IntegratedEA

STRATEGY • OPERATIONS • TECHNOLOGY

25-26 February 2014, One Great George St, London

Conference Programme

Welcome to Integrated EA 2014

Welcome to the seventh annual Integrated EA conference. Seven years and it always seems to me that the content still gets better every year. I'm confident this year will be no exception.

We have two themes to this year's event; both of which are of personal interest to me. I'll try and stay out of the debates though, as you'll never be able to quieten me once I get started. The first topic is about embracing complexity. Systems engineers strive to avoid it. Budget holders run scared of it. The military still swear by KISS principles. But the world *is* complex, and if we want to be agile enough to deal with a complex world, we need complex systems. The challenge is how do we move towards manageable complexity without ending up with something that is just complicated.

The second topic is about how you make architectures pay for themselves – again I'll try to avoid ranting about wasted opportunities and architects trying to model the world in excruciating detail. This theme is about doing just enough architecture. Not so much that you waste money, and not so little that nobody trusts it.

The big news this year is around NAF and MODAF. The IEA conference was originally set up to help establish of community of interest for MODAF. Throughout the years we have also developed a healthy following of NAF users. It is therefore fitting that this year should see a presentation on the convergence of NAF and MODAF. This is something the community has been asking about for a long time, and now the work is finally under way.

Integrated EA will offer you the perfect chance to explore all of these challenges. I urge you to make the most of your time here by discussing these issues and others with your fellow attendees.

After a successful trial last year, the unconference is back by popular demand with Mark Foden presiding. It will be held in the Palmer Room on the lower ground floor in parallel to the main conference from 12.05 on Tuesday. Delegates are encouraged to actively participate and direct the agenda themselves.

We are hugely grateful for the support and participation of our partners who make this event possible:

If you require any assistance throughout the conference please just ask Penny Creed or Karan Kitter who will be happy to help you.

I would like to thank you for your continued support of Integrated EA. It is your participation that makes this conference so unique. Defence and government face enormous challenges in 2014; delegates at the Integrated EA will do more than any other group to ensure they are met.

Kind regards

Ian Bailey

Conference Chair and Managing Director, Model Futures

Conference information

On behalf of the conference team I would like to welcome you to Integrated EA 2014. Please find below some logistical information to help you enjoy your time at the conference. If you have any questions please do not hesitate to ask myself or my colleague Karan at the registration desk.

We hope you enjoy your time at the conference please don't forget to complete your evaluation form and provide your honest feedback.

Penny Creed, Conference Manager

VENUE

WIFI: Complimentary Wifi is provided by the venue. Please look for **OneGreatGeorgeStreet**. No password is required.

Finding your way around:

- You will find a staffed cloakroom on the ground floor (behind the stairs)
- Lunch and all refreshments will be served in the Great Hall
- The unconference will table place in the Palmer Room on the lower ground floor. Lifts are available from the Rotunda area
- The drinks reception will take place in the Rotunda area (outside the Great Hall) at the end of day one. All day one attendees are welcome to attend.

HOUSEKEEPING

Name Badges: All delegates must wear their name badges in order to gain access to the conference sessions.

Mobile devises: Please ensure all mobile devises are switched to silent or off during the conference sessions.

Personal possessions: Please do not leave any items in the theatre overnight. If you wish to leave items at the venue overnight please use the venue cloakroom. Items are left at the owner's risk.

Health and safety: The Fire Alarm is a two-tone klaxon (note, if you hear a single bell ring it is likely to be the Division Bell, calling members to Parliament to vote). On hearing the alarm you must evacuate immediately by the nearest fire exits. You should not stop to collect personal belongings and must not use the lifts. There is no test scheduled for the next two days.
Assembly Points are located at the corner of Little Great George Street corner and Parliament Square, Storey's Gate and Prince's Mews. You must remain in one of the assembly points until authority is given by the Incident Controller to return to the building.

PROGRAMME

Social Media: We welcome tweeters and interaction on other social media. Though please do respect the wishes of any speakers who request secrecy during their presentation. Our twitter handle is **@IntegratedEA**. Please use hashtag **#IEA14.**

Presentations: Presentations will be available for download from www.integrated-ea.com after the conference. Notification of when they have been uploaded and a password to access the presentations will be emailed to delegates in due course. Please note we will only be providing for download those presentations we have been given permission by the authors to publish.

Questions: Questions will be taken at the end of each session. Please wait for a roving microphone and state your name and organisation before asking your question.

Day 1 – Managing Complexity

09.30	*Registration and coffee*	
10.30	Welcome by **Ian Bailey, Model Futures**	
10.45	**Keynote address: Tackling complexity in giant systems** Systems architecture evolve in cycles every 15-20 years, oscillating between centralization and decentralization, but growing in size and complexity. The last cycle shifted from vertical to horizontal scalability for hardware, applications and data platforms. This talk will describe approaches used by some of the companies who pioneered cloud platforms to tackle complexity when building these giant distributed systems. **Beat Schwegler,** Director Cloud Evangelism, **Microsoft**	
11.25	**Keynote address: Complexity, or the new simplicity** Complexity theory is starting to inform radical changes in both operations and strategy. Sometimes known as *the science of uncertainty* Complex Adaptive Systems theory is increasingly being used to avoid simplistic approaches to uncertain situations. New approaches to evidence based on coherence, utilising the power of social computing are providing radical new, low cost approaches to living with, absorbing and exploiting uncertainty. One of the big themes is *doing more with less* as much time and effort is wasted in trying to eliminate uncertainty rather than absorbing and using it. Foresight is assumed to be about assessing probabilities when in reality we have to deal with possibilities, and in extreme plausabilities. This presentation will provide a basic introduction to complex adaptive systems theory and explore some of the new methods and tools available. **Dave Snowden,** Founder & Chief Scientific Officer, **Cognitive Edge Pte Ltd**	
12.05	**European ATM Architecture – Using EA Techniques in support of the SESAR Programme** • The integration of models and architectural elements produced by diverse teams working in separate projects into a single model • The development of a consistent logical model of the future ATM Operation in terms of processes and interactions between stakeholders • Supporting the future ATM Operation through the integration of the Operational and Technical Models into a single logical architecture for ATM • Supporting the proposed future Service Oriented Approach for ATM through the identification of services which support the information exchanges within the future operation • A demonstration of the EATMA Portal which provides a rich	**Unconference** Chaired by: **Mark Foden, Foden Grealy Ltd**

	source of reference information to stakeholders in European Air Traffic Management. **Tony Vaudrey,** SESAR Systems Engineering Manager, **NATS** **Mariya Koleva,** ATM Architect, **Eurocontrol**	
12.40	*Lunch*	
13.40	**Managing Complexity – Why & How, a Systemic Perspective** • Making the organisation's complexity more understandable and manageable is one of the most important contributions businesses need from EA • Current EA practice does not support this well and may make the problem worse • Systems and Cybernetic approaches were developed specifically to address issues of complexity and can be used by EA to address this critically important challenge better • The potential benefits for Enterprise Architects of rising to the Complexity challenge are significant because this is a truly strategic, board level problem that EA could solve. **Patrick Hoverstadt,** Director, **Fractal** and Research Fellow, **Cranfield University**	**Unconference** *continued*
14.15	**Enterprise Architecture Framework Selection: MODAF, TOGAF or Zachman Framework?** • *Selecting an EA Framework* • *Benefits of EA*: The benefits of adopting an EA approach which can then be used to guide the selection of a suitable EAF • *Structure of an EAF*: Defining common core components • *EAF Comparison*: Highlighting some of the key similarities and differences between the three EAFs • Strengths and Weaknesses of the EAFs **Robert Paternoster,** Systems of Systems Approach (SOSA) Technical Support Lead, **Ministry of Defence, Engineering Group**	**Unconference** *continued*
14.50	*Tea and coffee*	
15.05	**Lines of Sight and Provable Traceability** • A key value of Enterprise Architecture - providing a line-of-sight from solutions and investments to enterprise objectives and goals. • Traceability between reification levels, e.g., the five levels in the Zachman framework. • Traceability is often simply declared, not proven.	**Unconference** *continued*

	• The International Defence Enterprise Architecture Specification (IDEAS) - providing essential mathematics for provable traceability for EA metamodels founded on IDEAS. • Early results on provable traceability algorithms from the U.S. DoD Joint Information Environment project **Dave McDaniel, Silver Bullet Solutions Inc**	
15.40	**The evolution of the MOD Technical Architecture – From GII to NTA** **Kevin Wallis,** Chief Architect, **Defence Network Technical Authority, UK MOD**	**Unconference** *continued*
16.10	*Refreshment break – Sponsored by **MEGA***	
16.40	**Panel Session – Managing Complexity** **Eugene McSheffrey,** Principal Business Consultant, **MEGA International** **Beat Schwegler,** Director Cloud Evangelism, **Microsoft** **Tom Graves,** Principal, **Tetradian Consulting** **Stu Jack,** Deputy CTO, **UK MOD**	
17.30	**Can Complexity Save Us?** • KISS (Keep It Simple Stupid) has been a well-used acronym and mantra for some time but how relevant is it today? • How simple is simple and what are we missing? • Understanding the audience and examining the user experience. • Embracing complexity and working with it rather than avoiding it. • Achieving success while introducing added complexity. **Alastair Macartney,** Team Leader, **Jump4Heroes, The Royal British Legion Extreme Human Flight Team**	
18.00	*Drinks reception*	

Day 2 – Extracting value from architectures

08.30	*Registration and coffee*
09.00	Welcome by **Ian Bailey, Model Futures**
09.05	**Keynote address: Delivering & Transforming DBS performance through architecture** • Defence Business Services (DBS) scope and responsibilities: managing the delivery of 122 services through three pillars, with planned extensions • Decision Support Manager (DSM): an architecture-driven tool underpinned by structured service catalogue modelling key interconnected components: covering People, Process, Systems, Services • Synchronising financial, HR, and change programme data to present senior managers with a single, integrated and readily available picture of how DBS is functioning and performing • Supporting senior managers in making rapid and informed decisions, and providing a solid baseline to assess proposed changes to services • Providing access to information across a growing number of customer groups, aiding communication and allowing a common understanding of DBS services. **Mike Stone,** CEO, **Defence Business Services**
09.45	**IA: Addressing the Organisation's Most Important Assets** **CESG Presenter**
10.25	**Joint Forces Command – Decision Support Architecture** • Combing art and science in decision-making – how to mix objective analysis with military judgement • Adaptive architectures – building tools alongside emerging policy • Agile project approaches – pros and cons **Mark Le Masurier,** JFC – JW – Solution Manager, **JFC – Joint Warfare**
11.00	*Tea and Coffee*
11.30	**The convergence of the MODAF and NAF as a step towards a Unified Architecture Framework (UAF)** • Background on why this is being done • What NAF version 4.0 will look like • Development of MODEM as the under-pinning Meta Model for NAF version 4.0

	• Re-structuring the Viewpoints • Standardisation activities **Ian Bailey, Team Ensure** **Patrick Gorman, MOD CTO Asst Head Architecture** **Kees Van Haperen, Team Ensure**
12.25	**International Panel Session: NAF MODAF Convergence** **Ian Bailey, Model Futures** and **Team Ensure** *(Moderator)* **Beat Lang,** Information Architect, Lead SME Architecture Methodology & Tools, **Swiss Armed Forces – Command Support Organisation (AFCSO)** **Patrick Gorman, MOD CTO Asst Head Architecture** **Kees Van Haperen, Team Ensure**
12.50	*Lunch*
13.50	**A pattern based approach to the development of architectures using UPDM 2** • An overview of the relationships that exist between the various UPDM viewpoints • The core set of views for systems engineering and how they support one another • The patterns across this core set that allows a structured workflow to be developed using practices based upon SysML • This workflow as a pattern that can be applied to the Operational, Systems and Service views in UPDM 2 **Graham Bleakley, IBM UK Ltd**
14.25	**All for the want of a horseshoe nail": An Examination of Causality in DoDAF** • Complex chains of events can be difficult to understand and even harder to model • MODAF/IDEAS concepts help to define and express these sequences • Causal sequence modelling, system dynamics and business motivational modelling are effective ways to express these concepts to users • The method for how to attack a problem where causality needs to be revealed is also discussed • The scenario chosen deals with a hostage rescue, the desired results and the outcome achieved **Lars-Olof Kihlstrom,** Principal Consultant, **Syntell AB**
15.00	*Tea and coffee*
15.20	**EA Extracting value from architectures** • DE&S DTech and an update on SOSA, Defence Reform context • Architecture exploitation in the value chain using SOSA • The need for a quality approach to architecting • Case study demonstration of architecture in the value chain

	Dr. Edwin Swidenbank, Chief Engineer, **Atkins** **Dr. Jonathan Cook**, Head of the Engineering Group, Technical Directorate, **Defence Equipment and Support, UK MOD**
15.55	**The Tom Graves Yard Slot: The dung-beetle's tale: systems-thinking, complexity and the real world** • How complexity, uncertainty and 'wicked-problems' arise naturally in any real-world system • How and why the usual linear methods of control often only make things worse • How and why systems-thinking becomes an essential part of the toolkit for a viable enterprise-architecture • How to identify and mitigate or leverage unintended-consequences of systems-complexity **Tom Graves,** Principal, **Tetradian Consulting**
16.30	Chair's closing remarks
16.40	Close

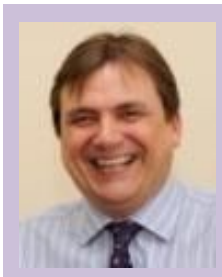
Keynote Speakers

Beat Schwegler, Director, **Enterprise Evangelism, Microsoft Europe**

Beat is part of Microsoft's technical evangelism and development team (ted), where he architects, designs, codes and delivers leading edge apps and services to showcase the Microsoft platform – with a special focus on cloud. He started to focus on cloud computing in 2008 and just loves the opportunities it provides to businesses of all sizes. Before joining Microsoft, he was an independent architect and developer and was involved in a wide variety of projects, ranging from real-time building control systems, best-selling shrink-wrapped products to large scale CRM and ERP systems.

Dave Snowden Cognitive Edge

Dave Snowden is the founder and chief scientific officer of Cognitive Edge. His work is international in nature and covers government and industry looking at complex issues relating to strategy, organisational decision making and decision making. He has pioneered a science based approach to organisations drawing on anthropology, neuroscience and complex adaptive systems theory. He is a popular and passionate keynote speaker on a range of subjects, and is well known for his pragmatic cynicism and iconoclastic style.
He holds visiting Chairs at the Universities of Pretoria and Hong Kong Polytechnic University as well as a visiting fellowship at the University of Warwick. He is a senior fellow at the Institute of Defense and Strategic Studies at Nanyang University and the Civil Service College in Singapore. His paper with Boone on Leadership was the cover article for the Harvard Business Review in November 2007 and also won the Academy of Management aware for the best practitioner paper in the same year. He has previously won a special award from the Academy for originality in his work on knowledge management. He is a editorial board member of several academic and practitioner journals in the field of knowledge management and is an Editor in Chief of E:CO. In 2006 he was Director of the EPSRC (UK) research programme on emergence and in 2007 was appointed to an NSF (US) review panel on complexity science research.



Mike Stone, CEO, **Defence Business Services**

A senior board level executive with over 35 years experience gained in significant appointments in technology, telecoms and the public sector.

Having led a successful 28 year career in the British Army, Mike completed his tenure as a
Brigadier in the role of Chief Information Officer (CIO) Army. Having stepped into civilian life in 2002 he joined BT where he held a number of senior executive appointments including Chief Operating Officer of BT international and President of Service Design for BT Global Services.

He has also been Group Executive Vice President at Mastek, an Indian IT solutions organisation. He has significant experience in driving transformational change in highly complex and ambiguous environments and has delivered multi-billion pound shared service programmes.

Key achievements:
During his tenure in BT he created and led a portfolio of programmes (Total Capital Value >£5bn over 7 years) to rationalise legacy networks and systems and create a shared

service centre. Delivered savings of 29% and reduced exit costs by 40%. He also cut "red" projects by 75% through overhauling the approach and focussing on delivery excellence.

Within Mastek he increased annual growth revenue by 8% by restructuring the most challenging customer contractual relationships.

As a Brigadier in the Army he restructured the Field Army HQ delivering a 9% headcount saving and 15% reduction in It costs. As Director Information Army he transformed the Army's use of information resources to maximise their contribution to operational capability

Speaker Profiles

Graham Bleakley Originally studied Mechanical Engineering, this was followed by a PhD in Model Based Systems Engineering and Process for Safety Critical Systems. Graham originally joined I-Logix in 2000 and was eventually acquired by IBM in 2008/9. Over the past twelve years he has worked as a senior consultant with a number of aero, defence (BAE, MBDA, Selex, SAAB, Thales etc) and automotive companies (TRW, Peugot, SAAB, PSA, Renault), helping them implement model based systems engineering into their workflows. He has written and presented a number of technical papers for INCOSE as well for other conferences and publications on the themes of Model Based Systems Engineering. He is currently a Solution Architect in IBM Rational SWG, Unleash the Labs, where he helps develop integrated solutions based upon Rational products. The latest project is around implementing ISO 26262 and the methodology and tools used to ensure compliance to it. When not doing this, he works on Model Based System Engineering Process definition and Architectural Frameworks, he is he is the Lead Architect and one of the co-chairs of the OMG UPDM group.

Dr Jonathan Cook, Head of Engineering Group, DE&S, UK MOD
Jonathan was appointed in 2012 to the SCS and to his current post as head of the Engineering Group within the Technical Directorate, merging the previous Systems Engineering and Integration Group (SEIG) with the engineering skills and engineering strategy teams. In this role, he leads the MoD's Systems of Systems Approach (SOSA) and a range of engineering functions including human factors integration, software supportability, tactical data links, spectrum management and electromagnetic integration.
He has a first degree in physics, an MSc in maths, a PhD in mechanical engineering and a Defence MBA. He is just embarking on an MSc in Systems Engineering. His business cards are now size A3

Mark Foden, Foden Grealy
Mark Foden is a management consultant focusing on transformational change, typically in sophisticated IT environments. He is an ex-soldier and, since leaving the Royal Engineers in 1990, has had a diverse career working with entrepreneurial start-up companies, a range of plcs and latterly with UK central government departments. He works mainly on enabling Government organisations to move from design-led, programmatic approaches to change – to more incremental, collaborative ones. He was recently involved in the development of the change strategy for the Government's G-Cloud Programme. He is one of the owners of the consulting firm Foden Grealy Ltd.

Patrick Gorman MSc BSc (Hons) MBCS CITP, Assistant Head, Architecture, MOD Chief Technology Officer

Patrick joined the MOD in 1978, initially working in the south of England employed in administrative roles in Army logistics and recruiting before joining the MOD IT profession where he worked managing and providing technical assurance for Army transport, catering and education information systems.

He moved to Main Building in 1997 to work as a programme co-ordinator on MOD's Capital Programme (resource accounting) before transferring to work on capability planning within the Joint Battlespace Digitisation Programme. In 2001 he transferred to the Information Coherence Framework Group where he managed the compilation of policy for Managed Services.

In 2002 and 2003, Patrick attended a long course at University College London studying for a Master's degree in Defence System Engineering, returning to work as Architectural Adviser for the Integration Authority embedded within the NITEworks team in Farnborough.

In 2006 he returned to Main Building to work on the Director General Information (now CIO) Enterprise Architecture (EA) Programme where he managed the work-stream on the development and promulgation of the MOD Architecture Framework (MODAF) before taking on the lead for MOD's enterprise architecture strategy and policy, and being appointed Head of Discipline for EA.

Since the formation of the MOD Chief Technology Officer's (CTO's) organisation in April 2013, Patrick has headed up a small architecture team responsible for providing the enablers that will help CTO ensure that the acquisition of C4ISR and ICT is aligned with strategy, compliant with policy, and coherent with architecture.

The current focus of Patrick's work is to develop an architectural approach centred on the Defence Information Reference Model (DIRM), and the convergence of MODAF and the NATO Architecture Framework (NAF) as a step towards a Unified Architecture Framework.

Tom Graves has been an independent consultant for more than three decades, in business transformation, enterprise architecture and knowledge management. His clients in Europe, Australasia and the Americas cover a broad range of industries including banking, utilities, manufacturing, logistics, engineering, media, telecoms, research, defence and government. He has a broad academic background in arts, sciences and architectures; he initially trained as a typographer and graphic-designer, and was one of the pioneers of desktop-publishing, with extensive experience in the practical and human challenges in business innovation and change. He has a special interest in architecture for non-IT-centric enterprises and the human side of systems.

Patrick Hoverstadt has worked as a consultant since 1995 with organisations in both the private and public sector, mainly on issues to do with organisational structure and change. He specialises in using systems approaches for analysing and designing organisations and work processes. Patrick is a specialist in working with very large complex organisations including whole sectors. He has developed methodologies for several difficult business problems:
Large-scale organisational change
Strategic risk
Measuring management performance
Measuring organisational agility
Collaborative governance
Business Strategy

He has worked on many restructuring projects, analysing structural weaknesses, designing appropriate solutions and practical change plans.
Patrick ran an engineering business for 13 years before becoming a consultant. He has written numerous research papers, is a regular keynote speaker at conferences, has contributed to several books on systems, organisation and management and is the author of a book on organisation published by Wiley in 2008. He chairs SCiO a group of systems practitioners and is a Visiting Research Fellow at Cranfield School of Management
Organisations for whom Patrick has worked include: Cabinet Office, Electricité de France, Fujitsu, Rolls Royce, Ove Arup & Partners, DSTL, Atkins, HM Customs & Excise, World Bank, Sun Microsystems, Siemens

Group Captain Stu Jack

Lars-Olof Kihlstrom has been working with enterprise architecture framework use and development since 2003. He was tasked to aid the UK during the finalization work of the NATO architecture framework version 3 based on MODAF. Lars-Olof has also acted as a modeling expert under contract to the Swedish armed forces in the IDEAS group where the UK, USA, Canada and Australia created a foundation ontology for architecture information that will enable the different architecture frameworks to exchange architecture information. Lars-Olof is a member of the architectural core of the UPDM 2.0 submission team responsible for development of the UPDM 2.0 submission. Presentations at the Enterprise Architecture conference in London concerning the use of SOA in NAF and the handling of the MODAF Learning Portal has also been held together with the Swedish Armed forces in 2008 and 2009. The Presentation concerning SOA has also been held at the DoD architecture conference in Orlando Florida. He has been project manager for the creation of MODEM where MODAF was re-engineered in order to base it completely on the IDEAS Foundation and remove its reliance on a UML profile. This work was conducted in a small expert team composed of Lars-Olof, Ian Bailey and Chris Partridge.

Mariya Koleva is a System Engineer with 13 years of professional experience in the field of Air Traffic Management (ATM) Systems engineering and architecture.
Currently she is holding the position of an ATM Architect in EUROCONTROL (European Organization for the Safety of Air Navigation).
As a contributor to the one of the most ambitious European research and development programmes - **S**ingle **E**uropean Sky ATM Research (SESAR), she is deeply involved in the adaptation and application of the Enterprise Architecture approach in the context of the Programme and in the development and implementation of the European Air Traffic management Architecture (EATMA) framework.

Beat Lang

Mark Le Masurier has over 20 years experience as a leader, programme and project manager (PRINCE and Agile); and, most recently, managing and contributing to a significant transformation and change programme. He offers mature analytical, problem solving, planning, management and communication skills derived from a strong education (Chartered Engineer with two IT/IS Degrees) and practical experience from working in demanding roles. His understanding of organisational cultures (from inside and outside), drive and attention to detail has enabled him to deliver strong results over a number of diverse tasks. Mark has a strong background in decision support, organisational strategy within a goal-based framework and change management perspective.

Alastair Macartney
World Champion and World Record Holder Alastair Macartney is a global adventurer that leads a team of human flight specialists that defy conventional wisdom, embrace complexity and achieve the unachievable while raising awareness for charity.
From setting a World Record leaping from the KL Tower in Malaysia to leading a 3-man wingsuit human flight formation from the infamous north face of the Eiger in Switzerland his team create the catalyst to inspire and motivate others to push their own boundaries while bridging the intersection to support others less fortunate than themselves.

Dave McDaniel is the US Department of Defense (DoD) lead engineer for the DoD Architecture Framework (DoDAF). His duties include evolution of DoDAF and application of DoDAF in the Information, Intelligence, Warfighting, and Business mission areas. He is very involved in the architecture of the Joint Information Environment. Mr. McDaniel worked closely with the International Defence Enterprise Architecture Specification (IDEAS) group for several years and was instrumental in the adoption of IDEAS by the US for DoDAF 2.0. Mr. McDaniel has had a role in the development of every DoD architecture framework since the C4ISR Framework in the 1990's. His early involvement stemmed from work on Battle Group architectures he had done for the Navy which aimed to create a multi-ship and aircraft System of Systems.
Dave McDaniel has worked on defense, air traffic control, and coastal security systems for 35 years. He was a software engineer for the weapons systems for the first Standard Missile 2 Navy cruisers and destroyers. He worked on the Advanced Combat Direction System for aircraft carriers, cruisers, and amphibious attack ships where he became involved in sensor and data fusion. He used simulations to analyze the performance of proposed fusion algorithms which led to selection of better alternatives as well as improvements to the selected algorithms. He developed Bayes Net algorithms to employ National intelligence databases as a context for combat identification from tactical sensor data. Mr. McDaniel continues research in data fusion, most recently on distributed data fusion using big data technologies like Hadoop. He also provides engineering assistance to the Navy on the employment of atom interferometry to inertial measurement units.
His degrees are Mathematics, Physics, and Computer Systems Applications from the College of William and Mary and American University. He currently lives just outside Washington, D.C., in Virginia and spends leisure time in Charleston, South Carolina. He has lived in San Diego, California and Colorado Springs and was born in Oklahoma City.

Eugene McSheffrey is a Principal Business Consultant with MEGA International.
He has over 16 years of experience of using software tools to help organisations develop and manage their Enterprise Architectures. He specialises in training and consultancy to enable clients realise business benefits by applying architecture frameworks such as Zachman, TOGAF, MODAF, DoDAF and NAF.
He is the author of several white papers and was a contributor to the 'UML Bible' (Tom Pender, Wiley, 2003). He holds a B.Sc. degree from the University of Edinburgh and a M.Sc. from the Open University.

Rob Paternoster completed the Defence Engineering and Science Group (DESG) sponsorship scheme before starting his career as an engineer within the Ministry of Defence. During his ten years working within Defence acquisition, Rob has gained experience of applying Systems Engineering (SE) and Enterprise Architecture (EA) on a number of complex Defence programmes. He currently works on the System of Systems Approach (SOSA) programme where he leads a team of systems engineers responsible for embedding SOSA within the new Defence Operating Model. He is also responsible for delivering the MODAF training programme which has successfully upskilled 1400 MoD personnel on the utility of EA within the context of Defence acquisition.

Rob has a BEng degree in Aerospace Engineering from Southampton University and recently completed his MSc in Systems Engineering from Cranfield University. As well as being a Chartered Engineer, Rob is also an experienced programme and project manager with PRINCE2, MSP and APMP practitioner qualifications.

Dr Edwin Swidenbank, Chief Engineer, **Atkins Defence**

Edwin Swidenbank is currently Chief Engineer ISTAR within Atkins Defence where he is working with the SE and PM functions to develop the capability that meets the strategic goals of the Atkins Defence Board. He is also Chief Engineer of "Team Ensure" (Atkins, Jacobs Sula, Quintec and SCS) who are supporting MOD in the development of System of Systems Approach and systems engineering maturity to address the fundamental issues of coherence, interoperability and reuse in military capability.
After completing his primary degree in Electrical and Electronic Engineering, Edwin Swidenbank undertook and completed a doctorate in modelling and control research at the Queen's University of Belfast.

Kees Van Haperen

Tony Vaudrey is the System Engineering Manager for SESAR within NATS. He has over 25 years' experience within the Air Traffic Management Industry. He has held a number of senior roles within NATS in the fields of Project Management, System Engineering and Enterprise Architecture. He was Civil Air Attaché within the British Embassy in Washington during the 1990s. Tony is a Chartered Engineer and a Fellow of the IET.

Conference Sponsor:

MEGA helps organizations collaboratively describe and manage large system architectures in accordance with internationally recognized standards such as DoDAF, MODAF, and NAF. MEGA's expertise and leading modeling tools are well-suited to the system of system architecture needs.

Our software solution is reinforced by 20 years of process expertise from MEGA's international team of consultants. MEGA consultants provide a prioritized understanding of risks and their impact on business. They help implement a consistent solution that is adaptable to the specific needs of the organization.

Clients include Airbus, BAE Systems, EADS, Eurocopter, GeoEye, NASA, Nissan, the Ministry of Justice, Renault, Thales and the US Departments of Agriculture, Homeland Security, and Transportation

Drinks Reception Sponsor:

Model Futures is a consulting company specialising in Enterprise Architecture and Information Management. Model Futures consultants and associates are some of the biggest names in Enterprise Architecture and our customers include blue-chip corporations and Government departments from around the world – www.modelfutures.com

Commercial Exhibitors:

Atkins provides high-end engineering consultancy, procurement and technical services to national defence and security organisations and industry partners globally. We work in partnership with our clients to provide independent and objective advice and support. With over 17,700 employees worldwide, we have the breadth and depth of expertise to respond to the most technically challenging and time critical projects.

Our expertise spans land, sea and air, as well as information and communications, and we work throughout the lifecycle of a platform, system or facility.

For further information please email: defencecommunications@atkinsglobal.com or visit our website: www.atkinsglobal.com/defence

BMT Hi-Q Sigma is one of 25 companies within the global BMT Group. It operates in the defence, transport and energy sectors by helping clients to deliver complex projects through the integration of programme management, systems engineering and Enterprise Architecture allowing clients to make relevant decisions with confidence. The company brings clarity through; strategic guidance in the establishment and management of programmes; optimisation of existing programmes; intelligent resourcing and knowledge transfer, all of which ultimately leads to building of complete confidence in the clients' programme and decision-making.
Within the defence sector the company has been or is involved with various Enterprise Architecture initiatives including the Successor Programme, Future Carrier, Artillery Systems, the Log NEC and the former DG INFO. On the transport front BMT Hi-Q Sigma is engaged with a number of port projects and associated maritime studies across Europe, the Middle East and the Far East. Recently BMT Hi-Q Sigma started to bring some of its defence and transport experience into the commercial sector where they are currently assisting one of the world's leading brewers, SABMiller, to roll out a global Enterprise Architecture.

Glue Reply specialise in data and Information architecture, integration, management, exploitation and optimisation. Our 100 plus core consultants deliver business outcomes through the exploitation of ICT, with core capabilities of data, integration, architecture and ICT Transformation, and development of Services and SOA.

We provide high value, independent advice on the technology solutions, including 'Traditional ICT Applications as well as 'New Wave ICT' (Social, Mobile, Big Data & Cloud) that support delivery of your business objectives. We focus on your strategic objectives; developing Capability Architecture to inform an appropriate, efficient and effective Technology Solution that is fit for your purpose.

IBM® Rational® helps clients transform the design, development, and delivery of both software and software embedded hardware (e.g., software in cars and phones) by providing the tools and practices for more innovative, more competitive products and services, with reduced cost and risk. Enabled by Jazz, the industry's only open, standards-based software delivery platform, IBM's software and systems lifecycle management solutions support collaboration and process improvements so that clients can accelerate time to market, improve quality, and beat their competition.

JCSys Ltd is a company that focuses on providing key consultancy support within both defence and civilian sectors. We comprise both broad and deep capability areas from holistic enterprise-wide architecture modelling and analysis consultancy to through-life consultancy specific to the Communication and Information Systems (CIS) sector. JCSys Ltd is founded on Subject Matter Experts (SMEs) who possess extensive knowledge and experience in all through life phases of the capability areas within which they work.

The JCSys team has recognised expertise in the integration of CIS solutions within Air Traffic Management (ATM) systems. The JCSys team also has strength in depth in areas such as network enabling capabilities and, more specifically, Tactical Data Links (TDLs).

The team also has recognised expertise in the development of Enterprise Architectures (EAs) and the provision of technical advice and training on all aspects of EAs.

JCSys Ltd prides itself on the provision of niche, high quality, pragmatic, and timely support for the benefit of the international customer community which it serves, with the aim of providing cost effective solutions to the end users.

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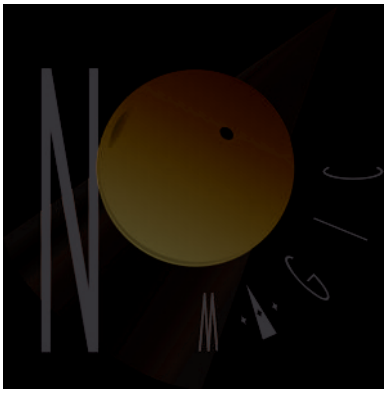
A software platform provider, working directly and through partners to deploy business information and decision applications that improve performance of large, complex, information & people-intensive missions, programmes and service portfolios. **MooD** applications drive business outcomes by providing transparency and control to inform and evidence decision making for improved transformation and delivery performance. Achievement of outcomes is evidenced through gains in deployment of cost and capital.



No Magic is one of the most respected providers of standards-compliant modeling, simulation and analysis solutions in the industry, No Magic is positioned by Gartner, Inc. in the Magic Quadrant for Business Process Analysis Tools. The Cameo® Suite supports the full enterprise application life-cycle from business requirements/planning through and including final testing with award-winning, OMG™ standards-compliant products that efficiently model organizational structure, business processes, applications, information and technology. MagicDraw® supports multiple domain-specific models based on UML® including: BPMN™, SysML™, fUML, NAF, DoDAF/UPDM, MDD, SOA, unit testing, data modeling, simulation and activity-based model-driven costing. Professional services include training, consulting, custom applications and MagicDraw® product customizations such as custom modeling domain diagrams, requirements management, team collaboration, design and analysis.

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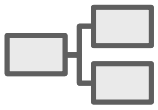

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