

# FRONTLINE



## Welcome to the first issue of Frontline, the HFI DTC Newsletter - Geoff Barrett

The Defence Technology Centres were launched by the MOD almost exactly two years ago through an advertisement inviting expressions of interest published on 20th February 2002. I was delighted that the DTC on Human Factors Integration (HFI DTC) was one of the three selected for funding in the first round, even though this meant more work for me and my colleagues! It is self-evident that we live in a climate of rapid technological change, and that this change has considerable influence not only on our daily lives but also the manner in which we conduct military operations. The human issues associated with operating in this climate of change are too easily forgotten in our excitement over the apparent capability of the latest items of equipment. It is important to remember, however, that in a large majority of cases, this "capability" is virtually non-existent without a human operator.

The need to combine equipments and operators into effective fighting units is the driving force behind the HFI DTC, and this is addressed through activities in four work packages which are described in greater detail in this newsletter. The first three of the work packages are devoted to: command and control; delivering effective training against a background of technological change and reducing numbers of personnel; and improving the ways in which the human factor is included in the procurement process. The fourth work package is devoted to recording and publicising the work of the HFI DTC. Frontline is one of the many outputs of this work package. I hope that you find this first issue and future issues of the newsletter interesting and that you will want to be regularly updated on the progress and products of the HFI DTC.



*Geoff Barrett, HFI DTC Technical Authority, Dstl Human Sciences Team*

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## HFI Process Improvement Cell at Abbey Wood

One major step forward in "spreading the HFI word" was taken in November of 2003, with the launch of a Process Improvement Cell (PIC) located within the Procurement Development Group at Abbey Wood. The remit of the PIC is to support the transfer of technology and knowledge from the HFI DTC to the MoD by eliciting relevant information (in this case from the IPTs at Abbey Wood) and developing appropriate and practical forms of guidance reports, short briefings, training, software tools and so on. The Procurement Development Group has been most helpful during the early stages of this exercise and has provided some very useful input and future suggestions for

channelling relevant information from the HFI DTC. At the time of writing, the PIC has been staffed by DTC collaborators Mike Goom of MBDA and Pam Newman of SEA, initially to a level of around 50% of a typical working week. During its first few months of operation, a number of important briefing opportunities have been generated, including presentations to the Future Business Group Requirements Managers and the Research Manager for Output (RO6). Discussions with the Air Land Technology Group has also stimulated ideas to investigate the various safety processes adopted by IPTs and to look generally at the links between HFI and safety.

## A welcome from the Frontline Editorial Team -

Bob Stone and Karen Lane

As editors of the Frontline Newsletter, we would like to add our welcome. This is the first issue of what we hope will become a regular publication, and we aim not only to bring you up to date with developments from within the Centre, but also to make sure you have access to our team and can benefit fully from the work and knowledge that currently exists and is yet to come. Therefore we would encourage you to contact us for specific details on any of the topics presented in the Newsletter, or even to submit short (250-word) reviews of HFI activities that you are involved in yourself. Case studies and lessons learned will be particularly welcome!

Our first year of operation has been quite frenetic in many respects, with many of the HFI team out in the field, either presenting the aims and aspirations of the DTC to national and international audiences, or working with end users, within IPTs and in the field. We've had a very encouraging response to our first major mailshot of 2003 and are continuing to build quite an impressive database of individuals and groups from across the globe who either want to be kept aware of what we are doing, or are seeking "comfort in numbers", being lone HFI champions in large, sceptical organisations!

So what are the aims and aspirations of the HFI DTC? Well, to set the scene, it is worth taking a few extracts from the Government's White Paper on Defence, published in December 2003. The DTCs were only briefly mentioned in this White Paper, in terms of expanding the MoD's research supplier base (e.g. Page 17), but the significance of the

work of the HFI DTC can be seen throughout the entire document and supporting essays.

As early as page 8, for example, it says, "Key to this [forces modernization] process will be our ability to derive the full benefit of advancing technology, particularly in the collection, management and use of information through NEC [Network Enabled Capability] and increasing the deployability, sustainability and protection of our forces." And in Supporting Essay No. 5, People, (pages 17 and 18), "Our people also need to possess exceptional skills to deal with the complexity and scale of modern operations ... Having the right people with the right skills is the single factor most critical to future operational and organisational success. High quality training and education will be both a key recruiting and retention tool. Network Enabled Capability will require more IT literate Armed Forces."

There are many more quotes one could point out that are just as powerful. But underpinning them all is a strong central message. "Advancing technology", "high quality training and education", "exceptional skills", "IT literate" all of these issues are meaningless to the future of the UK's armed forces. Meaningless, that is unless human factors knowledge defining the capabilities, limitations and needs of the end user is adequately packaged and integrated into meaningful, accessible processes that are adopted throughout the defence community. This is the goal of HFI. This, then, is the mission of the HFI DTC.

## HFI Symposium - May 25 2004

We are pleased to confirm that registrations are now being accepted for the 2004 HFI Symposium, a whole-day event to be held at MoD Abbey Wood. This year, the Symposium is being fully sponsored by the HFI DTC, which means there will be no charge for attendance, lunch and refreshments. We have organised a full day of speakers and expect the Symposium to be over-subscribed. A second announcement flyer has been sent out to those groups and individuals who responded to the initial HFI DTC awareness raising campaign last November, so if you would like to attend, we would strongly recommend that you register on-line at [www.hfidtc.com](http://www.hfidtc.com) (follow the links for events) as soon as possible. Places and car passes (which are limited in number) are being allocated on a first-come, first served basis.

Please ensure you complete ALL the details requested on the Web site registration page, as failure to do so will result in your application being declined.



source: [www.americasarmy.com](http://www.americasarmy.com)

Please note that to attend this Symposium, pre-registration is essential, primarily for security reasons and logistical arrangements, such as Abbey Wood car pass administration. The Web site will not accept online registrations from Friday 14 May 2004 onwards, or if the full quota of available places is reached before that date. The Symposium organisers will also be unable to accept registrations from this date.

## Call for Papers

Special Issue of Springer Verlag's Journal *Virtual Reality: Virtual Environments for Defence Applications*

It has been accepted for some time now that the defence industry and the armed forces they serve have used simulation to excellent effect. However, it is only relatively recently that Virtual Reality, in all its guises - from immersive to desktop - has been considered as a serious contender in the delivery of affordable design, prototyping, ergonomic and training solutions for a variety of land, sea, subsea and air applications. This special issue of *Virtual Reality* is dedicated to exploring the growing adoption of VR throughout the global defence community and invites papers that may consider, but are not limited to, the following areas:



- Investigations adopting immersive and desktop VR solutions for defence applications,
- Case studies focusing on the use of VR for part-task training,
- Studies evaluating human performance issues and VR situational awareness, workload, transfer of skills/training, etc.,
- Application of VR in support of ergonomics/human factors techniques in defence systems design (including acquisition life cycles such as CADMID, and synthetic environment development standards such as SEDEP),
- VR and unmanned/uninhabited/(semi-)autonomous air/land/subsea vehicles,
- Use of games engine technologies for real-time VR defence training or mission planning (at individual or team levels),
- VR for command and control (C<sup>4</sup>I, etc.),
- Distributable and Web-enabled VR applications for defence training,
- Emerging uses of VR for Homeland Security applications.

All papers submitted should be UNCLASSIFIED and should not contain any text or image material of a sensitive nature. Papers will be peer-reviewed in line with the Journal's normal process. Papers should be between 4500-6000 words in length and report original research in the form of, for example, case studies, review articles, discussion papers and integrated inter-disciplinary essays. Papers should be submitted in Word or PDF format, via e-mail, to [r.j.stone@bham.ac.uk](mailto:r.j.stone@bham.ac.uk) by 31 May, 2004.

## Director of US Navy HSI Office to Keynote at May Symposium

The organisers of the HFI DTC Symposium, to be held on 25 May 2004 at DPA, Abbey Wood, are delighted to announce that Ms Nancy Dolan, Director of Acquisition Programs and the US Navy HSI Office, has accepted an invitation to deliver this year's keynote speech. Ms Nolan graduated from Cornell University in 1990 and attended graduate school at the University of Dayton. After a brief period with Dayton's AFRL at Wright Patterson, she took up the post of HF engineer with CTA Inc and was assigned to the FAA's Technical Center in Atlantic City.

In 1996, Ms Dolan became the HF Lead within the Maryland Naval Air Warfare Center for the Aviation HSI Integrated Project Team on the next generation aircraft carrier (CVX) program. Later, having taken over Total Ship HSI Leadership, her duties expanded to incorporate in-service, refuelling, new construction and acquisition, at the same time coordinating HSI efforts on the SH-60R (Multi-Mission) and CH-60 (Fleet Combat Support) Helicopters, JSF and the Aviation Data Management & Control System. Since 2000, Ms Dolan has been highly active in the DoD HSI arena, serving on various program IPTs, writing HSI policy and helping to integrate human-centred design issues throughout the naval community. Her keynote speech, "A Two-Legged Stool Tips Over (and other insights on the importance of HFI in Warfighting)", is awaited with anticipation.



# Challenges and Opportunities for the Training and Education of Personnel in the Armed Services

Over the past two decades the complement of the British Armed Forces has been decreasing. At the same time there has also been a significant change in doctrine toward the rapid deployment of combat and peacekeeping forces and the provision of humanitarian aid. These trends have also been accompanied by an increase in the complexity of the equipment used by personnel and in the nature of operations. The theatres of operation into which armed forces will be deployed are also becoming more uncertain. As hinted in the 2003 White Paper, these factors alone present the MoD and Armed Forces with significant challenges for the effective use of available skills at individual and team levels. However, other issues are also at work, further increasing the challenges they pose.

With smaller armed forces, increased flexibility is required to maintain operational effectiveness. Greater cooperation with the armed forces from other countries is also needed. Personnel need to be equipped and trained to deal with an increased variety of threats and to operate in diverse roles in a wide range of environments. The more complex equipment they use (much of which must also now perform several functions), the greater the need for in-depth training to exploit the capabilities of the underlying technology. As a direct result, training requirements simultaneously become far more demanding and less easy to specify. Furthermore, with a shrinking complement, coupled with increasing levels of operational utilisation, opportunities for training become even more limited.

Other factors external to the Armed Forces are also at play. Changes in Government education policy will result in changes in the knowledge, skills, abilities and attitudes of new entry cadets to the services. Far fewer people now leave school at the age of 16 and the Government's target is for 50% of 18-year-old school leavers to attend university. Increasingly high career expectations after leaving degree-level education are likely to further decrease the pool of potential recruits looking to enter the services at all levels, but especially in the non-commissioned ranks. If all these factors were not enough, the UK's birth rate is also dropping dramatically. It is now down to approximately 1.64 children per couple compared to the all-time high of 2.93 in 1964. Approximately 2.1 children per couple are required to maintain the UK's population. The result will be 20-25% fewer young adults being amongst the potential pool of recruits in 15-20 years time. UK industry will be facing the same problem as the armed forces in this respect, hence



there will inevitably be increased competition to attract these people away from a career in the Army, Navy or Air Force.

As a central work package in the HFI DTC, research is being undertaken to investigate methods by which the issues may be tackled. To attempt to resolve the contradictory drivers described above, part of the HFI DTC's *Work Package 2* seeks to establish educational requirements for current and future military personnel. The education requirements analysis is investigating the benefits (and potential drawbacks) of a change in emphasis away from the provision of application-specific training towards an increased emphasis on education/generic training in a core set of fundamental underlying areas. This should allow a firmer basis on which to build capability (through subsequent targeted training) that is multi-skilled and capable of undertaking a flexible response in a less well-defined threat environment. The programme is considering training curricula in a number of key areas identified by DTC stakeholders from the three services to assess if application-specific training time can be reduced and/or training quality improved by only having to concentrate on targeted training and not having to also inculcate underlying knowledge (which will be provided prior to undertaking the training). Any increase in the flexibility of employment of personnel as a result of a broader educational base will be established. The research will also assess if the future knowledge requirements of personnel will be better achieved by changes in the selection process/criteria or by providing enhanced education and training while serving. Establishing current (and potentially future) knowledge levels of recruits will also be of great use in the design and development of future military equipment.

*Dr. Don Harris, Work Package 2 Leader,  
Cranfield University*

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## Command and Control: the Human Factor

One of the major deliverables planned for the HFI DTC revolves around the development - using a unique blend of human factors methodologies - of an advanced, network-enabled command and control demonstrator. However, rather than the project being driven by technological capability alone, the emphasis is on evolving a deeper understanding of the human psychological and social requirements in C4I scenarios. Understanding these human requirements is being based on data culled from a variety of sources, including field observations, studies of training regimes and predictions of human performance in both civilian and networked systems.

Before this understanding could be developed, we have reviewed over 200 human factors methods, identifying which of these could be used to capture and analyse the rich datasets being collated. This review has scrutinised the methods to determine which would be best suited to the analysis, prediction, design and evaluation phases of the project. Considerable effort has been expended to ensure the integration of human factors methods, as we recognise that, to date, no single, reliable or valid methodology has been forthcoming from the R&D community. The methodology for analysis of C4I systems has two facets. Firstly it can be used to analyse contemporary systems based on observational and interview data. Secondly it can be used to model future systems based on simulated data. This allows us to anticipate the effects of changes in current systems as well as develop entirely new systems. Whilst this modelling work is still under development at the time of writing, early evaluations are promising.



The observational studies of contemporary C4I systems are well under way. We have trained the team of analysts in the application of our methodology and have provided them with bespoke software to help in the conduct of observational studies. Whilst we await suitable opportunities with the Armed Forces, some early studies have already been conducted in the civilian (emergency services) sector, thanks to the excellent support of the Fire Service College at Moreton-In-Marsh and the Rail Safety and Standards Board.

These studies have validated the C4I methodology and given rise to new insights into the running of command and control systems. Such insights include the distributed nature of situational awareness in dynamic command systems. More studies are planned over the coming months in these and other systems in military, emergency services, and civilian domains.

The results of these studies are feeding directly into the development of the new networked C4I demonstrator, which will harness virtual and augmented reality technologies with the explicit aim of improving contextually-relevant situational awareness for the entire system. A human-centred design approach is being taken to these technologies. It is envisaged that multiple representations of the same mission could be displayed in parallel or on demand. Details

on the exact nature of the system are still under discussion at present, but are focusing on using the world-class VR and wearable computing facilities and knowledge at the Universities of Brunel and Birmingham.

*Prof. Neville Stanton, Work Package 1 Leader,  
Brunel University*

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## HFI DTC Web Site

Our Web site is now live and can be accessed at [www.hfidtc.com](http://www.hfidtc.com). In addition to the Newsletter, the Web site will be updated regularly, will present news and information of interest to the defence HFI community, and will provide additional links to interesting conferences, papers and useful HF information from both defence and civilian sources.

## Consortium Members' News Corner

VP Defence has recently upgraded the head-mounted display units for the successful Close-Range Weapons Simulators at HMS Collingwood in Fareham. The new nVisor HMDs offer higher resolution and optical field of view (1280 x 1024 at >60°), as well as increased ruggedness. The 20mm and 30mm simulators have been operational



since 2001. Not only has the Collingwood facility saved the Royal Navy millions of pounds in ammunition, aerial target and coastal estate costs, it has also resulted in superior actual marksmanship performance, as has been noted during annual RN sea firing trials off Gibraltar ([www.vrweb.com](http://www.vrweb.com)).

## I/ITSEC 2003

Held annually in Orlando, and this year at the newly-built Orange County Convention Centre, the



Interservice/Industry Training, Simulation & Education Conference (I/ITSEC) has grown to become the world's foremost conference and exhibition in its field. With over 3,500 conference attendees and a further 11,000-plus exhibition-goers (including the usual impressive contingent of RN

personnel!), I/ITSEC is a Mecca for those interested in the future of advanced training and simulation technologies. As usual, the conference component of I/ITSEC attracted an excellent range of speakers. This year, I/ITSEC's 25<sup>th</sup> Anniversary, the Human Interactive Systems (HIS) sessions were particularly interesting and diverse, with papers presented on such topics as human performance metrics for network-centric warfare to stereoscopic displays for the refuelling boom operators of KC-135 aircraft, and from graphical interfaces for UAVs to team performance modelling in C4I. This was also the first time a paper dedicated to the HFI DTC had been presented in an international venue of this size and Prof. Bob Stone delivered the overview to a receptive audience, under the watchful eye of Dstl's DTC Coordinator Jenni Henderson and one of the HFI DTC's co-sponsor (DAES) representatives, Andy Fawkes!

In terms of the I/ITSEC exhibition, it would be fair to say that there was not a great deal one could claim as being truly novel, unique or eye-catching. HFE and HFI contributions featured only as piecemeal contributions to certain stands, although there were one or two exceptions to this rule, including a handful of stands showing HF tools for uninhabited vehicle interface prototyping. Certainly the "big players" showed a certain lack of attention to HF/HFI issues, which considering the complexity of simulation and

training technologies they were exhibiting was somewhat disappointing. The usual Virtual/Synthetic Environment faces were in attendance and there were unofficial announcements relating to a small number of new head-mounted displays soon to reach the market (see also the VP Defence item in this Newsletter). On a related topic, one particularly noticeable development was a significant number of defence simulation stands demonstrating their facilities using not high-end distributed 3D software, but Web-deployable software and commercial games engines, such as *Unreal II*, *Quake III Arena* and *Half-Life*. The quality of these demonstrations was, in many cases, very high indeed and included applications from urban fighting training (exemplified in, for example, the popular *America's Army* package ([www.americasarmy.com](http://www.americasarmy.com))) to



simple but effective 3D interfaces for homeland security incident planning and supervisory control of semi-autonomous underwater vehicles.

In addition to the successful delivery of the HFI DTC's paper, Prof.

Stone has also been invited to become the first ever foreigner to join one of the I/ITSEC subcommittees (training) an excellent opportunity for the DTC. Electronic copies of Bob's I/ITSEC paper are available on request by e-mailing him at [r.j.stone@bham.ac.uk](mailto:r.j.stone@bham.ac.uk).

I/ITSEC Abstracts for the 2003 Conference can be read at:

- › [www.simsysinc.com/iitsec/hsi2003.htm](http://www.simsysinc.com/iitsec/hsi2003.htm) for Human System Integration papers,
- › [www.simsysinc.com/iitsec/trn2003.htm](http://www.simsysinc.com/iitsec/trn2003.htm) for Training papers, and
- › [www.simsysinc.com/iitsec/ed2003.htm](http://www.simsysinc.com/iitsec/ed2003.htm) for Education papers.

## Meet the Team



**Dr David Morris**  
**HFI DTC Director**

After completing his MSc and PhD degrees at Loughborough University, David started his career as an MoD scientist conducting R&D in digital signal processing for underwater acoustics. He then moved into the commercial sector and continued development work on the Spearfish heavyweight torpedo eventually managing the fore-body development programme before joining CAP Scientific to lead a new business in weapons and sensors contract research and development. He later transferred to YARD Consultants Ltd and then CODA (Centre for Operational Research and Defence Analysis) to continue work in defence systems and operational analysis in land, air and sea systems research, development and consultancy contracts. For the last 5 years David has been with Aerosystems International where he has been building Ael's capability in R&D in the systems modelling, simulation and human factors domain. David's current technical interests include the use of synthetic environments for system performance modelling, including HF aspects, and the application of SEs to the concept and assessment stages of new equipment programmes. David represents Ael on the SeBA industry forum.

**Dr Karen Lane BA (Hons) MSc, Phd MErgS EurErg**  
**HFI DTC Research Manager & Frontline Co-Editor**

Karen is the Human Factors Research Manager at Aerosystems International (Ael), Prime Contractor for the HFI DTC. She has over eight years experience of providing human factors expertise within multidisciplinary teams across a range of industries. Karen joined Ael from Cranfield University's College of Aeronautics where she was involved in the areas of usability assessment, simulation, and air accident investigation. Karen has undertaken work in several areas of HF including deriving user requirements, conducting simulation trials and evaluating complex systems from a human factors perspective. Karen's PhD research focused on the development of a usability assessment tool for use within the Civil Flight Deck Certification process. Karen also holds British Psychological Society Level A and Level B certificates of competence in occupational testing. Key areas of interest are human-machine interaction and usability engineering. Karen is a registered European Ergonomist (Council for the Registration of European Ergonomists), a Registered Member of the Ergonomics Society (The Ergonomics Society) and an affiliate of the Division of Occupational Psychology (British Psychological Society).



**Prof. Bob Stone BSc (Hons), MSc, C.Psychol, AFBPsS, FErgS, Eur.Erg, FIoN, FVRS.**  
**Work Package Leader and Frontline Editor**

Bob Stone holds a Chair in Interactive Multimedia Systems at the University of Birmingham and is Director of Training Systems & Human Factors at VP Defence Limited (Sale). A fully chartered psychologist and ergonomist, he also holds the position of Visiting Professor of Virtual Reality (VR) within the Faculty of Medicine at Manchester University, where he is a co-director of the North of England Wolfson Centre for Human-Centred Medical Technologies. Bob's defence ergonomics experience began in 1980 at British Aerospace in Bristol. In 1989 he left BAe to join the UK's National Advanced Robotics Research Centre in Salford, where in 1993 he and his team launched the world's first industrial VR initiative. In 1996, he became an Academician of the Russian International Higher Education Academy of Sciences. Bob specialises in task and training analyses for VR/SE content definition, most recently for the Royal Navy and RAF (close-range naval weapons, submarine training, the NATO Submarine Rescue System and helicopter voice marshalling). He is also active in the medical/surgical HF arena, having designed the world's first keyhole surgery trainer and undertaken projects involving ENT surgery and endoscopic robots. Bob's work in telerobotics, VR and human factors has received numerous national and international awards, including the Ergonomics Society's 1985 Applications Award (for remotely operated submersibles research) and the 1993 Otto Edholm Award (for human factors in VR).



**Prof. Neville Stanton PhD**  
**HFI DTC Technical Director (Year 1) and co-Work Package Leader**

Neville holds a Chair in Human-Centred Design at Brunel University. He received the IEE Informatics Divisional Premium Award in 1998, for a co-authored paper in the IEE journal of Computing and Control and the UK's Ergonomics Society's Otto Edholm Award in 2001, for an outstanding research contribution to basic and applied ergonomics. He is based at the BITlab on Brunel's Uxbridge campus, which is the University's new Synthetic Environment research centre. As Technical Director of the DTC, he is keen to maintain a vision and overview of the project. As co-Work Package Leader (WP1), he is currently concerned with research into, and development of prototype command and control environments. This research begins with a two-pronged approach, involving all of the HFI DTC partners. In parallel with efforts at the University of Birmingham, research is being conducted into what is technically possible in static and mobile synthetic environments, such as virtual reality, augmented reality and teleoperation. At the same time, Neville's team is exploring a variety of command and control structures in contemporary civil, emergency and military systems. The outcome of WP1 will lead to the development and testing of a new C4I concept, which, it is hoped, will exploit the maximum potential of synthetic environments.



## NEC The Human Dimension

A number of familiar faces in the HFI community converged upon the Defence Academy at Shrivenham between 26 and 27 November, 2003 to be entertained by an excellent collection of speakers, all addressing *Network Enabled Capability the Human Dimension*.

The keynote speakers in particular were open and frank in their delivery of the difficulties and problems faced in current military operations in the Gulf and Iraq. Lt Gen John Kiszely (Commander Regional Forces) flew an early flag for the human factor, warning against over-reliance on NEC and the need for reversionary modes. NEC could be a key vulnerability as well as a key asset in the future. He was concerned about information overload for commanders and how much trust the Armed Forces will be able to put in networked information. Vice Admiral James Burnell-Nugent (Second Sea Lord) spoke of Air Tasking Orders (ATOs) produced during the last Gulf conflict that were so large that no human could possibly read and understand them before they were changed or updated during the battle. He also spoke of the pressing need to equip the Navy with the most basic of computing capabilities provided by MS Outlook, Word, PowerPoint and Excel.

Air Marshall Glenn Torpy (Deputy C-in-C, Strike Command) spoke about the highly intense operations at the Combined Air Operations Centre (CAOC) during IRAQI FREEDOM. This US-led centre was highly automated and

process-driven, and information presented to planners was given a confidence level to help with decisions about attacks and re-attacks. Air Marshall Torpy was clearly impressed by this aspect and the US technology.

The different nature of C2 in each of the three main service arms was well illustrated by the three keynote speakers. Certainly the comments have stimulated a period of reflection within the HFI DTC consortium. For example, research into C4I architectures will need to compare and contrast warfare officers' tasks in the UK Ship Operations Room with high-intensity ATO planning within the hi-tech CAOC environment, plus the front-line platoon level C2 requirements of infantry brigades. Three different types of C2 environments that could result in three different C2 models.

All in all, an excellent two-day event, with a good mix of theoretical and practical papers based on service personnel

experience. A refreshing confirmation that, despite the ever-present preoccupation with autonomy in defence systems, it is still the case that, at all levels of the Armed Forces, *in humans we trust!*

A more detailed conference report can be obtained from David Morris by writing to [david.morris@aeroint.com](mailto:david.morris@aeroint.com).

*Dr. David Morris, HFI DTC Director,*



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