

INTERNATIONAL TELECOMMUNICATION UNION

The International Telecommunication Union (ITU) is the UN specialized agency responsible for promoting international cooperation in the field of telecommunication. The ITU is headquartered in Geneva and its Secretary-General is Yoshio Utsumi of Japan.

The global web of telecommunication systems now underpins a huge number of human activities, from international trade and commerce to health and education, banking, transportation, tourism and electronic commerce. ITU's work has provided the essential background that has enabled telecommunications to grow to a \$1 trillion industry worldwide. ITU provides the forum where governments and the private sector can work together to ensure the smooth functioning of international networks.

Governments and the private sector work together at the ITU to adopt international regulations and treaties governing all terrestrial and space uses of the frequency spectrum as well as the use of all satellite orbits, and to manage the radio frequency spectrum. Members work together to adopt international standards which are the foundation for international telecommunications of all kinds, including radio, television, telephony, internet, and satellite communications, and to foster the expansion of telecommunication systems and services in developing countries through policy, regulatory and technical advice on best practices. ITU is also responsible for organizing the quadrennial global TELECOM, the world's largest and most influential telecommunications exhibition and forum, as well as regional TELECOM events



ITU organizes the world's largest exhibition of telecommunications equipment, TELECOM, held every four years in Geneva.

Founded in 1865 as the International Telegraph Union, ITU is the world's oldest intergovernmental organization. It became a UN specialized agency in 1947. The only global organization open to all participants in the telecommunication sector, ITU's membership is comprised of both member states and 730 sector members representing public and private companies and organizations with an interest in telecommunications including equipment manufacturers, regulators, financing institutions, scientific organizations, telecommunications carriers, and service providers.

MULTIMEDIA, THE INTERNET AND "CONVERGENCE"

With the expansion of the Internet and multimedia in the 1990s, "convergence" has become a key concept in communications. Convergence refers to the increasing inter-

connectedness of traditional telecommunications, broadcasting multimedia and information and communication technologies (ICTs). The phenomena of convergence has been reflected in the participation in ITU, which now includes many representatives from the IT industry as well as its traditional members, the telecom companies. In this rapidly evolving environment, the ITU has begun to play a role in the evolution of information technologies and the Internet, particularly through its activities in standardization. For instance, in 2000 the ITU approved a group of broadband radio networks that help promote the global portability of computer equipment. The ITU is also a founding member of the Protocol Supporting Organization of the Internet Corporation for Assigned Names and Numbers (ICANN PSO). The Third World Telecommunication Policy Forum held in Geneva in March 2001 focused on Internet Telephony and the ITU is working with the Internet Society on a standardized Internet Telephone Numbering System (ENUM). Adoption of the system will make it possible for the first time to call a PC from the public-switched telecommunication network (PSTN) and to easily determine what type of terminal is associated with the number.

THE INFORMATION SOCIETY AND THE DIGITAL DIVIDE

The ITU is also helping developing economies to promote global connectivity and to help developing countries put into place the kind of telecommunication policies that will foster network growth, attract private investment, and encourage economic development. The global information society is evolving at breakneck speed, but the so-called “digital divide” persists between the developed and developing world. At the UN Millennium Summit in 2000 world leaders pledged to ensure that the benefits of new technologies, especially information and communication technologies, are available to all. In keeping with these goals, the UN General Assembly has convened a World Summit on the Information Society (WSIS), with the ITU playing the lead managerial role.. The Summit will aim to promote access by all countries to information, knowledge and communications technologies for development. It will be held in two phases, the first in Geneva, December 10-12, 2003, and the second in Tunisia in November 2005. The stated purpose of the World Summit on the Information Society is to develop a “common vision and understanding of the information society and the adoption of a declaration and plan of action for implementation by Governments, international institutions and all sectors of civil society”.

ITU STRUCTURE

The supreme authority of the ITU is its Plenipotentiary Conference which is convened every four years. The most recent Plenipotentiary Conference was held in Marrakesh in September-October 2002, and focused primarily on financial matters, restructuring of the ITU, Internet security and stability, and revamping the International Telecommunications Regulations (ITRs).

Between Plenipotentiary Conferences, the ITU Council (currently consisting of 46 member states) oversees ITU’s work. It considers broad telecommunication policy issues to ensure that ITU’s activities, policies and strategies fully respond to today’s dynamic and changing telecommunications environment and prepares policy and strategic reports for the following Plenipotentiary Conference. The Council meets once a

EXAMPLES OF ITU STANDARDS

Universal International Freephone Service

Recent examples of ITU's standards-setting work include the design and operation of the Universal International Freephone Service, a new global standard which allows "1-800"-style toll-free phone numbers to operate internationally. These numbers operate like traditional freephone numbers, where the called party bears the charge of the call, but they have the great advantage of working over international networks. That means that the same number can be dialled by customers in France, Chile and the United States – or indeed any other country which subscribes to the system – improving and simplifying customer access and giving companies greater control over their call processing systems.

A Global Open Standard for Videoconferencing

The adoption of the global open standard for videoconferencing, known as H.323, is another example. This ITU standard quickly won the support of the industry because it not only bridged a number of crucial transmission issues, but provided total interoperability between vendors' products until then often incompatible. Assured global interconnectivity proved to be the key factor which convinced the Internet telephony industry to abandon proprietary efforts and embrace the ITU standard.

The V.90 Modem

Before the V.90 modem standard was adopted, two proprietary standards for high-speed modems had come onto the market, but both were incompatible with one another. The agreement on the V.90 modem standard not only fostered the establishment of a global industry norm which provides for compatibility among new 56K-compliant modems put on the market, it also allowed manufacturers to upgrade existing 56K modems to the new standard so that the different models already on sale did not become obsolete. The benefit for consumers has been faster and more dependable connections to the Internet and the assurance that future improvements in 56K modem performance will be based on the same technical specifications.

year at ITU Headquarters. The United States chaired the Council in 2002, and was re-elected to a four-year term at the most recent Plenipotentiary Conference.

The ITU's constitution divides the work of the Union into three sectors: Radiocommunication, Telecommunication Standardization, and Telecommunication Development. Regular conferences, assemblies and meetings provide fora for the work of each sector in addition to the day-to-day work carried out at Headquarters.

THE RADIOCOMMUNICATION SECTOR (ITU-R)

The Radiocommunication Sector (ITU-R) regulates the use of the radio-frequency spectrum for both terrestrial and space (satellite) radiocommunication. This aspect

of ITU's work is essential to a growing range of wireless services since the only means of avoiding harmful interference between stations of different countries is through worldwide consensus on the use of the radio frequency spectrum. The Radio Regulations, the international treaty governing the shared use of the spectrum and of the satellite orbits, currently cover frequencies between 9 kHz and 400 GHz. The need for international regulation of spectrum use was already apparent at the beginning of the century when the first set of Radio Regulations was drawn up in 1906. Since that time the spectrum has come to be shared by some forty wireless services including television broadcasting, mobile telephone services, satellite communications, aeronautical communications, wireless computing, meteorology, environmental monitoring and science and space exploration services.



The ITU estimates that there should be 1,420 satellites in orbit by the end of 2003.

The Radio Regulations have been entirely revised six times since 1906 and are continually amended every two to three years. The Regulations require countries to notify ITU-R of the frequencies they plan to use if they might cause interference outside the country in which the relevant station is located or if the country wishes to have international recognition for its usage of frequencies. The ITU-R Register now contains some 2.5 million) assignments, each one of which must be able to be used without causing harmful interference to any other. The notification of frequency assignments, the examination of notices and the recording of assignments in the Register constitute an on-going process for ITU-R.

ITU-R also studies technical matters and develops recommended international standards in the field of radiocommunications. An example of its recent work on standardization is the agreement for the next generation of mobile phones, the IMT-2000 standard. Started in the mid 1980's, IMT-2000 or International Mobile Telecommunications 2000, aims at providing a global platform that will make it possible to harmonize today's often incompatible regional cellular systems. Providing both land-based and satellite wireless telecommunication, IMT-2000 will spur the growth of new services such as mobile Internet through its ability to send and receive information at megabit data rates and will provide seamless global roaming. The IMT-2000 standard accommodates five possible radio interfaces based on three different access technologies (FDMA, TDMA and CDMA). Although the final adoption of the standard took place at the World Radiocommunication Assembly in May 2000 in Istanbul, the industry already began implementing it following ITU's agreement on the air interface specifications reached in November 1999. The ITU is in the process of approving the inclusion of several CDMA -2000 standard specifications (1X EV-DO and 1X EV-DV networks), first commercially deployed in Korea, as part of its standard umbrella. Work is continuing in the ITU on systems beyond IMT-2000 in a

Special Study Group which is considering network aspects of IMT-2000 and beyond, including wireless Internet, convergence of mobile and fixed networks, mobility management, mobile multimedia functions, and enhancements to existing ITU-T Recommendations on IMT-2000

WRC-2000

Every two to three years the ITU organizes a World Radiocommunication Conference (WRC) to broker international agreements on the use of the radio frequency spectrum and satellite orbits. The most recent WRC in May 2000 in Istanbul. Of particular importance to the United States was the fact that WRC-2000 decided not to adopt a proposal (Resolution 220) that would have allocated a portion of the band used by the Global Positioning System (GPS) to satellites providing mobile telephone services (MSS). The United States, other governments, and aviation groups are concerned that the mobile satellite system would cause interference with the GPS aeronautical and maritime navigation systems which use that spectrum. The most recent WRC was held in Geneva in June-July 2003.

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TELECOMMUNICATIONS STANDARDIZATION SECTOR (ITU-T)

The International Telecommunication Union is the most important developer of the global standards on which the world's telecommunications networks are based. ITU standards are hammered out through negotiations among the world's national governments, equipment manufacturers and carriers. The Telecommunications Standardization Sector studies technical, operating and tariff questions and issues (i.e., voluntary standards) aimed at fostering the interconnectivity and interoperability of telecommunications systems worldwide. Each year hundreds of experts travel to ITU's headquarters to develop models and submit proposals. Recent standards agreed by the ITU include a host of protocols that enable traffic between conventional telephony networks and packet based data networks such as the Internet. Also, new world standards agreed at the ITU provide affordable high speed access via ordinary telephone subscriber lines through ADSL technology.

WORLD TELECOMMUNICATIONS STANDARDIZATION ASSEMBLY

Every four years ITU organizes a World Telecommunications Standardization Assembly (WTSA) to set the work program of the ITU Telecommunication Standardization Sector and determine the priorities for completion of work relating to the preparation of standards. The Assembly also approves, modifies or rejects draft standards that have not yet been adopted in the four-year cycle. Although they are not binding, ITU recommendations are generally complied with because they foster the interconnectivity of networks and technically enhance the capability to provide services worldwide. The WTSA has set up Standardization Study Groups composed of private and public sector experts who prepare the draft standards. The member states of the Study Groups also approve standards. The ITU-T's 14 Study Groups cover a huge range of topics relating to the smooth and efficient functioning of a growing range of telecommunications equipment and services. Topics covered include IP-networks,

3G – GOING MOBILE, GLOBALLY, THROUGH IMT-2000

The concept of mobile communications is not new. The first radiotelephone service was introduced in the U.S. at the end of the 1940s and was intended to connect mobile users in cars with the fixed network. Since then mobile communications services have evolved in three major phases, known as “generations.”

The first generation (1G) were analog systems used during the 1970s. The second generation (2G) were the digital cellular systems first introduced at the end of the 1980s. These systems digitalized voice signals and provided better quality and higher capacity at a lower cost. The vision of third generation (3G) services integrates voice, fax and Internet and allows seamless global roaming.

To avoid the fragmentation that had plagued earlier generations of mobile communications, ITU began to develop a concept of “International Mobile Telecommunications” for third generation systems during the late 1980s. After ten years of work, the ITU unanimously approved the technical specifications for 3G systems under the brand IMT-2000.

IMT-2000 offers the capability of providing value-added services and applications on the basis of a single standard. The system envisages a platform for distributing converged fixed, mobile, voice, data, Internet and multimedia services. One of its key visions is to provide seamless global roaming, enabling users to move across borders while using the same number and handset.

numbering systems, multimedia services and systems, network and service operation, tariff and accounting principles, telecommunication network management systems, signalling, transmission and transport systems, data networks, and new value-added services such as Universal International Freephone Numbers.

In addition, the ITU-T is charged with coordinating the development of the systems and technologies which constitute the emerging Global Information Infrastructure. Areas under study include broadband ISDN, Internet Protocol-based networks and ground-breaking technologies related to new multimedia systems, including special protocols and signal processing systems, high-speed modems, digital subscriber line systems (xDSL) and new types of multimedia terminal. The next Assembly will be held in 2004 in Brazil.

TELECOMMUNICATIONS DEVELOPMENT SECTOR (ITU-D)

As a UN specialized agency, ITU assists developing countries in improving their telecommunications capabilities. ITU’s goal is to work toward universal access to telecommunications for all countries. Over recent years, it has become clear that achieving improved access to telecommunications in the developing world requires the existence of a political and socio-economic framework conducive to business and investment. For this reason, ITU’s role in telecommunications development has shifted

from that of a provider of technical assistance to an advisor on a wide range of issues relating to telecommunication sector reform.

Sector activities range from policy and regulatory advice, advice on the financing of telecommunications and on providing low-cost technology options, assistance in human resource management and the development of initiatives for rural development and universal access. In all these activities, the ITU maintains a strong emphasis on partnerships with the private sector so as to harness the commercial drive of the industry to the needs of developing economies.

Surplus funds generated by the ITU's Telecom events are now used as seed money to fund promising development projects in partnership with the private sector in areas such as electronic commerce, tele-education, tele-medicine and the establishment of specialized telecommunication Centers of Excellence.

ITU convenes Telecommunication Development Conferences (WTDCs) at regular intervals (usually every four years) to establish strategies for a balanced worldwide development of telecommunications. The WTDC is a forum for the study of policy issues and organizational, regulatory, and technical questions. It adopts an Action Plan which serves as a framework for development and targets the key issues that need to be addressed in order to overcome obstacles to telecommunications development. The most recent WTDC was held in Istanbul in March 2002. The Istanbul Action Plan which was adopted there focused on six areas: regulatory reform, technologies and telecommunication network development, e-strategies and e-services/applications, economics and finance, human capacity building, and a special program for least developed countries. The World Summit on Information Society (see page TK) to be convened in 2003 will also examine many of the issues related to telecommunications and development.

TELECOM EVENTS

The ITU organizes the world's foremost exhibition of telecommunications equipment – "TELECOM" held every four years in Geneva – as well as regional ITU Telecom events for the Americas, Asia, Africa, the Middle East and Arab States. Telecom events serve as a meeting place for government leaders, senior executives from the world's leading operators, manufacturers and developers, telecommunications regulators, investors, and the business community.

World TELECOM 99, held in Geneva in October 1999, was marked by the huge changes wrought by the convergence of mobile wireless access and the Internet. Major business leaders at Telecom 99, from both the IT and telecommunications industries, strongly endorsed the key role that new emerging wireless access technologies, such as IMT-2000, will play in providing cost-effective access to the Internet for both developed and developing regions of the world. The most recent TELECOM took place October 12-18, 2003.

ITU TIES

Through its Telecom Information Exchange Services (TIES), ITU has played a key role

in advancing Internet use among UN organizations and the international community in Geneva. TIES provides Internet services to the Geneva-based diplomatic missions of ITU member states and provides space on its server for Mission homepages which can be found at via the ITU homepage.

MEMBERSHIP

In late 2003, ITU had 189 member states and over 640 sector members. Sector members are public and private companies and organizations with an interest in telecommunications that have become members of one or more of the three ITU sectors.

BUDGET

ITU has a unique financial contributory system in that both member states and sector members contribute to the ITU budget and that both may freely choose their classes of contributions. The Union's main source of financing is the contributions of its member states, which account for around 66 percent of the overall budget while sector members contributions represent 12 percent of total funding. . Other sources of income include the sale of publications and fees from satellite notifications which account for around 17 percent of total funding in the 2002-2003 budget.

At each Plenipotentiary Conference, every member state selects its class of contribution (the number of contributory units, ranging from 1/16 of a unit to 40 units) for the next four years. The amount of the contributory unit for sector members is currently set at 1/5 of the contributory unit of member states. The amount of the contributory unit is determined when the budget is approved.

For the years 2002-2003, the budget of the Union stands at 341,947,736 Swiss francs. The U.S. government's contribution to ITU is 30 units, or approximately six percent.

INTERNET

www.itu.int

Press releases, key telecommunication indicators, information on conferences and TELECOM, schedule of ITU events, links to other UN organizations, pages for permanent missions in Geneva.

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