

Singapore Customs

Amendments to Strategic
Goods (Control) Order (SGCO)

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Introduction

As part of Singapore's international obligation to prevent the proliferation of weapons of mass destruction, Singapore Customs regularly updates our Strategic Goods Control List ("Control List") prescribed in the Schedule to the Strategic Goods (Control) Order (SGCO). With effect from 1 Oct 2023, the SGCO 2023 will replace the SGCO 2021.

The SGCO 2023 brings our Control List up to date with 2022 Wassenaar Arrangement Munition List ("WAML") and 2022 European Union List of Dual-Use Items ("EUDL").

This document presents the amendments to the SGCO 2021 in a table with side-by-side comparison of the legal text in the 2021 and 2023 versions.

List of Military Goods

Definitions

Definition	SGCO 2021	SGCO 2023
“aircraft” (ML1, ML8, ML10, ML14)	“aircraft” (ML8, ML10, ML14) means a fixed wing, swivel wing, rotary wing (helicopter), tilt rotor or tilt wing airborne vehicle;	“aircraft” (ML1, ML8, ML10, ML14) means a fixed wing, swivel wing, rotary wing (helicopter), tilt rotor or tilt wing airborne vehicle;

ML4

Category Code	SGCO 2021	SGCO 2023
ML4.a. & <i>N.B.</i>	<p>Bombs, torpedoes, rockets, missiles, other explosive devices and charges and related equipment and accessories, as follows, and specially designed components therefor:</p> <p>---</p> <p>a. Bombs, torpedoes, grenades, smoke canisters, rockets, mines, missiles, depth charges, demolition charges, demolition devices, demolition kits, “pyrotechnic” devices, cartridges and simulators (i.e. equipment simulating the characteristics of any of these items), specially designed for military use;</p>	<p>Bombs, torpedoes, rockets, missiles, other explosive devices and charges and related equipment and accessories, as follows, and specially designed components therefor:</p> <p>---</p> <p>a. Bombs, torpedoes, grenades, smoke canisters, rockets, mines, missiles, depth charges, demolition-charges, demolition-devices, demolition-kits, “pyrotechnic” devices, cartridges, submunitions therefor and simulators (i.e. equipment simulating the characteristics of any of these items), specially designed for military use;</p> <p>---</p> <p><i>N.B.</i> <i>For grenade or canister ammunition for weapons or projectors specified in Category Codes ML1 or ML2 and submunitions specifically designed for ammunition, see Category Code ML3.</i></p>
ML4.b. <i>Note 1.a.</i>	<p>Bombs, torpedoes, rockets, missiles, other explosive devices and charges and related equipment and accessories, as follows, and specially designed components therefor:</p> <p>---</p> <p>b. Equipment having both of the following characteristics:</p> <p>---</p>	<p>Bombs, torpedoes, rockets, missiles, other explosive devices and charges and related equipment and accessories, as follows, and specially designed components therefor:</p> <p>---</p> <p>b. Equipment having both of the following characteristics:</p> <p>---</p>

Category Code	SGCO 2021	SGCO 2023
	<p><u>Note 1</u> Category Code ML4.b. includes:</p> <p>a. Mobile gas liquefying equipment capable of producing 1,000 kg or more per day of gas in liquid form;</p>	<p><u>Note 1</u> Category Code ML4.b. includes:</p> <p>a. Mobile gas liquefying equipment;</p>

ML10

Category Code	SGCO 2021	SGCO 2023
ML10.f. Note 1 & Note 2	<p>“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:</p> <p>---</p> <p>f. Ground equipment specially designed for “aircraft” specified in Category Code ML10.a. or aero engines specified in Category Code ML10.d.;</p> <p>---</p> <p><u>Note</u> Category Code ML10.f. includes pressure refuelling equipment and equipment designed to facilitate operations in confined areas, including equipment located on board a ship.</p>	<p>“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:</p> <p>---</p> <p>f. Ground equipment specially designed for “aircraft” specified in Category Code ML10.a. or aero engines specified in Category Code ML10.d.;</p> <p>---</p> <p><u>Note 1</u> Category Code ML10.f. includes pressure refuelling equipment and equipment designed to facilitate operations in confined areas, including equipment located on board a ship.</p> <p><u>Note 2</u> Category Code ML10.f. does not apply to:</p> <p>a. Towbars;</p> <p>b. Protective mats and covers;</p> <p>c. Ladders, steps and platforms;</p> <p>d. Chocks, lashings and tie-down equipment.</p>

ML11

Category Code	SGCO 2021	SGCO 2023
ML11.a. <i>Note e.</i>	<p>Electronic equipment, “spacecraft” and components, not specified elsewhere in any part of this Division, as follows:</p> <p>---</p> <p>a. Electronic equipment specially designed for military use and specially designed components therefor;</p> <p>---</p> <p><i>Note</i> <i>Category Code ML11.a. includes:</i></p> <p>---</p> <p>e. <i>Data processing security equipment, data security equipment and transmission and signalling line security equipment, using cipherring processes;</i></p>	<p>Electronic equipment, “spacecraft” and components, not specified elsewhere in any part of this Division, as follows:</p> <p>---</p> <p>a. Electronic equipment specially designed for military use and specially designed components therefor;</p> <p>---</p> <p><i>Note</i> <i>Category Code ML11.a. includes:</i></p> <p>---</p> <p>e. <i>Data processing security equipment, data security equipment and transmission and signalling line security equipment, using cryptographic functionality;</i></p>
ML11.b.	<p>Electronic equipment, “spacecraft” and components, not specified elsewhere in any part of this Division, as follows:</p> <p>---</p> <p>b. “Satellite navigation system” jamming equipment and specially designed components therefor;</p>	<p>Electronic equipment, “spacecraft” and components, not specified elsewhere in any part of this Division, as follows:</p> <p>---</p> <p>b. Jamming equipment designed or modified to hinder the reception, operation or effectiveness of positioning, navigation or timing services provided by “satellite navigation systems”, and specially designed components therefor;</p>

ML13

Category Code	SGCO 2021	SGCO 2023
ML13. <i>Note 5 & N.B.</i>	Armoured or protective equipment, constructions, components and accessories, as follows: ---	Armoured or protective equipment, constructions, components and accessories, as follows: --- <u>Note 5</u> Category Code ML13.d.1. does not apply to protective eyewear. <u>N.B.</u> For laser protective eyewear, see Category Code ML17.o.

ML15

Category Code	SGCO 2021	SGCO 2023
ML15 <i>N.B.</i>	Imaging or countermeasure equipment, as follows, specially designed for military use, and specially designed components and accessories therefor: --- <u>Note</u> Category Code ML15 does not apply to “first generation image intensifier tubes” or equipment specially designed to incorporate “first generation image intensifier tubes”. --- <u>N.B.</u> For the classification of weapon-sights incorporating “first generation image intensifier tubes”, see Category Codes ML1, ML2 and ML5.a.	Imaging or countermeasure equipment, as follows, specially designed for military use, and specially designed components and accessories therefor: --- <u>Note</u> Category Code ML15 does not apply to “first generation image intensifier tubes” or equipment specially designed to incorporate “first generation image intensifier tubes”. --- <u>N.B.</u> For weapon-sights incorporating “first generation image intensifier tubes”, see Category Codes ML1, ML2 and ML5.a.

List of Dual-Use Goods

Definitions

Definition / Acronyms / Abbreviation	SGCO 2021	SGCO 2023
“diffusion bonding” (Categories 1, 2)	“diffusion bonding” (Categories 1, 2, 9) means a solid state joining of at least two separate pieces of metals into a single piece with a joint strength equivalent to that of the weakest material, wherein the principal mechanism is interdiffusion of atoms across the interface;	“diffusion bonding” (Categories 1, 2) means a solid state joining of at least two separate pieces of metals into a single piece with a joint strength equivalent to that of the weakest material, wherein the principal mechanism is interdiffusion of atoms across the interface;
“Gate All-Around Field-Effect Transistor” (Category 3)	-	<p>“Gate All-Around Field-Effect Transistor” or “GAAFET” (Category 3) means a device having a single or multiple semiconductor conduction channel element(s) with a common gate structure that surrounds and controls current in all of the semiconductor conduction channel elements.</p> <p><i>N.B.</i> “Gate All-Around Field-Effect Transistor” includes nanosheet or nanowire field-effect and surrounding gate transistors and other “GAAFET” semiconductor channel element structures.</p>
“laser” (Categories 0, 1, 2, 3, 5, 6, 7, 9)	“laser” (Categories 0, 1, 2, 3, 5, 6, 7, 8, 9) means an item that produces spatially and temporally coherent light through amplification by stimulated emission of radiation;	“laser” (Categories 0, 1, 2, 3, 5, 6, 7, 9) means an item that produces spatially and temporally coherent light through amplification by stimulated emission of radiation;
“microorganisms” (Category 2)	“microorganisms” (Categories 1, 2) means bacteria, viruses, mycoplasmas, rickettsiae, chlamydiae or fungi, 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;	“microorganisms” (Category 2) means bacteria, viruses, mycoplasmas, rickettsiae, chlamydiae or fungi, 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;
“missiles” (Categories 1, 2, 3, 6, 7, 9)	“missiles” (Categories 1, 3, 6, 7, 9) means complete rocket systems and unmanned aerial vehicle systems, capable of delivering at least 500 kg payload to a range of at least 300 km;	“missiles” (Categories 1, 2, 3, 6, 7, 9) means complete rocket systems and unmanned aerial vehicle systems, capable of delivering at least 500 kg payload to a range of at least 300 km;

Definition / Acronyms / Abbreviation	SGCO 2021	SGCO 2023
“program”	“program” (Categories 2, 6) means a sequence of instructions to carry out a process in, or convertible into, a form executable by an electronic computer;	-
ECAD	-	ECAD Electronic Computer-Aided Design
GAAFET	-	GAAFET Gate-All-Around Field-Effect Transistor

Category 0

0B006

Category Code	SGCO 2021	SGCO 2023
0B006 <i>Note c</i>	<p>Plant for the reprocessing of irradiated “nuclear reactor” fuel elements, and specially designed or prepared equipment and components therefor.</p> <p><u>Note</u> <i>Category Code 0B006 includes:</i> ---</p> <p><i>c. Dissolver vessels or dissolvers employing mechanical devices, critically safe tanks (e.g. small diameter, annular or slab tanks) specially designed or prepared for the dissolution of irradiated “nuclear reactor” fuel, which are capable of withstanding hot, highly corrosive liquids, and which can be remotely loaded, operated and maintained;</i></p>	<p>Plant for the reprocessing of irradiated “nuclear reactor” fuel elements, and specially designed or prepared equipment and components therefor.</p> <p><u>Note</u> <i>Category Code 0B006 includes:</i> ---</p> <p><i>c. Dissolver vessels or dissolvers employing mechanical devices specially designed or prepared for the dissolution of irradiated “nuclear reactor” fuel, which are capable of withstanding hot, highly corrosive liquids, and which can be remotely loaded, operated and maintained;</i></p>

Category 1**1C006**

Category Code	SGCO 2021	SGCO 2023
1C006.b.	Fluids and lubricating materials, as follows: --- b. Lubricating materials containing, as their principal ingredients, either of the following: 1. Phenylene or alkylphenylene ethers or thio ethers, or their mixtures, containing more than two ether or thio ether functions or mixtures thereof; or 2. Fluorinated silicone fluids with a kinematic viscosity of less than 5,000 mm²/s (5,000 centistokes) measured at 298 K (25 °C);	Fluids and lubricating materials, as follows: --- b. Lubricating materials containing, as their principal ingredients, phenylene or alkylphenylene ethers or thio-ethers, or their mixtures, containing more than two ether or thio-ether functions or mixtures thereof;

1C351

Category Code	SGCO 2021	SGCO 2023
1C351.a.32	Human and animal pathogens and “toxins”, as follows: --- 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: --- 32. Monkeypox virus;	Human and animal pathogens and “toxins”, as follows: --- 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: --- 32. Monkeypox virus (mpox virus);

1E201

Category Code	SGCO 2021	SGCO 2023
1E201	“Technology” (according to the General Technology Note) for the “use” of goods specified in Category Code 1A002, 1A007, 1A202, 1A225 to 1A227, 1B201, 1B225 to 1B234, 1C002.b.3. or .b.4., 1C010.b., 1C202, 1C210, 1C216, 1C225 to 1C241 or 1D201.	“Technology” (according to the General Technology Note) for the “use” of goods specified in Category Code 1A002, 1A007, 1A202, 1A225 to 1A227, 1B201, 1B225 to 1B235, 1C002.b.3. or .b.4., 1C010.b., 1C202, 1C210, 1C216, 1C225 to 1C241 or 1D201.

Category 2**2B006**

Category Code	SGCO 2021	SGCO 2023
2B006.b.1. 2B006.b.3.b. & 2B006.b. <i>Technical Note</i>	<p>Dimensional inspection or measuring systems, equipment, position feedback units and “electronic assemblies”, as follows:</p> <p>---</p> <p>b. Linear displacement measuring instruments or systems, linear position feedback units, and “electronic assemblies”, as follows:</p> <p>---</p> <p>1. ‘Non-contact type measuring systems’ with a resolution equal to or less (better) than 0.2 µm within 0 to 0.2 mm of the ‘measuring range’;</p> <p>---</p> <p>3. Measuring systems having all of the following characteristics:</p> <p>---</p> <p>b. A resolution over their full scale of 0.2 nm or less (better); <u>and</u></p>	<p>Dimensional inspection or measuring systems, equipment, position feedback units and “electronic assemblies”, as follows:</p> <p>---</p> <p>b. Linear displacement measuring instruments or systems, linear position feedback units, and “electronic assemblies”, as follows:</p> <p>---</p> <p>1. ‘Non-contact type measuring systems’ with a ‘resolution’ equal to or less (better) than 0.2 µm within 0 to 0.2 mm of the ‘measuring range’;</p> <p>---</p> <p>3. Measuring systems having all of the following characteristics:</p> <p>---</p> <p>b. A ‘resolution’ over their full scale of 0.2 nm or less (better); <u>and</u></p> <p>---</p> <p><u>Technical Note</u> <i>For the purpose of Category Code 2B006.b., ‘resolution’ is the least increment of a measuring device; on digital instruments, the least significant bit.</i></p>

2B206

Category Code	SGCO 2021	SGCO 2023
2B206.c.2 2B206.c.2.a. & 2B206.c.2.a. <i>Technical Note</i>	Dimensional inspection machines, instruments or systems, other than those specified in Category Code 2B006, as follows: --- c. 'Linear displacement' measuring systems having both of the following characteristics: --- 2. Capable of maintaining, for at least 12 hours, at a temperature of ± 1 K (± 1 °C), around a standard temperature and standard pressure, both of the following: a. A resolution over their full scale of 0.1 μ m or better; <u>and</u>	Dimensional inspection machines, instruments or systems, other than those specified in Category Code 2B006, as follows: --- c. 'Linear displacement' measuring systems having both of the following characteristics: --- 2. Capable of maintaining, for at least 12 hours, over a temperature range of ± 1 K (± 1 °C), around a standard temperature and standard pressure, both of the following: a. A 'resolution' over their full scale of 0.1 μ m or better; <u>and</u> <i>Technical Note</i> <i>For the purpose of Category Code 2B206.c.2.a. 'resolution' is the least increment of a measuring device; on digital instruments, the least significant bit.</i>

2B352

Category Code	SGCO 2021	SGCO 2023
2B352.b. <i>Technical Note 2</i>	<p>Biological manufacturing and handling equipment, as follows: ---</p> <p>b. Fermenters and components as follows: ---</p> <p><u>Technical Notes</u></p> <ol style="list-style-type: none"> 1. For the purpose of Category Code 2B352.b., fermenters include bioreactors, single use (disposable) bioreactors, chemostats and continuous flow systems. 2. Cultivation chamber holding devices include single-use cultivation chambers with rigid walls. 	<p>Biological manufacturing and handling equipment, as follows: ---</p> <p>b. Fermenters and components as follows: ---</p> <p><u>Technical Notes</u></p> <ol style="list-style-type: none"> 1. For the purpose of Category Code 2B352.b., fermenters include bioreactors, single use (disposable) bioreactors, chemostats and continuous flow systems. 2. For the purpose of Category Code 2B352.b., cultivation chamber holding devices include single-use cultivation chambers with rigid walls.
2B352.h.	<p>Biological manufacturing and handling equipment, as follows: ---</p> <p>h. Spray drying equipment capable of drying toxins or pathogenic microorganisms having all of the following characteristics:</p>	<p>Biological manufacturing and handling equipment, as follows: ---</p> <p>h. Spray drying equipment capable of drying toxins or pathogenic "microorganisms" having all of the following characteristics:</p>

2D352

Category Code	SGCO 2021	SGCO 2023
2D352	-	"Software" specially designed for nucleic acid assemblers and synthesisers specified in Category Code 2B352.i., that is capable of designing and building functional genetic elements from digital sequence data.

2E003

Category Code	SGCO 2021	SGCO 2023
2E003.b.1.c <i>Technical Note,</i> 2E003.b.2. & <i>N.B.</i>	Other “technology” as follows: --- b. “Technology” for metal working manufacturing processes, as follows: 1. “Technology” for the design of tools, dies or fixtures specially designed for any of the following processes: a. “Superplastic forming”; b. “Diffusion bonding”; or c. ‘Direct-acting hydraulic pressing’; 2. Technical data consisting of process methods or parameters as listed below used to control: a. “Superplastic forming” of aluminium alloys, titanium alloys or “superalloys”: 1. Surface preparation; 2. Strain rate; 3. Temperature; 4. Pressure; b. “Diffusion bonding” of “superalloys” or titanium alloys: 1. Surface preparation; 2. Temperature; 3. Pressure; c. ‘Direct acting hydraulic pressing’ of aluminium alloys or titanium alloys: 1. Pressure; 2. Cycle time; d. ‘Hot isostatic densification’ of titanium alloys, aluminium alloys or “superalloys”: 1. Temperature; 2. Pressure; 3. Cycle time; <u>Technical Notes</u> 1. ‘Direct-acting hydraulic pressing’ is a	Other “technology” as follows: --- b. “Technology” for metal working manufacturing processes, as follows: 1. “Technology” for the design of tools, dies or fixtures specially designed for any of the following processes: a. “Superplastic forming”; b. “Diffusion bonding”; or c. ‘Direct-acting hydraulic pressing’; <u>Technical Note</u> ‘Direct-acting hydraulic pressing’ is a deformation process which uses a fluid-filled flexible bladder in direct contact with the workpiece. 2. Not used; <u>N.B.</u> For “technology” for metal-working manufacturing processes for gas turbine engines and components, see Category Code 9E003 and Division 2 of Part 1 of this Schedule.

Category Code	SGCO 2021	SGCO 2023
	<p><i>deformation process which uses a fluid-filled flexible bladder in direct contact with the workpiece.</i></p> <p>2. <i>'Hot isostatic densification' is a process of pressurising a casting at temperatures exceeding 375 K (102 °C) in a closed cavity through various media (gas, liquid, solid particles, etc.) to create equal force in all directions to reduce or eliminate internal voids in the casting.</i></p>	

Table – Deposition Techniques

Category Code	SGCO 2021	SGCO 2023
Note 10	10. Category 2 does not include “technology” for single-step pack cementation of solid airfoils .	10. Category 2 does not include “technology” for single-step pack cementation of solid aerofoils .

Category 3

3A

Category Code	SGCO 2021	SGCO 2023
3A Note 1	<p><i>Note 1</i></p> <p><i>Equipment and components described in Category Code 3A001 or 3A002, other than those described in Category Code 3A001.a.3. to 3A001.a.10., or 3A001.a.12. to 3A001.a.14., which are specially designed for or which have the same functional characteristics as other equipment are treated as coming within that description only if that other equipment is included in Division 2 of this Part.</i></p>	<p><i>Note 1</i></p> <p><i>Equipment and components described in Category Code 3A001 or 3A002, other than those described in Category Code 3A001.a.3. to 3A001.a.10., 3A001.a.12. to 3A001.a.14., or 3A001.b.12., which are specially designed for or which have the same functional characteristics as other equipment are treated as coming within that description only if that other equipment is included in Division 2 of this Part.</i></p>

3A001

Category Code	SGCO 2021	SGCO 2023
3A001.b.4.b.1	<p>Electronic items as follows:</p> <p>---</p> <p>b. Microwave or millimetre wave items, as follows:</p> <p>---</p> <p>4. Microwave solid state amplifiers and microwave assemblies/modules containing microwave solid state amplifiers, having any of the following characteristics:</p> <p>---</p> <p>b. Rated for operation at frequencies exceeding 6.8 GHz up to and including 31.8 GHz with a “fractional bandwidth” greater than 10%, and having any of the following characteristics:</p> <p>---</p> <p>1. A peak saturated power output greater than 70 W (48.54 dBm) at any frequency exceeding 6.8 GHz up to and including 8.5 GHz;</p>	<p>Electronic items as follows:</p> <p>---</p> <p>b. Microwave or millimetre wave items, as follows:</p> <p>---</p> <p>4. Microwave solid state amplifiers and microwave assemblies/modules containing microwave solid state amplifiers, having any of the following characteristics:</p> <p>---</p> <p>b. Rated for operation at frequencies exceeding 6.8 GHz up to and including 31.8 GHz with a “fractional bandwidth” greater than 10%, and having any of the following characteristics:</p> <p>---</p> <p>1. A peak saturated power output greater than 70 W (48.45 dBm) at any frequency exceeding 6.8 GHz up to and including 8.5 GHz;</p>

Category Code	SGCO 2021	SGCO 2023
3A001.b.11.e. & 3A001.b.11.f.	<p>Electronic items as follows:</p> <p>---</p> <p>b. Microwave or millimetre wave items, as follows:</p> <p>---</p> <p>11. ‘Frequency synthesiser’ “electronic assemblies” having a “frequency switching time” as specified by any of the following:</p> <p>---</p> <p>e. Less than 100 μs for any frequency change exceeding 2.2 GHz within the synthesised frequency range exceeding 37 GHz but not exceeding 90 GHz;</p> <p>f. Not used; <u>or</u></p>	<p>Electronic items as follows:</p> <p>---</p> <p>b. Microwave or millimetre wave items, as follows:</p> <p>---</p> <p>11. ‘Frequency synthesiser’ “electronic assemblies” having a “frequency switching time” as specified by any of the following:</p> <p>---</p> <p>e. Less than 100 μs for any frequency change exceeding 2.2 GHz within the synthesised frequency range exceeding 37 GHz but not exceeding 75 GHz;</p> <p>f. Less than 100 μs for any frequency change exceeding 5.0 GHz within the synthesised frequency range exceeding 75 GHz but not exceeding 90 GHz; <u>or</u></p>

3A002

Category Code	SGCO 2021	SGCO 2023
3A002.d.3.e & 3A002.d.3.g.	<p>General purpose “electronic assemblies”, modules and equipment, as follows:</p> <p>---</p> <p>d. Signal generators having any of the following characteristics:</p> <p>---</p> <p>3. A “frequency switching time” as specified by any of the following:</p> <p>---</p> <p>e. Less than 100 μs for any frequency change exceeding 2.2 GHz within the frequency range exceeding 37 GHz but not exceeding 90 GHz;</p> <p>f. Not used;</p>	<p>General purpose “electronic assemblies”, modules and equipment, as follows:</p> <p>---</p> <p>d. Signal generators having any of the following characteristics:</p> <p>---</p> <p>3. A “frequency switching time” as specified by any of the following:</p> <p>---</p> <p>e. Less than 100 μs for any frequency change exceeding 2.2 GHz within the frequency range exceeding 37 GHz but not exceeding 75 GHz; <u>or</u></p> <p>f. Not used;</p>

Category Code	SGCO 2021	SGCO 2023
		g. Less than 100 μ s for any frequency change exceeding 5.0 GHz within the frequency range exceeding 75 GHz but not exceeding 90 GHz;
3A002.d.5.c. & 3A002.d.5.d.	<p>General purpose “electronic assemblies”, modules and equipment, as follows:</p> <p>---</p> <p>d. Signal generators having any of the following characteristics:</p> <p>---</p> <p>5. An ‘RF modulation bandwidth’ of digital baseband signals as specified by any of the following:</p> <p>---</p> <p>c. Exceeding 2.2 GHz within the frequency range exceeding 37 GHz but not exceeding 90 GHz; or</p>	<p>General purpose “electronic assemblies”, modules and equipment, as follows:</p> <p>---</p> <p>d. Signal generators having any of the following characteristics:</p> <p>---</p> <p>5. An ‘RF modulation bandwidth’ of digital baseband signals as specified by any of the following:</p> <p>---</p> <p>c. Exceeding 2.2 GHz within the frequency range exceeding 37 GHz but not exceeding 75 GHz; <u>or</u></p> <p>d. Exceeding 5.0 GHz within the frequency range exceeding 75 GHz but not exceeding 90 GHz; <u>or</u></p>

3C001

Category Code	SGCO 2021	SGCO 2023
3C001.e. & 3C001.f.	<p>Hetero epitaxial materials consisting of a “substrate” having stacked epitaxially grown multiple layers of any of the following:</p> <p>---</p>	<p>Hetero epitaxial materials consisting of a “substrate” having stacked epitaxially grown multiple layers of any of the following:</p> <p>---</p> <p>e. Gallium Oxide (Ga_2O_3); <u>or</u></p> <p>f. Diamond.</p>

3C005

Category Code	SGCO 2021	SGCO 2023
3C005.a. & 3C005.b.	<p>High resistivity materials as follows: ---</p> <p>a. Silicon carbide (SiC), gallium nitride (GaN), aluminium nitride (AlN) or aluminium gallium nitride (AlGaN) semiconductor “substrates”, or ingots, boules, or other preforms of those materials, having resistivities greater than 10,000 ohm cm at 20 °C;</p> <p>b. Polycrystalline “substrates” or polycrystalline ceramic “substrates”, having resistivities greater than 10,000 ohm cm at 20 °C and having at least one non epitaxial single crystal layer of silicon (Si), silicon carbide (SiC), gallium nitride (GaN), aluminium nitride (AlN), or aluminium gallium nitride (AlGaN) on the surface of the “substrate”.</p>	<p>High resistivity materials as follows: ---</p> <p>a. Silicon carbide (SiC), gallium nitride (GaN), aluminium nitride (AlN), aluminium gallium nitride (AlGaN), gallium oxide (GA₂O₃) or diamond semiconductor “substrates”, or ingots, boules, or other preforms of those materials, having resistivities greater than 10,000 ohm-cm at 20 °C;</p> <p>b. Polycrystalline “substrates” or polycrystalline ceramic “substrates”, having resistivities greater than 10,000 ohm-cm at 20 °C and having at least one non-epitaxial single-crystal layer of silicon (Si), silicon carbide (SiC), gallium nitride (GaN), aluminium nitride (AlN), aluminium gallium nitride (AlGaN), gallium oxide (GA₂O₃) or diamond on the surface of the “substrate”.</p>

3C006

Category Code	SGCO 2021	SGCO 2023
3C006	<p>Materials, not specified in Category Code 3C001, consisting of a “substrate” specified in Category Code 3C005 with at least one epitaxial layer of silicon carbide, gallium nitride, aluminium nitride or aluminium gallium nitride.</p>	<p>Materials, not specified in Category Code 3C001, consisting of a “substrate” specified in Category Code 3C005 with at least one epitaxial layer of silicon carbide (SiC), gallium nitride (GaN), aluminium nitride (AlN), aluminium gallium nitride (AlGaN), gallium oxide (GA₂O₃) or diamond.</p>

3D006

Category Code	SGCO 2021	SGCO 2023
3D006	-	<p>'Electronic Computer-Aided Design' ('ECAD') "software" specially designed for the "development" of integrated circuits having any "Gate-All-Around Field-Effect Transistor" ("GAAFET") structure, and having any of the following characteristics:</p> <p>a. Specially designed for implementing 'Register Transfer Level' ('RTL') to 'Geometrical Database Standard II' ('GDSII') or equivalent standard; <u>or</u></p> <p>b. Specially designed for optimisation of power or timing rules.</p> <p><i>Technical Notes</i></p> <p>1. 'Electronic Computer-Aided Design' ('ECAD') is a category of "software" tools used for designing, analysing, optimising, and validating the performance of integrated circuit or printed circuit board.</p> <p>2. 'Register Transfer Level' ('RTL') is a design abstraction which models a synchronous digital circuit in terms of the flow of digital signals between hardware registers, and the logical operations performed on those signals.</p> <p>3. 'Geometrical Database Standard II' ('GDSII') is a database file format for data exchange of integrated circuit or integrated circuit layout artwork.</p>

3E003

Category Code	SGCO 2021	SGCO 2023
3E003.d. & 3E003.h.	<p>Other "technology" for the "development" or "production" of the following:</p> <p>---</p> <p>d. Substrates of films of diamond for electronic components;</p> <p>---</p> <p>-</p>	<p>Other "technology" for the "development" or "production" of the following:</p> <p>---</p> <p>d. Substrates of diamond for electronic components;</p> <p>---</p> <p>h. Substrates of gallium oxide for electronic components.</p>

Category 4**4A003**

Category Code	SGCO 2021	SGCO 2023
4A003.b.	<p>“Digital computers”, “electronic assemblies”, and related equipment therefor, as follows, and specially designed components therefor:</p> <p>---</p> <p>b. “Digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 29 Weighted TeraFLOPS (WT);</p>	<p>“Digital computers”, “electronic assemblies”, and related equipment therefor, as follows, and specially designed components therefor:</p> <p>---</p> <p>b. “Digital computers” having an “Adjusted Peak Performance” (“APP”) exceeding 70 Weighted TeraFLOPS (WT);</p>

Category 6**6A001**

Category Code	SGCO 2021	SGCO 2023
6A001.a.2.d	<p>Acoustic systems, equipment and components, as follows:</p> <p>---</p> <p>a. Marine acoustic systems, equipment and specially designed components therefor, as follows:</p> <p>---</p> <p>2. Passive systems, equipment and specially designed components therefor, as follows:</p> <p>---</p> <p>d. Heading sensors having both of the following characteristics:</p> <ol style="list-style-type: none"> 1. An accuracy of better than 0.5°; <u>and</u> 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; 	<p>Acoustic systems, equipment and components, as follows:</p> <p>---</p> <p>a. Marine acoustic systems, equipment and specially designed components therefor, as follows:</p> <p>---</p> <p>2. Passive systems, equipment and specially designed components therefor, as follows:</p> <p>---</p> <p>d. Heading sensors having both of the following characteristics:</p> <ol style="list-style-type: none"> 1. An “accuracy” of better than 0.5°; <u>and</u> 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;

6A005

Category Code	SGCO 2021	SGCO 2023
6A005.d.1.b.1.	<p>“Lasers”, other than those specified in Category Code 0B001.g.5. or 0B001.h.6., components and optical equipment, as follows:</p> <p>---</p> <p>d. Other “lasers”, not specified in Category Code 6A005.a., 6A005.b. or 6A005.c. as follows:</p> <p>---</p> <p>1. Semiconductor “lasers” as follows:</p> <p>---</p> <p>b. Individual multiple transverse mode semiconductor “lasers” having any of the following characteristics:</p> <p>---</p> <p>1. Wavelength of less than 1,400 nm, and average or CW output power exceeding 15 W;</p>	<p>“Lasers”, other than those specified in Category Code 0B001.g.5. or 0B001.h.6., components and optical equipment, as follows:</p> <p>---</p> <p>d. Other “lasers”, not specified in Category Code 6A005.a., 6A005.b. or 6A005.c. as follows:</p> <p>---</p> <p>1. Semiconductor “lasers” as follows:</p> <p>---</p> <p>b. Individual multiple transverse mode semiconductor “lasers” having any of the following characteristics:</p> <p>---</p> <p>1. Wavelength of less than 1,400 nm and average or CW output power, exceeding 25 W;</p>

6A008

Category Code	SGCO 2021	SGCO 2023
6A008.I.4. <i>Note and Technical Note</i>	<p>Radar systems, equipment and assemblies, having any of the following characteristics, and specially designed components therefor:</p> <p>---</p> <p>1. Having data processing sub systems, and having either of the following characteristics:</p> <p>---</p> <p>4. Configured to provide superposition and correlation, or fusion, of target data within 6 s from two or more ‘geographically dispersed’ radar sensors to improve the aggregate performance beyond that of any single sensor specified in Category Code 6A008.f. or 6A008.i.</p>	<p>Radar systems, equipment and assemblies, having any of the following characteristics, and specially designed components therefor:</p> <p>---</p> <p>1. Having data processing sub systems, and having either of the following characteristics:</p> <p>---</p> <p>4. Configured to provide superposition and correlation, or fusion, of target data within 6 s from two or more ‘geographically dispersed’ radar sensors to improve the aggregate performance beyond that of any single sensor specified in Category Code 6A008.f. or 6A008.i.</p>

Category Code	SGCO 2021	SGCO 2023
	<p>---</p> <p><i>Note</i> Category Code 6A008.1.4. does not include systems, equipment and assemblies used for 'vessel traffic service'.</p> <p><i>Technical Note</i> Sensors are considered 'geographically dispersed' when each location of a sensor is more than 1,500 m away from any other sensor in any direction. Mobile sensors are always considered 'geographically dispersed'.</p>	<p>---</p> <p><i>Note</i> Category Code 6A008.1.4. does not include systems, equipment and assemblies designed for 'vessel traffic service'.</p> <p><i>Technical Note</i> Sensors are considered 'geographically dispersed' when each location is distant from any other more than 1,500 m in any direction. Mobile sensors are always considered 'geographically dispersed'.</p>
6A008 <i>Technical Note 1</i>	<p>Radar systems, equipment and assemblies, having any of the following characteristics, and specially designed components therefor:</p> <p>---</p> <p><i>Technical Notes</i></p> <ol style="list-style-type: none"> 1. For the purpose of Category Code 6A008, 'marine radar' is a radar that is used to navigate safely at sea, inland waterways or near-shore environments. 	<p>Radar systems, equipment and assemblies, having any of the following characteristics, and specially designed components therefor:</p> <p>---</p> <p><i>Technical Notes</i></p> <ol style="list-style-type: none"> 1. For the purpose of Category Code 6A008, 'marine radar' is a radar that is designed to navigate safely at sea, inland waterways or near-shore environments.

6A108

Category Code	SGCO 2021	SGCO 2023
6A108.a. <i>Note</i>	<p>Radar systems, tracking systems and radomes, other than those specified in Category Code 6A008, as follows:</p> <p>---</p> <p>a. Radar and laser radar systems designed or modified for use in space launch vehicles specified in Category Code 9A004 or sounding rockets specified in Category Code 9A104;</p> <p><i>Note</i> <i>Category Code 6A108.a. includes the following:</i></p> <p>a. <i>Terrain contour mapping equipment;</i></p> <p>b. <i>Imaging sensor equipment;</i></p> <p>c. <i>Scene mapping and correlation (both digital and analogue) equipment;</i></p> <p>d. <i>Doppler navigation radar equipment;</i></p> <p>e. <i>Imaging sensor equipment (both active and passive).</i></p>	<p>Radar systems, tracking systems and radomes, other than those specified in Category Code 6A008, as follows:</p> <p>---</p> <p>a. Radar and laser radar systems designed or modified for use in space launch vehicles specified in Category Code 9A004 or sounding rockets specified in Category Code 9A104;</p> <p><i>Note</i> <i>Category Code 6A108.a. includes the following:</i></p> <p>a. <i>Terrain contour mapping equipment;</i></p> <p>b. <i>Scene mapping and correlation (both digital and analogue) equipment;</i></p> <p>c. <i>Doppler navigation radar equipment;</i></p> <p>d. <i>Passive interferometer equipment;</i></p> <p>e. <i>Imaging sensor equipment (both active and passive).</i></p>

6D003

Category Code	SGCO 2021	SGCO 2023
6D003.h.1.	<p>Other “software” as follows:</p> <p>---</p> <p>h. “Software” as follows:</p> <p>---</p> <p>1. Air Traffic Control (ATC) “software” application “programs” designed to be hosted on general purpose computers located at Air Traffic Control (ATC) centres and capable of accepting radar target data from more than four primary radars;</p>	<p>Other “software” as follows:</p> <p>---</p> <p>h. “Software” as follows:</p> <p>---</p> <p>1. Air Traffic Control (ATC) “software” designed to be hosted on general purpose computers located at Air Traffic Control (ATC) centres and capable of accepting radar target data from more than four primary radars;</p>

Category 7**7E004**

Category Code	SGCO 2021	SGCO 2023
7E004.c.3 & <i>Technical Note</i>	<p>Other “technology” as follows: --- c. “Technology” for the “development” of helicopter systems, as follows: --- 3. Rotor blades incorporating ‘variable geometry airfoils’, for use in systems using individual blade control. <i>Technical Note</i> <i>‘Variable geometry airfoils’ use trailing edge flaps or tabs, or leading edge slats or pivoted nose droop, the position of which can be controlled in flight</i></p>	<p>Other “technology” as follows: --- c. “Technology” for the “development” of helicopter systems, as follows: --- 3. Rotor blades incorporating ‘variable geometry aerofoils’, for use in systems using individual blade control. <i>Technical Note</i> <i>‘Variable geometry aerofoils’ use trailing edge flaps or tabs, or leading edge slats or pivoted nose droop, the position of which can be controlled in flight</i></p>

Category 9**9A004**

Category Code	SGCO 2021	SGCO 2023
9A004 & 9A004.g.	<p>Space launch vehicles, “spacecraft”, “spacecraft buses”, “spacecraft payloads”, “spacecraft” on board systems or equipment, terrestrial equipment and air launch platforms, as follows: --- g. “Aircraft” specially designed or modified to be air launch platforms for space launch vehicles;</p>	<p>Space launch vehicles, “spacecraft”, “spacecraft buses”, “spacecraft payloads”, “spacecraft” on-board systems or equipment, terrestrial equipment, air-launch platforms and “sub-orbital craft” as follows: --- g. “Aircraft” specially designed or modified to be air-launch platforms for space launch vehicles or “sub-orbital craft”;</p>

9B001

Category Code	SGCO 2021	SGCO 2023
9B001.c.	<p>Manufacturing equipment, tooling or fixtures, as follows: ---</p> <p>c. Directional solidification or Single Crystal (SC) additive manufacturing equipment, specially designed for manufacturing gas turbine engine blades, vanes or “tip shrouds”.</p>	<p>Manufacturing equipment, tooling or fixtures, as follows: ---</p> <p>c. Directional-solidification or Single Crystal (SC) additive-manufacturing equipment, designed for “superalloys”.</p>

9B004

Category Code	SGCO 2021	SGCO 2023
9B004	<p>Tools, dies or fixtures, for the solid state joining of “superalloy”, titanium or intermetallic airfoil to disk combinations described in Category Code 9E003.a.3. or 9E003.a.6. for gas turbines.</p>	<p>Tools, dies or fixtures, for the solid state joining of “superalloy”, titanium or intermetallic aerofoil-to-disk combinations described in Category Code 9E003.a.3. or 9E003.a.6. for gas turbines.</p>

9E003

Category Code	SGCO 2021	SGCO 2023
9E003.a.2.e & <i>Technical Note</i>	<p>Other “technology” as follows: ---</p> <p>a. “Technology” “required” for the “development” or “production” of any of the following gas turbine engine components or systems: ---</p> <p>2. Combustors having any of the following characteristics: ---</p> <p style="padding-left: 40px;">e.</p>	<p>Other “technology” as follows: ---</p> <p>a. “Technology” “required” for the “development” or “production” of any of the following gas turbine engine components or systems: ---</p> <p>2. Combustors having any of the following characteristics: ---</p> <p style="padding-left: 40px;">e. Utilising ‘pressure gain combustion’; <i>Technical Note</i> In ‘pressure gain combustion’ the bulk average stagnation pressure at the combustor outlet is</p>

Category Code	SGCO 2021	SGCO 2023
		<p><i>greater than the bulk average stagnation pressure at the combustor inlet due primarily to the combustion process, when the engine is running in a "steady state mode" of operation.</i></p>
9E003.a.6.	<p>Other "technology" as follows: --- a. "Technology" "required" for the "development" or "production" of any of the following gas turbine engine components or systems: --- 6. Airfoil-to-disk blade combinations using solid state joining;</p>	<p>Other "technology" as follows: --- a. "Technology" "required" for the "development" or "production" of any of the following gas turbine engine components or systems: --- 6. Aerofoil-to-disk blade combinations using solid state joining;</p>

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