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DEPARTMENT OF DEFENSE

Office of the Secretary

(Transmittal No. 16-58)

36(b)(1) Arms Sales Notification

AGENCY: Department of Defense, Defense Security Cooperation Agency.

ACTION: Notice.

SUMMARY: The Department of Defense is publishing the unclassified text of a section 36(b)(1) arms sales notification. This is published to fulfill the requirements of section 155 of Public Law 104-164 dated July 21, 1996.

FOR FURTHER INFORMATION CONTACT: Pam Young, DSCA/SE&E-RAN, (703) 697-9107.

The following is a copy of a letter to the Speaker of the House of Representatives, Transmittal 16-58 with attached Policy Justification and Sensitivity of Technology.

Dated: November 22, 2016.

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



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

The Honorable Paul D. Ryan
Speaker of the House
U.S. House of Representatives
Washington, DC 20515

NOV 17 2016

Dear Mr. 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. 16-58 concerning the Department of the Air Force's and Navy's proposed Letter(s) of Offer and Acceptance to the Government of Qatar for defense articles and services estimated to cost \$21.1 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,



J. W. Riskey
Vice Admiral, USN
Director

Enclosures:

1. Transmittal
2. Policy Justification
3. Sensitivity of Technology
4. Regional Balance (Classified Document Provided Under Separate Cover)



Transmittal No. 16-58

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 Qatar

(ii)	<u>Total Estimated Value:</u>	
	Major Defense Equipment*	\$11.5 billion
	Other	<u>\$ 9.6 billion</u>
	TOTAL	\$21.1 billion

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

Major Defense Equipment (MDE):

Seventy-two (72) F-15QA Aircraft
One hundred and forty-four (144) F-110-GE-129 Aircraft Engines
Eighty (80) Advanced Display Core Processor II (ADCP II)
Eighty (80) Digital Electronic Warfare Suites (DEWS)
Eighty (80) M61A "Vulcan" Gun Systems
Eighty (80) Link-16 Systems
One hundred and sixty (160) Joint Helmet Mounted Cueing Systems (JHMCS)
Three hundred and twelve (312) LAU-128 Missile Launchers
Eighty (80) AN/APG-82(V)1 Active Electronically Scanned Array (AESA)
Radars
One hundred and sixty (160) Embedded GPS/Inertial Navigation Systems (INS)
(EGI)
Eighty (80) AN/AAQ-13 LANTIRN Navigation Pods w/Containers
Eighty (80) AN/AAQ-33 SNIPER Advanced Targeting Pods w/containers (MDE
Determination Pending)
Eighty (80) AN/AAS-42 Infrared Search and Track Systems (IRST) (MDE
Determination Pending)
Two hundred (200) AIM-9X Sidewinder Missiles
Seventy (70) AIM-9X Captive Air Training Missiles (CATM)
Eight (8) AIM-9X Special Training Missiles
Twenty (20) CATM AIM-9X Missile Guidance Units
Twenty (20) AIM-9X Tactical Guidance Kits
Two hundred and fifty (250) AIM-120C7 Advanced Medium Range Air-to-Air
Missiles (AMRAAM)
Five (5) AIM-120C7 Spare Guidance Kits
One hundred (100) AGM-88 High Speed Anti-Radiation Missiles (HARM)
Forty (40) AGM-88 HARM CATMs

Two hundred (200) AGM-154 Joint Standoff Weapons (JSOW)
Eighty (80) AGM-84L-1 Standoff Strike Anti-Ship Missiles (Harpoon) Ten (10)
Harpoon Exercise Missiles
Two hundred (200) AGM-65H/K (Maverick) Missiles
Five hundred (500) GBU-38 Joint Direct Attack Munitions (JDAM) Guidance Kits
Five hundred (500) GBU-31 (V1) JDAM Guidance Kits
Two hundred and fifty (250) GBU-54 Laser JDAM Guidance Kits
Two hundred and fifty (250) GBU-56 Laser JDAM Guidance Kits
Five hundred (500) BLU-111B Bombs
Five hundred (500) BLU-117B Bombs
Six (6) MK-82 Inert Bombs
One thousand (1,000) FMU-152 Joint Programmable Fuses

Non-MDE include:

ACMI (P5) Training Pods, Reece Pods (DB-110), Conformal Fuel Tanks (CFTs), Identification Friend/Foe (IFF) system, AN/AVS-9 Night Vision Goggles (NVG), ARC-210 UHF/UVF radios, LAU-118(v)1/A, LAU-117-AV2A, associated ground support, training materials, mission critical resources and maintenance support equipment, the procurement for various weapon support and test equipment spares, technical publications, personnel training, simulators, and other training equipment, U.S. Government and contractor engineering, technical and logistics support services; and other related elements of logistical and program support.

(iv) Military Department: Air Force (X7-D-SAC and X7-D-YAB) and Navy (QA-P-AAB)

(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: November 17, 2016

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

POLICY JUSTIFICATION

Government of Qatar – F-15QA Aircraft with Weapons and Related Support

The Government of Qatar requested to purchase seventy-two (72) F-15QA multi-role fighter aircraft and associated weapons package; the provision for continental United States based Lead-in-Fighter-Training for the F-15QA; associated ground support, training materials; mission critical resources and maintenance support equipment; the procurement for various weapon support and test equipment spares; technical publications; personnel training; simulators and other training equipment; U.S. Government and contractor engineering; technical and logistics support services; and other related elements of logistical and program support. The estimated total program value is \$21.1 billion.

This proposed sale enhances the foreign policy and national security of the United State by helping to improve the security of a friendly country and strengthening our strategically important relationship. Qatar is an important force for political stability and economic progress in the Persian Gulf region. Our mutual defense interests anchor our relationship and the Qatar Emiri Air Force (QEAF) plays a predominant role in Qatar's defense.

The proposed sale improves Qatar's capability to meet current and future enemy air-to-air and air-to-ground threats. Qatar will use the capability as a deterrent to regional threats and to strengthen its homeland defense. Qatar will have no difficulty absorbing these aircraft into its armed forces.

The proposed sale of this aircraft, equipment, training, and support services will not alter the basic military balance in the region.

The prime contractor will be Boeing Corporation of Chicago, IL. The Purchaser typically requests offsets. Any offset agreement will be defined in negotiations between the purchaser and the contractor. Additional contractors include:

Astronautics Corporation of America, Arlington VA

BAE Systems, Arlington, VA

Elbit Systems of America, Fort Worth, TX

General Electric Aviation of Cincinnati, OH

Honeywell Aerospace, Phoenix, AZ

Lockheed Martin Aeronautics Company, Fort Worth, TX

L3 Communications, Arlington, TX

NAVCOM, Torrance, CA Raytheon, Waltham, MA

Rockwell Collins, Cedar Rapids, IA
Teledyne Electronic Safety Products, Thousand Oaks, CA
UTC Aerospace Systems, Charlotte, NC

Implementation of this sale requires the assignment of approximately 24 additional U.S. Government and approximately 150 contractor representatives to Qatar.

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

Transmittal No. 16-58

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 involves the release of sensitive technology to Qatar. The F-15QA weapons system is classified up to SECRET. The F-15QA aircraft uses the F-15E airframe and features advanced avionics and other technologically sensitive systems. The F-15QA contains the General Electric F-110-GE-129; an AN/APG-82(V)1 Active Electronically Scanned Array (AESA) radar; internal and external electronic warfare and self-protection equipment; identification, friend or foe (IFF) system; operational flight program; and software computer programs.

2. Sensitive and classified (up to SECRET) elements of the proposed F-15QA include hardware, accessories, components, and associated software: AESA radar, Digital Electronic Warfare Suite (DEWS), Missile Warning System (MWS), Non-Cooperative Threat Recognition (NCTR), Advanced Display Core Processor (ADCP) II, the AN/AAQ-33 SNIPER targeting system, Joint Helmet Mounted Cueing System (JHMCS), Infrared Search and Track system (IRST), APX-114/119 IFF, Link-16 Datalink Terminals, ARC-210 UHF/VHF, DB-110, EGI, AN/AVS-9 Night Vision Goggles (NVG), and associated air-to-air and air-to-ground weapons. 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-82(V) 1 is an AESA radar upgrade for the F-15. It includes higher processor power, higher transmission power, more sensitive receiver electronics, and synthetic aperture radar, which creates higher-resolution ground maps from a greater distance than existing mechanically scanned array radars. 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. DEWS provides passive radar warning, wide spectrum radio frequency jamming, and control and management of the entire electronic warfare (EW) system. It is an internally mounted suite. The commercially developed system software and hardware is UNCLASSIFIED. The system is classified SECRET when loaded with a U.S. derived EW database.

5. The AAR-57(v)2 uses electro-optical sensors to warn the aircrew of threatening missile launch and approach which is integrated within DEWS. This system detects and performs data hand-off so countermeasures can be automatically dispensed. The system, hardware components and software, are classified up to SECRET.

6. The ADCP II is the F-15 aircraft central computer. It serves as the hub for all aircraft subsystems and avionics data transfer. The hardware and software are classified SECRET.

7. 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.

8. The LANTIRN (AN/AAQ-13) is a navigation pod and provides high-speed penetration and precision attack assistance in all flying conditions. The pod uses a terrain-following radar and a fixed infrared sensor to display an image of the terrain in front of the aircraft on a heads-up display. System components, countermeasures and vulnerabilities are classified up to SECRET. Overall system classification is SECRET.

9. The AN/AAS-42 IRST system is a long-wave, high resolution, passive, infrared sensor system that searches and detects heat sources within its field of regard. The AN/AAS-42 is classified CONFIDENTIAL,

components and subsystems range from UNCLASSIFIED to CONFIDENTIAL, and technical data and other documentation are classified up to SECRET.

10. A combined transponder interrogator system is UNCLASSIFIED unless Mode IV or V operational evaluator parameters, which are SECRET, are loaded into the equipment.

11. An advanced Link-16 command, control, communications, and intelligence (C3I) system incorporating high-capacity, jam-resistant, digital communication links is used for exchange of near real-time tactical information, including both data and voice, among air, ground, and sea elements. The 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.

12. JHMCS is a modified HGU-55/P helmet that incorporates a visor-projected Heads-Up Display 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.

13. The AN/AVS-9 NVG is a 3rd generation aviation NVG offering higher resolution, high gain, and photo response to near infrared. Hardware is UNCLASSIFIED, and technical data and documentation to be provided are UNCLASSIFIED.

14. The ARC-210 UHF/VHF secure radios with HAVE QUICK II is a voice communications radio system that can operate in either normal, secure, or jam-resistant modes. It can employ cryptographic technology that is classified SECRET. Classified elements include operating characteristics, parameters, technical data, and keying material.

15. 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.

16. Embedded GPS INS (EGI) is a navigation platform that combines an inertial sensor assembly with a fixed reception pattern antenna (FRPA) GPS receiver and a common Kalman filter. The EGI system is the primary source for position information. The EGI is UNCLASSIFIED. The GPS crypto variable keys needed for highest GPS accuracy are classified up to SECRET.

17. Software, hardware, and other data and information, which is classified or sensitive, is reviewed prior to release to protect system vulnerabilities, design data, and performance parameters. Some end-item hardware, software, and other data identified above are classified at the CONFIDENTIAL and SECRET level. Potential compromise of these systems is controlled through management of the basic software programs of highly sensitive systems and software-controlled weapon systems on a case-by-case basis.

18. The following munitions are part of the F-15QA configuration:

19. AIM-9X Sidewinder missile is an air-to-air guided missile that employs a passive infrared target acquisition system that features digital technology and micro- miniature solid-state electronics. The AIM-9X tactical and captive air training missile (CATM) guidance units are subsets of the overall missile. The AIM-9X is overall classified CONFIDENTIAL; major components and subsystems range from UNCLASSIFIED to CONFIDENTIAL. However, technical data and other documentation are classified up to SECRET.

20. The AIM-9X is launched from the aircraft using a LAU-128 guided missile launcher. The LAU-128 provides mechanical and electrical interface between missile and aircraft. The LAU-128 system is UNCLASSIFIED.

21. AIM-120C7 Advanced Medium Range Air-to-Air Missile (AMRAAM) is a guided missile featuring digital technology and micro-miniature solid-state electronics. 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 is classified CONFIDENTIAL; major components and subsystems range from UNCLASSIFIED to CONFIDENTIAL. However, technical data and other documentation are classified up to SECRET.

22. The AIM-120C7 is launched from the aircraft using a LAU-128 guided missile launcher. The LAU-128 provides the mechanical and electrical interface between missile and aircraft. The LAU-128 system is

UNCLASSIFIED.

23. Joint Direct Attack Munition (JDAM) is an air-to-ground weapon with a guidance tail kit that converts unguided free-fall bombs into accurate, adverse weather "smart" munitions. With the addition of a laser guidance nose kit, the JDAM provides a capability to engage moving targets. The GPS-only guided JDAMs are GBU-38/31 (500 and 2000lbs respectively) and the Laser/OPS guided JDAMs are GBU-54/56 for the 500 and 2000lbs variants. The JDAM is UNCLASSIFIED; technical data for JDAM is classified up to SECRET. Overall system classification is SECRET.

24. JDAMs use the Global Positioning System (GPS) Precise Positioning System (PPS), which provides for a more accurate capability than the commercial version of GPS. Countries approved for GPS PPS will be provided Group Unique Variable (GUV) keys or unique country keys.

25. The AGM-154 is a family of low-cost standoff weapons that are modular in design and incorporate either a sub-munition or a unitary warhead. Potential targets for Joint Standoff Weapon (JSOW) range from soft targets, such as troop concentration, to hardened point targets like bunkers. AGM-154C is used by the US Navy, Marine Corps, and Air Force, and allows aircraft to attack well-defended targets in day, night, and adverse weather conditions. AGM-154C is a penetrator weapon that carries a BROACH warhead and pay load.

26. AGM-154 uses the Global Positioning System (GPS) Precise Positioning System (PPS), which provides for a more accurate capability than the commercial version of GPS.

27. The AGM-84L-1 Harpoon is a non-nuclear tactical weapon system currently in service in the U.S. Navy and in 28 other foreign nations. It provides a day, night, and adverse weather, standoff air-to-surface capability. Harpoon Block II is an effective Anti-Surface Warfare missile.

28. AGM-84L-1 uses the Global Positioning System (GPS) Precise Positioning System (PPS), which provides for a more accurate capability than the commercial version of GPS. The following Harpoon components being conveyed by the proposed sale that are considered sensitive and are classified CONFIDENTIAL include: IIR seeker, INS, OPP software and, missile operational characteristics and performance data. The overall system classification is SECRET.

29. The AGM-65H/K Maverick is an air-to-ground close air support

missile with a lock on before launch day or night capability. The H model uses an optical device guidance system that has the capability to penetrate haze and provides high contrast and longer range target identification. The K model uses the same guidance with a heavyweight penetrator warhead. Maverick hardware is UNCLASSIFIED. The SECRET aspects of the Maverick system are tactics, information revealing its vulnerability to countermeasures, and counter-countermeasures. Manuals and technical documents that are necessary for operational use and organizational maintenance are classified CONFIDENTIAL. Performance and countermeasure design are SECRET. Overall system classification is SECRET.

30. The AGM-65 is launched from the aircraft using a LAU-117 guided missile launcher. The LAU-117 provides the mechanical and electrical interface between missile and aircraft. The LAU-117 system is UNCLASSIFIED.

31. The AGM-88 High Speed Anti-Radiation Missiles (HARM) weapon system is an air-to-ground missile intended to suppress or destroy land or sea-based radar emitters associated with enemy air defenses and provides tactical air forces with a kinetic countermeasure to enemy radar-directed, surface-to-air missiles, and air defense artillery weapons systems. Destruction or suppression of enemy radars denies the enemy the use of air defense systems and therefore improving the survivability of our tactical aircraft. General capabilities, performance characteristics and support requirements are classified up to CONFIDENTIAL. The overall system classification is SECRET.

32. The AGM-88 is launched from the aircraft using a LAU-118 guided missile launcher. The LAU-118v 1/A provides the mechanical and electrical interface between missile and aircraft. The LAU-118 system is UNCLASSIFIED.

33. M61A1 20mm Vulcan Cannon: The 20mm Vulcan cannon is a six barreled automatic cannon chambered with 20x120mm ammunition with a cyclic rate of fire from 2,500-6,000 shots per minute. This weapon is a hydraulically powered air-cooled gatlin gun used to damage/destroy aerial targets, suppress/incapacitate personnel targets and damage or destroy moving and stationary light materiel targets. The M61A1 and its components are UNCLASSIFIED.

34. Qatar is both willing and able to protect United States classified military information. Qatari physical and document security standards are equivalent to U.S. standards. Qatar demonstrated its willingness and capability to protect sensitive military technology and information

released to its military in the past. Qatar is firmly committed to its relationship with the United States and to its promise to protect classified information and prevent its transfer to a third party. This sale is needed in furtherance of USG foreign policy and national security interests by helping to improve the security of a vital partner in the CENTCOM AOR.

35. If a technologically advanced adversary were to obtain knowledge of the specific hardware or software source code in this proposed sale, the information could be used to develop countermeasures which might reduce weapon system effectiveness or be used in the development of systems with similar or advance capabilities. The benefits to be derived from this sale in the furtherance of the U.S. foreign policy and national security objectives, as outlined in the Policy Justification, outweigh the potential damage that could result if the sensitive technology were revealed to unauthorized persons.

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

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