EXPLANATORY STATEMENT

ISSUED BY THE AUTHORITY OF THE MINISTER FOR DEFENCE

CUSTOMS ACT 1901

Defence and Strategic Goods List Amendment 2007

The Defence and Strategic Goods List (the List) is the document formulated and published under paragraph 112(2A)(aa) of the *Customs Act 1901* by the Minister for Defence. The List identifies the goods which regulation 13E of the *Customs (Prohibited Exports) Regulations 1958* prohibits from being exported from Australia unless a licence or permission has been granted by the Minister or an authorised person and that licence or permission is produced to a Collector of Customs before exportation.

The List embodies the export control guidelines developed by the multilateral non-proliferation and export control regimes of which Australia is a member. These regimes include the Wassenaar Arrangement, the Missile Technology Control Regime, the Australia Group and the Nuclear Suppliers Group.

The List was first published in 1996 when the *Customs (Prohibited Exports) Regulations 1958* were consolidated and revised. The List includes equipment, assemblies and components, associated test, inspection and production equipment, materials, software and technology. It is divided into two Parts.

Part 1 covers defence and related goods – those goods and technologies designed or adapted for use by the armed forces or goods that are inherently lethal. These goods include:

- Military Goods, that is, those goods or technology that are designed or adapted for military purposes including parts and accessories thereof; and
- Non-Military Lethal Goods, that is, equipment that is inherently lethal, incapacitating or destructive such as non-military firearms, non-military ammunition and commercial explosives and initiators.

Part 2 covers those goods that have a dual use. Dual-use goods comprise equipment and technologies developed to meet commercial needs but which may be used either as military components or for the development or production of military systems or weapons of mass destruction. Part 2 is further subdivided into 10 categories –

- Category 0 – Nuclear Materials;
- Category 1 – Materials, Chemicals, Micro-organisms and Toxins;
- Category 2 – Materials Processing;
- Category 3 – Electronics;
- Category 4 – Computers;
- Category 5 – Telecommunications and Information Security
- Category 6 – Sensors and Lasers;

- Category 7 - Navigation and Avionics;
- Category 8 – Marine;
- Category 9 – Aerospace and Propulsion.

The List is derived from the European Union Dual-Use List and the Wassenaar Arrangement Munitions List with Australia-specific requirements added. As mentioned above, the European Union Dual-Use List combines the dual use goods and technology controls of the Wassenaar Arrangement, Nuclear Suppliers Group, Missile Technology Control Regime and Australia Group.

The List is amended from time to time to reflect changes in multilateral non-proliferation and export control regimes. The last amendment to the List was made in August 2006.

The Defence and Strategic Goods List Amendment 2007 reflects significant technology, non-proliferation and export control variations introduced since 2006. These variations do not substantially alter the List's nature or overall content. The variations include:

- The introduction of new military and dual-use controls on:

    - Air Independent Propulsion (AIP) systems, specially designed for military submarines enabling to stay submerged for extensive periods.

    - Thermal batteries designed or modified for missiles and able to function in very high ambient temperatures.

    - Military digital troposcatter-radiocommunications transmission equipment. This equipment is specially designed for long-range terrestrial communications and less vulnerable to jamming.

    - Military digital demodulators specially designed for signals intelligence. These are highly specialised electronic devices to decode intercepted radio signals.

    - Underwater sonar navigation systems. Navigation systems of this type are routinely employed by special diving units required to navigate underwater in conditions of low or no visibility.

    - Passive coherent location systems or equipment, specially designed for detecting and tracking moving objects by measuring reflections of ambient radio frequency emissions, supplied by non-radar transmitters.

    - Solid-state pulsed power switching thyristor devices and thyristor modules using electrically, optically or electron radiation controlled switching methods. These thyristor devices and modules are used in high current switching applications, typically in railway locomotives. However, there are certain military applications as well such as electric rail-guns.

- The introduction of the following expansions, adjustments or clarifications of military and dual-use controls, primarily in response to technological advances. The majority of the following amended controls are essentially additions as sub-sets to existing control classes, which are underlined:

    - Smooth-bore rifles with a calibre of 20mm or more. Smooth bore barrels of 20 mm or larger are increasingly being used in more lethal anti-armour applications, instead of the more traditional barrel rifling, because new advances in ammunition technology require a smooth

bore barrel to impart the required muzzle velocity and accuracy. Smooth-bore weapons of less than 20mm calibre are already controlled.

- Fibre lasers. This new class of lasers consists of high power, compact devices, mostly used in the manufacturing and medical fields. Because these types of lasers are dual-use: they have application in military-related and WMD-related programs. Lasers are already controlled.

- Pulse jet engines, usable in unmanned aerial vehicles, and their specially designed components and devices to regulate combustion in engines, which are usable in unmanned aerial vehicles.
  Pulse jet engines and devices to regulate combustion in engines are already controlled, if usable in missiles. This is purely a logical extension of the control to pulse jet engines and devices to regulate combustion usable in unmanned aerial vehicles which have direct military applications such as reconnaissance and attack.

- Software specially designed to design the internal cooling passages of aero gas turbine blades, vans and tip shrouds. Gas turbine engines, in universal use in military applications, require temperature management of the gas generator and power stages (turbine blades). Software for their design is critical to the manufacturing process. Technology for the manufacture of aero gas turbine blades, vans and tip shrouds is already controlled. The existing control has been extended to include software.

- Superconductive composite conductors which remain superconductive above -158.16°C. Superconductor resistances are very low at low temperatures, consequently their electrical conductivity is very efficient with many dual-use applications in advanced military and WMD-related applications.
  This new type of superconductor known as *high temperature superconductive composite conductors* can function at less cold temperatures. Superconductive composite conductors are already controlled.

- Non-destructive inspection equipment specially designed for composite materials, including X-ray tomography systems and numerically controlled ultrasonic testing machines. Non-destructive testing processes are an essential component in the manufacture and maintenance of advanced composite materials which are used in aerospace and general military applications, and in WMD programs. The general class of non-destructive inspection equipment specially designed for composite materials, including X-ray tomography systems, is already controlled.

  Gas centrifuge bellows valves made of, or protected by, materials resistant to corrosion by uranium hexafluoride. Gas centrifuges are used in the enrichment process for uranium with potential for nuclear weapons applications and are already controlled. This amendment only clarifies that valve materials include those resistant to corrosion by uranium hexafluoride.

- Non-fluorinated polymeric hydrazine derivatives. Hydrazines can be used in dual-use applications such as rocket fuels and explosives. Hydrazines are already controlled in the Munitions List, this expanded control implements dual-use controls on hydrazine derivatives.

- The polymeric substance polytetrahydrofuran polyethylene glycol (TPEG).
  Polytetrahydrofuran polyethylene glycol (TPEG) is increasingly being used in the Missile Technology Control regime – controlled rocket motors as a propellant binder. Polymeric substances are already controlled, this proposed addition only involves the substance TPEG.

- The toxins shiga-like ribosome inactivating proteins. The shiga-like ribosome inactivating proteins are highly lethal toxins and could be used in biological warfare agents. Toxins are controlled substances, this proposal simply adds shiga-like ribosome inactivating proteins to the list.

- Fungi, either in the form of isolated live cultures, or as material including living material which has been inoculated or contaminated with coccidioides immitis or coccidioides posadasii. These are highly lethal fungal pathogens and could be used as biological warfare programs. Fungi are controlled, this entry adds those which have been inoculated or contaminated with coccidioides immitis or coccidioides posadasii.

- Software libraries (parametric technical databases) that enable equipment to perform the functions of controlled equipment. Software libraries can be used to provide command and control directions to automated military and dual-use equipment. Software libraries are controlled, this addition simply clarifies the scope of controls on equipment which performs the functions of controlled equipment.

- Microwave power modules (MPM). Microwave technology is used extensively in military radar and communications applications requiring associated power modules. Microwave power devices are controlled items, MPM are a new sub-class of microwave power devices.

- Solar cells, cell-interconnect-coverglass (CIC) assemblies, solar panels and solar arrays, which are 'space-qualified'. 'Space qualified' solar cell assemblies are used in satellites – both civil and military.
  Space-qualified solar cells are controlled, this entry clarifies the scope of control by including solar cell assemblies.

- Imprint lithography equipment capable of producing features of 180 nm or less and imprint lithography templates designed for controlled integrated circuits. Lithography is a technique used in the fabrication of integrated electronic circuits which have wide applications to military systems. Imprint lithography equipment is already controlled, this is just an adjustment of feature size. The resolution capability of these machines, used in integrated circuit manufacture, is steadily improving.

- Silicon carbide (SiC) wafers having a resistivity of more than 10,000 ohm-cm. SiC is used in the manufacture of light emitting diodes which are used in military electronics applications. SiC wafers are controlled items, this new control just narrows the scope to those wafers with more than 10,000 ohm-cm resistivity.

- Numerically controlled optical finishing machine tools, with three or more axes, using magnetorheological finishing (MRF), electrorheological finishing (ERF) or energetic particle beam finishing methods are polishing systems. These machine tools are dual-use equipment which can be used in the manufacture of aerospace and WMD-related components. Numerically controlled optical finishing machine tools are controlled, this revision includes two new finishing methods.

- Chemical manufacturing facilities, equipment and components using niobium (columbium) or niobium alloys. Niobium can be used to produce high strength low alloy steel which is stronger and tougher than ordinary carbon steels and is rust-resistant. Niobium is also used in nickel, cobalt and iron-base super-alloys for aerospace engines and rocket assemblies and heat-resisting and combustion equipment. Chemical manufacturing facilities, equipment and components using advanced metals and alloys are already controlled. This expanded entry captures niobium and its alloys.

- Technology for the development or production of microcircuits, having a vector processor unit designed to perform more than two calculations on floating-point vectors simultaneously. Microcircuits are components of military-related electronics systems in which vector processing units speed computer processing by performing arithmetic operations on arrays of data values. Technology for the development or production of microcircuits is controlled, this addition simply clarifies the scope by referencing the vector processing unit.

- Inertial measurement equipment including Inertial Measurement Units (IMU) and Inertial Reference Systems (IRS), incorporating controlled accelerometers or gyros, and their components. Inertial navigation systems are used in military aerospace systems (including ballistic missiles) for navigation and weapons control. Changes in acceleration of the vehicle are detected by gyroscopes for direction and attitude and by accelerometers for velocity. Inertial systems and equipment, incorporating controlled accelerometers or gyros, are already controlled. This entry clarifies the scope by specifically referencing IMU and IRS.

- Manufacturing equipment specially designed for the production of fibre-optic coil winding machines. Fibre-optics technology transfers information in military-related communications and weapons systems by converting electrical energy into light energy passed through optical fibres. Optical fibres and optical fibre cables are already controlled. This entry adds fibre-optic coil winding machines, as an additional control on manufacturing technology. The control of technology for the manufacture of controlled items is standard practice.

- Components, not yet in the final component form, manufactured from syntactic foam. Syntactic foam has a multitude of uses – many of which are dual-use. Some typical dual-use applications are for liquid containers, insulation material and marine use for boat construction. Syntactic foam components are already controlled. This entry closes a loophole which existed for syntactic foam components, not yet in final form.

- Clarification of the scope of Australia-unique controls on detonators and charges containing, or designed to initiate, non-military energetic materials.
  This Australia-unique entry clarifies the scope of controls on non-military explosives to include devices filled with those controlled non-military explosives.

- Statement of Understanding (SOU) that computer source code is a controlled item. Source codes are data statements written for a computer application before translation into machine language – consequently if the machine language is controlled for military or dual-use applications, the source code should also be controlled. This statement clarifies the fact that the source code of controlled software is also controlled.

- The inclusion of the following disclaimer regarding the index to the DSGL:

  'The index at the end of the Defence and Strategic Goods List is provided for guidance only and does not form part of the control text.'

  This disclaimer has no impact on the scope of controls because the index is not part of the control text.

- The removal of the following controls that are no longer relevant to non-proliferation aims:
  - Polyarylene ether ketones, i.e. polyether ketone ketone (PEKK), polyether ketone (PEK) and polyether ketone ether ketone ketone (PEKEKK).

- Directed energy weapon systems (DEW) test models of systems, equipment and components, no longer including related test results.

- Toxic chemicals and toxic chemical precursors controls, no longer including products identified as consumer goods packaged for retail sale for personal use or packaged for individual use.

- Lasers, no longer including ruby lasers with output energy below 20 joules, nitrogen or krypton lasers.

- Changes to existing text to improve clarity.

The Defence and Strategic Goods List Amendment 2007 also incorporates minor stylistic and grammatical changes in accordance with current government drafting practice.

Defence and the Office of Best Practice Regulation have assessed the amendments to have no, or low impact on business and individuals or the economy. Consequently, a Regulation Impact Statement has not been required.

The List is a disallowable instrument for the purposes of section 42 of the *Legislative Instruments Act 2003.*

The List will commence on the day after it is registered and published on the Federal Register of Legislative Instruments.