Technical Note:
AHRS generally differ from inertial navigation systems (INS) in that an AHRS provides attitude heading information and normally does not provide the acceleration, velocity and position information associated with an INS.

3. Other "software", as follows:
   a. "Software" specially designed or modified to improve the operational performance or reduce the navigational error of systems to the levels specified in 1071.3. or 1071.4.;
   b. "Source code" for hybrid integrated systems which improves the operational performance or reduces the navigational error of systems to the level specified in 1071.3. by continuously combining inertial data with any of the following navigation data:
      1. Doppler radar velocity;
      2. Global Positioning Satellite (GPS) references; *or*
      3. Terrain data base;
   c. "Source code" for integrated avionics or mission systems which combine sensor data and employ knowledge-based expert systems;
   d. "Source code" for the "development" of:
      1. Digital flight management systems for flight path optimization;
      2. Integrated propulsion and flight control systems;
      3. Fly-by-wire or fly-by-light control systems;
      4. Fault-tolerant or self-reconfiguring "active flight control systems";
      5. Airborne automatic direction finding equipment;
      6. Air data systems based on surface static data;
      7. Raster-type head-up displays or three dimensional displays;

1075. Technology

1. Technology according to the General Technology Note for the "development" of equipment or "software" embargoed by 1071., 1072. or 1074.;
2. Technology according to the General Technology Note for the "production" of equipment embargoed by 1071. or 1072.;
3. Technology according to the General Technology Note for the repair, refurbishing or overhaul of equipment embargoed by 1071.1. to 1071.4., *except* for maintenance technology directly associated with calibration, removal or replacement of damaged or unserviceable LRUs and SRAs of a "civil aircraft" as described in Maintenance Level I or Maintenance Level II.
   (see Technical Notes to 1072.1.)
4. Other technology, as follows:
   a. Technology for the "development" or "production" of:
      1. Airborne automatic direction finding equipment operating at frequencies exceeding 5 MHz;
      2. Air data systems based on surface static data only, i.e., which dispense with conventional air data probes;
      3. Raster-type head-up displays or three dimensional displays for "aircraft";
      4. Inertial navigation systems or gyro-astro compasses containing accelerometers or gyros embargoed by 1071.1. or 1071.2.;
   b. "Development" technology, as follows, for "active flight control systems" (including fly-by-wire or fly-by-light):
      1. Configuration design for interconnecting multiple microelectronic processing elements (on-board computers) to achieve "real time processing" for control law implementation;
      2. Control law compensation for sensor location or dynamic airframe loads, i.e., compensation for sensor vibration environment or for variation of sensor location from the centre of gravity;
      3. Electronic management of data redundancy or systems redundancy for fault detection, fault tolerance, fault isolation or reconfiguration;
         NOTE:
         1075.4.b.3. does not embargo technology for the design of physical redundancy.
      4. Flight controls which permit inflight reconfiguration of force and moment controls for real time autonomous air vehicle control;
      5. Integration of digital flight control, navigation and propulsion control data into a digital flight management system for flight path optimization, *except* "development" technology for aircraft flight instrument systems integrated solely for VOR, DME, ILS or MLS navigation or approaches;
      6. Full authority digital flight control or multi sensor mission management systems incorporating knowledge-based expert systems;
         (For technology for Full Authority Digital Engine Control (FADEC), see 1095.3.a.10.)
   c. Technology for the "development" of helicopter systems, as follows:
      1. Multi-axis fly-by-wire or fly-by-light controllers which combine the functions of at least two of the following into one controlling element:
         a. Collective controls;
         b. Cyclic controls;
         c. Yaw controls;
      2. "Circulation-controlled anti-torque or circulation-controlled directional control systems";
      3. Rotor blades incorporating "variable geometry airfoils" for use in systems using individual blade control.

1080. MARINE

1081. Equipment, Assemblies and Components

1081. 1. Submersible vehicles or surface vessels, as follows:
NOTE:
For the embargo status of equipment for submersible vehicles, see: Category 1150 "Information Security" for encrypted communication equipment; Category 1060 for sensors; Categories 1070 and 1080 for navigation equipment; Item 1081 for underwater equipment.

1081. 1. a. Manned, tethered submersible vehicles designed to operate at depths exceeding 1,000 m;
   b. Manned, untethered submersible vehicles:
      1. Designed to "operate autonomously" and having a lifting capacity of:
         a. 10% or more of their weight in air; and
         b. 15 kN or more;
      2. Designed to operate at depths exceeding 1,000 m; *or*
      3. a. Designed to carry a crew of 4 or more;
         b. Designed to "operate autonomously" for 10 hours or more;
         c. Having a "range" of 25 nautical miles or more; and
         d. Having a length of 21 m or less;
         Technical Note:
         "Operate autonomously" 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.
         Technical Note:
         "Range". Half the maximum distance a submersible vehicle can cover.
   c. Unmanned, tethered submersible vehicles designed to operate at depths exceeding 1,000 m:
      1. Designed for self-propelled manoeuvre using propulsion motors or thrusters embargoed by 1081.2.a.2.; *or*
      2. Having a fibre optic data link;
   d. Unmanned, untethered submersible vehicles:
      1. Designed for deciding a course relative to any geographical reference without real-time human assistance;
      2. Having an acoustic data or command link; *or*
      3. Having a fibre optic data or command link exceeding 1,000 m;
   e. Ocean salvage systems with a lifting capacity exceeding 5 MN for salvaging objects from depths exceeding 250 m and having either of the following:
      1. Dynamic positioning systems capable of position keeping within 20 m of a given point provided by the navigation system; *or*
      2. Seafloor navigation and navigation integration systems for depths exceeding 1,000 m with positioning accuracies to within 10 m of a predetermined point;