

ARCHIVED REPORT

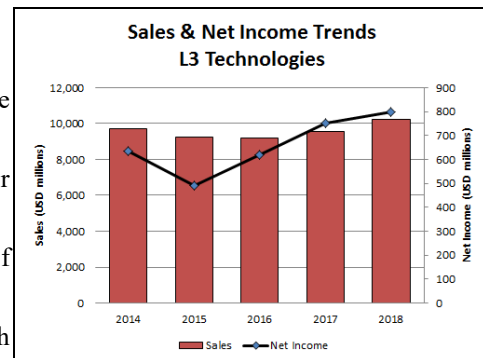
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L3 Technologies

Outlook

- Harris and L3 merger plan moves toward a mid-2019 close following shareholder approval earlier in the year
- This "merger of equals" will see the two firms joined together rather than one buying the other outright
- The new L3 Harris Technologies will have combined revenues of roughly \$15.6 billion – making it the 6th largest DoD contractor
- Merger combines a robust portfolio of electronic systems with little overlap



Headquarters

L3 Technologies Inc
600 Third Ave
New York, NY 10016
Telephone: +1 (212) 697-1111
Website: <http://www.l3t.com>

L3 Technologies Inc is a prime contractor for intelligence, surveillance, and reconnaissance (ISR) systems; aircraft maintenance, repair, and overhaul (MRO); simulation and training; night vision and image intensification equipment; and security and detection systems. L3 also provides a range of communication and electronic systems and products used on military and commercial platforms.

L-3 Communications was formed in April 1997 through the combination of 11 operating divisions formerly

owned by Loral Corporation and Lockheed Martin. On December 31, 2016, the company completed an internal reorganization to eliminate a holding company structure. Under this reorganization, L-3 Communications Holdings Inc was merged with L-3 Communications Corp. Following the merger, the company changed its name to L3 Technologies.

L3's major customers include the U.S. Department of Defense, select U.S. government intelligence agencies, aerospace and defense prime contractors, foreign governments, and domestic and international commercial customers.

In October 2018, Harris and L3 Technologies agreed to merge into a combined company, L3 Harris Technologies, Inc.

Structure and Personnel

Executive Management

Christopher E. Kubasik
President and Chief Executive Officer
Ralph G. D'Ambrosio
Senior Vice President and Chief Financial Officer
Ann D. Davidson
Senior Vice President and Chief Legal Officer
Raymond J. DeLuke
Senior Vice President and Chief Information Officer

Todd W. Gautier
Senior Vice President and President,
Electronic Systems Segment
Melanie M. Heitkamp
Senior Vice President and Chief Human Resources
Officer
Jeffrey A. Miller
Senior Vice President and President,
ISR Systems Segment

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Stephen F. O'Bryan
Senior Vice President and Chief Global Business
Development Officer

Sean J. Stackley
Senior Vice President and President,
Communications & Networked Systems Segment

David Van Buren
Senior Vice President of Program Development

Heidi Wood
Executive Vice President, Corporate Strategy
and Development

Product Area

L3 Technologies is a Tier 1 contractor that is predominantly active in the defense industry, primarily in the areas of electronics and communications. The company manages its operations as follows:

1. ISR Systems
 - 1.1 Advanced Laser Systems Technology, Inc. (ALST)
 - 1.2 Advanced Programs
 - 1.3 Aeromet
 - 1.4 Applied Defense Solutions
 - 1.5 ASA
 - 1.6 Brashear
 - 1.7 Cincinnati Electronics – Imaging & Detection Sensors
 - 1.8 Cincinnati Electronics – Space Avionics
 - 1.9 ComCept
 - 1.10 Electron Tube Operations
 - 1.11 EO/IR, Inc
 - 1.12 EOTech
 - 1.13 ForceX
 - 1.14 Insight Technology
 - 1.15 ISR Systems Segment
 - 1.16 ISR Systems, Greenville
 - 1.17 ISR Systems, Waco
 - 1.18 Kigre
 - 1.19 MAS
 - 1.20 Microe
 - 1.21 Oceania
 - 1.22 Sonoma EO, Inc
 - 1.23 SSG
 - 1.24 Trenchant
 - 1.25 TRL Technology
 - 1.26 WESCAM
2. Communications & Networked Systems
 - 2.1 Adaptive Methods
 - 2.2 ASV
 - 2.3 CALZONI
 - 2.4 Communication Systems-Australia
 - 2.5 Communication Systems-Canada
 - 2.6 Communication Systems-East
 - 2.7 Communication Systems-West
 - 2.8 Datron Advanced Technologies
 - 2.9 Electron Devices
 - 2.10 Electron Technologies Inc
 - 2.11 ESSCO
 - 2.12 GCS and 3Di
- 2.13 KEO
- 2.14 Linkabit
- 2.15 MAPPS Inc
- 2.16 MariPro Inc
- 2.17 Narda Microwave-West
- 2.18 Narda Safety Test Solutions GmbH
- 2.19 Narda Satellite Networks
- 2.20 Narda-ATM
- 2.21 Narda-MITEQ
- 2.22 Ocean Systems
- 2.23 OceanServer
- 2.24 Open Water Power
- 2.25 PHOTONICS
- 2.26 Randtron Antenna Systems
- 2.27 Telemetry & RF Products
3. Electronic Systems
 - 3.1 Airline Academy
 - 3.2 AMI
 - 3.3 Applied Technologies
 - 3.4 Aviation Communication & Surveillance Systems (ACSS)
 - 3.5 Aviation Products
 - 3.6 Combat Propulsion Systems
 - 3.7 Commercial Aviation
 - 3.8 Commercial Training Solutions
 - 3.9 CyTerra Inc
 - 3.10 D.P. Associates Inc
 - 3.11 Doss Aviation Inc
 - 3.12 ElectroDynamics Inc
 - 3.13 Electronic System Services
 - 3.14 ExMac Automation
 - 3.15 Fuzing & Ordnance Systems
 - 3.16 Interstate Electronics Corporation
 - 3.17 Latitude
 - 3.18 Link Training & Simulation
 - 3.19 MacDonald Humfrey Automation
 - 3.20 Magnet-Motor GmbH
 - 3.21 Maritime Systems
 - 3.22 Mustang Technology
 - 3.23 Power Paragon Inc
 - 3.24 Scandia Technologies
 - 3.25 Security & Detection Systems
 - 3.26 Space & Navigation
 - 3.27 SPD Electrical Systems
 - 3.28 Targa Systems
 - 3.29 Unmanned Systems
 - 3.30 Westwood Corporation

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L3 Technologies broadly defines its product segments into three major areas, detailed as follows.

ISR Systems. The businesses in this segment provide products and services for the global ISR mission solutions from seabed to space and Command, Control and Communications (C3) markets, specializing in signals intelligence (SIGINT) and multi-intelligence platforms, including engineering, modernization and sustainment solutions for military and various government aircraft, ground support equipment and other platforms. Other major capabilities and mission solutions include space avionics and imaging payloads, Counter Unmanned Aircraft Systems (CUAS) mission solutions, cyber and electronic warfare, special mission command and control, modeling and simulation, and life-cycle support. Operations are delineated as follows.

1. ISR Systems
2. Airborne Sensor Systems
3. Warrior Sensor Systems
4. Space & Sensor Systems
5. Aircraft Systems
6. Military Aviation Services
7. Intelligence & Mission Systems
8. Advanced Programs

Communications & Networked Systems. This sector focuses on network and communication systems;

secure communications products; radio frequency (RF) components; satellite communication terminals; and space, microwave and telemetry products. Other major capabilities include integrated maritime mission solutions, directed energy, lightweight unmanned undersea vehicles, and naval power delivery on submarines and surface ships. The unit focuses on the following business areas:

1. Broadband Communications
2. Naval Power Systems
3. Advanced Communications
4. Space & Power Systems
5. Maritime Sensor Systems

Electronic Systems. This catchall segment provides a broad range of products and services, including components, products, subsystems, systems and related services to military and commercial customers. These products and services serve markets such as commercial and military aircraft simulation and training, cockpit avionics, airport security and precision weapons. The operation focuses on the following business areas:

1. Commercial Aviation Solutions
2. Precision Engagement Systems
3. Link Training & Simulation
4. Security & Detection Systems

Facilities

Select L3 Technologies divisions are detailed below. For more coverage on individual operations and subsidiaries, please visit:

Website: <https://www.l3t.com/locations>

ISR Systems

Cincinnati Electronics, 7500 Innovation Way, Mason, OH 45040. Telephone: + 1 (513) 573-6100. Focuses on infrared detection and space and missile electronics.

Website: <http://www2.l3t.com/ce>

L3 Integrated Land Systems, Insight Technology, 9 Akira Way, Londonderry, NH 03053. Telephone: + 1 (603) 626-4800. Develops and manufactures night vision and electro-optical systems.

Website: <http://www.l3t.com/integratedlandsystems>

ISR Systems Greenville, 10001 Jack Finney Blvd, Greenville, TX 75402. Telephone: + 1 (903) 455-3450. The unit provides integration services and modernization of special-purpose fixed- and rotary-wing platforms.

Website: <http://www2.l3t.com/MID/index.htm>

MAS, 10,000 Helen-Bristol St, Montreal International Airport, Mirabel, Quebec J7N 1H3 Canada. Telephone: + 1 (450) 476-4000. Formerly SPAR, this unit provides aircraft modernization, systems integration, and life-cycle support services. The company's Aircraft Programs segment provides engineering support, depot-level maintenance, and avionics/structural upgrades. The component MRO segment specializes in servicing helicopter dynamics and the electrical, hydraulic, and pneumatic components of several aircraft.

Website: <http://www.l3t.com/mas>

WESCAM, 649 North Service Rd West, Burlington, Ontario, Canada L7P 5B9. Telephone: + 1 (905) 633-4000. L3 WESCAM designs and manufactures multi-spectral and multi-sensor EO IR imaging and targeting sensor systems.

Website: <https://www.wescam.com>

Communications & Networked Systems

Communication Systems-East, 1 Federal St, Camden, NJ 08103. Telephone: + 1 (856) 338-3000. L3 East designs, develops, produces, and integrates communications systems and network storage

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equipment for medical, commercial, space, air, ground, and naval applications. It also provides communications software support services to military and related government intelligence markets.

Website: <http://www2.l3t.com/cs-east>

Communication Systems-West, 640 N 2200 W, Salt Lake City, UT 84116. Telephone: + 1 (801) 594-2000. L3 West produces communications systems for the defense industry for use in intelligence collection, imagery processing, and satellite communications. It also has significant operations in Colorado Springs, CO; San Jose, CA; and Santa Maria, CA. These locations provide network engineering/software integration and test support for military customers.

Website: <http://www2.l3t.com/csw>

ESSCO, 90 Nemco Way, Ayer, MA 01432. Telephone: + 1 (978) 568-5100. ESSCO, a September 1998 acquisition, is a major manufacturer of ground-based radomes and precision millimeter-wave antenna systems, and it helped expand L3's satellite and antenna operations.

Website: <http://www2.l3t.com/essco>

MAPPS Inc, 8565 Côte-de-Liesse, Montréal, Québec, Canada H4T 1G5. Telephone: + 1 (514) 787-5000. Produces naval handling and visual landing aids systems, control and simulation solutions products and services for the marine, power generation, and space and civil sectors.

Website: <https://www2.l3t.com/mapps>

Narda-MITEQ, 435 Moreland Rd, Hauppauge, NY 11788. Telephone: + 1 (516) 231-1700. This unit offers high-performance microwave components, networks, and instruments to the wireless, industrial, and military communications markets.

Website: <http://www.nardamiteq.com>

Narda Microwave-West, 107 Woodmere Rd, Folsom, CA 95630. Telephone: + 1 (916) 351-4500. This facility designs and manufactures state-of-the-art space-qualified and wireless components.

Ocean Systems, 15825 Roxford St, Sylmar, CA 91342. Telephone: + 1 (818) 367-0111. Ocean Systems supplies acoustic undersea warfare systems for a wide range of platforms, including helicopters, submarines, and surface ships.

Website: <http://www2.l3t.com/oceansystems>

Randtron Antenna Systems, 130 Constitution Dr, Menlo Park, CA 94025. Telephone: + 1 (650) 326-9500. Randtron offers antennas designed for surveillance; use with high-resolution, ultra-wide frequency bands;

detection of low radar cross-section targets; low radar cross-section installations; severe environmental applications; and polarization diversity.

Website: <http://www2.l3t.com/randtron>

Telemetry & RF Products, 9020 Balboa Ave, San Diego, CA 92123. Telephone: + 1 (858) 694-7500. This unit specializes in the design and manufacture of radio frequency components for aircraft, missiles, and space applications.

Website: <http://www2.l3t.com/trf>

Electronic Systems

Aviation Communication & Surveillance Systems (ACCS), 19810 N 7th Ave, Phoenix, AZ 85027-4400. Telephone: + 1 (623) 445-7000. ACCS, an L3 and Thales company, produces safety avionics systems for commercial and military aviation. ACCS products include the TCAS 2000 and TCAS 1500 traffic alert and collision avoidance systems, a family of Mode S transponders, and the T2CAS combined traffic and terrain collision avoidance system.

Website:

<https://www.l3commercialaviation.com/avionics>

Aviation Products, 100 Cattlemen Rd, Sarasota, FL 34232. Telephone: + 1 (941) 371-0811. Aviation Recorders produces flight data recorders and cockpit voice recorders. The division designs, develops, and produces Fairchild Aviation recorders for general aviation, commercial, and military aircraft.

Avionics Products, 5353 52nd St SE, Grand Rapids, MI 49512. Telephone: + 1 (616) 949-6600. L3 Avionics Systems designs and manufactures safety systems for business, general aviation, and military aircraft.

Avionics Products, 1355 Bluegrass Lakes Pkwy, Alpharetta, GA 30004. Telephone: + 1 (770) 752-7000. Display Systems specializes in the design, development, and manufacture of ruggedized display systems. Products include cathode ray tube (CRT) displays, active matrix liquid crystal flat panel displays, and display processor electronics.

Electrodynamics Inc, 3975 McMann Rd, Cincinnati, OH 45245. Telephone: + 1 (513) 943-2000. Electrodynamic manufactures military aircraft data recorders, commercial locomotive data recorders, and integrated display-related components.

Website: <http://www2.l3t.com/edi>

Electronic System Services, 25 City View Dr, Toronto, Ontario, Canada, M9W 5A7. Telephone: + 1 (416) 249-1231. This unit's activities focus on ground vehicle electronics, flat panel liquid crystal displays (LCDs) and

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light-emitting diode (LED) displays, inertial navigation systems, and systems engineering and support.

Fuzing & Ordnance Systems, 3975 McMann Rd, Cincinnati, OH 45245. Telephone: + 1 (513) 943-2000. Comprising business units from two legacy L3 divisions – BT Fuze Products and KDI Precision Products – this unit produces ordnance fuzing products for artillery, mortars, rockets, missiles, and bombs.

Website: <http://www2.l3t.com/fos>

Interstate Electronics Corporation, 602 E Vermont Ave, PO Box 3117, Anaheim, CA 92805. Telephone: + 1 (714) 758-0500. IEC supplies test instrumentation and missile tracking systems for the U.S. Navy's Fleet Ballistic Missile weapons systems, including the Trident submarine. The division also offers Global Positioning Systems, ruggedized displays for military and industrial applications, and secure communications equipment and services.

Website: <http://www2.l3t.com/iec>

Link Simulation & Training, 2200 Arlington Downs Rd, Arlington, TX 76011. Telephone: + 1 (817) 619-2000. Link supplies simulators, training services, and effective on-demand instruction for military forces, governmental

agencies, educational institutions, and private businesses.

Website: <http://www.link.com>

Security & Detection Systems, 10E Commerce Way, Woburn, MA 01801. Telephone: + 1 (781) 939-3800. This unit produces X-ray security screening systems and metal detectors.

Website: <http://www.sds.l3com.com>

Space & Navigation, 450 Clark Dr, Budd Lake, NJ 07828. Telephone: + 1 (973) 446-4000. This division's products and capabilities include fiber-optic gyros, ring laser gyros, momentum and reaction wheel assemblies, control moment gyros, tactical inertial measurement units, position navigation units, and fire control and digital battlefield solutions.

Website: <http://www2.l3t.com/spacenav>

Unmanned Systems, 6900 K Ave, Plano, TX 75074. Telephone: + 1 (469) 568-2376. Manufactures unmanned aircraft, ground control stations, and support equipment.

Website: <http://www2.l3t.com/uas>

Corporate Overview

Since its formation in 1997, L3 Technologies has made a number of acquisitions that have strengthened and expanded the company's presence in a number of its markets. The acquisitions, which focus on building market share in the defense, security, satellite, and medical industries, complement L3's existing core defense and security operations and help the company enter new segments.

New Products and Services

Iver PW. In April 2018, L3 Technologies unveiled its new Iver Precision Workhorse (Iver PW) autonomous undersea vehicle. The Iver PW is the first in a family of advanced, highly capable military AUVs to address a wide variety of customer missions, including multidomain intelligence, surveillance, and reconnaissance (ISR), anti-submarine warfare (ASW), seabed warfare and mine warfare.

MUMT-X. In October 2017, L3 Technologies received a production contract for multiple awards totaling \$97 million in support of the U.S. Army's Apache Manned/Unmanned Teaming – eXpanded Capabilities (MUMT-X) helicopter program. By enabling communications and data teaming between manned and

unmanned aircraft, MUMT-X provides the Apache AH-64E with a transformational warfighting capability that is significantly more robust, lighter, and less expensive than the original unmanned aircraft system (UAS) control system. This award follows the successful completion of a 2015 MUMT-X communications upgrade contract in which L3 delivered state-of-the-art systems for high-speed transmissions of wideband video and data.

Airbus Flight Recorders. In June 2017, L3 announced that it has been selected by Airbus to provide and integrate new voice and data flight recorders for the entire range of Airbus commercial aircraft. L3 will design and manufacture a fixed, crash-protected Cockpit Voice and Data Recorder (CVDR) capable of recording up to 25 hours of voice and flight data on a single recorder. L3 will also be the integrator, in partnership with Airbus, of a new Automatic Deployable Flight Recorder (ADFR) that will be designed and manufactured by DRS Technologies Canada Ltd (a Leonardo DRS company). The new deployable ADFR is aimed at long-range aircraft, with extended flight time over water or remote areas, such as the Airbus A321LR, A330, A350, and A380.

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Plant Expansion/Organization Update

Arlington Expansion. In October 2018, L3 expanded its L3 Arlington Training Center facility in Arlington, Texas. The multipurpose training center provides simulation and instruction for both military and commercial pilots. The new expansion adds approximately 40,000 square feet, more than doubling the size of the high bay facility.

Segments Realigned. In August 2018, L3 Technologies realigned its business segments to maximize growth and improve its integration and collaboration across the enterprise. Under the change, Aerospace Systems was combined with Sensor Systems to form the new Intelligence, Surveillance & Reconnaissance (ISR) Systems segment. L3's other segments were unchanged.

L3 Commercial Aviation Formed. In July 2018, L3 Technologies launched L3 Commercial Aviation, which brings together key components of L3's commercial aviation offerings, including the development and management of on-aircraft avionics, integrated security solutions, and complete pilot training.

Website: <https://www.l3commercialaviation.com>

London Training Center. In July 2018, L3 announced it was more than \$100 million in its London Training Center, supporting London Gatwick as the epicenter of its worldwide commercial pilot training operations. When fully operational, the London Training Center will include eight L3 RealitySeven FFS, four high-fidelity L3 Flight Training Devices, eight Flat Panel Trainers, eight classrooms and briefing rooms, as well as the production facility.

L3 Link Expansion. In January 2018, L3 Technologies broke ground on an expansion of its Link Training & Simulation multipurpose pilot training center facility in Arlington, Texas. Under this plan, L3 will add approximately 40,000 square feet, more than doubling the size of the high bay site at L3 Link's headquarters. The training center provides simulation and instruction tools for both military and commercial pilots.

Restructurings Announced. In the third quarter of 2017, L3 announced a series of restructuring actions throughout its operations. The company has combined its Greenville and Waco operations in Texas, resulting in 700 layoffs. Other actions include consolidating three avionics businesses into one division; merging six power management divisions into two; shifting ab initio pilot training from Arizona to Florida; and consolidating several sensor systems facilities. Finally, the company plans to sell its Vertex Aerospace business in 2018,

following the loss of Fort Rucker Aviation Maintenance and Support contract recompetition.

Electronics Systems Segment Split. In January 2017, L3 Technologies split its Electronic Systems into two business segments, Electronic Systems and Sensor Systems. The Electronic Systems segment includes the Precision Engagement & Training, Aviation Products, and Security & Detection Systems sectors, as well as the Power & Propulsion Systems sector, excluding the Ocean Systems business, and had 2016 estimated sales of \$2.8 billion. The new Sensor Systems unit includes the Integrated Sensor Systems and Warrior Systems sectors, as well as L3's Ocean Systems and Advanced Programs businesses, and had 2016 estimated sales of \$1.5 billion. Commencing in the first quarter of 2017, the company will report its results under the realigned business segments.

Commercial Training Unit Formed. In July 2016, L3 formed a new Commercial Training Solutions division. The new business, which is operated under L3 Electronic Systems, was created through the consolidation of flight simulator manufacturer L3 Link UK, and its airline pilot training and resourcing organization, L3 CTC Aviation. Services offered include cadet (ab initio) training, resourcing, and airline training (including recurrent, type rating, and command training). L3 Commercial Training Solutions is headquartered in Crawley, U.K.

Mergers/Acquisitions/Divestitures

Harris and L3 Technologies to Merge. In October 2018, Harris and L3 Technologies announced they would combine operations in an all stock merger of equals. Upon completion of the merger, Harris shareholders will own approximately 54 percent and L3 shareholders will own approximately 46 percent of the combined company. The combined company, L3 Harris Technologies, Inc, will be the 6th largest defense company in the U.S. and a top 10 defense company globally, with approximately 48,000 employees. For 2018, the combined company is expected to generate net revenue of approximately \$16 billion, EBIT of \$2.4 billion, and free cash flow of \$1.9 billion.

L3 Harris Technologies will be headquartered in Melbourne, Florida. The combined company's Board of Directors will have 12 members, consisting of six directors from each company. William M. Brown will serve as chairman and chief executive officer, and Christopher E. Kubasik will serve as vice chairman, president and chief operating officer for the first two years. For the third year, Brown will transition to executive chairman and Kubasik to chief executive officer, after which Kubasik will become chairman and chief executive officer.

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In April 2019, shareholders approved the merger. At the same time, Harris announced it would sell its night vision business to Elbit Systems of America for \$350 million in order to avoid possible anti-trust concerns. The merger is expected to close in mid-2019 once it receives regulatory approvals.

ASV Global Acquired. In September 2018, L3 acquired ASV Global, a producer of unmanned surface vessel (USV) and autonomous vessel control systems. The new company now operates as L3 ASV. Based in Louisiana and the United Kingdom, L3 ASV delivers surface vessels in a range of sizes, currently from 10 to 42 feet, with proprietary software and control systems. Terms were not announced.

Website: <https://www.asvglobal.com>

Cybersecurity Acquisitions. In August 2018, L3 completed its acquisition of Azimuth Security and Linchpin Labs, two information security businesses, for about \$200 million. The acquired companies now operate under L3's ISR Systems business segment as L3 Trenchant.

Applied Defense Solutions Acquired. In July 2018, L3 Technologies acquired Applied Defense Solutions (ADS), an aerospace engineering, software development, and space situational awareness company for \$50 million. Headquartered in Columbia, Maryland, with offices in Herndon, Virginia, and Colorado Springs, Colorado, the business will be renamed L3 ADS and provides the intelligence community, DoD, NASA, and other customers with space systems mission planning; space exploration; and satellite operations, protection, and resiliency.

Website: <http://www.applieddefense.com>

Latitude Engineering Acquired. In June 2018, L3 Technologies bought hybrid quadrotor unmanned aircraft maker Latitude Engineering for \$15 million. Latitude, based in Arizona, has developed a hybrid quadrotor technology that enables vertical takeoff and landing (VTOL) of its UAV system.

Website: <https://www.latitudeengineering.com>

Vertex Aerospace Sold. In June 2018, L3 Technologies completed the sale of its Vertex Aerospace businesses to American Industrial Partners for \$540 million in cash, subject to customary adjustments. The sale included the Crestview Aerospace and TCS business units, which were part of L3's Aerospace Systems business segment. Vertex Aerospace provides aviation logistics services; supply chain management; and maintenance, repair, and overhaul services. Crestview Aerospace provides select

rotary aircraft component fabrication and assembly, and TCS provides select engineering services and logistics support.

Doss Aviation Acquired. In September 2017, L3 Technologies acquired Doss Aviation Inc for an undisclosed amount. Doss Aviation generated approximately \$50 million in annual sales for 2017. Based in Colorado Springs, Colorado, Doss Aviation is the sole provider of initial flight training (ab initio) for U.S. Air Force pilots and was recently authorized to train international military pilots. Doss owns and operates a full-service, turnkey training facility in Pueblo, Colorado, where it offers curriculum coursework and flight training for both fixed-wing and unmanned aircraft pilots and weapons officers. The business was renamed L3 Doss and has been integrated into L3's Electronic Systems business segment.

Adaptive Methods Acquired. In September 2017, L3 Technologies acquired Adaptive Methods Inc for an undisclosed amount. Based in Centreville, Virginia, Adaptive Methods is a systems engineering company that delivers undersea warfare (USW) and anti-submarine warfare (ASW) capabilities for U.S. military customers. The company is also developing autonomy and sensor payload solutions for use by unmanned undersea vehicles (UUVs). The business was renamed L3 Adaptive Methods and has been integrated into L3's Sensor Systems business segment.

Open Water Power Acquired. In May 2017, L3 Technologies acquired Open Water Power Inc for an undisclosed amount. Based in Somerville, Massachusetts, Open Water Power is developing safe and high energy density undersea power generation technologies for use by unmanned undersea vehicles (UUVs) and other maritime platforms. The business was renamed L3 Open Water Power and has been integrated into L3's Sensor Systems business segment.

OceanServer Technology Acquired. In March 2017, L3 Technologies acquired OceanServer Technology Inc for an undisclosed amount. Based in Fall River, Massachusetts, OceanServer Technology develops and manufactures autonomous, lightweight unmanned undersea vehicles (UUVs). The business was renamed L3 OceanServer and has been integrated into the company's Sensor Systems segment.

Coleman Aerospace Sold. In February 2017, Aerojet Rocketdyne acquired Coleman Aerospace from L3 Technologies for \$15 million. Coleman provides a variety of suborbital launch vehicles, payloads, and launch services. The operation has been renamed Aerojet Rocketdyne Coleman Aerospace.

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Implant Sciences Acquired. In January 2017, L3 Technologies completed its acquisition of the explosives trace detection (ETD) business of Implant Sciences Corporation for \$117.5 million. L3 acquired the worldwide rights to the QS-B220 desktop and the QS-H150 handheld ETD systems as well as all other product and technology assets of Implant Sciences. L3 integrated this business into its Security & Detection Systems division within the Electronic Systems business segment. The purchase was first announced in October 2016.

MacDonald Humfrey Acquired. In November 2016, L3 acquired U.K. airport security checkpoint specialist MacDonald Humfrey for GBP224 million (\$280 million). The business will operate as part of the L3 Electronic Systems business segment's Security & Detection Systems division.

Aerosim Acquired. In September 2016, L3 acquired Aerosim, including Aerosim Technologies Inc located in Burnsville, Minnesota, and Aerosim Flight Academy, Inc located in Sanford, Florida. Terms were not announced. Aerosim Technologies provides portable and flexible pilot and maintenance technician training products. Aerosim Academy, a flight school for prospective airline pilots, trains both U.S. and international cadets. Aerosim has been integrated into the L3 Commercial Training Solutions (L3 CTS) division of the company's Electronic Systems business segment and was renamed L3 Aerosim-CTC. Aerosim is projected to generate approximately \$50 million in sales for 2017.

Micreo Acquired. In September 2016, L3 acquired Micreo Ltd for an undisclosed amount. Micreo designs and produces RF and photonic products for radar and electronic warfare applications. The company, now known as L3 Micreo, employs approximately 70 people and is located in Brisbane, Australia. L3 Micreo reports directly to L3 TRL Technology, which is part of L3's Sensor Systems business segment. The business was projected to generate AUD35 million (\$27 million) in sales for 2017.

National Security Solutions Divested. In February 2016, L3 completed the sale of its National Security Solutions business to CACI International Inc for \$550 million in cash. With 4,000 employees, the divested operation provides enterprise and mission information technology services, intelligence operations support, and operational infrastructure support primarily to governmental agencies. "The completion of the divestiture of NSS reflects our commitment to sharpening our focus on our core defense electronics, ISR, and communications businesses where we have leading positions and global reach," said Michael T. Strianese, L3's chairman and chief executive

officer. The deal was first announced in December 2015.

Klein Associates Sold. In January 2016, Mitcham Industries acquired L3's Klein Associates, a designer, manufacturer, and worldwide distributor of sonar and waterside security systems to military and commercial customers. Terms were not disclosed.

ForceX Acquired. In October 2015, L3 acquired ForceX, a Nashville-based firm that specializes in ISR mission management software and geospatial application technology programs. The operation has been renamed L3 ForceX and is incorporated into L3's Integrated Sensor Systems sector within the Electronic Systems business segment. Terms were not reported, but the acquisition was forecast to add \$30 million in sales for 2016.

CTC Aviation Acquired. In May 2015, L3 acquired the U.K.-based CTC Aviation Group, now known as L3 CTC Ltd, for approximately \$220 million in cash. The operation is an airline pilot training and crew-resourcing specialist that offers customized solutions to major airlines and retail customers globally. The unit employs 265 and is expected to add \$50 million to L3 sales annually.

Marine Systems Sale. In May 2015, L3 completed the sale of its Marine Systems International (L3 MSI) business to Wärtsilä Corporation, for EUR295 million. Based in Hamburg, Germany, the MSI unit is primarily focused on the commercial ship industry, supplying complete electrical systems and integrated navigation, automation, communications, and power and propulsion systems for all types of ships, including cruise liners, ferries, and offshore and specialty vessels. The operation comprises various units, including SAM Electronics, Valmarine, Lyngsø Marine, Dynamic Positioning & Control Systems, JOVYATLAS / EUROATLAS, ELAC Nautik, FUNA, and APSS. The deal was first announced in December 2014.

Miteq Acquired. In January 2015, L3 acquired the assets of Miteq for \$41 million. The Miteq business develops and manufactures specialized RF microwave products and solid-state satellite communications components that complement L3's existing Narda product line. The business will be combined with L3's Narda Microwave-East business located in Hauppauge, New York. The new organization is called L3 Narda-Miteq and will employ approximately 700 people.

Website: <http://www.nardamiteq.com>

Applied Optics Sold. In November 2014, Optex Systems acquired L3 Warrior Systems' Applied Optics Center for \$1 million. Applied Optics Center designs

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and manufactures complex thin film coatings and optical assemblies for commercial and defense applications, including laser protection filters for the U.S. Army.

Mustang Technology Acquired. In December 2013, L3 acquired Mustang Technology Group LP for an undisclosed amount. The business, now named L3 Mustang Technology, develops and manufactures radar-based sensors and systems used in precision-guided weapons, electronic warfare systems, unmanned systems, and other military applications. Headquartered in Plano, Texas, L3 Mustang employs approximately 115 people. The business generated approximately \$36 million in sales in 2013. The unit reports to the Electronic Systems group.

Thales Training & Simulation Acquisition. In August 2012, L3 Communications completed its acquisition of the assets of Thales Training & Simulation Ltd's civil aircraft simulation and training business. The purchase price was GBP83 million (approximately \$130 million). Headquartered in Crawley, U.K., the business employs approximately 400 people. The business is now known as L3 Link Simulation & Training UK Ltd. The deal was first announced in April 2012.

Engility Holdings Spinoff Completed. In July 2012, L3 completed the spinoff of its government services operations into a new public company, Engility Holdings Inc. The new company focuses on systems engineering and technical assistance, training, and operational support services for the DoD and other U.S. government agencies, as well as civil and international customers. These businesses were part of L3's former Government Services segment. L3 retained its Cyber, Intelligence, and Security Solutions businesses as part of the National Security Solutions segment, which was divested in 2016.

Website: <http://www.saic.com>

Kollmorgen Electro-Optical Acquired. In February 2012, L3 Communications completed its \$210 million acquisition of the Kollmorgen Electro-Optical unit of Danaher Corporation. Conducting business under the name of L3 KEO, the acquired company develops and manufactures specialized equipment, including submarine photonics systems and periscopes, ship fire control systems, visual landing aids, and ground electro-optical and sensor-cueing systems. L3 KEO is headquartered in Northampton, Massachusetts. The deal was first announced in December 2011.

Detector Networks Acquired. In October 2011, L3 Security & Detection Systems acquired Detector

Networks International and its radiation detection technologies, including the field-proven Radiation Detection Straddle Carrier. RDSC is a passive radiation detection system that integrates with a standard straddle carrier and uses secondary scans to resolve alarms without the need to open cargo containers. Terms were not disclosed.

Teaming/Competition/Joint Ventures

ACSS. In April 2001, L3 and Thales Avionics, a wholly owned subsidiary of Thales specializing in avionics and aircraft cabin electronics, formed a joint venture company to operate the assets of L3's Aviation Communication & Surveillance Systems. Under the terms of the agreement, Thales Avionics purchased a 30 percent interest for approximately \$72 million in cash. L3 owns 70 percent of the joint venture and manages it. ACSS provides communications and surveillance avionics systems and services for the global aviation marketplace. The enterprise is located in Phoenix, Arizona, with marketing and support personnel stationed around the world.

Website:

<http://www.l3commercialaviation.com/avionics>

Applied Energetics. In August 2010, Applied Energetics entered into a strategic teaming agreement with L3 Interstate Electronics Corporation (IEC) to pursue U.S. DoD contracts involving counter-IED (improvised explosive device) systems. Applied Energetics intended to focus its efforts in technical areas requiring high-voltage electronics, systems integration, and systems testing in support of advanced counter-IED technologies. L3 IEC was expected to contribute expertise in power electronics, systems engineering, configuration control, and production management.

BAE Systems. In February 2018, L3 Technologies announced that it will support the BAE Systems Power and Propulsion Team by providing the Integrated Platform Management System (IPMS) for the upcoming Royal Australian Navy (RAN) SEA5000 program pursuit. L3 was selected to provide the IPMS, as well as Controls and Instrumentation (C&I), for the nine Type 26 Global Combat Ships proposed for the SEA5000 program. In June 2018, BAE Systems was selected as the preferred tenderer for the SEA 5000 program to deliver nine future frigates for the Royal Australian Navy. The program is valued at AUD35 billion (approximately \$27.4 billion).

Canada's Combat Ship Team. In February 2019, Canada signed a design contract for the Type 26 for Canadian Surface Combatant program. Canada's Combat Ship Team is led by Lockheed Martin Canada, and also includes BAE Systems, CAE,

L3 Technologies

L3 Technologies, MDA, and Ultra Electronics Maritime Systems. The frigates will be built at Irving Shipbuilding in Halifax. The award follows a brief three-month negotiation process that started in October when the Type 26 frigate was selected as Canada's preferred option in the surface combatant competition. Competitors included the Dutch De Zeven Provinciën class frigate-based design proposed by Alion Canada and Damen Group, and the Spanish F-105 frigate design offered by Navantia. The initial design contract is valued at CAD185 million (\$139 million), and the value will increase as design progresses. The program as a whole is valued at around CAD60 billion (\$45 billion) for the design and construction of 15 frigates. L3 Technologies will be providing the Integrated Platform Management System, Integrated Communication Systems, electro-optical infrared (EO/IR) sensors, weapons stowage and torpedo handling systems, and helicopter hangar doors. The program will replace Iroquois and Halifax class warships beginning in the early 2020s.

Website: <http://www.canadascombatshipteam.com>

Exelis. In February 2006, L3's SPAR (now L3 MAS) subsidiary signed a teaming agreement with ITT Electronic Systems (now Exelis) for the joint development, marketing, and implementation of electronic warfare solutions for the global C-130 Hercules and other military aircraft platforms. Under the terms of the agreement, L3 MAS serves as the prime contractor, with Exelis acting as the system provider of and integrator for EW solutions.

Future Attack Reconnaissance Aircraft. The FARA program aims to replace U.S. Army OH-58D scout helicopters currently in service. In December 2018, AVX Aircraft Company and L3 Technologies submitted a joint proposal for the U.S. Army's Future Attack Reconnaissance Aircraft (FARA) Competitive Prototype program. AVX will provide the platform and L3 a range of engineering services, weapons, sensors and communications systems. In

April 2019, the U.S. Army awarded five initial design contracts to the AVX/L3 team, Bell, Boeing, Karem Aircraft, and Sikorsky. Three other proposals were rejected that didn't meet minimum mandatory requirements. Two out of the five competitors will be downselected in early 2020 to build flyable prototypes for testing in 2023. Under the Army's aggressive schedule, the winning design will enter low-rate production in 2028.

Global Military Aircraft Systems. In February 2005, L3 and Alenia Aermacchi (now Leonardo) created the GMAS joint venture for production and support of the C-27J military transport aircraft. Australia selected the C-27J in 2012; the 10 aircraft would be sold through the U.S. Foreign Military Sales (FMS) program, with L3 as the prime contractor. Deliveries on this contract are believed to be complete.

Israel Aerospace Industries. In May 2018, L3 Technologies' L3 MAS subsidiary teamed with IAI to form Team Artemis to offer the Artemis Unmanned Aerial System (UAS), based on IAI's Heron TP, for the Royal Canadian Air Force's (RCAF) Remotely Piloted Aircraft System (RPAS) program. L3 MAS will be the prime contractor for the team. The contract is scheduled to be awarded in 2021-2022 and will include the acquisition of the equipment and the full spectrum of in-service support for 20 years.

Next Generation Jammer. The NGJ will replace the ALQ-99 tactical jamming system currently on the Navy's EA-18G Growler tactical airborne electronic attack aircraft. The NGJ program aims to develop three jammers: NGJ Mid Band, NGJ Low Band and NGJ High Band. Raytheon is the current contractor on the NGJ Mid Band.

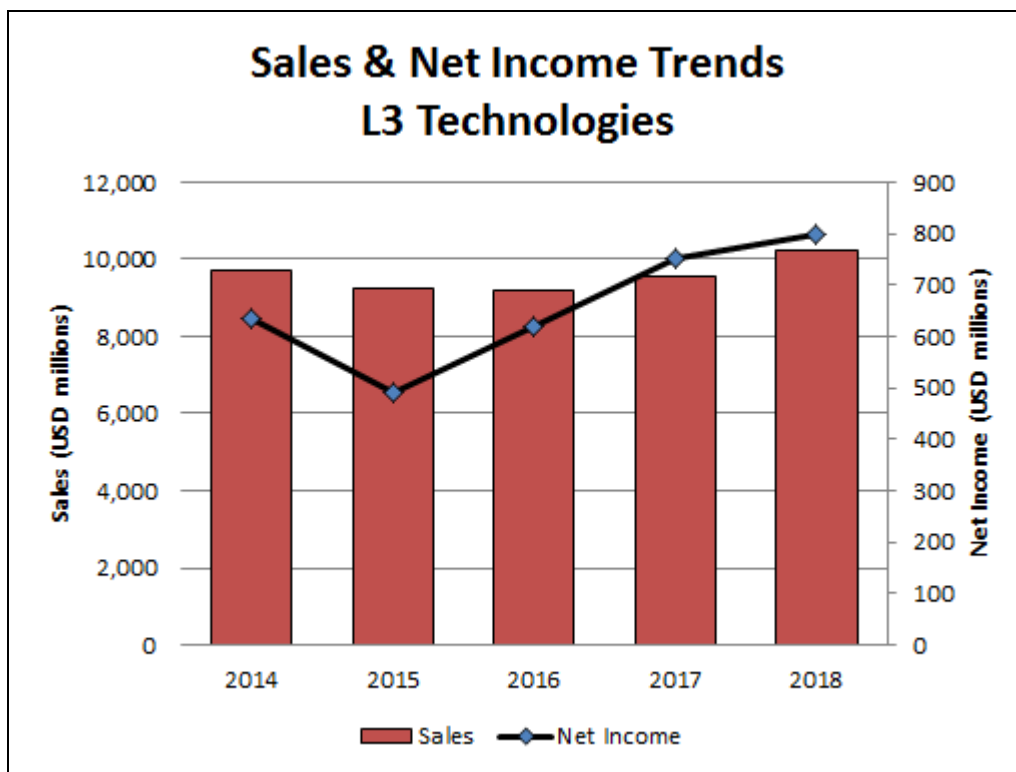
In October 2018, the Navy selected L3 Technologies and Northrop Grumman for its Next Generation Jammer Low Band (NGJ-LB) competition. Raytheon protested the awards with the GAO but was denied. A finalist is expected to be selected in 2020.

L3 Technologies

Financial Results/Corporate Statistics

For 2018, L3 Technologies' sales rose 7 percent, to \$10.2 billion, compared to \$9.6 billion in 2017. The company posted net income of \$800 million for the year, compared to \$753 million for 2017. Results below conform to the company's current presentation.

L3 Technologies (NYSE: LLL)					
(USD millions)	2014	2015	2016	2017	2018
Net Sales	9,691	9,231	9,210	9,573	10,244
Net Income	633	492	619	753	800
Percent Gov't Sales	68%	70%	69%	70%	70%
R&D Expenditures	229	228	258	287	326
Backlog (funded)	9,685	8,423	8,380	8,879	9,704
Long-Term Debt	3,916	3,626	3,325	3,330	3,321
Shareholder Equity	5,360	4,429	4,624	5,151	5,907
Debt to Equity Ratio	.73	.81	.71	.64	.56
Employees	45,000	38,000	38,000	31,000	31,000



L3 Technologies

Industry Segments

L3 Technologies reports segment information as follows.

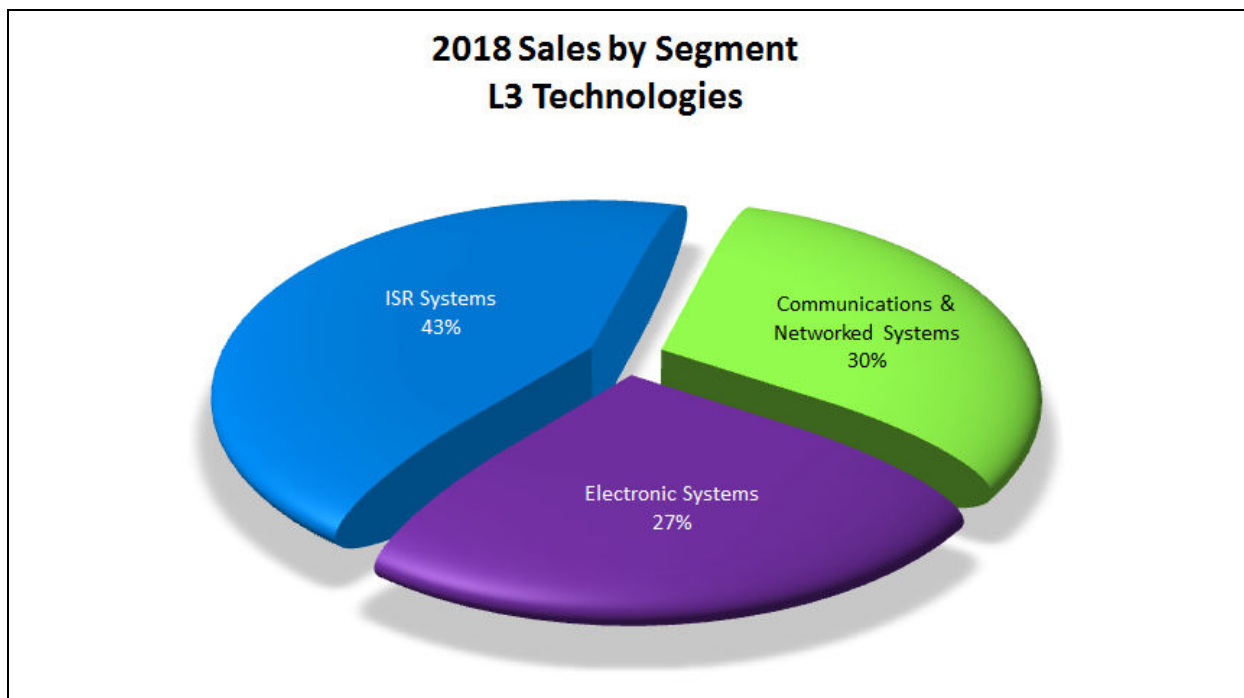
SALES	2016	2017	2018
(USD millions)			
ISR Systems	4,112	4,003	4,456
Communications & Networked Systems	2,916	3,141	3,094
Electronic Systems	2,270	2,509	2,796
Eliminations	-88	-80	-102
TOTAL	9,210	9,573	10,244
OPERATING INCOME			
(USD millions)			
ISR Systems	362	348	448
Communications & Networked Systems	298	362	282
Electronic Systems	298	321	376
TOTAL	958	1,031	1,106

Segment Details

The following tables provide a breakdown of key financial data for the company's major business segments and geographic regions for the past three years.

ISR SYSTEMS	2016	2017	2018
(USD millions)			
Net Sales	4,112	4,003	4,456
<i>Products</i>	2,662	2,540	2,907
<i>Services</i>	1,450	1,463	1,549
Operating Income	362	348	448
Funded Orders	-	4,313	5,121
Funded Backlog	-	3,628	4,150
COMMUNICATIONS & NETWORKED SYSTEMS			
(USD millions)			
Net Sales	2,916	3,141	3,094
<i>Products</i>	2,238	2,424	2,307
<i>Services</i>	678	717	787
Operating Income	298	362	282
Funded Orders	-	3,096	3,364
Funded Backlog	-	3,092	3,163
ELECTRONIC SYSTEMS			
(USD millions)			
Net Sales	2,270	2,509	2,796
<i>Products</i>	1,617	1,814	2,007
<i>Services</i>	653	695	789
Operating Income	298	321	376
Funded Orders	-	2,587	3,096
Funded Backlog	-	2,159	2,391

L3 Technologies



MAJOR CUSTOMERS	2016	2017	2018
(USD millions)			
Department of Defense	6,098	6,329	6,721
Other U.S. Government	301	368	423
International (Foreign Governments)	1,531	1,420	1,528
Commercial – International	732	809	873
Commercial – Domestic	548	647	699
TOTAL	9,210	9,573	10,244

GEOGRAPHIC SALES	2,016	2017	2018
(USD millions)			
USA	6,947	7,344	7,843
Canada	297	280	312
United Kingdom	331	335	309
Australia	254	268	219
China	67	167	156
Japan	81	125	145
Saudi Arabia	159	58	128
Turkey	61	61	113
Other	1,013	935	1,019
TOTAL	9,210	9,573	10,244

Major Competitors

Some of L3's major competitors include Collins Aerospace, Harris, Lockheed Martin, Northrop Grumman, General Dynamics, BAE Systems, Raytheon, Boeing, Motorola Solutions, OSI Systems, and SAIC.

L3 Technologies

Strategic Outlook

It seems mergers and acquisitions are a key part of L3 Technologies' DNA. The long-storied firm has a dynamic history of changing its portfolio over the decades through numerous acquisitions and divestitures.

Its latest deal to combine with Harris Corporation is one of the biggest defense mergers in recent years. This "merger of equals" will see the two firms joined together rather than one buying the other outright. The resulting firm, L3 Harris Technologies, will have combined revenues of roughly \$15.6 billion, pushing it into the top 10 list of defense contractors in both the U.S. and the world. Shareholders just approved the deal and it is now expected to pass regulatory muster, closing later in 2019.

The deal follows a flurry of recent merger activity in the defense and aerospace sector, with UTC completing its buy of Rockwell Collins, Northrop Grumman absorbing Orbital ATK, and Transdigm agreeing to buy Esterline Technologies.

L3 Harris Technologies will be a formidable player in the defense electronics sector. The merger combines a robust portfolio of products with little overlap, the exception being in the night vision sector. Here Harris has moved proactively, announcing in April 2019 that it would sell its night vision operations to Elbit Systems in a deal valued at \$350 million. With this divestiture, the deal is expected to be approved by the Pentagon and other regulatory agencies, and close later in the year.

It is a deal that L3 has long been preparing for. Over the past few years, the company has been adapting its portfolio through a number of divestitures. In 2016, it sold its National Security Solutions unit to CACI for \$550 million. Up next was the 2018 sale of its Vertex

Aerospace business. Vertex, long the incumbent for providing aviation maintenance and support to Fort Rucker, lost a recompetition to M1 Support Services in 2018. According to L3, the divestiture will allow the company to redirect its aerospace operations to areas in which it is best suited to grow, such as training services.

This type of portfolio pruning has long been a part of L3's dynamic style to trim noncore operations. At the same time, L3 will not hesitate to add firms that can build critical mass in key areas.

Most recently, the company has begun investing in undersea technology with the acquisitions of OceanServer Technology, Open Water Power, and Adaptive Methods. L3 is anticipating a growth market for undersea drones and systems akin to the need for aerial drones a decade or so ago.

While the company is no stranger to the acquisition mindset, the Harris merger will be different due to its sheer size. Many of L3's previous deals have been smaller operations that have been allowed to run pretty much independently. This attitude appears to be changing, as more integration between the company's operations is being initiated. For example, L3 recently combined its aerospace and sensor systems businesses into a new ISR Systems unit. Around the same time, the company created a new Commercial Aviation sector, which bundles L3's full suite of services in commercial aviation, including the development and management of on-aircraft avionics, integrated security solutions, and complete pilot training offerings.

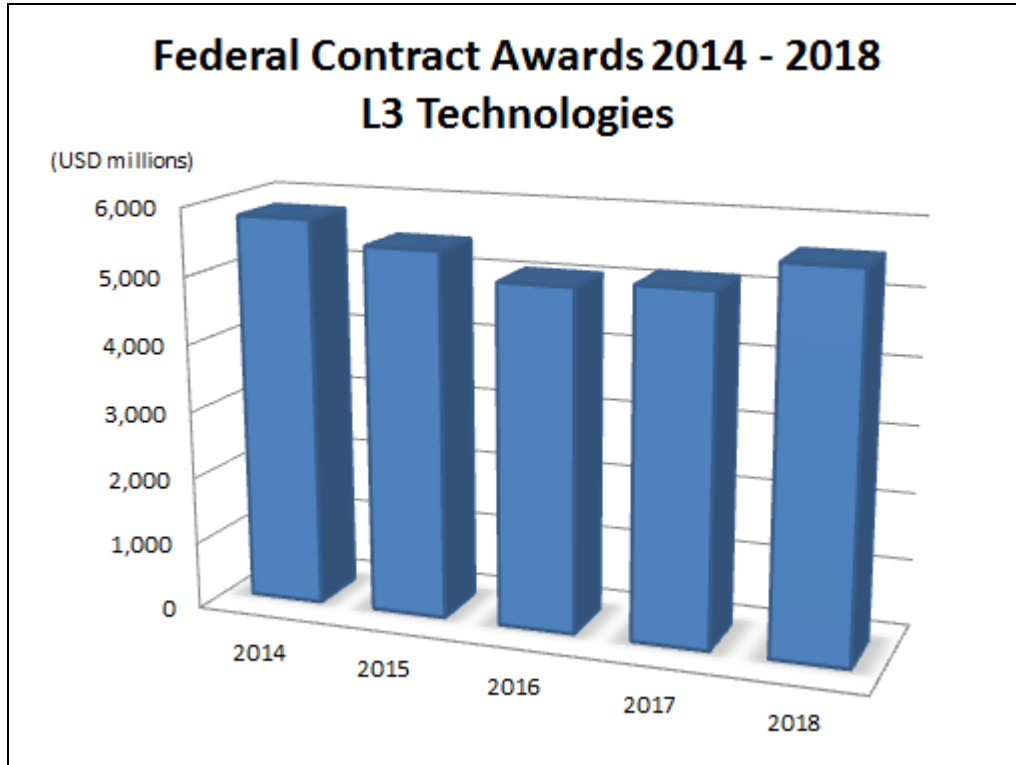
More combinations like this could be in the offing once the dust settles on the new L3 Harris Technologies.

Prime Award Summary

The following chart and table show the dollar volume of federal prime contract awards and rank (if applicable) relative to the top 100 companies in terms of federal contracts for 2014 through 2018. For more information, refer to Appendix I, "Recipients of Federal Contract Awards."

L3 Technologies	2014	2015	2016	2017	2018
(USD millions)					
Rank	9	8	9	10	12
Total Federal Awards	5,790	5,451	5,064	5,151	5,585

L3 Technologies



Source: Federal Procurement Data System - Next Generation (www.fpds.gov) Top 100 Contractors Report

Program Activity

Business Interests. The following lists some important aerospace and government programs currently underway at L3. The company's business interests are as follows:

- Secure and Integrated Communication Systems
- Satellite Communication Terminals
- Military Communications Information Security Systems
- Specialized Communication Products
- Microwave Components
- Avionics
- Ocean Systems
- Telemetry and Instrumentation

For specifics, please refer to L3's division breakdown page, <https://www.l3t.com/locations>

Aviation Services

Through its Aerospace Systems segment, L3 provides logistics services for aircraft, including modernization and refurbishments, upgrades and sustainment, and maintenance and support for military, government, and commercial customers.

F-16 Training

In December 2011, L3 Link Simulation & Training won an initial one-year contract to provide pilot and maintenance training devices for USAF F-16s. This firm-fixed-price contract, with options through 2019, has a maximum potential value of \$469.5 million. Under an F-16 Aircrew Training Device (ATD) contract, L3 Link was already supporting 183 F-16 pilot and maintenance trainers. With this new award, L3 Link would provide uninterrupted support to these training devices when the F-16 ATD contract expired in December 2011 and the F-16 training system contract began in January 2012. L3 Link is now overseeing all F-16 training systems support for the U.S. Air Force around the world and F-16 FMS countries, including Bahrain, Greece, and Jordan.

Electronics Programs

APS-145(V) (E-2C)

This is a high-power, UHF, Doppler, early warning radar with a large, rotating, circular radome. It is used as an advanced airborne surveillance radar for the E-2C Hawkeye, P-3 AEW&C, and C-130. Lockheed Martin

L3 Technologies

was the prime, with L3 Randtron producing the Total Radiation Aperture Controlled Antenna (TRAC-A) rotodome. Production of the APS-145 has ended.

APY-9

The Advanced Hawkeye radar, known as the APY-9, is an electronically scanned array airborne surveillance radar developed for installation on the U.S. Navy's E-2D. L3 Randtron Antenna Systems will provide the next-generation antenna to replace the current TRAC-A antenna and rotary coupler.

AQS-13(V)

The AQS-13(V) is a family of helicopter-borne, lightweight dipping sonar systems. The Sikorsky SH-60B/F/R and HS.23 helicopters (Spain's variation of the SH-60) are leading platforms. Most known orders and retrofits have been completed. A strong maintenance and spares market remains.

AQS-18

The AQS-18 is a helicopter-borne, lightweight active / passive dipping sonar system that is used on various naval ship-based ASW helicopters, such as the Westland Sea Lynx, Super Lynx, Lynx Wildcat, Sea King, S70C(M)-1, and Sikorsky S-70. L3 continues to actively promote the AQS-18 dipping sonar, with emphasis on the light ASW helicopter platform sector.

ASQ-170 Arrowhead M-TADS/PNVS

The Arrowhead is a significant upgrade to the Apache Target Acquisition and Designation Sight/Pilot Night Vision Sensor (TADS/PNVS) system. It is an electro-optical fire control system designed to provide the AH-64 Apache helicopter with targeting capability and operational safety both day and night and in bad weather. L3 Display Systems provides Modernized Target Acquisition Designation Sights (M-TADS) for the system.

ASQ-228/ATFLIR

The Advanced Targeting Forward-Looking Infrared sensor is used on F/A-18 Hornet and Super Hornet aircraft for long-range delivery of air-to-ground weapons. Raytheon is the prime; L3 Technologies Systems-West provides the ASQ-228 datalink. Production will continue through 2024 in support of the needs of Australia, Malaysia, and the U.S.

AUTEC

The Atlantic Undersea Test and Evaluation Center provides a deepwater test and evaluation facility for collecting underwater, surface, and air tracking data on test participants for the U.S. Navy's only deepwater, secure, instrumented ASW test and evaluation range. L3 MariPro is a program participant.

AWACS

The Airborne Warning and Control System (AWACS) platforms are equipped with APY-1 or APY-2 radars. The aircraft provide all-altitude air surveillance, threat warning, and control of theater air forces. Under a \$38 million 2016 contract, L3 Technologies will provide for the development and delivery of a government-owned AWACS Diminishing Manufacturing Sources (DMS) Replacement of Avionics for Global Operations and Navigation (DRAGON) Flight Crew Training System (FCTS). Work is expected to be completed by June 2020.

Compass Call

The Compass Call electronic countermeasures system is designed to disrupt the voice and data communications of adversaries, preventing them from effectively commanding and controlling their forces in the field. This also refers to Lockheed EC-130H Hercules aircraft configured to perform these tactical command, control, and communications countermeasures (C3CM). L3 is leading work on a Compass Call cross-deck effort, despite a protest from Bombardier over a possible sole-source contract. The effort will transfer existing technology from the EC-130H onto a new aircraft platform, dubbed the EC-37B. In September 2017, L3 selected the Gulfstream G550 Conformal Airborne Early Warning (CAEW) aircraft to host the system. Protests by Boeing and Bombardier over the airframe selection were denied in August 2017.

EMARSS

The U.S. Army's Enhanced Medium Altitude Reconnaissance Surveillance System flies on board the C-12 (King Air 350) platform in various configurations. The EMARSS-S will fulfill Army requirements for a manned airborne ISR system that provides a persistent capability to detect, locate, classify/identify, and track surface targets both day and night and in nearly all weather conditions with a high degree of timeliness and accuracy. L3 has modified one U.S. government-owned QRC Liberty Project aircraft to the EMARSS-M configuration. This modified aircraft made its first flight in June 2016. The EMARSS program, which is enjoying a period of steady funding, appears to have a solid place in the U.S. Army's plans.

HELTRAS

The Helicopter Long-Range Active Sonar is a helicopter-borne dipping sonar tasked with the detection and tracking of submarines. This low-frequency dipping sonar is intended to equip medium and large ASW helicopters. Existing platforms include EH101, NH90, SH-2G, and S-70B helicopters. L3 Ocean Systems is the prime.

L3 Technologies

Information Warfare Support

The Information Warfare Support program, led by the U.S. Air Force, studies, develops, and demonstrates prototypes to provide warning, self-protection, and support to personnel and equipment against combat systems employed by enemy forces. Information Warfare Planning Capability (IWPC), to be provided under this program, refers to a full-spectrum offensive and defensive planning capability. IWPC operators will develop information warfare courses of action for the Joint Forces Air Component Commander and nominate information warfare "targets" for inclusion in the Master Air Attack Plan and the Joint Integrated Prioritized List. L3 is one of several contractors involved in this effort.

Integrated Broadcast Service

IBS is a U.S. DoD system designed to integrate existing intelligence broadcast systems into a single architecture to transmit critical data to field commanders as quickly as possible. Four IBS sites have been built and are now functioning. In February 2008, the U.K. MoD selected L3 Technologies to supply an IBS system. Under an initial deal valued at GBP46 million (\$92.1 million), L3 will provide program management, system design, platform integration, and systems engineering for development, test, evaluation, and full life-cycle sustainment of requirements. According to the company, the service life of the program is expected to be 15 years, with a projected contract value in excess of GBP70 million (\$140.2 million).

L3 KEO Mk 46 EO Director

This is an electro-optical fire control director designed for anti-surface warfare, splash spotting, damage assessment, target surveillance/identification, naval gun fire support, mine detection, and automatic target tracking. The system was originally designed for DDG-51 Arleigh Burke class destroyers. Production continues, primarily for installations on U.S. Coast Guard vessels.

L3 KEO Model 76 Periscopes

This is a family of periscopes suitable for installation on most types of submarines, mainly sold to non-U.S. markets. The Model 76 family of periscopes is used for surveillance and attack fire control. The modular construction allows for variation and mission specialization for attack as well as search. The Model 76 remains in production. Production of Type 209 and Scorpène class submarines for several nations may be the primary market driver for this system into the next decade.

L3 KEO Non-Penetrating Periscopes

The Model 86 non-penetrating periscope will be used on the U.S. Navy's Seawolf and New Attack submarines, operating in an all-optronic configuration. Developed to

replace traditional periscopes, the Model 86 is a non-penetrating, two-stage, modular, electro-optical sensor system. The Model 86 offers thermal imaging for day and night viewing, and color television for daylight viewing. It has a built-in, two-axis stabilization feature, intended to eliminate the effects of the ship's motion and mast vibration. The periscope is a vital part of the Navy's Virginia (SSN-774) class submarines, which are scheduled to remain in production well into the next decade.

MEECN

The Minimum Essential Emergency Communications Network is designed to provide a reliable, durable communications network in adverse jamming and nuclear conditions. Both the U.S. Air Force and Navy are funding RDT&E programs; a separate DoD effort is also in progress. L3 Technologies provides cryptographic modernization services under this effort.

Panoramic Night Vision Goggles

Helmet-mounted Panoramic Night Vision Goggles provide 95° of horizontal field of view for aviators. PNVG are being evaluated on several U.S. Air Force platforms, including the A-10, F-15, F-16, and HH-60. PNVG are expected to be integrated into the Joint Helmet-Mounted Cueing System (JHMCS) to give it nighttime capabilities. PNVG are also being designed to protect the eyes of aircrews from lasers. L3 and Harris produce these systems.

PSQ-20 Enhanced Night Vision Goggle (ENVG)

The PSQ-20 ENVG is an enhanced, helmet-mounted night vision goggle designed for the dismounted soldier. ENVG systems are produced by BAE Systems, Harris, and L3 Technologies.

PSS-14 Mine Detecting Set

The handheld PSS-14 mine detecting set is capable of detecting all metallic and non-metallic anti-tank and anti-personnel mines. L3 CyTerra produces the system.

WESCAM MX-15

The MX-15 high-definition sensor turret is designed for medium-altitude covert ISR missions on fixed-wing, rotary-wing, and UAV platforms. Produced by L3 WESCAM, the system is in wide use with the U.S. Army and Air Force. Steady international demand for the WESCAM MX-15 will be driven by the ongoing need for airborne surveillance from multiple military, security, and search-and-rescue organizations around the world.

WIN-T

The Warfighter Information Network-Tactical is the U.S. Army's tactical telecommunications system,

L3 Technologies

consisting of communication infrastructure and network components from maneuver battalion to the theater rear boundary. It provides C4ISR capabilities that are mobile, secure, survivable, seamless, and capable of supporting multimedia tactical information systems. L3 is one of several contractors involved in this program.

Space Systems

Advanced EHF Satellites

The Advanced Extremely High Frequency satellite is a follow-on program intended to replace the Milstar satellite system. The Advanced EHF satellite provides the basis for the next-generation military communications satellite system. It enables secure, survivable, jam-resistant, worldwide communications for the strategic and tactical warfighter. Under a 2003 contract, L3 Linkabit developed a significant portion of the Advanced EHF Mission Planning Element software.

Eurostar

In June 2001, L3 signed contracts with Airbus Defence and Space and Inmarsat Ltd to design and build Satellite Control Center (SCC) software and offer related services for future Airbus Defence and Space Eurostar 3000/2000 satellite customers. Inmarsat was to contribute telemetry & telecomm and kernel software capabilities. The first operational use of the SCC would be for Inmarsat's I-4 series. Inmarsat was also to use the SCC for existing Inmarsat 2 and Inmarsat 3 spacecraft. Finally, the SCC was to support the monitoring and control of numerous other types of satellite platforms.

Inmarsat

The Inmarsat system is a global constellation of telecommunications satellites. The Inmarsat satellite system provides phone, fax, telex, data, and compressed video to customers aboard ships, yachts, cruise vessels, oil drilling rigs, commercial aircraft, automobiles, and trucks. L3 Telemetry & RF Products provides command software for the system.

Intelsat

Intelsat (International Telecommunications Satellite consortium) is an international satellite-based telecommunications system. L3 MAS provides various components to this program.

Skynet

Skynet is a military communications satellite used by the U.K. Ministry of Defence. In May 2003, Astrium (now Airbus Defence and Space) awarded L3 Communications a \$7.5 million-plus contract to supply satellite command and control software for use in the Skynet 4 and Skynet 5 satellite control centers. The system will support the launch and early orbit phase

for Skynet 5 and on-station operations for both Skynet 4 and Skynet 5.

Unmanned Vehicles

L3 provides a range of transmitters, receivers, amplifiers, and components supporting UAV video and tactical data downlink and uplink applications. The company also produces EO/IR payloads and tactical datalinks for a variety of UAV systems.

APEX

L3 produces the APEX (Airborne Pursuit and Exploitation), a small electrically powered tactical UAV. The APEX is a rail-launched system that uses a parachute for recovery. The UAV can carry a gimbaled, electro-optical, and cooled infrared payload suitable for day/night operations (including in hot weather). Company officials said that the APEX is already in use with an undisclosed U.S. customer.

Cutlass

L3 began offering a UAV known as Cutlass after its acquisition of Airborne Technologies. The Cutlass is a small foldable sensor vehicle housed in a 91-centimeter (36-in) Class A sonobuoy tube for launch by a standard cartridge-actuated device from a host aircraft, such as a Lockheed Martin P-3. Unfolded, the electric-powered aircraft has a 140-centimeter wingspan and can carry a payload of up to 2.3 kilograms (5 lb). Its operational endurance is 60 minutes.

EMD

L3's Expendable Mine Destructor (EMD) program has its roots in an effort started in the 1970s when the division was part of Bendix. This Bendix program provides a mine destruction system that can be used from U.S. Navy helicopters. The system is designed as an autonomous mine disposal vehicle for use by mine countermeasures forces. There are two variants of the EMD: one is designed to destroy sea mines, and the other is a reusable version with a TV camera instead of warheads. The latter version is an inexpensive substitute for remotely operated vehicles that can be used for training and inspection. Development on the system is complete. However, the EMD has yet to win any production orders.

Mobius

The Mobius optionally piloted aircraft (OPA) system is designed to fulfill a wide range of unmanned ISR and reconnaissance, surveillance, and target acquisition (RSTA) missions. The aircraft can also be flown in a manned configuration, providing flexibility for operations, training, and R&D. Mobius has been designed for low- and medium-altitude, long-endurance

L3 Technologies

ISR. Provisions have been made for carriage and release of external stores.

Viking

L3 Unmanned Systems produces the Viking family of tactical UAVs. The Viking 300 is an affordable, compact UAV capable of performing a wide range of remote sensing, precision-dispensing, and other aerial robotic applications requiring long endurance and medium-size payload capacity.

The Viking 400-S UAV is integrated with autonomous takeoff and landing technology. Missions are flown using GPS waypoint navigation. Embedded sensor data processing provides automated multi-intelligence ISR operations. Payload capacity for the Viking 400-S is 75-100 pounds, with nearly 7,000 cubic inches of payload volume.

U.S. Contract Awards

The following is a listing of major contracts recently awarded to L3 from the U.S. government (contracts as of press date). Note that the Description section is excerpted directly from U.S. DoD listings. For full details on individual contracts and their associated modifications, visit <http://www.defense.gov/contracts> and enter the contract number in the Search Contracts box.

Date	Award (USD millions)	Contract #	DESCRIPTION
2017			
1/19/17	29.9	SPRBL1-17-D-0001	ANTENNA DETECTORS.
1/19/17	33.1	W56HZV-15-C-0119	96 HYDROMECHANICALLY PROPELLED TRANSMISSIONS, 800-HP TRANSMISSIONS & REQUIRED ANCILLARY HARDWARE.
1/31/17	51.8	W15QKN-17-C-0024	21,589 M734A1 MULTI-OPTION FUZES AND A FIRST ARTICLE TEST, AND 270, 528 M783 POINT DETONATING DELAY FUZES.
2/14/17	12.9	W911SR-17-C-0017	CHEMICAL SURFACE DETECTOR.
2/22/17	?	FA8307-17-D-0008	A COMBINED, NOT-TO-EXCEED \$875,000,000 IDIQ CONTRACT. CONTRACTOR WILL PROVIDE LIFE-CYCLE SUPPORT OF CRYPTOGRAPHIC & INFORMATION ASSURANCE PRODUCTS, INCLUDING CONTRACTED ACTIVITIES DURING MATERIEL SOLUTIONS ANALYSIS, TECHNOLOGY MATURATION & RISK REDUCTION, EMD, PRODUCTION, AND PRODUCT SUPPORT.
2/23/17	10.9	FA8621-13-C-6323	PREDATOR MISSION AIRCREW TRAINING SYSTEM.
3/2/17	15.0	N00019-11-D-0010	AIRCRAFT MAINTENANCE & LOGISTICAL LIFE-CYCLE SUPPORT FOR THE C-12 UTILITY LIFT AIRCRAFT.
3/15/17	14.5	N00024-15-C-6252	UNIVERSAL MODULAR MASTS.
3/21/17	37.3	W15QKN-17-C-0024	FMS CONTRACT (SAUDI ARABIA) FOR 38,284 M734A1 MULTI-OPTION FUZES & 165,426 M783 POINT DETONATING/DELAY FUZES.
3/29/17	16.1	N61340-17-D-0005	MAINTENANCE, REPAIR, AND LOGISTICS SUPPORT FOR CHIEF OF NAVAL AIR TRAINING AIRCRAFT.
3/30/17	20.8	N61340-12-G-0001	HIGH-DEFINITION VISUAL SYSTEM & SYSTEM AREA NETWORK UPGRADES FOR F/A-18C/D TACTICAL OPERATIONAL FLIGHT TRAINERS, INCLUDING ASSOCIATED PROVISIONING ITEMS.
4/12/17	202.1	N00019-17-D-0088	DEPOT LEVEL MAINTENANCE, LOGISTICS, AND SUSTAINING ENGINEERING SERVICES IN SUPPORT OF THE C-12 UTILITY LIFT AIRCRAFT FOR THE NAVY & MARINE CORPS.

L3 Technologies

Date	Award (USD millions)	Contract #	DESCRIPTION
4/13/17	8.8	N61340-12-G-0001	PROVIDES F/A-18C/D TACTICAL OPERATIONAL FLIGHT TRAINERS WITH SYSTEM CONFIGURATION SET 29C SPIRAL BUILD 12 UPGRADE, AS WELL AS DELIVERY OF TWO F/A-18 SIMUSTRIKE FLIGHT TRAINERS FOR THE MARINE CORPS AIR STATION, IWAKUNI, JAPAN.
5/11/17	19.8	W56HZV-15-C-0119	98 TRANSMISSION HYDRO-MECHANICALLY PROPELLED TRANSMISSION OPERATIONAL RELIABILITY HMPT 500 SERIES TRANSMISSION & REQUIRED ANCILLARY HARDWARE; 45 TRANSMISSION CONTROL MODULES, AND 45 TRANSMISSION ELECTRONICALLY CONTROLLED CABLES.
5/17/17	17.9	SPRDL1-17-D-0062	MULTIFUNCTION LASERS.
5/19/17	13.9	FA8621-13-C-6323	PREDATOR MISSION AIRCREW TRAINING SYSTEM (PMATS) BLUE BOX HIGH DEFINITION (BBHD) RETROFIT UPGRADE.
5/19/17	13.6	N00024-15-C-6275	PROCUREMENT OF SIX TB-29A COMPACT TOWED ARRAY PRODUCTION REPRESENTATIVE UNITS.
5/25/17	7.7	N65236-17-D-1001	ORIGINAL EQUIPMENT MANUFACTURER (OEM) RETURN MERCHANDISE AUTHORIZATION (RMA) REPAIR FOR SATELLITE COMMUNICATIONS (SATCOM) ANTENNA SYSTEMS.
5/30/17	83.0	N00019-13-D-0007	ORGANIZATIONAL & DEPOT-LEVEL LOGISTICS SERVICES REQUIRED TO SUPPORT & MAINTAIN THE TH-57 FLEET.
6/15/17	90.7	FA8629-17-D-5001	HARDWARE, SUSTAINMENT, AND TRAINING OF VIDEO DATA LINK DEVICES.
6/30/17	28.2	W58RGZ-17-D-0081	REMOTE OPERATED VIDEO ENHANCED RECEIVER HARDWARE PRODUCTION.
6/30/17	35.2	W58RGZ-17-D-0055	REMOTE OPERATED VIDEO ENHANCED RECEIVER ENGINEERING TECHNICAL SERVICES.
7/10/17	8.8	N00019-13-D-0007	PROCUREMENT & INSTALLATION OF 96 AUTOMATIC DEPENDENT SURVEILLANCE (ADS) BROADCAST AVIONICS KITS (48 A KITS & 48 B KITS) REQUIRED TO UPGRADE THE TRANSCEIVER & TRANSPONDERS.
7/17/17	7.4	W58RGZ-17-C-0066	SIX WESCAM MX-15D SENSOR TURRETS WITH ACCESSORY COMPONENTS & SUPPORT EQUIPMENT.
7/19/17	7.2	N66604-12-C-2838	SUPPORT OF THE UNDERSEA WARFARE TRAINING RANGE, WHICH IS BEING DEVELOPED & FIELDIED IN THE WATERS OFF OF NAVAL STATION MAYPORT, FL, SUPPORTING NAVY AIR, SURFACE, & SUB-SURFACE TRAINING.
8/11/17	48.8	W15P7T-17-D-0164	TESTING, INSPECTION, AND UPGRADES TO THE MARINES CORP TSC-156C TERMINALS, AND THE ARMY TSC-156B/D TERMINALS.
8/16/17	8.9	N00019-17-C-0080	ORGANIZATIONAL & INTERMEDIATE-LEVEL AIRCRAFT MAINTENANCE ON THREE KC-130J AIRCRAFT, LOGISTICS & SUPPLY FUNCTIONS, LTD REPAIR OF COMMON SUPPORT EQUIPMENT & REQUIRED SUPPORT FOR THE GOVERNMENT OF KUWAIT.
8/22/17	28.4	N00019-14-C-0073	PROCUREMENT OF 10,419 FMU-139C/B FUSES & ACCESSORIES FOR THE AIR FORCE, NAVY, AND THE GOVERNMENTS OF AUSTRALIA AND MOROCCO.

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Date	Award (USD millions)	Contract #	DESCRIPTION
8/23/17	172.9	N00019-14-D-0011	ORGANIZATIONAL, INTERMEDIATE, AND DEPOT LEVEL MAINTENANCE, LOGISTICS, AND ENGINEERING TO SUPPORT & MAINTAIN 201 NAVY T-45 GOSHAWK AIRCRAFT, AIRCRAFT SYSTEMS, AND RELATED SUPPORT EQUIPMENT TO SUPPORT FLIGHT & TEST & EVALUATION OPERATIONS.
8/24/17	24.1	N00019-15-D-0022	BUSINESS JET TRAINING SERVICES IN SUPPORT OF CONTRACTED AIR SERVICES BASIC TRAINING, LARGE NATIONAL EXERCISES, AN SMALL, SINGLE UNIT TRAINING EXERCISES.
8/28/17	9.1	N00024-16-C-6239	PRODUCTION OF TB-34X TOWED ARRAY ASSEMBLIES, CABLE ASSEMBLIES, TEST SETS, AND ENGINEERING SERVICES.
8/28/17	7.0	N00024-15-G-5359	MK 20 ELECTRO-OPTICAL SENSOR SYSTEM & MK 46 OPTICAL SIGHT SYSTEM RETROFIT, REFURBISHMENT, AND UPGRADE SERVICES & DEPOT SPARES.
8/31/17	69.3	W52P1J-17-D-0070	PROCUREMENT OF MANNED & UNMANNED TEAMING HARDWARE & TECHNICAL & ENGINEERING SUPPORT IN SUPPORT OF THE APACHE ATTACK HELICOPTER.
9/6/17	10.5	FA8621-16-C-6378	F-16 A/B BLOCK 20 MISSION TRAINING CENTER.
9/13/17	7.9	FA8621-09-C-6292	F-16 MISSION TRAINING CENTER TECHNOLOGY REFRESH.
9/18/17	17.2	N00024-16-C-6251	PRODUCTION OF TB-29X TOWED ARRAY ASSEMBLY, TOWED ARRAY RECEIVER UNITS, TEST SETS & ENGINEERING SERVICES.
9/19/17	16.5	W15QKN-17-C-0024	FMS (SYRIA & IRAQ) CONTRACT FOR PRODUCTION QUANTITIES OF 77,114 M783 POINT DETONATING/DELAY FUZES.
9/20/17	9.5	W56JSR-17-D-0019	TSC-156D PHOENIX TACTICAL SUPER HIGH FREQUENCY SATELLITE TERMINAL.
9/26/17	8.0	W912DY-17-C-0050	46 TRIBAND CAPABLE TERMINALS, HARD SHELL PROTECTED TRANSIT CASES, ASSOCIATED MISCELLANEOUS ACCESSORIES & COMPONENTS FOR FULL INSTALLATION & OPERATIONAL FUNCTIONALITY, AND ON-SITE TRAINING FOR 33 OPERATIONS & MAINTENANCE PERSONNEL.
9/27/17	25.6	N68335-15-G-0002	DESIGN & DEVELOPMENT OF THE COMMON DATA LINK DEPOT REPAIR FACILITY AT FLEET READINESS CENTER SOUTHWEST SAN DIEGO, IN SUPPORT OF THE P-8 POSEIDON.
9/27/17	21.9	W56JSR-17-D-0006	COMBAT SERVICE SUPPORT VERY SMALL APERTURE TERMINAL SYSTEM.
10/1/17	27.7	FA8106-09-C-0001	LOGISTICS SUPPORT OF THE T-1A AIRCRAFT.
10/2/17	26.8	FA8106-18-D-0001	REPAIR OF 16 T-1A HAIL DAMAGED AIRCRAFT.
10/5/17	36.6	N00019-16-D-1003	DEPOT LEVEL MAINTENANCE SUPPORT TO FACILITATE THE SUSTAINMENT OF UP TO 13 F/A-18A-D AIRCRAFT.
10/13/17	18.5	W900KK-18-C-0001	PROMPT GAMMA SIMULATOR (PGS) FOR THE NUCLEAR EFFECTS LABORATORY AT WHITE SANDS MISSILE RANGE, NM.

L3 Technologies

Date	Award (USD millions)	Contract #	DESCRIPTION
11/1/17	?	W911QY-18-D-0096	L3 WILL SHARE IN AN \$8,276,161,000 HYBRID (COST, CPFF, CPIF, FFP, FPI, AND FP-REDETERMINATION) CONTRACT FOR JOINT ENTERPRISE RESEARCH, DEVELOPMENT, ACQUISITION & PRODUCTION & PROCUREMENT PROGRAM TO SUPPORT RESEARCH & DEVELOPMENT OF CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR, AND HIGH-YIELD EXPLOSIVES DEFENSE SYSTEMS, CAPABILITIES, EQUIPMENT, SUPPLIES, & MATERIAL.
11/3/17	71.0	FA8620-18-F-4802	MISSION SYSTEM DEVELOPMENT.
11/3/17	210.0	FA8620-18-F-4801	AIRCRAFT ENGINEERING, PROCUREMENT & FABRICATION.
11/22/17	19.8	N66604-17-C-3107	CONTINUE SERVICES FOR THE NAVAL ARRAY TECHNICAL SUPPORT CENTER (NATSC).
11/28/17	45.4	N00030-18-C-0001	FLIGHT TEST INSTRUMENTATION ENGINEERING SERVICES & SUPPORT.
12/4/17	37.6	N00019-14-D-0011	ORGANIZATIONAL, INTERMEDIATE, AND DEPOT LEVEL MAINTENANCE, LOGISTICS, AND ENGINEERING SERVICES TO SUPPORT & MAINTAIN APPROXIMATELY 200 NAVY T-45 GOSHAWK AIRCRAFT, AIRCRAFT SYSTEMS, AND RELATED SUPPORT EQUIPMENT TO SUPPORT FLIGHT & TEST & EVALUATION OPERATIONS.
12/6/17	10.2	FA8106-09-C-0001	LOGISTICS SUPPORT OF THE T-1A AIRCRAFT.
12/8/17	79.4	FA8106-18-C-0001	CONTRACTOR OPERATED & MAINTAINED BASE SUPPLY OF THE AIR EDUCATION & TRAINING COMMAND FLEET OF 178 T-1A TRAINER AIRCRAFT.
12/18/17	10.6	N61340-18-C-0002	SOFTWARE UPGRADE & INTEGRATION OF THE CF-18 C21X-B2.0 OPERATIONAL FLIGHT PROGRAM FOR THE GOVERNMENT OF CANADA, UNDER THE FMS PROGRAM.
12/21/17	15.6	N65236-18-D-8007	MANAGEMENT, ENGINEERING, AND TECHNICAL SUPPORT SERVICES TO SPACE & NAVAL WARFARE SYSTEMS CENTER ATLANTIC NECESSARY TO UPGRADE & SUSTAIN COAST GUARD PROPRIETARY L-3 COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, INTELLIGENCE, SURVEILLANCE & RECONNAISSANCE SYMPHONY SYSTEMS.
12/22/17	26.9	W58RGZ-10-C-0107	THREE-MONTH PERIOD OF PERFORMANCE FOR SERVICES, MAINTENANCE, REPAIRS, & SUPPORT OF 59 GO AIRCRAFT.
12/28/17	15.5	FA8621-09-C-6250	B-2 TRAINING SYSTEMS.
12/28/17	9.6	FA8620-18-F-4816	MANAGEMENT SERVICES.
2018			
1/9/18	?	FA8726-18-D-0010	A \$496,000,000 INDEFINITE DELIVERY/INDEFINITE QUANTITY, MULTIPLE AWARD CONTRACT TO SUPPORT TACTICAL PLATFORMS & TIME-SENSITIVE APPLICATIONS FOR THE DATALINKS ENTERPRISE COMMUNITY.
1/19/18	9.0	FA8651-18-D-0015	EXPLORE TECHNOLOGIES ENABLING COOPERATIVE ENGAGEMENT IN DEGRADED COMMUNICATION ENVIRONMENTS FOR THE NEXT GENERATION OF MUNITIONS.
1/19/18	30.8	N00024-16-C-5366	MK 20 ELECTRO-OPTICAL SENSOR SYSTEMS, RADAR CROSS SECTION KITS, SHOCK RING KITS, ENGINEERING SUPPORT SERVICES & SPARES FOR BOTH THE NAVY & COAST GUARD.

L3 Technologies

Date	Award (USD millions)	Contract #	DESCRIPTION
1/19/18	37.9	N50054-16-D-1804	LANDING CRAFT, AIR CUSHION/FLEET MODERNIZATION PROGRAM POST-SERVICE LIFE EXTENSION, POST-SHAKEDOWN AVAILABILITY.
1/30/18	8.2	FA8621-13-C-6323	PREDATOR MISSION AIRCREW TRAINING SYSTEM (PMATS) BLOCK 30 RETROFIT COMMUNICATION KITS & SIMULATOR SEATS.
1/31/18	55.9	W56HZV-15-C-0119	CONTRACT FOR 120 800HP TRANSMISSIONS (60 REMANUFACTURED TRANSMISSIONS & 60 NEW TRANSMISSIONS) & ANCILLARY TO SUPPORT PALADIN INTEGRATED MANAGEMENT; & 100 800-HP REMANUFACTURED TRANSMISSIONS & REFURBISHED CONTAINERS TO SUPPORT REQ FOR THE BRADLEY FIGHTING VEHICLE SYSTEM.
2/2/18	90.0	FA8620-18-D-4016	ELECTRO-OPTICAL & INFRARED SENSORS & FEATURES.
2/26/18	25.6	N00019-18-C-1030	MANUFACTURE, TEST, DELIVER, MANAGE, AND SUPPORT COMMON DATA LINK HAWKLINK SRQ-4 SYSTEMS FOR THE MH-60R AIRCRAFT.
3/6/18	9.6	N00024-16-C-6239	EXERCISE OPTIONS FOR THE PRODUCTION OF TB-34X TOWED ARRAYS & CABLE ASSEMBLIES.
3/20/18	13.4	N00024-15-C-6252	PRODUCTION OF UNIVERSAL MODULAR MASTS.
3/28/18	50.9	W15QKN-17-C-0024	FMS (AFGHANISTAN & BAHRAIN) CONTRACT FOR PROCUREMENT OF M734A1 & M783 FUZE UNITS.
3/28/18	99.6	N42158-18-D-S006	PROVIDE NON-NUCLEAR PRODUCTION SUPPORT FOR U.S. NAVAL SHIP & VESSEL PROJECTS/REPAIRS.
4/4/18	?	W58RGZ-18-D-0008	L3 VERTEX AEROSPACE LLC, MADISON, MS, WILL SHARE IN A \$25,500,000,000 HYBRID (CPFF, AND FFP) CONTRACT FOR AIRCRAFT & SUPPORT EQUIPMENT MAINTENANCE, MINOR MODIFICATION, AND SUPPLY CHAIN MANAGEMENT PRIMARILY FOR PERFORMANCE OUTSIDE THE CONTINENTAL U.S. TO SUPPORT EQUIPMENT & PERSONNEL IN KNOWN THEATERS OF OPERATIONS.
4/6/18	218.1	N61340-18-D-0004	NEW TRAINING SYSTEMS, AS WELL AS HARDWARE & SOFTWARE UPGRADES & MODIFICATIONS TO EXISTING F/A-18C/D/E/F & EA-18G AIRCREW TRAINING SYSTEMS.
5/1/18	?	W56HZV-18-D-0030	L3 WILL COMPETE FOR EACH ORDER OF THE \$145,661,024 HYBRID (CPFF & FFP) CONTRACT FOR THE OVERHAUL OF THE AIR-COOLED, V-ENGINE CONFIGURATION, DIESEL SUPERCHARGED 1790-8CR & 1790-2DR ENGINES.
5/1/18	12.6	N00024-16-C-5366	MK 20 ELECTRO-OPTICAL SENSOR SYSTEMS, RADAR CROSS-SECTION KITS, ENGINEERING SUPPORT SERVICES, AND DEPOT SPARES FOR BOTH THE NAVY & COAST GUARD.
5/7/18	8.8	N00421-15-G-0002	THREE TACTICAL COMMON DATA LINK MARITIME SHIPBOARD TERMINALS FOR LITTORAL COMBAT SHIPS (LCS-25, LCS-26 & LCS-28) IN SUPPORT OF SURFACE AVIATION INTEROPERABILITY LAB.
5/10/18	20.2	FA8621-09-C-6292	F-16 MISSION TRAINING CENTER (MTC) M7.2+ OPERATIONAL FLIGHT PROGRAM (OFF) UPGRADE.
5/16/18	9.2	SPRPA1-18-C-Z064	UNMANNED AERIAL VEHICLE SPARE PARTS.
5/16/18	391.8	W91CRB-18-D-0003	PROCUREMENT OF ENHANCED NIGHT VISION GOGGLE, BINOCULAR.
5/17/18	17.7	FA8620-11-G-4026	ADVANCED ENGINEERING SERVICES.
5/18/18	42.3	N00019-13-D-0007	ORGANIZATIONAL & DEPOT LEVEL LOGISTICS SERVICES REQUIRED TO SUPPORT & MAINTAIN THE TH-57 FLEET.

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Date	Award (USD millions)	Contract #	DESCRIPTION
6/8/18	7.1	FA8621-18-C-0019	PAKISTAN AIR FORCE F-16A BLOCK 15 MID-LIFE UPGRADE 3RD AIRCREW TRAINING DEVICE, WITH SPARES & CONTRACTOR LOGISTICS SUPPORT AS PRICED OPTIONS.
6/8/18	9.8	N00024-16-C-6239	EXERCISE OPTIONS FOR THE PRODUCTION OF TB-34X TOWED ARRAYS & CABLE ASSEMBLIES.
6/21/18	83.0	FA8620-18-F-4873	PROCUREMENT OF TWO GULFSTREAM G550 AIRCRAFT.
6/21/18	?	W91CRB-18-D-0007	L3 WILL COMPETE FOR EACH ORDER OF THE \$236,019,734 FFP CONTRACT FOR THE SMALL TACTICAL OPTICAL RIFLE-MOUNTED MICRO-LASER RANGE FINDER.
6/22/18	23.2	SPRDL1-18-D-0111	MULTIFUNCTION LASERS.
6/22/18	7.1	N00024-15-C-6250	SPARE PARTS FOR THE PHOTONICS MAST PROGRAM.
6/26/18	7.2	W58RGZ-17-D-0081	REMOTE-OPERATED VIDEO-ENHANCED RECEIVER HARDWARE PRODUCTION.
7/17/18	8.5	N00019-17-C-0080	PROVIDE LOGISTICS & SUPPLY SUPPORT AS WELL AS ORGANIZATIONAL & AUTHORIZED INTERMEDIATE LEVEL AIRCRAFT MAINTENANCE ON THREE KC-130J AIRCRAFT IN SUPPORT OF THE GOVERNMENT OF KUWAIT.
7/20/18	73.2	HQ0147-11-D-0014	THIS MODIFICATION WILL ALLOW THE CONTRACTOR TO PROCURE THREE USED AIRCRAFT REQUIRED TO MODERNIZE THE HIGH ALTITUDE OBSERVATORY (HALO) SYSTEMS USED BY THE MISSILE DEFENSE AGENCY TO COLLECT ELECTRO-OPTIC & INFRARED IMAGERY DURING TESTS OF THE BALLISTIC MISSILE DEFENSE SYSTEM.
7/27/18	?	N61340-18-D-5012	INDEFINITE DELIVERY/INDEFINITE QUANTITY CONTRACTS TO PROVIDE TRAINING DEVICE & TRAINING SYSTEMS DESIGN, DEVELOPMENT, PRODUCTION, TEST & EVALUATION, DELIVERY, MODIFICATION, AND SUPPORT. THESE PRODUCTS ARE IN SUPPORT OF THE NAVAL AIR WARFARE CENTER TRAINING SYSTEMS DIV. THE ESTIMATED AGGREGATE CEILING FOR ALL CONTRACTS IS \$980,000,000, WITH THE COMPANIES HAVING AN OPPORTUNITY TO COMPETE FOR INDIVIDUAL ORDERS.
7/27/18	9.6	N61340-18-C-0015	PROCUREMENT OF TWO EA-18G TACTICAL OPERATIONAL FLIGHT TRAINERS.
7/30/18	?	N66604-18-D-C814	A COMBINED \$561,160,000 CPFF, FFP, INDEFINITE DELIVERY/INDEFINITE QUANTITY, MULTIPLE-AWARD CONTRACT TO SUPPORT RESEARCH & DEVELOPMENT FOR THE PROCUREMENT OF MATERIALS & SERVICES USED TO DEVELOP, BUILD, FABRICATE & SUPPORT THE UNMANNED UNDERSEA VEHICLE FAMILY OF SYSTEMS.
7/30/18	27.6	N00024-16-C-6251	PRODUCTION OF TB-29X TOWED ARRAYS.
8/15/18	25.8	FA8621-16-C-6378	F-16 A/B BLOCK 20 MISSION TRAINING CENTER.
8/16/18	5.6	HC1013-18-C-0002	PROVIDE SENIOR LEADERS & THEIR SUPPORT STAFF WITH HIGH-THROUGHPUT MILITARY KA-BAND COMMUNICATIONS WHILE TRAVELING VIA AIRCRAFT.
8/24/18	17.2	SPRBL1-18-D-0057	IMAGE INTENSIFIER TUBE ASSOCIATED WITH THE PSQ-20B ENHANCED NIGHT VISION GOGGLE SYSTEM.

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Date	Award (USD millions)	Contract #	DESCRIPTION
8/24/18	69.3	?	PROCUREMENT OF MANNED & UNMANNED TEAMING HARDWARE & TECHNICAL & ENGINEERING SUPPORT IN SUPPORT OF THE APACHE ATTACK HELICOPTER.
8/27/18	48.1	FA8621-09-C-6292	F-16 MISSION TRAINING CENTER.
8/28/18	12.0	N00019-15-D-0022	BUSINESS JET TRAINING SERVICES IN SUPPORT OF CONTRACTED AIR SERVICES BASIC TRAINING; LARGE NATIONAL EXERCISES; AND SMALL, SINGLE UNIT TRAINING EXERCISES.
8/29/18	?	W909MY-18-D-0031	A \$454,000,000 FFP CONTRACT FOR THE ELECTRO-OPTIC/INFRARED/LASER DESIGNATOR PAYLOAD. BIDS WERE SOLICITED VIA THE INTERNET WITH TWO RECEIVED.
8/31/18	37.3	HC1013-18-C-0002	PROVIDE SENIOR LEADERS & THEIR SUPPORT STAFF WITH HIGH-THROUGHPUT MILITARY KA-BAND COMMUNICATIONS WHILE TRAVELING VIA AIRCRAFT.
9/6/18	9.2	?	AGILE SMALL-SATELLITE EXPERIMENTAL TELESCOPE.
9/10/18	49.3	N66604-18-D-G800	SUPPORT & REPAIR SERVICES FOR THE TB-23 TOWED ARRAY SYSTEMS & RELATED TEST EQUIPMENT.
9/10/18	202.9	N00019-14-D-0011	ORGANIZATIONAL, INTERMEDIATE, AND DEPOT LEVEL MAINTENANCE, LOGISTICS, AND ENGINEERING SUPPORT FOR NAVY T-45 AIRCRAFT, AIRCRAFT SYSTEMS, AND RELATED SUPPORT EQUIPMENT FOR FLIGHT & TEST & EVALUATION OPERATIONS.
9/13/18	10.0	N00030-18-C-0001	S-BAND MOBILE ARRAY TELEMETRY (SMART) ANTENNA COMPONENT REFRESH.
9/14/18	7.7	SPRPA1-18-C-Z10%	TRITON SPARE PARTS.
9/18/18	11.4	SPRPA1-18-C-Z105	TRITON SPARE PARTS.
9/20/18	23.6	N00164-18-D-JQ26	PROCUREMENT OF MINIATURE AIMING SYSTEM – DAY OPTICS CLOSE QUARTER COMBAT SIGHTS & CLIP-ON MAGNIFIERS IN SUPPORT OF U.S. SPECIAL OPERATIONS COMMAND.
9/21/18	9.0	W911QY-18-C-0233	PROCURE RQ-7B SHADOW SPARES.
9/21/18	8.6	FA8621-09-C-6292	F-16 MISSION TRAINING CENTER (MTC).
9/21/18	48.5	N00164-18-D-JQ27	PRODUCTION OF SQUAD AIMING LASERS (SAL), SPARE PARTS, AND TRAINING IN SUPPORT OF U.S. SPECIAL OPERATIONS COMMAND.
9/21/18	44.0	N64498-18-D-4029	TECHNICAL & ENGINEERING SERVICES IN SUPPORT OF IN-SERVICE ENGINEERING ROLES & RESPONSIBILITIES FOR ELECTRICAL POWER & GENERATION SYSTEMS INSTALLED ON SURFACE SHIPS, SUBMARINES & ASSAULT CRAFT.
9/21/18	16.3	N61340-17-D-0005	EXERCISE AN OPTION TO PROVIDE FOR INTERMEDIATE LEVEL MAINTENANCE, REPAIR, AND LOGISTICS SERVICES IN SUPPORT OF THE CHIEF OF NAVAL AIRCRAFT TRAINING AIRCRAFT.
9/24/18	43.0	W56HZV-15-C-0119	184 HYDRO-MECHANICALLY PROPELLED TRANSMISSIONS FOR THE BRADLEY & MULTIPLE LAUNCH ROCKET SYSTEMS & ANCILLARY HARDWARE.
9/25/18	8.1	FA8621-13-C-6323	SENSOR OPERATOR FIDELITY IMPROVEMENTS IV.

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Date	Award (USD millions)	Contract #	DESCRIPTION
9/26/18	8.5	?	RESEARCH & DEVELOPMENT EFFORT TO DESIGN, TEST & BUILD HIGH GAIN ANTENNA (HGA) COMMON DATA LINK (CDL) ENGINEERING DEVELOPMENT MODELS & PRODUCTION HGA/CDL FOR THE MARITIME PATROL & RECONNAISSANCE AIRCRAFT (PMA-290) & PERSISTENT MARITIME UNMANNED AIRCRAFT SYSTEMS (PMA-262).
9/27/18	10.1	N00030-18-C-0001	FLIGHT TEST INSTRUMENTATION ENGINEERING SERVICES & SUPPORT.
9/28/18	7.2	FA8621-13-C-6323	BLOCK 30 PHASE 3 HARDWARE EFFORT.
10/1/18	?	W58RGZ-18-D-0008	L-3 VERTEX AEROSPACE LLC, MADISON, MS, WILL SHARE IN A \$25,500,000,000 COST, CPFF, FFP CONTRACT FOR WORLDWIDE LOGISTICS SUPPORT SERVICES.
10/11/18	29.9	W56HZV-15-C-0119	HYDRO-MECHANICALLY PROPELLED TRANSMISSIONS FOR THE INTEGRATED LOGISTICS SUPPORT CENTER.
10/18/18	?	W15P7T-19-D-0173	L-3 INTEGRATED SYSTEMS LP, GREENVILLE, TX, WILL COMPETE FOR EACH ORDER OF THE \$37,400,000,000 HYBRID (COST, CPFF, CPIF, AND FFP) CONTRACT TO PROVIDE KNOWLEDGE-BASED PROFESSIONAL ENGINEERING SUPPORT SERVICES FOR PROGRAMS WITH COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (C4ISR) RELATED REQ.
10/24/18	55.4	FA8620-19-C-2008	DEPOT ACTIVATION OF THE MQ-9 COMMUNICATIONS & DATA LINK PARTS AT TOBYHANNA ARMY DEPOT, PA; & WARNER-ROBINS AIR LOGISTICS COMPLEX, GA.
10/25/18	35.7	N00019-19-C-0014	DEMONSTRATION & TEST OF EXISTING TECHNOLOGIES & ASSOCIATED TECHNICAL DATA THAT MAY POTENTIALLY PROVIDE A SOLUTION FOR AN AIRBORNE, WIDEBAND, LOW RADIO FREQUENCY BAND JAMMING APPLICATION IN SUPPORT OF THE NEXT GENERATION JAMMER LOW BAND (INCREMENT 2) PROGRAM.
11/2/18	22.1	N00030-18-C-0001	FLIGHT TEST INSTRUMENTATION PROGRAM MANAGEMENT, OPERATIONS PLANNING, AND LOGISTICS SUPPORT.
11/7/18	7.3	FA8620-11-G-4026	ADVANCED ENGINEERING SERVICES.
11/14/18	35.0	FA8106-17-D-0001	LOGISTIC SUPPORT OF THE AIR FORCE C-12 FLEET.
11/30/18	97.5	FA8106-18-C-0001	CONTRACTOR-OPERATED & -MAINTAINED BASE SUPPLY OF THE AIR EDUCATION & TRAINING COMMAND FLEET OF 178 T-1A TRAINER AIRCRAFT.
12/3/18	?	N00178-18-R-7000	ONE OF 1,870 INDEFINITE DELIVERY/INDEFINITE QUANTITY, MULTIPLE-AWARD CONTRACTS (MACS) TO BUSINESSES IN MULTIPLE LOCATIONS ACROSS 46 OF THE 50 UNITED STATES, THE DC, AND GUAM FOR FUTURE COMPETITION OF SUPPORT SERVICE REQ TO BE SOLICITED BY DEPARTMENT OF THE NAVY ACTIVITIES UNDER THE SEAPORT - NEXT GENERATION (SEAPORT-NXG) MULTIPLE-AWARD CONTRACT VEHICLE.
12/4/18	7.8	FA8117-19-D-0008	E-3 SUSTAINMENT.
12/6/18	21.8	N00019-13-D-0007	CONTRACTOR LOGISTICS SERVICES & MATERIALS FOR ORGANIZATIONAL & DEPOT-LEVEL SERVICES REQUIRED TO SUPPORT & MAINTAIN THE TH-57 FLEET.

L3 Technologies

Date	Award (USD millions)	Contract #	DESCRIPTION
12/6/18	83.9	W909MY-19-D-0001	MANUFACTURING, DELIVERING & SUPPORTING THE PSS-14.
12/17/18	8.6	FA8620-16-G-3027	MANAGEMENT SUPPORT SERVICES.
12/18/18	7.7	N00024-15-C-5220	OPTION FOR THE ACCOMPLISHMENT OF SERVICES FOR THE UNDERSEA WARFARE & SURFACE WARFARE COMMAND & CONTROL SYSTEMS.
12/19/18	35.0	FA8106-17-D-0001	LOGISTIC SUPPORT OF THE AIR FORCE C-12 FLEET.
12/20/18	10.5	SPRPA1-19-C-X007	F/A-18 AIRCRAFT ALTITUDE INDICATORS.
12/20/18	7.9	W91CRB-19-C-0008	COMBAT VEHICLE SPARE PARTS.

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