



The Americas Spectrum Management Conference 2011

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About the authors

NERA Economic Consulting is a global firm of experts dedicated to applying economic, finance, and quantitative principles to complex business and legal challenges. For half a century, NERA's economists have been creating strategies, studies, reports, expert testimony, and policy recommendations for government authorities and the world's leading law firms and corporations. NERA serves clients from more than 20 offices across North America, Europe, and Asia Pacific.

In radio spectrum, NERA is a leading provider of advice on designing and bidding in spectrum auctions, and on all aspects of spectrum policy, including spectrum pricing, trading and liberalization. Our advice is grounded on a thorough understanding of the services that can be deployed using different frequency bands, including mobile broadband and telephony, radio and television, satellite, and public uses, such as the military and public safety.

Aetha Consulting provides strategic advice to the telecommunications industry and specializes in undertaking rigorous quantitative assessments to support major strategic and regulatory decisions. Our senior staff collectively have over 100 person-years of experience of advising telecoms operators, regulators, and financial & legal institutions.

Throughout the recent growth of wireless services, Aetha's staff have been at the forefront of spectrum policy. Our work includes assisting regulators with the award of new spectrum bands and development of regulatory frameworks – for example supporting the European Commission to resolve high-profile issues such as spectrum trading and the digital dividend. Aetha also support operators in understanding their spectrum needs, valuing spectrum and bidding in auctions. Our staff have supported bidders in over 15 spectrum awards worldwide in the last five years and, at the time of writing, are currently supporting operators in multiple countries for forthcoming auctions. Our technical knowledge combined with our rigorous valuation modeling approach ensures that our clients are comprehensively prepared for auctions.

Forum Global specializes in policy focused conferences and events, providing a platform for discussion and debate on topical issues across a variety of different sectors. These events are organized with clients and partners and aim to progress ideas and actions on important issues, all within a balanced and neutral setting.

Forum Global is the international arm of Forum Europe, which was founded by Giles Merritt, columnist for the International Herald Tribune, and is widely recognized as the leading EU dedicated event provider. Headed by a team of events specialists with 20 years of experience, Forum Global works successfully with businesses, institutions and governments alike. Its strategic services can maintain and develop your key policy networks, and also deliver forums where key issues are aired and debated.

Introduction

The inaugural Americas Spectrum Management Conference 2011 was held in Washington, DC on October 19-20. The conference focused on policy issues concerning the management of radio spectrum and its impact on the essential downstream industries, such as mobile broadband, broadcasting, satellite, and public safety, that spectrum supports. It was attended by approximately 150 delegates from more than 18 countries across the Americas and from Europe and Asia Pacific. Although the primary focus of conversation was the policy and coordination challenges faced by countries in North America, Latin America, and the Caribbean, the conference also drew on perspectives from other world regions.

The event was organized by Forum Global, the international arm of Forum Europe, which organizes the annual European Spectrum Management Conference in Brussels. In developing the concept and agenda for the conference, Forum Global was supported by Knowledge Partners, NERA Economic Consulting and Aetha Consulting. Ericsson, Lemay-Yates Associates, and Qualcomm were Platinum Sponsors of the event, and Computech and NII Holdings were Gold Sponsors. Other Supporting partners included the GSM Association, the Satellite Industry Association, 4G Americas, Analysys Mason, the National Spectrum Management Association, MLex, and LS Telecom.

The conference followed a similar format to its sister conference in Europe, which has been running since 2006. It involved a mixture of keynote speeches, presentations on topical issues, and extensive panel discussions on each major topic area, plus plenty of scheduled time for formal and informal networking. Uniquely, the conference brings together all the major stakeholders in spectrum management, including policy makers, industry representatives (including mobile, satellite, and broadcasting), equipment manufacturers, and expert consultants, facilitating a rounded discussion with multiple viewpoints, and an exceptionally high quality of debate.

This report, prepared by NERA Economic Consulting and Aetha Consulting, summarizes the main discussions held during the conference, including an overview of each of the main presentations. We begin by highlighting some of the major themes that emerged across the conference, followed by a summary of the event in chronological order. Readers who would like to view specific presentations or listen to the conference audio recording should contact Forum Global.

Conference highlights

A number of major themes emerged during the conference that cut across the different topics discussed in each of the panel sessions:

- **Rapid growth in demand for mobile data** – The increased adoption of mobile data devices, such as smart phones and tablets, and the corresponding explosion in mobile data traffic levels was the most often brought-up topic at the conference. Participants observed that this demand upsurge was already apparent in countries across the American continents, not just in North America.
- **Spectrum crunch** – Many speakers warned of a forthcoming “spectrum crunch” if more frequency was not found for mobile broadband services. There was recognition that the amount of useful spectrum is finite and the only way forward is for us to make more efficient use of what is there. The adoption of more spectrally efficient technologies, such as LTE, and the use of integrated network architectures (e.g., off-loading traffic to the fixed network through use of WiFi and femtocells), was considered only a partial solution to meeting future demand. Several commentators highlighted the need for increased levels of sharing of spectrum between different services.
- **Regional and global harmonization of frequency assignments** – Industry and equipment manufacturers were vocal in their support of harmonized availability of spectrum both within the Americas region and worldwide. The growth of mass market wireless broadband, in particular, depends on availability of low-cost equipment, especially handsets, using the same frequency bands, which in turn requires economies of scale generated at a continental or global level. One new trend was the emergence of Asian markets, alongside the United States and Europe, as a source of economies of scale, and this was reflected in discussions at the conference as to whether Latin American countries should adopt the US or Asia Pacific band plan for assigning 700MHz spectrum.
- **Spectrum policy is moving up the political agenda** – Politicians are becoming increasingly aware of and involved in spectrum policy issues in both the Americas and other parts of the world. This reflects recognition of the underlying role of spectrum in supporting the growth of wireless broadband services, which are seen as a key enabler of economic growth and public policy goals, such as education and social inclusion.



Day 1 – main sessions

The first day of the conference featured keynote speeches on the approach to spectrum management in the Americas and other parts of the world, and focused on the issues of identifying and using spectrum to deliver wireless broadband services. The morning sessions were chaired by **Dr. Chantale LaCasse**, Senior Vice President at NERA Economic Consulting, while the main afternoon session was chaired by **Amit Nagpal**, Partner at Aetha Consulting.

Keynote presentations

The first keynote presentation was delivered by **Julius Knapp**, Chief of the Office of Engineering and Technology at the US Federal Communications Commission (FCC). Mr. Knapp provided an overview of the FCC's approach to enhancing spectrum policy. This proved to be an excellent introduction to many of the themes that were discussed later in the conference, including US plans for a spectrum inventory as part of the search for 500MHz of new spectrum for wireless broadband, the use of incentive auctions, and approaches to facilitating more dynamic use of the spectrum including the latest developments on white space devices.

Clovis Baptista, Executive Secretary to CITEI, delivered the next keynote on behalf of Héctor Olavarría Tapia, Undersecretary for Communications of Mexico and Chairman of COM/CITEL. His theme was the importance of making spectrum available for wireless broadband across the whole Americas region in order to facilitate competition and promote job creation. Mr. Baptista highlighted the role of the Inter-American Telecom Commission (IATA) as an agent for regional and broader international cooperation in order to realize the benefits of economies of scale and international roaming in mobile broadband services.

The final keynote was delivered by **Mike Byrne**, Chairman of the European Radio Spectrum Policy Group (RSPG) and Commissioner with ComReg (the regulator in Ireland). His speech was aimed at increasing awareness in the Americas of spectrum management activities in Europe, and promoting transatlantic cooperation on spectrum policy. Mr. Byrne gave an excellent overview of the decision-making institutions and processes in Europe and achievements arising from increased levels of cooperation within Europe. He concluded with a discussion of how the current levels of cooperation between the Americas and Europe could be increased to realize mutual economic benefits.

700 MHz band

Following a panel session involving the keynote speakers, the conference moved on to discuss the allocation and assignment of 700MHz digital dividend spectrum in the Americas. This was a timely topic, with many countries in the region planning to release this spectrum soon. A key debating point was whether countries in the Americas should follow the plan already implemented in the United States or take a different direction. **Sebastian Cabello**, Director for Latin America in the GSM Association gave an introductory presentation which set the scene for the debate. He highlighted the outstanding growth of mobile broadband in Latin America (noting that by the end of the year, mobile broadband connections are expected to exceed fixed broadband connections), the plans of individual countries for spectrum awards, and the choice of 700MHz band plans—including the US and Asia Pacific variants—available to each country.

Mr. Cabello's presentation was followed by a roundtable discussion, chaired by Dr. LaCasse. Four additional panelists made introductory remarks:

- **John Leibovitz**, the FCC's Wireless Deputy Bureau Chief, explained the background to the creation of the 700MHz band plan and the current status of the individual spectrum blocks.
- **Marc Dupuis**, Director General of Engineering, Planning and Standards at Industry Canada, reported on the expected outcome of the regulator's consultation on forthcoming spectrum releases. He revealed that Canada would follow the US 700MHz plan but would adopt the international band plan rather than the US plan for the 2.5GHz band. Regarding 700MHz, Mr. Dupuis said that Canada essentially "has its hands tied" when it comes to such decisions as a significant majority of its population lives in the border areas with the United States and interference minimization considerations are paramount. However, the 2.5GHz band was a special case owing to the likelihood that use of this band in the United States may be reconfigured in line with the international plan.
- **Clovis Baptista**, representing CITEL, focused on the main considerations underlying the choice of band plan in Central and South America, including maximizing the use of frequencies in border areas, facilitating the deployment of public safety systems, and finding an approach that supported the steady and harmonious introduction of new services. Mr. Baptista also highlighted the fact that Brazil, unlike the other members of CITEL, has maintained mobile as a secondary use of the 698-806MHz band, meaning that broadcasting may take precedence over mobile use in these frequencies.
- **Dean Brenner**, Vice President of Government Affairs for Qualcomm, provided further background on the historical situation in the United States. He also discussed the potential use of additional bands to provide supplemental downlink capacity (e.g., the lower 700MHz D block in the Americas, and L-Band in Europe and Canada) but stressed the need for the greatest degree of harmonization possible.

Following the presentations, the audience was invited to raise questions and points with the panel members. Discussions primarily focused on the increasing importance of China and India's spectrum allocation decisions and, given the sizes of population involved, how these countries may influence future equipment economies of scale. It was noted that China has proposed a different 700MHz band plan (TDD option) to the rest of Asia Pacific including India (FDD option).

Identifying spectrum for the broadband age

The main afternoon session considered the topic of identifying spectrum for the broadband age. **Matthew Hussey**, Telecommunications Advisor to US Senator Olympia Snowe, highlighted the importance that US politicians attached to the creation of a "spectrum inventory," as understanding how spectrum is currently being used and by whom is regarded as being key step towards identifying additional spectrum for wireless broadband. **Jose Rizek**, Minister and Telecommunications Advisor to the President of the Dominican Republic, then described the steps being taken in his country to identify new spectrum for wireless broadband services, including 90MHz in the 900MHz and AWS bands, and the allocation of the entire digital dividend to mobile services following analogue switch-off in 2015. He said that coverage and universal service obligations would be imposed on licensees to address concerns about a digital divide between urban and rural areas.

The panel session featured four other spectrum experts with diverse backgrounds. **John Kneuer**, President of JKC Consulting LLC, highlighted alternative models for reallocating spectrum, including reference to incentive auctions (discussed further during Day 2). **Charla Rath**, Vice President of Public Policy with Verizon Wireless, praised US policy maker's progress in identifying the right frequency bands for mobile, but called for more urgent action in actually freeing up the spectrum, particularly in moving spectrum from less to more efficient uses. **Kristin Due Hauge**, Director of Spectrum Policy at the GSM Association, spoke on the importance of international harmonization to support economies of scale in equipment production, international roaming services, and efficient border coordination. She called on individual regulators/governments across the Americas to make as many of the existing internationally harmonized bands available in their countries as possible. Finally, **Andres Maz**, Executive Director of Advanced Technology Policy and Manager of Government Affairs in Latin America for Cisco Systems, spoke about the explosive growth in data traffic and the need for operators to manage traffic levels, particularly given the regulatory constraints which may limit the use of network management tools in individual countries.

These comments provoked multiple questions from the audience, notably on the approaches available to operators to accelerate the availability of additional spectrum for wireless broadband. A key discussion point was whether infrastructure sharing between operators could play a role in improving coverage in rural areas in the United States and elsewhere. During the discussion, Ms. Rath gave further details on how Verizon Wireless was working with smaller providers in rural areas to enable them to offer next-generation mobile services to their customer base.



Day 1 – breakout sessions

In the second part of the afternoon, attendees were given the option to attend one of two breakout sessions on white space use and on rural broadband. Afterwards, participants continued their discussions at a cocktail reception.

White Space Devices and Dynamic Spectrum Access

Breakout Session 1 focused on the role that white space devices and more dynamic use of spectrum could play in enhancing the efficient use of the spectrum. **Richard S. Whitt**, Director and Managing Counsel for Telecom and Media Policy at Google, opened the proceedings with a presentation which focused on the commercialization and roll-out of white space technologies in the United States. Mr. Whitt argued that white spaces between TV channels are poised to become a focal point of wireless broadband activity, but also expressed concern that the US Congress may make decisions that unduly restrict the way that white spaces can be used. **Julius Knapp**, of the FCC, focused on the many initiatives underway to test white space equipment and rules for Dynamic Spectrum Access (DSA). Mr. Knapp told the audience that debate at the federal level on using white spaces had moved on from “*whether we should do it, to how we should do it.*” **Michael Marcus**, Director at Marcus Spectrum Solutions, focused on the management of interference between white space technologies and incumbent uses. Mr. Marcus suggested that there was a need to clarify what is harmful interference, and expressed concern that current FCC rules aimed at avoiding interference may be unduly conservative. The final presentation was delivered by **George Flammer**, Chief Scientist at Silver Spring Networks, who described a vision for the implementation of “Smart Grids” using white space technologies. He argued that sub-1GHz white space spectrum was needed to support complete ubiquity of services, such as smart utility meters, at the household level.

The presentations were followed by a lively debate chaired by **Ambassador David A. Gross**, Partner at Wiley Rein LLC. **Darrin Mylet** of Adaptrum hailed white space technology as a solution to the spectrum scarcity issue for wireless broadband. However, Julius Knapp was more cautious about the bandwidths that may be achieved using white spaces. Mr. Gross posed the question “*what does this mean for me as a consumer?*” and Mr. Whitt responded that change may seem gradual, but that new activities, including machine-to-machine communication, would ultimately transform the way we interact with machines throughout the home environment.

Broadband Coverage in Rural Areas

Breakout Session 2 continued discussions on the role of radio spectrum in bridging the digital divide through enhancing mobile broadband coverage in rural areas. **Jonathan Adelstein**, the Head of the Rural Utilities Service in the US Department of Agriculture described broadband as *"the most important thing since electrification."* He said that 50 million Americans still did not have access to broadband and highlighted the personal interest of President Obama in finding solutions to this as part of a platform for economic growth. **Mark Uncapher**, Director of Regulatory and Government Affairs with the Telecommunications Industry Association, discussed how targeted subsidies are being used to overcome the "cost of the last mile" in reaching rural consumers. **Jennifer Warren**, Vice Chair of the Satellite Industry Association, spoke about satellite's key role in bridging divides in individual countries across the entire Americas and noted the history of satellite in bridging the intercontinental divide. She called on governments to establish and interpret the rules for broadband schemes in a technology neutral way. Finally, **Andrew Gorton**, Group Head of Regulatory Affairs with Digicel, highlighted the essential role of harmonization in keeping handset prices down and facilitating widespread take-up in small countries and less wealthy markets. Mr. Gorton also hailed the benefits of having a high-speed backbone capacity to support mobile roll-out to less populated communities.

The session concluded with an interactive discussion between the audience and panel members on the approaches available to support universal broadband coverage, including examples from many countries worldwide. Such policy models included: specifying coverage deployment areas in mobile licenses (as adopted in Germany), use of reverse subsidy auctions (as used in Chile and proposed in the United States), and mandating wholesale access to common network infrastructure.



Day 2

The second day of the conference focused on spectrum auctions and their use across the Americas and beyond; and on global co-ordination of spectrum policy. **Richard Marsden**, Vice President at NERA Economic Consulting, chaired the morning sessions on spectrum auctions. **Ambassador David Gross** chaired the closing session on global coordination.

Spectrum auctions

The next few years will see a new wave of spectrum auctions across the Americas, as new bands are made available for mobile broadband and established bands are re-farmed. In the first session of the day on spectrum auction design and implementation, Mr. Marsden challenged speakers to identify the lessons that policy makers and bidders can learn from past auctions, both within and beyond the Americas. He also asked whether new innovations in spectrum auction design recently introduced in Europe, such as package bidding and generic lots, can be applied effectively in the Americas.

Dr. Maria Maher, Senior Consultant at NERA, presented an overview of recent spectrum auctions worldwide. Drawing on case studies from Italy, Sweden, and Denmark, she highlighted some of strengths and weaknesses of different auction formats, such as the SMRA and combinatorial clock auction (CCA). She concluded that there is no single best auction format, and that auction design should be tailored to local market conditions and policy goals. **Johanne LeMay**, Co-President of LeMay-Yates Associates, from Canada, and **Gustavo Cantu**, Corporate Vice-President at Nextel Mexico, presented on their own countries' experiences with the SMRA format, and its strengths and weaknesses. Both concluded that the use of auctions for spectrum assignment was considered a success, and highlighted the role of spectrum caps and other measures in affecting the distribution of spectrum across mobile operators in the downstream market.

The case studies were followed by a lively presentation on innovations in spectrum auction design by **Professor David McAdams** of the Duke Fuqua School of Business at Duke University, who highlighted the role of new tools, such as generic lots and package bidding, in solving some of the challenges in spectrum auction design. However, he cautioned that the theoretical benefits of such measures could not always be realized in real-world conditions. The final presentation by **Kristofer Shields**, Auctions Practice Lead at Computech, focused on the implementation side of spectrum auctions. Echoing comments from other speakers on auction rules, Mr. Shields said that implementation too should be tailored to local conditions, and that complexity in auctions rules is OK but should not exist at the expense of clarity.

In the following debate, the speakers were challenged to define what constitutes a successful auction. There was broad unanimity that revenues were a poor guide to success, and that the efficiency of assignment and positive impact on downstream competition were more important metrics. Other questions focused on using auction design to promote rural roll-out, whether greater complexity in auction rules favored larger bidders, and to what extent it was possible to compare the results of auctions across countries, for example between Canada and the United States.

Incentive auctions

The second morning session focused on the FCC's novel plan for "incentive auctions," designed to facilitate potential transfer of spectrum from broadcasters to mobile broadband operators. Mr. Marsden asked speakers to describe the progress has the FCC has made in developing the auction design, analyze their impact on spectrum users, and explore whether two-sided auctions will work in practice.

The first speaker was **Evan Kwerel**, Senior Economic Advisor at the FCC, who gave a detailed description of the Commission's current thinking on the incentive auction design, and emphasized the voluntary nature of the release option for broadcasters. There followed two differing views on incentive auctions from **Christopher Guttman-McCabe**, Vice President of Regulatory Affairs at the CTIA, and **Jane Mago**, Executive Vice President and General Counsel of the National Association of Broadcasters. Mr. Guttman-McCabe emphasized the urgent need to make more spectrum available for mobile broadband, and argued that incentive auctions were an important step towards this goal. Ms. Mago said that although broadcasters were not opposed to incentive auctions per se, they were concerned that some aspects of the process would not be voluntary—in particular, she expressed concern that operators that did not surrender spectrum may still be obliged to relocate their frequencies.

The presenters were joined by three additional panelists: **Lawrence M. Ausubel**, an economist and Chairman of Power Auctions LLC, **Jared Carlson**, Director of Industry and Government Relations at Ericsson, and **Victor Pavon Villamayor**, Director General for Prospective Regulation at COFETEL, the Mexican regulator. Mr. Ausubel argued that the basic rationale for incentive auctions in the United States was sound and compelling, and the approach may be relevant for other bands apart from UHF spectrum. Mr. Carlson stated that Ericsson is very supportive of FCC's idea to implement incentive auctions, and that although supporting legislation would not solve the "spectrum crunch," it was a start. Mr. Villamayor said that COFETEL would watch with interest the incentive auction process in the United States, and that Mexico's own policy on approach on auctions would prioritize efficiency and downstream competition.

In the following debate, Mr. Marsden raised the concern that incentive auctions are not guaranteed to produce a coherent band for mobile broadband, as release of spectrum could vary across the United States. Mr. Kwerel confirmed that as the auction was a truly voluntary approach, there is no guarantee that you will get the same available of spectrum in all regions of the United States, but expressed optimism that repacking of spectrum would produce a coherent band plan. From both the manufacturer and operator perspectives, Mr. Carlson and Mr. Guttman-McCabe highlighted the importance of the auction realizing a large contiguous band suitable for FDD mobile broadband deployment; but Ms. Mayo said that such cohesion should not be at the expense of broadcasters and their customers. Other questions focused on the challenge of coordinating the band at the Canadian border, the future of radio astronomy in channel 37, and some of the detailed rules of the auction. Notably, Mr. Kwerel highlighted the possibility that astronomy could be relocated from channel 37 if this could help facilitate a more efficient band plan for mobile broadband resulting from an incentive auction.

Regional and global spectrum policy coordination

The afternoon session on spectrum policy coordination was split into two parts: first, on coordination across the Americas, and, second, on global initiatives.

Carmelo Rivera, Vice-Chairman of the WRC-12 Regional Preparatory Group at the Inter-American Telecommunication Commission, initiated the regional discussions with a detailed description of the region's preliminary proposals for the next World Radio Conference (WRC). **Mindel De la Torre**, Chief of the International Bureau at the FCC, argued that there are great opportunities for deepening coordination of spectrum allocation across the Americas. Ms. De la Torre highlighted unmanned aircraft systems, electronic news gathering, and maritime spectrum as areas where there are immediate opportunities for policy harmonization, and expressed hope that there would be progress on harmonizing approaches to mobile broadband in the near future. **Jose Ayala**, Head of Government and Industry Relations for Latin America at Ericsson, described the growing need for spectrum for mobile broadband across Latin American countries, and emphasized the importance of harmonized allocations.

Beatrice Covassi, Digital Agenda and ICT Counselor for the EU Delegation to the United States, opened the global discussions with the question "*Can Europe and the Americas coordinate spectrum policy more closely?*" She concluded that they can and that real benefits could be realized from this, especially in relation to mobile broadband. **Alberto Mendez**, Chief of the Terrestrial Services Department at the Radiocommunication Bureau of the ITU, focused on the ITU's role in supporting global harmonization initiatives, and looked forward to the next WRC. **Chris Pearson**, President of 4G Americas, returned to the issue of finding more spectrum for mobile broadband. Mr. Pearson emphasized the importance of harmonizing bands and speeding up regional release of key bands to support future industry growth.

After the presentations, the presenters from both sections took part in a debate led by Ambassador Gross. There was broad agreement across participants on the need for closer coordination across countries, both within the Americas and globally, and particular recognition of the importance of identifying common frequency bands for release in addressing the "spectrum crunch." However, participants also emphasized that harmonized bands should normally be for flexible, non-technology-specific use, with the emphasis on allowing the market, not regulators, to harmonize technologies.



Looking forward to 2012

The conference attracted very favorable feedback from delegates, with many expressing hope that this would be the first of many annual events to come. Participants welcomed the global reach of the conference, and the diverse perspectives on issues facilitated by having attendees from across the Americas, as well as from other parts of the world.

Delegates praised the organization of the conference:

"The conference had a very good set of speakers and debate over issues...a well put on and well attended event by the Forum Global team!" – **Gabriela Manriquez**, Sr. Director, Government Affairs, Latin America

"I was very impressed with the conference--Forum Global did a great job in organizing a very informative conference. I look forward to future Forum Global conferences here in the states!" – **Matthew Hussey**, Telecommunications Legislative Assistant for Senator Olympia Snowe, United States Senate

"Forum Global really pulled together a great event...content, speakers, logistics, and timing/execution were all spot on. I look forward to the second annual!" – **Kris Shields**, Auctions Practice Lead, Computech, Inc.

They also highlighted the quality of debate:

"Speakers and content were top quality. Attendees and panelists, for the most part, stayed and listened to the discussions. The conference was not a typical Washington 'drop in and then leave' conference." – **Barbara Baffer**, Head of Corporate Affairs and Communications of Region North America, Ericsson

"Forum Global put on an exemplary conference. The attendance by high-level policy makers from the US and the Americas as well as thought leaders from industry, made for an impactful forum well worth the time. I will certainly plan on attending future Forums." – **John Kneuer**, President, JKC LLC

Delegates also enjoyed the balance between the stimulating formal presentations and Q&A sessions, and the informal networking opportunities available through the coffee and lunch breaks, and cocktail reception.

NERA and Aetha Consulting would like to add their voices to that of delegates calling for a return to Washington, DC for the second conference in autumn 2012. We are confident that this event will emerge as an annual institution for the Americas and global spectrum management community, complementing its sister event in Brussels.

Forthcoming Conferences



The 7th Annual European
Spectrum Management Conference
Where the European and worldwide spectrum communities meet!
20th & 21st June 2012 / Management Centre Europe
Pre Conference workshop 19th June

Organised by **Forum Europe**

The banner features a central globe with orange sine waves passing through it, set against a blue background with a grid pattern.

Now in its 7th year, the European Spectrum Management Conference has an established reputation as the major European meeting point of the year for stakeholders in the field of spectrum management, bringing together more than 280 participants on an annual basis.

The 2012 event will take place on June 20-21 at the Management Centre Europe in Brussels. There will also be an opportunity for delegates to attend the pre-conference workshop on June 19.

Key topics and issues to be addressed at the conference include:

- Beyond RSPP - Implementing Europe's spectrum policy roadmap
- Outcomes of WRC12 and a look ahead to WRC15
- Is there a need for a second Digital Dividend?
- Future bands for mobile broadband
- Public safety spectrum
- Spectrum Inventories & Mapping Future Spectrum Use
- Outcome of recent spectrum auctions and implications for future awards
- Whitespace & dynamic spectrum access
- How is the global spectrum landscape changing in light of the growing influence from nations such as China and India?

For more information on the 2012 event and to view details of the 2011 EU Spectrum Management conference, please visit www.spectrummanagement.eu or contact Tom Chinnock at tom.chinnock@forum-europe.com / T. +44 2920 783 025



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The Americas Spectrum Management Conference will return for its second year and will take place during the fall of 2012. Preparations for the event are coming on well and more details will be published shortly.

To keep up to date with developments of the 2012 conference and to view details of the 2011 conference, please visit www.spectrum2011.com or contact Tom Chinnock at tom.chinnock@forum-global.com / T. +44 2920 783 025



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