Defence and Strategic Goods List Amendment 2012 (No. 1)[1]

Customs Act 1901

I, Stephen Smith, Minister for Defence, make the following list under paragraph 112 (2A) (aa) of the *Customs Act 1901*.

Dated 15 November 2012

STEPHEN SMITH
Minister for Defence

1 Name of list

This list is the *Defence and Strategic Goods List Amendment 2012 (No. 1)*.

2 Commencement

This list commences on the day after it is registered.

3 Amendment of Defence and Strategic Goods List

For paragraph 112 (2A) (aa) of the *Customs Act 1901*, the Defence and Strategic Goods List, mentioned in regulation 13E of the *Customs (Prohibited Exports) Regulations 1958*, is amended as set out in Schedule 1.

Note Under regulation 13E of the *Customs (Prohibited Exports) Regulations 1958*, the Defence and Strategic Goods List is recognised as part of Australia's export controls.

Schedule 1 Amendments

(section 3)

[1] Part 1, ML2.c

substitute

c. Weapons sights and weapon sight mounts, having all of the following:
   1. Specially designed for military use; and
   2. Specially designed for weapons specified in ML2.a.;

[2] Part 1, ML4.b, including the notes

substitute

b. Equipment having all of the following:
   1. Specially designed for military use; and
   2. Specially designed for 'activities' relating to any of the following:
      a. Items specified by ML4.a.; or
      b. Improvised Explosive Devices (IEDs).

      Technical Note:

      For the purpose of ML4.b.2., 'activities' applies to handling, launching, laying, controlling, discharging, detonating, activating, powering with one-time operational output, decoying, jamming, sweeping, detecting, disrupting or disposing.

   Note 1: ML4.b. includes:
      a. Mobile gas liquefying equipment capable of producing 1,000 kg or more per day of gas in liquid form;
      b. Buoyant electric conducting cable suitable for sweeping magnetic mines.

   Note 2: ML4.b. does not apply to hand-held devices limited by design solely to the detection of metal objects and incapable of distinguishing between mines and other metal objects.

[3] Part 1, ML6.b, including the notes

substitute

b. Other ground vehicles and components, as follows:
   1. All-wheel drive vehicles capable of off-road use which have been manufactured or fitted with materials or components to provide ballistic protection to level III (NIJ 0108.01, September 1985, or comparable national standard) or better;
   2. Components having all of the following:
      a. Specially designed for vehicles specified in ML6.b.1.; and

b. Providing ballistic protection to level III (NIJ 0108.01, September 1985, or comparable national standard) or better.

N.B. *See also ML13.a.*

Note 1: *ML6.a. includes:*

a. *Tanks and other military armed vehicles and military vehicles fitted with mountings for arms or equipment for mine laying or the launching of munitions specified by ML4;*

b. *Armoured vehicles;*

c. *Amphibious and deep water fording vehicles;*

d. *Recovery vehicles and vehicles for towing or transporting ammunition or weapon systems and associated load handling equipment.*

Note 2: *Modification of a ground vehicle for military use specified by ML6.a. entails a structural, electrical or mechanical change involving one or more components that are specially designed for military use. Such components include:*

a. *Pneumatic tyre casings of a kind specially designed to be bullet-proof;*

b. *Armoured protection of vital parts, (e.g. fuel tanks or vehicle cabs);*

c. *Special reinforcements or mountings for weapons;*

d. *Black-out lighting.*

Note 3: *ML6. does not apply to civil automobiles, or trucks designed or modified for transporting money or valuables, having armoured or ballistic protection.*

Note 4: *ML6. does not apply to vehicles that meet all of the following:*

a. *Were manufactured before 1946;*

b. *Do not have items specified by the Munitions List and manufactured after 1945, except for reproductions of original components or accessories for the vehicle; and*

c. *Do not incorporate weapons specified in ML1., ML2. or ML4. unless they are inoperable and incapable of discharging a projectile.*

[4] Part 1, ML7.b.1

substitute

1. CW nerve agents:
   a. O-Alkyl (equal to or less than C_{10}, including cycloalkyl) alkyl (Methyl, Ethyl, n-Propyl or Isopropyl) - phosphonofluoridates, such as:
      1. Sarin (GB):O-Isopropyl methylphosphonofluoridate (CAS 107–44–8); and
      2. Soman (GD):O-Pinacolyl methylphosphonofluoridate (CAS 96–64–0);
   b. O-Alkyl (equal to or less than C10, including cycloalkyl) N,N-dialkyl (Methyl, Ethyl, n-Propyl or Isopropyl) phosphoramidocyanidates, such as:

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1. Tabun (GA):O-Ethyl N,N-dimethylphosphoramidocyanidate (CAS 77–81–6);

c. O-Alkyl (H or equal to or less than C10, including cycloalkyl) S-2-dialkyl (Methyl, Ethyl, n-Propyl or Isopropyl)-aminoethyl alkyl (Methyl, Ethyl, n-Propyl or Isopropyl) phosphonothiolates and corresponding alkylated and protonated salts, such as:

1. VX: O-Ethyl S-2-diisopropylaminoethyl methyl phosphonothiolate (CAS 50782–69–9);

[5] Part 1, ML7.g

omit

N.B.: See also 1.A.4. on the Dual-Use List.

insert

N.B.: See also 1A004 on the Dual-Use List.

[6] Part 1, ML7.i , except the notes

substitute

i. "Biocatalysts" for the decontamination or degradation of CW agents, and biological systems therefor, as follows:

1. "Biocatalysts" specially designed for the decontamination or degradation of CW agents specified by ML7.b. resulting from directed laboratory selection or genetic manipulation of biological systems;

2. Biological systems containing the genetic information specific to the production of "biocatalysts" specified by ML7.i.1., as follows:

a. "Expression vectors";

b. Viruses;

c. Cultures of cells.

[7] Part 1, ML8

omit

N.B. 1: See also 1.C.11. on the Dual-Use List.

N.B. 2: For charges and devices, see ML4 and 1.A.8. on the Dual-Use List.

insert

N.B. 1: See also 1C011 on the Dual-Use List.

N.B. 2: For charges and devices, see ML4 and 1A008 on the Dual-Use List.

[8] Part 1, ML8, after note 4

insert

Note 5: ML8.c.5.b. only applies to metal fuels in particle form when they are mixed with other substances to form a mixture formulated for military purposes such as liquid propellant slurries, solid propellants, or pyrotechnic mixtures.

[9] Part 1, ML8, after note 6

insert

Note 7: ML8. does not apply to ammonium perchlorate (ML8.d.2.) and NTO (ML8.a.18.), specially shaped and formulated for civil-use gas generation devices and meeting all of the following:

a. Compounded or mixed, with non-active thermoset binders or plasticizers;

b. Having a maximum of 80% ammonium perchlorate (ML8.d.2.) in mass of active material;

c. Having less than or equal to 4 g of NTO (ML8.a.18.); and

d. Having an individual mass of less than 250 g.

[10] Part 1, ML10

substitute

ML10. "Aircraft", "lighter-than-air vehicles", "Unmanned Aerial Vehicles" ("UAVs"), aero-engines and "aircraft" equipment, related equipment, and components, as follows, specially designed or modified for military use:

N.B. For guidance and navigation equipment, see ML11.

a. Manned "aircraft" and "lighter-than-air vehicles", and specially designed components therefor;

b. Not used;

c. Unmanned aircraft and related equipment, as follows, and specially designed components therefor:

1. "UAVs", Remotely Piloted Air Vehicles (RPVs), autonomous programmable vehicles and unmanned "lighter-than-air vehicles";

2. Launchers, recovery equipment and ground support equipment;

3. Equipment designed for command or control;

d. Propulsion aero-engines and specially designed components therefor;

e. Airborne equipment, including airborne refuelling equipment, specially designed for use with the "aircraft" specified by ML10.a. or the aero-engines specified by ML10.d., and specially designed components therefor;

f. Pressure refuellers, pressure refuelling equipment, equipment specially designed to facilitate operations in confined areas and ground equipment, developed specially for "aircraft" specified by ML10.a. or for aero-engines specified by ML10.d.;

g. Military crash helmets and protective masks, and specially designed components therefor, pressurised breathing equipment and partial pressure suits for use in "aircraft", anti-g suits, liquid oxygen converters used for "aircraft" or missiles, and catapults and cartridge actuated devices, for emergency escape of personnel from "aircraft";

h. Parachutes, paragliders and related equipment, as follows, and specially designed components therefor:

1. Parachutes not specified elsewhere in the Munitions List;

2. Paragliders;

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3. Equipment specially designed for high altitude parachutists (e.g. suits, special helmets, breathing systems, navigation equipment);

i. Controlled opening equipment or automatic piloting systems, designed for parachuted loads.

Note 1: ML10.a. does not apply to "aircraft" and "lighter-than-air vehicles" or variants of those "aircraft", specially designed for military use and which are all of the following:

a. Not a combat aircraft;

b. Not configured for military use and not fitted with equipment or attachments specially designed or modified for military use; and

c. Certified for civil use by the civil aviation authority in a participating state.

Note 2: ML10.d. does not apply to:

a. Aero-engines designed or modified for military use which have been certified by civil aviation authorities in a participating state for use in "civil aircraft", or specially designed components therefor;

b. Reciprocating engines or specially designed components therefor, except those specially designed for "UAVs".

Note 3: For the purposes of ML10.a. and ML10.d., specially designed components and related equipment for non-military "aircraft" or aero-engines modified for military use applies only to those military components and to military related equipment required for the modification to military use.

Note 4: For the purposes of ML10.a., military use includes combat, military reconnaissance, assault, military training, logistics support, and transporting and airdropping troops or military equipment.

Note 5: ML10.a. does not apply to "aircraft" that meet all of the following:

a. Were first manufactured before 1946;

b. Do not incorporate items specified by the Munitions List, unless the items are required to meet safety or airworthiness standards of a participating state; and

c. Do not incorporate weapons specified by the Munitions List, unless inoperable and incapable of being returned to operation.

[11] Part 1, ML13

substitute

ML13. Armoured or protective equipment, constructions and components, as follows:

a. Armoured plate, having any of the following:

1. Manufactured to comply with a military standard or specification; or

2. Suitable for military use;

N.B.: For body armour plate, see ML13.d.2.

b. Constructions of metallic or non-metallic materials, or combinations thereof, specially designed to provide ballistic protection for military systems, and specially designed components therefor;

c. Helmets manufactured according to military standards or specifications, or comparable national standards, and specially designed components therefor (i.e. helmet shell, liner and comfort pads);

d. Body armour or protective garments, and components therefor, as follows:

1. Soft body armour or protective garments, manufactured to military standards or specifications, or to their equivalents, and specially designed components therefor;

Note: For the purposes of ML13.d.1., military standards or specifications include, at a minimum, specifications for fragmentation protection.

2. Hard body armour plates providing ballistic protection equal to or greater than level III (NIJ 0101.06, July 2008) or national equivalents.

Note 1: ML13.b. includes materials specially designed to form explosive reactive armour or to construct military shelters.

Note 2: ML13.c. does not apply to conventional steel helmets, neither modified or designed to accept, nor equipped with any type of accessory device.

Note 3: ML13.c. and ML13.d. do not apply to helmets, body armour or protective garments, when accompanying their user for the user's own personal protection.

Note 4: The only helmets specially designed for bomb disposal personnel that are specified by ML13. are those specially designed for military use.

N.B. 1: See also 1A005 on the Dual-Use List.

N.B. 2: For "fibrous or filamentary materials" used in the manufacture of body armour and helmets, see 1C010 on the Dual-Use List.

[12] Part 1, ML15

omit

N.B.: See also 6.A.2.a.2. and 6.A.2.b. on the Dual-Use List.

insert

N.B.: See also 6A002.a.2. and 6A002.b. on the Dual-Use List.

[13] Part 1, ML16

substitute

ML16. Forgings, castings and other unfinished products, specially designed for items specified by ML1. to ML4., ML6., ML9., ML10., ML12. or ML19.

Note: ML16. applies to unfinished products when they are identifiable by material composition, geometry or function.

[14] Part 1, ML19

substitute

ML19. Directed Energy Weapon (DEW) systems, related or countermeasure equipment and test models, as follows, and specially designed components therefor:

a. "Laser" systems specially designed for destruction or effecting mission-abort of a target;

b. Particle beam systems capable of destruction or effecting mission-abort of a target;

c. High power Radio-Frequency (RF) systems capable of destruction or effecting mission-abort of a target;

d. Equipment specially designed for the detection or identification of, or defence against, systems specified by ML19.a. to ML19.c.;

e. Physical test models for the systems, equipment and components, specified by ML19.;

f. "Laser" systems specially designed to cause permanent blindness to unenhanced vision, i.e. to the naked eye or to the eye with corrective eyesight devices.

Note 1: DEW systems specified by ML19. include systems whose capability is derived from the controlled application of:

a. "Lasers" of sufficient power to effect destruction similar to the manner of conventional ammunition;

b. Particle accelerators which project a charged or neutral particle beam with destructive power;

c. High pulsed power or high average power radio frequency beam transmitters, which produce fields sufficiently intense to disable electronic circuitry at a distant target.

Note 2: ML19. includes the following when specially designed for DEW systems:

a. Prime power generation, energy storage, switching, power conditioning or fuel-handling equipment;

b. Target acquisition or tracking systems;

c. Systems capable of assessing target damage, destruction or mission-abort;

d. Beam-handling, propagation or pointing equipment;

e. Equipment with rapid beam slew capability for rapid multiple target operations;

f. Adaptive optics and phase conjugators;

g. Current injectors for negative hydrogen ion beams;

h. "Space-qualified" accelerator components;

i. Negative ion beam funnelling equipment;

j. Equipment for controlling and slewing a high energy ion beam;

k. "Space qualified" foils for neutralising negative hydrogen isotope beams.

[15] Part 2, category 1, 1A001

substitute

1A001 Components made from fluorinated compounds, as follows:

a. Seals, gaskets, sealants or fuel bladders, specially designed for "aircraft" or aerospace use, made from more than 50% by weight of any of the materials specified in 1C009.b. or 1C009.c.;

b. Piezoelectric polymers and copolymers, made from vinylidene fluoride (CAS 75–38–7) materials, specified in 1C009.a., having all of the following:

1. In sheet or film form; and
2. With a thickness exceeding 200 μm.

[16] Part 2, category 1, 1A002, after note 3

insert

Note 4: 1A002 does not control finished items specially designed for a specific application.

[17] Part 2, category 1, 1A004, note

substitute

Note: 1A004 does not control:

a. Personal radiation monitoring dosimeters;

b. Equipment limited by design or function to protect against hazards specific to residential safety or civil industries, including:

1. mining;
2. quarrying;
3. agriculture;
4. pharmaceutical;
5. medical;
6. veterinary;
7. environmental;
8. waste management;
9. food industry.

[18] Part 2, category 1, 1B001.c, note

omit

[19] Part 2, category 1, after 1B001.f

insert

g. Tow-placement machines, of which the motions for positioning and laying tows or sheets are coordinated and programmed in two or more 'primary servo positioning' axes, specially designed for the manufacture of "composite" airframe or "missile" structures.

[20] Part 2, category 1, 1C001.a, note 1, para c.2

omit

2. Tensile strength less than 7 x 106 N/m2; and

insert

2. Tensile strength less than 7 x 10^6 N/m^2; and

[21] Part 2, category 1, 1C002.b

omit

b. Metal alloys, as follows, made from material specified in 1C002.c.:

insert

b. Metal alloys, as follows, made from the powder or particulate material specified in 1C002.c.:

[22] Part 2, category 1, 1C006.c

substitute

c. Damping or flotation fluids having all of the following:
   1. Purity exceeding 99.8%;
   2. Containing less than 25 particles of 200 µm or larger in size per 100 ml; and
   3. Made from at least 85% of any of the following:
      a. Dibromotetrafluoroethane (CAS 25497–30–7, 124–73–2, 27336–23–8);
      b. Polychlorotrifluoroethylene (oily and waxy modifications only); or
      c. Polybromotrifluoroethylene;

[23] Part 2, category 1, 1C008.a.2

substitute

2. Aromatic polyamide-imides (PAI) having a 'glass transition temperature (Tg)' exceeding 563 K (290°C);

[24] Part 2, category 1, 1C008.b.1 and 1C008.b.2

substitute

1. Any of the following compounds:
   a. Phenylene, biphenylene or naphthalene; or
   b. Methyl, tertiary-butyl or phenyl substituted phenylene, biphenylene or naphthalene; and
2. Any of the following acids:
   a. Terephthalic acid (CAS 100–21–0);
   b. 6–hydroxy–2 naphthoic acid (CAS 16712–64–4); or
   c. 4–hydroxybenzoic acid (CAS 99–96–7);

[25] Part 2, category 1, 1C008, technical note

substitute

Technical Note:

The 'glass transition temperature (Tg)' for 1C008 materials is determined using the method described in ISO 11357–2 (1999) or national equivalents. In addition, for 1C008.a.2. materials, 'glass transition temperature (Tg)' is determined on a PAI test specimen having initially been cured at a minimum temperature of 310°C for a minimum of 15 minutes.

[26] Part 2, category 1, 1C010.b, including the note and technical note

substitute

b. Carbon "fibrous or filamentary materials", having all of the following:
   1. "Specific modulus" exceeding 14.65 x 10^6 m; and
   2. "Specific tensile strength" exceeding 26.82 x 10^4 m;

Note: 1C010.b. does not control:

a. "Fibrous or filamentary materials", for the repair of "civil aircraft" structures or laminates, having all of the following:
   1. An area not exceeding 1 m^2;
   2. A length not exceeding 2.5 m; and
   3. A width exceeding 15 mm.

b. Mechanically chopped, milled or cut carbon "fibrous or filamentary materials" 25.0 mm or less in length.

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[27] Part 2, category 1, 1C010.e

substitute

e. Fully or partially resin-impregnated or pitch-impregnated "fibrous or filamentary materials" (prepregs), metal or carbon-coated "fibrous or filamentary materials" (preforms) or "carbon fibre preforms", having all of the following:

1. Having any of the following:
   a. Inorganic "fibrous or filamentary materials" specified in 1C010.c.; or
   b. Organic or carbon "fibrous or filamentary materials", having all of the following:
      1. "Specific modulus" exceeding 10.15×10^6 m; and
      2. "Specific tensile strength" exceeding 17.7×10^4 m; and
2. Having any of the following:
   a. Resin or pitch specified in 1C008 or 1C009.b.;
   b. 'Dynamic Mechanical Analysis glass transition temperature (DMA Tg)' equal to or exceeding 453 K (180ºC) and having a phenolic resin; or
   c. 'Dynamic Mechanical Analysis glass transition temperature (DMA Tg)' equal to or exceeding 505 K (232ºC) and having a resin or pitch, not specified in 1C008 or 1C009.b., and not being a phenolic resin;

Note 1: Metal or carbon-coated "fibrous or filamentary materials" (preforms) or carbon fibre preforms, not impregnated with resin or pitch, are specified by "fibrous or filamentary materials" in 1C010.a., 1C010.b. or 1C010.c.

Note 2: 1C010.e. does not control:
a. Epoxy resin "matrix" impregnated carbon "fibrous or filamentary materials" (prepregs) for the repair of "civil aircraft" structures or laminates, having all the following:
1. An area not exceeding 1 m^2;
2. A length not exceeding 2.5 m; and
3. A width exceeding 15 mm.
b. Fully or partially resin-impregnated or pitch-impregnated mechanically chopped, milled or cut carbon "fibrous or filamentary materials" 25.0 mm or less in length when using a resin or pitch other than those specified by 1C008. or 1C009.b.

Technical Note:

The 'Dynamic Mechanical Analysis glass transition temperature (DMA T_g)' for materials specified by 1C010.e. is determined using the method described in ASTM D 7028–07, or equivalent national standard, on a dry test specimen. In the case of thermoset materials, degree of cure of a dry test specimen shall be a minimum of 90% as defined by ASTM E 2160–04 or equivalent national standard.

[28] Part 2, category 1, 1C011.b

substitute

b. Boron or boron alloys, with a particle size of 60 μm or less, as follows:

1. Boron with a purity of 85% by weight or more;
2. Boron alloys with a boron content of 85% by weight or more;

[29] Part 2, category 1, after 1C011.d

insert

N.B.: SEE ALSO MUNITIONS LIST CONTROLS FOR METAL POWDERS MIXED WITH OTHER SUBSTANCES TO FORM A MIXTURE FORMULATED FOR MILITARY PURPOSES.

[30] Part 2, category 1, 1C111.a.4.h

substitute

h. Hydrazinium azide (CAS 14546–44–2);

[31] Part 2, category 1, 1C111.a.4.n

substitute

n. Hydrazinium diperchlorate (CAS 13812–39–0);

[32] Part 2, category 1, after 1C111.a

insert

5. High energy density materials, other than that specified in the Military Goods Controls, usable in 'missiles' or unmanned aerial vehicles specified in 9A012:

a. Mixed fuel that incorporates both solid and liquid fuels, such as boron slurry, having a mass-based energy density of 40 x 10^6 J/kg or greater;

b. Other high energy density fuels and fuel additives (e.g. cubane, ionic solutions, JP–10) having a volume-based energy density of 37.5 x 10^9 J/m^3 or greater, measured at 20°C and one atmosphere (101.325 kPa) pressure;

Note: 1C111.a.5.b. does not control fossil refined fuels and biofuels produced from vegetables, including fuels for engines certified for use in civil aviation, unless specially formulated for 'missiles' or unmanned aerial vehicles specified in 9A012.

Technical Note:

In 1C111.a.5., 'missile' means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.

[33] Part 2, category 1, 1C111.c.6.h

substitute

h. Diethyl ferrocene (CAS 1273–97–8);

[34] Part 2, category 1, 1C111.c.6.l

substitute

l. Acetyl ferrocene (CAS 1271–55–2) / 1,1'-diacetyl ferrocene (CAS 1273–94–5);

[35] Part 2, category 1, 1C111.c.6.o

substitute

o. Other ferrocene derivatives usable as rocket propellant burning rate modifiers, other than those specified in the Military Goods Controls.

Note: 1C111.c.6.o. does not control ferrocene derivatives that contain a six carbon aromatic functional group attached to the ferrocene molecule.

[36] Part 2, category 1, 1C117

substitute

1C117 Materials for the fabrication of 'missile' components as follows:

a. Tungsten and alloys in particulate form with a tungsten content of 97% by weight or more and a particle size of 50 x 10^{-6} m (50 µm) or less;

b. Molybdenum and alloys in particulate form with a molybdenum content of 97% by weight or more and a particle size of 50 x 10^{-6} m (50 µm) or less;

c. Tungsten materials in solid form having all of the following:

1. Any of the following material compositions:

a. Tungsten and alloys containing 97% by weight or more of tungsten;

b. Copper infiltrated tungsten containing 80% by weight or more of tungsten; or

c. Silver infiltrated tungsten containing 80% by weight or more of tungsten; and

2. Able to be machined to any of the following products:

a. Cylinders having a diameter of 120 mm or greater and a length of 50 mm or greater;

b. Tubes having an inner diameter of 65 mm or greater and a wall thickness of 25 mm or greater and a length of 50 mm or greater; or

c. Blocks having a size of 120 mm by 120 mm by 50 mm or greater.

Technical Note:

In 1C117, 'missile' means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.

[37] Part 2, category 1, 1C230

substitute

1C230 Beryllium metal, alloys containing more than 50% beryllium by weight, beryllium compounds, manufactures thereof, and waste or scrap of any of the foregoing, other than that specified in the Munitions List controls.

N.B.: SEE ALSO MUNITIONS LIST CONTROLS.

[38] Part 2, category 1, 1C351.a

substitute

a. Viruses, whether natural, enhanced or modified, either in the form of "isolated live cultures" or as material including living material which has been deliberately inoculated or contaminated with such cultures, as follows:

1. Andes virus;
2. Chapare virus;
3. Chikungunya virus;
4. Choclo virus;
5. Congo-Crimean haemorrhagic fever virus;
6. Dengue fever virus;
7. Dobrava-Belgrade virus;
8. Eastern equine encephalitis virus;
9. Ebola virus;
10. Guanarito virus;
11. Hantaan virus;
12. Hendra virus (Equine morbillivirus);
13. Japanese encephalitis virus;
14. Junin virus;
15. Kyasanur Forest virus;
16. Laguna Negra virus;
17. Lassa fever virus;
18. Louping ill virus;
19. Lujo virus;
20. Lymphocytic choriomeningitis virus;
21. Machupo virus;

22. Marburg virus;
23. Monkey pox virus;
24. Murray Valley encephalitis virus;
25. Nipah virus;
26. Omsk haemorrhagic fever virus;
27. Oropouche virus;
28. Powassan virus;
29. Rift Valley fever virus;
30. Rocio virus;
31. Sabia virus;
32. Seoul virus;
33. Sin nombre virus;
34. St Louis encephalitis virus;
35. Tick-borne encephalitis virus (Russian Spring-Summer encephalitis virus);
36. Variola virus;
37. Venezuelan equine encephalitis virus;
38. Western equine encephalitis virus;
39. Yellow fever virus;

[39] Part 2, category 2, 2A001

substitute

2A001 Anti-friction bearings and bearing systems, as follows, and components therefor:

N.B.: SEE ALSO 2A101.

Note: 2A001 does not control balls with tolerances specified by the manufacturer in accordance with ISO 3290 as grade 5 or worse.

a. Ball bearings and solid roller bearings, having all tolerances specified by the manufacturer in accordance with ISO 492 Tolerance Class 4 (or national equivalents), or better, and having both rings and rolling elements (ISO 5593), made from monel or beryllium;

Note: 2A001.a. does not control tapered roller bearings.

b. Not used;

c. Active magnetic bearing systems using any of the following:
   1. Materials with flux densities of 2.0 T or greater and yield strengths greater than 414 MPa;
   2. All-electromagnetic 3D homopolar bias designs for actuators; or
   3. High temperature (450 K (177°C) and above) position sensors.

[40] Part 2, category 2, after 2A001

insert

2A101 Radial ball bearings, other than those specified in 2A001, having all tolerances specified in accordance with ISO 492 Tolerance Class 2 (or ANSI/ABMA Std 20 Tolerance Class ABEC–9 or other national equivalents), or better and having all the following characteristics:

a. An inner ring bore diameter between 12 mm and 50 mm;

b. An outer ring bore diameter between 25 mm and 100 mm; and

c. A width between 10 mm and 20 mm.

[41] Part 2, category 2, 2B, technical notes 5 and 6

substitute

5. 'Stated positioning accuracy' derived from measurements made according to ISO 230/2 (1988)[1] or national equivalents may be used for each machine tool model as an alternative to individual machine tests. 'Stated positioning accuracy' means the accuracy value provided to the competent authorities of the Member State in which the exporter is established as representative of the accuracy of a specific machine model.

Determination of 'stated positioning accuracy':

a. Select five machines of a model to be evaluated;

b. Measure the linear axis accuracies according to ISO 230/2 (1988)[2];

c. Determine the A-values for each axis of each machine. The method of calculating the A-value is described in the ISO standard;

d. Determine the mean value of the A-value of each axis. This mean value Â becomes the stated value of each axis for the model (Âx Ây...);

e. Since the Category 2 list refers to each linear axis there will be as many stated values as there are linear axes;

f. If any axis of a machine model not controlled by 2B001.a. to 2B001.c. or 2B201 has a stated accuracy Â of 6 microns for grinding machines and 8 microns for milling and turning machines or better, the manufacturer should be required to reaffirm the accuracy level once every eighteen months.

[1] Manufacturers calculating positioning accuracy in accordance with ISO 230/2 (1997) should consult the competent authorities of the Member State in which they are established.

[2] Manufacturers calculating positioning accuracy in accordance with ISO 230/2 (1997) should consult the competent authorities of the Member State in which they are established.

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[42] Part 2, category 2, 2B005.d.2 and 2B005.g

omit

in situ

insert

in situ

[43] Part 2, category 2, 2B006.a

substitute

a. Computer controlled or "numerically controlled" Coordinate Measuring Machines (CMM), having a three dimensional (volumetric) maximum permissible error of length measurement ($E_{0,MPE}$) at any point within the operating range of the machine (i.e. within the length of axes) equal to or less (better) than (1.7 + L/1,000) µm (where L is the measured length in mm), according to ISO 10360–2 (2009);

Technical Note:

The $E_{0,MPE}$ of the most accurate configuration of the CMM specified by the manufacturer (e.g. best of the following: probe, stylus length, motion parameters, environment) and with "all compensations available" shall be compared to the 1.7+L/1,000 µm threshold.

N.B.: SEE ALSO 2B206.

[44] Part 2, category 2, 2B201.a and 2B201.a.1

substitute

a. Machine tools for milling, having any of the following characteristics:

1. Positioning accuracies with "all compensations available" equal to or less (better) than 6 µm according to ISO 230/2 (1988)[1] or national equivalents along any linear axis; or

[45] Part 2, category 2, 2B206

substitute

2B206 Dimensional inspection machines, instruments or systems, other than those specified in 2B006, as follows:

a. Computer controlled or "numerically controlled" Coordinate Measuring Machines (CMM) having both of the following characteristics:

1. Two or more axes; and

2. A maximum permissible error of length measurement ($E_{0,MPE}$) along any axis (one dimensional), identified as E_{0X}, E_{0Y}, or E_{0Z}, equal to or less (better) than (1.25 + L/1000) µm (where L is the measured length in mm) at any point within the operating range of the machine (i.e. within the length of the axis), tested according to ISO 10360–2(2009);

b. Systems for simultaneous linear-angular inspection of hemishells, having both of the following characteristics:

1. "Measurement uncertainty" along any linear axis equal to or less (better) than 3.5 µm per 5 mm; and

2. "Angular position deviation" equal to or less than 0.02°.

Note 1: Machine tools that can be used as measuring machines are controlled if they meet or exceed the criteria specified for the machine tool function or the measuring machine function.

Note 2: A machine specified in 2B206 is controlled if it exceeds the control threshold anywhere within its operating range.

Technical Note:

All parameters of measurement values in 2B206 represent plus/minus i.e. not total band.

[46] Part 2, category 2, 2B350.j

substitute

j. Incinerators designed to destroy chemicals specified in 1C350, having specially designed waste supply systems, special handling facilities and an average combustion chamber temperature greater than 1,273 K (1,000°C), in which all surfaces in the waste supply system that come into direct contact with the waste products are made from or lined with any of the following materials:

1. 'Alloys' with more than 25% nickel and 20% chromium by weight;

2. Ceramics; or

3. Nickel or 'alloys' with more than 40% nickel by weight.

Technical Note:

1. 'Carbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is eight percent or more by weight.

2. For the listed materials in the above entries, the term 'alloy' when not accompanied by a specific elemental concentration is understood as identifying those alloys where the identified metal is present in a higher percentage by weight than any other element.

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[47] Part 2, category 2, 2B351

substitute

2B351 Toxic gas monitoring systems and their dedicated detecting components, other than those specified in 1A004, as follows, and detectors, sensor devices, and replaceable sensor cartridges therefor:

a. Designed for continuous operation and usable for the detection of chemical warfare agents or chemicals specified in 1C350, at concentrations of less than 0.3 mg/m^3; or

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

[48] Part 2, category 2, 2E003.f

substitute

f. "Technology" for the application of inorganic overlay coatings or inorganic surface modification coatings (specified in column 3 of the following table) to non-electronic substrates (specified in column 2 of the following table), by processes specified in column 1 of the following table and defined in the Technical Note.

Note: The table and Technical Note appear after 2E301.

N.B.: This table should be read to specify the technology of a particular Coating Process only when the Resultant Coating in column 3 is in a paragraph directly across from the relevant Substrate under column 2. For example, Chemical Vapour Deposition (CVD) coating process technical data are included for the application of silicides to carbon-carbon, ceramic and metal "matrix" "composites" substrates, but are not included for the application of silicides to 'cemented tungsten carbide' (16), 'silicon carbide' (18) substrates. In the second case, the resultant coating is not listed in the paragraph under column 3 directly across from the paragraph under column 2 listing 'cemented tungsten carbide' (16), 'silicon carbide' (18).

[49] Part 2, category 3, 3A001.a.4

omit

[50] Part 2, category 3, 3A001.a.5.a and 3A001.a.5.b

substitute

a. ADCs having any of the following:

N.B. SEE ALSO 3A101

1. A resolution of 8 bit or more, but less than 10 bit, with an output rate greater than 500 million words per second;

2. A resolution of 10 bit or more, but less than 12 bit, with an output rate greater than 300 million words per second;
3. A resolution of 12 bit with an output rate greater than 200 million words per second;
4. A resolution of more than 12 bit, but equal to or less than 14 bit, with an output rate greater than 125 million words per second; or
5. A resolution of more than 14 bit with an output rate greater than 20 million words per second;

Technical Notes:

1. *A resolution of n bit corresponds to a quantisation of 2^n levels.*
2. *The number of bits in the output word is equal to the resolution of the ADC.*
3. *The output rate is the maximum output rate of the converter, regardless of the architecture or oversampling.*
4. *For 'multiple channel ADCs', the outputs are not aggregated and the output rate is the maximum output rate of any single channel.*
5. *For 'interleaved ADCs' or for 'multiple channel ADCs' that are specified to have an interleaved mode of operation, the outputs are aggregated and the output rate is the maximum combined total output rate of all of the outputs.*
6. *Vendors may also refer to the output rate as sampling rate, conversion rate or throughput rate. It is often specified in megahertz (MHz) or mega samples per second (MSPS).*
7. *For the purpose of measuring output rate, one output word per second is equivalent to one Hertz or one sample per second.*
8. *'Multiple channel ADCs' are defined as devices which integrate more than one ADC, designed so that each ADC has a separate analogue input.*
9. *'Interleaved ADCs' are defined as devices which have multiple ADC units that sample the same analogue input at different times such that when the outputs are aggregated, the analogue input has been effectively sampled and converted at a higher sampling rate.*

b. Digital-to-Analogue Converters (DAC) having any of the following:

1. A resolution of 10 bit or more with an 'adjusted update rate' of 3,500 MSPS or greater; or
2. A resolution of 12 bit or more with an 'adjusted update rate' of equal to or greater than 1,250 MSPS and having any of the following:

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a. A settling time less than 9 ns to 0.024% of full scale from a full scale step; or

b. A 'Spurious Free Dynamic Range' (SFDR) greater than 68 dBc (carrier) when synthesising a full scale analogue signal of 100 MHz or the highest full scale analogue signal frequency specified below 100 MHz.

Technical Notes:

1. 'Spurious Free Dynamic Range' (SFDR) is defined as the ratio of the RMS value of the carrier frequency (maximum signal component) at the input of the DAC to the RMS value of the next largest noise or harmonic distortion component at its output.

2. SFDR is determined directly from the specification table or from the characterisation plots of SFDR versus frequency.

3. A signal is defined to be full scale when its amplitude is greater than -3 dBfs (full scale).

4. 'Adjusted update rate' for DACs:

a. For conventional (non-interpolating) DACs, the 'adjusted update rate' is the rate at which the digital signal is converted to an analogue signal and the output analogue values are changed by the DAC. For DACs where the interpolation mode may be bypassed (interpolation factor of one), the DAC should be considered as a conventional (non-interpolating) DAC;

b. For interpolating DACs (oversampling DACs), the 'adjusted update rate' is defined as the DAC update rate divided by the smallest interpolating factor. For interpolating DACs, the 'adjusted update rate' may be referred to by different terms including:

- *input data rate*
- *input word rate*
- *input sample rate*
- *maximum total input bus rate*
- *maximum DAC clock rate for DAC clock input.*

[51] Part 2, category 3, 3A001.b.2 to 3A001.b.4

substitute

2. Microwave "Monolithic Integrated Circuits" (MMIC) power amplifiers having any of the following:

a. Rated for operation at frequencies exceeding 3.2 GHz up to and including 6.8 GHz and with an average output power greater than 4W (36 dBm) with a "fractional bandwidth" greater than 15%;

b. Rated for operation at frequencies exceeding 6.8 GHz up to and including 16 GHz and with an average output power greater than 1W (30 dBm) with a "fractional bandwidth" greater than 10%;

c. Rated for operation at frequencies exceeding 16 GHz up to and including 31.8 GHz and with an average output power greater than 0.8W (29 dBm) with a "fractional bandwidth" greater than 10%;

d. Rated for operation at frequencies exceeding 31.8 GHz up to and including 37.5 GHz and with an average output power greater than 0.1 nW;

e. Rated for operation at frequencies exceeding 37.5 GHz up to and including 43.5 GHz and with an average output power greater than 0.25W (24 dBm) with a "fractional bandwidth" greater than 10%; or

f. Rated for operation at frequencies exceeding 43.5 GHz and with an average output power greater than 0.1 nW;

Note 1: Not used.

Note 2: The control status of the MMIC whose rated operating frequency includes frequencies listed in more than one frequency range, as defined by 3A001.b.2.a. to 3A001.b.2.f., is determined by the lowest average output power control threshold.

Note 3: Notes 1 and 2 in 3A mean that 3A001.b.2. does not control MMICs if they are specially designed for other applications, e.g. telecommunications, radar, automobiles.

3. Discrete microwave transistors having any of the following:

a. Rated for operation at frequencies exceeding 3.2 GHz up to and including 6.8 GHz and having an average output power greater than 60W (47.8 dBm);

b. Rated for operation at frequencies exceeding 6.8 GHz up to and including 31.8 GHz and having an average output power greater than 20W (43 dBm);

c. Rated for operation at frequencies exceeding 31.8 GHz up to and including 37.5 GHz and having an average output power greater than 0.5W (27 dBm);

d. Rated for operation at frequencies exceeding 37.5 GHz up to and including 43.5 GHz and having an average output power greater than 1W (30 dBm); or

e. Rated for operation at frequencies exceeding 43.5 GHz and having an average output power greater than 0.1 nW;

Note: The control status of a transistor whose rated operating frequency includes frequencies listed in more than one frequency range, as defined by 3A001.b.3.a. to 3A001.b.3.e., is determined by the lowest average output power control threshold.

4. Microwave solid state amplifiers and microwave assemblies/modules containing microwave solid state amplifiers, having any of the following:

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a. Rated for operation at frequencies exceeding 3.2 GHz up to and including 6.8 GHz and with an average output power greater than 60W (47.8 dBm) with a "fractional bandwidth" greater than 15%;

b. Rated for operation at frequencies exceeding 6.8 GHz up to and including 31.8 GHz and with an average output power greater than 15W (42 dBm) with a "fractional bandwidth" greater than 10%;

c. Rated for operation at frequencies exceeding 31.8 GHz up to and including 37.5 GHz and with an average output power greater than 0.1 nW;

d. Rated for operation at frequencies exceeding 37.5 GHz up to and including 43.5 GHz and with an average output power greater than 1W (30 dBm) with a "fractional bandwidth" greater than 10%;

e. Rated for operation at frequencies exceeding 43.5 GHz and with an average output power greater than 0.1 nW; or

f. Rated for operation at frequencies exceeding 3.2 GHz and having all of the following:

1. An average output power (in watts), P, greater than 150 divided by the maximum operating frequency (in GHz) squared [$P>150\ W*GHz^2/f_{GHz}^2$];

2. A "fractional bandwidth" of 5% or greater; and

3. Any two sides perpendicular to one another with length d (in cm) equal to or less than 15 divided by the lowest operating frequency in GHz [$d\leq 15cm*GHz/f_{GHz}$];

Technical Note:

3.2 GHz should be used as the lowest operating frequency (f_{GHz}) in the formula in 3A001.b.4.f.3., for amplifiers that have a rated operating range extending downward to 3.2 GHz and below [$d\leq 15cm*GHz/3.2\ GHz$].

N.B.: MMIC power amplifiers should be evaluated against the criteria in 3A001.b.2.

Note 1: Not used.

Note 2: The control status of an item whose rated operating frequency includes frequencies listed in more than one frequency range, as defined by 3A001.b.4.a. to 3A001.b.4.e., is determined by the lowest average output power control threshold.

[52] Part 2, category 3, after 3A001.b.10

insert

11. "Frequency synthesiser" "electronic assemblies" having a "frequency switching time" as specified by any of the following:

a. Less than 312 ps;

b. Less than 100 µs for any frequency change exceeding 1.6 GHz within the synthesised frequency range exceeding 3.2 GHz but not exceeding 10.6 GHz;

c. Less than 250 µs for any frequency change exceeding 550 MHz within the synthesised frequency range exceeding 10.6 GHz but not exceeding 31.8 GHz;

d. Less than 500 µs for any frequency change exceeding 550 MHz within the synthesised frequency range exceeding 31.8 GHz but not exceeding 43.5 GHz; or

e. Less than 1 ms within the synthesised frequency range exceeding 43.5 GHz.

N.B.: For general purpose "signal analysers", signal generators, network analysers and microwave test receivers, see 3A002.c., 3A002.d., 3A002.e. and 3A002.f., respectively.

[53] Part 2, category 3, 3A002.b, including the note

omit

[54] Part 2, category 3, 3A002.c

substitute

c. Radio-frequency "signal analysers" as follows:

1. "Signal analysers" having a 3 dB resolution bandwidth (RBW) exceeding 10 MHz anywhere within the frequency range exceeding 31.8 GHz but not exceeding 37.5 GHz;

2. "Signal analysers" having Displayed Average Noise Level (DANL) less (better) than -150 dBm/Hz anywhere within the frequency range exceeding 43.5 GHz but not exceeding 70 GHz;

3. "Signal analysers" having a frequency exceeding 70 GHz;

4. "Dynamic signal analysers" having a "real-time bandwidth" exceeding 40 MHz;

Note: 3A002.c.4. does not control those "dynamic signal analysers" using only constant percentage bandwidth filters (also known as octave or fractional octave filters).

[55] Part 2, category 3, 3A002.d.4

substitute

4. At synthesised frequencies exceeding 3.2 GHz but not exceeding 70 GHz, and having all of the following:

a. A single sideband (SSB) phase noise, in dBc/Hz, better than $-(126 + 20\log_{10}F - 20\log_{10}f)$ for 10 Hz < F < 10 kHz; and

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b. A single sideband (SSB) phase noise, in dBc/Hz, better than $-(114 + 20\log_{10}F - 20\log_{10}f)$ for $10\ kHz \leq F < 500\ kHz$; or

Technical Note:

In 3A002.d.4., F is the offset from the operating frequency in Hz and f is the operating frequency in MHz.

5. A maximum synthesised frequency exceeding 70 GHz;

Note 1: For the purpose of 3A002.d., frequency synthesised signal generators include arbitrary waveform and function generators.

Note 2: 3A002.d. does not control equipment in which the output frequency is either produced by the addition or subtraction of two or more crystal oscillator frequencies, or by an addition or subtraction followed by a multiplication of the result.

Technical Notes:

1. Arbitrary waveform and function generators are normally specified by sample rate (e.g. GSample/s), which is converted to the RF domain by the Nyquist factor of two. Thus, a 1 GSample/s arbitrary waveform has a direct output capability of 500 MHz. Or, when oversampling is used, the maximum direct output capability is proportionately lower.

2. For the purposes of 3A002.d.1., 'pulse duration' means the time interval between the leading edge of the pulse achieving 90% of the peak and the trailing edge of the pulse achieving 10% of the peak.

[56] Part 2, category 3, 3A228.c

substitute

c. Modules or assemblies with a fast switching function, other than those specified in 3A001.g. or 3A001.h., having all of the following characteristics:

1. Anode peak voltage rating greater than 2 kV;
2. Anode peak current rating of 500 A or more; and
3. Turn-on time of 1 µs or less.

[57] Part 2, category 3, 3B001.c to 3B001.f

substitute

c. Anisotropic plasma dry etching equipment having all of the following:

1. Designed or optimised to produce critical dimensions of 65 nm or less; and
2. Within-wafer non-uniformity equal to or less than 10% 3σ measured with an edge exclusion of 2 mm or less;

d. Plasma enhanced Chemical Vapour Deposition (CVD) equipment as follows:

1. Equipment with cassette-to-cassette operation and load-locks, and designed according to the manufacturer's specifications or optimised for use in the production of semiconductor devices with critical dimensions of 65 nm or less;

2. Equipment specially designed for equipment specified in 3B001.e. and designed according to the manufacturer's specifications or optimised for use in the production of semiconductor devices with critical dimensions of 65 nm or less;

e. Automatic loading multi-chamber central wafer handling systems having all of the following:

1. Interfaces for wafer input and output, to which more than two functionally different 'semiconductor process tools' specified in 3B001.a., 3B001.b., 3B001.c. or 3B001.d. are designed to be connected; and

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

Note: 3B001.e. does not control automatic robotic wafer handling systems specially designed for parallel wafer processing.

Technical Notes:

1. For the purpose of 3B001.e., 'semiconductor process tools' means modular tools that provide physical processes for semiconductor production that are functionally different, such as deposition, etch, implant or thermal processing.

2. For the purpose of 3B001.e., 'sequential multiple wafer processing' means the capability to process each wafer in different 'semiconductor process tools', such as by transferring each wafer from one tool to a second tool and on to a third tool with the automatic loading multi-chamber central wafer handling systems.

f. Lithography equipment as follows:

1. Align and expose step and repeat (direct step on wafer) or step and scan (scanner) equipment for wafer processing using photo-optical or X-ray methods and having any of the following:

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

b. Capable of producing a pattern with a 'Minimum Resolvable Feature size' (MRF) of 95 nm or less;

Technical Note:

The 'minimum resolvable feature size' (MRF) is calculated by the following formula:

$$MRF = \frac{(\text{an exposure light source wavelength in nm}) \times (\text{K factor})}{\text{numerical aperture}}$$

where the K factor = 0.35

2. Imprint lithography equipment capable of producing features of 95 nm or less;

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Note: 3B001.f.2. includes:
- *a. Micro contact printing tools*
- *b. Hot embossing tools*
- *c. Nano-imprint lithography tools*
- *d. Step and flash imprint lithography (S-FIL) tools.*

3. Equipment specially designed for mask making or semiconductor device processing using direct writing methods, having all of the following:
   a. Using deflected focused electron beam, ion beam or "laser" beam; and
   b. Having any of the following:
      1. A spot size smaller than 0.2 µm;
      2. Being capable of producing a pattern with a feature size of less than 1 µm; or
      3. An overlay accuracy of better than ± 0.20 µm (3 sigma);

[58] Part 2, category 3, 3E001

substitute

3E001 "Technology" according to the General Technology Note for the "development" or "production" of equipment or materials specified in 3A, 3B or 3C;

Note 1: 3E001 does not control "technology" for the "production" of equipment or components controlled by 3A003.

Note 2: 3E001 does not control "technology" for the "development" or "production" of integrated circuits specified in 3A001.a.3. to 3A001.a.12., having all of the following:
- *a. Using "technology" at or above 0.130 µm; and*
- *b. Incorporating multi-layer structures with three or fewer metal layers.*

[59] Part 2, category 4, 4A001

substitute

4A001 Electronic computers and related equipment, having any of the following and "electronic assemblies" and specially designed components therefor:

N.B.: SEE ALSO 4A101.

a. Specially designed to have any of the following:
   1. Rated for operation at an ambient temperature below 228 K (-45°C) or above 358 K (85°C); or

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

2. Radiation hardened to exceed any of the following specifications:

   a. Total Dose 5×10^3 Gy (silicon);

   b. Dose Rate Upset 5×10^6 Gy (silicon)/s; or

   c. Single Event Upset 1×10^{-8} Error/bit/day;

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

b. Not used.

[60] Part 2, category 4, 4A003.a and 4A003.b

substitute

a. Designed or modified for "fault tolerance";

Note: For the purposes of 4A003.a., "digital computers" and related equipment are not considered to be designed or modified for "fault tolerance" if they utilise any of the following:

1. Error detection or correction algorithms in "main storage";

2. The interconnection of two "digital computers" so that, if the active central processing unit fails, an idling but mirroring central processing unit can continue the system's functioning;

3. The interconnection of two central processing units by data channels or by using shared storage to permit one central processing unit to perform other work until the second central processing unit fails, at which time the first central processing unit takes over in order to continue the system's functioning; or

4. The synchronisation of two central processing units by "software" so that one central processing unit recognises when the other central processing unit fails and recovers tasks from the failing unit.

b. "Digital computers" having an "Adjusted Peak Performance" ("APP") exceeding 1.5 Weighted TeraFLOPS (WT);

[61] Part 2, category 4, 4D001, 4D002 and 4D003

substitute

4D001 "Software" as follows:

a. "Software" specially designed or modified for the "development", "production" or "use" of equipment or "software" specified in 4A001 to 4A004, or 4D;

b. "Software", other than that specified in 4D001.a., specially designed or modified for the "development" or "production" of equipment as follows:

1. "Digital computers" having an "Adjusted Peak Performance" ("APP") exceeding 0.25 Weighted TeraFLOPS (WT);
2. "Electronic assemblies" specially designed or modified for enhancing performance by aggregation of processors so that the "APP" of the aggregation exceeds the limit in 4D001.b.1.;

4D002 "Software" specially designed or modified to support "technology" specified in 4E.

4D003 Not used.

[62] Part 2, category 4, 4E001

substitute

4E001 a. "Technology" according to the General Technology Note, for the "development", "production" or "use" of equipment or "software" specified in 4A or 4D.

b. "Technology", other than that specified in 4E001.a., specially designed or modified for the "development" or "production" of equipment as follows:

1. "Digital computers" having an "Adjusted Peak Performance" ("APP") exceeding 0.25 Weighted TeraFLOPS (WT);
2. "Electronic assemblies" specially designed or modified for enhancing performance by aggregation of processors so that the "APP" of the aggregation exceeds the limit in 4E001.b.1.

[63] Part 2, category 5, Part 1

substitute

Part 1—TELECOMMUNICATIONS

Note 1: The control status of components, "lasers", test and "production" equipment and "software" therefor which are specially designed for telecommunications equipment or systems is determined in Category 5, Part 1.

N.B.1: For "lasers" specially designed for telecommunications equipment or systems, see 6A005.

N.B.2: See also Category 5, Part 2 for equipment, components, and "software" performing or incorporating "information security" functions.

Note 2: "Digital computers", related equipment or "software", when essential for the operation and support of telecommunications equipment described in this Category, are regarded as specially designed components, provided they are the standard models customarily supplied by the manufacturer. This includes operation, administration, maintenance, engineering or billing computer systems.

[64] Part 2, category 5, 5A001.c

substitute

c. Optical fibres of more than 500 m in length and specified by the manufacturer as being capable of withstanding a 'proof test' tensile stress of 2 x 10^9 N/m^2 or more;

N.B.: For underwater umbilical cables, see 8A002.a.3.

Technical Note:

'Proof Test': on-line or off-line production screen testing that dynamically applies a prescribed tensile stress over a 0.5 to 3 m length of fibre at a running rate of 2 to 5 m/s while passing between capstans approximately 50 mm in diameter. The ambient temperature is a nominal 293 K (20°C) and relative humidity 40%. Equivalent national standards may be used for executing the proof test.

[65] Part 2, category 5, 5A001.h

substitute

h. Radio Frequency (RF) transmitting equipment designed or modified for prematurely activating or preventing the initiation of Improvised Explosive Devices (IEDs).

N.B.: SEE ALSO 5A001.f. AND MUNITIONS LIST CONTROLS.

[66] Part 2, category 5, 5B001.b.1 and 5B001.b.3

omit

[67] Part 2, category 5, 5D001.d.1 and 5D001.d.3

omit

[68] Part 2, category 5, 5E001.c and 5E001.c.1

substitute

c. "Technology" according to the General Technology Note for the "development" or "production" of any of the following:

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1. Equipment employing digital techniques designed to operate at a "total digital transfer rate" exceeding 50 Gbit/s;

Technical Note:

For telecommunication switching equipment, the "total digital transfer rate" is the unidirectional speed of a single interface, measured at the highest speed port or line.

[69] Part 2, category 5, 5E001.c.3

substitute

3. Equipment employing "optical switching" and having a switching time less than 1 ms;

[70] Part 2, category 5, 5E001.d

substitute

d. "Technology" according to the General Technology Note for the "development" or "production" of Microwave Monolithic Integrated Circuit (MMIC) power amplifiers specially designed for telecommunications and having any of the following:

1. Rated for operation at frequencies exceeding 3.2 GHz up to and including 6.8 GHz and with an average output power greater than 4 W (36 dBm) with a "fractional bandwidth" greater than 15%;
2. Rated for operation at frequencies exceeding 6.8 GHz up to and including 16 GHz and with an average output power greater than 1 W (30 dBm) with a "fractional bandwidth" greater than 10%;
3. Rated for operation at frequencies exceeding 16 GHz up to and including 31.8 GHz and with an average output power greater than 0.8 W (29 dBm) with a "fractional bandwidth" greater than 10%;
4. Rated for operation at frequencies exceeding 31.8 GHz up to and including 37.5 GHz;
5. Rated for operation at frequencies exceeding 37.5 GHz up to and including 43.5 GHz and with an average output power greater than 0.25 W (24 dBm) with a "fractional bandwidth" greater than 10%; or
6. Rated for operation at frequencies exceeding 43.5 GHz;

[71] Part 2, category 5, Part 2, after note 3

insert

Note 4: Category 5, Part 2 does not control items incorporating or using "cryptography" and meeting all of the following:

a. The primary function or set of functions is not any of the following:

1. "Information security";

2. A computer, including operating systems, parts and components therefor;

3. Sending, receiving or storing information (except in support of entertainment, mass commercial broadcasts, digital rights management or medical records management); or

4. Networking (includes operation, administration, management and provisioning);

b. The cryptographic functionality is limited to supporting their primary function or set of functions; and

c. When necessary, details of the items are accessible and will be provided, on request, to the appropriate authority in the exporter's country in order to ascertain compliance with conditions described in paragraphs a. and b. above.

[72] Part 2, category 5, 5A002.a.9, note

substitute

b. Systems, equipment, application specific "electronic assemblies", modules and integrated circuits, designed or modified to enable an item to achieve or exceed the controlled performance levels for functionality specified by 5A002.a. that would not otherwise be enabled.

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

a. Smart cards and smart card 'readers/writers' as follows:

1. A smart card or an electronically readable personal document (e.g. token coin, e-passport) that meets any of the following:

a. The cryptographic capability is restricted for use in equipment or systems excluded from 5A002 by Note 4 in Category 5, Part 2 or entries b. to i. of this Note, and cannot be reprogrammed for any other use; or

b. Having all of the following:

1. It is specially designed and limited to allow protection of 'personal data' stored within;

2. Has been, or can only be, personalized for public or commercial transactions or individual identification; and

3. Where the cryptographic capability is not user-accessible;

Technical Note:
'Personal data' includes any data specific to a particular person or entity, such as the amount of money stored and data necessary for authentication.

2. 'Readers/writers' specially designed or modified, and limited, for items specified by a.1. of this Note.

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Technical Note:

'Readers/writers' include equipment that communicates with smart cards or electronically readable documents through a network.

b. Not used;

c. Not used;

d. Cryptographic equipment specially designed and limited for banking use or 'money transactions';

Technical Note:

'Money transactions' in 5A002 Note d. includes the collection and settlement of fares or credit functions.

e. Portable or mobile radiotelephones for civil use (e.g. for use with commercial civil cellular radio communication systems) that are not capable of transmitting encrypted data directly to another radiotelephone or equipment (other than Radio Access Network (RAN) equipment), nor of passing encrypted data through RAN equipment (e.g. Radio Network Controller (RNC) or Base Station Controller (BSC));

f. Cordless telephone equipment not capable of end-to-end encryption where the maximum effective range of unboosted cordless operation (i.e. a single, unrelayed hop between terminal and home base station) is less than 400 m according to the manufacturer's specifications;

g. Portable or mobile radiotelephones and similar client wireless devices for civil use, that implement only published or commercial cryptographic standards (except for anti-piracy functions, which may be non-published) and also meet the provisions of paragraphs b. to d. of the Cryptography Note (Note 3 in Category 5, Part 2), that have been customised for a specific civil industry application with features that do not affect the cryptographic functionality of these original non-customised devices;

h. Not used;

i. Wireless "personal area network" equipment that implement only published or commercial cryptographic standards and where the cryptographic capability is limited to a nominal operating range not exceeding 30 m according to the manufacturer's specifications; or

j. Equipment, having no functionality specified by 5A002.a.2., 5A002.a.4., 5A002.a.7., or 5A002.a.8., where all cryptographic capability specified by 5A002.a. meets any of the following:

1. It cannot be used; or

2. It can only be made useable by means of "cryptographic activation".

N.B.: See 5A002.a. for equipment that has undergone "cryptographic activation".

[73] Part 2, category 5, 5D002

substitute

5D002 "Software" as follows:

a. "Software" specially designed or modified for the "development", "production" or "use" of equipment specified in 5A002 or "software" specified in 5D002.c.;

b. "Software" specially designed or modified to support "technology" specified in 5E002;

c. Specific "software", as follows:

1. "Software" having the characteristics, or performing or simulating the functions of the equipment, specified in 5A002;

2. "Software" to certify "software" specified in 5D002.c.1.;

d. "Software" designed or modified to enable an item to achieve or exceed the controlled performance levels for functionality specified by 5A002.a. that would not otherwise be enabled.

Note: 5D002 does not control "software" as follows:

a. "Software" required for the "use" of equipment excluded from control by the Note to 5A002;

b. "Software" providing any of the functions of equipment excluded from control by the Note to 5A002.

[74] Part 2, category 5, 5E002

substitute

5E002 "Technology" as follows:

a. "Technology" according to the General Technology Note for the "development", "production" or "use" of equipment specified in 5A002, 5B002 or "software" specified in 5D002.a. or 5D002.c.;

b. "Technology" to enable an item to achieve or exceed the controlled performance levels for functionality specified by 5A002.a. that would not otherwise be enabled.

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[75] Part 2, category 6, 6A001

substitute

6A001 Acoustic systems, equipment and components, as follows:

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

1. Active (transmitting or transmitting-and-receiving) systems, equipment and specially designed components therefor, as follows:

Note: 6A001.a.1. does not control equipment as follows:

a. Depth sounders operating vertically below the apparatus, not including a scanning function exceeding ± 20°, and limited to measuring the depth of water, the distance of submerged or buried objects or fish finding;

b. Acoustic beacons, as follows:

1. Acoustic emergency beacons;

2. Pingers specially designed for relocating or returning to an underwater position.

a. Acoustic seabed survey equipment as follows:

1. Surface vessel survey equipment designed for seabed topographic mapping and having all of the following:

a. Designed to take measurements at an angle exceeding 20° from the vertical;

b. Designed to measure seabed topography at seabed depths exceeding 600 m;

c. 'Sounding resolution' less than 2; and

d. 'Enhancement' of the depth accuracy through compensation for all the following:

1. Motion of the acoustic sensor;

2. In-water propagation from sensor to the seabed and back; and

3. Sound speed at the sensor;

Technical Notes:

1. 'Sounding resolution' is the swath width (degrees) divided by the maximum number of soundings per swath.

2. 'Enhancement' includes the ability to compensate by external means.

2. Underwater survey equipment designed for seabed topographic mapping and having all of the following:

a. Designed or modified to operate at depths exceeding 300 m; and

b. 'Sounding rate' greater than 3,800;

Technical Note:

'Sounding rate' is the product of the maximum speed (m/s) at which the sensor can operate and the maximum number of soundings per swath.

3. Side Scan Sonar (SSS) or Synthetic Aperture Sonar (SAS), designed for seabed imaging and having all of the following:
    a. Designed or modified to operate at depths exceeding 500 m; and
    b. An 'area coverage rate' of greater than 570 m^2/s while operating with both an 'along track resolution' and 'across track resolution' of less than 15 cm.

Technical Notes:

1. 'Area coverage rate' (m^2/s) is twice the product of the maximum sonar range (m) and the maximum speed (m/s) at which the sensor can operate.

2. 'Along track resolution' (cm), for SSS only, is the product of azimuth (horizontal) beamwidth (degrees) and maximum sonar range (m) and 0.873.

3. 'Across track resolution' (cm) is 75 divided by the signal bandwidth (kHz).

b. Object detection or location systems, having any of the following:
    1. A transmitting frequency below 10 kHz;
    2. Sound pressure level exceeding 224 dB (reference 1 µPa at 1 m) for equipment with an operating frequency in the band from 10 kHz to 24 kHz inclusive;
    3. Sound pressure level exceeding 235 dB (reference 1 µPa at 1 m) for equipment with an operating frequency in the band between 24 kHz and 30 kHz;
    4. Forming beams of less than 1° on any axis and having an operating frequency of less than 100 kHz;
    5. Designed to operate with an unambiguous display range exceeding 5,120 m; or
    6. Designed to withstand pressure during normal operation at depths exceeding 1,000 m and having transducers with any of the following:
        a. Dynamic compensation for pressure; or
        b. Incorporating other than lead zirconate titanate as the transduction element;

c. Acoustic projectors, including transducers, incorporating piezoelectric, magnetostrictive, electrostrictive, electrodynamic or hydraulic elements operating individually or in a designed combination and having any of the following:

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Note 1: The control status of acoustic projectors, including transducers, specially designed for other equipment is determined by the control status of the other equipment.

Note 2: 6A001.a.1.c. does not control electronic sources which direct the sound vertically only, or mechanical (e.g. air gun or vapour-shock gun) or chemical (e.g. explosive) sources.

1. An instantaneous radiated 'acoustic power density' exceeding 0.01 mW/mm^2/Hz for devices operating at frequencies below 10 kHz;
2. A continuously radiated 'acoustic power density' exceeding 0.001 mW/mm^2/Hz for devices operating at frequencies below 10 kHz; or

Technical Note:

'Acoustic power density' is obtained by dividing the output acoustic power by the product of the area of the radiating surface and the frequency of operation.

3. Side-lobe suppression exceeding 22 dB;

d. Acoustic systems and equipment, designed to determine the position of surface vessels or underwater vehicles and having all the following, and specially designed components therefor:

1. Detection range exceeding 1,000 m; and
2. Positioning accuracy of less than 10 m rms (root mean square) when measured at a range of 1,000 m;

Note: 6A001.a.1.d. includes:

a. Equipment using coherent "signal processing" between two or more beacons and the hydrophone unit carried by the surface vessel or underwater vehicle;

b. Equipment capable of automatically correcting speed-of-sound propagation errors for calculation of a point.

e. Active individual sonars, specially designed or modified to detect, locate and automatically classify swimmers or divers, having all of the following:

1. Detection range exceeding 530 m;
2. Positioning accuracy of less than 15 m rms (root mean square) when measured at a range of 530 m; and
3. Transmitted pulse signal bandwidth exceeding 3 kHz;

N.B.: For diver detection systems specially designed or modified for military use, see the Military Goods Controls.

Note: For 6A001.a.1.e., where multiple detection ranges are specified for various environments, the greatest detection range is used.

2. Passive systems, equipment and specially designed components therefor, as follows:

a. Hydrophones having any of the following:

Note: The control status of hydrophones specially designed for other equipment is determined by the control status of the other equipment.

1. Incorporating continuous flexible sensing elements;
2. Incorporating flexible assemblies of discrete sensing elements with either a diameter or length less than 20 mm and with a separation between elements of less than 20 mm;
3. Having any of the following sensing elements:
   a. Optical fibres;
   b. 'Piezoelectric polymer films' other than polyvinylidene-fluoride (PVDF) and its co-polymers {P(VDF-TrFE) and P(VDF-TFE)}; or
   c. 'Flexible piezoelectric composites';
4. A 'hydrophone sensitivity' better than -180 dB at any depth with no acceleration compensation;
5. Designed to operate at depths exceeding 35 m with acceleration compensation; or
6. Designed for operation at depths exceeding 1,000 m;

Technical Notes:

1. 'Piezoelectric polymer film' sensing elements consist of polarised polymer film that is stretched over and attached to a supporting frame or spool (mandrel).

2. 'Flexible piezoelectric composite' sensing elements consist of piezoelectric ceramic particles or fibres combined with an electrically insulating, acoustically transparent rubber, polymer or epoxy compound, where the compound is an integral part of the sensing elements.

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3. *'Hydrophone sensitivity' is defined as twenty times the logarithm to the base 10 of the ratio of rms output voltage to a 1 V rms reference, when the hydrophone sensor, without a pre-amplifier, is placed in a plane wave acoustic field with an rms pressure of 1 µPa. For example, a hydrophone of -160 dB (reference 1 V per µPa) would yield an output voltage of 10^{-8} V in such a field, while one of -180 dB sensitivity would yield only 10^{-9} V output. Thus, -160 dB is better than -180 dB.*

b. Towed acoustic hydrophone arrays having any of the following:

1. Hydrophone group spacing of less than 12.5 m or 'able to be modified' to have hydrophone group spacing of less than 12.5 m;

2. Designed or 'able to be modified' to operate at depths exceeding 35 m;
Technical Note:
'Able to be modified' in 6A001.a.2.b.1. and 6A001.a.2.b.2. means having provisions to allow a change of the wiring or interconnections to alter hydrophone group spacing or operating depth limits. These provisions are: spare wiring exceeding 10% of the number of wires, hydrophone group spacing adjustment blocks or internal depth limiting devices that are adjustable or that control more than one hydrophone group.

3. Heading sensors specified in 6A001.a.2.d.;

4. Longitudinally reinforced array hoses;

5. An assembled array of less than 40 mm in diameter; or

6. Not used;

7. Hydrophone characteristics specified in 6A001.a.2.a.;

c. Processing equipment, specially designed for towed acoustic hydrophone arrays, having "user accessible programmability" and time or frequency domain processing and correlation, including spectral analysis, digital filtering and beamforming using Fast Fourier or other transforms or processes;

d. Heading sensors having all of the following:

1. An accuracy of better than ± 0.5°; and

2. Designed to operate at depths exceeding 35 m or having an adjustable or removable depth sensing device in order to operate at depths exceeding 35 m;

e. Bottom or bay cable systems, having any of the following:

1. Incorporating hydrophones specified in 6A001.a.2.a.; or

2. Incorporating multiplexed hydrophone group signal modules having all of the following characteristics:

a. Designed to operate at depths exceeding 35 m or having an adjustable or removable depth sensing device in order to operate at depths exceeding 35 m; and

b. Capable of being operationally interchanged with towed acoustic hydrophone array modules;

f. Processing equipment, specially designed for bottom or bay cable systems, having "user accessible programmability" and time or frequency domain processing and correlation, including spectral analysis, digital filtering and beamforming using Fast Fourier or other transforms or processes;

Note: 6A001.a.2. also controls receiving equipment, whether or not related in normal application to separate active equipment, and specially designed components therefor.

b. Correlation-velocity and doppler-velocity sonar log equipment, designed to measure the horizontal speed of the equipment carrier relative to the sea bed, as follows:

1. Correlation-velocity sonar log equipment having any of the following characteristics:

a. Designed to operate at distances between the carrier and the sea bed exceeding 500 m; or

b. Having speed accuracy better than 1% of speed;

2. Doppler-velocity sonar log equipment having speed accuracy better than 1% of speed.

Note 1: 6A001.b. does not control depth sounders limited to any of the following:
a. Measuring the depth of water;
b. Measuring the distance of submerged or buried objects; or
c. Fish finding.

Note 2: 6A001.b. does not control equipment specially designed for installation on surface vessels.

c. Not used.

[76] Part 2, category 6, 6A002.b to 6A002.e

substitute

b. "Monospectral imaging sensors" and "multispectral imaging sensors", designed for remote sensing applications and having any of the following:

1. An Instantaneous-Field-Of-View (IFOV) of less than 200 µrad (microradians); or

2. Specified for operation in the wavelength range exceeding 400 nm but not exceeding 30,000 nm and having all the following:

a. Providing output imaging data in digital format; and

b. Having any of the following characteristics:

1. "Space-qualified"; or
2. Designed for airborne operation, using other than silicon detectors, and having an IFOV of less than 2.5 mrad (milliradians);

Note: 6A002.b.1. does not control "monospectral imaging sensors" with a peak response in the wavelength range exceeding 300 nm but not exceeding 900 nm and only incorporating any of the following non-"space-qualified" detectors or non-"space-qualified" "focal plane arrays":

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

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

c. 'Direct view' imaging equipment incorporating any of the following:

1. Image intensifier tubes specified in 6A002.a.2.a. or 6A002.a.2.b.;
2. "Focal plane arrays" specified in 6A002.a.3.; or
3. Solid state detectors specified in 6A002.a.1.;

Technical Note:

'Direct view' refers to imaging equipment that presents a visual image to a human observer without converting the image into an electronic signal for television display, and that cannot record or store the image photographically, electronically or by any other means.

Note: 6A002.c. does not control equipment as follows, when incorporating other than GaAs or GaInAs photocathodes:

a. Industrial or civilian intrusion alarm, traffic or industrial movement control or counting systems;

b. Medical equipment;

c. Industrial equipment used for inspection, sorting or analysis of the properties of materials;

d. Flame detectors for industrial furnaces;

e. Equipment specially designed for laboratory use.

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

1. "Space-qualified" cryocoolers;
2. Non-"space-qualified" cryocoolers having a cooling source temperature below 218 K (-55°C), as follows:
   a. Closed cycle type with a specified Mean-Time-To-Failure (MTTF) or Mean-Time-Between-Failures (MTBF), exceeding 2,500 hours;
   b. Joule-Thomson (JT) self-regulating minicoolers having bore (outside) diameters of less than 8 mm;
3. Optical sensing fibres specially fabricated either compositionally or structurally, or modified by coating, to be acoustically, thermally, inertially, electromagnetically or nuclear radiation sensitive;

Note: 6A002.d.3. does not control encapsulated optical sensing fibres specially designed for bore hole sensing applications.

e. Not used.

[77] Part 2, category 6, 6A003

omit

N.B.: SEE ALSO 6A203.

insert

N.B.: FOR TELEVISION AND FILM-BASED PHOTOGRAPHIC STILL CAMERAS SPECIALLY DESIGNED OR MODIFIED FOR UNDERWATER USE, SEE 8A002.D.1. AND 8A002.E.

[78] Part 2, category 6, 6A003.b.2

substitute

2. Scanning cameras and scanning camera systems, having all of the following:
   a. A peak response in the wavelength range exceeding 10 nm, but not exceeding 30,000 nm;
   b. Linear detector arrays with more than 8,192 elements per array; and
   c. Mechanical scanning in one direction;

Note: 6A003.b.2. does not control scanning cameras, and scanning camera systems, specially designed for any of the following:
a. Industrial or civilian photocopiers;
b. Image scanners specially designed for civil, stationary, close proximity scanning applications (e.g. reproduction of images or print contained in documents, artwork or photographs); or
c. Medical equipment.

[79] Part 2, category 6, 6A003.b.4, note 4

substitute

Note 4: 6A003.b.4.c. does not control imaging cameras having any of the following:
a. Having all of the following:
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:
a. Industrial process monitoring, quality control, or analysis of the properties of materials;

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b. Laboratory equipment specially designed for scientific research;
c. Medical equipment;
d. Financial fraud detection equipment; and

2. Is only operable when installed in any of the following:
a. The system(s) or equipment for which it was intended; or
b. A specially designed, authorised maintenance facility; and

3. Incorporates an active mechanism that forces the camera not to function when it is removed from the system(s) or equipment for which it was intended;

b. Where the camera is specially designed for installation into a civilian passenger land vehicle of less than three tonnes (gross vehicle weight), or passenger and vehicle ferries having a length overall (LOA) 65 m or greater, and having all of the following:

1. Is only operable when installed in any of the following:
a. The civilian passenger land vehicle or passenger and vehicle ferry for which it was intended; or
b. A specially designed, authorised maintenance test facility; and

2. Incorporates an active mechanism that forces the camera not to function when it is removed from the vehicle for which it was intended;

c. Limited by design to have a maximum "radiant sensitivity" of 10 mA/W or less for wavelengths exceeding 760 nm, having all of the following:

1. Incorporating a response limiting mechanism designed not to be removed or modified;
2. Incorporates an active mechanism that forces the camera not to function when the response limiting mechanism is removed; and
3. Not specially designed or modified for underwater use; or

d. Having all of the following:
1. Not incorporating a 'direct view' or electronic image display;
2. Has no facility to output a viewable image of the detected field of view;
3. The "focal plane array" is only operable when installed in the camera for which it was intended; and

4. The "focal plane array" incorporates an active mechanism that forces it to be permanently inoperable when removed from the camera for which it was intended.

[80] Part 2, category 6, 6A005.c.1

substitute

1. Output wavelength less than 600 nm and any of the following:
   a. Output energy exceeding 50 mJ per pulse and "peak power" exceeding 1 W; or
   b. Average or CW output power exceeding 1 W;

Note: 6A005.c.1. does not control dye lasers or other liquid lasers, having a multimode output and a wavelength of 150 nm or more but not exceeding 600 nm and all of the following:
1. Output energy less than 1.5 J per pulse or a "peak power" less than 20 W; and
2. Average or CW output power less than 20 W.

[81] Part 2, category 6, 6A005.d and 6A005.e

substitute

d. Other "lasers", not specified in 6A005.a., 6A005.b. or 6A005.c. as follows:
   1. Semiconductor "lasers" as follows:

   Note 1: 6A005.d.1. includes semiconductor "lasers" having optical output connectors (e.g. fibre optic pigtails).

   Note 2: The control status of semiconductor "lasers" specially designed for other equipment is determined by the control status of the other equipment.

   a. Individual single-transverse mode semiconductor "lasers" having any of the following:
      1. Wavelength equal to or less than 1,510 nm and average or CW output power exceeding 1.5 W; or
      2. Wavelength greater than 1,510 nm and average or CW output power exceeding 500 mW;
   b. Individual, multiple-transverse mode semiconductor "lasers" having any of the following:
      1. Wavelength of less than 1,400 nm and average or CW output power exceeding 15W;
      2. Wavelength equal to or greater than 1,400 nm and less than 1,900 nm and average or CW output power exceeding 2.5 W; or
      3. Wavelength equal to or greater than 1,900 nm and average or CW output power exceeding 1 W;

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c. Individual semiconductor "laser" 'bars', having any of the following:

1. Wavelength of less than 1,400 nm and average or CW output power exceeding 100 W;
2. Wavelength equal to or greater than 1,400 nm and less than 1,900 nm and average or CW output power exceeding 25 W; or
3. Wavelength equal to or greater than 1,900 nm and average or CW output power exceeding 10 W;

d. Semiconductor "laser" 'stacked arrays' (two-dimensional arrays) having any of the following:

1. Wavelength less than 1,400 nm and having any of the following:
   a. Average or CW total output power less than 3 kW and having average or CW output 'power density' greater than 500 W/cm^2;
   b. Average or CW total output power equal to or exceeding 3 kW but less than or equal to 5 kW, and having average or CW output 'power density' greater than 350 W/cm^2;
   c. Average or CW total output power exceeding 5 kW;
   d. Peak pulsed 'power density' exceeding 2,500 W/cm^2; or
   e. Spatially coherent average or CW total output power, greater than 150 W;

2. Wavelength greater than or equal to 1,400 nm but less than 1,900 nm, and having any of the following:
   a. Average or CW total output power less than 250 W and average or CW output 'power density' greater than 150 W/cm^2;
   b. Average or CW total output power equal to or exceeding 250 W but less than or equal to 500 W, and having average or CW output 'power density' greater than 50 W/cm^2;
   c. Average or CW total output power exceeding 500 W;
   d. Peak pulsed 'power density' exceeding 500 W/cm^2; or
   e. Spatially coherent average or CW total output power exceeding 15 W;

3. Wavelength greater than or equal to 1,900 nm and having any of the following:
   a. Average or CW output 'power density' greater than 50 W/cm^2;
   b. Average or CW output power greater than 10 W; or
   c. Spatially coherent average or CW total output power exceeding 1.5 W; or

4. At least one "laser" 'bar' specified in 6A005.d.1.c.;

Technical Note:

For the purposes of 6A005.d.1.d., 'power density' means the total "laser" output power divided by the emitter surface area of the 'stacked array'.

e. Semiconductor "laser" 'stacked arrays', other than those specified in 6A005.d.1.d., having all of the following:

1. Specially designed or modified to be combined with other 'stacked arrays' to form a larger 'stacked array'; and
2. Integrated connections, common for both electronics and cooling;

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.

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.

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

Technical Notes:

1. Semiconductor "lasers" are commonly called "laser" diodes.

2. A 'bar' (also called a semiconductor "laser" 'bar', a "laser" diode 'bar' or diode 'bar') consists of multiple semiconductor "lasers" in a one-dimensional array.

3. A 'stacked array' consists of multiple 'bars' forming a two-dimensional array of semiconductor "lasers".

[82] Part 2, category 6, after 6A005.f

insert

g. 'Laser acoustic detection equipment' having all of the following:

1. CW laser output power equal to or exceeding 20 mW;
2. Laser frequency stability equal to or better (less) than 10 MHz;
3. Laser wavelengths equal to or exceeding 1,000 nm but not exceeding 2,000 nm;
4. Optical system resolution better (less) than 1 nm; and
5. Optical Signal to Noise ratio equal to or exceeding 10^3.

Technical Note:

'Laser acoustic detection equipment' is sometimes referred to as a Laser Microphone or Particle Flow Detection Microphone.

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[83] Part 2, category 6, after 6A006.d

insert

e. Underwater electromagnetic receivers incorporating magnetic field sensors specified by 6A006.a. or underwater electric field sensors specified by 6A006.b.

[84] Part 2, category 6, 6A008, note

substitute

Note: 6A008 does not control:

a. Secondary surveillance radar (SSR);

b. Civil Automotive Radar;

c. Displays or monitors used for air traffic control (ATC);

d. Meteorological (weather) radar;

e. Precision approach radar (PAR) equipment conforming to ICAO standards and employing electronically steerable linear (1-dimensional) arrays or mechanically positioned passive antennae.

[85] Part 2, category 6, 6A008.f, note

omit

[86] Part 2, category 6, 6A008.l

substitute

l. Having data processing sub-systems and having any of the following:

1. "Automatic target tracking" providing, at any antenna rotation, the predicted target position beyond the time of the next antenna beam passage; or

Note: 6A008.l.1. does not control conflict alert capability in ATC systems, or marine or harbour radar.

2. Not used;

3. Not used;

4. Configured to provide superposition and correlation, or fusion, of target data within six seconds from two or more "geographically dispersed" radar sensors to improve the aggregate performance beyond that of any single sensor specified by 6A008.f. or 6A008.i.

N.B.: See also Munitions List controls.

Note: 6A008.l.4. does not control systems, equipment and assemblies used for marine traffic control.

[87] Part 2, category 6, 6D003

substitute

6D003 Other "software" as follows:

a. "Software" as follows:

1. "Software" specially designed for acoustic beam forming for the "real time processing" of acoustic data for passive reception using towed hydrophone arrays;
2. "Source code" for the "real time processing" of acoustic data for passive reception using towed hydrophone arrays;
3. "Software" specially designed for acoustic beam forming for "real time processing" of acoustic data for passive reception using bottom or bay cable systems;
4. "Source code" for "real time processing" of acoustic data for passive reception using bottom or bay cable systems;
5. "Software" or "source code", specially designed for all of the following:
   a. "Real time processing" of acoustic data from sonar systems specified by 6A001.a.1.e.; and
   b. Automatically detecting, classifying and determining the location of divers or swimmers;

N.B.: For diver detection "software" or "source code", specially designed or modified for military use, see the Munitions List controls.

b. Not used;

c. "Software" designed or modified for cameras incorporating "focal plane arrays" specified in 6A002.a.3.f. and designed or modified to remove a frame rate restriction and allow the camera to exceed the frame rate specified in 6A003.b.4. Note 3.a.

d. Not used;

e. Not used;

f. "Software" as follows:

1. "Software" specially designed for magnetic and electric field "compensation systems" for magnetic sensors designed to operate on mobile platforms;
2. "Software" specially designed for magnetic and electric field anomaly detection on mobile platforms;
3. "Software" specially designed for "real time processing" of electromagnetic data using underwater electromagnetic receivers specified by 6A006.e.;
4. "Source code" for "real time processing" of electromagnetic data using underwater electromagnetic receivers specified by 6A006.e.;

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g. "Software" specially designed to correct motional influences of gravity meters or gravity gradiometers;

h. "Software" as follows:

1. Air Traffic Control (ATC) "software" application "programmes" designed to be hosted on general purpose computers located at Air Traffic Control centres and capable of accepting radar target data from more than four primary radars;

2. "Software" for the design or "production" of radomes and having all of the following:

a. Specially designed to protect the "electronically steerable phased array antennae" specified in 6A008.e.; and

b. Resulting in an antenna pattern having an 'average side lobe level' more than 40 dB below the peak of the main beam level.

Technical Note:

'Average side lobe level' in 6D003.h.2.b. is measured over the entire array excluding the angular extent of the main beam and the first two side lobes on either side of the main beam.

[88] Part 2, category 6, 6E003.a

substitute

a. "Technology" as follows:

1. Optical surface coating and treatment "technology", "required" to achieve an 'optical thickness' uniformity of 99.5% or better for optical coatings 500 mm or more in diameter or major axis length and with a total loss (absorption and scatter) of less than 5×10^{-3};

N.B.: See also 2E003.f.

Technical Note:

'Optical thickness' is the mathematical product of the index of refraction and the physical thickness of the coating.

2. Optical fabrication "technology" using single point diamond turning techniques to produce surface finish accuracies of better than 10 nm rms on non-planar surfaces exceeding $0.5\ m^2$;

[89] Part 2, category 7, after 7A001.a.3

insert

Note: 7A001.a.1. and 7A001.a.2. do not control accelerometers limited to measurement of only vibration or shock.

[90] Part 2, category 7, 7A002

substitute

7A002 Gyros or angular rate sensors, having any of the following and specially designed components therefor:

N.B.: SEE ALSO 7A102.

N.B.: For angular or rotational accelerometers, see 7A001.b.

a. Specified to function at linear acceleration levels less than or equal to 100 g and having any of the following:

1. A rate range of less than 500 degrees per second and having any of the following:

a. A "bias" "stability" of less (better) than 0.5 degree per hour, when measured in a 1 g environment over a period of one month, and with respect to a fixed calibration value; or

b. An "angle random walk" of less (better) than or equal to 0.0035 degree per square root hour; or

Note: 7A002.a.1.b. does not control 'spinning mass gyros'.

Technical Note:

'Spinning mass gyros' are gyros which use a continually rotating mass to sense angular motion.

2. A rate range greater than or equal to 500 degrees per second and having any of the following:

a. A "bias" "stability" of less (better) than 40 degrees per hour, when measured in a 1 g environment over a period of three minutes, and with respect to a fixed calibration value; or

b. An "angle random walk" of less (better) than or equal to 0.2 degree per square root hour; or

Note: 7A002.a.2.b. does not control 'spinning mass gyros'.

Technical Note:

'Spinning mass gyros' are gyros which use a continually rotating mass to sense angular motion.

b. Specified to function at linear acceleration levels exceeding 100 g.

[91] Part 2, category 7, 7A003.d, excluding the notes

substitute

d. Inertial measurement equipment including Inertial Measurement Units (IMU) and Inertial Reference Systems (IRS), incorporating accelerometers or gyros specified in 7A001 or 7A002.

[92] Part 2, category 7, 7A005

substitute

7A005 Global Navigation Satellite Systems (GNSS) receiving equipment having any of the following and specially designed components therefor:

N.B.: SEE ALSO 7A105.

N.B.: For equipment specially designed for military use, see Military Goods Controls.

a. Employing a decryption algorithm specially designed or modified for government use to access the ranging code for position and time; or

b. Employing 'adaptive antenna systems'.

Note: 7A005.b. does not control GNSS receiving equipment that only uses components designed to filter, switch, or combine signals from multiple omni-directional antennae that do not implement adaptive antenna techniques.

Technical Note:

For the purposes of 7A005.b., 'adaptive antenna systems' dynamically generate one or more spatial nulls in an antenna array pattern by signal processing in the time domain or frequency domain.

[93] Part 2, category 7, 7B001

substitute

7B001 Test, calibration or alignment equipment, specially designed for equipment specified in 7A.

Note: 7B001 does not control test, calibration or alignment equipment for 'Maintenance Level I' or 'Maintenance Level II'.

Technical Notes:

1. 'Maintenance Level I'
The failure of an inertial navigation unit is detected on the aircraft by indications from the Control and Display Unit (CDU) or by the status message from the corresponding sub-system. By following the manufacturer's manual, the cause of the failure may be localised at the level of the malfunctioning Line Replaceable Unit (LRU). The operator then removes the LRU and replaces it with a spare.

2. *'Maintenance Level II'*
The defective LRU is sent to the maintenance workshop (the manufacturer's or that of the operator responsible for level II maintenance). At the maintenance workshop, the malfunctioning LRU is tested by various appropriate means to verify and localise the defective Shop Replaceable Assembly (SRA) module responsible for the failure. This SRA is removed and replaced by an operative spare. The defective SRA (or possibly the complete LRU) is then shipped to the manufacturer. 'Maintenance Level II' does not include the disassembly or repair of controlled accelerometers or gyro sensors.

[94] Part 2, category 7, 7E004.a.4

substitute

4. Not used;

[95] Part 2, category 7, 7E004.b.6

substitute

6. Full authority digital flight control or multisensor mission management systems, employing "expert systems";

N.B.: For "technology" for Full Authority Digital Engine Control Systems ("FADEC systems"), see 9E003.h.

[96] Part 2, category 8, 8A002.f

substitute

f. Not used;

[97] Part 2, category 8, 8A002.i

substitute

i. Remotely controlled articulated manipulators specially designed or modified for use with submersible vehicles and having any of the following:
   1. Systems which control the manipulator using information from sensors which measure any of the following:
      a. Torque or force applied to an external object; or
      b. Tactile sense between the manipulator and an external object; or
   2. Controlled by proportional master-slave techniques or by using a dedicated computer and having 5 degrees of 'freedom of movement' or more;

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Technical Note:

Only functions having proportional control using positional feedback or by using a dedicated computer are counted when determining the number of degrees of 'freedom of movement'.

[98] Part 2, category 8, 8A002.o.3

substitute

3. Noise reduction systems designed for use on vessels of 1,000 tonnes displacement or more, as follows:
   a. Systems that attenuate underwater noise at frequencies below 500 Hz and consist of compound acoustic mounts for the acoustic isolation of diesel engines, diesel generator sets, gas turbines, gas turbine generator sets, propulsion motors or propulsion reduction gears, specially designed for sound or vibration isolation and having an intermediate mass exceeding 30 % of the equipment to be mounted;
   b. 'Active noise reduction or cancellation systems' or magnetic bearings, specially designed for power transmission systems;

   Technical Note:

   'Active noise reduction or cancellation systems' incorporate electronic control systems capable of actively reducing equipment vibration by the generation of anti-noise or anti-vibration signals directly to the source.

[99] Part 2, category 8, 8A002.p

substitute

p. Pumpjet propulsion systems having all of the following:
   1. Power output exceeding 2.5 MW; and
   2. Using divergent nozzle and flow conditioning vane techniques to improve propulsive efficiency or reduce propulsion-generated underwater-radiated noise;

[100] Part 2, category 8, 8A002.q

substitute

q. Underwater swimming and diving equipment as follows:
   1. Closed circuit rebreathers;
   2. Semi-closed circuit rebreathers;

   Note: 8A002.q. does not control individual rebreathers for personal use when accompanying their users.

r. Underwater swimming and diving equipment as follows:
   1. Closed circuit rebreathers;
   2. Semi-closed circuit rebreathers;

Note: 8A002.q. does not control individual rebreathers for personal use when accompanying their users.

[101] Part 2, category 9, 9A001.a

substitute

a. Incorporating any of the "technologies" specified in 9E003.a., 9E003.h. or 9E003.i.;

Note: 9A001.a. does not control aero gas turbine engines which meet all of the following:

a. Certified by the civil aviation authority in a "participating state"; and

b. Intended to power non-military manned aircraft for which any of the following has been issued by a "participating state" for the aircraft with this specific engine type:

1. A civil type certificate; or

2. An equivalent document recognized by the International Civil Aviation Organisation (ICAO).

[102] Part 2, category 9, 9A003

substitute

9A003 Specially designed assemblies and components, incorporating any of the "technologies" specified in 9E003.a., 9E003.h. or 9E003i., for any of the following gas turbine engine propulsion systems:

a. Specified in 9A001; or

b. Whose design or production origins are either non-"participating states" or unknown to the manufacturer.

[103] Part 2, category 9, 9A109

substitute

9A109 Hybrid rocket motors and specially designed components as follows:

a. Hybrid rocket motors usable in complete rocket systems or unmanned aerial vehicles, capable of 300 km, other than those specified in 9A009, having a total impulse capacity equal to or greater than 0.841 MNs, and specially designed components therefor;

b. Specially designed components for hybrid rocket motors specified in 9A009 that are usable in "missiles".

N.B.: SEE ALSO 9A009 and 9A119.

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[104] Part 2, category 9, 9B002

substitute

9B002 On-line (real time) control systems, instrumentation (including sensors) or automated data acquisition and processing equipment, having all of the following:

a. Specially designed for the "development" of gas turbine engines, assemblies or components; and

b. Incorporating "technology" specified in 9E003.h. or 9E003.i.

[105] Part 2, category 9, 9B116

substitute

9B116 Specially designed "production facilities" for the space launch vehicles specified in 9A004, or systems, sub-systems, and components specified in 9A005 to 9A009, 9A011, 9A101, 9A102, 9A104 to 9A109, 9A111, 9A116 to 9A120 or 'missiles'.

Technical Note:

In 9B116, 'missile' means complete rocket systems and unmanned aerial vehicle systems capable of a range exceeding 300 km.

[106] Part 2, category 9, 9D003

substitute

9D003 "Software" incorporating "technology" specified in 9E003.h. and used in "FADEC systems" for propulsion systems specified in 9A or equipment specified in 9B.

[107] Part 2, category 9, 9E003.a.8

substitute

8. 'Damage tolerant' gas turbine engine rotor components using powder metallurgy materials specified in 1C002.b.; or

Technical Note:

'Damage tolerant' components are designed using methodology and substantiation to predict and limit crack growth.

[108] Part 2, category 9, 9E003.a.9

substitute

9. Not used;

[109] Part 2, category 9, 9E003.a.10

substitute

10. Not used;

[110] Part 2, category 9, after 9E003.g, including the note

insert

h. "Technology" for gas turbine engine "FADEC systems" as follows:

1. "Development" "technology" for deriving the functional requirements for the components necessary for the "FADEC system" to regulate engine thrust or shaft power (e.g. feedback sensor time constants and accuracies, fuel valve slew rate);
2. "Development" or "production" "technology" for control and diagnostic components unique to the "FADEC system" and used to regulate engine thrust or shaft power;
3. "Development" "technology" for the control law algorithms, including "source code", unique to the "FADEC system" and used to regulate engine thrust or shaft power.

Note: 9E003.h. does not control technical data related to engine-aircraft integration required by the civil aviation certification authorities to be published for general airline use (e.g. installation manuals, operating instructions, instructions for continued airworthiness) or interface functions (e.g. input/output processing, airframe thrust or shaft power demand).

i. "Technology" for adjustable flow path systems designed to maintain engine stability for gas generator turbines, fan or power turbines, or propelling nozzles, as follows:

1. "Development" "technology" for deriving the functional requirements for the components that maintain engine stability;
2. "Development" or "production" "technology" for components unique to the adjustable flow path system and that maintain engine stability;
3. "Development" "technology" for the control law algorithms, including "source code", unique to the adjustable flow path system and that maintain engine stability.

Note: 9E003.i. does not control "development" or "production" "technology" for any of the following:

a. Inlet guide vanes;
b. Variable pitch fans or prop-fans;
c. Variable compressor vanes;
d. Compressor bleed valves; or
e. Adjustable flow path geometry for reverse thrust.

[111] Part 2, category 9, 9E102

substitute

9E102 "Technology" according to the General Technology Note for the "use" of space launch vehicles specified in 9A004, goods specified in 9A005 to 9A011, 'UAV's specified in 9A012 or goods specified in 9A101, 9A102, 9A104 to 9A111, 9A115 to 9A119, 9B105, 9B106, 9B115 to 9B117, 9D101 or 9D103.

Technical Note:

In 9E102, 'UAV' means unmanned aerial vehicle systems capable of a range exceeding 300 km.

[112] Sensitive list of dual-use goods and technologies, category 1, 1A007

omit

[113] Sensitive list of dual-use goods and technologies, category 5

insert

5A001.h. Radio Frequency (RF) transmitting equipment...

[114] Sensitive list of dual-use goods and technologies, category 6, 6A001.a.1.b

substitute

6A001.a.1.b. Systems or transmitting and receiving arrays, designed for object detection or location, having any of the following:

1. A transmitting frequency below 5 kHz or a sound pressure level exceeding 224 dB (reference 1 µPa at 1 m) for equipment with an operating frequency in the band from 5 kHz to 10 kHz inclusive;
2. Sound pressure level exceeding 224 dB…
3. Sound pressure level exceeding 235 dB…
4. Forming beams of…
5. Designed to operate…
6. Designed to withstand…

[115] Sensitive list of dual-use goods and technologies, category 6

omit

6°001.a.2.a.1.

insert

6A001.a.2.a.1.

[116] Sensitive list of dual-use goods and technologies, category 6

omit

6°001.a.2.a.2.

insert

6A001.a.2.a.2.

[117] Sensitive list of dual-use goods and technologies, category 6

omit

6°001.a.2.a.3.

insert

6A001.a.2.a.3.

[118] Sensitive list of dual-use goods and technologies, category 6

omit

6°001.a.2.a.5.

insert

6A001.a.2.a.5.

[119] Sensitive list of dual-use goods and technologies, category 6, 6A003.b.4

substitute

6A003.b.4. Imaging cameras incorporating "focal plane arrays" having any of the following:

a. Incorporating "focal plane arrays" specified by 6A002.a.3.a. to 6A002.a.3.e. of this List;

b. Incorporating "focal plane arrays" specified by 6A002.a.3.f. of this List; or

c. Incorporating "focal plane arrays" listed in 6A002.a.3.g. of this List.

6A003.b.4. *Note 1* ...

Note 2 ...

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Note 3 ...

Note 4 ...

[120] Sensitive list of dual-use goods and technologies, category 6

insert

6A006.e.	Underwater electromagnetic receivers incorporating magnetometers specified by 6A006.a.1. or 6A006.a.2. of this List.

[121] Sensitive list of dual-use goods and technologies, category 9, 9A004, 9A005, 9A007.a to 9A008.d

omit

[122] Very sensitive list of dual-use goods and technologies, category 5

insert

5A001.h.	Radio Frequency (RF) transmitting equipment...

[123] Index of DSGL 2011

omit

INDEX OF DSGL 2011

insert

INDEX

[124] Index of DSGL 2011

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Andes virus 1C351.a.1

[125] Index of DSGL 2011, bearings

after

pivot-cup assembly bearings 0B001.b.8

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radial ball bearings 2A101

[126] Index of DSGL 2011, boron and boron compounds

omit

boron carbides (CAS 12069–32–8) 1B115, 1C011, 1E.c.3

[127] Index of DSGL 2011

insert

Chapare virus 1C351.a.2

[128] Index of DSGL 2011

omit

Chikungunya virus 1C351.a.1

insert

Chikungunya virus 1C351.a.3

[129] Index of DSGL 2011

insert

Choclo virus 1C351.a.4

[130] Index of DSGL 2011

omit

Congo--Crimean haemorrhagic fever virus 1C351.a.2

insert

Congo-Crimean haemorrhagic fever virus 1C351.a.5

[131] Index of DSGL 2011

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cryptographic equipment 5A002.a.1, ML11

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cryptographic equipment 5A002.a.1, 5A002.b, ML11

[132] Index of DSGL 2011

insert

Dobrava-Belgrade virus 1C351.a.7

[133] Index of DSGL 2011

omit

eastern equine encephalitis virus 1C351.a.4

insert

eastern equine encephalitis virus 1C351.a.8

[134] Index of DSGL 2011

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filament winding equipment and software.....1B001, 1B201

insert

filament winding equipment and software..... 1B001, 1B101, 1B201

[135] Index of DSGL 2011

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frequency synthesisers 3A001.b.11

[136] Index of DSGL 2011

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Guanarito virus 1C351.a.10

[137] Index of DSGL 2011

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Junin virus.....1C351.a.7

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Junin virus.....1C351.a.14

[138] Index of DSGL 2011

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Laguna Negra virus 1C351.a.16

[139] Index of DSGL 2011, laser beam systems

after

in radar systems 6A008, 6A108

insert

laser microphones 6A005.g
laser stacks..... 6A005.d.1.d

[140] Index of DSGL 2011

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Lujo virus.....1C351.a.19

[141] Index of DSGL 2011

omit

Machupo virus 1C351.a.10

insert

Machupo virus 1C351.a.21

[142] Index of DSGL 2011

omit

Nipah virus 1C351.a.32

insert

Nipah virus 1C351.a.25

[143] Index of DSGL 2011

omit

pulmonary & renal syndrome--haemorrhagic fever virus 1C351.a.31

[144] Index of DSGL 2011

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Sabia virus..... 1C351.a.31

[145] Index of DSGL 2011

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Seoul virus 1C351.a.31

insert

Seoul virus 1C351.a.32

[146] Index of DSGL 2011

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Sin Nombre virus..... 1C351.a.31

insert

Sin nombre virus 1C351.a.33

[147] Index of DSGL 2011, software

after

design software.....6D003.d.2, 7D003, 8D002

insert

diver detection software..... 6D003.a.5, 6D003.f

[148] Index of DSGL 2011

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sonar navigation systems 6A001.a.2, 7A008

insert

sonar navigation systems 6A001.a, 7A008

[149] Index of DSGL 2011

omit

storage integrated circuits 3A001.a.4

[150] Index of DSGL 2011, tungsten, tungsten alloys and tungsten compounds

after

tungsten carbide 1C226

insert

tungsten in solid form 1C117

[151] Index of DSGL 2011, underwater operations equipment

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electric field sensors 6A006

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electromagnetic receivers 6A006.e

[152] Index of DSGL 2011

omit

Venezuelan equine encephalitis virus 1C351.a.16

insert

Venezuelan equine encephalitis virus 1C351.a.37

[153] Index of DSGL 2011

omit

yellow fever virus 1C351.a.19

insert

yellow fever virus 1C351.a.39

Note

1. All legislative instruments and compilations are registered on the Federal Register of Legislative Instruments kept under the *Legislative Instruments Act 2003*. See www.comlaw.gov.au.