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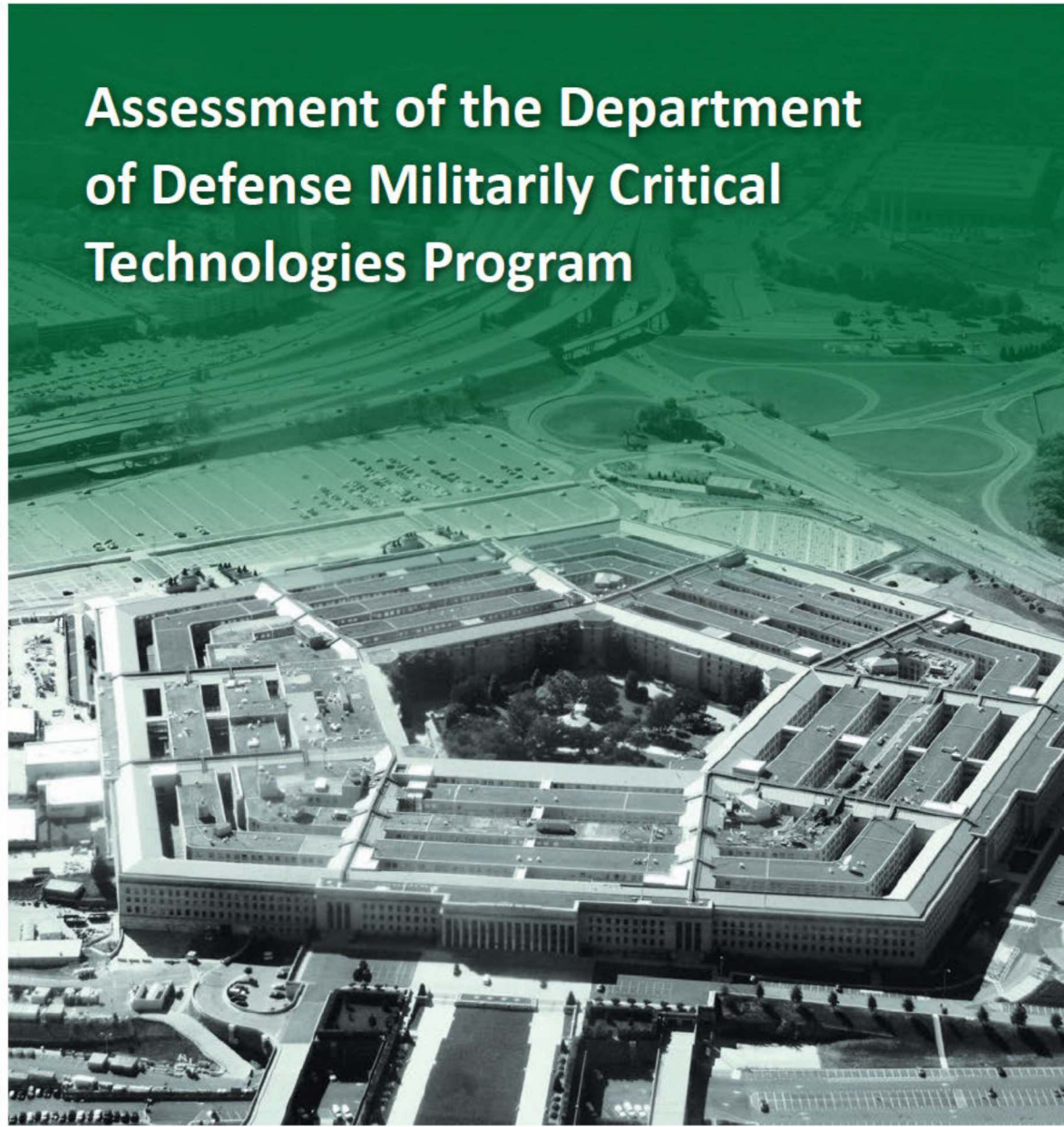
INSPECTOR GENERAL

U.S. Department of Defense

JULY 8, 2016



Assessment of the Department of Defense Militarily Critical Technologies Program



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Results in Brief

Assessment of the Department of Defense Militarily Critical Technologies Program

July 8, 2016

Objective

Our objective was to determine the effectiveness of the Militarily Critical Technologies Program in accordance with applicable DoD policy.

Finding

We found that the Militarily Critical Technologies List is ineffective and corresponding policy is outdated. Although DoD sought relief from the statutory requirement to produce a critical technologies list, DoD was unsuccessful. Consequently, DoD Instruction 3020.46, "The Militarily Critical Technologies List (MCTL)," October 24, 2008, remains in effect but no longer reflects the current status of DoD's list of critical technologies. Additionally, the Militarily Critical Technologies List has not been updated since 2011 and the Department currently uses the U.S. Munitions List and the Commerce Control List as technical references for the export control community. Because policy is not aligned with DoD's decision to use the U.S. Munitions List and the Commerce Control List as technical references for the DoD export control community, DoD components and various stakeholders are at risk of making programmatic decisions about the criticality, protection, or release of technologies based on dated and potentially inaccurate information.

Recommendations

We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics determine if the requirement in the Export Administration Act for a critical technologies list is currently being met by means other than the Militarily Critical Technologies List, and adjust policy to reflect that determination.

We further recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics along with the Under Secretary of Defense for Policy inform the internal and external export control stakeholder community -- through written notice, such as the Federal Register or directive-type memoranda, and by updating organizational websites -- that the Militarily Critical Technologies List is not being updated and should not be used as a technical reference.

Management Comments and Our Response

Management concurred with our comments to update policies to ensure the requirement in the Export Administration Act of 1979 for a critical technologies list be met, by means other than the Militarily Critical Technologies List, to alleviate confusion among some stakeholders about the disposition of the DoD-generated technology list. Comments from the Office of the Assistant Secretary of Defense for Research and Engineering indicated that DoD Instruction 3020.46 was in the process of being canceled and the associated cancellation memorandum will inform export control stakeholders in the DoD Components that the Militarily Critical Technologies List should not be used as a technical reference; rather, export control stakeholders should use the Commerce Control List and the U.S. Munitions List. Management also agreed that the broader stakeholder community should be made aware that current policy no longer reflects the current status of DoD's list of critical technologies and should not be used for technology determinations. The comments addressed the specifics of the recommendations, and no further comments are required. Please see the recommendations table on the next page.

Recommendations Table

Management	Recommendations Requiring Comment	No Additional Comments Required
Under Secretary of Defense for Acquisition, Technology, and Logistics		1,2
Under Secretary of Defense for Policy		2



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
4800 MARK CENTER DRIVE
ALEXANDRIA, VIRGINIA 22350-1500

July 8, 2016

**MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY,
AND LOGISTICS
UNDER SECRETARY OF DEFENSE FOR POLICY**

**SUBJECT: Assessment of the Department of Defense Militarily Critical Technologies Program
(Report No. DODIG-2016-109)**

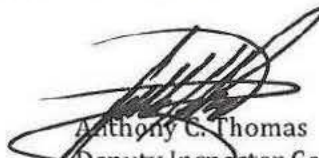
We are providing this report for your information and use. Our objective was to determine the effectiveness of the Militarily Critical Technologies Program in accordance with applicable DoD policy.

We found that DoD Instruction 3020.46, "The Militarily Critical Technologies List (MCTL)," October 24, 2008, no longer reflects the current status of DoD's list of critical technologies and is not a reliable technical reference for the export control community.

We conducted this assessment in accordance with the Council of the Inspectors General on Integrity and Efficiency Quality Standards for Inspection and Evaluation.

We considered comments on a draft of this report when preparing the final report and Recommendation 1 was subsequently revised. Management concurred with all recommendations. Comments from the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics, and the Under Secretary of Defense for Policy addressed all specifics of the recommendations and conformed to the requirements of DoD Instruction 7650.03; therefore, we do not require additional comments.

We appreciate the courtesies extended to the staff. Please direct questions to me at **DoD OIG (b)(6)**, or the Project Manager at **DoD OIG (b)(6)** (DSN **DoD OIG (b)(6)**).


Anthony C. Thomas
Deputy Inspector General for
Intelligence and Special
Program Assessments

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Acronyms and Abbreviations

Introduction

Objective

Our objective was to determine the effectiveness of the DoD Militarily Critical Technologies Program (MCTP) in accordance with applicable DoD policy.

Background

This report addresses a topic relevant to the U.S. Government Accountability Office (GAO) high risk area, “Ensuring the Effective Protection of Technologies Critical to U.S. National Security Interests.” The high-risk area states “Technological superiority is critical to U.S. military strategy. DoD spends billions of dollars each year to develop and acquire sophisticated technologies to provide an advantage for the warfighter during combat or other missions. Many of these technologies are also sold or transferred to promote U.S. economic, foreign policy, and national security interests. These technologies can also be acquired through foreign investment in the U.S. companies that develop or manufacture them. In addition, they are targets for unauthorized transfer, such as theft, espionage, reverse engineering, and illegal export. To identify and protect technologies critical to U.S. interests, the U.S. government has a number of programs. These include export controls—those developed to regulate exports and ensure that items and information are transferred to foreign parties in a manner consistent with U.S. interests.”

Establishment of DoD’s Militarily Critical Technologies Program

Export controls¹ on military and dual-use² products are essential tools in support of assuring U.S. technological superiority, because they control global proliferation and curtail the exploitation of critical military technologies. DoD, by virtue of its mission, is a primary stakeholder in U.S. export control activities. Accordingly, the Export Administration Act of 1979 places primary responsibility on the Secretary of Defense to develop a list of militarily critical technologies.

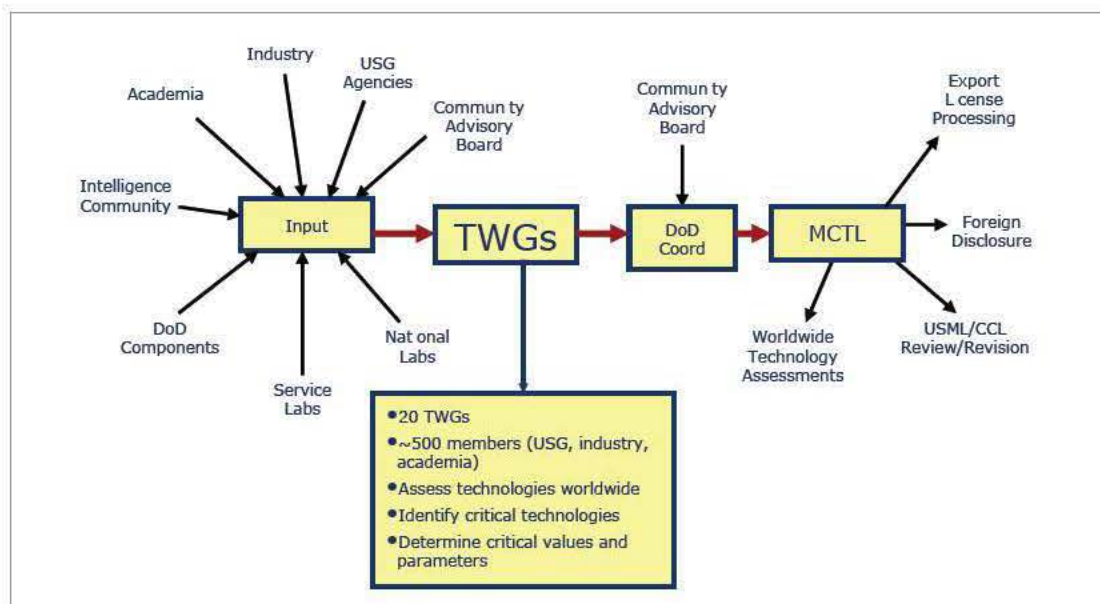
¹ An export occurs whenever any item (i.e., any commodity, software, technology, or equipment) or information is sent from the U.S. to a foreign destination or provided to a foreign national here or abroad. The manner in which the transfer or release of the item or information occurs does not matter. “Export Controls” refers collectively to the body of U.S. laws and regulations that govern the transfer of controlled items or information to foreign nationals or foreign entities.

² Dual use goods are products and technologies normally used for civilian purposes but which may have military applications.

The intent is to ensure that export control determinations consider the nature of militarily critical goods and technologies and the means by which such goods and technologies are effectively transferred. DoD implemented this requirement through the MCTP.

Established in 1980, the goal of the MCTP was to produce and publish a list of critical technologies that would inform export control determinations. The resulting MCTL was a detailed compilation of technologies that DoD assessed as critical to maintaining superior U.S. military capability. The list was developed by technology working groups (TWGs) composed of subject matter experts from academia, industry, and government agencies. Figure 1 below depicts the MCTL process, further detailed in Appendix B.

Figure 1. Militarily Critical Technologies List Process Overview



Source: DoD Instruction 3020.46

Additional Uses for the Militarily Critical Technologies List

The statutory, singular reason for the MCTL is to inform export control policy-makers as to the technical criteria and parameters by which a technology could be considered militarily critical. However, there are consumers of the MCTL in other elements of the technology security spectrum of protection options who have expanded the use of the MCTL beyond its original mandate and further than the intent of DoD Instruction 3020.46. Counterintelligence, intelligence, and security personnel used the MCTL to accomplish protection and enforcement activities.

Specifically, the MCTL was used as a:

- reference in support of security classification guides;
- resource for administrative security to determine what to classify and why it should be classified;
- reference for counterintelligence support to industrial security, Foreign Ownership, Control, or Influence determinations, and support to the Committee on Foreign Investment in the U.S. cases;
- resource in support of supply chain considerations when establishing contractual policy; and
- guide for the Services to assist in identifying critical program information.³

Additional uses included support for anti-tamper, foreign disclosure⁴, damage assessments, and as a guide to consult when constructing critical program information catalogs, as part of the horizontal protection⁵ program, for consistency in determinations. The latter program adapted the MCTL's taxonomy for use in DoD's Acquisition Security Database. The wide use of the list, however, did not necessarily mean that it was of equal benefit for all of the identified uses.

Government Accountability Office Reports on the Militarily Critical Technologies List

GAO published three reports (detailed in Appendix C) since 2006 addressing the extent to which the MCTL has not been an effective tool in DoD's technology regulatory process. The GAO recommended that:

- the Secretary of Defense determine the best approach to meeting users' needs for a technical reference, whether it be the MCTL, other alternatives being used, or some combination thereof;
- the Secretary of Defense ensure that resources are coordinated and efficiently devoted to sustain the approach chosen; and
- if DoD determines that the MCTL is not the optimal solution for aiding programs' efforts to identify militarily critical technologies that the Secretary of Defense seeks necessary relief from DoD's current responsibility.

³ Critical program information is U.S. capability elements that contribute to the warfighters' technical advantage, which if compromised, undermines U.S. military preeminence. U.S. capability elements may include, but are not limited to, software algorithms and specific hardware residing on the system, its training equipment, or maintenance support equipment.

⁴ Foreign disclosure is the legal transfer of classified or controlled unclassified military information through approved channels to an authorized representative of a foreign government.

⁵ Horizontal protection is the application of a consistent level of protection to similar critical program information associated with more than one research, development, test, and evaluation program, including inherited critical program information.

During the course of the GAO assessments, the Office of the Assistant Secretary of Defense for Research and Engineering (OASD (R&E)) tasked the Institute for Defense Analysis to conduct a study to ascertain whether the broader DoD community's needs for a technical reference were being met. The resulting report, "Assessment of Needs for a Militarily Relevant Technologies Reference," issued in July 2013, determined that there is substantial demand for such information.

DoD explored the development of an automated technical reference based on the assessed need. The Defense Technology Knowledge Base was a prototype developed under the auspices of Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD(AT&L)) Technology Security Office⁶ with the goal of providing a validated reference in support of DoD technology security and risk determinations. The requirements were established based on Institute for Defense Analysis-led discussions with stakeholders within the framework of the current national security environment. The resulting prototype was a browser based system that addressed stakeholder requirements to identify and capture relationships among technologies, weapon systems, components, and programs, companies. The knowledge-based approach enabled system adaptations and automated support for users; and the on-line updating and maintenance capability mitigated the cost of subject matter expert staffing. The Defense Technology Knowledge Base reached the developmental stage of a proof of principle net-centric prototype before the ASD (R&E) determined that the system was not possible in light of fiscal constraints and the viability of the U.S. Munitions List (USML) and Commerce Control List (CCL) as alternative references.

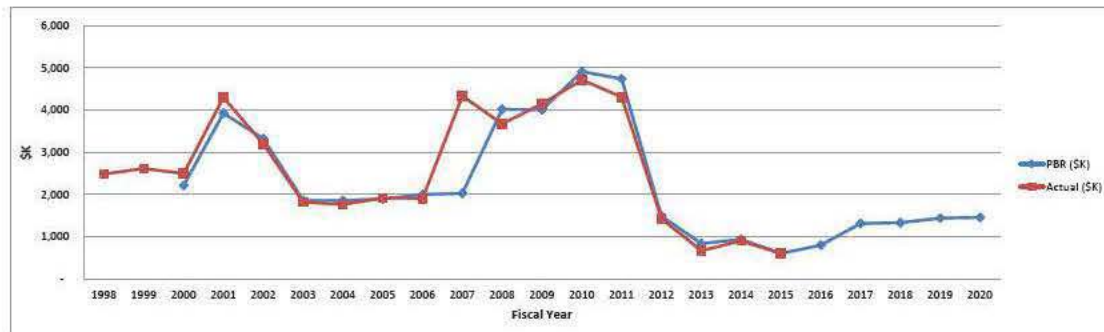
Issues Impacting the Militarily Critical Technologies Program

There were noticeable increases in program funding in the OUSD(AT&L) FY 2011 budget. However, OUSD(AT&L) leadership made a determination based on "higher AT&L priorities" to reduce funding levels for the MCTP in the FY 2012 budget and funding has remained below pre-FY 2011 levels ever since.

⁶ The Technology Security Office a subordinate office within the OUSD (AT&L) research directorate provides oversight for the MCTP.

Figure 2 below reflects the actual and projected levels of funding for the MCTP since 1998. All numbers are expressed in thousands.

Figure 2. Militarily Critical Technologies Program Funding



Source: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics

After DoD ceased updating the MCTL, the OUSD(AT&L) Technology Security Office removed the public version of the MCTL from the Defense Technical Information Center⁷ website in late 2011 to ensure that organizations were not making programmatic decisions based on dated and potentially inaccurate information.

In early July 2015, DoD sought relief from the requirement to maintain a critical technologies list. Both DoD and the Department of Commerce submitted their respective agency positions to the National Security Council. DoD's proposed course of action was not supported by the Department of Commerce. Commerce was concerned that the request for relief would have to be done on an annual basis, and could complicate the overall renewal of the Export Administration Act. On August 7, 2015, the provisions of the Export Administration Act were extended through Presidential notice. However, language specifying the exclusion of a requirement to maintain a critical technologies list was not included.

Alternatives to the Militarily Critical Technologies List Under Export Control Reform

DoD did not receive statutory relief from the requirement to maintain the MCTL and yet has not updated the MCTL since 2011. Instead, DoD has relied on the USML and the CCL for export determinations. During our interviews, OUSD(AT&L) and Office of the Under Secretary of Defense for Policy (OUSD(P)) representatives emphasized that the USML and the CCL have presented viable alternatives to the MCTL for the export control community and their subsequent revisions under an ongoing Export Control Reform initiative increased their usefulness in recent years.

⁷ The Defense Technical Information Center is the central scientific, research, and engineering information support activity for the Assistant Secretary of Defense for Research and Engineering (ASD(R&E)) on matters pertaining to centralized operation of DoD services, databases, and systems for the acquisition, storage, retrieval, and distribution of scientific, research, and engineering information in support of DoD research, development, testing and evaluation, and studies programs.

Export Control Reform

Export Control Reform began in 2009 as an effort to modernize the export control system. The President directed an interagency⁸ task force composed of export control agencies including DoD, to review export controls and identify additional ways to enhance U.S. national security.

Export Control Reform is a federated effort to support export control and licensing determinations while enhancing U.S. national security. The DoD export control community has worked with interagency stakeholders to create a consolidated export control list and an updated USML. This effort was occurring while the reallocation of funds based on OUSD (AT&L) priorities, and the dissolution of the supporting TWGs, adversely affected updates to the MCTL.

Based on the task force's findings, DoD established four main objectives supporting reform to the US export system:

- single licensing/control agency;
- single export control list;
- single enforcement coordination agency; and
- single information technology system.

Relevant to this assessment was the goal of a single export control list. This process is underway through a review of the USML and the migration of less-significant military systems, parts, and components to the 600 series⁹ on the CCL. That is, items that were once subject to the International Traffic in Arms Regulations but are no longer within the scope of a revised USML category, comprise the newly created export classification control numbered series within the CCL.

DoD stakeholders indicated that they worked closely with the Departments of State and Commerce, and other interagency stakeholders to review the USML and identify items that should remain on the USML and those that should migrate to the CCL. The remaining items on the USML, represent in the opinion of OUSD(P)

⁸ Participating agencies included the Departments of Defense, State, Commerce, Energy, the Treasury, Justice, Homeland Security and the Office of the Director of National Intelligence.

⁹ On April 16, 2013, the U.S. Departments of Commerce and State published final rules describing the initial implementation of Export Control Reform. These final rules fundamentally reform the U.S. export control system by changing the jurisdiction of thousands of military items, mostly parts and components, that do not provide a critical military or intelligence capability. Such items will move from the International Traffic in Arms Regulations, which are administered by the Department of State, to the Export Administration Regulations, which are administered by the Department of Commerce. Items transferring from the International Traffic in Arms Regulations USML to the Export Administration Regulations CCL are identified under new Export Control Classification Numbers, known as the 600 series. Most 600 series items will require a license to all countries except Canada, but many will be eligible for license exceptions. This will avoid the need for prior approval from the U.S. Government for transactions of less concern, such as trade with U.S. allies.

Defense Technology Security Administration representatives who are charged with export control policy for DoD, the most current list of militarily critical items and technologies.

Additionally, interviews, internal documents to include email communications, and concept and background papers, substantiate positions that senior OUSD(AT&L) and OUSD(P) officials expressed when stating current processes for reviewing export control lists, including those established under Export Control Reform, are meeting DoD needs.

When asked if the process for placing items on the CCL or the USML was difficult, a senior OUSD(P) representative said the process improved with the advent of Export Control Reform. He stated that getting items on to the CCL is the first priority, noting that it is a more involved process than the USML.

Additions to the USML, by comparison, can be accomplished through an interagency discussion. The official explained that additions of technologies to the USML are event driven. The process occurs when a new technology rises to a threshold that requires agency attention and has sufficient information to support its addition to the list.

This distinguishes the process from previous practices when adding items to the MCTL. Changes or updates occurred every two years. However, the Departments of Commerce and State have responsibility for administering the CCL and the USML respectively, and therefore determine their content. The DoD has responsibility for the MCTL.

Finding

The Militarily Critical Technologies List is Ineffective and Corresponding Policy is Outdated

We found that the Militarily Critical Technologies List is ineffective and corresponding policy is outdated. Although DoD sought relief from the statutory requirement to produce a critical technologies list, DoD was unsuccessful. Consequently, DoD Instruction 3020.46, "The Militarily Critical Technologies List (MCTL)," October 24, 2008, remains in effect but no longer reflects the current status of DoD's list of critical technologies. Additionally, the Militarily Critical Technologies List has not been updated since 2011 and the Department currently uses the U.S. Munitions List and the Commerce Control List as technical references for the export control community. Because policy is not aligned with DoD's decision to use the U.S. Munitions List and the Commerce Control List as technical references for the DoD export control community, DoD components and various stakeholders are at risk of making programmatic decisions about the criticality, protection, or release of technologies based on dated and potentially inaccurate information.

Viability of the Militarily Critical Technologies List

We determined that the MCTL was not a useful resource to support export control and licensing determinations, because the information was not current. In addition, when it was used, it was primarily used for purposes other than export control and licensing determinations. We also found that DoD and the export control community rely on the revised USML resulting from the Export Control Reform initiative as a viable alternative to the MCTL to assist with export control and licensing determinations. OUSD(AT&L) and OUSD(P) personnel maintain that the USML and CCL represents the most current list of militarily critical items and technologies. Moreover, current processes for reviewing export control lists, including those established under export control reform, enable DoD to update the USML and CCL with new and emerging technologies.

Our interviews with OUSD(AT&L) and OUSD(P) personnel, and reviews of DoD internal documents, listed in Appendix A, under Scope and Methodology, support previous GAO reports, listed in Appendix A, under Prior Coverage, that the export control community never considered the MCTL to be of much benefit to export control and licensing determinations.

Moreover, a July 2013 Institute for Defense Analyses report on the MCTL, “Assessment of Needs for a Militarily Relevant Technologies Reference,” stated that different organizations required varied levels of information from the MCTL. For some, it was too technical; for others, not technical enough.

GAO reports also noted that the MCTL is not being used to develop export control proposals or to inform individual export licensing decisions because the list is too broad and out of date. GAO recommended, among other things, that DoD determine user requirements and clarify the purpose of the MCTL. Most notably, the report stated that if the identified purpose differed from the original intent of the MCTL—that is, to inform export control decisions—DoD should seek legislative relief.

In 2015, the MCTL was included in a GAO report on protecting critical technologies, confirming that the MCTL is underutilized. The report confirmed that DoD officials were no longer updating the MCTL and were deciding whether to seek relief from the requirement to maintain the list.

We determined through interviews and document reviews that the MCTL had never been fully used as intended to support export control determinations. Moreover increased funding, and efforts to provide an automated technical reference to assist with export control and licensing determinations were not successful. Subsequent funding cuts and the cessation of updates ensured that the MCTL was no longer a viable technical reference.

Relief from Statutory Requirement

In early July 2015, OUSD(AT&L) and OUSD(P) sought relief from the statutory requirement to maintain the MCTL. Both DoD and the Department of Commerce submitted their respective agency positions on this issue to the National Security Council.

DoD proponents recommended that the MCTL-related provisions of the Export Administration Act be allowed to expire through their exclusion from the August 7, 2015, issued Presidential notice. The notice extended the Export Administration Act and its provisions for another year through the International Emergency Economic Powers Act.¹⁰ However, language excluding the requirement for a critical technologies list was not included in the notice.

¹⁰ The International Emergency Economic Powers Act is a U.S. federal law authorizing the President to regulate commerce after declaring a national emergency in response to any unusual and extraordinary threat to the United States which has a foreign source. Under authority of this law, the President issued Executive Order (EO) 13222 on August 17, 2001, extending the EEA, stating that “unrestricted access of foreign parties to U.S. goods and technology and the existence of certain boycott practices of foreign nations, in light of the expiration of the Export Administration Act of 1979, as amended (50 U.S.C. App. 2401 et seq.), constitute an unusual and extraordinary threat to the national security, foreign policy, and economy of the United States.” EO 13222 has, through its annual Presidential continuation, extended authority for all regulations previously authorized under the EEA. With respect to the MCTL, DoD supported the inclusion of language in an August 7, 2015 Presidential Notice extending the provisions of EO 13222 that would have allowed MCTL-related requirements in the EEA to expire. However, that notice did not include language excluding the requirement for a critical technologies list.

The approach was not supported by the Department of Commerce, who was concerned that the request for relief would have to be done on an annual basis, and could complicate the overall renewal of the Export Administration Act. Commerce's position was sustained in an August 2015 Presidential Notice, which chose not to include language canceling the requirement to maintain a critical technologies list.

The effort to seek relief was consistent with GAO recommendations that DoD seek relief from the requirement to maintain the MCTL if the list was not suited to assist programs in the identification of militarily critical technologies.

Additionally, a July 2013 Institute for Defense Analysis report on technical reference alternatives stated that efforts to seek relief were reasonable given the original purpose of the MCTL, "because this purpose (to inform export licensing decisions) has been overcome by events, as evidenced by the technology security community's ability to continue to operate (albeit inefficiently), and because the benefits of reviving the current MCTL solely for the sake of licensing don't warrant the required investment."

Additional Policies Associated with the Militarily Critical Technologies List

Although the statutory requirement has not been lifted, references to the MCTL and the associated policy were in the process of being removed from related guidance. These efforts occurred, however, approximately four years after updates to the list ceased and after the program experienced significant decreases in funding. As previously mentioned, all references to the MCTL to include DoD Instruction 3020.46 have been removed from DoD Instruction 2040.02. In addition, references to the MCTL and its instruction have been deleted from guidance for technology and foreign disclosure.

Despite these efforts, several policies still reference the outdated MCTL, both policies that pre-date 2011, and some that have come since. Issued on October 24, 2008, DoD Instruction 3020.46, and additional guidance still reference the MCTL in its outdated form. Older issuances that are in force still include references to the MCTL. For example, DoD Manual 5010.12, "Procedures for Acquisition and Management of Technical Data," May 1993, cites the list as a document that can provide support for withholding information based on a Freedom of Information Act exemption.

Similarly, DoD Directive 5230.25, "Withholding of Unclassified Technical Data From Public Disclosure," November 6, 1984 - Incorporating Change 1, August 18, 1995, cites the MCTL as a general guide for the purpose of "disclos[ing] critical technology with military or space application."¹¹

¹¹ Both DoD Manual 5010.12 and DoD Directive 5230.25 are being updated and will no longer mention the MCTL. As of this writing both are in the formal coordination process.

DoD Instruction 3200.20, "Scientific and Engineering Integrity," July 26, 2012, lists the MCTL Instruction as one of many applicable laws and regulations guiding the "free flow to the public of scientific and engineering information developed or used by DoD." More recently, DoD Instruction 4650.09, "Celestial Reference Frame (CRF) Management," April 15, 2015, was issued by the office of the Chief Information Officer. The instruction addresses geospatial issues related to position, navigation, and timing. It also directs CRF Earth Orientation Parameters Managers to seek reimbursement when providing technical "assistance in the preparation of the Militarily Critical Technologies List." This publicly available issuance still references a resource that has not been accessible since 2011.

At the Service level, the Navy and Air Force still have issuances that reference the MCTL. Army Regulation 380-10, "Foreign Disclosure and Contacts with Foreign Representatives," July 14, 2015, includes the acronym for the MCTL and only recently in this version removed a reference to an inactive link to the MCTL on the Defense Technical Information Center website. The Navy "Acquisitions and Capabilities Guidebook," May 2012, cites the MCTL as a reference for developing the Anti-Tamper¹² annex and includes a non-functioning link to the list.

In addition, the Federal Register listed two Navy-related arms sales notifications posted on January 4, 2013 and October 9, 2014, in which the MCTL was referenced as a compilation of critical technologies. The notices were sent to the Speaker of the House with policy justification.

The Air Force cites the MCTL in at least four issuances. Tinker Air Force Base Instruction 61-200, "Scientific and Technical Information (STINFO) Program," January 5, 2012, directs offices to refer to the MCTL prior to the release of technical information.

Headquarters Air Force Directive 1-16, "Deputy Under Secretary of the Air Force International Affairs," January 16, 2015, references the MCTL's DoD Instruction as an authority for the delegation of responsibility to the Deputy Under Secretary International Affairs from the Secretary of the Air Force. References to the MCTL were also found in two additional Air Force issuances.

We also found that the OUSD(P) was working to update issuances to remove references to the MCTL in anticipation of the eventual cancellation of DoD Instruction 3020.46. DoD began the coordination process for cancelling DoD Instruction 3020.46 in March 2016, and intends to reflect DoD's position

¹² Systems engineering activities intended to prevent or delay exploitation of critical program information in U.S. defense systems in domestic and export configurations to impede countermeasure development, unintended technology transfer, or alteration of a system due to reverse engineering.

that the USML and CCL are the appropriate references to support export control and licensing determinations within a DoD Instruction 3020.46 Cancellation Memorandum.

Outdated Militarily Critical Technologies List Impact on Stakeholders

While the MCTL was not used to support export control and licensing determinations, it was a technical resource for other DoD security elements. In addition, the absence of a reliable technical reference to support the assessment, protection, and release of critical technologies affects both internal and external programs. Because the decision to discontinue the MCTL is not widely known, there is confusion regarding its relevancy and status.

Requests for Information and External References

Despite the removal of the MCTL from public sites and the ending of updates to the list, inquiries continued—both internal and external—concerning the status and relevance of the list. For example:

- In June 2013, DoD received a request through diplomatic channels from an individual affiliated with an external organization, the National Institute of Statistics and Economic Studies in Paris, France. The request was for an updated MCTL in PDF format.
- On November 13, 2014, an Army Close Combat Systems program office was seeking information from the MCTL as part of their process for reviewing the technical data packages for purposes of direct commercial sales and foreign military sales. The office was advised that the Technology Security Office was “not currently in a position to support” the request.
- In January 2015, an email from a commercial firm was sent on behalf of a client whose products were involved in a pending transaction. The firm representative noted that they wanted to ensure the client’s items were not listed on the MCTL and added, “the most recent version on the internet is very old.”
- On March 18, 2015 the Technology Security Office received a request for clarification from a FOIA officer who was receiving “conflicting responses from stakeholders to withhold/release records requested under FOIA.” The requester was seeking updated information on close combat armored vehicles. No updated information was provided.

- Non-government sites are offering versions of the MCTL. One site offers customers the opportunity to download a 2014 edition of the MCTL at a cost of \$450.00.
- A government website entitled “Online Guide to Security Responsibilities” lists the MCTL in its section on foreign threats to protected information.

These examples highlight that the broader technology security community is unaware that the MCTL is dated and should not be used for technology transfer determinations.

Conclusion

We confirmed that the MCTL was not used as a reference for export control and licensing determinations through interviews of OUSD(P) and OUSD(AT&L) personnel, review of internal DoD documents, and analysis of previous GAO reports.

Moreover, with the introduction of Export Control Reform, the DoD export control community used the CCL and the USML as alternatives to support export control and licensing determinations.

In early July 2015, both OUSD(P) and OUSD(AT&L) sought formal relief from the requirement to produce the MCTL through revisions to MCTL-related provisions of the Export Administration Act. However, they were unsuccessful. DoD is in the process of cancelling DoD Instruction 3020.46; the resulting cancellation memorandum will formally capture DoD’s position for fulfilling the intent of the Export Administration Act requirement to develop a list of militarily critical technologies, and will specify the appropriate technical references in lieu of the MCTL.

Despite this fact, several references in DoD issuances and guides still present the MCTL as a reliable resource. This results in confusion among some stakeholders about the disposition of the DoD-generated technology list.

In the absence of clear communication about the status of the list, DoD risks the possibility of technology determinations occurring based on inaccurate information. The broader stakeholder community should be made aware that the information is dated and cannot be used for technology determinations.

Recommendations, Office of the Assistant Secretary of Defense for Research and Engineering, Director, Defense Technology Security Administration Comments, and Our Response

On behalf of the Under Secretary of Defense for Acquisition, Technology, and Logistics, the Office of the Assistant Secretary of Defense for Research and Engineering provided comments to findings and Recommendations 1 and 2. On behalf of the Under Secretary of Defense for Policy, the Director, Defense Technology Security Administration provided comments to finding and Recommendation 2.

Revised Recommendation 1

As a result of Office of the Assistant Secretary of Defense for Research and Engineering comments, we revised the wording of Recommendation 1 to allow for an alternative solution for a critical technologies list to be met by means other than the Militarily Critical Technologies List.

We recommended that the Under Secretary of Defense for Acquisition, Technology, and Logistics determine if the requirement in the Export Administration Act for a critical technologies list is currently being met by means other than the Militarily Critical Technologies List, and adjust policy to reflect that determination.

Office of the Assistant Secretary of Defense for Research and Engineering Comments

The Office of the Assistant Secretary of Defense for Research and Engineering concurred with the recommendation to determine if the requirement in the Export Administration Act for a critical technologies list is currently being met by means other than the Militarily Critical Technologies List, and adjust policy to reflect that determination. Comments from the Office of the Assistant Secretary of Defense for Research and Engineering indicated that DoD Instruction 3020.46 was in the process of being canceled and the associated cancellation memorandum will inform export control stakeholders in the DoD Components that the Militarily Critical Technologies List should not be used as a technical reference; rather, export control stakeholders should use the Commerce Control List and the U.S. Munitions List.

Our Response

We agree with Assistant Secretary of Defense for Research and Engineering comments that rewording Recommendation 1 maintains consistency with the report's findings. As a result, we reworded Recommendation 1, which aligns with the Department's planned actions to determine if the requirement in the Export Administration Act for a critical technologies list is being met by means other than the Militarily Critical Technologies List, and to adjust policy to reflect that determination. Comments from the Under Secretary of Defense for Acquisition, Technology, and Logistics addressed all specifics of the recommendation, and no further comments are required.

Recommendation 2

We recommended that the Under Secretary of Defense for Acquisition, Technology, and Logistics along with the Under Secretary of Defense for Policy inform the internal and external export control stakeholder community -- through written notice, such as the Federal Register or directive-type memoranda, and by updating organizational websites -- that the Militarily Critical Technologies List is not being updated and should not be used as a technical reference.

Under Secretary of Defense for Acquisition, Technology, and Logistics along with the Under Secretary of Defense for Policy Comments

The Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics along with the Office of the Under Secretary of Defense for Policy concurred with our recommendation to inform the internal and external export control stakeholder community that the Militarily Critical Technologies List is not being updated and should not be used as a technical reference. The Office of the Assistant Secretary of Defense for Research and Engineering plans to disseminate the DoD Instruction 3020.46 cancellation memorandum upon approval and signature by the Under Secretary of Defense for Acquisition, Technology, and Logistics.

Our Response

Comments from the Under Secretary of Defense for Acquisition, Technology, and Logistics along with the Office of the Under Secretary of Defense for Policy addressed all specifics of the recommendation, and no further comments are required.

Appendix A

Scope and Methodology

This assessment was conducted from April 2015 to August 2015, in accordance with Quality Standards for Inspection and Evaluation that the Council of the Inspectors General on Integrity and Efficiency issued. Those standards require that we plan and perform the assessment to obtain sufficient evidence for our findings and conclusions based on our stated objectives. To accomplish the objective, we reviewed relevant policies and guidance. We also interviewed DoD officials responsible for carrying out the MCTP.

We assessed existing policies to determine the extent to which the policies governing the program remain in effect. Our data collection efforts involved reviewing more than 600 documents including executive orders, directives, instructions, regulations, manuals, articles, e-mail communications, historical references, and concept and background papers.

This assessment addresses a topic relevant to the U.S. Government Accountability Office high-risk area, “Ensuring the Effective Protection of Technologies Critical to U.S. National Security Interests.”

Computer-Processed Data

We did not rely on computer-processed data to perform this assessment.

Use of Technical Assistance

We did not receive any technical assistance for this assessment.

Prior Coverage

During the last 5 years, DoD OIG has issued no reports that addressed issues specific to the MCTP. Unrestricted DoD OIG reports are at <http://www.dodig.mil>.

GAO

During the last 5 years, GAO issued two reports addressing issues specific to the MCTP:

GAO Report No. GAO-13-157, “DoD Assessment Needed to Determine Requirement for Critical Technologies List,” January 2013.

GAO Report No. GAO-15-288, “Critical Technologies: Agency Initiatives Address Some Weaknesses, but Additional Interagency Collaboration Is Needed,” February 2015.

Appendix B

Militarily Critical Technologies List Overview

The structure of the MCTL is based on, “A Report of the Defense Science Board Task Force on Export of US Technology,” February 4, 1976, and was directed by the Export Administration Act of 1979. The technology listing was published in Federal Register on October 1, 1980. The first MCTL was published in October 1981 and titled “DoD Militarily Critical Technologies List”.

Authorities

The primary authorities that shaped the MCTL were section 2401 of title 50, United States Code, the Export Administration Act of 1979;¹³ DoD Instruction 2040.02, “International Transfers of Technology, Goods, Services and Munitions,” July 10, 2008; and DoD Instruction 3020.46, “The Militarily Critical Technologies List (MCTL),” October 24, 2008, which is discussed in the Finding section.

Export Administration Act

The Export Administration Act of 1979 stated, “The Secretary of Defense shall bear primary responsibility for developing a list of militarily critical technologies.” It further stated that the list “shall be sufficiently specific to guide the determinations of any official exercising export licensing responsibilities under this Act.”

It directed the Commerce Secretary and the Secretary of Defense to “integrate items on the list of military critical technologies into the control list.” Specific to the MCTL, the Act required the Secretary of Defense to “establish a procedure for reviewing the goods and technology on the list of militarily critical technologies on an ongoing basis.” Because the Export Administration Act of 1979 required the Secretary of Defense to develop a list of militarily critical technologies, DoD issued DoD Instruction 3020.46, ‘The Militarily Critical Technologies List (MCTL),’ October 24, 2008, which implemented this statutory requirement. The requirement to develop and submit a MCTL has been continuous, extended by notices and regulations.

¹³ Extended via section 1701 of the Export Administration Act, the International Economic Emergency Powers Act.

DoD Instruction 2040.02

The instruction on “International Transfers of Technology, Goods, Services and Munitions,” July 10, 2008, defined critical technology as “essential to the design, development, production, operation, application, or maintenance of an article or service which makes or could make a significant contribution to the military potential of any country, including the United States. This includes, but is not limited to, design and manufacturing know-how, technical data, keystone equipment, and inspection and test equipment.” The MCTL was to remain relevant and current to assist Components with technology transfer decisions and recommendations for control of critical technologies. The Office of the Under Secretary of Defense for Policy (OUSD(P)) was tasked to “assist in identification and definition of items on the MCTL that should be controlled for export and assist with necessary guidelines.” OUSD(P) updated DoD Instruction 2040.02 on March 27, 2014, and references to the MCTL were removed.

DoD Instruction 3020.46

“The Militarily Critical Technologies List (MCTL),” October 24, 2008, is the primary issuance that defines organizational responsibilities for the MCTL. DoD Instruction 3020.46 established the MCTL as the technical reference for DoD technology security policies on international transfers of defense-related items. It required the USD(AT&L) to develop and maintain the MCTL on behalf of the Secretary of Defense as required by the Export Administration Act. The USD(AT&L) was directed to coordinate with the Under Secretary of Defense for Policy (USD(P)) on policy matters relating to the licensing and transfer of critical technologies. The USD(AT&L) was also required to coordinate with the Under Secretary of Defense for Intelligence (USD(I)) on questions related to foreign military technology capabilities and the defense intelligence implications of the licensing and transfer of militarily critical technologies.

The then Director, Defense Research and Engineering,¹⁴ an office within OUSD(AT&L), was tasked with direction and management oversight for the execution of the MCTL. The USD(P) was directed to “consult with the USD(AT&L) in the formulation, oversight, and enforcement of policy matters relating to the licensing and transfer of militarily critical technologies.”

¹⁴ The Director’s title has been subsequently changed to the Assistant Secretary of Defense for Research and Engineering (ASD (R&E)) and the office to the OASD (R&E).

In accordance with the issuance, the Director, Defense Technology Security Administration, (an element within OUSD(P)), would consult with the MCTL when developing DoD export-control proposals, and when processing export license requests. The USD(I) was tasked “to ensure intelligence, counterintelligence, and security support [was] available to the USD(AT&L) on matters pertaining to the MCTL.”

In accordance with the DoD 3020.46 instruction, the OASD (R&E) -- the office charged with oversight for execution of the MCTL -- was required to update sections of the MCTL at two-year intervals. In addition, the ASD (R&E) was directed to establish TWGs composed of individuals from industry, academia, and Government agencies working on the leading edge of technologies for which they provide assessments. The groups would assess technologies, identify those that met the criteria for inclusion in the MCTL, and make the required changes, revisions, or deletions to the list. The ASD (R&E) was also directed to develop a methodology to determine whether a given technology was militarily critical based on objective criteria and using methods that would produce logical and repeatable results.

The MCTL addresses 20 technology areas, shown in the Table. There were corresponding numbers of TWGs that evaluated current technologies and trends. They also established critical parameters for those 20 areas of technology.

Table. Militarily Critical Technology Areas

Technologies	
<ul style="list-style-type: none"> • Aeronautics • Armaments & Energetic Materials • Biological • Biomedical • Chemical • Directed Energy Systems • Electronics • Energy Systems • Ground Systems • Information Security 	<ul style="list-style-type: none"> • Information Systems • Lasers, Optics & Imaging • Processing & Manufacturing • Marine Systems • Materials & Processes • Nuclear Systems • Positioning, Navigation & Time • Signature Control • Space Systems • Weapons Effects

When fully operational, the MCTL contained more than 680 documents with descriptions, associated metrics, and critical technology parameters. Technical working groups were a major contributor to the program. The MCTP also had access to several sources for information. Additional contributors included:

- The Community Advisory Board – assessed the content and effectiveness of the MCTL;
- DoD Component subject matter experts – identified and assessed technologies;
- The Defense Intelligence Agency – addressed foreign capabilities and technology requirements;
- The Director, Special Programs – provided information on low-observable and counter-low-observable technologies; and
- DoD Component heads – provided recommendations for modifications or deletions to the MCTL.

Appendix C

General Accountability Office Reporting Related to the Militarily Critical Technologies List

The following GAO reports highlight the extent to which the MCTL has not been an effective tool in DoD's technology regulatory process. Moreover, while the MCTL was created to inform export control decisions, these reports show that it was not widely used by DoD's export control community and never considered the MCTL to be of much benefit to licensing determinations. The reports also highlighted problems with the currency of MCTL data, as well as concerns about its effectiveness as a reference in support of export control determinations.

The 2006 GAO report, "DoD's Critical Technologies Lists Rarely Inform Export Control and Other Policy Decisions," July 2006, noted "the MCTL is not used to develop export control proposals or to inform individual export licensing decisions because the list is too broad and out of date." The report recommended, among other things, that DoD determine user requirements and clarify the purpose of the MCTL. Most notably, the report stated that if the identified purpose differed from the original intent of the MCTL – that is, to inform export control decisions – DoD should seek legislative relief.

The 2013 GAO report, "DoD Assessment Needed to Determine Requirement for Critical Technologies List," stated that the MCTL remained outdated and that updates had ceased. The report further noted that non-export control programs, which required an understanding of the types of militarily critical technologies, were adversely affected by the dated information in the MCTL. The report cautioned that DoD ran the risk of programs and initiatives redirecting resources from critical missions in pursuit of inconsistent approaches in identifying and protecting critical technologies.

In the same 2013 GAO report, GAO again recommended that DoD determine the best approach for a technical reference that would meet user's needs, and that resources be coordinated to sustain the chosen approach. Finally, GAO reiterated its recommendation that DoD seek relief from the requirement to maintain the MCTL if the list was not suited to assist programs in the identification of militarily critical technologies.

In 2015, the MCTL was included in a GAO report on Critical Technologies, “Agency Initiatives Address Some Weaknesses, but Additional Interagency Collaboration Is Needed.” The report identified the MCTP as underutilized. The report confirmed that DoD officials were no longer updating the MCTL and were deciding whether to seek relief from the requirement to maintain the list. The report also cited the USML and the CCL 600 series as the main references for export control determinations.

The report had no recommendations specific to the MCTL. However, GAO acknowledged that DoD had not yet implemented recommendations from the 2013 report to determine how to meet users’ needs for a technical reference and to ensure coordinated resources to sustain the approach chosen.

Management Comments

Office of the Assistant Secretary of Defense for Research and Engineering

**Final Report
Reference**



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
3600 DEFENSE PENTAGON
WASHINGTON, DC 20301-3600

JUN 02 2016

MEMORANDUM FOR DEPUTY ASSISTANT INSPECTOR GENERAL FOR
INTELLIGENCE EVALUATIONS

SUBJECT: Response to DoD Inspector General Draft Report "Assessment of the Department of Defense Militarily Critical Technologies Program," dated April 20, 2016

Thank you for the opportunity to review and comment on the subject report. This memorandum provides our comments and planned actions on the report recommendations.

We recommend editing the first recommendation to read, "We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics determine whether the requirement in the Export Administration Act for a critical technologies list is being met by means other than the Militarily Critical Technologies List, and adjust policy to reflect that determination."

USD(AT&L) is in the process of canceling DoD Instruction (DoDI) 3020.46, "The Militarily Critical Technologies List (MCTL)." The associated cancellation memorandum will provide the determination both the Commerce Control List (CCL) and the United States Munitions List (USML) fulfill the intent of the MCTL requirements in the Export Administration Act of 1979. Rewording the IG's first recommendation maintains consistency with the report findings, and aligns with the Department's planned actions.

We agree with the second recommendation and we plan to disseminate the DoDI 3020.46 cancellation memorandum upon approval and signature by USD(AT&L). The memorandum will inform export control stakeholders in the DoD Components that the MCTL should not be used as a technical reference; rather, export control stakeholders should use the CCL and the USML. The cancellation memorandum will be posted to the public DoD Issuances website. We anticipate that DoDI 3020.46 will be officially cancelled before the end of FY16.

James A. MacStravic
Acting Principal Deputy Assistant Secretary of
Defense for Acquisition
Performing the Duties of the Assistant Secretary
of Defense for Acquisition

**Revised
Recommendation 1**

Director, Defense Technology Security Administration



DEFENSE TECHNOLOGY SECURITY ADMINISTRATION

4800 MARK CENTER DRIVE
ALEXANDRIA, VA 22350-1600

MAY 05 2016

MEMORANDUM FOR DEPUTY ASSISTANT INSPECTOR GENERAL FOR INTELLIGENCE EVALUATIONS

SUBJECT: Assessment of the Department of Defense Military Critical Technologies Program
(Project No. D2015-DISPA2-0175.000)

This is in response to your memorandum dated April 20, 2016, requesting comments on the draft report for Project No. D2015-DISPA2-0175.000, "Assessment of the Department of Defense Military Critical Technologies Program."

I agree with your recommendation to inform stakeholders that the Military Critical Technologies List (MCTL) should not be used as a technical reference. USD(AT&L) is the appropriate office to notify stakeholders of such updates since they are responsible for the MCTL and guidance on its use.

If you have any questions or would like to discuss this further, my point of contact for this is OSD/JS (b)(6) who can be reached at OSD/JS (b)(6) or OSD/JS (b)(6)

Beth M. McCormick
Director

Attachment:
None

Acronyms and Abbreviations

ASD (R&E)	Assistant Secretary of Defense for Research and Engineering
CCL	Commerce Control List
GAO	Government Accountability Office
MCTL	Militarily Critical Technologies List
MCTP	Militarily Critical Technologies Program
OASD (R&E)	Office of the Assistant Secretary of Defense for Research and Engineering
OUUSD(AT&L)	Office of the Under Secretary of Defense for Acquisition, Technology and Logistics
OUUSD(P)	Office of the Under Secretary of Defense for Policy
TWGs	Technology Working Groups
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology and Logistics
USD(I)	Office of the Under Secretary of Defense for Intelligence
USD(P)	Under Secretary of Defense for Policy
USML	U.S. Munitions List



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