

## Summary of Issues Regarding Export Controlled Software

This summary describes the expansive scope of the term “software” as it is used in the EAR and ITAR. (It does not, however, describe the case-specific process of determining whether a particular piece of “software” falls within the restrictions of export controls.) Both the EAR and ITAR address two embodiments of “software”, i.e., source code and object code, but also go further to encompass other embodiments. The term “software” is expansive in nature and, as shown in the EAR and ITAR definitions below also includes anything readable by a person that can ultimately be transformed into object code:

- The EAR states that the term “software” means “[a] collection of one or more “programs” or “microprograms” fixed in any tangible meaning of expression.”<sup>1</sup> The EAR defines “program” to mean “[a] sequence of instructions to carry out a process in, or convertible into, a form executable by an electronic computer.”<sup>2</sup> A “micro program” means “[a] sequence of elementary instructions, maintained in a special storage, the execution of which is initiated by the introduction of its reference instruction into an instruction register.”<sup>3</sup>
- The ITAR defines the term somewhat differently, i.e., that “[s]oftware includes, but is not limited to the system functional design, logic flow, algorithms, application programs, operating systems and support software for design, implementation, test, operation, diagnosis and repair.”<sup>4</sup>

The presence of “software” in the Commerce Control List (CCL) and Munitions List (ML) is quite extensive. Some representative occurrences of the term are found below.

### “Software” in the CCL

The search term “software” in the Alphabetic Index of the CCL found at <http://www.access.gpo.gov/bis/ear/pdf/indexccl.pdf> produces 116 terms. A sampling of these covers such items as:

Acoustic beam forming software.....	6D003.a.1
Active compensating system rotor clearance control software.....	9D004.d
Active flight control system software .....	7D003.e
Air traffic control software .....	6D003.h.1
Software, adaptive control .....	2D002.b.2
Software, adaptive control .....	2D992.a
Software, electronic devices .....	2D002
Software, for coordinating function of multiple subsystems for use in missiles.....	9D105
Software, for portable electric generator development or production.....	2D994
Software for nuclear materials, facilities and equipment.....	0D001

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<sup>1</sup> 15 C.F.R. § 772.1.

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*

<sup>4</sup> 22 C.F.R. § 121.8(f)

Software, multi-data-stream processing equipment operating systems.....	4D003.a
Software, numerical control.....	2D002
Software, real time processing in machine tools.....	2D002.b
Software, real time processing equipment operating systems.....	4D003.d
Software, recovery of source code .....	5D001.c.2

In addition, be aware that “software” is the subject of product group D for controls in each category (i.e., note the letter in each of the above ECCNs.) Thus, *every* Category has a software component built into its organization.

“Software” in the ML

A search for the term “software” in the Munitions List, found at [http://www.pmdtc.org/docs/ITAR/2004/22cfr121\\_Part\\_121.pdf](http://www.pmdtc.org/docs/ITAR/2004/22cfr121_Part_121.pdf), produces 31 references to this term, and the term is also described as an integral part of the term “system”. The reach of this term into all the categories is just as broad as in the CCL, as under many Categories is found the entry:

*The articles in this category include any end item, component, accessory, attachment part, firmware, **software** or system that has been designed or manufactured using technical data and defense services controlled by this category.*

Some specific examples of ITAR-controlled software are:

- Military Information Security Systems and equipment, cryptographic devices, software, and components specifically designed or modified therefor (i.e., such items when specifically designed, developed, configured, adapted or modified for military applications (including command, control and intelligence applications))
- Instrumentation, navigation and direction finding equipment and systems, and associated production and test equipment as follows; and specially designed components and software therefore
- Range instrumentation radars including associated optical/infrared trackers and the specially designed software therefore
- Software which processes post-flight, recorded data, enabling determination of vehicle position throughout its flight path

Conclusion

Given the scope of the term “software” it is imperative that researchers and other employees of MIT understand the breadth of the term. All affected persons must remain aware not only of individual application *programs* installed on their laptops, but also vigilant of the content of individual files, such as a Microsoft Word document with a flow chart embedded within that can be translated into object code. Researchers and research administrators must also be aware that the term “software” occurs in a variety of

technological areas and reference to the CCL or ML before traveling abroad with a laptop is recommended to prevent running afoul of export control laws.<sup>5</sup>

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<sup>5</sup> Researchers must also be aware that the research data files on their computer are also considered an export when taken out of the United States and they must evaluate whether such data may be subject to export controls, independently of the software on their computer.