



BILLING CODE 5001-06

DEPARTMENT OF DEFENSE

Office of the Secretary

[Transmittal No. 17-49]

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: Pamela Young, (703) 697-9107, pamela.a.young14.civ@mail.mil or Kathy Valadez, (703) 697-9217, kathy.a.valadez.civ@mail.mil; DSCA/DSA-RAN.

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 17-49 with attached Policy Justification and Sensitivity of Technology.

Dated: September 22, 2017.

Aaron Siegel,

Alternate OSD Federal Register Liaison Officer,

Department of Defense.



DEFENSE SECURITY COOPERATION AGENCY

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ARLINGTON, VA 22202-5408

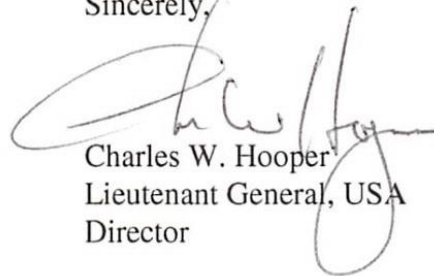
SEP 11 2017

The Honorable Paul D. Ryan
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. 17-49, concerning the Navy's proposed Letter(s) of Offer and Acceptance to the Government of Canada for defense articles and services estimated to cost \$5.23 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,

A handwritten signature in black ink, appearing to read "Charles W. Hooper".

Charles W. Hooper
Lieutenant General, USA
Director

Enclosures:

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



Transmittal No. 17-49

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 Canada

(ii) Total Estimated Value:

Major Defense Equipment*	\$2.64 billion
Other	<u>\$2.59 billion</u>
TOTAL	\$5.23 billion

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

Major Defense Equipment (MDE):

Ten (10) F/A-18E Super Hornet Aircraft, with F414-GE-400 Engines
 Eight (8) F/A-18F Super Hornet Aircraft, with F414-GE-400 Engines
 Eight (8) F414-GE-400 Engine Spares
 Twenty (20) AN/APG-79 Active Electronically Scanned Array (AESA) Radars
 Twenty (20) M61A2 20MM Gun Systems
 Twenty-eight (28) AN/ALR-67(V)3 Electronic Warfare Countermeasures Receiving Sets
 Fifteen (15) AN/AAQ-33 Sniper Advanced Targeting Pods
 Twenty (20) Multifunctional Information Distribution Systems–Joint Tactical Radio System (MIDS-JTRS)
 Thirty (30) Joint Helmet Mounted Cueing Systems (JHMCS)
 Twenty-eight (28) AN/ALQ-214 Integrated Countermeasures Systems
 One hundred thirty (130) LAU-127E/A and/or F/A Guided Missile Launchers
 Twenty-two (22) AN/AYK-29 Distributed Targeting System (DTS)
 Twenty-two (22) AN/AYK-29 Distributed Targeting Processor (DTP)
 One hundred (100) AIM-9X-2 Sidewinder Block II Tactical Missiles
 Thirty (30) AIM-9X-2 Sidewinder Block II Captive Air Training Missiles (CATM)
 Eight (8) AIM-9X-2 Sidewinder Block II Special Air Training Missiles (NATM)
 Twenty (20) AIM-9X-2 Sidewinder Block II Tactical Guidance Units
 Sixteen (16) AIM-9X-2 Sidewinder Block II CATM Guidance Units

Non-MDE:

Included in the sale are AN/AVS-9 Night Vision Goggles (NVG); AN/ALE-47 Electronic Warfare Countermeasures Systems; AN/ARC-210 Communication System; AN/APX-111 Combined Interrogator Transponder; AN/ALE-55 Towed Decoys; Joint Mission Planning System (JMPS); AN/PYQ-10C Simple Key Loader (SKL); Data Transfer Unit (DTU); Accurate Navigation (ANAV) Global Positioning System (GPS) Navigation; KIV-78 Duel Channel Encryptor, Identification Friend or Foe (IFF); CADS/PADS; Instrument Landing System (ILS); Aircraft Armament Equipment (AAE); High Speed Video Network (HSVN) Digital Video Recorder (HDVR); Launchers (LAU-

115D/A, LAU-116B/A, LAU-118A); flight test services; site survey; aircraft ferry; auxiliary fuel tanks; aircraft spares; containers; storage and preservation; transportation; aircrew and maintenance training; training aids and equipment, devices and spares and repair parts; weapon system support and test equipment; technical data Engineering Change Proposals; technical publications and documentation; software; avionics software support; software development/integration; system integration and testing; U.S. Government and contractor engineering technical and logistics support; Repair of Repairable (RoR); repair and return warranties; other technical assistance and support equipment; and other related elements of logistics and program support.

(iv) Military Department: Navy

(v) Prior Related Cases, if any: CN-P-FEC (planning case)

(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: September 11, 2017

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

POLICY JUSTIFICATION

Government of Canada – F/A-18E/F Super Hornet Aircraft with Support

The Government of Canada has requested a possible sale of ten (10) F/A-18E Super Hornet aircraft, with F414-GE-400 engines; eight (8) F/A-18F Super Hornet aircraft, with F414-GE-400 engines; eight (8) F414-GE-400 engine spares; twenty (20) AN/APG-79 Active Electronically Scanned Array (AESA) radars; twenty (20) M61A2 20MM gun systems; twenty-eight (28) AN/ALR-67(V)3 Electronic Warfare Countermeasures Receiving Sets; fifteen (15) AN/AAQ-33 Sniper Advanced Targeting Pods; twenty (20) Multifunctional Information Distribution Systems–Joint Tactical Radio System (MIDS-JTRS); thirty (30) Joint Helmet Mounted Cueing Systems (JHMCS); twenty-eight (28) AN/ALQ-214 Integrated Countermeasures Systems; one hundred thirty (130) LAU-127E/A and or F/A Guided Missile Launchers; twenty-two (22) AN/AYK-29 Distributed Targeting System (DTS); twenty-two (22) AN/AYK-29 Distributed Targeting Processor (DTP); one hundred (100) AIM-9X-2 Sidewinder Block II Tactical Missiles; thirty (30) AIM-9X-2 Sidewinder Block II Captive Air Training Missiles (CATM); eight (8) AIM-9X-2 Sidewinder Block II Special Air Training Missiles (NATM); twenty (20) AIM-9X-2 Sidewinder Block II Tactical Guidance Units; sixteen (16) AIM-9X-2 Sidewinder Block II CATM Guidance Units. Also included in this sale are AN/AVS-9 Night Vision Goggles (NVG); AN/ALE-47 Electronic Warfare Countermeasures Systems; AN/ARC-210 Communication System; AN/APX-111 Combined Interrogator Transponder; AN/ALE-55 Towed Decoys; Joint Mission Planning System (JMPS); AN/PYQ-10C Simple Key Loader (SKL); Data Transfer Unit (DTU); Accurate Navigation (ANAV) Global Positioning System (GPS) Navigation; KIV-78 Duel Channel Encryptor, Identification Friend or Foe (IFF); CADS/PADS; Instrument Landing System (ILS); Aircraft Armament Equipment (AAE); High Speed Video Network (HSVN) Digital Video Recorder (HDVR); Launchers (LAU-115D/A, LAU-116B/A, LAU-118A); flight test services; site survey; aircraft ferry; auxiliary fuel tanks; aircraft spares; containers; storage and preservation; transportation; aircrew and maintenance training; training aids and equipment, devices and spares and repair parts; weapon system support and test equipment; technical data Engineering Change Proposals; technical publications and documentation; software; avionics software support; software development/integration; system integration and testing; U.S. Government and contractor engineering technical and logistics support; Repair of Repairable (RoR); repair and return warranties; other technical assistance and support equipment; and other related elements of logistics and program support. The estimated total case value is \$5.23 billion.

This proposed sale will contribute to the foreign policy and national security objectives of the United States by helping to improve the security of a NATO ally which has been, and continues to be, a key democratic partner of the United States in ensuring peace and stability. The acquisition of the F/A-18E/F Super Hornet aircraft, associated weapons and capability will allow for greater interoperability with U.S. forces, providing benefits for training and possible future coalition operations in support of shared regional security objectives.

The proposed sale of the F/A-18E/F Super Hornet aircraft will improve Canada's capability to meet current and future warfare threats and provide greater security for its critical infrastructure. The F/A-18E/F Super Hornet aircraft will supplement and eventually replace a portion of the

Canadian Air Force's aging fighter aircraft. Canada will have no difficulty absorbing this equipment into its armed forces.

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

The principal contractors will be: Boeing Company, St. Louis, MO; Northrop Grumman, Los Angeles, CA; Raytheon, El Segundo, CA; General Electric, Lynn, MA; and Raytheon Missile Systems Company, Tucson, AZ. The Government of Canada has advised that it will negotiate offset agreements with key U.S. contractors.

Implementation of this proposed sale will require the assignment of contractor representatives to Canada on and intermittent basis over the life of the case to support delivery of the F/A-18E/F Super Hornet aircraft and weapons and to provide supply support management, inventory control and equipment familiarization.

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

Transmittal No. 17-49

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Pursuant to Section 36(b)(1)
of the Arms Export Control Act

Annex
Item No. vii

(vii) Sensitivity of Technology:

1. The F/A-18E/F Super Hornet is a single-seat and two-seat, twin engine, multi-mission fighter/attack aircraft that can operate from either aircraft carriers or land bases. The F/A-18E/F Super Hornet fills a variety of roles: air superiority, fighter escort, suppression of enemy air defenses, reconnaissance, forward air control, close and deep air support, and day and night strike missions. The F/A-18E/F Weapons System is considered SECRET.

2. The AN/APG-79 Active Electronically Scanned Array (AESA) Radar System is classified SECRET. The radar provides the F/A-18E/F Super Hornet aircraft with all-weather, multi-mission capability for performing air-to-air and air-to-ground targeting and attack. Air-to-air modes provide the capability for all-aspect target detection, long-range search and track, automatic target acquisition, and tracking of multiple targets. Air-to-surface attack modes provide high-resolution ground mapping navigation, weapon delivery, and sensor cueing. The system component hardware (Antenna, Transmitter, Radar Data Processor, and Power Supply) is UNCLASSIFIED. The Receiver-Exciter hardware is CONFIDENTIAL. The radar Operational Flight Program (OFP) is classified SECRET. Documentation provided with the AN/APG-79

radar set is classified SECRET.

3. The AN/ALR-67(V)3 Electronic Warfare Countermeasures Receiving Set is classified CONFIDENTIAL. The AN/ALR-67(V)3 provides the F/A-18E/F aircrew with radar threat warnings by detecting and evaluating friendly and hostile radar frequency threat emitters and providing identification and status information about the emitters to on-board Electronic Warfare (EW) equipment and the aircrew. The Operational Flight Program (OFP) and User Data Files (UDF) used in the AN/ALR-67(V)3 are classified SECRET. Those software programs contain threat parametric data used to identify and establish priority of detected radar emitters.

4. The Multifunctional Informational Distribution System-Joint Tactical Radio System (MIDS-JTRS) is classified CONFIDENTIAL. The MIDS-JTRS is a secure data and voice communication network using Link-16 architecture. The system provides enhanced situational awareness, positive identification of participants within the network, secure fighter-to-fighter connectivity, secure voice capability, and ARN-118 TACAN functionality. It provides three major functions: Air Control, Wide Area Surveillance, and Fighter-to-Fighter. The MIDS-JTRS can be used to transfer data in Air-to-Air, Air-to-Surface, and Air-to-Ground scenarios. The MIDS Enhanced Interference Blanking Unit (EIBU) provides validation and verification of equipment and concept. EIBU enhances input/output signal capacity of the MIDS-JTRS and addresses parts obsolescence.

5. The Joint Helmet Mounted Cueing System (JHMCS) 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. In close combat, a pilot must currently align the aircraft to shoot at a target. JHMCS allows the pilot to simply look at a target to shoot. 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. The system uses a magnetic transmitter unit fixed to the pilot's seat and a magnetic field probe mounted on the helmet to define helmet pointing positioning. A Helmet Vehicle Interface (HVI) interacts with the aircraft system bus to provide signal generation for the helmet display. This provides significant improvement for close combat targeting and engagement. Hardware is UNCLASSIFIED; technical data and documents are classified up to SECRET.

6. The AN/ALQ-214 is an advanced airborne Integrated Defensive Electronic Countermeasures (IDECM) programmable modular automated system capable of intercepting, identifying, processing received radar signals (pulsed and continuous) and applying an optimum countermeasures technique in the direction of the radar signal, thereby improving individual aircraft probability of survival from a variety of surface-to-air and air-to-air Radio Frequency (RF) threats. The system operates in a standalone or Electronic Warfare (EW) suite mode. In the EW suite mode, the AN/ALQ-214 operates in a fully coordinated mode with the towed dispensable decoy, Radar Warning Receiver (RWR), and the onboard radar in the F/A-18E/F Super Hornet in a coordinated, non-interference manner sharing information for enhanced information. The AN/ALQ-214 was designed to operate in a high-density Electromagnetic Hostile Environment with the ability to identify and counter a wide variety of multiple threats, including those with Doppler characteristics. Hardware within the AN/ALQ-214 is classified CONFIDENTIAL.

7. LAU-127E/A and/or F/A Guided Missile Launchers designed to enable F/A-18E/F Super Hornet aircraft to carry and launch missiles. It provides the electrical and mechanical interface between the missile and launch aircraft as well as the two-way data transfer between missile and cockpit controls and displays to support preflight orientation and control circuits to prepare and launch the missile.

8. The AIM-9X-2 Block II Sidewinder missile represents a substantial increase in missile acquisition and kinematics performance over the AIM-9M and replaces AIM-9X Block I missile configuration. The missile includes a high off-boresight seeker, enhanced countermeasure rejection capability, low drag/high angle of attack airframe and the ability to integrate the Helmet Mounted Cueing System. The software algorithms are the most sensitive portion of the AIM-9X-2 missile. The software continues to be modified via a pre-planned product improvement (P³I) program in order to improve its counter-countermeasure capabilities. No software source code or algorithms will be released. The missile is classified as CONFIDENTIAL.

9. The AIM-9X-2 will result in the transfer of sensitive technology and information. The equipment, hardware, and documentation are classified CONFIDENTIAL. The software and operation performance are classified SECRET. The seeker/guidance control section and the target detector are CONFIDENTIAL and contain sensitive state-of-the-art technology. Manuals and technical documentation that are necessary or support operational use and organizational management are classified up to SECRET. Performance and operating logic of the counter-countermeasures circuits are classified SECRET. The hardware, software, and data identified are classified to protect vulnerabilities, design and performance parameters and similar critical information.

10. The AN/AAQ-33 SNIPER Pod is a multi-sensor, electro-optical targeting pod incorporating infrared, low-light television camera, laser range finder/target designator, and laser spot tracker. It is used to provide navigation and targeting for military aircraft in adverse weather and using precision-guided weapons such as laser-guided bombs. It offers much greater target resolution and imagery accuracy than previous systems.

11. The AN/PVS-9 Night Vision Goggles (NVG) provide imagery sufficient for an aviator to complete night time missions down to starlight and extreme low light conditions. The AN/PVS-9 is designed to satisfy the F/A-18E/F mission requirements for covert night combat, engagement, and support. The third generation light amplification tubes provide a high-performance, image-intensification system for optimized F/A-18E/F night flying at terrain-masking altitudes. The AN/PVS-9 NVG's are classified as UNCLASSIFIED but with restrictions on release of technologies.

12. The AN/ALE-47 Countermeasures Dispensing Systems is classified SECRET. The AN/ALE-47 is a threat-adaptive dispensing system that dispenses chaff, flares, and expendable jammers for self-protection against airborne and ground-based Radio Frequency (RF) and Infrared Threats. The AN/ALE-47 Programmer is classified CONFIDENTIAL. The Operational Flight Program (OFP) and Mission Data Files (MDF) used in the AN/ALE-47 are classified SECRET. Those software programs contain algorithms used to calculate the best

defense against specific threats.

13. The AN/ARC-210 Radio's Line-of-sight data transfer rates up to 80 k/s in a 25 kHz channel creating high-speed communication of critical situational awareness information for increased mission effectiveness. Software that is reprogrammable in the field via Memory Loader/Verifier Software making flexible use for multiple missions. The AN/ARC-210 has embedded software with programmable cryptography for secure communications.

14. The AN/APX-111 Combined Interrogator/Transponder (CIT) with the Conformal Antenna System (CAS) is classified SECRET. The CIT is a complete MARK-XII identification system compatible with Identification Friend or Foe (IFF) Modes 1, 2, 3/A, C and 4 (secure). A single slide-in module that can be customized to the unique cryptographic functions for a specific country provides the systems secure mode capabilities. As a transponder, the CIT is capable of replying to interrogation modes 1, 2, 3/A, C (altitude) and secure mode 4. The requirement is to upgrade Canada's Combined Interrogator/Transponder (CIT) AN/APX-111 (V) IFF system software to implement Mode Select (Mode S) capabilities. Beginning in early 2005, EUROCONTROL mandated the civil community in Europe to transition to a Mode S only system and for all aircraft to be compliant by 2009. The Mode S Beacon System is a combined data link and Secondary Surveillance Radar (SSR) system that was standardized in 1985 by the International Civil Aviation Organization (ICAO). Mode S provides air surveillance using a data link with a permanent unique aircraft address. Selective Interrogation provides higher data integrity, reduced Radio Frequency (RF) interference levels, increased air traffic capacity, and adds air-to-ground data link.

15. The AN/ALE-55 Towed Decoy improves aircraft survivability by providing an enhanced, coordinated on-board/off-board countermeasure response to enemy threats.

16. The Joint Mission Planning System (JMPS) is classified SECRET. JMPS will provide mission planning capability for support of military aviation operations. It will also provide support for unit-level mission planning for all phases of military flight operations and have the capability to provide necessary mission data for the aircrew. JMPS will support the downloading of data to electronics data transfer devices for transfer to aircraft and weapon systems. A JMPS for a specific aircraft type will consist of basic planning tools called the Joint Mission Planning Environment (JMPE) mated with a Unique Planning Component (UPC) provided by the aircraft program. In addition UPCs will be required for specific weapons, communication devices, and moving map displays. The JMPS will be tailored to the specific releasable configuration for the F/A-18E/F Super Hornet.

17. AN/PYQ-10(C) is the next generation of the currently fielded AN/CYZ-10 Data Transfer Device (DTD). The AN/PYQ-10(C) provides automated, secure and user-friendly methods for managing and distributing cryptographic key material, Signal Operating Instructions (SOI), and Electronic Protection data. This course introduces some of the basic components and activities associated with the AN/PYQ-10(C) in addition to hands-on training. Learners will become familiar with the security features of the Simple Key Loader (SKL), practice the initial setup of the SKL, and will receive and distribute electronic keys using the SKL. Hardware is considered CLASSIFIED.

18. Data Transfer Unit (DTU) with CRYPTO Type 1 and Ground Encryption Device (GED). The DTU (MU-1164(C)/A) has an embedded DAR-400ES. Both versions of the DAR-400 are type 1 devices.

19. Accurate Navigation (ANAV) Global Positioning System (GPS) also includes Key loading Installation and Facility Charges. The ANAV is a 24-channel SAASM based pulse-per-second GPS receiver built for next generation GPS technology.

20. KIV-78 Dual Channel Encryptor Mode 4/Mode 5 Identification Friend or Foe (IFF) Crypto applique includes aircraft installs and initial spares, to ensure proper identification of aircraft during coalition efforts. The KIV-78 provides cryptographic and time-of-day services for a Mark XIIA (Mode 4 and 5) IFF Combined Interrogator/Transponder (CIT), individual interrogator, and individual transponder. Hardware is considered CLASSIFIED.

21. High Speed Video Network (HSVN) Digital Video Recorder (HDVR) with CRYPTO Type 1 and Ground Encryption Device (GED). The HDVR has an embedded DAR-400EX and the GED has an embedded DAR-400ES. Both versions of the DAR-400 are Type 1 devices.

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

23. A determination has been made that the Government of Canada 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.

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

[FR Doc. 2017-20743 Filed: 9/27/2017 8:45 am; Publication Date: 9/28/2017]