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Subject: Feasibility of Enumerating "Specially Designed" Components RIN 0694-AF68

The June 19, 2012 Advanced Notice of Proposed Rule Making (ANPRM) is a commendable start on this timely subject.

The ANPRM is unclear as to the criteria which should be applied in selecting components to be enumerated. It refers to "exhaustive," "catch-all," "particularly suitable," and "essence of the controlled items." It also explicitly omits components currently subject to the MT "unique" definition of "specially designed."

It is recommended that:

1. **The criteria for selecting components be an expanded definition of "required" to include commodities; and**
2. **These criteria also apply to components subject to MT controls.**[1]

Controls on components transferred from the USML to the CCL may have to be "exhaustive" "catch-all." If so, there would be no need for criteria to select which ones to control. The ANPRM Supplementary Information helpfully confirms the following:

> Unlike the USML, the CCL does not contain a broad catch-all control on essentially all "components" "specially designed" for any other item identified on the CCL.

The only publicly known basis for determining what is "particularly suitable" or the "essence" of existing CCL controlled items is the text on the CCL of the end items containing the components being reviewed."Required" is the only defined term referring to "controlled performance levels, characteristics or functions" which appear in those texts. If there were other features "particularly suitable" or the "essence," the texts of the listed end-items should be amended to include them. Moreover, although unintended, "suitable" and "essence" could be construed to mean catch-all. Every component must be "suitable for use in the controlled item." All components must be included for a controlled item to function. To achieve the essence of an item, it must be functional.

Export Administration Act Section 6(l) limits Administration flexibility concerning Missile Technology controls. However, EAA Section 6(l)(1)(B) provides that Commerce may include on the CCL goods and technology

> "not included in the MTCR Annex but which the United States is proposing to the other MTCR adherents to have included in the MT Annex."

A proposal to expand "specially designed" beyond the current MT unique definition (*e.g.*, to "required") would be permitted under 6(l)(1)(B). Failure to do so would result in great confusion, especially for items controlled for both MT and NS reasons.

Attachment 1 comments on the 42 ECCNs or parts thereof listed in the ANPRM.

[1] There are 17 instances in the MTCR Annex where the term "specially designed components" is used (6 for production equipment, 6 for inertial systems, 3 for engines, 1 for GPS and 1 for gravity meters). There is also one use of "component" without "specially designed" (for vibration test equipment. There are other descriptions of components which do not use the word "components," some of which use "designed or modified" rather than "specially designed" (*e.g.*, thermal batteries for missiles).

Attachment 1

Comment on the 42 ECCNs in the ANPRM

1. **1A004.a**

Gas masks and filter canisters and decontamination equipment therefor ~~designed or modified~~ "required" for defense against biological, radioactive, or chemical warfare agents or specific riot control agents and ~~specially designed~~ components "required" therefor.

Note: 1A004.a includes Powered Air Purifying Respirators (PAPR) that are ~~designed or modified~~ "required" for defense against agents or materials, listed in 1A004.a

and

2. **1A004.c**

Equipment for detection of biological, radioactive, or chemical warfare agents and ~~specially designed~~ components "required" therefor

At present, the sole distinguishing characteristic for USML vs. CCL jurisdiction is the inherently ambiguous word "military," as in military use, military operations, or compatibility with military equipment. Even if all USML components were moved to the CCL, they would all continue to be controlled in the "600 series." Even if non-"600 series" specially designed components were replaced by one or two technically defined components, all the components of this "commercial" equipment would continue to be controlled unless they were unique to the commercial equipment. This is because of the condition in 1A004 Related Controls that commercial equipment that incorporates components or parts controlled under USML Category XIV(f) is subject to DDTC jurisdiction unless those components or parts are:(1) integral to the device, (2) inseparable from the device, and (3) incapable of replacement without compromising the effectiveness of the device. Unless that condition is changed, there would seem to be **little point in spending time and effort on identifying one or two components of commercial equipment which might replace 1A004.a or .c specially designed components**.

3. **1A006**

Remotely operated vehicles and disruptors ~~specially designed or modified~~ "required" for the disposal of improvised explosive devices and ~~specially designed~~ components ~~and accessories~~ "required" therefor.

At present, the CCL states that equipment specially designed for military use for the disposal of improvised explosive devices is subject to DDTC licensing jurisdiction Category IV. The word "military" is inherently ambiguous. The closest language to 1A006 in USML Category IV is part (c), which reads:

Apparatus, devices, and materials for the handling, control, activation, monitoring, detection, protection, discharge, or detonation of the articles in paragraphs (a) and (b) of this category (See 121.5).

and part (h), which reads:

All specifically designed or modified components, parts, accessories, attachments, and associated equipment for the articles in this category.

No portion of Category IV or 121.5 contains the words “disposal” nor “improvised explosive devices.”

A proposed rule to transfer some items from Category IV to the CCL “600 series” is expected soon. It might transfer some or all components of IED disposal equipment now construed to be on the USML. If so, the catch-all feature of parts a.2 and a.3 in the June 19 proposed definition of “specially designed” would apply to the transferred components.

It is not known whether DDTC would apply to 1A006 the rule described in 1A004 Related Controls. That rule would limit any clarification that a license is not required for some components or accessories of commercial IED disposal equipment to those which are unique to commercial equipment. **There is a little more, but not much more, point in 1A006 than in 1A004.a or .c to spending time and effort on identifying one or two components or accessories of commercial IED disposal equipment which might replace 1A006 specially designed components or accessories.**

The ANPRM does not mention accessories. However, inclusion of 1A006 provides an opportunity to comment on whether there are any specially designed accessories,

4. **1A008.b**

Linear shaped cutting charges having an explosive load greater than 40g/m and a width of 10 mm or more and ~~specially designed~~ components “required” therefor.

1A008 Related Controls states DDTC jurisdiction for:

Shaped charges that have all of the following: a uniform shaped conical liner with an included angle of 90 degrees or less , more than 2.0 kg of controlled materials, and a diameter exceeding 4.5 inches.

These words were not found in the current USML nor in the May 2, 2012, proposed rule to revise Category V.

It makes considerable sense to explore the feasibility of replacing “specially designed components therefor” with technical descriptions of components needed to achieve or exceed the 1A008.b limits while excluding the DDTC jurisdiction technical parameters stated in the CCL.

5. 1B001.e

Equipment for producing prepregs controlled by 1C010.e by the hot melt method and ~~specially designed~~ components ~~and accessories~~ “required” therefor

and

6. **1B001.f**

Non-destructive inspection equipment ~~specially designed~~ “required” for “composite” materials as follows, and ~~specially designed~~ components ~~and accessories~~ “required” therefor

f.1 X-ray tomography systems for three dimensional defect inspection;

f.2 Numerically controlled ultrasonic testing machines of which the motions for positioning transmitters or receivers are simultaneously coordinated and programmed in four or more axes to follow the three dimensional contours of the components under inspection.

The structure of 1B001.f is ambiguous because of the omission of either “and” or “or” to connect f.1 and f.2. Any technical response to this item in the

ANPRM should specify whether "and" or "or" is assumed.

ECCNs 1B001.e and .f and 1C010.e include numerous technical parameters. There are no DDTC jurisdiction carve-outs from 1B001. **It makes considerable sense to explore the feasibility of replacing "specially designed components therefor" with technical descriptions of components needed to achieve or exceed the 1B001.e and 1C010.e limits for 1B001.e or the 1B001.f heading and f.1 and/or f.2 limits for 1B001.f.**

This item presents an opportunity to comment on whether 1B001.e or .f include any specially designed accessories.

7. **1B003.c**

Tools, dies, molds, or fittings, for "superplastic forming" or "diffusion bonding" titanium, aluminum or their alloys, ~~specially designed~~ "required" for the manufacture of ~~specially designed~~ components "required" for airframe or aerospace structures or "aircraft" or aerospace engines.

The June 19 ANPRM incorrectly describes 1B003.c as controlling components specially designed for tools, dies, molds, or fittings. This ECCN limits controlled tools, etc., to those specially designed for the manufacture of specially designed components of air or aerospace structures or engines. It does not control any specially designed components. Therefore, there is **little point in identifying which components of air or aerospace structures or engines should be technically identified as a substitute for specially designed**. There **may be a marginal benefit to simply deleting specially designed as a modifier of components** in 1B003.c. More importantly, there **would be considerable benefit from determining whether there is any point in retaining specially designed as a modifier of tools, etc., for the manufacture of air or aerospace structures or engines or their components**. Perhaps the definitions of "superplastic forming" and "diffusion bonding" and the limitation to titanium, aluminum or their alloys are enough to identify which tools, etc., are reasonably controlled.

The 1B003 Related Controls cross reference to 9B115 implies that 1B003 does not control what is controlled by 9B115. However, the usual construct in the CCL would be to identify the portion of 1B003 which is also described in 9B115 as controlled for MT reasons and to add to 9B115 "not controlled by 1B003." In any event, inclusion of 1B003 in the ANPRM is inconsistent with the Supplementary Information that ECCNs where MT controls overlap NS controls are omitted. However, inclusion of 1B003 provides an opportunity to comment on the technical problem of identifying which tools, etc., are described in 9B115 and which are not.

8. **2B003**

Machine tools, and ~~specially designed~~ components~~, controls and accessories~~ "required" therefor, ~~specially designed~~ "required" for the shaving, finishing, grinding or honing of technically described gears.

The first questions to be addressed are whether the technical description of the gears is a sufficient basis for deleting specially designed both as a modifier for tools and as a modifier for components. The ANPRM also provides an opportunity to explore whether

there are any specially designed accessories. “Controls” are necessary for the operation of end-items. They are, therefore, not “accessories” or “attachments,” as defined in the June 19, 2012, proposed rule. So, they must be a subset of “components,” even though they are not mentioned in the July 15, 2011, proposed rule definition of “components.” However, a technically defined control (*e.g.*, closed loop) might be a candidate for a component which would help to justify deletion of “specially designed” (or “required”).

9. **3A001.c**

Acoustic wave devices as follows and ~~specially designed~~ components “required” therefor

The ANPRM refers to any of the characteristics described in 3A001.c.1.a, c.1.b, c.1.c, c.2 or c.3. However, c.1.b includes four variants and c.1.c includes three variants. Moreover, the analyses of each of these variants must take into consideration the Note that 3A001.c does not control devices limited to a single band pass, low pass, high pass or notch filtering, or resonating function. Analyses should also consider possible technical overlaps with ECCNs 5A001.b.1.a or 6A001. None of these ECCNs refers to related USML coverage. However, analyses should also consider Category XX.c and December 23, 2011 proposals to revise Category XX and establish ECCN 8A620.

10. **3A003**

Spray cooling thermal management systems employing closed loop fluid handling and reconditioning equipment in a sealed enclosure where a dielectric fluid is sprayed onto electronic components using ~~specially designed~~ spray nozzles “required” therefor that ~~are designed to~~ maintain electronic components within their operating temperature range, and ~~specially designed~~ components “required” therefor

The accompanying text suggests that “specially designed spray nozzles” could be changed to “spray nozzles “required” therefor” and that “are designed to” could simply be deleted. Although unlikely, 2B005 spraying equipment for non-electronic substrates and 2B352.h spraying equipment for fitting to aircraft may have some relevance. Perhaps “and specially designed components therefor” could simply be deleted. The existing text already includes the significant components of closed loop equipment in a sealed enclosure and spray nozzles.

11. **3A292.d**

Digital oscilloscopes and transient recorders using analog-to-digital conversion techniques, ~~capable of~~ storing transients by sequentially sampling single shot inputs at successive intervals of less than 1 ns (greater than 1 giga sample per second) , digitizing to 8 bits or greater resolution, and storing 256 or more samples and ~~specially designed~~ components “required” therefor

This item should probably be given a low priority. The only non-AT countries to which a license is required are Iraq, Israel, Libya, and Pakistan, although a license is required to China if for military use.

12-18 **3B001**

Equipment for the manufacturing of semiconductor devices or materials, as follows, and ~~specially designed~~ components ~~and accessories~~ “required” therefor

a ~~Equipment designed~~ "required" for epitaxial growth

a.1 ~~capable of~~ producing a layer of any material other than silicon with a thickness uniform to less than 2.5% across a distance of 75 mm or more;
Note a.1 includes atomic layer epitaxy equipment.

a.2 Metal Organic Chemical Vapor Deposition reactors ~~specially designed~~ "required" for compound semiconductor crystal growth by the chemical reaction between materials controlled by 3C003 or 3C004; or

a.3 Molecular beam epitaxial growth equipment using gas or solid sources;

b. ~~Equipment designed~~ "required" for ion implementation and having any of the following:

b.1 A beam energy (accelerating voltage) exceeding 1 MeV;

b.2 ~~Being specially designed and optimized to operate~~ Operating at a beam energy (accelerating voltage) of less than 2 keV;

b.3 Direct writing capability; or

b.4 A beam energy of 65 keV or more and a beam current of 56 mA or more for a high energy oxygen implant into a heated semiconductor material "substrate";

c Anisotropic plasma dry etching equipment

c.1 ~~Designed or optimized~~ "required" to produce critical dimensions of 65 nm or less; and

c.2 Within-wafer non-uniformity equal to or less than ...

e. Automatic loading multi-chamber central wafer handling systems having

e.1 Interfaces for wafer input and output, to which more than two functionally different 'semiconductor process tools' controlled by 3B001.a, b, or c are ~~designed to be~~ connected; and
Note: 3B001.e does not control automatic robotic wafer handling systems ~~specially designed~~ for parallel wafer processing.

e.2 ~~Designed~~ "required" to form an integrated system in a vacuum environment for 'sequential multiple wafer processing';

f Lithography equipment

f.1 Align and expose step and repeat (direct step on wafer) or step and scan (scanner) equipment for wafer processing using photo-optical or X-ray methods and ~~having~~ either:

f.1.a Having A light source wavelength shorter than 245 nm; or

f.1.b ~~Capable of~~ producing a pattern with a "Minimum Resolvable Feature size" of 95 nm or less;

f.2 Imprint lithography equipment ~~capable of production~~ producing features of 95 nm or less

f.3 Equipment ~~specially designed~~ "required" for mask making or semiconductor device processing using direct writing methods

f.3.a Using deflected focused electron beam, ion beam or "laser" beam;

f.3.b ~~having~~ any of the following:

f.3.b.1 having a spot size smaller than 0.2 micrometer;

f.3.b.2 ~~capable of~~ producing a pattern with a feature size of less than 1 micrometer; or

f.3.b.3 having an overlay accuracy of better than ± 0.20 micrometer (3 sigma)

This exercise provides an opportunity to consider whether there are any 3B001 specially designed accessories.

Re 3B001.a epitaxial growth, see also 6C002.b

Re 3B001.b ion implementation, see also 2B005.b

Re 3B001.f lithography components, see also 3B001.i
Re 3B001.f..3.a electron beam, see also 0B001.g.1, 2B001.e.1.b, 2B005.c, 3B992.b.5, 3C002.b
Re 3B001.f.3.a ion beam, see also 3B992.b.6 and 3C002.b
Re 3B001.f.3.a "laser" beam, see also 2B001.e.1.c, 2B006.b.1.c, 2B008.a, 3B992.b.5

19. **3B002**

Test equipment ~~specially designed~~ "required" for testing S-parameters of transistor devices at frequencies exceeding 31.8 GHz or microwave integrated circuits controlled by 3A001.b.2 and ~~specially designed~~ components ~~and accessories~~ "required" therefor

> 3A001.b.2.a,b,c,d,e,f control microwave integrated circuits rated for operation at six different frequency ranges with output power limits declining as frequency limits rise.
> 3A001.b.2 Note 3: Notes 1 and 2 following the Category 3 heading for product group A ... mean that 3A001.b.2 does not control MMICs if they are ~~specially designed~~ for other applications, *e.g.*, telecommunications, radar, automobiles.
> Category 3 A Note 1: The controls status of equipment and components described in 3A001 or 3A002, other than (parts of 3A001.a), ~~which are specially designed for or~~ which have the same functional characteristics as other equipment is determined by the control status of the other equipment.
> 3A001 A Note 2: The control status of integrated circuits described in (parts of 3A001.a) that are unalterably programmed ~~or designed for a specific function~~ for other equipment is determined by the control status of the other equipment.

This exercise provides an opportunity to consider whether there are any 3B002 specially designed accessories.
Category 3 A Note 2 does not apply to 3A001.b, even though it is cited in Note 3 to 3A001.b. Category 3 A Note 1, which does apply to 3A001.b, equates specially designed, in describing what is not controlled, with "same functional characteristics." This logically means that specially designed in both these Notes does not limit the scope of what is not controlled by 3A002.b . Therefore, specially designed could simply be deleted from those Notes. This is only indirectly relevant to the remaining scope of 3A002.b, which uses rated, rather than specially designed, to describe what is controlled. It is even less directly relevant to the meaning of specially designed as a modifier of components in 3B002. So we are left with only the arguments in the cover memo to this Attachment for using "required" as the criterion for identifying technically components which might replace specially designed.

20. **4A003.c**

"Electronic assemblies" ~~specially designed or modified to be capable of enhancing~~ "required" to enhance performance by aggregation of processors so that the "APP" of the aggregation exceeds the limit in 4A003.b.
"Usable in", "usable for", "usable as" or "capable of" (MTCR context) ... suitable for a particular purpose. There is no need for ... to have been configured, modified or specified for the particular purpose. ...

> This is the first indication that the Export Control Reform will expand to include the status of components which are not referred to as "components" (such as "electronic assemblies") and expressions similar to specially designed, but not identical to specially

designed (such as specially designed or modified). It is an awkward example, because it links "specially designed or modified" with "capable of." The definition of "capable of" is equated with "usable in." All components are usable in the end-item which contains them. Therefore, "capable of" is the antithesis of other expressions to distinguish what is and what is not controlled (such as the a.1 portion of the June 19 proposed definition of "specially designed"). Inclusion of 4A003.c in the June 19 feasibility exercise assumes that "specially designed or modified" is to be construed to be the same as "specially designed." Therefore, the only way to make sense of 4A003.c would be to change the oxymoron combination "specially designed or modified to be capable of" to "required." In the non-export control world, "specially designed or modified to be capable of" makes sense. But it makes no sense in the export control world of defined terms.

The ANPRM omits the applicability to 4A003.c of "specially designed components therefor" in the heading of 4A003. There are undoubtedly many components of 4A003.c electronic assemblies which have nothing to do with enhancing performance to exceed the 4A003.b limit. It does not follow that there are a few components of such assemblies which are responsible for achieving that objective. It might be that it is only the combination of the components into that assembly which can do the job. Technical experts could reasonably be asked whether deletion of the applicability to 4A003.c of components in the 4A003 heading would be justified or whether there is one (or more) component(s) of such assemblies which is responsible for achieving the objective.

21 **4A003.e**

Equipment performing analog-to-digital conversions exceeding the limits in 3A001.a.5.a.1, 2, 3, 4, or 5 and ~~specially designed~~ components "required" therefor

3A001.a.5 consists of a.5.a, which controls analog to digital converters having any of five technical characteristics, and a.5.b, re digital to analog converters which are not relevant to 4A003.e. So, 3A001.a.5 should be changed to 3A001.a.5.a.1,2,3,4, or .5 in 4A003.e. The question as to whether there are technically described components to replace specially designed should be asked for each of the five parts of 3A001.a.5.a.

22 **4A003.g**

Equipment ~~specially designed~~ for aggregating the performance of digital computers by providing external interconnections which allow communications at unidirectional data rates exceeding 2.0 Gbyte/s per link and ~~specially designed~~ components "required" therefor

For consistency with the a.1 portion of the June 19 proposed definition of "specially designed," that term would be changed to "required" when modifying "Equipment." Perhaps the term could simply be deleted as a modifier of "Equipment," given the technical details in 4A003.g. Since that "Equipment" is a component of a computer system, perhaps the applicability of "and specially designed components thereof" in the 4A003 heading to sub-item 4A003.g could be removed.

23 **4A004**

Systolic array, neural, and optical computers and ~~specially designed related equipment, "electronic assemblies" and~~ components "required" therefor

"Electronic assemblies" is defined as "a number of electronic components ..." Moreover, the July 15, 2011, proposed rule definition of "component" includes: "For purposes of this definition, an assembly and a component are the same." Therefore, "electronicassemblies" in 4A004 is redundant and should be deleted from 4A004.

The term "related equipment" also appears in 4A003. However, in 4A003 it precedes "as follows" and is, therefore, limited to separately defined sub-items 4A003.e (analog to digital converters) and 4A003.g (interconnections for communications). There is no such limitation of "related equipment" in 4A004. Unless there are examples of "related equipment" for 4A004 which should be controlled, the term should be deleted from 4A004.

Neural components already controlled are described in 3A001.a.9.

Optical components already controlled are described in 2B002, 3A001.a.6, 5A001.c, 6A001.a.2.a.3.a, 6A002.d.3, 6A003.b.1.b.1 and b.1.b.2, 6A004, and 6A108.b.2. This list is undoubtedly incomplete.

A dictionary definition of "systolic" is "having to do with contraction of the heart."

Medical equipment is often explicitly excluded from export controls.

24 **5A001.b**

Telecommunications systems and equipment described in b.1.a,b,c,d; b.2; b.3.a,b; b.4.a,b; b.5; or b.6 and ~~specially designed~~ components ~~and accessories~~ "required" therefor.

Years ago accessories were removed from computer controls, because no accessories of concern had been identified. Perhaps accessories should similarly be removed from 5A001.

Priority might be given to b.3 and b.5, since b.1,2,4,6 are eligible for both GBS and CIV. Re b.3, see also 5A002.a.5 and USML XI(b)(1).

25 **5A001.e**

Radio equipment at frequencies above 30 MHz, "instantaneous bandwidth" of 10 MHz of more, and finding a line of bearing to non-cooperating transmitters with a signal duration of less than 1 ms and ~~specially designed~~ components "required" therefor

5A001 Related Controls states that 5A001.e is subject to the export licensing authority of the Department of State.

26 **5A001.f**

Jamming equipment ~~specially designed or modified~~ "required" to ~~intentionally and~~ selectively interfere with, deny, inhibit, degrade or seduce mobile telecommunications services and

f.1 simulate the functions of radio access network equipment,

f.2 detect and exploit specific characteristics of the mobile telecommunications protocol employed, or

f.3 exploit specific characteristics of the mobile telecommunications protocol employed and ~~specially designed~~ components "required" therefor

5A001.f is eligible for both GBS and CIV. 5A001 Related Controls does not mention that Department of State jurisdiction applies to 5A001.f. However, some might construe it as being covered by USML Category XI.a.i and a.ii active and passive (electronic) countermeasures and

counter-countermeasures.

27. **5B001.a**

Equipment ~~specially designed~~ "required" for the "development", or "production" ~~or "use"~~ of equipment, functions or features controlled by 5A001 and ~~specially designed~~ components ~~or accessories~~ "required" therefor

The heading of 5A001 is limited to test, inspection, and production. The "use" portion of 5B001.a is not included in that heading.

All of 5B001 is eligible for both GBS and CIV.

28, 29 **5B001.b**

Equipment ~~specially designed~~ "required" for the "development" of:

b.2 Equipment employing a "laser" and having

b.2.a A transmission wavelength exceeding 1750 nm

b.2.b "optical amplification" using praseodymium-doped fluoride fiber amplifiers;

b.2.c coherent optical transmission or coherent optical detection techniques; or

Note: 5B001.b.2.c applies to equipment ~~specially designed~~ "required" for the "development" of systems using an optical local oscillator in the receiving side to synchronize with a carrier "laser."

b.2.d analog techniques and having a bandwidth exceeding 2.5 Ghz;

Note: 5B001.b.2.d does not include equipment ~~specially designed~~ rated for the "development" of commercial TV systems.

b.4 radio equipment employing Quadrature-Amplitude Modulation (QAM) techniques above level 256; or

b.5 equipment employing "common channel signaling" operating in non-associated mode of operation.

All of 5B002 is eligible for both GBS and CIV.

30. **5A002**

The ANPRM states:

5A002.a controls "components" "specially designed" for "systems, equipment, application specific 'electronic assemblies', modules and integrated circuits for 'information security'" if they were also "specially designed" for 'information security.'"

However, the heading of 5A002 reads:

"Information security" systems, equipment and components therefor, as follows:

Therefore, the 5A002 heading limits ECCN 5A002 control of components to those for systems or equipment. 5A002.a literally asserts control of components for "electronic assemblies", modules and integrated circuits, which are all types of components. This assertion goes beyond the limitation of component controls in the 5A002 heading.

The following changes in 5A002.a and its related Notes and definitions are suggested as a necessary starting point for technicians trying to identify positively 5A002.a components as a substitute for the specially designed modifier of components.

Note: 5A002 does not control any of the following ...

(a)(1) ... The ~~cryptographic capability~~ cryptography is restricted ...
(a)(1)1 It is ~~specially designed and limited~~ rated to allow protection ...
(a)(1)2 ~~Has been, or can only be,~~ It is personalized ...
(a)(1)3 Where the ~~cryptographic capability~~ cryptography is not user-accessible;
(a)(2) 'Readers/writers' ~~specially designed or modified, and limited,~~ rated for items specified by (a)(1) of this Note.
(d) Cryptographic equipment ~~specially designed and limited~~ rated for banking ~~use~~ or 'money transactions';...
(e) Portable or mobile radiotelephones ~~for civil use (e.g., for use with commercial civil cellular radio communication systems)~~ that are not ~~capable of~~ "required" for ...
(f) Cordless telephone equipment not ~~capable of~~ "required" for ... ~~according to the manufacturer's specifications~~;
(g) ... devices ~~for civil use~~, that implement only published or commercial cryptographic standards ...
(i) ... ~~capability is limited to~~ function is rated for ... ~~according to the manufacturer's specifications~~..
(j) ...~~cryptographic capability~~ cryptography ...
a Systems, and equipment~~, application specific "electronic assemblies", modules and integrated circuits for "information security"as follows, and components therefor specially designed~~ "required" for "information security", as follows and components (including "electronic assemblies", modules and integrated circuits) "required" therefor: "Electronic assembly" a number of electronic components ... connected together~~ to perform (a) specific function(s)~~, replaceable as an entity ~~and normally capable of being disassembled~~.
a.1 ~~Designed or modified to use "cryptography"~~ employing digital techniques performing any cryptographic function other than authentication or digital signature and having any of the following:
Technical Notes:
1. Authentication and digital signature functions include ~~their associated~~ key management function.
2. Authentication includes all aspects of access control where there is no encryption of files or text except ~~as directly related to~~ for the protection of passwords, Personal Identification Numbers (PINs), or similar data to prevent unauthorized access.
3. "Cryptography" does not include "fixed" data compression or coding techniques. "Fixed" ... ~~can~~ does not accept externally supplied parameters ... ~~and cannot be modified by the user~~.
Note:5A002.a.1 includes ~~equipment designed or modified to use~~ "cryptography" equipment employing analog principles when implemented with digital techniques.
a.2 ~~Designed or modified to perform~~ performing cryptanalytic functions;
a.4 ~~Specially designed or modified to reduce~~ reducing the compromising emanations of information-bearing signals beyond what is necessary for health, safety or electromagnetic interference standards;
a.5 ~~Designed or modified to use~~ Employing cryptographic techniques to generate the

spreading code for “spread spectrum” systems, not controlled in 5A002.a.6, including the hopping code for “frequency hopping” systems;

a.6 ~~Designed or modified to use~~ Employing cryptographic techniques to generate channelizing codes, scrambling codes or network identification codes, for systems using ultra-wideband modulation techniques and having any of the following: ...

a.7 Non-cryptographic information and communications technology (ICT) security systems and devices evaluated to an assurance level exceeding class EAL-6 (evaluation assurance level) of the Common Criteria (CC) or equivalent;

a.8 Communications cable systems ~~designed or modified~~ using mechanical, electrical or electronic means to detect surreptitious intrusion;
Note: 5A002.a.8 applies only to physical layer security.

a.9 ~~Designed or modified to use~~ Employing ‘quantum cryptography’.

31,32 **6A001**.

The ANPRM states:

ECCN 6A001.a.1 controls “components” “specially designed” for “marine acoustic systems that are within the scope of (a.1.a,b,c,d, or e) and
ECCN 6A001.a.2 controls “components” “specially designed” for “passive systems” described in (a.2.a,b,c,d,e,or f)

However, both a.1 and a.2 are marine acoustic systems, per the heading of 6A001.a. The distinction between the two is that a.1 is active and a.2 is passive.

Moreover, the references to components in the headings of 6A001, 6A001.a, 6A001.a.1, and 6A001.a.2 all come before “as follows”. Furthermore, what follows does not distinguish between systems and equipment on the one hand and components on the other hand. Indeed, the word “components” does not appear in any of the sub-sub-items of a.1 or a.2.

The following changes related to specially designed or similar expressions in 6A001, 6A001,a, 6A001.a.1, and 6A001.a.2 and their related sub-sub-items, Notes and definitions are suggested. But there is no need for technicians to try to identify positively 6A001.a.1 and a.2 components as a substitute for the specially designed modifier of components. This is because the existing language of 6A001.a.1 and a.2 already accomplishes that task.

6A001

Acoustic systems, equipment and components, as follows

a. Marine acoustic systems, equipment and ~~specially designed~~ components ~~therefor~~, as follows:

a.1 Active (transmitting or transmitting and receiving) systems, equipment and ~~specially designed~~ components ~~therefor~~, as follows:
Note: 6A001.a.1 does not control equipment as follows: ...
b.2 Pingers ~~specially designed~~ for relocating or returning to an underwater position.

a.1.a.1 Surface vessel survey equipment ~~designed~~ “required” for sea bed topographic mapping ...

a.1.a.1.a ~~Designed to take measurements~~ Measuring ...

a.1.a.1.b ~~Designed to measure~~ Measuring ....

a.1.a.2 Underwater survey equipment ~~designed~~ “required” for seabed topographic mapping ...

a.1.a.2.a ~~Designed or modified to operate~~ Operating at depths ...
a.1.a.3 Side Scan Sonar or Synthetic Aperture Sonar ~~designed~~ "required" for seabed imaging ...
a.1.a.3.a ~~Designed or modified to operate~~ Operating at depths ...
a.1.b Systems or transmitting and receiving arrays ~~designed~~ for object detection or location, having any of the following
a.1.b.5 ~~Designed to operate~~ Operating with an unambiguous display range ....
a.1.b.6 ~~Designed to withstand~~ Withstanding pressure ...
a.1.c Acoustic projectors ...operating individually or in a ~~designed~~ combination and ...
Notes:
1. The control status of acoustic projectors ... ~~specially designed~~ for other equipment is determined by the control status of the other equipment.
a.1.d Acoustic systems and equipment~~, designed~~ "required" to determine the position of ...
Note: 6A001.a.1.d includes:
b. Equipment ~~capable of~~ automatically correcting ...
a.1.e Active individual sonars, ~~specially designed or modified~~ "required" to detect, locate and automatically classify swimmers or divers
N.B. For diver detection systems ~~specially designed~~ for military use, see the U.S. Munitions List ...
a.2 Passive systems, equipment and ~~specially designed~~ components therefor, as follows:
a.2.a Hydrophones
Note: The control status of hydrophones ~~specially designed~~ for other equipment is determined by the control status of the other equipment
a.2.a.5 ~~Designed to operate~~ Operating ...
a.2.a.6 ~~Designed for operation~~ Operating ...
a.2.c Processing equipment, ~~specially designed~~ "required" for towed acoustic hydrophone arrays, having ...
a.2.d.2 ~~Designed to operate~~ Operating at depths ...
a.2.e.2.a ~~Designed to operate~~ Operating at depths ...
a.2.e.2.b ~~Capable of being operationally interchanged with~~ Permitting change of towed acoustic hydrophone array modules during operations
a.2.f Processing equipment, ~~specially designed~~ "required" for bottom or bay cable systems, having ...
Note: 6A001.a.2 also applies to receiving equipment, whether or not related in normal application to separate active ~~equipment, and specially designed components therefor~~ controlled systems, equipment, or components.

33. **6A004**

Optical equipment and components, as follows:
a Optical mirrors (reflectors) as follows:
a.1 "Deformable mirrors" having either continuous or multi-element surfaces, and specially designed components therefor, capable of dynamically repositioning portions of the surface of the mirror at rates exceeding 100 Hz

Both 6A004.a.1 and the ANPRM restatement of that sub-item are ambiguous grammatically as to whether dynamically repositioning portions of the surface of the mirror ... modifies the control

of mirrors or the control of mirror components. However, substantively, “capable of” is inconsistent with “specially designed.” So, the following revision of 6A004.a.1 is recommended as a starting point for technicians to try to identify components which would permit deletion of specially designed.

a.1 “Deformable mirrors” having either continuous or multi-element surfaces and permitting dynamically repositioning portions of the surface of the mirror at rates exceeding 100 Hz, and ~~specially designed~~ components “required” therefor~~, capable of dynamically repositioning portions of the surface of the mirror at rates exceeding 100 Hz~~

34 **6A005.e.2**

Optical ~~mirrors~~ mirror components or transmissive or partially transmissive optical or electro-optical components~~, specially designed for use with~~ “required” for controlled “lasers”

Changes are to clarify that transmissive components are components of “lasers” and not of mirrors.

35 **6A203.a**

Components ~~specially designed~~ “required” for mechanical rotating mirror framing cameras with recording rates greater than 225,000 frames per second or mechanical rotating mirror streak cameras with writing seeds greater than 0.5 mm per microsecond.

36. **6A998.a**

Should be omitted, because of the stated intent to exclude AT-only ECCNs.

37 **6A998.b**

Components ~~specially designed~~ “required” for “space qualified” “laser” radar or Light Detection and Ranging equipment ~~specially designed~~ “required” for surveying or meteorological observation.

38 **7A008**

Components ~~specially designed~~ “required” for underwater sonar navigation systems using Doppler velocity or correlation velocity logs integrated with a heading source and having a positioning accuracy of equal to or less (better) than 3% of distance traveled “Circular Error Probable

39 **8A002.a**

Systems, equipment, and components ~~specially designed or modified~~ “required” for submersible vehicles and ~~designed to operate~~ operating at depths exceeding 1,000 m~~, as follows~~ and having any of the following characteristics: ...

40. **9A002**

~~Assemblies and~~ components ~~specially designed~~ “required” for ‘marine gas turbine engines’ with an ISO standard continuous power rating of 24,245 kW or more and a specific fuel consumption not exceeding 0.219 kg/kWh in the power range from 25 to 100%.

41,42 **9A003**

~~Specially designed assemblies and~~ components, incorporating any of the "technologies" controlled by 9E003.a, h, or i "required" for any of the following gas turbine engine propulsion systems

a. Controlled by 9A001

b. Whose ~~design or~~ production origins are either countries in Country Group D:1 or unknown to the manufacturer.

9A001 Aero gas turbine engines having any of the following;

a. Incorporating any of the technologies controlled by 9E003.a, h, or i or

b Developed to power an aircraft designed to cruise at Mach 1 or higher, for more than 30 minutes.

Note: 9A001.a does not control aero gas turbine engines certified by the civil aviation authority in a (Wassenaar member) country and intended to power non-military manned aircraft with a civil type certificate engine or equivalent.

All significant components may incorporate technologies controlled by 9E003.a, h, or i. If so, specially designed (or "required") could simply be omitted from 9A003. Perhaps components, if any, listed in the December 23, 2011, proposed rule for USML Category XIX.f.2 which do not incorporate these technologies should be considered in responding to the ANPRM.