

Innovations in surveillance

EVPU Defence is a specialist in the design and production of fixed and mobile monitoring and surveillance systems. Produced items are used for the protection and control of borders, airports, harbours and other high security areas. Igor Valnicek, general director and chairman of the board, explains how his company is developing and expanding.

Could you provide some background on EVPU, the organisation's history and its structure?

Igor Valnicek: In June 2011, it was exactly ten years since Slovak company EVPU founded EVPU Defence. Its base in the town of Uherske Hradiste was not chosen randomly, it is known not only for its wine and traditional culture but also its long history in precision engineering, focusing on air and military, along with the production of electrical equipment.

At the very beginning, we had only a few employees and the focus was mainly on trade.

What helped us learn the needs of our customers and suppliers very early on, was working with several well-known producers of optic electronics, as well as delivering products to the Czech Army and police. We invented the double axis manipulator based on these findings.

Incorporation with our mother company was a key step for the development of EVPU Defence. Our firm changed from a mainly trading company to a production one focusing specialised engineering in the area of monitoring and surveillance long range optical systems. Today, we have approximately 50 employees, we have our own development department with specialists focusing on pan/tilt cameras as well as hardware and software for electronic devices.

The past ten years have seen EVPU Defence's dynamic expansion. By the end of 2004, we moved from small offices to a separate building with production space. Currently, our space is very limited so we decided to purchase land in the industrial zone of Uherske Hradiste. We plan to construct a new building in 2015 and then move into the new premises. The receiving of ISO 9001 and AQAP 2110 certificates was a significant moment for our company, which led to higher production quality. Our company has also changed legal status, we have passed from Ltd form and have become EVPU Defence Inc.

What advantages do your products bring to customers?

Our surveillance and monitoring systems are used mainly for the protection of borders, airports, coastal areas, ports and military bases on the towers or on vehicles. For example the basic configuration of vehicle's system consists of the special vehicle, the lifting mechanism and the twin-axis pan/tilt. The multisensor head, mounted on the pan/tilt, is equipped with an infrared (IR) camera, a colour CCD video camera, laser range finder, digital magnetic compass and GPS; this all follows the same template of other versions of surveillance and monitoring systems. This also contains a control unit with software, the radio



The SUMO class, developed and produced in EVPU Defence company, is designed to cope with demanding requirements imposed on monitoring and surveillance systems.

communication system and the recording system. In cooperation with mother company EVPU and its testing facilities, we are able to develop customised solutions according to customer requirements and make all the necessary environmental and EMC/EMI test. Our devices can operate on their own or in coordination with other equipment.

What are your main product offerings?

A lot of companies know EVPU Defence as a producer of compact and precise pan/tilt, which are all enabled for the rotation in azimuth of 360° and up to 90° in elevation; it is also very precise and able to work in harsh environmental conditions, as well as its cold temperatures.

In the mainstream, our two most well-known products are the MSO-2 and the MST-1. MSO-2 can handle up to 30kg of payload and via ethernet interface can control up to five devices. For ultra-long range surveillance system, we have MST-1, which can handle up 58kg of payload and be equipped with fibre optic gyro for stabilisation in both its axis; it can also control up to five sensors.

In small range for uncooled IR cameras, we have MSM-2 pan/tilt, which can handle up to 12kg and can control via ethernet interface up to three sensors. Finally, the smallest pan/tilt is MCM-1 micropan, this unit was developed as a handheld device.

We have complete 'family' of small and large manipulators and complete optical systems, stabilised and non-stabilised, mobile and stationary, designed for use in different



The SIRIUS class is dedicated for long observation ranges of up to 20km for the detection of a human target.

environments, from desert to marine applications. The company is also developing and producing CCD cameras. Basically, EVPU Defence has three types of these cameras according to ranges of surveillance system. The SUMO-D26 is suited for short-range, with 26× optical zoom and provides a very good performance and price ratio. For medium-range is the ruggedised block camera SUMO-D32, with 32× zoom lens. For long-range surveillance systems, EVPU Defence developed the SUMO-D60, also a robust combination of block camera but with a 60× zoom lens. All of these cameras have an autofocus system and are environmentally tested according to standards of EN 61000, MIL-STD-810C/F, MIL-STD-461E and IEC 529.

What sort of market trends are you seeing at present, and how is EVPU equipped to deal with future challenges?

This year we presented the low-cost solution for uncooled cameras, which is called NERO. It is a newly developed system with new generation of low-cost pan/tilt and equipped with uncooled IR camera and 640×480 pixel display. The main demand for that system should be protection of military store, camps and airports. Secondly, we have announced the long-range surveillance system SIRIUS SEA. It is compact electro-optical head consisting of a cooled infrared camera display of 640×480 pixels, CCD video camera with 32× zoom, laser range finder, and GPS placed on the pan/tilt. Also equipped with fibre optic gyro, it is able to carry

out precise two axis stabilisation ideal for navy use. Finally, we would like to present the newly developed pan/tilt with bore through for radar integration.

The development of that product was started because of many requests from our customers. Our MSR-1 will be able to do same job as MST-1 and can handle up to 100kg of payload for radar.

In development, we would like to concentrate on two main branches. We would like to build our own high-definition cameras and prepare our facilities for producing uncooled infrared cameras.

These cameras should be equipped with intelligent software algorithms to increase their 'utility value'. The reason is simple – today's systems are very sophisticated and it is necessary for the operators to have real skill just to use them. We believe it is important to help to the operator through the use of artificial intelligence.

In our software development we would like to improve our already existing algorithm for digital image stabilisation, tracking and video-motion detection.

And finally our pan/tilt units have to be prepared to handle camera interface including camera link, GigE and HD-SDI. ■

Further information

EVPU Defence
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