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### **Special report from Colombo**



### Sri Lanka's President praises role of ICT in reconciling his country

In his opening address to the 12th Global Symposium for Regulators held on 2–4 October 2012, in Colombo, Sri Lanka's President, Mahinda Rajapaksa, recognized that information and communication technologies (ICT) were a force for good, opening a pathway to progress and breaking down barriers of race, faith and geography. But he also warned that we need to be wary of the abuse of such technology, particularly where children are concerned.

The president said ICT need to be handled with great care and their development imposed duties and responsibilities on parents so as not to draw children towards intolerance and extremism.

"ICT must not be the tool of societies that pay homage to material values, and pay no heed to the values of decency, tolerance and humanity," said President Rajapaksa. "The wonders of ICT should not alienate our children from what is best in their culture and traditional values."

ICT has been a driver of reconciliation in Sri Lanka since the end of the civil war in 2009. Re-establishing communication towers in areas ravaged by civil war in Kokavil in northern Sri Lanka and linking the north once more to the power grid had assisted the restoration of peace across the country.

But the bigger picture has been one of ICT as a driver of economic and social development. The President said that the country is fully aware of the development potential afforded by ICT and there are now more than 20 million fixed and mobile phone users in Sri Lanka, exceeding the size of the population, in what is considered a middle income country.



Sri Lanka's President, Mahinda Rajapaksa

AFP

"Our rate of IT literacy has grown to over 40 per cent within the past six years, with the opportunity very soon for every school to have state-of-the-art computer-training facilities," said President Rajapaksa. "These advances have positively impacted the rural sector and helped the overall growth of the economy."

#### New infrastructure will drive growth

The government is developing a policy and regulatory framework for a next- generation network and aims to have a national broadband policy before the end of 2012.

"With the assets we have in education, the recognition of skills, a readily trainable workforce, and the search for new areas of competence among our youth, Sri Lanka will not be left behind in this new Age of Knowledge," said the President.

Infrastructure is one challenge in maximizing the benefits of ICT development, and the government is building the tallest communication tower with a state-of-the-art facility to make the country the communication hub for South Asia. In addition, a dedicated information technology park is being built in Hambantota, in the south of Sri Lanka, once one of the most neglected areas in development, which will sit alongside other major infrastructure facilities such as a new port and international airport.

"We see how mobile communications can bring revolutionary changes to the lives of people in new life skills, new employment opportunities, and new links to markets in one's country and abroad," said the President. "It can bring new educational opportunities, expand health and healing services, have a positive impact on sustainable development, increase production in agriculture, and expand the market potential of small industry and also develop new media."





Brahima Sanou

Tissa Witharana

Houlin Zhao

Mahinda Rajapaksa

### Best-practice guidelines on regulatory approaches to foster access to digital opportunities

The 12th Global Symposium for Regulators (GSR-12), organized by ITU's Telecommunication Development Bureau (BDT), in collaboration with the Telecommunication Regulatory Commission of Sri Lanka (TRCSL), took place in Colombo from 2 to 4 October 2012. The event was held along with the newly created Global Regulators-Industry Dialogue (GRID), ITU having decided to transform its Global Industry Leaders' Forum into GRID to further strengthen dialogue between industry and regulatory agencies. It attracted 446 participants, comprising regulators, policy-makers, industry representatives and service providers from 77 countries and ten regional and international organizations.

The main outcome of GSR-12 is a set of best-practice guidelines, which offer regulatory approaches to foster access to digital opportunities through cloud services. With the advent of cloud computing, digital resources are now becoming accessible over multiple networks anywhere, anytime. The guidelines recognize that "The growth of cloud computing has the potential to offer tremendous cost savings, efficiency and innovation for government, businesses and individuals around the globe." They include recommendations relating to consumer "cloud literacy" to ensure personal data protection, transparency in cloud service obligations between service providers, the development and adoption of international technical and organizational standards for cloud interfaces and service delivery, data portability in the cloud, and international cooperation between regulators.

To reap the full potential of cloud computing will also require cooperation and collaboration between governments, industry and consumers to build confidence in cloud-based services. Importantly, the growth of cloud computing will depend on ubiquitous and affordable broadband networks to which service providers have access on a non-discriminatory basis.

Specific regulatory areas covered by the guidelines include digital capacity building, net neutrality, and regulatory enforcement mechanisms, as well as measures to promote broadband roll-out including strategies for sharing infrastructure, coordination of civil works across different sectors and policies to speed rights-of-way access.

#### Ambassador nominated for GSR-12 **Best Practice Guidelines**

The guidelines were approved at the closing session, moderated by Brahima Sanou, Director of the ITU Telecommunication Development Bureau. Mr Sanou nominated the Chairman of

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Dr Hamadoun I. Touré

Dr Sarath Amunugama

Dr Keheliya Rambukwella

Ranjith Siyambalapitiya

Anusha Palpita

GSR-12, Lalith Weeratunga, as the new Ambassador of the GSR-12 Best Practice Guidelines and requested him to bring the guidelines to the attention of all appropriate forums.

Mr Weeratunga, who is also Chairman of the Telecommunication Regulatory Commission of Sri Lanka (TRCSL), stressed that cloud computing allows significant cost savings and investment returns, and represents an opportunity for all consumers and for data centre infrastructure to allow deployment of services in unserved and underserved areas.

Mr Sanou affirmed ITU's central role as a platform for sharing knowledge and building consensus among an increasingly diverse range of stakeholders. He thanked co-host TRCSL for its support and hospitality during the three-day event. "Sri Lanka has proved not just a beautiful and gracious venue but a very attractive destination for an international event like this one because of its ideal geographical location between east and west. Our hosts have been exemplary in terms of their professionalism, their generosity, and the commitment they have shown to making this event a resounding success."

The full text of the guidelines is available at www.itu.int/ ITU-D/treg/Events/Seminars/GSR/GSR12/consultation/GSR12\_ BestPractices\_v3\_E.pdf).

### Why regulate in a networked society?

Opening the Global Symposium for Regulators, Sri Lanka's President, Mahinda Rajapaksa, expressed his pleasure at hosting the event in a country where information and communication technologies (ICT) have played an important part in the peace process. He noted that ICT can help develop sectors such as education, health, media, agriculture and industry. With more than 20 million fixed and mobile phone users, reaching more than 100 per-cent penetration, and with 750 telecentres, largely in rural areas, Sri Lanka is making good progress in the adoption of ICT. The country aimed to have a national broadband policy and plan by the end of 2012 (see related story on pages 62–63). ITU Secretary-General, Dr Hamadoun I. Touré, said that GSR-12's theme "Why regulate in a networked society?" prefigured some of the topics to be debated by the World Conference on International Telecommunications (Dubai, 3–14 December 2012). Dr Touré emphasized that ITU's mandate is to accelerate deployment of broadband to ensure that more people are connected. The ultimate goal of the United Nations and ITU is to put information and ICT in the hands of the people of the world, including persons with disabilities, at affordable prices.



# Opening debate — Make the world one: regulation in the global village

The opening debate was moderated by Mr Sanou, who introduced the six panellists: Dr Touré; Mr Weeratunga; Eugene Kaspersky, Chief Executive Officer, Kaspersky Lab; Magdalena Gaj, President, Office of Electronic Communications (UKE), Poland; Zohra Derdouri, President, *Autorité de Régulation de la Poste et des Télécommunications (ARPT),* Algeria; and Dr Robert Pepper, Vice-President, Global Technology Policy, Cisco Systems.

Mr Sanou outlined the importance of ICT and how they can be a factor of national cohesion, can empower rural people and provide a better future for young generations. The ICT sector is still experiencing many growing pains. For example with over 6 billion mobile subscriptions, representing a global penetration rate of 86 per cent, with 78 per cent penetration in developing countries, there is much pressure from spectrum demand and its management. Dr Touré said that a one-size-fits-all solution is not possible even if the 154 regulators around the world need to have a set of common key principles.

Eugene Kaspersky explained that a combination of technical solutions and international regulations is essential to prevent exploitation of vulnerabilities in cyberspace. He underlined the importance of finding the right balance between freedom and regulation.

Magdalena Gaj called on regulators and operators to collaborate, noting that the market must ensure a reasonable return on operator investment.

Participants acknowledged that regulation is needed, but warned that too much regulation can kill innovation. Government and the private sector should work in partnership, and international organizations should communicate with the private sector and INTERPOL to prevent cybercrime.



### Net neutrality: to regulate or not to regulate?

The session on net neutrality, moderated by Anusha Palpita, Director General of the Telecommunications Regulatory Commission of Sri Lanka, asked whether traffic management should be regulated or left to commercial negotiations; how the use of new applications and services, in particular cloud computing services, is affecting networks and straining existing bandwidth; and how to strike a balance between consumer protection and fostering investment.

Malcom Webb, Partner at Webb Henderson, author of the GSR discussion paper on "Net neutrality: a regulatory perspective", defined net neutrality as the principle that all electronic communication passing through a network is treated equally, independently of the content, application, service, device, sender address and receiver address. Blocking or throttling a rival's content or applications requires an adequate regulatory response. Regulators should ensure competition among Internet Protocol (IP) service providers and require them to have transparent traffic management techniques.

Ivan Sanchez, Expert Commissioner of Colombia's *Comisión de Regulación de Comunicaciones,* said that a new law on net neutrality in Colombia will cover principles of free access and nondiscrimination among operators, but not all users will have the same right of access to networks. Operators will be able to offer packages according to user needs. However, if operators change their offer conditions, they will have to notify users, who will have the right to cancel their contract without incurring charges.

Pablo Pfost, Telefonica's Director of corporate strategies and regulatory services, considers that the principle of net neutrality should be the same for fixed and mobile networks, even if the tools used for managing these networks are completely different.



### Setting spectrum policies in a digital mobile world

The session on setting spectrum policies, moderated by François Rancy, Director of the ITU Radiocommunication Bureau, discussed the measures needed to deal with rapid take-up of new broadband mobile applications and machine-to-machine communications in a hyperconnected world, while sustaining mobile next-generation network (NGN) deployment. The results relating to broadband achieved by the World Radiocommunication Conference (held in Geneva from 23 January to 17 February 2012) were also discussed.

Robert Horton, Senior ICT Expert and author of the GSR discussion paper on "Spectrum Policy in a hyperconnected digital mobile world" explained how increasing demand for broadband and mobility call for a rethinking of spectrum policy. With wireless penetration in urban areas currently at 65 per cent, it is easy to understand how future urbanization, together with a good spectrum policy, would give all citizens access to education and a better lifestyle, as well as promoting economic and social cohesion. Data traffic is growing, with huge penetration of smartphones and tablets in both developed and developing countries, and cloud computing is highly data-intensive. If nothing is done to meet the growing demand for spectrum, many mobile carriers will be out of business within three years. As well as implementing the high-level principles produced by GSR at its meeting in Tunisia in 2005, countries should conduct inventories of their national spectrum needs, and develop national spectrum plans linked with their national broadband plans.

Mignon Clyburn, Commissioner of the Federal Communications Commission (FCC), United States, agreed that there is a need to use spectrum more efficiently. Vacant spectrum between television channels should be made available, and mechanisms put in place to offer more opportunities for spectrum sharing.

Norifumi Yamaguchi, Director of the International Frequency Policy Office, in Japan's Ministry of Internal Affairs and Communications, described how a task force established in 2001 had estimated that mobile services in that country would need an extra 1600 MHz in 2016. The question remained of how to obtain that spectrum. The government envisaged obliging operators to evacuate some spectrum in the coming 10 years, and would set aside funds to compensate them, as necessary.



## International mobile roaming in a broadband economy

The session on international mobile roaming, moderated by Amr Badawi, Executive President of Egypt's National Telecom Regulatory Authority, discussed: how to handle termination of voice and mobile data communications in an always-on borderless society; business models for roaming and the need for crossborder delivery; the impact on consumers; the role of regulators and what regulatory approaches need to be adopted; and how to balance regulation with commercial solutions.

Dimitri Ypsilanti, Senior ICT Expert and author of the GSR discussion paper on "International roaming services: a review of best practice policies", said that international and regional bodies are putting more emphasis on roaming because of the increasing penetration rate of mobile subscribers requesting both voice and data services. Many operators have special roaming packages for tourists but no mobile operator informs consumers of roaming

prices when they subscribe to a contract. One solution could be to force operators to unlock mobile phones to allow consumers to buy foreign SIM cards while travelling. Network neutrality and voice over Internet Protocol (VoIP) are other solutions. The quickest way forward would be via bilateral agreements.

Saddig Al Tayeb, Assistant Deputy Governor for Competition Affairs, Communication and Information Technology Commission, Saudi Arabia, said that the six Gulf countries are collaborating on roaming. Gulf citizens know in advance how much they will pay for each phone call throughout the region. This has brought 33 per cent savings to consumers and now negotiations are starting on data tariffs.

Dr Badawi noted general agreement on the need for transparent roaming tariffs, recognizing that high roaming costs are even more problematic with data roaming.



## Blurring boundaries: global and regional IP interconnection

The session on boundaries in IP interconnection, moderated by Eugene Juwah, Executive Vice Chairman and CEO of the Nigeria Communications Commission, dealt with how to address the remaining bottlenecks and whether IP interconnection should be regulated, the kind of dispute resolution mechanisms to be adopted at regional and international levels, and what enforcement measures work in a competitive environment. It also considered whether regulators should be involved in wholesale charging agreements, and how international IP interconnection is affected by net neutrality and international Internet connectivity.

Dennis Weller, Senior Advisor for Navigant Economics and author of the GSR discussion paper on "Global and regional IP interconnection", said that the development of the Internet in the past 16 years has been the major factor of economic development, facilitated by an efficient and global market for IP connectivity. But the benefits of this development have not been uniform among regions. There have been structural changes in the market on peer practices, with almost all agreements made informally on the basis of trust, without written documents.

The voluntary nature of agreements in developed country markets is essential for the success of the development of the Internet. But in developing countries a set of best practices is needed to promote a virtuous circle of development around liberalization, low barriers to access international gateways, low licence fees, public investment where appropriate, support for the development of Internet exchange points, constraints on anticompetitive behaviour by the incumbent, openness to foreign direct investment, and promotion of demand for broadband services.

Harinderpal Singh Grewal, Director of Next Generation National Broadband at InfoComm Development Authority, Singapore, said that the trust mentioned by Mr Weller in the peer agreements between established operators does not always work for new entrants. In Singapore, one operator with significant market power is obliged to offer transit business as an operator of last resort. It therefore has no interest in making peer agreements with new operators. To remedy this situation, the regulator has set up a multi-operators Internet peer point, even if operators still negotiate peer agreements among themselves.

Participants pointed out that the difficulty of determining whether a number is coming from a normal network or an IP network is an obstacle to number portability for IP, and that high-termination rates do not stimulate operators to move to IP interconnection. Furthermore, there is a lack of standards. What is happening in the IP market now is what happened years ago in the telephony environment, with incumbent operators trying to block new entrants. Fortunately, the situation is changing.

Global Symposium for Regulators | Special report Demystifying regulation in the cloud



### Demystifying regulation in the cloud: opportunities and challenges for cloud computing

The session on regulation in the cloud, moderated by Marianne Treschow, Representative of the Commonwealth Telecommunications Organisation, covered the social and economic benefits of cloud computing and its impact on smalland medium-sized enterprises, public entities and end users. Participants discussed how new players — such as social media, over-the-top (OTT) content and application providers — are changing market dynamics through cloud services. They also looked at the need for regulation, recognizing that rules should not stifle innovation.

Dr Ian Walden, Professor of Information and Communications Law and Head of the Institute of Computer and Communications Law, Queen Mary, University of London, and author of the GSR discussion paper on "Demystifying regulation in the cloud: opportunities and challenges for cloud computing", described how cloud computing provides flexible, location-independent access to computing resources that are made available to the user as and when needed — in other words, on demand.

Should cloud computing be regulated? The answer depends on several factors. Much of the cloud computing market may fall outside telecommunication law, but governments and regulators could facilitate its uptake by removing the perceived barriers. The major concern remains the security of the metadata generated by use of cloud services. Equally crucial are questions of privacy, data retention or deletion, quality standards, and PATRIOT Act problems.

Leslie Martinkovics, Director of International Public Policy and Regulatory Affairs, Verizon Communications Inc., a cloud service provider, said that the deployment of broadband is essential to increasing cloud availability. Data portability and international standards should have time to mature before regulations are imposed on clouds.

Sanjaya Karunasena, Chief Technology Officer of Sri Lanka's Information and Communication Technology Authority, said that in his country some organizations have good information technology infrastructure, while others do not even have computers. An advantage of cloud computing technology is that it offers everyone the same infrastructure, with reliable and secure services at affordable prices.

Speakers stressed the importance of striking a balance between regulation and innovation, the key being flexibility. Ms Treschow said that the massive growth of data makes cloud technology a must, but emphasized that quality control and security are needed for both content and the transport of information.



#### Dark clouds: safety and security on the net

The session on safety and security on the net, moderated by Imad Hoballah, Acting Chairman and CEO of Lebanon's Telecommunications Regulatory Authority, reviewed online threats from a user's perspective (data protection and privacy), and rights in the cloud and how to ensure anytime reliable access to cloud services. Participants emphasized the importance of defining applicable jurisdictions and managing commercial risk.

Stephanie Liston, Senior Counsel of Charles Russell and author of the GSR discussion paper on "The Cloud: data protection and privacy: whose cloud is it anyway?", said that the challenge is to protect the legitimate right to privacy without losing the opportunities that cloud services and technology provide. Countries have developed different approaches to privacy and data protection, ranging from no legislation (as in Brazil) to detailed regulatory frameworks (as in the European Union). The current framework is outdated, because regulation should not prohibit the transborder flow of data. It is not clear which law applies to transborder data flows, so consumers do not know which jurisdiction they should turn to.

Kalamullah Ramli, Adviser to Indonesia's Minister of ICT for Technology, Indonesia, explained that in Indonesia cloud computing is dealt with in the same way as the transport sector: the service provider is responsible for the safety and protection of consumer data.

Participants pointed out that privacy regulation is being considered at national level, but within a decade a global response will be needed so that all citizens of the world have the same level of data protection.

Dr Hoballah concluded that regulators must strike a balance between the free flow of information and meeting the security concerns that users have about cloud computing.



#### Public-private partnerships

The session on strategies for bringing broadband close, moderated by Ananda Raj Khanal, Director (Acting Chief of Office) of Nepal's Telecommunication Authority, addressed: development of public-private-partnerships to foster investment in broadband NGN networks; bottom-up or top-down approaches; how pursuing the accessibility market opens up new business opportunities; and understanding who the non-adopters are and marketing services for their needs. Participants also discussed how regulators can promote accessibility and inclusion for today's non-adopters, whether regulators should monitor investment, and what regulatory incentives should be provided.

Matt Yardley, Partner at Analysys Mason and author of the discussion paper "Developing successful Public-Private Partnerships to foster investment in universal broadband networks", said there was no single best model for broadband deployment, but it was clear that private-sector investment alone could not deliver universal broadband, so there was a need for intervention by policy-makers.

Axel Leblois, Executive Director, G3ict, Global Initiative for Inclusive ICT, explained that non-adopters of broadband make up about one-third of the world population, and one-third of the nonadopters of broadband are persons with disabilities. While many regulators around the world have taken steps to reach people with disabilities, the level of implementation of the Convention on the Rights of Persons with Disabilities is low. Public privatepartnerships are necessary to promote accessibility.

Mr Khanal added that non-adopters and people with disabilities represent untapped potential, and regulators and the ICT industry have a responsibility to reach and serve those people, who have so far been excluded.

Gabrielle Gauthey, Executive Vice-President Global Government & Public Affairs, Alcatel-Lucent, said that the dramatic growth in data is both a challenge and an opportunity. The private sector is encountering increasing difficulties in funding the huge investment required by the growth in data. Governments should step in to manage scarce resources such as spectrum. Some innovative solutions are emerging from developing countries. Public interventions must operate to stimulate private investment, while minimizing public funding.

Mohamed Sharil Tarmizi, Chairman, Malaysian Communications and Multimedia Commission (MCMC), said that every country should examine its own situation and decide which path to take. In Malaysia, broadband is treated like a public utility, such as water or electricity. The country is divided into zones, and in Zone 1 — big cities with high population density — there is no need for public funds, while in Zones 2 and 3 some initiatives are being financed through the universal service fund.



## Defining markets: a regulatory ladder of intervention in a converged digital environment

The session on intervention in a converged digital environment, moderated by Kathleen Riviere-Smith, Chief Executive Officer of the Utilities Regulation and Competition Authority, Bahamas, covered: defining significant market power in a converged technology and service-neutral environment; the move from regulation to deregulation; whether significant market power operators who invest heavily in network deployment or innovate fast should be treated differently; and the roles of competition authorities and ICT regulators, with a view to avoiding overlap and fostering cooperation.

Ms Riviere-Smith said that the ICT market is moving towards a converged environment, and asked whether regulators should deregulate to allow innovation.

Christian Koboldt, Co-founder of DotEcon and author of the ITU Broadband Report on Competition and regulation in a converged broadband world, said that in a converged environment the same operator can provide different services through bundling, and that 70 to 90 per cent of broadband customers in developed countries use bundled services. Also, there is a range of different broadband ecosystems: digital subscriber line (DSL), cable and fibre for fixed, with a mixture of the three technologies and a growing role for mobile. The implication of this for market definition is the need to concentrate on marginal customers who switch to different products depending on price.

Different types of networks can give access to the same service in a non-discriminatory manner, but the rules applying to the different services and the boundaries of the various regulatory authorities need to be clear.

Mohamed Bubashait, General Director of the Telecommunications Regulatory Authority (TRA), Bahrain, explained that TRA was the first authority in the region to conduct a market review, and that it has published extensive guidelines on how to define markets and foster competition. While there is no competition commission in Bahrain, TRA has the power to enforce ex-post provisions in the telecommunication sector.

Abdus Samad, Commissioner of Bangladesh's Telecommunication Regulatory Commission, said that the concept of "dominant position" is defined by the general competition law in Bangladesh, and that the market currently functions under competition mechanisms with some regulatory boundaries, such as price regulation, to ensure sustainability of small market players.

Participants discussed the separation of competencies between the regulatory authorities and the competition authorities, noting that the expertise of the sectorial regulatory authority should be beneficial to the competition authority.



### Broadband implementation: country case studies

The session on broadband implementation, moderated by Rahul Khullar, Chairman of India's Telecom Regulatory Authority, looked at success stories, forward-looking approaches and lessons learned.

Mario Maniewicz, Chief of the Department of Infrastructure, Enabling Environment and E-Applications, ITU/ BDT, presented the ITU series of nine country-case studies on broadband implementation, jointly implemented by BDT and the Broadband Commission for Digital Development secretariat. The case studies provide an in-depth look at the state of broadband development in Albania, The Former Yugoslav Republic of Macedonia, Malaysia, Mauritius, Nigeria, Panama, Philippines, Romania and Sri Lanka, and show how strategies and regulation can boost access, availability and affordability in building today's broadband world. Mohan Jayasekere, Deputy Director of the Telecommunication Regulatory Commission of Sri Lanka (TRSCL), presented the lessons learned from the ITU case study on Sri Lanka. TRCSL began monitoring broadband quality of service (QoS) in 2010, which resulted in greater competition, higher broadband speeds and reduced broadband prices for subscribers. Now separate QoS standards will be introduced for fixed and mobile services.

Magdalena Gaj said that the implementation of NGN is a priority in Poland, and the first step taken towards NGN deployment was the signing of the Mega Act to support infrastructure development. Models of co-investment are being explored by two fixed operators, and the two main mobile operators are considering infrastructure sharing.

Ms Gaj invited participants to Warsaw, Poland, from 3 to 5 July 2013 for GSR-13.

### The regulatory consulting room: bringing it all together, fostering inclusive and sustainable growth

The regulatory consulting session, moderated by Cristhian Lizcano Ortíz, Senior Telecommunications Expert and Chairman of GSR-11, focused on the most pressing regulatory matters.

Alan Horne, Telecommunications and Radiocommunications Regulator, Vanuatu, said that regulators understand the social and economic benefits of the Internet, but efforts are needed to educate the population about those benefits. Regulators should support e-government and e-education activities to help meet the Millennium Development Goals. Because operators shun uneconomic areas, it is the regulator's role to manage projects under the universal access fund.

Dražen Lučić, Executive Director of the Croatian Post and Electronic Communications Agency (HAKOM), said that the key question is how to balance regulation and investment. Broadband penetration in Croatia is about 30 per cent but the distribution is unequal and rural areas are not covered, hindering development. The regulator has started to incentivize operators to invest in rural areas. Participants discussed the facilitator role of the regulator in promoting access to infrastructure in rural areas and in using universal service funds to generate incentives for industry to serve remote areas.

### Poland will host GSR-13 in Warsaw from 3 to 5 July 2013

