

**Part I: Croatia**

1. Croatia: Defence Budget and Future Acquisitions
2. Croatia: Defence Industry, Capabilities and Major Companies
3. Epicos “Industrial Cooperation and Offset Projects”
4. Advanced modeling and analysis of UAV thermal signatures for management and optimization of thermal signature reduction
5. Development of a CCTV Surveillance and Biometrics Access Control System for Homeland Security and/or Military Applications
6. News from our A&D Business Network

**Part II: Epicos Newsroom**

1. Orbital ATK Receives \$92 Million in Small-Caliber Ammunition Orders from the U.S. Army
2. Rockwell Collins awarded \$21 million contract to modernize Air Force, Navy and Army test ranges
3. 500th Eurofighter Typhoon produced, delivered to the Italian Air Force
4. Huntington Ingalls Industries’ Technical Solutions Division Wins Contract for Engineering Services and Technical Support for Naval Warfare Center
5. SAAB Signs Contract for Delivery of Special Purpose Ship for SIGINT

## Croatia: Defence Budget and Future Acquisitions

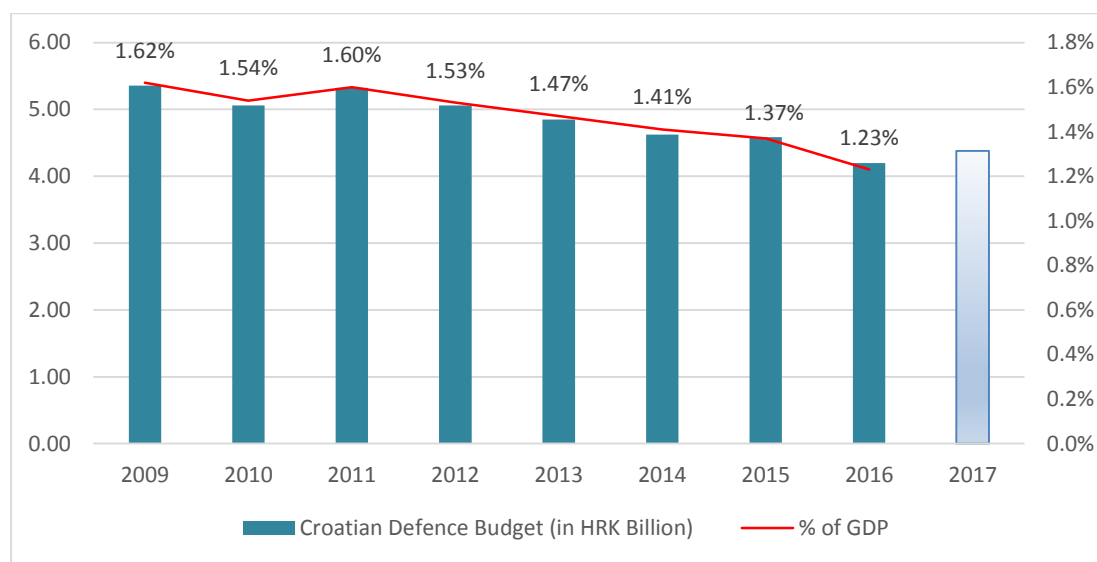


At the moment (2014 data), 18,841 people are employed by the Croatian Armed Forces (CAF) that consists of the Army, Air Force and Air Defence and the Navy. Their mission is the defence of the Republic of Croatia and its allies, the contribution to international security and the provision of support to civil institutions. However, reductions of personnel have been planned, with a

target of 15,000 (Active Duty military personnel and Civil employees) having been set for the end of 2017 (in addition to some 400 cadets). At the end of 2020, associated plans aim for a 1:3 to 1:5 ratio of NCO (Non-Commissioned Officers) and Soldiers with respect to the sum of the Armed Forces.

	CAF	Croatian MoD	Beyond MoD and CAF	TOTAL
Active Duty Military Personnel	15,358	346	5	15,709
Civil Employees	2,092	1,040	0	3,132
<b>TOTAL</b>	<b>17,450</b>	<b>1,386</b>	<b>5</b>	<b>18,841</b>

Croatia's Defence Budget has experienced a significant reduction in nominal values in the last few years. This drop is also reflected in the percentual GDP allocation to Defence. In 2015, the Defence Budget reached some HRK 4.6 billion, corresponding to 1.37% of the GDP.

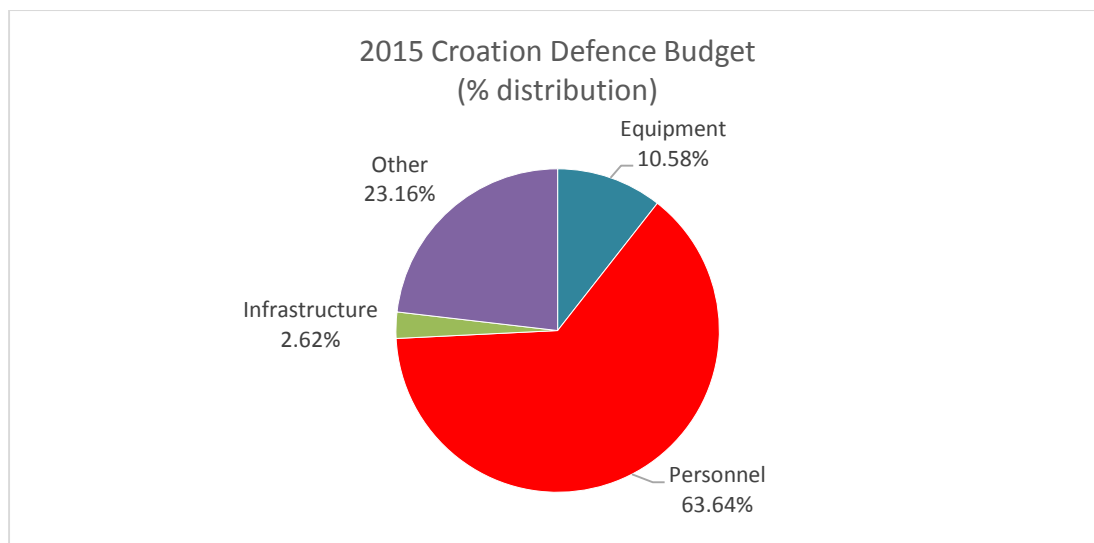


Source: [http://www.nato.int/nato\\_static\\_fl2014/assets/pdf/pdf\\_2016\\_07/20160704\\_160704-pr2016-116.pdf](http://www.nato.int/nato_static_fl2014/assets/pdf/pdf_2016_07/20160704_160704-pr2016-116.pdf)  
<https://www.morh.hr/en/news/press-releases/13992-mod-presents-the-2017-procurement-plan.html>

Furthermore, forecasts indicated an increased portion of the defence budget to be allocated for the next couple of years (2017 – confirmed by the release of the 2017 Procurement Plan by the MoD-, and 2018), for procuring equipment and modernising the Croatian Armed Forces, as far as for example the continuation of the acquisition and overhaul of self-

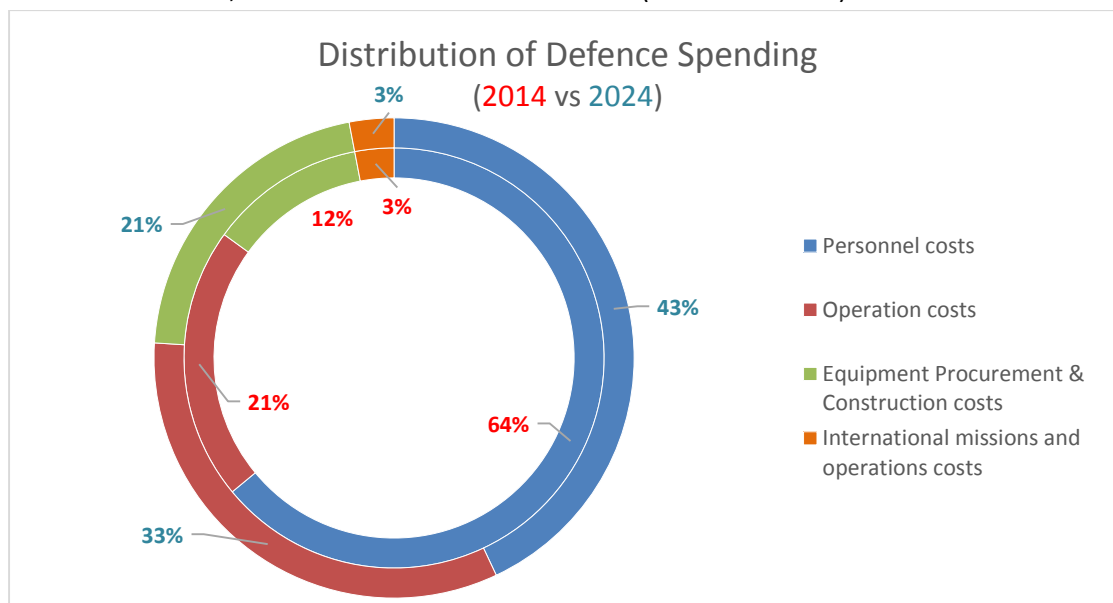
propelled PzH 2000 Howitzers, the procurement of OH-58D Kiowa Warrior helicopters, the overhaul of Mi-171Sh helicopters, and the M-84 tanks upgrade.

Despite the latter, significant cuts had been introduced with regards to the acquisition of military equipment, in the 2016 budget, with respect to the respective 2015 figures. More specifically, the 2016 Defence Budget was reduced by some HRK 390 million (compared to that of 2015), while the Ministry of Interior on the other hand was allocated approximately an additional HRK 310 million, in light of the refugee crisis, however in contradiction to the active role the Army is expected to play in the provision of border security. As an indication of the typical breakdown of the defence spending for the country, the 2015 budget was allocated as described in the chart below:



Source: [http://www.nato.int/nato\\_static\\_fl2014/assets/pdf/pdf\\_2016\\_07/20160704\\_160704-pr2016-116.pdf](http://www.nato.int/nato_static_fl2014/assets/pdf/pdf_2016_07/20160704_160704-pr2016-116.pdf)

According to the MoD’s 2015-2024 Long Term Development Plan, Croatian defence expenditure was to be preserved to the 2014 levels of 1.3% of the GDP, up to 2017. According to this Long Term Development Plan, the aim is by 2024, that 43% of the budget be allocated to Personnel, 33% to Operational costs, 21% to Equipment Procurement and Construction costs, and 3% to International missions (see chart below).



To make this possible, Personnel costs will be significantly reduced (when compared to 2014 expenditure as the baseline), as a result of the downsizing of the total number of personnel of the Armed Forces, as well as due to the reductions in expenditure for MoD personnel.

According to the Croatian Forces Long-Term Development Plan (2015-2024), the priority of the Croatian Army is the modernisation and equipping of the key 'mobile' Air Defence units (MANPADS) of the Armed Forces. Till 2020, priority will also be given to equipping the Mechanised Guard Brigade, as part of the country's contribution to the NATO capability targets. In addition, from 2021-2024 and onwards, projects of modernisation and equipping of the Guards Armoured - Mechanised Brigade will be initiated, as critical to retaining and enhancing associated capabilities. Finally, equipping of the CAF Active Duty personnel which will be engaged as part of the NATO Pool of Forces, with machine guns and universal machine guns of NATO calibre, is aimed to be completed by 2024.

Also, further procurements for equipping troops within the planned period, will include camouflage uniforms, combat boots and helmets, combat modular vests, backpacks and individual night vision devices. Units declared to EU and NATO, will be by priority equipped with upgraded systems of performance, protection and communication, offering the ability to operate under extreme weather conditions.

Overall, the CAF has planned a series of armament modernization programmes for its artillery and armoured units, to be carried out over the period 2015-2024, such as:

- A total of 48 tanks will be retained in operational use by the Armed Forces, following a revision process and of which, one (1) Tank Company will be further modernized.
- The APC Patria vehicles will continue to be equipped and phased into operation with additional weapons and military systems (e.g. anti-armor system, remote weapon station of 30 mm, communication equipment).
- BVP M-80 infantry combat vehicle will continue to be maintained and modernized including through the integration of new anti-armor systems.
- Equipping vehicles with new mobile anti-armor system capabilities (other than the APC Patria, possibly by upgrading the currently installed systems, or by employing improved capability projectiles).

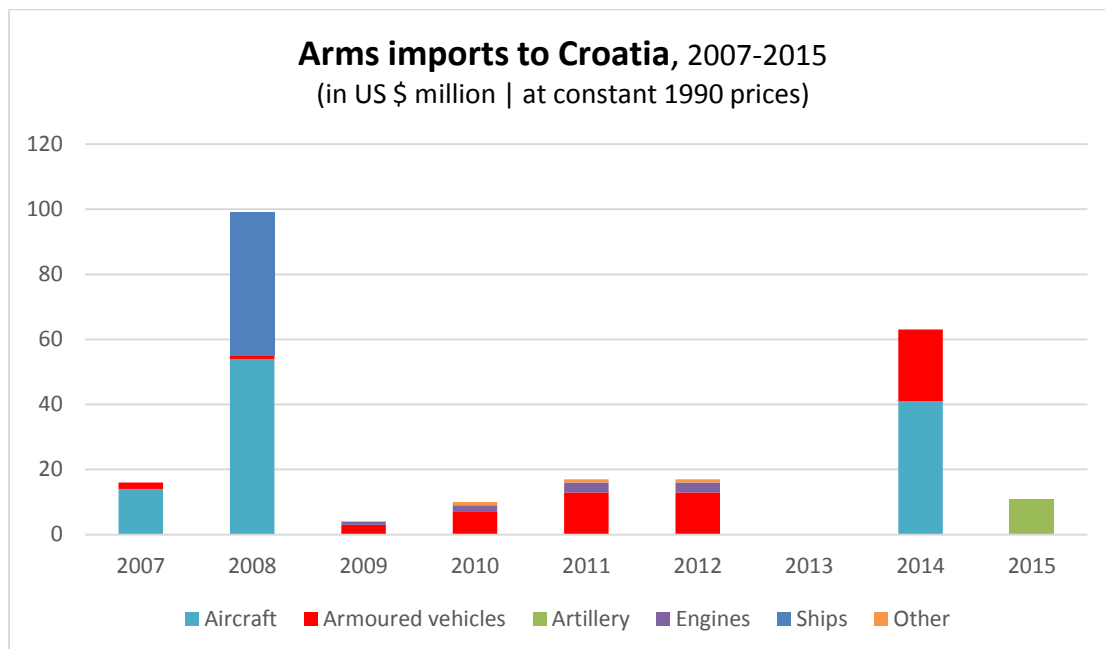
Regarding the Navy, for the period 2015-2024, the following main projects/programs will be carried out:

- Acquiring a total of 5 Coastal Patrol Boats, by 2017 (to be built by Brodosplit Shipyard).
- Acquiring a used Offshore Patrol Vessel (OPV).
- Equipping vessels with Anti-Ship Missile Systems (RBS-15B, following testing and the prolonging of service life).

Regarding the Air Force and Air Defence, for the period 2015-2024, the following main projects/programs will be carried out:

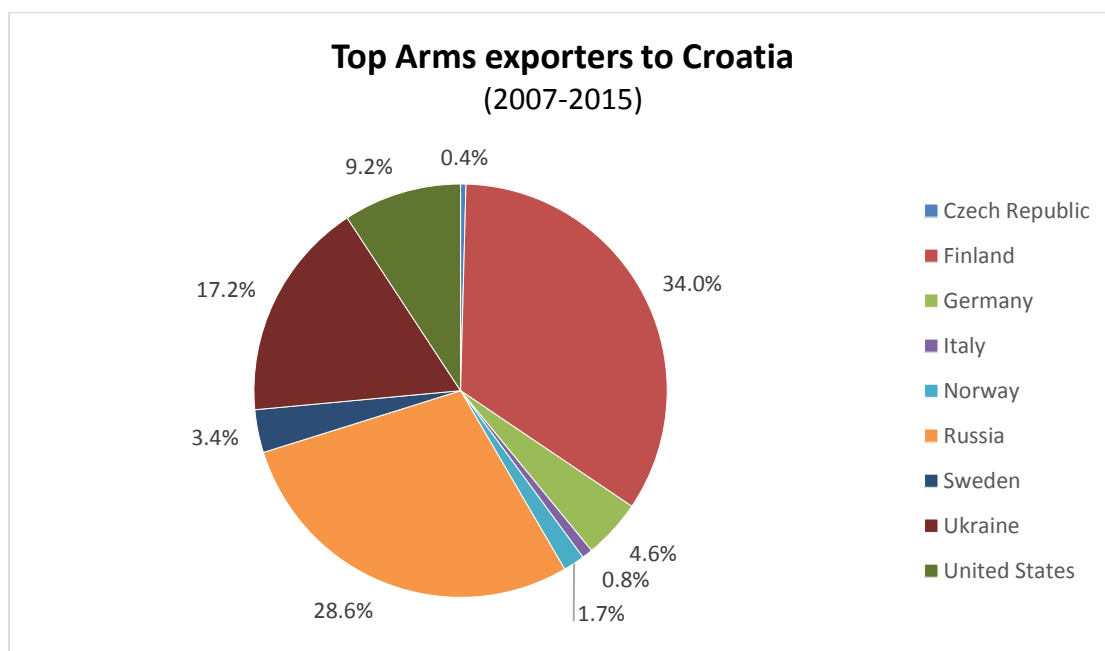
- By the end of 2016, a decision was to be made regarding retaining or abandoning the Autonomous Protection of the Air Space capabilities.
- To equip an Air Defense Battery with systems of mid-range.

In the last decade, Croatia has imported about US \$237 million of arms equipment. The majority of it comprised of Aircraft and Armoured vehicles (see chart below).



Source: <http://armstrade.sipri.org/armstrade/page/values.php>

The aforementioned equipment was mostly exported to Croatia, by Finland (34%), Russia (28.6%) and Ukraine (17.2%), for the given period (see chart below).



Source: <http://armstrade.sipri.org/armstrade/page/values.php>

## Croatia: Defence Industry, Capabilities and Major Companies



Ministry of Defence of the Republic of Croatia

The Croatian defence industry developed swiftly during the armed conflicts of 1991-1995, as a result of the need for self-defence of the nation. At that time, numerous new businesses were established, offering an array of products/activities across the defence spectrum, such as the manufacture of weapons, ammunition and equipment. In the post 1995 period, the Croatian defence industry further evolved, through the application of new technologies, concepts and the adoption of western (incl. NATO) quality standards, which allowed the sector to meet the demands of the Modernised Croatian Armed Forces, as well as to enter international markets. Croatia's accession to NATO in 2009 and the European Union in 2013 respectively, further aided the evolution of the country's defence industry.

Enjoying the support of the Croatian Ministry of Defence and the Armed Forces (indicated on various occasions by the emphasis placed on the fact that Croatian soldiers and officers were equipped and armed with products "Made in Croatia"), the Croatian Defence Industry was further fostered through the experience gained by the participation of the CAF in international operations (UN and NATO led), proving the industry's ability to adapt to different markets.

With regards to the industry's exports, according to the Government Agency "Alan", the total value of the Croatian military equipment exports, in 2014, was HRK 1.5 billion (approximately US \$214 million) –including agreed and realised deals- , representing an increase of 20% when compared to 2013. Historically, the exported arms and equipment, have been manufactured by some twenty Croatian companies and exported to Argentina, Austria, Australia, Spain, Sweden, Switzerland, USA, UAE, Kuwait, Poland, Bulgaria, Italy, Saudi Arabia and Ukraine.

Nowadays, the sector manufactures a wide variety of equipment and provides numerous related services, among which are the following:

- Small arms (including pistols, assault and sniper rifles, multi-grenade launchers and submachine guns)
- Mortars and Mortar Bombs
- Multiple Rocket Launchers and Rockets
- Optical sights
- Electronics and electro-optics equipment
- Personal Protection equipment
- Demining robots
- Fire-fighting equipment
- APC Vehicles & Tanks upgrades/modernization
- Naval vessels and related equipment
- Tents and related equipment
- Training & Education equipment

- Geo-information Systems

Moreover, it cannot be omitted to mention the technologic capabilities of the Đuro Đaković Group. The company's products & services include production of armoured combat vehicles and maintenance of these, tanks and mine sweepers, as well as development, production and integration of NATO interoperable systems.

Further, according to the Government Agency "Alan", the Croatian Defence Industry, apart from the design and manufacture of military equipment, provides logistics and other services, such as supply, maintenance, transportation, mediatory services and freight forwarding.

Croatia's strong military tradition in the production of weapons, is reflected in recent history by "Đuro Đakovic" development of the advanced battle tank M-84 and the "3. MAJ TIBO" factory's development of the missile system STRIJELA 10-CRO.

Today, the "HS Produkt" company designs, manufactures and sells more than a few million pieces of gun series HS and XD per annum, while the factory "Sestan Busch" produces more than 500,000 helmets.

Other prominent Croatian defence manufacturers include the companies "M Adler D Ltd" and "JLM Perkovic", which respectively produce Multiple Grenade Launchers (RBG-6) and Anti-Material Sniper Rifles of 20mm calibre.

In addition, the shipyards "Kraljevica", "Greben", "Brodosplit", "Viktor Lenac" and "Adria-Mar" manufacture various types of patrol boats, fast missile corvettes, mine sweepers, transport boats and transport logistics ships.

Finally, the "DOK-ING" company develops and manufactures remote-controlled robots, designed to clear all types of mines. A number of governmental institutions and companies from several countries around the world use 'DOK-ING' demining vehicles. Such entities include the Armed Forces of Australia, Austria, Croatia, Colombia, Greece, Ireland, Italy, Lebanon, Libya, Lithuania, Nicaragua, Sri Lanka and Sweden.

Notably, the Croatian Defence Industry, in terms of realised exports, has penetrated some 'prestigious' defence markets, including those of highly developed countries, such as Australia, Spain, Sweden, Switzerland, the US and Italy. The high expertise, skilled labour force, and innovation exhibited, guarantee the high quality of the Croatian defence products and services.

## Epicos "Industrial Cooperation and Offset Projects"



Epicos "Industrial Cooperation and Offset Projects" provides a unique set of online tools enabling the structure, identification and implementation of comprehensive Offsets programs, through a searchable database. By introducing different offset projects and ideas proposed by local A&D industry it ensures the optimum cost for Prime Contractors and reassures that the priorities of local industry are fully met...

[For Further Information Press Here](#)

### Advanced modeling and analysis of UAV thermal signatures for management and optimization of thermal signature reduction



A company with extensive expertise in the space and nuclear fusion industries, specialized in thermal design, modeling and analysis, proposes to implement existing technology and know-how to analyze UAV thermal signatures and to develop solutions for managing and reducing such signatures.

[For Further Information Contact our ICO Department](#)

Mail at: [a-kintis@epicos.com](mailto:a-kintis@epicos.com)

### Development of a CCTV Surveillance and Biometrics Access Control System for Homeland Security and/or Military Applications



A company active in the fields of video technology and biometrics-based entry control is proposing the development of a CCTV Surveillance and Biometrics Access Control System for Homeland Security and/or Military applications. This system will be based on a combination of legacy sub-systems already developed and fielded in several customers but it could also include the latest advances in video surveillance and biometrics-based entry control technologies.

[For Further Information Contact our ICO Department](#)

Mail at: [a-kintis@epicos.com](mailto:a-kintis@epicos.com)



## News from our A&D Business Network

### Triumph to Provide M777 Howitzer Body for BAE Contract with Indian Government



Triumph Group, Inc. will supply gun bodies for BAE Systems' M777 Howitzer in support of a recent contract with the U.S. Department of Defense. The contract, valued at \$15 million, was awarded to Triumph's Precision Components business unit for the gun body used in the ultra-lightweight artillery weapon. Precision Components has a long history of supporting the M777 platform, producing more than 1,000 gun bodies for BAE.

"We are pleased to continue our staunch relationship with BAE in support of the M777 Howitzer," said Rick Rosenjack, executive vice president for Triumph Precision Components, "and extend our support for the platform as it expands operations in India."

Triumph Precision Components will machine, weld and assemble the gun body before shipping it to BAE for the cannon assembly. Deliveries will take place over the next two and a half years. The gun bodies will support the recent foreign military sale between the U.S. and Indian governments and will be used to enhance border protection.

"With their focus on quality and on-time delivery as their top priorities, we are pleased to welcome Triumph Precision Components back to the production supply chain as we lean forward to deliver our commitment on the M777 India program," said Jimmy Dow, head of procurement for BAE Systems.

The win marks the continued expansion into adjacent markets for Triumph Precision Components. Last year the company announced a \$48 million contract with SNC-Lavalin for end fittings and shield plugs for the nuclear pressure vessels as part of the Ontario Darlington Retube & Feeder Replacement program.

Triumph Group, Inc., headquartered in Berwyn, Pa., designs, engineers, manufactures, repairs and overhauls a broad portfolio of aircraft structures, components, accessories, subassemblies and systems. The company serves a broad, worldwide spectrum of the aviation industry, including original equipment manufacturers of commercial, regional, business and military aircraft and aircraft components, as well as commercial and regional airlines and air cargo carriers.

For Further Information [Click Here](#)

## SAAB Receives Order for Airborne Self-Protection Systems to Equip the German Air Force



Defence and security company Saab has received an order for the electronic warfare self-protection and countermeasures system BOZ-101 EC from the NATO Eurofighter 2000 and Tornado Management Agency (NETMA) on behalf of the German Air Force. The BOZ self-protection and countermeasures system has been in use on Tornado for many years. This order is for 29 units of the enhanced version designated BOZ-101 EC. The wing mounted pod consists of a missile approach warning system in the aft section and a countermeasures dispensing system. Dispensing can be performed forward downwards and sideways in two adjustable directions. The dispenser is designed to counter modern IR-guided threats.

The production of the BOZ-101 EC will take place at Saab sites in Järfälla, Sweden and in Centurion, South Africa. Deliveries will take place during 2017-2020.

“The well renowned BOZ pod has been used on the Tornado for many years. This large follow-up order for the enhanced version confirms Saab’s capability to meet our customers’ need for state-of-the-art self-protection systems to improve their operational capabilities in hostile environments,” says Anders Carp, head of Saab business area Surveillance.

For Further Information [Click Here](#)



## Orbital ATK Receives \$92 Million in Small-Caliber Ammunition Orders from the U.S. Army

Orbital ATK, a global leader in aerospace and defense technologies, announced today that it has received \$92 million in small-caliber ammunition orders from the U.S. Army. Orders were placed for 5.56mm and 7.62mm ammunition under Orbital ATK's supply contract to produce small-caliber ammunition for the U.S. government at the Lake City Army Ammunition Plant (Lake City) in Independence, Missouri. The orders are in line with expected volumes. Orbital ATK is the largest manufacturer of small-caliber ammunition for the U.S. Department of Defense.

Since 2000, Orbital ATK has produced more than 17 billion rounds of small-caliber ammunition at Lake City to support U.S. and allied warfighters around the globe. Orbital ATK and the U.S. Army have made significant upgrades at the facility in recent years that have enhanced product quality; and performance, efficiency and operational improvements for safety and environmental stewardship.

"Orbital ATK is honored to continue our longstanding support of the U.S. Armed Forces and its allies by providing them with reliable, high-quality ammunition," said Jim Nichols, Vice President and General Manager of Orbital ATK's Small Caliber Systems Division of the Defense Systems Group. "Every member of the Orbital ATK team understands that our nation's warfighters depend on us to provide the highest quality ammunition possible, and we do not take that responsibility lightly."

Orbital ATK's Defense Systems Group is an industry leader in providing innovative and affordable precision and strike weapons, advanced propulsion and hypersonics, missile components across air-, sea- and land-based systems, ammunition and related energetic products.

For Further Information [Click Here](#)

**Source:** Epicos, Orbital ATK's Defense Systems Group

## Rockwell Collins awarded \$21 million contract to modernize Air Force, Navy and Army test ranges

The U.S. Department of Defense (DoD) awarded Rockwell Collins a \$21 million contract to support the second production lot of the Common Range Integrated Instrumentation System (CRIIS) for upgrading Air Force, Navy and Army test ranges.

The next-generation test range instrumentation system will replace legacy range systems including Advanced Range Data System (ARDS) and Air-to-Air Range Infrastructure (AARI) systems in use at major U.S. military ranges. This second production lot will help complete range installations and activations at Eglin Air Force Base (AFB), Edwards AFB, Naval Air Station (NAS) Patuxent River, White Sands Missile Range, Nellis AFB, Naval Air Weapons Station (NAWS) China Lake and NAS Point Mugu.

“With multi-level security and data link capabilities, the F-35 and other fighter aircraft will be able to perform several missions in a single day by transferring connectivity to multiple ranges versus a traditional test mission which consists of an exclusive base-to-aircraft data link,” said Troy Brunk, vice president and general manager, Communication, Navigation and Electronic Warfare Solutions for Rockwell Collins. “CRIIS provides much needed technology to modernize our U.S. military ranges.”

For example, an F-35 stationed at Edwards AFB can take off in the morning, fly to White Sands Missile Range for range-specific testing and then continue on to Nellis AFB, NAWS China Lake, the sea range located at NAS Pt. Mugu and return to Edwards AFB at the end of the day all while transferring its data connection securely to each range system. The CRIIS system will support developmental and operational testing with the named test ranges, and is ready to support F-15, F-16, and F/A-18, F-22 and F-35 in live, virtual and constructive test scenarios.

The CRIIS program fulfills DoD’s vision of common test and training infrastructure for improved operational realism by providing real-time tracking of air exercise participants up to approximately 350 nautical miles (line of sight plus relay); accurate time, space, position information under highly- dynamic aircraft conditions and an extended area control of air, land and sea participants. It also offers an open architecture design to support range flexibility; multiple independent levels of security architecture; standardization of interface protocols including test and training enabling architecture; software defined radio for waveform and frequency agility; and supports synthetic threats and forces.

Production work will be performed at Rockwell Collins facilities in Richardson, Texas, and Cedar Rapids, Iowa.

For Further Information [Click Here](#)

**Source:** Epicos, Rockwell Collins

## 500<sup>th</sup> Eurofighter Typhoon produced, delivered to the Italian Air Force

The 500th Eurofighter Typhoon has been delivered today to the Italian Air Force during a special ceremony held at Leonardo Aircraft Division's Turin site. Lt. Gen. Gabriele Salvestroni, Logistic Commander of the Italian Air Force, took delivery of the aircraft in the presence of Filippo Bagnato, Leonardo Aircraft Division's Managing Director, Volker Paltzo, Chief Executive Officer of Eurofighter Jagdflugzeug, Peter Schmidt, Deputy General Manager of NETMA, and representatives from the Eurofighter partner nations and partner companies.

Volker Paltzo, Chief Executive Officer of Eurofighter Jagdflugzeug GmbH, said: The 500 strong Eurofighter Typhoon fleet represents one of the largest and most capable fighter fleets in the western hemisphere, and will be the backbone of European airpower for decades to come. Today's handover is a great testament to the programme's success, and I firmly expect to see the fleet grow further as our partner companies continue to pursue opportunities for more orders internationally.

Filippo Bagnato, Leonardo Aircraft Division Managing Director, said: We are very proud to deliver the 500th Eurofighter Typhoon produced to the Italian Air Force. The Eurofighter Typhoon is the largest collaborative industrial programme in Europe, it is a successful and significant contributor to the nation's economic wellbeing, employing high-skilled workers and generating thousands of high-value manufacturing and engineering jobs. We are now fully committed to completing deliveries to the Italian Air Force, to develop the capabilities of the aircraft, and to the activities envisaged by Kuwait's contract, while continuing to pursue a number of significant market opportunities around the world.

For Further Information [Click Here](#)

**Source:** Epicos, Eurofighter Typhoon

## Huntington Ingalls Industries' Technical Solutions Division Wins Contract for Engineering Services and Technical Support for Naval Warfare Center

Huntington Ingalls Industries announced today that its Technical Solutions division has received a contract award to provide engineering services and technical, logistics, maintenance and installation/alteration support to Naval Sea System Command's Naval Surface Warfare Center Philadelphia Division (NSWCPD). AMSEC LLC, now part of the Fleet Support Group of HII's Technical Solutions division, will perform the work for NSWCPD's Cargo and Weapons Handling Division in major home ports in the United States, as well as in Canada and Egypt. If all options are exercised, the cost-plus-fixed-fee contract, worth approximately \$39 million, is expected to be completed by April 2022.

The work includes ship alterations, ship change documents, authorized work items, system repairs, operability testing, certification and inspections. Tasks also include drawing and technical manual development, fabrication of material and support for cargo/weapons and personnel elevators, dumbwaiters, magazine-handling systems, aircraft elevators and vertical package conveyors. The work will be conducted on U.S. Navy and Military Sealift Command ships, including LHA- and LHD-class amphibious assault ships, LPD-class amphibious transport docks, LSD-class dock landing ships, T-AOE-class fast combat support ships and T-AKE-class dry cargo/ammunition ships. Dave Henshaw, program manager of the Fleet Support Group's elevator support unit, said AMSEC has demonstrated a reliable performance record since its first task award in 1981. "Our technical experts have a commitment to safety and quality and have continuously supported the NSWCPD's mission to deploy critically needed weapons and cargo-handling equipment technologies to the fleet," he said. James "Rocket" Hamilton, a director of operations for HII's Fleet Support Group, added: "Our key personnel have over 112 years of combined conveyor, cargo/weapons elevator and deck machinery technical, logistics and engineering experience. With the increased operational tempo and current pressures on maintenance and modernization budgets, it is even more critical that NSWCPD can depend on a reliable partner."

HII Technical Solutions is a professional services business providing solutions to a variety of government and commercial customers worldwide. The division was formed in December 2016 when HII acquired Camber Corp. and combined it with HII's existing services subsidiaries, including AMSEC, Continental Maritime of San Diego, Newport News Industrial, SN3, Undersea Solutions Group and UniversalPegasus International. Technical Solutions provides fleet maintenance and modernization, unmanned solutions and rapid prototyping, agile software development and network engineering, training systems, logistics support, nuclear engineering and fabrication, and oil and gas engineering. Technical Solutions employs more than 5,000 people working in 35 states and 11 countries, with mobile "fly-away" teams that support emergent situations around the globe.

For Further Information [Click Here](#)

**Source:** Epicos, Huntington Ingalls

### SAAB Signs Contract for Delivery of Special Purpose Ship for SIGINT

Defence and security company Saab has signed a contract with the Swedish Defence Material Administration (FMV) for delivery of a Special Purpose Ship for Signal Intelligence (SIGINT). The order covers the period 2017– 2020, with a total value of SEK730 million. Saab will design, construct and deliver a signal intelligence vessel.

Special Purpose Ships of this kind requires high reliability and availability. Saab, and not the least Kockums, has during the years delivered products that live up to these high standards. This contract is also a confirmation on our ability to deliver surface ships, says Gunnar Wieslander, head of Saab business area Kockums.

A SIGINT-vessel is primarily used for interception and to analyze of radio transmitted signals. The existing Swedish vessel, HMS Orion, was launched in 1984, and has since then been upgraded several times at Saabs shipyard in Karlskrona.

For Further Information [Click Here](#)

**Source:** Epicos, SAAB