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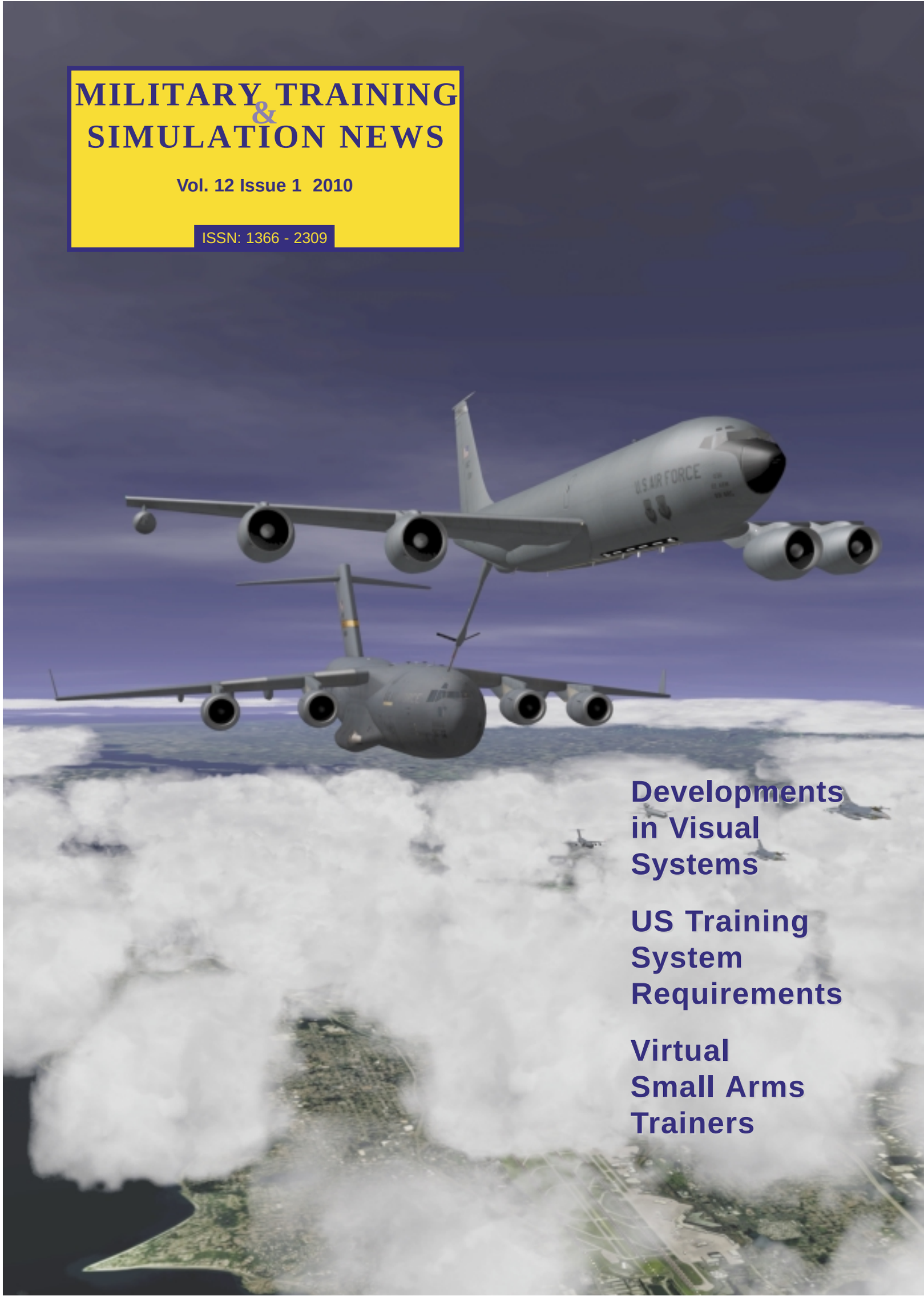

Developments in Visual Systems

US Training System Requirements

Virtual Small Arms Trainers

I/ITSEC

The Only Place To Be

Held in Orlando from 30 November – 3 December 2009, IITSEC is the world's premier simulation and training event. This year's show saw 607 exhibiting companies showing off their products and services to nearly 19,000 visitors. Of these, over 2,000 came from 61 countries outside the US.

Walking the aisles, there were a number of trends that caught the eye and built a picture. Firstly, the number of projection companies at the show seems to be increasing and the user is presented with a range of different technologies. Secondly, games technologies seem to have come of age and more and more companies involved in this sector are integrating their products with other simulations. A third trend was that software systems have become king and in areas as diverse as database generation, learning management systems and image generator design, software is being used to provide flexibility and value added performance.

There were also a number of surprises. For example, Boeing has launched its own curved-faceted rear-projection display system. Known as the Constant Resolution Visual System (CRVS), the system uses three Sony LCoS HD projectors. The key factor here is that other hi-res approaches use significantly more projectors and are therefore more expensive.

Rheinmetall Defence Electronics (RDE) was also highlighting its projection capabilities with its Avior laser projection system. Now on the third generation Avior, the system entered service on the German Air Force's (Luftwaffe) Tornado simulators but its customer base has now spread considerably. The system is now in use on the Luftwaffe's C-160 simulator, the German Army's (Bundesheer) EC-135 (8), CH-53G (2)and UH-1D (2) simulators and it has been exported to Switzerland for use on its EC-635 simulator and will be delivered on a MiG29 simulator for India later this year.

Barco used the show to announce the shipment of its 700th SIM 7 LCoS projector and release its new three-chip DLP projector. Known as the Galaxy NW-7, this 7,000 lumens WUXGA resolution device is aimed at the 3D visualisation and simulation markets. It also marks Barco's first dalliance in the DLP market.

Norway's projectiondesign company had a high profile at the show and was majoring on its F35 single-chip DLP and its new FL32 series LED projector. The latter has a predicted 100,000 hours light output and low power consumption. The company says that it is the ultimate in low total cost of ownership devices.

Another projection player to highlight its wares at the show was Christie. The company's Director Simulation Solutions, David Kanahele told *MT&SN* that its Matrix STiM projector that was launched at IITSEC 2008, "is now in production and sales are being made."

On the software front, Presagis had its usually massive presence at the show. The provider of Commercial Off The Shelf (COTS) modelling, simulation and embedded graphics solutions announced the release of the Presagis Worldwide Database (WWDB) and the Utilities Manager. These new products, along with recent releases, are part of the company's Aeria range designed to deliver a unified suite of COTS software and technical services to help organisations deliver more quickly and efficiently, highly complex, data-rich models and training scenarios. The WWDB from Presagis is a synthetic global database based on the Common Database (CDB) standard that allows developers to add and refine geographic zones of anywhere in the world. These new tools follow other recent product releases from the company, including STAGE 6.0, Vega Prime 3.0, Terra Vista 6.0 and Creator 4.0.

One of the highlights of the show was an EDM g-seat integrated as a stand-alone flight simulator.
(Source: EDM)

Antycip simulation released more details of its MyBehaviour and MyModels ranges and announced that the Spanish MoD had become the first customer for the former. The Spanish MoD's project also includes the purchase of VR Link and Data Logger from VT MÄK. TerraSim unveiled its latest addition to its source data preparation product line, Xtract. The product is designed to support legacy database processing for reuse with support for 32 and 64 bit Windows workstations. Xtract allows users to enhance the utility of the extracted geospatial data automatically and simultaneously. Enhancement includes manipulation of source data attribution, geospatial coordinate reprojection, and resampling of geopositional surface spacing—all within the primary Xtract function. Xtract exports to a variety of third party geospatial data processing products,

including Global Mapper, 3DStudio Max, Bohemia Interactive Oxygene, ESRI ArcGIS, OpenSceneGraph viewers, Google Earth, Presagis Creator, and more.

Xtract currently supports the ingest of OTBSAF CTDB, OneSAF OTF, and OpenFlight databases and individual models. It produces terrain surfaces, geospatial vectors, and 3D model libraries. In addition, Xtract supports simultaneous model extraction and enhancement, converting to 3DStudioMax, COLLADA, VBS2 P3D, OpenFlight, and tiled scenegraph (TSG) format.

One of the most interesting systems on display at the show was on the EDM stand where the company was showing its g-cueing ejector seat integrated into a standalone simulation. The g-seat features electric actuators and motors which provide movement to simulate the effects of g on the human body. Normally, the seat would be integrated into the simulator but at IITSEC, the company created a simulator around the seat to show-off its capabilities.

The flight model was created by J2 Aircraft Dynamics whilst the visual system was created by Cogent 3D running on a Diamond Visionics image generator hosted on a Concurrent computer. The DLP projectors were controlled by Mersive SOL image blending software. The HUD graphic was produced by DiSTI's GL Studio whilst the aircraft HOTAS and joystick were produced by Stirling Dynamics. The latter are supplying aircraft controls for the F-35 STE.

Always knee deep in visitors, the icing on the cake for EDM was selling the display screen at the end of the show!

Teaming was also a factor at the show for Thales and Cubic who have joined forces in the development of a Reconfigurable MRAP Vehicle Trainer (RMVT). The trainer is designed to allow troops to practice route clearance and features the Thales three or six axis MEMS electric motion system and the CRYEngine 3 visual system.

DISTi was showing its latest version of GL Studio alongside some of its major training systems for the F/A-18, F-18E and F-35. The company has been selected to provide its Human Machine Interface (HMI) expertise for the F-35 maintenance trainers as a sub-contractor to AAI.

"We have been creating a lot of interest with GL Studio over the years and this is now turning into sales," explain Chris Giordano Director of International Sales and Product Management at DISTi. "The past year has seen double digit growth with the Asian market being particularly strong."

Asked about the future, Giordano told *MT&SN* that GL Studio keeps developing with new features. These are being exploited in new market areas such as the space and automotive sectors and as for the military – "you've got to keep training," says Giordano.

BAE Systems had a large presence at the show and the company's Senior Business Development Executive, Ian Reason, told *MT&SN* that he has been given the remit to develop training as a business, primarily focusing on military air solutions, which he sees, "as a growth market for the company and of growing strategic importance."

Boeing used the show to launch a new high-resolution faceted display system using curved facet screens and HD projectors.
(Source: Boeing)

Although Reason says, "BAE does not want to get into the business of hardware based synthetic training equipment manufacture," the company is keen to, "promote its training service capabilities."

Much BAE Systems training capabilities are focused around the Hawk training aircraft (see MFTS feature in this issue) and Reason tells *MT&SN* that he wants to "re-engage with the UAE and Singapore" and is looking to possibly make a bid into Europe for the Eurotrainer requirement. In the longer term, the company is looking at the USAF's T-38 replacement where he believes, "BAE Systems has a lot to offer."

The T-38 replacement was also on the lips of Mark McGraw, Boeing IDS' VP Training and Simulation who said that Boeing is tracking this requirement, and might consider "a purpose-built aircraft."

From the Lockheed Martin perspective, they will be bidding the T-50 as they are currently into Singapore for the RSAF's Fighter Wings Course (FWC). Here, Lockheed Martin is competing with a Boeing, CAE, Singapore Technologies and Aermacchi team. The result is due as *MT&SN* goes to press.

In conclusion, IITSEC was yet again, a major showcase for the T&S industry. This really is a must-attend event as it brings the world's players to one location. It's a pity so few staff officers and procurers attended from the UK. The rumour was that Orlando in December sounded too much like a jolly and that senior officers at the MoD put the skids under attendance. That gentlemen, was a very foolish thing to do. IITSEC is at the epicenter of all things simulation.