

Nepal & Saudi Arabia - 2 new countries on list of customers

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FEINDEF as a platform for EW challenges in Hispanic region

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ERA obtained Golden IDET prize for its PET simulator

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## ERA LAUNCHED NEW PRODUCT ERIS AT WATM IN MADRID



ERA Company along with its subsidiary ER-SYS, presented ERIS, the new ATM and ATC system for ground surveillance and control at medium-sized and regional airports for the first time at the World ATM Congress 2019 held in Madrid, Spain, in March.

ERIS represents a product family of Air Traffic Management systems designed for Air Traffic Control and flight planning of civil and military operations. ERIS is based on a modern sophisticated and modular design that has been developed in compliance with ICAO and EUROCONTROL standards.

ERIS's modular architecture and scalability enable individual and optimal site-specific

tailoring and easy integration into various ATC environments. ERIS in conjunction with ERA's NEO multi-sensor surveillance system represent the complex solution for ATC controllers.

The system is designed for 24/7 continuous operation with its configuration depending on the given use case. The key features include Multi-sensor Data Fusion, Flight Data Processing, Safety Nets, Integrated Situational Data Presentation, Complex Supervision and Monitoring, and Recording and Analysis tools. The use cases of ERIS range from a solution on ACC or APP level to a Common Ground Surveillance System (CGSS) for regional airports.

> MORE ON ERIS AT PAGE 4

## ERA REPORTED RECORD-BREAKING FINANCIAL RESULTS

ERA had a profit of ca 380 million Czech crowns last year with total revenues of almost one and a half billion. The impressive economic results are the best in its quarter century long history.

The company reported revenues to a total amount of € 55,700 thous. and an accounting profit to an amount of € 14,800 thous. for the financial year 2018. This consists of a new record for the 25 years and the fifth in a row after the similarly successful years 2012, 2014, 2015 and 2016.

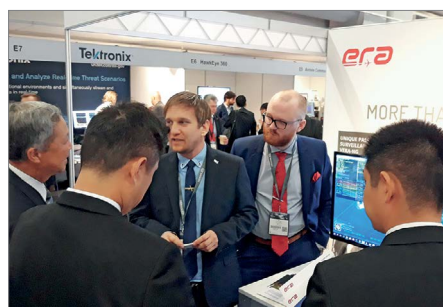
"The unique electronic warfare system VERA-NG, "the flagship" in ERA's portfolio, has attracted yet more military customers and together with the substantially growing amount of contracts in the civil sector we have sold our systems to 65 countries in all," stated ERA Managing Director Viktor Sotona.

The company now has five branch offices in the Czech Republic and five in Slovakia; and 420 employees, one third of them focused on research and development activities.

ERA has also continued the process of strengthening its market offerings with more complex ATM solutions than just sensors: systems for medium-size airports, Command and Control systems for air defence, flight incident investigation tools for air traffic control authorities and drone zone planning applications for other air space users.

## ERA PARTICIPATED IN EW EUROPE IN STOCKHOLM

ERA as traditionally contributed to EW Europe, an Electronic Warfare exhibition and conference, this time in Stockholm. There is no doubt about the importance of the EW domain in today's conflicts, with the key also being its impact across other military areas which require more tight cooperation between industries, the military, and the governments of free world nations. Sweden is one excellent example and thus the



event enjoy the exceptional success with 80 exhibitors and a busy conference programme.

EW cross-domain impact and training was also an ERA topic for this event. ERA at its stand presented a unique and comprehensive EW Simulator as a means to easily, and in a short time and with less effort prepare EW personnel for passive surveillance sensors which is of high demand at present.

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# ERA WILL PROVIDE ADS-B COVERAGE OF AIRSPACE IN NEPAL

ERA has been awarded a contract to deliver an ADS-B system monitoring the airspace over the Federal Democratic Republic of Nepal. ERA is proud to add Nepal as the 64<sup>th</sup> country to the list of its partners using ERA surveillance technologies.



ERA will supply three ADS-B stations as the surveillance system and partly as the Air Traffic Control solution for three airports: Bhairahawa Airport, Nepalgunj Airport and Dhangadhi Airport. The fourth station placed on Mount Phulchoki will cover Kathmandu Tribhuvan International Airport and the surrounding area.

The contract was assigned by Civil Aviation Authority Nepal (CAAN), the local ANSP this

cover a major part of their air space with up-to-date technology to provide surveillance coverage throughout the country (except the Himalayas) and obtain control of air traffic in TMAs of four important airports including the one for the capital Kathmandu. To meet this challenge, ERA will cooperate with the primary contractor Pacific Commercial Co.

Ltd. to deliver ERA's surveillance system NEO, a composite solution of multilateration and ADS-B.

The Nepali team has chosen the suitable locations for the ADS-B stations, one of them as high as 2 400 metres above sea level on Mountain Station near Tribhuvan International Airport. The final completion, followed by the Site Acceptance Tests, is planned for August and the system should go operational at the end of this year.

The proposed net of four ADS-B stations will work as part of the certified mature multi-sensor surveillance system with the prospect of extension to a Wide Area Multilateration system. The system has a robust system design, enhanced signal detection, reduced power consumption and should be international standards compliant (ED-117, ED 142, ED 129, ICAO Annex10 volume IV, etc.

## ON ADS-B TECHNOLOGY

ADS-B represents dependent information on data from the aircraft's navigation system, ADS-B equipped aircraft broadcast their GNSS positions once per second. The information includes the aircraft's identification, altitude, speed, velocity, etc.

ERA SYSTEM WILL ALSO MONITOR AIR TRAFFIC OVER THE NEPAL CAPITAL KATHMANDU.

„ERA scored the highest on the evaluation criteria and thanks to its experience in the deployment of surveillance solutions in neighbouring states India and China.“

Ondřej Jebálek, ERA Sales Manager

January as a result of a tendering process, which ERA successfully won in 2018.

„ERA scored the highest on the defined evaluation criteria and thanks to its experience in the deployment of surveillance solutions in neighbouring states India and China. The references were one of the key factors in selecting us for this project“, stated Ondřej Jebálek, ERA Sales Manager.

One of the priorities of CAAN has been to





# ERA HAS SIGNED A NEW CONTRACT TO PROVIDE COUNTRY-WIDE ADS-B SYSTEM PLUS THREE WAM SYSTEMS FOR SAUDI ARABIA

**E**RA announced the awarding of a contract to supply its composite multilateration and ADS-B system NEO for nationwide ADS-B coverage for the Kingdom of Saudi Arabia airspace. The system will also serve as a Wide Area Multilateration solution providing coverage of airspace for three regional airports. The ERA system is able to handle extreme climate environments under all operational capacities and has therefore been chosen for the high outdoor temperature prevailing in this region. Saudi Arabia amounts to the 65<sup>th</sup> country on the list of ERA customers.

The contract was signed by Saudi ANSP Saudi Air Navigation Services (SANS) this April. The project called Kingdom Wide ADS-B and WAM has two parts:

- The ADS-B project involves the delivery of 12 dual ADS-B stations in order to provide the entire country with FIR coverage. The CPS of the ADS-B system will be placed in Jeddah and the data distributed to Riyadh and Jeddah ACC centres and SANS HQ. The sites for installation of the ADS-B sensors include radar sites, communication sites and airport towers, etc., all in the property of SANS.



- The WAM project consists of three WAM nets of NEO system stations providing surveillance for Abha Airport (6 GS), Hail Regional Airport (5GS) and Qassim International Airport (5GS). Additional parts of the project include training of local staff and safety.

NEO is part of the family of ERA worldwide tested and tried multi-sensor systems, its ground station architecture is built to perform

under harsh outdoor conditions, particularly extreme temperatures. The stations are completely dust proof to handle the typical local environment of hot dry deserts.

The project shall be implemented within 18 months from the contract signature, in the autumn of 2020. ERA will cooperate on the project with the local subcontractor, who will be responsible for the equipment installation and local project management activities.

## ERA'S PROJECT FOR DAXING IS LISTED UNDER THE CZECH-CHINA MAJOR COOPERATION PROJECT LIST

**T**he Ministry of Industry and Trade of the Czech Republic and the National Development and Reform Commission of the People's Republic of China have included ERA's project for Daxing airport under the Bilateral Cooperation Plan to jointly coordinate and monitor the implementation of the project within the Frame Work of the Belt and Road Initiative and the Memorandum of Understanding. The Memorandum was signed during the second Belt and Road Forum in Beijing on 28 April 2019 as part of the visit of the Czech President Miloš Zeman.

Chinese authorities have repeatedly placed their trust in ERA technologies to ensure safe operations in rapidly growing airports. The CAAC China has issued the Permit Certificate which makes the company the



only manufacturer with permission to deliver multilateration surveillance systems and vehicle tracking systems to Chinese ANS.

Over the last 2 decades, ERA has reached a number of more than 100 installations of its systems, deployed in 65 countries on 5 continents. ERA's systems increase safety for passengers at 20 out of the 50 most important airports in the world and many others including five Chinese airports:

Beijing, Shanghai, Changsha, Zhengzhou and currently Daxing/Beijing.

Now ERA is installing its NEO multi-sensor surveillance system at the "meant to be largest" airport in the world in the Beijing southern quarter of Daxing. The airport has six runways and a supposed capacity of 130 million passengers per year. ERA has been selected by Chinese CAAC as a well-established partner with an excellent reputation thanks to the previous ERA system, which prepared the capital for the 2008 Olympics a decade ago. ERA then installed its tried and tested system for surface surveillance and parallel runway monitoring at Beijing Capital International Airport and remarkably increased the airport's throughput and safety for the thousands of visitors of the summer 2008 Olympics.

# ERIS - THE ALTERNATIVE ATM AND ATC SYSTEM FOR MEDIUM-SIZED AIRPORTS

ERA recently launched its new product ERIS, the ATM and ATC system for ground surveillance and control at medium-sized and regional airports. ERIS represents a product family of Air Traffic Management systems designed for Air Traffic Control and flight planning of civil and military operations. ERIS in conjunction with ERA's NEO multi-sensor surveillance system provides the complex solution for ATC controllers.



- ERIS ATM – Air Traffic Management System - a solution for Approach Control Service (APP) or Area Control Service (ACC)
- ERIS A - Alternative Common Ground Surveillance System and ATC/ATM solution for TWR
- ERIS C2 – Air Command and Control System for military operations
- ERIS DSD - Distributed Surveillance Data System

ERIS's modular architecture and scalability enable individual and optimal site-specific tailoring and easy integration into various ATC environments. The use cases of ERIS range from a solution on ACC or APP level to a Common Ground Surveillance System (CGSS) for medium-sized and regional airports.

ERIS is based on a modern sophisticated and modular design that has been developed in compliance with ICAO and EUROCONTROL standards. The system is designed for 24/7 continuous operation with its configuration depending on the given use case. The key features include Multi-sensor Data Fusion, Flight Data Processing, Safety Nets, Integrated Situational Data Presentation, Complex Supervision and Monitoring, and Recording and Analysis tools.

## ERIS PRODUCT PORTFOLIO

The newly introduced ERIS system, depending on ATC operations, is provided as:

### ERIS ATM

ERIS Air Traffic Management is an information system designed for radar and procedural air traffic control on all types of ATC centers.

The ERIS ATM system is modular. It allows tracking and evaluating the movement of air objects and fulfilling special functions depending on the location and the way of its

particular implementation. High system reliability and availability is ensured by backing up major servers, using dual LAN and SUSE Linux Enterprise High Availability Extension technology.

### ERIS A

ERIS Alternative Common Ground Surveillance is an information system designed to detect objects (airplanes, vehicles, or persons) moving in defined areas of an airport.

The system ensures the creation of data and voice recordings and their archiving for at least 30 days. Records can be used to rebuild the air situation, but also for data analysis and statistics. It allows not only to monitor the current status of all system components,

but also to monitor their history, evaluate the criticality of defects and the reliability of the system as a whole.

#### Features:

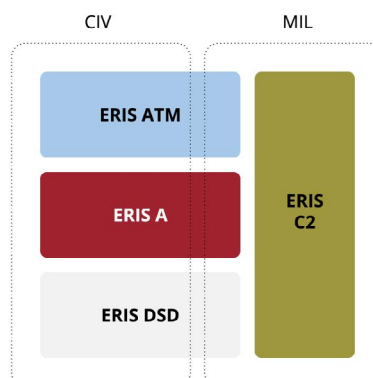
- Airport traffic control at the airport's operating and apron areas
- Presentation of surveillance output data and related flight information
- Airport Safety Support Services: RIMCAS, CATC, CMAC
- Video presentation of surveillance information

### ERIS C2

ERIS Command and Control is an information system designed to support command and control of air forces at operational and tactical levels, enabling planning and implementation of air and GBAD operations.

### ERIS DSD

ERIS Distributed Surveillance Data is an information system designated for receiving, filtering, processing, fusion and control of ASTERIX like data flow on a scale of country where the system is implemented to the single communicated nodes. All data is recorded automatically and can be monitored. The records can then be used retrospectively to analyze or compare data with the reference trajectory.





## VERA'S ELINT CAPABILITIES AT FEINDEF IN MADRID



Peacekeepers, primarily from Hispanic regions, inaugurated the International Defence and Security Exhibition FEINDEF held in Madrid, the capital of Spain, in May. Several prominent Czech producers of military solutions demonstrated their commitment to the community by participating in the first edition of FEINDEF under the umbrella of CzechTrade, the government trade promotion agency of the Czech Republic.

ERA's team at the FEINDEF fair in Madrid featured its latest developments in passive detection and the ELINT capabilities by sharing knowledge with their military prospect users. A range of defence organizations dis-

covered, for example, that VERA-NG complements surveillance capabilities since it is a distributed and completely silent system that provides accurate target information within a 400 km area of interest. Air-picture experts who visited the ERA stand agreed that a PSR or equivalent radar equipment, although accurate and with impressive range, is very vulnerable due to the electromagnetic emissions. A country depending solely on such active systems is prone to sudden attacks even in Electronic Warfare and VERA-NG is an important surveillance asset to tracking potential threats inclusive when active radars are neutralized or beyond coverage.

Central and South American armed forces surveyed the technological capabilities for detecting low-flying targets serving traffic of illegal commodities. ERA's expertise on passive detection introduced the means to track non-emitting targets by using existing 30 to 300 MHz radio emissions which physically reflects on aircraft surfaces.

FEINDEF has been a place to reach an understanding of the challenges of air surveillance from different nations. ERA is committed to advising best practices on passive detection to prospective armed-forces in Hispanic nations and across the globe thanks to their expertise of over 54 years.

## ERA PRESENTED ITS NEW C2 SYSTEM ERIS AT AD CONFERENCE

ERA and its parent company OMNIPOL took part in the PVO 2019 annual conference in Brno in April 16 – 17. The 20<sup>th</sup> year of the traditional event was organised by the Department of Air Defence Systems at the club of the Faculty of Military Technology of the University of Defence in Brno. This year the highlight topic was Evolution of Three Air Defence Pillars: C2-Sensors-Effectors for 21<sup>st</sup> Century Threats and Challenges. Thus ERA experts Rudolf Zmrhal and Tomáš Lipták lectured on ERA's newest SW system ERIS in presentation called "ERA Integrated Systems: From Sensors to Runway and Missile".

ERA participated as one of the partners along with other prominent producers of defence and security technologies such as IAI, Saab, ELTA, Rafael, Lockheed Martin, URC and



Retia. ERA consultant general Bohuslav Dvořák was also present to support the task.

The Department of AD Systems is tasked with preparing university-graduate specialists of Air Defence Troops for the combat utilization of weapon systems and Air Defence units, using automated command and control systems.

## ERA - SECOND TIME PART OF "PROPED 2019" IN BUDAPEST



ERA was honoured to participate in A Project of Economic Diplomacy called "PROPED" that took place at the Czech Embassy in Budapest at the beginning of April 2019.

ERA appreciated the opportunity of an official event organized by the Embassy, where Czech companies accompanied by the Defence and Security Industry Association of the Czech Republic (DSIA) could provide a short presentation for their Hungarian counterparts. The presence of the Czech defence industry was almost double compared to the same event in 2017, which demonstrates an opportunity for Czech companies.



ERA expert Jakub Thomas had a presentation to demonstrate the company's capabilities in civil Air Traffic Management as well as in military domain.

"We feel that the timing of this event was very good taking into account the modernization program of the Hungarian Defence Forces called Zrínyi 2026. We realized that there is a strong use case for implementation of the passive surveillance system called VERA-NG for the Hungarian Air Forces," stated Head of Sales Jakub Thomas.

# ERA OBTAINED THE GOLD AWARD FOR ITS VERA-NG SIMULATOR WITHIN THE MILITARY AND SECURITY FAIR IDET

ERA developed yet another extension in performance of its VERA-NG system. It was introduced to public within the IDET international exhibition in Brno at the end of May.

ERA exhibited its training simulator for Passive ESM Trackers at IDET exhibition held at Brno Exhibit Showground on May 29-31 and the international jury has awarded it Gold IDET Prize as one of the five best exhibits. The managing Director of ERA Viktor Sotona then took part of the awarding ceremony at chateau Austerlitz nearby where the crystal plaque and diploma were passed to his hands. Another prestige prize has gone to one of the three co-founders of ERA company Mr. Vladimir Kubecek, in memoriam.

Vladimir Kubecek is remembered as one of the remarkable pioneers of passive surveillance systems in the Czech Republic. He spent 20 years working for ERA predecessor Tesla Pardubice as an expert in this field, the worldwide known systems Ramona and Tamara were developed in his R&D department. In 1994, after the fall of communist regime he co-founded new company ERA and managed it as its first technical director. The award for life long achievement by the Defence and Security



Industry Association was handed over to its son, Vladimir Kubecek, jr., accompanied by his sister Gabriela Kubecek.

## ABOUT TRAINING SIMULATOR

The training simulator is a military reconnaissance tool, which provides training of passive emitter tracking systems and electronic warfare. The simulator significantly decreases the time needed for new users to obtain experience without affecting the performance of the operational system.



## ERA PARTICIPATED IN EW EUROPE IN STOCKHOLM

### CONTINUED FROM PAGE 1:

On top of that, the scenario prepared in the EW Simulator fit with the Swedish background and helped to explain during conference contribution the cross-domain role of Passive ESM Tracker (PET) VERA-NG in support of Air Defence (AD).

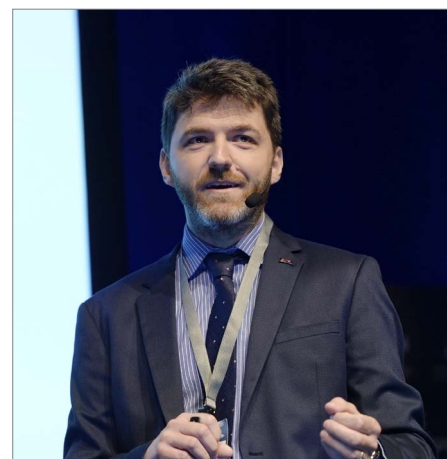
The contribution provided by Vojtech Stejskal explained how the PET sensor, with its unique properties, can support the Ground-Based Air Defence (GBAD) units in an absolutely passive manner over the entire GBAD cycle.

In addition, how can several levels of integration support different GBAD tasks and

how efficient can a combination of the active (radar) and passive (PET) component be against modern threats.

ERA thanks to its new simulator can deliver various scenarios reflecting the following themes or ERA experts can create any scenario on demand to create situations which might be extremely rare or almost impossible to find in the real environment, such as: navigation flights, dog fights, AWACS monitoring or border crossing.

The training can be carried out using data from prepared scenarios for targets of all kinds – airborne, maritime or ground in different battlefields and terrains.





# LIFE OF ERA COMMUNITY IN PHOTOS



THE NEWLY ESTABLISHED HONORARY CONSULS OF DOZEN COUNTRIES VISITED ERA HEADQUARTERS TO BECOME FAMILIAR WITH CZECH PASSIVE SURVEILLANCE SYSTEMS.



IN CONNECTION WITH ITS CORPORATE RESPONSIBILITY PROGRAM, ERA SUBSIDIZES THE PROJECTS OF SVÍTÁNÍ ELEMENTARY AND PRACTICAL EDUCATION SCHOOL FOR CHILDREN WITH SPECIAL NEEDS.



ERA EXPERTS TOOK PART IN ZOFIN FORUM IN PRAGUE FOCUSED ON THE LATEST ACQUISITIONS OF CZECH ARMED FORCES.



ERA EMPLOYEES JOINED THE 9TH ANNUAL CZECH CHALLENGE „BIKE TO WORK“. THEY CREATED TEAMS AND REGULARLY TRAVEL TO WORK ON A BIKE, INLINES OR SKATEBOARD.



ERA IS WELL KNOWN PARTNER OF CHARITY PROJECTS FOR ELDERLY AND HANDICAPPED PEOPLE HELD BY NON-PROFIT ORGANISATIONS IN THE REGION.





## MEDIA COVERAGE - ERA IN NEWS

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