Chapter 20

LUXEMBOURG

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I OVERVIEW

The Luxembourg TMT sector has evolved from being predominantly a provider of voice services into a diverse, competitive and interconnected industry using terrestrial, satellite and wireless transmission systems. Today Luxembourg has first-class infrastructures and telecommunication networks and counts among the top locations for electronic communication services and infrastructure.

Traditionally, the sector was limited to very few players. Telecommunication and postal services were operated over several decades as a public monopoly of the state-owned Entreprise des Postes et Telecommunications ('EPT'). The radio and television sector was controlled and developed from its early years by a privately owned company. Indeed, the first radio broadcasting in Luxembourg was initiated by the founders of the current broadcaster CLT-UFA. The privately held operator ensured a leading role in the national and international development of the radio and television sector and today ranks as the top television and radio broadcaster in Europe. Luxembourg has also been a pioneer in non-terrestrial communication technology. SES-Astra, a Luxembourg-based company created in 1985, was Europe's first private satellite operator and now has global standing.

The presence of certain important market players in the TMT sector in Luxembourg and the related know-how and experience has led the Luxembourg government to make efforts to maintain, create and further develop its electronic telecommunication technologies with the aim of being among the best places in Europe and abroad to do business within the sector.

Luxembourg combines certain features that are beneficial to the development of a local ICT sector, including the diversity and multilingual skills of the population and workforce, a geographical location within the heart of Europe and the importance of a financial industry in need of highly performing communication technologies. In

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addition, Luxembourg has gradually developed an excellent state-of-the-art infrastructure, international telecommunication connections, efficient national communication networks, data centres and an IT services industry, powerful legal framework, cutting-edge research, safety and security which all contribute to Luxembourg's increasing and undeniable attractiveness to technology organisations and electronic communication services, but also to financial institutions and other businesses. Luxembourg has become one of the top locations for ICT infrastructures (data centres, connectivity and Internet traffic) and offers specialised expertise to keep data safe.

The government follows a markedly pro-business policy (notably through 'Luxembourg for Business – proud to promote ICT' and is keen to further develop the TMT sector in line with the major industry trends. It is investing heavily in ICT research and focusing on high quality research in secure, reliable and trustworthy ICT systems and services.[1] Luxembourg is very present at European-level discussions and negotiations and stout in its defence of its position in the global process of harmonisation and liberalisation, while supporting the direction of European regulation. At a national level, research and development in the ICT sector is conducted by certain government-promoted institutions.[2] In developing its communication networks in the context of the investment realities and opportunities in the telecoms and media sector, the challenge is to direct investment in a way that ensures that the right type of network is built and that public investment works in cooperation with the private sector so as to promote a more competitive telecoms environment. The government has been very active in negotiating and defending the interests of Luxembourg in the adoption process of the European Telecoms Package (Directives 2009/140/CE of 25 November 2009 and 2009/136/CE of 25 November 2009).

The development of the information society is one of the key priorities of the government. In addition to the aforementioned policies, it has created an action plan called 'e-Luxembourg' with the ultimate goal that Luxembourg administrations, corporations, education personnel and individuals may efficiently use and have access to electronic communication means and to help improve their quality of the life. At present many filings, registrations, requests to public administrations such as tax, social security and energy sector can be made online, and the government has adopted a policy of electronic document management.

Convergence has been achieved by creating rules and regulations, regulatory authorities, consulting entities at national, European and international level, which embrace the diversity, interconnectivity and interrelatedness of the various industries. The increasing convergence between telecommunications, information technology and media has called for further adjustment of the current legislation and regulations, which led to the adoption of the Regulatory Framework, which has been introduced into Luxembourg law by two laws of 27 February 2011 (the Paquet Telecom).The Paquet

1 Interdisciplinary Centre for Security, Reliable and Trust.

2 For instance, CRP Henri Tudor and the University of Luxembourg, which has a computer science and communications research unit. Centre Gabriel Lippmann is active in applied scientific research and technological development.

Telecom is designed to provide for one set of rules for the entire electronic communication services and networks.

As a result of convergence, it is extremely important that interconnectivity and free access to all operators and service providers within the TMT sector is ensured in an equal manner. The use of one infrastructure for different types of services is of particular importance and it is crucial that the operators and owners of the infrastructure or networks make these available to the other participants in the TMT sector. This is particularly true in Luxembourg because of the small size of the market. Efforts are constantly undertaken to ensure competitivity among the players in the TMT sector.

Importantly, the government supports the principle of network neutrality (i.e., keeping a free architecture, open and non-discriminatory, guaranteeing access without unjustified conditions on electronic communication networks).

II REGULATION

i The regulators

TMT services cover an extremely wide scope of technology and services, with different laws and regulations applicable that entail various regulatory authorities to supervise different services and related technology. The competent ministry in Luxembourg for the telecommunication and media industry is currently the Ministry for Communication and Media.

Telecommunication, radio frequency, energy, railway service and postal service

The Law of 1997 created the Luxembourg Institute of Telecommunications ('the ILT'), whose duty it is to supervise and regulate the telecommunications sector. In 2000, the competence of the ILT was widened to encompass the Luxembourg energy sector and postal services and, as a consequence of the Law of 1997, was renamed the Luxembourg Institute of Regulation ('the ILR').[3] The competences of the ILR has been modified on several occasions, the latest changes being in Law of 27 February 2011 and 26 July 2011. The ILR is an independent regulator, not funded out of the public state funds, but financed by the operators of the sector supervised and regulated by the ILR.

Its competences in the different sectors are set by the Electronic Communication Law and the Spectrum Law. The recent amendment of the Spectrum Law introduced clarifications on the competences between the Minister for Communication and the ILR. The ILR is entitled to set rules in accordance with European Directives and national law. Additionally, it controls the efficient use of infrastructure for the benefit of the consumer. It is entitled to determine the fees and conditions at which communication networks are operated and services rendered so as to allow the formation of a competitive market. It has the authority to also draw up reports and proposals, which it must submit to its board and the government. It gives advice, and prepares statistics and regulations.

The ILR is competent to receive notifications and grant authorisations or licences in relation to the provision or operating of electronic communication network services

3 www.ilr.lu.

and is assisting the competent minister in the allocation of licences for radio spectrum . It is also in charge of establishing the frequencies plan, updating public registers required by law for the various TMT sectors.

The ILR has the power to decide administrative sanctions against operators that breach laws or regulations. It may also act as a dispute settlor between competing operators. The ILR also acts as mediator between customers and operators.[4]

The ILR is not empowered to monitor and regulate abuse of dominance. It is, however, responsible for ensuring that dominant players do not exclude other competitors from the sector. It may take measures and dictate rules to re-ensure a competitive market if in its opinion proper competition is no longer warranted.

Media

The Media Law (defined below) creates several governmental commissions, the first of which is the Communication Media Service ('the CMS'), which assists the competent minister in the determination and execution of Luxembourg media policy. Its main functions are:

a promoting the development of the programmes viewable by the Luxembourg population;

b promoting, in concert with other commissions and committees, Luxembourg as European centre for audio-visual and communication activities;

c assisting government representatives responsible for the supervision of the beneficiaries of licences or authorisation (the CIR – see below); and

d ensuring communication with international organisations responsible for the supervision of the audio-visual sector and ensure representative function within certain European committees.

The CMS does not have any regulatory or supervisory functions, but merely has consultative and recommending powers.

The Independent Radio Broadcasting Commission ('the CIR') has three main functions: (1) implementing of provisions relating to authorisations of low power transmitters, (2) advising the government in authorisation matters and (3) arbitration of specific potential disputes. The CIR will ensure that legal and regulatory provisions are complied with. It is empowered to grant or withdraw authorisations.

The CIR is composed of five members, nominated by Grand-Ducal regulation, for five years. The CIR may ask for assistance from the Audio-Visual and Media Service and technical support from the ILR.

The National Programming Council ('the CNP'), is an independent body advising the government on matters of surveillance of certain specific television and radio programmes and proposes a balanced content for socio-cultural radio-programmes. The CNP's mission is to ensure that legal and regulatory provisions applicable to the content of the programmes are complied with.

The National Commission for Data Protection ('the CNPD'), created by the law of 2 August 2002 on the protection of individuals with regard to the processing of personal

4 ILR Regulation 11/151/ILR of 4 April 2011.

data, is the authority in charge of the supervision of the electronic communication market, as far as data protection issues are concerned.

The CNPD controls the processing of personal data in Luxembourg and ensures compliance with the data protection regulations, in particular those relating to the confidentiality and security of processing operations. In addition, it has advisory competence towards the government. Although the CNPD is a public institution, it enjoys independence in order to carry out its mission.

The CNPD has investigative competence that allows it direct access to data of processing operations. As an investigation body, the CNPD is allowed to issue administrative sanctions.

Main sources of law

The TMT sector is extremely broad and diversified. Due to the specifics of the various industries on the one hand and the interrelatedness on the other hand, it appears that laws and regulations apply to more than one specific service within the TMT sector, resulting thus in a large number of applicable legislation and regulations.

The main laws are:

a Law of 27 July 1991 as amended by the Law of 17 December 2010 and the Law of 8 April 2011 on electronic media ('the Media Law');

b Law of 11 April 2010 on freedom of expression in electronic media, amending Law of 8 June 2004 (as amended) on freedom of expression in the media sector;

c Law of 27 February 2011 on electronic communication services and networks ('the Electronic Communication Law'), abrogating Law of 30 May 2005 on electronic communication services and networks ('the former Electronic Communication Law");

d Law of 30 May 2005 as amended by Law of 27 February 2011 on organisation and management of radio spectrum ('the Spectrum Law');

e Law of 30 May 2005 regarding the organisation of the ILR as amended by the Law of 26 July 2010;

f Law of 30 May 2005 on the specific provisions regarding the protection of individuals as to the processing of personal data in the electronic communication sector and amending Articles 88-2 and 88-4 of the Criminal Instruction Code as amended by the law of 27 July 2007 and the law of 24 July 2010 and more recently by the Law of 28 July 2011 ('the Electronic Data Protection Law');

g Law of 14 August 2000 on electronic commerce as amended;

h Law of 18 April 2001 on copyrights as amended ('the Copyright Law');

i Law of 2 August 2002 as amended (the latest time by a law of 28 July 2011) regarding the protection of individuals as to the processing of personal data ('the Data Protection Law');

j Luxembourg Constitution;

k Law of 11 August 1982 on privacy ('the Privacy Law');

l Articles L222-12 to L222-23 of the Consumer Code regarding distance contracts on financial services, abrogating the Law of 18 December 2006 on distance selling of financial services; and

m Articles L222-2 to L222-11 of the Consumer Code.

General laws are applicable for all aspects not specifically regulated by specific laws or regulations, in particular the provisions of the Luxembourg Criminal Code (e.g., in relation to pornography, discrimination, racism, violence, theft and piracy).

In addition, a large number of Grand-Ducal regulations and other regulations (particularly from the ILR) have been adopted in relation to the implementation of the various laws.

ii Ownership and market access restrictions

Luxembourg rules and regulations do not, in principle, impose ownership restrictions within the TMT sector, except for certain specific sectors. Regarding telecommunications services, the previous authorisation regime has even been replaced by a less stringent notification regime.

There are no ownership restrictions for being granted a concession to operate Luxembourg satellite systems or broadcast a Luxembourg programme via satellite or cable except that for the latter a broadcasting licence may only be granted to a legal entity incorporated under Luxembourg law.

To the extent that spectrum counts as a rare resource, its management and use is reserved for the Luxembourg state. Licences to use spectrum may, however, be granted to third parties subject to the conditions of national legislation, related regulations or international or European agreements and treaties.

There is no specific national regulation on cross-ownership of media companies. However, general laws on competition still apply.

Luxembourg has made important steps towards providing the type of infrastructure demanded by ICT companies and has a longstanding official policy of welcoming pan-European companies in addition to creating the appropriate framework for the development of local businesses.

With regard to foreign investments, given the small size of the market, global media companies have so far shown little interest in acquiring interests in local media players or in building up a presence in Luxembourg. As Luxembourg is a market economy, however, foreign investments are not restricted and neither is foreign control over Luxembourg companies. The size of the Luxembourg stake in SES is linked to the state concession pursuant to which SES operates orbital slots allocated to Luxembourg. Any direct impact on local programming or national culture is very limited, if not non-existent.

iii Transfers of control and assignments

There is no specific Luxembourg authority regulating mergers or acquisition in the TMT sector. The ILR's competences are to guarantee competitiveness on the Luxembourg TMT market and thus it will monitor acquisitions and mergers in the sector so as to evaluate their position on the market ex post.

The Law of 17 May 2004 on competition, which prohibits restrictive agreements and abuses of dominant position, created the Investigation Division for Competition Affairs and appointed it to be in charge of the investigation of cases, while the Council for Competition Matters ('the CCM') is the decision-making body. Decisions by the ILR in relation to regulation of competition must be taken in agreement with the CCM. None of the relevant authorities has *ex ante* powers nor may they prevent mergers or acquisitions.

III TELECOMMUNICATIONS AND INTERNET ACCESS

i Internet and Internet protocol regulation

Internet services were regulated, prior to the Electronic Communication Law, by the law of 21 March 1997 relating to telecommunication services and the operating of telecommunications networks ('the Law of 1997').

Even though the Law of 1997 did not provide for specific Internet or Internet protocol regulations, but covered telecommunications services and networks more generally, in the absence of the express exclusion of Internet services and in the light of the definition of 'telecommunication services and networks',[5] Internet services were considered to be governed by this law.

The former Electronic Communication Law introduced certain changes and widened the scope of existing regulation to a larger range of communication technologies and introduced the definitions of 'electronic communication network' and 'electronic communication services' as opposed to 'telecommunication services'. The new terminology reflected the increased scope of the services and networks that are regulated. Express reference to Internet services is made.

Neither the Law of 1997 nor the current Electronic Communication Law provide for any specific rules applicable to Internet services or IP-based services as opposed to traditional telephony services, except that due to the specific nature of the telephony services, certain additional rules apply to the provision of telecommunication services that are offered to the public. The Electronic Communication Law provides for certain specific obligations applying to publicly available telephony services and public telephone networks.[6] These specific regulations are due to ensure a universal service to the resident population and apply only to traditional telephony.

As previously noted, the ILR is the competent regulator in charge of the supervision of the services rendered both in relation to Internet services and traditional telephony services. With the adoption of the former Electronic Communication Law, the operation or provision of electronic communication services or networks is no longer subject to licence but only to notification to the ILR.[7] No distinction is made between traditional telephony and Internet or IP-based services.

The Electronic Communication Law provides for a global legal framework applicable to all electronic telecommunication services and networks, with certain specifics depending on the type of service or network, ensuring, however, that the whole sector is consistently governed by the same legislative and regulatory national framework.

5 The abrogated Law of 1997 provided for a definition of 'telecommunication services' and 'telecommunication networks', with 'telecommunication' having been defined as 'each transmission, issue or reception of signals, images, sounds or data of any nature, by wire, radio, by optical or by electromagnetic means'.

6 Articles 11 and 12 of the Electronic Communication Law.

7 Article 5.

ii Universal service

The development of communication infrastructure in Luxembourg is among the top priorities of the governmental programmes in the field of the information and communication technology. The government has been actively developing the broadband infrastructure service since 2004.

Already in 2005, 100 per cent of the country was covered by a broadband infrastructure. In 2009, 87.2 per cent of households were connected to the Internet, mobile broadband penetration ranged up to 67 per cent.[8]

In 2011 around 90 per cent of households are connected to the Internet, with 78 per cent having a broadband connection.[9] Today, Luxembourg counts itself among the world leaders in terms of broadband coverage and penetration, although the government feels that efforts still need to be made on the quality of the broadband and speed level. Luxembourg has been pursuing the installation of the fibre-optic infrastructure since 1997, and as of today benefits from an extremely developed FTTH architecture.

The ultimate aim of the government is to provide households and businesses with access to ultra-high-speed broadband by 2015 and reach a capacity of 1GB/s in 2020 andt o become the first European country to have total ultra-high speed broadband coverage. Ultra-high-speed broadband is subject to the installation of the optical fibre, which is in progress. Luxconnect[10] is joining the efforts to cover the whole country with optical fibre.

EPT has obtained the approval of the competent authorities to launch offers for ultra-high speed Internet access under the name of 'Lux Fibre' and expects to launch the first offers for ultra-high-speed broadband in September 2011.

In the meantime, before the optical fibre has been deployed throughout the country, efforts are also being made on the existing networks so as to increase the broadband speed (see also Section V.iv, *infra*).

iii Restrictions on the provision of service

Pursuant to the Electronic Data Protection Law and the Data Protection Law, ISPs and operators of electronic communication services and networks are compelled to ensure the confidentiality of the communications exchanged by way of electronic communication means. The general rule is that other than the user, no person is allowed to listen, intercept or store communications and data relating to the traffic and location without the agreement of the user.

This prohibition does not apply to (1) communications relating to emergency calls, (2) commercial transactions to the extent that they constitute proof of the transactions, (3) authorities investigating and acting in relation to a flagrante delicto or within the scope of criminal offences in order to ensure national and public security, and (4) cookies. In relation to data resulting from commercial transactions and cookies,

8 ITC.

9 http://ec.europa.eu/information_society/digital-agenda/scoreboard/countries/lu/index_en.htm

10 Luxconnect was created at the initiative of the government.

the user or parties to the transaction must be informed that their data may be processed, the conditions (in particular the duration) and aim of the storage, and the possibility of the user opposing such data processing. Moreover, in relation to cookies, a specific consent to the storage (opt-in) is required as a result of the recent change of law. For the purpose of criminal law enforcement, specific conditions must be met to be able to have recourse to intercepted communications data. In addition, for the purpose of research, monitoring and pursuit of criminal offences and with the sole aim to provide relevant information to the judicial authorities, each ISP or operator must store traffic information and locational data for a period of six months. The law of 24 July 2010 has amended the scope of criminal offences by limiting the possibility of only consulting the data in relation to criminal offences resulting in penal sanctions of more than one year's imprisonment. A Grand-Ducal Regulation determines the category of traffic data that may be useful for the research, observation and prosecution of criminal offences, as well as the manner pursuant to which such information is made available to the authorities.[11]

Intellectual property theft and piracy are regulated by:

a the Copyright Law;
b the Luxembourg Criminal Code;[12]
c the Privacy Law; and
d the Electronic Data Protection Law and the Data Protection Law.

There is no public authority in Luxembourg that exercises a global supervisory or monitoring power on the content and traffic data of network operators, ISPs and users as this would violate the essential privacy principles.

Similarly, and for the same reasons, network operators may not control the content, application and services accessed by their network users.

The practice of deep packet inspection is prohibited in Luxembourg as it infringes confidentiality rules and constitutes an invasion of privacy, in complete violation of the aforementioned legislation. The same analysis would apply to filtering of data processed by means of electronic communication means.

However, network operators are obliged, in order to comply with the secrecy or confidentiality requirements, and avoid invasion of privacy, piracy or intellectual property theft, to take appropriate technical and organisation measures and have systems and procedures (firewalls, encryption, secured and restricted access, etc) in place that render the network and the data processing via their network secure.

iv Security

The Electronic Communication Law, the Electronic Communication Data Protection Law and the Data Protection Law provide for specific applicable measures to ensure national interests.

In certain circumstances, where national security (including public health and public order) is endangered, the government may requisition the entire electronic

11 Grand-Ducal Regulation of 24 July 2010.

12 Articles 309, 460, 488, 505, 509-1 and following of the Luxembourg Criminal Code.

communication network established in Luxembourg, as well as the connected equipment, or prohibit the provision of some or all electronic communication services.

The government may also, in order to maintain access to the emergency services, dictate special conditions for the use of electronic communication services and networks. Although storage of personal data is generally prohibited, the Electronic Communication Law provides an exception in relation to storage of traffic data relating to emergency calls or inspection of false alerts or attacks or abusive calls.

Privacy and consumer protection

Privacy and consumer protection in the electronic communication domain is guaranteed by various laws. The adoption of the Consumer Code by the law of 8 April 2011 should be noted. The Media Law sets guidelines and restrictions in relation to commercial advertisements. Specific provisions for the protections of children are also provided for.

Information about consumers must be treated confidentially and may not be rendered accessible to third parties and the processing of consumer data is allowed only if it falls within the criteria defined by the relevant laws. Processing of data is subject to the principle of legitimacy of processing. Each data processor located or using physical means located in Luxembourg to process data is subject to a notification or prior authorisation procedure addressed to the CNPD depending on the nature of the data processed and the purpose for doing so.

Sharing of consumers' personal data is strictly prohibited by law, unless the consumers give their express consent. Where locational data is being stored and processed by an operator, a user must be informed thereof and must be able to oppose any such action (the process of which must be clearly set out and communicated to the user).

Luxembourg law prohibits the addressing of advertisements or other unrequested communication to persons by electronic means, unless the concerned person can simply request such actions to be stopped.

Protection for children

There is no specific legislation or regulation that ensures the protection of children online. However, the government is issuing a number of recommendations and is supporting various projects to render children and their parents aware of the risk related to the use of the Internet. The 'Bee Secure' project has been drawn up in the context of the EU Safer Internet programme, which gives directions for the use of the Internet to children, parents and educational staff.

Generally, the policy is to familiarise children with new technology rather than filtering or blocking access to various types of information (which might, however, be an alternative); the intention is to teach children how to use the Internet safely and to always be aware of the risks related to such use.

Children's rights are protected by provisions of the Luxembourg Criminal Code. The 'LISA Stopline' is a project that provides a structure to report illegal information transmitted over the Internet anonymously. The Media Law does include specific child-protection provisions.

Cybersecurity

Individuals and companies are encouraged to take appropriate technical measures to defend themselves against cyber attacks. Similarly, as for children, the government has created 'CASES Luxembourg', which is a project accessible by all Internet users whose purpose is to make the public aware of potential cyber attacks that are inherent to Internet use and advises on how to identify potential cyber attacks. In this context it is worth mentioning the certification authority 'Luxtrust', which manages electronic certificates with the highest security level.

Network operators and ISPs are required by applicable law to comply with stringent security measures.

As a response to increasing cyber attacks, the Luxembourg Criminal Code has been amended to include offences of the electronic communication sector. The government is pursuing efforts to prevent cybercrime and has created two new structures: the Luxembourgish Cybersecurity Board, whose mission is to work on a strategic plan against attacks via the Internet, and the governmental Computer Emergency Response Team (CERT), which is responsible for any incident of cybercrime occurring in the public information systems. The Luxembourg government has also signed a letter of intent with Belgium and the Netherlands to cooperate in the prevention and fight against cyber crime.

v Emergency response networks

Luxembourg first responders and other emergency responders (such as police, customs and civil protection) benefit from a dedicated network. This network is still analogue and ensures total territorial coverage; however, a group of experts composed by representatives of the main concerned administrations, the ILR, government and Ministry of Finance is working towards the switch to a higher-performance digital network for these services in the short term. At EU level, harmonisation of the digital frequency relating to these services has been achieved permitting interoperability.

IV SPECTRUM POLICY

i Development

The increasing development of wireless communication, media and information technology also affects spectrum policy in Luxembourg.

The need for radio spectrum has increased significantly over the past few years and Luxembourg actively participates in the elaboration of a pan-European spectrum policy and favours a more flexible and efficient use of spectrum.

Luxembourg has, in its contribution paper to the European Commission of 15 April 2010 ('the April 2010 Contribution'), indicated that it is in favour of a more flexible use of spectrum, emphasising however that it is crucial that the more flexible use will not negatively impair the current quality of services or entail harmful interferences. Luxembourg has expressed its concern that a more flexible use would need to take into consideration the characteristics of more specific and sensitive technology, which would be more prone to harmful interference than others.

During the negotiations that led to the adoption of the European Regulatory Framework, Luxembourg explained in the Law of 27 February 2011 that one of its top priorities was to maintain national competence in relation to the management of the spectrum and a full subsidiarity in this area.

ii Flexible spectrum use

As a result of the the Law of 27 February 2011 amending the Spectrum Law, allocated licences are no longer personal.[13] This means that it is now possible to sell, transfer or sublease allocated spectrum, thus enhancing the flexibility of spectrum use. The Spectrum Law also provides for the possibility of spectrum sharing.

The mobile use of spectrum dedicated to fixed use is possible as a matter of applicable law and regulations and is in line with the principle of technological neutrality. However, the technical implementation of this type of solution is not satisfactory at present.

iii Broadband and next-generation mobile spectrum use

Luxembourg aims towards the objective of broadband for all by 2013. As described in Section III, *supra*, the government is actively developing the terrestrial broadband infrastructure. In order to achieve this aim, a mixture of technologies must be put in place to take into account both topographic and demographic facts; so in addition to the terrestrial infrastructure, wireless terrestrial systems and satellites will be used.

In Luxembourg, the increasing need for spectrum for use by the offer of increasing broadband services is partly solved by opening additional frequencies or release of spectrum for the use of broadband and next generation mobile services.

Luxembourg completed the switch-off of analogue television broadcasting on 31 August 2006, replaced by DTTV. The released spectrum (referred to generally as 'the Digital Dividend') is proposed to be used for next-generation mobile services.

Luxembourg also contemplates to open the 800MHz frequency (recommended by the EU Commission) in addition to that of the 900MHz frequency for the use of wireless broadband services subject, however, to reservation as to the risk of harmful interference, the need for ancillary cable network and bilateral coordination. The current Luxembourg frequencies plan allows this frequency to be used by wireless broadband services.

The Luxembourg frequency plan allows the 800MHz frequency, gained from the switchover to digital television, to be used by wireless broadband services (in accordance with the decision of the EU Commission).[14]

Moreover, after a decision of the EU Commission in 2008 on the harmonisation of the use of the 2.6GHz frequency[15] and the ECC recommendation, the ILR has launched a public consultation in December 2010 on the possibility of opening up this frequency. Based on the results, it has now been decided to launch a public consultation to detemine which procedure for allocation of spectrum should be adopted.

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13 Article 2 of the Law of 27 February 2011 amending Law of 30 May 2005 on organisation of the management of electronic waves.

14 Grand-Ducal Regulation of 25 January 2011.

15 www.mediacom.public.lu/consultation.

Luxembourg has advised in its April 2010 Contribution, that in its view it is too early to decide on the necessity of an additional Digital Dividend. It believes that the current market would need to provide evidence of its interest at present for the current available Digital Dividend.

Generally, as regards the development of 4G or LTE activity, the ILR is observing the evolution of this market and may decide to launch a consultation on this subject. A short-term licence was granted in the 2.6GHz frequency to one operator for a period of six months in 2010 in order to test the LTE technology.

iv Spectrum auctions and fees

Given the small size of the market and the limited number of operators, the experience of the authorities shows that allocations of spectrum through auctions or 'beauty contests' does not produce satisfactory results. Hence, although theoretically possible as a matter of law, auctions are not currently practised.

The Spectrum Law provides for various procedures for the allocation of spectrum licences such as competitive selection, comparative selection or by a public bidding procedure for the best offeror. The competent minister will determine on the applicable procedure on a case-by-case basis after a having made a public consultation and publish this decision in the Luxembourg Official Gazette and in the EU Official Journal at least one month prior to the launch of the procedure.[16]

The fees payable to the Luxembourg state (as owner of the national spectrum) for the allocated spectrum are determined by Grand-Ducal Regulation. These fees comprise administrative management taxes as well as user rights fees. The law of 27 February 2011 amending the Spectrum Law has modified the allocation and recovery of fees payable in relation to spectrum licences in favour of the ILR. Public services and authorities are not subject to the payment duty to the extent that spectrum is used for the provision of services within the scope of national defence, public security or emergency services.

V MEDIA[17]

The Media Law has been amended by the law of 17 December 2010 and 8 April 2011. The amendments are deemed to adapt themselves to the newest sorts of audiovisual and audio media, and more importance is attached to content regulation. Rules are set to enhance the protection for children and non-discriminatory content, and the form and content of commercial advertising are more regulated.

i Digital switchover

Luxembourg took the decision not to develop a switchover plan with specific target dates for terrestrial broadcasting because the government favoured a market-driven approach.

16 Article 6 of the Spectrum Law.

17 Information in this section has been largely drawn from the government's 'Service des Médias et des Communications' activity report for 2009.

Luxembourg's penetration rate of cable as a means of receiving television programmes is among the highest in Europe: some 80 per cent of households subscribe to cable networks. The digital switchover from cable is in progress. EPT launched an IPTV service entitled 'La Télé des P&T' in March 2008. Initially offered in nine locations, the service now covers a large part of the country. The basic offer includes more than 70 channels. The complete switch-off of the analogue channels in the cable network will not take place before 2011. The government has asked the cable operators who have accepted to plan a transition period and to continue to offer between 20 and 30 of the most important analogue channels until the end of 2011.

Since 2008, a growing number of households have been able to receive television through ADSL and to choose between two competing offers to receive a complete range of TV programmes.

The switchover to DTTV was completed in Luxembourg in 2006, when CLT-UFA moved the main channels used for terrestrial broadcasting to the digital spectrum. Luxembourg holds sufficient spectrum for programme distributors other than CLT-UFA, as well as for new applications such as mobile television or HDTV.

The evolution of digital terrestrial radio transmission in Europe is being followed by the government and the ILR. In Luxembourg, the Broadcasting Centre Europe has set up different DRM short and middle-wave transmitters allowing international coverage. CLT-UFA now broadcasts its German-speaking RTL programme digitally.

ii Internet-delivered video content

It is difficult to measure the importance of Internet video distribution in Luxembourg given the absence of surveys or statistics on this phenomenon. The only indicator is the fact that, as in most other western countries, people watch less traditional TV, which seems to indicate that Internet video is becoming more popular, particularly with the younger public. Given the general availability of cable and satellite TV, the impact so far has been minimal. Also, based on the high connection rates of Luxembourg residents to the Internet, it should be expected that this move will not pose dramatic problems for consumers.

iii Mobile services

The Digital Dividend debate and the growing demand from mobile network operators for additional spectrum freed up by traditional broadcasters has been less pressing than in other jurisdictions, given the continued availability of spectrum in Luxembourg.

In order to accelerate the roll-out of high-speed mobile networks in Luxembourg, the government decided in 2009 to use the Digital Dividend and to make available the freed-up spectrum (780–862MHz) to operators of mobile electronic communications. In addition, to encourage the development of innovative new technology, while at the same time respecting the principle of technological neutrality, the national frequency plan has been amended to open the frequency of 900MHz to technologies other than GSM.[18]

18 Source : Government paper on a national strategy for ultra-high debit, April 2010, p. 11.

VI THE YEAR IN REVIEW

i Key legislation

The main legislative landmark between December 2010 and September 2011 has been the implemention of the Regulatory Framework into Luxembourg Law by the various means mentioned in Section II.iii, *supra.* A new frequency plan was also adopted in January 2011 and a mediation procedure has been put in place.

A public consultation regarding the amendment of the current frequency plan (to *inter alia* include the 2.6GHz frequency) will begin in November or December 2011. Another public consultation as regards the allocation of additional spectrum in the 2.6GHz frequency will be launched following the amendment of the frequency plan.

Key policies include the April 2010 government paper on a national strategy for high-speed networks, which defines the priorities and means of the government in enhancing high-speed Internet for households and businesses in Luxembourg. Generally, government policy over the past few years have been aimed at promoting the ITC sector and related infrastructure as one of the new pillars of the post-crisis Luxembourg economy. The government is investing heavily in the security of the networks and infrastrastructure as one of the main pillars of the development of the electronic communication systems. The creation of various structures at national level shows the government's priority of preventing and combating cyber crime and other attacks on electronic communication services and infrastructure.

In the field of spectrum policy, the main developments of the past year are the Digital Dividend decisions. Many other decisions and policies taken in this field have been in line with European policy. Importantly for Luxembourg, in relation to spectrum policy, is the forthcoming ITU World Radio Conference in Geneva in January 2012, where the pressure from mobile operators to obtain additional spectrum will need to be reconciled with Luxembourg's clear interests in safeguarding the interests of its satellite operators.

ii Key mergers and takeover activity

In October 2009, Voxmobile, the third mobile telephone operator in Luxembourg, was rebranded as Orange. Voxmobile was acquired by Mobistar, a subsidiary of Orange, in 2007.

A division of Rovi, a US and global player in digital entertainment technology solutions, has recently set up offices in Luxembourg through its subsidiary Rovi International Solutions Sàrl, which trades as Infomedia, a supplier of TV listings data serving the whole of Europe.

In July 2011, through the merger between LIX and Lu-CIX (two Internet exchange points), a straight highway allowing the fastest traffic without barriers has been achieved.

VII CONCLUSIONS AND OUTLOOK

The expectation of the government and of economic commentators is that Luxembourg, building on an attractive legislation and infrastructure and on the presence of global leaders such as SES, should increasingly be able to attract new international ICT business, and to build a new niche in this field along the same lines it managed to build local industry and its financial sector, even though this may happen at a slower pace than has happened in the past.