Timothy Mooney

From: William Root <waroot23@gmail.com>
Sent: Thursday, December 27, 2012 8:20 PM
To: PublicComments
Cc: Kevin Wolf; William Arvin
Subject: Public comment 2. individual W Root. 12.27.12
Attachments: sdcclclrfcnw.doc

The attached document is in response to the November 29, 2012, proposed rule on this subject.

Starting with the logic of deleting specially designed from 9A003 gas turbine engine components and deleting a similar expression from 4A003.c on computer assembly components, it shows how specially designed and similar expressions could be deleted throughout the entire existing CCL. It does so without adding any new technical substance.

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Thanks,
William Root
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Note: Please dont send any emails to my old email account waroot@aol.com

December 28, 2012

To: publiccomments@bis.doc.gov
From: Bill Root
Subject: November 29, 2012 Clarification Proposed Rule RIN 0694-AF37

The subject proposed rule provides an opportunity to identify needed clarifications related to the impact of the Export Control Reform proposed definition of "specially designed" on the existing CCL.

9A003 on gas turbine engine components is an excellent example of the desirability of deleting "specially designed" when the CCL already includes technical detail. "Specially designed" detracts from the clarity of controls on 9A003 components incorporating specified technologies. It would be unreasonable to remove from those controls what might be regarded as the portion of those specified technologies which is not "specially designed."

4A003.c controls an aggregation of "electronic assemblies" enhancing performance to exceed the limit defining computer controls. The subject proposed rule notes that assemblies are a form of components. The words "specially designed or modified to be capable of" should similarly be deleted from 4A003.c.

Attached please find recommendations to delete all but 7 of 418 uses of "specially designed" and 1,109 uses of other similar expressions from the existing CCL. A Recapitulation is followed by details in each of the ten CCL Categories. Such expressions are not needed where controls include technical descriptions. These are based on decades of negotiations within the USG and internationally. Moreover, such expressions cannot logically be used to modify what is not controlled as well as what is controlled. They are also not needed in references to other items. Controls should be based on actual measurements, rather than on some theoretical capability. "Required" should be used instead of "specially designed" or similar expressions to describe software and technology controls, for consistency with the EAR definition of "required." Technical parameters should be added to the seven ECCNs in which specially designed would remain, plus 11 more where specially designed would be added, to permit deletion of the term there. If there are no technical performance parameters, "specially designed" is of no help in determining what is controlled, regardless of how those words might be defined or interpreted.

Deletion of "parts" and "accessories" (and similar wording) from export controls is also recommended. "Single unassembled part," in the proposed (b)(3) "specially designed" release, is also the definitive part of the definition of "part." Riflescopes and special paints, examples in the ITAR definition of "accessories," are separately controlled. Bag or canopy for a riding lawn mower, the examples in the June 19, 2012, proposed "accessory" definition, do not warrant export control. Things external to an equipment item but added to that item so as to enhance its performance to exceed a control limit, as in 4A003.c or listed plug-ins for oscilloscopes, become components. If anyone can identify an item meeting the definitions of "part" or "accessory" which should be, but is not now, separately controlled, that item should be proposed as a separate

control.

Recapitulation of Existing CCL Recommended Clarifications

Clarifications are categorized, as follows. The number of recommendations is shown to the left of the sub-category description.

I.	Delete specially designed or similar expressions from descriptions of what is controlled.	
88	a.	Specially designed components
30	b.	Specially designed items which are components but not called components (also see I.e, below)
30	c.	Similar expressions modifying components
21	d.	Similar expressions modifying items which are components but not called components (also see I.f, below)
126	e.	Specially designed end-items (treated as such even though many are also components of something larger)
235	f	Similar expressions modifying such end-items
II.	Delete specially designed or similar expressions from what is not controlled.	
53	a.	Specially designed
73	b.	Similar expressions
III.	Delete specially designed or similar expressions from cross references to other items.	
54	a.	Specially designed
144	b.	Similar expressions
IV.	Delete “capable of” or similar phrases.	
156	a.	capable of
217	b.	Similar phrases
V.	Change “specially designed” or similar expressions to “required” in descriptions of software and technology controls.	
60	a.	Specially designed
130	b.	Similar expressions
VI.	Retain “specially designed” unchanged or change similar expressions to “specially designed.”	
7	a.	Retain specially designed components unchanged
6	b.	Add specially designed components
7	c.	Add specially designed end-items
	Delete:	
45	VII	“Parts”
45	VIII	“Accessories” and similar expressions

Number of Recommendations by Reasons for Control

	WA	MT	NSG	NRC	NP2	CB	RS	CC	SS	SL	AT+	Total
I.a	53	17	1		2			1			14	88
I.b	16	1	6	2		1					4	30
I.c	10	8				4	3				5	30
I.d	5	6	2			5					3	21
I.e	72	7	2		1	2		1			41	126
I.f	125	41	8	7	1	10	2	3			38	235
II.a	39	3	5			1					5	53
II.b	48	13	2			3		3			4	73
III.a	33	9		4	1	2				1	4	54
III.b	45	18	9	40	4	4	7		6	1	10	144
IV.a	42	40	20	9	2	8	1				34	156
IV.b	79	70	13	11	2	10		1		4	27	217
V.a	34	7	2				1	3			13	60
V.b	71	16	2		1	4	3	3		3	27	130
VI.a											7	7
VI.b							1			1	4	6
VI.c					5		1	1				7
VII	7	2	7	2	2		3	7		1	14	45
VIII	15	3	6	1	2		2	3		1	12	45
Total	694	261	85	76	23	54	24	26	6	12	266	1,527

WA (Wassenaar Dual Use List) includes 0A002 DOS and 1C001 (even though MT applies to entire item). WA also includes 7A005 and 9A005-9A011, even though these are marked as entirely DOS jurisdiction (wording not on USML, so portions are probably DOC jurisdiction)

MT includes 1A102, 6A103, 7A105, 7A115, 7A116, 7A117, 7B103, 9A103, 9A014, 9A105, 9A107, 9A108, 9A109, 9A111, 9A115, 9A116, 9A117, 9A118, 9A119, even though marked as entirely DOS jurisdiction (wording not on USML, so portions are probably DOC jurisdiction).

NRC, rather than WA or NSG, includes, not only 0A001, 0B001, 0B002, 0B003, 0B004, 0B005, 0B006, 0C002, 0C004, 0C005, 0C006, 0C201, 0D001, and 0E001 but also, 1A225, 1A226, 1A227, 1B225, 1B226, 1B227, 1B228, 1B229, 1B230, 1B232, 1B233, 1C012, 1C235, 2A226, 2A292, 2A293, 2B225, 2B231, 3A225, 3A226, 3A227, 3A233, because of possibility all are subject completely to NRC rather than DOC jurisdiction.

RS, rather than AT, includes, not only 0A918, 0E918, 0A919, 8A918, 0A521, 0B521, 0C521, 0D521, 0E521 but also, 0B999, 1B999, 1C995, 1C999, 2A983, 2A984, 2D983, 2D984, 2E983, 2E984, 3A982, 3D982, 3E982, 6A998.b.

AT+ includes, not only “AT only” but also, 0A986 FC1, 0A988 UN, and 9A991.a UN.

ECCNs in Each Recommended Clarification Sub-Category

I.a	I.b	I.c	I.d	I.e	I.f
1A004.a	1A001 2x	1A102	2B008	0A983	0A981
1A004.b	1A227	1B001 3x	2B119	1A007	0A981.c
1A005.a	1B116	1B101 6x	2B209.b	1B002 2x	0A987.f
1A006	1B233.b.1	2A001	2B227.c	1B003	1A004 5x
1A008.b	1C001	2A983	2B350 5x	1B201	1A006 2x
1B001 6x	2B006	2A984	2B999.j	1C101	1A226 2x
1B003.c	2B007	2B351 3x	4A003.c	1C992 2x	1A995.b
1B101	2B008	2B352	4A994.c 2x	2A291	1B226
1B102	2B204.b	3A999	6A004.c.3	2A991 2x	1B228 2x
1B115	2B207 2x	5A001 2x	9A003 b	2B003	1B232 2x
1B117	2B226.b	5A002.a.4	9A106 5x	2B005	1B999.c
1B118	2B350.j	6A002.d	9D004.f	2B007.2x	1C102
1B119	2B991.b	6A996 4x		2B207	1C116
2B001	2B998 2x	8A002.a		2B352 2x	1C395
2B003	2B999.k	8A918.b		3A001.d	1C991
2B004	3A002	9A004		3A991 2x	1C992
2B005	3A003	9A106		3B001 3x	1C995
2B109	4 APP Note			3B991 14x	1E350 2x
2B992	5E001 2x			3B992 12x	2A293
3A001.c	6A003.a.6.a			4A001.a	2A991 2x
3A292 2x	6A203 2x			4A003.g	2B Note 2x
3A981	8D002			4A994 2x	2B007
3B001	8E002.a			5A001 3x	2B104
3B002	9A003			5A991.a	2B105
4A001	9B006			5E991 2x	2B117
4A003 3x				5B002	2B120.b
4A004				6A001 3x	2B122
4A994 3x				6A004 2x	2B226
5A001 2x				6A005 2x	2B229 2x
5A991 2x				6A006.a.1.b	2B351 2x
5B001 2x				6A008 2x	2B352 4x
5A002				6A998	2B999.i
6A001 4x				6B004	3A001 8x
6A002 2x				6B108	3A002 2x
6A003				6C994	3A101.a
6A004				6E003	3A229 2x
6A005 2x				6E101	3A231
6A006				7A105	3A232
8A008				7B002	3A992
6A107 2x				7E004 2x	3A999

I.a	I.b	I.c	I.d	I.e	I.f
6A203				8A002 27x	3B001 10x
6A991				8A992 2x	3B991 5x
6A992 2x				9A012 3x	3B992 4x
6A996				9A110	3C002 8x
6A998				9B001	3C992 2x
6B008				9B002.a	3E002 3x
6B995				9B005	4A101 3x
7A001				9B007	4E993
7A002				9B008	5A001 4x
7A003 2x				9B009	5A101
7A004				9B010	5A991 7x
7A005				9B115	5C991
7A008				9B116	5E001.c.1
7A101 2x				9E003 2x	6A001 19x
7A102					6A002 6x
7A103					6A004
7A104					6A005 5x
7A105					6A006.a.1.b
7A107					6A007 2x
8A992					6A008.j.3
9A002					6A102 2x
9A003					6A103
9A012.b.3					6A107
9A106					6A108 3x
9A990					6A205
9B003					6A996 4x
					6C992
					6C994
					6E101
					6E993
					7A001
					7A003 2x
					7A101
					7A102
					7A103 2x
					7A105 3x
					7A106
					7A107
					7A115
					7A116
					7B101
					7B102

I.a	I.b	I.c	I.d	I.e	I.f
					7E004
					7E102 3x
					8A001 13x
					8A002 15x
					8A992 4x
					8B001
					8C0012x
					9.A N.B.
					9A001.b
					9A012
\					9B005.a
					9B106 3x
					9B115
					9E003 6x

II.a	II.b	III.a	III.b	IV.a	IV.b
1A002 3x	0A984	0B005 2x	0A001	0B006.b	0A987.f
1A004	0A985	0B006.d	0A002	1A102	1A001 2x
1C226	1A004	0C201	0A999	1B101	1A004 3x
1C230	1A005 2x	1A002	0B001 11x	1B201.a.3	1A101
2B001	1C006	1A004	0B002 3x	1B226 2x	1A226 2x
2B005	1C101	1A007	0B003	1B230	1A995
2B007	2B001 3x	1A008	0B004	1B231.b.1	1B002
2B201	2B119	1A995	0B006 3x	1B999.d	1B003
2B207	2B120	1B003	0B999 2x	1C001 2x	1B101
2B350	2B121	2A291.e	0D001	1C101	1B102 4x
2E003	2B226.a	2B004	0D999 2x	1C107 2x	1B117
3A001 2x	2B350	2B351 2x	0E001	1C117	1B118
3A002	2B352 2x	3A Note 1	1A001	1C202 3x	1B119
3A101.b	2D002	3B991	1A002	1C216 2x	1B226 2x
3A201	3A001 5x	3B992	1A004 3x	2B003 2x	1B229
3B991	3A002	3D001	1A006	2B006	1C107 5x
3B992	3A201	4 Note 2 N.B.	1A008	2B007	1C111.a.3.d
4A003.c	3B001 2x	4A003 N.B.1	1A202	2B008.e	1C117
4A994.c	3B991	5:2 Note 2 2x	1A225 2x	2B009	1C202
5A001 2x	3B992	5A980	1A226	2B116 4x	1C216
5A101	4A003.c	6A001 2x	1A227	2B119 4x	1D003
5A991.b 2x	4A980	6A004	1A999	2B120 2x	1D103
5B001.b.2	4A994.c	6A005	1B226	2B121	1E001
5A002 2x	5A001 2x	6A007	1B227	2B122 2x	1E002
6A001 2x	5A101 6x	6D001	1B228	2B209	1E103
6A002 2x	5D001.b.2	6D002 3x	1B229	2B226.a.1	2A291 2x
6A003 12x	5E001.c.4.b	6E001	1B230	2B227 2x	2A292
6A006 2x	5:2 Note 3,c	6E002	1B232	2B229 2x	2A991 6x
6A008 2x	5A002	7A003	1B233	2B230 2x	2B001 12x
6A108	5D002	7A008	1B999 2x	2B232	2B002
7A003	5D992	7A103	1C002	2B290	2B006 3x
9B005	5E002 2x	7A104	1C116	2B351	2B009 2x
	6A002 6x	7D001	1C202	2B352 7x	2B104
	6A003 6x	7E001	1C216	2B991 2x	2B109 2x
	6A005 2x	7E002	1C233	2B992	2B116
	6A006	7E101	1C234	2B997	2B119
	6A008 2x	9A006	1C240	2B998.c	2B201 2x
	7A001	9A008	1C355	2B999	2B206
	7A101 2x	9A010	1C395	2D992	2B209
	7A103	9A011	1C980	3A002	2B225 3x
	7E003	9A103	1C981	3A101	2B227
	7E004	9A109	1C982	3A201	2B229 2x

II.a	II.b	III.a	III.b	IV.a	IV.b
	9A001	9A110	1C983	3A225 2x	2B350 4x
	9E003	9A111	1C984	3A226	2B351 2x
		9B001`	1C988	3A227	2B352 4x
		9B991	1C995	3A229	2B991
		9D103	1C997	3A233	2B999 2x
		9E101	1C999 2x	3A292	3A001
		9E102	1D999	3A999 2x	3A101
			1E001	3B001 3x	3A226
			2A226	3B991 13x	3A227
			2A290	3B992 7x	3A229 2x
			2A291 3x	4A003 2x	3A232
			2A292	4A994.c.1	3A992
			2A999	5A001	3B001 2x
			2B005	5A101 2x	3B991 3x
			2B225	6A001 2x	3B992 3x
			2B231	6A003 2x	3C002 4x
			2B351	6A004 3x	3C992
			2B352	6A005 5x	4A101
			2B999	6A008 3x	5A001 4x
			2D994	6A108	5A101 2x
			2E003	6A203 2x	5A980
			3.A Note 2	6A991	5A991 6x
			3A001 2x	6A995	5D980 2x
			3A201	6B108	5E001 5x
			3A225	6D003	5E980
			3A226	6D993	5E991
			3A227	6E003	5:2 Note 3.b
			3A232	7A102	6A002
			4A001	7A103 3x	6A003 2x
			5A980	7A105	6A004
			6A002	7A107	6A005 3x
			6A003	7A117	6A008
			6A005 2x	8A001	6A102
			6A008	8A002 4x	6A103 2x
			6A108	8A992	6A107
			6A205	9A012	6A108 2x
			6A992	9A104	6A203
			6A999	9A111	6B108
			6D003	9A115	6C994
			7A003	9B005	6E003
			7A103	9B006	6E101 2x

II.a	II.b	III.a	III.b	IV.a	IV.b
			7D101 2x	9B009	7A001 2x
			7D102	9B105	7A003
			7E001	9B106 4x	7A101 4x
			7E002	9B117	7A102 2x
			7E101	9E003	7A103 3x
			7E994		7A106
			8A002 2x		7A115
			9A004 4x		7B101
			9A101 2x		7E004 2x
			9A104		8A001
			9A115		8A002 12x
			9A116		9A012 3x
			9A117		9A101 2x
			9A118		9A103
			9A119		9A106 3x
			9A120		9A107
			9A991 2x		9A108
			9D001 2x		9A109 2x
			9D002 2x		9A110 2x
			9D003		9A116
			9D104		9A117
			9D105		9A118 3x
			9E001 2x		9A120 2x
			9E002 2x		9A991
			9E003		9B001
					9B005
					9B105
					9B106
					9B117
					9E003 2x

V.a	V.b	VI.a	VI.b	VI.c	VII	VIII
1D103 2x	0E982	2A994	0A918	0A918	0A918	0A918
1D993	0E984	6A998.a	5A980	2A290 3x	0A979	0A982
1D999 2x	1D001	8A992.f	5A991.g	2A291 2x	0A982	0A983
1E102	1D002	8A992.g	5A991.h	4A980	0A983	1A006
2D001 2x	1D003	9A991.c	5A992.b		0A986	1B001
2D101	1D101	9A991.e	9A991.d		0A987	1B101
2D201 2x	1D201	9B990			2A291	2A291
2D991	1D390				2A292	2A292
2D994	1E002 7x				2A984	2B003
3D001 3x	1E103				2A994	2B004
3D002	1E104				2B001	2B201
3D003	1E355				2B201	2B206
3D004	1E994				2B206	2B209
3D980	2D001 2x				2B209	2B290
3D982	2D002				2B290	3A002
3D991 2x	2D101				3A001	3B001
3E001	2D202				3A201	3B002
3E980	2D290				3A231	3B991
4D001	2D351 2x				3A980	3B992
4D980	2D983				3A981	4A001
4D993 3x	2D984				4A994	4A004
5D001 3x	2D992				5A980	4A994
5D991	2E003 7x				5:2 Note 4.a.2	5A001
5E001 3x	2E983				6A203	5A980
6D001 3x	2E991				6A225	5A991
6D002 2x	2E994				6A226	5B001
6D003 8x	3D101				6A991	6A203
6D991	3E002				6A992	6A225
6D992	2E003				6A994	6A226
6E001 2x	3E991				6A995	6A991
7D003	4D001 4x				6C992	6A992
7D102	4D002 2x				6C994	6A994
7D103	4D994				7A994	6A995
8D001 2x	4E001 2x				8A918	6B995
9B116	4E980				8A992	6C992
					9A004	6C994
	4E992				9A012	8A918
	4E993				9A106	9A004
					9A120	9A012
	5D001 5x				9A980	9A106
	5D101				9A990	9A120
	5D980 2x				9A991	9A980

V.a	V.b	VI.a	VI.b	VI.c	VII	VIII
	5D991				9B010	9A990
	5E001 4x				9B990	9B003
	5E980				9E003	9B010
	5E991 2x					
	5D002 2x					
	5D992					
	6D003 4x					
	6D102					
	6D103					
	6E991					
	6E992					
	6E993 4x					
	7D001					
	7D002					
	7D003 4x					
	7D101					
	7D102					
	7D994					
	7E004					
	7E102					
	7E104 3x					
	7E994					
	8D001					
	8D002					
	8D992					
	8E002 2x					
	8E992					
	9D001 2x					
	9D002					
	9D003					
	9D004 5x					
	9D101					
	9D104					
	9D990					
	9D991					
	9E003 6x					
	9E990					
	9E991					
	9E993					

Line-in ~~Line-out~~ Recommended Changes in Individual ECCNS
(Roman numeral before ECCN identifies applicable recommendation category)

II: 0A001
... components ~~specially designed or prepared~~ as defined by NRC for ...

III: 0A002
.. equipment ~~specially designed~~ as defined in the USML

VII, VIII: 0A918
~~and specially designed parts and accessories therefor~~
VI: 0A918
Power controlled searchlights and control units therefor specially designed for military use

VII: 0A979
... ~~parts~~. components

I: 0A981.
c Air tight vaults ~~designed~~ for the execution of human beings ...
Equipment ~~designed~~ for the execution of human beings, as follows ...

VII, VIII: 0A982
... ~~parts and accessories~~ components

I: 0A983
~~Specially designed~~ implements ~~of~~ torture ...
VII, VIII: 0A983
...~~parts and accessories~~ components

II: 0A984
... except equipment ~~used exclusively~~ to treat ... and except arms ~~designed solely~~ for ...

II: 0A985
... except equipment ~~used exclusively~~ to treat ... and except arms ~~designed solely~~ for ...

VII: 0A986
Shotgun shells ... and ~~parts~~ components

I: 0A987
f Laser pointing devices ~~designed~~ for ... firearms
IV: 0A987
f ... ~~use on~~ ...
VII: 0A987

~~parts~~ components

III: 0A999

AT applies ... The Commerce Country Chart ~~is not designed to~~ does not determine AT license requirements for this entry.

III: 0B001

Plant ... and ~~specially designed or prepared~~ equipment and components as defined by NRC

a Plant ~~specially designed~~ as defined by NRC for ...
b Equipment and components, ~~specially designed or prepared~~ as defined by NRC
c Equipment and components, ~~specially designed or prepared~~ as defined by NRC
d Equipment and components, ~~specially designed or prepared~~ as defined by NRC
e Equipment and components, ~~specially designed or prepared~~ as defined by NRC
f Equipment and components, ~~specially designed or prepared~~ as defined by NRC
g Equipment and components, ~~specially designed or prepared~~ as defined by NRC
h Equipment and components, ~~specially designed or prepared~~ as defined by NRC
i Equipment and components, ~~specially designed or prepared~~ as defined by NRC
j Equipment and components, ~~specially designed or prepared~~ as defined by NRC

III: 0B002

~~Specially designed or prepared~~ auxiliary systems, equipment and components as defined by NRC

e ...systems ~~specially designed~~ as defined by NRC
f ... mass spectrometers/ion sources ~~specially designed or prepared~~ as defined by NRC...

III: 0B003

Plant... and equipment ~~specially designed or prepared~~ as defined by NRC ...

III: 0B004

Plant ... and ~~specially designed or prepared~~ equipment and components as defined by NRC

III: 0B005

Plant ~~specially designed~~ for fabrication ... and ~~specially designed~~ equipment as defined by NRC

III: 0B006

Plant for ... and ~~specially designed or prepared~~ equipment and components as defined by NRC

c ... ~~specially designed or prepared~~ as defined by NRC
d ... ~~specially designed or prepared~~ as defined by NRC
e ... ~~specially designed~~ as defined by NRC

IV: 0B006.

b ... ~~capable of withstanding~~ withstand ... ...

III: 0B999

AT applies ... The Commerce Country Chart ~~is not designed to~~ does not determine AT license requirements for this entry.
RS applies ... The Commerce Country Chart ~~is not designed to~~ does not determine RS license requirements for this entry.

III: 0C201
~~Specially prepared~~ compounds or powders, as defined by the NRC, ...

III: 0D001
... ~~specially designed or modified~~ as defined by NRC or as defined in the USML

III: 0D999
AT applies... The Commerce Country Chart ~~is not designed to~~ does not determine AT license requirements for this entry.
RS applies ... The Commerce Country Chart ~~is not designed to~~ does not determine RS license requirements for this entry.

III: 0E001
"Technology" ~~according to the Nuclear Technology Note~~ as defined by NRC or as defined in the USML

V: 0E982
"Technology" ~~exclusively~~ "required" for ...

V: 0E984
"Technology" "required" for ...

I: 1A001
a. Seals, gaskets, ... ~~specially designed for "aircraft" or aerospace~~ ..., made from ...
c. Seals, gaskets, ... ~~having all of the following:~~
~~c.1~~ ~~Made~~ made from ... ~~; and~~
~~c.2~~ ~~Specially designed for "aircraft," aerospace or missile~~ ....
III: 1A001
Related Controls: (1) Items ~~specially designed or modified~~ as defined on the USML for ...
IV: 1A001
a. ... ~~use~~ ...
c.2 ... ~~use~~ ...

II: 1A002
Note 2. 1A002 does not control semi-finished items ~~specially designed~~ for ...
Note 3: 1A002.b.1 does not apply to ... ~~specially designed~~ for ...
Note 4: 1A002 does not apply to finished items ~~specially designed~~ for ...
III: 1A002
Related Controls: ....(3) ... structures ~~"specially designed"~~ for missile applications (including ~~specially designed~~ subsystems and components) are controlled by 9A110
(4) "Composite" structures or laminates ~~specially designed or prepared for use in~~ as defined by NRC for separating uranium isotopes are subject to the export licensing authority of the Nuclear Regulatory Commission (see 10 CFR part 110).

I: 1A004
a. Gas masks, ... ~~designed or modified~~ for defense against any of the following ...
Note: 1A004.a includes ... PAPR that are ~~designed or modified~~ for ...
b. Protective suits ... ~~specially designed or modified~~ for defense against any of the following
c. Detection systems ~~specially designed or modified~~ for detection or identification of any of the following
d. Electronic equipment ~~designed~~ for automatically detecting or identifying the presence of explosives ... residues and utilizaing 'trace detection techniques
II: 1A004
Note 1. 1A004.d does not apply to equipment ~~specially designed~~ for laboratory use
Note. 1A004 does not control ... Equipment ~~limited by design or function~~ to protect against hazards ~~specific~~ to residential safety or civil industries, including ...
III: 1A004
Protective and detection equipment and components, not ~~specially designed for military use~~ defined in the USML, as follows:
Related Controls:
(2) See ECCN 1D003 for "software"~~specially designed or modified~~ ... for equipment to perform the functions of equipment controlled under section 1A004.c ...
(3) See ECCN 1E002.g for control libraries (parametric technical data bases) ~~specially designed or modified~~ ... for equipment to perform the functions of equipment controlled under section 1A004.c
(4) Chemical and biological protective and detection equipment ~~specifically designed ,~~

~~developed, modified, configured, or adapted for military applications~~ as defined in the USML is subject to the export licensing jurisdiction of the Department of State ... category XIV(f) ... as is commercial equipment that incorporates components or parts controlled under that Category unless those components or parts are: ... and (3)... not for replacement without compromising the effectiveness of the device, in which case the equipment is subject to the export licensing jurisdiction of the Department of Commerce under ECCN 1A004.

IV: 1A004

Related Controls:

(2) ... ~~to enable~~ ...

(3) ... ~~to enable~~ ...

(4) ... (3) ~~incapable of~~ ...

VI: 1A004

a Gas masks, filter canisters and decontamination equipment ... and specially designed components therefor

c. Detection systems ... and specially designed components therefor

I: 1A005

a. Soft body armor and ~~specially designed~~ components therefor having such chacteristics

II: 1A005.Notes

2. This entry does not control body armor ~~designed~~ to provide frontal protection only ...

3. This entry does not apply to body armor ~~designed~~ to provide protection only from knife, spike, needle or blunt trauma

I: 1A006

Equipment (remotely operated vehicles or disruptors) ~~specially designed or modified~~ for the disposal of improvised explosive devices, as follows ... and ~~specially designed~~ components ... therefor having such characteristics

Related Definitions: 'Disruptors' - Devices ~~specially designed for the purpose of~~ preventing the operation of an explosive device by projecting a liquid, solid or frangible projectile.

III: 1A006 Related Controls

Equipment ~~specially designed for military use~~ as defined in the USML for the disposal of improvised explosive devices is subject to the export licensing jurisdiction of the Department of State ...

VIII: 1A006 ... ~~and accessories~~ ...

VI: 1A006

and specially designed components ... therefor

I: 1A007

Equipment and devices, ~~specially designed~~, to initiate charges ... as follows ...

III 1A007

Related Controls: High explosives and ~~related~~ equipment ~~specially designed for military use~~ as defined in the USML is subject to the export licensing jurisdiction of the

Department of State ...

I: 1A008

b. Linear shaped cutting charges having all of the following, and ~~specially designed~~ components therefor having any of the following

III: 1A008 Related Controls

(1) All of the following, as defined in the USML. are subject to the export licensing jurisdiction of the Department of State

~~a.~~ High explosives and related equipment ~~specially designed for military use~~.

~~b~~ Explosive devices or charges in this entry that utilize USML controlled energetic materials ... ~~if thy have been specifically designed, developed, configured, adapted or modified for a military application~~.

IV: 1A101

... usable ...

I: 1A102

Resaturated pyrolized carbon-carbon components ~~designed~~ for roekets ...

IV: 1A102

Resaturated pyrolized carbon-carbon components ....~~capable of~~ achieving a "range" ...

III: 1A202 Related Controls

(3) "composite" structures ~~specially designed or prepared for use in~~ as defined by NRC for separating isotopes ...

III: 1A225

Platinized catalysts ~~specially designed or prepared~~ as defined by NRC for ... the production of heavy water.

Related Controls: (2) Equipment ~~specially designed or prepared~~ for ... as defined by NRC

I: 1A226

~~Specialized~~ packings ... for separating heavy water from ordinary water, having both of the following characteristics:

a. Made of phosphor bronze mesh chemically treated to improve wettability; and

b. ~~Designed~~ ... for vacuum distillation towers.

III: 1A226

Related Controls: (2) Equipment ~~specially designed or prepared~~ as defined by NRC for ...

IV:1A226

... ~~which may be used in~~ ...

b. ... ~~to be used in~~ ...

I: 1A227

... radiation shielding windows ... and ~~specially designed~~ frames therefor

III: 1A227

Related Controls (2) Equipment ~~specially designed or prepared~~ as defined by NRC for ...

I: 1A995

b. Equipment limited by function ~~or design~~ to protect against hazards specific to civil industries, such as ...

III: 1A995

Protective and detection equipment and components not ~~specially designed~~ ... and not controlled by ECCN 1A004 or ECCN 2B351 or ECCN 1A613 or the USML, as follows

IV: 1A995

... ~~for military use~~ ...

III: 1A999

AT applies ... The Commerce Country Chart ~~is not designed to~~ does not determine AT license requirements for this entry.

I: 1B001

Equipment and components for... as follows ... ~~and specially designed components therefor~~

a. Filament winding ~~machines~~, of which the motions for ... , ~~specially designed~~ for ~~the manufacture of~~ "composite" structures or laminates, from "fibrous or filamentary materials"

b. Tape laying ~~machines~~, of which the motions for ... , ~~specially designed~~ for ~~the manufacture of~~ "composite" airframe or "missile" structures;

c. Multidirectional, multidimensional weaving ~~machines~~, or interlacing ~~machines~~, ~~including~~ and adapters and modification kits, ~~specially designed or modified~~ for weaving, interlacing or braiding fibers for " composite" structures;

d. ~~Equipment specially designed or adapted for the production of reinforcement~~ Reinforcing fibers, as follows:

d.1 ~~Equipment for~~ converting polymeric fibers ... into carbon fibers or silicon carbide fibers, ~~including special equipment to strain~~ or straining the fiber during heating;

d.2 ~~Equipment for the~~ chemical vapor deposition of elements or compounds, on heated filamentary substrates, to manufacture silicon carbide fibers;

d.3 ~~Equipment for the~~ wet-spinning of refractory ceramics ... ;

d.4 ~~Equipment for~~ converting aluminum containing precursor fibers into alumina fibers ...;

e. ~~Equipment for~~ producing prepregs controlled by 1C010.e by the hot melt method;

f. Non-destructive inspection ~~equipment specially designed~~ for "composite" materials, as follows:

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

f.2 Numerically controlled ultrasonic testing ~~machines~~ of which the motions for ...

g. Tow-placement machines, of which the motions ..., ~~specially designed~~ for ~~the manufacture of~~ "composite" airframe or missile structures

VIII: 1B001

... ~~and accessories~~ ...

I: 1B002

Equipment for producing metal alloys ... ~~specially designed~~ to avoid contamination ~~and specially designed for~~... in one of the processes specified in 1C002.c.2.

IV: 1B002

... ~~use~~ ...

I: 1B003

Tools, dies, molds or fixtures, for "superplastic forming" or diffusion bonding" titanium, aluminum or their alloys, ~~specially designed~~ for ~~the manufacture of~~ any of the following

c. ~~Specially designed components for structures specified by 1B003.a or for engines specified by 1B003.b.~~

(Such components are separately controlled by USML Category VIII and ECCNs 9A002, 9A003, and 9A991.c and .d.)

III: 1B003

Related Controls: For ~~specially designed~~ production equipment of systems, sub-systems and components ... <u>for</u> "missiles", see 9B115.

IV: 1B003

Related Controls: ... ~~usable in~~ ...

I: 1B101

Equipment <u>and components</u> ... as follows ... for rockets ... as follows ... ~~; and specially designed components~~ ... ~~therefor~~

a. Filament winding ~~machines~~, or fiber placement ~~machines~~, of which the motions ... ~~designed to fabricate~~ <u>for</u>.composite structures or laminate from fibrous or filamentary materials, and coordinating and programming controls.

b. Tape-laying ~~machines~~ of which the motions ..., ~~designed~~ for ~~the manufacture of~~ composite airframe and missile structures....

c. ~~Equipment designed or modified for the~~ "production" of "fibrous or filamentary materials", as follows:

c.1 ~~Equipment for~~ converting polymeric fibers ... ~~including special provision to strain~~ <u>or straining</u> the fiber during heating;

c.2 ~~Equipment for the~~ chemical vapor deposition of elements or compounds, on heated filamentary substrates;

c.3 ~~Equipment for the~~ wet-spinning of refractory ceramics ... ;

d. ~~Equipment designed or modified for special~~ fiber surface treatment or ~~for~~ producing prepregs and preforms controlled by 9A110, as follows:

. ~~Note: Equipment covered by 1B101.d includes but is not limited to~~ rollers, tension stretchers, coating equipment, cutting equipment and clicker dies

IV: 1B101

... ~~usable~~ for rockets ... ~~capable of~~ achieving a "range" ...

VIII: 1B101

... ~~and accessories~~

I: 1B102

a. Metal powder production equipment and components ... for the production in a controlled environment, of spherical or atomized materials specified in ...

b. ~~Specially designed components for production equipment specified in 1B002 or 1B102.a~~ Components for producing metal alloys, metal alloy powder or alloyed materials to avoid contamination and in one of the processes specified in 1C002.c.2.

IV: 1B102

a. ... ~~usable~~ ...

Note a. Plasma generators (high frequency arc-jet) ~~usable~~ for ...

b Electroburst equipment ~~usable~~ for ...

c. Equipment ~~usable~~ for ...

I: 1B115

Equipment ... for the "production" of propellants or propellant constituents, and ~~specially designed~~ components therefor having any of the following characteristics (see List of Items Controlled)

I: 1B116

~~Specially designed~~ nozzles for ...

I: 1B117

Batch mixers ... and having all of the following characteristics ... and ~~specially designed~~ components ~~therefor~~ having any of the following characteristics

IV: 1B117

... with ~~temperature control capability of the~~ temperature-controlled mixing chamber ...

I: 1B118

Continuous mixers ... and having all of the following characteristics ... and ~~specially designed~~ components ~~therefor~~ having any of the following characteristics

IV: 1B118

... with ~~temperature control capability of the~~ temperature-controlled mixing chamber...

1: 1B119

Fluid energy mills and components ... for grinding or milling ... ~~, and specially designed components therefor~~

IV: 1B119

... ~~usable~~ ...

I: 1B201

a.2 ~~Specially designed~~ to fabricate ...

IV: 1B201

a.3 ~~Capable of~~ winding ...

I: 1B226

Electromagnetic isotope separators ~~designed~~ for ...

III: 1B226

Related Controls: (1) Electromagnetic isotope separators ~~specially designed or prepared~~ as defined by NRC

IV: 1B226

... ~~, or equipped with,~~ ... ~~capable of~~ ...

Related Controls: (1) ... ~~use in~~ ...

ECCN Controls: ... ~~capable of~~ ...

III: 1B227

Related Controls: (1) Equipment ~~specially designed or prepared~~ as defined by NRC ...

I: 1B228

a. ~~Designed~~ to operate ...

b. ~~Designed~~ to operate ...

III: 1B228

Related Controls: (1) Equipment ~~specially designed or prepared~~ as defined by NRC ...

III: 1B229

Related Controls: (1) Equipment ~~specially designed or prepared~~ as defined by NRC ...

IV: 1B229

a.1 ~~Can operate~~ Operating at ...

III: 1B230

Related Controls: (1) Equipment ~~specially designed or prepared~~ as defined by NRC ...

IV: 1B230

Pumps ~~capable of~~ for ...

IV: 1B231 b.1

Hydrogen or helium refrigeration units ~~capable of~~ for cooling ...

I: 1B232.

a. ~~Designed~~ for operation with ...

b. ~~Designed~~ for a throughput of hydrogen gas ...

III: 1B232 Related Controls

(1) Equipment ~~specially designed or prepared~~ as defined by NRC for ...

I: 1B233

b.1 ... columns ~~specially designed~~ for lithium amalgams

III: 1B233

Related Controls: (3) Facilities or plants ~~specially designed or prepared~~ as defined by NRC for ...

(The above assumes that the 1C233 text for Related Controls is moved to 1B233. NRC clearly controls 1B233.a and may also control 1B233.b.)

I: 1B999
c. Industrial process control hardware/systems ~~designed~~ for power industries, n.e.s.;
III: 1B999
AT applies: The Commerce Country Chart ~~is not designed to~~ does not determine AT license requirements for this entry.
RS applies The Commerce Country Chart ~~is not designed to~~ does not determine AT license requirements for this entry.
IV: 1B999
d. ... cooling systems ~~capable of~~ for continuous cooling ...

I: 1C001
Materials ~~specially designed~~ for ~~use as~~ absorbers ... , as follows
IV: 1C001
Note 1
c.1.a ... not ~~capable of~~ withstanding temperatures exceeding
c.1.b ... not ~~capable of~~ withstanding temperatures exceeding

III: 1C002
Related Controls: (3) Aluminum alloys and titanium alloys in physical forms and finished products ~~specially designed or prepared~~ as defined by NRC for ~~use in~~ separating uranium isotopes are subject to the export licensing authority of the Nuclear Regulatory Commission (see 10 CFR part 110).

II: 1C006.
d Note: 1C006.d does not apply to ~~materials specified and packaged as~~ medical products.

I: 1C101
Related Controls: (1) Materials controlled by this entry include structural materials and coatings (including paints), ~~specially designed~~ for reduced or tailored reflectivity or emissivity ..
II: 1C101
Related Controls: (2) This entry does not control coatings (including paints) ~~when specially used~~ for the thermal control of satellites.
IV: 1C101
... ~~for applications usable~~ in rockets ... ... ~~capable of~~ achieving a “range” ...

I: 1C102
Resaturated pyrolized carbon-carbon materials ~~designed~~ for ...

IV: 1C107
b. ... graphites, ~~usable~~ for rocket nozzles and reentry vehicle nose tips.
c ... materials ... for ~~use in~~ radomes ~~useable in~~ for rockets ... ~~capable of~~ achieving a “range” ...

d Silicon-carbide materials ~~usable in~~ for rockets ... ~~capable of~~ a “range” ...
d.1 ... ~~useable~~ ...
d.2 ... ~~usable~~ ...

IV: 1C111.a.3.d Technical Note
Mixed Oxides of Nitrogen are ... ~~that can be used~~ in missile systems

I: 1C116
Maraging steels (iron alloys ~~generally characterized by~~ with ...), ...
III: 1C116
Related Contrtols: (3) Maraging steel, in physical forms and finished products and ~~specially designed or prepared~~ as defined by NRC for ~~use in~~ separating uranium isotopes, is subject to the export licensing authority of the Nuclear Regulatory Commission (see 10 CFR part 110).

IV: 1C117
Materials for the fabrication of missile components for rockets or missiles ~~capable of~~ achieving a “range” equal to or greater than 300 km, as follows
c.2 ~~Able to be~~ machined to any of the following products ...

III: 1C202
Related Controls: (3) Aluminum alloys and titanium alloys, in physical forms and finished products and ~~specially designed or prepared~~ as defined by NRC for ... separating uranium isotopes, are subject to the export licensing authority of the Nuclear Regulatory Commission (see 10 CFR part 110).
IV: 1C202
Related Controls: (3) ... ~~use in~~ ...
Related Definition: ~~The phrase “capable of” refers to aluminum alloys and titanium alloys~~ Ultimate tensile strength in a.1 or b.1 is measured either before or after heat treatment.
a.1 ~~“Capable of”~~...
b.1 ~~“Capable of”~~...

III: 1C216
Related Controls: (3) Maraging steel, in physical form and finished products ~~specially designed or prepared~~ as defined by NRC for ... separating uranium isotopes, is subject to the export licensing authority of the Nuclear Regulatory Commission (see 10 CFR part110).
IV: 1C216
Maraging steel ... ~~“capable of”~~ ...
IV: 1C216
Related Controls: (3) ... ~~use in~~ ...
Related Definition ~~The phrase “capable of” in the ECCN heading refers to maraging steel~~ Ultimate tensile strength is measured either before or after heat treatment.

II: 1C226

ECCN Controls This entry does not control manufactures ~~specially designed as~~ in the form of weights or gamma-ray collimators.

II, VII: 1C230

ECCN Controls: This entry does not control the following:

b. Oxide shapes in fabricated or semi-fabricated forms ~~specially designed~~ for electronic components ~~parts~~ or as substrates for electronic circuits.

III: 1C233

Related Controls: (2) Facilities or plants ~~specially designed or prepared~~ as defined by NRC for the separation of lithium isotopes are subject to the export licensing authority of the Nuclear Regulatory Commission (see 10 CFR part 110).

(This statement of NRC jurisdiction belongs in 1B233, not 1C233.)

III: 1C234

Related Controls: (2) Zirconoium metal and alloys in the form of tubes or assemblies of tubes~~, specially designed or prepared~~ for as defined by NRC ~~use in~~ a reactor, are subject to the export licensing authority of the Nuclear Regulatory Commission (see 10 CFR part 110).

III: 1C240

Related Controls: (2) Nickel powder and porous nickel metal, ~~specially designed or prepared~~ as defined by NRC for ~~use in~~ separating uranium isotopes, are subject to the export licensing authority of the Nuclear Regulatory Commission (see 10 CFR part 110).

III: 1C355

CW applies to entire entry. The Commerce Country Chart ~~is not designed to~~ does not determine licensing requirements for items controlled for CW reasons.

I: 1C395

Related Definitions ... pre-packaged materials of defined composition that are ~~specifically~~ developed, packaged and marketed for medical, ... purposes.

III: 1C395

CW applies to entire entry. The Commerce Country Chart ~~is not designed to~~ does not determine licensing requirements for items controlled for CW reasons.

III: 1C980

Control(s) ... The Commerce Country Chart ~~is not designed to~~ does not determine licensing requirements for items controlled for SS reasons.

III: 1C981

Control(s) ... The Commerce Country Chart ~~is not designed to~~ does not determine

licensing requirements for items controlled for SS reasons.

III: 1C982

Control(s) ... The Commerce Country Chart ~~is not designed to~~ does not determine licensing requirements for items controlled for SS reasons.

III: 1C983

Control(s) ... The Commerce Country Chart ~~is not designed to~~ does not determine licensing requirements for items controlled for SS reasons.

III: 1C984

Control(s) ... The Commerce Country Chart ~~is not designed to~~ does not determine licensing requirements for items controlled for SS reasons.

III: 1C988

Control(s) ... The Commerce Country Chart ~~is not designed to~~ does not determine licensing requirements for items controlled for SS reasons.

I: 1C991

Related Definitions ... "medical products" are (1) Pharmaceutical formulations ~~designed~~ for testing and human administration ... :diagnostic and food testing kits" are ~~specifically~~ developed, ... "Vaccine" ... that ~~is intended to stimulate~~ stimulates ...

I: 1C992

a Shaped charges ~~specially designed~~ for ...:

b Shaped charges ~~specially designed~~ for ...:

k Pyrotechnic devices ~~when designed exclusively~~ for ...:

I: 1C995

Related Definitions ... "medical ... kits" are prepackaged materials of defined composition that are ~~specifically~~ developed ... for medical purposes.

III: 1C995

RS applies... The Commerce Country Chart ~~is not designed to~~ does not determine RS license requirements for this entry.

III: 1C997

RS applies... The Commerce Country Chart ~~is not designed to~~ does not determine RS license requirements for this entry.

III: 1C999

AT applies... The Commerce Country Chart ~~is not designed to~~ does not determine AT license requirements for this entry.

RS applies... The Commerce Country Chart ~~is not designed to~~ does not determine RS license requirements for this entry.

V: 1D001

"Software" ~~specially designed or modified~~ "required" ...

V: 1D002

"Software" "required" for the "development" of organic "matrix", metal "matrix", or carbon "matrix" laminates or "composites"

IV: 1D003

...~~to enable~~ ...

V: 1D003

"Software" ~~specially designed or modified~~ ... "required" for equipment to perform the functions of equipment controlled under 1A004.c or 1A004.d

V: 1D101

"Software" ~~specially designed or modified~~ "required" ...

V: 1D103

Related Controls (1) This entry includes "software" ~~specially designed~~ "required" for analysis of signature reduction.

IV: 1D103

...~~usable in~~ ...

V: 1D103

... ~~specially designed~~ "required" for ... and acoustic signatures, ~~for applications~~ ... "required" for "missiles" or ~~their~~ for subsystems "required" therefor

V: 1D201

... ~~specially designed or modified~~ "required"

V: 1D390

"Software" "required" for process control ~~that is specifically configured~~ to control or initiate "production" of chemicals controlled by 1C350. ...

V: 1D993

"Software" ~~specially designed~~ "required" for

III: 1D999

AT applies ... The Commerce Country Chart ~~is not designed to~~ does not determine AT license requirements for this entry.

V: 1D999

a. ... ~~specially designed~~ "required"

b ... ~~specially designed~~ "required"

III: 1E001

Related Controls (2) See 1E002.g for control libraries (parametric technical data bases) ~~specially designed or modified~~ ... ~~equipment to perform the functions of equipment controlled under 1A004.c (Nuclear, biological and chemical (NBC) detection systems)~~.

IV: 1E001

Related Controls (2) ... ~~to enable~~ ...

IV: 1E002

g ...~~to enable~~ ...

V: 1E002

a. "Technology" "required" for ...

b. "Technology" "required" for ...

c "Technology" "required" for ...

d "Technology" "required" for ...

e "Technology" "required" for ...

f "Technology" "required" for ..

g Libraries (parametric technical databases) ~~specially designed or modified~~ ... "required" for equipment to perform the functions of equipment controlled under 1A004.c or 1A004.d

V: 1E102

Related Controls (1) This entry includes databases ~~specially designed~~ "required" for analysis of signature reduction.

IV: 1E103

... ~~when used~~ ...~~usable for~~ .....

V: 1E103

"Technical data" ... "required" for the "production" of "composites" or partially processed "composites" ... equipment or materials specified in .....

V: 1E104

"Technology" "required" for

I: 1E350

... facilities ~~designed~~ ... ~~to produce~~ producing chemicals controlled by 1C350 ... ~~or intended~~ ...

V: 1E355

"Technology" "required" for

V: 1E994

"Technology" "required" for ...

V: 1E998

"Technology" "required" for ...

I: 2A001

Anti-friction bearings and bearing systems and components, ~~as follows~~ having any of the following characteristics (see List of Items Controlled) ~~and components therefor~~

III: 2A226

Related Controls .... (3) Valves ~~specially designed or prepared~~ as defined by NRC for ...

III: 2A290

Related Controls ... (4) Certain nuclear equipment ~~specially designed or prepared for use in~~ as defined by NRC for nuclear plants ...

VI: 2A290

Generators and other equipment specially designed~~, prepared, or intended~~ for ~~use with~~ nuclear plants

a. Generators ... specially designed ~~or intended~~ for ~~use in~~ a nuclear reactor;

b. Process control systems ~~intended~~ specially designed for ...

I: 2A291

c Casks that are ~~specially designed~~ for transportation ... and that weigh ...

III: 2A291

Related Controls ...(4) Certain equipment ~~specially designed or prepared for use in~~ as defined by NRC for a nuclear reactor ... (5) Nuclear radiation detection and measurement devices ~~specially designed or modified for military purposes~~ as defined in the USML ...

d ... ~~specially designed or prepared~~ as defined by NRC ...

e ... ~~specially designed~~ ....

IV: 2A291

a. ...~~use with~~ ...

d. ... ~~use with~~ ...

VI: 2A291

Equipment, ... ~~related to~~ specially designed for nuclear material handling ...

a Process control systems ~~intended~~ specially designed for ... nuclear reactors

VII, VIII: 2A291

d ...~~ parts and accessories~~ ...

Unit ...; ~~parts and accessories~~ components in $ valuer

X: 2A291

b Simulators specially designed for nuclear reactors

III: 2A292

Related Controls ...(4) Piping, fittings, and valves ~~specially designed or prepared~~ as defined by NRC for certain nuclear uses ...

IV: 2A292

a. Pressure tube, pipe, and fittings ... ~~suitable~~ for operation at ...

VII, VIII:2A292

Unit ... ~~parts and accessories in $ value~~

I: 2A293

Pumps ~~designed~~ to move molten metals by electromagnetic forces.

I: 2A983

Explosives or detonator detection equipment ... and components having any of the following characteristics (see List of Items Controlled).

a Explosives detection equipment and components for automated decision making ....

b. Detonator detection equipment and components for automated decision making ... Related Controls (1) For the purpose of this entry, automated decision making is the ability of the equipment to detect explosives or detonators at the ~~design or~~ operator-selected level of sensitivity and provide an automated alarm ...

VII: 2A983

... ~~parts and~~ ...

I: 2A984

Concealed object detection equipment and components operating in the frequency range ... and having a spatial resolution ...~~and components~~ ...

VII 2A984

... ~~and parts~~ ...

I: 2A991

a.1 ... ~~special~~ materials ... ~~special~~ heat treatment

a.2 ... ~~specially designed~~ ... bearings

b1 ... ~~specially designed~~ ... bearings

IV: 2A991

a.1 ~~Manufactured for use at~~ operating at temperatures ... as a result of either ~~by using special~~ materials or ~~by special~~ heat treatment

a.2 ~~With lubricating elements or component modifications that, according to the manufacturer's specifications, are specially designed to enable the~~ bearings ~~to operate~~ operating at speeds ... as a result of either lubricating elements or component modification

b1 ~~With lubricating elements or component modifications that, according to the manufacturer's specifications, are specially designed to enable the~~ bearings ~~to operate~~ operating at speeds ... as a result of either lubricating elements or component modification

c ... ~~manufactured for use at~~ operating at temperatures of ... and a unit load capacity ...

e ... ~~manufactured for use at~~ operating at temperatures ...

VI: 2A994

Portable electric generators and specially designed components

VII: 2A994

... ~~parts~~ components

III: 2A999

AT applies ...The Commerce Country Chart ~~is not designed to~~ does not determine AT licensing requirements for this entry.

I: 2B Technical Notes

2.b Parallel rotary axes ~~designed~~ for mounting of separate workpieces

2.c Co-linear rotary axes ~~designed~~ for manipulating the same workpiece by holding it in a chuck from different ends.

I: 2B001

Machine tools ... ~~and specially designed components as follows~~ ...

Unit ... ~~components in $ value~~

f Deep-hole-drilling machines ... ~~and specially designed components therefor~~

II: 2B001

Note 1. 2B001 does not control ~~special purpose~~ machine tools limited to the manufacture of gears. ...

Note 2. 2B001 does not control ~~special purpose~~ machine tools limited to the manufacture of any of the following ...

a Note: 2B001.a does not control turning machines ~~specially designed~~ for producing contact lenses, having all of the following:

c Note: 2B001.c does not control grinding machines as follows:

b ~~Machines designed specifically as~~ iig grinders that ...

IV: 2B001

Machine tools ..., ~~which, according to the manufacturer's technical specifications, can be equipped with~~ for electronic devices for "numerical control" ...

NP applies ... EXCEPT: (1) Turning machines under 2B001.a ~~with a capacity no~~ not greater than 35 mm diameter; (2) bar machines (Swissturn), limited to machining only bar feed through, if maximum turning bar diameter is equal to or less than 42 mm and ~~there is no capability of~~ not mounting chucks. ~~(Machines may have drilling and/or milling capabilities for machine parts with diameters less than 42 mm)~~

Note 3: A machine tool ~~having~~ at least two of the following three turning, milling or grinding ~~capabilities~~ (e.g., ~~a turning machine with milling capability~~ for milling as well as turning) must be evaluated ...

a Note: 2B001.a does not control ...

a. ... ~~using~~ ...

a.2 Two or more axes ~~which can be~~ coordinated simultaneously for "contouring control"

b.2 Five or more axes ~~which can be~~ coordinated simultaneously for "contouring control"

c.1.b Five or more axes ~~which can be~~ coordinated simultaneously for "contouring control"

c.2 Five or more axes ~~which can be~~ coordinated simultaneously for "contouring control"

d ... two or more rotary axes ~~which can be~~ coordinated simultaneously for "contouring control"

e.2.a ~~Can be~~ coordinated simultaneously for "contouring control"

f Deep-hole-drilling machines ... having a depth of bore ~~capability~~ exceeding 5m ...

VII 2B001 NP applies

... ~~machine parts~~ ...

IV: 2B002
c Four or more axes ~~which can be~~ coordinated simultaneously for "contouring control"

I: 2B003
"Numerically controlled" or manual machine tools, having all the following characteristics, and ~~specially designed~~ components, controls ... therefor, having any of the following characteristics, ~~specially designed for the~~ shaving, finishing, grinding or honing of hardened ... spur, helical and double-helical gears with a pitch diameter exceeding ... and a face widh ot ... finished to a quality of ...
VIII: 2B003
... ~~and accessories~~ ...

I: 2B004
Hot 'isostatic presses' having all of the characteristics described in the List of Items Controlled, and ~~specially designed~~ components ... therefor having any of those characteristics
III: 2B004
Related Controls (3) For ~~specially designed~~ dies, molds and tooling, see ...
VIII: 2B004
... ~~and accessories~~ ...
Unit ... ~~and accessories~~ ...

I: 2B005
Equipment ~~specially designed~~ for the disposition ... as follows ... and ~~specially designed~~ automated handling, positioning, manipulation and control components therefor.
II: 2B005
Related Controls (1) This entry does not control chemical vapor deposition, cathodic arc, sputter deposition, ion plating or ion implantation equipment~~, specially designed~~ for cutting or machining tools.
III: 2B005
Related Controls (3) Chemical Vapor Deposition furnaces ~~designed or modified~~ for densification of carbon-carbon composites are controlled by 2B105.
IV: 2B005
e. Sputter deposition ... ~~capable of~~ ...
g Ion plating ... ~~capable of~~ for *in situ* measurement ...

I: 2B006.
b.1.d "Electronic assemblies" ~~specially designed~~ to provide feedback ...
II: 2B006.
b.1 Note: 2B006.b.1 does not control measuring interferometer systems, with an automatic control system ~~that is designed~~ ... no feedback techniques, ..
IV: 2B006
Note: Machine tools, which ~~can be used as~~ are also measuring machines, are controlled

if ...
b.1 ... ~~to use~~ with no feedback ....
b.1.c.2.b ~~Capable of~~ achieving a “measurement uncertainty”...
b.1.d ... ~~capability~~

I: 2B007
“Robots” ... and ~~specially designed~~ controllers and “end-effectors” therefor
b ~~Specially designed~~ to comply ...
c ~~Specially designed or rated~~ as radiation-hardened ...
d ~~Specially designed to operate~~ Operating at altitudes ...
II: 2B007
Note: 2B007.b does not apply to “robots” ~~specially designed~~ for paint-spraying booths.
IV: 2B007
a. ~~Capable~~ in real time ~~of~~ full three-dimensional image processing ...

I: 2B008
Assemblies of units, ~~specially designed~~ for machine tools or ... as follows ...
a,b Note: 2B008.a and 2B008.b apply to units, which ~~are designed to~~ determine the positioning information for feedback control ...
IV: 2B008
c “Compound rotary tables” and “tilting spindles”, ~~capable of~~ upgrading, ~~according to the manufacturer’s specifications,~~ machine tools to or above the levels controlled by 2B001 to 2B009

IV: 2B009
Spin-forming machines and flow-forming machines~~, which, according to the manufacturer’s technical specification, can be~~ equipped with“numerical control” units or a computer control ...
NP applies ... spin -forming machines ~~capable of~~ for flow forming function
a. Two or more controlled axes of which at least two ~~can be~~ are coordinated simultaneously for “contouring control”

I: 2B104
b ~~Designed to achieve and maintain~~ a controlled thermal environment ...
IV: 2B104
c ~~Possessing a~~ chamber cavity with an inside diameter of 254 mm or greater.

I: 2B105
Chemical vapor deposition (CVD) furnaces, ... ~~designed or modified~~ for the densification of carbon-carbon composites. ...

I: 2B109
a. Flow forming machines having all of the following and components therefor having any of the following

b. ~~Specially designed~~ components for flow-forming machines ~~controlled~~ having any of the characteristics described in 2B009 ~~or 2B109.a~~

IV: 2B109

a.1 ~~According to the manufacturer's technical specifications, can be equipped with~~ for "numerical control" units ... ...

Technical Note 2. 2B109 does not control machines that are not ~~usable in~~ for the "production" of propulsion components and equipment (e.g., motor cases) for systems in 9A005, 9A007.a, or 9A105.a.

I: 2B116

b Digital controllers, combined with ~~specially designed~~ vibration test "software", ... and ~~designed~~. for.. vibration test equipment described in 2B116.a

d Test piece support structures ... ~~designed~~ to combine multiple shaker units ...

IV: 2B116

Vibration test systems and equipment ~~usable~~ for rockets, missiles, or unmanned aerial vehicles ~~capable of~~ achieving a "range" equal to or greater than 300 km, and their subsystems~~,~~ and components therefor, as follows

a. ... ~~capable of~~ for ...

b ... ~~use with~~ ...

c Vibration thrusters ... ~~capable of~~ for imparting a force equal to or greater than 50 kN ... and ~~usable in~~ for vibration test systems described in 2B116.a

d Test piece support structures ... ~~capable of~~ providing an effective combined force ... and ~~usable in~~ for vibration test systems described in 2B116.a

I: 2B117

Equipment and process controls... ~~designed or modified~~ for ...

I: 2B119

b Indicator heads ~~designed or modified~~ for

II: 2B119

2B119.a. does not control balancing machines ~~designed or modified~~ for ...

IV: 2B119

Balancing machines

a.1 Not ~~capable of~~ for ...

a.2 ~~Capable of~~ for

a.3 ~~Capable of~~ for

a.4 ~~Capable of~~ for

b Indicator heads... for ~~use with~~

I: 2B120

b ~~Designed or modified~~ to ...

II: 2B120 Note

2B120 does not control rotary tables ~~designed or modified~~ for ...

IV: 2B120

Motion simulators ... ~~capable of~~ for ...

c.1.a ~~Capable of~~ rates of rotation ...

II: 2B121 Note

2B121 does not control rotary tables ~~designed or modified~~ for ...

IV: 2B121

Positioning tables (equipment ~~capable of~~ for precise rotary position in any axis) ...

I: 2B122

Centrifuges ... and ~~designed or modified~~ sliprings or integrated non-contact devices therefor ...

IV: 2B122

Centrifuges ~~capable of~~ for imparting accelerations above 100 g and ... sliprings or integrated non-contact devices therefor ~~capable of~~ transferring electric power, signal information, or both

II: 2B201.Notes

c 2B201.c does not control the following grinding machines: ...

c Tool or cutter grinding machines with "software" ~~specially designed~~ for the production of tools or cutters; ...

IV: 2B201

Machine tools, ... ~~which, according to the manufacturer's technical specifications, can be equipped~~ with

a Note: Item 2B201.a does not control bar machines (Swissturn), ... and ~~there is no capability of~~ not mounting chucks

VII, VIII: 2B201 Unit

...~~; parts and accessories in $ value~~

I: 2B204

b. Dies, molds and controls ~~specially designed~~ for "isostatic presses" ~~controlled by~~ having any of the characteristics described in 2B204.a

IV: 2B206 ECCN Controls

(1) Machine tools ~~that can be used as~~ for measuring ~~machines~~

VII, VIII: 2B206 Unit

~~; parts and accessories in $ value~~

I: 2B207

a. "Robots" or "end-effectors" ~~specially designed to comply~~ complying ...

b Control units ~~specially designed~~ for ...

II: 2B207 ECCN Controls:

This entry does not control "robots" ~~specially designed~~ for ...

!: 2B209

b. Rotor-forming mandrels ~~designed~~ to ...

IV: 2B209

Flow-forming machines, spin-forming machines ~~capable of~~ for flow forming ...

a.2 ~~According to the manufacturer's technical specifications, can be equipped~~ with

VII, VIII: 2B209 Unit

~~; parts and accessories in $ value~~

III: 2B225 Related Controls

(3) Remote manipulators ~~specially designed or prepared for use in~~ as defined by NRC for fuel reprocessing ...

IV: 2B225

Remote manipulators ~~that can be used to provide~~ providing ...

a. ~~A capability of~~ penetrating ...

b. ~~A capability of~~ bridging ...

I: 2B226

a.3 ~~Designed~~ for power inputs ...

b Power supplies, with a ~~specified~~ power output of 5 kW or more, ~~specially designed~~ for furnaces controlled by 2B226.a.

II: 2B226

ECCN Controls. 2B226.a does not control furnaces ~~designed~~ for the processing of semiconductor wafers.

IV: 2B226

a.1 ~~Capable of operation~~ operating above ...

I: 2B227

c. Computer control and monitoring systems ~~specially configured~~ for ...

IV: 2B227

a.1 Consumable electrode ~~capabilities~~ between ...

a.2 ~~Capable of~~ operating with ...

b.2 ~~Capable of~~ operating ...

I: 2B229

a Centrifugal balancing machines ~~designed~~ for ... and ...

b Centrifugal balancing machines ~~designed~~ for ... and ...

IV: 2B229

a.2 Mass ~~capability of~~ from 0.9 to 23 kg; and

a.3 ~~Capable of~~ balancing speed ...

b.2 Mass ~~capability of~~ from 0.9 to 23 kg;

b.3 ~~Capable of~~ balancing to a residual imbalance ...

IV: 2B230

"Pressure transducers" ~~capable of~~ measuring ...

c ~~Capable of~~ producing an ultimate vacuum ....

III: 2B231 Related Controls

(2) Vacuum pumps ~~specially designed or prepared~~ as defined by NRC for

IV: 2B232

Multistage light gas guns ... ~~capable of~~ accelerating projectiles ...

IV: 2B290

a. Turning machines ... ~~capable of~~ machining diameters ...

VII, VIII: 2B290

Unit ... ~~; parts and accessories in $ value~~

I: 2B350

b ... blades or shafts ~~designed~~ for such agitators ...

d. Heat exchangers or condensers ... and tubes, plates, coils or blocks (cores) ~~designed~~ for such heat exchangers or condensers ...

e Distillation or absorption columns ...and liquid distributors, vapor distributors or liquid collectors ~~designed~~ for such distillation or absorption columns, ...

g Valves ... and casings ... ~~designed~~ for such valves ...

i Multiple-seal and seal-less pumps ...and casings ... ~~designed~~ for such pumps ...

j Incinerators ~~designed~~ to destroy "chemical warfare agents", chemical weapons precursors controlled by 1C350, or ~~chemical munitions having specially designed~~ waste supply systems~~,~~ for chemical munitions or ~~special~~ handling facilities ~~and~~ for an average combustion chamber temperature ...

II: 2B350

License Requirement Note. This ECCN does not control equipment that is both: (1) ~~Specially designed~~ for ... civil applications... and (2) ~~inappropriate, by the nature of its design,~~ not for storing, processing ... precursors controlled by 1C350

IV: 2B350

License Requirement Note. ... ~~use in~~ ...

b Agitators for ~~use in~~ ...

i Multiple-seal and seal-less pumps with ~~manufacturer's specified~~ maximum flow-rate ... or vacuum pumps with ~~manufacturer's specified~~ maximum flow-rate ...

I: 2B351

Toxic gas monitoring systems, and ~~their dedicated~~ detecting components ... as follows ...

a ~~Designed~~ for continuous operation and ... for the detection of chemical warfare agents or chemicals controlled by 1C350 at concentrations of less than $0.3mg/m^3$

b ~~Designed~~ for the detection of cholinesterase-inhibiting activity.

III: 2B351 Related Controls

... Also see ECCN 1A004, which controls chemical detection systems and ~~specially designed~~ components ~~that are specially designed or modified~~ for detection or identification of chemical warfare agents~~, but not specially designed for military use~~

IV: 2B351

a ... ~~usable~~ ...

Related Definitions... (2) ... "continuous operation" ~~describes the capability of the equipment to operate~~ operating on line without human intervention. The intent of this entry is to control toxic gas monitor systems ~~capable of collection and detection of~~ which collect and detect samples ...

I: 2B352

d.2 Cross ... flow filtration components ... ~~designed~~ for ,,, cross ... flow filtration equipment

g. Chambers ~~designed~~ for aerosol challenge testing...

h.1 ... ~~specially designed or modified~~ ...

h.2 ... ~~specially designed or modified~~ ...

h.3 Aerosol generating units ~~specially designed for fitting to~~ for the systems...

Technical Notes:

1. "Aerosol generating units" are devices ~~specially designed or modified~~ for fitting to aircraft
3. Droplet size for spray equipment or nozzles ~~specially designed~~ for... aircraft or "UAVs" ...

II: 2B352

f.1 Technical Note: This entry does not control suits ~~designed to be~~ worn with self-contained breathing apparatus

h.3 Technical Note 2: This entry does not control spraying or fogging systems and components, as ~~specified~~ described in 2B352 ... not for delivering biological agents in the form of infectious aerosols ....

III: 2B352

Related Controls ... See ECCN 9A129 for ... "UAV" systems ~~designed or modified~~ to dispense an aerosol ...

IV: 2B352

Equipment ~~capable of use in~~

Related Controls ... ~~capable of~~ ...

b. ... ~~capable of~~ for ...

c. ... ~~capable of~~ for ...

d.1. ... ~~capable of~~ for ...

d.2 ... ~~use in~~ ...

d. Technical Note: ... ~~the use of~~ ... ~~the use of~~ ...

h.2 ... ~~capable of delivering~~ to deliver

h.3 Technical Note 2: ... ~~that are demonstrated not to be capable of~~ not for ....

I: 2B991

b "Motion control boards" ~~specially designed~~ for machine tools and having ...

IV: 2B991

a.1 ... axes ~~that can be~~ coordinated simultaneously for "contouring control"

a.2 ... axes ~~that can be~~ coordinated simultaneously for "contouring control"

a.3 ... axes ~~that can be~~ coordinated simultaneously for "contouring control"

b.2 ~~Capable of~~ for

b.3 ~~Capable of~~ for
c. ... ~~that, according to the manufacturer's technical specifications, can be equipped~~ with ...
c.1 Two or more axes ~~that can be~~ coordinated simultaneously ...
d. ... ~~that, according to the manufacturer's technical specifications, can be equipped~~ with...
d.1 ... having two or more axes ~~that can be~~ coordinated simultaneously ...
d.2 ... have five or more axes ~~that can be~~ coordinated simultaneously ...

I: 2B992

Non-"numerically controlled" machine tools for generating optical quality surfaces having all of the characteristics in 2B992.a or 2B992.b, and ~~specially designed~~ components therefor having any of the following characteristics (see List of Items Controlled)

IV: 2B993

... machinery ... ~~capable of~~ producing gears ...

IV: 2B997

"Robots"... ~~capable of~~ for

I: 2B998

Assemblies, units or inserts ~~specially designed~~ for machine tools ... as follows
c ~~Specially designed~~ printed circuit boards with mounted components ... upgrading ... "numerical control" units, machine tools, or feedback devices ...

IV: 2B998

c ... printed circuit boards with mounted components ...~~capable of~~ upgrading ~~according to the manufacturer's technical specifications,~~ "numerical control" units, machine tools, or feedback devices ...

I: 2B999

i Electroplating equipment ~~designed~~ for ...
j Pumps ~~designed for industrial services~~ ... with an electrical motor of 5 HP or greater
k Vacuum valves, piping, flanges, gaskets and related equipment ~~specially designed~~ for ... high-vacuum service, ...

III: 2B999 AT applies

... The Commerce Country Chart ~~is not designed to~~ does not determine AT licensing requirements for this entry.

IV: 2B999

h.1 ... ~~capable of~~ for drilling holes greater than two feet in diameter
j Pumps ... for industrial services ~~and for use~~ with an electrical motor of 5 HP or greater
k Vacuum valves, piping, flanges, gaskets and related equipment ... for ~~use in~~ high-vacuum service, ...

V: 2D001

"Software"...~~.~~ ~~specially designed or modified~~ "required" for ...

NP applies to ~~specially designed or modified~~ “software” for ... and to ~~specially designed~~ “software” for ...
STA: ... may not be used to ship or transmit “software” ... ~~specially designed~~ “required” for the development or production of equipment as follows: ...

II: 2D002 Note 1
2D002 does not control “software” ~~specially designed or modified~~ for the operation of machine tools not controlled by Category 2

IV: 2D002
... ~~capable of~~ for coordinating simultaneously more than 4 axes for “contouring control”

V: 2D002
“Software” ~~for electronic devices~~, even when residing in an electronic device or system, ~~enabling such devices or systems to function as a~~ “required” for “numerical control” unit,

V: 2D101
“Software” ~~specially designed or modified~~ “required” for ...
NP applies to “software” ~~specially designed~~ for the “use” of ...

V: 2D201
“Software” ~~specially designed~~ “required” for ...
ECCN Controls: Software ~~specially designed~~ “required” for systems controlled by 2B206 includes ...

V: 2D202
“Software” ~~specially designed or modified~~ “required” for ...

V: 2D290
“Software” ~~specially designed or modified~~ “required” for ...

V: 2D351
~~Dedicated~~ “software” “required” for toxic gas monitoring systems and t~~heir dedicated~~ detecting components “required” therefor controlled by ECCN 2B351
Related Definitions: (1) ~~For the purpose of this entry, the term “dedicated” means committed entirely to a single purpose or device. (2)~~

V: 2D983
“Software” ~~specially designed or modified~~ “required” for ...

V: 2D984
“Software” “required” for ...

V: 2D991
“Software” ~~specially designed~~ “required” for ...

IV: 2D992
a.2 ~~Capable of~~ for generating or modifying ... ...
V: 2D992
a. "Software""required" to provide

III: 2D994 AT applies
... The Commerce Country Chart ~~is not designed~~ does not determine ...
V: 2D994
"Software" ~~specially designed~~ "required" for ...

II: 2E003 Notes to Table on Deposition Techniques ...
17. "Technology" ~~specially designed~~ ... is not controlled ...
III: 2E003
Related Controls See 2E001, 2E002, and 2E101 for ... technology for equipment ~~that are designed or modified~~ for densification ...
V: 2E003
a. "Technology" "required" for ...
b.1 "Technology" for the ~~design~~ "development" of tools, dies or fixtures ~~specially designed~~ "required" for any of the following processes:
c. "Technology" "required" for ...
d. "Technology" "required" for ...
e. "Technology" "required" for ...
f. "Technology" "required" for ...

V: 2E983
"Technology" ~~specially designed or modified~~ "required" ...

V: 2E991
"Technology" "required" for the "use" of ...

V: 2E994
"Technology" "required" for ...

III: 3A

Note 1. The control status of equipment and components described in 3A001 or 3A002 other than ... ~~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.

Note 2: The control status of integrated circuits described in 3A001 ... that are unalterably programmed ~~or designed for a specific function~~ for other equipment is determined by the control status of the other equipment.

I: 3A001

a.1 Integrated circuits ~~designed or~~ rated as radiation hardened ...

a.2 ... ~~designed~~ for "signal processing"

a.5.a.5 Technical Note 8: 'Multiple channel ADCs' ... ~~designed so that~~ each ADC ~~has~~ having a separate analog input.

a.6 ... ~~designed~~ for "signal processing"

b.1.c Impregnated cathodes ~~designed~~ for ...

b.7 Converters and harmonic mixers, ~~designed~~ rated to ...

c. Acoustic wave devices ~~as follows~~ and ~~specially designed~~ components therefor having any of the following characteristics

d Electronic devices and circuits containing components, manufactured from "superconductive" materials ~~specially designed~~ for ...

e.1.a Technical Note 3. ... a 'primary cell' is a 'cell' that is not ~~designed to be~~ charged by any other source.

e.1.b Technical Note 4. ... a 'secondary cell' is a 'cell' that is ~~designed to be~~ charged by an external electrical source.

e.3 "Superconductive" electromagnets and solenoids ~~specially designed~~ to ...

II: 3A001

b.1 Note 1 3A001.b.1 does not control tubes ~~designed or~~ rated for operation ...

Note 2 3A001.b.1 does not control ...

(b) ~~Designed or~~ rated ...

b.2 Note 3. ... 3A001.b.2 does not control MMICs if they are ~~specially designed~~ for ...

b.8 Note: 3A001.b.8 does not control equipment ~~designed or~~ rated for ...

e.3 Note: 3A001.e.3 does not control "superconductive" electromagnets or solenoids ~~specially designed~~ for ...

g Note 2: 3A001.g does not control ... equipment ~~designed~~ for ...

h Note 3: 3A001.h does not apply to ... equipment ~~designed~~ for ...

III: 3A001

MT applies ... to 3A001.a.5.a ~~when "designed or modified" for military use, hermetically sealed and rated for operations in the temperature range from below -54°C to above + 125°C~~ also described in 3A101.a.

Related Controls ... (2) ...(c) ~~All specifically designed or modified systems or subsystems, components, parts, accessories, attachments, and associated equipment~~ items controlled by Category XV(e) of the USML.....

IV: 3A001 MT applies

MT applies to 3A001.a.1.a ~~when usable in~~ for "missiles" ...

VII, VIII: 3A001 Related Controls:

... (2) ...(c) ... ~~parts, accessories, attachments, and associated equipment~~ ...

I: 3A002

CIV (3) They are not ~~designed~~ for underwater use.

a ... and ~~specially designed~~ test tape therefor

a.4 ... ~~designed~~ to convert ...

II: 3A002

a.1 Note: Analog magnetic tape recorders ~~specially designed~~ for civilian video purposes are not considered to be instrumentation tape recorders.

a.2 Note: 3A002.a.2 does not control ... recorders ~~specially designed~~ for ...

IV: 3A002

f.2 ~~Being capable of~~ for ...

VIII: 3A002

General purpose electronic equipment ~~and accessories, therefor~~ ...

1: 3A003

... systems ... ~~using specially designed~~ with spray nozzles ~~that are designed~~ to ... and ~~specially designed~~ components therefor having any of the foregoing characteristics

I: 3A101

a. Analog-to-digital converters, ... ~~designed to meet~~ meeting military specifications for ruggedized equipment

II: 3A101 Note

3A101.b does not include equipment ~~specially designed~~ for medical purposes.

IV: 3A101

a. Analog-to-digital converters, ~~usable in~~ for ..."missiles" ...

b Accelerators ~~capable of~~ delivering electromagneitc ...

II: 3A201 Notes

b 3A201.b does not control magnets ~~specially designed~~ for ... medical nuclear magnetic resonance (NMR) imaging systems.

c. 3A201.c does not control accelerators that are ... devices ~~designed~~ for purposes other than electron beam or X-ray radiation ... nor those ~~designed~~ for medical purposes.

III: 3A201 Related Controls

(3) ... ~~specially designed or prepared~~ as defined by NRC for

IV: 3A201

b.1 ~~Capable of~~ creating ...

VII: 3A201 Notes

b 3A201.b does not control magnets ... exported "as ~~parts~~ components of" medical nuclear magnetic resonance (NMR) imaging systems. The phrase "as ~~parts~~ components of" does not necessarily mean physical ~~part~~ component in the same shipment; separate shipments from different sources are allowed, provided the related export documents clearly specify

that the shipments are dispatched as"as ~~part~~ components of" the imaging systems.

c. 3A201.c does not control accelerators that are ~~component parts~~ components of devices ... for purposes other than electron beam or X-ray radiation ...

III: 3A225 Related Controls

(2) ... ~~specially designed or prepared~~ as defined by NRC for ...

IV: 3A225

Related Controls (2) ... for ~~use in~~.

a. A multiphase output ~~capable of~~ providing power ...

b ~~Capable of~~ operating ...

III: 3A226 Related Controls

(3) ... ~~specially designed or prepared~~ as defined by NRC for ...

IV: 3A226

Related Controls (3) ... for ~~use in~~.

a ~~Capable of~~ continuously producing ...

III: 3A227 Related Controls

(3) ... ~~specially designed or prepared~~ as defined by NRC for ...

IV: 3A227

Related Controls (3) ... for ~~use in~~ ...

a ~~Capable of~~ continuously producing ...

I: 3A229

a Explosive detonator firing sets ~~designed to drive~~ driving ...

b.1 ~~Designed~~ for portable, mobile or ruggedized use.

IV: 3A229

b.3 ~~Capable of~~ delivering their energy ...

b.8 ~~Specified for use~~ Operating over an extended temperature range ... or ~~specified as suitable~~ for aerospace applications

I: 3A231

a ~~Designed for operation~~ Operating without an external vacuum system

VII, VIII: 3A231 Unit

...~~; parts and accessories in $ value~~

I: 3A232

b ...-single or multiple detonators ~~designed to~~ nearly simultaneously ~~initiate~~ initiating an explosive surface ...

III: 3A232 Related Controls

(3) High explosives and ~~related~~ equipment ~~for military use~~ controlled by USML Category V(a) are subject to the export licensing authority of the U.S. Department of State ...

IV: 3A232

b ~~Arrangements using~~ single or multiple detonators ...

I: 3A233.f
Mass spectrometers equipped with a microfluorination ion source ~~designed~~ for actinides...
III: 3A233
Related Controls (2) Mass spectrometers ~~specially designed or prepared~~ as defined by NRC for
IV: 3A233
Mass spectrometers ... ~~capable of~~ measuring ...

I: 3A292
Oscilloscopes ... and ~~specially designed~~ components therefor, as follows
Note: ~~Specially designed~~ components controlled by this item are the following ...
IV: 3A292
d ... ~~capable of~~ storing transients ...

VII: 3A980
Voice print identification and analysis equipment and ~~parts~~ components

I: 3A981
... and ~~specially designed~~ ... components thereof have any of these characteristics
VII, VIII: 3A981
Polygraphs ... ~~parts and accessories,~~ components

I: 3A991
k "Superconductive" electromagnets or solenoids ~~specially designed to be~~ fully charged or discharged in less than one minute ...
l Circuits or systems for electromagnetic energy storage, containing components manufactured from "superconductive" materials ~~specially designed for operation~~ operating at temperatures ...

I: 3A992
c Equipment ... ~~designed to convert~~ converting digital video magnetic tape recorders ... to digital instrumentation data recorders
IV: 3A992
c Equipment, ... for ~~use as~~ ...

I: 3A999
c All flash x-ray machines, ~~and~~ including those which are components of pulsed power systems ~~designed thereof~~ ~~including~~ such as Marx generators , ...
IV: 3A999
Related Controls: See ... for frequency ~~changes capable of~~ changers operating ...
a Frequency changers ~~capable of~~ operating ...

I: 3B001

... and ~~specially designed~~ components therefor having any of these characteristics
a Equipment ~~designed~~ for epitaxial growth, as follows;
a.2 ... reactors ~~specially designed~~ for
b Equipment ~~designed~~ for ion implantation ...
b.2 ~~Being specially designed and optimized to operate~~ Operating at a beam energy ...
c.1.a ~~Designed or optimized to produce~~ Producing critical dimensions ...
c.1.b ~~Designed for~~ generating less than ...
c.2 Equipment ~~specially designed~~ for equipment controlled by 3B001.a ...
c.2.a ~~Designed or optimized to produce~~ Producing critical dimensions ...
c.2.b ~~Designed for~~ generating less than ...
e.2 ~~Designed to form~~ Forming ...
f.3 Equipment ~~specially designed~~ for mask making ...
g Masks and reticles, ~~designed~~ for integrated circuits controlled by 3A001.
I Imprint lithography templates ~~designed~~ for integrated circuits controlled by 3A001
II: 3B001
e. Note: 3B001.e does not control automatic robotic wafer handling systems not ~~designed to operate~~ operating in a vacuum environment.
h Note: 3B001.h does not control multi-layer masks with a phase shift layer ~~designed~~ for the fabrication of memory devices ...
IV: 3B001
a.1 Equipment ~~capable of~~ producing ...
b.3 Direct write ~~capability~~
e. Technical Note 2: ... 'sequential multiple wafer processing' means ~~the capability to process~~ processing each wafer ...
f.1.b ~~Capable of~~ producing a pattern ...
f.3.b.2 ~~Being capable of~~ producing a pattern ...
VIII: 3B001
... ~~and accessories~~ ...

I: 3B002
Test equipment ~~specially designed~~ for testing finished or unfinished semiconductor devices as follows and ~~specially designed~~ components ... therefor having any of these characteristics
VIII: 3B002
... ~~and accessories~~ ...

I: 3B991
a Equipment ~~specially designed~~ for the manufacture of electron tubes optical elements ...
b Equipment ~~specially designed~~ for the manufacture of semiconductor devices ...
b.1.b Equipment ~~specially designed~~ for purifying or processing ...
b.1.f ... "sputtering equipment with ~~specially designed~~ integral load locks ...
b.1.g Equipment ~~specially designed~~ for ion implantation ...
b.1.g.3 ~~Optimized to operate~~ Operating ...
b.1.h.1 Note 1 "Batch types" refers to machines not ~~specially designed~~ for production processing

of single wafers.

b.1.h.2 Note 2. “Single wafer types” refers to machines ~~specially designed~~ for production processing of single wafers.

b.1.j ... ~~specially designed or modified~~ for mask making ...

b.1.k.1 ~~Specially designed~~ equipment for backside processing ...

b.1.k.2 ~~Specially designed~~ equipment for achieving ...

b.1.l ~~specially designed to permit~~ permitting ...

b.2.a.2.a ~~Their design is~~ based on geometries ..

b.2.a.2.b ~~The design does not include special features to alter the intended use by~~ Not altering the means of production equipment or “software”

b.2.b.2 “Substrates” ~~specially designed~~ for X-ray masks;

b.2.c ... ~~specially designed~~ for computer aided design ...

b.3.a.1 ~~Specially designed~~ for “hybrid integrated circuits”

b.3.c ... ~~specially designed~~ for ceramic microcircuit packages ..

II: 3B991

b.1 Note: 3B991 does not control ... boats (except ~~specially designed~~ caged boats), bubblers, cassettes, or crucibles ~~specially designed~~ for the processing equipment controlled by 3B991.b.1.

b.2.e Note: 3B991.b.2.e does not control ~~general purpose~~ scanning electron microscopes except when ~~specially designed and~~ instrumented for automatic pattern inspection ...

III: 3B991

a. ... and ~~specially designed~~ components therefor controlled by 3A001 or 3A991

IV: 3B991

b. Note: 3B991.b also controls equipment ~~used or modified for use in~~ for the manufacture ...

b.1.c.1 ... ~~capable of~~ processing wafers at a rate ...

b.1.c.2.b ~~Capable of operation~~ Operating at ...

b.1.c.2.c ~~Capable of~~ pulling crystals ...

b.1.d.1 ~~Capable of~~ producing a silicon wafer ...

b.1.d.2 ~~Capable of~~ producing a layer of ...

b.1.f ... ~~capable of~~ transferring wafers ...

b.1.g.1 Patterning ~~capability~~

b.1.g.4 ~~Capable of~~ high energy oxygen implant

b.1.i ... ~~capabilities~~ characteristics ...

b.2.d.1 ... ~~capable of~~ producing a single exposure ...

b.2.d.2 ... ~~capable of~~ producing ...

b.2.f ... ~~capable of~~ performing ...

b.2.g ... ~~capable of~~ producing ...

b.2.h .. ~~capable of~~ producing ...

b.4 ... ~~capable of~~ providing ...

VIII: 3B991

... ~~and accessories~~ ...

Unit: ... ~~and accessories~~ ...

I: 3B992

Equipment ~~specially designed~~ for the inspection or testing ...
a Equipment ~~specially designed~~ for the inspection
b Equipment ~~specially designed~~ for the inspection ...
b.1 Note: 3B992.b.1 does not control ~~...~~ except when ~~specially designed and~~ instrumented for automatic pattern inspection.
Note: 3B992.b does not control test equipment ~~specially designed~~ for ...:
b.2 ~~Specially designed~~ "stored program controlled" measuring and analysis equipment, as follows
b.2.a ~~Specially designed for the~~ measurement of oxygen or carbon content ...
b.2.c ~~Specially designed for~~ flatness measurement ...
b.4.a ... equipment ~~specially designed~~ for testing ...
b.4.b ... equipment ~~specially designed~~ for testing ...
b.4.c Equipment ~~specially designed~~ ...
b.4.c.2 ~~Designed~~ for measuring ...
b.4.c.3 ~~Designed~~ for evaluating ...
b.5 Electron beam test systems ~~designed~~ for ...
b.5 Note: 3B992.b.5 does not control scanning electron microscopes, except when ~~specially designed and~~ instrumented for
b.6 ... ion beam systems ~~specially designed~~ for ...
b.7 Particle measuring systems employing "lasers" ~~designed~~ for ...
II: 3B992
b.1 Note: 3B992.b.1 does not control ~~general purpose~~ scanning electron microscopes...
Note: 3B992.b does not control test equipment ~~specially designed~~ for ...:
III: 3B992
a. ... and ~~specially designed~~ components therefor controlled by 3A001 or 3A991
IV: 3B992
Note: 3B992.b ...controls equipment ~~used or modified for use in~~ <u>for</u> the inspection ...
b.3.b ~~Capable of~~ testing devices having ... ...
b.3.c ~~Capable of~~ testing at ...
b.4.a ... ... dice, ~~capable of~~ testing ...
b.4.b ... and "electronic assemblies" thereof, ~~capable of~~ functional testing ...
b.4.b.2 ... ~~capable of~~ testing packages...
b.5.a Stroboscopic ~~capability~~ with ...
b.7.a ~~Capable of~~ measuring ...
b.7.b ~~Capable of~~ characterizing ...
VIII: 3B992
... ~~and accessories~~

I: 3C002
GBS: Yes for positive resists not ~~optimized~~ for photolithography...
CIV: Yes for positive resists not ~~optimized~~ for photolithography ...
a Positive resists ~~designed~~ for semiconductor lithography ~~specially adjusted (optimized)~~ for ...
b ... resists ~~designed~~ for ... electron beams or ion beams, with

c ... resists ~~designed~~ for ... X-rays, with ...
d ... resists ~~optimized~~ for surface imaging ...
e ... resists designed or optimized for ... imprint lithography
IV: 3C002
a. ... for ~~use at~~ ...
b. ... for ~~use with~~ ...
c ... for ~~use with~~ ...
e. ... for ~~use with~~ ...

I: 3C992
Positive resists ~~designed~~ for semiconductor lithography ~~specially adjusted (optimized)~~ for ... wavelengths between 370 and 245 nm.
IV: 3C992
... for ~~use at~~ ...

III: 3D001
Related Controls:"Software"~~specially designed~~ also described in the USML ...
V: 3D001
"Software" ~~specially designed~~ "required" for ...
TSR: .. ~~specially designed~~ "required" ...
STA: ... ~~specially designed~~ "required" ...

V: 3D002
"Software" ~~specially designed~~ "required" ...

V: 3D003
'Physics-based' simulation "software" ~~specially designed~~ "required" for ...

V: 3D004
"Software" ~~specially designed~~ "required" for ...

V: 3D101
"Software" ~~specially designed or modified~~ "required" for ...

V: 3D980
"Software" ~~specially designed~~ "required" for ...

V: 3D982
"Software: ~~specially designed~~ "required" for ...

V: 3D991
"Software" ~~specially designed~~ "required" for the "development", "preoduction", or "use" of ... or "software" ~~specially designed~~ "required" for the "use" of ...

V: 3E001
TSR: Yes except N/A for ... “technology” ~~specially designed~~ “required” for ...

I: 3E002
a. A ‘vector processor unit’ ~~designed to perform~~ performing ...
b ~~Designed to perform~~ performing
c ~~Designed to perform~~ performing...
V: 3E002
CIV ... License Exception CIV does not apply to ECCN 3E002 technology also ~~required~~ “required” for ...

V: 3E003
Other “technology” “required” for ...
V: 3E980
“Technology” ~~specially designed~~ “required” for ...

V: 3E991
“Technology”“required” for ...

III: 4 Note 2 N.B.

For the control status of "software" ~~specially designed~~ for packet switching see ECCN 5D001

I: 4A001

... and "electronic assemblies" and ~~specially designed~~ components therefor having any of these characteristics

a. ~~Specially designed to have~~ Having any of the following:

II: 4A001

a.1 Note: 4A001.a.1 does not apply to computers ~~specially designed~~ for civil automobile, railway train or for "civil aircraft" applications...

a.2 Note: 4A001.a.2 does not apply to computers ~~specially designed~~ for "civil aircraft" applications.

III: 4A001

Related Controls .... Equipment ~~designed or rated~~ for transient ionizing radiation is subject to the export licensing authority of the U.S, Department of State ...

VIII: 4A001

Electronic computers ~~and related equipment~~ ... ~~and "electronic assemblies"~~ and ... components therefor

Unit: Computers ~~and related equipment~~ in number; ~~"electronic assemblies" and~~ components in $ value

Related Controls: ... ~~and related equipment~~ ...

(Accessories and attachments include related equipment; components include assemblies.)

I: 4A003

... ~~and specially designed components therefor~~

(4A003.c covers specially designed components for 4A003.b.)

GBS ... ~~and specially designed components therefor~~

Unit ... ~~and components~~

c. ... ~~specially designed or modified~~ ...

g, Equipment ~~specially designed for~~ aggregating the performance of "digital computers" ...

II: 4A003

Note 1 4A003.c ... does not apply to "electronic assemblies" ~~inherently limited by nature of their design for use as related equipment~~ controlled by 4A003.e

Note 2 4A003.c does not control "electronic assemblies" ~~specially designed~~ for a product or family of products whose maximum configuration does not exceed the limit of 4A003.b.

III: 4A003

NB1 ... ~~specially designed~~ for other equipment ...

IV: 4A003

c. ... ~~to be capable of~~ ...

Note 1 ... ~~that are~~ not ~~capable of~~ exceeding ...

I: 4A004

... and ~~specially designed~~ related equipment, “electronic assemblies” and components therefor having any of these characteristics

VIII: 4A004

... ~~related equipment, “electronic assemblies”~~ ...

Unit: ... ~~and related equipment...~~ ~~“electronic assemblies”~~

I: 4A101

... computers ... ~~designed or modified~~ for ... “missiles,” having ...

b ~~Designed as~~ ruggedized or ‘radiation hardened’.

Note: ‘Radiation hardened’ means ~~that the component or equipment is designed or rated to withstand withstanding~~ radiation levels which meet or exceed ...

IV: 4A101

... computers ... for ~~use in~~ “missiles” ...

II: 4A980 Note

4A980 does not control equipment limited to one finger and ~~designed~~ for user authentication or access control

VI: 4A980

Computers “specially designed” for fingerprint equipment ...

I: 4A994

Computers, “electronic assemblies”, ~~and~~ related equipment, and components, not controlled by 4A001 or 4A003, having any of the following characteristics (see List of Items Controlled) ~~and specially designed components therefor~~

a. ... and ~~specially designed~~ components therefor,

c. “Electronic assemblies” that are ~~specially designed or modified~~ to enhance performance by aggregation of processors, as follows:

c.1 ~~Designed~~ ... aggregation in configurations of ...

j. Equipment ~~specially designed~~ to provide ...

k. “Hybrid computers” and “electronic assemblies” and ~~specially designed~~ other components therefor containing ...

II: 4A994

c ~~Note 1: ... It (4A994.c) does not apply to “electronic assemblies” inherently limited by nature of their design for use as related equipment controlled by 4A994.k~~

(4A994.k does not control related equipment.)

c. Note 2: 4A994.c does not control any “electronic assembly” ~~specially designed~~ for a product or family of products whose maximum configuration does not exceed the limits of 4A994.b

III: 4A994

Note 1.b.N.B.1 ... ~~specially designed~~ for other equipment ...

IV: 4A994

c.1. ... ~~to be capable of~~ aggregation ...

VII: 4A994

Unit ... ~~parts and~~ ...

VIII: 4A994
Computers, "electronic assemblies"~~, and related equipment~~ ...
Unit: ... ~~and accessories~~
Note 1 ... ~~and related equipment~~ ...
Note 1.a ... ~~or related equipment~~ ...
Note 1.b ... ~~or related equipment~~ ...
Note 1.b.N.B. 2 ... ~~or related equipment~~ ...
Note 1.c ... ~~or related equipment~~ ...
a. ... ~~and related equipment,~~ ...
j. ... ~~associated equipment that~~ ...

V: 4D001
STA ... may not be used to ship or transmit "software" ~~specially designed~~ "required" for ... equipment ~~specified~~ controlled by ECCN 4A001.a.2 for ...
a "Software" ~~specially designed or modified~~ "required" for ...
b "Software" .... ~~specially designed or modified~~ "required" for ...
b.2 "Electronic assemblies" ~~specially designed or modified~~ "required" for:

V: 4D002
"Software" ~~specially designed or modified~~ "required" to support "technology" ...
TSR Yes, except N/A for "software" ~~specifically designed or modified~~ "required" to support "technology" for computers requiring a license.

V: 4D980
"Software" ~~specially designed~~ "required" for ...

V: 4D993
... that are ~~specially designed~~ "required" for real time processing equipment ...
a ... ~~and designed or modified~~ "required" for ...
c Operating system "software" ~~specially designed~~ "required" for ...

V: 4D994
"Software" ... ~~specially designed or modified~~ "required" for ...

V: 4E001
b "Technology" ... ~~specially designed or modified~~ "required" for ...
b.2 "Electronic assemblies" ~~specially designed or modified~~ "required" for ...

V: 4E980
"Technology" "required" for ... 4A980

V: 4E992
"Technology" ... "required" for ...

I: 4E993
... of equipment ~~designed~~ for “multi-data-stream processing”
V: 4E993
“Technology”“required” for the “development” or “production” of ...
.
I: Technical Note on APP
Note 6 “APP” values must be calculated for (1) processor combinations containing processors ~~specially designed to enhance~~ enhancing performance by aggregation, operating simultaneously and sharing memory; or (2) multiple memory/processor combinations operating simultaneously utilizing ~~specially designed~~ hardware.

III: Category 5 Part 1 Note 1
... ~~specially designed~~ for ...
N.B .1 For "lasers" ~~specially designed~~ for ...
Note 2: "Digital computers", related equipment or "software, when essential ... are ~~regarded as specially designed components~~ subject to the controls in this Category, provided ...

I: 5A001
a.1 ~~Specially designed~~ to withstand ...
a.2 ~~Specially hardened~~ to withstand ...
a.3 ~~Specially designed~~ to operate outside the temperature range ...
b Telecommunications systems and equipment, and ~~specially designed~~ components ... therefor, having ...
e. Radio direction finding equipment ... and ~~specially designed~~ components therefor having any of the following characteristics
f Jamming equipment and components therefor ~~specially designed or modified to intentionally an d selectively interfere with, deny, inhibit, degrade, or seduce~~ interfering with, denying, inhibiting, degrading, or seducing mobile telecommunication services and ~~perform~~ performing any of the following~~, and specially designed components therefor~~
g ... ~~specially designed~~ for ...
h Electronic equipment ~~designed or modified~~ for ...
i Systems or equipment and components therefor ~~specially designed or modified~~ to intercept and process the air interface of 'mobile telecommunications'~~, and specially designed components therefor~~
II: 5A001
a Note: 5A001.a.2 and 5A001.a.3 do not apply to equipment ~~designed or modified~~ for ... satellites.
b.3.b Note: 5A001.b.3.b does not control radio equipment ~~specially designed~~ for ... civil cellular radio-communications systems
b.5 Note: 5A001.b.5 does not control radio equipment ~~specially designed~~ for ... civil cellular radio-communications systems.
i. Note: 5A001.i does not apply to equipment ~~designed~~ for ... network operators
IV: 5A001
a. Note: 5A001.a.2 and 5A001.a.3 do not apply to equipment ... for ~~use on board~~ satellites.
b.2.b ... ~~having a capability~~ to ...
b.3.b Note: 5A001.b.3.b does not control radio equipment ... for ~~use with~~ civil cellular radio-communications systems
b.5 Note: 5A001.b.5 does not control radio equipment ... for ~~use with~~ civil cellular radio-communications systems.
c Optical fibers ... ~~specified by the manufacturer as being capable of~~ withstanding ...
VIII: 5A001
... ~~and accessories~~
Unit: ... ~~and accessories~~ ...

b. ... ~~and accessories~~ ...

I: 5A101
Telemetering and telecontrol equipment ~~designed or modified~~ for ...
II: 5A101
Note: 5A101 does not control:
1. Telecontrol equipment ~~specially designed~~ ... for
2. Equipment ~~designed or modified~~ for.
3. Ground-based equipment ~~designed or modified~~ for
4. Equipment ~~designed~~ for
Note: Item 5A101 does not include items not ~~designed or modified~~ for unmanned aerial vehicles or rocket systems ... (e.g., telemetry circuit cards limited ~~by design~~ to reception ~~only~~ and ~~designed~~ ... for personal computers~~)~~.
IV: 5A101
Telemetering and telecontrol equipment ... for ... ~~capable of~~ <u>with</u> a maximum "range" ...
Note: 5A101 does not control:
1. Telecontrol equipment ... ~~to be used~~ for
Note: Item 5A101 does not include items ... ~~capable of~~ <u>for</u> a maximum "range" equal to or greater than 300 km (e.g., telemetry circuit cards ...for ~~use in~~ personal computers~~)~~.

III: 5A980 Related Controls
... ~~specially designed or modified~~ to intercept ... ~~specially designed~~ components
IV: 5A980
Devices ~~primarily useful~~ for the surreptitious interception of wire, oral, or electronic communications
VI: 5A980
... and ... <u>components specially designed</u> therefor
VII, VIII: 5A980
... and ~~parts and accessories~~

I: 5A991
a ... ~~specially designed to operate~~ <u>operating</u> outside the temperature range ...
b ... and ~~specially designed~~ components ... having any of the following characteristics ...
b Note: ... b. ~~Designed~~ for ... single or multi-channel communication ...
b.1 ... ~~designed~~ to operate at ...
c ... switching systems and ~~related~~ signaling systems <u>and components therefor</u>, having any of the following ,,, ~~and specially designed components... therefor~~
c.1 ... ~~designed~~ for "packet mode operation" ... ~~and assemblies and components therefor~~ ...
c.6 ~~Designed~~ for automatic hand-off ...
d Optical fibers ... ~~designed~~ for single mode operation
f ... ~~designed~~ to permit electronic control of beam shaping ...
h ... ~~designed for~~ ... at frequencies ...
II: 5A991
b.1 Note: 5A991.b.1 does not control equipment ~~specially designed~~ to be integrated and

operated in any satellite system ...

b.7 Note 1: 5A991.b.7 does not control equipment ~~specially designed~~ to be integrated and operated in any satellite system ...

IV: 5A991

Related Definitions ...(5) ... beyond ~~the basic capabilities of~~ a basic virtual call

b Note: ... b. ... for ~~use in~~ single or multi-channel communication ...

b.1 Note: 5A991.b.1 does not control equipment ... to be integrated and operated in any civil satellite system ~~for civil use~~.

b.7 Note 1: 5A991.b.7 does not control equipment ... to be integrated and operated in any civil satellite system ~~for civil use~~.

c.3 Note: ... ~~using~~ ...

h ... ~~for use~~ at frequencies ...

VI: 5A991

g ... assemblies and components specially designed therefor

h ... ... and assemblies and components specially designed therefor

VIII: 5A991

b ... ~~and accessories~~ ...

c ... ~~and accessories~~ ...

I: 5B001

STA:... equipment and ~~specially designed~~ components ... therefor, ~~specially designed~~ for...

a Equipment and ~~specially designed~~ components ... therefor, ~~specially designed~~ for the "development", "production" or "use" of equipment, functions or features having characteristics specified in the texts of what is controlled by 5A001.

b Equipment and ~~specially designed~~ components ... therefor, ~~specially designed~~ having characteristics for the "development" of any of the following telecommunication .transmission or switching equipment.

II: 5B001

b.2 Note: 5B001.b.2.d does not include equipment ~~specially designed~~ for ...

VIII: 5B001

... ~~and accessories~~ ...

STA: ... ~~or accessories~~...

Unit: ... ~~and accessories~~

a ... ~~or accessories~~ ...

b ... ~~or accessories~~ ...

I: 5C991

... ~~optimized~~ for ~~the manufacture of~~ optical fibers controlled by 5A991

V: 5D001

CIV: ... controlled by 5D001.a and ~~specially designed~~ "required" for ...

TSR: ... controlled by 5D001.a and ~~specially designed~~ "required" for ...

STA: ... 5D001.a "software" ~~specially designed~~ "required" for ... 5B001.b for "software" ~~specially designed or modified~~ "required" to support technology

a “Software” ~~specially designed or modified~~ “required” for ...
b “Software” ~~specially designed or modified~~ “required” for ...
c “Software” ~~specially designed or modified~~ “required” for ...
d “Software” ~~specially designed or modified~~ “required” for ...
II: 5D001
d.2 Note: 5D001.d.2.b does not control “software” ~~specially designed or modified~~ for the “development” of commercial TV systems

V: 5D101
“Software” ~~specially designed or modified~~ “required” for ...

IV: 5D980
a. “Software” ~~primarily useful~~ ...
b. “Software” ~~primarily useful~~ ...
V: 5D980
a. “Software” ... “required” for the surreptitious interception of ...
b. “Software” ... “required” for the “development” ...

V: 5D991
“Software”~~specially designed or modified~~ “required” for ...
~~a.~~ “Software”... ~~specially designed~~ “required” for “dynamic adaptive routing”.

I: 5E001
c.1 ... ~~designed to operate~~ operating ...
e ... electronic devices and circuits ~~, specially designed~~ for telecommunications and containing components manufactured from “superconductive” materials~~, specially designed~~ for operation at temperatures ...
II: 5E001
c.4.b Note: 5E001.c.4.b does not control “technology” for the “development” or “production” of equipment ~~designed or modified~~ for operation in any frequency band which is “allocated by the ITU” ...
IV: 5E001
b.1 ... telecommunications equipment ... ~~to be used on board~~ satellites
b.2 ... ~~with the capability of~~ automatically ...
b.3 ... ~~whose reception capabilities that allow~~ multi-band, multi-channel, multi-mode, multi-coding algorithm or multi-protocol ...
e1 ... circuits ~~using~~ “superconductive” gates
e.2 ... ~~using~~ with resonant circuits ...
V: 5E001
TSR: ... (2) ... 5D001.a that is ~~specially designed~~ for ...
b.1 ... telecommunications equipment ~~specially designed~~ ... “required” for satellites
b.2 “Technology” “required” for the “development” or “use” of “laser” communication techniques ... automatically ...
b.3 “Technology” “required” for the “development” of digital cellular radio base station

receiving equipment ...multi-band, multi-channel, multi-mode, multi-coding algorithm or multi-protocol ~~operation can be modified by changes in "software"~~ reception;
b.4 "Technology" "required" for ...
c.2.c Note: 5E001.c.2.c applies to "technology" ~~specially designed~~ "required" for
d ... power amplifiers ~~specially designed~~ "required" for telecommunications and ...

IV: 5E980
"Technology" ~~primarily useful~~ for
V: 5E980
"Technology" ... "required" for

I: 5E991
a.1 "Technology" for the processing and application of coatings to optical fiber ~~specially designed~~ ... for underwater use;
IV: 5E991
a.1 "Technology" for the processing and application of coatings to optical fiber ... ~~to make it suitable~~ for underwater use;
V: 5E991
a.1 "Technology" "required" for the processing and application of coatings ...
a.2 "Technology" "required" for ...

II: 5 Part 2 - "Information Security"
Note 3.c ~~Designed for~~ installation by the user ...
IV: 5 Part 2 - "Information Security"
Note 3.b The cryptographic functionality ~~cannot be~~ is not easily changed by the user
VII: 5 Part 2 - "Information Security"
Note 4.a.2 ... ~~parts and~~ ...

I: 5A002
a Systems, equipment, application specific "electronic assemblies", cryptographic libraries, modules, development kits, toolkits, application-specific development kits, chipsets, field programmable logic devices, and integrated circuits ~~for "information security"~~ providing the means or functions necessary for "information security", as follows~~, and components therefor specially designed for "information security"~~.
a.4 ~~Specially designed or modified to reduce~~ Providing the means or techniques necessary for reducing the compromising emanations .....
II: 5A002
Note: 5A002 does not control any of the following ...
((a)(1)b.1 It is ~~specially designed and~~ limited to allow protection ...
(a)(2) 'Readers/writers' ~~specially designed or modified, and~~ limited ...
(d) Cryptographic equipment ~~specially designed and~~ limited for banking ...

VI: 5A992
b ... and components "specially designed" therefor.

I: 5B002

a. Equipment ~~specially designed~~ providing the means or functions necessary for ...

b. Measuring equipment ~~specially designed to evaluate and validate~~ providing the means or functions necessary for evaluating and validating the "information security" ... ..

II: 5D002

Related Controls: (1) This entry does not control "software" ~~"required"~~ for ...

V: 5D002

a "Software" ~~specially designed or modified~~ "required" for ...

b "Software" ~~specially designed or modified~~ "required" to support "technology" ...

II: 5D992

Related Controls: This entry does not control "software" ~~designed or modified~~ to ...

V: 5D992

a. "Software" ~~specially designed or modified~~ "required" for ...

II: 5E002

Related Controls: ... This entry does not control "technology" ~~"required"~~ for ... or "technology" ~~related to~~ for equipment ...

I: 6A001
a.1 Active ... systems, equipment and ~~specially designed~~ components therefor, as follows:
a.1.a.1 ... ~~designed~~ for
a.1.a.1.a ~~Designed~~ to
a.1.a.1.b ~~Designed~~ to
a.1.a.2 ... ~~designed~~ for
a.1.a.2.a ~~Designed or modified~~ to
a.1.a.3 ... ~~designed~~ for
a.1.a.3.a ~~Designed or modified~~ to
a,1,b Systems or transmitting and receiving arrays ~~designed~~ for ...
a.1.b.5 ~~Designed~~ to
a.1.b.6 ~~Designed~~ to
a.1.c ... operating individually or in a ~~designed~~ combination
a.1.d Acoustic systems and equipment ~~designed~~ to determine... and ~~specially designed~~ components therefor <u>having any of the following characteristics</u>
a.1.e Active individual sonars ~~specially designed or modified~~ to
a.2 Passive ... systems, equipment and ~~specially designed~~ components therefor, as follows:
a.2 Note: 6A001.a.2 also applies to receiving equipment whether or not related in novmal application to separate active equipment and ~~specially designed~~ components therefor <u>having any of the characteristics of that equipment</u>.
a.2.a Note: The control status of hydrophones ~~specially designed~~ for other equipment <u>described in an ECCN numbered xx0xx</u> is determined by the control status of the other equipment.
a.2.a.5 ~~Designed~~ to
a.2.a.6 ~~Designed~~ for
a.2.b.2 ~~Designed~~ or ‘able to be modified’ to
a.2.c Processing equipment, ~~specially designed~~ for ...
a.2.d.2 ~~Designed~~ to
a.2.e.2.a ~~Designed~~ to
a.2.f Processing equipment, ~~specially designed~~ for ...
b ... ~~designed~~ to ...
b.1.a ~~Designed~~ to
II: 6A001
a.1 Note: 6A001 does not control:
b.2 Pingers ~~specially designed~~ for ...
b Note 2: 6A001.b does not apply to equipment ~~specially designed~~ for ...
III: 6A001
LVS: N/A for ...a.2.c ~~and specially designed~~ ... a.2.f ... ~~specially designed~~ ...
IV: 6A001
a.1.d Note: 6A001.a.1.d includes: ...
b ... Equipment ~~capable of~~ <u>for</u> ...
a.2.e.2.b ~~Capable of~~ <u>for</u> being ...

I: 6A002

MT applies ... ~~specially designed or modified~~ to protect "missiles" ...

a.2 Image intensifying tubes and ~~specially designed~~ components therefor, as follows

a.2.a.2.b An electron sensing device with a non-binned pixel pitch of 500 micrometer or less, ~~specially designed or modified~~ to achieve 'charge multiplication' other than by a microchannel plate;

a.2.c ~~Specially designed~~ components, as follows:

a.2.c.2 An electron sensing device with a non-binned pixel pitch of 500 micrometer or less, ~~specially designed or modified~~ to achieve 'charge multiplication' other than by a microchannel plate;

a.3.b.2.b ~~Specially designed or modified~~ to achieve 'charge multiplication' and ~~having~~ to have a maximum "radiant sensitivity" exceeding ...

a.3.g.2 ~~Specially designed or modified~~ to achieve 'charge multiplication' and ~~having~~ to have a maximum "radiant sensitivity" exceeding ...

b ... ~~designed~~ for

b.2 ~~Being specified~~ for ...

b.2.b.2 ~~Designed~~ for

d ~~Special support~~ components for optical sensors, as follows:

d.3 Optical sensing fibers ~~specially fabricated~~ either compositionally or structurally, or ~~modified~~ by coating, to

II: 6A002

a.2.c.3 Note: 6A002.a.2.c.3 does not control compound semiconductor photocathodes ~~designed to achieve~~ with a maximum "radiant sensitivity" ...

a.3 ... Note 2: 6A002.a.3 does not control: ...

c "Focal plane arrays" ~~specially designed or modified to achieve~~ 'charge multiplication' ~~and limited by design~~ to have a maximum "radiant sensitivity" of ... having all the following:

c.1 Incorporating a response limiting mechanism ~~designed~~ not to be removed or modified; and

Technical Note: A response limiting mechanism integral to the detector element ~~is designed~~ may not ~~to~~ be removed or modified without rendering the detector inoperable

b.1 Note: 6A002.b.1 does not control ... and only incorporating any of the following ...

a. Charge Coupled Devices (CCD) not ~~designed or modified to achieve~~ with 'charge multiplication'; or

b. Complementary Metal Oxide Semiconductor (CMOS) devices not ~~designed or modified to achieve~~ with 'charge multiplication'.

c Note: 6A002.c does not control ..

e. Equipment ~~specially designed~~ for ...

d.3 Note: 6A002.d.3 does not apply to ... ~~specially designed~~ for ...

III: 6A002

Related Controls: The following commodities are subject to the export licensing authority of U.S. Department of State, Directorate of Defense Trade Controls (22 CFR part 121): (1) "Image intensifiers" defined in 6A002.a.3 ~~specially designed or modified, or configured for military use and not part of civil equipment~~ as defined in the USML;

IV: 6A002
MT applies ... to protect “missiles” ... ~~and usable for “missiles”~~

I: 6A003
a. Instrumentation cameras and ~~specially designed~~ components therefor, as follows
a.6 Plug ins ...
a.6.a ~~Specially designed~~ for instrumentation cameras which have modular structures...
II: 6A003
a.1 Note: 6A003.a.1 does not control cinema recording cameras ~~designed~~ for civil purposes.
b Note: 6A003.b does not control television or video cameras ~~specially designed~~ for television broadcasting.
b.2 Note: 6A003.b.2 does not apply scanning cameras ... ~~specially designed~~ for...
a Industrial or civilian photocopiers; <u>or</u>
b Image scanners ~~specially designed~~ for ... close proximity scanning ...
b.4.a Note 2.6A003.b.4 does not control ...
d Equipment ~~specially designed~~ for laboratory use
b.4.b Note 3.6A003.b.4.b does not control ...
b.4.b The camera is ~~designed~~ for a single kind of application and ~~designed~~ not to be user modified
c The camera is ~~specially designed~~ for installation into a civilian passenger land vehicle ...
c.1.b ~~A specially designed~~ <u>An</u> authorized maintenance test facility
b.4.c Note 4. 6A003.b.4.c does not control
4.a.1 Where the camera is ~~specially designed~~ for installation as an integrated component into indoor and wall-plug-operated systems or equipment, ~~limited by design~~ for a single kind of application, as follows
4.a.1.b Laboratory equipment ~~specially designed~~ for scientific research:
4.a.2.b ~~A specially designed~~ <u>An</u> authorized maintenance test facility
4.b The camera is ~~specially designed~~ for installation into a civilian passenger land vehicle ...
4.b.1.b ~~A specially designed~~ <u>An</u> authorized maintenance test facility
4.c ~~Limited by design to have~~ a maximum “radiant sensitivity” of ... or less
4.c.1 Incorporating a response limiting mechanism ~~designed~~ not to be removed or modified
4.c.3 Not ~~specially designed or modified~~ for underwater use
III: 6A003
Related Controls: ....(3) See ECCN 8A002.d and .e for cameras ~~specially designed or modified~~ for underwater use.
IV: 6A003
Note: Instrumentation cameras ... should be evaluated by their maximum ~~capability~~ <u>speeds</u> ...
a.1 ... ~~capable of~~ <u>for</u> recording at framing rates ...
a.2 ... ~~capable of~~ <u>for</u> recording at rates ...
a.5.a An electronic shutter speed (gating ~~capability~~) of ...

I: 6A004

a.1 “Deformable mirrors” ... , and ~~specially designed~~ components therefor, ... for dynamically repositioning ...

c.3 Segments ... of mirrors ~~designed~~ to be assembled in space

d.1 Equipment ~~specially designed~~ to maintain the surface figure .....

d.4 ~~Specially designed~~ to maintain the alignment of phased array...

e.2 Technical Note 2. Manufacturers are not required to measure the surface roughness listed in 6A004.e.2 unless the optical element was ~~designed or manufactured with the intent to meet, or exceed,~~ meets or exceeds the control parameter.

III: 6A004

Related Controls: (1) For optical mirrors or ‘aspheric optical elements’ ~~specially designed~~ for lithography equipment, see ECCN 3B001.

IV: 6A004

a.1 “Deformable mirrors” ... , and ... ~~capable of~~ for dynamically repositioning ...

d.3.d.1 ... ~~capable of~~ for angular accelerations ...

d.3.d.2 ... ~~capable of~~ with angular accelerations ...

e ... having an inner mirror ~~capabilities~~ ...

I: 6A005

b.6.b.1.b ... limited ~~by design~~ to a maximum pulse repetition ...

d.1.e.1 ~~Specially designed or modified~~ to be combined with other ‘stacked arrays’

d.1.d Note 1: ‘Stacked arrays’, formed by combining semiconductor “laser” ‘stacked arrays’ specified by 6A005.d.1.e that are not ~~designed to be~~ further combined ~~or modified~~ are specified by 6A005.d.1.d.

d.1.e Note 2: ‘Stacked arrays’, formed by combining semiconductor “laser” ‘stacked arrays’ specified by 6A005.d.1.e that are ~~designed to be~~ further combined ~~or modified~~ are specified by 6A005.d.1.e.

e.2 Optical mirrors ... components, ~~specially designed~~ for ... controlled “lasers”

f.3 Optical equipment and components ~~specially designed~~ for a phased array ... at the ~~designed~~ wavelength, or 0.1 micrometer, whichever is smaller

f.4 Projection telescopes ~~specially designed~~ for ... “SHPL” systems.

II: 6A005

a.6.b Note: 6A005.a.6.b does not control ... components ~~required~~ needed ,..

d.1.e Note 3: 6A005.d.1.e does not apply to modular assemblies of single ‘bars’ ~~designed to be fabricated into~~ in end-to-end stacked linear arrays.

III: 6A005

Related Controls:... (4) See ECCN 3B001.f.3 for excimer “lasers” ~~specially designed~~ for lithography equipment. (5) “Lasers” ~~specially designed or prepared.~~ ... as defined by NRC for isotope separation are subject to the export licensing authority of the Nuclear Regulatory Commission (see 20 CFR part 110), (6) ... “lasers” ~~specifically designed, modified, or configured for military application~~ as defined in the USML are subject to the export licensing authority of the U.S. Department of State, Directorate of Defense Trade Controls (see 22 CFR part 121).

IV: 6A005
Related Controls:...(5) ...~~for use in~~ ...(6) ...~~, capable of~~ ...
b.6.b.1.c ... ~~capable of~~ for ...
b.6.b.1.d ... ~~capable of~~ for ...
e.2 Optical mirrors ... for ~~use with~~ controlled "lasers"
f.1 ... ~~capable of~~ for ...
f.2 ... ~~capable of~~ for ...
f.4 ... ~~use with~~ ...

I: 6A006
"Magnetometers" ..., and ~~specially designed~~ components therefor, as follows
a.1.a SQUID systems ~~designed~~ for stationary operation ...
a.1.b SQUID systems having an in-motion-magnetometer 'sensitivity' ... and ~~specially designed~~ to reduce in-motion noise.
II: 6A006
Related Controls: ... This entry does not control ... ~~specially designed~~ for ...
a.1.a SQUID systems ... without ~~specially designed~~ subsystems ~~designed~~ to reduce in-motion noise, ...

I: 6A007
a. Gravity meters ~~designed or modified~~ for ...ground use ...
b Gravity meters ~~designed~~ for mobile platforms ...

I: 6A008
Radar .. . and ~~specially designed~~ components therefor, as follows;
g ~~Specially designed~~ for ...
j.3 ~~Designed~~ for ...
j.3 Note 1: LIDAR equipment ~~specially designed~~ for surveying is only specified by 6A008.j.3
II: 6A008
i Note: 6A008.i does not control: ...
b Ground radar equipment ~~specially designed~~ for ...
b.2 ~~Configured so that~~ radar target data ~~can~~ be transmitted only one way from the radar site to one or more civil ATC centers.
j Note 2. 6A008.j does not apply to LIDAR equipment ~~specially designed~~ for meteorological observation.
l.4 Note: 6A008.l.4 does not control systems, equipment and assemblies ~~designed~~ for marine traffic control.
III: 6A008
MT applies to ~~items that are designed for airborne applications~~ ... the portion of 6A008 also described in 6A103 or 6A108
(6A008 specifications differ in many respects from those in MTCR items 11.A.1, 12.A.5, and 18.A.3, which are described in 6A103 and 6A108.)
IV: 6A008

MT applies to ~~items ... that are usable in systems controlled for MT reasons~~ the portion of 6A008 also described in 6A103 or 6A108

c ~~Capable of~~ for operating ...

d ~~Capable of~~ for operating ...

f ~~Capable of~~ for heightfinding ...

I: 6A102

Radiation hardened detectors ... ~~specially designed or modified~~ for protecting against nuclear effects... ~~designed or~~ rated to withstand radiation levels ...

IV: 6A102

Radiation hardened detectors ... ~~usable~~ for "missiles," ...

I: 6A103

Radomes ~~designed to withstand~~ withstanding ...

IV: 6A103

Radomes ... ~~usable in~~ protecting "missiles" against nuclear effects ... ~~and usable for "missiles"~~.

I: 6A107

Gravity meters ... and ~~specially designed~~ components for gravity meters ... as follows ...

a Gravity meters (gravimeters)... ~~designed or modified~~ for airborne or marine use ...

b. ~~Specially designed~~ components ~~for gravity meters controlled in~~ having any of the characteristics described in ... 6A107.a ..

III: 6A107

b. ~~Specially designed~~ components ~~for gravity meters controlled in~~ having any of the characteristics described in 6A007.b ... ~~and gravity gradiometers controlled in~~ or 6A007.c.

IV: 6A107

a Gravity meters (gravimeters)... ~~usable~~ for "missiles"

I: 6A108

a Related Definitions: Laser radar systems ... embody ~~specialized~~ transmission ...

a Radar and laser radar systems ~~designed or modified~~... for "missiles".

b.2 Range instrumentation radars including ~~associated~~ optical/infrared trackers ...

II: 6A108

Related Controls:(1) This entry does not control ... provided that they do not incorporate any of the following ... or (d) Signal processing ~~specially designed~~ for the tracking of vehicles.

III: 6A108

a Related Controls: ...(2) Items in 6A108.a that are ~~specially designed or modified for "missiles" or for items~~ on the U.S. Munitions List are subject to the export licensing authority of the U.S. Department of State ...

IV: 6A108

a ...~~use in~~ ...

b ... ~~usable~~ ... ~~capable of ...~~
b.2 Range instrumentation radars ... with all of the following ~~capabilities~~:

I: 6A203
a Mechanical rotating cameras~~, as follows,~~ and ~~specially designed~~ components therefor, as follows:
a.3 ~~Note:~~ Components of cameras controlled by 6A203.a ~~include~~ as follows: their synchronizing electronics units and rotor assemblies consisting of turbines, mirrors and bearings
b.4.d Other framing tubes and solid-state imaging devices ...~~specially designed for cameras controlled by 6A203.b.3~~
(Most of strike thru text in b.4.d is redundant, repeating text from b.4.)
c ~~Radiation-hardened~~ TV cameras, or lenses therefor, ~~specially designed or~~ rated as radiation hardened to withstand a total radiation dose ...
IV: 6A203
b.1 ... ~~capable of~~ with ...
b.3 ... ~~capable of~~ with ...
b.4 Framing tubes and solid-state imaging devices for ~~use with~~ cameras controlled by 6A203.b.3, as follows:
VII, VIII: 6A203
Unit:: ...~~; parts and accessories in $ value~~
(NSG 1.A.2, 5.B.3, and 5.B.4 do not control parts or accessories.)

I: 6A205
e Para-hydrogen Raman shifters ~~designed to operate~~ operating at ...
III: 6A205
Related Controls: ... (4) “Lasers” ~~specially designed or prepared~~ as defined by NRC for ~~use in~~ isotope separation are subject to the export licensing authority of the Nuclear Regulatory Commission (see 10 CFR part 110).

VII, VIII: 6A225
Unit: ...~~ parts and accessories in $ value~~

VII, VIII: 6A226
Unit: ... ~~; parts and accessories in $ value~~

I: 6A991
... acoustic equipment ... detecting or locating underwater objects or features or positioning surface vessels or underwater vehicles; and ~~specially designed~~ components having any of those characteristics ...
IV: 6A991.
... ~~capable of~~ ...
VII, VIII: 6A991
Unit: ... ~~parts and accessories~~ components in $ value

I: 6A992
a Image intensifier tubes and ~~specially designed~~ components therefor, as follows
a.2 ~~Specially designed~~ microchannel plates having ...
III: 6A992
RS applies ... Country Chart ~~is not designed to~~ does not determine ...
VII, VIII: 6A992
Unit: ... ~~parts and accessories~~ components in $ value

VII, VIII: 6A994
Unit: ...; ~~parts and accessories in $ value~~

IV: 6A995
d.2.a.1 ... ~~capable of~~ operating ...
VII, VIII: 6A995
Unit: ...~~; parts and accessories in $ value~~

I: 6A996
"Magnetometers" ... sensors, and ~~specially designed~~ components therefor, as follows
b.1 ~~Designed~~ for
b.2 ~~Designed~~ for
b.3.b ~~Designed~~ for
b.3.c ~~Designed~~ for

I: 6A998
Radar systems, equipment, ~~and~~ assemblies, and components, as follows ... (see List of Items Controlled), ~~and specially designed components therefor~~
b Space-qualified "laser" radar or Light Detection and Ranging (LIDAR) equipment ~~specially designed~~ for surveying or for meteorological observation and components therefor having any of those characteristics
VI: 6A998
a Airborne radar equipment, n.e.s., and specially designed components therefor.

III: 6A999
AT applies: ... Country Chart ~~is not designed to~~ does not determine

I: 6B004
b Equipment ... ~~specially designed~~ for ...

I: 6B008
Pulse radar cross-section measurement systems and components therefor having transmit pulse widths of 100 ns or less~~, and specially designed components therefor~~

I: 6B108

Systems, ... ~~specially designed~~ for radar cross section measurement ...
IV: 6B108
Systems, ... ~~usable~~ for rockets, missiles or unmanned aerial vehicles ~~capable of achieving~~ for a "range" equal to or greater tan 300 km and ~~their~~ subsystems therefor

I: 6B995
~~Specially designed or modified~~ equipment, including tools, dies, fixtures or gauges, and other ~~specially designed~~ components ... therefor having any of the following characteristics (see List of Items Controlled):
VIII: 6B995
Unit: ... ~~accessories~~ ....

I: 6C992
Optical sensing fibers ... which ~~are modified structurally to~~ have a 'beat length' ...
VII, VIII: 6C992
Unit: ~~Equipment in number; parts and accessories in $ value~~ Kilograms

I: 6C994
Related Definitions: ... (2) ... have been ~~specially~~ processed for ... fabricating optical fibers
b 'Optical fiber preforms' ... ~~specially designed~~ for the manufacture of 'fluoride fibers' controlled by 6A994.b.
IV: 6C994
Related Definitions: ... (2) ... have been ... processed for ~~use in~~ fabricating optical fibers
VII, VIII: 6C994
Unit: ~~Equipment in number; parts and accessories in $ value~~ Kilograms

III: 6D001
Related Controls: "Software" ~~specially designed~~ defined in the USML for ... is subject to the export licensing authority of the Department of State ...
V: 6D001
"Software" ~~specially designed~~ "required" for ...
TSR: Yes, except for the following:
(2) "Software" ~~specially designed~~ for ...
(3) ... "software" ~~specially designed~~ for ...

III: 6D002
Related Controls: "Software" ~~specially designed~~ defined in the USML for ... is subject to the export licensing authority of the Department of State ..."Software" ~~specially designed~~ for ..."space qualified" LIDAR equipment ~~specially designed~~ for surveying or for meteorological observation ... is controlled in 6D991.
V: 6D002
Software" ~~specially designed~~ "required" for the "use" ...
TSR: Yes, except ... (2) "Software" ~~specially designed~~ for ...

III: 6D003
a.5.b N.B. For diver detection "software" or "source code" ~~specially designed or modified for military use~~ defined in the USML, see the U.S. Munitions List
IV: 6D003
h.1 ... and ~~capable of~~ ...
V: 6D003
a.1 "Software" ~~specially designed~~ "required" for acoustic beam forming ...
a.3 "Software" ~~specially designed~~ "required" for acoustic beam forming ...
a.5 "Software" or "source code", ~~specially designed~~ "required" for ...
c "Software" ~~designed or modified~~ "required" for cameras incorporating "focal plane arrays" specified by 6A002.a.3.f ~~and designed or modified~~ "required" to remove a frame rate restriction ...
f.1 ... ~~specially designed~~ "required"
f.2 ... ~~specially designed~~ "required"
f.3 ... ~~specially designed~~ "required" ...
g ... ~~specially designed~~ "required"
h.1 ... ~~designed~~ ...
h.2 "Software" "required" ...
h.2.a ... ~~specially designed~~ "required"

V: 6D102
"Software" ~~specially designed or modified~~ "required" for ...

V: 6D103
"Software" ... ~~specially designed or modified~~ "required" for "missiles"

V: 6D991
"Software" ~~specially designed~~ "required" for ...

V: 6D992
"Software" ~~specially designed~~ "required" for ...

IV: 6D993
,a ... ~~capable of~~ ...

III: 6E001
TSR: Yes, except
(4)(b) Equipment controlled by 6A001.a.2.c or 6A001.a.2.f ~~when specially designed for real-time applications~~;
V: 6E001
TSR: Yes, except ...
(3) "Technology" for "software" ~~specially designed~~ for ...
(4)(c) "Software" controlled by 6D001 ~~and specially designed~~ for ...

III: 6E002
TSR: Yes, except ...
(3)(b) Equipment controlled by 6A001.a.2.c or 6A001.a.2.f ~~when specially designed for real-time applications~~;

I: 6E003
e Lasers. “Technology” “required” for the “development”, “production”, or “use” of ~~specially designed~~ diagnostic instruments or targets in test facilities for “SHPL” testing ...
IV: 6E003
(In the definition of “Super High Power Laser” change “capable of” to “for”.)
d.2 Optical fabrication ~~“technology” using~~ single point diamond turning techniques ...

I: 6E101
Related Definitions: (1) This entry only controls “technology” for equipment controlled by 6A008 when it is ~~designed~~ for airborne applications and .... (2) This entry only controls “technology” for items in 6A002.a.1, a.3, and .e that ~~are specially designed or modified to~~ protect “missiles” against nuclear effects (e.g., Electromagnetic Pulse (EMP), X-rays, combined blast and thermal effects) ...
IV: 6E101
Related Definitions: (1) ... and is ~~usable in~~ for “missiles”. (2) This entry only controls “technology” for items in 6A002.a.1, a.3, and .e that ... protect “missiles”...~~, and usable for “misssiles”~~.

V: 6E991
“Technology”“required” for ...

V: 6E992
“Technology”“required” for ...
I: 6E993
a.2 ... at the ~~designed~~ operating wavelength.:
V: 6E993
a Optical fabrication technologies “required” for ...
b “Technology” “required” for optical filters ...
c “Technology” “required” for ...
d “Technology” “required” for ...

I: 7A001

Accelerometers and components therefor, as follows ... ~~and specially designed components therefor~~:

a. Linear accelerometers and components therefor having any of the following: ...

b. Angular or rotational accelerometers and components therefor, specified to function at ...

a.3 ~~Designed~~ for ... inertial navigation or guidance systems ...

II: 7A001

Related Controls: ...~~MT controls do not apply to accelerometers that are specially designed and developed as Measurement While Drilling (MWD) sensors for use in downhole well service applications.~~

(Such accelerometers are excluded from 7A101 and are thus excluded from the 7A001 MT applies entry)

IV: 7A001

Related Controls ... ~~use in~~ ...

a.3 ... ~~use in~~ ...

I: 7A002

Gyros or angular rate sensors and components therefor, having any of the following ... ~~and specially designed components therefor~~:

I: 7A003

Inertial systems and ~~specially designed~~ components therefor, as follows

a. ... inertial equipment and components ~~designed~~ for ...and having any of the following ~~and specially designed components therefor~~

b. Hybrid Inertial Navigation Systems and components therefor ...

c. Inertial measurement equipment and components therefor ...

d. Inertial measurement equipment and components therefor ...

c.1 ~~Designed to have~~ ...

c.2 ~~Designed to have~~

II: 7A003

c.1 Note 3. 7A003.c.1 does not control theodolite systems incorporating inertial equipment ~~specially designed~~ for civil surveying purposes.

III: 7A003

Related Controls:... Inertial Navigation Systems (INS) and inertial equipment, and ~~specially designed~~ components therefor~~, specifically designed, modified or configured for military use~~ as defined in the USML are subject to the export licensing authority of the U.S. Department of State, Directorate of Defense Trade Controls. (See 22 CFR part 121.)

Note 1: The parameters of 7A003.a and 7A003.b are applicable with any of the following ...

IV: 7A003

b An angular rate ~~capability~~ about one or more axes ...

I: 7A004

b Components ~~specially designed~~ for equipment specified in 7A004.a as follows:

I: 7A005

Global Navigation Satellite Systems (GNSS) reeceiving equipment and components therefor having any of the following ~~and specially designed components therefor~~.

I: 7A008

Underwater sonar navigation systems and components therefor ... having a positioning accuracy ... ~~and specially designed components therefor~~.

II: 7A008

Related Controls: 7A008 does not control systems ~~specially designed~~ for ...

I: 7A101

Accelerometers, other than those controlled by 7A001, as described in 7A101.a or .b and components therefor as described in 7A101.a.1, a.2, or .b (see List of Items Controlled), ~~and specially designed components therefor~~

a. Linear accelerometers ~~designed for~~ ... inertial navigation systems or ~~in~~ guidance systems of all types, ... having all of the following characteristics, ~~and specially designed components therefor~~:

b Accelerometers of any type, ~~designed~~ for ... inertial navigation systems or ...

II: 7A101

Related Controls: This entry does not control accelerometers ~~which are specially designed and developed as~~ for MWD ...

b. Note: This paragraph (b) does not include accelerometers ~~that are designed~~ to measure vibration or shock.

IV: 7A101

Related Controls: ...for ~~use in~~ downhole well service operations.

a. Linear accelerometers ... ~~use in~~ ... ~~usable in~~ for “missiles” ...

b. ... ~~use in~~ ...

I: 7A102

Gyros and components therefor ... as follows ~~and specially designed components therefor~~.

a. All types of gyros and components therefor, ... with a rated drift rate stability of ...

b Gyros of any type and components therefor, ~~designed~~ for ... inertial navigation systems ...

IV: 7A102

a. ... ~~usable in~~ for rockets, missiles, or unmanned aerial vehicles ~~capable of~~ achieving a “range” ...

b. ... ~~use in~~ ...

I: 7A103

Instrumentation, navigation equipment and systems as follows and components therefor as follows in 7A103.b ... ~~and specially designed components therefor~~

b Integrated flight instrument systems, ~~which include~~ and the following components:

gyrostabilizers or automatic pilots, ~~designed or modified~~ for ... rockets,

c Integrated Navigation Systems, ~~designed or modified~~ for ... rockets

II: 7A103

a Note 1. 7A103.a does not control equipment containing accelerometers ~~specially designed and developed as~~ for MWD ...

III: 7A103

Related Controls: ... (2) Inertial navigation systems and inertial equipment, and ~~specially designed~~ components therefor ~~specifically designed, modified or configured for military use~~ as defined in the USML are subject to the export licensing authority of the U.S. Department of State ...

IV: 7A103

a Note 1. ... sensors for ~~use in~~ down-hole well ...

b ... ~~use in~~ rockets ... ~~capable of~~ achieving a “range” equal to or greater than 300 km.

c ... ~~use in~~ rockets ... ~~capable of~~ achieving a “range” equal to or greater than 300 km and ~~capable of~~ providing a navigational accuracy of 200m Circular Error Probable (CEP) or less

I: 7A104

Gyro-astro compasses and other devices and components therefor ... that derive position or orientation by means of automatically tracking celestial bodies or satellites ~~and specially designed components therefor~~.

III: 7A104

Related Controls: ~~This entry controls specially designed components for gyro-astro compasses and other devices controlled by 7A004.~~ N/A
(7A004.b controls components for 7A004.a.)

I: 7A105

Receiving equipment and components therefor for ... having any of the following characteristics, ~~and specially designed components therefor~~.

1 ~~Designed or modified~~ for ... “missiles”; or

2 ~~Designed or modified~~ for airborne applications ...

2.b ... decryption~~, designed or modified~~ for ~~military or governmental services to gain~~ access to GNSS secured signal/data

2.c ... ~~specially designed~~ ... anti-jam features...

IV: 7A105

1. ... ~~use in~~ ...

2.a ~~Capable of~~ providing navigation information at speeds ...

2.b ~~Employing~~ ...

2.c Being ... ~~to employ~~ ...

I: 7A106

Altimeters ... ~~designed or modified~~ for ... “missiles”

IV: 7A106

... ~~use in~~ ...

I: 7A107

Three axis magnetic heading sensors having all of the following characteristics, and ~~specially designed~~ components therefor having any of the following characteristics (see List of Items Controlled) .

c ~~Designed or modified to be integrated with~~ for integration into flight control ~~and~~ or navigation systems.

IV: 7A107

b. ~~Capable of~~ providing azimuthal accuracy .....

!: 7A115

Passive sensors ..., ~~designed or modified~~ for ... “missiles”.

IV: 7A115

... ~~use in~~ ...

1: 7A116

Flight control systems ... ~~designed or modified~~ for “missiles”.

IV: 7A117

“Guidance sets” ~~capable of~~ achieving system accuracy of ...

VII: 7A994

... ~~parts and~~ components~~, n.e.s.~~ therefor

I: 7B002

Equipment ~~specially designed~~ to characterize mirrors for ring “laser” gyros, as follows ...

I: 7B101

“Production equipment” ... ~~designed or modified~~ ... having characteristics specified in the texts of equipment controlled by ...

IV: 7B101

...~~ to be used with~~ for ...

I: 7B102

... ~~designed or modified~~ to characterize mirrors for “laser” gyro equipment, as follows ...

a ~~Scatterometers ...~~

c ~~Profilometers ...~~

(7B102.a and .c are covered by 7B002.a and .b.)

III: 7D001

~~MT applies ...~~

(MTCR 9D covers only use and integration software, see 9D101 and 9D102.)

~~RS applies to “software” for inertial navigation systems, inertial equipment, and specially designed components therefor, for “civil aircraft”~~

(The RS applies description is much broader than 7D001. It is unclear what portion, if any, of that description is covered by 7D001.)

Related Controls: ... ~~(2) The "software" related to 7A003.b , 7A005, 7A103.b, 7A105, 7A106, 7A115, 7A116, 7A117, or 7B103 are subject to the export licensing authority of the U.S. Department of State ... (3) "Software" for inertial navigation systems and inertial equipment, and specially designed components therefor, not for use on civil aircraft are subject to the export licensing authority of the U.S. Department of State ...~~

(It is clear that use software for USML items is, and will continue to be, ITAR controlled. But 7D001 covers only development and production software. It is not at all clear that the ECR intends ITAR control of development or production software, except in narrowly defined areas such as production of low observable components or portable platform signature field repair validation equipment, per May 18, 2012, proposed rule for XIII.l as it relates to XIII.k.)

V: 7D001

"Software" ~~specially designed or modified~~ "required" for ...

V: 7D002

"Source code" "required" for ...

V: 7D003

a "Software" ~~specially designed or modified~~ "required" to improve ...

b "Source code" "required" for ...

c "Source code" "required" for ...

d "Source code" "required" for ...

e Computer-Aided-Design (CAD) "software" ~~specially designed~~ "required" for ...

III: 7D101

Related Controls:(1) The software ~~related to~~ for ... as defined in the USML are subject to the export licensing authority of the U.S. Department of State ... (2) "Software" as defined in the USML for inertial navigation systems and inertial equipment, and ~~specially designed~~ components therefor, not ~~designed~~ for ~~use on~~ "civil aircraft" certified by civil aviation authorities of a country listed in ~~Country Group A:1~~ 743 Supplement 1 is subject to the export licensing authority of the U.S. Department of State, ...

V: 7D101

"Software" ~~specially designed or modified~~ "required" for ...

III: 7D102

Related Controls: The "software" ~~related to~~ for 7A003.b or 7A103.b as defined in the USML are subject to the export licensing authority of the U.S. Department of State ...

V: 7D102

a Integration "software"required" for ... 7A103,b.

b Integration "software" ~~specially designed~~ "required" for ... 7A003 or 7A103.a.

V: 7D103

"Software" ~~specially designed~~ "required" for modelling or simulation ... or for their ~~design~~ integration with "missiles".

V: 7D994
"Software.,~~n.e,s.~~, "required" for ...

III: 7E001

~~RS applies to "software" for inertial navigation systems, inertial equipment, and specially designed components therefor, for civil aircraft~~

(The RS applies description is much broader than 7E001. It is unclear what portion, if any, of that description is covered by 7E001.)

Related Controls: ... (2) The "technology" ~~related to~~ for ..., as defined in the USML are subject to the export licensing authority of the U.S. Department of State ...

III: 7E002

~~RS applies to "software" for inertial navigation systems, inertial equipment, and specially designed components therefor, for civil aircraft~~

(The RS applies description is much broader than 7E002. It is unclear what portion, of any, of that description is covered by 7E002.)

Related Controls: ...(2) The "technology" ~~related to~~ for ... as defined in the USML are subject to the export licensing authority of the U.S. Department of State ...

II: 7E003

Related Controls: ... This entry does not control maintenance "technology" ~~directly associated with~~ for calibration , removal, or replacement of ...

I: 7E004
a.5 Electric actuators ... ~~specially designed~~ for "primary flight control";
a.6 "Flight control optical sensor array" ~~specially designed~~ for...
a.7 "DBRN" systems ~~designed~~ to navigate underwater ...
II: 7E004
b.3 Note: 7E004.b.3 does not control "technology" for ~~the design of~~ physical redundancy
IV: 7E994
c.3 Rotor blades ... ~~use in~~ systems ~~using~~ for individual blade control.
V: 7E004
a. "Technology" "required" for the "development" of ...

III: 7E101

~~RS applies to "software" for inertial navigation systems, inertial equipment, and specially designed components therefor, for "civil aircraft"~~

(The RS applies description is much broader than 7E101. It is unclear what portion, of any, of that description is covered by 7E101.)

Related Controls: The "technology" ~~related to~~ for ... are subject to the export licensing authority of the U.S. Department of State ...

I: 7E102

a ~~Design~~ “technology” for shielding systems

b ~~Design~~ “technology” for the configuration of hardened electrical circuits ...

c ~~Design~~ “technology” for the determination of hardening criteria ...

V: 7E102

“Technology” “required” for the “development” of protection of avionics ..., as follows

V: 7E104

Design “Technology” “required” for the “development” of integration of ... data into a ... system ~~designed or modified~~ “required” for “missiles” ~~for optimization of rocket system~~ trajectory.

III: 7E994

Related Controls: Technology ~~specific to~~ for ... QRS11 sensors as defined in the USML remains subject to the licensing jurisdiction of the Department of State ...

V: 7E994

“Technology”, n.e.s., “required” for...

I: 8A001

a. Manned, untethered submersible vehicles ~~designed to operate~~ operating at depths ...

b.1 ~~Designed~~ to 'operate autonomously' and ~~having~~ a lifting capacity of all the following:

b.2 ~~Designed~~ to operate at depths exceeding 1,000 m; or

b.3.a ~~Designed~~ to continuously 'operate autonomously' for 10 hours or more; and

c Unmanned, tethered submersible vehicles ~~designed to operate~~ operating at depths exceeding 1,000 m and having any of the following

c.1 ~~Designed for~~ self-propelled maneuver using propulsion motors

d.1 ~~Designed for~~ deciding a course

f.1 Maximum ~~design~~ speed ...

g Surface-effect vehicles (rigid sidewalls) ~~with~~ for a maximum ~~design~~ speed

h Hydrofoil vessels ... a maximum ~~design~~ speed ...

i.1 Full load displacement ... a maximum ~~design~~ speed ...

i.2 Full load displacement ... a maximum ~~design~~ speed

i Technical Note: ... operational ~~design~~ draft ...

IV: 8A001

b Technical Note: ... ~~can safely control~~ safely controls ...

e.1 Dynamic ~~positioning systems capable of~~ position keeping within 20 m of a given point ...

I: 8A002

a Systems, equipment, and components ~~specially designed or modified~~ for submersible vehicles and ~~designed~~ to operate ..., as follows:

b Systems specially ~~designed or modified~~ for the automated control of the motion of submersible vehicles ...

d.1.a Television systems ... having a 'limiting resolution' ... and ~~specially designed or modified~~ for remote operation ...

d.1.c Low light level television cameras ~~specially designed or modified~~ for underwater use and ~~having~~ for all of the following

d.2 Systems ~~specially designed or modified~~ for remote operation ...

e Photographic still cameras ~~specially designed or modified~~ for underwater use ...

e.3 Automatic compensation control ~~specially designed to permit~~ permitting ...

g Light systems ~~specially designed or modified~~ for underwater use, as follows:

g.2 Argon arc light systems ~~specially designed~~ for ~~use~~ below 1,000 m

h "Robots" ~~specially designed~~ for underwater use, computerized controlled ~~by using a dedicated computer~~ and ~~having~~ any of the following

i Remotely controlled articulated manipulators ~~specially designed or modified~~ for ... submersible vehicles ...

j Air independent power systems ~~specially designed~~ for underwater use, as follows

j.1.a Chemical scrubber or absorber systems ~~specially designed~~ to remove carbon dioxide, carbon monoxide and particulates ...

j.1.b ~~Systems specially designed to use~~ a monoatomic gas ...

j.1.c ~~Devices or enclosures, specially designed for~~ underwater noise reduction ... or ~~special~~ mounting devices ~~for~~ shock mitigation;

j.1.d.1 ~~Specially designed~~ to pressurize the products of reaction or for fuel reformation;

j.1.d.2 ~~Specially designed~~ to store the products of the reaction; and
j.1.d.3 ~~Specially designed~~ to discharge the products of the reaction...
j.2.a Chemical scrubber or absorber systems, ~~specially designed~~ to remove ...
j.2.b ~~Systems specially designed to use~~ a monoatomic gas;
j.2.c ~~Devices or enclosures, specially designed for~~ underwater noise reduction in frequencies below 10 kHz, or ~~special~~ mounting devices ~~for~~ shock mitigation; and
j.2.d ~~Specially designed~~ exhaust systems that do not exhaust continuously the products of combustion;
j.3.a ~~Devices or enclosures, specially designed for~~ underwater noise reduction in frequencies below 10 kHz, or ~~special~~ mounting devices ~~for~~ shock mitigation; or
j.3.b.1 ~~Specially designed~~ to pressurize
j.3.b.2 ~~Specially designed~~ to store
j.3.b.3 ~~Specially designed~~ to discharge
j.4.a ~~Devices or enclosures, specially designed for~~ underwater noise reduction in frequencies below 10 kHz, or ~~special~~ mounting devices ~~for~~ shock mitigation; and
j.4.b ~~Specially designed exhaust systems which~~ discharge the products of combustion against a pressure of 100 kPa or more
k.1 ~~Designed for~~ cushion pressures of 3,830 Pa or more~~, operating~~ in a significant wave height of 1.25 m (Sea State 3) or more and ~~specially designed~~ for surface effect vehicles (fully skirted ~~variety~~)...
k.2 ~~Designed for~~ cushion pressures of ... and ~~specially designed~~ for surface effect vehicles (rigid sidewalls) ...
l Lift fans rated at more than 400 kW and ~~specially designed~~ for surface effect vehicles ...
m ... hydrofoils, ~~specially designed~~ for vessels controlled by 8A001.h
n Active systems ~~specially designed or modified~~ to control automatically the sea-induced motion of vehicles or vessels
o.1 Water-screw propeller or power transmission systems, ~~specially designed~~ for surface effect vehicles ... as follows:
o.2 Water-screw propeller, power generation systems or transmission systems, ~~designed~~ for ... vessels, as follows:
o.3 Noise reduction systems ~~designed~~ for ... on vessels of 1,000 tonnes displacement or more, as follows
o.3.a Systems that attenuate underwater noise ....~~specially designed~~ for sound or vibration isolation ...
o.3.b Active noise reduction or cancellation systems, or magnetic bearings, ~~specially designed~~ for ...
r Diver deterrent acoustic systems ~~specially designed or modified~~ to ...
III: 8A002
Related Controls: ... (3) ... ~~specially designed or modified~~ for ... (4) ... ~~specially designed or modified~~ for ...
IV: 8A002
b.1 ~~Enabling a vehicle to~~ move within 10 m ...
e.3 ... ~~to be usable~~ at depths exceeding 1,000 m
g.1 Stroboscopic light systems ~~capable of~~ a light output energy ...

g.2 ... ~~use~~ below 1,000 m
h "Robots" ... for underwater use, computerized controlled ~~by using a dedicated computer~~
h.2 ~~The ability to exert~~ Exertion ...
i Remotely controlled articulated manipulators ... for ~~use with~~ submersible vehicles
i.2 Controlled by proportional master-slave or computerized techniques ~~or by using a dedicated computer~~, ...
Technical Note: Only functions having proportional control ~~using~~ positional or computerized feedback ~~or by using a dedicated computer~~ are counted when determining the number of degrees of 'freedom of movement
o.1.c Systems ~~employing~~ for pre-swirl or post-swirl techniques, for smoothing the flow into a propeller;
o.1.e Power transmission shaft systems incorporating "composite" material components ~~and capable of~~ transmitting more than 1 MW;
o.2 ... ~~use on~~ vessels, as follows:
o.2.d ...~~ capable of~~ transmitting more than 1 MW;
o.3 ... ~~use on~~ vessels ...
Technical Note: ... ~~capable of~~ actively reducing equipment vibration ...
p.2 ~~Using~~ divergent nozzle and flow conditioning vane techniques ....

I: 8A918
a Marine boilers ~~designed to have~~ having any of the following characteristics:
b. Components ... for the above having any of the characteristics in 8A918.a
VII, VIII: 8A918
b ... ~~parts, accessories and atttachments~~ ...

I: 8A992
Vessels, marine systems or equipment, and components therefor, not controlled by ..., as follows (see List of Items Controlled)~~, and specially designed parts therefor~~
a.1 Television systems ... ~~specially designed or modified~~ for remote operation with a submersible vehicle; or
b Photographic still cameras ~~specially designed or modified~~ for underwater use, ... auto-focusing or remote focusing ~~specially designed~~ for underwater use;
c Stroboscopic light systems, ~~specially designed or modified~~ for underwater use ...
h ~~Other~~ self-contained underwater breathing apparatus (scuba gear) ~~and related equipment~~
k Air compressors and filtration systems ~~specially designed~~ for filling air cylinders
IV: 8A992
c ... ~~, capable of ...~~
VI: 8A992
f Vessels, n.e.s., including inflatable boats , and specially designed components therefor,
g Marine engines ... and submarine engines, n.e.s., and specially designed components therefor,
VII: 8A992
... ~~and specially designed parts therefor~~.
g ... ~~parts~~ ...

I: 8B001
Water tunnels ... ~~designed~~ for measuring acoustic fields ...

1: 8C001
Syntactic foam' ~~designed~~ for underwater use and having all of the following ...
a ~~Designed for~~ marine depths exceeding 1,000 m ...

V: 8D001
"Software" ~~specially designed or modified~~ "required" for ...
TSR: Yes, except ... "software" ~~specially designed~~ "required" for ...
STA: ... "software" ~~specially designed~~ "required" for ...

I: 8D002
... Specific "software"... for the "development", "production", repair, overhaul or refurbishing (re-machining) of propellers ~~specially designed~~ for underwater noise reduction
V: 8D002
Specific "software" ~~specially designed or modified~~ "required" for ...

V: 8D992
"Software" ~~specially designed or modified~~ "required" for ...

I: 8E002
a "Technology"... for the "development", "production", repair, overhaul or refurbishing (re-machining) of propellers ~~specially designed~~ for underwater noise reduction;
V: 8E002
a "Technology" "required" for ...
b "Technology" "required" for ...

V: 8E992
"Technology" "required" for ...

I: 9. A. N.B.
For propulsion systems ~~designed or~~ rated against ...
I: 9A001
b ~~Designed~~ to power an aircraft ~~designed~~ to cruise at Mach 1 or higher, for more than 30 minutes.
II: 9A001
a Note: 9A001 does not control ...
b ~~Intended to power~~ Powering non-military unmanned aircraft ...

I: 9A002
'Marine gas turbine engines' ... continuous power rating ... specific fuel consumption ... power range ... and ~~specially designed~~ assemblies and components therefor having any of those characteristics

I: 9A003
~~Specially designed~~ assemblies and components incorporating any of the technologies...
b Whose ~~design~~ development or production origins are ...

I: 9A004
Related Controls: (5) ... All ~~specially designed or modified~~ components ... for "spacecraft" that have been determined by the Department of State through the commodity jurisdiction process to be under the licensing jurisdiction of the Department of Commerce and that are not controlled by any other ECCN on the Commerce Control List will be assigned a classification under this ECCN 9A004.
III: 9A004
Related Controls: ...(4) All other "spacecraft" not controlled under 9A004 and their payloads, and ~~specifically designed or modified~~ components ... including ground support equipment, as defined in the USML are subject to the export licensing authority of the Department of State unless otherwise transferred to the Department of Commerce ... (6) ~~Technical data required~~ "Technology" as defined in the USML for the ~~detailed design,~~ development~~, manufacturing,~~ or production of the international space station (to include ~~specifically designed~~ ... components) remains under the jurisdiction of the Department of State. This control by the ITAR of ~~detailed design,~~ development~~, manufacturing~~ or production technology for NASA's international space station does not include that level of ~~technical data~~ "technology" necessary and reasonable for assurance that a U.S.-built item ~~intended~~ to operate on NASA's international space station has been ~~designed, manufactured and~~ tested in conformance with specified requirements ... . All ~~technical data~~ "technology" and all defense services, including all technical assistance, for launch of the international space station ... are controlled and subject to the jurisdiction of the Department of State ...
VII, VIII: 9A004
Related Controls: ...(4) ... ~~parts, accessories, attachments and associated equipment~~, ... (5) ... ~~parts, accessories, attachments, and associated equipment~~ ... (6)... ~~parts~~ ...

III: 9A006

Systems and components ~~specially designed~~ for liquid rocket propulsion systems as defined on the USML ~~(These items~~ are subject to the export licensing authority of the Department of State ...

III: 9A008

Components ~~specially designed~~ for solid rocket propulsion systems as defined on the USML ~~(These items~~ are subject to the export licensing authority of the Department of State....

III: 9A010

~~Specially designed~~ components, systems and structures for launch vehicles, launch vehicle propulsion systems or "spacecraft" as defined on the USML ~~(These items~~ are subject to the export licensing authority of the Department of State ...

III: 9A011

Ramjet, scramjet, and combined cycle engines, and ~~specially designed~~ components therefor as defined on the USML ~~(These items~~ are subject to the export licensing authority of the Department of State....

I: 9A012

b.1 Equipment ~~specially designed~~ for remotely controlling ...

b.2 Systems for navigation, attitude, guidance or control, ... ~~and specially designed to provide~~ providing autonomous flight control or navigation ~~capability~~ to "UAVs" controlled by 9A012.a

b.3 Equipment and components ~~specially designed to convert~~ converting a manned aircraft to a "UAV"...

b.4 ... engines ~~specially designed or modified to propel~~ propelling "UAVs".

IV: 9A012

MT applies to ... ~~capable of~~ ...

a.1 An autonomous flight control and navigation ~~capability~~ ...

a.2 ~~Capability of~~ controlled flight ...

b.2 ... ~~capability~~ ....

VII, VIII

Unit ... ~~parts and accessories~~ components in $ value

VIII: 9A012

... ...~~associated~~ systems, ...

b ~~Associated~~ systems, equipment and components ...

III: 9A101

Related Controls: 9A101.b controls only engines for non-military ... UAVs or ... RPVs and does not control other engines ~~designed or modified~~ as defined in the USML for ... "missiles" .....

b Engines ~~designed or modified~~ as defmed in the USML for ... "missiles", regardless of

thrust or specific fuel consumption.

IV: 9A101

Related Controls ... ~~use in~~ ...

b ... ~~use in~~ ...

III: 9A103

Liquid propellant tanks ~~specially designed~~ ... as defined on the USML ~~(These items~~ are subject to the export licensing authority of the Department of State....

IV: 9A103

... ~~used in~~ for "missiles."

III: 9A104

Sounding rockets, ~~capable of~~ a range of at least 300 km as defined on the USML ~~(These items~~ are subject to the export licensing authority of the Department of State....

IV: 9A104

... ~~capable of~~ ...

I: 9A106

d Liquid and slurry propellant (including oxidizers) control systems, and ~~specially designed~~ components therefor, ~~designed or modified to operate~~ operating in vibration environments greater than 10g rms between 20 Hz and 2000 Hz

Note: The only servo valves and pumps controlled by 9A106.d are the following:

a. Servo valves ~~designed~~ for flow rates ...

b Pumps, for liquid propellants, with shaft speeds ...

c Flight control servo valves ~~designed or modified~~ for ... "missiles" and ~~designed or modified to operate~~ operating in a vibration environment greater than 10g rms over the entire range between 20 Hz and 2kHz

e Flight control servo valves ~~designed or modified~~ for ... "missiles" and ~~designed or modified to operate~~ operating in a vibration environment ...

IV: 9A106

..., ~~usable in~~ ...

d Note c: ...~~use in~~ ...

e ... ~~use in~~ ...

VII, VIII: 9A106

Unit: ...~~; parts and accessories in $ value~~.

IV: 9A107

... ~~usable in~~ ... ~~capability~~ ...

IV: 9A108

... ~~usable in~~ ... ~~capability~~ ...

III: 9A109

Hybrid rocket motors..., for rockets with a range ... capability ... ~~and specially designed~~ components therefor as defined on the USML ~~(These items~~ are subject to the export

licensing authority of the Department of State.....

IV: 9A109

... ~~usable in~~ ... ~~capability~~ ...

I: 9A110

Composite structures, laminates and manufactures thereof... ~~specially designed~~ for ... "missiles" or ...

III: 9A110

Related Controls: ... (2) "composite" structures, laminates, and manufactures thereof, ~~specially designed~~ as defined in the USML for ... missile systems are under the licensing authority of the Directorate of Defense Trade Controls, U.S. Department of State, except those ~~specially designed~~ for non-military unmanned air vehicles controlled by 9A012.

IV: 9A110

... ~~use in~~ ...

Related Controls: ... (2) ...~~use in~~ missile systems ...

III: 9A111

Pulse jet engines and components therefor ..., as defined in the USML for rockets, missiles, or unmanned aerial vehicles ... achieving a "range" equal to or greater than 300 km~~, and specially designed components therefor~~.

IV: 9A111

... ~~usable in~~... ~~capable of~~ ...

III: 9A115

Apparatus, devices, and vehicles ~~designed or modified~~ as defined in the USML for ... achieving a "range" equal to or greater than 300 km.

IV: 9A115

... ~~capable of~~ ...

III: 9A116

Reentry vehicles and equipment therefor, ... , as defined in the USML, for "missiles"~~, and equipment designed or modified therefor~~

IV: 9A116

... ~~usable in~~ ...

III: 9A117

Staging mechanisms, separation mechanisms, and interstages therefor, ... as defined in the USML for "missiles".

IV: 9A117

...~~, usable in~~ ...

III: 9A118

Devices to regulate combustion of engines ... as defined in the USML for engines ... for rockets with a range ...

IV: 9A118

...~~usable in~~ ... ~~which are usable in~~ ... ~~capability~~ ...

III: 9A119

Individual rocket stages ... as defined in the USML for rockets with a range ...

IV: 9A119

... ~~usable in~~ ... ~~capability~~ ...

I: 9A120

b.2 ~~Designed or modified to incorporate~~ incorporating ...

III: 9A120

Related Controls: ... see ECCN 2B352.h for ... and components therefor~~, specially designed or modified~~ for ...

IV: 9A120

a.1 ... ~~capability~~ ...

a.2 ~~Capability of~~ ...

VII, VIII: 9A120

Unit: ~~; parts and accessories in $ value~~

VII, VIII: 9A980

...~~; and parts and accessories, n.e.s.,~~ components therefor

I: 9A990

Diesel engines, n.e.s., and tractors, as follows (see List of Items Controlled) and ~~specially designed parts~~ components therefor, n.e.s. having any of the following characteristics

VII: 9A990

~~parts~~ components therefor, n.e.s.

c ... ~~and specially designed parts~~.

VII, VIII: 9A990

b ... ~~and parts and accessories~~, n.e.s.

III: 9A991

Related Controls: ... Technology ~~specific~~ to as defined in the USML for the development and production of QRS11 sensors remains subject to the licensing jurisdiction of the Department of State.

a Military "aircraft", demilitarized (not ~~specifically equipped or modified for military operation~~ defined on the USML), as follows:...

IV: 9A991

c Note: ... ~~destined~~ for ~~use in~~ ...

VI: 9A991

c Aero gas turbine engines and specially designed ... components therefor

d ~~Aircraft ... components, n.e.s.~~ Components "specially designed" for "aircraft."

e Pressurized aircraft breathing equipment, n.e.s.; and specially designed ... components therefor ...

VII: 9A991
... ~~parts and~~ ...
c ... ~~parts~~ components ...
d ... ~~parts and~~ ...
e ... ~~parts~~ components ...

I: 9B001
Equipment, tooling and fixtures, ~~specially designed~~ for manufacturing gas turbine blades, vanes, to tip shroud castings, ~~as follows~~ having any of the following characteristics (see List of Items Controlled)
III: 9B001
Related Controls: (1) For ~~specially designed~~ production equipment ~~of~~ for systems, subsystems and components controlled by ... see 9B115
IV: 9B001
Related Controls: (1) ... ~~usable in "missiles"~~ see 9B115
(9B115 does not include the words usable in "missiles".)

9B002
MT applies ... described in ~~9A001~~ 9A101
I: 9B002
a ~~Specially designed~~ for ...

I: 9B003
Equipment ~~specially designed~~ for the "production" or test of gas turbine brush seals ~~designed to operate~~ operating at tip speeds ... and temperatures ... and ~~specially designed~~ components ... therefor having any of those characteristics.
VIII: 9B003
... ~~or accessories~~ ...

I: 9B005
On-line (real time) control systems ...~~specially designed for~~ ... having any of the following characteristics ...
a. Wind tunnels ~~designed~~ for speeds of Mach 1.2 or more;
II: 9B005
a Note: 9B005.a does not control wind tunnels ~~specially designed~~ for ...
IV: 9B005
... ~~use with~~ ...
c ... ~~capable of~~ for simulating ...

I: 9B006
Acoustic vibration test equipment ... and ~~specially designed~~ quartz heaters therefor
IV: 9B006
... ~~capable of~~ ...

I: 9B007
Equipment ~~specially designed~~ ...

I: 9B008
Transducers ~~specially designed to operate~~ operating at ...

I: 9B009
Tooling ~~specially designed~~ for producing turbine engine powder metallurgy rotor components ... operating at ...
IV: 9B009
... ~~capable of~~ ...

I: 9B010
Equipment ~~specially designed~~ for the production of UAVs and systems, equipment and components having any of the characteristics described in texts controlled by 9A012
VII, VIII: 9B010
... ~~associated~~ systems ...
Unit: ...~~; parts and accessories in $ value~~
.
IV: 9B105
... ~~usable~~ ... ~~capable of~~ ...

I: 9B106
a.2 Incorporating~~, or designed or modified to incorporate,~~ ...
a.2 Technical Note 3. In 9B106.a.2, ~~designed or modified means~~ incorporating includes the environmental chamber ~~provides~~ having ~~appropriate~~ interfaces (e.g., sealing devices) to incorporate ...
IV: 9B106
...~~usable~~ ... ~~capable of~~ ...
a ... ~~capable of~~ ..
Technical Note 1. ... ~~capable of~~ generating ... ~~capable of~~ generating ...

I:: 9B115
~~Specially designed~~ "production equipment"for the systems, sub-systems and components having any of the characteristics in the texts cpntrolled by ...
Definition of "production equipment" in 772.1
... machinery and components therefor, limited to those ~~specially designed or modified~~ for "development" or ... "production"

I: 9B116
~~Specially designed~~ "production facilities" for the systems, sub-systems and components having any of the characteristics in the texts cpntrolled by ...
V: 9B116
Definition of "production facilities" in 772.1:

Means "production equipment" and ~~specially designed~~ "software" "required" therefor integrated into installations for "development" or ... "production"

IV: 9B117
a ~~The capacity to handle~~ Handling ...
b. ~~Capable of~~ simultaneously measuring ...

VII: 9B990
... ~~parts and~~ ...
X: 9B990
Vibration and test equipment, and specially designed ... components~~, n.e.s.~~ therefor

I: 9B991
~~Specially designed~~ equipment, tooling or fixtures, ... ~~as described in the~~ having any of the following characteristics (see List of Items Controlled) for manufacturing or measuring gas turbine blades, vanes, or tip shroud castings.
III: 9D001
Related Controls: ~~(1) "Software" "required" for the "development" of items controlled by 9A004 is subject to the export licensing authority of the U.S. Department of State ... (2) "Software" "required" for the "development" of equipment or "technology" subject to the export licensing authority of the U.S. Department of State, Directorate of Defense Trade Controls is also subject to the same licensing jurisdiction.~~...
(Such software is controlled by 9B116.)
V: 9D001
"Software" ~~specially designed or modified~~ "required" for ...
STA: License Exception STA may not be used to ship or transmit "software" ~~specially designed or modified~~ controlled by 9D001 for the "development" of equipment or "technology" specified by ...

III: 9D002
Related Controls: ~~(1) "Software" "required" for the "production" of items controlled by 9A004 is subject to the export licensing authority of the U.S. Department of State ... (2) "Software" "required" for the "production" of equipment or "technology" subject to the export licensing authority of the U.S. Department of State, Directorate of Defense Trade Controls is also subject to the same licensing jurisdiction~~. ...
(Such software is controlled by 9B116.)
V: 9D002
"Software" ~~specially designed or modified~~ "required" for the "production" of ...

III: 9D003
Related Controls:... (2) "Software" ~~"required"~~ as defined in the USML for the "use" of equipment or "technology" subject to the export licensing authority of the U.S. Department of State, Directorate of Defense Trade Controls is also subject to the same licensing jurisdiction....

V: 9D003
Software" ~~specially designed or modified~~ "required" for the "use" of ... (FADEC) for

I: 9D004
f. ... ~~design~~ develop the internal cooling passages of aero gas turbine engine blades ...
IV: 9D004
b. ... ~~capable of~~ ...
V: 9D004
b. ... ~~specially designed~~ "required" ...
c. ... ~~specially designed~~ "required" ...
e. ... ~~specially designed or modified~~ "required" ...
f. ... ~~specially designed~~ "required"
g.1. ... ~~specially designed~~ "required" ...

V: 9D101
"Software" ~~specially designed or modified~~ "required" for ...

III: 9D103
"Software" ~~specially designed~~ as defined in the USML for ...

III: 9D104
Related Controls: "Software" as defined in the USML for commodities controlled by ... are subject to the export licensing authority of the U.S. Department of State ....
V: 9D104
"Software" ~~specially designed or modified~~ "required" for ...

III: 9D105
"Software" that coordinates the function of more than one subsystem ~~specially designed or modified~~ as defined in the USML for "use" in "missiles"

V: 9D990
"Software",.~~n.e.s.,~~ "required" for the "development" or "production" of 9A990 or 9B990.

V: 9D991
"Software" "required" for the "development" or "production" of ...

III: 9E001
Related Controls: ... (2) The "technology"~~required~~ as defined in the USML for the "development" of equipment controlled by 9A004, is subject to the export licensing authority of the U.S. Department of State ... (3) "Technology, ~~required~~ as defined in the USML for the "development" of equipment or "software" subject to the export licensing authority of the U.S. Department of State ... is also subject to the same licensing jurisdiction. ...

III: 9E002

Related Controls: ... (3) The "technology" ~~required~~ as defined in the USML for the "production" of equipment controlled by 9A004, is subject to the export licensing authority of the U.S. Department of State ... (4) "Technology, ~~required~~ as defined in the USML for the "production" of equipment or "software" subject to the export licensing authority of the U.S. Department of State, ... is also subject to the same licensing jurisdiction. ...

I: 9E003

a.2.a Thermally decoupled liners ~~designed to operate~~ operating at 'combustor exit temperature' exceeding ...

a.2.d Liners ~~designed to operate~~ operating at 'combustor exit temperature' exceeding ...

a.3.a ... ~~designed to operate~~ operating ...

a.4 ... ~~designed to operate~~ operating ...

f.3 ... fuel injector systems ~~with a specially designed multifuel~~ for more than one type of fuel (e.g. diesel or jet ~~fuel~~) ...

f.3.b Electronic control features ~~specially designed~~ for switching governor characteristics ...

i.2 ... for components ~~unique to the adjustable flow path system and that maintain~~ that adjusts flow path and maintains engine stability

i.3 "Development" "technology for the control law algorithms, including "source code", ~~unique to the adjustable flow path system and that maintain~~ that adjusts flow path and maintains engine stability

II: 9E003

h Note: 9E003.h does not apply to technical data ~~related to~~ for engine-aircraft integration ~~required by~~ which the civil aviation certification authorities require to be published ... or for interface functions ...

III: 9E003

Related Controls: (1) Hot section "technology" ~~specifically designed, modified or equipped for military uses or purposes or developed principally with U.S. Department of Defense funding~~ as defined on the USML is subject to the licensing authority of the U.S. Department of State

IV: 9E003

b.1 ... ~~capable of~~ transmitting ...

f.3 ... ~~capability~~ ...

j ... ~~used in~~ ...

V: 9E003

e. "Technology" "required" for ...

f.1 ~~"Technology" "required" for the production of~~ engine systems having ...

f.2 ~~"Technology" "required" for the production of~~ turbocharger systems with ...

f.3 ~~"Technology" "required" for the production of~~ fuel injector systems ~~with a specially designed multifuel~~ for more than one type of fuel (e.g. diesel or jet ~~fuel~~) ...

i "Technology" "required" for adjustable flow path systems ~~designed~~ to maintain engine stability ...

j "Technology" not otherwise controlled in 9E003.a.1, through a.8. a.10, ~~and~~ or .h ~~and~~

~~used in~~ "required" for the "development", "production", or overhaul of hot section ... components of civil derivatives of military engines controlled on the U.S. Munitions List.

VII: 9E003

j ... ~~parts and~~ ...

III: 9E101

Related Controls: "Technology" ... ~~specially designed~~ as defined in the USML for ~~use in~~ missile systems and subsystems ... are subject to the export licensing authority of the U.S. Department of State ...

III: 9E102

Related Controls: ... (2) "Technology" ... ~~specially designed~~ as defined in the USML for ~~use in~~ missile systems ... are subject to the export licensing authority of the U. S. Department of State ...

V: 9E990

"Technology", ~~n.e.s.~~ "required" for the "development", "production", or "use" of equipment controlled by 9A990 or 9B990

V: 9E991

"Technology", ~~n.e.s.~~ "required" for the "development", "production", or "use" of equipment controlled by 9A991 or 9B991

V: 9E993

Other "required" "technology"...