

1051. c. 8. Being packet switches, circuit switches and routers with ports or lines exceeding either:

- a. A "data signalling rate" of 64,000 bit/s per channel for a "communications channel controller"; *or*

NOTE:

1051.c.8.a. does not preclude the multiplexing over a composite link of communications channels not embargoed by 1051.c.8.a.

- b. A "digital transfer rate" of 33 Mbit/s for a "network access controller" and related common medium;

1051. c. 9. "Optical switching";

1051. c. 10. Employing "Asynchronous Transfer Mode" (ATM) techniques;

1051. c. 11. Containing "stored programme controlled" digital cross-connect equipment with a "digital transfer rate" exceeding 8.5 Mbit/s per port;

1051. d. Centralized network control having both of the following characteristics:

1. Receives data from the nodes; *and*
2. Processes these data in order to provide control of traffic not requiring operator decisions, thereby performing "dynamic adaptive routing";

NOTE:

1051.d. does not preclude control of traffic as a function of predictable statistical traffic conditions.

1051. e. Optical fibre communication cables, optical fibres and specially designed components and accessories therefor, as follows:

1. Optical fibres or cables of more than 50 m in length having either of the following characteristics:
 - a. Designed for single mode operation; *or*
 - b. For optical fibres, capable of withstanding a "proof test" tensile stress of 2×10^9 N/m² or more;

Technical Note:

"Proof Test"

On-line or off-line production screen testing that dynamically applies a prescribed tensile stress over a 0.5 to 3 m length of fibre at a running rate of 2 to 5 m/s while passing between capstans approximately 15 cm in diameter. The ambient temperature is a nominal 293 K and relative humidity 40%.

N.B.:

Equivalent national standards may be used for executing the "proof test".

1051. e. 2. Components and accessories specially designed for the optical fibres or cables embargoed by 1051.e.1., *except* connectors for use with optical fibres or cables with a repeatable coupling loss of 0.5 dB or more;

1051. e. 3. Optical fibre cables and accessories designed for underwater use;
(For fibre-optic hull penetrators or connectors, see 1081.2.c.)

1051. f. Phased array antennae, operating above 10.5 GHz, containing active elements and distributed components, and designed to permit electronic control of beam shaping and pointing, *except* those for landing systems with instruments meeting ICAO standards (microwave landing systems (MLS));

1052. Test, Inspection and Production Equipment

1052. a. Equipment specially designed for:

1. Development of equipment, materials, functions or features embargoed by 1051., 1052., 1053., 1054. or 1055., including measuring or test equipment;
2. Production of equipment, materials, functions or features embargoed by 1051., 1052., 1053., 1054. or 1055., including measuring, test or repair equipment;
3. Use of equipment, materials, functions or features exceeding any of the least stringent embargo criteria applicable in 1051., 1052., 1053., 1054. or 1055., including measuring, repair or test equipment;

1052. b. Other equipment as follows:

1. Bit error rate (BER) test equipment designed or modified to test the equipment embargoed in 1051.b.1.;
2. Data communication protocol analyzers, testers and simulators for functions embargoed by 1051.b.1.;
3. Stand alone "stored programme controlled" radio transmission media simulators/channel estimators specially designed for testing equipment embargoed by 1051.b.5.

1053. Materials

Preforms of glass or of any other material optimized for the manufacture of optical fibres embargoed by 1051.e.;

1054. Software

1054. a. "Software" specially designed or modified for the development, production or use of equipment or materials embargoed by 1051., 1052. or 1053.;

b. "Software" specially designed or modified to support "technology" embargoed by 1055.;

c. Specific "software" as follows:

1. "Generic software", other than in machine-executable form, specially designed or modified for the "use" of "stored program controlled" digital switching equipment or systems;
 2. "Software", other than in machine-executable form, specially designed or modified for the "use" of digital cellular radio equipment or systems;
 3. "Software" specially designed or modified to provide characteristics, functions or features of equipment embargoed by 1051. or 1052.;
 4. "Software" which provides capability of recovering "source code" of telecommunications "software" embargoed by this category;
 5. "Software" specially designed for the "development" or "production" of "software" embargoed by 1054.;
- (For "software" for "signal processing" see also 1044. and 1064.)

1055. Technology

1055. a. Technology according to the General Technology Note for the "development", "production" or "use" (excluding operation) of equipment, systems, materials or "software" embargoed by 1051., 1052., 1053. or 1054.

b. Specific technologies as follows:

1. "Required" technology for the "development" or "production" of telecommunications equipment specially designed to be used on board satellites;
2. Technology for the "development" or "use" of laser communication techniques with the capability of automatically acquiring and tracking signals and maintaining communications through exoatmosphere or sub-surface (water) media;
3. Technology for processing and application of coatings to optical fiber specially designed to make it suitable for underwater use;
4. Technology for "development" or "production" of equipment employing "Synchronous Digital Hierarchy" (SDH) or "Synchronous Optical Network" (SONET) techniques;
5. Technology for the "development" or "production" of "switch fabric" exceeding 64,000 bits per second per information channel other than for digital cross connect integrated in the switch;
6. Technology for the "development" or "production" of centralized network control;
7. Technology for the "development" or "production" of digital cellular radio systems;
8. Technology for the "development" or "production" of "Integrated Services Digital Network" (ISDN).

NOTES:

1. Governments may permit, as administrative exceptions, the shipment of telecommunications equipment for optical fibres embargoed by 1051.b.4.a., provided the transmission wavelength does not exceed 1370 nm.
2. Governments may permit, as administrative exceptions, the shipment of cables or fibres embargoed by 1051.e. provided:
 - a. Quantities are normal for the envisaged end-use; *and*
 - b. They are for a specified civil end-use.
3. Governments may permit, as administrative exceptions, the shipment of optical fibre test equipment embargoed by 1052.a.3. using a transmission wavelength not exceeding 1370 nm.
4. Governments may permit, as administrative exceptions, the shipment to COCOM-agreed countries of equipment or systems embargoed by 1051.b., c., d., e. or f., and test equipment, "software" and "use" technology therefor, provided the Government of the exporting country: