

ITEC 2015



General Pavel talking to Lockheed Martin during ITEC 2015 in Prague.

(Source: Clarion)

Held for the first time in Prague, this year's ITEC was generally applauded by visitors and exhibitors alike. The show attracted 'just over 100 exhibitors' and 2,213 'unique visitors'.

Although marginally down on recent ITECs – which is hardly surprising given the current austere defence spending environment – there was a buzz about the show. As a location, Prague proved to be a hit with many. The city's excellent transport links to the PVA Expo venue were superb and the layout of two halls with a restaurant area in the middle worked very well.

Whether Clarion, as the organisers of the event, are justified in claiming this year's ITEC, 'shows [an] upturn in [the] simulation and training sector' is a debatable point. Fundamentally, as the numbers of platforms and personnel decline, less training is required.

The major logistical infrastructure criticism was the conference area. On a positive note, its location at the rear of one of the two halls was great for access and the ability to be close to the show floor. This advantage was negated by the use of cloth material drapes for the walls. With each speaker wired to a microphone

and loudspeakers booming out from each session, the cacophony was more like that experienced in a fish market rather than what should be expected at a professional conference.

The delivery of ITEC follows a common structure that sees a conference programme supported by an exhibition. Putting together an international conference is always a challenging task.

Those on the conference committee often have partisan reasons for selecting certain themes or titles so as to promote commercial products. The other challenge is to manage a large committee and ensure that they take a wider and more impartial view of current issues and of what visitors might require from the programme.

This committee is vitally important because it determines the programme and with the best will in the world, this will only be dictated by their personal experience and knowledge; or as historians say, 'the baggage that they bring with them.'

The pivotal question is this; do visitors want to hear from industry about what they have to offer, from academics on their specific topics of research, from the military as to what training challenges and/or requirements they might have or a combination of all three?

The answer to that question very much depends on the attendee's job function, interests and affiliation.

Let us take a look at this process with regard to ITEC 2015. Tess Butler from Bohemia Interactive Simulations headed up a conference committee of 27. Including Butler, 16 came from industry, four from trade associations and the media, three from academe and five from the military or government agencies; four of the latter were civil servants. Let us now consider the conference programme and how that reflected the conference committee's job functions.

Including session chairs, this year's ITEC conference saw speakers and chairs approximately represented as follow: 45% industry, 41% government/military and 14% from academe. In terms of spread across disciplines, this appears fair although some might argue that the military/government proportion should be higher at the expense of industrial speakers but on the whole, this was a credible spectrum of speakers created by Tess Butler and her team.

Although this report will not highlight the papers at the show – these may be obtained from Clarion, the show organiser – the opening address by General Petr Pavel, Chief of the General Staff for the Armed Forces of the Czech Republic, is worth dwelling upon as it paints a useful backdrop for ITEC and highlights some of the training challenges that the military now face.

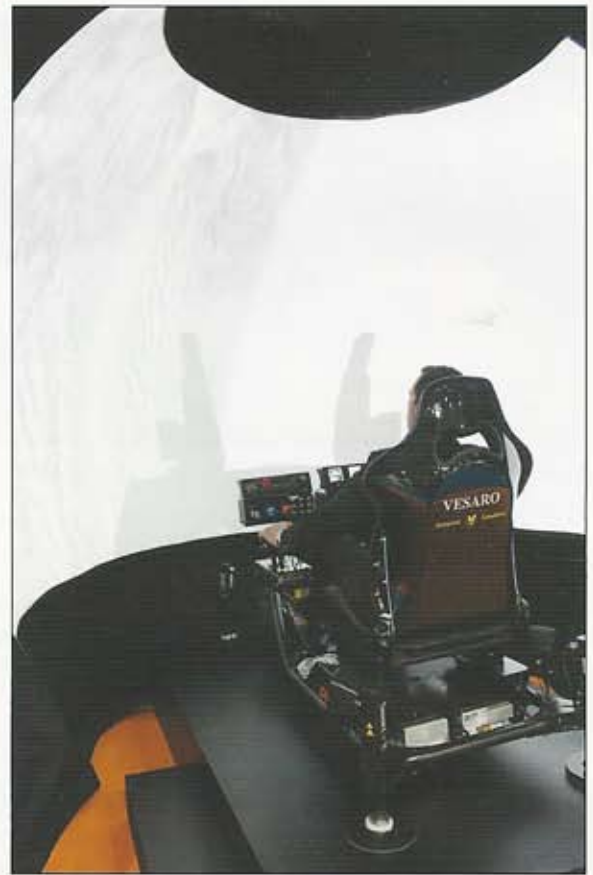
According to General Pavel, the government of the Czech Republic is committed to increase defence spending to 1.4% of Gross Domestic Product which is forecast to rise to 2% by 2020 to support the country's values and reflect events such as the recent annexation of Crimea, continued unrest in Ukraine and the global rise of extremism.

Continuing, General Pavel stated that there are many more challenging threats now and the training required is more complicated to face this new environment. With a more complex future, there is a need to co-ordinate more with industry and other non-military organisations as operations, he says, are not managed by military tools alone.

Hybrid warfare demonstrated by Russia has highlighted other issues in terms of preparation and training to react to these new threats. General Pavel confirmed that there is a requirement to enable Armed Forces to be prepared to face individuals, small groups as well as at the other end of spectrum, conventional armies.

Although General Pavel highlighted the threats, the Czech Republic's defence investment of 1.4% of GDP is well below the NATO recommended figure of 2%. Only the US, UK and Estonia currently meet that figure with the UK expected to drop out of the club following its forthcoming Strategic Defence and Security Review (SDSR).

With budgets depressed the key theme of the show was all about doing more with less and getting better value for money from training. Many companies were therefore showing the military how training can be conducted without breaking the bank and surprisingly, the military were listening.



A flight simulator on the BIS booth featuring B-Box's motion actuators. These systems have recently been used as part of a ship's bridge simulator in Brazil.

(Source: T. Nash)

One interesting view of the market was provided by Jean-Louis Igarza, Chief Scientist at Antycip Simulation.

"To be honest, Antycip Simulation is finding the market positive and I think that this positive mood will continue for us," explained Igarza. "There are two main reasons for my optimism; the first is that we work with companies that have the best products on the market and secondly, that we comply with simulation standards to enable easier integration.

"This strategy means that we are flexible and can offer solutions that contain the latest technologies and that can be integrated rapidly," he continued. "Larger companies find it difficult to stay up to date with the latest technological developments and as customers become more educated and aware, I believe this situation will benefit Antycip Simulation."

Igarza has a point. When ITEC was first held 26 years ago, the stands were populated by large companies. In Prague it was the smaller and medium-sized companies that predominated and, if Igarza is correct, it will be these players that will offer the latest technology, quickly and at a lower cost than hitherto. This approach could also have a beneficial impact on the ridiculously long procurement cycles that predominate today.

Apart from the frustrations of the procurement cycle, many military officers spoken to by *MT&SN* at ITEC were also clearly concerned about the impact of hybrid warfare and the need to conduct joint training. One Dutch officer described how Russian forces had wiped out two battalions of Ukrainian self-propelled artillery by deploying swarms of unmanned aerial vehicles and counter-battery fire using smart munitions. "It was done in minutes and we've only got one self-propelled artillery battalion!", he said.



Omnifinity was displayed as part of the integrated iCASS exhibit.

(Source: MSE Omnifinity)

So, if hybrid warfare, joint training and the cost of training were the key themes at the show, what concrete steps were being taken to address them and how were they covered on the show floor?

On The Floor

A classic example of the response and for *MT&SN*, the highlight of the show, was the Close Air Solutions demonstration. The Joint Fires training scenario was based on Close Air Solutions immersive Close Air Support Simulator (iCASS) system that has now been installed at the UK School of Forward Air Control at RAF Leeming. Featuring the MetaVR geo-specific Kismayo, Somalia visual database generated using the company's VRSG, the demonstration also included a networked flight simulator, a dismounted soldier, forward observer and JTAC.

As well as MetaVR and Close Air Solutions, the demonstration brought together Omnifinity, Teleplan Globe, Immersive Display Group, Novatech and BSI to highlight how industry can work together to provide optimal and timely training solutions.

Another company to highlight the power of partnerships was Bohemia Interactive Simulations. The main thrust of the company's presence at the event was its latest version of VBS3.

"This year at ITEC we provided a VBS Community booth that featured eight partners to demonstrate the ever widening and imaginative uses of VBS in armed forces and security training," explained Tess Butler, the company's PR Director. "The partners not only demonstrated different applications or training uses for VBS3, they also formed a wide variety of backgrounds and experience in military training and simulation."

These booth partners included Fujitsu, Motion Analysis, Eurosimtec, SimCentric, Vevaro, Immersive Displays, DBox as well as BIS's own TerraSim.

One of these company's, the Montreal-based DBox, is a classic example of an organisation that aims to create cost-effective but high-fidelity simulation. Starting in the film industry in 2000, the company moved into the simulation and training sphere six years ago and offers semi-electromagnetic actuators for motion platforms.

BIS had a major presence at the show with eight partners on its booth. Shown here is a scene created using VBS3.

(Source: BIS)

"Over recent years our simulation and training business has grown and now represents around 40-50% of our activity," explained Sébastien Lozé, the company's Senior PM Director Industrial Markets. "We provide both the hardware and software to create high-fidelity motion solutions and have integrated our system with helicopter, fast-jet, ground vehicle and ship's bridge simulators."

Projection companies were, as ever, well in evidence at the show. 3D perception announced a number of contract successes including the delivery of two Mini-Dome Visual Display Systems to the USAF Test Pilot Training School at Edwards AFB and further deliveries of its Northstar displays to CAE for integration on the UH-72A Lakota Flight Training Devices (FTD).

Other display specialists at the show included Digital Projection Ltd, Germany's eyevis GmbH, Immersive Display Group, Project Syntropy and Scalable Display Technologies.

Rockwell Collins were also highlighting its display systems, notably the company's Spectraview dome, Panorama and Griffin systems. As well as being used as part of the F-35 training system, Griffin is also used on the Saudi F-15 and F-16 simulators. Developments at Barco are discussed below.

But ITEC was not all about the virtual. French company MASA was full of the joys of spring following their recent announcements of success for the company's SWORD constructive training system for the Defence Science and Technology Agency (DSTA) in Singapore and the Bangladeshi Army. The company is also understood to have signed a contract with the French Army although details of this are sparse.

"We are extremely pleased with the progress that we have made with SWORD where today, it is in service in 17 countries," said Juan-Pablo Torres, MASA's President and CEO. "We expect that number to grow significantly over the next few years."

Another company to highlight its command and staff training capabilities was VT MÄK. The company says that its Command & Staff Trainer (CST) can be used, "to simulate a full spectrum of operations training at all levels – from squad leader through brigade commander."

CST features models for CBRN and EW and has a whole-world 3D terrain capability through the use of VT MÄK's VRTheWorld database. The company is currently working with



Raytheon where CST has been linked to the company's Command View decision-support architecture.

Industry Changes

Perhaps the major industrial story of the show was the first public unveiling of the Esterline offering following its entry into the simulation and training market. Esterline's presence is due to the purchase by Esterline of Barco's Defence, Aerospace and Training (DAT) business in September 2014 for USD 200 million.

Esterline has named its new visual systems business, Treality, and the group reports to Esterline's CMC Electronics business unit. Esterline has taken on Barco's display business such as RP360, SEER Domes and Cross-Cockpit Collimated Displays and added a new TD Series to the mix – more of which later. Treality also offers warp and blend solutions through its partnership with Scalable Display Technologies and auto-alignment solutions using previous Barco technologies.

In addition to the product side of the business, Esterline has taken over the customer and engineering support for all previous Barco simulation and training installations.

In terms of projectors, Barco has kept its SIM-series LCoS projector business but with the caveat that it can only sell these systems to Esterline. Barco has also retained its F-Series DLP projectors that were previously traded by Norwegian company, projectiondesign.

Dave Fluegeman, Barco's VP Simulation told *MT&SN* that, previously Barco had offered a system integration service that put many people of buying the F-Series projectors. "We now have the opportunity to bring the F-Series to the forefront of our business and work more closely with companies such as Antycip Simulation who have been a great partner for us."

Returning to Esterline, the company took the opportunity of ITEC to launch its new TD-Series of transportable displays. The TD-Series is designed around the Barco F-Series projectors and are available with one, three or five projectors to provide horizontal fields-of-view (FoV) from 160 to 220 degrees and vertical FoVs from +54 to -42.5 degrees.

"Mobility, cost-effectiveness and performance are the three key areas that are central to the design of the TD-Series," explained Esterline Simulation Visual Systems' Business Development Director, Paul Lyon. "The TD-Series is lightweight and fully transportable so that it is able to be set-up exactly where the user requires to undertake his training."

The dome has a lightweight structure that is populated with 2mm thick fibre-glass composite panels. These can be rolled up for transportation. The first of the new TD-Series domes is due for delivery in July.

Another key piece of industry news centred on Havelsan and its purchase of troubled US image generation specialist, Quantum3D. Havelsan has said that the company will continue to trade under the Quantum3D name.

"Our simulation and training business has the potential for significant growth, and Quantum3D's products are well known for realism and high performance. We believe that combining our strategies with Quantum3D products will create many new opportunities and allow us to develop Mantis to be the most innovative solution in the market", said Mr. Sadik Yamac, General Manager and CEO of Havelsan.

As part of Esterline's Treality product portfolio, ITEC saw the unveiling of its new TD Series of displays.

(Source: T. Nash)



"With these assets from Quantum3D we will not only enhance our core product capabilities worldwide, but will also better serve the large US domestic and other North, South, Central Americas markets for complete training solutions." Mr. Yuksel Oztekin, Chairman of the Board of Havelsan added. "This is indeed a strategic move for Havelsan to enter into the US Market and develop a high-end technology [offering] with Quantum3D."

Although good news for Havelsan, the company had previously integrated other image generation systems, notably from companies such as CAE, Lockheed Martin and Equipe Electronics. Here, the news may be less well received.

As to new companies at the show, one to catch the eye was MJ Impulse that was highlighting its Black Box sensory training system.

Black Box is a dual sensory training device that specifically develops visual/auditory motor reflexes, the primary sensory system, which controls psychological and physiological actions and reactions. Strobe glasses are the main component of the system and have LED lenses that shutter and completely block visual signals to the eyes as objects are in motion. In the initial training, they are set to shutter rapidly initially, then slower as the trainee adapts to the training. In pure training terms, Black Box adds stress to the individual and in so doing, is designed to improve areas such as cognition and motor memory.

Conclusion

ITEC 2015 was considered by the majority as a great success. Perhaps the major theme to percolate through the show was the need for industry to provide effective but lower-cost training solutions and these were present in large numbers. Threats continue to increase and training for hybrid warfare is now a serious concern for the military that many in industry are now addressing.

Next year the event moves to London. One thing's for sure, it won't be as cheap as Prague!