



Billing Code: 5001-06

DEPARTMENT OF DEFENSE

Office of the Secretary

[Transmittal No. 19-09]

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 19-09 with attached Policy Justification and Sensitivity of Technology.

Dated: June 7, 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 22202-5406

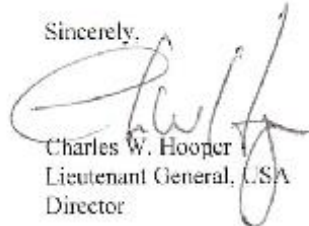
MAR 22 2019

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. 19-09 concerning the Air Force's proposed Letter(s) of Offer and Acceptance to the Government of Morocco for defense articles and services estimated to cost \$3.787 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
4. Regional Balance (Classified document provided under separate cover)

Transmittal No. 19-09

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: Kingdom of Morocco

(ii) Total Estimated Value:

Major Defense Equipment*	\$2.987 billion
Other	\$.800 billion
	<hr/>
	\$3.787 billion

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

Major Defense Equipment (MDE):

Twenty-five (25) F-16C/D Block 72 Aircraft
Twenty-nine (29) Engines (Pratt & Whitney F100-229 (includes 4 spares)
Twenty-six (26) APG-83 Active Electronically Scanned Array (AESA) Radars
(includes 1 spare)
Twenty-six (26) Modular Mission Computers (includes 1 spare)
Twenty-six (26) Link-16 Multifunctional Information Distribution Systems –
JTRS (MIDS-JTRS) with TACAN and ESHI Terminals (includes 1 spare)
Twenty-six (26) LN260 Embedded Global Navigation Systems (EGI) (includes 1
spare)
Forty (40) Joint Helmet Mounted Cueing Systems (JHMCS) (includes 5 spares)
Twenty-six (26) Improved Programmable Display Generators (iPDG) (includes 1
spare)
Thirty (30) M61 A1 Vulcan 20mm Guns (includes 5 spares)
Fifty (50) LAU-129 Multi-Purpose Launchers
Forty (40) AIM-120C-7 Advanced Medium Range Air-to-Air Missiles
(AMRAAM)
Forty (40) AIM-120C-7 Guidance Sections
Three (3) GBU-38/54 JDAM Tail Kits
Fifty (50) MXU-650 Air Foil Group, GBU-49
Fifty (50) MAU-210 Enhanced Computer Control Group (CCG), GBU-49,-50
Thirty-six (36) FMU-139 D/B Fuzes
Six (6) FMU-139 D/B (D-1) Inert Fuzes
Two (2) GBU-39 (T-1) GTVs
Sixty (60) GBU-39/B Small Diameter Bombs (SDB I)
Ten (10) MAU-169L/B Computer Control Group, GBU-10,-12,-16
Ten (10) MXU-650C/B Air Foil Group, GBU-12
Twelve (12) MK82 Bombs, Filled Inert
Four (4) BLU-109 Practice Bombs

Ten (10) MAU-169 CCG (D-2)
Twenty-six (26) AN/AAQ-33 Sniper Pods

Non-MDE:

Also included are twenty-six (26) AN/ALQ-213 EW Management Systems; twenty-six (26) Advanced Identification Friend/Foe; Secure Communications, Cryptographic Precision Navigation Equipment; one (1) Joint Mission Planning System; twenty-six (26) AN/ALQ-211 AIDEWS; six (6) DB-110 Advanced Reconnaissance Systems; communications equipment; spares and repair parts; support equipment; personnel training and training equipment; publications and technical documentation; support and test equipment, simulators; integration and test; U.S. Government and contractor engineering, technical and logistical support services; and other related elements of logistics and program support.

(iv) Military Department: Air Force (MO-D-SAH)

(v) Prior Related Cases, if any: MO-D-SAY

(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: **March 22, 2019**

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

POLICY JUSTIFICATION

Morocco – F-16 Block 72 New Purchase

The Government of Morocco has requested to buy twenty-five (25) F-16C/D Block 72 aircraft; twenty-nine (29) engines (Pratt & Whitney F100-229) (includes 4 spares); twenty-six (26) APG-83 Active Electronically Scanned Array (AESA) radars (includes 1 spare); twenty-six (26) Modular Mission Computers (includes 1 spare); twenty-six (26) Link-16 Multifunctional Information Distribution Systems – JTRS (MIDS-JTRS) with TACAN and ESHI Terminals (includes 1 spare); twenty-six (26) LN260 Embedded Global Navigation Systems (EGI) (includes 1 spare); forty (40) Joint Helmet Mounted Cueing Systems (JHMCS) (includes 5 spares); twenty-six (26) Improved Programmable Display Generators (iPDG) (includes 1 spare); thirty (30) M61 Al Vulcan 20mm Guns (includes 5 spares); fifty (50) LAU-129 Multi-Purpose Launchers; forty (40) AIM-120C-7 Advanced Medium Range Air-to-Air Missiles (AMRAAM); forty (40) AIM-120C-7 Guidance Sections; three (3) GBU-38/54 JDAM Tail Kits; fifty (50) MXU-650 Air Foil Group, GBU-49; fifty (50) MAU-210 Enhanced Computer Control Group (CCG), GBU-49,-50; thirty-six (36) FMU-139 D/B Fuzes; six (6) FMU-139 D/B (D-1) Inert Fuzes; two (2) GBU-39 (T-1) GTVs; sixty (60) GBU-39/B Small Diameter Bombs (SDB I); ten

(10) MAU-169L/B Computer Control Group, GBU-10,-12,-16; ten (10) MXU-650C/B Air Foil Group, GBU-12; twelve (12) MK82 Bombs, Filled Inert; four (4) BLU-109 Practice Bombs; ten (10) MAU-169 CCG (D-2); and twenty-six (26) AN/AAQ-33 Sniper Pods. Also included are twenty-six (26) AN/ALQ-213 EW Management Systems; twenty-six (26) Advanced Identification Friend/Foe; Secure Communications, Cryptographic Precision Navigation Equipment; one (1) Joint Mission Planning System; twenty-six (26) AN/ALQ-211 AIDEWS; six (6) DB-110 Advanced Reconnaissance Systems; communications equipment; spares and repair parts; support equipment; personnel training and training equipment; publications and technical documentation; support and test equipment, simulators; integration and test; U.S. Government and contractor engineering, technical and logistical support services; and other related elements of logistics and program support. The estimated cost is \$3.787 billion.

This proposed sale will contribute to the foreign policy and national security of the United States by helping to improve the security of a major Non-NATO ally that continues to be an important force for political stability and economic progress in North Africa.

The proposed sale will contribute to Morocco's self-defense capabilities. The purchase will improve interoperability with the United States and other regional allies and enhance Morocco's ability to undertake coalition operations, as it has done in the past in flying sorties against ISIS in Syria and Iraq. Morocco already operates an F-16 fleet and 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. The purchaser typically requests offsets. Any offset agreement will be defined in negotiations between the purchaser and the contractor.

Implementation of this proposed sale will require the assignment of 10 additional U.S. Government and approximately 75 contract representatives to Morocco.

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

Transmittal No. 19-09

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 Morocco. The F-16C/D Block 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 Pratt & Whitney F100-PW-229 EEP engine, AN/APG-83 radar, digital flight control system, embedded internal global navigation system, Joint Helmet Mounted Cueing Systems (JHMCS), internal and external electronic warfare equipment, Advanced IFF, LINK-16 datalink, operational flight trainer, and software computer programs.

2. Sensitive and/or classified (up to SECRET) elements of the proposed F-16 V include hardware, accessories, components, and associated software: Link 16 (MIDS-JTRS) with TACAN and ESHI Terminals, Multipurpose Launcher (LAU-129), AN/ALQ-213 EW Management Systems, Advanced Identification Friend or Foe (AIFF), Cryptographic Appliques (KIV-78), Dual-Band AN/ARC-238 UHF/VHF Radios, KY-58M COMSEC Secure Voice Processors, Joint Mission Planning System, F-16V Simulator, AN/ALQ-211 AIDEWS Pods, Avionics I-Level Test Station, DB-110 Advanced Reconnaissance Systems, F-110 engine infrared signature, Sniper (AN/AAQ-33-33) targeting pods, and Advanced Interference Blanker Unit. Additional sensitive areas include operating manuals and 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 is an Active Electronically Scanned Array (AESA) radar upgrade of 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, increases in processing speed and memory, as well as significant improvements in all modes. The highest classification of the radar is SECRET.

4. The Multifunctional Information Distribution System (MIDS) 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. The MIDS 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.

5. Joint Helmet Mounted Cueing System (JHMCS II) is a modified HGU-55/P helmet that incorporates a visor-projected Heads-Up Display (HUD) to cue weapons and aircraft sensors to air and ground targets. This system projects visual targeting and aircraft performance information on the back of the helmet's visor, enabling the pilot to monitor this information without interrupting his field of view through the cockpit canopy. This provides improvement for close combat targeting and engagement. Hardware is UNCLASSIFIED; technical data and documents are classified up to SECRET.

6. KY-58M is a lightweight terminal for secure voice and data communications. The KY-58M provides wideband/ narrowband half duplex communication. The KY-58M provides flexible interface capability. Operating in tactical ground, marine and airborne applications, the KY-58M enables secure communication with a broad range of radio and satellite equipment.

7. Joint Mission Planning System (JMPS) is a multi-platform PC based mission planning system. JMPS hardware is UNCLASSIFIED but the software is classified up to SECRET.

8. AN/ALQ-211 Airborne Integrated Defensive Electronic Warfare Suite (AIDEWS) provides passive radar warning, wide spectrum RF jamming, and control and management of the entire EW system. It is an externally mounted Electronic Warfare (EW) pod. The commercially developed system software and hardware is UNCLASSIFIED. The system is classified SECRET when loaded with a US derived EW database.

9. The DB-110 is a tactical airborne reconnaissance system. This capability permits reconnaissance missions to be conducted from very short range to long range by day or night. It is an under-the-weather, podded system that produces high resolution, dual-band electro-optical and infrared imagery. The DB-110 system is UNCLASSIFIED.

10. 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 cryptovvariable keys needed for highest GPS accuracy are classified up to SECRET.

11. The AN/APX-126 Advanced Identification Friend or Foe (AIFF) Combined Interrogator Transponder (CIT) is a system capable of transmitting and interrogating Mode V. It is UNCLASSIFIED unless/until Mode IV and/or Mode V operational evaluator parameters are loaded into the equipment. Elements of the IFF system classified up to SECRET include software object code, operating characteristics, parameters, and technical data. Mode IV and Mode V anti-jam performance specifications/data, software source code, algorithms, and tempest plans or reports will not be offered, released, discussed, or demonstrated.

12. 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.

13. The Improved Programmable Display Generator (iPDG) and color multifunction displays utilize ruggedized commercial liquid crystal display technology 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 provides orders of magnitude increases in throughput, memory, and graphics capabilities. The hardware and software are UNCLASSIFIED.

14. The KIV-78 is a crypto applique for Mode 5 IFF. The hardware is UNCLASSIFIED unless loaded with Mode 4 and/or Mode 5 classified elements.

15. 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.

16. The AN/ARC-238 radio with HAVE QUICK II is a voice communications radio system and considered UNCLASSIFIED without HAVE QUICK II. HAVE QUICK II employs cryptographic technology that is classified SECRET. Classified elements include operating characteristics, parameters, technical data, and keying material.

17. The LAU-129 Guided Missile Launcher is capable of launching a single AIM-9 (Sidewinder) 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 versions is the material they are coated with or the color of the coating. This device is UNCLASSIFIED.

18. The AIM-120C-7 Advanced Medium Range Air-to-Air Missile (AMRAAM) is a supersonic, air launched, aerial intercept, guided missile featuring digital technology and microminiature solid-state electronics. AMRAAM capabilities include lookdown/shootdown, multiple launches against multiple targets, resistance to electronic countermeasures, and interception of high- and low-flying maneuvering targets. The AMRAAM AUR is classified CONFIDENTIAL, major components and subsystems range from UNCLASSIFIED to CONFIDENTIAL, and technical data and other documentation are classified up to SECRET.

19. 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 tailkit 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 a 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.

20. GBU-31/38 (JDAM) are 2,000 pound and 500 pound JDAMs respectively. The JDAM All Up Round (AUR) and all of its components are SECRET; technical data for JDAM is classified up to SECRET. The GBU-31/38 contain a GPS Receiver Card with Selective Availability Anti-Spoofing Module (SAASM).

21. GBU-54/56 (JDAM) are 500 pound and 2,000 pound JDAM respectively, which incorporates all

the capabilities of the JDAM and adds 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).

22. GBU-49 and GBU-50 Enhanced Paveway II (EP II) are 5001bs/20001bs dual mode laser and GPS guided munitions respectively. 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.

23. GBU-39 (2501b) Small Diameter Bomb (SDB-I) 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.

24. GBU-10/12/16/58 Paveway II (PWII), a Laser Guided Bomb (LGB), is a maneuverable, free-fall weapon that guides to a spot of laser energy reflected off of the target. The LGB is delivered like a normal general purpose (GP) warhead and the semi-active guidance corrects for many of the normal errors inherent in any delivery system. Laser designation for the LGB can be provided by a variety of laser target markers or designators. A LGB consists of a Computer Control Group (CCG) that is not warhead specific, and a warhead specific Air Foil Group (AFG) that attaches to the nose and tail of a GP bomb body. The PWII can use either the FMU-152 or FMU-139D/B fuzes. The overall weapon is CONFIDENTIAL. The GBU-10 is a 2,0001b (MK-84 or BLU-117 B/B) GP bomb body fitted with the MXU-651 AFG, and MAU-209C/B or MAU-169 L/B CCG to guide to its laser designated target. The GBU-12 is a 5001b (MK-82 or BLU-111 B/B) GP bomb body fitted with the MXU-650 AFG, and MAU-209C/B or MAU-168L/B CCGs to guide to its laser designated target. The GBU-16 is a 1,0001b (BLU-110 B/B or MK-83) GP bomb body fitted with the MXU-650 airfoil and MAU-209C/B or MAU-168L/B CCGs to guide to its laser designated target. The GBU-58 is a 2501b (BLU-110 B/B or MK-83) GP bomb body fitted with the MXU-650 airfoil and MAU-209C/B or MAU-168L/B CCGs to guide to its laser designated target.

25. M61 20mm Vulcan Cannon: The 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.

26. 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.

27. A determination has been made that Morocco 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.

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

[FR Doc. 2019-12443 Filed: 6/12/2019 8:45 am; Publication Date: 6/13/2019]