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Part I: Canada

Part II: Epicos Newsroom

Canadian Future Defence Budget; An Overall Analysis

Canada's 2015 federal budget will include an increase of CAD11.8 billion (US9.6 billion) to the country's defence spending over 10 years. According to the Canada's Economic Action Plan the 2015 national defence budget will increase by 3% starting in 2017–18. Additionally, the 2015 federal budget will provide up to CAD 360.3 million (USD 443 million) for the period 2015–16 for the Canadian Armed Forces to extend its mission to counter the Islamic State of Iraq and the Levant (ISIL).

The Canadian authorities will also strengthen national security by:

- Investing CAD 292.6 million (USD 238 million) over five years in intelligence and law enforcement agencies for additional investigative resources to counter terrorism.
- Providing $12.5 million (USD 10 million) over five years, starting in 2015–16, and CAD 2.5 million (USD 2 million) ongoing thereafter, in additional funding to the Security Intelligence Review Committee to enhance its review of the Canadian Security Intelligence Service.
- Providing CAD 58 million (USD 47 million) over five years, starting in 2015–16, to further protect the Government of Canada's essential cyber systems and critical infrastructure against cyber-attacks.
- Investing CAD 36.4 million (USD 30 million) over five years to support the operators of Canada's vital cyber systems in addressing cyber security threats, as required by the new legislation.
- Providing CAD 60.4 million (USD 49 million) over three years on a cash basis to support an enhanced security model on Parliament Hill.

Development was positively accepted by the country's defence authorities. It is indicative that the Canadian Association of Defence and Security Industries (CADSI) President Mr. Christyn Cianfarani stated the following: "Not only is the budget balanced, which is a good thing for Canadians, but it provides a range of initiatives that are important to Canada's national defence and national security, which is all about keeping all of us safe".

Kyriazis Vasileios,
Epicos Newsletter Head Editor

Canadian Aerospace Industry: Orientation and Main Products

Canada's aerospace industry has a long history of innovation and success throughout the world. Canada is a global market leader in producing regional aircraft, avionics, business jets, commercial helicopters, aircraft engines, flight simulation, landing gear, space systems and in providing Maintenance Repair and Overhaul Expertise. Additionally, it is worth mentioning that leading aerospace companies from around the world choose to perform their manufacturing and research and development activities in Canada.

Among others Canadian industry can be divided into seven main product/service subsectors:

- **Complete Aircraft**

With nearly a century of aircraft production heritage, Canada has earned a solid reputation at the forefront of 21st Century powered flight. Learn more >>

- **Aircraft Engines & Parts**

Canada is a world leader in turbine-powered aviation engines for business and regional aircraft, and helicopters. Learn more >>

- **Aircraft Systems & Parts**

Canadian manufacturers of aircraft systems and parts are suppliers of choice to the world's aircraft manufacturers and air framers. Learn more >>

- **Simulation & Training**

Canadian firms lead the world in the design and manufacture of large flight simulators, visual systems and flight training devices. Learn more >>

- **Aircraft Maintenance, Repair & Overhaul (MRO)**

Canadian MRO firms generate more than $3 billion in annual revenues and employ some 17,000 highly skilled workers. Learn more >>

- **Avionics & Mission Systems**

Canadian firms possess world-class strengths in civil aircraft avionics suites, military aircraft command and control systems, visualization imagery devices, airborne surveillance devices, and air navigation management aids. Learn more >>

- **Space Technologies**

Canadian space firms have world-leading capabilities in areas such as satellite-based communication services, space robotics, and earth observation. Learn more >>

While the continued success of the Canadian aerospace industry cannot be guaranteed, the strong base upon which it is built and the help provided by the Canadian authorities will definitely help its future development. The country's authorities help the companies through attractive investment fundamentals; leading-edge knowledge infrastructure; risk-sharing investments in technology development; commitment to investing in skills and research; and new business opportunities.

Kyriazis Vasileios,
Epicos Newsletter Head Editor

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

Development of a compact NBC filtering unit to be installed on tactical Military vehicles

A company with long standing experience in the design, manufacturing and installation of specialized air-conditioning equipment and NBC filtering solutions, is proposing the customization of a compact lightweight NBC filtration unit that will be integrated in the air-conditioning system of various tactical military trucks, providing complete NBC protection for the cabin crew. The same system can be utilized to fulfill related civilian vehicle protection requirements (e.g. VIP cars).

For Further Information Contact our ICO Department
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Head-mounted displays (HMDs) or Augmented Binoculars for Future Soldier and Homeland Security applications

A company with extensive experience in providing customized cutting edge solutions in the field of information technology, telecommunications and image processing, is proposing the development of smart Head-mounted displays (HMDs) to be used in several Future Soldier and homeland security applications. The proposed HMDs, as wearable devices, will use augmented reality technology to render see-through images or video, imposed onto a real world view, thus supporting Future Soldier operations.

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Rheinmetall to upgrade NH90 Cockpit Trainer for the Bundeswehr with Asterion

The German Bundeswehr is currently upgrading its helicopter training programme with simulation technology from Rheinmetall. In March 2015 the Simulation and Training business unit of Rheinmetall Defence was awarded a contract from Germany's BAAINBw defence procurement agency to upgrade all NH90 Cockpit Trainer to IOC+ configuration and with additional software modules from Rheinmetall's Asterion product line.

The NH90 Cockpit Trainer is used for initial and advanced training of Bundeswehr aviation technical personnel in NH90 helicopter operations at the German Air Force technical training center (TAusbZLw) in Fassberg. With this order, all NH90 Cockpit Trainer have now been upgraded to IOC+ configuration status, and are programmed with additional Asterion training software modules. This simulator enables the Bundeswehr to train aspiring aircraft technicians in all systems of this complex helicopter without having to use the expensive original weapons system. Thanks to its system infrastructure, the Asterion product enables a modularly designed training system, meaning that it can go into operation as soon as the first software module is delivered.

Rheinmetall and its subsidiary benntec Systemtechnik have developed an innovative new system for recording and collecting original data of the weapons system for Asterion, which is not only more cost-effective than previous methods, but also leads to faster development of individual components and subcomponents of the desired weapons system.

Rheinmetall's Asterion modular simulation realistically reproduces the behavior and functionality of air, land and sea weapon systems. Asterion can be used on various training devices, from a full replica cockpit to a tablet PC, and can be customized to the customers' training needs. The embedded virtual simulation can also be combined with a computer based training solution to maximize the training effort. Visitors to ITEC 2015 can learn more about the Asterion Cockpit Trainer at the Rheinmetall booth 3A-100.

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Arabsat and KACST Award Lockheed Martin Contract to Provide Satellite Systems to Strengthen TV, Internet, Telephone Communication

Arabsat and King Abdulaziz City for Science and Technology (KACST) today announced contracts for Lockheed Martin to manufacture two A2100 communications satellites. In conjunction with the award, Lockheed Martin, KACST and TAQNIA Space Company, a subsidiary of the Saudi Technology Investment and Development Company (TAQNIA), signed an agreement to explore future design, manufacture, assembly and integration of satellites in the Kingdom of Saudi Arabia.

The two satellites ordered by Arabsat will strengthen the Arabsat fleet to 10 in-orbit operational satellites. These new satellites will ensure and guarantee Arabsat expansion through the additional services that will provide advanced telecommunications capabilities, including television, internet, telephone and secure communications, to customers in the Middle East, Africa and Europe. The contracts were signed April 9, 2015. Construction of the satellites will commence immediately and will be completed for launch in 2018.

Under the agreement, Lockheed Martin and TAQNIA Space Company will pursue the creation of a Joint Venture, anticipated to be structured as a limited liability company, that would develop talent and infrastructure that will support space capabilities and services in the Kingdom of Saudi Arabia. KACST will serve as a technology partner, leading research and development efforts that will support new innovations for future Saudi Arabian space endeavors.

“Lockheed Martin’s proven record of developing and delivering state-of-the-art space communications capabilities will ensure the Kingdom’s critical telecommunications needs are met. KACST and Arabsat collectively selected the best and latest technology for their satellites and KACST will elevate local satellite technologies competency through the Joint Venture with Lockheed Martin and TAQNIA Space Company,” said Prince Dr. Turki bin Saud bin Mohammad Al Saud, President of KACST.

“Arabsat 6A and Hellas-Sat-4/SaudiGeoSat-1 will join a fleet of satellites that provides millions of people access to TV, radio and broadband services for mobile and landline communications,” said Khalid Balkheyour, CEO of Arabsat. “We selected Lockheed Martin to build these satellites due to the impressive technical capabilities and proven track record of the A2100 satellite.”

“We believe this partnership will serve as a platform for commercialization of innovations in future satellite systems in the Middle East and North Africa region,” said Abdullah Alosaimi, CEO of TAQNIA Space Company.

“This is a great step forward to support both Arabsat and the Kingdom’s long-term strategy to provide consumers and commercial customers with robust communications resources,” said Mike Hamel, vice president and general manager of Commercial Space at Lockheed

Martin. “The modernized A2100 satellite platform is ideally suited to their mission of connecting people and societies through reliable telecommunications services.”

The Lockheed Martin A2100 fleet has accumulated more than 450 years of in-orbit operation. The modernized version builds on that flight-proven design with advanced innovations including propulsion, solar arrays and electronics. Every satellite is tailored for the mission and customers it will serve through its communications payload and traffic both to and from the satellite.

Arabsat 6A will be located at 30.5 degrees East and Hellas-Sat-4/SaudiGeoSat-1 will be located at 39 degrees East. Both satellites will be designed for a 15-year service life, and will be manufactured in Denver, Colorado.

Lockheed Martin is a global security and aerospace company that employs approximately 112,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. Internationally, Lockheed Martin has more than 300 partnerships in 70 countries, with significant footprints in the United Kingdom, Canada and Australia. The Corporation’s net sales for 2014 were $45.6 billion, including 20 percent from international sales.

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For Further Information Click Here

Epicos Newsroom

Airbus Defence and Space selected by the CNES to build Merlin the first Franco-German Earth observation satellite

Airbus Defence and Space, the world's second largest space company, has signed a contract with the French space agency (CNES) to build the platform and carry out final integration of the MERLIN (MEthane Remote sensing LIdar missioN) satellite. From 2020 MERLIN will measure methane (CH4), one of the main greenhouse gases, in the Earth's atmosphere. MERLIN is the first joint Earth observation satellite programme between the French (CNES) and German (DLR) space agencies.

"We are happy to run the first Franco-German Earth observation satellite programme and we will build the spacecraft on both sides of the Rhine," said François Auque, Head of Space Systems. "Thanks to this contract, our new satellite platform AstroBus-S has its second order (after Perusat-1), proving its competitiveness in this range of small Earth observation satellites on the global market."

MERLIN is one of the European satellite programmes designed to study greenhouse gases and the phenomenon of global warming. Using its LIDAR (LIght Detection And Ranging) instrument, MERLIN will "probe" the atmosphere to determine the varying concentrations of methane, which, together with carbon dioxide (CO2), is one of the main contributors to the greenhouse effect.

Airbus Defence and Space has already been selected by DLR as prime contractor for early development phases (0-B) of the MERLIN payload. The LIDAR instrument shines a laser at two different wavelengths through the atmosphere, and measures their reflections off the Earth's surface or the cloud tops. As one wavelength is absorbed by the methane and the other is not, this difference can be measured and the methane content in the atmosphere determined. Being an active instrument with its own light source on board, the MERLIN LIDAR instrument does not have to rely on Sun illumination of the observed areas and can therefore operate day and night.

MERLIN is the first institutional programme to be based on the new AstroBus-S platform, developed by Airbus Defence and Space in partnership with CNES, as part of the French Investment for the Future Programme (Plan d'Investissements d'Avenir – Myriade Evolutions). AstroBus-S will form the basis of the Airbus Defence and Space range of 400 kg class Earth observation satellites for imaging, climatology and science missions. AstroBus-S complements the current AstroBus range, which has underpinned commercial export successes for more than 15 years (Chile, United Arab Emirates, Kazakhstan, Peru, etc.) and been the technological spearhead of the most emblematic institutional missions (MetOp-SG, Spot, etc.).

The MERLIN programme will be carried out under the aegis of CNES and DLR. On behalf of CNES, Airbus Defence and Space in France (Toulouse) will be responsible for the satellite, its platform and its integration with the instrument. The LIDAR instrument will be designed and built by Airbus Defence and Space teams in Germany (Friedrichshafen, Ottobrunn) on behalf of DLR.

About Airbus Defence and Space

Airbus Defence and Space is a division of Airbus Group formed by combining the business activities of Cassidian, Astrium and Airbus Military. The new division is Europe's number one defence and space enterprise, the second largest space business worldwide and among the top ten global defence enterprises. It employs more than 38,000 employees generating revenues of approximately €13 billion per year.

For Further Information Click Here

Source: Epicos, Airbus Defence and Space

Vector Aerospace receives Airbus Helicopters' Service Centre Approval

Vector Aerospace UK is pleased to announce the signing of an agreement with Airbus Helicopters enabling its Fleetlands site in Gosport to operate as an Airbus Helicopters Service Centre for countries adjoining the North Sea - the UK, Republic of Ireland, Norway, Denmark, the Netherlands and Belgium.

The agreement covers the maintenance, repair and overhaul services at the organisational and intermediate level of maintenance. This includes major inspection of airframe, blades, mechanical assemblies, hydraulics and APCU of all Super Puma variants owned by oil and gas operators and lessors active within this territory.

Vector Aerospace had the opportunity to validate its capability to undertake this work when it received its first aircraft, an Airbus Helicopters' AS332L Super Puma, from Vector Aerospace Leasing Services last year.

Complementing the existing AS332 & EC225 EASA Part 145 approvals, the Airbus Helicopters' accreditation provides a key enabler to enhance and accelerate the growth of Vector Aerospace's UK civil helicopter support portfolio, as the company continues to strengthen this part of its wide range of capabilities.

Michael Tyrrell, Managing Director, Vector Aerospace UK, said, "The UK and wider European civil MRO markets have enormous potential that Vector Aerospace is actively working to tap into. Becoming an approved Airbus Helicopters' Service Centre provides us with the credentials we need to deliver OEM approved support to all Super Puma operators."

Vector Aerospace holds approvals from some of the world's leading turbine engine, airframe and avionics OEMs. Powerplants supported include a wide range of turboshafts, turboprops and turbofans from General Electric, Honeywell, Pratt & Whitney Canada, Rolls-Royce and Turbomeca. Vector Aerospace also provides support for a wide range of airframes from Airbus Helicopters, Bell, Boeing and Sikorsky, its capabilities including major inspections and dynamic component overhaul, and offers full-service avionics capability, including aircraft rewiring, mission equipment installation and glass cockpit upgrades.

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Source: Epicos, Vector Aerospace

Upgraded PS-05/A Radar Gives Gripen C/D Extended Performance and Operating Range

The PS-05/A Mk4 is the most recent development of the renowned PS-05/A radar, originally developed for the Gripen fighter. Through continuous spiral development it has maintained its position as one of the most competent fighter radars in the world.

A new hardware configuration with a complete new radar back-end gives significantly improved radar performance and operational range, enhances the Gripen Weapon System capabilities and offers full AMRAAM and Meteor integration. It also enables significant capability growth through software upgrades to successfully counter evolving threats in decades to come.

A new Air-to-Air mode has been implemented and demonstrated which takes full advantage of the signal processing capacity and the flexible waveform generation in PS-05/A Mk4. This mode increases acquisition range with 100% at low altitudes compared to previous version of PS- 05/A. This radar mode will also be useful for detection of targets with very low Radar Cross Section. The Meteor missile downlink is optimized to maintain radar performance during long-range data linking scenarios.

“The Mk4 is a world-class multifunction radar, with excellent ECCM performance, growth capability and with very low life cycle cost,” says Lars Tossman, Head of Airborne Surveillance Systems at Saab business area Electronic Defence Systems.

With the new Mk4 upgrade the PS-05/A will continue to improve operational capabilities for customers around the world. The PS-05/A Mk4 can be adapted to fit into most airborne platforms. Both compact and lightweight, this modular solution is ideal for integration with standard avionics technology systems and allows for installation on any multi-role combat aircraft, UAV, advanced jet trainer or other airborne platform.

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Saab serves the global market with world-leading products, services and solutions within military defence and civil security. Saab has operations and employees on all continents around the world. Through innovative, collaborative and pragmatic thinking, Saab develops, adopts and improves new technology to meet customers’ changing needs.

Source: Epicos, SAAB

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Turkmenalem52e/Monacosat Telecom Satellite in Orbit

Built by Thales Alenia Space as prime contractor, on behalf of the Turkmenistan Ministry of Communications, the TurkmenAlem52E/MonacoSAT telecommunications satellite was successfully launched today from the Cape Canaveral launch site in Florida by a SpaceX Falcon 9 launcher.

Once in service, TurkmenAlem52E/MonacoSAT will allow Turkmenistan to operate its first national satellite telecommunications system, ensuring enhanced, secure telecommunications for the country. The satellite is built on a Thales Alenia Space Spacebus 4000 C2 platform, weighed 4.7 metric tons at launch and offers a design life exceeding 16 years. Its coverage zone encompasses Europe, Central Asia up to the Chinese border and virtually all of Africa. The Turkmenistan Ministry of Communications will use Monaco's 52°E orbital position, via the Monaco-based satellite operator, Space System International - Monaco (SSI).

As prime contractor for this in-orbit delivery contract, Thales Alenia Space was in charge of satellite design and manufacture, along with the manufacture of ground support equipment for the two satellite control stations, all associated services, provision of launch services and insurance. The Turkmenistan team, which manages TurkmenAlem52E/MonacoSAT, received intensive training from Thales Alenia Space engineers to ensure trouble-free satellite operation.

TurkmenAlem52E/MonacoSAT is Thales Alenia Space's first satellite in orbit to use a component made by the additive manufacturing process, also known as 3D printing, namely the T&C antenna horn mounting strut. In addition, it is the first satellite made by Thales Alenia Space to feature "flexible" traveling wave tube amplifiers (TWTA), meaning with adjustable output power.

About Thales Alenia Space

Thales Alenia Space, a joint venture between Thales (67%) and Finmeccanica (33%), is a key European player in space telecommunications, navigation, Earth observation, exploration and orbital infrastructures. Thales Alenia Space and Telespazio form the two parent companies' “Space Alliance”, which offers a complete range of services and solutions. Because of its unrivaled expertise in dual (civil/military) missions, constellations, flexible payloads, altimetry, meteorology and high-resolution optical and radar instruments, Thales Alenia Space is the natural partner to countries that want to expand their space program. The company posted consolidated revenues in excess of 2 billion euros in 2013, and has 7,500 employees in six countries. www.thalesaleniaspace.com

For Further Information Click Here

Source: Epicos, Thales Alenia Space

Finmeccanica-Alenia Aermacchi Presents, for the First Time, the M-345 Ground Based Training Demonstrator Device

On the occasion of ITEC, the annual International Forum for the Military Training, Education and simulation sectors, held on 28-30 April 2015 in Prague, Alenia Aermacchi presents, for the first time, the M-345 Ground Based Training Demonstrator Device (GDD).

The M-345 GDD, painted in "Frecce Tricolori" livery, is an advanced flight simulator, representative of the flight qualities of the Alenia Aermacchi M-345 HET (High Efficiency Trainer) aircraft and offering a replica of the cockpit and the main flight controls of the aircraft.

The ground based training system - that include aircraft flight and systems simulators and computer based training devices - is a key component of the new M-345 HET (High Efficiency Trainer) "Integrated Training System".

The M-345 HET represents the most recent solution proposed by Alenia Aermacchi for the basic-advanced phase of training syllabus for military pilots.

M-345 HET provides Air Forces with an economically affordable and effective solution, thanks to a significant reduction in acquisition and life-cycle costs, compared to those of powerful turboprop trainer aircrafts, which offer lower performance and lower training effectiveness, despite being in the same weight class and in some case equipped with similar top of the line on-board systems.

M-345 provides, in fact, a value for money solution that benefits from the jet performance and from the expanded flight envelope, both in terms of speed and altitude, which ensure more training per flight hour and higher training download capability from the subsequent Advanced/LIFT phase, providing important cost saving in producing a fast jet pilot.

With the M-345, flying the same number of flight hours, the student pilot can complete Phase 2 with a significantly higher skill level, also including the management of sensors and weapons and the air-to-air and air-to-ground engagement procedures. In concrete terms, the air force can reduce the basic phase flight hours, for instance, from 120 to 90 or maintaining the 120 hours including the introduction to tactics, thus reducing Phase 3 on the advanced trainer from 70 to 50 hours (more than 28% less), and achieving great economic savings.

The M-345 Ground Based Training System will have its e-learning component including the CBT and the PTD procedural simulator, further to an Operational Flight Trainer (OFT), a simulator which is likely to feature the same software as the PTD, with an additional 180° wide display and a life-like cockpit where the student pilots can use the same controls they will find on actual aircraft.

This simulator will allow for the introduction to tactics to be then completed in-flight with the ETTS, able to generate on the Multi-Function Displays (MFD) the tracking of targets,

friend or foe aircraft, threats and all the necessary elements to create an effective virtual operating scenario.

For Further Information Click Here

Source: Epicos, Thales Alenia Space