COMMUNICATIONS REGULATORY COMMISSION MONGOLIA

Fiscal Year 2010 Performance and Accountability Report
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Letter of Transmittal

To:   H.E. BATBOLD Sukhbaatar
       Prime Minister
       Mongolia

Your Excellency,

I am pleased to present you with the Communications Regulatory Commission’s Fiscal Year 2010 Performance and Accountability Report.

The report has been prepared in accordance with Article 8.11 of Law on Communications of Mongolia, 2001. The report contains an Overview of ICT, telecommunication, broadcasting, postal sector, and a summary of the key initiatives of the CRC on the regulatory issues with reference to the functions mandated by the Law.

The Audited Financial Statement of Accounts of the CRC has also been included in the Report.

BOLDBAATAR Bat-Amgalan
Chairman and CEO
March 30, 2011
Part I. Review of General Regulatory Environment in the sector

Overview of the CRC

INTRODUCTION

This Performance and Accountability Report (PAR or report) contains management, performance, and financial information about the Communications Regulatory Commission (CRC).

Chapter 1 presents a Review of General Regulatory Environment in the sector, including the following:
- Commission’s mission;
- an overview of the agency’s reporting structure;
- the CRC’s main objectives;
- the CRC Legal environment, and
- policy frameworks in the sector.

Chapter 2 outlines the CRC’s Performance in Fiscal Year 2010.

Chapter 3 presents the implementation issues surrounding Universal Service Obligation.

Chapter 4 covers organizational matters of the CRC.

ABOUT THE CRC

The CRC is an independent Mongolian Government regulatory agency. The CRC was established by the Communications Act of 2001, and is charged with regulating and supervising a wide range of subjects including competition issues, the provision of networks and services for fixed line and wireless telecommunications, television, radio, and satellite transmission, spectrum management, postal services and the Internet to ensure that the public interest is well-served. The CRC’s jurisdiction covers all regions of Mongolia.

In September of 2009, CRC approved “The Strategy and action plan for 2009-2012 year”.

The CRC consists of seven commissioners, appointed by the Prime Minister for six-year terms. The Prime Minister appoints the Chairman and six non-executive Board Members.

The list of Commissioners during FY 2010 was the following:
- Chairman & CEO Mr.BOLDBAATAR Bat-Amgalan
- Commissioner Mr. SANSAR Jiimen
- Commissioner Mr. MUNKHBAT Buyandelger
- Commissioner Mrs.URANCHIMEG Janchiv
- Commissioner Mr.BAATARKHUYAG Narantsogt
- Commissioner Mr.MUNKHBAT Ayush
- Commissioner Mr.ERDENEKHUU Norinpel
**CRC MISSION**

The Commission’s mission is to advance the development of ICT, Telecommunication and Postal sector in Mongolia to make it an efficient, competitive and less intervened communications sector which meets the needs of the Mongolian people.

**OUR VALUES**
- Fairness;
- Transparency; and
- Efficiency.

**CRC MAIN OBJECTIVES**
- To facilitate access to safe, reliable and affordable ICT and Broadcasting networks and services by pursuing, where appropriate, a commercially viable and competitive environment;
- To support innovation and expansion in ICT Broadcasting and Postal markets, through the efficient and impartial oversight of network and service providers and the enforcement of their obligations including the USOF;
- To protect the interests of users of networks and services in the sector in which we regulate;
- To Increase tele-density and access to ICT and Telecommunications services in the country at affordable prices,
- To establish an interconnection regime that allows fair, transparent, prompt and equitable interconnection,
- To re-balance tariffs so that the objectives of affordability and operator viability are met in a consistent manner,
- To protect the interest of consumers and to address general consumer concerns relating to availability, pricing and quality of service and other matters,
- To monitor the quality of service provided by the various operators.

In order to support our mission, values and objectives, the CRC employs the following workplace principles:

1. **Well-informed** – Through research, investigation, inter-agency co-operation, ongoing public consultations, and by monitoring and resolving complaints and disputes data, we commit to operating from a solid base of evidence.
2. **Openness** – By publishing objectives, procedures, annual strategic plans, divisional remits and responsibilities, decision-making processes, the reason for our decisions, an Annual Report, and by conducting open consultations, we seek continuously to engage with our stakeholders to inform them, and to have them inform our policy decisions.
3. **Timeliness** - By setting organizational timeframes and goals for granting licenses, consultations, investigations, adjudications, resolution of disputes, and by publishing these timeframes, we are committed to providing an efficient service without sacrificing thoroughness.
4. **Professionalism** – By adhering to best practice and laws on handling confidential information, adopting international standards, committing to staying informed, setting
and meeting deadlines, and by offering an open complaints channel, we seek to reflect a consistently high level of professionalism in everything that we do.

5. **Accountability** – By evaluating our own effectiveness and publishing these findings in our Annual Report to the State Ikh Hural; operating a complaints procedures; assigning particular functions to named individuals; providing an appeals process; an independent external auditing process; and in setting out open consultation, decision-making and complaints processes; the CRC is fully accountable for its actions.

6. **Quality human resources** – By ensuring that we employ the best staff available; training these people in the CRC’s methods of carrying out its operations; giving individual contracts setting out clearly what is expected of them; affording them comprehensive training to improve skills and ensuring they receive annual appraisals; offering a competitive salary and an incentive bonus scheme; we are committed to attaining higher staff standards.

**CRC ORGANIZATIONAL STRUCTURE**

The Commission’s Chairman leads the Commission as head of the agency. The Commission has five operating departments that implement the following functions:

1. **Justice, Information and Administration Department** - general counsel and legal advisory, consumer protection, investigations team, compliance, complaints and dispute resolution, public relations, administration, finance, international relations, human resource and training, IT and website management.

2. **Regulatory Department** - licensing, development of standards, technical aspects of interconnection, numbering assignments, technical requirements and Internet affairs.

3. **Radio Frequency Regulation and Monitoring Department** - radio frequency spectrum planning, technical analysis, radio frequency allocation and management, radio frequency monitoring and inspections, radio frequency utilization licensing and broadcasting.

4. **Market and Tariff Regulation Department** - market strategy analysis, market research statistics, competition and network access, tariff and interconnection, and USO.

5. **Postal Regulation Department** - international, domestic postal and parcel service licensing and regulation, interconnection, define reserved areas of postal service and USP, postal zip code assignment and regulation.
The Commission’s organizational chart is below in Figure-1.

**CRC ORGANIZATIONAL CHART**

[Diagram of CRC organizational chart]

The Chairman’s Council is responsible for making day-to-day decisions and assisting to the Chairman.

**CRC LEGAL ENVIRONMENT**

The CRC’s regulatory functions are subject to the following laws and regulations:

- Law on Communications
- Law on Radio wave
- Law on Post
- Law on licensing business activities
- Law on Prohibiting Unfair competition
- Law on Governments’ Special fund and etc.,

**Objectives**

A regulatory approach that promotes benefits to end-users and contributes to an efficient and competitive Mongolian communications sector.

**Law on Communications (2001)** - The first Law on Communications was approved in 1995 and it was revised in 2001. The purpose of Law on Communications is to regulate relations between the state, citizen and legal person on construction, operation and protection of communications networks in Mongolia.

**Law on Radio Wave (1999)** - The Law on Radio Wave was approved in 1999. The purpose of this Law is to regulate relations derived from allocation, usage, protection, ownership and possession of radio waves.
Law on Post - The Law on Post was approved by the Parliament in 2003. The purpose of this Law is to regulate relations associated with postal networks, their operation and maintenance.

Law on licensing business activities (2001) - The Law on licensing business activities was approved by the Parliament in 2001. The purpose of this Law is to regulate relations related to issuance, revocation and cancellation of licenses for engagement in some utility activities that require particular circumstances and specific professions or might be dangerous to public interest, human health, environment and national security. Licensing in radio communications and telecommunications is subject to articles 2.2.

Law on Prohibiting Unfair Competition (2003) - The Law on Prohibiting Unfair Competition was approved in 2003. The purpose of this law is to regulate relations regarding creation of conditions for fair competition in the market for entities conducting business activities, and the identification and implementation of a legal and organizational basis for prohibition, restriction and prevention of any activities impeding competition.

Law on Governments’ Special Fund (2006) - The Law on Governments’ Special Fund was approved in 2006. The purpose of this law is to regulate Governments’ special funds including USOF in the ICT and Telecommunications sector.

Regulatory rules and procedures - Regulatory functions and activities are subject to the rules and procedures that are issued and approved by the CRC. A list of procedures and regulations are available at Attachment-A.1.

SECTOR DEVELOPMENT POLICY AND STRATEGY

Mongolia is a large country of approximately 1.6 million square kilometers and a population of 2.8 million (2010 census). The majority of the people (1 million) live in the capital Ulaanbaatar. The remainder are scattered through more than 400 settlements of varying size ranging from centers of Provincial Government (Aimag Centres), Local Government centers (Soums), and smaller villages or in isolated dwellings.

The ICT and Post Authority (ICTPA) of Mongolia is responsible for all ICT policies, coordination and implementation under the direct auspices of the Prime Minister of Mongolia. The ICT sector has been given great priority and is regarded as the leading direction of the Government development strategy.

The government’s development strategy considers the ICT sector among its greatest priorities. The government’s 2005 Mid-term Strategy for the Development of the ICT Sector will be implemented according to the E-Government Master Plan, and the subsequent E-Mongolia National programme.

The E-Mongolia National programme intends to establish an information society and the foundation of a knowledge based society in Mongolia through the extensive use of ICT in
all sectors of our society so that, by 2012, Mongolia becomes one of the top ten ICT developed countries in the Asian Region. The Visions of the “e-Mongolia” National program are to establish the information society and the foundation of the knowledge based society in Mongolia by enhancing extensive application of ICT in all sectors of society and to make Mongolia one of the top ten ICT developed countries in Asia on a per person basis by 2012.

Mongolia’s E-Government initiatives include a build-up citizen-centred, result-oriented, market-based government by utilizing ICT throughout the government sector, including central and local administrative units.

The Government Action Plan 2008-2012 defines practical actions concerning the introduction of e-Government into all government institutions at all levels, to modernize and centralize the basic telecommunications network to international broadband standards, to provide an integrated information system by creating a Nationwide numbering code, to establish an integrated information network for hospitals, to provide computers to homes and schools in all population centers with a regular source of energy.

Mongolia’s National Broadband program, to be implemented by 2021. Its main goals are to improve the quality of life for all citizens by:

* by increasing wide range, always-on, applications such as e-government, e-commerce, e-learning, e-health etc;
* through high speed and low cost broadband network with an IPv6-based backbone network (IP/MPLS) which covers all of Mongolia;
* by enhancing industrial productivity via ICT, to upgrade Mongolian competitiveness;
* To establish a high speed DWDM backbone network and national IP/MPLS network and migrate to IPv6.
* To provide universal data service for public and private organizations and households.

Also, as part of the objective to support the development of business and the private sector, the Government intends to create a favorable policy and regulatory environment for Public and private partnership (PPP) development in the ICT sector. As a first step, the Government implemented the policy and regulatory framework for building the appropriate regulatory and management structure, and renovation of the backbone telecommunications network.

**REGULATORY FRAMEWORKS IN THE SECTOR**

The Internet of things, cloud computing and mobile Internet networks convergence, and more, are all important advances. The next generation of Internet addressing - IPv6 – will be essential to their development. A rich supply of Internet addresses is vitally important to the deployment of many new technologies including cloud computing, smart grids, RFID, IPTV among others.
The CRC, established by the Communications Act of 2001, is an independent Mongolian Government regulatory agency. The CRC regulates and supervises a wide range of subjects including competition issues, the provision of networks and services for fixed line and wireless telecommunications, television, radio, and satellite transmission, spectrum management, postal services and the Internet throughout Mongolia.

Key operators like Mobicom Corporation, RailCom, a subsidiary of Mongolia Railways, and Gemnet LLC operate their own private fibre-optic and microwave infrastructure along main backbone networks, roads and railways. A number of licensed VSAT service providers also provide value-added services such as managed network services and online commercial bank services.

The Internet service market is fully liberalized and there are approximately 199,100 Internet users in the end of 2010.

During 2009, the Government of Mongolia introduced DTH multichannel TV broadcasting covering all of Mongolia by satellite. The CRC licensed earth stations, which began operations in July 2009, for the Ku-band satellite; they provide capacity for more than 20 DTH television channels.

In November 2009, the CRC granted two IP television (IPTV) and two Mobile TV licences in Ulaanbaatar, the capital city. This important step introduced IP services and new mobile applications and content to Mongolian people. In first quarter 2011, Univision LLC will be launched the first IPTV services in Ulaanbaatar.

In 2010-2011, four existing mobile operators- Mobicom Corporation, Skytel LLC, Unitel LLC, G-Mobile LLC - began 3G services.

The CMMB and DMB standards have been adopted in Mongolia for the provision of mobile digital television services. These services will be established by private companies who make the choice of technology between the systems. Other than the fact that they are most likely to operate within the Band III Television Band, there is no specific requirement that they be interoperable with the terrestrial broadcast standard.

In October 2010, CRC and ICTPA jointly prepared and submitted the “National Program on Radio and TV Broadcasting Transition to Digital Technology” to the Mongolian Government, Government of Mongolia has been approved and decided to migrate all analog television to digital, and has announced that analog services will cease on 30 June 2014. The broad objectives for the Mongolian Government’s DTV migration plan can be summarized as follows:

1. Analogue switch off will occur 30-th of June 2014,

2. The Government plans to migrate all of the terrestrial rebroadcast transmitters to digital under a Government-funded project.
3. The Government would like the first stage of this project to be completed by Oc
tober 2011 (basically a pilot programme to demonstrate the system capability and implementation). Depending on costs, this might establish up to ten provincial or regional transmitters and the necessary up-linking arrangements.

4. The Government would like to see at least ten SDTV programme services on the digital multiplex available across the country.

5. Guidance has yet been provided about coverage of digital services. A reasonable assumption would be that the digital services should, as a minimum, match the coverage of existing analog transmissions and that when necessary the DTV coverage be extended to cover growing urban areas, and to address any nine coverage deficiencies with the current analog services.

6. If possible DTV implementation should allow for competitive proposals for the provision of up-linking and satellite capacity for distribution of the services.

7. The proposed initial services should share a single multiplex.

8. The ability to insert local programs Aimag Centre transmitters should be incorporated within the design, even if implementation is not carried out immediately. These services should, if possible, be part of the single multiplex.

9. The initial Government-funded implementation will install DTV in all existing 374 sites.

CRC established its nationwide System for Spectrum Management and Monitoring (SMMS), which includes mobile, portable and fixed radio monitoring and inspection facilities. With help from the World Bank, CRC purchased the SMMS equipment to strengthen its regulatory capacity, radio frequency regulation and broadcasting services and to properly implement ICT sector reform policies and promote competition and growth in the sector.
Part II. CRC’s Performance in Fiscal Year 2010

Regulation of ICT, Telecommunication and Postal Sector

CLASSIFICATION OF LICENSEES

The CRC has responsibility for administering the licensing of ICT and telecommunications, including construction of networks and provisioning of information, communications, and postal public services for promoting competition and ensuring a favorable investment climate for the network and service providers of the sector. There are two classes of licenses plus certificates:

- A-class license, which allows an operator to construct information, communications and postal networks;
- B-class license, which allows a service provider to provide information, communications and postal services;
- Certificates, which allows service providers to provide manufacturing, maintenance, consultancy, software and other supplementary services;

LICENSING AND SERVICE REGULATION

While issuing licenses the CRC has maintained the principles to develop an efficient and fair competitive environment that will better accommodate the interests of end users, technical specifications, network coverage and expansion within the framework of government policy to develop the communications sector.

During 2010, the CRC has approved the general conditions and requirements on building and use of ICT networks (A-class license); multimedia internet services (B-class license), and revised the general terms, conditions and requirements for international VoIP telephone service.

According to the existing Laws and regulations, the CRC issued 193 licenses and terminated 73 licenses in 2010. In the postal sector in 2010, the CRC issued eight B-class licenses to citizens and withdrew fifteen.

A-class licensing - an A-class license must be held by the owner of information, communications and postal networks used to supply network services to the public. The CRC may grant an A class license if the applicant satisfies:

- General terms and conditions of Licensing Requirements Procedure;
- Technical conditions for interconnection with any other networks operating in Mongolia;
- Quality demands during the installation and usage of equipment, specified by the Communications Regulatory Commission;
• Technical solutions for the security of information transmitted over a network and any related organizational measures.

During 2010, the CRC issued five A-class licenses upon requests.

**B-class licensing** - B-class licenses must be held by service providers for supplying information, communications and postal services to the public. The CRC grants B class licenses if the applicant satisfies:

- General terms and conditions of Licensing Requirements Procedure;
- Any interconnection agreement existing in Mongolia which should be concluded in accordance with the procedure issued from the CRC;
- Interconnection fee determined in accordance with the methodology specified by the CRC;
- Quality demands set up by the CRC;
- Service pricing and tariff in accordance with the methodology developed by the CRC and prior to tariff being applied shall inform customers by publishing in the media;
- Consumer rights and confidentiality.

In 2010, the CRC issued more than 160 B-class licenses including radio frequency utilization to citizens, company, organizations and other entities.

**Table 1: CRC License statistics in 2010**

<table>
<thead>
<tr>
<th>License type</th>
<th>Issued License</th>
<th>Terminated License</th>
<th>Amended License</th>
<th>Extended</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDD</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IDD</td>
<td>4</td>
<td>1</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>NIIM</td>
<td>35</td>
<td>25</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>FM</td>
<td>14</td>
<td>22</td>
<td>-</td>
<td>8</td>
</tr>
<tr>
<td>TV</td>
<td>12</td>
<td>10</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>CaTV</td>
<td>9</td>
<td>10</td>
<td>-</td>
<td>16</td>
</tr>
<tr>
<td>IS</td>
<td>14</td>
<td>3</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>CSR/XX</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CSR/Data</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CSR/IS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>VoIP</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>WLL</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>RTV</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>PBX</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>TN</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>
CERTIFICATION

Certificates are issued for internet cafes and centers, hardware and software services; end terminal maintenance services; communications equipment manufacturing; assembling and maintenance services; communications consultancy service; leasing or separate operation of telecommunications and post service points and branches on an interconnection contract basis with basic service providers or other providers; electronic equipment assembling and maintenance services; postal equipment supply and manufacturing /post box, envelopes, packages and containers. According to the existing Laws and regulations, the CRC issued more than 30 certificates in a total.

TELECOMMUNICATIONS INFRASTRUCTURE AND TECHNICAL REGULATION

INTERCONNECTION AND ACCESS

Any Licensee of telecommunication services is entitled to have both interconnection and access to networks. Non-discriminatory or equal treatment, transparency and co-efficient principles have to be maintained by the parties involved in interconnection or access. The parties shall maintain fair competitive principles avoiding any anti-competitive acts. The parties shall maintain the principles of open network standards in interconnection or access deals. Network owners shall publish a RIO which is inclusive terms and conditions of interconnection and access, charges and agreement procedures. Charges of interconnection and access shall be cost-based and reasonable. Any inefficiency should not be passed through interconnection or access charges. Cost related to modification or upgrading in order to meet technical conditions in interconnection or access for the purpose of deploying new equipment and technologies in Mongolia born by the requesting party.

Access agreements - Access and interconnection agreements are commercially negotiated instruments providing the means by which operators interconnect with each other’s networks, and gain access to each other’s services. As required by the procedure, the CRC registers these agreements, and maintains regulatory intervention when or where disputes occur.
Registrations - In 2010 year, the CRC registered the agreements set out in Table 2.

<table>
<thead>
<tr>
<th>Parties</th>
<th>Subject of Agreement</th>
<th>Registration date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skytel LLC / Government Communications department</td>
<td>Interconnection</td>
<td>2010/02/04</td>
</tr>
<tr>
<td>Skytel LLC / Mongolian Railway</td>
<td>Interconnection</td>
<td>2010/02/09</td>
</tr>
<tr>
<td>Unitel LLC / Mongolia Telecom</td>
<td>Interconnection</td>
<td>2010/02/22</td>
</tr>
<tr>
<td>Skytel LLC / Mongolia Telecom</td>
<td>Interconnection</td>
<td>2010/03/03</td>
</tr>
<tr>
<td>Government Communications Department / Mongolia Telecom</td>
<td>Interconnection</td>
<td>2010/03/11</td>
</tr>
<tr>
<td>Mongolia Railway / Mongolia Telecom</td>
<td>Interconnection</td>
<td>2010/03/19</td>
</tr>
<tr>
<td>Skytel LLC / Skynetcom LLC</td>
<td>Interconnection</td>
<td>2010/03/26</td>
</tr>
<tr>
<td>G-Mobile LLC / Skynetcom LLC</td>
<td>Interconnection</td>
<td>2010/05/03</td>
</tr>
<tr>
<td>G-Mobile LLC / Mongolia Telecom</td>
<td>Interconnection</td>
<td>2010/05/03</td>
</tr>
<tr>
<td>Skytel LLC / G-Mobile LLC</td>
<td>Interconnection</td>
<td>2010/09/15</td>
</tr>
<tr>
<td>Skytel LLC / Unitel LLC</td>
<td>Interconnection</td>
<td>2010/10/11</td>
</tr>
<tr>
<td>Unitel LLC / Government Communications Department</td>
<td>Interconnection</td>
<td>2010/11/16</td>
</tr>
</tbody>
</table>

Confidentiality - The parties can apply to the CRC for parts of the agreement to remain confidential. Typically, references to charging arrangements, costing methods, operator liability provisions, and network security information are considered commercial-in-confidence, and may be kept from the public register.

Infrastructure sharing and unbundling - The CRC is required to regulate relations derived from unbundling of network elements, infrastructure sharing or collocations that are purported by communications public service providers or value added service providers.

General conditions and requirements for unbundling are as follows:
- Any network owner is obliged to lease its unbundled network elements, infrastructure sharing and collocations;
- Any network owner is not entitled to decline to lease its unbundled network elements, infrastructure and part of building or room other than those reserved for future expansion to other communication service providers;
- Any network owner shall publish terms and conditions, charges and agreement Procedures for unbundled network elements, infrastructure sharing and collocation regulation;
- Any network owner shall lease unbundled network elements, infrastructure and part of building or room on a non-discriminatory and first come first served basis;
Any network owner shall provide information on location and capacity of unbundled network elements, infrastructure and parts of buildings or rooms to the CRC and a requesting service provider.

**TECHNICAL REGULATIONS**

**Technical issues** - The CRC is the sector standards setting body – with the cooperation of the Mongolia Agency for Meteorology and Standardization (MASM) – for telecommunications within Mongolia. This includes the development and maintenance of Mongolian standards and management of Mongolia’s involvement with the setting of international and, where appropriate, regional standards.

As well as its responsibilities for standards setting, the CRC also regulates Mongolia’s telecommunications and ICT equipment and cabling industry to ensure the safety of users and operators of the networks, and to ensure the minimum technical requirements, as laid out in the standards, are met.

**Standards** - The Communications Sub-Committee for Standardization (CSC) was established in 2003 by the CRC. The CSC was supported in its work by a number of associated working groups, which considered specialized topics and types within the framework of the information and communications policy and regulation. It consists of 15 members.

In 2010, the CRC drafted 10 national standards and submitted each of them to the MASM for the final review and 3 national standards were approved (Table-3).

<table>
<thead>
<tr>
<th>Table 3 : Approved National standards in 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Standards</td>
</tr>
<tr>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Information technology- Open systems</td>
</tr>
<tr>
<td>interconnection- transport service</td>
</tr>
<tr>
<td>Information technology – Open system</td>
</tr>
<tr>
<td>interconnection- network service definition</td>
</tr>
<tr>
<td>Information technology – Computer security-</td>
</tr>
<tr>
<td>Cryptography- Electronic signature and its</td>
</tr>
<tr>
<td>requirements</td>
</tr>
</tbody>
</table>

Under the relevant legislation, technical standards are developed to ensure, among other things, the safety of persons, integrity of telecommunications networks, interoperability of equipment, quality of end-to-end services, and avoidance of electromagnetic interference and disturbance.

The CRC’s role in standards development extends to fixed equipment, mobile equipment, networks and international standards.
NUMBERING PLAN AND ADMINISTRATION

The CRC manages “Telecommunications Numbering Plan”, which sets out the framework for numbering of telecommunications networks in Mongolia and the use of numbers in connection with the supply of services. The CRC is also responsible for managing the existing numbering resource, and planning for new numbering developments in Mongolia. Representatives from the telecommunications industry, telecommunications users, community groups and ICT work closely in numbering issues to formulate and administer numbering policy. The CRC primarily addresses issues relating to the development and management of the Numbering Plan, including the allocation and specification of numbers and distribution and administration of annual numbering charges.

VoIP and NGN - The CRC allocated “77-xx-xxxx” numbers for new services such as VoIP and NGN-IN - Skynetcom in December, 2007.

Mobile telephony – During 2007-2010, the CRC allocated new numbers to the following service providers:

- “93-xx-xxxx” numbers to G-Mobile, the fourth mobile operator:

<table>
<thead>
<tr>
<th>№</th>
<th>Type of number</th>
<th>Allocated numbers</th>
<th>Quantity of numbers allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Geographic (NGN)</td>
<td>1</td>
<td>500,000</td>
</tr>
<tr>
<td>2</td>
<td>Mobile</td>
<td>1</td>
<td>1,000,000</td>
</tr>
<tr>
<td>3</td>
<td>WLL</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>National SPC</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>5</td>
<td>New area code</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Toll freephone and local rate</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Premium rate numbers</td>
<td>25</td>
<td>31</td>
</tr>
<tr>
<td>8</td>
<td>Dial-Up and VoIP access (Codes)</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
CRC has been revised and approved the National Numbering Plan in 2010 and it shown in Table 5.

Table 5: National Numbering Plan approved by CRC, 2010

<table>
<thead>
<tr>
<th>Prefix Number</th>
<th>Designation</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>00x</td>
<td>International prefix</td>
<td></td>
</tr>
<tr>
<td>0x</td>
<td>National prefix</td>
<td>National prefix+ Geographical area + SN</td>
</tr>
<tr>
<td>1</td>
<td>Special numbers</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Fixed telephony service</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Wireless local loop (WLL) service</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Reserved</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Voice over internet protocol (VoIP) service</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Reserved</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Mobile service</td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Current status of telecommunications numbering

<table>
<thead>
<tr>
<th>№</th>
<th>Type of number</th>
<th>Allocated numbers</th>
<th>Quantity of numbers allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PSTN - Geographic</td>
<td>MTC – 14 blocks</td>
<td>200.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Railway – 3 blocks</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other – 3 blocks</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mobile</td>
<td>Mobicom (GSM) – 2 serials</td>
<td>8.000.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skytel (CDMA) – 2 serials</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unitel (GSM) – 2 serial</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>G-Mobail (CDMA) – 2 serial</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>WLL</td>
<td>Mobicom – 1 serial</td>
<td>3.000.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MTC – 1 serial</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skytel – 1 serial</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>NGN</td>
<td>MTC – 1 serial</td>
<td>600.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skynetcom – 1 serial</td>
<td>500.000</td>
</tr>
<tr>
<td>5</td>
<td>National SPC</td>
<td>57</td>
<td>82</td>
</tr>
<tr>
<td>6</td>
<td>Toll freepone and local rate</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>7</td>
<td>Premium rate numbers</td>
<td>140</td>
<td>94 in UB</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>46 in Domestic</td>
</tr>
<tr>
<td>8</td>
<td>Dial-Up and VoIP access (Codes)</td>
<td>39</td>
<td>58</td>
</tr>
</tbody>
</table>
CONSUMER PROTECTION AND QUALITY OF SERVICES

The CRC is required to determine and control quality indicators for each communication service and targeted performances with particular reference to consumer satisfaction, consumer benefits and quality of service. The CRC has developed minimum levels of quality and reliability indicators of radio television telecommunications and postal basic networks and services, and conducted quality performance investigations by completing comparisons with the minimum levels.

The CRC adopted the procedure to monitor Quality of Service (QoS) by creating points in order to ensure regularity and quality of the ICT and postal services. The monitoring covers international calling card services, post delivery, radio and television, plus coverage of telephony services.

Investigation - In 2010, the CRC conducted the following investigations:
- License agreement compliance of service providers in Selenge, Hentii, Sukhbaatar Dornod, Huvsugul, Uvurhkangai, Dundgobi, Orkhon, Darkhan-Uul, Arkhangai, Dornogobi; and,
- Universal service obligation compliance.

DISPUTE RESOLUTION AND COMPLAINTS

The CRC is required to receive comments, complaints and disputes from licensees and consumers for settlement under its jurisdiction. The main matters raised throughout 2010 were disputes related to lease agreements, interference, international long distance calling and WLL.

Licensees’ complaints/disputes -
- Licensing and interconnection.

Consumer complaints -
- Unavailability of international long distance calling;
- Fee on cable TV;
- Request on clarification of licensee; and
- Complaints on prepaid card.

RADIO FREQUENCY SPECTRUM REGULATION

SPECTRUM PLANNING AND MANAGEMENT

The radio frequency spectrum has a wide variety of users, ranging from amateurs to providers of space communications between satellites and ground stations. An efficient management of the spectrum involves the planning of the spectrum to ensure that capacity meets a wide diversity of different user needs where emerging technologies are consistent with international spectrum allocation principles. It is also necessary to ensure that licensing
regimes are in place that enable the allocation of spectrums in a way that clearly defines the rights of users and protects the rights of licensees to use that spectrum without interference.

According to the recommendations of World Radio Conference of 2007, the National Radio Frequency table was renewed, and a new chart for National Radio Frequency allocation was made. The allocations are:

- **3 kHz-400 GHz** - The Table is a legal instrument that prescribes spectrum usage arrangements for LF, MF, HF, VHF, UHF and SHF in the band of 3 kHz-400 GHz. A range of radio communication services such as broadcasting, mobile, data communications, space communications and special consumption services is arranged in these bands.

- **LF, MF, HF: LF, MF and HF** - These bands are assigned for broadcasting, high power radio transmission, plus transmission of 5 radio programs abroad. An aviation navigation control is also provided in these bands in cooperation with ICAO.

- **VHF** - VHF band is assigned for television and FM radio broadcasting. Walkie-talkie stations, special consumption and signaling systems are also covered in the VHF band.

- **UHF** - UHF band is allocated for television channels. 4-6 channels have been provided for each soum (totally 342 soums). Mobile (GSM and CDMA), WLL, WiFi, satellite communications services such as Iridium, some types of radio relays are assigned for this band.

- **SHF** - SHF band is planned for WiFi, WiMAX, radio relays and earth stations.

Based on the introduction of 3G mobile technology in Mongolia by the policy and approach of CRC, the steps for bidding and selection have been arranged, and approval granted to the bidding winners.

With the purpose of introducing and establishing new wireless technology in Mongolia, CRC issued part of frequency bandwidth 2.3 and 2.5 GHz, developed the technical specifications, and undertook measures to implement these. As a result of the bidding selection, one special license has been given for the WiMax on 3.5 GHz bandwidth.

In October of 2010, the CRC approved regulation procedure and technical requirements for wireless communication frequency range of 2400.0-2483.5 MHz bandwidth.

In 2010, CRC also allocated 330.0-340.0 MHz bandwidth for disaster communication in Mongolia.
RADIO FREQUENCY LICENSING AND REGISTRATION

Licenses for radio and television frequencies in Ulaanbaatar, Darkhan and Erdenet cities, and public use mobile and fixed communications radio frequencies are awarded through competitive bidding selection (tendering) in accordance with the Radio Wave Law of Mongolia and the Procedures on Competitive Award of Licenses for Radio Frequency Utilization respectively. Frequencies for other services, including rural service provisioning, are allocated if the applicant satisfies all terms and requirements subject to the requested frequency availability.

Radio frequency authorization is granted in two types, which are “License” and “Certificate” in accordance with the Law on Radio Wave of Mongolia.

Radio frequency license - In 2010, CRC issued a total of 160 organizations and business entities submitted requests to obtain the special licenses for radio frequency. Upon the decision of the CRC Commission meetings, 73 of the total requests were approved to get the special licenses, which met the requirements and conditions for special license.

The contracts for special license of 17 business entities and organizations that had expired were renewed and extended. Upon the Committee meeting 61 special licenses had been canceled which had payment problem; the contracts were expired and did not met with related law and requirements.

Radio frequency utilization certificate - In 2010, a total of approximately 210 businesses and individuals sent in requests to obtain a certificate for radio frequency, and approximately 90 requests were approved.

The contracts for certificate of 40 business entities and individuals that had expired were also renewed and extended.

MONITORING AND INSPECTION OF RADIO FREQUENCY ARRANGEMENT

The CRC is responsible for interference management by monitoring and detecting illegal users of radio frequency, investigating and analyzing interferences of transmitters, measurement and investigation of radio equipment at customers’ or licensees’ requests.

Examinations revealed some businesses and individuals who conducted operations in the communication sector without licenses and certificates. These were as follows:

- Fixed monitoring:
  - Bandwidth in public use – 21
  - Bandwidth in defence – 10
  - Bandwidth in CDMA 450 – 15
• Mobile monitoring:
  - Bandwidth in public use – 12
  - Bandwidth in defence – 6
  - Bandwidth in CDMA 450 – 24

Upon the monitoring collaborated with State Inspection Authority.
  - Bandwidth in public use – 5
  - Bandwidth in defence – 6
  - Bandwidth in Radio and TV - 46
  - Bandwidth in CDMA 450 – 21

SMMS PROJECT FINANCED BY WORLD BANK

Under the framework of the World Bank grant MOG-H232 contract between the Government of Mongolia and the World Bank, the CRC has implemented the consulting service project component “Radio Spectrum Policy of Mongolia” and Spectrum Management and Monitoring System (SMMS).

REGULATION OF BROADCASTING

Because the broadcast media has an important role to play in the development of Mongolia by providing information to its citizens, the equipment of radio and TV studios, transmission systems and TV broadcasting stations were upgraded in 2006-2009. Within this framework, Mongolia started broadcasting with four domestic digital TV channels (including the National TV and other commercial TV) throughout the whole of Mongolia.

For the first time in Mongolia, the CRC established a Nation-wide System for Spectrum Management and Monitoring (SMMS) including mobile, portable and fixed radio monitoring and inspection facilities. With assistance from the World Bank, the CRC purchased a SMMS for strengthening regulatory capacity, radio frequency regulation and broadcasting services for proper implementation of ICT sector reform policies to promote competition and growth in the sector.

During 2009, the Government of Mongolia introduced DTH multichannel TV broadcasting covering all of Mongolia by satellite. The CRC licensed earth stations, which began operations in July 2009, for the Ku-band satellite; they provide capacity for more than 20 DTH television channels. In November 2009, the CRC granted two IP television (IPTV) and two Mobile TV licences in Ulaanbaatar, the capital city. This important step introduced IP services and new mobile applications and content to Mongolian people.

The CMMB and DMB standards have been adopted in Mongolia for the provision of mobile digital television services. These services will be established by private companies who make the choice of technology between the systems. Other than the fact that they are most likely to operate within the Band III Television Band, there is no specific requirement that they be interoperable with the terrestrial broadcast standard.
In October 2010, CRC and ICTPA jointly prepared and submitted the “National Program on Radio and TV Broadcasting Transition to Digital Technology” to the Mongolian Government, Government of Mongolia has been approved and decided to migrate all analog television to digital, and has announced that analog services will cease on 30 June 2014. The broad objectives for the Mongolian Government’s DTV migration plan can be summarized as follows:

- Analogue switch off will occur 30-th of June 2014,
- The Government plans to migrate all of the terrestrial rebroadcast transmitters to digital under a Government-funded project,
- The Government would like the first stage of this project to be completed by October 2011 (basically a pilot programme to demonstrate the system capability and implementation). Depending on costs, this might establish up to ten provincial or regional transmitters and the necessary up-linking arrangements,
- The Government would like to see at least ten SDTV programme services on the digital multiplex available across the country,
- Guidance has yet been provided about coverage of digital services. A reasonable assumption would be that the digital services should, as a minimum, match the coverage of existing analog transmissions and that when necessary the DTV coverage be extended to cover growing urban areas, and to address any nine coverage deficiencies with the current analog services,
- If possible DTV implementation should allow for competitive proposals for the provision of up-linking and satellite capacity for distribution of the services,
- The proposed initial services should share a single multiplex,
- The ability to insert local programs Aimag Centre transmitters should be incorporated within the design, even if implementation is not carried out immediately. These services should, if possible, be part of the single multiplex,
- The initial Government-funded implementation will install DTV in all existing 374 sites.

According to the CRC license agreement, Univision LLC will be started the first IPTV services in Ulaanbaatar in first quarter of 2011.

REGULATION OF POSTAL SECTOR

In the Mongolian postal service market, there are currently 51 licensed postal operators running postal service business. There is one state owned company (designated operator) Mongol Post LLC and other 40 private companies.

Following the existing Postal Laws and Regulations, the CRC issued thirteen new “B” class license for postal services in 2010, and 13 license issued and 1 license were terminated. CRC also amended 5 “B” class licenses.

The CRC is now running a national zip code website www.zipcode.mn and published a second edition of the Handbook
on National Zip Codes in 2010. Further, the CRC sponsored and organized a Seminar on Postal Standardization and Regulation in June 2010, with participation from amongst the GoM organizations, postal service license holders and other NGO organizations.

REGULATION OF TARIFF AND PRICING

REGULATION FEE AND INTERCONNECTION TARIFFS

The CRC is required under the Communications Law and relevant procedures to assess all service providers’ tariff filings for precision and detail, and to assess dominant’s tariffs for discrimination and anti-competitive impact. Non-dominant tariffs must be reviewed within 14-21 business days and contentious dominant tariffs reviewed within 14-21 business days respectively.

The CRC approved the minimum rates of external billings for international incoming calls and termination rates of international calls at mobile, wireless and fixed networks.

“Cost allocation methodology” for services was adopted in order to settle long-lasting disputes on discharged local long distance transmission for local and long distance calls between MTC and mobile telephony service providers.

The CRC also adopted a cost accounting model by investigating economic efficiencies of a service cost and service packages on the basis of service costs of Mongol Post Company. Under the policy to allow postal operators to distribute and sell definitive stamps, the CRC has cooperated with the Road, Transportation and Tourist Ministry and developed relevant proposals for approval.

In accordance to resolution of CRC meeting, nondiscriminatory interconnection price regardless of location has been introduced since 1st February, 2010 and principle of interconnection revenue sharing between telecommunications operators was renovated. Difference between domestic and local communication service fee has been changed to same tariff by agreement CRC and Information Communication Network LLC, Mobicom LLC, Skytel LLC, Unitel LLC, G-Mobile LLC, and Mongolia Telecom LLC. Results of the implementation this interconnection regime, domestic mobile subscribers interconnection tariff reduced an average of 1.7-2.1 times, domestic fixed subscribers interconnection tariff an average of 1.6-2 times.

Information Communications Network LLC’s domestic channel lease tariff for internet service is regulated the 1st CRC resolution in 2010. As a result of tariff approval, internet subscriber’s monthly payment reduced by 15% in average and enables to increase internet connection speed of customers.
RADIO SPECTRUM PRICING AND CHARGES

The CRC is responsible for setting fees in accordance with the Methodology of Spectrum Pricing, which was approved by the Minister for Infrastructure in October, 2003. Fees were determined in November, 2003, and application and compliance with spectrum fees have been implemented since 1 January, 2004, and procedure was modified in 2010.

Fees for frequencies that have high demands and efficiencies (mobile, WLL, WiFi, WiMax etc) are higher than frequencies for lower demands and usages (rural television and radio etc).

NUMBERING CHARGES AND PRICING

The CRC commenced a collection of numbering charges in March, 2003. Prefix codes of international numbers were charged at 50 000,0 thousand tugrugs in the first year as regulatory fees. Regulatory fees are compared in Table 7.

<table>
<thead>
<tr>
<th>Numbering types</th>
<th>Regulatory fees per year /in thousand tug/</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Special numbers</strong></td>
<td></td>
</tr>
<tr>
<td>1. Numbers to be used for emergency purposes such as ambulance calls, fire alerts and enforcement agencies for social order or crimes</td>
<td>Free of charge</td>
</tr>
<tr>
<td>2. Numbers for the purposes of technical monitoring of networks or technical maintenance</td>
<td>50,0 per number</td>
</tr>
<tr>
<td>3. Business and information directory services</td>
<td>500,0 per number</td>
</tr>
<tr>
<td>4. Internet service purposed</td>
<td>200,0 per number</td>
</tr>
<tr>
<td><strong>B. Access codes</strong></td>
<td></td>
</tr>
<tr>
<td>1. Access codes for independent gateways of /001, 002, 003, 004 / international calling</td>
<td>0,019% of revenue of international calling</td>
</tr>
<tr>
<td>2. Area codes for domestic long distance calling</td>
<td>0,001% of revenue from domestic long distance call</td>
</tr>
<tr>
<td><strong>C. Network numbering</strong></td>
<td></td>
</tr>
<tr>
<td>1 Serial (10,000 )</td>
<td>120</td>
</tr>
<tr>
<td>1 Serial (100,000)</td>
<td>1,200</td>
</tr>
<tr>
<td>1 Serial (1,000,000)</td>
<td>12,000</td>
</tr>
</tbody>
</table>
Telecommunications and Information Infrastructure Development

The state owned Mongolian telecom backbone network consists of approximately 1400km of digital microwave, more than 12,100km of optical cable links, plus more than 400 VSAT systems linked to Ulaanbaatar and all provincial centres. Mongolia has made considerable progress in developing its information and communications infrastructure in recent years, particularly in the availability of modern basic service and cellular services.

Mongolia has made considerable progress in developing its information and communications infrastructure in recent years, particularly in the availability of modern basic service and cellular services. The number of main fixed lines grew from 3.5 per 100 inhabitants in 1996 to 6.1 in 2010. Mobile telephone density per 100 people has grown from 9.2 in 2002 to 91.3 in 2010. The number of cellular subscribers grew from 1800 in 1996 to 2.4 million in 2010 (December) with the licensing of five operators.

Mobicom Corporation-mobile service operator, RailCom, a subsidiary of Mongolia Railways, and Gemnet LLC operate their own private fibreoptic and microwave infrastructure along main backbone networks, road and railways.

Mobicom Corporation, RailCom, a subsidiary of Mongolia Railways, and Gemnet LLC operate their own private fibreoptic and microwave infrastructure along main backbone networks, road and railways. This creates a favorable environment for both the Government and customers, by providing affordable bandwidth while increasing returns on state owned assets and investments.

A number of licensed VSAT service providers also provide various value-added services such as managed network services and on-line services of commercial bank services.

The Internet service market is fully liberalized and there are approximately 199,000 Internet users.

As the broadcast media has an important role to play in the development of Mongolia by providing information to its citizens, the equipment of radio and TV studio, transmission systems and TV broadcasting stations were upgraded in 2006-2008. Within this framework, Mongolia started broadcasting 6 domestic digital TV (including the National Public TV and other commercial TV channels) through whole Mongolia.

Mongolia will ensure that the policy and regulatory environment allows fair and competitive provision of infrastructure and services.
Two 3G/ GSM system operators – Mobicom and Unitel LLC – and two CDMA system operators – Skytel LLC and G-Mobile LLC – are providing mobile communications services in Mongolia.

There were 56 Internet service providers in the market at the end of 2010. Internet service providers connect with key ISPs via fibre-optics networks; these are connected to Russia and China, and are operated by the Railcom Center, Gemnet Company and MobiCom Corporation.

Promoting Competition

The CRC of Mongolia has always endeavoured to encourage greater competition in the ICT, telecommunications and postal sectors in order to meet the objectives of "e-Mongolia national program up to 2012" and "Government Action plan 2008-2012".

Because on the introduction of 3G mobile technology in Mongolia through the policies and approaches of the CRC, the activities surrounding the bidding and selection processes have been arranged, and approval has been given to the bidding winners. In 2010, 3G licensee holders undertook modernization of their networks and introduced 3G services in more than 20 sites including Ulaanbaatar.

In November 2009, the CRC issued two IP television (IPTV) and two Mobile TV licenses in Ulaanbaatar, the capital city. This is an important step to introduce IP services and new mobile applications, as well as the resulting content, to Mongolian people. According to the CRC license agreement, Univision LLC will be started the first IPTV services in Ulaanbaatar in first quarter of 2011.

Due to expanded foreign relations, international investment and growth in Mongolian markets, the number of citizens living outside Mongolia is increasing; therefore, enlarging the scope of the international parcel post service and increasing the number of postal operators for courier service is under consideration.

Telecommunication and ICT, Postal Sector Market Environment and Key Statistics-2010

Fixed and Mobile Communication

Fixed line communications play a key role in improving information and communications service. The fixed telephone subscriber tele-density per 100 people has decreased 0.8 in 2010 when compared with 2009.

Two 3G/GSM system operators – Mobicom and Unitel LLC – and two CDMA system operators – Skytel LLC and G-Mobile LLC – are providing mobile communications services in
Mongolia. Mobile telephone density per 100 people has grown from 9.2 in 2002 to 90.3 in 2010. Figure-2 shows the comparison of key data between world average and Mongolian fixed and mobile subscribers per 100 persons.

**Figure-2. Fixed telephone and mobile cellular users per 100 inhabitant**

*Source: CRC of Mongolia and ITU indicators data, 2010 (Estimates)*

**WIRELESS LOCAL LOOP (WLL)**

Mongolia Telecom Company expanded WLL (F-Zone service) networks in urban and rural areas, and WLL subscribers reached 50.1 thousand in 2010 (see Figure 3). During 2010, WLL service was provided by Skytel LLC, Mobicom Corporation and Mongolia Telecom JS Company.

**Figure-3. WLL subscribers per 100 person, 2005-2010**
INTERNET SERVICES

There were 54 Internet service providers in the market at the end of 2010. Internet service providers connect with key ISPs via fiber-optics networks; these are connected to Russia and China, and are operated by the Railcom Center, Gemnet Company and MobiCom Corporation (see Figures 4 & 5).

![Figure-4. Internet subscribers, 2005-2010](image)

At present, Internet services in Mongolia are distributed to subscribers via ADSL, FTTH, and WiMax.

![Figure-5. Market share by technology, 2010](image)
POSTAL SERVICES

In the Mongolian postal service market, there are currently more than 40 licensed postal operators. There is one state-owned company (designated operator) – Mongol Post LLC – and 40 other private companies. Data concerning competitive services in the postal market, like market share of domestic postal service (parcel, post letter, small parcel) and International express postal services, are compared in Figures 6 & 7.

Figure-6. Market share of Domestic postal service

Figure-7. International express postal services
CATV SERVICES

There were 72 CATV license holders registered with the CRC in 2010. As a result of enabling rural citizens to watch National TV programmes and CATV, the total number of rural subscribers has rapidly increased in recent years. Figures 8 shows the Number of CATV subscribers and types in 2010.

![Figure-8. CATV, DTH and MMDS (wireless CATV) subscribers, 2005-2010](image)

ICT AND POSTAL SECTOR INVESTMENT

While sector investment was 94.4 billion tugrugs in 2009, it has reached about 89.9 billion tugrugs in 2010.

![Figure-9. Sector investment, 2005-2010](image)
HUMAN RESOURCES

There were more than 7,260 employees working in the Mongolian ICT, telecommunications and postal sectors at the end of 2010 (Figure-10).

Figure-10. Number of employees in ICT sector, 2005-2010
For the first time, CRC has established a Nationwide System for Spectrum Management and Monitoring-SMMS, which includes mobile, portable and fixed radio monitoring and inspection facilities. Within the framework of assistance from the World Bank, CRC purchased an SMMS for strengthening regulatory capacity, radio frequency regulation and broadcasting services for proper implementation of ICT sector reform policies and promotion of competition and growth in the sector.

CRC were drafted “National Programme on Transition of Radio and Television Broadcasting to the Digital Technology” and submitted to the Government of Mongolia in 2010. Government of Mongolia approved the National programme by the 275th resolution in October 27, 2010.

Providing the 3G technology of cellular communications in Mongolia can benefit entire country by developing cellular communication sector, broadband and wireless internet service. Cellular communication operators successful transition and renovation of 3G technology service in 2010 and expanding its activities, the 3G technology has been provided in Ulaanbaatar, Darkhan, Erdenet and more than twenty aimags, provincial capitals and settlements.

In accordance with Resolution-61 (Dec 2009), CRC decided to introduce non-geographical tariffs and interconnection policy in the local and domestic market. This regime introduced from 1 January 2010. Urban and rural subscribers will now have the same tariffs at interconnection.

Fiscal Year 2010 Highlights
International Cooperation and Development Projects

INTERNATIONAL COOPERATION

The CRC has maintained and expanded its involvement in international cooperation. CRC represents Mongolia in the international bodies, namely the International Telecommunication Union (ITU) and Asia and the Pacific Telecommunity (APT) as well as other international organizations, and ensures that the industry complies with various international agreements on telecommunications technical standards. CRC became an ITU-D sector member in 2007.

CRC joined the ITU-IMPACT Coalition on December 2010. IMPACT is the world’s first comprehensive global partnership against cyber threats and the premier platform for target stakeholders to congregate and address the increasing instances of cyber threats. Member States have access to specialised tools and systems, including the recently-developed ‘Electronically Secure Collaborative Application Platform for Experts’ (ESCAPE). ESCAPE is an electronic tool that enables authorised cyber experts and empowered officials across different countries to pool resources and collaborate with each other remotely, yet within a secure and trusted environment. By pooling resources and expertise from many different countries at short notice, ESCAPE will enable individual nations and the global community to respond immediately to cyber threats, especially during crisis situations.

CRC has been applied for member of Asian-Pacific Postal Union (APPU). APPU is an inter-governmental organization of 32 postal administrations of the Asian-Pacific region. APPU is affiliated to the Universal Postal Union, which is a specialised agency of the United Nations. The purpose of the APPU is to extend, facilitate and improve postal relations between member countries and to promote cooperation in the field of postal services.

CRC has been applied to join the Asia-Pacific Broadcasting Union (ABU). ABU is a non-profit, non-government, professional association of broadcasting organisations, formed in 1964 to facilitate the development of broadcasting in the Asia-Pacific region and to organise co-operative activities amongst its members. It currently has over 200 members in 58 countries, reaching a potential audience of about 3 billion people. The ABU works closely with the regional broadcasting unions in other parts of the world on matters of common concern, and with many other international organisations, to exchange information on the latest developments in broadcasting, undertake activities to improve the skills and technologies of its members, and encourage harmonisation of operating and technical broadcasting standards and systems in the region.

The CRC actively participates in study groups and information exchange programs with these organizations by providing regulatory surveys and information about the ICT sector of...
Mongolia. Training of management teams and staff members abroad has also successfully taken place under the training plan of the CRC.

Since June of 2009, the CRC has jointly implemented “Project on Rural ICT Policy Advocacy, Capacity Building and Knowledge Sharing” with ITU/ADB and ICTPA. Within the project implementation activities, CRC also co-organized the ITU/ADB workshop in May 2010.

The CRC has sent its delegates to international/regional seminars and training programs provided by the ITU, UPU, APT, APEC, APPU, in locations such as the USA, Japan, Australia, Thailand, Singapore, China, Turkey, Korea, Vietnam, India, Germany, Switzerland and Malaysia.

Table 8. Conference and training attendance 2010

<table>
<thead>
<tr>
<th>Items</th>
<th>No.of events</th>
<th>No.of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>International conferences and meetings</td>
<td>20</td>
<td>34</td>
</tr>
<tr>
<td>Trainings</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>Study tours</td>
<td>4</td>
<td>15</td>
</tr>
</tbody>
</table>

INFORMATION AND COMMUNICATIONS INFRASTRUCTURE DEVELOPMENT PROJECT

The Information and Communications Infrastructure Development Project was launched in June 2006. The project’s long term development objectives are to:

(a) significantly increase the coverage and use of ICT services among the rural population through an incentive program designed to encourage the private companies; and

(b) increase private sector participation in the delivery of e-government services.

The project has three main interrelated components and the CRC is taking part in two components dealing with information and communications infrastructure development in rural areas and communications regulatory development.

Spectrum Management and Monitoring System (SMMS).

During 2010, The World Bank assisted the CRC to procure and purchase a Spectrum Management and Monitoring System Phase-II for strengthening regulatory capacity for proper implementation of ICT sector reform policies that will promote competition and growth in the sector. Within the framework of this assistance, Mongolia has established the nation-wide SMMS, including mobile, portable and fixed radio monitoring and inspection facilities.

Soum center internet services (SCI).

The Soum Center Internet (SCI) service providers will provide the mandatory SCI services in accordance with the provisions of Agreements between CRC and the SCI service providers. In order to implement the World Bank Project “Soum Centre Internet”, CRC and Mongolian internet service providers were introduced internet service in 34 soums of Tuv, Bulgan, Dundgobi, Umnugibi, Khuvsgul, Uvs, Uvurkhangai, Zavkhan aimags.
Part III. Implementation of Universal Service Obligation

DEFINITION OF UNIVERSAL SERVICES AND ACCESS REQUIREMENTS-2010

Access to information and e-services are increasingly considered as crucial for socio-economic development for reasons of efficiency. Also, according to the network effect, the value of the network increases as the square of the number of users of the network.

Universal Service Obligation Fund (USOF) is a tool for implementing ICTs and promoting development of rural communication. While USOF sponsored services are not always commercially viable, they are very socially desirable.

Generally, Mongolian Government is planning to introduce two types of universal service (US). The first is a general obligation to provide service to all customers willing to pay regulated rates for service. This obligation may be limited to certain geographic or population groups, such as a requirement to serve all urban areas, or to serve rural areas above a certain population. In addition, policymakers and regulators have imposed obligations to extend certain types of designated services to a pre-specified number of subscribers or localities.

Still, the situation remains largely unbalanced between urban and rural areas. The digital divide is a problem that the Government and the private sector need to work together to address and to support Government’s policies to relieve the situation.

Universal access policies and policy frameworks must be reviewed on a periodic basis to ensure that they remain suited to their purpose, and to ensure that processes do not become rigid and institutionalized nor obstruct the flow of benefits they were originally designed to deliver. In particular, Mongolia must continually adapt its universal access and service policies and programs to meet changing resource, demand and technological circumstances.

PROGRAMS AND PROJECTS FINANCED BY USOF-2010

During 2010, the CRC and USOF team prepared several projects that were approved by the Prime Minister. The USOF has collected and spent USD 4.4 mln for financing the rural ICT development and rural internet access projects.
Sub-project: Soum center internet services (SCI)

Very few of the country’s rural soums (rural district center) have Internet services today. It has been determined through an examination of previous pilot projects and a market analysis from a recent national demand study carried out for the CRC that only a minority of soum centres can be considered ready to support Internet services supplied by a commercial Internet Service Provider, especially if they have a low population, less than 24-hour commercial electricity supply, and/or little prior experience of private fixed or mobile voice communication services.

The Soum Center Internet (SCI) service provider shall provide the mandatory SCI services in accordance with the provisions Agreement between CRC and the SCI service provider to the mandatory USO service areas. In order to promote the Government’s policy of expanding access to telecommunications services, SCI subsidies shall be paid as an incentive to the SCI Service Provider. The SCI Subsidy payments shall be made in accordance with the SCI Service Agreement from the CRC (USOF).
Part IV. Organizational Matters of Commission

This section provides information on organizational matters of the CRC, relating particularly to organization, funding, human resources (covering the areas of recruitment, training and seminars) and some general issues.

EMPLOYMENT ARRANGEMENT AND FUNDING

The amount of staff at the CRC as of 31 December 2010 was 54 in total. The CRC has five Director-Generals and five senior officers (Deputy Directors) for each department. As well, there are 21 experts and other supporting staff.

The number of female employees was 23.

Each employee is required to sign an individual labour contract with the CRC under Labor Law 1999 and the CRC’s Internal Regulation. The key features of which are as follows:

- Position and title name;
- Duties and responsibilities indicated in job description;
- Duration of an agreement;
- Working days and hours;
- Salary system; and,
- Labor conditions.

As of 31 December 2009, the level of salary ranges for employees on the CRC’s payroll were divided into following categories:

- Management team;
- Senior officer;
- Expert;
- Engineers and technicians, and
- Other supporting employees.

Funding.

According to the Law on Communications and Law on Governments’ Special Fund, which were ratified by Parliament of Mongolia, the CRC’s revenues are derived from five main sources, namely:

(i) General Licence and regulation fees;
(ii) Fees for radio spectrum;
(iii) Fees for numbering assignments;
(iv) Income from licence tenders, and
(v) Levy of 2% (before tax) on license holders (for the USOF).
STAFF DEVELOPMENT AND CAPACITY BUILDING

The CRC is committed to providing opportunities for employees to improve their on-the-job skills, which will support employees' adaptability and mobility, and help them to achieve their full potential by supporting learning and development activities.

The CRC’s staff development programs are designed to ensure that the skills of the staff are developed to meet the specific business needs of the CRC and to address personal development needs of staff such that they can contribute effectively in a diverse and constantly changing work environment.

Within the CRC, employee education, training and development are necessary in order to:

- Develop employees to undertake higher-grade tasks;
- Provide the conventional training of new and young employees; and
- Raise efficiency and standards of performance; Meet legislative requirements (e.g. health and safety).

Seminars / exhibition / training

The CRC has given utmost importance to its HRD program, with a view to develop the expertise and ability of its staff in handling vast amounts of data. This will allow them to monitor the various developments and proposals with respect to tariffs and quality of services standards, as well as to conduct and to co-ordinate surveys on Quality of Service issues and other consumer related matters.

The CRC has organized regional and nation-wide seminars and meetings on ICT and telecommunications networks and services, including the Internet, USOF projects, interconnection, and tariffs.

In the framework of the ITU Telecommunications Day celebrations, the CRC and ICTPA jointly organized the “ICT Expo-2010” Exhibition and Forum, which occurred 17-21 May 2010; more than 120 ICT, telecommunications, broadcasting, postal and software companies participated.

In 2010, CRC initiated and organized a variety of consultation meetings and discussions amongst ICT stakeholders. Topics included the ICT sector and economic crises, regulation of Next Generation Network, content issues, rural communications, and standardization in the postal sector.

“CRC Regulatory Open Forum 2010” was organized on 11-12 May, 2010 for 15th anniversary of Communications Regulatory Commission of Mongolia. More than 250 delegates, who were license holders and operators of Mongolia, were participated in this forum.

Internet,
television and postal sub-conferences were organized within this Forum. After evaluating achievements and discussing issues, participants were approved recommendations for effective regulation. The implementation of the plan of action measures were taking according to the recommendation. CRC and World Bank organized The National Universal Access Final Workshop on October 28, 2010 and program has been being started since 2008. Implementing activities in the framework of this programme, subprojects, such as herder public access network, soum centre wireless network, soum centre internet, universal access, results and further objectives were discussed by more than 150 delegates of CRC, World Bank, ICTPA and province.

In order to keep pace with the developments taking place globally, CRC has dispatched members of its staff to various international events, meetings and symposia to keep track of these developments and to gather valuable feedback/inputs for its own policy formulation.

The CRC’s participation in deliberations at the international level have not only contributed well to the international efforts being focused on issues, which are currently major regulatory concerns in Mongolia but have also helped in keeping CRC officials aware of International practices. During the year 35 officers were deputed to attend various seminars/conferences/meetings.

Of the CRC’s 53 employees, more than 40 have attended international trainings and seminars. All CRC employees were trained in domestic training during the year. CRC’s net expenditure for employee training was 81.1 million tugrugs, with technical assistance from World Bank. Development and training activities included training in management and leadership skills, information technology skills, job-specific skills, and attendance at seminars and conferences.
The CRC has provided funding grants to two employees studying for post graduate degrees – one PhD. and two Masters – and four other employees also working to improve their education. Further, the CRC has supported three employees as they improved their English language skills, covering all expenses as they studied abroad.

**Performance Management and Feedback System**

The CRC developed a Performance Management and Feedback System (PMFS). The aim of the PMFS is to provide a framework within which the CRC staff will be able to:

- Identify, plan and review business outcomes and individual responsibilities, linking individual performance with the CRC’s corporate plan;
- Determine the standards of performance expected from staff;
- Share regular feedback on their performance and that of their team;
- Continuously identify and implement work improvements; and,
- Identify priorities, develop and improve skills.

**OCCUPATIONAL HEALTH AND SAFETY**

The CRC aims to promote and maintain a high standard of health, safety and well-being for all staff by:

- Preventing accidents and ill-health caused by adverse working conditions;
- Protecting employees, contractors and the public from health hazards that may arise from their work or the conditions in which they work; and
- Locating employees in an occupational environment that maximises health, safety and well-being.

During the year, the CRC undertook work with “Gurvan Gal” hospital to highlight areas where improvements could be implemented in our approach to Occupational Health and Safety. The CRC provides counselling to those having difficulty with work or personal issues that affect their work performance and general health. All counselling is free to staff.

Consultation and workplace relations.

The CRC seeks to achieve high-quality outcomes by taking the following steps:

- Helping and consulting employees to balance work, study, family life and other caring responsibilities; and
• Involving employees in decision-making and information sharing include “all staff” meetings, planning sessions, departments meetings, focus group;

**Code of Practice.**
The overall approach to regulation by the CRC is set out in the Code of Practice. Our purpose is to address the following challenges in the communications sector in Mongolia by:

- Ensuring a modern and reliable communications infrastructure that is made available to the whole population of Mongolia;
- Promoting competition and ensuring a favorable investment climate for the network and service providers of the sector; and,
- Protecting and promoting the interests of consumers.

The CRC will act in a fair, transparent, and efficient manner. These are our core values and we will adhere to these in order to effectively balance the needs of our stakeholders. This document provides information on our values and our objectives, and how our procedures allow us to bring success to the communications sector in Mongolia. Lastly, this document reflects our commitment to operating in a more open and customer-service based manner.

**Code of Conduct -** The Code of Conduct is written primarily for our employees and for any person who represents us – for example, a consultant or a contractor. It sets out our employment standards and provides guidance that should give greater consistency and predictability to our collective work. In turn, this provides a better workplace environment for the CRC employees and consequently gives a higher-value service to our stakeholders. In publishing this Code, we are offering transparency by setting: professional standards, employee principles, our commitment to our employees, certain human resource practices, rules for the CRC Commissioners and Directors (“Senior Staff”), and our method for dealing with certain legal issues, such as handling confidential information.
## A.1. LISTS OF REGULATIONS AND PROCEDURES

List of procedures and regulations, terms and requirements approved by the CRC meeting for a period from July 2002 to December 2010

<table>
<thead>
<tr>
<th>Name of Procedures and Regulations</th>
<th>Approved/Amendments/Modifications (CRC Resolution number and Date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Procedure to issue, prolong and terminate licenses or certificates to utilize radio frequency and monitor compliance</td>
<td>Res.-4, 05/11/2002, Res.-39, 26/12/2003, Res.-16, 12/05/2004</td>
</tr>
<tr>
<td>8 Procedure on monitoring communications service quality</td>
<td>Res.-19, 02/06/2003</td>
</tr>
<tr>
<td>9 Procedure on Complaints and Disputes</td>
<td>Res.-25, 30/06/2003</td>
</tr>
<tr>
<td></td>
<td>Methodologies to define communications service tariff</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>Procedure on determining and controlling dominants in ICT markets</td>
</tr>
<tr>
<td>12</td>
<td>Radio frequency utilization and service fees **</td>
</tr>
<tr>
<td>14</td>
<td>Procedure on unbundling</td>
</tr>
<tr>
<td>15</td>
<td>Procedure on reviewing backgrounds of communications services</td>
</tr>
<tr>
<td>16</td>
<td>Procedure on post network access and interconnection</td>
</tr>
<tr>
<td>17</td>
<td>Procedure on frequency utilization for amateur radio stations in the territory of Mongolia</td>
</tr>
<tr>
<td>18</td>
<td>Special terms and conditions to licenses for cable line installation, assembly and maintenance</td>
</tr>
<tr>
<td>19</td>
<td>Procedure on telecommunications network access and interconnection charges</td>
</tr>
<tr>
<td>20</td>
<td>Procedure on controlling international call tariff compliance</td>
</tr>
<tr>
<td>21</td>
<td>Procedure on defining regulatory fee</td>
</tr>
<tr>
<td>22</td>
<td>Special terms and conditions to provide multimedia services</td>
</tr>
<tr>
<td>No.</td>
<td>Procedure Description</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>23</td>
<td>Terms and conditions to local and domestic telephony services</td>
</tr>
<tr>
<td>24</td>
<td>Terms and requirements of licenses to provide international telephony services</td>
</tr>
<tr>
<td>25</td>
<td>Methodologies to define radio frequency fee and tariff</td>
</tr>
<tr>
<td>26</td>
<td>Procedure of tariff regulation the ICNC</td>
</tr>
<tr>
<td>27</td>
<td>Procedure of Content Regulation</td>
</tr>
<tr>
<td>28</td>
<td>Procedure on monitoring the USOF quality requirement</td>
</tr>
<tr>
<td>29</td>
<td>General Procedure on Type approval</td>
</tr>
<tr>
<td>30</td>
<td>Amendment of Postal license classification</td>
</tr>
<tr>
<td>31</td>
<td>Regulation of website business by using communication network</td>
</tr>
</tbody>
</table>

*“Procedure on telecommunications network numbering” which was approved by Res.07, 28/02/2003 was invalidated and revised by Res.-05, 09/03/2005

**“Procedure on radio frequency utilization and service fees” was approved by Decree#216 of the Minister for Infrastructure in 2003 and subject to this procedure the CRC has determined “Radio frequency utilization and service fees”**.
A.2. LICENSE CLASSIFICATIONS

CLASSIFICATIONS OF LICENSES TO RUN COMMUNICATIONS PUBLIC SERVICES

One. "A" CLASS:

COMMUNICATIONS NETWORK CONSTRUCTION AND OPERATION LICENSES

1. Construction and operation of IC network
2. Construction and operation of regional IC network
3. Construction and operation of long distance IC network
4. Construction and operation of international IC network

Construction of 3-4 levels network will apply to A-1 class
Construction of 2 level network will apply to A-2 class
Construction of 1 level network will apply to A-3 class

5. Construction and operation of mobile communication network
6. Construction and operation of radio and television network
7. Construction and operation of postal communication local network
8. Construction and operation postal communication regional network
9. Construction and operation of postal communication long distance network
10. Construction and operation of international postal network

Construction of 3-4 levels network will apply to A-1 class
Construction of 2 level network will apply to A-2 class
Construction of 1 level network will apply to A-3 class

Two. "B" CLASS:

TYPES OF COMMUNICATIONS SERVICES FOR LICENSING

1. International calling service
2. Regional telephony service
3. Local telephony service
4. Long distance telephony service
5. Mobile telephony service
6. Wireless telephony service /WLL, PHS etc., /
7. Television broadcasting and transmission service
8. Cable television service /CATV, MMDS, LMDS etc.,/
9. Radio broadcasting and transmission service
10. Internet based calling service
11. International long distance channel and line leasing service
   applies to service providers other than international calling service license of "B" classification.
12. International post service
   *in accordance with provision of 3 and 6 Chapters of the Postal Law*
13. Postal basic service
14. Postal supplementary service
15. International postal services provided through designated routes
16. Communications resale service
17. Internet service
18. LAN installation and maintenance service
19. Communication cable line installation, maintenance and assembling service
20. Directory service by utilising special numbering

Three. **TYPES OF SERVICES FOR REGISTRATION CERTIFICATES**

1. Internet cafe and center
2. Hardware and software service
3. End terminal maintenance service
4. Communication's equipment manufacturing, assembling and maintenance service
5. Communications consultancy service
6. Leasing and independent operation of telecommunications and post service points and branches on the interconnection contract basis with basic service providers or other providers
7. Electronic equipment assembling and maintenance service
8. Postal equipment supply and manufacturing /post box, envelopes, packages and containers/
A.3. AUDITED FINANCIAL REPORT OF COMMUNICATIONS REGULATORY COMMISSION OF MONGOLIA: 2010

MONGOLIAN NATIONAL AUDIT OFFICE

Date: 09 March 2011 Ref.No.2/217

To: Mr. B. Boldbaatar,
Chairman and CEO
Communications Regulatory Commission of Mongolia

CERTIFICATION AUDITING

Scope
According to the section 15.1.2 of Law on Audit and section 38.3 of Law on State Treasury and Finance, Mongolian National Audit Office has been audited the financial statements of the Communications Regulatory Commission of Mongolia (CRC) for the year ended 31 December 2010.

Management responsibilities on financial statement

Management of the CRC is responsible for preparing financial statements that give a true and fair presentation of the financial position and performance of the Communications Regulatory Commission.

Auditor’s responsibility

Our responsibility is to prepare independent audit report based on our audited financial statements. We have audited in accordance with the International Audit standards and Law on Audit, Law on State Treasury and Finance of Mongolia.

The audit has been conducted in accordance with international standards, in order to provide reasonable assurance as to whether the financial statements are free of material misstatement. Audit procedures included examination, on a test basis, of evidence supporting the amounts and other disclosures in the financial statements, and the evaluation of accounting policies and significant accounting estimates.

Audit opinion

In our opinion, CRC’s statements of the year 2010 are true and fair in all financial aspects and gave a true and fair view of the CRC’s financial position as at 31 December 2010 and of its performance and cash flows for the year the ended in accordance with international accounting standards.

Ts. Batbayar,
Director General
Department of Financial Audit, MNAO
<table>
<thead>
<tr>
<th>ASSETS</th>
<th>/in thousand tugrugs/</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CURRENT ASSETS</strong></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalent</td>
<td>2,029,799.4</td>
</tr>
<tr>
<td>Receivables</td>
<td>687,878.5</td>
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<tr>
<td>Prepaid expenses</td>
<td>53,217.4</td>
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<tr>
<td>Goods</td>
<td>8,725.9</td>
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<tr>
<td><strong>Total current assets</strong></td>
<td>2,779,621.2</td>
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<tr>
<td><strong>NON-CURRENT ASSETS</strong></td>
<td></td>
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<tr>
<td>Physical assets</td>
<td>3,812,038.9</td>
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<tr>
<td>Non-physical assets</td>
<td>57,894.0</td>
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<tr>
<td><strong>Total non-current assets</strong></td>
<td>3,869,932.9</td>
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<tr>
<td><strong>TOTAL ASSETS</strong></td>
<td>6,649,554.1</td>
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<tr>
<td><strong>LIABILITIES</strong></td>
<td></td>
</tr>
<tr>
<td>Other liabilities</td>
<td>1,067.5</td>
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<tr>
<td>Unearned Income</td>
<td></td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td>1,067.5</td>
</tr>
<tr>
<td><strong>EQUITY</strong></td>
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<tr>
<td>Government fund</td>
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<tr>
<td>Total accumulation</td>
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<tr>
<td>Retained surpluses</td>
<td>114,631.8</td>
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<tr>
<td><strong>Total equities</strong></td>
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<tr>
<td><strong>TOTAL LIABILITIES AND EQUITYIES</strong></td>
<td>6,649,554.1</td>
</tr>
</tbody>
</table>
PERFORMANCE STATEMENT

As at 31 December 2010

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>/in thousand tugrugs/</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPERATION REVENUE</strong></td>
<td></td>
</tr>
<tr>
<td>International grants</td>
<td></td>
</tr>
<tr>
<td>Basic operation revenue</td>
<td>2 455 096.1</td>
</tr>
<tr>
<td>Non-Basic operation revenue</td>
<td>205 988.6</td>
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<tr>
<td><strong>TOTAL OPERATION REVENUE</strong></td>
<td>2 661 084.7</td>
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<tr>
<td><strong>OPERATION EXPENCES</strong></td>
<td></td>
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<tr>
<td>Employee related costs</td>
<td>762 746.9</td>
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<tr>
<td>Remuneration</td>
<td>687 173.8</td>
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<tr>
<td>Social and health insurance</td>
<td>75 573.1</td>
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<tr>
<td>Good and service expenses</td>
<td>885 508.3</td>
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<tr>
<td>Levy funding</td>
<td>224 580.7</td>
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<td><strong>TOTAL OPERATION EXPENSES</strong></td>
<td>1 872 835.9</td>
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<td><strong>OPERATION PERFORMANCE</strong></td>
<td>788 248.8</td>
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<tr>
<td>Non operation revenue</td>
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<tr>
<td>Non operation cost</td>
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<tr>
<td><strong>TOTAL NON OPERATION PERFORMANCE</strong></td>
<td>-211 188.6</td>
</tr>
<tr>
<td><strong>PERFORMANCE</strong></td>
<td>577 060.2</td>
</tr>
</tbody>
</table>
A.4. A LIST OF MATERIALS FOR LICENSE APPLICATION

APPLICATION DOCUMENTS FOR LICENSE

• Official letter on requesting for a license;
• State registration certificate and a copy of approved identity card;
• In-depth introduction material on a standard to be used, technical Specifications, principles of operation;
• Letter of reference from the owners of other networks, defining the technical possibilities on feasibility of interconnection, in case of deployment and maintenance of a network;
• Service price quotation;
• Letter proving economical and financial capability:
  ■ An audited balance sheet for the previous year
  ■ Opening balance, if the operation is newly started
  ■ Calculations on financial sources, necessary for carrying out performances in accordance with a license
• Copies of employees’ graduation diploma, professional certificates;
• Documents defined in the Law on Radio Frequency in case of the usage of Radio frequency;
• Domain name, e-mail address, letter of reference from the governing organization proving the possession of a domain name;
A.5. GLOSSARY OF TERMS

ADSL  Asymmetric Digital Subscriber Line
APEC  Asia-Pacific economic cooperation
APT  Asia and Pacific telecommunity
CATV  Cable television
CDMA  Code division multiple system
CEO  Chief executive officer
CRC  Communications Regulatory Commission
  Mongolian regulatory authority for the information and communications sector.
CSC  Sub committee for standardization
DSL  Digital subscriber line
DTH  Direct TV to Home
EBRD  European Bank of reconstruction and development
ENUM  Electronic numbering
GHz  Gigahertz
  One billion Hertz (where one hertz is the measurement of frequency equal to one cycle of electromagnetic radiation per second).
GoM  Government of Mongolia
GSM  Global system for mobiles
HF  High frequency
  Radio frequency spectrum in the 3030 MHz frequency range
ICTPA  Information, Communications Technology and Post Authority
ICT  Information and communications technology
IP3  Internet protocol 3
ISP  Internet service provider
ITU  International telecommunication union
kHz  KiloHertz
  One thousand hertz
LAN  Local area network
LF  Low frequency
MF  Medium frequency
MHz  MegaHertz
  One million Hertz
MMDS  Multi point multi distribution system
MTC  Mongolian Telecommunication Company
NGN  Next generation network
QoS  Quality of service
PMFS  Performance management and feedback system
PSTN  Public switch telephone network
RIO  Reference interconnection offer
SHF  Super high frequency
  Portion of the radiofrequency spectrum between 3GHz and 300 GHz.
SIDA  Swedish international development cooperation agency
SMMS  Spectrum management monitoring system
SPC  Signaling point code
TV  Television
UA  Universal access
UHF  Ultra high frequency
      Portion of the radiofrequency spectrum between 300 and 3000 MHz.
UNESCAP United nations economy and social committee of Asia and Pacific
USO  Universal service obligation
USOF  Universal service obligation fund
USTTI  United states telecommunication training institute
VDSL  Very high-speed digital subscriber line
VHF  Very high frequency
      Portion of the radiofrequency spectrum between 30 and 300 MHz.
VoIP  Voice over area network
      Network using short-range radio communications transmission links, for
      example, a private network of computer terminals, which may or may not
      be connected to the public networks.
VSAT  Very small aperture terminal
WiFi  Wireless Fidelity
      Broadband wireless data technologies used for interconnecting computer
      equipment
WiMax  World interoperability for microwave access
      Broadband wireless data technologies used for interconnecting computer
      equipment
WLL  Wireless local loop

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