ITU CORPORATE ANNUAL REPORT 2009

CONTENT

> " *It was a highly productive 2009 for ITU, during which we succeeded in bringing our key message to the top of the international agenda. We demonstrated that information and communication technologies (ICT) are vital and powerful in addressing the major global issues of today, from the economic downturn, to climate change and cybersecurity."*

Dr Hamadoun I. Touré, ITU Secretary-General

MESSAGE FROM ITU SECRETARY-GENERAL DR HAMADOUN I. TOURÉ

The year in review

ITU remained strong financially, our staff were focused and our working methods continued to improve in response to the constantly evolving world of ICT (Information Communication Technology). And the ICT industry stayed buoyant, despite the financial crisis. Governments prioritized investment in ICT networks as a key method of improving productivity in all industrial sectors and fuelling recovery. In October, ITU issued a report on this crucial issue: *"Confronting the Crisis: ICT Stimulus Plans for Economic Growth"*.

Other ITU activities had an important presence on the Internet. In particular, I would like to highlight the Child Online Protection (COP) initiative, formally launched in 2009. An integral part of ITU's Global Cybersecurity Agenda, COP has been established as an international network for action. I am also very pleased to report that the Global Cybersecurity Agenda found a physical home at the headquarters of IMPACT (International Multilateral Partnership Against Cyber Threats), which opened in March in Malaysia. Through cooperation between ITU and IMPACT, many countries are now being assisted to protect cybersecurity in a practical way.

The first ITU event of the year was the World Telecommunication Policy Forum (WTPF), held in Portugal in April. WTPF adopted the Lisbon Consensus, which addressed policy and regulatory issues associated with technological change and convergence. A few weeks later, we held the World Summit on the Information Society (WSIS) Forum in Geneva, which was co-hosted by UNCTAD, UNDP and UNESCO. The Forum was our annual follow-up on implementation of WSIS outcomes, with six high-level panels addressing critical issues, including climate change as well as the protection of children online.

"Protecting Children in Cyberspace" was also the theme of World Telecommunication and Information Society Day (WTISD), on 17 May. We were honoured to have Queen Silvia of Sweden as patron for the event, and the 2009 WTISD awards were given to three laureates for their exceptional work in this area: President Luiz Inácio Lula Da Silva of Brazil; Mr Rob Conway, CEO of GSMA; and Ms Deborah Taylor Tate, former Commissioner of the US Federal Communications Commission.

Our biggest event of the year was ITU TELECOM World 2009, held in Geneva in October. Heads of State and government attended, as well as many ministers and senior company executives from the ICT sector. Participants enjoyed a more varied exhibition than ever before, and a really innovative Forum programme, where many of the key issues of the day were discussed in depth. The Youth Forum, too, brought together some 300 young people from 150 countries around the world.

November saw two important events. First was the Global Symposium for Regulators (GSR), which took place in Beirut, Lebanon. Its value was demonstrated by the record number of participants. On the day before, the successful Global Industry Leaders Forum was held at the same venue.

Then shortly after, in Minsk, Belarus, ITU organized the ITU Connect CIS Summit, attended by leaders of government and industry from the Comonwealth of Independent States (CIS) and neighbouring countries. It was a landmark event in ITU's Connect the World series, which aims to mobilize all the resources needed to connect the unconnected by 2015.

In December, the United Nations Conference on Climate Change took place in Copenhagen, Denmark. As part of the ITU team there, I met world leaders to put forward our message on the fundamental importance of ICT, now and for the future of the world. I also took part in the WMO Climate Summit in Geneva and the UN Climate Summit in New York in September. ITU's three Sectors actively addressed climate change issues through various projects and meetings, and I am proud of our work on this challenge that affects us all.

ITU raised its profile on the international stage during 2009, and played a more dynamic role as a UN organization, taking part in many high-level meetings and events. I was therefore especially pleased to announce the opening of our New York UN Liaison Office, which will help us to remain integrated effectively within the UN system.

In November, I was also delighted to conclude an agreement with the United Arab Emirates, and its Telecommunications Regulatory Authority, on the creation of a visitors' centre at ITU's headquarters. This centre will showcase the foundations of ICT, its many uses in the modern world, and its exciting future.

Such a future is something to which all of us at ITU look forward, and for which all our Sectors were busy laying the foundations throughout 2009, as detailed in this report. Notably, Regional Preparatory Meetings for the 2010 World Telecommunication Development Conference were organized by the Telecommunication Development Sector for Asia and the Pacific, Africa, the Americas, the Commonwealth of Independent States, and Europe, with the Arab States meeting taking place in January 2010. The Radio Regulations Board met three times during the year, and continued implementing the results of the World Radiocommunication Conference 2007 while also preparing for the next conference in 2012. And the work of the Study Groups in the Radio-communication and Telecommunication Standardization Sectors continued apace, including such important topics as the Next Generation Networks Global Standards Initiative.

I know that, throughout the year to come, our staff, our elected officials and our membership will continue to work hard to achieve ITU's goal of connecting the world and creating a truly inclusive information society.

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Our major task is to bridge the digital divide. We must set the tone and agenda on how to strengthen regulatory practice, address issues related to convergence and ensure the smooth functioning of the Internet. We must also address the key challenges of our times, such as harnessing the power of ICT to combat climate change. At the same time, we must focus on the issues affecting developing countries: how they can build capacity and attract investment, in order to achieve the connectivity targets set by the World Summit on the Information Society and meet the 2015 Millennium Development Goals."

2009 ITU Council Chairman Haruna Iddrisu, Ghana's Minister of Communications

ITU COUNCIL

The 2009 session of ITU Council was held at the Union's headquarters on 20-30 October. There were 316 participants, representing the 46 Council Member States, as well as observers from other Member States and from Sector Members.

Leadership of the Council is rotated among the world's regions. Elected as Chairman for 2009 was Haruna Iddrisu, Ghana's Minister of Communications, while the Asia and Australasia region provided Vice-Chairman R.N Jha, Deputy Director General (International Relations), Department of Telecommunications, Ministry of Communications and Information Technology, India.

Council 2009 had a very heavy workload but achieved good results. The agenda was completed in record time and in a friendly atmosphere. Having an able chairman facilitated discussions, as did the well-constructed documents that were prepared by ITU staff.

Key decisions included approving ITU's biennial budget for 2010-2011, and creating a Working Group to elaborate the 2012-2015 Strategic and Financial Plans in preparation for the Plenipotentiary Conference in 2010. In addition, the Council created a Working Group on Child Online Protection, and approved a resolution on ICT and mitigating climate change.

The Council also adopted a resolution on the role of the group dealing with international Internet-related public policy issues, which provides the framework for the scope of ITU's work in this domain. It reviewed the results of a consultation on the functioning and management of ITU, and endorsed a strategic plan on human resources.

ITU's coordinated approach to cross-cutting issues, such as climate change and cybersecurity, was supported by the organizational structure put in place in 2007. This fosters productive collaboration between ITU's General Secretariat and the three Sectors: Radiocommunication, Telecommunication Standardization, and Telecommunication Development. Beyond the many events organized within the three Sectors, 2009 was also notable for a number of cross-sectoral events.

WORLD TELECOMMUNICATION POLICY FORUM

The first cross-sectoral event of the year was the fourth World Telecommunication Policy Forum (WTPF), held in Portugal on 22-24 April. WTPF brought together representatives of 124 ITU Member States to focus on the future policy direction for the telecommunication and ICT industry — which will guide future regulatory and standardization efforts worldwide.

WTPF attained a new high point for ITU in terms of organizing conferences outside Geneva. The logistical facilities (in particular in terms of the meeting room and IT features) were second to none, allowing work to be entirely paperless during the event.

WTPF adopted the Lisbon Consensus, which acknowledged the far-reaching importance of ICT in extending the benefits of the information society to all. In addition, participants expressed consensus on six "Opinions", covering Internet-related public policy matters:

- the advent of next-generation networks (NGN) and advanced broadband access;
- ICT and the environment to address global climate change;
- collaborative strategies to create confidence and security in the use of ICT;
- capacity building to support the adoption of Internet protocol version 6 (IPv6);
- and review of the International Telecommunication Regulations.

WORLD SUMMIT ON THE INFORMATION SOCIETY

The World Summit on the Information Society (WSIS) Forum was held in Geneva on 18-22 May and was co-hosted by the United Nations Conference on Trade and Development (UNCTAD), the United Nations Development Programme (UNDP) and the United Nations Educational, Scientific and Cultural Organization (UNESCO).

The enlarged and re-worked Forum successfully built on the tradition of annual follow-up meetings to review implementation of the outcomes of WSIS, which took place in two phases in 2003 and 2005. High-level panels addressed issues that are critical to the multi-stakeholder implementation process. These included ICT in achieving the Millennium Development Goals; accessing knowledge; financial mechanisms in the economic downturn; cybersecurity; climate change and ICT applications for a better life.

The WSIS Forum provided unique opportunities to network and participate in multi-stakeholder discussions and consultations — including meetings for facilitators on WSIS Action Lines, thematic workshops, and speed exchanges on critical issues.

WORLD TELECOMMUNICATION & INFORMATION SOCIETY DAY

World Telecommunication and Information Society Day (WTISD) was celebrated in Geneva, marking the foundation of ITU on 17 May 1865.

ITU was honoured to have Queen Silvia of Sweden as the patron for the event, held on 18 May. Its focus for 2009 was on *"Protecting Children in Cyberspace."* Participants learned about ITU's Child Online Protection (COP) initiative, which falls within the Global Cybersecurity Agenda and has been established as an international network for action to promote the protection of children and young people when they use the Internet.

ITU called upon all stakeholders (policy makers, regulators, operators and industry) to promote the adoption of policies and strategies that protect children in cyberspace and promote their safe access to online resources.

ITU awards three laureates

The 2009 WTISD Awards were presented by ITU to three laureates for their exceptional work in protecting children online.

President Luiz Inácio Lula da Silva of Brazil
While actively promoting Internet access for all, President Luiz Inácio Lula da Silva of Brazil has demonstrated deep concern for children's safety in cyberspace. In 2008, he signed a new law against buying, posting, or storing of child pornography on the Internet.

Rob Conway, CEO of GSMA
As Chief Executive Officer of GSMA, the industry association for mobile communications, Robert Conway led efforts to protect children using mobile phones. The Award was given in particular recognition for the GSMA's Mobile Alliance Against Child Sexual Abuse Content.

Deborah Taylor Tate, former Commissioner of the US Federal Communications Commission
When serving as a Commissioner at the United States Federal Communications Commission from 2005 to 2008, Deborah Taylor Tate was often called the *"Children's Commissioner"*. She is an international advocate for child safety related to ICT.

ITU TELECOM WORLD

ITU TELECOM World 2009 took place in Geneva on 5-9 October. Despite occurring during a period of global economic crisis, the event was acknowledged as a success by industry leaders. Its powerful theme — Open Networks, Connected Minds — linked concepts that convey the diversity in approaches to innovation, collaboration and cooperation by all those involved in communications. It also referred to the burgeoning of opportunities to connect people around the world through ICT.

ITU TELECOM World 2009 was opened in the presence of Heads of State, government ministers, senior industry executives and other key figures, including United Nations Secretary-General Ban Ki-moon, President of Rwanda Paul Kagame, Chairman of the State Council of Geneva David Hiler, Swiss Federal Councillor Moritz Leuenberger, Chairman and CEO of China Mobile Jianzhou Wang, and CEO of STC Group Saud bin Majed Al Daweesh. In total, some 2250 VIPs attended.

For the first time, a Heads of State Programme was included, to renew the vision of the World Summit on the Information Society and the global effort towards achieving the Millennium Development Goals through using ICT. A Heads of State Roundtable discussion with Chief Executive Officers concluded on the positive note that ICT can help lead the world out of the financial crisis, while also making a serious contribution to mitigating and adapting to climate change and addressing cybersecurity. Another session convened a Council of Ministers, at which more than 50 participants debated the future of the Internet, with a focus on broadband and convergence, Internet public policy, and new and emerging cyberthreats.

The Forum brought together players from across the ICT sector to discuss such areas as the new technologies shaping the future of ICT, the challenges of regulation in a fast-changing environment, and cybersecurity. Sessions featured roundtable and interactive panel discussions, with participants encouraged to put forward their questions via a range of different formats. For the first time, Forum sessions were webcast live to a global audience.
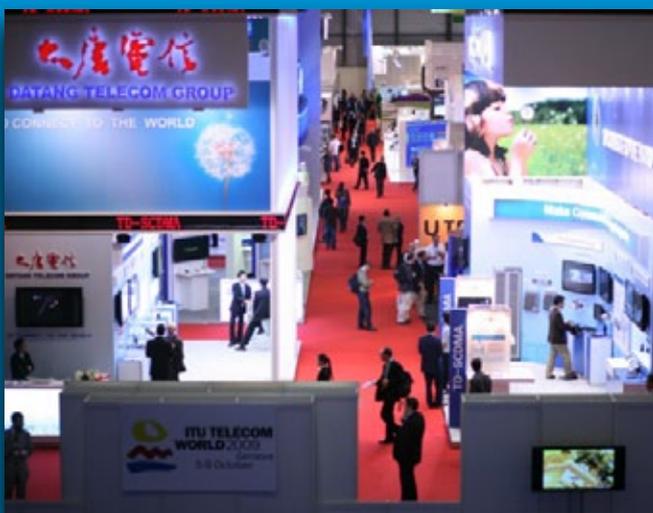
The Exhibition featured 465 exhibitors from 49 countries, and spanned products, solutions and services from almost every area of ICT.

The Youth Forum — another key element of ITU TELECOM events — welcomed some 300 young people from 148 countries. It was sponsored by the state of Geneva and brought together students with the vision and talent to take on key leadership roles in future within the ICT sector. Youth Forum participants (known as Fellows) followed a packed programme of discussion and debate, with opportunities to interact and develop mentor relationships with senior members of the ICT sector. Finally, they presented a Declaration and Action Plan conveying their global vision for expanding the benefits of ICT.

The Exhibition featured 465 exhibitors from 49 countries, and spanned products, solutions and services from almost every area of ICT. For the first time, ITU TELECOM World included thematic pavilions focusing on core areas relating to global well-being, such as e-health and environmentally friendly ICT. The exhibition also featured 35 national and regional pavilions, many from developing countries. This was a record number.

The whole of ITU was mobilized to support the event, in a number of different ways. All of ITU's elected officials offered their support and coordination before and during ITU TELECOM World, and took part in various Forum Sessions as moderators or speakers.

ITU TELECOM
WORLD 2009

" *...we firmly believe that investments in ICT and broadband networks have a major role to play in any stimulus plan."*

Dr Hamadoun I. Touré, ITU Secretary-General

THE GLOBAL FINANCIAL CRISIS

Fortunately, the financial crisis failed to make a major dent in demand for ICT services, with the mobile and satellite sectors proving remarkably resilient, and consumer demand for high-speed fixed and mobile connections continued to fuel growth in broadband subscriptions in major markets worldwide, including Brazil, China and the US.

Global Fibre-to-the-Home (FTTH) installations are still forecast to grow at a steady rate of 30% over the next five years, while long lead times, robust demand for entertainment services and specialized financing mechanisms have helped bolster the satellite industry, which is predicting 50% growth over the coming decade.

These were just some of the findings of the second edition of the ITU report on the role of ICT in the financial crisis, launched to coincide with the opening of ITU Telecom World 2009. Entitled **"Confronting the Crisis: ICT Stimulus Plans for Economic Growth"**, the report argued that the ICT sector has a major role to play in generating economic growth and stimulating the global financial recovery across all commercial and industrial sectors. *"Economists are still debating appropriate measures to combat the global recession,"* said ITU Secretary-General Dr Hamadoun Touré, *"but we firmly believe that investments in ICT and broadband networks have a major role to play in any stimulus plan. They often promise stronger*

marginal returns on supply and greater productivity gains than other forms of infrastructure." Co-authored by ITU and experts from Ericsson, Eutelsat, Intel, UK-based analyst house The Mobile World, the Organisation for Economic Cooperation & Development (OECD), broadband consultancy Point Topic, and the World Bank, the report was the second in ITU's Confronting the Crisis series.

The report also highlighted the necessary role of government in critical infrastructure investment. At the same time, however, the report warned that governments needed to be mindful of where they directed spending. With operators themselves hedging their bets by picking a raft of different technologies for ICT expansion, governments, too, were reminded to exercise caution when picking technologies, picking winners or even picking the communities where investments will be channelled.

Also, with operators facing greater challenges in accessing capital and financing their network investments, plans to roll out Next-Generation Networks have been delayed. Unchecked, these challenges could hold back communities that need solid broadband infrastructure to achieve their social and economic development goals: *"Next-generation technologies bring enormous advantages to nations, and the right policy choices must be made now, so we can reap the benefits tomorrow."* concluded Dr Touré.

By the end of 2009, more than 40 countries from all ITU regions had joined the collaborative ITU-IMPACT initiative.

CYBERSECURITY

In 2009, as part of the Global Cybersecurity Agenda (GCA), ITU continued its efforts to protect children online. This was the theme of World Telecommunication and Information Society Day (see page 12), and of the 6th Annual Safer Internet Day, held in partnership with the European Commission in February and marked by more than 500 events in 50 countries worldwide. During ITU TELECOM World 2009 in October (see pages 14-17, ITU announced its Guidelines on Child Online Protection (COP), aimed at bringing together partners from all sectors of the global community to ensure a safe and secure online experience for young people everywhere.

In March, to provide services and infrastructure in the five work areas of the GCA, the the Prime Minister of Malaysia and the ITU Secretary-General inaugurated the global headquarters of the International Multilateral Partnership Against Cyber Threats (IMPACT) in Cyberjaya, Malaysia. The facility includes the Global Response Centre (GRC), a resource that enables the international community to proactively track and defend against cyberthreats. The GRC also offers a framework for countries to work together on protecting cybersecurity.

By the end of 2009, more than 40 countries from all ITU regions had joined the collaborative ITU-IMPACT initiative. The deployment includes training sessions on using the GRC and technical and operational support, as well as assistance with the establishment of Computer Incident Response Teams (CIRT).

ITU held a series of Regional Cybersecurity Forums across the world to reinforce international cooperation and develop a harmonized approach to combating cybercrime.

Throughout the year, ITU held a series of Regional Cybersecurity Forums across the world to reinforce international cooperation and develop a harmonized approach to combating cybercrime. "*The ITU Toolkit for Cybercrime Legislation*" was published to provide countries with sample legislative language and reference material that can assist in the establishment of harmonized laws and procedural rules. ITU also made available a publication entitled "*Understanding Cybercrime: A Guide for Developing Countries*" to help these countries better understand the implications of the growing threats to cybersecurity, and assist in the assessment of current legal frameworks.

As an integral part of the global ITU effort, 2009 was an important milestone for standardization to bring about substantially enhanced global cybersecurity. Actions included the adoption of a cybersecurity information exchange framework (CYBEX) that imports more than twenty of the best standards for platforms that have been developed in recent years by government agencies and industry. The framework pulls these platforms together to facilitate their global interoperability and is also designed to be extensible and capable of evolving to include new threat-specific capabilities.

In addition, a first set of Recommendations dealing with identity management was approved for application in next-generation networks, for globalization of existing solutions and ensuring interoperability, and for user control of digital identity. Looking ahead, explanatory work was initiated on cloud computing and smart grid security. The fourth edition of the "*Security in Telecommunications and Information Technology*" manual was also completed.

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ICT are also crucial in providing early-warning and disaster relief communications...

CLIMATE CHANGE

A main focus of ITU's work in 2009 was the issue of climate change. The Council requested that efforts be made so that ICT would be mentioned in the final global agreements expected at the United Nations Climate Change Conference held in Copenhagen, Denmark, on 7-18 December.

A high-level ITU delegation took an active part in the conference and in the preceding negotiation meetings. ITU Secretary-General Hamadoun I. Touré and the Director of the Telecommunication Standardization Bureau, Malcolm Johnson, raised awareness of the importance of ICT in mitigating and adapting to climate change. They spoke at a number of side events in Copenhagen and daily briefings on the issue were arranged from representatives of industry and government, as well as other experts. In addition, a side event was organized by ITU with the World Intellectual Property Organization (WIPO), which examined how ICT and the intellectual property system can promote the development of new technologies to combat climate change and improve access to them.

All Sectors participated in the ITU Climate Change and Emergency Telecommunications Task Force, and provided contributions to various documents as inputs to the UN-led negotiation meetings in preparation for the Copenhagen summit. A key message was conveyed: that although ICT themselves add greenhouse–gas emissions to Earth's atmosphere (through their manufacture and use), they are also a powerful part of the solution when applied across all industrial sectors.

ICT are also crucial in providing early-warning and disaster relief communications — an area in which ITU was also active (see page 26). An important example is the monitoring of climatic conditions, and ITU and the World Meteorological Organization (WMO) jointly organized a seminar on the "Use of Radio Spectrum for Meteorology: Weather, Water and Climate Monitoring and Prediction," which took place in Geneva on 16–18 September (see page 28). ITU also led the Dynamic Coalition on Internet and Climate Change, composed of 34 organizations. Its first meeting was held in December 2008, and the second took place on 16 November 2009 at Sharm el Sheikh, Egypt, during the Internet Governance Forum (IGF).

The Focus Group on ICT and Climate Change, established in 2008, successfully completed its work in April 2009, with an outline methodology to measure ICT's impact on greenhouse gas emmisions.

Achieving climate justice is in the interest of all countries and citizens. This was a conclusion of the ITU Symposium on ICT and Climate Change, held in Quito, Ecuador, on 8-10 July. It was the third of its kind to be held by ITU, and the first in a developing country. Participants agreed that bridging the digital divide is fundamental to tackling climate change. The symposium was attended by 450 people from 20 countries, as well as 60 who used ICT to participate remotely. Marking the event, ITU published a background paper on this important issue, reflecting the work done in all three ITU Sectors. It also looked at the challenges of funding and access to technology that are faced in particular by developing countries as they try to find solutions to climate change.

Together with the Korea Communications Commission, ITU organized on 23 September the first ever Virtual International Symposium on ICT and Climate Change. The event featured speakers participating virtually from locations around the world. Thus, they saved greenhouse-gas emissions while discussing such topics as clean technologies and smart applications to achieve a green future.

Finally, ITU's own efforts to reduce its carbon footprint included the launch of a six-month teleworking trial for its staff, and offering remote participation to many of its meetings.

ITU has continued helping countries to better prepare for, and mitigate the impact of, natural disasters.

EMERGENCY COMMUNICATIONS

ITU has continued helping countries to better prepare for, and to mitigate the impact of, natural disasters. In 2009, the Union signed two new agreements which enhance its capacity to assist in this way. In July, Qualcomm donated a Qualcomm Deployable Base Station, with a total estimated value of over USD 500 000, which is a compact and easy-to-use way of providing mobile communications for the first rescuers on the scene after a disaster. In October, at ITU TELECOM World 2009, Inmarsat Ltd and Vizada SAS donated 70 Broadband Global Area Network (BGAN) terminals that are highly portable devices capable of delivering voice and broadband data via satellite. Based on these agreements, Inmarsat and Vizada will also provide ITU with preferential airtime rates, while Qualcomm, Inmarsat, and Vizada will also provide technical training.

In 2009, ITU provided assistance to Tonga, following earthquakes and floods on two occasions; to Kyrgyzstan, following an earthquake; to Zimbabwe, following floods, and to Indonesia, following two earthquakes. In all cases, ITU deployed satellite terminals to support relief and rescue efforts by the government authorities and other humanitarian aid agencies.

ITU also responded to requests from many countries to help design national emergency telecommunication plans, taking into account the challenges of adapting to the effects of climate change. In addition, countries were supported in reducing the risks of disaster. A range of activities were carried out by the Telecommunication Development Bureau, including helping to ensure that resilience and redundancy are built into telecommunication networks, and establishing national early-warning systems linked to regional and international networks. Countries were also assisted with reconstruction and rehabilitation of infrastructure destroyed by disasters.

ITU and WMO working together to monitor and predict changes in the weather and climate.

ITU-WMO SEMINAR

On 18 September 2009, ITU and the World Meteorolgical Organization (WMO) held the first joint seminar on the use of radio-frequency spectrum for meteorology, aimed at monitoring and predicting changes in the weather and climate — with an important role to play in predicting and mitigating natural disasters.

It has been estimated that in the great majority of disasters, most lives are lost and damage is caused by weather-related hazards such as droughts, floods, severe storms and tropical cyclones. Keeping track of these is therefore vital. And radio-based applications such as remote sensors are currently the main source of observations and information about the Earth's atmosphere and surface.

The seminar shared information on WMO's Integrated Global Observing System and ITU's role in using ICT to help combat climate change. Discussions focused on the effective use of radio spectrum, space orbits and radio-based meteorological tools and systems for monitoring the environment and thus predicting and detecting natural disasters, and mitigating their effects. The quality of meteorological measurements was also on the agenda, as well as the activities of national and international organizations in this field.

In remarks at the opening of the seminar, the Director of ITU's Radiocommunication Bureau Valery Timofeev noted that *"successive ITU World Radiocommunication Conferences have taken into account WMO's requirements for radio-frequency bands as observation tools, such as radiosondes, weather and wind profiler radars, as well as Space-borne infra-red and microwave sounders."* He added that *"in recognition of the vital importance of environmental monitoring, the World Radiocommunication Conference in 2007 allocated additional spectrum for observation systems involved in monitoring climate change."*

" *... we want to enhance digital opportunities for all, and find new ways for these remarkable technologies to advance economic and social development."*

Ban Ki-moon, UN Secretary-Genral

ITU CONNECT CIS SUMMIT

To help mobilize resources for the development of ICT in the Commonwealth of Independent States (CIS) and neighbouring countries, ITU organized a Connect CIS Summit, on 26-27 November 2009. Held in Minsk, the capital of Belarus, the event was hosted by the country's President Alexander Lukashenko.

Approximately 350 participants gathered from across the region, including Heads of State from Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Tajikistan, as well as government ministers, representatives of financial institutions and international and regional organizations, and other leaders from the telecommunications and ICT industry. A ministerial meeting took place at the same venue on 25 November.

The summit was organized in partnership with, among others, the Regional Commonwealth in the Field of Communications; the Commonwealth of Independent States Executive Committee; the World Bank; the European Bank for Reconstruction and Development; the European Investment Bank; the Islamic Development Bank; the United Nations Economic Commission for Europe, and the United Nations Global Alliance for ICT and Development.

In his message to the summit, United Nations Secretary-General Ban Ki-moon said that *"unequal access to ICT impedes productivity and innovation".* This directly affects efforts to achieve the Millennium Development Goals, he added, and so *"we want to enhance digital opportunities for all, and find new ways for these remarkable technologies to advance economic and social development."* Addressing the summit, ITU Secretary-General Dr Hamadoun I. Touré said that *"It is now time to turn words into action, and this can only happen through a renewed commitment to partnership — in particular between the public and private sectors."*

Sami Al Basheer Al Morshid, Director of ITU's Telecommunication Development Bureau, spoke about the increasingly important role of broadband Internet access for the overall economy. *"if we take the right steps together now, broadband networks will serve as a platform in the coming years for innovation, growth and development across the CIS region,"* he said. The Director of ITU's Radiocommunication Bureau, Valery Timofeev, noted that the transition to digital broadcasting will *"revolutionize communications in the CIS region and set the stage for a rich digital dividend,"* and it is very important that a smooth switchover takes place.

Part of ITU's Connect the World series of events, the ITU Connect CIS Summit was a venue for creating new partnerships to support the region's transition to digital infrastructure and services. The first panel discussion examined the status of broadband infrastructure and how it could be expanded, while the second panel looked at ways to foster an enabling environment, reviewing regulatory frameworks and their harmonization across the region in order to attract investment. A panel discussion on *"Strengthening public service through ICT"* introduced some of the new applications available over high-speed broadband infrastructure, such as e-health, online education and e-commerce. In addition, it examined the issues involved in moving government services online.

The risks and challenges associated with the emerging information society were also debated, in particular the need to protect data and privacy online. Also, a session was held on the issues and the timetable for CIS countries in moving from analogue to digital broadcasting, and participants considered ways to use the digital dividend of radio-frequency spectrum that will be released when analogue broadcasting is discontinued.

The summit issued the Connect CIS Declaration, stating a *"common desire to build an inclusive and development-oriented information society, where people can achieve their full potential and improve their quality of life."* Recognizing *"the important contribution of ICT in stimulating economic growth, employment and broader sustainable development in the region,"* as well as *"the essential role of governments in devising national e-strategies and establishing an enabling policy and regulatory framework to foster ICT investment,"* CIS leaders reaffirmed their commitment to achieving the goals of the World Summit on the Information Society (WSIS). To this end, the declaration calls on partners from the telecommunication and ICT sector, development banks and financial institutions, international and regional organizations and civil society, *"to mobilize human, financial and technical resources"* for initiatives in the CIS region.

Key objectives for the auto industry are to address climate change, security, safety, innovation and advanced communications.

THE FULLY NETWORKED CAR

For the fourth year running, a major event focusing on ICT in motor vehicles was organized in 2009 by ITU, the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), working together as the World Standards Cooperation (WSC). The *"Fully Networked Car"* workshop took place on 4-5 March at the Geneva International Motor Show, with the environment and climate change among its major themes.

The event brought together key specialists in the field, from top decision makers to engineers, designers, planners, government officials, regulators, standards experts and others. Presentations shed light onto some of the complex questions that face the ICT industry and the car industry, as well as technologies such as nomadic devices, voice and audiovisual services, advanced driver assistance systems, and ways to manage traffic and promote safety on the road.

It is estimated that by 2020 the number of cars on the road will have reached nearly 1.5 billion. However, the expected impact of the resulting growth in greenhouse gas emissions can be reduced with the help of ICT. *"We need to look at how ICT can help the motor industry address the challenge of climate change,"* said Malcolm Johnson, Director of ITU's Telecommunication Standardization Bureau, upon opening the workshop. He encouraged discussion to identify new areas of work for the WSC organizations on international standards.

Speaking of electric and hybrid cars, Jack Sheldon, IEC Standardization Strategy Manager, underlined that developing better batteries is essential. He added that smart power grids will be vital to support the adoption of electric cars. Kevin McKinley, Deputy Secretary-General of ISO, said that key objectives for the auto industry are to address climate change, security, safety, innovation and advanced communications.

An executive session of the workshop produced insights into how engineers around the world are developing technologies that will improve fuel economy, reduce emissions and lessen transport's environmental impact, while delivering the comfort, convenience and performance that drivers demand.
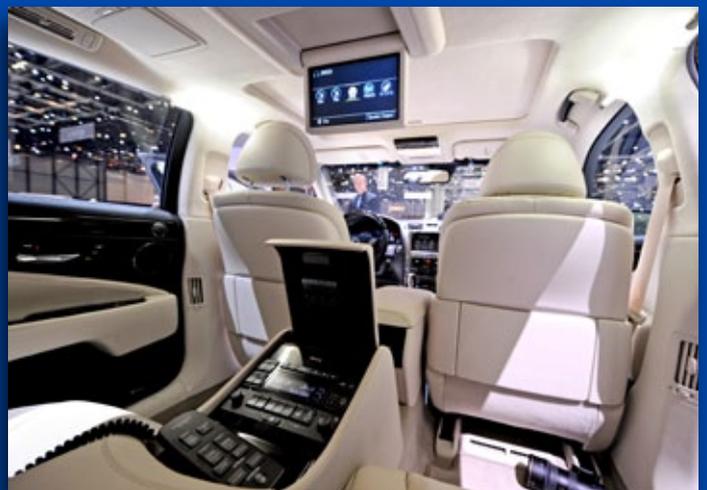
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If we are to build on this success, finding common ground among ICT stakeholders will be critical to stimulating growth in a converged environment."

Sami Al Basheer Al Morshid,
Director of ITU's Telecommunication Development Bureau

GLOBAL SYMPOSIUM FOR REGULATORS

Delegates at ITU's 9th Global Symposium for Regulators (GSR), held in Beirut, Lebanon on 10-12 November 2009, spoke of the pressing need for governments to open markets to greater competition and use incentives to stimulate investment in the broadband networks that are the lifeblood of the knowledge economy. The GSR was chaired by Dr Kamal Shehadi, Chairman and CEO of TRA, the Lebanese telecommunication regulator.

Described by ITU Secretary-General Hamadoun I. Touré as *"the most successful ever,"* the 2009 GSR welcomed 648 participants from 89 countries, who forged a shared vision of the challenges facing regulators in increasingly complex and converged markets for ICT. With the tough economic climate prompting some operators to rein in network development plans, the meeting placed emphasis on the need for the public and private sectors to work cooperatively to meet demand for ICT services.

The ICT industry played a central role in the one-day Global Industry Leaders Forum, held on Monday 9 November at the same venue. Chaired by Dr Saad Al Barrak, CEO of the Zain Group, the forum encouraged frank discussion among participants representing operators, ICT manufacturers and application developers, service providers, infrastructure specialists and consultancies. The Chairman's report was presented to the GSR for in-depth consideration. It stressed the need for predictable, stable regulation, improved regional harmonization of regulatory frameworks, more efficient management of radio-frequency spectrum, and a *'light touch'* by regulators

to allow markets to evolve naturally. It also advocated technology-neutral regulation, and urged regulators to make provision for the ongoing development of converged services by ensuring sufficient spectrum is available to support future growth.

In his opening address to the GSR, Sami Al Basheer Al Morshid, Director of ITU's Telecommunication Development Bureau, noted that mobile penetration would reach two-thirds of the global population in 2009, and one quarter are using the Internet. *"If we are to build on this success, finding common ground among ICT stakeholders will be critical to stimulating growth in a converged environment."* he said.

Participants agreed that the economic downturn had largely spared the ICT sector. Other key topics covered included consumer protection; universal access; Internet protocol (IP) interconnection; mobile termination rates; challenges facing new market entrants and voice over IP. The Symposium also issued a new set of Best Practice Guidelines that focus on four key regulatory areas deemed essential to today's fast-paced ICT marketplace: the need to promote convergence; to build stronger, more effective national regulatory institutions; to use regulation to stimulate ongoing market investment; and to promote innovative new services that can benefit consumers and help connect the unconnected.

> " "Our ambition is to ensure that everyone shares the benefits of the world information society. ITU-D plays a key role both as a facilitator of multi-stakeholder partnerships and as a mobilizer of resources to help implement, in all regions, commitments made by the World Summit on the Information Society and the World Telecommunication Development Conference. We are working with partners to build human, regulatory, institutional and business capacities to overcome the ICT gaps that persist in developing countries."
>
> Sami Al Basheer Al Morshid,
> Director of the ITU Telecommunication Development Bureau

TELECOMMUNICATION DEVELOPMENT SECTOR

Over the course of 2009, activities were carried out within ITU's Telecommunication Development Sector (ITU-D) to meet evolving needs in relation to ICT. And looking ahead to the World Telecommunication Development Conference taking place in Hyderabad, India in 2010 (WTDC-10), the Telecommunication Development Bureau (BDT) organized a series of Regional Preparatory Meetings through the year in Malaysia, Uganda, Colombia, Belarus and Andorra. (The meeting for the Arab States was held in January 2010 in Syria). At each meeting delegates set the priorities for future development arranged by programmes, regional initiatives and study group questions. For each event, BDT developed training materials in collaboration with ITU's other sectors on bridging the standardization gap and fostering the implementation of next-generation networks (NGN) and broadband in developing countries.

BDT was also involved in implementing over 80 development projects in 2009. These included wireless broadband planning and deployment; policy and regulatory harmonization; cybersecurity and e-applications; establishment of Internet Training Centres and Centres of Excellence; the transition to NGN and digital broadcasting; spectrum management; rehabilitation of networks following conflict and natural disasters, and the translation of ICT terminology into Arabic. Activities and projects were undertaken on ICT accessibility for people with disabilities, including development of policy models and an online toolkit. In addition, specific ICT activities and projects focused on gender equality and the needs of young people, children, and indigenous communities in rural areas.

In an effort to streamline extensive capacity-building efforts in ICT and telecommunications, ITU-D launched the ITU Academy, with the aim of strengthening the human, institutional and organizational capacity of developing countries. A key component was a new web-based portal (http://academy.itu.int) that gives a single access point to all ITU training opportunities, whether delivered face-to-face or through distance learning.

BDT also continued its leading work on ICT statistics and published several reports in 2009, including "*Measuring the Information Society*", featuring "*The ICT Development Index*"; "*The World Telecommunications/ICT Indicators Database*", "*The latest edition in the Trends in Telecommunications Reform series*" and "*The Manual for Measuring ICT Access and Use by Households and Individuals*", as well as a series of regional statistical profiles produced as input for the Regional Preparatory Meetings.

BDT also released the third version of "*A harmonized and automated technical and administrative tool for spectrum management in developing countries*" under the brand name SMS4DC (Spectrum Management System for Developing Countries), and published and "*The ICT Regulation Toolkit*", a web-based series of modules to provide regulators, service providers, policy makers and others with the latest developments in regulatory topics, best practice and case studies.

In October, the new ITU Sector Members' Portal was launched during ITU TELECOM World 2009. It allows members to showcase their organizations on the ITU-D website with a short profile, logo and RSS feed of their press releases. It provides members with visibility and strengthens communication both among members and with BDT.

The 9th Global Symposium for Regulators (GSR) was held in Beirut in November, with the theme *"Hands-on or Hands-off? Stimulating growth through effective ICT regulation"* (see page 34). And as part of the Connect the World programme, six flagship initiatives were launched in 2009: Connect a School, Connect a Community; the Wireless Broadband Initiative; the Connecting Villages Initiative; the ITU Academy Partnership; the ITU Mobile Health Initiative, and the ITU-IMPACT Collaboration on Cybersecurity (see page 20). BDT took the lead in facilitating implementation of this cybersecurity initiative, by communicating with ITU Member States, helping them assess their needs and ensuring proper follow-up in coordination with IMPACT, which is providing the related technical support and expertise.

To help mobilize resources for WTDC Regional Initiatives and other ICT development projects, BDT took a leading role in the organization of the ITU Connect CIS Summit, held in Minsk, Belarus, in November (see pages 30-31). Priority areas identified by the summit included investing in broadband infrastructure to support advanced services and applications; enhancing cybersecurity; policy and regulatory reform to boost ICT investment; and preparing for the transition to digital broadcasting. BDT is following up with partners on projects in these areas to benefit countries in the region.

BDT was also active during 2009 in meetings dealing with emergency communications and disaster preparedness. These included the National Workshop on the use of ICT in Disaster Management, held in Uganda in October in conjunction with the Uganda Communication Commission, as well as a Central American Workshop in El Salvador that took place in September and a Central African Workshop hosted by São Tomé e Príncipe in the same month. Similar events were held during the year in Senegal, Greece and Samoa.

" *The ITU Radiocommunication Sector plays a vital role in the global management of the radio-frequency spectrum and satellite orbits - limited natural resources which are increasingly in demand from a large and growing number of services. Everywhere, at every moment, people need to communicate and to understand each other. Encouraging communication between nations through the harmonious development of the tools made available to them is our ultimate goal."*

Valery Timofeev,
Director of the ITU Radiocommunication Bureau

RADIOCOMMUNICATION SECTOR

As well as contributing to all the Union's cross-sectoral activities and events, ITU's Radiocommunication Sector (ITU-R) worked through 2009 on the implementation of its Strategic Objectives. Under the first of these, relating to conferences and meetings, the Radiocommunication Bureau (BR) put into effect decisions of the 2007 World Radiocommunication Conference (WRC-07), including the development of necessary software tools related to the Fixed-Satellite Service Plan of Appendix 30B of the Radio Regulations. BR published circular letters to inform the membership of these developments, and, according to the relevant WRC-07 decisions, updated those assignments recorded in the Master Register for which the frequency allocations were changed.

In preparation for WRC-12, the Bureau organized a meeting in collaboration with the African Telecommunication Union (ATU) in September in Geneva, in which five regional telecommunication organizations participated: APT,ASMG, CEPT, CITEL, and RCC. In an intensive programme of meetings, work on agenda items of WRC-12 were pursued by the appropriate ITU-R Study Groups in accordance with the decisions of the first session of the Conference Preparatory Meeting for WRC-11 (CPM-11-1), which took place in November 2007. (The date of the upcoming WRC was later changed to 2012).

The Radiocommunication Advisory Group (RAG) held its 16th meeting in February under the chairmanship of Mr J.B. Yao Kouakou. RAG was attended by 104 delegates representing 41 ITU Member States and 12 Sector Members, including two international organizations. The Radio Regulations Board (RRB) met three times during 2009. In addition to its usual consideration of appeals and cases of harmful interference, the Board also implemented outcomes of WRC-07, including the adoption of new and revised Rules of Procedure and special studies in preparation for WRC-12.

In relation to BR's responsibilities with regard to the Radio Regulations, the second Strategic Objective — processing space and terrestrial service notices — was pursued in 2009 with the goal of continuing to improve efficiency, based on the provision of adequate resources and software-related tools.

Study Group activities are the subject of the third Strategic Objective. ITU-R Study Groups carried out various work programmes, in particular those defined by the 2007 Radiocommunication Assembly and by CPM11-1. With respect to the 33 agenda items for WRC-12 relating to almost all radiocommunication services and to many different wireless applications, the Study Groups continued to prepare the necessary technical bases through the CPM process. In addition, studies were carried out in support of ITU's activities on emergency communications and disaster relief, and mitigating the effects of climate change.

BR liaised closely with ITU's other two Sectors with respect to closing the standardization gap and providing assistance in areas of spectrum management.

Work also progressed on evaluating radio interface technologies for IMT-Advanced. Candidate radio interface technologies were submitted to the relevant Working Party. Further evaluation processes, assessment of compliance with minimum requirements and subsequent consensus building will lead to the inclusion of decisions on the radio interface technologies in the standardization phase of IMT-Advanced, scheduled for October 2010.

The Sector's fourth Strategic Objective covers publications. In 2009, ITU-R published the "**49th edition of the List of Ship Stations"**, which is a service publication issued annually by ITU in pursuance of Article 20 of the Radio Regulations. "**The 2009 edition of the Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services (Maritime Manual)"** was also published, based on the work of ITU-R Study Group 7. And in cooperation with the World Meteorological Organization (WMO),

"**The WMO/ITU Handbook Use of Radio Spectrum for Meteorology: Weather, Water and Climate Monitoring and Prediction"** was produced (see page 45). It provides information on the development and proper use of radio-communication systems and radio-based technologies for observing the environment, climate control, weather forecasting and the prediction, detection and mitigation of natural and man-made disasters.

Offering assistance to the membership is the fifth Strategic Objective. In this respect, BR organized a Workshop on Three-Dimensional Television Broadcasting (3D TV) in April (see box); a Workshop on the Efficient Use of the Spectrum/Orbit Resource in May, and the First ITU/WMO Seminar on the *"Use of Radio Spectrum for Meteorology: Weather, Water and Climate Monitoring and Prediction"* in September (see page 46).

BR also participated in the Development Forums organized by the Bureau for Telecommunication Development, as well as the Global Symposium for Regulators (see page 34) and the Connect CIS Summit (see pages 30). BR liaised closely with ITU's other two Sectors with respect to closing the standardization gap and providing assistance in areas of spectrum management. The Bureau also implemented several direct assistance initiatives in 2009, including training visits of delegations to ITU headquarters and missions to Oman in February, Bolivia in October, Cameroon in November and the Southern African Development Community in December.

Workshop on 3D television

In April 2009, a workshop on three-dimensional (3D) television broadcasting was organized by ITU-R Study Group 6 (Working Party 6C) in association with the Society of Motion Picture and Television Engineers and the European Broadcasting Union. ITU-R has a study programme on 3D TV with the objective of agreeing worldwide recommendations for standards. The workshop reviewed the 'landscape' of 3D TV systems and work being done. It considered such topics as the options for production and display, the role of the standards bodies, the tools available for picture coding, and the emerging technologies of the future.

"

"When they make a phone call or go online, few people imagine the hundreds of technical standards that help them communicate. Standards are taken for granted – but the engineers who work hard to develop them at ITU-T meetings are the unsung heroes of the ICT world. During 2009, many experts contributed their time and expertise to the study groups which develop ITU-T Recommendations in the wide range of technologies that underpin our modern information society."

Malcolm Johnson,
Director of the ITU Telecommunication Standardization Bureau

TELECOMMUNICATION STANDARDIZATION SECTOR

In 2009, despite the global financial crisis, there was increased participation in most of the study groups of ITU's Telecommunication Standardization Sector (ITU-T). Among the highlights of these groups' achievements were the first global standard for a fully networked home and a universal charger for mobile phones (see box). And with the involvement of twenty other organizations, work was carried out to develop a methodology to measure the impact of ICT on climate change.

The Telecommunication Standardization Bureau (TSB) developed an Action Plan arising from the World Telecommunication Standardization Assembly in 2008 (WTSA-08), which is publicly available on the ITU-T website and is being continuously updated. The Bureau also organized some thirty workshops and seminars in 2009, including, for the first time, a symposium on ICT and climate change that was conducted online and in a fully virtual environment – thus illustrating in itself the power of ICT to help save energy by reducing the need for travel.

ITU-T continued its work on attracting participation by universities and researchers, particularly in relation to a new Focus Group on Future Networks, which is examining approaches to the developing structure of the Internet. Academia was also invited to contribute to the Kaleidoscope event that was held in Argentina in September on the theme of "Innovations for Digital Inclusion", with awards being given to the best research papers submitted. New Technology Watch Briefing Reports were issued on the themes of Distributed Computing; "*The Future Internet; Mobile Applications, and ICT and Food Security*."

The first meeting of a new ITU-T group for Chief Technical Officers (CTO) was held in October in connection with ITU TELECOM World 2009. Nineteen CTOs, or their equivalents, from major companies attended the event and agreed on an action plan to be reviewed at the next meeting. Also for the first time, ITU hosted the Global Standards Collaboration meeting in July, consisting of the major ICT standards bodies with the remit to support ITU's work in this area.

The 2009 session of ITU's Council approved the TSB recommendations on conformance and interoperability testing, and plans to assist developing countries with this task. The Council also set up a joint group involving ITU-T and the ITU Telecommunication Development Sector in order to examine issues concerning the move from Internet protocol (IP) version 4 (IPv4) to IPv6. TSB participated actively in the 2009 Internet Governance Forum (IGF) which took place in November, and was involved in the preparation of various workshops and activities at the event, including one focusing on making ICT accessible to people with disabilities.

## A universal charger helps to reduce emissions

How ICT can combat climate change — and efforts to reduce the carbon footprint of ICT themselves — are among the topics of work by Study Group 5 of ITU-T, which was given a new mandate in April 2009 and the title "Environment and Climate Change". One of its main tasks is to follow up activities of the Focus Group on ICT and Climate Change, which ended its work in March 2009.

On the agenda of the group's meeting on 25-29 May 2009 was a practical proposal that would help reduce the amount of energy needed to charge mobile phones — and cut the clutter of unnecessary equipment. The GSM Association (GSMA) had asked for ITU's support in promoting a "universal charging solution" for handsets, based on Micro-USB as the common universal charging interface. The request was positively received and the study group worked on adopting the solution as an ITU-T Recommendation. As a result, an energy-efficient charger should be developed that is compatible with any type of mobile phone.

GSMA estimates that this would result in a 50% cut in the energy consumed when chargers are left on standby, and that people will not have to buy another charger when they buy a new handset. This would eliminate the need to manufacture 51 000 tonnes of duplicate chargers each year: equal to a reduction of 13.6 million tonnes in greenhouse gas emissions. There will also be a big boost to convenience. Consumers will be able to keep using the same charger for handsets produced in future, as well as power-up their mobile phones wherever a universal charger is available. The 17 leading makers and operators that launched the project in February 2009 agreed that, by the start of 2012, most of their new handsets will be compatible with the universal charger, which they expect to see for sale worldwide.
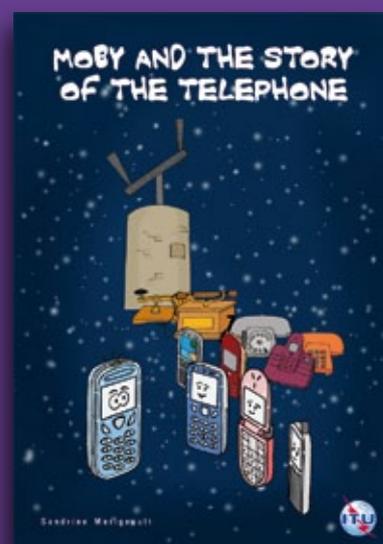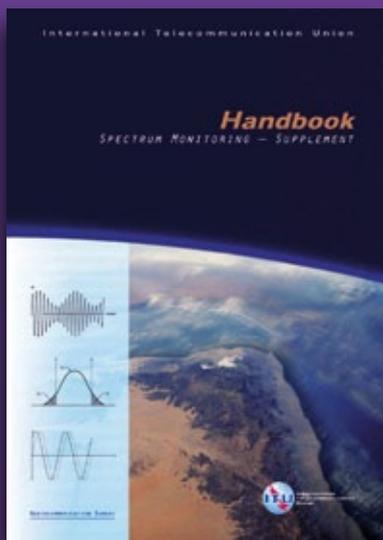
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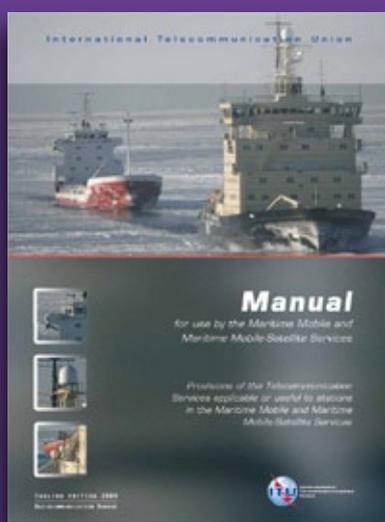
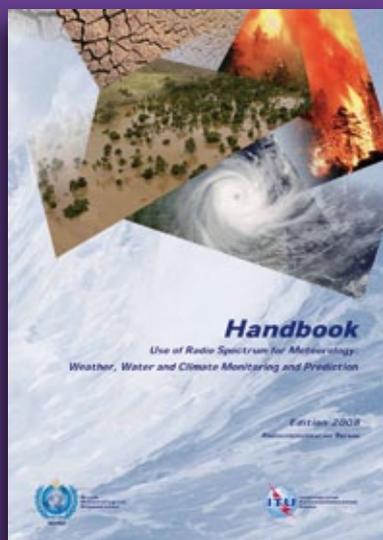Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services
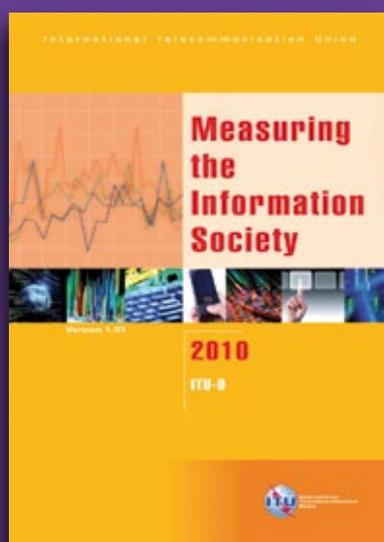
Measuring the Information Society ICT Opportunity Index and World Telecommunication/ICT Indicators, with new ITU ICT Development Index comparing 154 countries
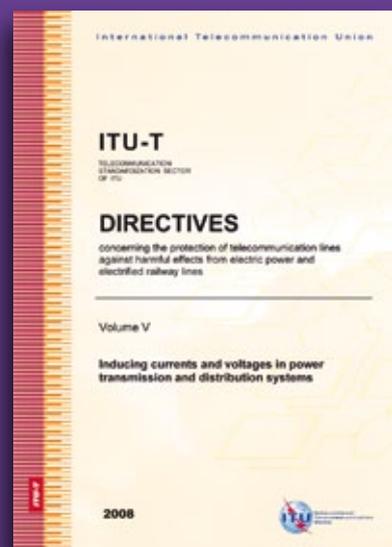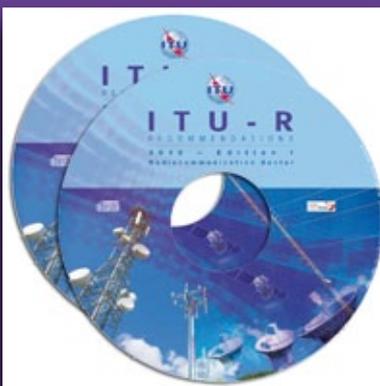

Moby and the Story of the Telephone

Supplement to Handbook on Spectrum Monitoring

Joint ITU/WMO Handbook on Use of Radio Spectrum for Meteorology: Weather, Water and Climate Monitoring and Prediction

New Directives on inducing currents and voltages in power transmission and distribution systems
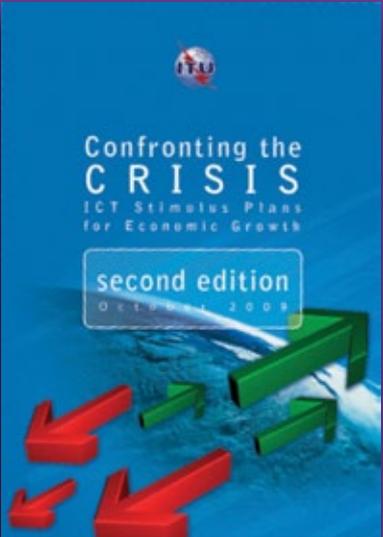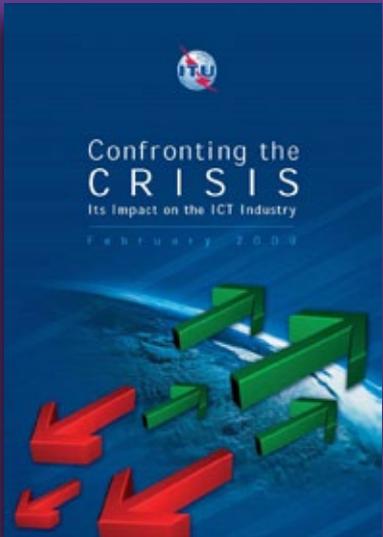

New ITU radio interface standards to revolutionize mobile communication"

Guidelines for Child Online Protection

New Trends in Telecommunica
tion Reform: Hands-on or hands-
off? Stimulating growth through
effective ICT regulation

Confronting the Crisis: It's Impact on the Industry &
Confronting the Crisis: ICT Stimulus Plans for Economic Growth