttda) + k_2S(actd) + k_3S(qrc))/\text{Total Number of FTEs}]$ for the like facility with the highest score.

Total Number of FTEs – All categories of the PATCOB workforce (military, government civilian, and others) for which the technical facility is obliged to provide space. Other means non-government personnel (e.g., all on-site contractors such as SETA, A&AS, A76, all on-site FFRDC personnel, Intergovernmental Personnel Act appointees, etc.)

Question: Refer to Capacity Supplemental Data Call Question 4277 for counting FTEs in each Technical capability area in FY01, FY02, and FY03.Total Number of FTEs is defined as the sum of FY01, FY02, and FY03 FTEs.

All other information gathered previously for other metrics.

Rationale:	An effective technical facility will have a higher Cost Metric than a less effective technical facility.
Scoring Rationale	The scoring is designed to give greater Military Value to facilities that have a higher technical output to Personnel Workforce ratio. The specific weights assigned to the Cost Metric are the result of collective Professional Military Judgment.

S(oi) D&A

17. Systems Fielded/Currently in Work—S(acat): Each ACAT I, II, III and IV system fielded (IOC) in the last 3 years or currently in work

S(acat) = Sum of (AFIII/IV + 2X AFII + 3X AFI)/MAX Sum of (AFIII/IV + 2X AFII + 3X AFI) for the like facility with the highest total score

Include all products delivered to operational use in the last 3 years

AFIII/IV = number of ACAT III and ACAT IV products fielded or in work

AFII = number of ACAT II products fielded or in work

AFI = number of ACAT I products fielded or in work

Question	A recent history of fielding products valued by Under

Rationale:	Secretary of Defense (Acquisition and Technology) or DoD Component Head or DoD Component Acquisition Executive contributes to Military Value.
Scoring Rationale:	The scoring is designed to give more MV to those facilities that deliver more Operationally relevant products. Since ACAT levels are well defined across the DoD and there is recognition that ACAT level 1 is more challenging than ACAT level II which is more challenging than ACAT levels III & IV. Each is weighted, the result of Professional Military Judgment.

DOD#3022: Acquisition Category (ACAT) Delivered Count RD(A)T&E

Question: By technical capability area in the D&A function identify the count of ACAT I, ACAT II programs that have been fielded during FY01-03. Report the program if you are the executive agent or where the funding exceeds $10M or FTEs exceed 30 aggregated over the period FY01-03.

DOD#3023: Acquisitions Category (ACAT) In Work Count RD(A)T&E

Question: By technical capability area in the D&A function, identify the count of ACAT I and II programs that were in work at your technical facility as of 30 September 2003. Report the program if you are the executive agent or where the funding exceeds $10M or FTEs exceed 30 aggregated over the period FY01-03.

18. Rapid Response—S(qrc): Capabilities delivered in rapid response to meet operational deficiencies over the past three years

S(qrc) = Sum of total funding for FY01-02-03 for all rapid fieldings by the technical facility)/Max Sum of total funding for FY01-02-03 for all rapid fieldings) for the like facility with the highest total funding of rapid responses to operational deficiencies

Each rapid response or fielding to meet operational deficiencies over last 3 years

DOD#3018: Rapid Response capability delivered to the warfighter RD(A)T&E

Question: List by name and total funding for FY01-02-03, broken down by technical capability area and function, each rapid response capability delivered in response to an urgent war fighter request (e.g. Urgent Need Statement, Urgent Material Release, Quick Response Capability) during the time frame FY01-03 that was delivered in less than 12 months from identification of operational need to the reporting technical facility. In addition, identify the operational command/unit that requested and received the capability along with the quantity/number of items fielded.

Rationale:	A recent history of rapid response capability (e.g. Urgent Need Statement, Urgent Material Release, Quick Response Capability) accepted by the operational command contributes to Military Value

19. Workload Focus— S(foc): The magnitude of work effort at a technical facility compared to the work effort of like technical facilities

S(foc) = [.8X(FTFEi/MTFEi$_i$) + .2X(FTFEe/MTFEe) + (FFTEs/MFFTEs)]/2

FTFEi = funding executed internally by the technical facility (includes personnel salaries) over the last three years (FY01-03)

MTFEi= maximum funding executed internally by any like-facility (includes personnel salaries) over the last three years (FY01-03)

FTFEe = funding executed externally by the technical facility over the last three years (FY01-03)

MTFEe = maximum funding executed externally by any like technical facility over the last three years (FY01-03)

FFTEs = In house FTEs at the technical facility over the last three years (FY01-FY03)

MFFTEs = maximum # of FTEs at any like facility over the last three years (FY01-FY03)

Question: Refer to Capacity Supplemental Data Call Question 4277 for counting FTEs and the funding executed by the facility for each technical capability area. .

Rationale:	The relative magnitude of the work effort at a technical facility is proportional to its Military Value

20. Future Warfighting Capability—S(fwc): The measure of a technical facility to meet the needs of the future warfighter. The following areas have been identified by as future high value warfighting capabilities/technologies that will be needed:

Advanced Detection and Mitigation of CBNRE

Advanced Guided Weapons
Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons
Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift
Hypersonics
Information Warfare
Integrated Warrior
Laser Communication
Network Centric Info Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space (Enhanced Domain)
Unmanned Vehicles

$S(fwc) = [.8X(FTFEi/MTFEi_i) + .2X(FTFEe/MTFEe) + (FFTEs/MFFTEs)]/2$

FTFEi = funding executed internally by the technical facility (includes personnel salaries) over the last three years (FY01-03)

MTFEi= maximum funding executed internally by any like-facility (includes personnel salaries) over the last three years (FY01-03)

FTFEe = funding executed externally by the technical facility over the last three years (FY01-03)

MTFEe = maximum funding executed externally by any like technical facility over the last three years (FY01-03)

FFTEs = In house FTEs at the technical facility over the last three years (FY01-FY03)

MFFTEs = maximum # of FTEs at any like facility over the last three years (FY01-FY03)

Rationale:	Efforts associated with the listed high value future warfighting capabilities/technologies provide Military Value.

DOD#3019: Technical Intramural Funding Focus RD(A)T&E
Question: Select the warfighter capability appearing on the list below and identify the funding that has been executed intramurally in each capability by year for FY01, FY02, FY03,. Report the amount of funding within each technical capability and function.

Advanced Detection and Mitigation of CBNRE
Advanced Guided Weapons
Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons
Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift
Hypersonics
Information Warfare
Integrated Warrior
Laser Communication
Network Centric Info Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space (Enhanced Domain)
Unmanned Vehicles

DOD#3020: Technical Extramural Funding Focus RD(A)T&E

Question: Select the warfighter capability appearing on the list below and identify the funding that has been executed extramurally in each capability by year for FY01, FY02, FY03,. Report the amount of funding within each technical capability and function.

Advanced Detection and Mitigation of CBNRE
Advanced Guided Weapons
Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons
Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift
Hypersonics
Information Warfare
Integrated Warrior
Laser Communication
Network Centric Info Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space (Enhanced Domain)
Unmanned Vehicles

DOD#3021: Technical Workload Focus by PATCOB RD(A)T&E

Question: Report the number of Professional and Technical FTE's for each of the Warfighter Capabilities listed below. Report the number of FTEs within in each technical capability and function by year for FY01, FY02, FY03.

Advanced Detection and Mitigation of CBNRE
Advanced Guided Weapons
Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons

Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift
Hypersonics
Information Warfare
Integrated Warrior
Laser Communication
Network Centric Info Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space (Enhanced Domain)
Unmanned Vehicles

21. Cost of Operations_D&A – S(OI_Cost_DA):

S(OI_Cost_D&A) = [(k_1S(acat) + k_2S(qrc))/Total Number of FTEs]/MAX [(k_1S(acat) + k_2S(qrc))/Total Number of FTEs] for the like facility with the highest score

Total Number of FTEs – All categories of the PATCOB workforce (military, government civilian, and others) for which the technical facility is obliged to provide space. Other means non-government personnel (e.g., all on-site contractors such as SETA, A&AS, A76, all on-site FFRDC personnel, Intergovernmental Personnel Act appointees, etc.)

Question: Refer to Capacity Supplemental Data Call Question 4277 for counting FTEs in Tecchnical capability area in FY01, FY02, and FY03.Total Number of FTEs is defined as the sum of FY01, FY02, and FY03 FTEs.

All other information gathered previously for other metrics.

Rationale:	An effective technical facility will have a higher Cost Metric than a less effective technical facility.

Scoring Rationale	The scoring is designed to give greater Military Value to facilities that have a higher technical output to Personnel Workforce ratio. The specific weights assigned to the Cost Metric are the result of collective Professional Military Judgment.

S(oi) T&E

22. Current Testing in Work—S(tiw): Total testing workload in test hours over the last three years (FY01-03).

S(tiw) = [Sum(test hours) for a facility/Max Sum(test hours) for the largest like facility

Question: Use Capacity Supplemental Question 4283 as the source of executed test hours and events.

Rationale:	Ability to conduct tests of military equipment/processes provides Military Value.

23. Rapid Response—S(qrc): Capabilities delivered in rapid response to meet operational deficiencies over the past three years

S(qrc) = Sum of total funding for FY01-02-03 for all rapid fieldings by the technical facility)/Max Sum of total funding for FY01-02-03 for all rapid fieldings) for the like facility with the highest total funding of rapid responses to operational deficiencies

Each rapid response or fielding to meet operational deficiencies over last 3 years

DOD#3018: Rapid Response capability delivered to the warfighter RD(A)T&E

Question: List by name and total funding for FY01-02-03, broken down by technical capability area and function, each rapid response capability delivered in response to an urgent war fighter request (e.g. Urgent Need Statement, Urgent Material Release, Quick Response Capability) during the time frame FY01-03 that was delivered in less than 12 months from identification of operational need to the reporting technical facility. In addition, identify the operational command/unit that requested and received the capability along with the quantity/number of items fielded.

Rationale:	A recent history of rapid response capability (e.g. Urgent Need Statement, Urgent Material Release, Quick Response Capability) accepted by the operational command contributes to Military Value

<u>24. Workload Focus—</u> S(foc): The magnitude of work effort at a technical facility compared to the work effort of like technical facilities

$S(foc) = [1.0X(FTFEi/MTFEi_i) + 0.0X(FTFEe/MTFEe) + (FFTEs/MFFTEs)]/2$

FTFEi = funding executed internally by the technical facility (includes personnel salaries) over the last three years (FY01-03)

MTFEi= maximum funding executed internally by any like-facility (includes personnel salaries) over the last three years (FY01-03)

FTFEe = funding executed externally by the technical facility over the last three years (FY01-03)

MTFEe = maximum funding executed externally by any like technical facility over the last three years (FY01-03)

FFTEs = In house FTEs at the technical facility over the last three years (FY01-FY03)

MFFTEs = maximum # of FTEs at any like facility over the last three years (FY01-FY03)

Question: Refer to Capacity Supplemental Data Call Question 4277 for counting FTEs and the funding executed by the facility for each technical capability area. .

Rationale:	The relative magnitude of the work effort at a technical facility is proportional to its Military Value

<u>25. Future Warfighting Capability</u>—S(fwc): The measure of a technical facility to meet the needs of the future warfighter. The following areas have been identified by as future high value warfighting capabilities/technologies that will be needed:

Advanced Detection and Mitigation of CBNRE
Advanced Guided Weapons
Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons
Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift

Hypersonics
Information Warfare
Integrated Warrior
Laser Communication
Network Centric Info Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space (Enhanced Domain)
Unmanned Vehicles

$S(fwc) = [1.0X(FTFEi/MTFEi_i) + 0.0X(FTFEe/MTFEe) + (FFTEs/MFFTEs)]/2$

FTFEi = funding executed internally by the technical facility (includes personnel salaries) over the last three years (FY01-03)

MTFEi= maximum funding executed internally by any like-facility (includes personnel salaries) over the last three years (FY01-03)

FTFEe = funding executed externally by the technical facility over the last three years (FY01-03)

MTFEe = maximum funding executed externally by any like technical facility over the last three years (FY01-03)

FFTEs = In house FTEs at the technical facility over the last three years (FY01-FY03)

MFFTEs = maximum # of FTEs at any like facility over the last three years (FY01-FY03)

Rationale:	Efforts associated with the listed high value future warfighting capabilities/technologies provide Military Value.

DOD#3019: Technical Intramural Funding Focus RD(A)T&E
Question: Select the warfighter capability appearing on the list below and identify the funding that has been executed intramurally in each capability by year for FY01, FY02, FY03,. Report the amount of funding within each technical capability and function.

Advanced Detection and Mitigation of CBNRE
Advanced Guided Weapons
Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons
Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift
Hypersonics
Information Warfare
Integrated Warrior
Laser Communication
Network Centric Info Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space (Enhanced Domain)
Unmanned Vehicles

DOD#3020: Technical Extramural Funding Focus RD(A)T&E
Question: Select the warfighter capability appearing on the list below and identify the funding that has been executed extramurally in each capability by year for FY01, FY02, FY03,. Report the amount of funding within each technical capability and function.

Advanced Detection and Mitigation of CBNRE
Advanced Guided Weapons

Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons
Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift
Hypersonics
Information Warfare
Integrated Warrior
Laser Communication
Network Centric Info Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space (Enhanced Domain)
Unmanned Vehicles

DOD#3021: Technical Workload Focus by PATCOB
RD(A)T&E

Question: Report the number of Professional and Technical FTE's for each of the Warfighter Capabilities listed below. Report the number of FTEs within in each technical capability and function by year for FY01, FY02, FY03.

Advanced Detection and Mitigation of CBNRE
Advanced Guided Weapons
Advanced Propulsion
Anti-Materiel Weapons
Directed Energy Weapons
Distributed Netted Sensors
EM Guns and Accelerators
Fast, Survivable Sealift
Hypersonics
Information Warfare
Integrated Warrior
Laser Communication

Network Centric Info Management
Next Generation Stealth Enhanced Vehicles
Non-Lethal Weapons and Effects
Space (Enhanced Domain)
Unmanned Vehicles

26. Cost of Operations_T&E – S(OI_Cost_TE):

S(OI_Cost_TE) = [(k_1S(tiw) + k_2S(qrc))/Total Number of FTEs]/MAX [(k_1S(tiw) + k_2S(qrc))/Total Number of FTEs] for the like facility with the highest score

Where:

S(OI_Cost_TE): is the total score establishing a Military Value of the cost metric of operational impact of the technical infrastructure of a facility.

Total Number of FTEs – All categories of the PATCOB workforce (military, government civilian, and others) for which the technical facility is obliged to provide space. Other means non-government personnel (e.g., all on-site contractors such as SETA, A&AS, A76, all on-site FFRDC personnel, Intergovernmental Personnel Act appointees, etc.)

Question: Refer to Capacity Supplemental Data Call Question 4277 for counting FTEs in Technical capability area in FY01, FY02, and FY03.Total Number of FTEs is defined as the sum of FY01, FY02, and FY03 FTEs.
All other information gathered previously for other metrics.

Rationale:	An effective technical facility will have a higher Cost Metric than a less effective technical facility.
Scoring Rationale	The scoring is designed to give greater Military Value to facilities that have a higher technical output to Personnel

	Workforce ratio. The specific weights assigned to the Cost Metric are the result of collective Professional Military Judgment.

SYNERGY

S(syn) for a facility = [k_1S(mfc) + k_2S(jnt) + k_3S(prox) + k_4S(duc)]

Where:
S(syn) is the total score establishing a Military Value of synergy of the technical infrastructure of a facility.

27. Multiple Functions/Capability Areas—S(mfc): accomplishment of more than one function or capability area at a facility

S(mfc) = Sum of (F + C)/ MAX Sum of (F + C) of the like facility with the highest score

F =
1 point if 10% or more of funded work is in another function (i.e., R, D&A, T&E)
2 points if 10% or more of funded work is in all the functions

C =
1 point if 10% or more of funded work is in another technical capability area
2 points if 10% or more of funded work is in two or three other technical capability areas
3 points if 10% or more of funded work is in four or more other technical capability areas

Question: Data for this question will be derived from analysis of the results of Capacity questions 734 through 746 inclusive (734-746: For the function identified provide the funding for three years (FY01, FY02, FY03) and the peak funding year

(from FY94 through FY03) for RDTE&A funding received at the location. When doing the comparisons for "F" and "C" in the above formula, the average funding level for FY01 through FY03 will be used.

Rationale:	Ability to support more than 1 function and/or capability provides Military Value.

28. Jointness—S(jnt): Executing a joint program at your facility, use of your facility's physical structure and/or personnel by other services/OSD, or another service's personnel assigned to your facility

S(jnt) = Sum of the total Joint $ at your facility / MAX Spent at the like facility with the highest score

DOD#3024: Technical Capability Joint Participation RD(A)T&E

Question: Identify by function and technical capability area all technical funded programs (e.g. Sidewinder, F-22, PATRIOT) in which your technical facility participated (managed and/or executed), along with associated funding levels for which external organizations benefit (e.g. supporting Joint Service (DoD), other domestic government, or international military requirements) during the period FY01 through FY03.

Rationale:	Support to multiple organizations (e.g. supporting Joint Service (DoD), other domestic government, or international military requirements) provides Military Value.

DOD#3025: Funding - Other Services Programs RD(A)T&E
Question: Identify by function and technical capability area all other Services' programs (including international and other government agencies) and funding that was executed at your technical facility during the FY01 through FY03.

29. Proximity—S(prox): Proximity of facility to customers/users, other functions (R, D&A, T&E), industry, governmental and academic institutions that add value to the facility's product.

S(prox) = Sum of (CUST + OF + IP + GA + AI)/MAX Sum of (CUST + OF + IP + GA + AI) for the like facility with the highest score

Proximity benefits only accrue to entities participating in the facility's capability area, in the last three years

CUST = 1 point for at least one customer/user co-located or located within 60 miles of the front/main gate of the facility

OF = 1 point for at least one each other function (R, D&A, T&E) co-located or located within 60 miles of the front/main gate of the facility

IP = 1 point if at least one industry partner is co-located or located within 60 miles of the front/main gate of the facility

GA = 1 point if at least one other non-DoD government agency co-located or located within 60 miles of the front/main gate of the facility

AI = 1 point if at least one academic institutions are co-located or located within 60 miles of the front/main gate of the facility

The Maximum value for Proximity-S(prox) is 6.

DOD#3026: Proximity RD(A)T&E

Question: Count all customers/users, industry partners, non-DoD agencies that were supporting your RD(A)T&E mission through formal agreement (e.g. contract, CRADA, Technical Exchange Agreement (TEA), Commercial Service Agreement (CSA), Memorandums of Agreement (MOA) Educational Partnership Agreement, etc.) as of 30 September 2003 and were either co-located or located within 60 miles of your front/main gate. In addition, count all university/college-level academic institutions that are located within 60 miles of your front/main gate.. Additionally count other functions (R, D&A, or T&E) performed within each technical capability in your technical facility at the end of FY03 and were either co-located or located within 60 miles of your front/main gate; e.g., your technical facility performs Air Platform Research work and another entity at your location performs Air Platform D&A - the D&A entity, then, would be counted as an "Other" function for Air Research.

Question Rationale:	This question is designed to identify business partners that provide synergistic support to the reporting activity's primary mission – the 60 mile limit is a nominal hour's driving time representing a distance a reasonable person might travel to collaborate.
Scoring Rationale:	The scoring is designed to give more Military Value to those facilities with more partners involved in their mission. As there was no basis for giving one partner more Military Value than another, all partners were treated equally.

<u>30. Dual Use Capacity</u>—S(duc): Use of a facility's technical infrastructure by academia, industry or international (non military) activities

S(duc) = Sum of (the score)/MAX Sum of (the score) of the like facility with the highest score

1 point for each use of a facility's technical infrastructure by academia, industry, or international activities

DOD#3027: Dual Use - Technical Infrastructure RD(A)T&E
Question: Provide a count and funding levels, broken down by technical capability and function, all academia, industry, non-military, or international programs/activities that used your technical infrastructure (buildings, labs, or equipment) through formal agreement (e.g. contract, CRADA, Technical Exchange Agreement (TEA), Commercial Service Agreement (CSA), Memorandums of Agreement (MOA) Educational Partnership Agreement, etc.) during FY01-03.

Rationale:	Dual use of existing technical infrastructure provides Military Value.

Section 5: Weights

ALSS D&A:								
Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Weight	Points
C1: Mission	53%	A1: People	25%	M1: Education	30%	M1: Question 1	100%	3.90%
				M2: Experience	50%	M2: Question 1	100%	6.50%
				M3: Certification	10%	M3: Question 1	100%	1.30%
				M4: Patents/Publication/sAwards	10%	M4: Question 1	100%	1.30%
		A2: Physical Environment	9%	M1 Special Features	55%	M1: Question 1	100%	2.75%
				M2: Encroachment	45%	M2: Question 1	100%	2.25%
		A3: Physical Structures & Equipment	8%	M1: Uniqueness	25%	M1: Question 1	100%	1.00%
				M2: Depth of Application	35%	M2: Question 1	100%	1.40%
				M3: Value Building Conditions	10%	M3: Question 1	100%	0.40%
				M4 Value Utilization	30%	M4: Question 1	100%	1.20%
		A4: Operational Impact	40%	M1 Systems Fielded/Current & In-works	45%	M1: Question 1	100%	9.45%
				M2: Rapid Responses	35%	M3: Question 1	100%	7.35%
				M3: Workload Focus	10%	M4: Question 1	100%	2.10%
				M4: Future Mil Val	10%	M5: Question 1	100%	2.10%
				M5: Cost of Operations	0%	M5: Question 1	100%	0.00%
		A5: Synergy	19%	M1: Multiple Functions	35%	M1: Question 1	100%	3.50%
				M2: Jointness	40%	M2: Question 1	100%	4.00%
				M3: Proximity	20%	M3: Question 1	100%	2.00%
				M4: Dual Use Capacilty	5%	M4: Question 1	100%	0.50%
C2: Facilities	12%	A1: People	0%	M1: Education	0%	M1: Question 1	100%	0.00%
				M2: Experience	0%	M2: Question 1	100%	0.00%
				M3: Certification	0%	M3: Question 1	100%	0.00%
				M4: Patents/Publication/sAwards	0%	M4: Question 1	100%	0.00%
		A2: Physical Environment	50%	M1 Special Features	50%	M1: Question 1	100%	3.00%
				M2: Encroachment	50%	M2: Question 1	100%	3.00%
		A3: Physical Structures & Equipment	50%	M1: Uniqueness	40%	M1: Question 1	100%	2.40%
				M2: Depth of Application	10%	M2: Question 1	100%	0.60%
				M3: Value Building Conditions	20%	M3: Question 1	100%	1.20%
				M4 Value Utilization	30%	M4: Question 1	100%	1.80%
		A4: Operational Impact	0%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	100%	0.00%
				M2: Rapid Responses	0%	M2: Question 1	100%	0.00%
				M3: Workload Focus	0%	M3: Question 1	100%	0.00%
				M4: Future Mil Val	0%	M4: Question 1	100%	0.00%
				M5: Cost of Operations	0%	M5: Question 1	100%	0.00%
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	100%	0.00%
				M2: Jointness	0%	M2: Question 1	100%	0.00%
				M3: Proximity	0%	M3: Question 1	100%	0.00%
				M4: Dual Use Capacilty	0%	M4: Question 1	100%	0.00%

Table B-1 Cont. Air Land Sea Space D&A

ALSS D&A:								
Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Weight	Points
C3: Contingency	25%	A1: People	20%	M1: Education	40%	M1: Question 1	100%	2.00%
				M2: Experience	30%	M2: Question 1	100%	1.50%
				M3: Certification	20%	M3: Question 1	100%	1.00%
				M4: Patents/Publication/sAwards	10%	M4: Question 1	100%	0.50%
		A2: Physical Environment	4%	M1 Special Features	50%	M1: Question 1	100%	0.50%
				M2: Encroachment	50%	M2: Question 1	100%	0.50%
		A3: Physical Structures & Equipment	16%	M1: Uniqueness	40%	M1: Question 1	100%	1.60%
				M2: Depth of Application	10%	M2: Question 1	100%	0.40%
				M3: Value Building Conditions	20%	M3: Question 1	100%	0.80%
				M4 Value Utilization	30%	M4: Question 1	100%	1.20%
		A4: Operational Impact	36%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	100%	0.00%
				M2: Rapid Responses	20%	M2: Question 1	100%	1.80%
				M3: Workload Focus	30%	M3: Question 1	100%	2.70%
				M4: Future Mil Val	50%	M4: Question 1	100%	4.50%
				M5: Cost of Operations	0%	M5: Question 1	100%	0.00%
		A5: Synergy	24%	M1: Multiple Functions	20%	M1: Question 1	100%	1.20%
				M2: Jointness	20%	M2: Question 1	100%	1.20%
				M3: Proximity	40%	M3: Question 1	100%	2.40%
				M4: Dual Use Capacilty	20%	M4: Question 1	100%	1.20%
C4: Cost	10%	A1: People	30%	M1: Education	50%	M1: Question 1	100%	1.50%
				M2: Experience	50%	M2: Question 1	100%	1.50%
				M3: Certification	0%	M3: Question 1	100%	0.00%
				M4: Patents/Publication/sAwards	0%	M4: Question 1	100%	0.00%
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	100%	0.00%
				M2: Encroachment	0%	M2: Question 1	100%	0.00%
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	100%	0.00%
				M2: Depth of Application	0%	M2: Question 1	100%	0.00%
				M3: Value Building Conditions	0%	M3: Question 1	100%	0.00%
				M4 Value Utilization	100%	M4: Question 1	100%	3.00%
		A4: Operational Impact	20%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	100%	0.00%
				M2: Rapid Responses	0%	M2: Question 1	100%	0.00%
				M3: Workload Focus	0%	M3: Question 1	100%	0.00%
				M4: Future Mil Val	0%	M4: Question 1	100%	0.00%
				M5: Cost of Operations	100%	M5: Question 1	100%	2.00%
		A5: Synergy	20%	M1: Multiple Functions	30%	M1: Question 1	100%	0.60%
				M2: Jointness	20%	M2: Question 1	100%	0.40%
				M3: Proximity	40%	M3: Question 1	100%	0.80%
				M4: Dual Use Capacilty	10%	M4: Question 1	100%	0.20%

Table B-1a Cont. Air Land Sea Space D&A

ALSS Research:								
Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Weight	Points
C1: Mission	53%	A1: People	32%	M1: Education	40%	M1: Question 1	100%	6.80%
				M2: Experience	25%	M2: Question 1	100%	4.25%
				M3: Certification	5%	M3: Question 1	100%	0.85%
				M4: Patents/Publication/sAwards	30%	M4: Question 1	100%	5.10%
		A2: Physical Environment	4%	M1 Special Features	50%	M1: Question 1	100%	1.00%
				M2: Encroachment	50%	M2: Question 1	100%	1.00%
		A3: Physical Structures & Equipment	13%	M1: Uniqueness	40%	M1: Question 1	100%	2.80%
				M2: Depth of Application	15%	M2: Question 1	100%	1.05%
				M3: Value Building Conditions	20%	M3: Question 1	100%	1.40%
				M4 Value Utilization	25%	M4: Question 1	100%	1.75%
		A4: Operational Impact	28%	M1: Technology Transition	35%	M1: Question 1	100%	5.25%
				M2: Advance Tech Demos	25%	M2: Question 1	100%	3.75%
				M3: Rapid Responses	25%	M3: Question 1	100%	3.75%
				M4: Workload Focus	5%	M4: Question 1	100%	0.75%
				M5: Future Mil Val	10%	M5: Question 1	100%	1.50%
				M6: Cost of Operations	0%	M6: Question 1	100%	0.00%
		A5: Synergy	23%	M1: Multiple Functions	25%	M1: Question 1	100%	3.00%
				M2: Jointness	30%	M2: Question 1	100%	3.60%
				M3: Proximity	35%	M3: Question 1	100%	4.20%
				M4: Dual Use Capacilty	10%	M4: Question 1	100%	1.20%
C2: Facilities	12%	A1: People	0%	M1: Education	0%	M1: Question 1	100%	0.00%
				M2: Experience	0%	M2: Question 1	100%	0.00%
				M3: Certification	0%	M3: Question 1	100%	0.00%
				M4: Patents/Publication/sAwards	0%	M4: Question 1	100%	0.00%
		A2: Physical Environment	33%	M1 Special Features	50%	M1: Question 1	100%	2.00%
				M2: Encroachment	50%	M2: Question 1	100%	2.00%
		A3: Physical Structures & Equipment	67%	M1: Uniqueness	40%	M1: Question 1	100%	3.20%
				M2: Depth of Application	15%	M2: Question 1	100%	1.20%
				M3: Value Building Conditions	20%	M3: Question 1	100%	1.60%
				M4 Value Utilization	25%	M4: Question 1	100%	2.00%
		A4: Operational Impact	0%	M1: Technology Transition	0%	M1: Question 1	100%	0.00%
				M2: Advance Tech Demos	0%	M2: Question 1	100%	0.00%
				M3: Rapid Responses	0%	M3: Question 1	100%	0.00%
				M4: Workload Focus	0%	M4: Question 1	100%	0.00%
				M5: Future Mil Val	0%	M5: Question 1	100%	0.00%
				M6: Cost of Operations	0%	M6: Question 1	100%	0.00%
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	100%	0.00%
				M2: Jointness	0%	M2: Question 1	100%	0.00%
				M3: Proximity	0%	M3: Question 1	100%	0.00%
				M4: Dual Use Capacilty	0%	M4: Question 1	100%	0.00%

Table B-2 Air Land Sea Space Research

ALSS Research:								
Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Weight	Points
C3: Contingency	25%	A1: People	40%	M1: Education	40%	M1: Question 1	100%	4.00%
				M2: Experience	20%	M2: Question 1	100%	2.00%
				M3: Certification	0%	M3: Question 1	100%	0.00%
				M4: Patents/Publication/sAwards	40%	M4: Question 1	100%	4.00%
		A2: Physical Environment	4%	M1 Special Features	50%	M1: Question 1	100%	0.50%
				M2: Encroachment	50%	M2: Question 1	100%	0.50%
		A3: Physical Structures & Equipment	20%	M1: Uniqueness	40%	M1: Question 1	100%	2.00%
				M2: Depth of Application	10%	M2: Question 1	100%	0.50%
				M3: Value Building Conditions	20%	M3: Question 1	100%	1.00%
				M4 Value Utilization	30%	M4: Question 1	100%	1.50%
		A4: Operational Impact	12%	M1: Technology Transition	0%	M1: Question 1	100%	0.00%
				M2: Advance Tech Demos	0%	M2: Question 1	100%	0.00%
				M3: Rapid Responses	20%	M3: Question 1	100%	0.60%
				M4: Workload Focus	30%	M4: Question 1	100%	0.90%
				M5: Future Mil Val	50%	M5: Question 1	100%	1.50%
		A5: Synergy	24%	M1: Multiple Functions	20%	M1: Question 1	100%	1.20%
				M2: Jointness	30%	M2: Question 1	100%	1.80%
				M3: Proximity	40%	M3: Question 1	100%	2.40%
				M4: Dual Use Capacilty	10%	M4: Question 1	100%	0.60%
C4: Cost	10%	A1: People	30%	M1: Education	50%	M1: Question 1	100%	1.50%
				M2: Experience	50%	M2: Question 1	100%	1.50%
				M3: Certification	0%	M3: Question 1	100%	0.00%
				M4: Patents/Publication/sAwards	0%	M4: Question 1	100%	0.00%
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	100%	0.00%
				M2: Encroachment	0%	M2: Question 1	100%	0.00%
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	100%	0.00%
				M2: Depth of Application	0%	M2: Question 1	100%	0.00%
				M3: Value Building Conditions	0%	M3: Question 1	100%	0.00%
				M4 Value Utilization	100%	M4: Question 1	100%	3.00%
		A4: Operational Impact	20%	M1: Technology Transition	0%	M1: Question 1	100%	0.00%
				M2: Advance Tech Demos	0%	M2: Question 1	100%	0.00%
				M3: Rapid Responses	0%	M3: Question 1	100%	0.00%
				M4: Workload Focus	0%	M4: Question 1	100%	0.00%
				M5: Future Mil Val	0%	M5: Question 1	100%	0.00%
				M6: Cost of Operations	100%	M6: Question 1	100%	2.00%
		A5: Synergy	20%	M1: Multiple Functions	0%	M1: Question 1	100%	0.00%
				M2: Jointness	40%	M2: Question 1	100%	0.80%
				M3: Proximity	60%	M3: Question 1	100%	1.20%
				M4: Dual Use Capacilty	0%	M4: Question 1	100%	0.00%

Table B-2a Cont. Air Land Sea Space Research

ALSS T&E:								
Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Weight	Points
C1: Mission	53%	A1: People	30%	M1: Education	30%	M1: Question 1	100%	4.80%
				M2: Experience	55%	M2: Question 1	100%	8.80%
				M3: Certification	10%	M3: Question 1	100%	1.60%
				M4: Patents/Publication/sAwards	5%	M4: Question 1	100%	0.80%
		A2: Physical Environment	13%	M1 Special Features	55%	M1: Question 1	100%	3.85%
				M2: Encroachment	45%	M2: Question 1	100%	3.15%
		A3: Physical Structures & Equipment	9%	M1: Uniqueness	30%	M1: Question 1	100%	1.50%
				M2: Depth of Application	30%	M2: Question 1	100%	1.50%
				M3: Value Building Conditions	10%	M3: Question 1	100%	0.50%
				M4 Value Utilization	30%	M4: Question 1	100%	1.50%
		A4: Operational Impact	32%	M1: Direct Warfighting Support	45%	M1: Question 1	100%	7.65%
				M2: Urgent Material Release	35%	M2: Question 1	100%	5.95%
				M3: Workload Focus	10%	M3: Question 1	100%	1.70%
				M4: Future Mil Val	10%	M4: Question 1	100%	1.70%
				M5: Cost of Operations	0%	M5: Question 1	100%	0.00%
		A5: Synergy	15%	M1: Multiple Functions	35%	M1: Question 1	100%	2.80%
				M2: Jointness	35%	M2: Question 1	100%	2.80%
				M3: Proximity	20%	M3: Question 1	100%	1.60%
				M4: Dual Use Capacilty	10%	M4: Question 1	100%	0.80%
C2: Facilities	18%	A1: People	0%	M1: Education	0%	M1: Question 1	100%	0.00%
				M2: Experience	0%	M2: Question 1	100%	0.00%
				M3: Certification	0%	M3: Question 1	100%	0.00%
				M4: Patents/Publication/sAwards	0%	M4: Question 1	100%	0.00%
		A2: Physical Environment	28%	M1 Special Features	50%	M1: Question 1	100%	2.50%
				M2: Encroachment	50%	M2: Question 1	100%	2.50%
		A3: Physical Structures & Equipment	72%	M1: Uniqueness	40%	M1: Question 1	100%	5.20%
				M2: Depth of Application	10%	M2: Question 1	100%	1.30%
				M3: Value Building Conditions	20%	M3: Question 1	100%	2.60%
				M4 Value Utilization	30%	M4: Question 1	100%	3.90%
		A4: Operational Impact	0%	M1: Direct Warfighting Support	0%	M1: Question 1	100%	0.00%
				M2: Urgent Material Release	0%	M2: Question 1	100%	0.00%
				M3: Workload Focus	0%	M3: Question 1	100%	0.00%
				M4: Future Mil Val	0%	M4: Question 1	100%	0.00%
				M5: Cost of Operations	0%	M5: Question 1	100%	0.00%
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	100%	0.00%
				M2: Jointness	0%	M2: Question 1	100%	0.00%
				M3: Proximity	0%	M3: Question 1	100%	0.00%
				M4: Dual Use Capacilty	0%	M4: Question 1	100%	0.00%

Table B-3 Air Land Sea Space T&E

ALSS T&E:								
Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Weight	Points
C3: Contingency	19%	A1: People	11%	M1: Education	25%	M1: Question 1	100%	0.50%
				M2: Experience	50%	M2: Question 1	100%	1.00%
				M3: Certification	20%	M3: Question 1	100%	0.40%
				M4: Patents/Publication/sAwards	5%	M4: Question 1	100%	0.10%
		A2: Physical Environment	16%	M1 Special Features	50%	M1: Question 1	100%	1.50%
				M2: Encroachment	50%	M2: Question 1	100%	1.50%
		A3: Physical Structures & Equipment	26%	M1: Uniqueness	30%	M1: Question 1	100%	1.50%
				M2: Depth of Application	25%	M2: Question 1	100%	1.25%
				M3: Value Building Conditions	20%	M3: Question 1	100%	1.00%
				M4 Value Utilization	25%	M4: Question 1	100%	1.25%
		A4: Operational Impact	37%	M1: Current Testing in Works	0%	M1: Question 1	100%	0.00%
				M2: Urgent Material Release	50%	M2: Question 1	100%	3.50%
				M3: Workload Focus	30%	M3: Question 1	100%	2.10%
				M4: Future Mil Val	20%	M4: Question 1	100%	1.40%
				M5: Cost of Operations	0%	M5: Question 1	100%	0.00%
		A5: Synergy	11%	M1: Multiple Functions	40%	M1: Question 1	100%	0.80%
				M2: Jointness	20%	M2: Question 1	100%	0.40%
				M3: Proximity	30%	M3: Question 1	100%	0.60%
				M4: Dual Use Capacilty	10%	M4: Question 1	100%	0.20%
C4: Cost	10%	A1: People	30%	M1: Education	25%	M1: Question 1	100%	0.75%
				M2: Experience	75%	M2: Question 1	100%	2.25%
				M3: Certification	0%	M3: Question 1	100%	0.00%
				M4: Patents/Publication/sAwards	0%	M4: Question 1	100%	0.00%
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	100%	0.00%
				M2: Encroachment	0%	M2: Question 1	100%	0.00%
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	100%	0.00%
				M2: Depth of Application	0%	M2: Question 1	100%	0.00%
				M3: Value Building Conditions	0%	M3: Question 1	100%	0.00%
				M4 Value Utilization	100%	M4: Question 1	100%	3.00%
		A4: Operational Impact	20%	M1: Direct Warfighting Support	0%	M1: Question 1	100%	0.00%
				M2: Urgent Material Release	0%	M2: Question 1	100%	0.00%
				M3: Workload Focus	0%	M3: Question 1	100%	0.00%
				M4: Future Mil Val	0%	M4: Question 1	100%	0.00%
				M5: Cost of Operations	100%	M5: Question 1	100%	2.00%
		A5: Synergy	20%	M1: Multiple Functions	0%	M1: Question 1	100%	0.00%
				M2: Jointness	20%	M2: Question 1	100%	0.40%
				M3: Proximity	80%	M3: Question 1	100%	1.60%
				M4: Dual Use Capacilty	0%	M4: Question 1	100%	0.00%

Table B-3a Cont. Air Land Sea Space T&E

C4ISR D&A:								
Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C1: Mission	53%	A1: People	25%	M1: Education	20%	M1: Question 1	2.60%	
				M2: Experience	40%	M2: Question 1	5.20%	
				M3: Certification	40%	M3: Question 1	5.20%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	9%	M1 Special Features	40%	M1: Question 1	2.00%	
				M2: Encroachment	60%	M2: Question 1	3.00%	
		A3: Physical Structures & Equipment	8%	M1: Uniqueness	50%	M1: Question 1	2.00%	
				M2: Depth of Application	10%	M2: Question 1	0.40%	
				M3: Value Building Conditions	20%	M3: Question 1	0.80%	
				M4 Value Utilization	20%	M4: Question 1	0.80%	
		A4: Operational Impact	40%	M1 Systems Fielded/Current & In-works	40%	M1: Question 1	8.40%	
				M2: Rapid Responses	30%	M3: Question 1	6.30%	
				M3: Workload Focus	15%	M4: Question 1	3.15%	
				M4: Future Mil Val	15%	M5: Question 1	3.15%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	19%	M1: Multiple Functions	35%	M1: Question 1	3.50%	
				M2: Jointness	30%	M2: Question 1	3.00%	
				M3: Proximity	25%	M3: Question 1	2.50%	
				M4: Dual Use Capacilty	10%	M4: Question 1	1.00%	53.00%
C2: Facilities	12%	A1: People	0%	M1: Education	0%	M1: Question 1	0.00%	
				M2: Experience	0%	M2: Question 1	0.00%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	50%	M1 Special Features	40%	M1: Question 1	2.40%	
				M2: Encroachment	60%	M2: Question 1	3.60%	
		A3: Physical Structures & Equipment	50%	M1: Uniqueness	50%	M1: Question 1	3.00%	
				M2: Depth of Application	10%	M2: Question 1	0.60%	
				M3: Value Building Conditions	20%	M3: Question 1	1.20%	
				M4 Value Utilization	20%	M4: Question 1	1.20%	
		A4: Operational Impact	0%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	0.00%	
				M2: Rapid Responses	0%	M2: Question 1	0.00%	
				M3: Workload Focus	0%	M3: Question 1	0.00%	
				M4: Future Mil Val	0%	M4: Question 1	0.00%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	0%	M3: Question 1	0.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	12.00%

Table B-4 C4ISR D&A

C4ISR D&A:								
Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C3: Contingency	25%	A1: People	20%	M1: Education	20%	M1: Question 1	1.00%	
				M2: Experience	40%	M2: Question 1	2.00%	
				M3: Certification	40%	M3: Question 1	2.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	4%	M1 Special Features	40%	M1: Question 1	0.40%	
				M2: Encroachment	60%	M2: Question 1	0.60%	
		A3: Physical Structures & Equipment	16%	M1: Uniqueness	40%	M1: Question 1	1.60%	
				M2: Depth of Application	20%	M2: Question 1	0.80%	
				M3: Value Building Conditions	20%	M3: Question 1	0.80%	
				M4 Value Utilization	20%	M4: Question 1	0.80%	
		A4: Operational Impact	36%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	0.00%	
				M2: Rapid Responses	50%	M2: Question 1	4.50%	
				M3: Workload Focus	25%	M3: Question 1	2.25%	
				M4: Future Mil Val	25%	M4: Question 1	2.25%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	24%	M1: Multiple Functions	35%	M1: Question 1	2.10%	
				M2: Jointness	30%	M2: Question 1	1.80%	
				M3: Proximity	25%	M3: Question 1	1.50%	
				M4: Dual Use Capacilty	10%	M4: Question 1	0.60%	25.00%
C4: Cost	10%	A1: People	30%	M1: Education	50%	M1: Question 1	1.50%	
				M2: Experience	50%	M2: Question 1	1.50%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	0.00%	
				M2: Encroachment	0%	M2: Question 1	0.00%	
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	0.00%	
				M2: Depth of Application	0%	M2: Question 1	0.00%	
				M3: Value Building Conditions	100%	M3: Question 1	3.00%	
				M4 Value Utilization	0%	M4: Question 1	0.00%	
		A4: Operational Impact	20%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	0.00%	
				M2: Rapid Responses	0%	M2: Question 1	0.00%	
				M3: Workload Focus	0%	M3: Question 1	0.00%	
				M4: Future Mil Val	0%	M4: Question 1	0.00%	
				M6: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	20%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	100%	M3: Question 1	2.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	8.00%

Table B-4a C4ISR D&A

C4ISR Research:								
Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C1: Mission	53%	A1: People	32%	M1: Education	35%	M1: Question 1	5.95%	
				M2: Experience	35%	M2: Question 1	5.95%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	30%	M4: Question 1	5.10%	
		A2: Physical Environment	4%	M1 Special Features	40%	M1: Question 1	0.80%	
				M2: Encroachment	60%	M2: Question 1	1.20%	
		A3: Physical Structures & Equipment	13%	M1: Uniqueness	50%	M1: Question 1	3.50%	
				M2: Depth of Application	10%	M2: Question 1	0.70%	
				M3: Value Building Conditions	20%	M3: Question 1	1.40%	
				M4 Value Utilization	20%	M4: Question 1	1.40%	
		A4: Operational Impact	28%	M1: Technology Transition	25%	M1: Question 1	3.75%	
				M2: Advance Tech Demos	25%	M2: Question 1	3.75%	
				M3: Rapid Responses	15%	M3: Question 1	2.25%	
				M4: Workload Focus	15%	M4: Question 1	2.25%	
				M5: Future Mil Val	20%	M5: Question 1	3.00%	
				M6: Cost of Operations	0%	M6: Question 1	0.00%	
		A5: Synergy	23%	M1: Multiple Functions	40%	M1: Question 1	4.80%	
				M2: Jointness	25%	M2: Question 1	3.00%	
				M3: Proximity	25%	M3: Question 1	3.00%	
				M4: Dual Use Capacilty	10%	M4: Question 1	1.20%	53.00%
C2: Facilities	12%	A1: People	0%	M1: Education	0%	M1: Question 1	0.00%	
				M2: Experience	0%	M2: Question 1	0.00%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	33%	M1 Special Features	40%	M1: Question 1	1.60%	
				M2: Encroachment	60%	M2: Question 1	2.40%	
		A3: Physical Structures & Equipment	67%	M1: Uniqueness	50%	M1: Question 1	4.00%	
				M2: Depth of Application	10%	M2: Question 1	0.80%	
				M3: Value Building Conditions	20%	M3: Question 1	1.60%	
				M4 Value Utilization	20%	M4: Question 1	1.60%	
		A4: Operational Impact	0%	M1: Technology Transition	0%	M1: Question 1	0.00%	
				M2: Advance Tech Demos	0%	M2: Question 1	0.00%	
				M3: Rapid Responses	0%	M3: Question 1	0.00%	
				M4: Workload Focus	0%	M4: Question 1	0.00%	
				M5: Future Mil Val	0%	M5: Question 1	0.00%	
				M6: Cost of Operations	0%	M6: Question 1	0.00%	
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	0%	M3: Question 1	0.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	12.00%

Table B-5 C4ISR Research

C4ISR Research:								
Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C3: Contingency	25%	A1: People	40%	M1: Education	35%	M1: Question 1	3.50%	
				M2: Experience	35%	M2: Question 1	3.50%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	30%	M4: Question 1	3.00%	
		A2: Physical Environment	4%	M1 Special Features	40%	M1: Question 1	0.40%	
				M2: Encroachment	60%	M2: Question 1	0.60%	
		A3: Physical Structures & Equipment	20%	M1: Uniqueness	0%	M1: Question 1	0.00%	
				M2: Depth of Application	0%	M2: Question 1	0.00%	
				M3: Value Building Conditions	100%	M3: Question 1	5.00%	
				M4 Value Utilization	0%	M4: Question 1	0.00%	
		A4: Operational Impact	12%	M1: Technology Transition	0%	M1: Question 1	0.00%	
				M2: Advance Tech Demos	0%	M2: Question 1	0.00%	
				M3: Rapid Responses	25%	M3: Question 1	0.75%	
				M4: Workload Focus	25%	M4: Question 1	0.75%	
				M5: Future Mil Val	50%	M5: Question 1	1.50%	
				M6: Cost of Operations	0%	M6: Question 1	0.00%	
		A5: Synergy	24%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	100%	M3: Question 1	6.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	25.00%
C4: Cost	10%	A1: People	30%	M1: Education	50%	M1: Question 1	1.50%	
				M2: Experience	50%	M2: Question 1	1.50%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	0.00%	
				M2: Encroachment	0%	M2: Question 1	0.00%	
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	0.00%	
				M2: Depth of Application	0%	M2: Question 1	0.00%	
				M3: Value Building Conditions	100%	M3: Question 1	3.00%	
				M4 Value Utilization	0%	M4: Question 1	0.00%	
		A4: Operational Impact	20%	M1: Technology Transition	0%	M1: Question 1	0.00%	
				M2: Advance Tech Demos	0%	M2: Question 1	0.00%	
				M3: Rapid Responses	0%	M3: Question 1	0.00%	
				M4: Workload Focus	0%	M4: Question 1	0.00%	
				M5: Future Mil Val	0%	M5: Question 1	0.00%	
				M6: Cost of Operations	100%	M6: Question 1	2.00%	
		A5: Synergy	20%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	100%	M3: Question 1	2.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	10.00%

Table B-5a. Cont. C4ISR Research

C4ISR T&E:

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C1: Mission	53%	A1: People	30%	M1: Education	20%	M1: Question 1	3.20%	
				M2: Experience	50%	M2: Question 1	8.00%	
				M3: Certification	30%	M3: Question 1	4.80%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	13%	M1 Special Features	40%	M1: Question 1	2.80%	
				M2: Encroachment	60%	M2: Question 1	4.20%	
		A3: Physical Structures & Equipment	9%	M1: Uniqueness	30%	M1: Question 1	1.50%	
				M2: Depth of Application	20%	M2: Question 1	1.00%	
				M3: Value Building Conditions	20%	M3: Question 1	1.00%	
				M4 Value Utilization	30%	M4: Question 1	1.50%	
		A4: Operational Impact	32%	M1: Direct Warfighting Support	35%	M1: Question 1	5.95%	
				M2: Urgent Material Release	35%	M2: Question 1	5.95%	
				M3: Workload Focus	15%	M3: Question 1	2.55%	
				M4: Future Mil Val	15%	M4: Question 1	2.55%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	15%	M1: Multiple Functions	35%	M1: Question 1	2.80%	
				M2: Jointness	40%	M2: Question 1	3.20%	
				M3: Proximity	15%	M3: Question 1	1.20%	
				M4: Dual Use Capacilty	10%	M4: Question 1	0.80%	53.00%
C2: Facilities	18%	A1: People	0%	M1: Education	0%	M1: Question 1	0.00%	
				M2: Experience	0%	M2: Question 1	0.00%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	28%	M1 Special Features	40%	M1: Question 1	2.00%	
				M2: Encroachment	60%	M2: Question 1	3.00%	
		A3: Physical Structures & Equipment	72%	M1: Uniqueness	30%	M1: Question 1	3.90%	
				M2: Depth of Application	20%	M2: Question 1	2.60%	
				M3: Value Building Conditions	20%	M3: Question 1	2.60%	
				M4 Value Utilization	30%	M4: Question 1	3.90%	
		A4: Operational Impact	0%	M1: Direct Warfighting Support	0%	M1: Question 1	0.00%	
				M2: Urgent Material Release	0%	M2: Question 1	0.00%	
				M3: Workload Focus	0%	M3: Question 1	0.00%	
				M4: Future Mil Val	0%	M4: Question 1	0.00%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	0%	M3: Question 1	0.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	18.00%

Table B-6 C4ISR T&E

C4ISR T&E:

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C3: Contingency	19%	A1: People	11%	M1: Education	20%	M1: Question 1	0.40%	
				M2: Experience	50%	M2: Question 1	1.00%	
				M3: Certification	30%	M3: Question 1	0.60%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	16%	M1 Special Features	40%	M1: Question 1	1.20%	
				M2: Encroachment	60%	M2: Question 1	1.80%	
		A3: Physical Structures & Equipment	26%	M1: Uniqueness	30%	M1: Question 1	1.50%	
				M2: Depth of Application	20%	M2: Question 1	1.00%	
				M3: Value Building Conditions	20%	M3: Question 1	1.00%	
				M4 Value Utilization	30%	M4: Question 1	1.50%	
		A4: Operational Impact	37%	M1: Current Testing in Works	0%	M1: Question 1	0.00%	
				M2: Urgent Material Release	25%	M2: Question 1	1.75%	
				M3: Workload Focus	25%	M3: Question 1	1.75%	
				M4: Future Mil Val	50%	M4: Question 1	3.50%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	11%	M1: Multiple Functions	35%	M1: Question 1	0.70%	
				M2: Jointness	40%	M2: Question 1	0.80%	
				M3: Proximity	15%	M3: Question 1	0.30%	
				M4: Dual Use Capacilty	10%	M4: Question 1	0.20%	19.00%
C4: Cost	10%	A1: People	30%	M1: Education	25%	M1: Question 1	0.75%	
				M2: Experience	75%	M2: Question 1	2.25%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	0.00%	
				M2: Encroachment	0%	M2: Question 1	0.00%	
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	0.00%	
				M2: Depth of Application	0%	M2: Question 1	0.00%	
				M3: Value Building Conditions	100%	M3: Question 1	3.00%	
				M4 Value Utilization	0%	M4: Question 1	0.00%	
		A4: Operational Impact	20%	M1: Direct Warfighting Support	0%	M1: Question 1	0.00%	
				M2: Urgent Material Release	0%	M2: Question 1	0.00%	
				M3: Workload Focus	0%	M3: Question 1	0.00%	
				M4: Future Mil Val	0%	M4: Question 1	0.00%	
				M5: Cost of Operations	100%	M5: Question 1	2.00%	
		A5: Synergy	20%	M1: Multiple Functions	35%	M1: Question 1	0.70%	
				M2: Jointness	40%	M2: Question 1	0.80%	
				M3: Proximity	15%	M3: Question 1	0.30%	
				M4: Dual Use Capacilty	10%	M4: Question 1	0.20%	10.00%

Table B-6a Cont. C4ISR T&E

Enabling D&A:

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C1: Mission	53%	A1: People	25%	M1: Education	25%	M1: Question 1	3.25%	
				M2: Experience	35%	M2: Question 1	4.55%	
				M3: Certification	25%	M3: Question 1	3.25%	
				M4: Patents/Publication/sAwards	15%	M4: Question 1	1.95%	
		A2: Physical Environment	9%	M1 Special Features	85%	M1: Question 1	4.25%	
				M2: Encroachment	15%	M2: Question 1	0.75%	
		A3: Physical Structures & Equipment	8%	M1: Uniqueness	40%	M1: Question 1	1.60%	
				M2: Depth of Application	20%	M2: Question 1	0.80%	
				M3: Value Building Conditions	20%	M3: Question 1	0.80%	
				M4 Value Utilization	20%	M4: Question 1	0.80%	
		A4: Operational Impact	40%	M1 Systems Fielded/Current & In-works	40%	M1: Question 1	8.40%	
				M2: Rapid Responses	40%	M3: Question 1	8.40%	
				M3: Workload Focus	10%	M4: Question 1	2.10%	
				M4: Future Mil Val	10%	M5: Question 1	2.10%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	19%	M1: Multiple Functions	30%	M1: Question 1	3.00%	
				M2: Jointness	30%	M2: Question 1	3.00%	
				M3: Proximity	30%	M3: Question 1	3.00%	
				M4: Dual Use Capacilty	10%	M4: Question 1	1.00%	53.00%
C2: Facilities	12%	A1: People	0%	M1: Education	0%	M1: Question 1	0.00%	
				M2: Experience	0%	M2: Question 1	0.00%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	50%	M1 Special Features	90%	M1: Question 1	5.40%	
				M2: Encroachment	10%	M2: Question 1	0.60%	
		A3: Physical Structures & Equipment	50%	M1: Uniqueness	40%	M1: Question 1	2.40%	
				M2: Depth of Application	20%	M2: Question 1	1.20%	
				M3: Value Building Conditions	20%	M3: Question 1	1.20%	
				M4 Value Utilization	20%	M4: Question 1	1.20%	
		A4: Operational Impact	0%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	0.00%	
				M2: Rapid Responses	0%	M2: Question 1	0.00%	
				M3: Workload Focus	0%	M3: Question 1	0.00%	
				M4: Future Mil Val	0%	M4: Question 1	0.00%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	0%	M3: Question 1	0.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	12.00%

Table B-7 Enabling Technology D&A

Enabling D&A:

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C3: Contingency	25%	A1: People	20%	M1: Education	25%	M1: Question 1	1.25%	
				M2: Experience	35%	M2: Question 1	1.75%	
				M3: Certification	25%	M3: Question 1	1.25%	
				M4: Patents/Publication/sAwards	15%	M4: Question 1	0.75%	
		A2: Physical Environment	4%	M1 Special Features	85%	M1: Question 1	0.85%	
				M2: Encroachment	15%	M2: Question 1	0.15%	
		A3: Physical Structures & Equipment	16%	M1: Uniqueness	40%	M1: Question 1	1.60%	
				M2: Depth of Application	20%	M2: Question 1	0.80%	
				M3: Value Building Conditions	20%	M3: Question 1	0.80%	
				M4 Value Utilization	20%	M4: Question 1	0.80%	
		A4: Operational Impact	36%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	0.00%	
				M2: Rapid Responses	0%	M2: Question 1	0.00%	
				M3: Workload Focus	30%	M3: Question 1	2.70%	
				M4: Future Mil Val	70%	M4: Question 1	6.30%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	24%	M1: Multiple Functions	30%	M1: Question 1	1.80%	
				M2: Jointness	30%	M2: Question 1	1.80%	
				M3: Proximity	30%	M3: Question 1	1.80%	
				M4: Dual Use Capacilty	10%	M4: Question 1	0.60%	25.00%
C4: Cost	10%	A1: People	30%	M1: Education	45%	M1: Question 1	1.35%	
				M2: Experience	55%	M2: Question 1	1.65%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	0.00%	
				M2: Encroachment	0%	M2: Question 1	0.00%	
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	0.00%	
				M2: Depth of Application	0%	M2: Question 1	0.00%	
				M3: Value Building Conditions	100%	M3: Question 1	3.00%	
				M4 Value Utilization	0%	M4: Question 1	0.00%	
		A4: Operational Impact	20%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	0.00%	
				M2: Rapid Responses	0%	M2: Question 1	0.00%	
				M3: Workload Focus	0%	M3: Question 1	0.00%	
				M4: Future Mil Val	0%	M4: Question 1	0.00%	
				M5: Cost of Operations	100%	M5: Question 1	2.00%	
		A5: Synergy	20%	M1: Multiple Functions	40%	M1: Question 1	0.80%	
				M2: Jointness	20%	M2: Question 1	0.40%	
				M3: Proximity	30%	M3: Question 1	0.60%	
				M4: Dual Use Capacilty	10%	M4: Question 1	0.20%	10.00%

Table B-7a Enabling Technology D&A

Enabling Research:

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C1: Mission	53%	A1: People	32%	M1: Education	35%	M1: Question 1	5.95%	
				M2: Experience	25%	M2: Question 1	4.25%	
				M3: Certification	15%	M3: Question 1	2.55%	
				M4: Patents/Publication/sAwards	25%	M4: Question 1	4.25%	
		A2: Physical Environment	4%	M1 Special Features	100%	M1: Question 1	2.00%	
				M2: Encroachment	0%	M2: Question 1	0.00%	
		A3: Physical Structures & Equipment	13%	M1: Uniqueness	40%	M1: Question 1	2.80%	
				M2: Depth of Application	20%	M2: Question 1	1.40%	
				M3: Value Building Conditions	20%	M3: Question 1	1.40%	
				M4 Value Utilization	20%	M4: Question 1	1.40%	
		A4: Operational Impact	28%	M1: Technology Transition	30%	M1: Question 1	4.50%	
				M2: Advance Tech Demos	30%	M2: Question 1	4.50%	
				M3: Rapid Responses	20%	M3: Question 1	3.00%	
				M4: Workload Focus	10%	M4: Question 1	1.50%	
				M5: Future Mil Val	10%	M5: Question 1	1.50%	
				M6: Cost of Operations	0%	M6: Question 1	0.00%	
		A5: Synergy	23%	M1: Multiple Functions	40%	M1: Question 1	4.80%	
				M2: Jointness	20%	M2: Question 1	2.40%	
				M3: Proximity	30%	M3: Question 1	3.60%	
				M4: Dual Use Capacilty	10%	M4: Question 1	1.20%	53.00%
C2: Facilities	12%	A1: People	0%	M1: Education	0%	M1: Question 1	0.00%	
				M2: Experience	0%	M2: Question 1	0.00%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	33%	M1 Special Features	90%	M1: Question 1	3.60%	
				M2: Encroachment	10%	M2: Question 1	0.40%	
		A3: Physical Structures & Equipment	67%	M1: Uniqueness	40%	M1: Question 1	3.20%	
				M2: Depth of Application	20%	M2: Question 1	1.60%	
				M3: Value Building Conditions	20%	M3: Question 1	1.60%	
				M4 Value Utilization	20%	M4: Question 1	1.60%	
		A4: Operational Impact	0%	M1: Technology Transition	0%	M1: Question 1	0.00%	
				M2: Advance Tech Demos	0%	M2: Question 1	0.00%	
				M3: Rapid Responses	0%	M3: Question 1	0.00%	
				M4: Workload Focus	0%	M4: Question 1	0.00%	
				M5: Future Mil Val	0%	M5: Question 1	0.00%	
				M6: Cost of Operations	0%	M6: Question 1	0.00%	
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	0%	M3: Question 1	0.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	12.00%

Table B-8 Enabling Technology Research

Enabling Research:

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C3: Contingency	25%	A1: People	40%	M1: Education	30%	M1: Question 1	3.00%	
				M2: Experience	40%	M2: Question 1	4.00%	
				M3: Certification	10%	M3: Question 1	1.00%	
				M4: Patents/Publication/sAwards	20%	M4: Question 1	2.00%	
		A2: Physical Environment	4%	M1 Special Features	100%	M1: Question 1	1.00%	
				M2: Encroachment	0%	M2: Question 1	0.00%	
		A3: Physical Structures & Equipment	20%	M1: Uniqueness	40%	M1: Question 1	2.00%	
				M2: Depth of Application	20%	M2: Question 1	1.00%	
				M3: Value Building Conditions	20%	M3: Question 1	1.00%	
				M4 Value Utilization	20%	M4: Question 1	1.00%	
		A4: Operational Impact	12%	M1: Technology Transition	0%	M1: Question 1	0.00%	
				M2: Advance Tech Demos	0%	M2: Question 1	0.00%	
				M3: Rapid Responses	40%	M3: Question 1	1.20%	
				M4: Workload Focus	25%	M4: Question 1	0.75%	
				M5: Future Mil Val	35%	M5: Question 1	1.05%	
				M6: Cost of Operations	0%	M6: Question 1	0.00%	
		A5: Synergy	24%	M1: Multiple Functions	40%	M1: Question 1	2.40%	
				M2: Jointness	20%	M2: Question 1	1.20%	
				M3: Proximity	30%	M3: Question 1	1.80%	
				M4: Dual Use Capacilty	10%	M4: Question 1	0.60%	25.00%
C4: Cost	10%	A1: People	30%	M1: Education	45%	M1: Question 1	1.35%	
				M2: Experience	55%	M2: Question 1	1.65%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	0.00%	
				M2: Encroachment	0%	M2: Question 1	0.00%	
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	0.00%	
				M2: Depth of Application	0%	M2: Question 1	0.00%	
				M3: Value Building Conditions	100%	M3: Question 1	3.00%	
				M4 Value Utilization	0%	M4: Question 1	0.00%	
		A4: Operational Impact	20%	M1: Technology Transition	0%	M1: Question 1	0.00%	
				M2: Advance Tech Demos	0%	M2: Question 1	0.00%	
				M3: Rapid Responses	0%	M3: Question 1	0.00%	
				M4: Workload Focus	0%	M4: Question 1	0.00%	
				M5: Future Mil Val	0%	M5: Question 1	0.00%	
				M6: Cost of Operations	100%	M6: Question 1	2.00%	
		A5: Synergy	20.00%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	100%	M3: Question 1	2.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	10.00%

Table B-8a Cont. Enabling Technology Research

Enabling T&E:

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C1: Mission	53%	A1: People	30%	M1: Education	25%	M1: Question 1	4.00%	
				M2: Experience	40%	M2: Question 1	6.40%	
				M3: Certification	25%	M3: Question 1	4.00%	
				M4: Patents/Publication/sAwards	10%	M4: Question 1	1.60%	
		A2: Physical Environment	13%	M1 Special Features	80%	M1: Question 1	5.60%	
				M2: Encroachment	20%	M2: Question 1	1.40%	
		A3: Physical Structures & Equipment	9%	M1: Uniqueness	40%	M1: Question 1	2.00%	
				M2: Depth of Application	20%	M2: Question 1	1.00%	
				M3: Value Building Conditions	20%	M3: Question 1	1.00%	
				M4 Value Utilization	20%	M4: Question 1	1.00%	
		A4: Operational Impact	32%	M1: Direct Warfighting Support	40%	M1: Question 1	6.80%	
				M2: Urgent Material Release	40%	M2: Question 1	6.80%	
				M3: Workload Focus	10%	M3: Question 1	1.70%	
				M4: Future Mil Val	10%	M4: Question 1	1.70%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	15%	M1: Multiple Functions	30%	M1: Question 1	2.40%	
				M2: Jointness	30%	M2: Question 1	2.40%	
				M3: Proximity	20%	M3: Question 1	1.60%	
				M4: Dual Use Capacilty	20%	M4: Question 1	1.60%	53.00%
C2: Facilities	18%	A1: People	0%	M1: Education	0%	M1: Question 1	0.00%	
				M2: Experience	0%	M2: Question 1	0.00%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	28%	M1 Special Features	80%	M1: Question 1	4.00%	
				M2: Encroachment	20%	M2: Question 1	1.00%	
		A3: Physical Structures & Equipment	72%	M1: Uniqueness	40%	M1: Question 1	5.20%	
				M2: Depth of Application	20%	M2: Question 1	2.60%	
				M3: Value Building Conditions	20%	M3: Question 1	2.60%	
				M4 Value Utilization	20%	M4: Question 1	2.60%	
		A4: Operational Impact	0%	M1: Direct Warfighting Support	0%	M1: Question 1	0.00%	
				M2: Urgent Material Release	0%	M2: Question 1	0.00%	
				M3: Workload Focus	0%	M3: Question 1	0.00%	
				M4: Future Mil Val	0%	M4: Question 1	0.00%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	0%	M3: Question 1	0.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	18.00%

Table B-9 Enabling Technology T&E

Enabling T&E:

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C3: Contingency	19%	A1: People	11%	M1: Education	25%	M1: Question 1	0.50%	
				M2: Experience	40%	M2: Question 1	0.80%	
				M3: Certification	25%	M3: Question 1	0.50%	
				M4: Patents/Publication/sAwards	10%	M4: Question 1	0.20%	
		A2: Physical Environment	16%	M1 Special Features	80%	M1: Question 1	2.40%	
				M2: Encroachment	20%	M2: Question 1	0.60%	
		A3: Physical Structures & Equipment	26%	M1: Uniqueness	40%	M1: Question 1	2.00%	
				M2: Depth of Application	20%	M2: Question 1	1.00%	
				M3: Value Building Conditions	20%	M3: Question 1	1.00%	
				M4 Value Utilization	20%	M4: Question 1	1.00%	
		A4: Operational Impact	37%	M1: Current Testing in Works	0%	M1: Question 1	0.00%	
				M2: Urgent Material Release	30%	M2: Question 1	2.10%	
				M3: Workload Focus	25%	M3: Question 1	1.75%	
				M4: Future Mil Val	45%	M4: Question 1	3.15%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	11%	M1: Multiple Functions	30%	M1: Question 1	0.60%	
				M2: Jointness	30%	M2: Question 1	0.60%	
				M3: Proximity	20%	M3: Question 1	0.40%	
				M4: Dual Use Capacilty	20%	M4: Question 1	0.40%	19.00%
C4: Cost	10%	A1: People	30%	M1: Education	45%	M1: Question 1	1.35%	
				M2: Experience	55%	M2: Question 1	1.65%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	0.00%	
				M2: Encroachment	0%	M2: Question 1	0.00%	
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	0.00%	
				M2: Depth of Application	0%	M2: Question 1	0.00%	
				M3: Value Building Conditions	100%	M3: Question 1	3.00%	
				M4 Value Utilization	0%	M4: Question 1	0.00%	
		A4: Operational Impact	20%	M1: Direct Warfighting Support	0%	M1: Question 1	0.00%	
				M2: Urgent Material Release	0%	M2: Question 1	0.00%	
				M3: Workload Focus	0%	M3: Question 1	0.00%	
				M4: Future Mil Val	0%	M4: Question 1	0.00%	
				M5: Cost of Operations	100%	M5: Question 1	2.00%	
		A5: Synergy	20%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	100%	M3: Question 1	2.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	10.00%

Table B-9a Cont. Enabling Technology T&E

Innovative D&A:

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C1: Mission	53%	A1: People	25%	M1: Education	20%	M1: Question 1	2.60%	
				M2: Experience	40%	M2: Question 1	5.20%	
				M3: Certification	30%	M3: Question 1	3.90%	
				M4: Patents/Publication/sAwards	10%	M4: Question 1	1.30%	
		A2: Physical Environment	9%	M1 Special Features	50%	M1: Question 1	2.50%	
				M2: Encroachment	50%	M2: Question 1	2.50%	
		A3: Physical Structures & Equipment	8%	M1: Uniqueness	25%	M1: Question 1	1.00%	
				M2: Depth of Application	40%	M2: Question 1	1.60%	
				M3: Value Building Conditions	15%	M3: Question 1	0.60%	
				M4 Value Utilization	20%	M4: Question 1	0.80%	
		A4: Operational Impact	40%	M1 Systems Fielded/Current & In-works	50%	M1: Question 1	10.50%	
				M2: Rapid Responses	20%	M3: Question 1	4.20%	
				M3: Workload Focus	15%	M4: Question 1	3.15%	
				M4: Future Mil Val	15%	M5: Question 1	3.15%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	19%	M1: Multiple Functions	30%	M1: Question 1	3.00%	
				M2: Jointness	30%	M2: Question 1	3.00%	
				M3: Proximity	30%	M3: Question 1	3.00%	
				M4: Dual Use Capacilty	10%	M4: Question 1	1.00%	53.00%
C2: Facilities	12%	A1: People	0%	M1: Education	0%	M1: Question 1	0.00%	
				M2: Experience	0%	M2: Question 1	0.00%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	50%	M1 Special Features	70%	M1: Question 1	4.20%	
				M2: Encroachment	30%	M2: Question 1	1.80%	
		A3: Physical Structures & Equipment	50%	M1: Uniqueness	40%	M1: Question 1	2.40%	
				M2: Depth of Application	25%	M2: Question 1	1.50%	
				M3: Value Building Conditions	15%	M3: Question 1	0.90%	
				M4 Value Utilization	20%	M4: Question 1	1.20%	
		A4: Operational Impact	0%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	0.00%	
				M2: Rapid Responses	0%	M2: Question 1	0.00%	
				M3: Workload Focus	0%	M3: Question 1	0.00%	
				M4: Future Mil Val	0%	M4: Question 1	0.00%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	0%	M3: Question 1	0.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	12.00%

Table B-10 Innovative Technology D&A

Innovative D&A:

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C3: Contingency	25%	A1: People	20%	M1: Education	40%	M1: Question 1	2.00%	
				M2: Experience	40%	M2: Question 1	2.00%	
				M3: Certification	10%	M3: Question 1	0.50%	
				M4: Patents/Publication/sAwards	10%	M4: Question 1	0.50%	
		A2: Physical Environment	4%	M1 Special Features	10%	M1: Question 1	0.10%	
				M2: Encroachment	90%	M2: Question 1	0.90%	
		A3: Physical Structures & Equipment	16%	M1: Uniqueness	40%	M1: Question 1	1.60%	
				M2: Depth of Application	20%	M2: Question 1	0.80%	
				M3: Value Building Conditions	20%	M3: Question 1	0.80%	
				M4 Value Utilization	20%	M4: Question 1	0.80%	
		A4: Operational Impact	36%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	0.00%	
				M2: Rapid Responses	0%	M2: Question 1	0.00%	
				M3: Workload Focus	25%	M3: Question 1	2.25%	
				M4: Future Mil Val	75%	M4: Question 1	6.75%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	24%	M1: Multiple Functions	40%	M1: Question 1	2.40%	
				M2: Jointness	20%	M2: Question 1	1.20%	
				M3: Proximity	20%	M3: Question 1	1.20%	
				M4: Dual Use Capacilty	20%	M4: Question 1	1.20%	25.00%
C4: Cost	10%	A1: People	30%	M1: Education	50%	M1: Question 1	1.50%	
				M2: Experience	50%	M2: Question 1	1.50%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	0.00%	
				M2: Encroachment	0%	M2: Question 1	0.00%	
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	0.00%	
				M2: Depth of Application	0%	M2: Question 1	0.00%	
				M3: Value Building Conditions	100%	M3: Question 1	3.00%	
				M4 Value Utilization	0%	M4: Question 1	0.00%	
		A4: Operational Impact	20%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	0.00%	
				M2: Rapid Responses	0%	M2: Question 1	0.00%	
				M3: Workload Focus	0%	M3: Question 1	0.00%	
				M4: Future Mil Val	0%	M4: Question 1	0.00%	
				M5: Cost of Operations	100%	M5: Question 1	2.00%	
		A5: Synergy	20%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	100%	M3: Question 1	2.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	10.00%

Table B-10a Cont. Innovative Technology D&A

Innovative Research

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C1: Mission	53%	A1: People	32%	M1: Education	45%	M1: Question 1	7.65%	
				M2: Experience	15%	M2: Question 1	2.55%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	40%	M4: Question 1	6.80%	
		A2: Physical Environment	4%	M1 Special Features	80%	M1: Question 1	1.60%	
				M2: Encroachment	20%	M2: Question 1	0.40%	
		A3: Physical Structures & Equipment	13%	M1: Uniqueness	50%	M1: Question 1	3.50%	
				M2: Depth of Application	20%	M2: Question 1	1.40%	
				M3: Value Building Conditions	20%	M3: Question 1	1.40%	
				M4 Value Utilization	10%	M4: Question 1	0.70%	
		A4: Operational Impact	28%	M1: Technology Transition	40%	M1: Question 1	6.00%	
				M2: Advance Tech Demos	20%	M2: Question 1	3.00%	
				M3: Rapid Responses	20%	M3: Question 1	3.00%	
				M4: Workload Focus	0%	M4: Question 1	0.00%	
				M5: Future Mil Val	20%	M5: Question 1	3.00%	
				M6: Cost of Operations	0%	M6: Question 1	0.00%	
		A5: Synergy	23%	M1: Multiple Functions	25%	M1: Question 1	3.00%	
				M2: Jointness	15%	M2: Question 1	1.80%	
				M3: Proximity	35%	M3: Question 1	4.20%	
				M4: Dual Use Capacilty	25%	M4: Question 1	3.00%	53.00%
C2: Facilities	12%	A1: People	0%	M1: Education	0%	M1: Question 1	0.00%	
				M2: Experience	0%	M2: Question 1	0.00%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	33%	M1 Special Features	60%	M1: Question 1	2.40%	
				M2: Encroachment	40%	M2: Question 1	1.60%	
		A3: Physical Structures & Equipment	67%	M1: Uniqueness	40%	M1: Question 1	3.20%	
				M2: Depth of Application	10%	M2: Question 1	0.80%	
				M3: Value Building Conditions	30%	M3: Question 1	2.40%	
				M4 Value Utilization	20%	M4: Question 1	1.60%	
		A4: Operational Impact	0%	M1: Technology Transition	0%	M1: Question 1	0.00%	
				M2: Advance Tech Demos	0%	M2: Question 1	0.00%	
				M3: Rapid Responses	0%	M3: Question 1	0.00%	
				M4: Workload Focus	0%	M4: Question 1	0.00%	
				M5: Future Mil Val	0%	M5: Question 1	0.00%	
				M6: Cost of Operations	0%	M6: Question 1	0.00%	
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	0%	M3: Question 1	0.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	12.00%

Table B-11 Innovative Technology Research

Innovative Research

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C3: Contingency	25%	A1: People	40%	M1: Education	40%	M1: Question 1	4.00%	
				M2: Experience	10%	M2: Question 1	1.00%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	50%	M4: Question 1	5.00%	
		A2: Physical Environment	4%	M1 Special Features	10%	M1: Question 1	0.10%	
				M2: Encroachment	90%	M2: Question 1	0.90%	
		A3: Physical Structures & Equipment	20%	M1: Uniqueness	50%	M1: Question 1	2.50%	
				M2: Depth of Application	10%	M2: Question 1	0.50%	
				M3: Value Building Conditions	20%	M3: Question 1	1.00%	
				M4 Value Utilization	20%	M4: Question 1	1.00%	
		A4: Operational Impact	12%	M1: Technology Transition	0%	M1: Question 1	0.00%	
				M2: Advance Tech Demos	0%	M2: Question 1	0.00%	
				M3: Rapid Responses	25%	M3: Question 1	0.75%	
				M4: Workload Focus	25%	M4: Question 1	0.75%	
				M5: Future Mil Val	50%	M5: Question 1	1.50%	
				M6: Cost of Operations	0%	M6: Question 1	0.00%	
		A5: Synergy	24%	M1: Multiple Functions	25%	M1: Question 1	1.50%	
				M2: Jointness	15%	M2: Question 1	0.90%	
				M3: Proximity	35%	M3: Question 1	2.10%	
				M4: Dual Use Capacilty	25%	M4: Question 1	1.50%	25.00%
C4: Cost	10%	A1: People	30%	M1: Education	50%	M1: Question 1	1.50%	
				M2: Experience	50%	M2: Question 1	1.50%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	0.00%	
				M2: Encroachment	0%	M2: Question 1	0.00%	
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	0.00%	
				M2: Depth of Application	0%	M2: Question 1	0.00%	
				M3: Value Building Conditions	0%	M3: Question 1	0.00%	
				M4 Value Utilization	100%	M4: Question 1	3.00%	
		A4: Operational Impact	20%	M1: Technology Transition	0%	M1: Question 1	0.00%	
				M2: Advance Tech Demos	0%	M2: Question 1	0.00%	
				M3: Rapid Responses	0%	M3: Question 1	0.00%	
				M4: Workload Focus	0%	M4: Question 1	0.00%	
				M5: Future Mil Val	0%	M5: Question 1	0.00%	
				M6: Cost of Operations	100%	M6: Question 1	2.00%	
		A5: Synergy	20%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	100%	M3: Question 1	2.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	10.00%

Table B-11a Cont. Innovative Technology Research

Innovative T&E:

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C1: Mission	53%	A1: People	30%	M1: Education	40%	M1: Question 1	6.40%	
				M2: Experience	42%	M2: Question 1	6.72%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	18%	M4: Question 1	2.88%	
		A2: Physical Environment	13%	M1 Special Features	60%	M1: Question 1	4.20%	
				M2: Encroachment	40%	M2: Question 1	2.80%	
		A3: Physical Structures & Equipment	9%	M1: Uniqueness	40%	M1: Question 1	2.00%	
				M2: Depth of Application	10%	M2: Question 1	0.50%	
				M3: Value Building Conditions	15%	M3: Question 1	0.75%	
				M4 Value Utilization	35%	M4: Question 1	1.75%	
		A4: Operational Impact	32%	M1: Direct Warfighting Support	35%	M1: Question 1	5.95%	
				M2: Urgent Material Release	35%	M2: Question 1	5.95%	
				M3: Workload Focus	15%	M3: Question 1	2.55%	
				M4: Future Mil Val	15%	M4: Question 1	2.55%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	15%	M1: Multiple Functions	35%	M1: Question 1	2.80%	
				M2: Jointness	30%	M2: Question 1	2.40%	
				M3: Proximity	20%	M3: Question 1	1.60%	
				M4: Dual Use Capacilty	15%	M4: Question 1	1.20%	53.00%
C2: Facilities	18%	A1: People	0%	M1: Education	0%	M1: Question 1	0.00%	
				M2: Experience	0%	M2: Question 1	0.00%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	28%	M1 Special Features	50%	M1: Question 1	2.50%	
				M2: Encroachment	50%	M2: Question 1	2.50%	
		A3: Physical Structures & Equipment	72%	M1: Uniqueness	40%	M1: Question 1	5.20%	
				M2: Depth of Application	25%	M2: Question 1	3.25%	
				M3: Value Building Conditions	15%	M3: Question 1	1.95%	
				M4 Value Utilization	20%	M4: Question 1	2.60%	
		A4: Operational Impact	0%	M1: Direct Warfighting Support	0%	M1: Question 1	0.00%	
				M2: Urgent Material Release	0%	M2: Question 1	0.00%	
				M3: Workload Focus	0%	M3: Question 1	0.00%	
				M4: Future Mil Val	0%	M4: Question 1	0.00%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	0%	M3: Question 1	0.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	18.00%

Table B-12 Innovative Technology T&E

Innovative T&E:

Criteria		Attributes		Metrics		Questions		
Name	Weight	Name	Weight	Name	Weight	Name	Points	
C3: Contingency	19%	A1: People	11%	M1: Education	25%	M1: Question 1	0.50%	
				M2: Experience	75%	M2: Question 1	1.50%	
				M3: Certification	0%	M3: Question 1	0.00%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	16%	M1 Special Features	50%	M1: Question 1	1.50%	
				M2: Encroachment	50%	M2: Question 1	1.50%	
		A3: Physical Structures & Equipment	26%	M1: Uniqueness	35%	M1: Question 1	1.75%	
				M2: Depth of Application	15%	M2: Question 1	0.75%	
				M3: Value Building Conditions	40%	M3: Question 1	2.00%	
				M4 Value Utilization	10%	M4: Question 1	0.50%	
		A4: Operational Impact	37%	M1: Current Testing in Works	0%	M1: Question 1	0.00%	
				M2: Urgent Material Release	30%	M2: Question 1	2.10%	
				M3: Workload Focus	20%	M3: Question 1	1.40%	
				M4: Future Mil Val	50%	M4: Question 1	3.50%	
				M5: Cost of Operations	0%	M5: Question 1	0.00%	
		A5: Synergy	11%	M1: Multiple Functions	40%	M1: Question 1	0.80%	
				M2: Jointness	35%	M2: Question 1	0.70%	
				M3: Proximity	15%	M3: Question 1	0.30%	
				M4: Dual Use Capacilty	10%	M4: Question 1	0.20%	19.00%
C4: Cost	10%	A1: People	30%	M1: Education	20%	M1: Question 1	0.60%	
				M2: Experience	50%	M2: Question 1	1.50%	
				M3: Certification	30%	M3: Question 1	0.90%	
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%	
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	0.00%	
				M2: Encroachment	0%	M2: Question 1	0.00%	
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	30%	M1: Question 1	0.90%	
				M2: Depth of Application	30%	M2: Question 1	0.90%	
				M3: Value Building Conditions	15%	M3: Question 1	0.45%	
				M4 Value Utilization	25%	M4: Question 1	0.75%	
		A4: Operational Impact	20%	M1: Direct Warfighting Support	0%	M1: Question 1	0.00%	
				M2: Urgent Material Release	0%	M2: Question 1	0.00%	
				M3: Workload Focus	0%	M3: Question 1	0.00%	
				M4: Future Mil Val	0%	M4: Question 1	0.00%	
				M5: Cost of Operations	100%	M5: Question 1	2.00%	
		A5: Synergy	20%	M1: Multiple Functions	0%	M1: Question 1	0.00%	
				M2: Jointness	0%	M2: Question 1	0.00%	
				M3: Proximity	100%	M3: Question 1	2.00%	
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%	10.00%

Table B-12a Cont. Innovative Technology T&E

Weapons & Armaments D&A:

Criteria		Attributes		Metrics		Questions	
Name	Weight	Name	Weight	Name	Weight	Name	Points
C1: Mission	53%	A1: People	25%	M1: Education	30%	M1: Question 1	3.90%
				M2: Experience	42%	M2: Question 1	5.46%
				M3: Certification	18%	M3: Question 1	2.34%
				M4: Patents/Publication/sAwards	10%	M4: Question 1	1.30%
		A2: Physical Environment	9%	M1 Special Features	50%	M1: Question 1	2.50%
				M2: Encroachment	50%	M2: Question 1	2.50%
		A3: Physical Structures & Equipment	8%	M1: Uniqueness	28%	M1: Question 1	1.12%
				M2: Depth of Application	30%	M2: Question 1	1.20%
				M3: Value Building Conditions	15%	M3: Question 1	0.60%
				M4 Value Utilization	27%	M4: Question 1	1.08%
		A4: Operational Impact	40%	M1 Systems Fielded/Current & In-works	35%	M1: Question 1	7.35%
				M2: Rapid Responses	30%	M3: Question 1	6.30%
				M3: Workload Focus	20%	M4: Question 1	4.20%
				M4: Future Mil Val	15%	M5: Question 1	3.15%
				M5: Cost of Operations	0%	M5: Question 1	0.00%
		A5: Synergy	19%	M1: Multiple Functions	30%	M1: Question 1	3.00%
				M2: Jointness	25%	M2: Question 1	2.50%
				M3: Proximity	20%	M3: Question 1	2.00%
				M4: Dual Use Capacilty	25%	M4: Question 1	2.50%
C2: Facilities	12%	A1: People	0%	M1: Education	0%	M1: Question 1	0.00%
				M2: Experience	0%	M2: Question 1	0.00%
				M3: Certification	0%	M3: Question 1	0.00%
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%
		A2: Physical Environment	50%	M1 Special Features	45%	M1: Question 1	2.70%
				M2: Encroachment	55%	M2: Question 1	3.30%
		A3: Physical Structures & Equipment	50%	M1: Uniqueness	28%	M1: Question 1	1.68%
				M2: Depth of Application	30%	M2: Question 1	1.80%
				M3: Value Building Conditions	15%	M3: Question 1	0.90%
				M4 Value Utilization	27%	M4: Question 1	1.62%
		A4: Operational Impact	0%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	0.00%
				M2: Rapid Responses	0%	M2: Question 1	0.00%
				M3: Workload Focus	0%	M3: Question 1	0.00%
				M4: Future Mil Val	0%	M4: Question 1	0.00%
				M5: Cost of Operations	0%	M5: Question 1	0.00%
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	0.00%
				M2: Jointness	0%	M2: Question 1	0.00%
				M3: Proximity	0%	M3: Question 1	0.00%
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%

Table B-13 Weapons & Armaments Technology D&A

Weapons & Armaments D&A:

Criteria		Attributes		Metrics		Questions	
Name	Weight	Name	Weight	Name	Weight	Name	Points
C3: Contingency	25%	A1: People	20%	M1: Education	30%	M1: Question 1	1.50%
				M2: Experience	42%	M2: Question 1	2.10%
				M3: Certification	18%	M3: Question 1	0.90%
				M4: Patents/Publication/sAwards	10%	M4: Question 1	0.50%
		A2: Physical Environment	4%	M1 Special Features	45%	M1: Question 1	0.45%
				M2: Encroachment	55%	M2: Question 1	0.55%
		A3: Physical Structures & Equipment	16%	M1: Uniqueness	28%	M1: Question 1	1.12%
				M2: Depth of Application	30%	M2: Question 1	1.20%
				M3: Value Building Conditions	15%	M3: Question 1	0.60%
				M4 Value Utilization	27%	M4: Question 1	1.08%
		A4: Operational Impact	36%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	0.00%
				M2: Rapid Responses	0%	M2: Question 1	0.00%
				M3: Workload Focus	40%	M3: Question 1	3.60%
				M4: Future Mil Val	60%	M4: Question 1	5.40%
				M5: Cost of Operations	0%	M5: Question 1	0.00%
		A5: Synergy	24%	M1: Multiple Functions	30%	M1: Question 1	1.80%
				M2: Jointness	25%	M2: Question 1	1.50%
				M3: Proximity	20%	M3: Question 1	1.20%
				M4: Dual Use Capacilty	25%	M4: Question 1	1.50%
C4: Cost	10%	A1: People	30%	M1: Education	50%	M1: Question 1	1.50%
				M2: Experience	50%	M2: Question 1	1.50%
				M3: Certification	0%	M3: Question 1	0.00%
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	0.00%
				M2: Encroachment	0%	M2: Question 1	0.00%
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	0.00%
				M2: Depth of Application	0%	M2: Question 1	0.00%
				M3: Value Building Conditions	20%	M3: Question 1	0.60%
				M4 Value Utilization	80%	M4: Question 1	2.40%
		A4: Operational Impact	20%	M1 Systems Fielded/Current & In-works	0%	M1: Question 1	0.00%
				M2: Rapid Responses	0%	M2: Question 1	0.00%
				M3: Workload Focus	0%	M3: Question 1	0.00%
				M4: Future Mil Val	0%	M4: Question 1	0.00%
				M5: Cost of Operations	100%	M5: Question 1	2.00%
		A5: Synergy	20%	M1: Multiple Functions	25%	M1: Question 1	0.50%
				M2: Jointness	20%	M2: Question 1	0.40%
				M3: Proximity	30%	M3: Question 1	0.60%
				M4: Dual Use Capacilty	25%	M4: Question 1	0.50%

Table B-13a Cont. Weapons & Armaments Technology D&A

Weapons & Armaments Research:

Criteria		Attributes		Metrics		Questions	
Name	Weight	Name	Weight	Name	Weight	Name	Points
C1: Mission	53%	A1: People	32%	M1: Education	40%	M1: Question 1	6.80%
				M2: Experience	36%	M2: Question 1	6.12%
				M3: Certification	6%	M3: Question 1	1.02%
				M4: Patents/Publication/sAwards	18%	M4: Question 1	3.06%
		A2: Physical Environment	4%	M1 Special Features	50%	M1: Question 1	1.00%
				M2: Encroachment	50%	M2: Question 1	1.00%
		A3: Physical Structures & Equipment	13%	M1: Uniqueness	28%	M1: Question 1	1.96%
				M2: Depth of Application	30%	M2: Question 1	2.10%
				M3: Value Building Conditions	15%	M3: Question 1	1.05%
				M4 Value Utilization	27%	M4: Question 1	1.89%
		A4: Operational Impact	28%	M1: Technology Transition	28%	M1: Question 1	4.20%
				M2: Advance Tech Demos	18%	M2: Question 1	2.70%
				M3: Rapid Responses	21%	M3: Question 1	3.15%
				M4: Workload Focus	18%	M4: Question 1	2.70%
				M5: Future Mil Val	15%	M5: Question 1	2.25%
				M6: Cost of Operations	0%	M6: Question 1	0.00%
		A5: Synergy	23%	M1: Multiple Functions	30%	M1: Question 1	3.60%
				M2: Jointness	25%	M2: Question 1	3.00%
				M3: Proximity	20%	M3: Question 1	2.40%
				M4: Dual Use Capacilty	25%	M4: Question 1	3.00%
C2: Facilities	12%	A1: People	0%	M1: Education	0%	M1: Question 1	0.00%
				M2: Experience	0%	M2: Question 1	0.00%
				M3: Certification	0%	M3: Question 1	0.00%
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%
		A2: Physical Environment	33%	M1 Special Features	45%	M1: Question 1	1.80%
				M2: Encroachment	55%	M2: Question 1	2.20%
		A3: Physical Structures & Equipment	67%	M1: Uniqueness	28%	M1: Question 1	2.24%
				M2: Depth of Application	30%	M2: Question 1	2.40%
				M3: Value Building Conditions	15%	M3: Question 1	1.20%
				M4 Value Utilization	27%	M4: Question 1	2.16%
		A4: Operational Impact	0%	M1: Technology Transition	0%	M1: Question 1	0.00%
				M2: Advance Tech Demos	0%	M2: Question 1	0.00%
				M3: Rapid Responses	0%	M3: Question 1	0.00%
				M4: Workload Focus	0%	M4: Question 1	0.00%
				M5: Future Mil Val	0%	M5: Question 1	0.00%
				M6: Cost of Operations	0%	M6: Question 1	0.00%
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	0.00%
				M2: Jointness	0%	M2: Question 1	0.00%
				M3: Proximity	0%	M3: Question 1	0.00%
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%

Table B-14 Weapons & Armaments Technology Research

Weapons & Armaments Research:

Criteria		Attributes		Metrics		Questions	
Name	Weight	Name	Weight	Name	Weight	Name	Points
C3: Contingency	25%	A1: People	40%	M1: Education	40%	M1: Question 1	4.00%
				M2: Experience	36%	M2: Question 1	3.60%
				M3: Certification	6%	M3: Question 1	0.60%
				M4: Patents/Publication/sAwards	18%	M4: Question 1	1.80%
		A2: Physical Environment	4%	M1 Special Features	45%	M1: Question 1	0.45%
				M2: Encroachment	55%	M2: Question 1	0.55%
		A3: Physical Structures & Equipment	20%	M1: Uniqueness	28%	M1: Question 1	1.40%
				M2: Depth of Application	30%	M2: Question 1	1.50%
				M3: Value Building Conditions	15%	M3: Question 1	0.75%
				M4 Value Utilization	27%	M4: Question 1	1.35%
		A4: Operational Impact	12%	M1: Technology Transition	0%	M1: Question 1	0.00%
				M2: Advance Tech Demos	0%	M2: Question 1	0.00%
				M3: Rapid Responses	30%	M3: Question 1	0.90%
				M4: Workload Focus	30%	M4: Question 1	0.90%
				M5: Future Mil Val	40%	M5: Question 1	1.20%
				M6: Cost of Operations	0%	M6: Question 1	0.00%
		A5: Synergy	24%	M1: Multiple Functions	30%	M1: Question 1	1.80%
				M2: Jointness	25%	M2: Question 1	1.50%
				M3: Proximity	20%	M3: Question 1	1.20%
				M4: Dual Use Capacilty	25%	M4: Question 1	1.50%
C4: Cost	10%	A1: People	30%	M1: Education	50%	M1: Question 1	1.50%
				M2: Experience	50%	M2: Question 1	1.50%
				M3: Certification	0%	M3: Question 1	0.00%
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	0.00%
				M2: Encroachment	0%	M2: Question 1	0.00%
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	0.00%
				M2: Depth of Application	0%	M2: Question 1	0.00%
				M3: Value Building Conditions	20%	M3: Question 1	0.60%
				M4 Value Utilization	80%	M4: Question 1	2.40%
		A4: Operational Impact	20%	M1: Technology Transition	0%	M1: Question 1	0.00%
				M2: Advance Tech Demos	0%	M2: Question 1	0.00%
				M3: Rapid Responses	0%	M3: Question 1	0.00%
				M4: Workload Focus	0%	M4: Question 1	0.00%
				M5: Future Mil Val	0%	M5: Question 1	0.00%
				M6: Cost of Operations	100%	M6: Question 1	2.00%
		A5: Synergy	20%	M1: Multiple Functions	25%	M1: Question 1	0.50%
				M2: Jointness	20%	M2: Question 1	0.40%
				M3: Proximity	30%	M3: Question 1	0.60%
				M4: Dual Use Capacilty	25%	M4: Question 1	0.50%

Table B-14a Cont. Weapons & Armaments Technology Research

Weapopns & Armaments T&E:

Criteria		Attributes		Metrics		Questions	
Name	Weight	Name	Weight	Name	Weight	Name	Points
C1: Mission	53%	A1: People	30%	M1: Education	25%	M1: Question 1	4.00%
				M2: Experience	50%	M2: Question 1	8.00%
				M3: Certification	21%	M3: Question 1	3.36%
				M4: Patents/Publication/sAwards	4%	M4: Question 1	0.64%
		A2: Physical Environment	13%	M1 Special Features	50%	M1: Question 1	3.50%
				M2: Encroachment	50%	M2: Question 1	3.50%
		A3: Physical Structures & Equipment	9%	M1: Uniqueness	28%	M1: Question 1	1.40%
				M2: Depth of Application	30%	M2: Question 1	1.50%
				M3: Value Building Conditions	15%	M3: Question 1	0.75%
				M4 Value Utilization	27%	M4: Question 1	1.35%
		A4: Operational Impact	32%	M1: Direct Warfighting Support	35%	M1: Question 1	5.95%
				M2: Urgent Material Release	25%	M2: Question 1	4.25%
				M3: Workload Focus	25%	M3: Question 1	4.25%
				M4: Future Mil Val	15%	M4: Question 1	2.55%
				M5: Cost of Operations	0%	M5: Question 1	0.00%
		A5: Synergy	15%	M1: Multiple Functions	30%	M1: Question 1	2.40%
				M2: Jointness	25%	M2: Question 1	2.00%
				M3: Proximity	20%	M3: Question 1	1.60%
				M4: Dual Use Capacilty	25%	M4: Question 1	2.00%
C2: Facilities	18%	A1: People	0%	M1: Education	0%	M1: Question 1	0.00%
				M2: Experience	0%	M2: Question 1	0.00%
				M3: Certification	0%	M3: Question 1	0.00%
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%
		A2: Physical Environment	44%	M1 Special Features	45%	M1: Question 1	3.60%
				M2: Encroachment	55%	M2: Question 1	4.40%
		A3: Physical Structures & Equipment	56%	M1: Uniqueness	28%	M1: Question 1	2.80%
				M2: Depth of Application	30%	M2: Question 1	3.00%
				M3: Value Building Conditions	15%	M3: Question 1	1.50%
				M4 Value Utilization	27%	M4: Question 1	2.70%
		A4: Operational Impact	0%	M1: Direct Warfighting Support	0%	M1: Question 1	0.00%
				M2: Urgent Material Release	0%	M2: Question 1	0.00%
				M3: Workload Focus	0%	M3: Question 1	0.00%
				M4: Future Mil Val	0%	M4: Question 1	0.00%
				M5: Cost of Operations	0%	M5: Question 1	0.00%
		A5: Synergy	0%	M1: Multiple Functions	0%	M1: Question 1	0.00%
				M2: Jointness	0%	M2: Question 1	0.00%
				M3: Proximity	0%	M3: Question 1	0.00%
				M4: Dual Use Capacilty	0%	M4: Question 1	0.00%

Table B-15 Weapons & Armaments Technology T&E

Weapopns & Armaments T&E:

Criteria		Attributes		Metrics		Questions	
Name	Weight	Name	Weight	Name	Weight	Name	Points
C3: Contingency	19%	A1: People	11%	M1: Education	25%	M1: Question 1	0.50%
				M2: Experience	50%	M2: Question 1	1.00%
				M3: Certification	21%	M3: Question 1	0.42%
				M4: Patents/Publication/sAwards	4%	M4: Question 1	0.08%
		A2: Physical Environment	16%	M1 Special Features	45%	M1: Question 1	1.35%
				M2: Encroachment	55%	M2: Question 1	1.65%
		A3: Physical Structures & Equipment	26%	M1: Uniqueness	28%	M1: Question 1	1.40%
				M2: Depth of Application	30%	M2: Question 1	1.50%
				M3: Value Building Conditions	15%	M3: Question 1	0.75%
				M4 Value Utilization	27%	M4: Question 1	1.35%
		A4: Operational Impact	37%	M1: Current Testing in Works	0%	M1: Question 1	0.00%
				M2: Urgent Material Release	40%	M2: Question 1	2.80%
				M3: Workload Focus	30%	M3: Question 1	2.10%
				M4: Future Mil Val	30%	M4: Question 1	2.10%
				M5: Cost of Operations	0%	M5: Question 1	0.00%
		A5: Synergy	11%	M1: Multiple Functions	30%	M1: Question 1	0.60%
				M2: Jointness	25%	M2: Question 1	0.50%
				M3: Proximity	20%	M3: Question 1	0.40%
				M4: Dual Use Capacilty	25%	M4: Question 1	0.50%
C4: Cost	10%	A1: People	30%	M1: Education	25%	M1: Question 1	0.75%
				M2: Experience	75%	M2: Question 1	2.25%
				M3: Certification	0%	M3: Question 1	0.00%
				M4: Patents/Publication/sAwards	0%	M4: Question 1	0.00%
		A2: Physical Environment	0%	M1 Special Features	0%	M1: Question 1	0.00%
				M2: Encroachment	0%	M2: Question 1	0.00%
		A3: Physical Structures & Equipment	30%	M1: Uniqueness	0%	M1: Question 1	0.00%
				M2: Depth of Application	0%	M2: Question 1	0.00%
				M3: Value Building Conditions	20%	M3: Question 1	0.60%
				M4 Value Utilization	80%	M4: Question 1	2.40%
		A4: Operational Impact	20%	M1: Direct Warfighting Support	0%	M1: Question 1	0.00%
				M2: Urgent Material Release	0%	M2: Question 1	0.00%
				M3: Workload Focus	0%	M3: Question 1	0.00%
				M4: Future Mil Val	0%	M4: Question 1	0.00%
				M5: Cost of Operations	100%	M5: Question 1	2.00%
		A5: Synergy	20%	M1: Multiple Functions	25%	M1: Question 1	0.50%
				M2: Jointness	20%	M2: Question 1	0.40%
				M3: Proximity	30%	M3: Question 1	0.60%
				M4: Dual Use Capacilty	25%	M4: Question 1	0.50%

Table B-15a Cont. Weapons & Armaments Technology T&E

Technical Capability	Alpha	Beta
Air Platforms	0.40	0.60
Battlespace Environments	0.70	0.30
Biomedical	0.90	0.10
Chemical Biological Defense	0.50	0.50
Ground Vehicles	0.40	0.60
Human Systems	0.90	0.10
Information Systems Technology	0.85	0.15
Materials and Processes	0.90	0.10
Nuclear Technology	0.80	0.20
Sea Vehicles	0.35	0.65
Sensors, Electronics, and EW	0.65	0.35
Space Platforms	0.70	0.30
Weapons Technology	0.30	0.70

Table B-16 Alpha and Beta for Incorporation of OAR scores into MILVAL

Appendix C

Acronyms and Symbols

ACAT - Acquisition Category Code program designation

ACTD - Advanced Concept Technology Demonstration

AFI - Number of ACATI products fielded or in work

AFII - Number of ACATII products fielded or in work

AFIII - Number of ACATIII products fielded or in work

AFIV - Number of ACAT IV products fielded or in work

AI - 1 point if academic institutions are co-located or located within 60 miles from the outside physical border of the facility

ATD - Advanced Technology Demonstration

AR - Arctic

AS - Airspace under the control of the facility, expressed in terms of restricted/warning area(s)

ALSS - Air, Land, Sea & Space Systems

AT - Analytic Team

BRAC - Base Realignment and Closure

C - Amount of funded work (if ≥ 10%) in another technical capability area(s)

CB - Chemical-Biological capability

CBNRE - Chemical, Biological, Radiological, Nuclear and High Explosive

CIT - Capability Integration Team

CL_i - % of workforce with highest Defense Acquisition Workforce Improvement Act Certification Level of either 1, 2, or 3.

C4ISR - Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance

CUST - 1 point for customers/users co-located or located within 60 miles from the outside physical border of the facility.

DAWIA - Defense Acquisition Workforce Improvement Act

D&A - Development and Acquisition

DE - Desert

DoD - Department of Defense

DT&E - Developmental Test and Evaluation

DTO - Defense Technology Objective

DW - Total Sea Space in Deep Water (≥ 100 fathoms in square nautical miles)

DZ - Drop Zone

EASM - 50 x number of Elite National and International Technical Awards/Society Memberships (all past occurrences, indicate name if individual, and year awarded) (i.e., Nobel Prize, Robert J. Collier Trophy, National Medal of Science, Draper Prize, Bower Award for Achievement in Science)

El_i -% of workforce with an Education Level at either an Associates Degree, Bachelors Degree, Masters Degree or PhD

EM - Electromagnetic Spectrum capability

ET - Enabling Technologies

EW - Electronic Warfare

EXP_i - % of workforce with 0-10 years, 10 to 20 years, or greater than 20 years Experience

F - Amount of funded work (if ≥ 10%) in a function other than the major function or each of the three major functions

F_i - Factors based on scoring plan for each metric

F_i - The weighting factor to balance the Base Realignment and Closure (BRAC) importance of “in-house” versus “out-house” efforts.

FCI - Facility Condition Index

FFTE - In-house (Government & on-site contractor) full time equivalents (FTE) at the technical facility

FMV - Future Military Value

FO - Forested

FOIA - Freedom of Information Act

FTE - Full Time Equivalent

FTFE$ - Funding executed by the technical facility

FU - 1 point if our facility is used by another service

FY - Fiscal Year

GA - 1 point if another non-DoD government agency is co-located or located within 60 miles from the outside physical border of the facility.

HVFWC - High Value Future Warfighting Capability

IAL - Impact Area in square nautical miles (used for land area calculation)

IAS - Impact Area in square nautical miles (used for sea space calculation)

IEEE - Institute of Electronics and Electrical Engineering

IOC - Initial Operational Capability

IP - 1 x number of Invited Presentations (National or International Technical Society Conferences)

IP - 1 point if an industry partner is co-located or located within 60 miles from the outside physical border of the facility

IS - Innovative Systems

ISG - Infrastructure Steering Group

JCSG - Joint Cross Service Group

JP - 1 point awarded if a joint or another service’s program is executed at your facility

k_j - Weights assigned by each of the Technical Joint Cross Service Group subgroups for the metrics

LA - Land Area under the control of the facility, expressed in terms of restricted/warning area(s)

LI - Littoral

LLD - Longest Linear Dimension in kilometers

LO - Live Ordnance capability

LSLD - Longest Straight Line Distance in nautical miles

LSLOW - Longest Straight Line Distance Over Water in nautical miles

m_p - Normalized values of the scored data

M - The number of High Value Defense Technology Area Plan (DTAP) Areas/Sub-areas

MM - Each major modification made to an existing system/product fielded in the last three years

MO - Mountainous

MOA - Memorandum of Agreement

MTFE$ - Maximum funding executed by any like technical facility

MV - Military Value

NA - Net Area in acres

NM - Nautical Miles

NP - 1 x Number of Patents awarded at the facility

NV - Net Volume in cubic nautical miles

O - Other activity(s) accomplished at a facility

OAM - 1 x number of Other National and International Technical Awards/Society Memberships (if and individual, must be currently on staff, identify by name, and year awarded)

OC - % of workforce that are either Test Pilot School graduates, hold any of the approved Software Certifications, or hold Professional Engineering licenses

OF - 1 point for each other function (Science and Technology, Development and Acquisition, Test and Evaluation) co-located or located within 60 miles from the outside physical border of the facility.

OSD - Office of the Secretary of Defense

OT&E - Operational Test and Evaluation

PA - 1 point if another service's personnel are permanently assigned to your facility (tenant at your facility)

PASM - 10 x number of Prestigious National and International Technical Awards/Society Memberships (must be currently on staff if individual, identify name and year awarded) (i.e., Stellar Award, Lord Rank Award, National Inventors Hall of Fame, Space Technology Hall of Fame, member of National Academy of Sciences, member of National Academy of Engineering, Institute of Electronics and Electrical Engineering (IEEE) Fellow)

PL - 2 x number of patents licensed by the facility

PUB - 1 x number of technical publications (each book, book chapter, citations of papers in refereed journals/ # of papers)
QDR - Quadrennial Defense Review

R - Research

RH - Rolling Hills

R&D - Research and Development

RDAT&E - Research, Development, Acquisition, Test and Evaluation

S - Sigma: The sum of

S(acat) - The total ACAT I, II, III and IV systems fielded (Initial Operational Capability (IOC)) in the last three years or currently in work

S(actd) - Sum of all Advanced Concept Technology Demonstrations, Advanced Technology Demonstrations, Defense Technology Objectives and Technology Transition Agreements currently in work.

S(air) - The clean air quality constraint based on air quality controls, emissions, or permits.

S(bc) - Building Condition measured by the Facility Condition Index (FCI) defined as the ratio of the current capital investment required to meet required/desired mission performance to the total replacement value.

S(bl) - Buildable land measured as either no buildable land, lost buildable land, or no loss of buildable land.

S(bp) - Bounding Parameters: The bounding operating parameters of the capabilities of the physical structure or equipment, which the cost to move or replace exceeds $10M (i.e., size (volume/cross section), productivity (throughput, data rate, duration), thrust/HP, range (square miles, altitude/depth, terrain), test article size/weight, frequency range, velocity limits, and/or temperature limits.)

S(bp)f - Frequency range of a facility/MAX Broadest frequency range reported of like facilities.

S(bp)t - Temperature limits of a facility/MAX Widest temperature limits reported of like facilities.

S(bp)v - Velocity limits of a facility/MAX Widest velocity limits reported of like facilities.

S(cer) - The professional workforce who hold the following professional certifications: DAWIA, Software Engineering Certification, Professional Engineer, or who are Test Pilot School graduates

S(cli) - Climate: Positive and negative aspects of the annual weather conditions for the facility in the context of enabling or hindering the accomplishments of the facility's mission.

S(cul) - The cultural constraint placed on use by the presence of national historic sites, archeological sites and Native American asserted interest.

S(dim) - Range dimensions for either airspace, sea space, space access or land area under the control of the facility, expressed in terms of restricted/warning area(s)

S(dim)AS - Range airspace

S(dim)LA - Range land area

S(dim)SA - Range space access

S(dim)SS - Range sea space

S(doa) - Depth of Application: The aggregate use of people, physical environment, infrastructure and equipment demonstrated capability to perform integration/testing for each of the following above the component level: Sub-systems, systems and system of systems with a funding level > $2M. System of systems level refers to large scale integration of actual or simulated systems such as weapons systems/platforms with other actual or simulated systems and/or national assets.

S(duc) - Dual Use Capacity: Use of a facility's technical infrastructure by academia, industry or international activities.

S(dws) - Each system involved in Test and Evaluation (T&E) (excluding training/operation missions supported) directly in support of warfighter efforts. This includes, but is not limited to, assessing technical feasibility of early concepts, determining system performance and safety, assessing technical risks during system development, confirming designs and validating manufacturers' facilities and processes at both system and component level.

S(edu) - The educational level of the workforce expressed in terms of highest degree attained (Associates Degree, Bachelors Degree, Masters Degree, PhD)

S(enc) - Encroachment: Loss in the last five years, or potential loss, of operating envelop due to change in available operating space, frequency spectrum, licenses; and availability of buildable land

S(end) - The constraint placed by threatened/endangered species and critical habitat

S(exp) - The experience level of the professional/technical workforce expressed in terms of years, measured in years since first degree attained, or from service computation date for those without degrees

S(foc) - The magnitude of work effort at a technical facility compared to the work effort of like technical facilities.

S(freq) - The frequency spectrum constraint placed on electromagnetic radiation and emissions.

S(fwc) - Value of a technical facility to the future warfighter based on the amount of effort that will lead to a High Value Future Warfighting Capability (HVFWC).

S(jnt) - Executing a joint program at your facility, use of your facility's physical structure and or personnel by other services/OSD, or another service's personnel assigned to your facility.

S(lic) - Loss of either 0, 1 or more than 1 Operating Licenses divided by 2.

S(maritime) - The constraint resulting from the Marine Mammal Protection Act, Marine Sanctuaries, presence of marine animals or other marine restrictions.

S(mfc) - Accomplishment of more than one function or capability area at a facility.

S(mm) - The total number of major modifications made or still in work for existing systems/products fielded

S(noise) - The constraint which prohibits, limits, delays, alters or cause modifications of operations.

S(oi) - The total score establishing a military value of the operational impact of the technical infrastructure of a facility.

S(oi)D&A - The total score establishing a military value of the operational impact for the Development and Acquisition function of the technical infrastructure of a facility.

S(oi)S&T - The total score establishing a military value of the operational impact for the Research function of the technical infrastructure of a facility.

S(oi)T&E - The total score establishing a military value of the operational impact for the Test and Evaluation function of the technical infrastructure of a facility.

S(p) - The attribute score establishing a military value of people executing a particular function in a specific capability area

S(pe) - The total score establishing a military value of the physical environment associated with the technical infrastructure of the facility

S(ppa) - Number of patents granted, patents licensed, software licenses awarded, technical publications (each book, book chapter, citation of a paper in a refereed journal), number of national and international technical awards, invited presentations (at a national or international technical society conferences) over the last three years. Note: elite National and International Technical Awards and Prestigious National and International Technical Awards may be counted for any year for individuals that are currently on-staff.

S(prox) - Proximity of facility to customers/users, other functions (Science and Technology, Development and Acquisition, Test and Evaluation), industry, governmental and academic institutions that add value to the facility's product.

S(pse) - The total score establishing the military value for a facility's physical structures and equipment. For each listed physical structure or equipment (e.g., office building, laboratory, wind tunnel, pilot plant, etc.) with replacement value greater than or equal to $3M.

S(qrc) - Capabilities delivered in rapid response to meet operational deficiencies over the past three years.

S(restrictions) - The constraint by laws, regulations, and policies.

S(sfea) - Special features of the range space (supersonic corridors, live-ordnance capability, space operations support capability, drop zones, chem-bio capability, and/or electromagnetic spectrum capability)

S(syn) - The total score establishing a military value of synergy of the technical infrastructure of a facility.

S(ter) - Geo-physical features of the range space associated with the facility (tropical, desert, forested, swamp, rolling hills, mountainous, littoral, arctic, sea, (surface and subsurface))

S(ttda) - Technologies transitioned into Development and Acquisition and Industry over the past three years.

S(umr) - The total number of systems/modifications tested providing essential information for the decision making process in support of urgent materiel release or rapid fielding over the last three years.

S(unq) - Uniqueness: Physical structure and/or equipment which offers the only such technical capability within the DoD and the cost to move or replace exceed $10M.

S(urban) - The constraint as a result of urbanization and encroachment.

S(uxo) - The constraint placed by the presence or generation of unexploded ordnance.

S(water) - The constraint based upon ground water conservation or contamination requirements.

S(wetlands) - The constraint resulting from jurisdictional wetlands.
S(xxx) - The score for the metric of interest

SA - Space Access under the control of the facility, expressed in terms of restricted/warning area(s)

SC - Availability of Supersonic Corridors

SLA - 1 x number of government created software licenses awarded by the facility

SMT - Each system/modification tested to support urgent materiel release or rapid fielding over the last three years.

SOS - Space Operations Support capability

SS - Sea Space under the control of the facility, expressed in terms of restricted/warning area(s)

SS - Sea/Surface

SSS - Sea/Sub-surface

SW - Total Sea Space in Shallow Water (< 100 fathoms, in square nautical miles)

SW - Swamp

T&E - Test and Evaluation

TJCSG - Technical Joint Cross Service Group

TR - Tropical

TTA - Technology Transition Agreement

UC - Number of physical structures and/or equipment that offer a validated DoD unique technical capability with a cost to move or replace of > $10M.

USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

V - Value

V_{spi} - The value (V) from the scoring plan (sp) for the question corresponding to the ith metric.

W_i - Weights of the interim selection criteria

W_m - Weights of the attributes

Wpn - Weapons and Armaments

w_p - Weights of the metrics

Appendix D

Glossary

Base Closure Law - The provisions of Title II of the Defense Authorization Amendments and Base Closure and Realignment Act (Pub. L. 100-526, 102 Stat. 2623, 10 U.S.C. S 2687 note), or the Defense Base Closure and Realignment Act of 1990 (Pub. L. 100-526, Part A of Title XXIX of 104 Stat. 1808, 10 U.S.C. S 2687 note).

Base Realignment and Closure (BRAC) - It is the process DOD has previously used to reorganize its installation infrastructure to more efficiently and effectively support its forces, increase operational readiness and facilitate new ways of doing business. DOD anticipates that BRAC 2005 will build upon processes used in previous BRAC efforts.

Closure - All missions of the installation have ceased or have been relocated. All personnel positions (military, civilian and contractor) have either been eliminated or relocated, except for personnel required for caretaking, conducting any ongoing environmental cleanup, and disposal of the base, or personnel remaining in authorized enclaves.

Cost of Base Realignment Actions (COBRA) - Is an analytical tool used to calculate the costs, savings, and return on investment, of proposed realignment and closure actions.

Commission - The Commission established by section 2902 of the Defense Base Closure and Realignment Act of 1990, as amended.

Community preference - Section 2914(b)(2) of BRAC requires the Secretary of Defense to consider any notice received from a local government in the vicinity of a military installation that the government would approve of the closure or realignment of the installation.

Data certification - Section 2903 (c)(5) of BRAC requires specified DOD personnel to certify, to the best of their knowledge and belief, that information provided to the Secretary of Defense or the 2005 Commission concerning the realignment or closure of a military installation is accurate and complete.

Force structure - Numbers, size and composition of the units that comprise US defense forces; e.g., divisions, ships, air wings, aircraft, tanks, etc.

Infrastructure Executive Council (IEC) - One of two senior groups established by the Secretary of Defense to oversee and operate the BRAC 2005 process. The Infrastructure Executive Council, chaired by the Deputy Secretary of Defense, and composed of the Secretaries of the Military Departments and their Chiefs of Services, the Chairman of the

Joint Chiefs of Staff and Under Secretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L)), is the policy making and oversight body for the entire BRAC 2005 process.

Infrastructure Steering Group (ISG) - The subordinate of two senior groups established by the Secretary of Defense to oversee and operate the BRAC 2005 process. The Infrastructure Steering Group, chaired by the Under Secretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L)), and composed of the Vice Chairman of the Joint Chiefs of Staff, the Military Department Assistant Secretaries for installations and environment, the Service Vice Chiefs, and the Deputy Under Secretary of Defense (Installations & Environment) (DUSD(I&E)), will oversee joint cross-service analyses of common business-oriented functions and ensure the integration of that process with the Military Department and Defense Agency specific analyses of all other functions.

Military Departments - The Military Departments are the Department of the Army, Department of the Navy, which includes the Marine Corps, and Department of the Air Force.

Military installation - A base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the Department of Defense, including any leased facility. Such term does not include any facility used primarily for civil works, rivers and harbors projects, flood control, or other projects not under the primary jurisdiction or control of the Department of Defense.

National Environmental Policy Act (NEPA) Analysis - An analysis conducted to evaluate an installation's disposal decisions in terms of the environmental impact. The NEPA analysis is useful to the community's planning efforts and the installation's property disposal decisions. It is used to support DOD decisions on transferring property for community reuse.

Realignment - Includes any action that both reduces and relocates functions and civilian personnel positions, but does not include a reduction in force resulting from workload adjustments, reduced personnel or funding levels, or skill imbalances. Redevelopment authority In the case of an installation to be closed or realigned under the BRAC authority, the term "redevelopment authority" means an entity (including an entity established by a State or local government) recognized by the Secretary of Defense as the entity responsible for developing the redevelopment plan with respect to the installation or for directing the implementation of such plan.

Redevelopment plan - In the case of an installation to be closed or realigned under the BRAC authority, the term "redevelopment plan" means a plan that (A) is agreed to by the local redevelopment authority with respect to the installation; and (B) provides for the reuse or redevelopment of the real property and personal property of the installation that is available for such reuse and redevelopment as a result of the closure or realignment of the installation.

Secretary of Defense Transformation - According to the Department's April 2003 Transformation Planning Guidance document, transformation is "a process that shapes the changing nature of military competition and cooperation through new combinations of concepts, capabilities, people and organizations that exploit our nation's advantages and protect against our asymmetric vulnerabilities to sustain our strategic position, which helps underpin peace and stability in the world."

United States - The 50 states, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, American Samoa, and any other territory or possession of the United States.