Billing Code: 5001-06

DEPARTMENT OF DEFENSE

Office of the Secretary

[Transmittal No. 19-36]

Arms Sales Notification

AGENCY: Defense Security Cooperation Agency, Department of Defense.

ACTION: Arms sales notice.

SUMMARY: The Department of Defense is publishing the unclassified text of an arms sales notification.

FOR FURTHER INFORMATION CONTACT: Karma Job at karma.d.job.civ@mail.mil or (703) 697-8976.

SUPPLEMENTARY INFORMATION: This 36(b)(1) arms sales notification is published to fulfill the requirements of section 155 of Public Law 104-164 dated July 21, 1996. The following is a copy of a letter to the Speaker of the House of Representatives, Transmittal 19-36 with attached Policy Justification and Sensitivity of Technology.

Dated: June 12, 2019.

Aaron T. Siegel,
Alternate OSD Federal Register Liaison Officer,
Department of Defense.

DEFENSE SECURITY COOPERATION AGENCY
201 12TH STREET SOUTH, STE 203
ARLINGTON, VA 22202-5408

MAY 3 0 2019

The Honorable Nancy Pelosi
Speaker of the House
U.S. House of Representatives
H-209, The Capitol
Washington, DC 20515

Dear Madam Speaker:

Pursuant to the reporting requirements of Section 36(b)(1) of the Arms Export Control Act, as amended, we are forwarding herewith Transmittal No. 19-36 concerning the Air Force's proposed Letter(s) of Offer and Acceptance to the Government of Bulgaria for defense articles and services estimated to cost $1.673 billion. After this letter is delivered to your office, we plan to issue a news release to notify the public of this proposed sale.

Sincerely,

Charles W. Hooper
Lieutenant General, USA
Director

Enclosures:
1. Transmittal
2. Policy Justification
3. Sensitivity of Technology

Transmittal No. 19-36

Notice of Proposed Issuance of Letter of Offer
Pursuant to Section 36(b)(1)
of the Arms Export Control Act, as amended

(i) Prospective Purchaser: Government of Bulgaria

(ii) Total Estimated Value:

Major Defense Equipment*	$ .763 billion
Other	$ .910 billion
TOTAL	$1.673 billion

(iii) Description and Quantity or Quantities of Articles or Services under Consideration for Purchase:

Major Defense Equipment (MDE):
Eight (8) F-16C/D Block 70/72 Aircraft
Ten (10) F110 General Electric Engines (includes 2 spares)
Ten (10) Link-16 Multifunctional Information Distribution Systems – JTRS (MIDS-JTRS) (includes 2 spares)
Nine (9) Improved Program Display Generators (iPDG) (includes 1 spare)
Nine (9) APG-83 Active Electronically Scanned Array (AESA) Radars (includes 1 spare)
Four (4) AN/AAQ-33 SNIPER Targeting Pods
Nine (9) Modular Mission Computers (MMC) 7000AH (includes 1 spare)
Nine (9) LN-260 Embedded GPS/INS (EGI)
Nine (9) M61 Vulcan 20mm Cannons
Sixteen (16) AIM-120C7 Advanced Medium Range Air-to-Air Missiles (AMRAAMs)
One (1) AIM-120C7 Spare Guidance Section
Twenty-four (24) AIM-9X Sidewinder Missiles
Eight (8) AIM-9X Captive Air Training Missiles (CATM)
Four (4) AIM-9X Spare Tactical Guidance Sections
Four (4) AIM-9X Spare CATM Guidance Sections
Forty-eight (48) LAU-129 Multi-Purpose Launchers
Fifteen (15) GBU-49 Enhanced Paveway II Kits
Fifteen (15) GBU-54 Laser JDAM Kits
Twenty-eight (28) GBU-39 Small Diameter Bombs (SDB-1)
Twenty-four (24) FMU-152 Fuzes
Twenty-four (24) MK82 Bombs (Tritonal)
Six (6) MK82 Bombs (Inert)
Thirteen (13) MAU-210 Enhanced Computer Control Group (ECCG)

Non-MDE:
Also included are nine (9) AN/ALQ-211 Internal Advanced Integrated Defensive Electronic Warfare Suites (including 1 spare); nine (9) AN/ALE-47 Countermeasure

Dispensers (including 1 spare); 4,140 Infrared Flare countermeasures, with impulse cartridges; 8,250 each of PGU-27A/B 20mm training and combat munitions; thirty-six (36) MK-124 Signal/Smoke Illumination devices; nine (9) APX-126 Advanced Identification Friend or Foe (AIFF) units with Secure Communications and Cryptographic Appliques; eighteen (18) AN/ARC-238 UHF/VHF SATURN Radios; sixteen (16) AIM-120C AMRAAM training CATMs; Joint Mission Planning System (JMPS) with software, training and support; twenty (20) Joint Helmet Mounted Cueing System (JHMCS) II with Night Vision Goggle compatibility; ten (10) Night Vision Devices; two (2) Remote Operated Video Enhanced Receiver (ROVER) 6i units, plus 1 ground station; ground training device (flight and maintenance simulator); one (1) Avionics I-level Test Station; Electronic Combat International Security Assistance Program (ECISAP) support; Cartridge Actuated and Propellant Actuated Devices (CAD/PAD) support; Common Munitions Bit-test Reprogramming Equipment (CMBRE) support with Computer Test Set Adapter Group; communications equipment; software delivery and support; facilities and construction support; spares and repair/replace parts; personnel training and training equipment; publications and technical documentation; containers; munition support and test equipment; aircraft and munition integration and test support; studies and surveys; U.S. Government and contractor technical, engineering and logistical support services; and other related elements of logistics and program support.

(iv) Military Department: Air Force (BU-D-SAB, BU-D-AAA)
Navy (BU-P-AAD, BU-P-LAR)

(v) Prior Related Cases, if any: None

(vi) Sales Commission, Fee, etc., Paid, Offered, or Agreed to be Paid: None

(vii) Sensitivity of Technology Contained in the Defense Article or Defense Services Proposed to be Sold: See Attached Annex

(viii) Date Report Delivered to Congress: **May 30, 2019**

*As defined in Section 47(6) of the Arms Export Control Act.

POLICY JUSTIFICATION

Bulgaria – F-16 Block 70/72 New Purchase

The Government of Bulgaria has requested to buy eight (8) F-16 C/D Block 70/72 aircraft; ten (10) F110 General Electric engines (includes 2 spares); ten (10) Link-16 Multi-Functional Information Distribution System (MIDS) - JTRS (MIDS-JTRS) (includes 2 spares); nine (9) Improved Program Display Generators (iPDG) (includes 1 spare); nine (9) AN/APG-83 Active Electronically Scanned Array (AESA) Radars (includes 1 spare); four (4) AN/AAQ-33 SNIPER Targeting Pods; nine (9) Modular Mission Computers (MMC) 7000AH (includes 1 spare); nine

(9) LN-260 Embedded GPS/INS (EGI); nine (9) M61 Vulcan 20mm Cannons; sixteen (16) AIM-120C7 Advanced Medium Range Air-to-Air Missiles (AMRAAMs); one AIM-120C7 Spare Guidance Section; twenty-four (24) AIM-9X Sidewinder Missiles; eight (8) AIM-9X Captive Air Training Missiles (CATM); four (4) AIM-9X Spare Tactical Guidance Sections; four (4) AIM-9X Spare CATM Guidance Sections; forty-eight (48) LAU-129 Multi-Purpose Launchers; fifteen (15) GBU-49 Enhanced Paveway II Kits; fifteen (15) GBU-54 Laser JDAM Kits; twenty-eight (28) GBU-39 Small Diameter Bombs (SDB-1); twenty-four (24) FMU-152 Fuzes; twenty-four (24) MK-82 Bombs (Tritonal); six (6) MK82 Bombs (Inert); and thirteen (13) MAU-210 Enhanced Computer Control Group (ECCG). Also included are nine (9) AN/ALQ-211 Internal Advanced Integrated Defensive Electronic Warfare Suites (including 1 spare); nine (9) AN/ALE-47 Countermeasure Dispensers (including 1 spare); 4,140 Infrared Flare countermeasures, with impulse cartridges; 8,250 each of PGU-27A/B 20mm training and combat munitions; thirty-six (36) MK-124 Signal/Smoke Illumination devices; nine (9) APX-126 Advanced Identification Friend or Foe (AIFF) units with Secure Communications and Cryptographic Appliques; eighteen (18) AN/ARC-238 UHF/VHF SATURN Radios; sixteen (16) AIM-120C AMRAAM training CATMs; Joint Mission Planning System (JMPS) with software, training and support; twenty (20) Joint Helmet Mounted Cueing System (JHMCS) II with Night Vision Goggle compatibility; ten (10) Night Vision Devices; two (2) Remote Operated Video Enhanced Receiver (ROVER) 6i units, plus 1 ground station; ground training device (flight and maintenance simulator); one (1) Avionics I-level Test Station; Electronic Combat International Security Assistance Program (ECISAP) support; Cartridge Actuated and Propellant Actuated Devices (CAD/PAD) support; Common Munitions Bit-test Reprogramming Equipment (CMBRE) support with Computer Test Set Adapter Group; communications equipment; software delivery and support; facilities and construction support; spares and repair/replace parts; personnel training and training equipment; publications and technical documentation; containers; munition support and test equipment; aircraft and munition integration and test support; studies and surveys; U.S. Government and contractor technical, engineering and logistical support services; and other related elements of logistics and program support. The estimated cost is $1.673 billion.

The proposed sale will contribute to the foreign policy and national security of the United States by helping to improve security of a NATO ally and a key democratic partner of the United States in ensuring peace and stability in this region.

The proposed sale will contribute to Bulgaria's capability to provide for the defense of its airspace, regional security, and interoperability with the United States and NATO. These aircraft will provide Bulgaria with a fleet of modernized multi-role combat aircraft, ensuring that Bulgaria can effectively operate in hazardous areas and enhancing the Bulgarian Air Force's interoperability with U.S. as well as NATO forces. Bulgaria currently relies on the United States and the United Kingdom to participate in joint air policing. By acquiring these F-16s and the associated sustainment and training package, Bulgaria will be able to provide for the defense of its own airspace and borders. Bulgaria will have no difficulty absorbing this aircraft and services into its armed forces.

The proposed sale of this equipment will not alter the basic military balance in the region.

The prime contractor will be Lockheed Corporation, Bethesda, Maryland. There are no known

offset agreements proposed in connection with this potential sale.

Implementation of this proposed sale will not require the assignment of any additional U.S. Government or contractor representatives to Bulgaria.

There will be no adverse impact on U.S. defense readiness as a result of this proposed sale.

Transmittal No. 19-36

Notice of Proposed Issuance of Letter of Offer
Pursuant to Section 36(b)(1)
of the Arms Export Control Act

Annex
Item No. vii

(vii) Sensitivity of Technology:

1. This sale will involve the release of sensitive technology to Bulgaria. The F-16C/D Block 70/72 weapon system is unclassified, except as noted below. The aircraft utilizes the F-16 airframe and features advanced avionics and systems. It will contain the General Electric F110-129D engine, AN/APG-83 radar, digital flight control system, embedded internal global navigation system, Joint Helmet Mounted Cueing Systems (JHMCS II) with night vision compatibility, internal and external electronic warfare equipment, Advanced IFF, LINK-16 datalink, operational flight trainer, and software computer systems.

2. Sensitive and/or classified (up to SECRET) elements of the proposed F-16 include hardware, accessories, components, and associated software: LINK-16 (MIDS-JTRS) with TACAN and ESHI Terminals, Multi-purpose Launcher (LAU-129), Internal AN/ALQ-211 EW Management Systems, Advanced Identification Friend or Foe (AIFF), Cryptographic Appliques (KIV-78), Dual-band ARC-238 UHF/VHF Radios, KY-58M COMSEC Secure Voice Processors, Joint Mission Planning System, F-16 Flight Simulator, Avionics I-level Test Station, and SNIPER AN/AAQ-33 Targeting Pods. Additional sensitive areas include operating manuals, maintenance technical orders containing performance information, operating and test procedures, and other information related to support operations and repair. The hardware, software and data identified are classified to protect vulnerabilities, design and performance parameters and other similar critical information.

3. The AN/APG-83 radar is an Active Electronically Scanned Array (AESA) upgrade on the F-16. It includes higher processor power, higher transmission power, more sensitive receiver electronics, and Synthetic Aperture Radar (SAR), which creates higher resolution ground maps from a greater distance than existing mechanically scanned array radars

(e.g., APG-68). The upgrade features an increase in detection range of air targets, increase in processing speed and memory, in addition to significant improvement in all operating modes. The highest classification of the radar is SECRET.

4. The Multifunctional Information Distribution System-Low Volume Terminal (MIDS-LVT) is an advanced Link-16 command, control, communications, and intelligence (C3I) system incorporating high-capacity, jam-resistant, digital communication links for exchange of near real-time tactical information, including both data and voice, among air, ground, and sea elements. MIDS-LVT is intended to support key theater functions such as surveillance, identification, air control, weapons engagement coordination, and direction for all services and allied forces. The system will provide jamming-resistant, wide-area communications on a Link-16 network among MIDS and Joint Tactical Information Distribution System (JTIDS) equipped platforms. The MIDS/LVT and MIDS On Ship Terminal hardware, publications, performance specifications, operational capability, parameters, vulnerabilities to countermeasures, and software documentation are classified CONFIDENTIAL. The classified information to be provided consists of that which is necessary for the operation, maintenance, and repair (through intermediate level) of the data link terminal, installed systems, and related software. Group A provision only will be transferred initially.

5. EGI LN-260: The Embedded GPS INS (EGI) LN-260 is a sensor that combines GPS and inertial sensor inputs to provide accurate location information for navigation and targeting. The EGI LN-260 is UNCLASSIFIED. The GPS crypto variable keys needed for highest GPS accuracy are classified up to SECRET.

6. The Modular Mission Computer (MMC) is the central aircraft computer of the F-16. It serves as the hub for all aircraft subsystems and avionics data transfer. The hardware and software are classified SECRET.

7. The Improved Programmable Display Generator (iPDG) and color multifunction displays utilize ruggedized commercial liquid crystal display technology that is designed to withstand the harsh environment found in modern fighter cockpits. The display generator is the fifth generation graphics processor for the F-16. Through the use of state-of-the-art microprocessors and graphics engines, it provided orders of magnitude increases in throughput, memory, and graphics capabilities. The hardware and software are UNCLASSIFIED.

8. The SNIPER (AN/AAQ-33) targeting system is UNCLASSIFIED and contains technology representing the latest state-of-the-art in electro-optical clarity and haze, and low light targeting capability. Information on performance and inherent vulnerabilities is classified SECRET. Software (object code) is classified CONFIDENTIAL. Overall system classification is SECRET.

9. The M61 20mm Vulcan Cannon is a six barreled automatic cannon chambered

in 20x120mm with a cyclic rate of fire from 2,500-6,000 shots per minute. This weapon is a hydraulically powered air cooled Gatling gun used to damage/destroy aerial targets, suppress/incapacitate personnel targets and damage or destroy moving and stationary light materiel targets. The M61 and its components are UNCLASSIFIED.

10. The AIM-9X Block II SIDEWINDER Tactical Missile includes the following advanced technology: Active Optical Target Detector (AOTD), Gyro Optics Assembly within the Guidance Control Section (GCS), Infrared Countermeasures (IRCM), Detection and Rejection Circuitry, digital ignition safety, a reduced smoke rocket motor and a weapons datalink to support beyond visual range engagements. The equipment/hardware, software, and maintenance are classified CONFIDENTIAL. Manuals and technical documents are classified SECRET. Performance and operating information is classified SECRET.

11. The LAU-129 Guided Missile Launcher is capable of launching the AIM-9 family of missile or AIM-120 Advanced Medium Range Air-to-Air Missile (AMRAAM). The LAU-129 launcher provides mechanical and electrical interface between missile and aircraft. There are five versions produced strictly for foreign military sales. The only difference between these launchers is the material they are coated with or the color of the coating.

12. The AIM-120C7 AMRAAM is a radar-guided missile featuring digital technology and micro-miniature solid-state electronics. The AMRAAM capabilities include look-down/shoot- down, multiple launches against multiple targets, resistance to electronic countermeasures, and interception of high- and low-flying and maneuvering targets. The AMRAAM All Up Round (AUR) is classified CONFIDENTIAL, major components and subsystems range from UNCLASSIFIED to CONFIDENTIAL, and technical data and other documentation are classified up to SECRET.

13. Joint Direct Attack Munitions (JDAM) (General Overview) is a Joint Service weapon which uses an onboard GPS-aided Inertial Navigation System (INS) Guidance Set with a MK 82, MK 83, MK 84, BLU-109, BLU-110, BLU-111, BLU-117, BLU-126 (Navy) or BLU-129 warhead. The Guidance Set, when combined with a warhead and appropriate fuze, and tail kit forms a JDAM Guided Bomb Unit (GBU). The JDAM Guidance Set gives these bombs adverse weather capability with improved accuracy. The tail kit contains an Inertial Navigation System (INS) guidance/Global Positioning System (GPS) guidance to provide highly accurate weapon delivery in any "flyable" weather. The INS, using updates from the GPS, helps guide the bomb to the target via the use of movable tail fins. The JDAM weapon can be delivered from modest standoff ranges at high or low altitudes against a variety of land and surface targets during the day or night. After release, JDAM autonomously guides to a target, using the resident GPS- aided INS guidance system. JDAM is capable of receiving target coordinates via preplanned mission data from the delivery aircraft, by onboard aircraft sensors (i.e. FLIR, Radar, etc.) during captive carry, or from & third party source via manual or automated aircrew

cockpit entry. The JDAM as an All Up Round is SECRET; technical data for JDAM is classified up to SECRET.

14. GBU-54/56 (LJDAM) are 500 pound and 2,000 pound JDAM respectively, which incorporate all the capabilities of the JDAM and add a precision laser guidance set. The Laser- JDAM (LJDAM) gives the weapon system an optional semi-active laser guidance in addition to the correct GPS/INS guidance, which allows for striking moving targets. The LJDAM AUR and all of its components are SECRET; technical data for JDAM is classified up to SECRET. The GBU-54/56 contain a GPS Receiver Card with Selective Availability Anti-Spoofing Module (SAASM).

15. GBU-49 and GBU-50 Enhanced Paveway II (EP II) are 500lbs/2000lbs dual mode laser and GPS guided munitions respectively. The EP II works together with an embedded MAU-210 Enhanced Computer Control Group (ECCG) to guide the warhead to its laser-designated target. Information revealing target designation tactics and associated aircraft maneuvers, the probability of destroying specific/peculiar targets, vulnerabilities regarding countermeasures and the electromagnetic environment is classified SECRET. Information revealing the probability of destroying common/unspecified targets, the number of simultaneous lasers the laser seeker head can discriminate, and data on the radar/infrared frequency is classified CONFIDENTIAL.

16. The Guided Bomb Unit-39 (GBU-39/B) small diameter bomb (SDB) is a 250-lb class precision guided munition that is intended to provide aircraft with an ability to carry a high number of bombs. The weapon offers day or night, adverse weather, precision engagement capability against pre-planned, fixed, or stationary soft, non-hardened, and hardened targets, and provides greater than 50 NM standoff range. Aircraft are able to carry four SDBs in place of one 2,000-lb bomb. The SDB is equipped with a GPS-aided inertial navigation system to attack fixed/stationary targets such as fuel depots and bunkers. The SDB and all of its components are SECRET; technical data is classified up to SECRET.

17. Joint Programmable Fuze (JPF) FMU-152 is a multi-delay, multi-arm and proximity sensor compatible with general purpose blast, frag and hardened-target penetrator weapons. The JPF settings are cockpit selectable in flight when used with JDAM weapons.

18. Mk-82 General Purpose (GP) bomb is a 500 pound, free-fall, unguided, low-drag weapon. The Mk-82 is designed for soft, fragment sensitive targets and is not intended for hard targets or penetrations. The explosive filling is usually tritonal, though other compositions have sometimes been used. The overall classification of the weapon is UNCLASSIFIED.

19. Third generation aviation Night Vision Goggles (NVGs) offer high resolution, high gain, and photo response to near infrared light sources. Helmet mount configurations are

designed for fixed and rotary-wing applications. Hardware is UNCLASSIFIED, and technical data and documentation to be provided are UNCLASSIFIED.

20. If a technologically advanced adversary were to obtain knowledge of the specific hardware and software elements, the information could be used to develop countermeasures that might reduce weapon system effectiveness or be used in the development of a system with similar or advanced capabilities.

21. A determination has been made that Bulgaria can provide substantially the same degree of protection for the sensitive technology being released as the U.S. Government. This sale is necessary in furtherance of the U.S. foreign policy and national security objectives outlined in the Policy Justification.

22. All defense articles and services listed in this transmittal are authorized for release and export to the Government of Bulgaria.

[FR Doc. 2019-12780 Filed: 6/17/2019 8:45 am; Publication Date: 6/18/2019]