



# The UMTS Forum Annual Report 2004 and Directions for 2005

# 2004: Large-scale commercialisation of the 3G/UMTS vision



*UMTS Forum members meet in Athens during November 2004.*

When The UMTS Forum was launched in 1996 at the instigation of the European Commission (EC), few of the members attending our first ever meeting could have anticipated the dramatic developments our industry has seen since then.

2004 will be rightly regarded as the year of true large-scale commercialisation of 3G/UMTS in Europe. The return of a reasonable optimism regarding the 3G mobile market, that was evident at the 3GSM World Congress in Cannes in February 2004, was confirmed and strengthened at the 3G World Congress & Exhibition in Hong Kong in November 2004. At the time of writing, there are more than 60 WCDMA networks open to paying customers, supported by a choice of over 100 terminal devices from European, Asian and US manufacturers. The 10 million subscriber milestone was passed in September 2004, and, as take-up continues to accelerate, the sixteen millionth customer was confirmed in the early days of January 2005, representing six times the figure of the same time a year ago...

This rapid and sustained growth in customer adoption of 3G/UMTS networks and services can be attributed to several key factors. The surge in commercial launches during 2004 has raised market awareness of 3G/UMTS, and, in parallel with this, we have seen dramatic progress on the terminal front, with latest WCDMA devices competing head-to-head with their 2G peers in terms of size, weight and battery life. The industry as a whole is making great strides in the field of interoperability – a crucial driver for mass-market adoption. Just as importantly, the 3G user experience has been the focus of intense activity within the operator and manufacturing communities alike. Tighter dovetailing between handsets and services means that customers can get straight to the information, entertainment and other services they need with less fuss. The result is an attractive, easy to use 3G/UMTS experience that is quick to access, satisfying... and fun.

Following Japan's established lead, we are now seeing the first fruits of successful 3G/UMTS commercialisation in Europe. This does not mean, of course, that we have any reason to be

complacent. The UMTS Forum continues to play an important role in forging dialogue between industry and administrations in other world regions where the licensing process is still in progress or yet to be initiated. During 2004, UMTS Forum delegations have visited key regions including Africa, Brazil, China, India and Russia. Well-attended round-tables and seminars attracting operators and manufacturers have been complemented by personal meetings with regulators and other governmental representatives. Amongst other objectives, these meetings have provided the opportunity to promote the benefits of migration to 3G/UMTS, while emphasising the importance of timely licensing in globally harmonised frequency bands. This intensive programme of regional activities has also seen Forum members working in close alignment with the ITU, 3GPP, CEPT/ECC, ETSI and other organisations with which we enjoy productive links. The UMTS Forum visited the EC in March 2004. Commissioner Liikanen and the Director General of DG Information Society reiterated their confidence in the Forum, particularly in the area of spectrum and the promotion of 3G/UMTS.

During this exciting period, The UMTS Forum has maintained a high-profile presence at leading industry events throughout the world. We have attended or supported more than 60 conferences, seminars and exhibitions throughout 2004, and our events schedule for 2005 is equally ambitious. Meanwhile, the Forum's dialogue with the media continues to serve as a backdrop to our other activities. Meetings with well over 120 journalists have resulted in more than 100 separate pieces of news coverage in national newspapers, magazines and on television.

In conclusion, I would like to extend my personal thanks to everyone who has contributed to the Forum's work programme over the last twelve months. The dedicated work of our expert contributors in the fields of spectrum, regulatory, technology and market aspects plays a central role in maintaining the international reputation and visibility of The UMTS Forum. Since its inauguration, the scope and interests of the Forum have expanded to embrace a range of complementary mobile and wireless access technologies that can deliver broadband multimedia and the personal Internet. One thing that remains consistent, however, is the passion of our membership to put the interests of today's – and tomorrow's – mobile customer first.

Yours sincerely

Jean-Pierre Bienaimé  
Chairman  
January 2005

# Part I: UMTS Forum 2004 Activities

## Responses to Public Consultations

The Forum's Spectrum Aspects Group (SAG) has continued to play a valuable role in supporting administrations globally through its timely responses to public consultations relating to IMT-2000 licensing and spectrum. Notable examples include:

**Response to Ofcom/RA consultation on spectrum trading:** In its response to the UK regulator Ofcom in Q1 on secondary spectrum trading, the Forum noted that any such activities must be considered in a context of improved spectrum management and increased efficiency. In particular, trading must be implemented in a way that maintains and respects the benefits brought by regional and global harmonisation to users and the industry.

**CDMA/PAMR:** Commenting on the draft ECC decision on availability of frequency bands for PMR/PAMR in the 400 MHz and 800/900 MHz bands, the Forum noted that any extension of PMR/PAMR networks usage has to comply with a similar approach as for previously attributed IMT-2000 licenses. All operators should face the same spectrum supply conditions, regardless of technology, and European countries must harmonise their frequency allocations.

**RSPG Consultation on Secondary Trading of Rights:** In Q2, The UMTS Forum supported the view that transfer of radio frequencies can be an effective means of increasing efficient use of spectrum, as long as there are sufficient safeguards. Responding to the RSPG consultation on secondary trading rights, the Forum suggested taking into account – in the early stages of future standardisation – secondary trading of rights to use radio spectrum and thus increase the flexibility of spectrum engineering.

**EC/RSPG Consultation on objectives for WRC-07:** The forthcoming World Radiocommunication Conference 2007 (WRC-07) will be a critical event for the mobile industry, and The UMTS Forum believes that globally harmonised frequency bands are of major importance for successful development of mobile systems. The Forum issued its response to EC/RSPG on objectives for WRC-07, with particular reference to two Agenda items for the meeting. Item 1.4 considers frequency-related matters for the future development of IMT-2000 and systems beyond IMT-2000, while item 1.9 reviews the technical, operational and regulatory provisions applicable to the use of the band 2500-2690 MHz by space services in order to facilitate sharing with terrestrial services. UMTS Forum recommendations include the pursuit of further in-depth studies on new bands for the high bit-rate evolution of IMT-2000, plus further studies on extension of UMTS/IMT-2000 in bands below those already identified for IMT-2000 to provide coverage for large areas with low population density.

## Key Messages to Public Authorities

Complementing its work in response to public consultations, the Forum has also provided inputs to public authorities in Europe and beyond on a range of spectrum issues relating to IMT-2000 systems:

**Spectrum solution for UWB:** The UMTS Forum has voiced its concern that the introduction of UWB (Ultra Wide Band) in the spectrum bands of current and future 3G/UMTS systems with the currently proposed UWB masks would result in significant interference to UMTS networks. Amidst fears that UWB usage in this spectrum range could prevent economical deployment of wide area systems and harm this valuable spectrum, The UMTS Forum confirmed its viewpoint that the most promising application for UWB is for high bit-rate/short range indoor communications, whereas demand for local area networking solutions will be provided by WLANs. A UMTS Forum input document was consequently sent to ECC TG3 meeting in May, with further inputs made in June to ITU-R TG 1/8.

**'Mixed allocations' at 2 GHz band:** A document presented to the Indian regulator TRAI (April 2004) explained difficulties related to the usage of both PCS1900 and IMT-2000 band plans in the WARC-92 bands in the same geographical area. This question is currently under discussion in India, and key observations applicable in other countries that may have similar discussions, such as Brazil. The Forum has noted that 'mixed' IMT-2000 and PCS1900 use at WARC-92 bands runs risk that emissions and noise from the PCS1900 BS transmitters will impair subsequent use of WARC-92 bands. Furthermore, these mixed allocations would incur additional cost and need for site co-ordination. The Forum thus confirmed its position to TRAI that, from a spectrum efficiency point of view, the best solution is to follow the ITU-R identification and implement all IMT-2000 technologies within WARC-92 bands.

**'Digital Dividend' of broadcast bands below 1 GHz:** In May, the Forum drafted a set of messages for countries participating in ITU Regional Radio Conference (RRC) 04/06 to consider usage of the 'digital dividend' as coverage bands for IMT-2000, to be continued in inter-sessions before 2006. Specifically, Forum spectrum experts urged that RRC should identify the spectrum dividend resulting from the switchover to digital broadcasting. In addition, the new digital broadcasting plan should be developed by RRC in such a way that the 'digital dividend' or part of it could be used for mobile services.

## Reports and Studies

Throughout 2004 the Forum has continued to provide its members with high-quality analysis of industry trends, technological and market developments.

Reports published during 2004 included studies on the user behaviour of mobile customers; Mobile Market Evolution including long-term sociological, social and economical trends; and the Benefits of Mobile Communications for Society. In its first detailed study of 3G/UMTS market trends since 2001, the Forum has recently completed a major report titled 'The Magic Digital Future 2010 – 2020'. By assessing the likely impact of long-term social and economic trends, the report conducts a qualitative and quantitative analysis of mobile subscribers, services and traffic evolution during this timeframe. A key objective of the study has been to assist ECC PT1 and ITU-R WP8F in their preparations for WRC-07, and publication of the final report is anticipated in Q1 2005.



## Events

The Forum has continued to maintain a prominent industry profile through its endorsement and participation at key conferences and exhibitions worldwide.

Over the course of the last year there have been over 60 events where the Forum has provided keynote speakers, presenters, panelists and session chairs or offered its endorsement. In particular, The UMTS Forum Chairman and officers spoke at the following events in 2004:

3G World Mobile Forum, Tokyo (January); 3GSM World Congress, Cannes (February); Euro-India, Delhi – organised by European Commission & Confederation of Industries of India (March); India Mobility 2004 (April); Connect Middle East Summit, Dubai, (May); 3G China International Summit, Beijing – organised by IIR & CIC (June); 3G European Deployment Congress, London (June); 4th GSM Brazil Congress, Rio (June); Tehran Telecoms Summit, Tehran (July); Latin America & Caribbean Mobile Forum, Miami (August); ITU Telecom Asia 2004, Busan (September); NGT Central & Eastern Europe Conference, Prague (September); AMTA Congress, Sydney (September); GSM Middle East, Dubai (October); UMTS Congress/Mobile Infratech, London (October); Futurecom, Florianopolis (October); 3G World Congress & Exhibition, Hong Kong (November); IDATE 26th International Conference, Montpellier (November); GSM Africa, Cape Town (December).

## External Communications and Media Relations

The role of the Forum in promoting the benefits of 3G/UMTS networks and services has remained a key focus for activities throughout 2004. A resurgence of interest in 3G from the world's media has accompanied large-scale commercial deployments in several key regions, and this has resulted in a further increase in the volume of regular press briefings undertaken by UMTS Forum officers over the last year. Overall, more than 120 separate media interviews – via telephone, e-mail or face to face – have resulted in over 100 separate pieces of press coverage, spanning national and regional newspapers, industry magazines and newsletters, television broadcast and on-line news services. In particular, the Forum's worldwide presence at conferences, exhibitions and workshops has been augmented by local PR opportunities co-ordinated with the assistance of regional media specialists. Notable examples of this strategy have included regional PR campaigns to amplify the Forum's profile and deliver positive messages relating to 3G/UMTS licensing, technology, deployment and market aspects in Australia, Brazil, China, France, India, Japan, Korea, Russia and the UK.

The Forum's free e-newsletter, Mobilennium Express, continues to provide a weekly digest of news announcements from the Forum and the industry at large for several thousand recipients weekly. Our web site, [www.umts-forum.org](http://www.umts-forum.org), also offers a source of news and information, including regular updates on data relating to 3G/UMTS launches and subscribers.

## Regional Focus

Key emerging countries action plan:

### Brazil

As part of the Forum's ongoing 'mission to Brazil', promotional activity and dialogue with the authorities continued during June with visits to Brasilia, Rio and Sao Paulo. In addition to delivering a response to ANATEL's public consultation on the use of 450 MHz for mobile services, Forum officers attended meetings with Mr Ziller, the new Chairman of Brazilian Regulator ANATEL, and with Jarbas Valente, Superintendent of 3G Services. The Forum also maintained its regional profile at Futurecom in Florianopolis (October) with a presence on the ETSI/@LIS stand.

### China

With confirmation of China's 3G licensing plans still eagerly awaited, The UMTS Forum has maintained its ongoing programme of promotional activity and dialogue with the Chinese authorities. October 2004 saw the hosting of the second UMTS Forum workshop in Beijing, co-organised with the China 3G Leading Group (MOST, NDRC, MII) and BUPT. The event was facilitated with the support of the European Commission and the GSM Association, with the sponsorship of Siemens, Alcatel-ShanghaiBell, Huawei, Ericsson and Nortel. Attendees at the workshop represented China's main operators, administrations and manufacturers involved in 3G licensing and deployment. Momentum from this successful event was maintained via follow-up with the Chinese administration during November's 3G World Congress in Hong Kong.

### India

Continuing promotional activity and dialogue with Indian authorities included meetings with the Telecoms Regulatory Authority of India (TRAI) in March and April. This gave the opportunity to present the benefits of licensing 3G/IMT-2000 in WARC-92 spectrum bands. A response from the Forum was issued to the TRAI public consultation on spectrum management issues, co-ordinated by the Forum's Spectrum Aspects Group. Follow-up on the status of licensing in India was conducted with the Cellular Operators Association of India (COAI). During 'open house' discussion meetings over the summer, further lobbying actions were pursued in response to threats on the 1900 MHz band, in co-ordination with COAI, GSMA and GSA.

### Russia

A highly successful joint workshop was hosted in Moscow during June, at the instigation of The UMTS Forum and the 3G Association of Russia (A3G). '3G cellular communications introduction in Russia' was attended by more than 120 high level participants, with an introduction by the Minister of Communications and IT of the Russia Federation. The meeting also marked the signature of a Co-operation Agreement between the Forum and A3G Russia.

# Part II: UMTS Forum Work Programme for 2004 and Proposals for 2005

## Mission Statement

Vision/Future Research and Market		Spectrum and Regulation	Technical Issues and Implementation
Evolution of 3G/UMTS	Global spectrum and spectrum arrangements for UMTS/IMT-2000 and its evolutions		Implementation
Research into customer behaviour and social shaping	Regulation		Complementary Technologies
Services and Applications			Use of IP in mobile environment
			Security awareness
Promotion/Marketing Communications			
Investor Relations/Media Briefings and Relations/Conferences & Exhibitions			
Secretariat Support			

## Vision, Future Research and Market

Completed Vision/Future Research Studies in 2004			
Activity	Project Responsible & Project Group (Support)	Deliverable/Output	Timescale/Milestones
Feasibility and costs study	Manufacturers Group	What is now technically possible to accomplish (circuit switched, packet...)? <ul style="list-style-type: none"> <li>facts and figures on objective basis: eg comparative capabilities of EDGE and UMTS in terms of coverage, number of base stations for equivalent service...</li> <li>compared costs (stand-alone, incremental...)</li> <li>payback periods</li> </ul>	Work reviewed during 2004 and input to the Evolution Paper
Update to Mobile Evolution White Paper	Press Officer led the project team with contributions from members and others.	Agreement to produce a revised White Paper on the possible further evolution of UMTS towards mobile broadband: 'Mobile Broadband the Personal Internet'	The updated White Paper is virtually complete, now with printers
Research on customers' behaviour/ social shaping	Programme Manager and project team (plus research team)	Project on how customer behaviour affects how services and applications are introduced.	The final report of phase 2 was published in February 2004 as Report 34
Market evolution and forecasts	Marketing Group	Consider possible scenarios concerning the evolution of IMT-2000 market, services and usage for the years beyond 2010	Published as Report 35
Benefits of mobile communication for society	Operators Group	Develop communication material emphasising benefits of mobile communication for society to balance the biased communication of the 'health' effects	Paper approved with revisions at SG#46, paper approved at GA#32 with amendments, now Report 36
Vision/Future Research and Market Programme for 2005			
Disseminate research from social shaping activity	3GPP representative	Work to be presented to 3GPP human factors group	Ongoing
Services and applications study	Manufacturers Group	Complementary studies on the introduction of services and applications of interest to members and not covered elsewhere	It was further discussed at GA#30 where inputs on the effects of video imaging on networks were sought.
Market evolution	Marketing Group	Market study 2010-2020	Scheduled for completion Jan 2005 with output to ITU

## Spectrum and Regulation

Completed Spectrum and Regulation Studies in 2004			
Activity	Project Responsible & Project Group (Support)	Deliverable/Output	Timescale/Milestones
Influence ITU-R WP8F and regional groups (CEPT/ECC PT1) in the attempt to harmonise frequency arrangements for UMTS	Spectrum Aspects Group (SAG)	Traffic characteristics study and methodologies for spectrum calculations.  A second item was ordered from Telecompetition to complete the offered traffic study with 2G and 2.5G traffic. The funding for the MOMENTUM research project was discussed at SG46.  Study the aspects related to the operators' initiative to find harmonised mobile spectrum in the band 470-600 MHz (based on OG justification for the need).	Contribution to ECC PT1 in January 2004  Report 33 completed and hard copies printed. The second TC study was approved at GA#32 and was annexed to Report 33.  A Forum message regarding RRC 04/06 prepared by SAG and sent to CEPT WGMF.  The same message was discussed at SG46. Printed document was prepared for those African administrations that participated in ITU RRC 04/05

\* The term 'evolution' has two references: one to the services and one to the technology.

Completed Spectrum and Regulation Studies in 2004			
Activity	Project Responsible & Project Group (Support)	Deliverable/Output	Timescale/Milestones
Ascertain the availability of the 2500-2690 MHz band for UMTS	Chairman & members of SAG	<ul style="list-style-type: none"> <li>To ensure UMTS is deployed successfully, manufacturers and operators must be given timely confidence and clarity to make the necessary investments in UMTS system and service.</li> <li>In Europe, the commitment by CEPT member countries to implement an ECC Decision for the additional band 2500-2690 MHz for terrestrial IMT-2000 will provide a clear indication that the required frequency bands are available on time and on a European-wide basis.</li> <li>Safeguard the global availability of the 2.5 GHz band for IMT-2000, see WRC-07 agenda item 1.9</li> <li>Investigate the spectrum requirements and needs for satellite and terrestrial IMT-2000 in this frequency band, based on ERO study on current utilisation of the IMT-2000 bands.</li> </ul>	<p>Reviewed at GA#30</p> <p>The outcome of the ERO study was presented at GA#31 and agreed as an internal report.</p>
Consideration of spectrum aspects for the Globalisation of UMTS	SAG	<ul style="list-style-type: none"> <li>Global promotion of UMTS (there are other groups promoting other technologies)</li> <li>World-wide UMTS deployment, based on the success of GSM, as the evolutionary path from 2G to UMTS</li> <li>Consider and promote suitable frequency arrangements for the bands identified for IMT-2000, where standards are not yet developed, as a basis for standardisation, eg in 3GPP</li> <li>Also other regions than Europe will be increasingly important</li> </ul> <p>Studies and UF Reports prepared by SAG to be used.</p> <p>A statement for CEPT and ITU-R TG 1/8 on the protection of UMTS bands from UWB completed by SAG.</p>	<p>Reviewed at GA#30</p> <p>India document was created in SAG#42</p> <p>Main focus on the draft Report presented at GA#33 on Coverage Extension Bands for UMTS/IMT-2000 concerned the bands between 470 and 600 MHz. Draft report (SAG 43/07 r3) distributed to GA#33 for information. Comments are welcome and the report will be reviewed in detail at SAG#44 meeting</p> <p>Approved at GA#33</p>
Consultation	Chairman of SAG & members of SAG and Steering Group (SG)	Preparation of a response to EC on objectives for WRC-07	The paper was approved at GA#32
Consultation	Chairman of SAG & members of SAG and SG + UMTS Forum Latin America Vice-Chairman	Preparation of UMTS Forum Response to the Brazilian Public Consultation Nr. 535 concerning 410-430 and 440-450 MHz bands	Completed
Consultation	Chairman of SAG & members of SAG and SG	Preparation of UMTS Forum position on a spectrum solution for UWB, May 2004	Completed
Consultation	Chairman of SAG & members of SAG and SG	Co-ordination of a response to India Regulator on spectrum pricing	Completed
	Chairman of SAG & members of SAG and SG	What can the Forum ask of the EC to facilitate the quicker development of UMTS in Europe?	Completed
Consultation	Operators Group	Contribute to elaborate comments on the ECC Decision on CDMA-PAMR.	Action completed but not full agreement by all members
Process for dealing with consultation documents	Meeting Secretary	To update process on formal approval of consultation responses when Forum does not have a formal position on the topic.	New process now in place, distributed at GA#33
Consultation	Chairman of Administrations Group	Produce Forum position on UK Ofcom consultation on secondary spectrum trading.	Review completed
Spectrum and Regulation Plans for 2005			
Influence ITU-R WP8F and regional groups (CEPT ECC PT1) in the attempt to harmonise frequency arrangements for UMTS	SAG	Reach consolidated UMTSF members view for WRC-07 on spectrum requirements. The issues are WRC agenda items 1.4 (spectrum for IMT-2000) and 1.9 (spectrum sharing with BSS).	Projects underway, no completion dates yet.
Co-operation with GSMA	Chairman, Vice-Chairman and SAG	Joint responses to public consultations; co-ordinated work on defined topics.	Ongoing
Spectrum management	SAG	New work item on new Spectrum Management Principles. The aim of the Ad Hoc Group set up to study this is to indicate possible advances in spectrum management principles that can benefit the expanding and evolving commercial wireless business industry sector. Scope being defined	Report back in 2005

## Technical Studies and Implementation

Technical Issues and Implementation Studies for 2005			
Activity	Project Responsible & Project Group (Support)	Deliverable/Output	Timescale/Milestones
Identity overview	Operators Group	<ul style="list-style-type: none"> <li>Liberty model</li> <li>Federated identity platform elaborated by Liberty Alliance (open standard)</li> <li>Web Services Federation by IBM, Microsoft, BEA, VeriSign, RSA Security</li> <li>WS-Federation by itself does not provide a complete security solution for Web services.</li> <li>WS-Federation is not an open standard.</li> </ul>	
Use of IP in mobile environment	Project Team led by ICT Chairman	Update existing report on the full UMTS all-IP vision and ensure Forum documents are available to all other relevant fora. Input from Operators Group required.	Work not started yet
Settlements (billing and charging)	ICT Group	Scope being defined	
Medical Services	Operators Group	Study possible future mobile medical services (health empowerment) eg ambulances services, auto-diagnostic, Alzheimer positioning services	
Photo & video	Operators Group	Study the impact of high quality images on networks	
Security	Operators Group/ICT Group	<p>A/ Study relevant security related issues including authorisation and spam</p> <p>B/ Elaborate Content Control mechanisms:</p> <ul style="list-style-type: none"> <li>Adult Content management</li> <li>Digital Rights Management policy</li> </ul> <p>C/ Study issues to be managed by any UMTS network which is using the dual technologies: WCDMA/FDD and TDD (principally the low chiprate TDD).</p>	
Identity	Operators Group	Consider the issue of 'Identity', eg a single 'sign on' enabling mobile users to keep the same identity and user account across partner operator and ASP services.	

## Promotion and Marketing Communications/External Relations

Completed Promotion and Marketing Actions in 2004			
Activity	Project Responsible & Project Group (Support)	Deliverable/Output	Timescale/Milestones
Identity overview	Programme Manager	Liaise with other organisations to ensure Forum has latest information on health issues.	Presentation to members at GA#31
Promotion of good news	Press Officer + editorial help + Webmaster	Deliver to the industry and media and financial community positive information on UMTS deployment by means of a weekly e-newsletter. Webmaster to produce draft prototypes.	Completed regular weekly newsletters sent out
Brochure of the Forum	Press Officer	Produce presentation brochure of the Forum and its activities	Completed
Media Briefings/ Relations	Chairman, Press Officer + PR Co-ordination Group	Influencing press via direct contact. Content developed via regular review meetings	Briefings and presentations in W Europe, Brazil, US, Japan, India, S Korea, S Africa, China, E Europe, Middle East, Russia, Australia
Promotion of Forum's reports and papers etc globally	Forum officers + Forum members	Influence WTO/regulators and others on learnings from Forum reports, studies etc	Meetings scheduled in Cannes, Beijing etc for 2004
Dashboard/ Periodical Report on 3G deployment	Press Officer	Produce a live updated list of UMTS deployments as they occur, including terminals, rollout, subscribers etc	Ongoing
Internal Customer relations	Chairman and officers	Meetings with Forum's 'Key account holders', meetings arranged with EC members	Ongoing
Co-operation and work with 3GPP	Chairman, Programme Manager, 3GPP liaison person + Press Officer	Input Forum Evolution work to 3GPP study. Longer term brief 3GPP on WLAN report. Work to get messages to other fora. Provide 3GPP members with Forum reports.	E-mail review currently underway. Ongoing Ongoing Completed
Co-operation with ETSI	Chairman + Press Officer	Contribution to @LIS programme in S America	Ongoing



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