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M28B BRYZA

The M28B BRYZA is a high-wing cantilever monoplane featuring a non-pressurised cabin, twin vertical tails, a non-retractable tricycle, fuselage-mounted landing gear with a steerable nose wheel.

The type is a versatile, transport category airplane with a short takeoff and landing capability (STOL). The airplane is flown by a crew of two pilots (pilot-in-command and a co-pilot). For civil-aviation operations, the airplane has been type-certificated by Poland's General Inspectorate of Civil Aviation, while its military configurations have successfully undergone all State qualification testing required.

A variety of equipment that can be installed on board the airplane translates to its versatility. It can be operated in the following mission configurations:

- passenger transport, featuring fixed seats and a lavatory
- cargo transport, equipped with cargo hoisting and restraint systems
- medevac/ambulance, fitted with stretchers, airborne medical equipment and medical attendants' seats
- paradrop, with equipment providing for parachuting operations
- patrol/reconnaissance for search & rescue and oversea patrol missions.

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py planes for Poland

Americans plan to sell UAV, to Poland. The Pentagon informed US Congress about it, which is obligatory.

It will be Shadow 200 RQ-7B UAV, which is being in use in war with terrorism. According to Reuters, Poland would like to use it in NATO and EU led operations. Value of the purchase (together with additional equipment) amounts approx. 73 mln USD.

New transport planes from Spain



Two CASA C295 M medium transport planes will be delivered to Poland by Spanish EADS this year.

180 mln PLN (approx. 60 mln USD) contract was signed by Mr. Marek ZAJĄKAŁA - Secretary of State in Polish MoD and Mr. Antonio R. BARBERÁN - CEO of Spanish EADS. Higher price is the effect of installation of expensive electronic equipment on board. Similar equipment will be installed on the older Polish Armed Forces CASA planes.

PZL Świdnik helicopters are already in the Army.

Two of the first SW-4 Puszczyc training helicopters were already delivered to the Military Pilots School in Dęblin. Army plans to buy tens



of these machines.

Helicopters have been completely designed and built in Świdnik factory, which is unique in the world's scale, because today, new constructions are created by international consortiums of the biggest producers. SW-4 multipurpose helicopters with 457 hp Rolls-Royce Allison engine are able to transport up to 5 people. Their maximum speed is 280 kph, and their range on single fuel tank is 800 km. They can operate by day and night. One piece of SW-4 in basic version costs approx. 1 mln USD.

Engines from WSK Rzeszów for the F-16s

Already 27 pcs of S 100 PW229 engines for 48 F-16 planes bought by Poland were sent to the Lockheed Martin Texas factory by WSK Rzeszów.

Factory in Rzeszów assembles powerful and currently the most modern propulsions for fighter planes. They are assembled of the US components, but WSK Rzeszów also adds their own parts e.g. all fuel, air and oil pipes. Engines have to pass test in Military Aviation Plants No. 4 in Rembertów before sending to Lockheed Martin Forth Worth factory. Military Aviation Plants No. 4 is the only company outside the USA, which has rights to test and confirm quality of the Pratt&Whitney F-16 engines.

Polish helicopters for Italy.

On the January 10th, 2007, Sikorsky Aircraft became owner of the Polish Aviation Factory in Mielec. Competition next to the helicopter factory in Świdnik, forces Augusta Westland company, which is involved in Świdnik's production, to strengthen its position in Poland.

British-Italian Agusta strengthens its presence in PZL Świdnik. Corporation orders increase and component export value exceeds half of the PZL Świdnik income. Agency for the Industrial Development which is the Świdnik's owner, expects capital involvement from Agusta.

Italian group which has 11,5 bln USD income in the 2006 and employs 56 000 employees, already has the agreement with the Agency, which gives Świdnik exclusive rights for selling joint products in our part of Europe.

Świdnik's owner considers tightening capital ties between PZL and Agusta. Italians are interested in taking over approx. 20% of the PZL. E.g. exchange of the shares between Agency and Finmeccanica is being considered. PZL Świdnik needs new investments. Company might be strengthened by raising the capital.

VIP planes

Till the end of 2007 producers of planes have time for presenting offers for deliveries of six luxury planes most important people in Poland.

Quarter of million USD tender was announced by Military Property Agency. New planes for traveling mostly in Europe have to be delivered till the end of 2008. Till then producer, as the part of the contract, has to secure two "flying limousines" for the VIPs, which will fill the gap after withdrawal Yak-40 planes.

Sikorsky took over Polish Aviation Factory from Mielec

Sikorsky Aircraft, the American potentate on January 10th, 2007 became officially owner of Mielec factory. Initial of document was at the end of December 2006.

PZL Mielec was bought for approx. 10 mln USD announced Mr Jeffrey P. PINO., President of the Sikorsky Aircraft. In the same time he assure that there is completely no connection between buying PZL Mielec and preference for Sikorsky Aircraft in tender for deliveries of new helicopters for the Polish Armed Forces and Health Service. Army plans to buy approx. 85 heavy transport helicopters and Ministry of Health looks for 23 light helicopters till the end of 2010. Total value of contract will be probably approx. 4 bln USD. Sikorsky will invest around 45 mln USD, mainly in starting production of UH-60 Black Hawk military helicopters' hulls. Americans will also pay the debts of the Mielec factory.



Bumar's helicopters

Bumar sold used Mi-8 helicopters to the Polish Army. These helicopters were overhauled in Russian Petersburg factory.

Value of contract and its conditions are kept in confidence both by Bumar and the MoD. Used helicopters were ordered in Bumar a year ago by Iraqi government. After obtaining and modernising in Russia 7 pcs of helicopters, Iraqis changed the order and decided to buy new Mi-17 helicopters via Polish company. Used helicopters which were owned by Bumar were offered to the Polish Army. These are checked helicopters, equipped with stronger engines compare to the Mi-8s currently in use by the Polish Armed Forces. After equipping in modern communication equipment and additional armour they will serve with Polish soldiers in Afghanistan.



F-16 on landing gears made in Krosno

Goodrich Krosno, producer of parts for Boeing passenger planes, F-16 and F-18 fighters and e.g. Gulfstream planes, earned 23 mln USD on aircraft parts export.

This year Goodrich will install specialist machines for processing new materials for building military planes, and will also employ next tens of people.

WSK Rzeszów - the best.

WSK Rzeszów light propulsion components factory, which was deeply modernised in the recent years, owned by Pratt & Whitney is currently the best production facility of the American company. This fact came of the audit evaluating quality, punctuality of deliveries and work conditions.

Parts of made in Rzeszów engines' turbines, fuel and air pipes, gear boxes are being installed in majority of P&W engines. Rzeszów is also the only place outside the USA where F-16 engines are assembled. The company employs 46 000 people. In the last year Rzeszów employed 350 people and plans to employ another 400. ■

STRATEGIC PARTNER

PERSPECTIVES OF CO-OPERATION BETWEEN POLISH AND INDIAN INDUSTRY ON THE FIELD OF ARMAMENT

Polish-Indian co-operation has started in the early 1960s.

Till 1980 export of armament and military equipment reached 115 mln USD. During all this years Poland exported to India 300 T-55 and T-54 tanks, 100 wheeled armoured fighting vehicles SKOT, 4 landing crafts, 50 TS-11 ISKRA planes and arms and spare parts for armoured, naval and air military equipment. Poland also maintained planes sold to India.

Payment for air and naval equipment was made as a part of multiyear, low interest, governmental credit, and the payments were done in cash.

Years 1981-1988 were the golden age for Polish-Indian co-operation. During this time Poland outdistanced many competitors on the Indian market. Export from Poland to India reached 250 mln USD.

During this years India bought in Poland 162 pcs. of technical support vehicles WZT-3, 2000 pcs of ant-tank guided missiles 9M14M „MALUTKA", 12 000 pcs of 122 mm GRAD ammunition, 100 T-72 engines, 50 AV-LB (Armoured Vehicle - Launched Bridge) BLG-60M, R-123M Radio stations and R-124 communication systems. Poland was still supplying spare parts for military equipment and was maintaining TS-11 ISKRA.

**ARV-3
Armoured
Recovery
Vehicles**

Additionally Poland supplied to India full technological lines for production of small calibre ammunition and took part in T-54/T-55 tanks modernisation programme. Poland also took part in starting license production of T-72 tanks.

After 1988 deliveries of new weapons and military equipment from Poland to India rapidly shortened. Only already contracted supplies were continued.

Main factors of lowering of turnover were:

- change of the form of agreements from clearing to foreign currency settlements
- reduction of competitiveness of Polish offer in comparative to other suppliers
- reduction of Indian funds for military purchases
- reduction of purchases of final products from abroad by India in favour of domestic production based on licenses or own projects.

In 1990s Poland made attempts to interest Indians with joint modernisation of T-72 tanks, joint production of self-propelled howitzers cal. 155mm, radio location systems, landing crafts, or aerospace programs. Only some of them were realised.

In the middle of 1990s India showed interest in making Polish-Indian joint ventures, producing modern weapons and military equipment for Indian Armed Forces and for export. Common readiness for revitalisation of defence industries and technical-scientific co-operation of both countries, make an opportunity for frequent visits of military and governmental delegations from Poland and India in appropriate countries (in years 1991-2000 4 delegations of Indian MoD and Armed Forces visited Poland, and 3 Polish MoD's delegations visited India).

More intensified contacts between Poland and India on field of the defence resulted in increase of export of Polish arms to India and start of joint production programs. In 2001 Poland won a tender for supplying technical support vehicles ARV-3. In 2002 Poland won a tender for , the next part of ARV-3 and parachutes for Special Forces. Construction and modernisation services of TS-11 ISKRA were still a leading product.

There are also positive effects of Polish-Indian



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defence industry co-operation started by Polish Defence Consortium (joint initiative of PZL Mielec, Huta Stalowa Wola and Bumar Labedy). Przemysłowy Instytut Telekomunikacji - producing e.g. passive detection systems - together with Bharat Electronic Limited (BEL) from Bangalore made new radio-location station on BEML chassis, for Indian Armed Forces. Thanks to co-operation between PHZ BUMAR and Bharat Enginery Marat Ltd., supplies of ARV-3 for India became possible. The deliveries of the ARV-3 were successful, but the cooperation between partners is still ongoing.

Are there chances for mutually beneficial cooperation between India and Poland? Of course there are. Poland, after transformation in 1990s is specialised in modernising of Soviet / Russian - origin weapons or produced on licences and Russian technologies. We offer to Indian partner our experiences and modernisation projects of T-72 MBT and of other products basing on T-72 chassis. We lead in modernisation of KRUG, KWADRAT and NEWA missile systems, reconnaissance vehicles BRDM-2 and infantry fighting vehicles BWP.

We believe it would be possible to start co-operation in producing ammunition (e.g. 125mm sub-calibre ammunition) on the world market as there is a big need for large quantity of such products. It would be also reasonable to co-operate in production of new family of antitank missiles, which are in use by the Polish Armed Forces since 2005.

Polish offer could also include such systems like: 122mm missile ammunition FENIKS, portable anti-aircraft missiles GROM and 35mm anti-aircraft guns. Polish missiles, "cousins" of Russian Igla, haven't been intensively promoted on the foreign markets yet, but their effectiveness

isn't worse than STINGERS'. Oerlikon guns (for which Poland bought license) are standard equipment of many NATO countries. Another interesting solution, on the world's scale, is anti-aircraft system LOARA, currently being introduced to the Polish army.

Fire control and command artillery systems also could be the opportunity for bilateral co-operation. Modernisation of C4I systems also becoming most important priority for army and air forces. There are already some solutions in Poland for air forces and mobile systems for the army, made by RADWAR and military facilities in Czernica and Zegrze.

Poland is open for co-operation in shipyard, aerospace and electronic branch. We're leading producer of landing crafts, logistic ships and mine destroyers. In 2002 we started building modern corvettes for Polish Navy. In aerospace industry, opportunity for Polish-Indian co-operation could concern reconnaissance planes PZL-28 BRYZA and transport PZL-28 SKYTRUCK, modernisation of TS-11 ISKRA and joint production of its successor IRYDA. We could offer also radiolines and modern battlefield communication systems. Our strongpoint is offer of supplies and joint development of logistics equipment, including soldier's personal equipment.

Above examples do not fulfill all opportunities for Polish-Indian co-operation on field of armament. It would be also important to start some joint projects of export to third countries. The most important factor in planning of the cooperation on field of armament is realisation, that goals of modernisation programs are similar in both countries and join investments in armament production programs may increase chances, for our producers, for receiving more orders. It is also positive in terms of sufficient level sustaining of employment. Optimal way for increasing effectiveness in armament production is consolidation and making international structures. Our countries should reach common approach to this problem.

Currently some of the Polish companies try to create some new Joint Ventures with Indian partners.

A few years ago Polish-Indian Joint Working Group on Military Cooperation has been established. Its main scopes are military cooperation and defence industries cooperation. Last meeting took place in April 2006 in Poland when delegation of the Indian Ministry of Defence led by Skri K.P. SINGH, Secretary, Department of Defence Production visited Poland. The next meeting of the group will take place in India in March 2007. Also, this year Polish Prime Minister will visit India to conduct talks related, among the others, to defence industry. Creating of Joint Working Group and incoming visit of the Prime Minister shows our approach toward India as a strategic partner and very important player in the World. ■

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New Radios from RADMOR SA.



**R3505 TACTICAL
 HANDHELD
 RADIO**

Radmor is the biggest manufacturer of radio communication equipment in Poland. We offer military and civil equipment suitable for building state-of-the-art different radio communication systems.

This year Radmor is going to launch production of two new radios.

R3505 TACTICAL HANDHELD RADIO

Radio R3505 is a modern radiocommunication mean operating in a wide frequency band 20-520 MHz, equipped with a few kinds of analog and digital modulations.

It substitutes a number of classic radios and radiotelephones used by Armed Forces and civilian services, dedicated to operations in a single frequency band and adapted to one transmission mode.

Radio ensures:

- tactical communication in a frequency band 20-520 MHz according to STANAG 4203, 4204, 4205 standards
- modulation of AM, FM, FFSK, GMSK, QPSK
- interoperability among land, navy and air forces and communication with civilian services: the Police, Fire Departments, Medical Rescue, Crisis Management Centre

Radio 3505 integrates existing radio communication standards enabling:

- voice transmission
- data transmission
- GPS position reception and transfer
- signal conversion among radio networks (re-transmission)

Radio allows:

- programming voice and data transmission protocols by the user
- configuring radio parameters using build-in keypad
- programming system configuration and radio parameters using a Fill Gun
- cloning system configuration and radio parameters between radios
- configuring system and usable parameters over the air (OTAM - Over The Air Management)
- automatic transmission of alarm signals with report on present geographical position (GPS data)
- correspondent identification
- individual and group selective calling
- creating re-transmission sets
- creating vehicle sets
- connecting additional power amplifiers
- remote controlling with all functions from PC or tactical terminal

R35010 PERSONAL ROLE RADIO

The R35010 radio is dedicated for operation in small area radio networks and enables two way half duplex communication at a distance of up to several hundred meters in an open terrain. The communication can be kept on 16 radio channels within the 2405 MHz ÷ 2480 MHz frequency band. The radio is intended for use as soldier personal equipment.

The radio permits the following types of radio communication:

- half duplex digital voice: open and enciphered
- data transmission

R35010 radio co-operates with other radio of the same type in Direct Sequence Spread Spectrum (DSSS) mode with audio signal data packets burst transmission (in accordance with the modified 802.15.4 IEEE standard).

The transceiver unit co-operates with wireless headset (microphone and headphone) and with the wireless PTT switch using the Frequency Hopping Spread Spectrum (FHSS) system.

Each radio operating in the network has its own unique digital address and frequency hope pattern used in the FHSS communication between the transceiver unit and the wireless headset and wireless PTT switch.

To reduce probability of detection and interception of the radio operation, to save the energy and to eliminate mutual interference between individual units the transmitters of all radio equipment are being switched on periodically (burst operation) for possibly short time in the way excluding simultaneous transmission of two transmitters in one set.

The radio enables:

- co-operation of the transceiver unit with the wireless headset and switching the transmitter on by voice controlled PTT (VOX)
- handheld operation (without the headset and external PTT switch)
- co-operation of the transceiver unit with the headset and PTT switch using the cable connection
- full duplex operation in the TDMA mode with not more than four users speaking simultaneously
- connection to mobile object intercom network as an access point
- blocking of the radio over the air (OTAZ - Over The Air Zeroing)

BASIC TECHNICAL DATA

Frequency band:

2405 ÷ 2480 MHz (ISM band) ¹⁾

Number of users at full duplex: 4

¹⁾ According to the 802.15.4 IEEE standard

BASIC EXPLOITATION PARAMETERS

Range in an open terrain: 500 m

Range of the set component devices: 2 m

Operation time (Tx/Rx/S'By = 1/7/16): 24 h

Power supply battery type: nickel-zinc; R6

Dimensions):133 x 68 x 25 mm

Weight: 280 g

The radio meets the environmental requirements according to the MIL STD 810F standard.

TECHNICAL SPECIFICATIONS

Frequency band: 20÷520 MHz and GPS signal reception

Channel spacing: 5.0, 6.25, 8.33, 10.0, 12.5, 25 kHz

Number of programmed channels: 100

Modulation: FM, AM, QPSK, FFSK, GMSK

Voice transmission: analog, digital CVSD 16kbps

Data transmission: up to 64 kbps

Data interfaces: RS232E, USB

Dimensions (with battery pack): 210x80x43 mm

Weight: 500 g

Weight with battery pack: 900 g

Power supply: 7,2 V

TRANSMITTER CHARACTERISTICS

Output power: 0.1-5 W (FM)

Harmonic radiation: -50 dBc

RECEIVER CHARACTERISTICS

Sensitivity: FM <0.5 μ V 12 dB SINAD

AM <1.5 μ V 10 dB SINAD

Squelch: noise, tone 150 Hz

Audio output power: 400 mW

Radio meets requirements of MIL-STD-810E

and WPN-84/N-01001÷01008 (for group N14), i.a.:

-30 ÷ +60°C

Operational temperature range:

-40 ÷ +70°C

Extreme temperature range:

immersion-proof under 1 m of water for 2 hours

Water tightness:



**R35010 PERSONAL
ROLE RADIO**



Telecommunications Research Institute: from concept to delivery

Poland's defense industry is capable to deliver modern solutions for own and foreign military needs. What became the driving factor of progress in all kinds of arms and services is development of advanced sensors and command and control systems.

**Weapon
Locating Radar
WLR 100 -LIWIEC**

The Warsaw-headquartered Telecommunications Research Institute (Przemyslowy Instytut Telekomunikacji, PIT) is active in the both main streams of R&D aimed at home defense and recently also at export.

For over 70 years of its activity in the area of defense electronics PIT has created and firmly established position as a leading

Polish R & D center in military radar and microwave technologies. The large part of in-service home air defense radar equipment includes PIT's solutions. PIT has delivered three L-band long range radars to cover a part of the NATO backbone surveillance network in Poland; this large project is about to be completed. The PIT's air defense line of products



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The home air defense is integrated, controlled and commanded by four sector operation centers, conceived and delivered by PIT. The C2 concepts and technology has been developed at PIT for forty years. PIT's experience both in sensors and C2 systems allows for flexible integration of Poland-based systems with NATO systems at the required interoperability level.

PIT has been appointed as the focal organization for the Polish Industrial Group in framework of TIPS Consortium in AGS NATO project. It is also involved in Industry Group for NATO "Alliance Shield".

PIT has been recognized as an important supplier of original solutions for the sea surveillance of the Polish Navy. Maritime patrol aircrafts are equipped with PIT-made sea surveillance radar with SAR mode. The capability of the aircraft has been recently enhanced by combination of PIT-developed antisubmarine warfare systems, ESM/RWR to create an effective surveillance unit.

Telecommunications Research Institute has proposed a family of Low Probability of Detection (LPI) radars dedicated for sea coast surveillance, but also for sea navigation, air-base surface control, as well as battlefield radars for infantry.

In line of Army request for increased digitization of battlefield, a command and control system for corps/division/brigade tactical operations has been proposed to Polish Armed Forces. This C2 system provides the common operation picture, controls the information flow between the tactical levels, allows the use of digital staff maps to generate the staff plans, orders and regulations. The system can be integrated into the NATO command networks.

To keep the supplies of subassemblies and components unperturbed, PIT has developed its own line of microwave wave tubes and microwave ferrite elements.

The Telecommunications Research Institute is a state owned R&D center having around 800 employees. PIT is not just an institute: its activity covers full product development line, from concept, through manufacturing to delivery and logistic-support. PIT is also capable of keeping international cooperation at various levels and in numerous areas. ■

**Air Forces
Command
and
Control
Systems**



**Telecommunications
Research Institute**

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THE SCOPE OF ACTIVITIES:

- Air Armament
- Logistics Systems
- Safety and Reliability
- Unmanned Aerial Vehicles
- Airfield and Road Infrastructure
- Training Systems, including E-learning
- Biocomponents in POL's Engineering Products
- Designing and Integration of Aeronautical Systems
- Substitute Fuels, Working Liquids and Lubricating Oils

THE UPGRADING OF AIRCRAFT AND HELICOPTERS**OBJECTIVE:**

Introduction of a new integrated avionics system and airborne instruments that meet the requirements of the modern battlefield.

THE SCOPE:

- Precise navigation based on the ins, gps, vor/dme/ils/mrk/tacan, and air data unit (adu)
- Head-up display (hud) with a rear-cockpit repeater, and multi-function displays (mfd)
- Moving and rotary digital map
- Communication system, incl. the wide-band radio station
- Digitally managed armament system extended with some selected components of simulated air weapons
- The whole system integrated with mil-std-1553b airborne digital data bus employed
- Remote flight monitoring system (including the on-line transmission of selected flight data to a ground station)
- Modified cockpit architecture and a new cockpit-abandoning system with modern ejection seats

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- Certificate of the Quality Management System, consistent with the NATO **AQAP-2110** and the **PN - ISO 9001** standards;
- The NATO Commercial and Government Entity (NCAGE) Code **0481H**;
- The Internal Audits System No. **W-45/1/2006** in the field of scientific research to support operation/maintenance of military aeronautical systems;
- The State concession No. **B-404/2003** granted by the Ministry of the Interior & Administration;
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WB Electronics is the leading system integrator and manufacturer of specialized electronics equipment for Command and Control applications in Land Forces. The company main areas of activity are software development, system integration, design and manufacturing of computers, terminals and communication devices and maintenance of deployed systems as well. WB Electronics is also involved in training simulations for the military. To meet most demanding customer needs the company employs staff of over 50 highly qualified engineers with vast experience in development and design of devices and systems conforming to severe military standards.

WB Electronics specializes in high-tech solutions for battalion and below bringing power of integrated multifunctional system providing on-the-move, real time battle command information reaching tactical combat, combat support and combat service support leaders and individual soldiers on the battlefield. Traditional stronghold of WB Electronics is the integrated Fire Control and Command System for artillery. FCS is multi service, automated command and control system of mobile, versatile communication nodes providing automated planning and execution capabilities to Field Artillery Command Post, Battery Command Posts, Forward Observers and individual guns. Such solutions are referred to in literature as C4I systems - Command, Control, Communication, Computer and Intelligence Systems. Presently we are experiencing rapid

increase of demand for these systems in military community worldwide.

In 1994 Polish Ministry of National Defense commissioned from WB Electronics the research and development project for Artillery Fire Command System - TOPAZ, to bring Poland's artillery assets to international standards. The modernization approach had been taken relying on implementation of modern communication and software. TOPAZ system has been successfully introduced to Polish Army Land Forces and fielded throughout the country in number of artillery regiments on 122 mm, 152 mm platforms. TOPAZ is the advanced field artillery tactical data system supporting the following field artillery functional areas: Command & Control, Fire mission Planning, Fire mission execution, Movement control, Field artillery fire direction operations, Fire mission security, reconnaissance and surveillance and inventory. TOPAZ has universal modular hardware and software structure allowing further modification, re-developing the system for different platforms and command levels making possible its deployment in Fire Support Coordination Centers and integration with advanced C4I systems up to division level.

Furthermore, WB Electronics manufactures range of rugged military computers, terminals, cable communication devices, vehicular crew communication devices, allowing integration of virtually any mobile and fixed voice and data communication set-up with network control functionality, unique parameters and flexibility. FONET intercom system can be installed in any track



or wheeled vehicle, to provide communication foundation to be used in Battlefield Management System. FONET, the digital, software controlled and VoIP enabled intercom is the perfect solution for communication applicable to diverse military platforms ranging from MBT's, self propelled guns and HMLV's to complex command and EW vehicles.

WB Electronics is also present in the UAV market with its mini-UAV named SOFAR. The SOFAR UAV is the compact system for short range image intelligence applications. SOFAR provides reliable real time surveillance due to the high quality video transmission. It can be easily used for over the hill surveillance, special operations, fast reaction needs or urban operations. SOFAR the mini-UAV is also designed for reconnaissance missions to be the BMS or FCS extension.

As a result of multiple development cycles WB Electronics has gained unique expertise and is capable of integrating advanced IT devices to be deployed on the battlefield - sensors, UAV's, robots. The company develops specialized driver software for various communication assets and sensors and incorporates them into integrated communication and Battlefield Management Systems.

At the moment WB Electronics has in its portfolio more than 20 diverse IT and communication devices with documentation fully approved by the Ministry of National Defence in Poland (NATO member since 1999). The products offered by the company can be used for modernization programs of armed forces throughout the world assuring leap in technology at minimum cost.

WB Electronics has been four times awarded the DEFENDER prize for best product at International Defence Industry Exhibition in Kielce.

WB Electronics is a private owned enterprise with high growth potential, offering a wide range of services and products in accordance to professional Quality Management Systems.

The company expertise in advanced technologies allows it to compete successfully with the worldwide renowned companies



The SOFAR mini UAV

in terms of quality and prices. WB Electronics is flexible and ready to undertake non-standard projects. The company is able to respond quickly and allocate engineering resources to meet customer specifications involving dedicated software and hardware development. The company guarantees to customers the best quality of development and craftsmanship. To ensure this WB Electronics performs in accordance to ISO 9001 and AQAP 2110 standards, which the company is certified to. ■

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DD-9620 T Vehicle Terminal (Tablet PC)



WE ARE EFFECTIVE

Polish Chamber of National Defence Manufacturers was established on 11th September 1995 and is the eldest selfgoverning economical organisation in Poland in defence branch. The Chamber represents economical interest of its members on field of their production, service and commercial activities, especially in front of the governmental bodies.

Because of its range, status and achievements the Chamber is still the organisation, which represents matters of defence companies the best.

The statue's obligation of the Chamber are: initiating activities for improving the technological level and quality standards of products manufactured by the companies - national defence suppliers, activating co-operation efforts, inspiring efforts aimed at increasing of the domestic defence production and export, inspiring and supporting process of restructurisation and modernisation of the domestic defence industry and its preparations for integration with European structures. Important part of the Chamber's activities is expertise and opinionmaking and conducting training for representatives of Polish defence industry and facilitating their contacts with foreign partners. There is also conducted exchange of technical, organisational and commercial experiences.

Currently the Chamber has over 190 members, including private as well as state-owned companies. Among them are potentates as well as small enterprises. Since 6 years the Chamber co-ordinates majority of joint appearances of the Polish

defence industry on international exhibitions. The Chamber is the initiator of the militaryindustrial co-operation among Visegrad Group. 1st Forum of Defence Industries of the Visegrad Group 2001 in Warsaw. Except co-operation agreement with Ministry of Defence (12th August 1999), the Chamber formalised contacts with defence industry associations of some of the countries by signing separate agreements with them (e.g. with France, India, Malaysia, Indonesia, Czech Republic, Slovakia, United Kingdom, Norway, Romania, Spain, Portugal, Italy, USA, Indonesia). In 1998 the Chamber was selected for representing Polish defence industry in NATO Industrial Advisory Group (NIAG) and since December 2000 is actively taking part in the Group meetings.

Since August 22nd, 2005 the Chamber has initiated Internal Control System according to law about turnover of the products, technologies and services important for national security and also for keeping international peace and security, and

received ISO 9001:2001 and IQNet certificate (No. PL-JW-172/1/2005 valid up to August 21st, 2008). On October 20th, 2005 the Chamber received concession of Polish Ministry of Internal Affairs and Administration for special equipment turnover (No. B-062/2005), on December 27th, 2005 the Chamber received NATO Commercial and Government Entity Code (N-CAGE No. 1082H).

The Chamber also facilitates business contacts between Polish and foreign companies, helps with conducting business in arms trade and offers consulting services. ■

***PCNDM stand
for the
INDODEFENCE
2006 exhibition***



MILITARY OFFER



**R3501
Vehicle Set**



**R3501
Handheld
Radio**



**R3501
Handheld
Software
Radio**



**R35010
Personal
Role
Radio**



**AQAP 2110
ISO 9001**

Unmanned Aerial Vehicle - SOFAR

Wingspan 2.5 m

Length 1.7 m

Structure composite materials

Total weight 4.9 kg

Velocity 40 to 90 km/h

Altitude up to 1000 m

Flight range more than 15 km

Operational endurance 120 minutes



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