

Developing Bigetooth

# Implementation and Deployment Strategies

Tuesday 26<sup>th</sup> – Wednesday 27<sup>th</sup> September 2000 Crowne Plaza London St. James, London

With major contributions from:

Ericsson • Nokia • Intel • Siemens • Motorola Philips Semiconductors • TDK • ARM • 7 layers Cadence Design Systems • TTP Communications Cetecom • IrDa • Cambridge Consultants ICC • Cambridge Silicon Radio

2000 is a critical year for Bluetooth. What better time to learn how to:

- Successfully translate the Bluetooth specification into viable products
- Ensure the interoperability of your Bluetooth product range
- Manage the Bluetooth product development process
- Ensure the security of your Bluetooth products

Plus <u>A day with the qualification experts</u>

Managing the Bluetooth Qualification Process

## Post-Conference Workshop – 28th September 2000

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## **Developing Bluetooth Implementation and Deployment Strategies**

As we are approaching the launch of many first-wave Bluetooth products, it looks like 2000 will be a critical year for Bluetooth. The road to market for the Bluetooth products of these pioneering companies hasn't always been smooth. The challenges of achieving high levels of interoperability, amongst other factors, are crucial to the success of Bluetooth.

As the potential for Bluetooth in personal area wireless communications is recognised to be huge, it is essential for developers to keep abreast of the techniques used by other implementers to ensure the long-term success of their Bluetooth products. Companies are now learning how to deal with the practicalities of implementing Bluetooth after the initial speculation of how it may be applied.

This, EuroForum's second Bluetooth event, promises to provide you with the most up-to-date information on the development processes used to implement Bluetooth technology. Our previous Bluetooth conference proved to be a great success with the Senior Managers and Directors who attended. Therefore, we decided to build on that success and have taken steps to ensure this year's event will be even more successful.

As this conference will coincide with a critical phase in the development of Bluetooth, why not join us for this timely and bold event, where you will be provided with all the information you need to ensure your Bluetooth development programme will be a success.

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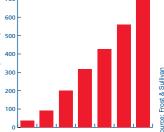
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## 120 Units (millions) 90 60 2000 2001 2002 2003 2004 2005 Unit Revenue Forecasts (Europe) 2000-2006 80 70 60 (millions) 50 40

Total Bluetooth Silicon Market

150

Unit Shipment Forecasts (Europe) 2000-2006



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## THE ONLY BLUETOOTH SPECIFIC BOOKS ON THE MARKET!

Bluetooth: Connect Without Cables: Jennifer Bray/Charles F. Sturman Complete tutorial/reference explaining Bluetooth technology standards more clearly than ever before. Authors are designers of TTP Communication's Bluetooth solution Training Program.

Review components of Bluetooth system, how Bluetooth connections work, differences in Bluetooth support for voice & data; security/management issues; key components such as piconets & scatternets; & system qualification.

## Bluetooth Revealed: Brent A. Miller /Chatschik Bisdikan

Accessible introduction to Bluetooth written by two major contributors to Bluetooth specification. **Part 1**: Provides introduction to Bluetooth Technology and Bluetooth 1.0 specification. Parts 2-3: Authors explain each major component of specification and profiles. Part 4 explores Bluetooth future directions Contact Jonathan Hardy; Pearson Education UK for ordering information.

jonathan.hardy@pearsoned-ema.com Tel: 020 7447 2149 Fax: 020 7836 4372

## **Official Publication**

### The Bluetooth newsletter from Click I.T. Ltd

Incisor is a free subscription monthly newsletter created by Click I.T. - the IT industry PR and marketing company - for those people interested in Bluetooth. Bluetooth is the latest development in short range wireless connectivity and is set to revolutionise the way devices can communicate. Bluetooth is relevant not only to the existing mobile data sector, but any area in which two devices might want to transfer information without a wired connection

The newsletter is sent by e-mail as an Adobe Acrobat (.pdf) file. Acrobat is rapidly becoming the de-facto standard for online publishing.

The newsletter distribution list includes members of the Bluetooth special interest group (SIG) and other interested parties. Since launch in December 1998, Incisor has become the de-facto independent publication for the Bluetooth community. Incisor is now sponsored by a growing list of companies including Ericsson, TDK Systems and Digianswer and appears on the official Bluetooth SIG web site: www.bluetooth.com

If you need to know what is happening in the Bluetooth world, there is no broader and more interesting source of information than Incisor. To subscribe to Incisor Email: subscriber@click.co.uk - For commercial and editorial enquiries, contact Vince Holton Email: vholton@click.co.uk

Experience the thrill of a ride on London's hottest attraction this Millennium: THE LONDON EYE. We'll transport you across the Thames to the Millennium Pier where you'll embark onto our exclusive pod and receive a glass of Champagne.

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# **Developing Bluetooth Implementa**

## Conference Day One - Tuesday 26th September 2000

- 9:00 Registration and coffee
- 9:15 Opening Address from The Chair Nick Hunn – Head of R&D TDK Systems Europe

## 9:30 Examining the evolution of the Bluetooth standard and identifying lessons to be learnt for future development

- Identifying the challenges associated with translating the Bluetooth specification and determining how this has impeded product development
- Determining the extent to which the Bluetooth standard has facilitated interoperability between:
- Multiple products from a single vendor
- Multi-vendor product portfolios
- Analysing predicted timescales for Bluetooth implementation and identifying barriers to achieving these
- Identifying how component cost and availability has impeded Bluetooth implementation
- Applying the lessons learnt by first phase developers to ensure the smooth and rapid development and deployment of Bluetooth products

### Nick Hunn – Head of R&D TDK Systems Europe

## 10:15 Evaluating the optimal choice of silicon technology for your Bluetooth product

- Identifying the range of silicon technology on the market and in development for Bluetooth implementation:
- High power vs. low power
- Single chip vs. multi-chip
- Embedded and PC applications
- Determining the extent to which your choice of silicon technology will be dictated by the specific requirements of the individual application
- Understanding how the product usage environment will impact your choice
- Optimising the integration of silicon technology into your Bluetooth product to ensure:
- Optimal power usage
- Adequate security levels
- Ensuring optimal cost/size ratios are achieved
- Determining how to speed up the Qualification process by selecting pre-qualified components that adhere to standard specifications

### Gerhard Heider – Sector Manager Connectivity Philips Semiconductors

## 11:00 Morning Coffee

## 11:20 Identifying and utilising suitable Bluetooth development tools

- Analysing the availability and choice of development tools on the market
- Understanding the roles of development tools, and the coordination required to effectively utilise them to develop both hardware and software
- Analysing the requirements of your development tools and the extent to which your choice of product dictates tool selection
- Minimising time to market through standardised development techniques
- Determining how best to utilise development kit interfaces for rapid product development

## George Milne – Bluetooth Project Manager ARM

### 12:05 Managing Bluetooth costs from specification to launch

- Ensuring cost effective implementation by applying lessons learnt from first phase product developers
- Identifying the threat posed by Bluetooth to network operators
- Establishing what performance levels are required of different Bluetooth products and identifying cost control methods
- Managing the integration of software into Bluetooth products and identifying the effect on development cost:

- Examining real time operating systems and how to effectively manage software co-ordination
- Identifying how multiple approval procedures can be refined to minimise approval costs:
- Will regulatory type approval be required after Bluetooth enabling a GSM phone?

Jeremy Hendy – Strategic Technology Director Cadence Design Systems

## 12:50 Lunch

## 2:00 Implementing suitable quality of service levels into Bluetooth devices

- Examining the QoS implications of the Bluetooth specification and how these can best be implemented into products
- Determining the robustness of the Service Discovery Profile (SDP)
- Identifying how vendors can optimise the configuration and management of their Bluetooth QoS levels
- Minimising interference levels in order to comply effectively with guaranteed QoS levels in terms of:
- Obtaining protocols
- Access methods
- Drivers
- Determining the extent to which access to services should be controlled by the user or pre-determined by the vendor

## 2:45 Evaluating antennae choice to attain optimal

## cost/performance ratios

- Examining the appropriate choice of antenna technology for your product portfolio in terms of:
- Minimising interference
- Cost implications
- Size concerns
- Comparing the effectiveness of the different materials used for antennae
- Examining the different approaches adopted by first phase product vendors and identifying lessons to be learnt

Hans-Peter Kurz – Antennae Expert Ericsson Microelectronics

## 3:30 Afternoon Coffee

## 3:50 Identifying the user interface requirements for the optimal performance of Bluetooth products

- Examining how to translate the specification into a viable user experience
- Establishing what changes the user may need to make to their existing product to achieve Bluetooth capability
- Determining how users can effectively control services across devices
- Developing a strategy for supporting consistent interfacing with multiple Bluetooth products
- Examining user requirements for operating Bluetooth

Erich Kamperschroer – Bluetooth Applications Manager Siemens

## 4:35 Managing and maximising Bluetooth product security in the migration from a wired to a wireless environment

- Understanding the implications of the 'Safer Plus' Bluetooth encryption engine for product vendors and end users
- Examining the pairing process at the lower stack layers
- Examining the bonding process at the higher layers of stack
  Overcoming the challenges of worldwide deployment of Bluetooth products with 128 bit security
- Examining how signal strength can be manipulated to maximise security levels

Dr Jennifer Bray – Baseband Software Project leader -Bluetooth

## **TTP Communications**

- 5:20 Closing Remarks from The Chair
- 5:30 Close of day one

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# ation and Deployment Strategies

## Conference Day Two - Wednesday 27th September 2000

#### 9:00 **Registration and coffee**

#### **Opening remarks from The Chair** 9:15

- Understanding and utilising profiles for maximum 9:30 interoperability
  - Defining the role of the profile within the Bluetooth context
  - •Determining how best to implement and utilise profiles to
  - maximise their effectiveness:
  - Effectively translating specification profiles
  - Identifying effective profile testing procedures to ensure interoperability at:

  - Radio level
  - Protocol level
  - Usage level
  - Determining new profiles to be developed to enhance Bluetooth adoption

### Chris Eden – Business Development Manager - Bluetooth **Cambridge Consultants**

### 10:15 Ensuring robust connections between Bluetooth devices operating in a densely packed environment

- Identifying the challenges associated with connection set-up
- within a densely packed environment, in terms of:
- Strength of signal
- Interference levels
- Security concerns
- Determining strategies for minimising interference in the 2.45ghz band when multiple Bluetooth products are in operation
- Examining how the chip can best be utilised to establish a solid connection within a packed environment
- Comparing the appropriateness of Bluetooth with other standards when operating in a packed environment, such as:
- Home RF
- IrDA
- DECT
- IEEE 802.11

### Leo Dehner – Bluetooth Development Team Motorola

### 11:00 Morning coffee

## 11:20 Understanding the BQTF/BQB qualification procedure

- Identifying timescales for full BQTF testing availability
- Mapping out procedures for gaining BQTF approval • Identifying how to effectively pre-test your product before BQTF testing:
- Establishing what equipment will be used
- Effectively testing individual technology layers and overcoming compliance issues:
- Application software
- Digital baseband and embedded software
- RF
- Identifying the potential for the utilisation of pre-approved components to speed up the qualification process

Michael Klos - Certification Manger - BQB Cetecom

### 12:05 Examining what efforts are being made to support global deployment of Bluetooth products by reviewing regulatory type approvals

- Identifying country-specific procedures, and developing a strategy for overcoming potential conflicts in terms of:
- Certification and regulatory type-approval
- Timescales for gaining approval
- Determining which markets have the most potential in terms of gaining approval and end user adoption potential
- Identifying how the Bluetooth SIG is working to overcome barriers to global type approval
- Understanding the implications of the 2.45ghz band being licensed in some countries and not others
- How will this affect opportunities for foreign competition?

Paul G Didcott - Senior Consultant for Global Product Certification ICC

## 12:50 Lunch

#### Quantifying the potential for end-user adoption of Bluetooth 2:00 in the global market

- Analysing how Bluetooth will be received in worldwide markets, with a focus on:
  - Europe
  - USA
  - Iapan
- Identifying how to capitalise on country-specific drivers
- Assessing the extent to which pricing will drive Bluetooth adoption
- Identifying whether the value added factors that the end-user will perceive from a Bluetooth product will differ between countries

### Paul Dyer – Asia Pacific Sales Executive **Cambridge Silicon Radio**

#### 2:45 Developing strategies to promote interoperability to the customer

- Identifying how to develop customer confidence in Bluetooth interoperability
- Analysing what procedures the end-user must go through to set up an interoperable Bluetooth product, once purchased:
- Examining the effect this will have on consumer perception of interoperability
- Analysing the role the Bluetooth logo and brand will play in promoting consumer confidence in interoperability

Mike Bonello – Business Client Marketing Manager Intel

#### Afternoon coffee 3:30

#### 3:50 Identifying realistic Bluetooth applications that will drive mass-market adoption

- Quantifying the market for consumer and industrial applications • Determining a deployment strategy that effectively capitalises on
- early-adopters whilst rapidly extending to the mass-market • Identifying the specific applications that will achieve a rapid return on your Bluetooth investment

### Petri Morko – Bluetooth Marketing Manager Nokia

#### Examining how the relationship between IrDA and 4:35 Bluetooth will develop

- Comparing Bluetooth and IrDA in terms of:
  - Cost
  - Performance
  - Security
- Determining the extent to which Bluetooth and IrDA can be thought to compete or compliment each other
- Examining the case for converging Bluetooth and other standards such as Home RF, IEEE 802.11, DECT:
- What opportunities are being created
- To what extent will co-existence compromise quality?

### Michael Watson - President **Infrared Data Association**

### 5:20 Bluetooth Reality Check - An Online Industry Survey A series of online "technical" market surveys of several thousand IC and OEM design engineers and technical managers was developed to determine what technologies and applications they plan to use to drive the development of first-generation Bluetooth devices. What critical technical issues remain to be solved before Bluetooth can attain the huge numbers being projected by independent market researchers? This survey covers several key technical issues, including process, antenna and packaging technology selection; production plans; and interoperability concerns. Jay McSherry & Ron Schneiderman

TechSurveys.com

- 6:05 **Closing Remarks from The Chair**
- 6:15 End of conference

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# **Managing the Bluetooth Qualification Process**

## Post Conference Workshop - Thursday 28th September 2000



## **Workshop Format**

This workshop, focussing on the qualification procedure, will give you the opportunity to get up to speed with the latest developments made to this critical process.

Differing from the conference format, this workshop has been designed to ensure maximum interaction between individual delegates and the qualification experts. Structured sessions will be followed by frequent question and answer sessions, where you will be able to get answers that are specific to your needs. We have limited attendance to 40 to ensure maximum contact between the delegates and speakers. This workshop is the perfect compliment to the two-day conference, and is guaranteed to provide you with all the information you need to ensure that your product's journey through the qualification process is trouble-free.

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## Bluetooth

## Tuesday 26th - Thursday 28th September 2000, London

Conference **Developing Bluetooth Implementation and Deployment Strategies** 293T01-LON Tuesday 26th - Wednesday 27th September 2000 Post-Conference Workshop

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