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**Special Focus: Electro-Optical Systems**

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“Theon Sensors is the Number One producer of Night Driver Viewers based on image intensifier in the world. In addition to this product, Theon also produces state of the art weapon sights using unique key technology such as interchangeable ballistic reticules as well as Night Vision Sniper Clip-On sights, monoculars and goggles”, said Mr. Vassilis Savvaides, General Manager of THEON Sensors, in an exclusive interview given to Epicos.

➤ Could you please describe the current place of THEON Sensors in the national and international market?

Theon Sensors is the leading supplier of Night Vision Equipment to the Hellenic Armed Forces. Additionally, is constantly expanding its presence in the international market.

➤ What are the main business areas in which THEON Sensors is activated?

Theon Sensors main business areas are Night Vision Systems based on Image Intensifying Technology. Furthermore in 2005, the MEMS (Micro Electro-mechanical Sensors) was founded opening up a second technological area for Theon Sensors.

➤ What are the main products that THEON Sensors is manufacturing?

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➤ What are the main technological advantages of the company's products?



Theon Sensors' products are all designed to Mil Spec using highest quality and performance standards.

➤ Is there a specific country or region that the company would like to expand?

Theon is currently active on 5 continents and pursues business opportunities around the world.

- Could you please name the main customers of THEON Sensors?

Theon Sensors is active around the world with business in countries such as Australia, Austria, Belgium, Chile, Greece, Portugal, the Netherlands, Spain, Kuwait, UK, USA and other countries.

- Is the company currently investing in a new technology?

Yes, Theon Sensors R&D department is constantly improving the existing product range while developing new systems taking into account the latest available technology trends.

- What are the next steps and priorities of THEON Sensors?

The company will try to create new night vision and thermal imaging products. Additionally, we will try to further expand our international sales.



- Theon sensors participated in the Eurosatory exhibition in Paris. Would you describe your presence there as a success?

Theon Sensor's presence was certainly a great success. Many new contacts were signed there and several visitors of the exhibition admired the products of Theon.



THEON Sensors is a Greek company and one of the leading global designer and manufacturer of Electro-Optical systems for defence and security applications as well as micro sensing systems that can measure air flow and pressure based on Micro-Electronic Mechanical Systems (MEMS), for medical,

industrial, consumer goods and aerospace applications. Furthermore, THEON Sensors, in cooperation with other international ventors, has acted as a lead systems integrator to deliver specialized systems to support mission-critical end-user requirements. The company was incorporated in 1997 in Athens and currently is located in privately-owned facilities (1200 m<sup>2</sup>) at Koropi, near the new Athens International Airport, with enough space to accommodate further growth.

The company has modern development, production and quality control tools to support its production, design and development operations. In order to accomplish its task, it has extensive know how and highly sophisticated advanced optical, mechanical & electronic CAD and simulation software tools. Manufacturing and development operations are supported by a fully equipped machine shop using multi axis CNC centres, a wide range of test stations for detailed measurements of day, night and thermal subassemblies, (e.g. MTF), environmental chambers, wire and die bonders and clean rooms (class 100, 1.000, 100.000 ) for assembly and integration of silicon based micro systems.

Quality is a prerequisite for THEON Sensors something that is highlighted by the fact that the company is maintaining a quality assurance system in accordance with ISO-9001:2000. The manufacturing facilities and the personnel have NATO Security clearances for defence related projects.



Additionally, the company's products are designed and manufactured with the highest levels of workmanship and materials in order to meet the demanding requirements and conditions of their use.

THEON Sensors provides products in the following areas:

- Aiming and Observation Day and Night Sights
- Driver's Night Viewers
- Systems for Observation, Range finding and Target Locating
- Light Intensifying Systems
- Thermal Imaging Systems
- IR Assemblies
- Opto-mechanical assemblies for laser designators and rangefinders
- Mass Air Flow sensing micro-systems for medical, consumer goods and aerospace applications

- Capacitive Pressure sensing micro-systems for medical, consumer goods and aerospace applications
- Value-Added Services: Consulting, Design, Training

In electro-optics, THEON Sensors offers a family of image intensified driver's viewers for several types of armored vehicles and main battle tanks. With special-to-the-vehicle bracket



assemblies the basic design can be fitted to almost any kind of vehicle. (e.g. M113 A2 - M113AS, Leonidas, PzH 2000, Piranha, Leguan AVLB, Leopard 1 and Leopard 2). Theon's 4X and 6X magnification night vision weapon sights for a variety of individual and crew served weapons are low-weight, small-dimension and offer excellent bore-sighting retention and performance under all light conditions.

For Further Information about THEON Sensors' electro-optical products Press [Here](#)

In MEMS, THEON Sensors is the first privately owned Greek fabless design house focused on the development of silicon based Micro - Systems (MEMS) to IC analog and mixed signal systems. Its business and commercial orientation, ensures the establishment of flexible and interactive relationship with potential clients, in order to produce, develop and integrate innovative custom made systems solutions.

The MEMS engineering team is in the position to bring to the global market new products due to its in house developed technologies or technologies that have been developed and used under license by domestic and international academic and research institutions.

For Further Information about THEON Sensors' Micro - Systems (MEMS) products Press [Here](#)

THEON's leading position as a designer and supplier especially in the area of electro-optical systems in Greek has been earned due to its focus on innovation, quality, cost effectiveness and superior value for its customers. By building upon its corresponding expertise, and in reaction to today's customer requirements for an all-around support during the complete product life cycle, Theon offers a comprehensive bundle of services aimed at creating the necessary environment in which its customers will achieve the optimal return for their investment.



Epicos "Project Opportunities" 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](#)

### **Comprehensive military shooting training system based on optoelectronic technology.**



A company specializing in the design and manufacture of optoelectronic devices for a wide range of applications is proposing the implementation of small arm shooting training system for the armed forces. The system will comprise of training management facilities, training methods, related equipment and software in indoor and outdoor facilities (basic, range and field shooting). The system design is using a progressive method that also provides further instruction for training personnel and covers complete range of small arms.

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

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**Optical Supercomputing: Second International Workshop, OSC 2009, Bertinoro, Italy, November 18-20, 2009, Proceedings, by Shlomi Dolev (Editor), Mihai Oltean**



This book constitutes the refereed proceedings of The Second International Workshop on Optical SuperComputing, OSC 2009, held in Bertinoro, Italy, in November 2009. There are 18 revised full papers presented together with 1 invited lecture were carefully reviewed and selected from numerous submissions for inclusion in the book. The workshop is an annual forum for research presentations on all facets of optical computing for solving hard computation tasks, OCS addresses the following topics of interest: designs of optical computing devices, algorithmics and complexity issues of optical computing, computation representation by photons and holograms, neural and brain inspired architectures, electro-optic devices, practical implementations, analysis of existing devices and case studies and many more.

**Liquid Crystals: Viscous and Elastic Properties in Theory and Applications, by Sergey V. Pasechnik, Prof Vladimir G. Chigrinov and Dina V. Shmeliova (Author)**



It is hard to believe that only 50 years ago liquid crystals were out of practical applications and considered mostly as specific intermediate state of matter interesting for basic science. Nowadays, the aforementioned technology is very important. This book is covering numerous practical applications as yet not covered in any single source of information, this monograph discusses the importance of viscous and elastic properties for applications in both display and non-display technologies. The very well-known authors are major players in this field of research and pay special attention here to the use of liquid crystals in fiber optic devices as applied in telecommunication circuits.





### Russia to market 300 warplanes domestically, abroad by 2015

FARNBOROUGH, July 20 (RIA Novosti) - Russia is to sell around 300 MiG- and Su-family warplanes at home and abroad by 2015, Sukhoi and MiG companies said on Tuesday. "Three hundred Su and MiG family warplanes are to be delivered to the domestic and foreign market by 2015 - approximately 40% for the Russian Defense Ministry and the other 60% for export," the general director of both companies, Mikhail Pogosyan, said.

**Source:** Ria Novosti

### Thai airline to buy at least 12 SSJ100s from Russia's Sukhoi

FARNBOROUGH, July 20 (RIA Novosti) - Russia's Sukhoi Civil Aircraft and Thailand's Orient Thai Airlines signed on Tuesday a memorandum of intent on the delivery of 12 Sukhoi Superjet 100 aircraft and an option on 12 more airliners. The contract, expected to be signed in late 2010, would see a significant part of the Orient Thai Airlines fleet made up of Russian-built aircraft. At present the company owns 11 McDonnell Douglas MD-80s and four Boeing-747s. The SSJ100s are to be delivered between 2011 and 2014. The SSJ100 is a family of medium-haul passenger aircraft developed by Sukhoi in cooperation with U.S. and European aviation corporations, including Boeing, Snecma, Thales, Messier Dowty, Liebherr Aerospace and Honeywell. On Monday, Sukhoi Civil Aircraft and Indonesia's regional carrier Kartika Airlines inked a \$951 million contract for the delivery of 30 SSJ100s. The contract is a solid order for 30 airplanes to be shipped between 2012 and 2015. Kartika CEO Kim J. Mulia said SSJ100 would help fill a "regional niche" on Indonesia's carrier market because most national airlines were focused on larger-capacity aircraft.

**Source:** Ria Novosti

### NATO to stay in Afghanistan after Afghans take over security

NATO chief Anders Fogh Rasmussen told a major international conference in Kabul on Tuesday that the alliance would remain in Afghanistan even after Afghans take over responsibility for security.



Afghan President Hamid Karzai says his government is working to take full responsibility for security in the war-torn country by the end of 2014 and Tuesday's conference is seeking to lay out a roadmap to Afghan leadership.

Rasmussen said transition would be based on "conditions, not calendars" with NATO forces working to train Afghan police and army to take the lead in protecting the country from a nearly nine-year Taliban insurgency.

"Transition will be done gradually -- on the basis of a sober assessment of the political and security situation, so that it is irreversible.

"And when it happens, international forces won't leave; they will simply move into a supporting role," he said.

"We have not come this far, at this cost, to falter just as we see our common goal take shape."

**Source:** 2009 AFP, Agence France-Presse (AFP)

#### **GE Capital Aviation Services orders 60 A320 Family Aircraft**

GE Capital Aviation Services (GECAS), the commercial aircraft leasing and financing arm of General Electric [NYSE: GE], has signed a firm order for 60 additional A320 family aircraft. This new order brings the total number of A320 family aircraft ordered by GECAS to 327 and the backlog of aircraft to be delivered to 99 aircraft.

"We're pleased to announce the growth of our A320 fleet with this new order today," said Norman C.T. Liu, president and CEO of GECAS. "We have a solid track record of placing A320s with our customer base across the world."

"GECAS' order is a further demonstration of the strong demand for the A320 family and underlines its attractiveness to leasing companies, who are returning to the market with full steam," said Tom Enders, Airbus President and CEO. "The low operating costs and proven high dispatch reliability offered by the A320 family make it the preferred choice for operators in all sectors, and a strong asset for the GECAS portfolio."

GECAS customers will be able to select the Sharklet option for aircraft to be delivered from the end of 2012. Sharklets have been developed to enhance the eco-efficiency and payload-range performance of the A320 family resulting in at least 3.5 percent reduced fuel burn over longer sectors.

Airbus aircraft share a unique cockpit and operational commonality, allowing airlines to use the same pool of pilots, cabin crews and maintenance engineers, bringing operational flexibility and resulting in significant cost savings.

The A320 Family, which includes the A318, A319, A320 and A321, is recognised as the benchmark single-aisle aircraft family. More than 6,500 Airbus A320 Family aircraft have been sold to more than 310 customers and operators worldwide, making it the world's best selling commercial jetliner ever. With proven reliability and extended servicing periods, the A320 Family has the lowest operating costs of any single aisle aircraft. Uniquely, the A320 Family offers a containerized cargo system, which is compatible with the world-wide standard wide-body system.

**Source:** Epicos, Boeing

### **Asian air travel demand boosts Boeing, Airbus at Farnborough**

Aircraft manufacturers awaited more orders Tuesday at the Farnborough Airshow, a day after it took off with rivals Boeing and Airbus netting 23 billion dollars in new contracts.

A rush of orders for 192 short- and long-haul passenger jets worth a total of 23.3 billion dollars (18 billion euros) marked the start of the show, as airlines and leasing firms sought to meet soaring Asian demand for air travel.

The biggest single order came from Dubai airline Emirates for 30 Boeing long-range 777 aircraft worth a combined 9.1 billion dollars.

General Electric's aircraft leasing unit agreed to buy 40 single-aisle 737-800 planes worth 3.0 billion dollars from US aerospace giant Boeing.

GE Capital Aviation Services also bought 60 A320 single-aisle planes with a catalogue price of 4.5 billion dollars from Boeing's fierce European rival, Airbus.

Airbus won a 4.4-billion-dollar order from new US group Air Lease Corporation (ALC) for 51 A320 jets while Russian airline Aeroflot confirmed it was buying 11 long-haul Airbus A330-300 carriers worth 2.3 billion dollars.

"The leasing companies are looking, to not only an upturn in Western European and US markets, but they are also seeing the opportunity in emerging markets," independent aviation analyst John Strickland told AFP.

"There's strong demand for aircraft coming through from not only the Middle East but other parts of Asia and in particular China so getting those aircraft on the books now... really is placing them in a strong position to take advantage of that upturn and the growing economies in the years to come."

Although the 192 planes ordered Monday are together worth more than 23 billion dollars, customers traditionally receive large discounts on the list price of each plane when the orders are of a certain size.

Emirates' huge order came only a month after the airline agreed to spend 11.5 billion dollars on 32 Airbus A380 superjumbos -- the biggest single contract in civil aviation history.

The Farnborough International Airshow near London is one of the aviation world's biggest trade events and renowned for being an arena for major deal announcements.

Defence will also be in focus Tuesday at the event, which traditionally sees the announcement of orders for military jets. But with governments set to slash defence budgets to help reduce huge public deficits, major deals may be scarce.

Boeing will be hoping to secure more orders here for its mid-sized 787 Dreamliner -- a fuel-efficient jet which will be on display in Farnborough after making its first flight outside of the United States on Sunday.

The plane, which can fly very long distances and seat up to 330 passengers, has been beset by production delays.

Jim Albaugh, chief executive of Boeing Commercial Airplanes, said on Sunday the company hoped to deliver the first Dreamliner to launch client All Nippon Airways no later than January.

Airbus is working on a new long-haul plane of its own -- the A350 XWB (Extra Wide Body).

**Source:** 2009 AFP, Agence France-Presse (AFP)