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Part I: Brazil

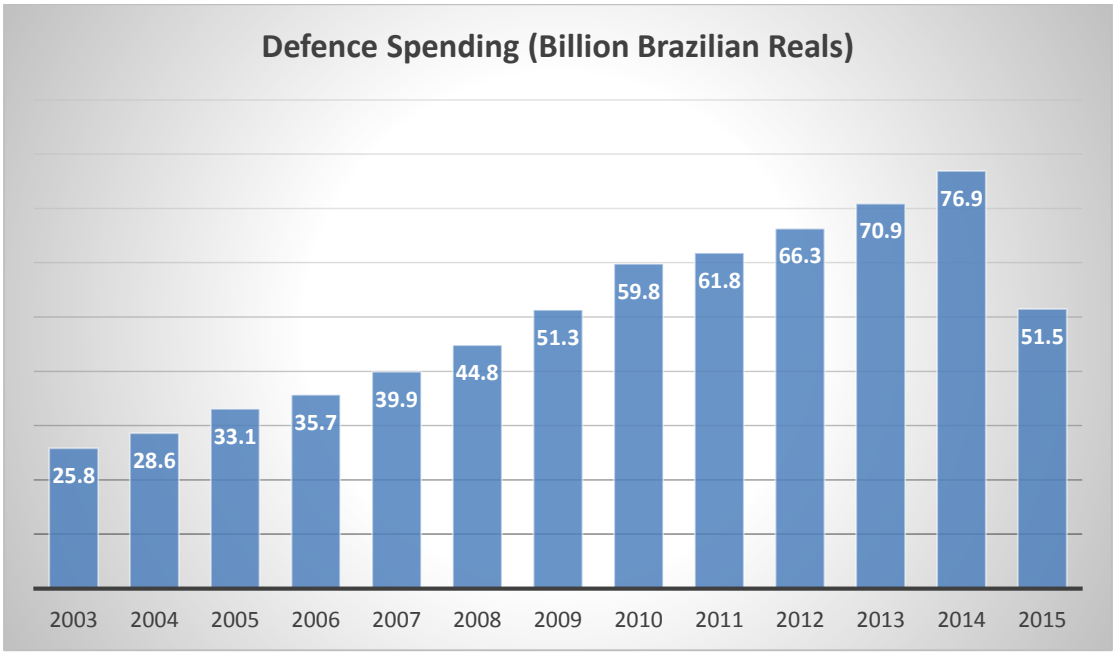
1. Brazil: Defence Spending
2. Brazil: Defence Industry
3. Epicos "Industrial Cooperation and Offset Projects"
4. Non-destructive Testing (NDT) apparatuses calibration services for the aerospace and defence industry
5. Machining services of ferrous and non-ferrous materials for the aerospace sector
6. News from our A&D Business Network

Part II: Epicos Newsroom

1. Saab to Provide Additional Deliveries for U.S. Army's Combat Vehicles
2. Pratt & Whitney to Deliver Final Production F117 Engine to the U.S. Air Force
3. Northrop Grumman to Provide LN-200S for Lockheed Martin's Satellite Bus
4. Lockheed Martin Team Delivers Second Lightning Tracker for NOAA Weather Satellite
5. ManTech Awarded Potential $200 Million Contract for Defense and Intelligence Community Modernization Support

Brazil: Defence Spending

Between 2003 and 2014, Brazil has experienced a constant and significant increase in military spending. It is indicative that in 2003 total defence spending was 25.8 billion Brazilian Real (approximately 6.4 billion US Dollars) while in 2014 reached 76.9 billion (approximately 19.1 billion US Dollars). Nevertheless, this trend was diversified in 2015 when defence spending was largely decreased reaching 51.5 million Brazilian Reals (approximately 12.8 billion US Dollars). According to official statements the 76.9 million billion Brazilian real budget for 2014 was distributed as following: personnel costs - 55.6 billion (approximately 13.8 billion US Dollars), operating expenses - 11.2 billion (approximately 2.8 billion US Dollars) and investments – 8.4 billion (approximately 2 billion US Dollars).



Despite the fact that during the period 2003-2014 military spending increased, previous to that, and more specifically during the 1990s and early 2000s, it remained low. The main reason was that the civilian government that emerged after the end of the military dictatorships of the 1970s and the 1980s tried to gain the control over defence policies and disconnect the future of the country with its troubled past.

The alternation in Brazil's defence spending doctrine that took place after 2003 can be largely explained by the fact that neighbouring countries such as Venezuela, Chile and (to a lesser extent) Colombia were already in a process of expanding their military capabilities. Additionally, internal security problems was a concern, especially in the Amazon Basin area,

where Brazil shares around 12,000km of border with seven other countries, over which the government had a weak hold over the rule of law.

Currently, Brazil can be fairly characterised as an important regional and a constantly evolving global player. Thus, a significant amount of funds need to be allocated in the armament modernisation of the country and this makes Brazil a rather appealing county for defence firms. Nevertheless, we must take into consideration that as almost every other country in South America, Brazil demands from foreign suppliers of defence material a good dose of patience, as deals usually take a significant amount of political consultation and negotiation. Additionally, foreign companies that are willing to do business in Brazil must be prepared to transfer technology, and that must be done in collaboration with their respective governments, and to engage in cooperation with Brazilian companies. Despite the aforementioned difficulties the market exists and rewards await those whose efforts are serious and persistent enough.

Kyriazis Vasileios,
Epicos Newsletter Head Editor

Brazil: Defence Industry

Brazil has over 400 companies with a direct defence capability and several others that provide products and/or services to the defence industry in a supporting role. Moreover the Latin American country has focused on further developing its indigenous defence manufacturing capabilities through several enablers (including offsets). The state of Brazil has been a vital and strong ally in the effort of the defence industry to re-establish its place in the international defence market. By adopting a strategy of constantly rising defence budgets it has the opportunity of injecting funds into the industry, and therefore completing strategic projects. Additionally, by adopting a policy, which considers the transfer of technology to local companies as a prerequisite for future defence procurements, the Brazilian state is trying to create the proper circumstances for the further development of the national defence industry.

The wheels of the post-war Brazilian defence industry started turning, in the fifties. The main actors in this specific period were state-owned companies. Though, the systematic establishment and expansion of the Brazilian defence industry started during the 1960s. It was then that Brazil's three largest arms firms were established, in 1961 Avibrás Aerospace Industry (Avibrás Indústria Aeroespacial S.A.--Avibrás), in 1963, Engesa and in 1969 Embraer.

The Brazilian defence industry experienced its so-called “golden years” in the 1980s, as exports reached a peak of almost US$1 billion per year. Brazil became a global player in the production and export of arms and especially in the arms market of the third and developing world. It is indicative that it was the 11th biggest supplier in the world for the period 1984-88.

Engesa was exporting a broad spectrum of armoured vehicles, such as Cascavel and Urutu in the Americas, whereas Embraer exported the Tucano trainer aircraft, which was purchased, even by air forces in the so-called first world countries such as France and the United Kingdom.

However, the late 1980s and early 1990s brought a sudden and serious crisis for the Brazilian defence industry. A significant amount of Brazilian arms transfers were made to Iraq and when the Iran-Iraq war was finished in the early 1990s Brazil lost one of its main buyers.

Currently, Brazil exports defence equipment in several countries. According to Stockholm International Peace Research Institute (SIPRI), during the period 2010-2014 Brazil exported defence equipment in 17 countries. The first four countries imported arms from Brazil during 2009-2014 period and based on the amount of funds allocated are: Ecuador, Indonesia, Chile and Dominican Republic.

The state of Brazil has been a vital and strong ally in the effort of the defence industry to re-establish its place in the international defence market. By adopting a strategy of constantly

rising defence budgets it has the opportunity of injecting funds into the industry, and therefore completing strategic projects, such as KC-390 that will potentially transform the country into a key global player. Additionally, by adopting a policy, which considers the transfer of technology to local companies as a prerequisite for future defence procurements, the Brazilian state is trying to create the proper circumstances for the further development of the national defence industry.

Embraer is in the forefront of the efforts for the re-establishment of the national defence industry. The company's KC-390 medium-size, twin-engine jet-powered military transport aircraft is the Brazilian first new military product in more than a decade and it can be fairly characterized as a key propellant that will elevate the country to a higher level of importance and help it evolve into an ever more influential regional player and growing world power.

The main aspect that attributes this potential to KC-390 is the possibility of involving foreign partners in its development, something that can bring together the countries of the region in a joint project executed in national soil.

The aircraft design resulted from the Embraer's development project will belong to the Brazilian government, while Embraer will be the lead technical and industrial partner. This has as a direct consequence that future talks in order to join the program will be conducted at a government-to-government level, whereas the process of adding "risk sharing" partners will be a top-down process that results in directives handed down to Embraer.

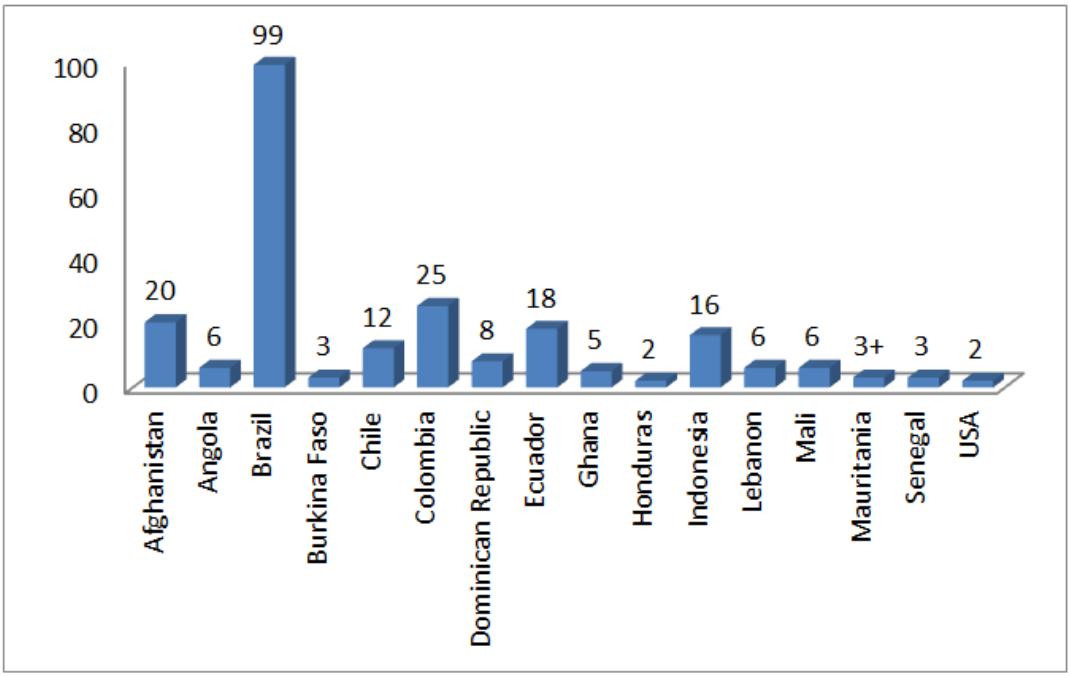
This is a rather complicated procedure for the reason that if the partners selected by the Brazilian government fail to perform on an industrial level, then they will be eliminated from the program. The aforementioned structure creates a relatively complicated decision-making mechanism, which is directed by two different entities (Brazilian Government - Embraer).

Including Brazilian order, a total of sixty units were ordered by Chile, Portugal, Czech Republic, Argentina and Colombia. Portugal, Czech Republic and Argentina are Brazilian partners in the KC-390 program.

Another important product of Embraer is Super Tucano. Regionally, Super Tucano is mainly used by the air forces of Latin and Central American countries. Nevertheless, with the exception of Europe and Australia, countries from all the other continents are currently operating the aforementioned aircraft or they will in the near future.

In Colombia the aircraft is used for intense internal security operations. In Dominican Republic, the aircraft is providing internal security and helping counter illegal activities. In Brazil, Super Tucano is providing border security and helping counter illegal activities. In Ecuador the aircraft is flying advanced training and operational missions, whereas in Chile is providing tactical training and intelligence, surveillance and reconnaissance missions.

Super Tucano Operators



Number of Super Tucano's Operated (Currently or in the Near Future) by Country

In addition to military aircraft, Brazil also produces and exports, in a lesser extent, naval equipment. One such example is the export of seven Macae-class patrol boats in late 2014 to the Angolan Navy. Four of the vessels were planned to be constructed in Rio de Janeiro by Brazil's Empresa Generencial de Projectos Navais (EMGEPRON).

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

Non-destructive Testing (NDT) apparatuses calibration services for the aerospace and defence industry

A company specializing in the sales and servicing of non-destructive testing apparatuses, running a NAT-accredited MSZ EN ISO/IEC 17025:2005 calibrating laboratory, is proposing - in the frame of an offset program - collaboration with a prime contractor or a third party active within the NDT market, in order to provide its services, as a certified NDT apparatus calibration center for Eastern Europe.

For Further Information Contact our ICO Department

Mail at: g-menexis@epicos.com

Machining services of ferrous and non-ferrous materials for the aerospace sector

A company specializing in the supply of parts and services for the machining industry, is willing to collaborate with a Prime Contractor or a third party for the provision of its machining services of ferrous and non-ferrous materials, to be used in several applications within the aerospace industry.

For Further Information Contact our ICO Department

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Airbus Exceeds Targets in 2015 – Delivers the Most Aircraft Ever

Airbus has exceeded its targets for 2015, achieving a new record of 635 aircraft deliveries for 85 customers of which 10 are new. These deliveries comprise: 491 A320 Family aircraft; 103 A330s; 27 A380s; and 14 A350 XWBs. This production achievement means that Airbus' aircraft deliveries in 2015 were up for the 13th year in a row, surpassing the previous year-end delivery record of 629 aircraft – set in 2014. Airbus also achieved 1,036 net orders from 53 customers (of which eight are new), comprising 897 single-aisle aircraft and 139 widebodies. At 2015 year-end the overall backlog had climbed to a new industry record of 6,787 aircraft valued at US$996.3 billion at list prices.

Fabrice Brégier, Airbus President and CEO said: "This commercial and industrial performance unequivocally proves that global demand for our aircraft has remained resilient." He adds: "In 2015 Airbus has also laid firm foundations for the future, increasing the capability and variety of the aircraft which we can offer to our customers."

Overall, 2015 has been a year of solid and wide-ranging Airbus accomplishments. For example, the A320neo was certified by the aviation authorities on both sides of the Atlantic just five years after its launch. In addition, Airbus delivered 14 A350s – making good its pledge to the airlines who are now benefitting from the world's most efficient and advanced airliner. Important progress was also made on the A350 programme's next variant, the A350-1000 – whose major components and structures are now taking shape across various production sites. Likewise, parts are now in production for the first A330neo – with the machining of its first engine pylon and centre wing-box components. In addition, there has been good news for the flagship A380, 10 years after its first flight, with the programme breaking-even for the first time.

Another notable highlight was of course September's official opening of the first Airbus factory in the US, at Mobile on Alabama's Gulf Coast, where between 40 and 50 A320 Family aircraft will be produced annually by 2018. On the other side of the globe in China, additional orders for the A330 not only complements our plans for a new A330 completion and delivery centre in Tianjin, but also helps to smooth our transition towards the A330neo. Furthermore, in 2015 Airbus launched three new incremental aircraft developments which include: the Long-Range version of the A321neo which will offer true transatlantic operation; the Regional version of the A330 which is optimized to seat up to 400 passengers on missions up to 3,000nm; and the Ultra-Long-Range version of the A350-900, capable of 19-hour flights.

Headquartered in Toulouse, France, Airbus is the leading commercial aircraft manufacturer with the most modern, comprehensive and efficient family of airliners, ranging in capacity

from 100 to more than 500 seats. Employing some 55,000 people, Airbus champions innovative technologies and has sold over 16,300 aircraft to around 400 customers worldwide. Airbus has design and manufacturing facilities in France, Germany, the UK, and Spain, as well as subsidiaries in the US, China, Japan, India and in the Middle East. In addition, it provides the highest standard of customer support and training through an expanding international network.

For Further Information Click Here

Rheinmetall to Supply Royal Thai Army with Four Air Defence Systems

For the first time ever, the Royal Thai Army has awarded Rheinmetall a major contract for air defence technology. The multi-million euro order encompasses four latest-generation Skyguard systems. In all, the Group's Swiss subsidiary Rheinmetall Air Defence will be supplying Thailand with four Oerlikon Skyguard 3 fire control systems and eight 35mm Oerlikon GDF007 Twin Guns. The order also includes Rheinmetall's tried-and-tested and unique Ahead airburst ammunition and additional services.

For Rheinmetall Air Defence, the Royal Thai Army is another new customer in Asia who introduces a 35mm air defence system. Rheinmetall thus attaches great commercial importance to this recently awarded contract.

In the domain of cannon-based air defence technology, Rheinmetall is the global leader and the sole single-source supplier of battle management systems, fire control systems, automatic cannon, integrated missile launchers and Ahead ammunition. One of the company's core competencies is the development and manufacture of advanced air defence systems as well as simulators and training systems.

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Epicos NewsRoom

Saab to Provide Additional Deliveries for U.S. Army's Combat Vehicles

Defence and security company Saab has been awarded the fourth and fifth options of a multi-year contract for deliveries of laser-based training system for U.S. Army's armoured combat vehicles. The order value of USD 32 million was booked by Saab as order intake in December 2015.

The Combat Vehicle Tactical Engagement Simulation System (CVTESS) indefinite delivery/indefinite quantity (IDIQ) contract was signed with the U.S. Army in 2012. It consists of this order and further options that can be exercised over a time period of five years with a potential total order value of USD 90 million.

Since 2012, CVTESS has provided the U.S. Army with the next–generation of laser-based training systems for its armoured combat vehicles. The system supplies a highly accurate, laser-based simulation of the combat vehicle weapons used on all M-1 Abrams Main Battle Tank and the Bradley Fighting Vehicles (BFV) variants, including opposing forces vehicles.

"Saab's CVTESS is on the cutting edge of force-on-force training technology. With more than 3,000 vehicle systems fielded to the U.S. Army, we are proud to continue supplying our military with a proven solution for their training needs", said Cyndi Turner, General Manager of Saab Defense and Security USA's Training and Simulation division. CVTESS is easy to install and maintain, reducing the cost and time of combat vehicle training. Its highly realistic combat scenarios and after-action reports provide soldiers with the experience and knowledge necessary to be safe and effective in the field. Saab has delivered laser-based training systems to the U.S. Army for the Abrams tanks and BFVs since 1988.

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Saab Defense and Security USA LLC delivers advanced technology and systems to United States armed forces and other government agencies. Headquartered in Ashburn, Virginia, the company has business units and local employees in four states. Saab Defense and Security USA is a wholly owned subsidiary of the Saab Group. Saab Group 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

Pratt & Whitney to Deliver Final Production F117 Engine to the U.S. Air Force

Pratt & Whitney will deliver the final production F117 engine to the U.S. Air Force for its C-17 Globemaster III fleet later this month. A ceremony commemorating delivery of 1,313 production engines will be held later today at Pratt & Whitney's engine center in Middletown, Connecticut, and will include representatives from the U.S. Air Force and Boeing. Pratt & Whitney is a United Technologies Corp. (NYSE:UTX) company.

"This is a bittersweet occasion for those of us who have played a part in developing and delivering the F117 engine to our customers over the years," said Bennett Croswell, president, P&W Military Engines. "The F117 production engine program might be ending, but we look forward to working with our customers around the world to sustain their engines and to keep the C-17 fleet flying for decades to come."

Pratt & Whitney's F117 engine is a member of the company's PW2000 family of commercial engines, known for powering the Boeing 757. Four F117 engines power the C-17, and each engine is rated at 40,440 pounds of thrust which enables the aircraft to carry a payload of 164,900 pounds and fly 2,400 nautical miles without refueling. The F117 engine first entered service in 1993. With more than 12 million hours of proven military service and 50 million hours in commercial use, F117/PW2040 engines have consistently proven to be world-class dependable engines. Through Pratt & Whitney's ongoing investment in product improvements, the engine continuously surpasses established goals of time on-wing and support turnaround time.

"The legacy of this production program is defined by world-class engine reliability and dependability, which would not have been possible without the talent and dedication of the present and past Pratt & Whitney employees," said Brig. Gen. Stacey T. Hawkins, director of Logistics, Engineering and Force Protection for the U.S. Air Force Air Mobility Command. "The U.S. Air Force relies on the C-17 to enable our global mobility mission. The fact is, the workhorse C-17 and its F117 powerplant ensure we are able to project power around the globe during times of conflict, or to deliver aid and comfort in times of crisis."

F117 engines power nine C-17 fleets around the world, including the Royal Australian Air Force, the British Royal Air Force, the Royal Canadian Air Force, the Qatar Emiri Air Force, the United Arab Emirates Air Force, the Indian Air Force, the NATO Airlift Management Programme, and the Kuwaiti Air Force in addition to the U.S. Air Force.

ABOUT PRATT & WHITNEY

Pratt & Whitney is a world leader in the design, manufacture and service of aircraft engines and auxiliary power units. United Technologies Corp., based in Farmington, Connecticut, provides high-technology systems and services to the building and aerospace industries. To learn more about UTC, visit its website at www.utc.com, or follow the company on Twitter: @UTC.

Source: Epicos, Pratt & Whitney

Northrop Grumman to Provide LN-200S for Lockheed Martin's Satellite Bus

Northrop Grumman Corporation has been awarded a contract from Lockheed Martin Corporation to supply its LN-200S fiber-optic Inertial Measurement Unit (IMU) for the LM 300 satellite bus.

The LN-200S is a small, lightweight navigational element that senses acceleration and angular motion, providing data outputs used by vehicle control systems for attitude control and guidance. The IMU is hermetically sealed and contains no moving parts, ensuring low noise, dependability and an extended shelf life.

"The LN-200S is a low cost, reliable IMU with significant space heritage," said Bob Mehltretter, vice president, navigation and positioning systems business unit, Northrop Grumman Mission Systems. "This IMU is especially ideal for the burgeoning small satellite market due to its affordability, small size, light weight and low power consumption."

The LN-200S heritage can be traced back 20 years to its qualification for flight aboard the Clementine spacecraft. Since then, a wide range of space missions have depended on the IMU to provide reliable inertial data. The LN-200S has successfully performed on many spacecraft, including NASA's Curiosity, Spirit and Opportunity Mars rovers, as well as satellites in geosynchronous and low Earth orbits. The Coriolis spacecraft, built by Orbital ATK and launched in January 2003 with two LN-200S IMUs, continues to perform its mission in low Earth orbit. The primary IMU has far exceeded its life expectancy and requirements by providing continuous data since launch — avoiding the need to utilize the backup LN-200S IMU on the spacecraft.

Northrop Grumman is a leading global security company providing innovative systems, products and solutions in unmanned systems, cyber, C4ISR, and logistics and modernization to government and commercial customers worldwide. Please visit www.northropgrumman.com for more information.

Source: Epicos, Northrop Grumman

Lockheed Martin Team Delivers Second Lightning Tracker for NOAA Weather Satellite

Lockheed Martin delivered the second Geostationary Lightning Mapper (GLM) instrument that will provide earlier alerts of severe storms and contribute to more accurate tornado warnings. The sensor will fly on the second next-generation Geostationary Operational Environmental Satellite, known as GOES-S, for the National Oceanic and Atmospheric Administration (NOAA). The Lockheed Martin team successfully completed assembly, integration, test and delivery of the second GLM instrument only 13 months after the first delivery.

“We reduced the build and test time of this complex instrument by 40 percent compared to the first unit,” said Jeff Vanden Beukel, Lockheed Martin GLM program director. “Now that development is complete, we are able to reduce delivery time so the GOES program can serve our nation with more accurate weather information.”

A rapid increase of in-cloud lightning can precede severe weather on the ground. GLM tracks that activity and gives faster warning plus more precise location information versus current systems. It does this by tracking lightning flashes from geostationary orbit, with continuous coverage of the United States and most of the Western Hemisphere. The heart of the GLM instrument is a high-speed (500 frames per second), 1.8 megapixel focal plane, integrated with low-noise electronics and specialized optics to detect weak lightning signals, even against bright, sunlit cloud backgrounds. It was developed at Lockheed Martin’s Advanced Technology Center in Palo Alto.

GOES satellites are a key element in NOAA’s National Weather Service operations, providing a continuous stream of weather imagery and sounding data used to support weather forecasting, severe-storm tracking and meteorological research. The GOES program is managed and operated by NOAA, and NASA’s Goddard Space Flight Center manages GLM instrument development. The team is preparing GLM for integration on the GOES-S spacecraft at Lockheed Martin’s facility near Denver.

Headquartered in Bethesda, Maryland, Lockheed Martin is a global security and aerospace company that–with the addition of Sikorsky–employs approximately 126,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services.

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For Further Information Click Here

Source: Epicos, Lockheed Martin

ManTech Awarded Potential $200 Million Contract for Defense and Intelligence Community Modernization Support

ManTech International Corporation has been awarded a contract by the Department of Defense to support the defense and Intelligence Community's growing needs for modernization. ManTech will provide integration, systems engineering, sustainment, and deployment support worldwide. The award is for a base period of 1 year, followed by 4 option years. The total projected value is more than $200 million.

"ManTech is proud to support critical missions around the globe," said L. William Varner, president of ManTech's Mission, Cyber & Intelligence Solutions Group. "Our experts have modernized some of our nation's most critical infrastructure and look forward to enhancing our technical and security posture."

About ManTech International Corporation

ManTech is a leading provider of innovative technologies and solutions for mission-critical national security programs for the Intelligence Community; the Departments of Defense, State, Homeland Security, Energy, Veterans Affairs, and Justice, including the Federal Bureau of Investigation; the health and space communities; and other U.S. federal government customers. We provide support to critical national security programs for approximately 50 federal agencies through approximately 1,000 current contracts. ManTech's expertise includes cyber security; command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) solutions and services; information technology (IT) modernization and sustainment; intelligence/counter-intelligence solutions and support; systems engineering; healthcare analytics and IT; global logistics support; test and evaluation; and environmental, range, and sustainability services. ManTech supports major national missions, such as military readiness and wellness, terrorist threat detection, information security and border protection. Additional information on ManTech can be found at www.mantech.com.

Source: Epicos, ManTech International Corporation