

An update for defence decision makers

INFORM

October 2014

Strengthening defence
resilience through
collaboration



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A view from ACM ◀
Sir Stuart Peach

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Niteworks White ◀
Paper series



PROVIDING PRACTICAL, IMPARTIAL RESPONSES TO COMPLEX DEFENCE PROBLEMS

Niteworks provides a unique MOD/industry collaborative environment. MOD staff are encouraged to consider using Niteworks for military capability decision support, where complex problems exist which would benefit from wide-ranging, collaborative and impartial investigation.

Search 'Niteworks' on the Defence Intranet or visit www.niteworks.net for more information.

NITEWORKS

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Introduction

by **Simon Jewell, Managing Director, Niteworks**

Welcome to *Inform*, a publication aimed at Defence decision-makers produced by the Niteworks partnership. I hope that you find its content useful and that through reading it you will feel inspired to find out more about the partnership, and how it can help add value to your organisation be it MOD, industry or academia. The theme for this first issue is *Collaboration* and more particularly how through working collaboratively Defence is able to take better, more informed decisions. In subsequent publications the intention is to focus on *Innovation* (Issue 2), *Experimentation* (Issue 3) and *Knowledge Management* (Issue 4).



Since April 2013 the Niteworks partnership has initiated over 100 projects in support of MOD sponsors. You will be able to read about some of these projects within this publication. This however represents a taster of the knowledge that is available to Defence and accessible through the Niteworks Collaborative Working Environment, Athena and other sources. I encourage you to maximise the value of this information through re-use and you will find details of how to access it on page 10 of this publication.

In his foreword VCDS speaks of the need for Niteworks to help MOD and industry adapt to the changing defence environment in order to deliver resilience and to remain ahead of its adversaries. I am proud of the role that the Niteworks partnership plays in helping to bring this about.

Air Chief Marshal Sir Stuart Peach, Vice Chief of the Defence Staff

Defence is an Enterprise-level system: if it is to work effectively all of its parts must work together. To deliver the timely advantage we seek, the boundaries between industry and MOD need to be broken down and the synergies between science, industry and military capability strengthened. The environment within which we operate is highly dynamic, where our adversaries possess an agility that must be over-matched by our own. If we are to deliver the resilience necessary to succeed in future conflicts we must constantly adapt.



Intelligence preparation of the battlefield requires a fusing of operations, communications and intelligence, delivered by skilled and motivated people supported by the latest technology. Here industry plays a key role through the contribution of military Reserves and in providing the products and services into what is referred to as the Whole Force Concept. Furthermore, through test and experimentation together we must generate the resilience we require by stressing our systems (often to the point of failure) and thus identifying areas of improvement.

It is here that I see Niteworks continuing to play an important role. Over the years I have been a consistent supporter of Niteworks and look to it to help overcome the boundaries that exist between and within MOD and industry. A successful Niteworks should help MOD and industry adapt within the changing defence environment – it should help us to evolve more rapidly – it should help us provide clarity to the decider on the decisions that need to be taken. In doing this it must challenge the default assumptions and drive innovation: as it does so it must support Defence in the taking of impartial and informed decisions in a timely manner.

I need the Niteworks partnership to continue to rise to this challenge.



INFORM

Editors

Jessie-May Brown
Sophie Watts

MOD photography
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News in Brief



Niteworks welcomes new partnership board chair

The new Chair of the Niteworks Partnership Board, Ron Finlayson, has recently taken over the reins from Finmeccanica UK's Vic Leverett. Ron, who is Strategic Business Director – Defence at QinetiQ, represented his company on the Niteworks Partnership Board for almost five years before taking on the role of Chair in September 2014.

Ron has enjoyed a long and established career in Defence, starting in the Royal Navy and moving to other

MOD roles before joining QinetiQ in 2004. We are looking forward to working with Ron and we are certain that he will add a great deal of value in his new role. At the same time, we would like to thank Vic Leverett for the enormous contribution that he has given to the partnership during his tenure.



Outgoing Chair Vic Leverett receives a farewell gift from the Niteworks Partnership Board.

New white paper published

Niteworks has released the latest in a series of White Papers which draw on best practice from Niteworks projects to help address some of the root causes of Defence problems. The paper, entitled *Styles of Architecting: a smarter approach to architecting the Defence Environment*, proposes four different styles of architecting and is already influencing MOD thinking on standardising architecting practice. Read more about the White Papers initiative on pages 12-13.



Welcome to our new associate members

Over the last quarter (1 July to 30 September 2014) Niteworks welcomed eight new Associate members into the partnership.



Niteworks' membership currently stands at 140 organisations, made up of the MOD (including Dstl), 12 Partners and 127 Associates. Each offers niche skills and expertise which will help us support MOD decision-making on military capability.

AWARDS

Niteworks is proud to have received a number of awards for its work in recent months: here are some of the highlights.

CSA commendation for joint Dstl-Niteworks team

Niteworks' role in helping the MOD and Dstl to exploit publically available, Open Source information has been recognised by the MOD's Chief Scientific Adviser (CSA), Professor Vernon Gibson. Dstl received an award under the annual CSA Commendation Scheme, which gives public recognition to those who have made exceptional contributions to Defence Science and Technology. The award acknowledges the combined efforts of Dstl and Niteworks on a challenging and

highly innovative programme of work, which continues today. The citation stated that the results of experimentation work had 'influenced the specification of emerging defence capability in Open Source exploitation.' It added that the work of the joint Dstl-Niteworks team 'clearly demonstrated how (and justified why) government and industry should work closely in advancing Defence ambitions.' To learn more about the programme see pages 6-7.



From left to right: Ian Cooper, David Coombs, Professor Vernon Gibson (Chief Scientific Adviser), Lucy Harwood, Natasha Malden, Keith Hermiston (Dstl Project Lead).

Accolade for cyber work

BAE Systems has commended Niteworks' activity in the cyber domain through its annual Chairman's Award Scheme.

Niteworks received an award for a major, three-year programme of work to assist the MOD in driving a step change in its approach to cyber operations and capability. You can read more about the programme in this issue.

Niteworks' White Paper initiative and a project to examine the role of motion cueing in synthetic helicopter training also received awards.



Commercial achievement award

A joint MOD-industry team from Niteworks has been awarded 'silver' under the BAE Systems Commercial Achievement Award Scheme (CAAS). The award recognised the team's efforts for continued delivery while working to secure a new, three-year contract for the extension of Niteworks in 2013 despite challenging circumstances. The contract was required to pass through several tiers of senior MOD approval because of its unique nature and it took over two years of complex negotiation to complete. Throughout this period, the Niteworks team worked hard

to deliver high quality outcomes, sustaining the support of the partnership while developing a viable

solution that delivered cost savings and effectiveness improvements for the MOD.



From left to right: Keith Hurst, Dave Pilbeam, Guy Griffiths (Group Managing Director – International, BAE Systems), Samantha Page, James Shiplee, George King.

Project Highlights



With over 100 projects initiated under the latest contract, Niteworks' Delivery Director, Rick Bounsall, summarises a few examples to show the range of activity that the partnership is able to tackle.

The main theme for Niteworks' delivery and project teams over the last 18 months has been *exploitation*. We have been focusing on this in two ways.

First, we aim to provide the best possible support to the MOD in order to enable it to fully exploit the benefits identified through our project work. Due to the nature of our MOD-industry partnership, Niteworks is well placed to fulfil this critical friend role in order to assist our customer in following through on the outputs we have delivered.

In addition, we are able to exploit the unique access that we have to valuable intellectual property from historic projects in order to ensure that we re-use previous lessons learned and best practice where appropriate. You can read more about this in Mike Wilkinson's article on White Papers.

At a time of significant MOD transformation, we have sought to provide support to all sectors of the Defence enterprise as they grapple with their new responsibilities in the post-Levene world. We remain committed to delivering real value and innovation to MOD through our activities, from facilitating pre-competitive dialogue with industry through to running operationally-focused experimentation across all the Defence Lines of Development (DLODs), specifically tailored to support UK Armed Forces on deployment.

All Niteworks projects are grouped into programmes, which facilitates the cross-fertilisation of ideas and free re-use of existing MOD intellectual property. Through delivering our projects so closely alongside our MOD colleagues, we have been a key enabler in the transition to the new, post-Levene Defence Enterprise. But there is still so much more to do as the Commands grapple with their new roles, DE&S continues to evolve and another Strategic Defence and Security Review (SDSR) approaches. Niteworks is mature and is ready to play its part.

Brockworks – innovation in action

Brockworks is a Niteworks model for fast experimentation using the latest technological and information systems products and services alongside industry best practice. It aims to help the MOD to overcome the enormous challenge of facilitating the flow of information across its many communities, without compromising security.

The facility is a secure, multi-industry environment where testing can take place safely in the drive to innovate. It also permits MOD and industry to examine new commercial models better suited to the lifecycle of the technology. This work is at the forefront of supporting the new MOD Chief Information Officer – Mike Stone – as he seeks to challenge established practice and deliver affordable 21st century solutions to Defence's information needs.

Exercise COMBINED ENDEAVOUR 2014 – classic Niteworks support across the DLODs

Exercise COMBINED ENDEAVOUR 2014 was a NATO-led exercise in multi-national interoperability involving 28 nations. The UK provided the largest contribution to the exercise, deploying over 500 troops to Grafenwohr in Germany, including one of its Armoured Infantry Brigade headquarters, in order to gain experience of returning to contingency operations in a multi-national context. Niteworks went back to its roots by supporting the planning, observation and analysis of the exercise, as well as providing networks support and pan-DLOD advice before, during and after the event. As a

result, the Niteworks team was able to identify and suggest different operating models and provide valuable input into new acquisition programmes.



Defence Operational Training Capability (Air) – A pathfinder for the MOD training enterprise

Niteworks has been supporting the MOD in articulating the case for a new approach to post-graduate synthetic training in order to improve both the quality of training and operational performance whilst delivering cost efficiencies. The quality and maturity of off-the-shelf simulation and networking products, driven in part by the gaming industry – in which the UK is a world leader – when integrated as part of a targeted fidelity simulation, now provide an opportunity to deliver new synthetic training capabilities and re-assess the optimum live synthetic training balance.

Niteworks has been linking the Dstl and DE&S communities with industry in the critical pre-competitive stages of the Air component of this initiative. In doing so, the work has helped

inform what the newly established Defence Training & Education Capability Authority needs to do in order to roll out this concept across Defence.

“This was my first experience of working with Niteworks and I was impressed by not only their capabilities and ability to deliver against the Statement of Work set for them, but also the professional and structured manner in which they did so. The open and honest working relationships have been excellent and the impartial advice they have provided has been really helpful in challenging and informing our own forward plans.” Mark Newton, DOTC(A) Core System & Services Project Manager, DE&S.

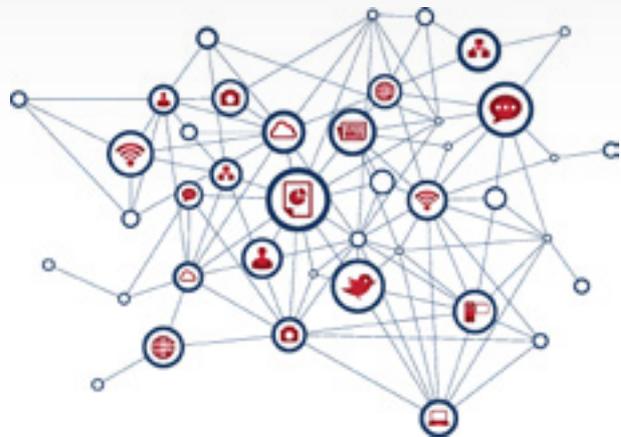
Open Source Intelligence – supporting a new, enhanced capability

Niteworks has been assisting the MOD in its search for an enhanced Open Source Intelligence (OSINT) capability, where the plethora of accessible, non-classified information can be best utilised by the MOD and the UK intelligence community to ensure the security of the United Kingdom.

The OSINT Concept Capability Demonstrator (CCD), run by the Niteworks team out of RAF Wyton, did this by examining the available information sources, technologies and tools that could be used to gather and exploit Open Source Information (OSINF). Working with the end user analyst community, Niteworks also defined the tradecraft, processes and procedures to develop the collected OSINF into useful OSINT.

Niteworks has also been supporting the Joint User and DE&S Information Systems and Services Delivery Team in

determining how to take a service-based approach to delivering the future OSINT capability, whilst maintaining the level of innovation and agility that will be required for service delivery.



Command Transformation and the introduction of Programme Management

As many of you will be aware, the Levene report triggered a fundamental redesign of the MOD and Front Line Command (FLC) organisations in order to allow the FLCs to manage the ‘business’ of Defence as well as the outputs. The FLCs have been seeking support to transform into simpler, more effective, appropriately skilled and less bureaucratic organisations, which will enable them to achieve more effective and efficient delivery of capability to the frontline.

One of the areas of focus for Niteworks in support of this transformation has been the design and piloting of new Programme and Portfolio Management functions – a new

concept within the FLCs (though not in industry) and one for which they do not currently have the processes and skills in place. With support from its industry members, Niteworks is helping the MOD to create its own systems and methodology based on best practice to bring greater rigour to Defence project management.

Niteworks has been involved in the process of change transformation across all the FLCs for the past two years and specific programme support tasks will continue to run into 2015.

Making the most of our unique partnership

Samantha Page, Head of Commercial and Partnering, provides an update on the latest activity within the Niteworks partnership



Niteworks is an open and inclusive partnership between the MOD, Dstl, industry and academia, which allows organisations of all sizes operating within the defence sector to work together in an impartial and agile way to support the MOD.

Since the partnership began in 2003, membership has grown to 140 organisations including the MOD, Dstl, large defence primes and a diverse community of Associates – of which approximately 40% are small to medium enterprises. More than 30 organisations have joined since the start of the most recent Niteworks contract in April 2013 and there are at least another 20 interested companies in the pipeline. We have agreed with the MOD that we should not attempt to limit the size of Niteworks because it is essential that we continue to encourage innovation by allowing new companies to join, helping us to be prepared for any new MOD requirements that may arise.

The continued enthusiasm of current and potential members shows that many organisations recognise the value that this partnership provides to both the MOD and industry alike.

For industry members there is the opportunity to gain insight and develop skills through submitting project team members, attending industry workshops, taking part in industry consultations or review panels, or simply accessing information made available through the partnership.

For the MOD, DE&S and Dstl, the partnership provides access to an impartial, pan-industry view on how to address cross-cutting problems, which is motivated by what is 'best for Defence'. Through bringing together the MOD, industry and academia, Niteworks helps MOD to maximise capability for the Armed Forces within available budgets and with minimum risk. In addition, by tapping into the business minds and intellectual property available from the wider partnership, the MOD can de-risk requirements and gain access



to information about new technology types or innovative services from industry, which will help to improve Defence acquisition.

The Niteworks partnership is represented by the Partnership Board, which consists of our MOD sponsor, Dstl, ADS (who represents our Associate community) as well as each of the 12 major industry Partners. Meeting on a quarterly basis, the Board assesses the roles of MOD and industry in fulfilling the Niteworks strategy, and provides a forum to raise any issues that need to be brought to the attention of the Niteworks 2* Governance Board. There is an independent Chair of the Board, which rotates on a two-year cycle. Our current Chair is Ron Finlayson from QinetiQ, who recently took over the reins from Vic Leverett of Finmeccanica.

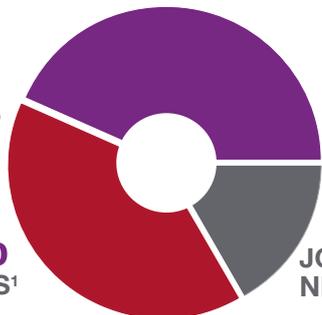
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Continued on page 10

THE PARTNERSHIP

140
ORGANISATIONS

40%
ARE SMES¹



32
JOINED UNDER
NITENETWORKS III

OVER
90%
OF PARTNERS
AND ASSOCIATES
HAVE EITHER
WORKED ON
PROJECTS
OR ATTENDED
WORKSHOPS



MORE MAY HAVE BEEN INVOLVED THROUGH OUR OTHER ENGAGEMENT MECHANISMS.

PEOPLE



61%
OF INDIVIDUALS
SUB-CONTRACTED
UNDER NITENETWORKS III
ARE BRAND NEW
FACES TO NITENETWORKS



757
ROLES
FILLED



102
DIFFERENT
PROJECTS
INITIATED



11.3
CVs RECEIVED
ON AVERAGE FOR EACH
COMPETED ROLE
WITH EXPECTED
START DATE BETWEEN
1 APR 13 AND 30 SEP 14

CUSTOMER

70 PROJECTS DELIVERED
UNDER NITENETWORKS III



4 MARITIME



23 LAND



13 AIR



26 JOINT

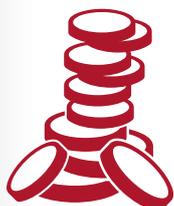


4 CENTRE

MOD PROJECT
SPONSORS
VERY SATISFIED
OR SATISFIED
WITH THE OUTCOME
AND QUALITY OF
NITENETWORKS TASKS²



VALUE FOR MONEY



£1bn+
COST AVOIDANCE
IDENTIFIED SINCE
THE START OF THE
NITENETWORKS II CONTRACT
(NOVEMBER 2007)



MOD PROJECT
SPONSORS
VERY SATISFIED
OR SATISFIED
WITH THE VALUE
FOR MONEY RECEIVED
FROM NITENETWORKS²

Statistics cover the period from the start of the Niteworks III contract (1st April 2013) to 30 September 2014 unless otherwise stated

¹ Estimate based on information received when joining the partnership

² Projects delivered between 1 Jan 13 and 30 Sep 14, based on 55% response rate



Making the most of our unique partnership

Continued from page 8

It is vital for us to ensure that the partnership is flourishing and we have recently undertaken a survey to gain some valuable feedback on this point. We had some very encouraging results. 96% of respondents value their participation in Niteworks, with over 90% believing that it improves their understanding of MOD processes and capability, enabling them to ensure they are best positioned to support MOD going forward. In addition, 98% felt that the process for submitting candidates for roles was easy to understand and well organised, plus 98% were either very satisfied or satisfied with our communications.

“I believe Niteworks to be particularly effective in its scope, influence and membership.”

Ian Peck, Business Manager (Sales and Business Development), MBDA

Inevitably, there were areas for improvement such as interview feedback and access to the Collaborative Working Environment (the electronic portal where Niteworks outputs can be accessed). We will continue to improve on these points wherever possible. Another key concern was the perception that our resourcing processes may favour previous incumbents. We monitor this potential issue very carefully and

we try to balance direct experience with a fresh perspective, maximising competition wherever appropriate. In fact, since the start of the current contract around 61% of roles have been awarded to individuals who have not been involved before and this trend is increasing. A full report on the outcomes of the survey will be issued in due course to partnership members.



If you are interested in joining the Niteworks partnership, or if you know an organisation that you think might benefit from membership, please contact the Niteworks commercial team at membership@niteworks.net

How the partnership can access information from Niteworks

There are several ways in which the partnership can access relevant information and reports from Niteworks.

E-mail updates

Newsflash – a new reports list and the projects pipeline and portfolio chart are e-mailed to the partnership on a monthly basis. The newsflash also includes upcoming events, industry briefings and workshops.



Partnership update – more detailed information about current projects is e-mailed on a bi-monthly basis. This includes an update from our MD, news and events and resourcing activities.

Collaborative Working Environment (CWE)

Partnership members that have access to the CWE (via 

the RLI) can find project summaries, pipeline and portfolio information, executive summaries of reports, Quicklook reports, key facts, copies of the latest communications, papers, presentations and useful contacts.

Niteworks website (www.niteworks.net)

A list of recent projects is available in the Publications section and is updated on a six-monthly basis. There is also a Members Area on the site, containing the projects pipeline and portfolio chart key contacts, FAQs, communications, papers, presentations and other relevant information.



The partnership (including MOD staff) can also email Mark Schofield (knowledge.manager@niteworks.net) if they want help to find a report.

How MOD can access reports from Niteworks

MOD personnel also have access to Niteworks reports and general information via **Athena**, a research database run by Dstl for HMG. You can also view the Niteworks page on the **Defence Intranet**, which provides information and news about Niteworks, as well as key contact information and FAQs. You can also download our Tasking Form from there.



View from our MOD Sponsor

Dr Dai Morris

Head of Weapons, Evaluation and Capability Assurance,
MOD



I have been closely associated with Niteworks for over a decade. Over this time I have seen it evolve under the direction of MOD from a centrally-funded warfighting experimentation centre into a highly flexible organisation providing evidence-based decision support on a wide range of MOD topics, using a much more customer-focussed and flexible funding model. As it has done so, it has adapted its ways of working to provide the agility needed to help inform MOD decision making as our operational and operating environments change.

Any entity that wishes to remain viable in a changing environment must innovate and adapt. I believe it is one of the enduring strengths of the Niteworks partnership that it has been able to do so – balancing the strengths of a broad partnership with the inherent agility of a small core.

I am particularly pleased that the partnership continues to grow and is able to bring capabilities to bear from a broad base of traditional and non-traditional sources. Helping MOD access the talents of its SME base is important – but so is accessing the talents of its prime contractors. The ability to access both through Niteworks in a unified manner is a unique feature of the partnership that has provided demonstrable value over the years. Clearly the fusing of such eclectic talent can at times lead to tensions, but this is something that I see as entirely healthy. A consensus too easily formed is probably one that has not enjoyed the benefit of robust challenge. This ability to challenge has been made possible through the culture of trust that has developed within the Niteworks partnership as it has matured and it is arguably an understated feature of the model.

In any complex system, it is necessary to understand the individual contribution of every part of the system

to the whole if it is to be improved. It is important therefore that when Niteworks executes its projects, MOD, industry and academia work collaboratively to address the issues at hand. To gain the most value out of Niteworks projects, MOD needs to remain involved in the project as it develops. Complex problems cannot be addressed if we expect to throw the problem over the fence and wait for an answer to be thrown back. In turn, industry and academia should not think that they can answer our problems without properly engaging in the problem space. The ability to work together – even where neither the problem nor the solution is clear – is for me a much prized feature of the Niteworks Way that we should ensure is not diminished.

As I write this piece I recall what I said in a similar publication in 2011, in which I reflected on the need to focus on the training and simulation initiatives. I accept that I could have chosen many other strands of Niteworks activity to focus on, but time and space are limited, so I will bound my thinking here. And I also note that responsibility for this training and simulation activity has now moved to JFC, so my observations are as an interested observer, rather than sponsor. So has there been a focus on training and simulation and, more

importantly, has anything changed as a result? Demonstrably the answer is yes on both counts. Niteworks has made a significant contribution in helping MOD explore and challenge its approach to training and simulation. The work, which started with the collation of existing analysis ahead of SDSR 2010, made recommendations to improve the way we ran business change in this area. Niteworks provided advice on setting up a Defence Training & Education Capability and then firmly linked Dstl outputs into a tangible and well-structured delivery programme for exploitation by DE&S Delivery Teams and hence into the Commands.

So am I satisfied with the progress made? Well in truth no – not because of faltering delivery concerns or because of a lack of determination to make things happen, but because I know that we can still do more to support change throughout MOD in this vital area. The journey is by no means over but significant progress has been made. Niteworks has helped and continues to help MOD develop a training and simulation environment fit for the 21st century. It is a bold and challenging transition of a scale only matched by the size of the potential advantage that can be gained. Could we have made the progress we have made without Niteworks? Regrettably without a parallel universe to prove either way the judgement on this will have to remain personal and subjective. However for me the answer is unequivocal: we would not have made the progress we have made had it not been for the contribution of the Niteworks partnership. I therefore welcome this opportunity to thank the partnership for its support and I urge the good, collaborative work to continue.

Niteworks White Papers: Tackling strategic/systemic issues in Defence

Technical Director Mike Wilkinson explains how a new Niteworks initiative could help the MOD address some of its most challenging and persistent problems



A key principle of the ‘Niteworks Way’ of doing business is to focus on *exploitation*, ensuring maximum value is derived from our reports and other outputs. This includes capturing ideas and know-how created within Niteworks projects for subsequent re-use by MOD and industry. Our project management framework is designed to deliver this principle and it is enshrined in the terms and conditions that every Niteworks member signs up to: all foreground intellectual property is owned by MOD but it is licensed back to members to exploit for government purposes.

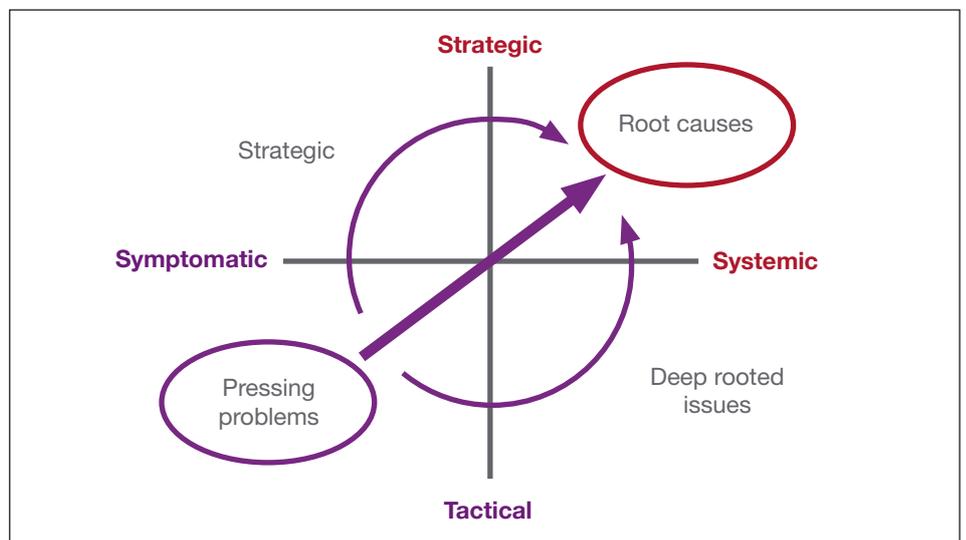
For several years now Niteworks has captured best practice from its projects in the form of *Niteworks Generic Approaches* and these are made available to projects as templates for their work. Typically, the problems addressed by these approaches tend to be quite specific, as dictated by the challenges that Niteworks is asked to tackle by the MOD. Herein lies a key issue, namely that the Niteworks programme of work is not necessarily designed to be coherent at a strategic level but is often led by customer demand and is very focussed on dealing with pressing issues in a pragmatic fashion. Individual projects, therefore, typically do not have an opportunity to deal with underlying systemic issues for the benefit of the whole of Defence.

However, looking through the long history of Niteworks projects, the existence of recurring problems and solution approaches is evident. In some cases it is possible to see how the ‘intellectual capital’ captured by individual projects can be abstracted and synthesised to help address the root causes of Defence problems in a way that is inherently strategic and systemic in nature. In such cases, the key ideas are communicated via the recently introduced *Niteworks White Papers*.

To date, we have identified four areas where we believe the synthesis of best practice from Niteworks projects can have strategic systemic effect, namely: Continuous Capability

Evolution (CCE); Architecting Styles; Complex System Interventions, and; Capability Coherence. We have already issued White Papers for the first two topics and work is well advanced for the second two. We also have some early thoughts on other topics that might follow.

We believe that the White Paper initiative will become an increasingly important ‘value added’ benefit to MOD and industry, only made possible through the unique Niteworks construct. In recognition of its significance, the initiative recently received an award in the annual Chairman’s Award Scheme run by BAE Systems, one of 12 major industry partners in Niteworks.



The Niteworks White Papers demonstrate how best practice from individual projects can be synthesised to help address the root causes of Defence problems.

The CCE White Paper

The CCE White Paper describes a practical approach to the evolution of capability through small scale, low risk increments. The approach brings together activities that are traditionally situated at opposite ends of the acquisition lifecycle through combining Capability Concept Demonstration (CCD) and System (or Service) Integration (SI).



Key benefits of the approach are: the radical compression of acquisition timescales; exploitation of technologies at their optimum maturity point, and; the ability to incorporate operational lessons with minimal delay. Variants of the approach have been tested and refined in a wide range of Niteworks projects, and several MOD projects are now looking at adapting the ideas for their own purposes.

The Architecting Styles White Paper

The Architecting Styles White Paper defines a 'smarter' approach to architecting the Defence environment by linking problem situation and solution approach according to the purpose of the architecting activity. Four styles have been defined (*Authoritative, Directive, Co-ordinative, Supportive*).



This White Paper has already influenced the MOD Chief Technical Officer's thinking on standardising architecting practice in Defence and has been incorporated into the DE&S Director Technical's System of Systems Approach (SOSA) initiative. It has also had a wider impact on the Systems Engineering and Architecture community through bodies like NATO and the International Council on Systems Engineering (INCOSE).

PROJECT SPOTLIGHT

Improving performance whilst reducing costs: motion cueing in aviation simulators

The Customer

Merlin Project Team, DE&S, Abbey Wood.

The Issue

To understand the simulation requirements for Merlin Mk 4 training in order to acquire an affordable helicopter simulation capability.

The Task

Previous assumptions had suggested that helicopter simulators must have full, complex, hydraulically driven motion platforms in order to provide effective aircrew training.

To test this assumption, Niteworks conducted a short, innovative and objective assessment of the role of motion cueing in helicopter training through a mixture of qualitative and quantitative analysis. In short, the objective was to determine whether it was necessary to have a full motion platform or whether a less expensive option was feasible, without affecting the efficacy of training.

The Niteworks project team analysed evidence gathered from various sources, including a capability concept demonstrator, interviews with leading subject matter experts (in both training and operational fields),

a comprehensive review of published work and regulatory requirements, benchmarking against other simulators in use within the UK and overseas, and engagement with academia (in particular, Liverpool University).

Various stakeholders were engaged at a senior level during the process, including DE&S, Joint Helicopter Command, Navy HQ, HQ Air Command and the Military Aviation Authority.

Results and recommendation

The majority of quantitative evidence suggested that whilst the presence of motion did improve crew performance in the simulator, it had no effect on the transfer of that training to the real helicopter. Results of the qualitative analysis concluded that motion cues are most important as the first indicator of manoeuvre, with subsequent motion cues becoming less significant.

A review of all the evidence led to the overall recommendation that alternative simulator training equipment such as modern motion seats could provide the required training performance whilst reducing costs.



The Benefit

On a basic level, the work will ensure that a fit-for-purpose training system for Merlin Mk 4 can be delivered within tight financial constraints. Immediate savings from this short, comprehensive study represent an order of magnitude reduction in cost to the MOD over previous training solutions.

Why Niteworks?

Niteworks was particularly well placed to carry out this project due to its ability to access the most credible pan-industry and academic expertise in a timely manner for both leading and informing the project. In addition, the success of the project also relied on the project team's ability to identify and engage with all the relevant stakeholders within MOD at the right level.

NITENETWORKS PROFILE



Fleur Currie, Niteworks Chief Systems Engineer



Role and responsibilities

I joined Niteworks in July 2014 as one of six Technical Assurers. I take on the assurer role for a number of projects within my areas of expertise, which are systems engineering, business change and transformation. My main responsibilities in the early phase of a project are to help shape the task, ensuring that we have captured the correct MOD Customer requirement, and to put the right team in place to address that requirement. Once the project is up and running, I monitor the team's activity and output, helping to ensure that they remain focused on the brief or respond appropriately to changing requirements. As formal deliverables are developed, I get engaged to ensure that they address the original requirement and that they are fit for purpose.

Priorities for the rest of the year

My top priority is to focus on ensuring that the outputs that are developed have the maximum chance of exploitation. We need to ensure that every project outlines how the customer can implement change within their own environment in a practical and sustainable way. I can also bring my experience of change and transformation to bear; to help the Customer and wider

partnership understand how to initiate change, how to measure progress and deal with the challenges they are likely to face.

Another priority relates to industry engagement, which has two elements to consider. Firstly, there is the need to make sure that the maximum benefit is derived from industry for each project. Secondly, industry must be encouraged to gain the most value from the partnership by accessing key information about current and future priorities of their customer.

Career background

I was sponsored through my Systems Engineering degree at Loughborough University by BAE Systems. On graduating I joined the company, working as a technical expert on Typhoon product development and on engineering programme management for a Tornado avionics upgrade. After moving into a more strategic role on secondment into Dstl, I was then seconded into MOD to support the Capability Manager Battlespace Manoeuvre directorate. This role enabled me to develop some of the critical skills needed to implement change including stakeholder management and influencing.

I continued to take on a series of secondments within MOD Main Building relating to change

management until I left BAE Systems to set up my own business. I then worked on a series of projects, some of which were within Niteworks, including Key Systems Advisor, Information Operating Model and Customer Design and Materiel Strategy before joining the Niteworks core team in July 2014.

The main reason I wanted to join was to give something back because I gained a lot of knowledge and skills from my project work with Niteworks. I think Niteworks is fantastic for MOD – there is no other way that they can get such valuable and varied input from industry.

Hobbies

I have a campervan, which I take to go walking and climbing in the Lake District and Scotland. I enjoy Cani-X (running with dogs), gardening and riding my superbike. I'm also taking a canine psychology course at the moment.

Unknown fact

I'm a qualified rock climbing instructor and mountain guide, but what's probably more surprising is that I'm a quarter Jamaican. You never know, maybe I'm related to Usain Bolt!

Project in depth

Supporting the MOD's cyber capability

Project summary

Over the last three years Niteworks has undertaken a major programme of work to assist the MOD in driving a step change in its approach to cyber operations and capability, most recently through a series of Technology Demonstrator Programmes which is already informing the MOD's cyber acquisition strategy.

How did Niteworks approach the task?

Niteworks was approached by the MOD in 2011 and undertook two pieces of work to establish the skills and experience that could be brought to bear from the Niteworks partnership to inform the MOD's cyber effort. The tasks focussed on defining the cyber skills and competences that would be needed by the MOD, from the specialist operator to the generalist. Niteworks also completed a short project to show how industry quantified the cyber threat and justified expenditure on cyber security activities.

Later on in the year Niteworks was commissioned by the MOD to look at all aspects of MOD-to-industry cyber security and how this could be enhanced to reduce the risk of the Advanced Persistent Threat (APT) to

MOD information and operations. This work resulted in a number of practical recommendations which were subsequently taken forward within the MOD. A further project followed that assisted MOD with setting up its organisation for the implementation of changes in MOD-industry cyber security. The project complemented the work of the Defence Cyber Protection Partnership, which has been conducted in full consultation with other Government initiatives led by GCHQ and the Department for Business, Innovation and Skills (BIS).

2013 proved itself as one of the most intensive periods of the Niteworks cyber programme, seeing some highly practical deliverables involving the de-risking of some major technical, security and procedural factors. A major element of this was a series of five Technology Demonstrator Programmes (TDPs) conducted by Niteworks on behalf of the MOD. These set up and evaluated different cyber structures and technologies and their outcomes have informed the MOD acquisition strategy for Cyber Test & Evaluation capability.

In autumn 2013, Niteworks commenced a project looking at Cyber Defence Key Performance Indicators (KPIs) for the future

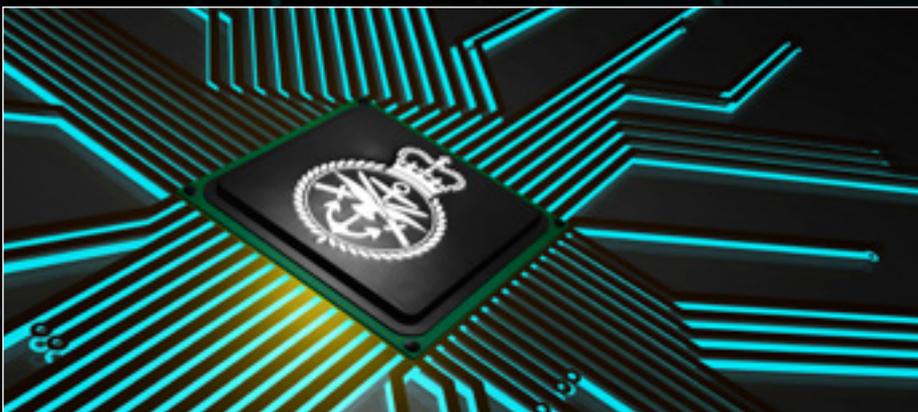
provision of ICT services from industry suppliers to the MOD. The initial Cyber Defence KPI project was completed in December 2013 and a second continuation project has just started.

What was the outcome?

Niteworks has provided the MOD and Dstl with a highly refined definition of the requirements for cyber capability which has been comprehensively evaluated and de-risked. It has supported the MOD in delivering new capability, through practical solutions that could be implemented rapidly. The series of TDPs has ensured top level confidence and understanding within the MOD of what can be achieved through contracting with industry. In turn, the partnership has had first-hand involvement in informing a novel and dynamic strategic requirement and the opportunity to learn from that involvement and reflect that into business practice.

Key facts

- Industry better informed of MOD's requirements in the cyber domain
- MOD's cyber acquisition strategy informed by latest industry capabilities and expertise
- Strong SME involvement
- Aggressive timescales pursued through agility of the Niteworks partnership



An Associate's View of Niteworks

There are nearly 130 Associate Members within the Niteworks partnership, many of which are small to medium enterprises. With that in mind, we asked a recent joiner, Nova Systems UK, about their view of Niteworks so far. We spoke to Dave Best, Director Operations – UK.



How did you find out about Niteworks?

I had been aware of Niteworks whilst still in uniform, although to my shame I knew very little about the organisation. After retiring from the RAF and establishing Nova Systems UK it became clear to me that many of the major issues facing MOD, the Front Line Commands and industry were being tackled through the Niteworks partnership – especially in the area of capability management. I therefore set about doing the research which I should have done whilst still in uniform and I made contact with a senior Niteworks manager to better understand the structure, mandate and philosophy of the partnership.

How long have you been an Associate?

Nova became a Niteworks Associate in February 2014. I had personally been conducting project work through another Niteworks associate company for about a year prior to that, but achieving associate status in our own right was important to us.

How have you been involved so far?

We have actively sought to be involved in projects within the Niteworks portfolio which match our expertise and experience. These have included synthetic mission training, capability management, Unmanned Air Systems policy and

“By being a member of the Niteworks partnership we can therefore contribute to important programmes which perfectly suit our expertise and philosophy but which would otherwise be hard for a small company to support.”

flight simulation. We were delighted to be awarded a BAE Systems Chairman’s Bronze Award for work which Nova personnel completed on future Merlin simulation requirements (this work was conducted through Vedette Consulting Ltd, prior to Nova gaining associate status).

What value do you think Niteworks provides to you and your company?

Nova gains enormous value by being a member of the Niteworks partnership. As a company we aim to provide warfighter focussed expertise based on the strong operational and technical background of our people. This automatically points us towards the early stages of the capability management process, and this is the area where Niteworks typically operates. By being a member of the Niteworks partnership we can therefore contribute to important programmes which perfectly suit our expertise and philosophy but which would otherwise be hard for a small company to support. Also, the Niteworks policy of mixing project team members from across the partnership in order to capture deep subject matter expertise makes

Niteworks a stimulating, highly professional and ‘output focussed’ place to work. Again, these values match our own and therefore from a personal point of view I enjoy the working environment.



Niteworks would like to congratulate Air Commodore (Ret'd) David Best on receiving the prestigious Legion of Merit award from the United States. The award is in recognition for his efforts as Director Air Operations at ISAF Joint Command in Afghanistan during 2010-11. Dave was cited for his specific work around eliminating aircraft-induced civilian casualties whilst ensuring continued air support for operations in spite of a particularly challenging political environment. An extract from Dave’s citation reads: ***“The superior effort, outstanding leadership, and personal initiative displayed by Air Commodore Best reflect great credit upon himself, the United Kingdom Royal Air Force, and his country.”***

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