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Proposed Goods Review List (GRL)

(Note: Arms and munitions are prohibited under UNSCR 687, para 24 and thus are not included on the review list.)

- A. Items subject to the provisions of UNSCR 1051 (1996).
- B. The List contained in the Appendix to this Annex (to the extent, if any, the items on these lists are not covered by UNSCR 687, para 24). The list includes the following general categories: (1) advanced materials; (2) materials processing; (3) electronics; (4) computers; (5) telecommunications and information security; (6) sensors and lasers; (7) navigation and avionics; (8) marine; and (9) propulsion.
- C. The following individual items, as further described in the annex:

Command, Control, Communication and Simulation

- 1. Specific advanced telecommunications equipment.
- 2. Information security equipment.
- 3. Specialized electronic instrumentation and test equipment.

Sensors, Electronic Warfare, and Night Vision

- 4. Image intensifier night vision systems, tubes, and components.

Aircraft and Related Items

- 5. Specialized radar equipment.
- 6. Non-civil certified aircraft; all aero gas turbine engines; unmanned aerial vehicles; and parts and components.
- 7. Non-xray explosive detection equipment Naval-related Items
- 8. Air independent propulsion (AIP) engines and fuel cells specially designed for underwater vehicles, and specially designed components therefor.
- 9. Marine acoustic equipment.

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Explosives and Hardened Facilities

10. Charges and devices specially designed for civil projects, and containing small quantities of energetic materials.

Missile-Related Items

11. Specialized vibration test equipment.

Conventional Weapons Manufacturing

12. Specialized semiconductor manufacturing equipment.

13. Specialized equipment for inspecting and testing electronic components and materials.

Heavy Military Transport

14. Low-bed trailers/loaders with a carrying capacity greater than 30 metric tonnes and width equal to or greater than 3 meters.

Biological Weapons Equipment

15. Certain Biological Equipment.

ANNEX TO PROPOSED GOODS REVIEW LIST (GRL)
Technical Parameters for Individual Items

#1. Specific advanced telecommunication equipment

- a. Any type of telecommunications equipment, specially designed to operate outside the temperature range from 218 K (-55° C) to 397 K (124° C).
- b. Phased array antennae, containing active elements and distributed components, and designed to permit electronic control of beam shaping and pointing, except for landing systems with instruments meeting International Civil Aviation Organization (ICAO) standards (microwave landing systems (MLS));
- c. Radio relay communications equipment designed for use at frequencies of 7.9 through 10.55 GHz or exceeding 40 GHz and assemblies and components therefor;
- d. Optical fiber cables of more than 5 meters in length, and preforms or drawn fibers of glass or other materials optimized for manufacture and use as optical telecommunications transmission medium. Optical terminals and optical amplifiers;
- e. Software specially designed for the development or production of the components or equipment in a-d above;
- f. Technology for the development, design or production of the components, software, or equipment in a-d above.

#2. Information security equipment

Information security equipment having any of the following characteristics:

- a. a symmetric encryption algorithm;
- b. an asymmetric encryption algorithm;
- c. a discrete-log encryption algorithm;
- d. analog encryption or scrambling;
- e. TCSEC B1, B2, B3, or A1 or equivalent Multilevel Secure (MLS) computer systems.
- f. Software specially designed for the development or production of a-e above;
- g. Technology for the development, design or production of a-e above.

Note 1: This entry does not require review of items that meet all of the following:

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- a. Generally available to the public, by being sold, without restriction, from stock at retail selling points by means of any of the following:
 - a.1. Over the counter transactions;
 - a.2. Mail order transactions;
 - a.3. Electronic transactions;
 - a.4. Telephone call transactions;
- b. The cryptographic functionality cannot easily be changed by the user;
- c. Designed for installation by the user without further substantial support by the supplier; and
- d. When necessary, details of the items are accessible and will be provided, upon request, to the appropriate authority in the exporter's country in order to ascertain compliance with conditions described in paragraphs a-c above.

Note 2: This item does not require review of:

- a. Personalized smart cards where the cryptographic capability is restricted for use in equipment or systems excluded from control under entries b-f of this note. If a personalized smart card has multiple functions, the control status of each function is addressed individually.
- b. Receiving equipment for radio broadcast, pay television, or similar restricted audience broadcast of the consumer type, without digital encryption except that exclusively used for sending the billing or program-related information back to the broadcast providers;
- c. Equipment where the cryptographic capability is not user-accessible and which is specially designed and limited to allow any of the following:
 - c.1. Execution of copy-protected software;
 - c.2. Access to any of the following:
 - c.2.a. Copy-protected contents stored on read-only media; or
 - c.2.b. Information stored in encrypted form on media (e.g. in connection with intellectual property rights) where the media is offered for sale in identical sets to the public; or
 - c.2.c. One-time copying of copyright-protected audio/video data.

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- d. Cryptographic equipment specially designed and limited for banking use or money transactions;
Technical Note: "Money transactions" includes the collection and settlement of fares or credit functions.
- e. Portable or mobile radiotelephones for civil use (e.g. for commercial civil cellular radiocommunications systems) that are not capable of end-to-end encryption;
- f. Cordless telephone equipment not capable of end-to-end encryption where the maximum effective range of unboosted cordless operation (i.e., a single, unrelayed hop between terminal and home basestation) is less than 400 meters according to the manufacturer's specifications.

#3. Specialized electronic instrumentation and test equipment.

- a. Signal analyzers from 4 through 31 GHz;
- b. Microwave test receivers from 4 through 40 GHz;
- c. Network analyzers from 4 through 40 GHz;
- d. Signal generators from 4 through 31 GHz;
- e. Travelling wave tubes, pulsed or continuous wave, as follows:
 - e.1. Coupled cavity tubes, or derivatives thereof;
 - e.2. Helix tubes, or derivatives thereof, with any of the following:
 - e.2.a.1. An instantaneous bandwidth of half an octave or more; and
 - e.2.a.2. The product of the rated average output power (expressed in kW) and the maximum operating frequency (expressed in GHz) of more than 0.2;
 - e.2.b.1. An instantaneous bandwidth of less than half an octave; and
 - e.2.b.2. The product of the rated average output power (expressed in kW) and the maximum operating frequency (expressed in GHz) of more than 0.4;
- f. Equipment specially designed for the manufacture of electron tubes, optical elements and specially designed components therefor;
- g. Hydrogen/hydrogen-isotope thyratrons of ceramic-metal construction and rate for a peak current of 500 A or more;
- h. Digital instrumentation data recorders having any of the following characteristics:

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- h.1. A maximum digital interface transfer rate exceeding 175 Mbit/s; or
- h.2. Space qualified.
- i. Radiation and radioisotope detection and simulation equipment, analyzers, software, and Nuclear Instrumentation Module (NIM) componentry and mainframes;
- j. Software specially designed for the development or production of the components or equipment in a-i above;
- k. Technology for the development, design or production of the components or equipment in a-i above.

Note: Items a-e do not require review when contained in contracts for civil telecommunications projects, including ongoing maintenance, operation, and repair of the system, certified for civil use by the supplier government.

#4. Image intensifier night vision systems, tubes, and components.

- a. Night vision systems (i.e., cameras or direct view imaging equipment) using an image intensifier tube that utilizes a microchannel plate (MCP) and an S-20, S-25, GaAs, or GaInAs photocathode.
- b. Image intensifier tubes that utilize a microchannel plate (MCP) and an S-20, S-25, GaAs, or GaInAs photocathode with a sensitivity of 240 micro Amps per lumen and below.
- c. Microchannel plates of 15 micrometers and above.
- d. Software specially designed for the development or production of the components or equipment in a-c above;
- e. Technology for the development, design or production of the components or equipment in a-c above.

#5. Specialized radar equipment.

- a. All airborne radar equipment and specially designed components therefor, not including radars specially designed for meteorological use or Mode 3, Mode C, and Mode S civilian air traffic control equipment specially designed to operate only in the 960-1215 MHz band;
NOTE: This entry does not require initial review of airborne radar equipment installed as original equipment in civil-certified aircraft operating in Iraq.
- b. All ground-based primary radar systems that are capable of aircraft detection and tracking.

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- c. Software specially designed for the development or production of the components or equipment in a and b above;
- d. Technology for the development, design or production of the components or equipment in a and b above.

#6. Non-civil certified aircraft; all aero gas turbine engines; unmanned aerial vehicles; and parts and components.

a. Non-civil certified aircraft and specially designed parts and components therefor. This does not include parts and components solely designed to accommodate a carrying of passengers including seats, food services, environmental conditioning, lighting systems, and passenger safety devices.

NOTE: Civil certified aircraft consist of aircraft that have been certified for general civil use by the civil aviation authorities of the original equipment manufacturer's government.

b. All gas turbine engines except those designed for stationary power generation applications, and specially designed parts and components therefor.

c. Unmanned aerial vehicles and parts and components therefor with any of the following characteristics:

- c.1. Capable of autonomous operation;
- c.2. Capable of operating beyond line of sight;
- c.3. Incorporating a satellite navigation receiver (i.e. GPS);
- c.4. A gross take-off weight greater than 25 kg (55 pounds).

d. Parts and components for civil-certified aircraft (not including engines).

Note 1: This does not include parts and components for normal maintenance of non-Iraqi owned or leased civil-certified aircraft that were originally qualified or certified by the original equipment manufacturer for that aircraft.

Note 2: For Iraqi-owned or leased civil aircraft, review of parts and components for normal maintenance is not required if the maintenance is performed in a country other than Iraq.

Note 3: For Iraqi-owned or leased aircraft, parts and components are subject to review except for equivalent one-for-one replacement of parts and components that have been

certified or qualified by the original equipment manufacturer for use on that aircraft.

Note 4: Any specially designed parts or components that improve the performance of the aircraft remain subject to review.

e. Technology, including software, for the design, development and production of equipment and parts/components for the items in sub-items a-d above.

#9. Marine acoustic equipment.

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

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

a.1.a. Wide-swath bathymetric survey systems designed for sea bed topographic mapping designed to measure depths less than 600 m below the water surface

a.2. Passive (receiving, whether or not related in normal application to separate active equipment) systems, equipment and specially designed components thereof as follows:

a.2.a. Hydrophones with sensitivity better than minus 220 Db at any depth with no acceleration compensation;

a.2.b. Towed acoustic hydrophone arrays designed or able to be modified to operate at depths exceeding 15 meters but not exceeding 35 meters.

a.2.b.1. Heading sensors with an accuracy better than +/- 0.5 degrees.

a.2.c. Processing equipment specially designed for towed acoustic hydrophone arrays.

a.2.d. Processing equipment, specially designed for bottom or bay cable systems.

b. Correlation-velocity sonar log equipment designed to measure the horizontal speed of the equipment carrier relative to the seabed.

Technical Note: Hydrophone sensitivity is defined as twenty times the logarithm to the base 10 of the ratio of rms output voltage to a 1 V rms reference, when the hydrophone sensor, without a pre-amplifier, is placed in a plane wave

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acoustic field with an rms pressure of 1 μ Pa. For example, a hydrophone of -160 Db (reference 1 V per μ Pa) -180 Db.

#10. Charges and devices specially designed for civil projects, and containing small quantities of the following energetic materials:

1. Cyclotetramethylenetetranitramine (CAS 2691-41-0) (HMX); octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazine; 1,3,5,7-tetranitro-1,3,5,7-tetraazacyclooctane; (octogen, octogene);
2. Hexanitrostilbene (HNS) (CAS 20062-22-0);
3. Triaminotrinitrobenzene (TATB) (CAS 3058-38-6);
4. Triaminoguanidinenitrate (TAGN) (CAS 4000-16-2);
5. Dinitroglycoluril (DNGU, DINGU) (CAS 55510-04-8); tetranitroglycoluril (TNGU, SORGOYL) (CAS 55510-03-7);
6. Tetranitrobenzotriazolobenzotriazole (TACOT) (CAS 25243-36-1);
7. Diaminohexanitrobiphenyl (DIPAM) (CAS 17215-44-0);
8. Picrylamindinitropyridine (PYX) (CAS 38082-89-2);
9. 3-nitro-1,2,4-triazol-5-one (NTO or ONTA) (CAS 932-64-9);
10. Cyclotrimethylenetrinitramine (RDX) (CAS 121-82-4); cyclonite; T4; hexahydro-1,3,5-trinitro-1,3,5-triazine; 1,3,5-trinitro-1,3,5-triazacyclohexane (hexogen, hexogene);
11. 2-(5-cyanotetrazolato) penta amine-cobalt (III) perchlorate (or CP) (CAS 70247-32-4);
12. cis-bis (5-nitrotetrazolato) tetra amine-cobalt (III) perchlorate (or BNCP);
13. 7-Amino-4,6-dinitrobenzofurazane-1-oxide (ADNBF) (CAS 97096-78-1); amino dinitrobenzofuroxan;
14. 5,7-diamino-4,6-dinitrobenzofurazane-1-oxide (CAS 117907-74-1), (CL-14 or diamino dinitrobenzofuroxan);
15. 2,4,6-trinitro-2,4,6-triazacyclohexanone (K-6 or Keto-RDX) (CAS 115029-35-1);
16. 2,4,6,8-tetranitro-2,4,6,8-tetraazabicyclo [3,3,0]-octanone-3 (CAS 130256-72-3) (tetranitrosemiglycouril, K-55 or keto-bicyclic HMX);

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17. 1,1,3-trinitroazetidine (TNAZ) (CAS 97645-24-4);
18. 1,4,5,8-tetranitro-1,4,5,8-tetraazadecalin (TNAD) (CAS 135877-16-6);
19. Hexanitrohexaazaisowurtzitane (CAS 135285-90-4) (CL-20 or HNIW); and clathrates of CL-20;
20. Trinitrophenylmethylnitramine (tetryl) (CAS 479-45-8);
21. Any explosive with a detonation velocity exceeding 8,700 m/s or a detonation pressure exceeding 34 GPa (340 kbar);
22. Other organic explosives yielding detonation pressures of 25 GPa (250 kbar) or more that will remain stable at temperatures of 523 K (250°C) or higher for periods of 5 minutes or longer;
23. Any other United Nations (UN) Class 1.1 solid propellant with a theoretical specific impulse (under standard conditions) of more than 250 s for non-metallised, or more than 270 s for aluminized compositions; and
24. Any UN Class 1.3 solid propellant with a theoretical specific impulse of more than 230 s for non-halogenised, 250 s for non-metallised and 266 s for metallised compositions.

Note: When not part of a charge or device specifically designed for civil projects in small quantities, the energetic materials above are considered military items and are subject to UNSCR 687, para 24.

#11. Specialized vibration test equipment.

Vibration test equipment and specially designed parts and components capable of simulating flight conditions of less than 15,000 meters.

- a. Software specially designed for the development or production of the components or equipment above;
- b. Technology for the development, design or production of the components or equipment above.

#12. Specialized semiconductor manufacturing equipment.

- a. Items specially designed for the manufacture, assembly, packaging, test, and design of semiconductor devices,

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integrated circuits and assemblies with a minimum feature size of 1.0 micrometers, including:

a.1. Equipment and materials for plasma etch, chemical vapor deposition (CVD), lithography, mask lithography, masks, and photoresists.

a.2. Equipment specially designed for ion implantation, ion-enhanced or photo-enhanced diffusion, having any of the following characteristics:

a.2.a. Beam energy (accelerating voltage) exceeding 200 keV; or

a.2.b. Optimized to operate at a beam energy (accelerating voltage) of less than 10 keV.

a.3. Surface finishing equipment for the processing of semiconductor wafers as follows:

a.3.a. Specially designed equipment for backside processing of wafers thinner than 100 micrometer and the subsequent separation thereof; or

a.3.b. Specially designed equipment for achieving a surface roughness of the active surface of a processed wafer with a two-sigma value of 2 micrometer or less, total indicator reading (TIR);

a.4. Equipment, other than general-purpose computers, specially designed for computer aided design (CAD) of semiconductor devices or integrated circuits;

a.5. Equipment for the assembly of integrated circuits, as follows:

a.5.a. Stored program controlled die bonders having all of the following characteristics:

a.5.a.1. Specially designed for hybrid integrated circuits;

a.5.a.2. X-Y stage positioning travel exceeding 37.5 x 37.5 mm; and

a.5.a.3. Placement accuracy in the X-Y plane of finer than + 10 micrometer;

a.5.b. Stored program controlled equipment for producing multiple bonds in a single operation (e.g., beam lead bonders, chip carrier bonders, tape bonders);

a.5.c. Semi-automatic or automatic hot cap sealers, in which the cap is heated locally to a higher temperature than the body of the package, specially designed for ceramic microcircuit

packages and that have a throughput equal to or more than one package per minute.

- b. Software specially designed for the development or production of the components or equipment in a above;
- c. Technology for the development, design or production of the components or equipment in a above.

#15. Certain Biological Equipment.

- a. Equipment for the microencapsulation of live microorganisms and toxins in the range of 1-15 micron particle size, to include interfacial polycondensers and phase separators.