Billing Code: 5001-06

DEPARTMENT OF DEFENSE

Office of the Secretary

(Transmittal Nos. 12-59)

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: Ms. B. English, DSCA/DBO/CFM, (703) 601-3740.

The following is a copy of a letter to the Speaker of the House of Representatives, Transmittals 12-59 with attached transmittal and policy justification, and Sensitivity of Technology.

Dated: December 31, 2012.

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

DEC 21 2012

The Honorable John A. Boehner
Speaker of the House
U.S. House of Representatives
Washington, DC 20515

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. 12-59, concerning the Department of the Army's proposed Letter(s) of Offer and Acceptance to Qatar for defense articles and services estimated to cost $406 million. After this letter is delivered to your office, we plan to issue a press statement to notify the public of this proposed sale.

Sincerely,

FOR William E. Landay, III
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. 12-59

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: Qatar

(ii) Total Estimated Value:

Major Defense Equipment*	$ 276 Million
Other	$ 130 Million
TOTAL	$ 406 Million

(iii) Description and Quantity or Quantities of Articles or Services under Consideration for Purchase: 7 M142 High Mobility Artillery Rocket System (HIMARS) Launchers with the Universal Fire Control System (UFCS); 60 M57 Army Tactical Missile System (ATACMS) Block IA T2K Unitary Rockets (60 pods, 1 rocket per pod); 360 M31A1 Guided Multiple Launch Rocket System (GMLRS) Unitary Rockets (60 pods, 6 rockets per pod); 180 M28A2 Reduced Range Practice Rockets (30 pods, 6 rockets per pod); 7 M68A2 Trainers, 1 Advanced Field Artillery Tactical Data System (AFATDS); 2 M1151A1 High Mobility Multipurpose Wheeled Vehicles (HMMWV); and 2 M1152A2 HMMWVs. Also included are simulators, generators, transportation, wheeled vehicles, communications equipment, spare and repair parts, support equipment, tools and test equipment, technical data and publications, personnel training and training equipment, U.S. government and contractor engineering, technical and logistics support services, and other related elements of logistics support.

(iv) Military Department: Army (UAQ)

(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 Annex attached.

(viii) Date Report Delivered to Congress: 21 December 2012

POLICY JUSTIFICATION

Qatar – HIMARS, ATACMS, and GMLRS

The Government of Qatar has requested a possible sale of 7 M142 High Mobility Artillery Rocket System (HIMARS) Launchers with the Universal Fire Control System (UFCS); 60 M57 Army Tactical Missile System (ATACMS) Block 1A T2K Unitary Rockets (60 pods, 1 rocket per pod); 360 M31A1 Guided Multiple Launch Rocket System (GMLRS) Unitary Rockets (60 pods, 6 rockets per pod); 180 M28A2 Reduced Range Practice Rockets (30 pods, 6 rockets per pod); 7 M68A2 Trainers, 1 Advanced Field Artillery Tactical Data System (AFATDS); 2 M1151A1 High Mobility Multipurpose Wheeled Vehicles (HMMWV); and 2 M1152A2 HMMWVs. Also included are simulators, generators, transportation, wheeled vehicles, communications equipment, spare and repair parts, support equipment, tools and test equipment, technical data and publications, personnel training and training equipment, U.S. government and contractor engineering, technical and logistics support services, and other related elements of logistics support. The estimated cost is $406 million.

This proposed sale will contribute to the foreign policy and national security of the United States by helping to improve the security of an important partner which has been, and continues to be an important force for political stability and economic progress in the Middle East.

The proposed sale will improve Qatar's capability to meet current and future threats and provide greater security for its critical infrastructure. It will also enhance Qatar’s interoperability with the U.S. and its allies, making it a more valuable partner in an increasingly important area of the world. Qatar will have no difficulty absorbing these launchers into its armed forces.

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

The prime contractor will be Lockheed Martin Missile and Fire Control in Dallas, Texas. There are no known offset agreements proposed in connection with this potential sale.

Implementation of this proposed sale will require the assignment of two contractor representatives to Qatar for a minimum of one year to support delivery of the HIMARS and to provide support and equipment familiarization.

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

Transmittal No. 12-59

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

Annex
Item No. vii

(vii) Sensitivity of Technology:

1. The High Mobility Artillery Rocket System (HIMARS) with the Universal Fire Control System (UFCS) is a C-130 transportable, wheeled version of the Multiple Launch Rocket System (MLRS) launcher. Integrated on a 5-ton Family of Medium Tactical Vehicles (FMTV) truck chassis, it carries one launch pod containing six MLRS rockets or one ATACMS missile and is capable of firing all MLRS Family of Munitions (MFOM) rockets and missiles, to include Guided MLRS, ATACMS Unitary, and future variants. HIMARS operates with the same MLRS command, control, and communications, as well as the same size crew, as the M270A1 launcher. The HIMARS launcher has a Global Positioning System (GPS), but can operate without it. The launcher has a maximum speed of 55 mph and a minimum cruising range of 300 miles. The UFCS provides the command and control interface, man-machine interface, weapon interface, launcher interface and embedded training. The UFCS enables the launcher to interoperate with compatible national fire direction systems to navigate to specific fire and reload points, compute the technical firing solution, and orient the Launcher Module (LM) on the target to deliver the weapon accurately and effectively. The HIMARS launcher is moderately susceptible to reverse engineering. However, the cost to develop and establish a production capability would be prohibitive for many countries. It includes Built-in-Test and capability to store critical mission parameters, as well as system configuration and maintenance information. The UFCS also provided position navigation and processing necessary to direct and maintain control of the launcher system to allow for accurate firing and loading of weapons. The UFCS is militarily critical because it has the latest software and hardware. Reverse engineering would allow countermeasures to be developed, degrading the total weapon system. It would also impact the commercial business base by allowing cheap replication without the expenditure of Research and Development funds. The UFCS software is classified as Secret. The HIMARS hardware is Unclassified.

2. The M57 ATACMS Block 1A T2K Unitary Rocket provides Corps and Joint Task Force Commanders the capability to attack high-value, time sensitive targets when and where collateral damage, unexploded ordnance, or piloted aircraft risk may be of concern. It can be employed, even during inclement weather, against a variety of infrastructure, tactical, and, operational targets. These targets include both single and multi-story buildings, radio and television communications centers, telephone-relay sites,

and other targets located in urban or foliage restricted terrain. The M57 ATACMS Block 1A (Unitary) rocket is a conventional, semi-ballistic missile which utilizes a 500-lb HE unitary warhead. The Block IA configuration has increased range and accuracy as compared to the Block I (70-300km for Block 1A vs. 25-165km for Block I) and maintains lethality due to a Global Positioning System (GPS) aided guidance system. The M57 ATACMS Block 1A (Unitary) is the Full Material Release variant of ATACMS Unitary (formerly the M48 Quick Reaction Unitary), and has been upgraded to TACMS 2K (T2K) specifications (T2K includes redesigned components to compensate for obsolescence issues and bring down per-unit costs). Components of the M57 ATACMS Block IA Unitary missile are considered highly resistant to reverse engineering, and the impact of loss or diversion of the end item hardware would have minimum adverse impact. However, technical data for production of the Ring Laser Gyroscope (RLG), or for production, procession, fabrication, and loading of the solid propellant rocket motor are potentially applicable to development and production of accurate, long-range missile delivery systems. In addition, the RLG and accelerometers would have applicability to aircraft, space, and submarine programs. Lithium battery technology has applicability in a number of areas such as smart munitions communication, etc. Technologies used in the missile guidance and control subsystems and propulsion system are on the Militarily Critical Technologies List with details provided below:

a. The Inertial Measurement Unit (IMU) is militarily critical due to the components used and the manufacturing process involved in the development of the ring laser gyroscope (RLG), accelerometers, microprocessors, and integration of the GPS receiver into the missile.

b. The propulsion system technology is militarily critical. Critical factors include low-burn rate/high performance propellant, case bonding, and design for long shelf-life stability.

c. The lithium thermal batteries used in the tactical missile guidance and control are militarily critical. Within the U.S., only a small number of companies can produce batteries having the required combination of energy density and shelf life.

d. The system software could be used by adversaries to evaluate missions and capabilities of the missile and is therefore militarily critical.

The data table and mission critical data generator special applications software is classified Confidential. The Security Classification Guide's (SCG's) classification of performance data and information ranges from Unclassified to Secret. System accuracy, lethality, and effectiveness data are classified Secret. System response time and most trajectory data are classified Confidential. Range, reliability, and maintainability data are Unclassified. Countermeasures and counter-countermeasures are classified Secret.

3. The M31 Guided Multiple Launch Rocket System (GMLRS) Unitary uses a Unitary High Explosive (HE) Warhead along with GPS-aided IMU based guidance and control for ground-to-ground precision point targeting. GPS is not required for GMLRS to meet its effectiveness threshold. Additionally, GMLRS Unitary uses an Electronic Safe and Arm Fuse (ESAF) along with a nose mounted proximity sensor to give enhanced effectiveness to the GMLRS Unitary rocket by providing tri-mode warhead

functionality with point detonate, point detonate with programmable delay, or Height of Burst proximity function. Control of the rocket in flight is accomplished by fins (canards) located in the nose section. The GMLRS Unitary M31A1 is comprised of a Launch Pod Container (LPC) and six GMLRS Unitary Rockets. The LPC can be loaded in the M270A1, M142 HIMARS, or in the European M270 launcher. The LPC provides a protective environment for the GMLRS Unitary during shipment and storage, and serves as an expendable launch rail when the GMLRS Unitary Rocket is fired. The height, width, length, and other features of the LPC are exactly the same as for the MLRS rocket LPC. The LPC is a controlled breathing type container equipped with desiccant for humidity control. The forward and aft LPC covers are designed to fracture as the rocket egresses from the container. The GMLRS rocket utilizes technologies in the guidance and control subsystem and the rocket motor that appear on the Military Critical Technologies List. The most serious consequences of unauthorized disclosure of information concerning the guidance and control subsystem are the accelerated development of countermeasures and manufacturing capability by other nations. Components of the GMLRS system are considered highly resistant to reverse engineering and the impact of loss or diversion of the end item hardware would have minimum adverse impact. However, technical data for production of the RLG, or for production, processing, fabrication, and loading of the solid propellant rocket motor are directly applicable to the development and production of accurate, long-range rocket and missile systems. In addition, the RLG and accelerometers would have applicability to aircraft, space and submarine programs. Lithium battery technology has applicability in a number of areas such as smart munitions, communications, etc. Production technology for the GMLRS motor exceeds limits established in the Missile Technology Control Regime.

a. The proximity sensor does not include special anti-tamper features nor is there any attempt to hide original component markings. Reverse engineering and then reproducing the fuse system, while not impossible, would require a considerable amount of resources, technical ability, testing and time; both for the ESAF and the Proximity Sensor. The details of the Directional Doppler Ratio (DDR) signal processing technique used in the GMLRS Unitary proximity sensor and in other U.S. Army proximity fuses remains classified Secret.

b. The GMLRS guidance and control subsystem is composed of a three-axis laser gyro inertial sensor assembly and an electronics chassis assembly. The basic design and packaging of the guidance and control subsystem is unique and critical to GMLRS and includes several embedded Non-Developmental Items (NDIs). The assembly must fit into the space available in the forward section of the rocket. The technology involved with the guidance and control subsystem is militarily critical due to the components used, and the manufacturing processes involved in development of the RLGs, accelerometers, microprocessors and GPS. The rocket is guided by an inertial navigation system with GPS updates. The rockets are Selective Adaptive Anti-Spoofing Module (SAASM) compliant and will have specific country code and coalition codes loaded in the key deployment package by the GPS Joint Program Office.

c. RLG technology is militarily critical. The RLGs have been produced and used in military and commercial systems since the mid-1970s. Widespread use of RLGs

has enabled refinement of production techniques and processes resulting in high-rate, low cost production, while improving weapon system accuracy. RLG critical technology factors include the processes, procedures, and equipment used in the manufacture, inspection and test of RLG hardware.

d. Like the RLGs, the accelerometer critical technology factors include the processes, procedures and equipment used in the manufacture, inspection, and test of accelerometer hardware.

e. The GMLRS uses microprocessors to control data collection from the inertial sensors, and to perform guidance, autopilot, navigation, and hardware interface communications functions. The latest technology in microprocessor development is used in GMLRS, and is militarily critical.

f. The technology involved with the integration of the GPS receiver and the SAASM into the GMLRS guidance and control subsystem is militarily critical.

g. The GMLRS rocket propulsion subsystem technology is militarily critical. This propellant formulation has been incorporated in a limited motor volume to provide the boost and sustain thrust profile that meets the unique range and payload requirements of the GMLRS system. Critical factors include low-burn rate/high-performance propellant, limited toxicity, and design for extended shelf-life stability.

h. A lithium thermal battery powers the GMLRS rocket electronics. The battery is critical and unique to GMLRS. The knowledge required for the design and production of thermal batteries is not widely held. Within the U.S., only a limited number of companies can produce batteries having the required combination of energy density, and shelf life. However, Aerospatiale Batteries in Bourges, France also has the capability to produce batteries of this type.

i. The GMLRS system software is militarily critical. The software is uploaded to the rocket from the launcher during pre-launch operations. The system software would be useful to adversaries concerning GMLRS missions and tactical capabilities, and could possibly be reverse engineered to duplicate the algorithms.

j. The U.S. proximity sensor for height of burst fusing is listed as militarily critical technology. The GMLRS proximity sensor and ESAF fall within that definition. The proximity sensor design utilizes DDR as a basic signal processing technique and commercial-off-the-shelf (COTS) parts for the transmitter and electronic signal processing components. The GMLRS proximity sensor uses a unique frequency and signal processing algorithm. The proximity sensor is only turned on over the target, and it cannot be functioned or turned on during pre-flight built-in-test. Operating frequency parameters and the proprietary signal processing algorithm are unique to the GMLRS proximity sensor and are classified Secret. The assembled GMLRS and components are Unclassified. Performance of GMLRS is classified Confidential.

4. The Advanced Field Artillery Tactical Data System (AFATDS) is an automated C3 (Command, Control, and Communications) system for the fires battlefield

functional area. It provides the commander with integrated, responsive, and reliable fire support. AFATDS is a fully automated fire support system, which minimizes the sensor-to-shooter timeline and increases the hit ratio. It provides fully automated support for planning, coordinating and controlling mortars, field artillery cannons, rockets, close air support, attack helicopter and naval gunfire, for close support, counter-fire, interdiction, and deep operations.

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

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