

for normal installation, maintenance and operation situations.

(B) Can we send an engineer (with knowledge and experience) to the customer site to perform the installation or repair, under the provisions of License Exception TSU for operation technology and software described in § 740.13(a) of the EAR, if it is understood that he is restricted by our normal business practices to performing the work without imparting the knowledge or technology to the customer personnel?

(ii) *Answer 1.* Export of technology includes release of U.S.-origin data in a foreign country, and "release" includes "application to situations abroad of personal knowledge or technical experience acquired in the United States." As the release of technology in the circumstances described here would exceed that permitted under the License Exception TSU for operation technology and software described in § 740.13(a) of the EAR, a license would be required even though the technician could apply the data without disclosing it to the customer.

(2)(i) *Question 2.* We plan, according to our normal business practices, to train customer engineers to maintain equipment that we have exported under a license, License Exception, or NLR. The training is contractual in nature, provided for a fee, and is scheduled to take place in part in the customer's facility and in part in the U.S. Can we now proceed with this training at both locations under a License Exception?

(ii) *Answer 2.* (A) Provided that this is your normal training, and involves technology contained in your manuals and standard instructions for the exported equipment, and meets the other requirements of License Exception TSU for operation technology and software described in § 740.13(a), the training may be provided within the limits of those provisions of License Exception TSU. The location of the training is not significant, as the export occurs at the time and place of the actual transfer or imparting of the technology to the customer's engineers.

(B) Any training beyond that covered under the provisions of License Exception TSU for operation technology and software described in § 740.13(a), but

specifically represented in your license application as required for this customer installation, and in fact authorized on the face of the license or a separate technology license, may not be undertaken while the license is suspended or revoked.

[61 FR 12920, Mar. 25, 1996, as amended at 61 FR 64286, Dec. 4, 1996; 62 FR 25470, May 9, 1997; 65 FR 14860, Mar. 20, 2000]

## PART 772—DEFINITIONS OF TERMS

AUTHORITY: 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; E.O. 12924, 59 FR 43437, 3 CFR, 1994 Comp., p. 917; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; Notice of August 3, 2000 (65 FR 48347, August 8, 2000).

SOURCE: 61 FR 12925, Mar. 25, 1996, unless otherwise noted.

### § 772.1 Definitions of terms as used in the Export Administration Regulations (EAR).

The following are definitions of terms as used in the Export Administration Regulations (EAR). In this part, references to the EAR are references to 15 CFR chapter VII, subchapter C. Those terms in quotation marks refer to terms used on the Commerce Control List (CCL) (Supplement No. 1 to part 774 of the EAR). Parenthetical references following the terms in quotation marks (i.e., (Cat 5)) refer to the CCL category in which that term is found.

*AES.* See "Automated Export System."

*ATM.* (Cat 5)—See "Asynchronous Transfer Mode."

*Accuracy.* (Cat 2 and 6)—"Accuracy" is usually measured in terms of inaccuracy. It is defined as the maximum deviation, positive or negative, of an indicated value from an accepted standard or true value.

*Active flight control systems.* (Cat 7)—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.* (Cat 6 and 8)—A maximum (single) element of the solid state array that has a photoelectric

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transfer function when exposed to light (electromagnetic) radiation.

*Adaptive control.* (Cat 2)—A control system that adjusts the response from conditions detected during the operation (Ref. ISO 2806-1980).

*Advisory Committee on Export Policy (ACEP).* The ACEP voting members include the Assistant Secretary of Commerce for Export Administration, and Assistant Secretary-level representatives from the Departments of State, Defense, Justice (for encryption exports), Energy, and the Arms Control and Disarmament Agency. The appropriate representatives of the Joint Chiefs of Staff and the Director of the Nonproliferation Center of the Central Intelligence Agency are non-voting members. The Assistant Secretary of Commerce for Export Administration is the Chair. Appropriate acting Assistant Secretary, Deputy Assistant Secretary or equivalent strength of any agency or department may serve in lieu of the Assistant Secretary of the concerned agency or department. Such representatives, regardless of rank, will speak and vote on behalf of their agencies or departments. The ACEP may invite Assistant Secretary-level representatives of other Government agencies or departments (other than those identified above) to participate in the activities of the ACEP when matters of interest to such agencies or departments are under consideration. Decisions are made by majority vote.

*AES.* See “Automated Export System.”

*Aircraft.* (Cat 7 and 9)—A fixed wing, swiveling, rotary wing (helicopter), tilt rotor or tilt-wing airborne vehicle. (See also “civil aircraft”.)

*Airline.* Any person engaged primarily in the transport of persons or property by aircraft for compensation or hire, pursuant to authorization by the U.S. Government or a foreign government.

*Angular position deviation.* (Cat 2)—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. (Reference: VDI/VDE 2617, Draft: “Rotary tables on coordinate measuring machines”).

*Applicant.* The person who applies for an export or reexport license, and who has the authority of a principal party in interest to determine and control the export or reexport of items. See § 748.4 of the EAR and definition for “exporter” in this part of the EAR.

*Assembly.* (Cat 3 and 4)—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.

NOTES: 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.

2. “Discrete component”: a separately packaged “circuit element” with its own external connections.

*Asymmetric algorithm.* (Cat 5, Part II) A cryptographic algorithm using different, mathematically-related keys for encryption and decryption. A common use of “asymmetric algorithms” is key management.

*Asynchronous transfer mode.* (ATM) (Cat 5)—A transfer mode in which the information is organized into cells; it is asynchronous in the sense that the recurrence of cells depends on the required or instantaneous bit rate. (CCITT Recommendation L.113)

*Australia Group.* The members belonging to this group have agreed to adopt controls on dual-use chemicals, i.e., weapons precursors, equipment, and biological microorganisms and related equipment in order to prevent the proliferation of chemical and biological weapons. Member countries as of October 1996 include: Argentina, Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea (South), Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, the United Kingdom, and the United States. See also § 742.2 of the EAR.

*Automated Export System (AES).* AES is a nationwide system operational at all ports and for all methods of transportation through which export shipment data required by multiple agencies is filed electronically to Customs,

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using the efficiencies of Electronic Data Interchange (EDI). AES provides an alternative to filing paper Shipper's Export Declarations (SEDs), so that export information is collected electronically and edited immediately. For more information about AES, visit the Bureau of Census website at: <http://www.customs.ustreas.gov/impexpo/abaesint.htm>

*Automatic target tracking.* (Cat 6)—A processing technique that automatically determines and provides as output an extrapolated value of the most probable position of the target in real time.

*Bandwidth of one voice channel.* (Cat 5)—In the case of data communication equipment designed to operate in one voice channel of 3,100 Hz, as defined in CCITT Recommendation G.151.

*Bank.* Means any of the following:

(a) Bank, savings association, credit union, bank holding company, bank or savings association service corporation, Edge Act corporation, Agreement corporation, or any insured depository institution, which is organized under the laws of the United States or any State and regulated or supervised by a Federal banking agency or a State bank supervisor; or

(b) A company organized under the laws of a foreign country and regulated or supervised by a foreign bank regulatory or supervisory authority which engages in the business of banking, including without limitation, foreign commercial banks, foreign merchant banks and other foreign institutions that engage in banking activities usual in connection with the business of banking in the countries where such foreign institutions are organized or operating; or

(c) An entity engaged in the business of providing clearing or settlement services, that is, or whose members are, regulated or supervised by a Federal banking agency, a State bank supervisor, or a foreign bank regulatory or supervisory authority; or

(d) A branch or affiliate of any of the entities listed in paragraphs (a), (b), or (c) of this definition, regulated or supervised by a Federal banking agency, a State bank supervisor or a foreign bank regulatory or supervisory authority; or

(e) An affiliate of any of the entities listed in paragraph (a), (b), (c), or (d) of this definition, engaged solely in the business of providing data processing services to a bank or financial institution, or a branch of such an affiliate.

*Basic gate propagation delay time.* (Cat 3)—The propagation delay time value corresponding to the basic gate utilized within a “family” of “monolithic integrated circuits”. This may be specified, for a given “family”, either as the propagation delay time per typical gate or as the typical propagation delay time per gate.

NOTE: “Basic gate propagation delay time” is not to be confused with input/output delay time of a complex “monolithic integrated circuit”.

*Basic Scientific Research.* (GTN)—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.

*Beat length.* (Cat 6)—The distance over which two orthogonally polarized signals, initially in phase, must pass in order to achieve a 2 Pi radian(s) phase difference.

*Bias.* (accelerometer) (Cat 7)—An accelerometer output when no acceleration is applied.

*Bill of Lading.* The contract of carriage and receipt for items, issued by the carrier. It includes an air waybill, but does not include an inland bill of lading or a domestic air waybill covering movement to port only.

*Business Unit.* As applied to encryption items, means a unit of a business which, whether or not separately incorporated, has:

(a) A distinct organizational structure which does not overlap with other business units of the same business;

(b) A distinct set of accounts; and

(c) Separate facilities for purchase, sale, delivery, and production of goods and services.

*CCL.* See Commerce Control List.

*CCL Group.* The Commerce Control List (CCL) is divided into 10 categories. Each category is subdivided into five groups, designated by the letters A through E: (A) Equipment, assemblies and components; (B) Test, inspection

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and production equipment; (C) Materials; (D) Software; and (E) Technology. See §738.2(b) of the EAR.

*CE.*—See “Computing Element.”

*CTP.*—See “Composite theoretical performance.” This term may also appear without quotation marks.

*Camming.* (axial displacement) (Cat 2)—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 (Ref.: ISO 230 Part 1-1986, paragraph 5.63).

*Canadian airline.* Any citizen of Canada who is authorized by the Canadian Government to engage in business as an airline. For purposes of this definition, a Canadian citizen is:

- (a) A natural person who is a citizen of Canada; or
- (b) A partnership of which each member is such an individual; or
- (c) A Canadian firm incorporated or otherwise organized under the laws of Canada or any Canadian province, having a total foreign stock interest not greater than 40 percent and having the Chairman or Acting Chairman and at least two-thirds of the Directors thereof Canadian citizens.

*Capable of.* (MTCR context)—See “usable in”.

*Category.* The Commerce Control List (CCL) is divided into ten categories: (0) Nuclear Materials, Facilities and Equipment, and Miscellaneous; (1) Materials, Chemicals, “Microorganisms”, and Toxins; (2) Materials Processing; (3) Electronics Design, Development and Production; (4) Computers; (5) Telecommunications and Information Security; (6) Sensors; (7) Navigation and Avionics; (8) Marine; (9) Propulsion Systems, Space Vehicles, and Related Equipment. See §738.2(a) of the EAR.

*Chemical laser.* (Cat 6)—A “laser” in which the excited species is produced by the output energy from a chemical reaction.

*Chemical Weapons Convention (CWC).* Means “The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction”, opened for signature on January 13, 1993.

*Circulation.* (controlled, anti-torque direction control systems) (Cat 7)—Use

air blown over aerodynamic surfaces to increase or control the forces generated by the surfaces.

*Civil aircraft.* (Cat 7 and 9)—Only those “aircraft” listed by designation in published airworthiness certification lists by the civil aviation authorities to fly commercial civil internal and external routes or for legitimate civil, private or business use. (See also “aircraft”)

*COCOM* (*Coordinating Committee on Multilateral Export Controls*). A multilateral organization that cooperated in restricting strategic exports to controlled countries. COCOM was officially disbanded on March 31, 1994. COCOM members included the NATO countries, except Iceland, plus Japan and Australia.

*Commerce Control List (CCL).* A list of items under the export control jurisdiction of the Bureau of Export Administration, U.S. Department of Commerce. Note that certain additional items described in part 732 of the EAR are also subject to the EAR. The CCL is found in Supplement No. 1 to part 774 of the EAR.

*Commingled.* (Cat 1)—Filament to filament blending of thermoplastic fibers and reinforcement fibers in order to produce a fiber reinforcement/matrix mix in total fiber form.

*Comminution.* (Cat 1)—A process to reduce a material to particles by crushing or grinding.

*Commodity.* Any article, material, or supply except technology and software. Note that the provisions of the EAR applicable to the control of software (e.g. publicly available provisions) are not applicable to encryption software. Encryption software is controlled because, like the items controlled under ECCN 5A002, it has a functional capacity to encrypt information on a computer system, and not because of any informational or theoretical value that such software may reflect, contain or represent, or that its export may convey to others abroad.

*Common channel signalling.* (Cat 5)—A signalling method in which a single channel between exchanges conveys, by means of labelled messages, signalling information relating to a multiplicity

of circuits or calls and other information such as that used for network management.

*Communications channel controller.* (Cat 5)—The physical interface that 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.

*Composite.* (Cat 1, 6, 8, and 9)—A “matrix” and an additional phase or additional phases consisting of particles, whiskers, fibers or any combination thereof, present for a specific purpose or purposes.

*Composite theoretical performance.* (CTP) (Cat 4)—A measure of computational performance given in millions of theoretical operations per second (Mtops), calculated using the aggregation of “computing elements (CE)”. (See Category 4, Technical Note.) This term may also appear without quotation marks. The formula to calculate the CTP is contained in a technical note titled “Information on How to Calculate ‘Composite Theoretical Performance’ at the end of Category 4 of the CCL.

*Compound rotary table.* (Cat 2)—A table allowing the workpiece to rotate and tilt about two non-parallel axis that can be coordinated simultaneously for “contouring control”.

*Computer using facility.* (Cat 4)—The end-user's contiguous and accessible facilities:

(a) Housing the “computer operating area” and those end-user functions that are being supported by the stated application of the electronic computer and its related equipment; and

(b) Not extending beyond 1,500 meters in any direction from the center of the “computer operating area”.

NOTE: “Computer operating area”: the immediate contiguous and accessible area around the electronic computer, where the normal operating, support and service functions take place.

*Computing element.* (CE) (Cat 4)—The smallest computational unit that produces an arithmetic logic result.

*Contouring control.* (Cat 2)—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).

*Controlled country.* A list of countries designated controlled for national security purposes found in Country Group D:1 (see Supplement No. 1 to part 740 of the EAR). This list was established under authority delegated to the Secretary of Commerce by Executive Order 12214 of May 2, 1980 pursuant to section 5(b) of the EAA, and including: Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Cambodia, the People's Republic of China, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Laos, Latvia, Lithuania, Moldova, Mongolia, Romania, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, and Vietnam. Cuba and North Korea are controlled countries, but they are listed in Country Group E:2 (unilateral embargoes) rather than Country Group D:1. This definition does not apply to part 768 of the EAR (Foreign Availability), which provides a dedicated definition.

*Controlled in fact.* For purposes of the Special Comprehensive License (part 752 of the EAR), controlled in fact is defined as it is under the Restrictive Trade Practices or Boycotts (§ 760.1(c) of the EAR).

*Cooperating country.* A country that cooperated with the former COCOM member countries in restricting strategic exports in accordance with COCOM standards. The “Cooperating Countries” are: Austria, Finland, Hong Kong, Ireland, Korea (Republic of), New Zealand, Sweden, and Switzerland.

*Countries supporting international terrorism.* In accordance with section 6(j) of the Export Administration Act of 1979, as amended (EAA), the Secretary of State has determined that the following countries' governments have repeatedly provided support for acts of international terrorism: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

*Country Chart.* A chart, found in Supplement No. 1 to part 738 of the EAR, that contains certain licensing requirements based on destination and reason for control. In combination with the CCL, the Country Chart indicates when a license is required for any item on

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the CCL to any country in the world under General Prohibition One (Exports and Reexports in the Form Received), General Prohibition Two (Parts and Components Reexports), and General Prohibition Three (Foreign Produced Direct Product Reexports). See part 736 of the EAR.

*Country Groups.* For export control purposes, foreign countries are separated into five country groups designated by the symbols A, B, C, D, and E. (See Supplement No. 1 to part 740 of the EAR for a list of countries in each Country Group.)

*Critical temperature.* (Cat 1, 3, and 6)—The “critical temperature” (sometimes referred to as the transition temperature) of a specific “superconductive,” material is the temperature at which the material loses all resistance to the flow of direct electrical current.

*Cryptanalysis.* (Cat 5)—The analysis of a cryptographic system or its inputs and outputs to derive confidential variables or sensitive data including clear text. (ISO 7498-2-1988(E), paragraph 3.3.18)

*Cryptanalytic items.* Systems, equipment, applications, specific electronic assemblies, modules and integrated circuits designed or modified to perform cryptanalytic functions, software having the characteristics of cryptanalytic hardware or performing cryptanalytic functions, or technology for the development, production or use of cryptanalytic commodities or software.

*Cryptography.* (Cat 5)—The discipline that 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) and/or associated key management.

NOTE: “Secret parameter”: a constant or key kept from the knowledge of others or shared only within a group.

*Customs officer.* The Customs officers in the U.S. Customs Service and postmasters unless the context indicates otherwise.

*Data signalling rate.* (Cat 5)—The rate, as defined in ITU Recommendation 53—

36, taking into account that, for non-binary modulation, baud and bit per second are not equal. Bits for coding, checking and synchronization functions are to be included.

NOTES: 1. When determining the “data signalling rate”, servicing and administrative channels shall be excluded.

2. It is the maximum one-way rate, i.e., the maximum rate in either transmission or reception.

(a) Mirrors:

(1) Mirrors having a single continuous optical reflecting surface that is dynamically deformed by the application of individual torques or forces to compensate for distortions in the optical waveform incident upon the mirror; or

(2) Mirrors having multiple optical reflecting elements that can be individually and dynamically repositioned by the application of torques or forces to compensate for distortions in the optical waveform incident upon the mirror.

(b) Deformable mirrors are also known as adaptive optic mirrors.

*Datagram.* (Cat 4 and 5)—A self-contained, independent entity of data carrying sufficient information to be routed from the source to the destination data terminal equipment without reliance on earlier exchanges between this source and destination data terminal equipment and the transporting network.

*Defense Trade Control (DTC).* The office at the Department of State, formerly known as the Office of Munitions Control, responsible for reviewing applications to export and reexport items on the U.S. Munitions List. (See 22 CFR parts 120 through 130.)

*Denied Persons List.* A list, referenced in Supplement No. 2 to part 764 of the EAR, of specific persons that have been denied export privileges, in whole or in part. The full text of each order denying export privileges is published in the FEDERAL REGISTER.

*Designed or modified.* (MTCR context)—Equipment, parts, components, or “software” that, as a result of “development”, or modification, have specified properties that make them fit for a particular application. “Designed or modified” equipment, parts, components or “software” can be used for other applications. For example, a titanium coated pump designed for a “missile” may be used with corrosive fluids other than propellants.

*Development.* (General Technology Note)—“Development” is related to all stages 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.* (Cat 1, 2, and 9)—A solid-state molecular joining of at least two separate metals into a single piece with a joint strength equivalent to that of the weakest material.

*Digital computer.* (Cat 4 and 5)—Equipment that can, in the form of one or more discrete variables:

- (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 that is modifiable; and
- (d) Provide output of data.

NOTE: 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.* (Cat 5)—The total bit rate of the information that is directly transferred on any type of medium.

*Direct-acting hydraulic pressing.* (Cat 2)—A deformation process that uses a fluid-filled flexible bladder in direct contact with the workpiece.

*Drift rate. (gyro)* (Cat 7)—The time rate of output deviation from the desired output. It consists of random and systematic components and is expressed as an equivalent input angular displacement per unit time with respect to inertial space.

*Dual use.* Items that have both commercial and military or proliferation applications. While this term is used informally to describe items that are subject to the EAR, purely commercial items are also subject to the EAR (see § 734.2(a) of the EAR).

*Dynamic adaptive routing.* (Cat 5)—Automatic rerouting of traffic based on sensing and analysis of current actual network conditions.

NOTE: This does not include cases of routing decisions taken on predefined information.

*Dynamic signal analyzers.* (Cat 3)—“Signal analyzers” that use digital

sampling and transformation techniques to form a Fourier spectrum display of the given waveform including amplitude and phase information.

*Effective control.* You maintain effective control over an item when you either retain physical possession of the item, or secure the item in such an environment as a hotel safe, a bonded warehouse, or a locked or guarded exhibition facility. Retention of effective control over an item is a condition of certain temporary exports and reexports.

*Electronically steerable phased array antenna.* (Cat 6)—An antenna that forms a beam by means of phase coupling, i.e., the beam direction is controlled by the complex excitation coefficients of the radiating elements and the direction of that beam can be varied in azimuth or in elevation, or both, by application, both in transmission and reception, of an electrical signal.

*Encryption component.* Any encryption commodity or software (except source code), including encryption chips, integrated circuits, application specific encryption toolkits, or executable or linkable modules that alone are incapable of performing complete cryptographic functions, and is designed or intended for use in or the production of another encryption item.

*Encryption items.* The phrase encryption items includes all encryption commodities, software, and technology that contain encryption features and are subject to the EAR. This does not include encryption items specifically designed, developed, configured, adapted or modified for military applications (including command, control and intelligence applications) which are controlled by the Department of State on the U.S. Munitions List.

*Encryption licensing arrangement.* A license that allows the export of specified products to specified destinations in unlimited quantities. In certain cases, exports are limited to specified end-users for specified end-uses. Generally, reporting of all sales of the specified products is required at six month intervals. This includes sales made under distribution arrangements and distribution and warehousing agreements that were previously issued

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by the Department of State for encryption items.

*Encryption object code.* Computer programs containing an encryption source code that has been compiled into a form of code that can be directly executed by a computer to perform an encryption function.

*Encryption software.* Computer programs that provide capability of encryption functions or confidentiality of information or information systems. Such software includes source code, object code, applications software, or system software.

*Encryption source code.* A precise set of operating instructions to a computer that, when compiled, allows for the execution of an encryption function on a computer.

*End-effectors.* (Cat 2)—“End-effectors” include grippers, “active tooling units” and any other tooling that is attached to the baseplate on the end of a “robot” manipulator arm.

NOTE: “Active tooling unit”: a device for applying motive power, process energy or sensing to the workpiece.

*End-user.* The person abroad that receives and ultimately uses the exported or reexported items. The end-user is not a forwarding agent or intermediary, but may be the purchaser or ultimate consignee.

*Equivalent Density.* (Cat 6)—The mass of an optic per unit optical area projected onto the optical surface.

*Expert systems.* (Cat 4)—Systems providing results by application of rules to data that are stored independently of the “program” and capable of any of the following:

(a) Modifying automatically the “source code” introduced by the user;

(b) Providing knowledge linked to a class of problems in quasi-natural language; or

(c) Acquiring the knowledge required for their development (symbolic training).

*Export.* Export means an actual shipment or transmission of items out of the United States. (See § 734.2(b) of the EAR.)

*Export Administration Act (EAA).* Export Administration Act of 1979, as amended, effective October 1, 1979.

*Export Administration Regulations (EAR).* Regulations set forth in parts

730–774, inclusive, of Title 15 of the Code of Federal Regulations.

*Export Administration Review Board (EARB).* EARB voting members are the Secretary of Commerce, the Secretary of State, the Secretary of Defense, the Secretary of Energy, the Attorney General (for encryption exports), and the Director of the Arms Control and Disarmament Agency. The Chairman of the Joint Chiefs of Staff and the Director of Central Intelligence are non-voting members. The Secretary of Commerce is the Chair of the EARB. No alternate EARB members may be designated, but the acting head or deputy head of any agency or department may serve in lieu of the head of the concerned agency or department. The EARB may invite the heads of other Government agencies or departments (other than those identified in this definition) to participate in the activities of the EARB when matters of interest to such agencies or departments are under consideration. Decisions are made by majority vote.

*Export Control Classification Number (ECCN).* The numbers used in Supplement No. 1 to part 774 of the EAR and throughout the EAR. The Export Control Classification Number consists of a set of digits and a letter. Reference § 738.2(c) of the EAR for a complete description of each ECCN’s composition.

*Export control document.* A license; application for license; any and all documents submitted in accordance with the requirements of the EAR in support of, or in relation to, a license application; application for International Import Certificate; Delivery Verification Certificate or similar evidence of delivery; Shipper’s Export Declaration (SED) or Automated Export System (AES) record presented in connection with shipments to any country; a Dock Receipt or bill of lading issued by any carrier in connection with any export subject to the EAR and any and all documents prepared and submitted by exporters and agents pursuant to the export clearance requirements of part 758 of the EAR; a U.S. exporter’s report of request received for information, certification, or other action indicating a restrictive trade practice or boycott imposed by a foreign country against a country

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friendly to the United States, submitted to the U.S. Department of Commerce in accordance with the provisions of part 760 of the EAR; Customs Form 7512, Transportation Entry and Manifest of Goods, Subject to Customs Inspection and Permit, when used for Transportation and Exportation (T.& E.) or Immediate Exportation (I.E.); and any other document issued by a U.S. Government agency as evidence of the existence of a license for the purpose of loading onto an exporting carrier or otherwise facilitating or effecting an export from the United States or any reexport of any item requiring a license.

*Exporter.* The person in the United States who has the authority of a principal party in interest to determine and control the sending of items out of the United States. Note that the Foreign Trade Statistics Regulations have a different definition for the term "exporter". Under the FTSR, the "exporter" is the U.S. principal party in interest (see Foreign Trade Statistics Regulations title 15 part 30).

*Exporting carrier.* Any instrumentality of water, land, or air transportation by which an export is effected, including any domestic air carrier on which any cargo for export is laden or carried.

*FMU.*—See "flexible manufacturing unit"

*Family.* (Cat 3)—Consists of microprocessor or microcomputer microcircuits that have:

- (a) The same architecture;
- (b) The same basic instruction set; and
- (c) The same basic technology (e.g., only NMOS or only CMOS).

*Fast select.* (Cat 4 and 5)—A facility applicable to virtual calls that allows data terminal equipment to expand the possibility to transmit data in call setup and clearing "packets" beyond the basic capabilities of a virtual call.

NOTE: "Packet": a group of binary digits including data and call control signals that is switched as a composite whole. The data, call control signals, and possible error control information are arranged in a specified format.

*Fault tolerance.* (Cat 4)—The capability of a computer system, after any malfunction of any of its hardware or "software" components, to continue to

operate without human intervention, at a given level of service that provides: continuity of operation, data integrity, and recovery of service within a given time.

*Fibrous or filamentary materials.* (Cat 1 and 8)—The term "fibrous and filamentary materials" includes:

- (a) Continuous monofilaments;
- (b) Continuous yarns and rovings;
- (c) Tapes, fabrics, random mats and braids;
- (d) Chopped fibers, staple fibers and coherent fiber blankets;
- (e) Whiskers, either monocrystalline or polycrystalline, of any length;
- (f) Aromatic polyimide pulp.

*Film type integrated circuit.* (Cat 3)—An array of "circuit elements" and metallic interconnections formed by deposition of a thick or thin film on an insulating "substrate".

NOTE: "Circuit element": a single active or passive functional part of an electronic circuit, such as one diode, one transistor, one resistor, one capacitor, etc.

*Financial Institution.* As applied to encryption items, means any of the following:

(a) A broker, dealer, government securities broker or dealer, self-regulatory organization, investment company or investment adviser, which is regulated or supervised by the Securities and Exchange Commission or a self-regulatory organization that is registered with the Securities and Exchange Commission; or

(b) A broker, dealer, government securities broker or dealer, investment company, investment adviser, or entity that engages in securities activities that, if conducted in the United States, would be described by the definition of the term "self-regulatory organization" in the Securities Exchange Act of 1934, which is organized under the laws of a foreign country and regulated or supervised by a foreign securities authority; or

(c) A U.S. board of trade that is designated as a contract market by the Commodity Futures Trading Commission or a futures commission merchant that is regulated or supervised by the Commodity Futures Trading Commission; or

(d) A U.S. entity engaged primarily in the business of issuing a general purpose charge, debit, or stored value

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card, or a branch of, or affiliate controlled by, such an entity; or

(e) A branch or affiliate of any of the entities listed in paragraphs (a), (b), or (c) of this definition regulated or supervised by the Securities and Exchange Commission, the Commodity Futures Trading Commission, or a foreign securities authority; or

(f) An affiliate of any of the entities listed in paragraph (a), (b), (c), or (e), of this definition engaged solely in the business of providing data processing services to one or more bank or financial institutions, or a branch of such an affiliate; or

(g) A company organized and regulated under the laws of any of the United States and its branches and affiliates whose primary and predominant business activity is the writing of insurance or the reinsuring of risks; or a company organized and regulated under the laws of a foreign country and its branches and affiliates whose primary and predominant business activity is the writing of insurance or the reinsuring of risks.

*Firm.* A corporation, partnership, limited partnership, association, company, trust, or any other kind of organization or body corporate, situated, residing, or doing business in the United States or any foreign country, including any government or agency thereof.

*Fixed.* (Cat 5)—The coding or compression algorithm cannot accept externally supplied parameters (e.g., cryptographic or key variables) and cannot be modified by the user.

*Flexible manufacturing unit.* (FMU), (sometimes also referred to as ‘flexible manufacturing system’ (FMS) or ‘flexible manufacturing cell’ (FMC)) (Cat 2)—An entity that includes a combination of at least:

(a) A “digital computer” including its own “main storage” and its own “related equipment”; and

(b) Two or more of the following:

(1) A machine tool described in 2B001.c;

(2) A dimensional inspection machine described in Category 2, or another digitally controlled measuring machine controlled by an entry in Category 2;

(3) A “robot” controlled by an entry in Category 2 or 8;

(4) Digitally controlled equipment controlled by 1B003, 2B003, or 9B001;

(5) “Stored program controlled” equipment controlled by 3B001;

(6) Digitally controlled equipment controlled by 1B001;

(7) Digitally controlled electronic equipment controlled by 3A002.

*Fluoride fibers.* (Cat 6)—Fibers manufactured from bulk fluoride compounds.

*Focal plane array.* (Cat 6)—A linear or two-dimensional planar layer, or combination of planar layers, of individual detector elements, with or without readout electronics, that work in the focal plane.

N.B. This definition does not 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.

*Foreign government agency.* For the purposes of exemption from support documentation (see § 748.9 of the EAR), a foreign government agency is defined as follows:

(a) National governmental departments operated by government-paid personnel performing governmental administrative functions; e.g. Finance Ministry, Ministry of Defense, Ministry of Health, etc. (municipal or other local government entities must submit required support documentation); or

(b) National government-owned public service entities; e.g., nationally owned railway, postal, telephone, telegraph, broadcasting, and power systems, etc. The term “foreign government agency” does not include government corporations, quasi-government agencies, and state enterprises engaged in commercial, industrial, and manufacturing activities, such as petroleum refineries, mines, steel mills, retail stores, automobile manufacturing plants, airlines, or steamship lines that operate between two or more countries, etc.

*Foreign policy control.* A control imposed under the EAR for any and all of the following reasons: chemical and biological weapons, nuclear nonproliferation, missile technology, regional stability, crime control, anti-terrorism, United Nations sanctions, and any other reason for control implemented

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under section 6 of the EAA or other similar authority.

*Foreign Terrorist Organizations (FTO).* Any organization that is determined by the Secretary of the Treasury to be a foreign terrorist organization under notices or regulations issued by the Office of Foreign Assets Control (see 31 CFR chapter V).

*Forwarding agent.* The person in the United States who is authorized by a principal party in interest to perform the services required to facilitate the export of the items from the United States. This may include air couriers or carriers. In routed export transactions, the forwarding agent and the exporter may be the same for compliance purposes under the EAR.

*Frequency hopping.* (Cat 5 part 1 and 5 part 2)—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.* (Cat 3 and 5)—The maximum time (i.e., delay), taken by a signal, when switched from one selected output frequency to another selected output frequency, to reach:

- (a) A frequency within 100 Hz of the final frequency; or
- (b) An output level within 1 dB of the final output level.

*Frequency synthesizer.* (Cat 3)—Any kind of frequency source or signal generator, regardless of the actual technique used, providing a multiplicity of simultaneous or alternative output frequencies, from one or more outputs, controlled by, derived from or disciplined by a lesser number of standard (or master) frequencies.

*Gas Atomization.* (Cat 1)—A process to reduce a molten stream of metal alloy to droplets of 500-micrometer diameter or less by a high-pressure gas stream.

*Gateway.* (Cat 5)—The function, realized by any combination of equipment and “software”, to carry out the conversion of conventions for representing, processing or communicating information used on one system into the corresponding, but different conventions used in another system.

*General prohibitions.* The 10 prohibitions found in part 734 of the EAR that

prohibit certain exports, reexports, and other conduct, subject to the EAR, absent a license, License Exception, or determination that no license is required (“NLR”).

*Generic software.* (Cat 5)—A set of instructions for a “stored program controlled” switching system that is the same for all switches using that type of switching system.

NOTE: The data base portion is not considered to be a part of the generic “software”.

*Geographically dispersed.* (Cat 6)—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.

*Global interrupt latency time.* (Cat 4)—The time taken by the computer system to recognize an interrupt due to the event, service the interrupt and perform a context switch to an alternate memory-resident task waiting on the interrupt.

*Government end-user (as applied to encryption items).* A government end-user is any foreign central, regional or local government department, agency, or other entity performing governmental functions; including governmental research institutions, governmental corporations or their separate business units (as defined in part 772 of the EAR) which are engaged in the manufacture or distribution of items or services controlled on the Wassenaar Munitions List, and international governmental organizations. This term does not include: utilities (including telecommunications companies and Internet service providers); banks and financial institutions; transportation; broadcast or entertainment; educational organizations; civil health and medical organizations; retail or wholesale firms; and manufacturing or industrial entities not engaged in the manufacture or distribution of items or services controlled on the Wassenaar Munitions List.

*Hold Without Action (HWA).* License applications may be held without action only in the limited circumstances described in § 750.4(c) of the EAR.

*Hot isostatic densification.* (Cat 2)—A process of pressurizing a casting at temperatures exceeding 375 K (102 °C)

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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.

*Hybrid computer.* (Cat 4)—Equipment that can:

- (a) Accept data;
- (b) Process data, in both analog and digital representation; and
- (c) Provide output of data.

*Hybrid integrated circuit.* (Cat 3)—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 criteria:

- (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.

NOTES: 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.

2. “Discrete component”: a separately packaged “circuit element” with its own external connections.

*ISDN.*—See “Integrated Services Digital Network”.

*Image enhancement.* (Cat 4)—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.

*Information security.* (Cat 5)—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”, “cryptanalysis”, protection against compromising emanations and computer security.

N.B. “Cryptanalysis”: the analysis of a cryptographic system or its inputs and outputs to derive confidential variables or sen-

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sitive data, including clear text. (ISO 7498-2-1988 (E), paragraph 3.3.18)

*Instantaneous bandwidth.* (Cat 3)—The bandwidth over which output power remains constant within 3 dB without adjustment of other operating parameters.

*Instrumented range.* (Cat 6)—The specified unambiguous display range of a radar.

*Integrated Services Digital Network.* (ISDN) (Cat 5)—A unified end-to-end digital network, in which data originating from all types of communication (e.g., voice, text, data, still and moving pictures) are transmitted from one port (terminal) in the exchange (switch) over one access line to and from the subscriber.

*Intent to Deny (ITD) letter.* A letter informing the applicant:

- (a) Of the reason for BXA’s decision to deny a license application; and
- (b) That the application will be denied 45 days from the date of the ITD letter, unless the applicant provides, and BXA accepts, a reason why the application should not be denied for the stated reason. See § 750.6 of the EAR.

*Interconnected radar sensors.* (Cat 6)—Two or more radar sensors are interconnected when they mutually exchange data in real time.

*Intermediate consignee.* The person that acts as an agent for a principal party in interest for the purpose of effecting delivery of items to the ultimate consignee. The intermediate consignee may be a bank, forwarding agent, or other person who acts as an agent for a principal party in interest.

*Intrinsic Magnetic Gradiometer.* (Cat 6)—A single magnetic field gradient sensing element and associated electronics the output of which is a measure of magnetic field gradient. (See also “Magnetic Gradiometer”)

*Isostatic presses.* (Cat 2)—Equipment capable of pressurizing 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.

*Item.* “Item” means “commodities, software, and technology.” When the EAR intend to refer specifically to commodities, software, or technology, the text will use the specific reference.

*Know.* See “knowledge.”

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*Knowledge.* Knowledge of a circumstance (the term may be a variant, such as "know," "reason to know," or "reason to believe") includes not only positive knowledge that the circumstance exists or is substantially certain to occur, but also an awareness of a high probability of its existence or future occurrence. Such awareness is inferred from evidence of the conscious disregard of facts known to a person and is also inferred from a person's willful avoidance of facts. This definition does not apply to part 760 of the EAR (Restrictive Trade Practices or Boycotts).

*Laser.* (Cat 2, 3, 5, 6, and 9)—An assembly of components that produce both spatially and temporally coherent light that is amplified by stimulated emission of radiation. See also: "Chemical laser"; "Q-switched laser"; "Super High Power Laser"; and "Transfer laser".

*Law or regulation relating to export control.* Any statute, proclamation, executive order, regulation, rule, license, or order applicable to any conduct involving an export transaction shall be deemed to be a "law or regulation relating to export control."

*Legible or legibility.* Legible and legibility mean the quality of a letter or numeral that enables the observer to identify it positively and quickly to the exclusion of all other letters or numerals.

*License.* Authority issued by the Bureau of Export Administration authorizing an export, reexport, or other regulated activity. The term "license" does not include authority represented by a "License Exception."

*License application; application for license.* License application and similar wording mean an application to BXA requesting the issuance of a license to the applicant.

*License Exception.* An authorization described in part 740 of the EAR that allows you to export or reexport, under stated conditions, items subject to the EAR that otherwise would require a license. Unless otherwise indicated, these License Exceptions are not applicable to exports under the licensing jurisdiction of agencies other than the Department of Commerce.

*Licensee.* The person to whom a license has been issued by BXA. See § 750.7(c) of the EAR for a complete definition and identification of a licensee's responsibilities.

*Linearity.* (Cat 2)—"Linearity" (usually measured in terms of non-linearity) is the maximum deviation of the actual characteristic (average of upscale and downscale readings), positive or negative, from a straight line so positioned as to equalize and minimize the maximum deviations.

*Local area network.* (Cat 4)—A data communication system that:

(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).

NOTE: "Data device": equipment capable of transmitting or receiving sequences of digital information.

*MBTR.*—See "maximum bit transfer rate".

*MTCR.* See Missile Technology Control Regime.

*MTEC.* See Missile Technology Export Control Group.

*Magnetic Gradiometers.* (Cat 6)—Are 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. (See also "Intrinsic Magnetic Gradiometer".)

*Magnetometers.* (Cat 6)—Are 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.

*Main storage.* (Cat 4)—The primary storage for data or instructions for rapid access by a central processing unit. It consists of the internal storage of a "digital computer" and any hierarchical extension thereto, such as cache storage or non-sequentially accessed extended storage.

*Matrix.* (Cat 1, 2, 8, and 9)—A substantially continuous phase that fills the space between particles, whiskers or fibers.

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*Maximum bit transfer rate.* (MBTR) (Cat 4)—Of solid state storage equipment: the number of data bits per second transferred between the equipment and its controller. Of a disk drive: the internal data transfer rate calculated as follows:

"MBTR" (bits per second)=B x R x T, where:

B=Maximum number of data bits per track available to read or write in a single revolution;

R=Revolutions per second;

T=Number of tracks that can be used or written simultaneously.

*Measurement uncertainty.* (Cat 2)—The characteristic parameter that 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.: VDI/VDE 2617).

*Mechanical alloying.* (Cat 1)—An alloying process resulting from the bonding, fracturing and rebonding of elemental and master alloy powders by mechanical impact. Non-metallic particles may be incorporated in the alloy by addition of the appropriate powders.

*Media access unit.* (Cat 5)—Equipment that contains one or more communication interfaces ("network access controller", "communications channel controller", modem or computer bus) to connect terminal equipment to a network.

*Melt Extraction.* (Cat 1)—A process to "solidify rapidly" and extract a ribbon-like alloy product by the insertion of a short segment of a rotating chilled block into a bath of a molten metal alloy.

NOTE: "Solidify rapidly": solidification of molten material at cooling rates exceeding 1,000 K/sec.

*Melt Spinning.* (Cat 1)—A process to "solidify rapidly" a molten metal stream impinging upon a rotating chilled block, forming a flake, ribbon or rod-like product.

NOTE: "Solidify rapidly": solidification of molten material at cooling rates exceeding 1,000 K/sec.

*Microprocessor microcircuit.* (Cat 3)—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 microcircuit" 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 definition includes chip sets that are designed to operate together to provide the function of a "microprocessor microcircuit".

*Microprogram.* (Cat 4 and 5)—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.

*Missile Technology Control Regime (MTCR).* The United States and other nations in this multilateral control regime have agreed to guidelines for restricting the export and reexport of dual-use items that may contribute to the development of missiles. The MTCR Annex lists missile-related equipment and technology controlled either by the Department of Commerce or by the Department of State's Office of Defense Trade Controls (22 CFR parts 120 through 130).

*Missile Technology Export Control Group (MTEC).* Chaired by the Department of State, the MTEC primarily reviews applications involving items controlled for Missile Technology (MT) reasons. The MTEC also reviews applications involving items not controlled for MT reasons, but destined for a country and/or end-use/end-user of concern.

*Missiles.* (All)—Rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets) and unmanned air vehicle systems (including cruise missile systems, target drones, and reconnaissance drones) "capable of" delivering at least 500 kilograms payload to a range of at least 300 kilometers.

*Monolithic integrated circuit.* (Cat 3)—A combination of passive or active "circuit elements" or both that:

(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.

*NOTE:* "Circuit element": a single active or passive functional part of an electronic circuit, such as one diode, one transistor, one resistor, one capacitor, etc.

*Most immediate storage.* (Cat 4)—The portion of the "main storage" most directly accessible by the central processing unit:

- (a) For single level "main storage", the internal storage; or
  - (b) For hierarchical "main storage":
- (1) The cache storage;
  - (2) The instruction stack; or
  - (3) The data stack.

*Motion control board.* (Cat 2)—An electronic "assembly" specially designed to provide a computer system with the capability to coordinate simultaneously the motion of axes of machine tools for "contouring control".

*Multichip integrated circuit.* (Cat 3)—Two or more "monolithic integrated circuits" bonded to a common "substrate".

*Multi-data-stream processing.* (Cat 4)—The "microprogram" or equipment architecture technique that permits simultaneous processing of two or more data sequences under the control of one or more instruction sequences by means such as:

- (a) Single Instruction Multiple Data (SIMD) architectures such as vector or array processors;
- (b) Multiple Single Instruction Multiple Data (MSIMD) architectures;
- (c) Multiple Instruction Multiple Data (MIMD) architectures, including those that are tightly coupled, closely coupled or loosely coupled; or
- (d) Structured arrays of processing elements, including systolic arrays.

*Multilevel security.* (Cat 5)—A class of system containing information with different sensitivities that simultaneously permits access by users with different security clearances and need-to-know, but prevents users from obtaining access to information for which they lack authorization.

*NOTE:* "Multilevel security" is computer security and not computer reliability that deals with equipment fault prevention or human error prevention in general.

*Multispectral Imaging Sensors.* (Cat 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.

*N.E.S.* N.E.S or n.e.s. is an abbreviation meaning "not elsewhere specified".

*NLR.* NLR ("no license required") is a symbol entered on the Shipper's Export Declaration, certifying that no license is required.

*NSG.* See Nuclear Suppliers Group.

*NATO* (*North Atlantic Treaty Organization*). A strategic defensive organization that consists of the following member nations: Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Turkey, the United Kingdom, and the United States.

*Net value.* The actual selling price, less shipping charges or current market price, whichever is the larger, to the same type of purchaser in the United States.

*Network access controller.* (Cat 4 and 5)—A physical interface to a distributed switching network. It uses a common medium that 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.

*Neural computer.* (Cat 4)—A computational device designed or modified to mimic the behavior of a neuron or a collection of neurons (i.e., a computational device that is distinguished by its hardware capability to modulate the weights and numbers of the interconnections of a multiplicity of computational components based on previous data).

*Noise level.* (Cat 6)—An electrical signal given in terms of power spectral density. The relation between "noise level" expressed in peak-to-peak is given by  $S_{pp}^2 = 8N_o(f_2 - f_1)$ , where  $S_{pp}$  is the peak-to-peak value of the signal (e.g., nanoteslas),  $N_o$  is the power spectral density (e.g., (nanotesla) $^2$ /Hz) and  $(f_2 - f_1)$  defines the bandwidth of interest.

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*Nuclear Suppliers Group (NSG).* The United States and other nations in this multilateral control regime have agreed to guidelines for restricting the export or reexport of items with nuclear applications. As of February 1, 1996, members include: Argentina, Australia, Austria, Belgium, Bulgaria, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Romania, Russia, Slovak Republic, Spain, South Africa, Sweden, Switzerland, the United Kingdom, and the United States. See also § 742.3 of the EAR.

*Numerical control.* (Cat 2)—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).

*Object code.* (or object language) (Cat 4)—An equipment executable form of a convenient expression of one or more processes (“source code” (or source language)) that has been converted by a programming system. (See also “source code”)

*Office of Foreign Assets Control (FAC) or (OFAC).* The office at the Department of the Treasury responsible for blocking assets of foreign countries subject to economic sanctions, controlling participation by U.S. persons, including foreign subsidiaries, in transactions with specific countries or nationals of such countries, and administering embargoes on certain countries or areas of countries. (See 31 CFR parts 500 through 590.)

*Open cryptographic interface.* A mechanism which is designed to allow a customer or other party to insert cryptographic functionality without the intervention, help or assistance of the manufacturer or its agents, e.g., manufacturer’s signing of cryptographic code or proprietary interfaces. If the cryptographic interface implements a fixed set of cryptographic algorithms, key lengths or key exchange management systems, that cannot be changed, it will not be considered an “open” cryptographic interface. All general application programming interfaces (e.g., those that accept either a cryptographic or non-cryptographic inter-

face but do not themselves maintain any cryptographic functionality) will not be considered “open” cryptographic interfaces.

*Operate autonomously.* (Cat 8)—Fully submerged, without snorkel, all systems working and cruising at minimum speed at which the submersible can safely control its depth dynamically by using its depth planes only, with no need for a support vessel or support base on the surface, sea-bed or shore, and containing a propulsion system for submerged or surface use.

*Operating Committee (OC).* The OC voting members include representatives of appropriate agencies in the Departments of Commerce, State, Defense, Justice (for encryption exports), and Energy and the Arms Control and Disarmament Agency. The appropriate representatives of the Joint Chiefs of Staff and the Director of the Non-proliferation Center of the Central Intelligence Agency are non-voting members. The Department of Commerce representative, appointed by the Secretary, is the Chair of the OC and serves as the Executive Secretary of the Advisory Committee on Export Policy. The OC may invite representatives of other Government agencies or departments (other than those identified in this definition) to participate in the activities of the OC when matters of interest to such agencies or departments are under consideration.

*Optical amplification.* (Cat 5)—In optical communications, an amplification technique that introduces a gain of optical signals that have been generated by a separate optical source, without conversion to electrical signals, i.e., using semiconductor optical amplifiers, optical fiber luminescent amplifiers.

*Optical computer.* (Cat 4)—A computer designed or modified to use light to represent data and whose computational logic elements are based on directly coupled optical devices.

*Optical fiber preforms.* (Cat 5 and 6)—Bars, ingots, or rods of glass, plastic or other materials that have been specially processed for use in fabricating optical fibers. The characteristics of the preform determine the basic parameters of the resultant drawn optical fibers.

*Optical integrated circuit.* (Cat 3)—A “monolithic integrated circuit” or a “hybrid integrated circuit”, containing one or more parts designed to function as photosensor or photoemitter or to perform (an) optical or (an) electro-optical function(s).

*Optical switching.* (Cat 5)—The routing of or switching of signals in optical form without conversion to electrical signals.

*Order Party.* The person in the United States who conducted the direct negotiations or correspondence with the foreign purchaser or ultimate consignee and who, as a result of these negotiations, received the order from the foreign purchaser or ultimate consignee.

*Organization for the Prohibition of Chemical Weapons (OPCW).* Means the international organization, located in The Hague, Netherlands, that administers the Chemical Weapons Convention.

*Other party authorized to receive license.* The person authorized by the applicant to receive the license. If a person and address is listed in Block 15 of the BXA-748P Multipurpose Application Form, the Bureau of Export Administration will send the license to that person instead of the applicant. Designation of another party to receive the license does not alter the responsibilities of the applicant, licensee or exporter.

*Overall current density.* (Cat 3)—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.).

*PABX.* (Cat 5)—(See “Private automatic branch exchange”.)

*Part program.* (Cat. 2)—An ordered set of instructions that is in a language and in a format required to cause operations to be effected under automatic control and that is either written in the form of a machine program on an input medium or prepared as input data for processing in a computer to

obtain a machine program (Ref. ISO 2806-1980).

*Peak power.* (Cat 6)—Energy per pulse in Joule divided by the pulse duration in seconds.

*Person.* A natural person, including a citizen or national of the United States or of any foreign country; any firm; any government, government agency, government department, or government commission; any labor union; any fraternal or social organization; and any other association or organization whether or not organized for profit. This definition does not apply to part 760 of the EAR (Restrictive Trade Practices or Boycotts).

*Personalized smart card.* (Cat 5)—A smart card containing a microcircuit, in accordance with ISO/IEC 7816, that has been programmed by the issuer and cannot be changed by the user.

*Port of export.* The port where the cargo to be shipped abroad is laden aboard the exporting carrier. It includes, in the case of an export by mail, the place of mailing.

*Positioning accuracy.* (Cat. 2)—The positioning accuracy of “numerically controlled” machine tools is to be determined and presented in accordance with ISO/DIS 230/2 (1988), paragraph 2.13, in conjunction with the following requirements:

(a) Test conditions:

(1) For 12 hours before and during measurements, the machine tool and accuracy measuring equipment will be kept at the same ambient temperature. During the pre-measurement time the slides of the machine will be continuously cycled in the same manner that the accuracy measurements will be taken;

(2) The machine shall be equipped with any mechanical, electronic, or software compensation to be exported with the machine;

(3) Accuracy of measuring equipment for the measurements shall be at least four times more accurate than the expected machine tool accuracy;

(4) Power supply for slide drives shall be as follows:

(i) Line voltage variation shall exceed  $\pm 10\%$  of nominal rated voltage;

(ii) Frequency variation shall not exceed  $\pm 2$  Hz of normal frequency;

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(iii) Lineouts or interrupted service are not permitted.

(b) Test programs:

(1) Feed rate (velocity of slides) during measurement shall be the rapid traverse rate;

*NOTE:* In case of machine tools that generate optical quality surfaces, the feedrate shall be equal to or less than 50 mm per minute.

(2) Measurements shall be made in an incremental manner from one limit of the axis travel to the other without returning to the starting position for each move to the target position;

(3) Axes not being measured shall be retained at mid travel during the test of an axis.

(c) Presentation of test results: The results of the measurement must include:

- (1) Position accuracy (A); and
- (2) The mean reversal error (B).

*Power management.* (Cat 7)—Changing the transmitted power of the altimeter signal so that received power at the “aircraft” altitude is always at the minimum necessary to determine the altitude.

*Principal element.* (Cat 4)—An element 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.

*Principal parties in interest.* Those persons in a transaction that receive the primary benefit, monetary or otherwise, of the transaction. Generally, the principals in a transaction are the seller and the buyer. In most cases, the forwarding or other agent is not a principal party in interest.

*Private automatic branch exchange.* (PABX) (Cat 5)—An automatic telephone exchange, typically incorporating a position for an attendant, designed to provide access to the public network and serving extensions in an institution such as a business, government, public service or similar organization.

*Production.* (General Technology Note) (Cat. 1 and 7)—Means all production stages, such as: product engineer-

ing, manufacture, integration, assembly (mounting), inspection, testing, quality assurance.

*Production equipment.* (MTCR context)—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.* (General Technology Note)—Means all production stages, such as: product engineering, manufacture, integration, assembly (mounting), inspection, testing, quality assurance.

*Production facility.* As defined by 10 CFR 110.2 of the Nuclear Regulatory Commission Regulations, production facility means any nuclear reactor or plant specially designed or used to produce special nuclear material through the irradiation of source material or special nuclear material, the separation of isotopes or the chemical reprocessing or irradiated source or special nuclear material.

*Program.* (Cat 2, 4, and 5)—A sequence of instructions to carry out a process in, or convertible into, a form executable by an electronic computer.

*Proof test.* (Cat 5)—On-line or off-line production screen testing that dynamically applies a prescribed tensile stress over a 0.5 to 3 m length of fiber at a running rate of 2 to 5 m/s while passing between capstans approximately 150 mm in diameter. The ambient temperature is a nominal 293 K (20 °C) and relative humidity 40%.

*NOTE:* Equivalent national standards for executing the “proof test” may be used.

*Publicly available information.* Information that is generally accessible to the interested public in any form and, therefore, not subject to the EAR (See part 732 of the EAR).

*Publicly available technology and software.* Technology and software that are already published or will be published; arise during, or result from fundamental research; are educational; or are included in certain patent applications (see § 734.3(b)(3) of the EAR).

*Pulse compression.* (Cat 6)—The coding and processing of a radar signal pulse of long time duration to one of short

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time duration, while maintaining the benefits of high pulse energy.

*Pulse duration.* (Cat 6)—Duration of a “laser” pulse measured at Full Width Half Intensity (FWHI) levels.

*Purchaser.* The person abroad who has entered into a transaction to purchase an item for delivery to the ultimate consignee. In most cases, the purchaser is not a bank, forwarding agent, or intermediary. The purchaser and ultimate consignee may be the same entity.

*Q-switched laser.* (Cat 6)—A “laser” in which the energy is stored in the population inversion or in the optical resonator and subsequently emitted in a pulse.

*RWA.* See Return Without Action.

*Radar frequency agility.* (Cat 6)—Any technique that 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.* (Cat 6)—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.

*Range.* (Cat 8)—Half the maximum distance a submersible vehicle can cover.

*Readable or readability.* Readable and readability mean the quality of a group of letters or numerals being recognized as complete words or numbers.

*Real-time bandwidth.* (Cat 3)—For “dynamic signal analyzers”, the widest frequency range that the analyzer can output to display or mass storage without causing any discontinuity in the analysis of the input data. For analyzers with more than one channel, the channel configuration yielding the widest “real-time bandwidth” shall be used to make the calculation.

*Real-time Processing.* (Cat 2 and 4)—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.

*Reasons for Control.* Reasons for Control are: Anti-Terrorism (AT), Chemical & Biological Weapons (CB), Crime Control (CC), High Performance Computer (XP), Missile Technology (MT), National Security (NS), Nuclear Non-proliferation (NP), Regional Stability (RS), Short Supply (SS), and United Nations sanctions (UN). Items controlled within a particular ECCN may be controlled for more than one reason.

*Recoverable commodities and software.* As applied to encryption items, means any of the following:

(a) A stored data product containing a recovery feature that, when activated, allows recovery of the plaintext of encrypted data without the assistance of the end-user; or

(b) A product or system designed such that a network administrator or other authorized persons who are removed from the end-user can provide law enforcement access to plaintext without the knowledge or assistance of the end-user. This includes, for example, products or systems where plaintext exists and is accessible at intermediate points in a network or infrastructure system, enterprise-controlled recovery systems, and products which permit recovery of plaintext at the server where a system administrator controls or can provide recovery of plaintext across an enterprise.

NOTE TO THIS DEFINITION: “Plaintext” indicates that data that is initially received by or presented to the recoverable product before encryption takes place.

*Reexport.* “Reexport” means an actual shipment or transmission of items subject to the EAR from one foreign country to another foreign country. For purposes of the EAR, the export or reexport of items subject to the EAR that will transit through a country or countries, or be transshipped in a country or countries to a new country, or are intended for reexport to the new country, are deemed to be exports to the new country. (See §734.2(b) of the EAR.) In addition, for purposes of satellites controlled by the Department of Commerce, the term “reexport” also includes the transfer of registration of a satellite or operational control over a satellite from a party resident in one country to a party resident in another country.

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*Replacement license.* An authorization by the Bureau of Export Administration revising the information, conditions, or riders stated on a license issued by BXA. See § 750.7 of the EAR.

*Required.* As applied to "technology" or "software", refers to only that portion of "technology" or "software" which is peculiarly responsible for achieving or extending the controlled performance levels, characteristics or functions. Such "required" "technology" or "software" may be shared by different products. For example, assume product "X" is controlled if it operates at or above 400 MHz and is not controlled if it operates below 400 MHz. If production technologies "A", "B", and "C" allow production at no more than 399 MHz, then technologies "A", "B", and "C" are not "required" to produce the controlled product "X". If technologies "A", "B", "C", "D", and "E" are used together, a manufacturer can produce product "X" that does not operate at or above 400 MHz. In this example, technologies "D" and "E" are "required" to make the controlled product and are themselves controlled under the General Technology Note. (See the General Technology Note.)

*Resolution.* (Cat 2)—The least increment of a measuring device; on digital instruments, the least significant bit (Ref.: ANSI B-89.1.12).

*Return Without Action (RWA).* An application may be RWA'd for one of the following reasons:

- (a) The applicant has requested the application be returned;
- (b) A License Exception applies;
- (c) The items are not under Department of Commerce jurisdiction;
- (d) Required documentation has not been submitted with the application; or
- (e) The applicant cannot be reached after several attempts to request additional information necessary for processing of the application.

*Robot.* (Cat 2 and 8)—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 a three dimensional space;

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(c) Incorporates three or more closed or open loop servo-devices that may include stepping motors; and

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

NOTE: This definition does not include the following devices:

(a) Manipulation mechanisms that are only manually/teleoperator controllable;

(b) Fixed sequence manipulation mechanisms that are automated moving devices, operating according to mechanically fixed programmed motions. The program 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;

(c) Mechanically controlled variable sequence manipulation mechanisms that are automated moving devices, operating according to mechanically fixed programmed motions. The program 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 program pattern. Variations or modifications of the program pattern (e.g., changes of pins or exchanges of cams) in one or more motion axes are accomplished only through mechanical operations;

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

(e) 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.

*Rotary Atomization.* (Cat 1)—A process to reduce a stream or pool of molten metal to droplets to a diameter of 500 micrometer or less by centrifugal force.

*Routed export transaction.* A transaction where the foreign principal party in interest authorizes a U.S. forwarding or other agent to facilitate export of items from the United States.

*Run-out.* (out-of-true running) (Cat 2)—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

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revolving surface to be tested (Ref.: ISO 230 Part 1-1986, paragraph 5.61).

*SDH.*—See “synchronous digital hierarchy” Sensors (Cat. 6)—Detectors of a physical phenomenon, the output of which (after conversion into a signal that can be interpreted by a controller) is able to generate “programs” or modify programmed instructions or numerical program data. This includes “sensors” with machine vision, infrared imaging, acoustical imaging, tactile feel, inertial position measuring, optical or acoustic ranging or force or torque measuring capabilities.

*SNEC.* See Subgroup on Nuclear Export Coordination.

*SONET.*—See “synchronous optical network”.

*Scale factor.* (gyro or accelerometer) (Cat 7)—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.

*Schedule B numbers.* The commodity numbers appearing in the current edition of the Bureau of the Census publication, Schedule B Statistical Classification of Domestic and Foreign Commodities Exported from the United States. (See part 758 of the EAR for information on use of Schedule B numbers.)

*Settling time.* (Cat 3)—The time required for the output to come within one-half bit of the final value when switching between any two levels of the converter.

*Shield.* Chaired by the Department of State, the Shield primarily reviews applications involving items controlled for Chemical and Biological Weapons (CBW) reasons. The Shield also reviews applications involving items not controlled for CBW reasons, but destined for a country and/or end-use/end-user of concern. See § 750.4 of the EAR.

*Signal analyzers.* (Cat 3)—Apparatus capable of measuring and displaying basic properties of the single-frequency components of multi-frequency signals.

*Signal analyzers.* (dynamic) (Cat 3)—(See “Dynamic signal analyzers”.)

*Signal processing.* (Cat 3, 4 and 5)—The processing of externally derived infor-

mation-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).

*Simple educational devices.* (Cat 3)—Devices designed for use in teaching basic scientific principles and demonstrating the operation of those principles in educational institutions.

*Single shipment.* All items moving at the same time from one exporter to one consignee or intermediate consignee on the same exporting carrier, even if these items will be forwarded to one or more ultimate consignees. Items being transported in this manner shall be treated as a single shipment even if the items represent more than one order or are in separate containers.

*Software.* (Cat: all)—A collection of one or more “programs” or “microprograms” fixed in any tangible medium of expression.

*Source code.* (or source language) (Cat 4)—A convenient expression of one or more processes that may be turned by a programming system into equipment executable form (“object code” (or object language)).

*Spacecraft.* (Cat 7 and 9)—Active and passive satellites and space probes.

*Space qualified.* (Cat 3 and 6)—Products designed, manufactured and tested to meet the special electrical, mechanical or environmental requirements for use in the launch and deployment of satellites or high-altitude flight systems operating at altitudes of 100 km or higher.

*Specially Designated National (SDN).* Any person who is determined by the Secretary of the Treasury to be a specially designated national for any reason under regulations issued by the Office of Foreign Assets Control (see 31 CFR parts 500 through 590).

*Specially Designated Terrorist (SDT).* Any person who is determined by the Secretary of the Treasury to be a specially designated terrorist under notices or regulations issued by the Office of Foreign Assets Control (see 31 CFR chapter V).

*Specially designed.* (MTCR context)—Equipment, parts, components or “software” that, as a result of “development”, have unique properties that

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distinguish them for certain predetermined purposes. For example, a piece of equipment that is "specially designed" for use in a "missile" will only be considered so if it has no other function or use. Similarly, a piece of manufacturing equipment that is "specially designed" to produce a certain type of component will only be considered such if it is not capable of producing other types of components.

*Specific modulus.* (Cat 1)—Young's modulus in pascals, equivalent to N/m<sup>2</sup> divided by specific weight in N/m<sup>3</sup>, measured at a temperature of (296 ± 2)

K ((23 ± 2) °C) and a relative humidity of (50 ± 5)%.

*Specific tensile strength.* (Cat 1)—Ultimate tensile strength in pascals, equivalent to N/m<sup>2</sup> divided by specific weight in N/m<sup>3</sup>, measured at a temperature of (296 ± 2) K ((23 ± 2) °C) and relative humidity of (50 ± 5)%.

*Spectral efficiency.* (Cat 5)—A figure of merit parametrized to characterize the efficiency of transmission system that uses complex modulation schemes such as QAM (quadrature amplitude modulation), Trellis coding, QSPK (Q-phased shift key), etc. It is defined as follows:

$$\text{Spectral efficiency} = \frac{\text{"Digital transfer rate" (bits/second)}}{6 \text{ dB spectrum bandwidth (Hz)}}.$$

*Splat Quenching.* (Cat 1)—A process to "solidify rapidly" a molten metal stream impinging upon a chilled block, forming a flake-like product.

NOTE: "Solidify rapidly": solidification of molten material at cooling rates exceeding 1,000 K/sec.

*Spread spectrum.* (Cat 5)—The technique whereby energy in a relatively narrow-band communication channel is spread over a much wider energy spectrum.

*Spread spectrum radar.* (Cat 6)—(see "Radar spread spectrum")

*Sputtering.* (Cat 4)—An overlay coating process wherein positively charged ions are accelerated by an electric field towards the surface of a target (coating material). The kinetic energy of the impacting ions is sufficient to cause target surface atoms to be released and deposited on the substrate.

NOTE: Triode, magnetron or radio frequency sputtering to increase adhesion of coating and rate of deposition are ordinary modifications of the process.

*Stability.* (Cat 7)—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.

*Stored program controlled.* (Cat 2, 3, and 5)—A control using instructions stored in an electronic storage that a processor can execute in order to direct

the performance of predetermined functions.

NOTE: Equipment may be "stored program controlled" whether the electronic storage is internal or external to the equipment.

*Strategic partner (of a U.S. company).* As applied to encryption items, means a foreign-based entity that:

(a) Has a business need to share the proprietary information with one or more U.S. companies; and

(b) Is contractually bound to the U.S. company (e.g., has an established pattern of continuing or recurring contractual relations).

*Subgroup on Nuclear Export Coordination (SNEC).* Chaired by the Department of State, the SNEC primarily reviews applications involving items controlled for nuclear nonproliferation (NP) reasons. The SNEC also reviews applications involving items not controlled for NP reasons, but destined for a country and/or end-use/end-user of NP concern.

*Subject to the EAR.* A term used in the EAR to describe those commodities, software, technology, and activities over which the Bureau of Export Administration (BXA) exercises regulatory jurisdiction under the EAR (See § 734.2(a) of the EAR).

*Substrate.* (Cat 3)—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.

NOTE: "Discrete component": a separately packaged "circuit element" with its own external connections.

*"Substrate blanks."* (Cat 6)—Monolithic compounds with dimensions suitable for the production of optical elements such as mirrors or optical windows.

*Superalloys.* (Cat 2 and 9)—Nickel-, cobalt-, or iron-base alloys having strengths superior to any alloys in the AISI 300 series at temperatures over 922 K (694 degrees C) under severe environmental and operating conditions.

*Superconductive.* (Cat 1, 3, 6, and 8)—Materials, i.e., metals, alloys, or compounds that can lose all electrical resistance, i.e., that can attain infinite electrical conductivity and carry very large electrical currents without Joule heating.

NOTE: The "superconductive" state of a material is individually characterized by a "critical temperature", a critical magnetic field that is a function of temperature, and a critical current density that is a function of both magnetic field and temperature.

*Super High Power Laser.* (SHPL) (Cat 6)—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.* (Cat 1 and 2)—A deformation process using heat for metals that are normally characterized by low 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 that are at least 2 times those values.

*Swept frequency network analyzers.* (Cat 3)—Involve the automatic measurement of equivalent circuit parameters over a range of frequencies, involving swept frequency measurement techniques, but not continuous wave point-to-point measurements.

*Switch fabric.* (Cat 5)—That hardware and associated "software" that provides the physical or virtual connection path for in-transit message traffic being switched.

*Symmetric algorithm.* (Cat 5, Part II) A cryptographic algorithm using an identical key for both encryption and decryption. A common use of "sym-

metric algorithms" is confidentiality of data.

*Synchronous digital hierarchy.* (SDH) (Cat 5)—A digital hierarchy providing a means to manage, multiplex, and access various forms of digital traffic using a synchronous transmission format on different types of media. The format is based on the Synchronous Transport Module (STM) that is defined by CCITT Recommendation G.703, G.707, G.708, G.709 and others yet to be published. The first level rate of "SDH" is 155.52 Mbits/s.

*Synchronous optical network.* (SONET) (Cat 5)—A network providing a means to manage, multiplex and access various forms of digital traffic using a synchronous transmission format on fiber optics. The format is the North America version of "SDH" and also uses the Synchronous Transport Module (STM). However, it uses the Synchronous Transport Signal (STS) as the basic transport module with a first level rate of 51.81 Mbits/s. The SONET standards are being integrated into those of "SDH".

*Systems tracks.* (Cat 6)—Processed, correlated (fusion of radar target data to flight plan position) and updated aircraft flight position report available to the Air Traffic Control center controllers.

*Systolic array computer.* (Cat 4)—A computer where the flow and modification of the data is dynamically controllable at the logic gate level by the user.

*Technology.* (General Technology Note)—Specific information necessary for the "development", "production", or "use" of a product. The information takes the form of "technical data" or "technical assistance". Controlled "technology" is defined in the General Technology Note and in the Commerce Control List (Supplement No. 1 to part 774 of the EAR).

N.B.: Technical assistance—May take forms such as instruction, skills training, working knowledge, consulting services.

NOTE: "Technical assistance" may involve transfer of "technical data".

*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

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media or devices such as disk, tape, read-only memories.

*Telecommunication transmission equipment.* (Cat 5)—

(a) Categorized as follows, or combinations thereof:

- (1) Radio equipment (e.g., transmitters, receivers and transceivers);
  - (2) Line terminating equipment;
  - (3) Intermediate amplifier equipment;
  - (4) Repeater equipment;
  - (5) Regenerator equipment;
  - (6) Translation encoders (transcoders);
  - (7) Multiplex equipment (statistical multiplex included);
  - (8) Modulators/demodulators (modems);
  - (9) Transmultiplex equipment (see CCITT Rec. G701);
  - (10) "Stored program controlled" digital crossconnection equipment;
  - (11) "Gateways" and bridges;
  - (12) "Media" access units; and
- (b) Designed for use in single or multi-channel communication via:
- (1) Wire (line);
  - (2) Coaxial cable;
  - (3) Optical fiber cable;
  - (4) Electromagnetic radiation.

*Terminal interface equipment.* (Cat 4)—

Equipment at which information enters or leaves the telecommunication systems, e.g., telephone, data device, computer, facsimile device.

*Three dimensional Vector Rate.* (Cat 4)—The number of vectors generated per second that have 10 pixel poly line vectors, clip tested, randomly oriented, with either integer or floating point X-Y-Z coordinate values (whichever produces the maximum rate).

*Tilting spindle.* (Cat 2)—A tool-handling spindle that alters, during the machining process, the angular position of its center line with respect to any other axis.

*Time constant.* (Cat 6)—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).

*Total digital transfer rate.* (Cat 5)—The number of bits, including line coding, overhead and so forth per unit time passing between corresponding equipment in a digital transmission system. (See also "digital transfer rate".)

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*Transfer.* A transfer to any person of items subject to the EAR either within the United States or outside of the United States with the knowledge or intent that the items will be shipped, transferred, or transmitted to an unauthorized recipient.

*Transfer laser.* (Cat 6)—A "laser" in which the lasting species is excited through the transfer of energy by collision of a non-lasing atom or molecule with a lasing atom or molecule species.

*Tunable.* (Cat 6)—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".

*Two dimensional Vector Rate.* (Cat 4)—The number vectors generated per second that have 10 pixel poly line vectors, clip tested, randomly oriented, with either integer or floating point X-Y coordinate values (whichever produces the maximum rate).

*Ultimate consignee.* The principal party in interest located abroad who receives the exported or reexported items. The ultimate consignee is not a forwarding agent or other intermediary, but may be the end-user.

*U.S. person.* (a) For purposes of §§ 744.6, 744.10, and 744.11 of the EAR, the term U.S. person includes:

(1) Any individual who is a citizen of the United States, a permanent resident alien of the United States, or a protected individual as defined by 8 U.S.C. 1324b(a)(3);

(2) Any juridical person organized under the laws of the United States or any jurisdiction within the United States, including foreign branches; and

(3) Any person in the United States.

(b) See also §§ 740.9 and 740.14, and parts 746 and 760 of the EAR for definitions of "U.S. person" that are specific to those parts.

*U.S. subsidiary.* As applied to encryption items, means

(a) A foreign branch of a U.S. company; or

(b) A foreign subsidiary or entity of a U.S. entity in which:

(1) The U.S. entity beneficially owns or controls (whether directly or indirectly) 25 percent or more of the voting securities of the foreign subsidiary or

entity, if no other persons owns or controls (whether directly or indirectly) an equal or larger percentage; or

(2) The foreign entity is operated by the U.S. entity pursuant to the provisions of an exclusive management contract; or

(3) A majority of the members of the board of directors of the foreign subsidiary or entity also are members of the comparable governing body of the U.S. entity; or

(4) The U.S. entity has the authority to appoint the majority of the members of the board of directors of the foreign subsidiary or entity; or

(5) The U.S. entity has the authority to appoint the chief operating officer of the foreign subsidiary or entity.

*Ultimate consignee.* The person located abroad who is the true party in interest in actually receiving the export or re-export for the designated end-use. (See § 748.5(e) of the EAR.)

*United States.* Unless otherwise stated, the 50 States, including offshore areas within their jurisdiction pursuant to section 3 of the Submerged Lands Act (43 U.S.C. 1311), the District of Columbia, Puerto Rico, and all territories, dependencies, and possessions of the United States, including foreign trade zones established pursuant to 19 U.S.C. 81A–81U, and also including the outer continental shelf, as defined in section 2(a) of the Outer Continental Shelf Lands Act (43 U.S.C. 1331(a)).

*United States airline.* Any citizen of the United States who is authorized by the U.S. Government to engage in business as an airline. For purposes of this definition, a U.S. citizen is:

(a) An individual who is a citizen of the United States or one of its possessions; or

(b) A partnership of which each member is such an individual; or

(c) A corporation or association created or organized under the laws of the United States, or of any State, Territory, or possession of the United States, of which the president and two-thirds of the board of directors and other managing officers thereof are such individuals and in which at least 75 percent of the voting interest is owned or controlled by persons who are citizens of the United States or of one of its possessions.

*Usable in or Capable of.* (MTCR context)—Equipment, parts, components or “software” that are suitable for a particular purpose. There is no need for the equipment, parts, components or “software” to have been configured, modified or specified for the particular purpose. For example, any military specification memory circuit would be “capable of” operation in a guidance system.

*Use.* (General Technology Note)—Operation, installation (including on-site installation), maintenance (checking), repair, overhaul and refurbishing.

*User-accessible programmability.* (Cat 4, 5, and 6)—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.

*Utilization facility.* (a) As defined by 10 CFR 110.2 of the Nuclear Regulatory Commission Regulations, utilization facility means a nuclear reactor, other than one that is a production facility, any of the following major components of a nuclear reactor: Pressure vessels designed to contain the core of a nuclear reactor, other than one that is a production facility, and the following major components of a nuclear reactor:

(1) Primary coolant pumps;

(2) Fuel charging or discharging machines; and

(3) Control rods.

(b) Utilization facility does not include the steam turbine generator portion of a nuclear power plant.

*Vacuum Atomization.* (Cat 1)—A process to reduce a molten stream of metal to droplets of a diameter of 500 micrometer or less by the rapid evolution of a dissolved gas upon exposure to a vacuum.

*Variable geometry airfoils.* (Cat 7)—Use trailing edge flaps or tabs, or leading edge slats or pivoted nose droop, the position of which can be controlled in flight.

*Vector Rate.* (Cat 4)—See: “Two dimensional Vector Rate”; “Three dimensional Vector Rate”.

*You.* Any person, including a natural person, including a citizen of the United States or any foreign country; any firm; any government, government

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agency, government department, or government commission; any labor union; any fraternal or social organization; and any other association or organization whether or not organized for profit.

[61 FR 12925, Mar. 25, 1996, as amended at 61 FR 68586, Dec. 30, 1996; 62 FR 6686, Feb. 12, 1997; 62 FR 25470, May 9, 1997; 63 FR 50525, Sept. 22, 1998; 63 FR 72166, Dec. 31, 1998; 64 FR 1122, Jan. 8, 1999; 64 FR 5932, Feb. 8, 1999; 64 FR 13339, Mar. 18, 1999; 64 FR 27146, May 18, 1999; 65 FR 2501, Jan. 14, 2000; 65 FR 34075, May 26, 2000; 65 FR 42573, July 10, 2000; 65 FR 43133, July 12, 2000; 65 FR 62609, Oct. 19, 2000]

## PART 774—THE COMMERCE CONTROL LIST

### Sec.

774.1 Introduction.

774.2 [Reserved]

SUPPLEMENT NO. 1 TO PART 774—THE COMMERCE CONTROL LIST

SUPPLEMENT NO. 2 TO PART 774—GENERAL TECHNOLOGY AND SOFTWARE NOTES

SUPPLEMENT NO. 3 TO PART 774—CROSS-REFERENCE LIST

AUTHORITY: 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; 10 U.S.C. 7420; 10 U.S.C. 7430(e); 18 U.S.C. 2510 *et seq.*; 22 U.S.C. 287c, 22 U.S.C. 3201 *et seq.*; 22 U.S.C. 6004; 30 U.S.C. 185(s), 185(u); 42 U.S.C. 2139a; 42 U.S.C. 6212; 43 U.S.C. 1354; 46 U.S.C. app. 466c; 50 U.S.C. app. 5; E.O. 12924, 59 FR 43437, 3 CFR, 1994 Comp., p. 917; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; Notice of August 3, 2000 (65 FR 48347, August 8, 2000).

SOURCE: 61 FR 12937, Mar. 25, 1996, unless otherwise noted.

### § 774.1 Introduction.

In this part, references to the EAR are references to 15 CFR chapter VII, subchapter C. The Bureau of Export Administration (BXA) maintains the Commerce Control List (CCL) that includes items (commodities, software, and technology) subject to the authority of BXA. The CCL does not include those items exclusively controlled for export by another department or agency of the U.S. Government. In instances where other agencies administer controls over related items, entries in the CCL will contain a reference to these controls. Those items subject to the EAR but not specified on the CCL are identified by the designator "EAR99". See § 734.2(a) of the

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EAR for items that are "subject to the EAR". You should consult part 738 of the EAR for an explanation of the organization of the CCL and its relationship to the Country Chart.

The CCL is contained in Supplement No. 1 to this part, and Supplement No. 2 to this part contains the General Technology and Software Notes relevant to entries contained in the CCL.

### § 774.2 [Reserved]

#### SUPPLEMENT NO. 1 TO PART 774—THE COMMERCE CONTROL LIST

CATEGORY 0—NUCLEAR MATERIALS, FACILITIES, AND EQUIPMENT [AND MISCELLANEOUS ITEMS]

##### A. SYSTEMS, EQUIPMENT AND COMPONENTS

**0A001 "Nuclear reactors", i.e., reactors capable of operation so as to maintain a controlled, self-sustaining fission chain reaction, and equipment and components specially designed or prepared for use in connection with a "nuclear reactor", including (see List of Items Controlled).**

##### LICENSE REQUIREMENTS

###### *Reason for Control:*

*Control(s):* Items described in 0A001 are subject to the export licensing authority of the Nuclear Regulatory Commission (see 10 CFR part 110)

##### LICENSE EXCEPTIONS

LVS: N/A

GBS: N/A

CIV: N/A

##### LIST OF ITEMS CONTROLLED

*Unit:* N/A

*Related Controls:* N/A

*Related Definitions:* N/A

*Items:* a. Pressure vessels, i.e. metal vessels as complete units or X parts therefor, which are specially designed or prepared to contain the core of a "nuclear reactor" and are capable of withstanding the operating pressure of the primary coolant, including the top plate for a reactor pressure vessel;

b. Fuel element handling equipment, including reactor fuel charging and discharging machines;

c. Control rods specially designed or prepared for the control of the reaction rate in a "nuclear reactor", including the neutron absorbing part and the support or suspension structures therefore, and control rod guide tubes;

d. Electronic controls for controlling the power levels in "nuclear reactors", including reactor control rod drive mechanisms and radiation detection and measuring instruments to determine neutron flux levels;