ANNEX I

LIST OF DUAL-USE ITEMS(referred to in Article 3 of this Regulation)

This list implements internationally agreed dual-use controls including the Australia Group[(1)], the Missile Technology Control Regime (MTCR)[(2)], the Nuclear Suppliers' Group (NSG)[(3)], the Wassenaar Arrangement[(4)] and the Chemical Weapons Convention (CWC)[(5)].

GENERAL NOTES TO ANNEX I

1. For control of goods which are designed or modified for military use, see the relevant list(s) of controls on military goods maintained by individual Member States. References in this Annex that state "SEE ALSO MILITARY GOODS CONTROLS" refer to the same lists.

2. The object of the controls contained in this Annex should not be defeated by the export of any non-controlled goods (including plant) containing one or more controlled components when the controlled component or components are the principal element of the goods and can feasibly be removed or used for other purposes.

N.B. In judging whether the controlled component or components are to be considered the principal element, it is necessary to weigh the factors of quantity, value and technological know-how involved and other special circumstances which might establish the controlled component or components as the principal element of the goods being procured.

3. Goods specified in this Annex include both new and used goods.

4. In some instances chemicals are listed by name and CAS number. The list applies to chemicals of the same structural formula (including hydrates) regardless of name or CAS number. CAS numbers are shown to assist in identifying a particular chemical or mixture, irrespective of nomenclature. CAS numbers cannot be used as unique identifiers because some forms of the listed chemical have different CAS numbers, and mixtures containing a listed chemical may also have different CAS numbers.

NUCLEAR TECHNOLOGY NOTE (NTN)

(To be read in conjunction with section E of Category 0.)

The "technology" directly associated with any goods controlled in Category 0 is controlled according to the provisions of Category 0.

"Technology" for the "development", "production" or "use" of goods under control remains under control even when applicable to non-controlled goods.

The approval of goods for export also authorizes the export to the same end-user of the minimum "technology" required for the installation, operation, maintenance and repair of the goods.

Controls on "technology" transfer do not apply to information "in the public domain" or to "basic scientific research".

GENERAL TECHNOLOGY NOTE (GTN)

(To be read in conjunction with section E of Categories 1 to 9.)

The export of "technology" which is "required" for the "development", "production" or "use" of goods controlled in Categories 1 to 9, is controlled according to the provisions of Categories 1 to 9.

"Technology""required" for the "development", "production" or "use" of goods under control remains under control even when applicable to non-controlled goods.

Controls do not apply to that "technology" which is the minimum necessary for the installation, operation, maintenance (checking) or repair of those goods which are not controlled or whose export has been authorised.

Note: This does not release such "technolog"y specified in 1E002.e., 1E002.f., 8E002.a. and 8E002.b.

Controls on "technology" transfers do not apply to information "in the public domain", to "basic scientific research" or to the minimum necessary information for patent applications.
NUCLEAR SOFTWARE NOTE (NSN)

(This note overrides any control within section D of Category 0)

Section D of Category 0 of this list does not control "software" which is the minimum necessary "object code" for the installation, operation, maintenance (checking) or repair of those items whose export has been authorised.

The approval of goods for export also authorises the export to the same end-user of the minimum necessary "object code" for the installation, operation, maintenance (checking) or repair of the goods

Note: The Nuclear Software Note does not release "softwar"e specified in Category 5 - Part 2 ("Information Securit"y).
GENERAL SOFTWARE NOTE (GSN)

(This note overrides any control within section D of Categories 1 to 9.)

Categories 1 to 9 of this list do not control "software" which is any of the following:

a. Generally available to the public by being:

   1. Sold from stock at retail selling points, without restriction, by means of:

      a. Over-the-counter transactions;

      b. Mail order transactions;

      c. Electronic transactions; or

      d. Telephone call transactions; and

   2. Designed for installation by the user without further substantial support by the supplier;

   Note: Entry a. of the General Software Note does not release "software" specified in Category 5 - Part 2 ("Information Security").

b. "In the public domain"; or

c. The minimum necessary "object code" for the installation, operation, maintenance (checking) or repair of those items whose export has been authorised.

   Note: Entry c. of the General Software Note does not release "software" specified in Category 5 - Part 2 ("Information Security").

GENERAL "INFORMATION SECURITY" NOTE (GISN)

"Information security" items or functions should be considered against the provisions in Category 5 - Part 2, even if they are components, "software" or functions of other items.
EDITORIAL PRACTICES IN THE *OFFICIAL JOURNAL OF THE EUROPEAN UNION*

In accordance with the rules set out in paragraph 6.5 on page 108 of the Interinstitutional style guide (2015 edition), for texts in English published in the *Official Journal of the European Union*:

— a comma is used to separate the whole number from decimals,

— whole numbers are presented in series of three, each series being separated by a thin space.

The text reproduced in this annex follows the above-described practice.

ACRONYMS AND ABBREVIATIONS USED IN THIS ANNEX

An acronym or abbreviation, when used as a defined term, are found in ‘Definitions of Terms used in this Annex’.

ACRONYM OR ABBREVIATION	**MEANING**
ABEC	Annular Bearing Engineers Committee
ADC	Analogue-to-Digital Converter
AGMA	American Gear Manufacturers' Association
AHRS	Attitude and Heading Reference Systems
AISI	American Iron and Steel Institute
ALE	Atomic Layer Epitaxy
ALU	Arithmetic Logic Unit
ANSI	American National Standards Institute
APP	Adjusted Peak Performance
APU	Auxiliary Power Unit
ASTM	American Society for Testing and Materials
ATC	Air Traffic Control
BJT	Bipolar Junction Transistors
BPP	Beam Parameter Product
BSC	Base Station Controller
CAD	Computer-Aided-Design
CAS	Chemical Abstracts Service
CCD	Charge Coupled Device
CDU	Control and Display Unit
CEP	Circular Error Probable
CMM	Coordinate Measuring Machine
CMOS	Complementary Metal Oxide Semiconductor
CNTD	Controlled Nucleation Thermal Deposition
CPLD	Complex Programmable Logic Device
CPU	Central Processing Unit

CVD	Chemical Vapour Deposition
CW	Chemical Warfare
CW (for lasers)	Continuous Wave
DAC	Digital-to-Analogue Converter
DANL	Displayed Average Noise Level
DBRN	Data-Base Referenced Navigation
DDS	Direct Digital Synthesizer
DMA	Dynamic Mechanical Analysis
DME	Distance Measuring Equipment
DMOSFET	Diffused Metal Oxide Semiconductor Field Effect Transistor
DS	Directionally Solidified
EB	Exploding Bridge
EB-PVD	Electron Beam Physical Vapour Deposition
EBW	Exploding Bridge Wire
ECM	Electro-Chemical Machining
EDM	Electrical Discharge Machines
EEPROMS	Electrically Erasable Programmable Read Only Memory
EFI	Exploding Foil Initiators
EIRP	Effective Isotropic Radiated Power
ENOB	Effective Number of Bits
ERF	Electrorheological Finishing
ERP	Effective Radiated Power
ETO	Emitter Turn-Off Thyristor
ETT	Electrical Triggering Thyristor
EUV	Extreme UltraViolet
FADEC	Full Authority Digital Engine Control
FFT	Fast Fourier Transform
FPGA	Field Programmable Gate Array
FPIC	Field Programmable Interconnect
FPLA	Field Programmable Logic Array
FPO	Floating Point Operation
FWHM	Full-Width Half-Maximum
GSM	Global System for Mobile Communications

GLONASS	Global Navigation Satellite System
GPS	Global Positioning System
GNSS	Global Navigation Satellite System
GTO	Gate Turn-off Thyristor
HBT	Hetero-Bipolar Transistors
HEMT	High Electron Mobility Transistor
ICAO	International Civil Aviation Organisation
IEC	International Electro-technical Commission
IED	Improvised Explosive Device
IEEE	Institute of Electrical and Electronic Engineers
IFOV	Instantaneous-Field-Of-View
IGBT	Insulated Gate Bipolar Transistor
IGCT	Integrated Gate Commutated Thyristor
IHO	International Hydrographic Organization
ILS	Instrument Landing System
IMU	Inertial Measurement Unit
INS	Inertial Navigation System
IP	Internet Protocol
IRS	Inertial Reference System
IRU	Inertial Reference Unit
ISA	International Standard Atmosphere
ISAR	Inverse Synthetic Aperture Radar
ISO	International Organization for Standardization
ITU	International Telecommunication Union
JT	Joule-Thomson
LIDAR	Light Detection and Ranging
LIDT	Laser Induced Damage Threshold
LOA	Length Overall
LRU	Line Replaceable Unit
MLS	Microwave Landing Systems
MMIC	Monolithic Microwave Integrated Circuit
MOCVD	Metal Organic Chemical Vapour Deposition

MOSFET	Metal-Oxide-Semiconductor Field Effect Transistor
MPM	Microwave Power Module
MRAM	Magnetic Random Access Memory
MRF	Magnetorheological Finishing
MRF	Minimum Resolvable Feature size
MRI	Magnetic Resonance Imaging
MTBF	Mean-Time-Between-Failures
MTTF	Mean-Time-To-Failure
NA	Numerical Aperture
NDT	Non-Destructive Test
NEQ	Net Explosive Quantity
OAM	Operations, Administration or Maintenance
OSI	Open Systems Interconnection
PAI	Polyamide-imides
PAR	Precision Approach Radar
PCL	Passive Coherent Location
PDK	Process Design Kit
PIN	Personal Identification Number
PMR	Private Mobile Radio
PVD	Physical Vapour Deposition
ppm	parts per million
QAM	Quadrature-Amplitude-Modulation
QE	Quantum Efficiency
RAP	Reactive Atom Plasmas
RF	Radio Frequency
rms	Root Mean Square
RNC	Radio Network Controller
RNSS	Regional Navigation Satellite System
ROIC	Read-out Integrated Circuit
S-FIL	Step and Flash Imprint Lithography
SAR	Synthetic Aperture Radar
SAS	Synthetic Aperture Sonar
SC	Single Crystal

SCR	Silicon Controlled Rectifier
SFDR	Spurious Free Dynamic Range
SHPL	Super High Powered Laser
SLAR	Sidelooking Airborne Radar
SOI	Silicon-on-Insulator
SQUID	Superconducting Quantum Interference Device
SRA	Shop Replaceable Assembly
SRAM	Static Random Access Memory
SSB	Single Sideband
SSR	Secondary Surveillance Radar
SSS	Side Scan Sonar
TIR	Total Indicated Reading
TVR	Transmitting Voltage Response
u	Atomic Mass Unit
UPR	Unidirectional Positioning Repeatability
UV	UltraViolet
UTS	Ultimate Tensile Strength
VJFET	Vertical Junction Field Effect Transistor
VOR	Very High Frequency Omni-directional Range
WLAN	Wireless Local Area Network

DEFINITIONS OF TERMS USED IN THIS ANNEX

Definitions of terms between ‘single quotation marks’ are given in a Technical Note to the relevant item.

Definitions of terms between "double quotation marks" are as follows:

N.B. Category references are given in brackets after the defined term.

"Accuracy" (2 3 6 7 8), usually measured in terms of inaccuracy, means the maximum deviation, positive or negative, of an indicated value from an accepted standard or true value.

"Active flight control systems" (7) are systems that function to prevent undesirable "aircraft" and missile motions or structural loads by autonomously processing outputs from multiple sensors and then providing necessary preventive commands to effect automatic control.

"Active pixel" (6) is a minimum (single) element of the solid state array which has a photoelectric transfer function when exposed to light (electromagnetic) radiation.

"Adjusted Peak Performance" (4) is an adjusted peak rate at which "digital computers" perform 64-bit or larger floating point additions and multiplications, and is expressed in Weighted TeraFLOPS (WT) with units of 10^{12} adjusted floating point operations per second.

N.B. See Category 4, Technical Note.

"Aircraft" (1 6 7 9) means a fixed wing, swivel wing, rotary wing (helicopter), tilt rotor or tilt-wing airborne vehicle.

N.B. See also "civil aircraf"t.

"Airship" (9) means a power-driven airborne vehicle that is kept buoyant by a body of gas (usually helium, formerly hydrogen) which is lighter than air.

"All compensations available" (2) means after all feasible measures available to the manufacturer to minimise all systematic positioning errors for the particular machine-tool model or measuring errors for the particular coordinate measuring machine are considered.

"Allocated by the ITU" (3 5) means the allocation of frequency bands according to the current edition of the ITU Radio Regulations for primary, permitted and secondary services.

N.B. Additional and alternative allocations are not included.

"Angular position deviation" (2) means the maximum difference between angular position and the actual, very accurately measured angular position after the workpiece mount of the table has been turned out of its initial position

"Angle random walk" (7) means the angular error build up with time that is due to white noise in angular rate. (IEEE STD 528-2001)

"APP" (4) is equivalent to "Adjusted Peak Performance".

"Asymmetric algorithm" (5) means a cryptographic algorithm using different, mathematically-related keys for encryption and decryption.

N.B. A common use of "asymmetric algorithm"s is key management.

"Authentication" (5) means verifying the identity of a user, process or device, often as a prerequisite to allowing access to resources in an information system. This includes verifying the origin or content of a message or other information, and all aspects of access control where there is no encryption of files or text except as directly related to the protection of passwords, Personal Identification Numbers (PINs) or similar data to prevent unauthorized access.

"Average output power" (6) means the total "laser" output energy, in joules, divided by the period over which a series of consecutive pulses is emitted, in seconds. For a series of uniformly spaced pulses it is equal to the total "laser" output energy in a single pulse, in joules, multiplied by the pulse frequency of the "laser", in Hertz.

"Basic gate propagation delay time" (3) means the propagation delay time value corresponding to the basic gate used in a "monolithic integrated circuit". For a ‘family’ of "monolithic integrated circuits", this may be specified either as the propagation delay time per typical gate within the given ‘family’ or as the typical propagation delay time per gate within the given ‘family’.

N.B.1".Basic gate propagation delay tim"e is not to be confused with the input/output delay time of a complex "monolithic integrated circui"t.

N.B.2.'Family' consists of all integrated circuits to which all of the following are applied as their manufacturing methodology and specifications except their respective functions:

a. *The common hardware and software architecture;*

b. *The common design and process technology; and*

c. *The common basic characteristics.*

"Basic scientific research" (GTN NTN) means experimental or theoretical work undertaken principally to acquire new knowledge of the fundamental principles of phenomena or observable facts, not primarily directed towards a specific practical aim or objective.

"Bias" (accelerometer) (7) means the average over a specified time of accelerometer output, measured at specified operating conditions, that has no correlation with input acceleration or rotation. "Bias" is expressed in g or in metres per second squared (g or m/s^2). (IEEE Std 528-2001) (Micro g equals $1x10^{-6}$ g).

"Bias" (gyro) (7) means the average over a specified time of gyro output measured at specified operating conditions that has no correlation with input rotation or acceleration. "Bias" is typically expressed in degrees per hour (deg/hr). (IEEE Std 528-2001).

"Biological agents" (1) are pathogens or toxins, selected or modified (such as altering purity, shelf life, virulence, dissemination characteristics, or resistance to UV radiation) to produce casualties in humans or animals, degrade equipment or damage crops or the environment.

"Camming" (2) means axial displacement in one revolution of the main spindle measured in a plane perpendicular to the spindle faceplate, at a point next to the circumference of the spindle faceplate (Reference: ISO 230-1:1986, paragraph 5.63).

"CEP" (7) means "Circular Error Probable" - In a circular normal distribution, the radius of the circle containing 50 % of the individual measurements being made, or the radius of the circle within which there is a 50 % probability of being located.

"Chemical laser" (6) means a "laser" in which the excited species is produced by the output energy from a chemical reaction.

"Chemical mixture" (1) means a solid, liquid or gaseous product made up of two or more components which do not react together under the conditions under which the mixture is stored.

"Circulation-controlled anti-torque or circulation controlled direction control systems" (7) are systems that use air blown over aerodynamic surfaces to increase or control the forces generated by the surfaces.

"Civil aircraft" (1 3 4 7) means those "aircraft" listed by designation in published airworthiness certification lists by the civil aviation authorities of one or more EU Member States or Wassenaar Arrangement Participating States to fly commercial civil internal and external routes or for legitimate civil, private or business use.

N.B. See also "aircraf"t.

"Communications channel controller" (4) means the physical interface which controls the flow of synchronous or asynchronous digital information. It is an assembly that can be integrated into computer or telecommunications equipment to provide communications access.

"Compensation systems" (6) consist of the primary scalar sensor, one or more reference sensors (e.g., vector "magnetometers") together with software that permit reduction of rigid body rotation noise of the platform.

"Composite" (1 2 6 8 9) means a "matrix" and an additional phase or additional phases consisting of particles, whiskers, fibres or any combination thereof, present for a specific purpose or purposes.

"III/V compounds" (3 6) means polycrystalline or binary or complex monocrystalline products consisting of elements of groups IIIA and VA of Mendeleyev's periodic classification table (e.g., gallium arsenide, gallium-aluminium arsenide, indium phosphide).

"Contouring control" (2) means two or more "numerically controlled" motions operating in accordance with instructions that specify the next required position and the required feed rates to that position. These feed rates are varied in relation to each other so that a desired contour is generated. (ref. ISO/DIS 2806 - 1980).

"Critical temperature" (1 3 5) (sometimes referred to as the transition temperature) of a specific "superconductive" material means the temperature at which the material loses all resistance to the flow of direct electrical current.

"Cryptographic activation" (5) means any technique that specifically activates or enables cryptographic capability of an item, by means of a mechanism implemented by the manufacturer of the item, where this mechanism is uniquely bound to any of the following:

1. A single instance of the item; or

2. One customer, for multiple instances of the item.

Technical Notes:

1. "Cryptographic activatio"n techniques and mechanisms may be implemented as hardware, "softwar"e or "technolog"y.

2. Mechanisms for "cryptographic activatio"n can, for example, be serial number-based licence keys or authentication instruments such as digitally signed certificates.

"Cryptography" (5) means the discipline which embodies principles, means and methods for the transformation of data in order to hide its information content, prevent its undetected modification or prevent its unauthorized use. "Cryptography" is limited to the transformation of information using one or more 'secret parameters' (e.g., crypto variables) or associated key management.

Notes:

1. "Cryptograph"y does not include 'fixed' data compression or coding techniques.

2. "Cryptograph"y includes decryption.

Technical Notes:

1. 'Secret parameter': a constant or key kept from the knowledge of others or shared only within a group.

2. 'Fixed': the coding or compression algorithm cannot accept externally supplied parameters (e.g., cryptographic or key variables) and cannot be modified by the user.

"CW laser" (6) means a "laser" that produces a nominally constant output energy for greater than 0,25 seconds.

"Data-Based Referenced Navigation" ("DBRN") (7) Systems means systems which use various sources of previously measured geo-mapping data integrated to provide accurate navigation information under dynamic conditions. Data sources include bathymetric maps, stellar maps, gravity maps, magnetic maps or 3-D digital terrain maps.

"Depleted uranium" (0) means uranium depleted in the isotope 235 below that occurring in nature.

"Development" (GTN NTN All) is related to all phases prior to serial production, such as: design, design research, design analyses, design concepts, assembly and testing of prototypes, pilot production schemes, design data, process of transforming design data into a product, configuration design, integration design, layouts.

"Diffusion bonding" (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.

"Digital computer" (4 5) means equipment which can, in the form of one or more discrete variables, perform all of the following:

a. Accept data;

b. Store data or instructions in fixed or alterable (writable) storage devices;

c. Process data by means of a stored sequence of instructions which is modifiable; and

d. Provide output of data.

N.B. Modifications of a stored sequence of instructions include replacement of fixed storage devices, but not a physical change in wiring or interconnections.

"Digital transfer rate" (def) means the total bit rate of the information that is directly transferred on any type of medium.

N.B. See also "total digital transfer rat"e.

"Drift rate" (gyro) (7) means the component of gyro output that is functionally independent of input rotation. It is expressed as an angular rate. (IEEE STD 528-2001).

"Effective gramme" (0 1) of "special fissile material" means:

a. For plutonium isotopes and uranium-233, the isotope weight in grammes;

b. For uranium enriched 1 per cent or greater in the isotope uranium-235, the element weight in grammes multiplied by the square of its enrichment expressed as a decimal weight fraction;

c. For uranium enriched below 1 per cent in the isotope uranium-235, the element weight in grammes multiplied by 0,0001;

"Electronic assembly" (2 3 4) means a number of electronic components (i.e., ‘circuit elements’, ‘discrete components’, integrated circuits, etc.) connected together to perform (a) specific function(s), replaceable as an entity and normally capable of being disassembled.

N.B.1.‘Circuit element’: a single active or passive functional part of an electronic circuit, such as one diode, one transistor, one resistor, one capacitor, etc.

N.B.2.‘Discrete component’: a separately packaged ‘circuit element’ with its own external connections.

"Energetic materials" (1) means substances or mixtures that react chemically to release energy required for their intended application. "Explosives", "pyrotechnics" and "propellants" are subclasses of energetic materials.

"End-effectors" (2) means grippers, ‘active tooling units’ and any other tooling that is attached to the baseplate on the end of a "robot" manipulator arm.

N.B.‘Active tooling unit’ means a device for applying motive power, process energy or sensing to the workpiece.

"Equivalent Density" (6) means the mass of an optic per unit optical area projected onto the optical surface.

"Explosives" (1) means solid, liquid or gaseous substances or mixtures of substances which, in their application as primary, booster, or main charges in warheads, demolition and other applications, are required to detonate.

"FADEC Systems" (9) means Full Authority Digital Engine Control Systems – A digital electronic control system for a gas turbine engine that is able to autonomously control the engine throughout its whole operating range from demanded engine start until demanded engine shut-down, in both normal and fault conditions.

"Fibrous or filamentary materials" (0 1 8 9) include:

a. Continuous "monofilaments";

b. Continuous "yarns" and "rovings";

c. "Tapes", fabrics, random mats and braids;

d. Chopped fibres, staple fibres and coherent fibre blankets;

e. Whiskers, either monocrystalline or polycrystalline, of any length;

f. Aromatic polyamide pulp.

"Film type integrated circuit" (3) means an array of ‘circuit elements’ and metallic interconnections formed by deposition of a thick or thin film on an insulating "substrate".

N.B.‘Circuit element’ is a single active or passive functional part of an electronic circuit, such as one diode, one transistor, one resistor, one capacitor, etc.

"Fly-by-light system" (7) means a primary digital flight control system employing feedback to control the "aircraft" during flight, where the commands to the effectors/actuators are optical signals.

"Fly-by-wire system" (7) means a primary digital flight control system employing feedback to control the "aircraft" during flight, where the commands to the effectors/actuators are electrical signals.

"Focal plane array" (6 8) means a linear or two-dimensional planar layer, or combination of planar layers, of individual detector elements, with or without readout electronics, which work in the focal plane.

N.B. This is not intended to include a stack of single detector elements or any two, three or four element detectors provided time delay and integration is not performed within the element.

"Fractional bandwidth" (3 5) means the "instantaneous bandwidth" divided by the centre frequency, expressed as a percentage.

"Frequency hopping" (5 6) means a form of "spread spectrum" in which the transmission frequency of a single communication channel is made to change by a random or pseudo-random sequence of discrete steps.

"Frequency switching time" (3) means the time (i.e., delay) taken by a signal when switched from an initial specified output frequency, to arrive at or within any of the following:

a. ±100 Hz of a final specified output frequency of less than 1 GHz; or

b. ±0,1 part per million of a final specified output frequency equal to or greater than 1 GHz.

"Fuel cell" (8) is an electrochemical device that converts chemical energy directly into Direct Current (DC) electricity by consuming fuel from an external source.

"Fusible" (1) means capable of being cross-linked or polymerized further (cured) by the use of heat, radiation, catalysts, etc., or that can be melted without pyrolysis (charring).

"Guidance set" (7) means systems that integrate the process of measuring and computing a vehicles position and velocity (i.e. navigation) with that of computing and sending commands to the vehicles flight control systems to correct the trajectory.

"Hybrid integrated circuit" (3) means any combination of integrated circuit(s), or integrated circuit with ‘circuit elements’ or ‘discrete components’ connected together to perform (a) specific function(s), and having all of the following characteristics:

a. Containing at least one unencapsulated device;

b. Connected together using typical IC production methods;

c. Replaceable as an entity; and

d. Not normally capable of being disassembled.

N.B.1. ‘Circuit element’: a single active or passive functional part of an electronic circuit, such as one diode, one transistor, one resistor, one capacitor, etc.

N.B.2. ‘Discrete component’: a separately packaged ‘circuit element’ with its own external connections.

"Image enhancement" (4) means the processing of externally derived information-bearing images by algorithms such as time compression, filtering, extraction, selection, correlation, convolution or transformations between domains (e.g., fast Fourier transform or Walsh transform). This does not include algorithms using only linear or rotational transformation of a single image, such as translation, feature extraction, registration or false coloration.

"Immunotoxin" (1) is a conjugate of one cell specific monoclonal antibody and a "toxin" or "sub-unit of toxin", that selectively affects diseased cells.

"In the public domain" (GTN NTN GSN), as it applies herein, means "technology" or "software" which has been made available without restrictions upon its further dissemination (copyright restrictions do not remove "technology" or "software" from being "in the public domain").

"Information security" (GSN GISN 5) is all the means and functions ensuring the accessibility, confidentiality or integrity of information or communications, excluding the means and functions intended to safeguard against malfunctions. This includes "cryptography", "cryptographic activation", ‘cryptanalysis’, protection against compromising emanations and computer security.
Technical Note:

‘Cryptanalysis’: analysis of a cryptographic system or its inputs and outputs to derive confidential variables or sensitive data, including clear text.

"Instantaneous bandwidth" (3 5 7) means the bandwidth over which output power remains constant within 3 dB without adjustment of other operating parameters.

"Instrumented range" (6) means the specified unambiguous display range of a radar.

"Insulation" (9) is applied to the components of a rocket motor, i.e. the case, nozzle, inlets, case closures, and includes cured or semi-cured compounded rubber sheet stock containing an insulating or refractory material. It may also be incorporated as stress relief boots or flaps.

"Interior lining" (9) is suited for the bond interface between the solid propellant and the case or insulating liner. Usually a liquid polymer based dispersion of refractory or insulating materials, e.g. carbon filled hydroxyl terminated polybutadiene (HTPB) or other polymer with added curing agents sprayed or screeded over a case interior.

"Interleaved Analogue-to-Digital Converter (ADC)" (3) means devices that 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.

"Intrinsic Magnetic Gradiometer" (6) is a single magnetic field gradient sensing element and associated electronics the output of which is a measure of magnetic field gradient.

N.B. See also "magnetic gradiomete"r.

"Intrusion software" (4) means "software" specially designed or modified to avoid detection by 'monitoring tools', or to defeat 'protective countermeasures', of a computer or network-capable device, and performing any of the following:

a. The extraction of data or information, from a computer or network-capable device, or the modification of system or user data; or

b. The modification of the standard execution path of a program or process in order to allow the execution of externally provided instructions.

Notes:

1. "Intrusion softwar"e does not include any of the following:

a. *Hypervisors, debuggers or Software Reverse Engineering (SRE) tools;*

b. *Digital Rights Management (DRM) "softwar"e; or*

c. *"Softwar"e designed to be installed by manufacturers, administrators or users, for the purposes of asset tracking or recovery.*

2. Network-capable devices include mobile devices and smart meters.

Technical Notes:

1. 'Monitoring tools': "softwar"e or hardware devices, that monitor system behaviours or processes running on a device. This includes antivirus (AV) products, end point security products, Personal Security Products (PSP), Intrusion Detection Systems (IDS), Intrusion Prevention Systems (IPS) or firewalls.

2. 'Protective countermeasures': techniques designed to ensure the safe execution of code, such as Data Execution Prevention (DEP), Address Space Layout Randomisation (ASLR) or sandboxing.

"Isolated live cultures" (1) includes live cultures in dormant form and in dried preparations.

"Isostatic presses" (2) mean equipment capable of pressurising a closed cavity through various media (gas, liquid, solid particles, etc.) to create equal pressure in all directions within the cavity upon a workpiece or material.

"Laser" (0 1 2 3 5 6 7 8 9) is an item that produces spatially and temporally coherent light through amplification by stimulated emission of radiation.

N.B. See also	*"Chemical lase"r;* *"CW lase"r;* *"Pulsed lase"r;* *"Super High Power Lase"r.*

"Library" (1) (parametric technical database) means a collection of technical information, reference to which may enhance the performance of relevant systems, equipment or components.

"Lighter-than-air vehicles" (9) means balloons and "airships" that rely on hot air or other lighter-than-air gases such as helium or hydrogen for their lift.

"Linearity" (2) (Usually measured in terms of non-linearity) means the maximum deviation of the actual characteristic (average of upscale and downscale readings), positive or negative, from a straight line so positioned as to equalise and minimise the maximum deviations.

"Local area network" (4 5) is a data communication system having all of the following characteristics:

a. Allows an arbitrary number of independent ‘data devices’ to communicate directly with each other; and

b. Is confined to a geographical area of moderate size (e.g., office building, plant, campus, warehouse).

N.B.‘Data device’ means equipment capable of transmitting or receiving sequences of digital information.

"Magnetic Gradiometers" (6) are instruments designed to detect the spatial variation of magnetic fields from sources external to the instrument. They consist of multiple "magnetometers" and associated electronics the output of which is a measure of magnetic field gradient.

N.B. See also "intrinsic magnetic gradiomete"r.

"Magnetometers" (6) are instruments designed to detect magnetic fields from sources external to the instrument. They consist of a single magnetic field sensing element and associated electronics the output of which is a measure of the magnetic field.

"Materials resistant to corrosion by UF_6" (0) include copper, copper alloys, stainless steel, aluminium, aluminium oxide, aluminium alloys, nickel or alloys containing 60 % or more nickel by weight and fluorinated hydrocarbon polymers.

"Matrix" (1 2 8 9) means a substantially continuous phase that fills the space between particles, whiskers or fibres.

"Measurement uncertainty" (2) is the characteristic parameter which specifies in what range around the output value the correct value of the measurable variable lies with a confidence level of 95 %. It includes the uncorrected systematic deviations, the uncorrected backlash and the random deviations (ref. ISO 10360-2).

"Microcomputer microcircuit" (3) means a "monolithic integrated circuit" or "multichip integrated circuit" containing an arithmetic logic unit (ALU) capable of executing general purpose instructions from an internal storage, on data contained in the internal storage.

N.B. The internal storage may be augmented by an external storage.

"Microprocessor microcircuit" (3) means a "monolithic integrated circuit" or "multichip integrated circuit" containing an arithmetic logic unit (ALU) capable of executing a series of general purpose instructions from an external storage.

N.B.1. The "microprocessor microcircui"t normally does not contain integral user-accessible storage, although storage present on-the-chip may be used in performing its logic function.

N.B.2. This includes chip sets which are designed to operate together to provide the function of a "microprocessor microcircui"t.

"Microorganisms" (1 2) means bacteria, viruses, mycoplasms, 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" (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.

"Monofilament" (1) or filament is the smallest increment of fibre, usually several micrometres in diameter.

"Monolithic integrated circuit" (3) means a combination of passive or active ‘circuit elements’ or both which:

a. Are formed by means of diffusion processes, implantation processes or deposition processes in or on a single semiconducting piece of material, a so-called ‘chip’;

b. Can be considered as indivisibly associated; and

c. Perform the function(s) of a circuit.

N.B.‘Circuit element’ is a single active or passive functional part of an electronic circuit, such as one diode, one transistor, one resistor, one capacitor, etc.

"Monolithic Microwave Integrated Circuit" ("MMIC") (3 5) means a "monolithic integrated circuit" that operates at microwave or millimeter wave frequencies.

"Monospectral imaging sensors" (6) are capable of acquisition of imaging data from one discrete spectral band.

"Multichip integrated circuit" (3) means two or more "monolithic integrated circuits" bonded to a common "substrate".

"Multiple channel Analogue-to-Digital Converter (ADC)" (3) means devices that integrate more than one ADC, designed so that each ADC has a separate analogue input.

"Multispectral imaging sensors" (6) are capable of simultaneous or serial acquisition of imaging data from two or more discrete spectral bands. Sensors having more than twenty discrete spectral bands are sometimes referred to as hyperspectral imaging sensors.

"Natural uranium" (0) means uranium containing the mixtures of isotopes occurring in nature.

"Network access controller" (4) means a physical interface to a distributed switching network. It uses a common medium which operates throughout at the same "digital transfer rate" using arbitration (e.g., token or carrier sense) for transmission. Independently from any other, it selects data packets or data groups (e.g., IEEE 802) addressed to it. It is an assembly that can be integrated into computer or telecommunications equipment to provide communications access.

"Nuclear reactor" (0) means a complete reactor capable of operation so as to maintain a controlled self-sustaining fission chain reaction. A "nuclear reactor" includes all the items within or attached directly to the reactor vessel, the equipment which controls the level of power in the core, and the components which normally contain, come into direct contact with or control the primary coolant of the reactor core.

"Numerical control" (2) means the automatic control of a process performed by a device that makes use of numeric data usually introduced as the operation is in progress (ref. ISO 2382:2015).

"Object code" (GSN) means an equipment executable form of a convenient expression of one or more processes ("source code" (source language)) which has been compiled by programming system.

"Operations, Administration or Maintenance" ("OAM") (5) means performing one or more of the following tasks:

a. Establishing or managing any of the following:

   1. Accounts or privileges of users or administrators;

   2. Settings of an item; or

   3. Authentication data in support of the tasks described in paragraphs a.1. or a.2.;

b. Monitoring or managing the operating condition or performance of an item; or

c. Managing logs or audit data in support of any of the tasks described in paragraphs a. or b.

Note":OA"M does not include any of the following tasks or their associated key management functions:

a. *Provisioning or upgrading any cryptographic functionality that is not directly related to establishing or managing authentication data in support of the tasks described in paragraphs a.1. or a.2. above; or*

b. *Performing any cryptographic functionality on the forwarding or data plane of an item.*

"Optical integrated circuit" (3) means a "monolithic integrated circuit" or a "hybrid integrated circuit", containing one or more parts designed to function as a photosensor or photoemitter or to perform (an) optical or (an) electro-optical function(s).

"Optical switching" (5) means the routing of or switching of signals in optical form without conversion to electrical signals.

"Overall current density" (3) means the total number of ampere-turns in the coil (i.e., the sum of the number of turns multiplied by the maximum current carried by each turn) divided by the total cross-section of the coil (comprising the superconducting filaments, the metallic matrix

in which the superconducting filaments are embedded, the encapsulating material, any cooling channels, etc.).

"Participating state" (7 9) is a state participating in the Wassenaar Arrangement. (see www.wassenaar.org)

"Peak power" (6) means the highest power attained in the "pulse duration".

"Personal area network" (5) means a data communication system having all of the following characteristics:

a. Allows an arbitrary number of independent or interconnected ‘data devices’ to communicate directly with each other; and

b. Is confined to the communication between devices within the immediate vicinity of an individual person or device controller (e.g., single room, office, or automobile, and their nearby surrounding spaces).

Technical Note:

‘Data device’ means equipment capable of transmitting or receiving sequences of digital information.

"Previously separated" (1) is the application of any process intended to increase the concentration of the controlled isotope.

"Principal element" (4), as it applies in Category 4, is a "principal element" when its replacement value is more than 35 % of the total value of the system of which it is an element. Element value is the price paid for the element by the manufacturer of the system, or by the system integrator. Total value is the normal international selling price to unrelated parties at the point of manufacture or consolidation of shipment.

"Production" (GTN NTN All) means all production phases, such as: construction, production engineering, manufacture, integration, assembly (mounting), inspection, testing, quality assurance.

"Production equipment" (1 7 9) means tooling, templates, jigs, mandrels, moulds, dies, fixtures, alignment mechanisms, test equipment, other machinery and components therefor, limited to those specially designed or modified for "development" or for one or more phases of "production".

"Production facilities" (7 9) means "production equipment" and specially designed software therefor integrated into installations for "development" or for one or more phases of "production".

"Program" (2 6) means a sequence of instructions to carry out a process in, or convertible into, a form executable by an electronic computer.

"Pulse compression" (6) means the coding and processing of a radar signal pulse of long time duration to one of short time duration, while maintaining the benefits of high pulse energy.

"Pulse duration" (6) is the duration of a "laser" pulse and means the time between the half-power points on the leading edge and trailing edge of an individual pulse.

"Pulsed laser" (6) means a "laser" having a "pulse duration" that is less than or equal to 0,25 seconds.

"Quantum cryptography" (5) means a family of techniques for the establishment of shared key for "cryptography" by measuring the quantum-mechanical properties of a physical system

(including those physical properties explicitly governed by quantum optics, quantum field theory or quantum electrodynamics).

"Radar frequency agility" (6) means any technique which changes, in a pseudo-random sequence, the carrier frequency of a pulsed radar transmitter between pulses or between groups of pulses by an amount equal to or larger than the pulse bandwidth.

"Radar spread spectrum" (6) means any modulation technique for spreading energy originating from a signal with a relatively narrow frequency band, over a much wider band of frequencies, by using random or pseudo-random coding.

"Radiant sensitivity" (6) is Radiant sensitivity (mA/W) = 0,807 x (wavelength in nm) x Quantum Efficiency (QE).
Technical Note:

QE is usually expressed as a percentage; however, for the purposes of this formula QE is expressed as a decimal number less than one, e.g., 78 % is 0,78.

"Real-time processing" (6) means the processing of data by a computer system providing a required level of service, as a function of available resources, within a guaranteed response time, regardless of the load of the system, when stimulated by an external event.

"Repeatability" (7) means the closeness of agreement among repeated measurements of the same variable under the same operating conditions when changes in conditions or non-operating periods occur between measurements. (Reference: IEEE STD 528-2001 (one sigma standard deviation))

"Required" (GTN 5 6 7 9), as applied to "technology", refers to only that portion of "technology" which is peculiarly responsible for achieving or extending the controlled performance levels, characteristics or functions. Such "required""technology" may be shared by different goods.

"Resolution" (2) means the least increment of a measuring device; on digital instruments, the least significant bit (ref. ANSI B-89.1.12).

"Riot control agent" (1) means substances which, under the expected conditions of use for riot control purposes, produce rapidly in humans sensory irritation or disabling physical effects which disappear within a short time following termination of exposure.
Technical Note:

Tear gases are a subset of "riot control agent"s.

"Robot" (2 8) means a manipulation mechanism, which may be of the continuous path or of the point-to-point variety, may use sensors, and has all the following characteristics:

a. Is multifunctional;

b. Is capable of positioning or orienting material, parts, tools or special devices through variable movements in three dimensional space;

c. Incorporates three or more closed or open loop servo-devices which may include stepping motors; and

d. Has "user accessible programmability" by means of teach/playback method or by means of an electronic computer which may be a programmable logic controller, i.e., without mechanical intervention.

N.B. The above definition does not include the following devices:

1. *Manipulation mechanisms which are only manually/teleoperator controllable;*

2. *Fixed sequence manipulation mechanisms which are automated moving devices, operating according to mechanically fixed programmed motions. The programme is mechanically limited by fixed stops, such as pins or cams. The sequence of motions and the selection of paths or angles are not variable or changeable by mechanical, electronic or electrical means;*

3. *Mechanically controlled variable sequence manipulation mechanisms which are automated moving devices, operating according to mechanically fixed programmed motions. The programme is mechanically limited by fixed, but adjustable stops, such as pins or cams. The sequence of motions and the selection of paths or angles are variable within the fixed programme pattern. Variations or modifications of the programme pattern (e.g., changes of pins or exchanges of cams) in one or more motion axes are accomplished only through mechanical operations;*

4. *Non-servo-controlled variable sequence manipulation mechanisms which are automated moving devices, operating according to mechanically fixed programmed motions. The programme is variable but the sequence proceeds only by the binary signal from mechanically fixed electrical binary devices or adjustable stops;*

5. *Stacker cranes defined as Cartesian coordinate manipulator systems manufactured as an integral part of a vertical array of storage bins and designed to access the contents of those bins for storage or retrieval.*

"Roving" (1) is a bundle (typically 12-120) of approximately parallel ‘strands’.

N.B.‘Strand’ is a bundle of "monofilament"s (typically over 200) arranged approximately parallel.

"Run-out" (2) (out-of-true running) means radial displacement in one revolution of the main spindle measured in a plane perpendicular to the spindle axis at a point on the external or internal revolving surface to be tested (Reference: ISO 230-1:1986, paragraph 5.61).

"Sample rate" (3) for an Analogue-to-Digital Converter (ADC) means the maximum number of samples that are measured at the analogue input over a period of one second, except for oversampling ADCs. For oversampling ADCs the "sample rate" is taken to be its output word rate. "Sample rate" may also be referred to as sampling rate, usually specified in Mega Samples Per Second (MSPS) or Giga Samples Per Second (GSPS), or conversion rate, usually specified in Hertz (Hz).

"Satellite navigation system" (5 7) means a system consisting of ground stations, a constellation of satellites, and receivers, that enables receiver locations to be calculated on the basis of signals received from the satellites. It includes Global Navigation Satellite Systems (GNSS) and Regional Navigation Satellite Systems (RNSS).

"Scale factor" (gyro or accelerometer) (7) means the ratio of change in output to a change in the input intended to be measured. Scale factor is generally evaluated as the slope of the straight line that can be fitted by the method of least squares to input-output data obtained by varying the input cyclically over the input range.

"Signal analysers" (3) means apparatus capable of measuring and displaying basic properties of the single-frequency components of multi-frequency signals.

"Signal processing" (3 4 5 6) means the processing of externally derived information-bearing signals by algorithms such as time compression, filtering, extraction, selection, correlation,

convolution or transformations between domains (e.g., fast Fourier transform or Walsh transform).

"Software" (GSN All) means a collection of one or more "programs" or 'microprograms' fixed in any tangible medium of expression.

N.B.'Microprogram' means a sequence of elementary instructions, maintained in a special storage, the execution of which is initiated by the introduction of its reference instruction into an instruction register.

"Source code" (or source language) (6 7 9) is a convenient expression of one or more processes which may be turned by a programming system into equipment executable form ("object code" (or object language)).

"Spacecraft" (9) means active and passive satellites and space probes.

"Spacecraft bus" (9) means equipment that provides the support infrastructure of the "spacecraft" and location for the "spacecraft payload".

"Spacecraft payload" (9) means equipment, attached to the "spacecraft bus", designed to perform a mission in space (e.g., communications, observation, science).

"Space-qualified" (3 6 7) means designed, manufactured or qualified through successful testing, for operation at altitudes greater than 100 km above the surface of the Earth.

N.B. A determination that a specific item is "Space-qualifie"d by virtue of testing does not mean that other items in the same production run or model series are "Space-qualifie"d if not individually tested.

"Special fissile material" (0) means plutonium-239, uranium-233, "uranium enriched in the isotopes 235 or 233", and any material containing the foregoing.

"Specific modulus" (0 1 9) is Young's modulus in pascals, equivalent to N/m^2 divided by specific weight in N/m^3, measured at a temperature of (296 ± 2) K ((23 ± 2)°C) and a relative humidity of (50 ± 5)%.

"Specific tensile strength" (0 1 9) is ultimate tensile strength in pascals, equivalent to N/m^2 divided by specific weight in N/m^3, measured at a temperature of (296 ± 2) K ((23 ± 2)°C) and a relative humidity of (50 ± 5)%.

"Spinning mass gyros" (7) means gyros which use a continually rotating mass to sense angular motion.

"Spread spectrum" (5) means the technique whereby energy in a relatively narrow-band communication channel is spread over a much wider energy spectrum.

"Spread spectrum" radar (6) - see "Radar spread spectrum".

"Stability" (7) means the standard deviation (1 sigma) of the variation of a particular parameter from its calibrated value measured under stable temperature conditions. This can be expressed as a function of time.

"States (not) Party to the Chemical Weapon Convention" (1) are those states for which the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons has (not) entered into force. (See www.opcw.org)

"Steady State Mode" (9) defines engine operation conditions, where the engine parameters, such as thrust/power, rpm and others, have no appreciable fluctuations, when the ambient air temperature and pressure at the engine inlet are constant.

"Substrate" (3) means a sheet of base material with or without an interconnection pattern and on which or within which ‘discrete components’ or integrated circuits or both can be located.

N.B.1.‘Discrete component’: a separately packaged ‘circuit element’ with its own external connections.

N.B.2.‘Circuit element’: a single active or passive functional part of an electronic circuit, such as one diode, one transistor, one resistor, one capacitor, etc.

"Substrate blanks" (3 6) means monolithic compounds with dimensions suitable for the production of optical elements such as mirrors or optical windows.

"Sub-unit of toxin" (1) is a structurally and functionally discrete component of a whole "toxin".

"Superalloys" (2 9) means nickel-, cobalt- or iron-base alloys having strengths superior to any alloys in the AISI 300 series at temperatures over 922 K (649°C) under severe environmental and operating conditions.

"Superconductive" (1 3 5 6 8) means materials, i.e., metals, alloys or compounds, which can lose all electrical resistance, i.e., which can attain infinite electrical conductivity and carry very large electrical currents without Joule heating.

N.B. The "superconductiv"e state of a material is individually characterised by a "critical temperatur"e, a critical magnetic field, which is a function of temperature, and a critical current density which is, however, a function of both magnetic field and temperature.

"Super High Power Laser" ("SHPL") (6) means a "laser" capable of delivering (the total or any portion of) the output energy exceeding 1 kJ within 50 ms or having an average or CW power exceeding 20 kW.

"Superplastic forming" (1 2) means a deformation process using heat for metals that are normally characterised by low values of elongation (less than 20 %) at the breaking point as determined at room temperature by conventional tensile strength testing, in order to achieve elongations during processing which are at least 2 times those values.

"Symmetric algorithm" (5) means a cryptographic algorithm using an identical key for both encryption and decryption.

N.B. A common use of "symmetric algorithm"s is confidentiality of data.

"Tape" (1) is a material constructed of interlaced or unidirectional "monofilaments", ‘strands’, "rovings", "tows", or "yarns", etc., usually pre-impregnated with resin.

N.B.‘Strand’ is a bundle of "monofilament"s (typically over 200) arranged approximately parallel.

"Technology" (GTN NTN All) means specific information necessary for the "development", "production" or "use" of goods. This information takes the form of ‘technical data’ or ‘technical assistance’.

N.B.1.‘Technical assistance’ may take forms such as instructions, skills, training, working knowledge and consulting services and may involve the transfer of ‘technical data’.

N.B.2.'Technical data' may take forms such as blueprints, plans, diagrams, models, formulae, tables, engineering designs and specifications, manuals and instructions written or recorded on other media or devices such as disk, tape, read-only memories.

"Three dimensional integrated circuit" (3) means a collection of semiconductor dies or active device layers, integrated together, and having through semiconductor via connections passing completely through an interposer, substrate, die or layer to establish interconnections between the device layers. An interposer is an interface that enables electrical connections.

"Tilting spindle" (2) means a tool-holding spindle which alters, during the machining process, the angular position of its centre line with respect to any other axis.

"Time constant" (6) is the time taken from the application of a light stimulus for the current increment to reach a value of 1-1/e times the final value (i.e., 63 % of the final value).

"Time-to-steady-state registration" (6) (also referred to as the gravimeter's response time) is the time over which the disturbing effects of platform induced accelerations (high frequency noise) are reduced.

"Tip shroud" (9) means a stationary ring component (solid or segmented) attached to the inner surface of the engine turbine casing or a feature at the outer tip of the turbine blade, which primarily provides a gas seal between the stationary and rotating components.

"Total control of flight" (7) means an automated control of "aircraft" state variables and flight path to meet mission objectives responding to real time changes in data regarding objectives, hazards or other "aircraft".

"Total digital transfer rate" (5) means the number of bits, including line coding, overhead and so forth per unit time passing between corresponding equipment in a digital transmission system.

N.B. See also "digital transfer rat"e.

"Tow" (1) is a bundle of "monofilaments", usually approximately parallel.

"Toxins" (1 2) means toxins in the form of deliberately isolated preparations or mixtures, no matter how produced, other than toxins present as contaminants of other materials such as pathological specimens, crops, foodstuffs or seed stocks of "microorganisms".

"Tunable" (6) means the ability of a "laser" to produce a continuous output at all wavelengths over a range of several "laser" transitions. A line selectable "laser" produces discrete wavelengths within one "laser" transition and is not considered "tunable".

"Unidirectional positioning repeatability" (2) means the smaller of values R↑ and R↓ (forward and backward), as defined by 3.21 of ISO 230-2:2014 or national equivalents, of an individual machine tool axis.

"Unmanned Aerial Vehicle" ("UAV") (9) means any aircraft capable of initiating flight and sustaining controlled flight and navigation without any human presence on board.

"Uranium enriched in the isotopes 235 or 233" (0) means uranium containing the isotopes 235 or 233, or both, in an amount such that the abundance ratio of the sum of these isotopes to the isotope 238 is more than the ratio of the isotope 235 to the isotope 238 occurring in nature (isotopic ratio 0,71 per cent).

"Use" (GTN NTN All) means operation, installation (including on-site installation), maintenance (checking), repair, overhaul and refurbishing.

"User-accessible programmability" (6) means the facility allowing a user to insert, modify or replace "programs" by means other than:

a. A physical change in wiring or interconnections; or

b. The setting of function controls including entry of parameters.

"Vaccine" (1) is a medicinal product in a pharmaceutical formulation licensed by, or having marketing or clinical trial authorisation from, the regulatory authorities of either the country of manufacture or of use, which is intended to stimulate a protective immunological response in humans or animals in order to prevent disease in those to whom or to which it is administered.

"Vacuum electronic devices" (3) means electronic devices based on the interaction of an electron beam with an electromagnetic wave propagating in a vacuum circuit or interacting with radio-frequency vacuum cavity resonators. "Vacuum electronic devices" include klystrons, travelling-wave tubes, and their derivatives.

"Yarn" (1) is a bundle of twisted ‘strands’.

N.B.‘Strand’ is a bundle of "monofilament"s (typically over 200) arranged approximately parallel. '

(**1**) https://www.australiagroup.net/

(**2**) http://mtcr.info/

(**3**) http://www.nuclearsuppliersgroup.org/

(**4**) http://www.wassenaar.org/

(**5**) https://www.opcw.org/chemical-weapons-convention