

"SMi are the best organised...with widest relevant choice of conferences"

Colin Robinson, Director Radio Products, THALES



SMi's Second Annual... **Software Radio**

17th & 18th June 2002, The Hatton, London

A unique opportunity to learn from leading military and industry experts including:

- Colonel Steven MacLaird, Program Director, JTRS Joint Program Office, US Army
- Lieutenant Colonel Chris Richards, SO1 Battlespace Information Infrastructure, Ministry of Defence
- Colonel John Grobmeier, Project Manager, Tactical Radio Communications Systems, US Army
- Dr Michaël Pascaud, Manager, DGA/SPOTI
- Mark Harrington, Project Leader for WDL, QinetiQ
- Bob Prill, Senior Technical Staff, BAE SYSTEMS-CNI
- Allan Margulies, Chief Operating Officer, The SDR Forum

Key issues that will be addressed at the conference:

- ASSESSING the requirements of the US Joint Tactical Radio System and evaluating the "Cluster 1" systems integration and procurement contract
- REFLECTING upon international perspectives and specific case studies on other software radio programmes
- IDENTIFYING key technological advances, capability developments and the potential for software radio in future equipment programmes
- DEVELOPING and integrating software communications, base station, reconfigurable and open architecture java implementation
- ESTABLISHING the cost and competitive advantages of designing for software portability

PLUS TWO ONE DAY EXECUTIVE BRIEFINGS

Principals of JTRS: The Software Communications Architecture (SCA)

19th June 2002, The Hatton, London

In association with: Space Coast Communication Systems

Software-Defined Radios

19th June 2002, The Hatton, London

In association with: ITT Industries

www.smi-online.co.uk/sr.asp

register online and receive full information on all of SMi's conferences

Or alternatively fax your registration to +44 (0)870 90 90 712

Or call +44 (0)870 90 90 711

Sponsored by



- 8.30 Registration and Coffee
- 9.00 **Chairman's Opening Remarks**
Allan Margulies, Chief Operating Officer, **The SDR Forum**
 Allan Margulies is the Chief Operating Officer of the Software Defined Radio Forum; previously, he was a Principal Communications Engineer for the MITRE Corporation. He has presented papers on software radio technology at MILCOM and at the IEEE International Symposium on Spread Spectrum Techniques and Applications. In addition, he has authored a chapter in the recently published book, 'Software Defined Radio: Origins, Drivers and International Perspectives'.
- THE NEED TO EVOLVE WITH TECHNOLOGY**
- 9.20 **Assessing the requirements of the US Joint Tactical Radio System**
- Status of the tri-service procurement process: is the criticism justified?
 - The need to procure a radio that is capable of developing with time
 - Involvement of industry in the definition of the communications architecture
 - The reasons behind its accelerated acquisition
- Colonel Steven MacLaird**, Program Director, JTRS Joint Program Office, **US Army**
- SOFTWARE RADIO IN THE UK**
- 9.50 **Software radio's place in military equipment capability**
- The need to maximise future military capability
 - Opportunities offered by software radio
 - Potential for software radio in future equipment programmes
- Lieutenant Colonel Chris Richards**, SO1 Battlespace Information Infrastructure, **Ministry of Defence**
- SOFTWARE RADIO IN FRANCE**
- 10.30 **A military view**
- Requirement
 - Programme of work
 - MMR programme
 - Future of software radios in France
- Dr Michaël Pascaud**, Manager, **DGA/SPOTI**
- 11.10 Morning Coffee
- 11.30 **THE JOINT TACTICAL RADIO SYSTEM & SOFTWARE COMMUNICATIONS ARCHITECTURE DEVELOPMENT**
- Raytheon's proven capability in military tactical radios in operation today
 - The "Cluster 1" systems integration and procurement contract
 - Design and integration of JTRS architecture, legacy waveforms and development of a new wideband network waveform
 - Maintaining, evolving and improving software architecture
 - Providing information services and promoting SCA as an open industry standard
- Richard Hitt**, Director of Business Development, Radios & Terminals, **Raytheon**
- 12.10 **THE JOINT TACTICAL RADIO SYSTEM (JTRS)**
- Boeing's proven capability in large-scale systems integration
 - The need to build a software-defined radio communications system
 - The "Cluster 1" systems integration and procurement contract and the Futara team
 - Design and integration of the JTRS architecture and legacy waveforms
 - Development of a new wideband network waveform
 - The qualification of two hardware production sources for up to 10,000 vehicular and airborne systems through low-rate initial production
- Alejandro Lopez**, Director, Network Communication Systems, Battle Management/Command, Control and Communications (BMC3) and Strategic Systems, **Boeing**
- 12.50 Lunch

AN OVERVIEW

- 1.50 **Antennas for JTRS radios**
- The antenna problems related to wideband radios and new antenna solutions
 - Antennas: understanding the problems related to wideband radios
 - The existing state of the art
 - JTRS antennas
 - Obtaining the link characteristics of existing systems with wideband JTRS radios
- Dr Ron Davidson**, Managing Director, **Chelton Antennas**

SOFTWARE RADIO – A KEY ELEMENT FOR INTEROPERABILITY IN EUROPE

- 2.30 **Requirements, constraints and perspectives**
- Development of new capabilities
 - Technical considerations
 - Achieving interoperability
 - Current European developments
 - Main challenges to address
- Christian Serra**, Chief Engineer, Advanced Studies and Standards, Software Radio Department, **THALES Communications** & Vice-Chair, **The SDR Forum**

- 3.10 **SOFTWARE DEFINED RADIO PROJECTS**
- Reconfigurable Omni-Band Radio (ROBR) project
 - Software radio implementation of a satellite ground terminal
 - SCA Reference Implementation (SCARI) project
 - Open architecture java implementation
 - Future possibilities
- Robin Addison**, CRC/DRDC Reconfigurable Omni-Band Radio Project Leader, **Communications Research Centre & Defence Research and Development Canada**

3.50 Afternoon Tea

SOFTWARE RADIO BASE STATIONS FOR 3G UMTS

- 4.10 **ADC and DSP challenges for fixed and distributed network architectures**
- UMTS evolution and developments
 - Software radios for fixed base stations
 - ADC and DSP limitations and challenges
 - Software radio based distributed base station architectures
 - Applications
 - Future developments
- Dr Takis Mathiopoulos**, Professor, Department of Electrical and Computer Engineering, **University of British Columbia** & Director, Institute for Space Research, **National Observatory of Athens**

- 4.50 **HANDHELD SDR**
- Issues
 - Adaptation of the operating environment
 - Examples of handheld SDRs
- Dr John Bertrand**, Director, System Engineering, **ITT**

5.30 **Chairman's Closing Remarks and Close of Day One**

5.40 Drinks Reception
 Sponsored by:



Sponsored by



Chelton Antennas, based in Dourdan France, is a subsidiary of Chelton Ltd, a major supplier of antennas and avionics equipment for the Military and Aerospace markets. Chelton Ltd is itself a wholly owned subsidiary of Cobham plc, a large UK Aerospace Company based in Wimborne. Chelton Antennas develops and manufactures antennas for ground, airborne and space applications.

SPONSORSHIP AND EXHIBITION OPPORTUNITIES

SMI offer sponsorship, exhibition, advertising and branding packages, uniquely tailored to compliment your company's marketing strategy. Prime networking opportunities exist to entertain, enhance and expand your client base within the context of an independent discussion specific to your industry. Should you wish to join the increasing number of companies benefiting from sponsoring our conferences please call: Fiona Punter on +44 (0)20 7827 6098 or email: fpunter@smi-online.co.uk

- 8.30 Re-registration and Coffee
- 9.00 **Chairman's Opening Remarks**
Dr Stephan Weiss, Communications Research Group, Department of Electronics & Computer Science, **University of Southampton**
 Stephan Weiss was awarded the Dipl.-Ing in 1995 from the University of Erlangen-Nuremberg, Germany and a PhD in 1998 from the University of Strathclyde, Glasgow. He is a lecturer in the department of Electronics & Computer Science, University of Southampton, since 1999 and a part-time visiting faculty member at the University of California, Los Angeles (UCLA) extension school since 1998. Prior to his appointment in ECS, he was a visiting lecturer at the University of Strathclyde in 1998/99 and a visiting scholar at the University of Southern California in 1996/97. His research interests are mainly in adaptive and multirate signal processing, and currently focus on fast converging and numerically efficient adaptive equalisation and beamforming techniques, with applications in communications systems, audio and biomedical signal processing.
- TACTICAL COMMUNICATIONS**
- 9.10 **Transforming army tactical communications**
- Legacy communications - where we've been
 - Tactical communications - backbone for the tactical Internet
 - JTRS Cluster 1 - the future is now
 - Enabling the objective force
 - Where do we go from here?
- Colonel John Grobmeier**, Project Manager, Tactical Radio Communications Systems, **US Army**
- THE UK'S PROGRAMMABLE DIGITAL RADIO (PDR) PROJECT**
- 9.40 **Reducing testing and implementation work needed to write software for PDRs**
- Developing new automated design techniques for the programming of PDRs
 - Project contributors and respective areas of research
 - A Waveform Description Language (WDL)
 - System demonstrations
 - USA's tactical radio
 - NATO's SATURN waveform
 - The effectiveness of the automated design process
- Bob Prill**, Senior Technical Staff, **BAE SYSTEMS-CNI**
Mark Harrington, Project Leader for WDL, **QinetiQ**
- SOFTWARE DEFINED RADIO SOLUTIONS**
- 10.20 **New technology and JTRS push the envelope**
- What are the key technology drivers?
 - JTRS provides the framework
 - Battery powered platform SDR solutions
 - HF subsystem for the UK's Bowman Tactical Radio Programme
- Mark Turner**, Director of Multiband Engineering, **Harris Corporation**
- 11.00 Morning Coffee
- SOFTWARE DEFINED RADIO RESEARCH**
- 11.20 **A Roke Manor Research perspective**
- Introduction
 - Forming the basis for the fourth generation of mobile communications
 - Developing a reconfigurable radio architecture
 - Alternative radio systems
 - Possibilities and limitations
 - Future potential
- John Spicer**, Software Radio Group Manager, **Roke Manor Research**
- APPLICATION PROGRAMMING INTERFACES (APIs) FOR THE SCA**
- 12.00 **Allowing third-parties to write software for the JTRS radios**
- An introduction
 - The benefits of open architecture
 - Opportunities to develop software
 - Possible improvements
- Byron Tarver**, Business Development Manager, **General Dynamics**
- 12.40 Lunch
- EUROPE'S FIRST OPERATIONAL SOFTWARE RADIO**
- 2.00 **Supplying the Fully Integrated Communications System (FICS) for the Royal Navy's future T45 destroyers**
- An introduction
 - Using existing technology to reduce risk and expenditure
 - An open systems design to enable cost-effective upgrade throughout the ships' in-service life
 - Timing and cost
 - Technical advantages and disadvantages
 - Future possibilities
- Dr Peter Harrop**, Director of Engineering, **THALES Communications**
- SOFTWARE RADIOS**
- 2.40 **Software portability for software radios**
- Cost drivers in radio systems
 - Cost and competitive advantages of designing for software portability
 - Technical barriers to portability
 - Portability solutions in Vanu software radio
- Dr John Chapin**, Chief Technology Officer, **Vanu**
- 3.20 Afternoon Tea
- SINGGARS SIP AND ESIP WAVEFORMS**
- 3.40 **Developing new software versions**
- System description
 - Advanced System Improvement Program (ASIP)
 - Operational requirements
 - Object oriented design
 - Completion and future possibilities
- Bill Place**, Vice President, **Assurance Technology Corporation**
- LINK 16 CAPABILITY FOR JTRS SCA**
- 4.20 **Phase 2B of the JTRS program to develop, test and validate**
- Providing a Link-16 prototype/demonstration test bed
 - Critical system interfaces and processing requirements for the Link-16 wideband waveform
 - Operating in a JTRS multi-waveform implementation
 - A "stressing" waveform for the JTRS SCA
 - Technical risks associated with implementation
- Ed Calhoun**, Marketing Manager, JTRS, **Rockwell Collins**
- 5.00 **Chairman's Closing Remarks and Close of Conference**

Principals of JTRS: The Software Communications Architecture (SCA)

19th June 2002. The Hatton, London

In association with:



- 8.30 **Registration & coffee**
- 9.00 **The core framework**
 - Overview
 - Framework services
 - The port interface
 - Base application interfaces
- 10.45 **Morning coffee**
- 11.10 **Applications and devices**
 - State diagrams
 - Collaboration
 - Profiles
 - Identifiers
- 12.30 **Lunch**
- 1.45 **The runtime**
 - POSIX-SCA
 - CORBA middleware
 - Concurrency models
 - Naming service
- 2.45 **Afternoon tea**
- 3.10 **Factories and deployment**
 - The CORBA components model
 - Domain manager
 - XML descriptors
 - UUID's
- 4.30 **Discussion and questions – review of the session**
- 5.00 **Close of workshop**

About your briefing leader

Dr John Bard, Principal and Owner, **Space Coast Communication Systems**

For almost two decades, John has been providing innovative software solutions to some of industry's most complex problems and is currently principal and owner of Space Coast Communication Systems, Inc., <http://www.spacecoastcomm.com/>. Dr. Bard also presides as Technical Committee Chairman of the Software Defined Radio Forum and oversees development of an open-source Reference Implementation of the Software Communications Architecture (SCA) and serves as liaison to the Joint Tactical Radio System (JTRS) Joint Program Office (JPO), where he is directly responsible for promoting commercial application of the SCA.

A leader in his field, Dr. Bard has been instrumental in the design and realisation of CECOM's (US Army) Joint Tactical Terminal (JTT), Naval Research Laboratory's JCIT radio, SPAWAR's (US Navy) Digital Modular Radio (DMR) and the Mnemonics' Inc. Zebra System.

Software-Defined Radios

19th June 2002, The Hatton, London

In association with:



- 8.30 Registration & coffee**
- 9.00 Rationale and early developments**
- Commercial and government drivers
 - Early SDR (NTDR, SUO)
 - PMCS/MMITS to SDRF/OMG
 - JTRS and the JTRS JPO
- 10.30 Morning coffee**
- 11.00 The JTRS architecture**
- Development of the SCA
 - Description of the SCA (JTRS Steps 1 and 2)
 - Validation (JTRS Step 2)
- 12.30 Lunch**
- 1.30 Technology enablers**
- Hardware (processors, busses, FPGAs)
 - Software (RTOS, CORBA, HLL)
 - COMSEC (AIM, Cornfield)
- 3.00 Afternoon tea**
- 3.30 The future of SDR**
- Procurements (JTRS clusters)
 - Architectural evolution
- 5.00 Discussion and questions – review of the session**
- 5.30 Close of workshop**

About your briefing leader



Dr John Bertrand, Director, System Engineering, **ITT**

Dr. John Bertrand is Director, System Engineering of ITT Industries Aerospace/Communications Division where he was previously Director, Secure Information Systems. He joined

ITT Aerospace/Communications in September 1984 as Senior Scientist and in 1989 was appointed Technical Director in charge of IR&D.

ITT Industries' Aerospace/Communications Division is a recognized pioneer in tactical wireless communications. Leveraging off its experience in the world's two largest digitisation programs, the UK Bowman Programme and the US Tactical Internet, ITT was instrumental in the transition from voice-centric to network-centric battlefield communications. Through development of its core SINCGARS radio technology, ITT developed the world's first tactical software-capable radios. Those radios are now at the heart of US and UK military operations. While its software programmable Mercury Wideband Networking Radio will be the backbone system for US and UK tactical communications. As founding member of the Software Defined Radio Forum and co-developer of the architecture for America's Joint Tactical Radio System (JTRS), ITT A/CD is helping to lead the way for Software Defined Radio development.

REGISTRATION FORM

Conference: 17th & 18th June 2002
Executive Briefings: 19th June 2002

Please register the following delegates for *(photocopy for multiple registrations)*

Software Radio

17th - 19th June 2002, The Hatton, London

SPONSORSHIP OPPORTUNITIES
Fiona Punter, SMi Sponsorship on
+44 (0) 20 7827 6098 or
email: fpunter@smi-online.co.uk

MARKETING OPPORTUNITIES
Luisa Wengraf, SMi Marketing on
+44 (0)20 7827 6114 or
email: lwengraf@smi-online.co.uk

EXECUTIVE PACKAGES

For our Executive package inclusive of a discount of £100, tick one of these options:

SERVING MILITARY

- Option A Conference & Executive Briefing 1 Fee: £1598.00 VAT: £279.65 Total: £1877.65
 Option B Conference & Executive Briefing 2 Fee: £1598.00 VAT: £279.65 Total: £1877.65

COMMERCIAL ORGANISATIONS

- Option C Conference & Executive Briefing 1 Fee: £1698.00 VAT: £297.15 Total: £1995.15
 Option D Conference & Executive Briefing 2 Fee: £1698.00 VAT: £297.15 Total: £1995.15

SERVING MILITARY Tick here for the conference only

- Option E Conference only Fee: £999.00 VAT: £174.83 Total: £1173.83
COMMERCIAL ORGANISATIONS Tick here for the conference only:

- Option F Conference only Fee: £1099.00 VAT: £192.33 Total: £1291.33

SERVING MILITARY AND COMMERCIAL ORGANISATIONS

Tick here for either executive briefing 1 or executive briefing 2, but not both:

- Option G Executive Briefing 1 only Fee: £699.00 VAT: £122.33 Total: £821.33
 Option H Executive Briefing 2 only Fee: £699.00 VAT: £122.33 Total: £821.33

How to register:

By mail: Complete and return your signed registration together with your cheque to: SMi Conferences Ltd, 1 New Concordia Wharf, Mill St, London SE1 2BB

By fax: Complete and fax your signed Registration Form with your credit card details to +44 (0)870 9090 712

By internet: Complete your Registration Form on line with your credit card details at www.smi-online.co.uk/sr.asp

How to contact us:

Telephone: +44 (0) 870 9090 711
Fax: +44 (0) 870 9090 712
Email: customer_services@smi-online.co.uk
Web: www.smi-online.co.uk/sr.asp

How we will contact you: SMi Conferences Ltd's preferred method of communication is by email and phone. Please ensure you complete the Registration Form so that we can contact you. We will use postal services on a request basis only.

Venue: The Hatton, 51-53 Hatton Garden, London EC1N 8HN.

The Hatton is SMi Conferences Ltd's bespoke state of the art conference venue and has excellent transport links to all London airports, with train and tube stations nearby. There are also three NCP car parks in close proximity. Full details will be included in your conference joining pack.

We can arrange your travel, accommodation, transfers and insurance. The SMi JVT team are available to make your journey and stay during the conference as hassle free and as smooth as possible. SMi JVT can book your accommodation, flights, transfers and arrange insurance all at the best possible rate. Please contact us on +44 (0) 870 9090 713 fax +44 (0) 870 9090 714 email: travel@smi-online.co.uk or visit our website www.smi-online.co.uk/travel.asp Please book early to get the full advantage of our travel packages.

Payment terms: SMi Conferences Ltd require the full amount to be settled prior to the event taking place. SMi Conferences Ltd reserves the right to refuse entry to any customer who has not paid their invoice. A credit card guarantee may be requested if full payment has not been received.

Methods of payment: Payment must be in sterling. You can pay by cheque drawn on a UK bank, payable to SMi Conferences Ltd or by bank transfer to HSBC Account No: 11364057 Sort Code: 40 06 21 (For overseas customers please use SWIFT CODE MIDLGB22) 28 Borough High St, London SE1 1YB, or by credit card. Please complete the Registration Form. When making payments please quote delegates name and conference and/or product.

Interest: SMi Conferences Ltd reserves the right to charge interest on any unpaid invoices.

Alteration to invoices: Any alterations to an invoice, excluding substitutions/names changes, requested by the customer will incur an administration fee of £50 and will be charged to the customer by credit card prior to the amendment being made.

Cancellations/substitutions and name changes: All bookings carry a 50% liability after the booking has been made, by post, fax, email or web. There will be no refunds for cancellations in received on or after one month before the start of the conference (e.g. cancellation on the or after 20th January for a conference starting on 20th February). If you decide to cancel after this date the full invoice remains payable. Conference notes which are available on the day will be sent to you. Unfortunately we are not able to transfer places between conferences and conferences and workshops. However, if you are unable to attend the event you may make a substitution/name change at any time as long as we are informed in writing by email, fax or post. Name changes and substitutions must be from the same company and are not transferable between companies or countries.

Indemnity: SMi Conferences Ltd reserve the right to change the conference/workshop content, timing, speakers or venue without notice. The event may be postponed or cancelled due to acts of terrorism, war, extreme weather conditions, industrial action, acts of God or any event beyond the control of SMi Conferences Ltd. If such a situation arises we will endeavour to reschedule the event. However, SMi Conferences Ltd cannot be held responsible for any cost, damage or expenses which may be incurred by the customer as a consequence of the event being postponed or cancelled.

We therefore strongly advise all customers to take out insurance to cover the cost of the registration, travel and expenses. SMi JVT can provide this insurance.

Data Protection: SMi Conferences Ltd (part of the SMi Group Ltd) gathers data in accordance with the UK Data Protection Act 1998. The information about you contained on this form may be used to update you on SMi Group products and services via post, telephone, fax or email, unless you state that you do not want us to do so. We may also share your data with other companies within the SMi Group, or external companies offering complementary products or services. If you do not wish for your details to be passed on to any external third party, or if you have any queries regarding the data we hold on you, please contact our Database Manager (database@smi-online.co.uk) SMi Information Services Ltd (part of the SMi Group Ltd), 1 New Concordia Wharf, Mill St, London, SE1 2BB, United Kingdom.

The fee includes lunch, refreshments and conference papers provided on the day. It does not include travel, hotel accommodation, transfers or insurance (which we strongly recommend you obtain).

VAT will be charged at the local rate on each conference. Delegates may be able to recover VAT incurred by contacting Eurocash Corporation plc (0)1273 325000, eurocash@eurocashvat.com. Eurocash are specialists in recovering cross border VAT.

Unique Reference Code

Your purchase order no

PLEASE USE BLOCK PRINT - PLEASE COMPLETE FORM IN FULL

Title	<input type="text"/>
Forename	<input type="text"/>
Initials	<input type="text"/>
Surname	<input type="text"/>
Department	<input type="text"/>
Job Title	<input type="text"/>
Organisation	<input type="text"/>
Address	<input type="text"/>
Town/City	<input type="text"/>
County	<input type="text"/>
Post/Zip code	<input type="text"/>
Country	<input type="text"/>
Direct Phone	<input type="text"/>
Direct Fax	<input type="text"/>
Switchboard Phone	<input type="text"/>
Switchboard Fax	<input type="text"/>
Email	<input type="text"/>
Booking Contact	<input type="text"/>
Job Title	<input type="text"/>
Immediate Manager	<input type="text"/>
Business Sector	<input type="text"/>
Number of employees on site	<input type="text"/>

Signature Date

I agree to SMi Conferences Ltd Terms and Conditions of Booking.

I cannot attend the conference but wish to purchase:

- £300 Documentation (including postage and packing)
 £500 Documentation and Audio Tapes (including VAT, postage and packaging)
To order, complete the Registration Form and complete your method of payment. Payment must be received before the goods can be despatched which will be 7-14 days after the conference.

PAYMENT:

- I enclose a cheque (drawn on a UK Bank made payable to SMi Conferences Ltd)
 I am transferring the money to HSBC Bank plc, Account No: 11364057, Sort Code: 40 06 21 (For overseas customers please use SWIFT CODE MIDLGB22) 28 Borough High Street, London SE1 1YB
 Please debit my credit card (including % & tax)
 Visa/MasterCard (1.90%) Amex (3.80%)
 Diners (3.00%) Eurocard (1.90%)

Card No

Expiry Date

Signature Date

I agree to SMi Conferences Ltd Terms and Conditions of booking and SMi debiting my credit card.

If you have NOT received registration confirmation within 48 hours of registering, please call +44 (0) 870 9090 711

