



REPORT 1

Supply of services in monitoring regulatory and market
developments for electronic communications and information society
services in Enlargement Countries

2011-2013

November 2011

Executive Summary

This report is the first in a series of four study reports that will be prepared over a three-year project of monitoring the nine countries that are seen as potential members of the European Union, either in the short or medium term: Croatia, Iceland, the former Yugoslav Republic of Macedonia (FYROM), Turkey, Albania, Bosnia & Herzegovina, Montenegro, Serbia and Kosovo¹. The objective of the project is to report on developments in the electronic communications and information society sectors in the enlargement countries as well as to assess the progress of each country in adopting the EU regulatory framework and aligning national ICT policies with the goals and priorities of the Digital Agenda for Europe.

The unprecedented economic crisis of 2008 has affected the EU-27 and all enlargement countries. Iceland, Croatia, Montenegro, Turkey and Serbia, which are more integrated in the global market, were heavily affected and Iceland was especially hard hit due to the collapse of the financial sector. Albania and the FYROM were least affected by the crisis, as their economies are less dependent on exports. Complete financial data for 2010 is not yet available but there have been clear signs of a recovery, particularly in Turkey, that has led to resurgence in telecommunications revenues.

In contrast to its decline in 2009, the electronic communications market in the nine enlargement countries grew in 2010 by 2.4% to a total value of €15.8bn. A similar growth rate of 2.2% was demonstrated by the mobile communications segment representing over half of the telecommunications market. Revenue in the next largest segment of fixed telephony remained more or less flat, whereas internet and cable TV services were the two fastest growing segments in 2010, achieving 13.3% and 23.8% growth, respectively. Growth in revenue from electronic communications services, however, was not carried through to an increase in investment in the sector. Overall investment in electronic communications in the enlargement countries was €3.07bn in 2010. This represents a fall of 17.6% from 2009, based on the available data.

The total number of fixed telephone lines in the enlargement countries continues to fall, as a result of continued fixed-to-mobile substitution, and stood at 22.95 million at the end of 2010 – a drop of more than a million compared with a year earlier. This corresponds to the average penetration rate for the nine countries of 24.1%, ranging from nearly 50% penetration in Iceland to just 5% in Kosovo.

Despite the uptake of VoIP services from alternative operators, fixed voice telephony markets continue to be dominated by incumbent operators. Only in Iceland, Croatia and the FYROM the proportion of subscribers using alternative operators for fixed voice telephony services is comparable to the EU-27 level, ranging from 25-26% in the FYROM and Iceland to 33.7% in Croatia.

The total number of mobile voice subscriptions across the nine countries remained fairly constant at 89.6 million that corresponds to the average penetration rate of 94%. Six countries – Croatia, Iceland, Montenegro, the FYROM, Albania and Serbia – reported mobile penetration rates above the EU-27 average of 124%. The concentration level of the mobile markets has fallen in most of the enlargement countries and the market shares of the third-placed operators have risen slowly but surely in 2010. Number portability in mobile networks has been implemented in six countries – Croatia, Iceland, the FYROM, Turkey, Albania and Serbia – and is soon expected to be introduced in Bosnia and Herzegovina.

The fixed broadband market is growing in all of the enlargement countries and total fixed broadband connections reached 9.67 million at the end of 2010. This corresponds to the average fixed broadband penetration rate of 10.6%. The highest penetration rate of 34.2% was observed in Iceland, above the EU-27 average of 26.6%. The highest annual growth in the number of fixed broadband lines in 2010 was reported in Serbia (47%), Montenegro (37%), Bosnia and Herzegovina (34%) and Kosovo (23%).

Incumbents continue to dominate fixed broadband markets: with the exception of Kosovo, where the incumbent's market share is below 30%, in all other countries the incumbents control over 40% of fixed broadband connections – and more than 85% in Turkey and Montenegro. By far the majority of fixed broadband connections in the enlargement countries are based on xDSL. Only in the FYROM, Bosnia and

¹ Under the United Nations Security Council Resolution 1244 of June 10, 1999 (UNSCR 1244), hereafter Kosovo

Herzegovina, Serbia and Kosovo, the growth in fixed broadband has been driven by alternative infrastructures, such as cable TV and fixed wireless access networks.

In terms of the distribution of retail fixed broadband lines by download speeds, users in Iceland and Turkey have by far the fastest connections, with the majority buying connections of at least 8 Mbps, whereas in Kosovo, Montenegro and Bosnia and Herzegovina, more than two-thirds of users have access only to speeds below 2 Mbps.

The mobile broadband market is one of the most dynamic segments and the penetration rate of dedicated 3G mobile datacards / wireless modems has doubled in less than a year in most of the enlargement countries. Iceland and Croatia have reported mobile broadband penetration levels of 10.8% and 7.6%, respectively, above the EU-27 average of 7.2%.

All countries, except Kosovo, have awarded spectrum licences for 3G mobile services in the 2.1 GHz bands, and five countries – Croatia, Iceland, Montenegro, the FYROM and Bosnia and Herzegovina – now allow 3G services in the 900 MHz and the 1800 MHz bands. None of monitored countries has reported any concrete plans to make further spectrum available for wireless broadband either in the 800 MHz or in the 2.6 GHz bands. Only Croatia completed analogue terrestrial broadcasting switch-off in the 800 MHz in October 2010, ahead of many of the EU member states, but the open issue of cross-border interference prevents any reallocation of the released digital dividend spectrum to wireless broadband services.

Only five of the monitored countries – Croatia, Iceland, the FYROM, Turkey and Serbia – collect on regular basis national statistics on the key information society indicators based on Eurostat methodology. The collected data in particular allows assessing the performance of the five enlargement countries in terms of adoption of the main ICT services addressed by the Digital Agenda targets.

For many of the available statistical indicators, Croatia, the FYROM, Turkey and Serbia are below the EU-27 average, whereas Iceland can be compared with Denmark and Sweden and is generally far above the EU-27. For example, the percentage of individuals regularly using internet is ranging from 33% in Turkey to 41% in Serbia, 50% in the FYROM and 51% in Croatia, whereas the respective indicator in Iceland is 92% and significantly above the EU-27 average of 65%. Internet services for buying online are used by 4% of individuals in the FYROM, 5% in Turkey, 11% in Serbia, 14% in Croatia and 45% in Iceland - which is again above the EU-27 average of 40%.

The degree of alignment of national electronic communications and information society legislation with the EU directives also varies among the monitored countries. The highest level of harmonisation of national legislation with the EU *acquis* comparable to the EU member states has been achieved by Iceland that adopted most of the relevant EU legislation on the internal market following the implementation of the agreement on the European Economic Area (EEA) in 1994.

Electronic communications legislation based on the EU 2003 regulatory framework has been adopted in Albania, Croatia, Iceland, Montenegro, the FYROM, Serbia and Turkey. However, only Croatia has fully aligned its legislation with the new provisions of the EU 2009 framework. Amendments transposing the EU 2009 framework have been drafted in Iceland and Albania. Kosovo is preparing a new law that would transpose both the EU 2003 and 2009 regulatory frameworks. No progress on transposition of the EU 2003 and 2009 regulatory frameworks was reported by Bosnia and Herzegovina where legislative processes were further slowed down by the delays in the establishment of the state level legislative and executive authorities after the elections of October 2010.

The EU legal framework for information society services has been the focus of recent legislative developments in Kosovo and Albania. Kosovo has adopted new laws on data protection and cyber crime and is drafting amendments aligning its law on the information society services with the Electronic Signatures Directive and the Electronic Commerce Directive. Albania has been working on data retention and alignment of the law on electronic commerce with the Electronic Commerce Directive. Turkey still needs to adopt legislation transposing the Electronic Commerce Directive. Furthermore, the Turkish law regulating internet content raises concerns about restrictions to freedom of expression and citizens' right to access information. Bosnia & Herzegovina has no legislation on cyber crime, electronic documents or e-government at state level.

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I. INTRODUCTION

The project, called "Monitoring regulatory and market developments for electronic communications and information society services in Enlargement countries", is a three year initiative funded by the European Commission and managed by Cullen International. The countries monitored in this project – Albania, Bosnia & Herzegovina, Croatia, Iceland, Montenegro, Serbia, Kosovo (under United Nations Security Council Resolution (UNSCR) 1244 of June 10, 1999), the former Yugoslav Republic of Macedonia and Turkey – have been given the perspective of becoming EU members once they fulfil the necessary conditions, and are at various stages on their road towards the EU.

Five of them, namely Croatia, Iceland, Montenegro, the former Yugoslav Republic of Macedonia and Turkey, have been granted the status of EU candidate countries. Accession negotiations are underway with Croatia and Turkey and opened for Iceland in July 2010, while no date has been specified yet for the start of membership talks with Montenegro and the former Yugoslav Republic of Macedonia.

Three other countries in the group have signed a Stabilisation and Association Agreement with the EU: Albania, Bosnia & Herzegovina and Serbia. An exceptional case is Kosovo under UNSCR 1244, following its unilateral declaration of independence from Serbia on February 17, 2008. The EU remains divided on the recognition of its independence and EU member states decide individually on their relations with Kosovo in accordance with national practice and international law. However, notwithstanding member states' differing positions on Kosovo's status, the EU has repeatedly confirmed that Kosovo shares the European perspective of the Western Balkans and is part of the Stabilisation and Association Process.

Compliance with the EU *acquis* is a key requirement for the accession countries that must be fulfilled prior to becoming member states. The Stabilisation and Association countries also have formal commitments to make progress towards compliance with the EU *acquis* and as a condition for achieving the status of an EU candidate country.

The main objective of the project is to assist the Commission and the authorities in the countries concerned in monitoring the progress made by each country towards compliance with the EU rules for electronic communications and information society services and convergence with the EU internal market. This is first of the four interim study reports that will be produced for this project every nine months in the period from 2011 to 2013.

II. PARTICIPATING COUNTRIES

The table below lists the participating countries in order in which they are presented in the study report: the five candidate countries followed by the potential candidate countries. It also introduces two letter codes that will be used to identify specific entities on graphs and charts. The codes are based on the international two letter ISO codes that are also used for Internet domain names assigned by Internet Assigned Numbers Authority (IANA).

Country	Code	Comments
Croatia	HR	-
Iceland	IS	-
Montenegro	ME	-
The former Yugoslav Republic of Macedonia (FYROM)	MK	The constitutional name is the Republic of Macedonia, though it is not recognised under this name by some countries. The EU refers to it by the provisional reference under which it was admitted to the United Nations: "the Former Yugoslav Republic of Macedonia". This does not prejudice the outcome of the negotiations on the name of the country that are underway. The country code "MK" is used by ISO and some other organisations.
Turkey	TR	-
Albania	AL	-

Country	Code	Comments
Bosnia & Herzegovina	BA	<p>Bosnia & Herzegovina (BiH) comprises two parts:</p> <ul style="list-style-type: none"> • The Federation of Bosnia & Herzegovina • Republika Srpska <p>A separate federal district of Brčko belongs to both.</p> <p>Bosnia & Herzegovina is presented as a single geographic unit because its constituent parts have a common legislative and institutional framework for electronic communications and information society services, established at the entity level.</p> <p>The report treats separately the three incumbent operators that, while now operating nationally, were initially established in different parts of the entity:</p> <ul style="list-style-type: none"> • BH Telecom d.d Sarajevo (BA-bh) based in Sarajevo, the Federation of Bosnia & Herzegovina • Hrvatske Telekomunikacije d.o.o. Mostar (BA-ht) based in Mostar, the Federation of Bosnia & Herzegovina • Telekom Srpske a.d. Banja Luka (BA-ts) based in Banja Luka, Republika Srpska
Serbia	RS	-
Kosovo (under UNSCR 1244)	XK	<p>Kosovo is a territory under interim international administration. Under United Nations Security Council Resolution 1244, the administration of Kosovo has been carried out by the UN without the involvement of the government of Serbia.²</p> <p>On February 17, 2008 the Kosovo Assembly, elected in December 2007, adopted a resolution declaring Kosovo to be independent. On February 18, 2008 the EU Council took note of that resolution stating that member states would decide, in accordance with their national practices and international law, on their relations with Kosovo.³</p> <p>Kosovo does not have an officially assigned ISO 3166 code. However, the structure allows for so-called user assigned codes. The code "XK" is used by Eurostat and some other organisations.⁴</p>

Table A.1 - Entities covered in the report



² <http://www.un.org/Docs/scres/1999/sc99.htm>

³ http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressdata/en/gena/98818.pdf

⁴ See, for example, Eurostat Pocketbook on candidate and potential candidate countries, 2008 edition, March 18, 2008. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-PF-08-001/EN/KS-PF-08-001-EN.PDF

III. METHODOLOGY

In the data collection process, the project relies on the support of the national regulatory authorities for electronic communications and the government bodies responsible for electronic communications and information society policies. The principal sources of the information are listed in the table below. Some additional information will be taken from Eurostat and national statistics offices.

Country	Electronic communications	Information society services
HR	Croatian Post and Electronic Communications Agency (HAKOM) Ministry of the Sea, Transport and Infrastructure	Central State Administrative Office for e-Croatia
IS	Post and Telecom Administration (PTA)	Prime Minister's Office Department of Information Society
ME	Agency for Electronic Communications and Postal Services (EKIP)	Ministry for Information Society and Telecommunications
MK	Agency for Electronic Communications (AEC)	Agency for Electronic Communications (AEC) Ministry of Information Society and Administration
TR	Information and Communication Technologies Authority (ICTA)	Ministry of Development
AL	Electronic and Postal Communications Authority (AKEP)	National Agency on Information Society (NAIS)
BA	Communications Regulatory Agency (RAK)	Ministry of Communications and Transport
RS	Republic Agency for Electronic Communications (RATEL)	Ministry for Culture, Media and Information Society Digital Agenda Administration
XK	Telecommunications Regulatory Authority (TRA)	Ministry of Economic Development

Table A.2 - Authorities supplying data for this project

The information collection process involves four sets of questionnaires distributed to the relevant ministries and authorities, three for electronic communications and one for information society services:

1. Electronic communications: Regulatory and organisational information. The questionnaire addresses institutional and organisational issues as well as regulatory processes, such as the completion of market analyses, regulatory obligations imposed on operators with SMP, competitive safeguards and the universal service and consumer protection framework.
2. Electronic communications: Price information. The questionnaire covers a range of retail and wholesale tariffs.
3. Electronic communications: Market information. The questionnaire covers general economic background and key indicators for the electronic communications market and its main sectors: fixed, mobile and broadband communications.
4. Information society services. The questionnaire covers regulatory aspects of information society services and a limited set of statistical indicators.

The information provided by the regulatory authorities has been reviewed and validated by Cullen International experts

IV. INTERIM STUDY REPORT STRUCTURE

The structure of the nine-monthly interim study reports comprises four principal chapters:

- **Summary report:** an overview of the most important legislative, regulatory and market developments over each nine-months reporting period. It presents key findings, highlights the major market trends and provides a summary assessment of the market data.
- **Country profiles:** an overview of policy making and regulatory authorities for electronic communications and information society services in the monitored countries, the key legal and policy documents, regulatory decisions and market structure.
- **Cross-country comparative data:** Presented as a separate Annex I to the report, this chapter compiles the indicators for electronic communications and information society services in the form of cross-country comparative tables and figures.
- **Electronic communications and information society legislation:** Presented as a separate Annex II to the report, this chapter lists the relevant national legislation on electronic communications and information society topics, with the title of the law or ordinance in the original language and in English translation and a reference to the official gazette number of the original version and later amendments.

V. SUMMARY REPORT

A. General economic background

The economic recession of 2008-2009 was reflected in a shrinking of GDP for several enlargement countries in 2009, notably the biggest economies of Turkey and Croatia, and a collapse in GDP growth rates not seen since 2001.

In 2009, the gross domestic product (GDP) decreased by 4.2% in the EU-27. The impact of crisis on the enlargement countries varied depending on each country's economic structure. Croatia, Iceland, Serbia and Turkey, which are more integrated in the global market, were heavily affected and Iceland was especially hard hit due to the collapse of the financial sector. In 2009, GDP fell by 6.8% in Iceland, 5.8% in Croatia, 4.7% in Turkey and 3% in Serbia. Montenegro, which was also severely hit, due to its dependence on external financing, saw its GDP contract by 5.7% in 2009. In Bosnia and Herzegovina, GDP decreased by 2.9% in 2009. Albania and the FYROM were least affected by the crisis, as they are less dependent on exports and their domestic markets held up well. In 2009, GDP decreased slightly, by 0.8%, in FYROM. Albania stood out with a growth rate of 3.3% in 2009.

Complete financial data for 2010 is not yet available but there have been clear signs of a recovery, particularly in Turkey, that has led to resurgence in telecoms revenues.

The economic crisis led to substantial fluctuations in exchange rates, which have continued to be unpredictable in 2010 and 2011. Depreciation of national currencies against the euro (measured by comparing the average exchange rate for 2010 with the average for 2009) was recorded in Serbia (RSD by 10%) and Albania (ALL by 4%). However, Turkey and Iceland both experienced significant appreciation of their currency against the euro in 2010 – a trend that was, nonetheless, reversed in Turkey in the first six months of 2011.

During the economic crisis some governments sought to increase taxes on the telecoms industry to help meet shortfalls in overall government budgets. However, the temporary additional 10% tax on mobile communications services in Serbia was abolished from January 1, 2011 and the additional 6% tax on mobile communications services in Croatia will be abolished from January 1, 2012.

B. Electronic communications market overview

In contrast to its decline in 2009, the electronic communications market in the nine enlargement countries grew in 2010 to a total value of €15.8bn. This represents a year-on-year increase of 2.4%.

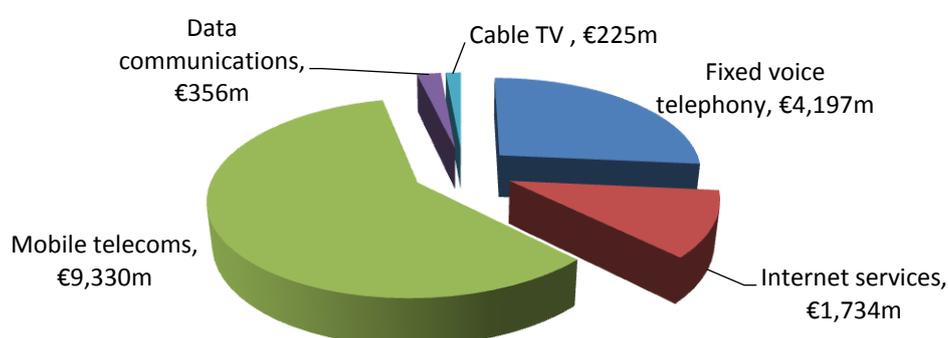


Figure B.1 - Electronic communications market revenue share by service category in 2010

Although more than half the market is represented by mobile services, internet and cable television services were the fastest growing service categories in 2010.

Revenue from fixed voice telephony meanwhile rose a little in some countries in 2010 and fell a little in others but, overall, revenue in this sector was more or less flat year-on-year.

More surprisingly, despite continued fixed-to-mobile substitution, revenues from the mobile telecoms sector in the enlargement countries were also more or less flat year-on-year, with the overall figure lifted by a slight rise in Croatia and Serbia.

Internet service revenues accounted for 13% of electronic communications revenues in Croatia and 11.5% in Turkey in 2010. Cable TV, meanwhile, accounted for 6.3% in Bosnia Herzegovina and 5.9% in Serbia (cable TV revenue figures were not available for Albania).

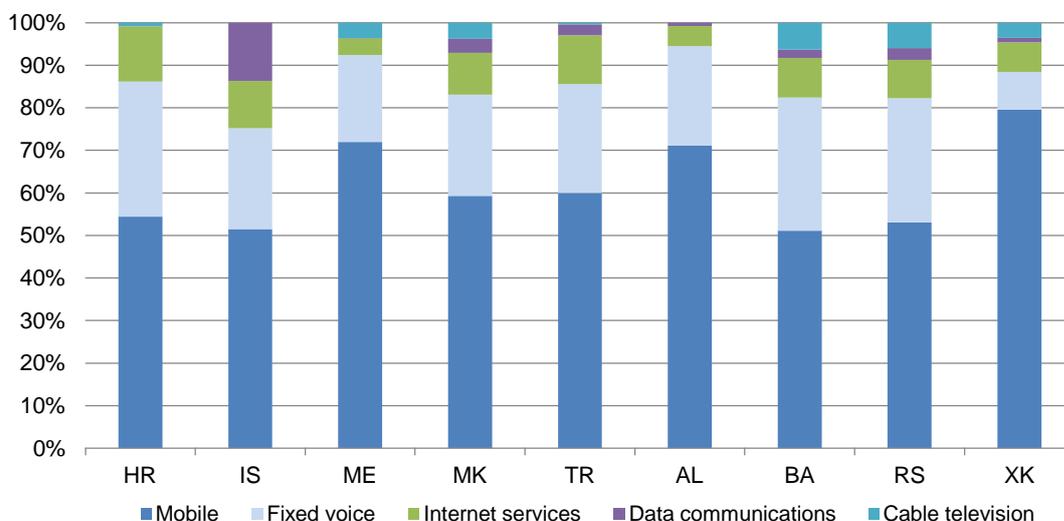


Figure B.2 - Electronic communications market, percentage of revenue by service category by country in 2010

Growth in revenue from electronic communications services was not carried through to an increase in investment in the sector. Overall investment in electronic communications in the enlargement countries was €3.07bn in 2010. This represents a fall of 17.6% from 2009, based on the available data. Data on the level of investment in internet services in Turkey, including in both broadband infrastructure and in internet services, is available only for 2010.

In Croatia there were significant declines in investment in internet services (-34.4%) and in mobile telephony (-30.5%). These were set against an 80% rise in investment in cable TV, albeit starting from a far lower base.

Serbia recorded an increase in investment in all areas, notably in internet services (82%) and in cable TV (59.4%), as well as in mobile telephony (€17.3m in absolute terms, equivalent to a 13.1% rise).

An apparent halving of investment in mobile telephony in Turkey from 2009 to 2010 is explained by a huge spike in investment in 2009 in 3G networks and services following the issuing of 3G licences in the country.

C. Fixed voice telephony market

The total number of fixed telephone lines in the enlargement countries continues to fall, as a result of continued fixed-to-mobile substitution, and stood at 22.95m at end-2010 – a drop of more than a million compared with a year earlier.

At end-2010 the average fixed-line penetration rate for the nine enlargement countries was 24.1%, although there are significant variations, ranging from nearly 50% penetration in Iceland to just 5% in Kosovo.

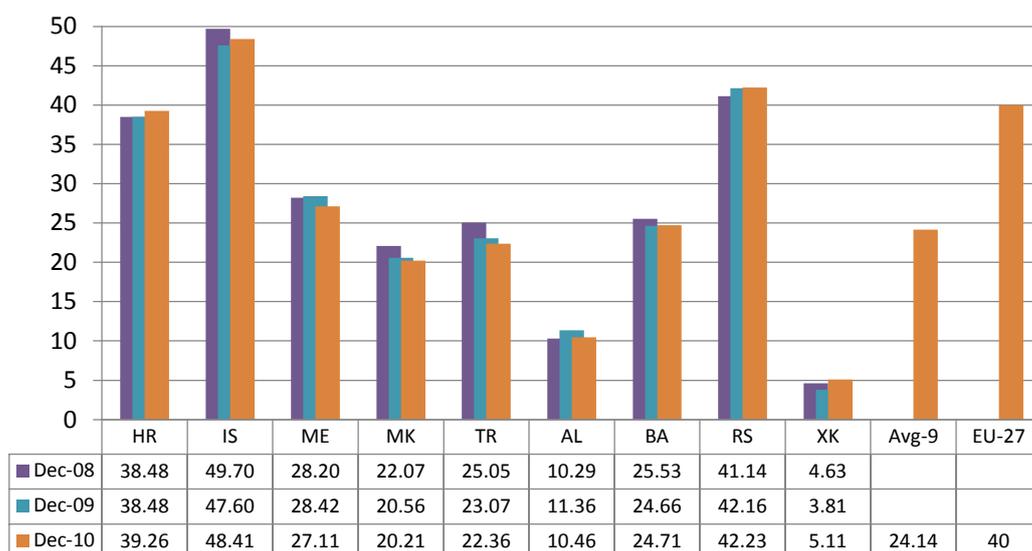


Figure C.1 - Fixed lines per 100 population

There has been significant uptake of VoIP in Croatia and FYROM in 2010, with the result that VoIP accounted for 14.2% and 20.1% of fixed lines in Croatia and FYROM respectively at end-2010.

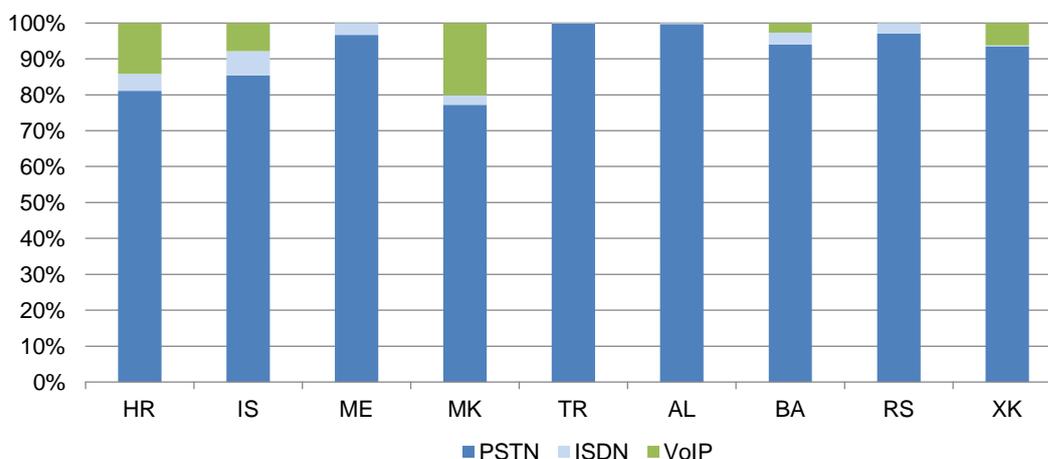


Figure C.2 - Fixed network lines by technology, Dec. 2010

Despite the uptake of VoIP services from alternative operators, the continued dominance of the incumbents is clear. In Iceland the incumbent's market share is, however, lower than in the eight enlargement countries in South Eastern Europe and is comparable to the EU average.

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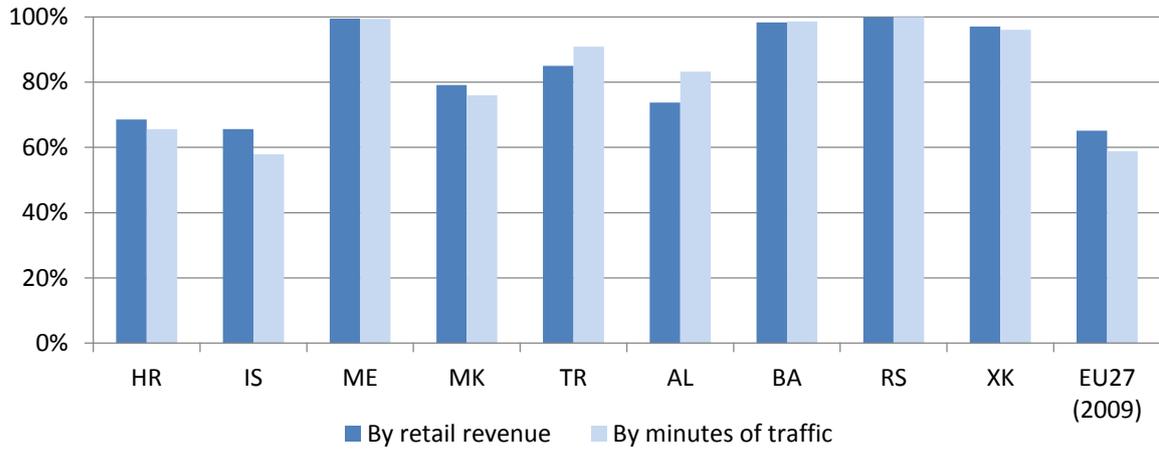


Figure C.3 - Incumbent operators' overall market shares in fixed voice telephony, Dec. 2010 (%)

In FYROM, significant growth in the number of fixed lines provided by alternative operators in 2010 has been fuelled in particular by the cable operators. Three major cable operators offer access to fixed telephony services and there is also a trend for smaller cable networks to rent their networks to other (bigger) operators that have been notified as providers of fixed telephony services.

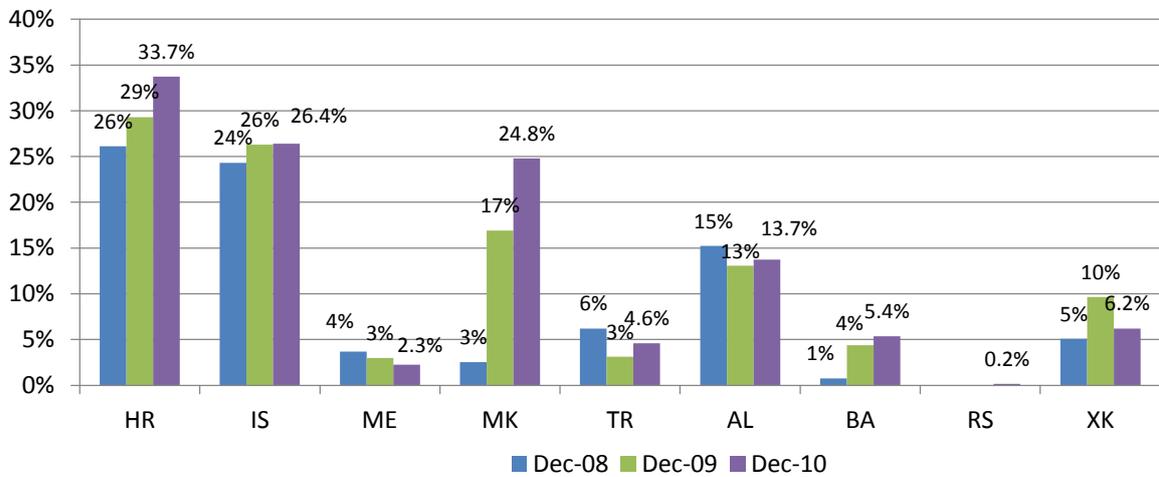


Figure C.4 - Subscribers using alternative providers for fixed voice telephony, as percentage of total fixed lines

D. Mobile market

The total number of mobile subscriptions across the nine enlargement countries remained fairly constant in 2010 at between 89 and 90 million.

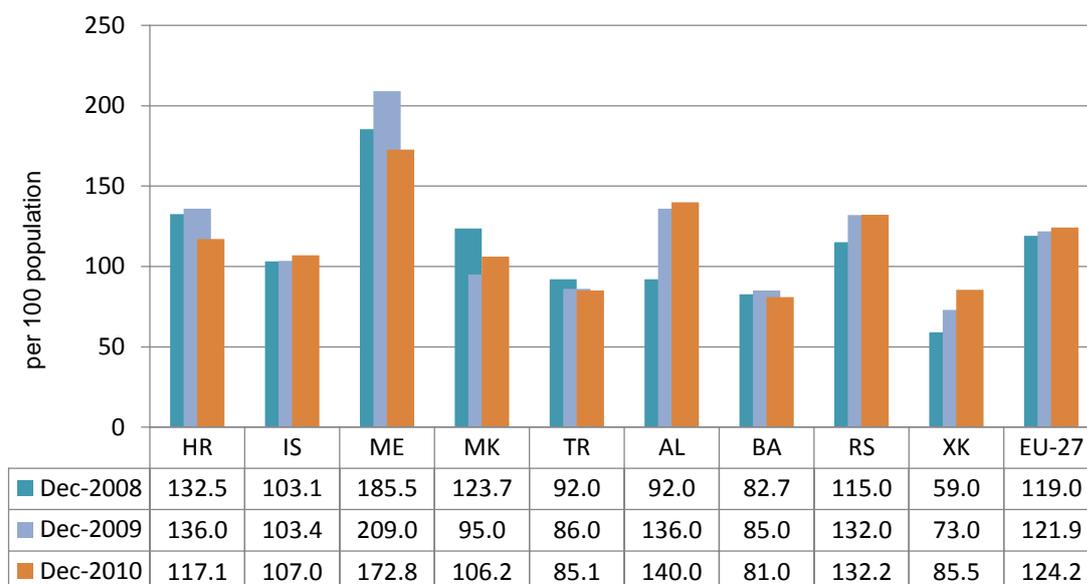


Figure D.1 - Mobile subscriptions per 100 population, by country, 2008 – 2010

The penetration rate in Croatia has fallen thanks to the introduction of a standard 90-day activity period for prepaid subscriptions. (Previously, some subscriptions were counted as active for up to 270 days.) The penetration rate for Montenegro remains the highest but is artificially inflated by the large numbers of prepaid subscriptions that are bought by tourists but remain active for only a limited period.

Competition has been effectively implemented in all mobile markets – with the exception of Kosovo there are at least three active network operators licensed in each country. In Albania and Iceland there are four licensed mobile network operators, while in Kosovo in addition to two mobile network operators there are two service providers (MVNOs) using networks of both respective mobile operators. The market shares of the third-placed operators have risen slowly but surely in 2010, and in Turkey Avea has broken the 20% barrier in terms of revenue market share.

The Herfindahl-Hirschmann Index (HHI), the sum of the squares of the market shares, is commonly used in assessing concentration in competition law. The HHI value for the mobile markets has fallen in most of the enlargement countries in 2010 – a sign of improved competitiveness.

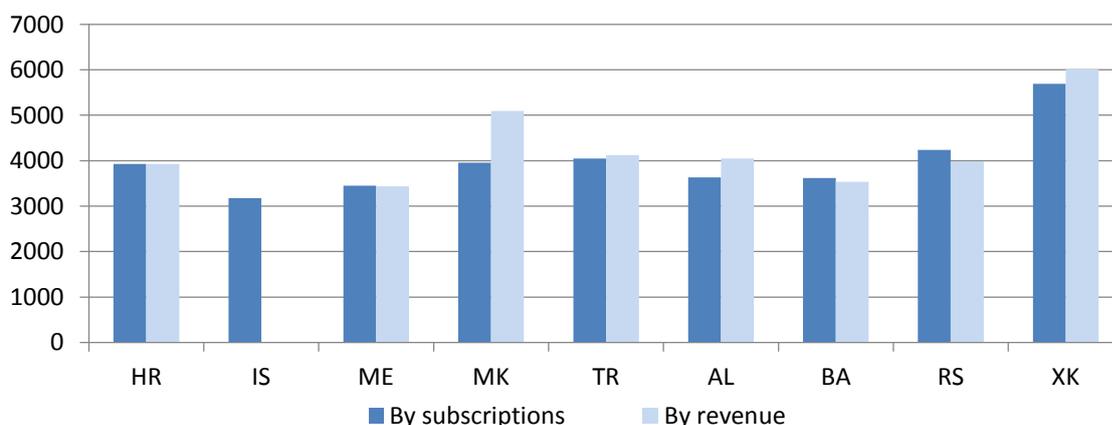


Figure D.2 - Mobile market concentration levels, HHI (end-2010)

E. Fixed broadband market

The fixed broadband market is growing in all the enlargement countries and total fixed broadband connections reached 9.67m at the end of 2010. The average fixed broadband penetration rate for the nine countries crossed the 10% threshold in 2010 to reach 10.6%.

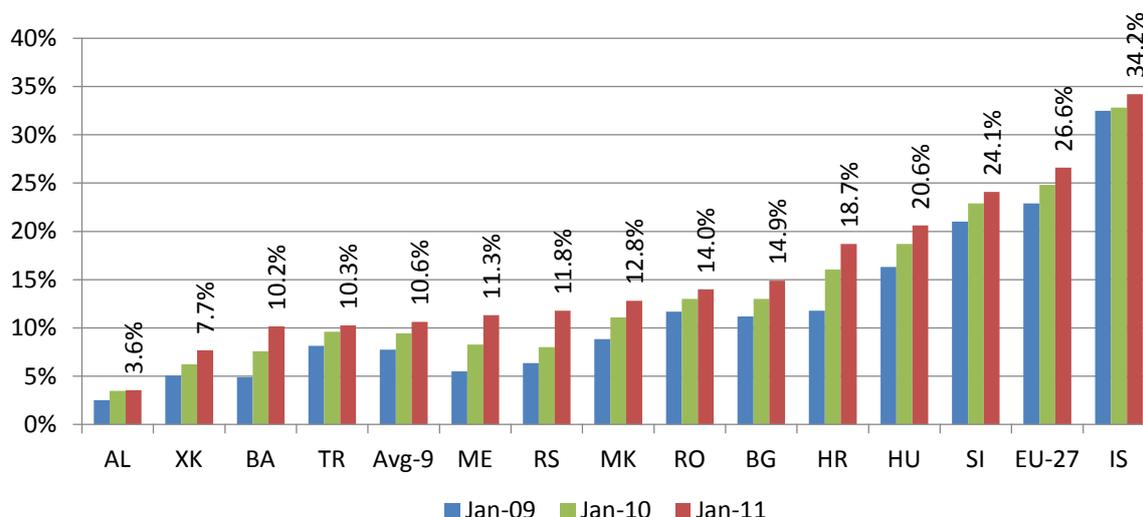


Figure E.1- Fixed broadband penetration rate, 2009-2011

Incumbents continue to dominate the market: although all countries except Iceland and Montenegro have at least 30 active ISPs, the incumbent ISP retains more than a 40% market share in all countries – and more than 85% in Turkey and Montenegro.

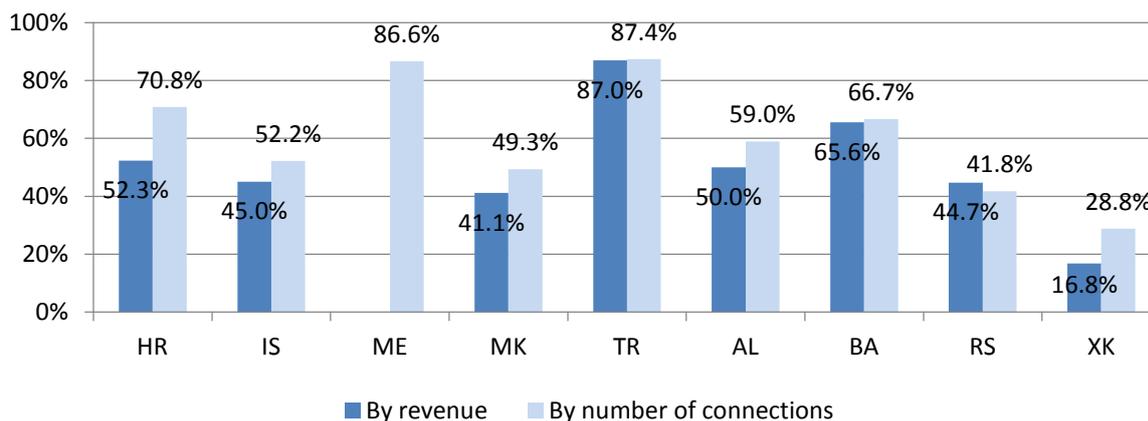


Figure E.2 - Incumbent ISP's retail market share, Dec 2010

By far the majority of fixed broadband connections in the enlargement countries are based on xDSL.

In Albania and Bosnia Herzegovina, alternative operators are using their own xDSL networks, while in Serbia and Turkey alternative operators providing xDSL are almost entirely dependent on bitstream services.

In Croatia, most alternative xDSL operators are using full LLU, while in Iceland full LLU lines and shared access lines together account for more than one third of xDSL connections.

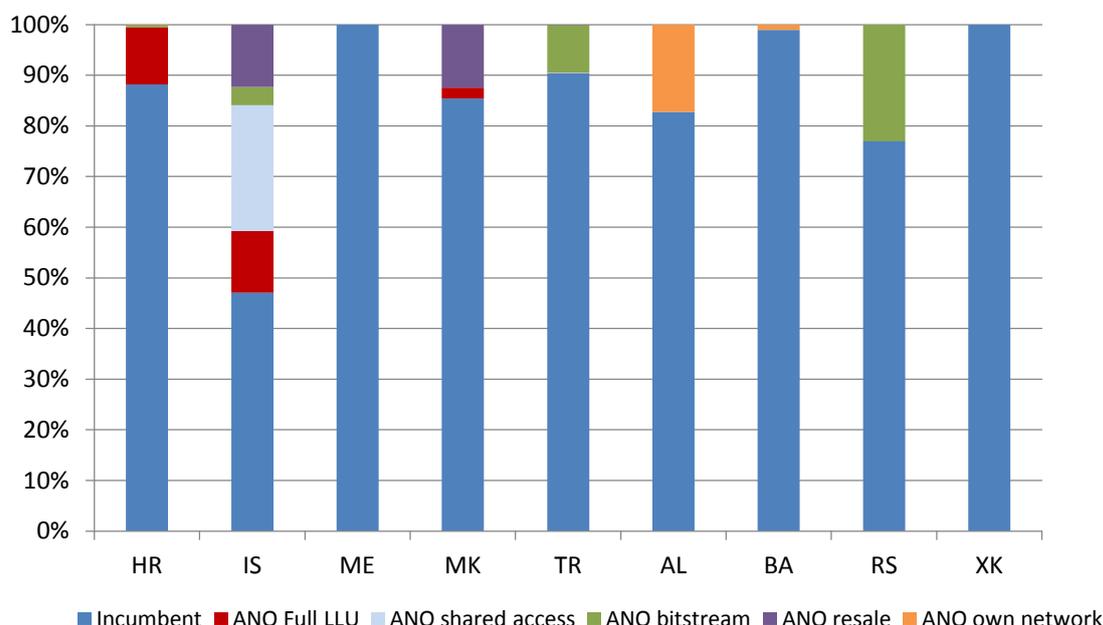


Figure E.3 - xDSL lines by type of access

The broadband market generally remains dominated by the fixed incumbent operator in countries where xDSL is the main access technology but fibre and cable are making inroads in some markets.

In Iceland, the number of fibre connections increased 67% in 2010 to account for more than 10% of total fixed broadband connections in the country by end-2010. Growth in fibre uptake in Iceland is being driven mainly by alternative operator Fjarskipti (Vodafone), which has a market share in the fibre segment of 86%.

In Albania the incumbent is rolling out fibre-to-the-node (FTTN) and the incumbent's fibre connections account for more than 90% of the fibre connections shown for Albania in the figure below. Albania's alternative operators, on the other hand, rely on their own xDSL or cable networks. Where cable is making the strongest inroads into the broadband market, growth is being driven by alternative operators.

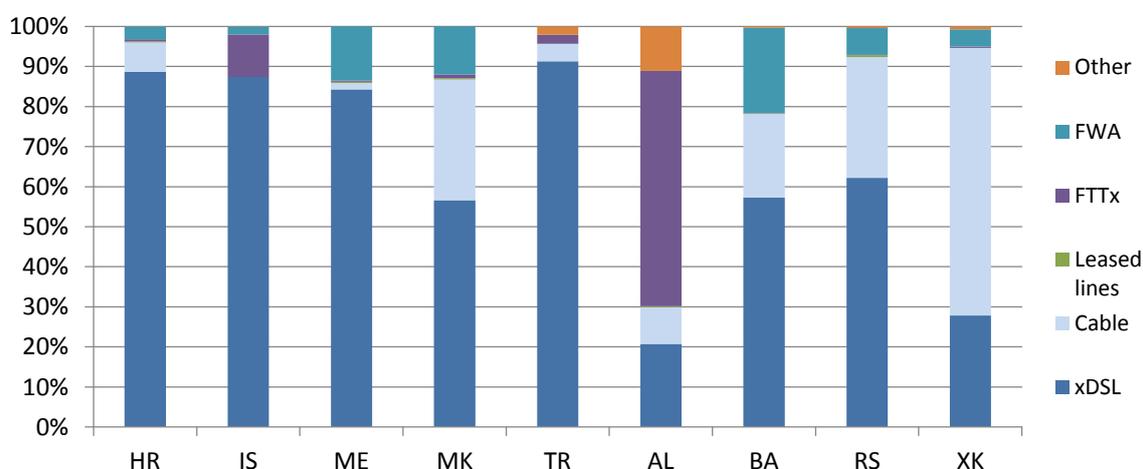


Figure E.4 - Fixed retail broadband connections by technology

When it comes to the distribution of retail broadband lines by download speeds, users in Iceland and Turkey have by far the fastest connections, with the majority buying connections of at least 8 Mbps. In Kosovo, Montenegro and Bosnia Herzegovina, on the other hand, more than two-thirds of users have access only to speeds of less than 2 Mbps.

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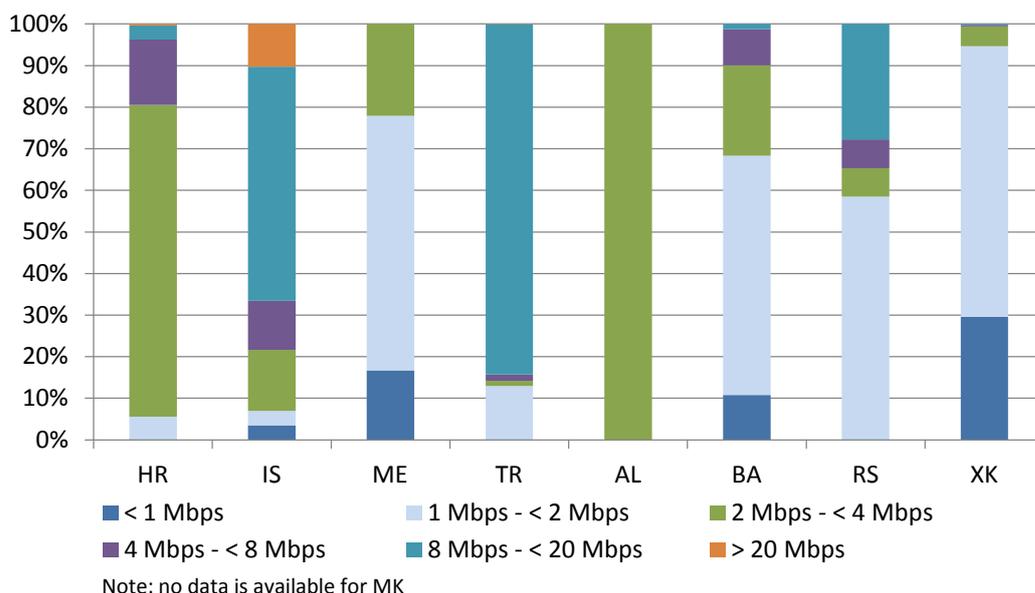


Figure E.5 - Distribution of retail broadband lines by download speeds, Dec. 2010

In Turkey, both the incumbent, Turk Telekom (via DSL) and alternative operator Turkcell-superonline (FTTH) are offering retail broadband connections with advertised speeds up to 100 Mbps. In Iceland, Vodafone is advertising speeds of 50 Mbps via its fibre network and in Kosovo and FYROM cable operators are advertising speeds of 50 Mbps or more.

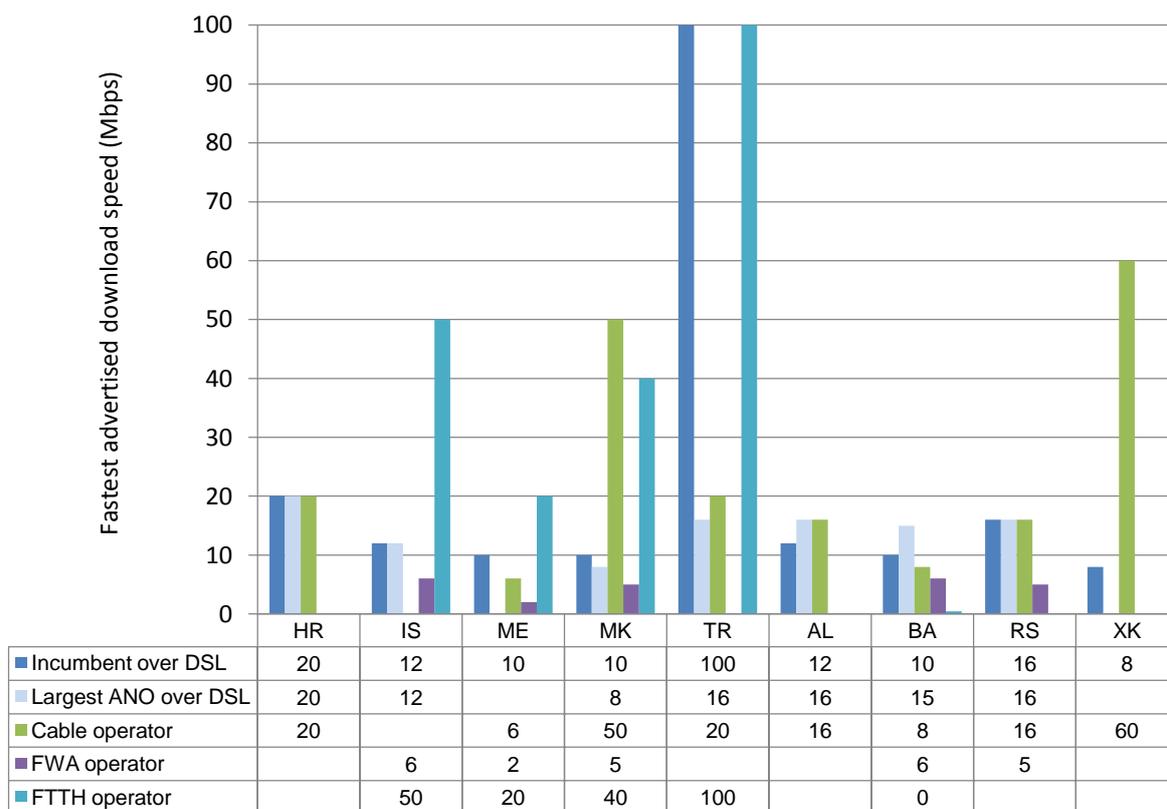


Figure E.6 - Fastest advertised download speed (Mbps), Dec. 2010

F. Mobile broadband market

The mobile broadband market is one of the most dynamic segments of the electronic communications sector and the penetration rate of dedicated 3G mobile datacards/modems has doubled in less than a year in most markets.

In Iceland and Croatia the penetration of such dedicated 3G data devices is now above the EU average, while in Montenegro the penetration increased from 3.4% to 5.5% over the course of 2010.

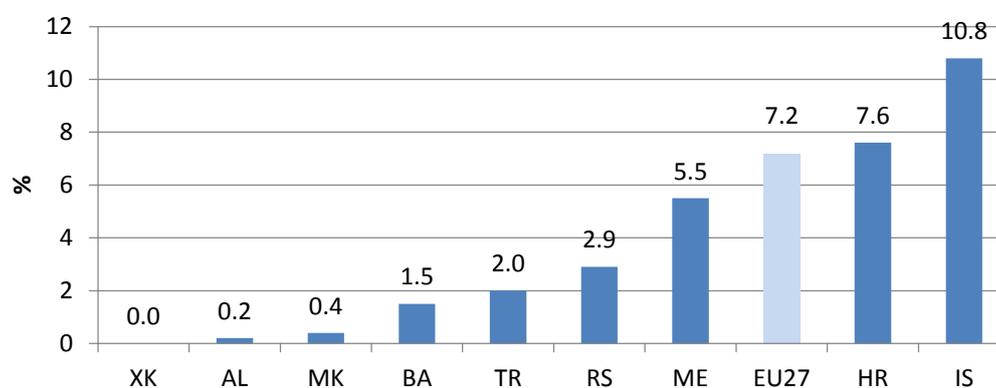


Figure F.1 - Dedicated datacards/wireless modems per 100 population, Dec. 2010

G. Legislative, policy and institutional framework

1. Information society legislation

All participating entities have been actively aligning their information society legislation with the relevant provisions of the EU directives.

The following table provides an overview on the relevant legislation. It shows only the year of the original version of the law, not the later amendments. Detailed information, links and official reference numbers can be found in the Annex II, which also contains references to laws not covered in this study, such as the competition law, audio-visual media legislation and the data protection law.

	HR	IS	ME	MK	TR	AL	BA	RS	XK
Electronic communications law	2008	2003	2008	2005	2008	2008	2003	2010	2002
Based on EU 2003 regulatory framework?	✓	✓	✓	✓	✓	✓	✗	✓	✗
Draft for implementing EU 2009 regulatory framework?	–	✓	–	–	–	✓	–	–	✓
EU 2009 regulatory framework adopted?	✓	–	–	–	–	–	–	–	–
Electronic commerce law	2003	2002	2004	2007	✗	2009	2007	2009	2002
Electronic signature law	2002	2001	2003	2001	2004	2008	2006	2004	2002
Audio-visual media law based on AVMSD	✗	✗	2010	✗	✗	draft	✗	✗	✗
Data protection law	2003	2000	2008	2005	✗	2008	2006	2008	2002
Cybercrime legislation	✓	✓	✓	✓	✓	✓	✗	✓	✓
Electronic document law or E-government law	2005	–	2008	2001 2009	second. legis- lation	2010	–	2009	2002

Table G.1 - Information society legislation

The most important part of the *acquis* is the regulatory framework for electronic communications. Seven countries have adopted laws which are based on the EU 2003 regulatory framework. Croatia is the first of the monitored countries that in July 2011 adopted amendments to transpose the EU 2009 regulatory framework.

Audio-visual media regulation is not assessed in the scope of this study, but references to the relevant legislation can be found in the annex. Montenegro adopted a new Law on electronic media in July 2010, which is largely aligned with the Audiovisual Media Services Directive. In Albania a draft law is in the parliamentary procedure. The other countries have not yet transposed the directive.

All countries except Turkey implemented the Electronic Commerce Directive 2000/31/EC. Turkey is preparing a draft transposing the directive.⁵ The Turkish Law no. 5651 addresses some of the topics regulated in the directive, but is not aligned with it and would not be replaced by the new law. In particular, liability of internet service providers would not be regulated as in the directive.

Turkey has recently adopted a new Code of Obligations, a new Code of Commerce and a new Code of Civil Procedure. According to the Code of Obligations, electronic signature and hand-written signature have the same legal effect. The Code of Commerce obliges stock companies to establish a website and to publish certain documents on the website. Executive Board meetings may be held electronically. The Code of Civil Procedure foresees the introduction of an e-Justice system and amendments to another law provide a legal basis for delivering official notifications electronically – for natural persons on request, but for certain companies compulsory.

All countries have adopted an electronic signature law based on Directive 1999/93/EC. All countries except Turkey have adopted a data protection law.

Cybercrime legislation is usually not covered by a separate law, but by provisions in the Criminal Code. The table above therefore does not show the date of the law, but whether the national legislation is more or less aligned with the Convention on Cybercrime (for details see Table V.1 below).

There is no requirement from the *acquis* to adopt laws on electronic documents or electronic government, but most countries adopted such laws. Turkey has secondary legislation on electronic documents standards.

In most of the monitored countries the legislation is structured in similar way: The country has an electronic communications law, an electronic commerce law, an electronic signature law, and various laws on broadcasting/media/electronic media (usually separate for the public service broadcaster and other media). Some noteworthy exceptions:

- In Turkey both primary and secondary legislation is complex. Electronic communications regulation has been addressed by various laws and the new Law no. 5809 on electronic communications has not entirely replaced those previous laws. In particular Law no. 406 on telegrams and telephones (enacted in 1924) and the Wireless Law no. 2813 (enacted in 1983) are still in force, although most of their articles have been either repealed or replaced by new text during the last years. Law no. 406 is now mostly about the incumbent's legal status, but also the legal basis of a telecommunications tax. The Wireless Law no. 2813 received a new title and is now called Law no. 2813 on the Establishment of the Information Technologies and Communications Authority.
- In Kosovo most of the information society legislation was adopted in 2002 as a single law, the Law on the information society services. This law includes laws on electronic commerce, distance contracts, electronic invoicing, electronic payment, data protection, electronic signatures and protection of information systems. Telecommunications and broadcasting regulation are addressed by two separate laws, adopted in 2002 and 2003, respectively.
- Bosnia & Herzegovina has laws both at state level and at entity level, in particular both the state and the Republika Srpska have laws on electronic commerce and electronic signature, which are not aligned with each other.

⁵ The draft is published (in Turkish) at <http://www.basbakanlik.gov.tr/Handlers/FileHandler.ashx?FileId=6593>

2. Ongoing legislative work

Aligning national legislation with the EU *acquis* into is not a one-time effort, but requires continuous monitoring of new legislation at the EU level and assessing what needs to be changed in the national legislation.

The participating countries show significant differences with respect to the question whether their responsible ministries are actively pursuing this task.

EU member states had to transpose the EU 2009 regulatory framework by May 2011. Although most EU member states missed this deadline, about two thirds had at least submitted a bill to parliamentary procedure at this time. In the enlargement countries, several of the responsible ministries have not even developed a plan on how to transpose the new framework.

In some countries legislative work depends on support by international experts, for example in projects funded by the EU or the EBRD.

The differences between participating countries can be summarised as follows:

- Croatia has brought its legislation in line with the information society *acquis*, and has also been the first of the participating countries that implemented the EU 2009 regulatory framework. The law amending the Electronic communications act was adopted in July 2011.
- Iceland been transposing EU directives as soon as they are incorporated into the EEA Agreement. A draft bill for transposing the EU 2009 regulatory framework is prepared and will be sent to parliamentary procedure in 2011. Iceland has also plans to transpose the Audiovisual Media Services Directive and identified during the screening process several details that need transposition.⁶
- Kosovo lagged behind and still has a law on telecommunications that is not based on the EU 2003 regulatory framework. However, Kosovo is now finalising a new law that will implement both the EU 2003 and 2009 regulatory frameworks. The responsible ministry delivered the final draft to the Prime Minister's office in November 2011 and adoption in parliament is envisaged for early 2012. Kosovo has also shown legislative activity by adopting new laws on data protection and cyber crime and drafting a bill to fully align its Law on the Information Society Services with the Electronic Signatures Directive and the Electronic Commerce Directive.
- Albania has several pending legislative activities, all of them aiming for full alignment with the *acquis*. Amendments to align the law on electronic communications with the EU 2009 regulatory framework are being finalised and will be presented to stakeholders before the end of 2011. The responsible ministry intends to submit the bill to parliament soon afterwards. Draft laws on transposing the Audiovisual Media Services Directive and on the rights of way are already in the parliamentary procedure. Albania also works on data retention and final alignment of the law on electronic commerce with the Electronic Commerce Directive. Legislative activities in the fields of information society are overseen by the Minister for Innovation and ICT, but work often depends on external experts.
- Although Turkey is actively adopting new laws, the legislation is complex (see above). Newly adopted legislation is not always based on the EU *acquis* and sometimes does not aim at full alignment. For example, the electronic communications law of 2008 introduced a general authorisation scheme, but did not abolish the old concessions. Also, the regulation of content transmitted over the internet and internet service providers' liability is not aligned with EU policy and legislation. Turkey regulates these issues in law no. 5651, which was adopted in 2007, but is not based on the EU Electronic Commerce Directive of 2000. A draft law to transpose the directive would not contain all articles on internet service providers' liability.⁷ Turkey does not yet have specific plans for transposing the EU 2009 regulatory framework.

⁶ See the negotiation position of Iceland for chapter 10, information society and media, http://europe.mfa.is/media/ees_i/Chapter-10-Draft-Position-Paper-Iceland---FINAL.pdf

⁷ See articles 12 to 15 of Directive 2000/31/EC of the European Parliament and of the Council of June 8, 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ('Directive on electronic commerce') and article 9 of the Turkish draft law: <http://www.basbakanlik.gov.tr/Handlers/FileHandler.ashx?FileId=6593>

- Montenegro has adopted several new laws in mid-2011, including amendments to the Law on Electronic Communications addressing institutional issues, appointment of the NRA management and reporting requirements for the NRA. A law on digital broadcasting was adopted in 2011 and legislation on copyright is in parliamentary procedure. However, Montenegro did not report any plans or preparations for transposing the EU 2009 regulatory framework.
- Serbia has in 2010 adopted the new law on electronic communications, which transposes the EU 2003 legislative framework. Serbia is now solely reporting work on secondary legislation. Work on transposing the EU 2009 regulatory framework has not yet started.
- FYROM did not report any plans on legislative activities. Responsibilities for legislation are being moved from the Ministry of Transport and Communication to the Ministry of Information Society and Administration, but both ministries have limited capacity for drafting legislation.
- Bosnia & Herzegovina is lagging behind. Its Communications Law is mainly based on the EU 1998 framework and there are no immediate plans to transpose the EU 2003 and 2009 framework. Bosnia & Herzegovina also does not have legislation on cyber crime, electronic documents or e-government at state level. A law on creating an agency for the information society at state level and a law on amending the Law on broadcasting system have been blocked in parliament. At entity level, the Republika Srpska has laws on electronic documents, electronic commerce, electronic signature and some cyber crime provisions in its criminal code. The legislative process is hampered by the complex institutional setup, the unclear distribution of legislative competencies between the state and the entities, and most recently, the delayed process of establishing executive and legislative authorities at the state level following the general elections of October 2010.

3. Information society policy

Each of the participating countries has a high-level responsible body for information society policy. This is usually a ministry.

In Croatia policy-making is the responsibility of the Central State Administrative Office for e-Croatia (which is lead by a State Secretary), the Ministry of Sea, Transport and Infrastructure (broadband, digital switchover) and the Ministry of Economy, Labour and Entrepreneurship (electronic business strategy).

In Iceland the Prime Minister's Office is responsible for information society policy in general and the Ministry of the Interior is responsible for electronic communications policy.

Turkey has reorganised its State Planning Organization (SPO), which was part of the Prime Minister's Office, as the new Ministry of Development. The new ministry is responsible for policy-making across all sectors, as SPO was before.

This study assessed whether countries have an information society policy or strategy document in general, as well as policies for specific topics. The full title and links to the respective documents can be found in Table O.3 of the annex.

As the following table shows, each country except Croatia has a strategy document for information society in general, and also separate documents for most or all topics covered by this report.

	HR	IS	ME	MK	TR	AL	BA	RS	XK
Information society in general	X	✓	✓	✓	✓	✓	✓	✓	✓
Electronic communications	X	✓	✓	✓	✓	✓	✓	✓	(✓)
Broadband	✓	✓	X	✓	✓	✓	✓	✓	(✓)
Digital TV	✓	✓	X	✓	X	(✓)	✓	✓	(✓)
eSEE Initiative (eg government adoption of the eSEE Agenda+)	✓	–	✓	X	–	✓	✓	✓	✓
Network security	X	✓	X	✓	✓	X	✓	✓	X

	HR	IS	ME	MK	TR	AL	BA	RS	XK
Cybercrime	X	✓	X	X	✓	X	✓	✓	X
E-Government	✓	✓	✓	✓	✓	✓	✓	✓	✓
E-Business	✓	✓	X	X	✓	✓	✓	✓	X
✓ is covered by a policy document, (✓) policy being drafted, X is not explicitly covered by a policy document – not applicable (no eSEE Initiative member)									

Table G.2 - Information society policy documents

In October 2011, Croatia adopted a new broadband strategy for the years 2012 to 2015 and an action plan for 2012-2013. Croatia does not have a policy document on information society in general. There is no single body responsible for information society policy-making at the government level, but responsibilities are divided between two ministries and the Central State Administrative Office for e-Croatia.

Several countries are preparing new policies: Iceland prepares a new Telecom policy statement (covering electronic communications, broadband, digital TV). Turkey is preparing a new version of its comprehensive information society strategy and action plan (the current version covers the years 2006 to 2010), but also covers information society aspects in its medium term programme for 2011–2013 and annual programme for 2011. In Kosovo, a sector strategy has been prepared for all areas of the former Ministry of Transport and Communications, but due to the reorganisation of ministries the parts covering electronic communications and broadband have not been adopted. The Ministry of Economic Development is now planning to adopt a policy document based on these drafts early in 2012. Kosovo and Albania both expect adoption of strategies for digital switchover by the end of 2011.

4. Bodies responsible for electronic communications and information society

The questionnaire for this report asked for a comprehensive overview over all ministries, authorities or agencies that are responsible for certain topics of legislation, policy-making or administration.

The following table shows for which areas the participating countries have designated a responsible body. The names and websites of these bodies can be found in Table B.2 of the annex.

	HR	IS	ME	MK	TR	AL	BA	RS	XK
Electronic communications legislation and policy	✓	✓	✓	✓	✓	✓	✓	✓	✓
Information society policy	✓	✓	✓	✓	✓	✓	✓	✓	✓
National regulatory authority	✓	✓	✓	✓	✓	✓	✓	✓	✓
National competition authority	✓	✓	✓	✓	✓	✓	✓	✓	✓
Audiovisual media regulator	✓	✓	✓	✓	✓	✓	✓	✓	✓
Body responsible for R&TTE	✓	✓	✓	X	✓	✓	✓	✓	✓
Information society statistics	✓	✓	✓	✓	✓	✓	✓	✓	X
Electronic Commerce Directive: supervision and national contact point	✓	✓	✓	✓	X	✓	✓	✓	✓
Electronic Signatures Directive: supervisory authority	✓	✓	✓	✓	✓	✓	X	✓	X
Data protection authority	✓	✓	✓	✓	X	✓	✓	✓	✓

	HR	IS	ME	MK	TR	AL	BA	RS	XK
Network security (Art. 13a, 13b Framework Directive)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Personal data security (Art. 4 e-Privacy Directive)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Enforcement of intellectual property rights	✗	✓	✗	✗	✗	✓	✓	✓	✓
Computer emergency response team (CERT)	✓	✓	✓	✗	✓	✗	✓	✓	✗
Domain name policy	✓	✓	✓	✓	✓	✓	✓	✓	–
Domain name registry	✓	✓	✓	✓	✓	✓	✓	✓	–
✓ responsibility defined, ✗ no dedicated body responsible, – not applicable (no ccTLD)									

Table G.3 - Responsible bodies for electronic communications and information society

H. National regulatory authorities

The establishment of an independent NRA is a cornerstone of the EU regulatory framework for electronic communications. Independence involves at least three key elements: (i) structural separation of the NRA from the regulated firms, (ii) isolation of the NRA from political intervention and (iii) functional effectiveness that can be achieved through adequate human and financial resources and enforcement powers.

The two latter aspects of the NRA independence have been particularly emphasised in the amended EU 2009 regulatory framework that seeks to limit political interference in the day-to-day duties of NRAs, to set predictable and transparent rules for appointment and dismissal of the NRA management and to ensure that they have their own independent budget and sufficient number of qualified staff.

The NRA independence, however, does not mean that regulators should function in a vacuum, particularly in countries where the legal and judiciary infrastructure is still immature. Independence must be balanced with clearly identified requirements for accountability, including strict procedural rules, reporting mechanisms, public consultation and transparency requirements as well as the possibility of judicial review.

These aspects of the NRA independence and accountability have been addressed in detail by the study and are discussed in the sections below.

1. NRA structural separation

Under the EU regulatory framework, there has been no requirement for privatisation of any state-owned telecommunications undertakings, but the decrease of the state shareholding, however, usually strengthens the independence of the NRA.

Article 3 of the Framework Directive requires that regulatory tasks must be carried out by competent bodies that are legally distinct and functionally independent from any organisations providing electronic communications networks and services. However, where the state retains control of undertakings providing electronic communications networks and services, the activities associated with the state ownership and control must be structurally separate from regulatory functions.

Croatia and Montenegro are currently the only monitored countries without any state ownership in telecommunications operators.

In Iceland, the government privatised the incumbent operator, Síminn, and sold its 98.8% share to Skipti ehf in July 2005. In 2007 Síminn was split into three separate companies: Síminn hf, the main operating company; Fasteignafélagið Jörfi ehf, a real estate company, and Míla ehf which owns and operates the national trunk and access networks. The Icelandic state however retained a stake in the company Farice ehf that operates submarine fibre optic cables from Iceland to Denmark and the UK.

In the remaining countries the state ownership in major telecommunications operators ranges from 24% up to 100%. The governments in the FYROM, Turkey and Serbia also retain ‘golden shares’, i.e. special powers granted to the state by law or by the articles of association of a company that allow it to maintain a special influence in the incumbent telecom operators.

During 2011, further privatisation attempts were announced by the governments in Serbia for a 51% stake in Telekom Srbija and in Kosovo for a 75% stake in PTK, but both processes were cancelled.

There are no clear trends in the management of the ownership functions, although in most of the monitored countries these functions typically rest with the ministry of finance (Iceland, FYROM and Serbia) or the State Treasury (Turkey). In Bosnia & Herzegovina, the control of two incumbent operators that have not yet been fully privatised is exercised by the government of the relevant entity, the Federation of Bosnia & Herzegovina, whereas in Albania this function belongs to the Ministry of Economy, Trade and Energy. Only in Kosovo, the control of the incumbent operator is assigned to the same body as policy making and legislative functions in electronic communications sector, the Ministry of Economic Development.

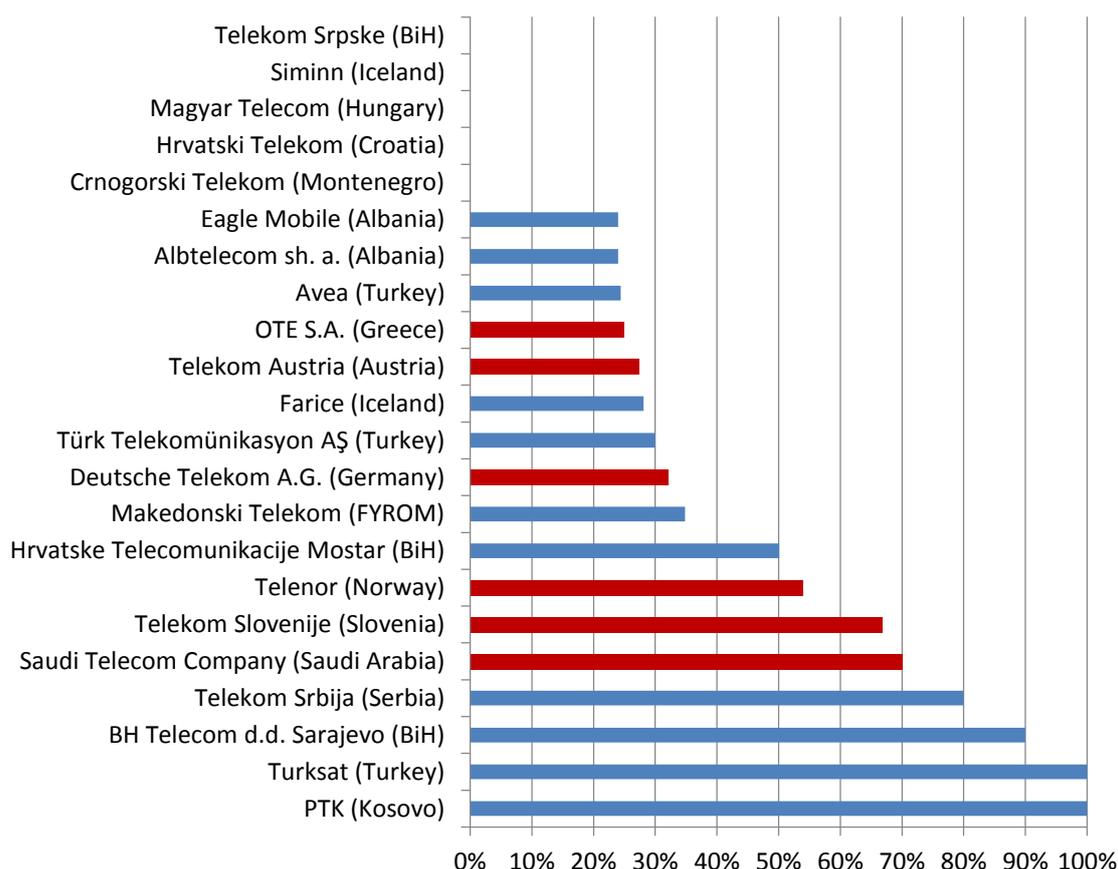


Figure H.1 - State ownership of telecommunications operators: monitored and investing countries

2. Division of responsibilities between the government and the NRA

Regarding political influence, the mere possibility of arbitrary political intervention may put the NRAs under pressure. Therefore the effective independence of the NRA is best achieved by providing it with a distinct legal mandate, free of ministerial control and eliminating political interference in its day-to-day tasks.

In general, the concept of NRA independence is being progressively introduced in the national regulatory frameworks alongside the adoption of new laws on electronic communications. The key functions of the government and the regulator were redefined in the laws adopted in Croatia, Turkey, Albania and Montenegro in 2008 and in Serbia in 2010. In Kosovo, the Law on Telecommunications was amended in 2008 to remove the provisions enabling the ministry to issue instructions to the NRA

to amend a licence. In June 2010, the Macedonian Law on Electronic Communications was also amended to clarify the role of the NRA and the scope of its responsibilities.

The common objective of these legislative changes was to make a more clear division between the legislative and policy-making tasks carried out by the government (or the relevant ministry) and the regulatory tasks performed by the NRA.

Nevertheless, the situation concerning specific regulatory decisions subject to the government approval varies substantially among the nine countries, as illustrated by the table below.

Country	Spectrum	Universal service	Fees	Market analysis	Secondary legislation
HR	✓	-	-	-	-
IS	✓	✓	✓	-	✓
ME	✓	✓	✓	-	✓
MK	-	✓	✓	-	-
TR	-	✓	✓	-	-
AL	✓	✓	-	-	-
BA	✓	✓	-	-	-
RS	✓	✓	-	-	-
XK	✓	-	-	-	-

Table H.1 - Regulatory decisions subject to the government approval

In all countries, with the exception of FYROM and Turkey, the government is involved in spectrum management where its role may comprise various aspects, including approval of the frequency allocation table, spectrum award procedures or determining of the number of spectrum authorisations to be issued for specific services.

With regard to other aspects, a relatively effective independence of the NRA has been achieved in Croatia, where the ministry is no longer involved in adoption of regulatory decisions in addition to being restricted from influencing the NRA decisions in individual cases. The amendments to the Law on electronic communications adopted in July 2011 further emphasise this division between legislative and regulatory tasks by shifting from the ministry to the NRA the inspection function responsible for monitoring compliance with the law and making the NRA the only body responsible for inspection and monitoring.

Institutional frameworks in Iceland, Montenegro, FYROM, Turkey, Albania, Bosnia & Herzegovina and Serbia foresee involvement of the government or the relevant ministry in the implementation of universal service. This involvement however varies, ranging from the overall responsibility for the universal service framework to its specific aspects covering the universal service scope, designation procedures for the providers and the financing mechanism.

In Iceland, Montenegro, FYROM and Turkey the government is involved in determining the amount of the administrative fees for the use of limited resources. In Iceland and Montenegro, the government also establishes the fees for certification and registration tasks carried out by the NRAs.

In Iceland and Montenegro the responsible ministry plays the key role in adopting the secondary acts foreseen under the primary legislation, whereas in other countries this responsibility has been largely delegated to the NRA. Furthermore, in Iceland, the NRA has to seek the ministry's approval in order to be able to appeal decisions of the first instance appeal body to the courts. In Montenegro, the Law on electronic communications gives the ministry the powers of administrative review of the NRA decisions as the first appeal instance, effectively undermining the NRA independence.

3. Appointment and dismissal of the NRA management

The rules and procedures for the appointment and dismissal of the management of the NRAs are an important factor facilitating the effectiveness of the independence. The EU 2009 regulatory framework introduced an explicit requirement for clear and defined in advance provisions on the dismissal of the NRA management and transparent procedures where the reasons for the dismissal are clearly stated.

This report monitors (i) NRA management structure, (ii) appointment procedures and the bodies involved, (iii) term in office and (iv) grounds for dismissal.

Determining the most suitable management structure for an NRA requires an assessment of various factors including: the country's regulatory needs and objectives, political environment, legal requirements and availability of qualified experts in the labour market. There are two major models of management organisation for the NRAs: (i) the collegial body (a board or commission composed of several members); and (ii) the single regulator (often given the title of chairperson or president). Each has its advantages and disadvantages, and variations of each model are also observed in the monitored countries.

The collegial body model involves a board or commission composed of individuals with different areas of expertise, potentially able to bring different perspectives on each regulatory issue. The collegial body is often seen as more independent, as it is unlikely that all members would be influenced by the same actors, whether in the government or the private sector. This model also conveys more legitimacy in decision-making, as it is less likely that a single individual is responsible for any particular decision. However, as in any decision-making process involving more than one actor, the adoption of regulatory decisions can be a slow process that is often complicated by internal politics.

By comparison, the single regulator model has the potential benefit of a more consistent approach to regulation and decision-making, as decision-making authority is vested in a single individual. In contrast to the collegial body model, single regulators can make decisions much more quickly, even when constrained by procedural regulations. However, the single regulator is also potentially more vulnerable to undue influence exerted by external actors. In addition, a single individual may not be able to match the expertise of a collegial body made up of individuals from different backgrounds, although experienced staff can provide substantial expertise.

In terms of the management structure, Iceland is the only country where the NRA is headed by the single managing director who oversees all policy, management, and administrative activities of the regulatory authority. Until 2008, this was also the case in Montenegro but changed with the adoption of the new law.

In all other countries the NRAs are headed by collegial bodies, comprised of five to seven members. In most countries, the NRA organisation also involves a separate position of an executive director who handles day-to-day management and administrative functions of the regulator. In Albania, Kosovo and Turkey there is no separate position of the executive director and this function is assigned to the chairperson of the managing collegial body.

The appointment procedures for the members of the collegial body also vary from country to country with appointment (i) by parliament only (FYROM), (ii) appointment by parliament following a government proposal (Albania, Bosnia & Herzegovina, Croatia, Montenegro, Serbia, Kosovo), (iii) by the government only (Iceland). In Montenegro the parliamentary appointment was introduced following amendments to the Electronic Communications Law adopted in June 2011, whereas the previous procedure foresaw appointment by the government. In Turkey, the board members of the NRA are appointed by the Council of Ministers subject to the final approval by the President of the country.

In the countries where there is a separate position of the executive director in charge of the NRA's day-to-day operations, the appointment is usually done by the NRA board members with the exception of Bosnia & Herzegovina which requests the approval of the Council of Ministers.

However, even in the presence of well defined rules and deadlines for appointment of the NRA management, in some countries there have been undue delays in the appointment procedures. As a result, the management functions often are carried out without a formal mandate which undermines overall regulatory certainty for the sector. Particularly worrying is Bosnia & Herzegovina, where the office term of the executive director expired in 2007 and the mandate of the NRA council members ended in early 2009, while no new appointment has taken place so far. A similar situation was observed in Serbia, where the board members of the NRA were appointed on March 31, 2011 – nine months after the adoption of the new Law on electronic communications in June 2010.

The term in office of the board and executive director is generally four to five years with the possibility of one renewal, except in Croatia and Iceland, where the board of the NRA and the executive director may be reappointed without limitations. In Serbia the possibility of reappointment without limitations is foreseen for the position of the executive director of the NRA.

Grounds for discharge and dismissal are rather similar in all monitored countries, mostly concentrated over few main situations: (i) resignation, (ii) inability to perform duties, (iii) criminal conviction, (iv) professional misconduct and/or abuse of the position and (v) conflict of interest. Only Croatia has so far fully transposed the new provisions of the EU 2009 framework concerning the clear and transparent rules for dismissal of the NRA management.

4. NRA budget and sources of financing

The financial resources available to the NRA, the number of employees and its ability to attract and retain suitably qualified staff are particularly important aspects in assessing the capacity of the NRA to operate effectively. Article 3 of the Framework Directive of the amended EU 2009 regulatory framework establishes a requirement that NRAs must have their own separate annual budgets and adequate financial and human resources. At the same time, Article 12 of the Authorisation Directive requires that administrative charges for financing the NRA activities must be objective, transparent, and proportionate and set at the minimum level necessary to cover administrative costs of the NRA.

The figure below shows the NRA operational budget including planned capital investments in 2011 and the value of electronic communications markets based on the 2010 revenue.

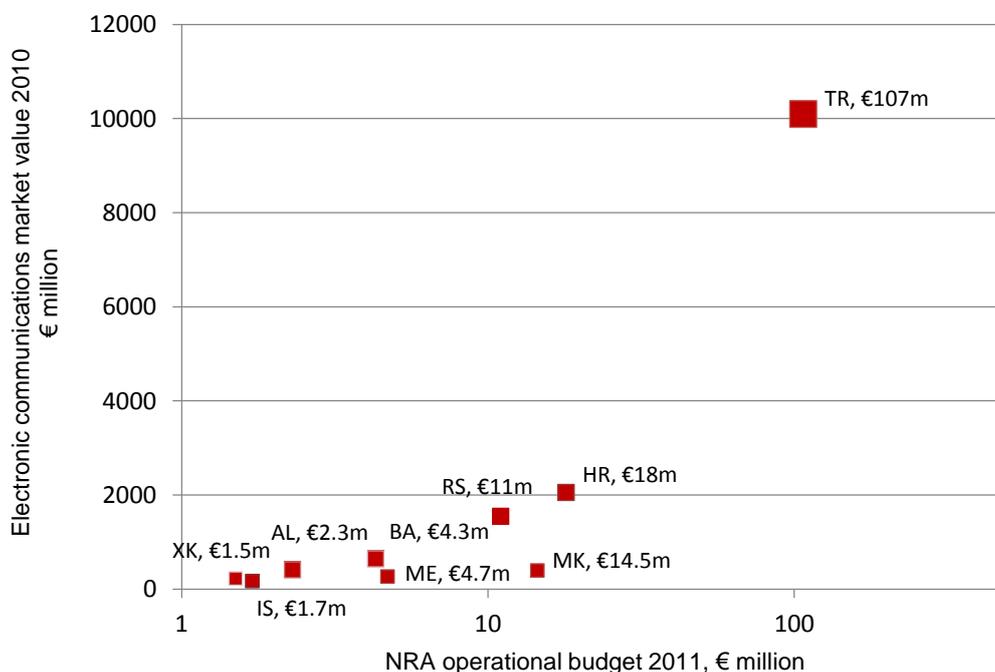


Figure H.2 - NRA operational budget and electronic communications market value (€, million)

The sources of the NRA funding tend to become more diversified. Nevertheless, spectrum usage fees remain the main source of financing of the NRAs in Albania (92%), Turkey (87%), and FYROM (73%). Annual revenue-based and numbering usage fees are the main funding source for the NRA in Bosnia & Herzegovina, while the funding sources for the NRAs in Croatia, Iceland, Montenegro, Serbia and Kosovo are distributed between annual revenue-based and spectrum usage fees. In addition, in 2010 the Croatian NRA secured almost €2.8m funding through the EU pre-accession funds.

The annual budgets of the NRAs are subject to prior approval either by the government or by parliament as further described in the section on the NRA accountability below.

The rules on allocation of the surplus NRA budget also vary among the countries. In Croatia, Iceland, Montenegro and FYROM, the NRAs are allowed to transfer the surplus of collected funds to the next calendar year's budget. In Iceland, however, following the economic breakdown in 2008, the NRA has to reserve any surplus funds as "restricted equity" on its balance sheet which it is not allowed to spend

on its activities. In the 2011 budget the restricted equity amounts to 13.5% of all fees collected by PTA and it is not clear when and if it would be allowed to use these funds for its operations.

In all other countries the NRAs are required to return any surplus funds to the state budget. The amount of surplus funds transferred by the NRAs to the state budget often significantly exceeds their own operational budgets. In 2010 this was particularly apparent in Turkey, Serbia and Kosovo. In Serbia, this requirement was introduced in 2010 following the adoption of the new Law on Electronic Communications, whereas previously RATEL was allowed to allocate surplus funds to its own operations. The Serbian law also provides that any surplus funds collected by RATEL should be allocated to the development of electronic communications and information society sector. In Turkey, a portion of revenues collected by the NRA is earmarked for the universal service purpose and transferred to the fund kept by the State Treasury.

5. NRA staffing

The total number of the NRA staff in 2011 ranges from a team of 23 in Iceland to 709 in Turkey, as shown in the figure below.

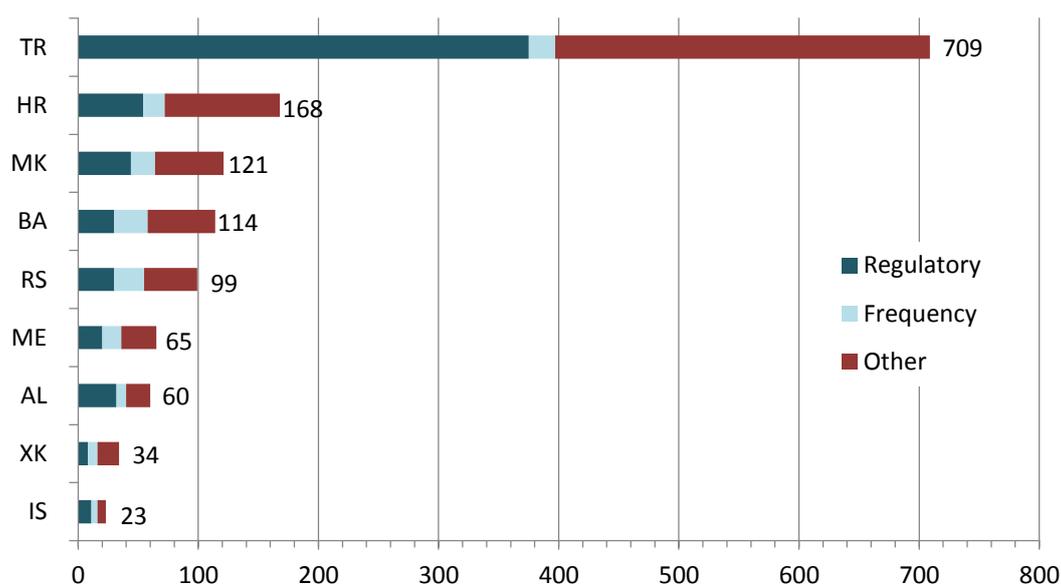


Figure H.3 - NRA organisation: total staff, regulatory and frequency experts

The distribution of the number of staff handling electronic communications regulatory tasks and frequency monitoring tasks also varies. The lowest number of eight regulatory experts was reported by Kosovo. This raises concerns about the lack of competent resources to ensure implementation and enforcement of the regulatory framework. In Iceland the number of regulatory experts amounts to 11, whereas in Turkey it reaches 375. In the remaining countries, the number of NRA regulatory experts ranges from 20 in Montenegro to 54 in Croatia. A particular improvement in terms of regulatory expertise has been observed in FYROM: the number of regulatory experts has increased from 28 in 2010 to 44 in 2011.

NRAs in most countries have to comply with certain restrictions when deciding on the salary level of their employees within the approved budgets. In Albania, Bosnia & Herzegovina and Kosovo the salaries of the NRA staff are linked to the salary levels of civil service positions. In Montenegro, the salaries of the NRA management were reduced in 2009 to the pay level of government officials. In Serbia, there are no legal restrictions to the NRA ability to set the salary level of its employees within the approved budget, however, in 2009 RATEL had to apply a temporary six-months salary limit imposed on all employees in the public sector. In Turkey, the salaries of the NRA staff are set according to the internal pay grade.

Comparing the ratio of the NRA budget to the number of its staff presents yet another picture of the NRA resources. The NRA in Turkey tops the list with €151 thousand budget per employee per year,

while the NRAs in Bosnia & Herzegovina and Albania find themselves on the opposite end of the scale with €38 thousand and €39 thousand per year per employee.

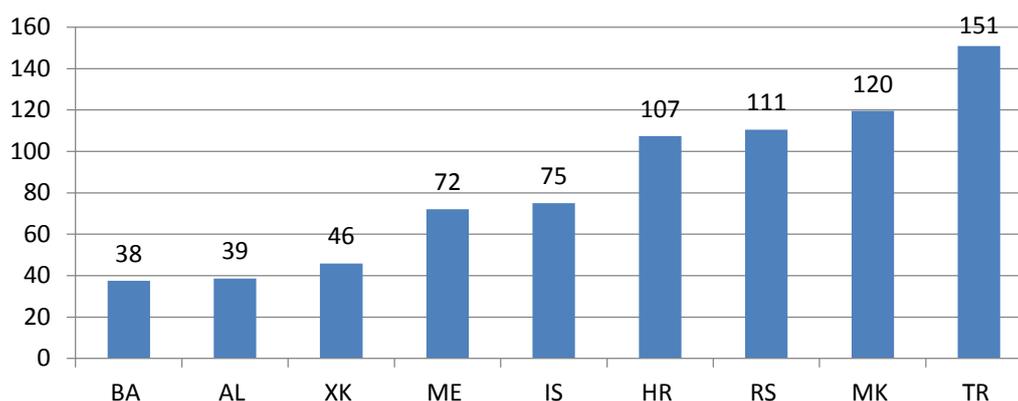


Figure H.4 - NRA operating budget per employee in 2011 (€, thousand)

6. NRA accountability

Independence needs to be reconciled with measures to ensure that the NRAs are accountable for their actions through (i) approval and publication of an action plan that sets forth explicit objectives governing the regulator; (ii) specific requirements for reporting and review of the NRA performance by the government or Parliament and (iii) financial reporting.

One of the common features observed in most of the monitored countries, with the exception of Iceland and Bosnia & Herzegovina, is the increasing parliamentary involvement in the approval of the NRA plans and the review of its performance.

In Croatia, the NRA annual activity plan is approved by the government while the NRA's performance is reviewed annually by the government and by parliament. A similar procedure applies to the NRA financial plan that is approved by the government while its financial reports are reviewed by both the government and parliament.

In Montenegro, FYROM, Turkey, Albania, Serbia and Kosovo the central role in the approval of the NRA activity plans and financial plans as well as in the review of the annual reports belongs to parliament. In Montenegro, parliamentary approval of the NRA budget replaced the government approval following the amendments to the Law on electronic communications adopted in June 2011. The NRA's annual activity report is reviewed by both the government and parliament.

In Serbia, the NRA's financial plan is subject to the government approval. In Turkey, additional audits of the NRA financial plans and annual reports can be performed by the Court of Accounts, Inspection Council of the Prime Ministry and the State Inspection Council of the Presidency of the Turkish Republic.

In Iceland, the approval of the annual plan and the review of the results are carried out by the Ministry of Interior, whereas the financial plan of the NRA is approved by the Ministry of Finance and the Ministry of Interior and reviewed by the National Audit Office.

In Bosnia & Herzegovina, annual activity and financial plans of the NRA are approved by the government and it is also the government that reviews the NRA's annual activity and financial reports.

As a regular practice, NRAs are required to publish activity plans and audited financial reports on their websites.

7. NRA enforcement powers

Independence may be illusory unless the NRA has the necessary enforcement powers to carry out its tasks. The NRA bears the primary responsibility of ensuring compliance with the obligations imposed on SMP operators after carrying out a market analysis procedure. To that effect, the NRA should have specific investigatory and sanctioning powers.

In order to ensure effective compliance of the undertakings with regulatory obligations, the NRA sanctioning powers should in particular allow it to impose fines with a sufficient deterrent effect. Sanctions should be sufficiently high, taking into account the substantial commercial benefits that can be achieved by the illegal practice. Moreover, the threat of sanctions should also be sufficiently real to deter SMP operators from not conforming to their regulatory obligations.

In general, the NRAs have the power to impose fines directly with an exception of Croatia, Montenegro, FYROM and Serbia where the NRAs have to initiate a misdemeanour procedure before the relevant court.

In four countries, the maximum amount of fine is set as a percentage of the total annual turnover with the level varying from 3% to 10%: 3% in Turkey, 5% in Croatia, 10% in FYROM and Albania. In four other countries, the maximum fine is set as a specific monetary amount: €16,500 in Montenegro, €20,000 in Serbia, €76,000 for the first violation and €153,000 for the repeated violation in Bosnia & Herzegovina and €250,000 in Kosovo.

In Iceland, there is a maximum amount of €3,030 that can be imposed on a daily basis but no maximum limit to the total amount of fine.

Financial penalties have not been applied in practice by the NRAs in Iceland, FYROM, Albania and Serbia.

8. Resolution of disputes between undertakings

Article 20 of the Framework Directive establishes a requirement for the NRAs to be able to issue binding decisions to resolve commercial disputes between undertakings arising from obligations under the regulatory framework. The maximum timeframe for resolving a dispute may not exceed four months, with an exception of some special circumstances.

In the monitored countries, the deadline for the NRA to resolve a dispute varies from one to four months. Five countries, envisage particularly short deadlines for dispute resolution: Albania, Bosnia & Herzegovina, Montenegro, Kosovo and FYROM, which however can be extended in exceptional circumstances in Albania, Bosnia & Herzegovina, and FYROM.

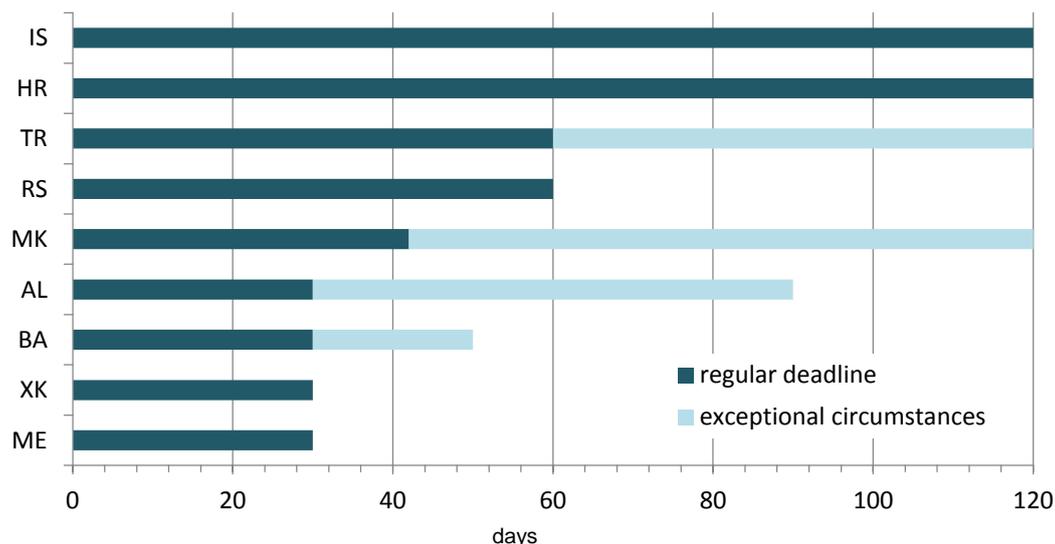


Figure H.5 - Deadlines for resolution of disputes between undertakings

Some countries specify a minimum period of unsuccessful negotiation from 42 days up to 90 days before the dispute can be passed to the NRA.

All countries, except Bosnia & Herzegovina and Kosovo have a specific obligation for the NRAs to publish their decisions on disputes.

In addition to resolving disputes between undertakings, in some countries the NRAs also have the power to settle disputes between providers and end users: Croatia, Iceland, Bosnia & Herzegovina, Montenegro, Serbia, Kosovo, as further explained in the section on end user dispute resolution.

9. Appeal procedures

Article 4 of the Framework Directive sets out a requirement for effective judicial review mechanisms enabling any party affected by an NRA decision to submit an appeal against the decision to an appeal body that is independent of the parties involved. Therefore, there is a similar requirement of independence for the appeal body as exists for the NRA itself. The article also establishes several requirements for the appeal mechanisms:

- The appeal body may be a court or a non-judicial body. In the latter case, the second appeal instance must be a court or a tribunal.
- An appeal of the NRA decision shall not automatically suspend the application of the appealed decision.
- The appeal body must be able to take the merits of the case into consideration and not only rule on procedural grounds.

In addition, the timeframe for obtaining a decision on appeal is important given the inherent legal uncertainty caused by such appeal processes and their potential retroactive effects.

In five of the monitored countries, the NRA decisions are final in the administrative procedure and the first appeal instance is a court. In Albania and Bosnia & Herzegovina, before being submitted to a court, the appealed NRA decisions are first reviewed by the council of the NRA.

In Montenegro, the NRA decisions in the first instance are appealed to the Ministry of Information Society and Telecommunications. In Iceland, the NRA decisions in the first instance are appealed to the Rulings Committee for electronic communications and postal affairs appointed by the Ministry of Interior. In both countries, the appeal mechanisms raise concerns over independence of the appeal body.

With the exception of Albania where an administrative appeal to the council of the NRA would automatically suspend the implementation of the appealed decision, there is no automatic suspension of the appealed decision, unless the appeal body or the NRA decides to grant a suspension upon the complainant's request.

In most of the countries the appeal body is able to consider the merits of the case, except FYROM where the court is limited in the appeal process to the correct application of administrative proceeding. All countries allow a third party to appeal an NRA decision if it can prove a legitimate interest in the case.

Except in a few instances where the first instance appeal body is an institution different from a court, the judicial review systems do not foresee any specific deadlines for adopting decisions on appeals. Lengthy and inefficient court procedures taking several were reported in most countries, however, recently some progress has been observed in Croatia and Serbia.

In countries where the first appeal instance is a non-judicial body, it is common to set a deadline for decisions on appeals. In Albania, the NRA council has to decide on appeal within 30 days, in Bosnia & Herzegovina within 60 days. In Montenegro, the appeal procedure brought before the Ministry must be completed within 60 days, whereas in Iceland the deadline for the Rulings Committee to decide on appeal is eight weeks.

10. NRA transparency and participation

The NRAs need to exercise their powers impartially and transparently. A lack of transparency undermines legal certainty and increases the potential for political interference. Furthermore, according to the principle of transparency, regulatory processes should allow for formal consultation of the stakeholders before decisions are made.

The rules and procedures vary from country to country but, to a certain degree, all NRAs have an established practice to organise public consultation on specific decisions. The average period for comments is 30 days with a maximum of three months in Montenegro and a minimum of 10 days in Serbia.

It has not yet become a common practice for the NRAs to publish a summary of the received responses to the consultation along with their reasoned opinion. In Croatia, a specific provision is

included in the amendments of the Law on electronic communications adopted in July 2011, to publish the summary of the public consultation responses.

In all countries except in Turkey there is an obligation for the NRAs to publish their decisions on the website. In practice, all NRAs are publishing their decisions on their websites.

11. Cooperation between NRA and national competition authority

The EU regulatory framework for electronic communications is intended to apply during the intermediary phase on the transition from a regulated monopoly to normal competition, governed only by general competition law. Sector specific ex ante regulation and competition law should serve as complementary instruments to achieve policy objectives in the electronic communications sector and address the lack of effective competition. At the same time, a principle underlying the regulatory framework is that ex ante regulation should only be imposed where competition law remedies are insufficient and rolled back when it is no longer needed.

Furthermore, the use of sector specific regulation, when it is found to be justified, relies extensively on the competition law principles in defining the relevant markets that are susceptible to ex ante regulation, in assessing market dominance and in formulating remedies to address anticipated competition law breaches.

Therefore, the EU 2003 regulatory framework for electronic communications introduced an important convergence of competition law and sector specific ex ante regulation. In its practical application, NRAs are advised to consult with their national competition authorities (NCAs) when deciding whether the use of both complementary regulatory tools is suitable to deal with a specific topic, or whether competition law instruments are sufficient. NRAs are also required to carry out analysis of the relevant markets in close collaboration with NCAs. In a practical application, it is advisable for both authorities to conclude an agreement covering the scope of their cooperation in the electronic communications sector and the division of specific responsibilities.

In all countries with the exception of Bosnia & Herzegovina, the NRA and the NCA have established such a formal cooperation.

I. Market access conditions in electronic communications

1. Liberalisation of electronic communications networks and services

The liberalisation of telecommunications markets in the monitored countries was evolving at different speeds. Furthermore, in some countries it was a complex process stretched over several years with a step-by-step approach starting from data services and moving into specific segments of voice telephony networks and services.

As illustrated in the figure below, by now all monitored countries have liberalised electronic communications networks and services, with the exception of public fixed voice telephony networks and services in Serbia that will be fully opened to competition on January 1, 2012.

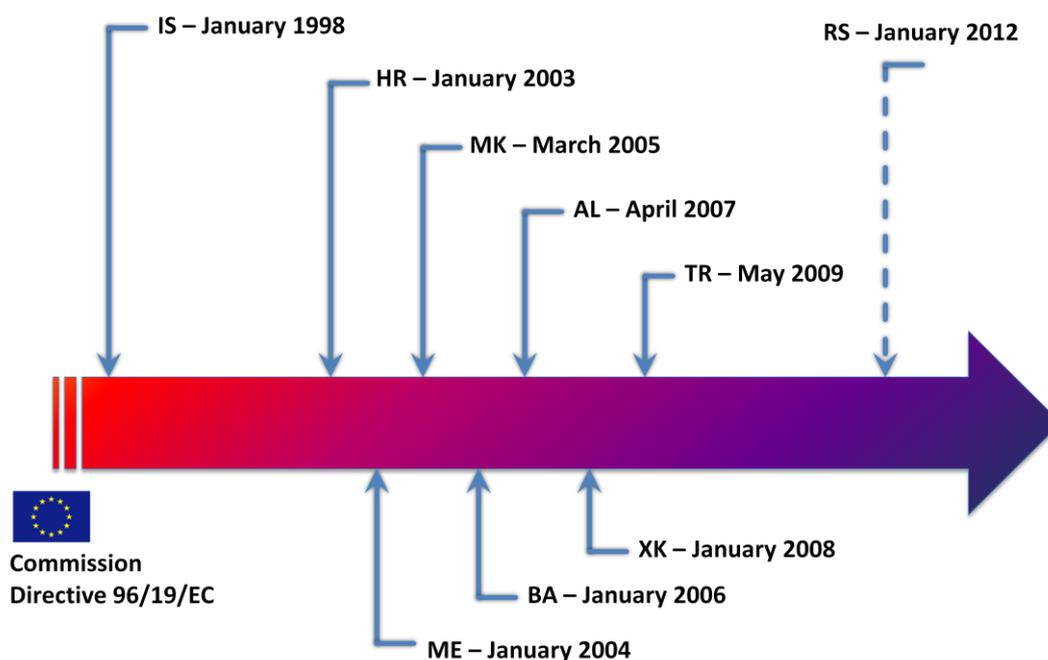


Figure I.1 - Full liberalisation of telecommunications markets

Iceland was the first country to introduce full liberalisation of telecommunications networks and services on January 1, 1998, in line with the requirements set out in the agreement on the European Economic Area (EEA) in accordance with the European Commission Directive 96/19/EC.

Croatia liberalised telecommunications markets on January 1, 2003, followed by Montenegro on January 1, 2004. However, until April 2007 the high Montenegrin licensing fees, especially for international services, presented a barrier to market entry. In FYROM, full liberalisation was implemented in 2005 following the adoption of the Law on electronic communications and implementing legislation.

Bosnia & Herzegovina liberalised local and domestic long distance services in 2002. International voice telephony services were opened to competition on January 1, 2006.

In Albania, liberalisation of fixed telephony networks and services was a gradual process starting with rural local services in 1998, moving to domestic long distance services in July 2003 and international services in January 2005. The provision of urban local networks and services was liberalised in April 2007 following the introduction of regional licences, although *de facto* this segment remained closed to competition until the Law on electronic communications was adopted in 2008.

In Kosovo, the liberalisation of fixed networks and services was formally achieved by the Law on telecommunications of May 12, 2003. However, the NRA only completed the secondary legislation on authorisations for alternative providers in 2006. PTK, the incumbent operator, maintained exclusive control over international gateway facilities until December 31, 2007.

In Turkey, domestic long-distance and international networks were liberalised on January 1, 2004, while local fixed telephony networks and services were opened to competition only in May 2009 with the entry into force of the general authorisation regime under the new Electronic communications law.

In Serbia, the fixed incumbent operator was granted until June 9, 2005 an exclusive right to provide all types of fixed telecommunications services, with the exception of internet and cable TV services that were open to competition. Telekom Srbija remained the only licensed public fixed telephony network operator until February 2010, when a second licence for the provision of public fixed telecommunications networks and services was issued to Telenor following a public tender procedure. It was also agreed not to allow similar new licences until the end of 2011, thereby keeping competition in the sector limited despite the adoption of the new primary law which envisages full liberalisation.

2. Authorisation regime for electronic communications services

The EU 2003 regulatory framework has established a general authorisation regime for the provision of electronic communications networks and services. Undertakings may only be required to notify the

intention to commence the provision of electronic communication networks or services and to submit information required to allow the NRA to keep a register or list of providers. There is no requirement to obtain an explicit decision by the NRA before starting activities. Individual authorisations can only be required for the rights to use spectrum and numbers.

Six of the monitored countries have implemented a general authorisation regime for all categories of electronic communications services: Iceland, FYROM, Albania, Croatia, Montenegro and Turkey.

In Turkey, however, authorisation and concession agreements issued before the entry into force of the Electronic Communications Law of November 2008 will remain in force until their expiry (due in 2029), annulment or termination. Currently, Turksat (the satellite provider) operates under an authorisation agreement, Turk Telekom and the three mobile providers operate under concession agreements. The specific obligations and conditions stemming from the respective authorisation and concession agreements also continue to apply to the authorisation holders. Furthermore, in September 2011, the Turkish NRA amended the bylaw on authorisations to prevent operators that are authorised through a concession or an authorisation agreement from obtaining additional authorisations. As a result of this new regulation, these operators would not be able to launch multiple-play service offers.

Serbia introduced general authorisation regime for all electronic communications services in 2010, except public voice telephony services provided over public fixed telephony networks, for which general authorisation regime is foreseen from January 1, 2012.

In Bosnia & Herzegovina and Kosovo, the authorisation regimes are based on individual licences. Both countries, however, have recently reduced the applicable licensing fees. In January 2011, the Bosnian NRA reduced annual fees for licensed providers of public fixed telephony services from €28,000 to €20,000, and for licensed operators of public fixed networks: from €26,000 to €16,000 at national level, from €5,000 to €3,000 at regional level and from €2,600 to €1,500 at local level. In March 2011, the one-off licence fees in Kosovo were reduced from €87,500 to €50,000 for national fixed telephony services, from €35,000 to €25,000 for international services, and from €50,000 to €25,000 for international gateway facilities.

The table below provides an overview of the authorisation regimes for electronic communications networks and services and one-off and annual fees paid by authorised undertakings. Annual fees are shown either as a percentage of revenue or a corresponding amount in euro. Where applicable, a maximum amount foreseen by the law is shown in parentheses.

Country	General authorisation	One-off fees	Annual fees (% of revenue)
HR	2008	0	0.28%
IS	2003	0	0.30%
ME	2008	€1000	0.8% (max 1.5%)
MK	2005	0	0.07-0.35% (max €250,000)
TR	2009	0	0.35%
AL	2008	0	0 (max 0.5%)
BA	X	€255 - €511	€511 - €281,000
RS	2010-2012	0	from €103 to 0.5%
XK	X	up to €50,000	0.30%

Table I.1 - Authorisation regime for electronic communications services

The operation of cable TV networks is subject to a general authorisation regime with a simple notification to the NRA in Croatia, Iceland, Montenegro and Turkey. In FYROM, in addition to the general authorisation regime with a notification to the NRA, cable TV operators are required to register the provision of broadcasting retransmission services with the broadcasting regulator. In Albania and Serbia, in addition to the general authorisation regime with a notification to the NRA, a separate licence to provide broadcasting services has to be obtained from the national broadcasting regulators. Furthermore, in Albania cable TV operators are restricted from offering electronic communications

services, such as voice telephony or internet access. In practice, Albanian cable TV operators have to establish separate legal entities in order to be able to offer electronic communications services.

In Kosovo, provision of cable TV services requires an individual licence from the broadcasting regulator without any specific authorisation from the NRA. An individual licence from the NRA would be however required for provision of electronic communications services such as voice telephony or internet access. In Bosnia & Herzegovina, cable TV services require two licences from the NRA: a network licence for the provision of a public network and a service licence for content distribution services over a cable TV network.

3. Rights of way

Rights of way are necessary to establish electronic communications infrastructure. For fixed network operators rolling out new infrastructures, access to public and private land is required to install cables and ducts. Similarly, access to building sites and construction permits is important for operators installing mobile network infrastructure.

Article 11 of the Framework Directive requires that applications for granting the rights to install infrastructure on public or private property shall be handled by the relevant authorities in a transparent, non-discriminatory manner and without delay. It also states that the authorities issuing building permits must be structurally separated from the network operators. Expropriation procedures must be available and justified as a safeguard mechanism for access to private as well as to public land.

In all monitored countries the rights of way for electronic communications infrastructure are addressed in the primary laws on electronic communications that provide for the non-discriminatory right of use of public and private land. In addition, more specific procedural issues are set out in the relevant acts on spatial planning and constructions. Recent legislative initiatives aimed at improving the transparency of the procedures and shortening the deadlines for issuing relevant permits have been implemented in Croatia and Serbia. Also, new legislation on the rights of way for electronic communications infrastructure is currently being drafted in Albania and Kosovo.

The deadlines for issuing construction permits foreseen by the relevant legislation in the monitored countries are varying from eight to 60 days. However, the NRAs typically have little or no control over the procedures for granting rights of way, which involve issuing of building permits by local or regional authorities and location permits by authorities in charge of urban and country spatial planning. Therefore, in practice the time required to obtain construction permits may still well exceed 12 months.

J. Radio spectrum

1. Frequency management

Frequency management includes two main tasks: (i) frequency allocation, including the approval of the national frequency plan; and (ii) frequency assignments, covering individual authorisations to use frequencies in the national frequency plan. Frequencies for the military sector are normally decided outside this framework.

In Bosnia & Herzegovina, Iceland and FYROM, NRAs are responsible for the full scope of frequency management functions, including frequency allocation and frequency assignments for telecommunications and broadcasting. In Turkey, the NRA is responsible for frequency allocation and frequency assignment for telecommunications, while frequency assignment for broadcasting is carried out by the broadcasting authority. In Croatia, Montenegro and Serbia, frequency allocation is carried out by the government on the basis of a proposal of the NRA, while the NRA performs all frequency assignment tasks.

In Kosovo, the national frequency plan is approved by parliament on the basis of the NRA proposal, and the NRA carries out all frequency assignments. Spectrum assignments for broadcasters, however, are done in coordination with the broadcasting authority. In Albania, frequency allocation is decided by the government on the basis of a proposal of the NRA to the ministry. Similarly to Turkey, the NRA is responsible for frequency assignment for telecommunications, and the broadcasting authority for frequency assignment to broadcasters.

2. Spectrum licences issued to mobile operators

Six of the monitored countries have three 2G mobile operators: Croatia, Montenegro, FYROM, Turkey, Bosnia & Herzegovina and Serbia. In Iceland and Albania, there are four and in Kosovo two 2G mobile operators. All countries, except Kosovo, have issued 3G spectrum in the 2100 MHz band.

In Montenegro, a tender procedure was launched in November 2011 to award additional spectrum in the 900 MHz, 1800 MHz and 2100 MHz bands – either to a new entrant mobile operator or the three existing ones.

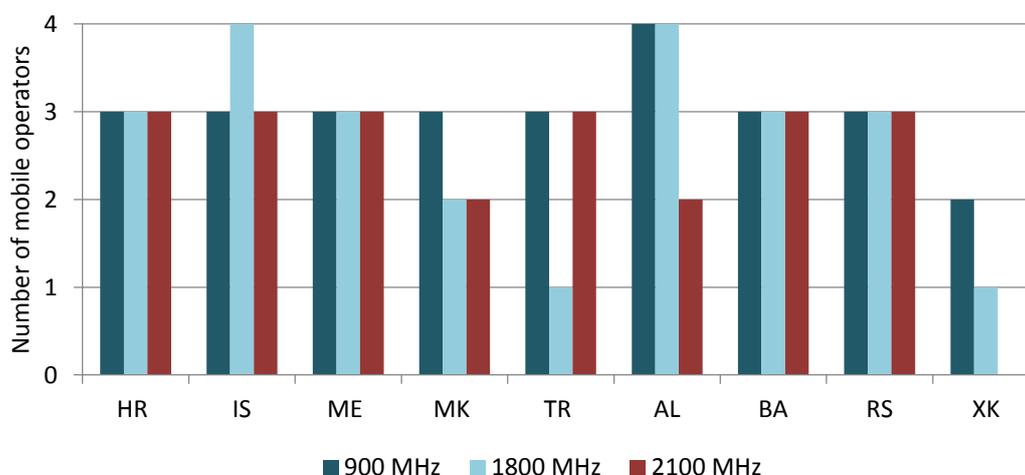


Figure J.1 - Spectrum assignments in 900 MHz, 1800 MHz and 2100 MHz bands

The distribution of spectrum assignments demonstrates some asymmetries, typically between established operators and new entrants. In Croatia, the new entrant Tele2 was granted a smaller spectrum assignment in the 900 MHz band than T-Mobile and VIPnet. Also in Serbia, the late entrant VIP mobile has a smaller spectrum assignment in the 900 MHz band, but more in the 1800 MHz as compared to the two other established operators. In Turkey, the smallest operator, Avea, has a much smaller spectrum assignment in the 900 MHz band, but also holds the single licence in the 1800 MHz band.

In Iceland, the late entrant operator, Nova, has a smaller spectrum assignment in the 900 MHz band than the two largest operators, Síminn and Fjarskipt. The fourth and the smallest Icelandic operator, Alterna (IMC) only has a very small spectrum assignment in the 1800 MHz and no spectrum in either 900 MHz or 2100 MHz bands.

In FYROM, One does not have any spectrum in the 1800 MHz band, while the late entrant VIP operator did not acquire any spectrum in the 2100 MHz band. In Albania, all four mobile operators have similar spectrum assignments in the 900 MHz and 1800 MHz bands, but only two of them, Vodafone and AMC, have been awarded spectrum in the 2100 MHz.

In Kosovo, Vala has been assigned spectrum only in the 900 MHz band, while IPKO has both the 900 MHz and 1800 MHz spectrum assignments.

In practice, these asymmetries mean that mobile operators with spectrum assignments in the higher 1800 MHz band are often facing higher network deployment cost.

As regards the spectrum assignment method, comparative selection based on non-financial criteria (“beauty contest”) has been historically used in Croatia and Iceland. Financial auctions have been the principal method used in Serbia and in Turkey. Four other countries – Albania, Montenegro, FYROM and Kosovo – have opted for a hybrid method combining financial bid and other non-financial selection criteria. In Bosnia & Herzegovina, all spectrum assignments have been awarded to the mobile subsidiaries of the three incumbent operators without any competitive procedures.

3. Refarming of 2G spectrum for 3G/4G services

In October 2009, the Council Directive 87/372/EEC ('GSM Directive') was amended removing the restriction that reserved the 900 MHz spectrum exclusively for GSM services. The Commission has also adopted complementary decisions setting out the technical parameters that enable the co-existence of 3G (UMTS) and 4G (LTE and WiMAX) mobile technologies along with the traditional GSM services in the 900 MHz and the 1800 MHz bands. The objective of these Commission's initiatives has been to stimulate deployment of wireless broadband services in these bands.

The Commission has also called for redistribution of the existing spectrum assignments in the GSM bands between mobile operators, in order to avoid competition distortions and to modify channelling arrangements from the current 2 x 200 kHz spectrum blocks used by GSM to 2x5 MHz blocks required for deployment of UMTS and LTE.

Five of the monitored countries have so far allowed UMTS services in the 900 MHz and 1800 MHz bands: Croatia, Iceland, and FYROM – since 2009, and Montenegro and Bosnia & Herzegovina – since 2010.

In Croatia, the regulator renewed in 2009 spectrum licences of the three mobile operators on technology neutral basis. In Iceland, in parallel with allowing UMTS services in the 900 MHz and 1800 MHz bands, the regulator also assigned additional spectrum in the 900 MHz band to three mobile operators: Síminn, Fjarskipt and Nova. The issue of spectrum redistribution in Iceland is expected to be further addressed in the context of the renewal of mobile licences expiring in 2012.

In Turkey, the regulator has proposed to the Ministry of Transport that frequencies allocated to GSM operators (both at 900 MHz and 1800 MHz) be opened for 3G services. It also proposed that before this change in the use of frequencies takes place, 2x8.6 MHz of spectrum in the E-GSM band (880-890 MHz paired with 925-935 MHz) may be auctioned to operators that currently hold less than 10 MHz of spectrum in the 900 MHz band. Similarly, two blocks of 2x15 MHz in the 1800 MHz band may be auctioned to operators that do not have frequencies in this band.

4. Broadband wireless access

Spectrum licences for broadband wireless access (BWA) in the 3.5 GHz band have been issued in Croatia, Iceland, Montenegro and FYROM. Most of the regional licences issued in Croatia and FYROM, however, either expired or were returned to the regulator. In Croatia, out of 56 initially issued regional licences, currently there are 11 valid licenses covering 11 of 20 counties and the district of Zagreb. In FYROM, out of initially issued two national and 18 regional licences, there are six valid regional licences covering the whole national territory issued to one licensee (Neotel). All other licences were revoked either because of the failure to meet coverage obligations or on request of the licensees themselves.

In Serbia, no national or regional licences have been issued, but there are 51 permits for individual radio stations at specific locations mostly within Belgrade and Novi Sad granted under the previous legislation. In May 2009, the Serbian NRA issued two national fixed wireless access licences in the 410 – 430 MHz band to Telekom Srbija and Orion Telecom (Media Works) following a tender procedure.

In Albania, Bosnia & Herzegovina, Kosovo and Turkey no licences for provision of broadband wireless access services have been issued so far. In Bosnia & Herzegovina, however, alternative operators are offering broadband services using Wi-Fi spectrum in the license-free 2.4 GHz and 5 GHz bands.

5. Analogue switch-off dates and use of the digital dividend

The 800 MHz (790-862 MHz) band is the upper part of the spectrum that will be freed up with the switchover from analogue to digital terrestrial television broadcasting. The European Commission calls all EU member states to have completed their analogue terrestrial broadcasting switch-off by January 1, 2012, although this is not a binding deadline.

In September 2010, the Commission presented a package of measures intended to facilitate investment in fast and ultra-fast broadband networks, including a legislative proposal for the first EU-wide five-year Radio Spectrum Policy Programme (RSPP). The main objective is to make more spectrum available for wireless broadband services. As part of the RSPP, the Commission proposes that all member states should open up the 800 MHz band for wireless broadband services by January 2013, with derogations until the end of 2015 in exceptional cases. If adopted, the RSPP targets would be binding on member states.

Only Croatia and Bosnia & Herzegovina would have completed their analogue terrestrial transmissions by January 1, 2012. Croatia already completed the switch-off process on October 5, 2010. Iceland, Montenegro and Serbia have plans to complete switchover in 2012, FYROM in 2013. Turkey plans to terminate analogue transmissions in 2014 and Kosovo in 2015.

No formal decision on digital switchover has been taken in Albania. At the same time, Albania is reported to operate already now well developed DVB-T and DVB-H networks with national coverage.⁸ The networks, however, operate outside of the current legal framework for broadcast services adopted by parliament in May 2007.

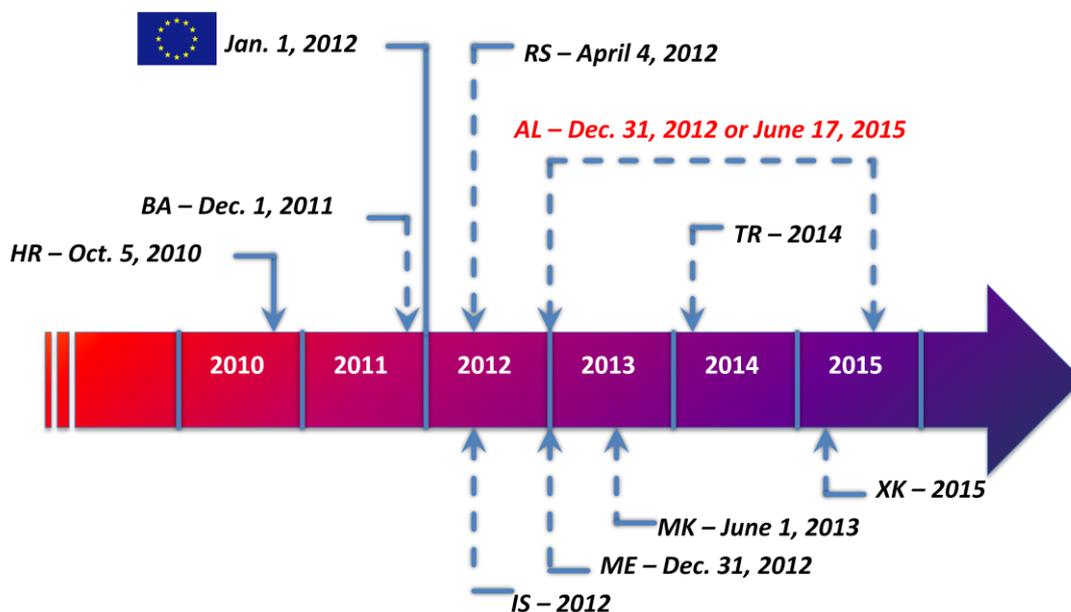


Figure J.2 - Analogue switch-off schedule in the Enlargement countries

At this stage, none of the countries has decided on further steps to allocate the digital dividend for wireless broadband. Even in Croatia, where the 800 MHz band is free, the allocation of digital dividend for wireless broadband applications in practice is not possible because of the interception caused by the neighbouring countries that currently continue analogue broadcasting transmission in this band.

K. Regulatory framework for market analyses

1. Market analysis procedures and regulations

The concept of significant market power (SMP) is one of the central elements of the EU regulatory framework for electronic communications. Following a market analysis by the NRA, an operator can be designated as having SMP in a specified electronic communications market. Subsequently, it may be subject to specific *ex ante* regulatory obligations (remedies).

So far, seven countries with primary legislation based on the EU 2003 regulatory framework have adopted regulations based on the EU guidelines and competition law principles and have completed at least one round of market analysis: Croatia, Iceland, Montenegro, FYROM, Turkey, Albania and Serbia.

Bosnia & Herzegovina and Kosovo are also aligning their regulatory regimes with the EU guidelines and have started their first analyses of relevant markets. Although both countries have primary laws based on the EU 1998 regulatory framework, their NRAs have recently adopted regulations that provide legal basis for regular analysis of electronic communications markets and imposition of *ex ante* regulatory obligations on operators with SMP. In Kosovo, the NRA adopted a Regulation on market

⁸ <http://www.digitag.org/WebLetters/2008/External-Aug2008.html>

analysis and definition of the providers with SMP in December 2010, and in Bosnia & Herzegovina, the NRA adopted a Rule on analysis of electronic communications markets in October 2011.

In all countries, the NRAs have discretion to define markets relevant for ex ante regulation taking into account the EC recommendation on relevant markets and applying the three criteria test for additional markets. In practice, the NRAs in Iceland, FYROM, Turkey, Albania and Kosovo have so far relied on the European Commission recommendation on relevant markets of 2003 in defining relevant markets, whereas the NRAs in Croatia, Montenegro, Bosnia & Herzegovina and Serbia have applied the 2007 version of the recommendation.

With the exception of Kosovo that mainly relies on the 25% market share threshold as a basis for the designation of undertakings with SMP, the monitored countries now apply competition law principles, taking into account market shares and other relevant criteria in accordance with the EU guidelines.

The frequency of the market analysis varies between the countries:

- once every year – in Bosnia & Herzegovina;
- every two years – in Albania;
- every three years – in Croatia, Iceland, Turkey, Serbia and Kosovo; and
- left to the discretion of the NRA – in FYROM and Montenegro.

2. Analysis of relevant markets by NRAs

Seven of the monitored countries have completed at least their first round analysis of electronic communications markets in line with the EU guidelines.

a) Croatia

The Croatian regulator, HAKOM, completed its first round analysis of nine markets in July 2009 covering five markets of the Commission 2007 recommendation on the relevant markets – wholesale fixed call origination, wholesale fixed call termination, wholesale infrastructure access and wholesale broadband access markets (markets 2-5/2007) and wholesale mobile call termination (market 7/2007). At the same time HAKOM found no longer relevant for ex ante regulation four markets that have been previously regulated: wholesale fixed transit services (market 10/2003), wholesale mobile access and call origination (market 15/2003) and retail mobile services. HAKOM also assessed the wholesale SMS termination market finding it not fulfilling the three criteria test.

In 2011, HAKOM has carried out its analysis of further markets. In April 2011, retail and wholesale regulatory obligations were imposed on the incumbent operator that was found to have SMP in the retail fixed access market (market 1/2007). In June 2011, HAKOM deregulated retail markets for international calls (markets 4 and 6/2003) after finding them no longer fulfilling the three criteria test. At the same time, the incumbent operator was found to have SMP in the retail markets for local and national calls (markets 3 and 5/2003) and regulatory obligations were imposed in July 2011.

Between May 30 and July 15, 2011, HAKOM consulted on draft decisions covering market analysis of wholesale terminating segments of leased lines (market 6/2007) and on a three criteria test for wholesale trunk segments of leased lines (market 14/2003). Between July 21 and September 12, 2011 HAKOM consulted on a three criteria test for the retail market for provision of broadband internet access services and as a next step, on October 24, 2011 HAKOM published for consultation its draft analysis of this market proposing to designate HT together with its subsidiary Iskon as having SMP. The scope of proposed regulatory obligations includes retail price control, non-discrimination and prohibition of unjustified bundling and would apply to both retail broadband access and IPTV services.

b) Iceland

The Icelandic regulator, PTA, completed in 2007-2008 its first round analysis of the markets defined in line with the Commission 2003 recommendation. Only the wholesale market for broadcasting transmission services (market 18/2003) was found to be competitive, whereas SMP was found in all other 16 markets. No retail regulatory obligations were imposed in the markets for fixed call services (markets 3-6/2003) as PTA considered wholesale obligations imposed in the corresponding upstream markets to be sufficient to address the identified competition problems.

Currently PTA is working on its second round market analysis. Analysis of the wholesale mobile call termination market (market 16/2003) was completed in July 2010 introducing new glide paths for reductions in mobile termination rates until January 2013 for all mobile operators with SMP. In August 2011, PTA published for consultation its draft proposal to deregulate the wholesale market for mobile access and call origination (market 15/2003) as no longer satisfying the three criteria test.

c) Montenegro

The Montenegrin regulator, EKIP, completed in November 2010 its first round of market analysis defined according to the Commission 2007 recommendation. In all seven markets, it imposed a full set of regulatory obligations including retail price controls, wholesale access obligations covering interconnection, carrier selection and pre-selection, wholesale line rental, local loop unbundling, wholesale broadband access and wholesale price controls.

In 2011, EKIP continued analysis of additional markets. During August and September 2011 EKIP consulted on draft proposals that the following additional markets satisfy the three criteria test and therefore should be subject to ex ante regulation: retail market for fixed local and national calls (markets 3 and 5/2003), retail market for fixed international calls (markets 4 and 6/2003), wholesale market for mobile access and call origination (market 15/2003), wholesale broadcasting transmission services (market 18/2003) and wholesale trunk segments of leased lines (market 14/2003). As a next step, EKIP will carry out analysis of the markets found relevant to ex ante regulation.

d) FYROM

In 2010 the Macedonian NRA, AEC, completed its first round analysis of the retail fixed markets for fixed access and call services (markets 1-6/2003), retail and wholesale leased lines services (markets 7, 13 and 14/2003), wholesale fixed call origination, termination and transit services (markets 8-10/2003), wholesale infrastructure and wholesale broadband access (markets 11 and 12/2003), and wholesale mobile access and call origination (market 15/2003). At the same time, AEC also carried out its second round analysis of the wholesale mobile call termination market for all three mobile operators (market 16/2003) and approved asymmetric glide paths for MTRs reductions until August 2013.

In May 2011, AEC completed its analysis of the wholesale market for SMS termination that was found satisfying the three criteria test and therefore relevant to ex ante regulation. All three mobile operators were found as having SMP and imposed a full set of regulatory obligations including price control based on LRIC methodology.

e) Turkey

The Turkish regulator, ICTA, completed its second round of market analyses. In line with its first round, the analysed markets correspond to 16 relevant markets of the Commission 2003 recommendation (i.e. excluding the two wholesale markets for international roaming and broadcasting transmission services). Final decisions on all markets were adopted between December 2009 and February 2010. In all markets, similar to the first round analysis, ICTA imposed a full set of regulatory obligations, including the new remedy of wholesale line rental imposed on Türk Telekom in retail fixed markets for residential and business access (markets 1 and 2/2003).

Currently ICTA is carrying out its third round of market analyses. The consultation on mobile call termination (market 16/2003) was completed in April 2011. According to the draft proposal, price control obligations would now only apply to calls originating inside Turkey.

f) Albania

The Albanian regulator, AKEP, also completed its second round of market analyses. In April 2011 AKEP adopted final decisions on leased lines markets (markets 7, 13 and 14/2003), wholesale unbundled access and broadband access (markets 11 and 12/2003).

Similar to Turkey, the analysed markets correspond to 16 relevant markets of the Commission 2003 recommendation. The scope of regulatory obligations imposed on the fixed incumbent operator, Albtelecom, in the fixed retail and wholesale markets includes the obligations to provide carrier selection and pre-selection, local loop unbundling and wholesale broadband access. However, the implementation of these obligations in practice is linked to completing the tariff rebalancing process for Albtelecom.

The second round analysis of wholesale call termination on individual mobile networks covers three mobile network operators that have been imposed a similar set of regulatory obligations, although the price control obligations allow asymmetric MTRs. The regulator has also removed the non-discrimination obligation that previously applied to termination of calls originating abroad. The fourth operator, Plus Communication, is currently not regulated as it was not active at the time of market analysis.

g) Bosnia & Herzegovina

Until now, the Bosnian regulatory framework has based on the 25% market share threshold for the designation of undertakings with SMP and regulatory obligations pre-defined by the law and licence conditions. Accordingly, the three incumbent operators were designated as having SMP in the markets for fixed and mobile voice telephony services and leased lines.

In October 2011 the NRA adopted a Rule on market analysis that provides legal basis for regular analysis of electronic communications markets and imposition of *ex ante* regulatory obligations on operators with SMP in line with the current EU regulatory framework. In parallel, the regulator has been also carrying out its first round analysis of wholesale mobile call termination (market 7/2007), wholesale fixed call termination (market 3/2007), wholesale unbundled access and broadband access (markets 4 and 5/2007).

h) Serbia

In August 2011, the Serbian regulator, RATEL, completed its first round of market analyses. The list of analysed markets includes the seven markets of the Commission 2007 recommendation and two further retail markets that were found satisfying the three criteria test: retail fixed telephony services (markets 3-6/2003) and retail distribution of media content. In all markets RATEL designated undertakings with SMP and imposed regulatory obligations, including carrier selection and pre-selection, local loop unbundling and wholesale broadband access, as well as retail and wholesale price controls. Final decisions on the specific regulatory obligations for SMP operators are expected to be adopted by RATEL before the end of 2011.

i) Kosovo (under UNSCR 1244)

Although the current regulatory framework in Kosovo is still based on the 25% market share threshold for the designation of undertakings with SMP, the regulator has made some progress in aligning its market analysis procedures with the EU rules. In December 2010, the regulator, TRA, adopted a regulation on market analyses and designation of providers with SMP, which defines the procedural steps and main principles for defining relevant markets, designating operators with SMP and imposing regulatory obligations. By the end of 2011, TRA is planning to complete its first round market analysis of fixed retail services (markets 1-6/2003), wholesale call origination, termination and transit (markets 8-10/2003) and wholesale unbundled access (market 11/2003).

L. Competitive safeguards

1. Competitive safeguards overview

The next sections address the implementation of competitive safeguards which constitute the basic mechanisms enabling competition when a national market is being liberalised.

The table below provides a summary overview of the implementation status of competitive safeguards in the monitored countries.

	HR	IS	ME	MK	TR	AL	BA	RS	XK
Carrier selection/ pre-selection	✓	✓	✓	✓	✓	✗	✓	✗	✗
Fixed number portability	✓	✓	✗	✓	✓	✗	✓	✗	✗
Mobile number portability	✓	✓	✗	✓	✓	✓	✗	✓	✗
Fixed RIO	✓	✓	✓	✓	✓	✓	✓	✓	✓

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	HR	IS	ME	MK	TR	AL	BA	RS	XK
RUO	✓	✓	✓	✓	✓	✗	✓	✗	✗
Wholesale broadband access	✓	✓	✓	✓	✓	✗	✗	✓	✗
Wholesale line rental	✓	✓	✓	✓	✗	✗	✗	✗	✗
Mobile RIO	✓	✓	✓	✓	✓	✓	✓	✗	✗
National roaming	✓	✓	✗	✓	✓	✓	✓	✓	✗
MVNO/SP access	✗	✓	✗	✓	✓	✓	✓	✗	✓
Legend: ✓ implemented - ✗ not implemented									

Table L.1 - Implementation of competitive safeguards

2. Carrier selection and pre-selection

Carrier selection (CS) and carrier pre-selection (CPS) are among the basic mechanisms enabling competition at the service level. CS allows a subscriber, connected to the incumbent operator's network, to choose a competitive operator for making local calls, long-distance calls, calls to mobile networks, or international calls by dialling a carrier selection code. When CPS is available, the subscriber can make a permanent selection of an alternative provider for all calls or certain types of calls.

	Local calls	National	International	Calls to mobile
HR	February 2005	February 2005	February 2005	February 2005
IS	January 1998 (CS) April 2000 (CPS)			
ME	January 2008 (CS) February 2011 (CPS)	January 1998 (CS) February 2011 (CPS)	January 1998 (CS) February 2011 (CPS)	January 1998 (CS) February 2011 (CPS)
MK	May 2008	January 2007	January 2007	January 2007
TR	May 2009 (CS) October 2009 (CPS)	July 2006	July 2006	July 2006
AL	Not available	Not available	Not available	Not available
BA	October 2006 (CS) July 2007 (CPS)			
RS	Not available	Not available	Not available	Not available
XK	Not available	Not available	Not available	Not available

Table L.2 - Implementation of carrier selection and carrier pre-selection

CS and CPS have been implemented in Croatia, Iceland, Montenegro, FYROM, Turkey and Bosnia & Herzegovina and Montenegro. In Croatia, CS services since their introduction in 2005 have gradually become less attractive commercially and no longer offered by any provider. In Montenegro, CPS was included in the incumbent operator's RIO in February 2011 but no alternative provider has yet started offering CPS services in practice.

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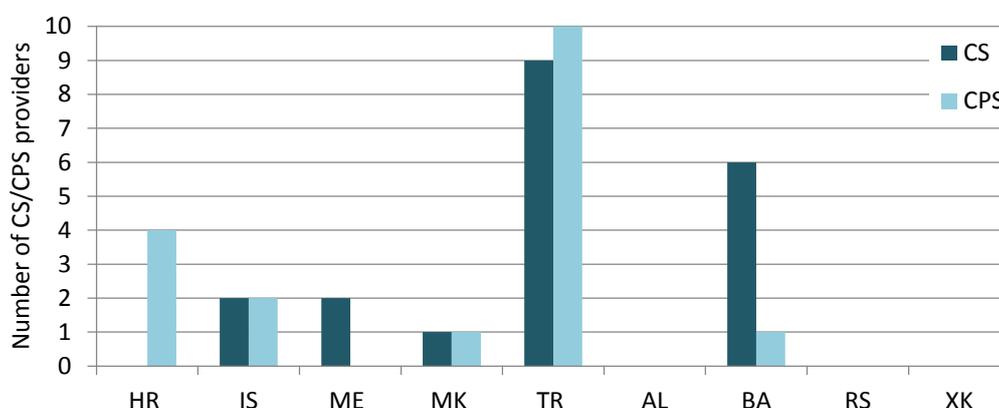


Figure L.1 - Number of providers offering CS and CPS services commercially

In Albania, CS and CPS is imposed as a regulatory obligation on Albtelecom on the wholesale fixed call origination market (market 8/2003), but the introduction has been delayed pending the implementation of tariff rebalancing. CS and CPS are expected to become available in December 2011 for international calls and in May 2012 for local and national calls as well as for calls to mobile networks.

In Serbia, the obligation to offer call origination for CS and CPS services will be imposed on the incumbent operator as part of SMP remedies following the analysis of wholesale call origination (market 2/2007), but the exact timing for its implementation has not yet been decided.

In Kosovo, the regulation on CS and CPS services was adopted by TRA in June 2010, but the so far no obligations to offer CS and CPS services have been imposed in practice pending the conclusions of the first round market analysis.

3. Number portability

Number portability is another important competitive safeguard that enables subscribers to maintain their telephone number when changing the service provider. Article 30 of the Universal Service Directive 2002/22/EC requires all operators of publicly available mobile and fixed telephone services to provide number portability. It also must be available for both geographic and non-geographic numbers.

Only Croatia, Iceland, FYROM and Turkey have implemented number portability for both fixed and mobile networks. In 2011, number portability in mobile networks has become available in Albania and Serbia and in fixed networks – in Bosnia & Herzegovina. Bosnia & Herzegovina also plans to introduce number portability in mobile networks before the end of 2011.

In Montenegro, the deadline of August 28, 2011 for number portability in fixed and mobile networks set out by the law was not met in practice and it has not been decided when it would become available in practice. In Albania, no decision has been taken on the implementation of number portability in fixed networks. No clear deadline has been established for the implementation of number portability in Kosovo, one of the reasons being the absence of the country code.

The table below shows further details concerning implementation of number portability, inter-operator charges (end-user charges in Bosnia & Herzegovina) and implementation statistics.

	Fixed number portability			Mobile number portability		
	Introduction	Inter-operator charge	Statistics	Introduction	Inter-operator charge	Statistics
HR	July 2005	€6.80	536,000	Oct. 2006	€6.80	219,000
IS	Sep. 2000	€3.33	26,000	Oct. 2004	€3.33	55,000/year
ME	<i>Not decided</i>	-	-	<i>Not decided</i>	-	-
MK	Sep. 2008	€3.23	55,000	Sept. 2008	€3.23	40,000
TR	Sep. 2009	€0.90	60,000	Nov. 2008	€0.90	29.7m
AL	<i>Not decided</i>	€4.32	-	May 2011	€4.32	9,000
BA	Sep. 2011	€15.33 (end user)	-	<i>Dec. 2011</i>	€15.33 (end user)	-
RS	<i>Dec. 2012</i>	€10.33	-	July 2011	€10.33	14,500
XK	<i>Not decided</i>	-	-	<i>Not decided</i>	-	-

Note: implementation statistics refer to June 2011, except July 2011 for Albania and October 2011 for Serbia

Table L.3 - Implementation of number portability in fixed and mobile networks

Article 30(4) of the Universal Service Directive 2002/22/EC amended in November 2009 introduces a new requirement for the porting of a number and its subsequent activation to be carried out within one working day. In the monitored countries, only in Iceland the number porting is completed within one day, for both fixed and mobile networks. The longest timeframe for porting a number – 10 days – is allowed in Bosnia & Herzegovina.

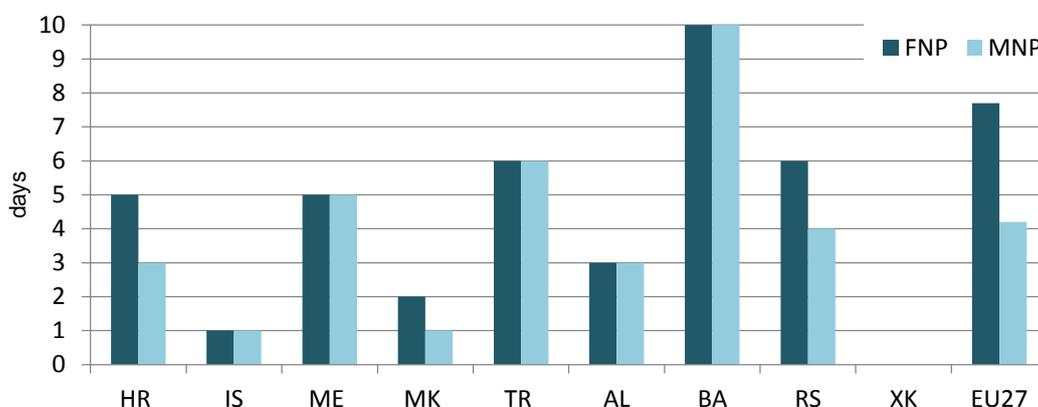


Figure L.2 – Number portability – process duration

4. Reference interconnection offers

One of the key factors in enabling a competitive telecommunications market is ensuring the availability of reference interconnection offers (RIOs) from SMP operators, which also makes more effective other obligations of transparency and non-discrimination.

In fixed networks, RIOs have been published by fixed incumbent operators in all monitored countries. In FYROM, this obligation also applies to the provision of network termination services by major alternative operators designated as having SMP. New reference offers were published by the Macedonian incumbent and alternative operators in the first quarter of 2011. In 2011, RIOs have also been updated by the fixed incumbent operators in Montenegro, Turkey, Albania and Serbia.

In mobile networks, RIOs have been published by MNOs designated as having SMP in all countries, except Serbia and Kosovo. In December 2010 RIOs were updated by the three Albanian mobile network operators with SMP. In February 2011 the first RIOs were published by mobile operators in Montenegro and in April 2011 by mobile operators in Bosnia & Herzegovina. In Serbia, mobile operators will be required to publish RIOs following the conclusion of market analyses by RATEL.

5. Wholesale unbundled access

The least replicable element in the establishment of an access transmission channel to an end-user location is local access or the local loop. There are major obstacles, in terms of cost, time and legal barriers to duplicating the incumbent's local access network. Access networks often represent half of the investment by a fixed network operator and although competitive access technologies are emerging, the copper access network infrastructure is still difficult to duplicate. For this reason, the obligation for local loop unbundling (LLU) is seen as one of the key competition enablers and as an indispensable instrument to speed up the deployment of broadband access.

In the EU, this topic was deemed sufficiently important to justify the adoption of Regulation no. 2887/2000 of the European Parliament and of the Council of December 18, 2000 on unbundled access to the local loop, which also set out a requirement for the publication of a reference unbundling offer. The regulation was later replaced by a corresponding requirement in article 9(4) of the Access Directive 2002/19/EC. The existence of a reference unbundling offer (RUO) is therefore an indication that the local loop facilities of the incumbent operator are available to alternative operators under non-discriminatory terms and conditions.

Only in four of the monitored countries the obligation to provide unbundled access has been implemented in practice: Croatia, Iceland, FYROM and Turkey.

In Croatia, reference unbundling offer (RUO) was introduced by the incumbent operator in October 2005 and by the thirist quarter of 2011 there were nearly 130,000 fully unbundled loops used by five alternative operators. However, 35% of these unbundled loops have been deployed by the incumbent's fully-owned subsidiary, Iskon.

In Iceland, local loop unbundling has been imposed on the incumbent's infrastructure subsidiary, Mila, since 2007. There are four agreements in place for full LLU access and six agreements for shared access. However, out of 70,000 fully unbundled loops over 58,000 (i.e. 83%) are used by the incumbent operator, Siminn. Also, out of 40,000 shared unbundled loops, 16,000 (40%) are used by Siminn.

In Turkey, LLU has been available since 2006 and currently there are 11 agreements in place for both full and shared LLU access. However, the number of unbundled loops remains very low. As of April 30, 2011 there were around 700 fully unbundled loops and just below 10,000 shared unbundled loops (on a network of around 16 million lines).

In FYROM, LLU has also been available since 2006. There is only one agreement for full LLU in place and by the thirist quarter of 2011 there were 3,743 unbundled loops (which represents a decline from 4,300 lines reported a year ago).

In Bosnia & Herzegovina, the first RUOs approved by the NRA were published by the three incumbent operators in January 2010. There are three LLU agreements in place but no unbundled loops have been reported so far.

Following the analysis of the wholesale unbundled access LLU market completed in November 2010, the first RUO was introduced by the incumbent operator in Montenegro in February 2011. However, no LLU agreements have been concluded so far. In Albania, following the designation of Albtelecom as having SMP in the wholesale unbundled access market in April 2011, Albtelecom is required to publish RUO that has not been yet implemented in practice.

In Serbia, one LLU agreement has been concluded between Telekom Srbija and Telenor. The requirement to provide LLU access was imposed on Telekom Srbija under specific conditions for issuing the second fixed licence for Telenor. The agreement was reached in early 2011 following RATEL's intervention in the dispute between the two operators but its practical implementation has been slow. Telekom Srbija will be required to publish its first RUO after the conclusion of the market analysis by RATEL (expected at the end of 2011).

No clear deadline is established for the implementation of LLU in Kosovo.

6. Wholesale broadband access

Wholesale bitstream access is another option for access to infrastructure, in addition to LLU, whereby the incumbent operator hands over the data traffic according to an agreed standard. There are four possible wholesale bitstream access options, representing typical handover points between an incumbent operator and an alternative operator or ISP: DSLAM level, ATM/Ethernet level, IP level and end-to-end resale.

As with LLU, the availability of bitstream access varies considerably across the monitored countries. In Croatia, Iceland, FYROM and Turkey different options for bitstream access have been implemented on the basis of regulated reference offers, while in Serbia bitstream access with handover at the IP level is on commercial basis.

In Croatia, the regulated reference offer for bitstream access with handover at IP level has been available since December 2007. The latest version of the reference offer valid from July 2011 covers both copper and FTTH access networks. As of the first quarter of 2011 there were six agreements in place covering over 21,000 lines.

In Iceland, the regulated reference offer for bitstream access with handover at ATM and IP levels and a resale product has been available since 2008. Currently there are two resale agreements in place covering over 11,000 lines and 11 bitstream access agreements covering around 3,500 lines.

In FYROM, Makedonski Telekom initially offered wholesale ADSL on commercial basis, providing a bitstream access product with IP level handover and a resale product. The first regulated reference offer was approved by the NRA in July 2009 enabling handover at DSLAM, ATM and IP levels as well as resale. As of the first quarter of 2011 there was one resale agreement in place covering nearly 19,000 broadband lines.

An obligation to provide bitstream access with IP handover and resale was imposed on Türk Telekom as early as 2004, but the first reference offer approved by the NRA became available only in August 2007. Since 2010, the reference offer also covers bitstream access with handover at ATM level. As of April 30, 2011 there were 30 resale agreements and 14 bitstream access agreements in place. Out of 82,677 resale lines, 75,426 were supplied to Türk Telekom's subsidiary, TTNNet, and 7,251 to alternative operators. Out of 6,794,690 bitstream access lines, 6,150,390 were supplied to TTNNet and 644,300 to alternative operators.

In Montenegro and Albania, the obligation to provide wholesale bitstream access was imposed on the incumbent operators following the recent analyses of the wholesale broadband access markets. There has been no practical implementation so far, although the first reference offer was published by the Montenegrin incumbent in February 2011.

In Serbia, Telekom Srbija offers wholesale ADSL with IP handover on a commercial basis. Currently there are 22 agreements in place covering over 123,000 lines.

In Bosnia & Herzegovina and Kosovo, no form of wholesale bitstream access is currently available.

7. Wholesale line rental

An incumbent operator may rent its subscriber lines on a wholesale basis to alternative operators enabling resale of these lines to the end users, known as wholesale line rental (WLR). In conjunction with carrier pre-selection ('all calls' option), WLR enables alternative operators to take control over the billing relationship with the end user.

WLR is currently only available in FYROM, where a bylaw was adopted in December 2008, and the incumbent reference offer was approved by the NRA in March 2009. There is currently only one WLR agreement in place covering around 5,000 lines (a decline from the first quarter of 2010 when over 12,000 lines were supplied to two alternative operators). Regulatory obligations to provide WLR and to publish reference offers have been imposed on the incumbent operators in Croatia, Iceland, Montenegro and Turkey, but so far there has been no practical implementation. In Turkey, WLR was initially expected to become available from October 2011, but the implementation was postponed until the end of 2011.

8. Access obligations in NGA environment

As the deployment of NGA networks is still at a very early phase in most of the monitored countries, very few regulators have considered imposing specific regulatory covering passive and active NGA infrastructure elements.

So far, only regulators in Croatia, Montenegro and FYROM have addressed fibre deployments within the scope of their analysis of the wholesale infrastructure access market (market 4/2007). The full set of regulatory obligations related to provision of passive infrastructure for NGA was imposed on the incumbent operator in Croatia, including fibre unbundling, access to ducts and provision of dark fibre where access to ducts is not available. In addition, the Croatian regulator has also imposed symmetrical obligations related to access to in-building wiring infrastructure and the requirement to apply FTTH point-to-point topology for all new NGA deployments.

In FYROM the scope of regulatory obligations related to passive NGA infrastructure only covers access to ducts and dark fibre, while in Montenegro it is limited to duct access.

Active NGA infrastructure has been included in the scope of the wholesale market for wholesale broadband access (market 5/2007) by regulators in Croatia and FYROM. The obligation to provide wholesale broadband access over FTTH network has been only imposed in Croatia and the new reference offer covering bitstream access over fibre was published by the Croatian incumbent operator in June 2011.

In Turkey, in October 2011 the regulator announced that access to fibre services (FTTH and FTTB – fibre to the home and fibre to the building) will be excluded from market analyses for five years, or until the share of fibre internet subscriptions reaches 25% of all broadband subscriptions.

9. National roaming, mobile access and call origination

Regulatory obligations to provide national roaming could be imposed on the established mobile network operators in order to support network deployment for new entrant operators. Such obligations normally are not intended to be a permanent solution and have some conditions attached, such as the achievement of a minimum level of the network coverage before national roaming is permitted and a maximum duration period.

In the monitored countries, there are several examples where national roaming obligations have been imposed in order to support market entry or to facilitate better network coverage.

Croatia had a temporary national roaming requirement to facilitate the entry of the new mobile operator, Tele2. Now Tele2 continues to use national roaming on T-Mobile (HT) network, but on commercial basis.

In Iceland, article 35 of the Electronic Communications Act contains a symmetrical obligation for all mobile operators to provide national roaming to other operators where the establishment of the mobile network is not practicable or difficult, for example due to natural conditions.

In Bosnia & Herzegovina national roaming requirements have been imposed in order to ensure full national coverage for the three MNOs operating in three different entities.

In FYROM and Serbia, the new entrant mobile operators (both are subsidiaries of Telekom Austria) have reached commercial agreements on national roaming with the established mobile operators.

Another way of increasing competition in the mobile market is to impose wholesale access obligations, such as an obligation for MNOs to provide network access for mobile virtual network operators (MVNO) and service providers, in addition to the general obligation to negotiate interconnection.

Based on the market analyses of the wholesale mobile access and call origination (market 15/2003), regulatory obligations to provide different forms of network access were imposed on mobile operators designated as having SMP in Iceland, FYROM, Turkey and Albania.

In Iceland, Síminn is required to provide at regulated prices access to its network for MVNOs and resellers. Recently, the Icelandic regulator, however, has proposed in its second round analysis of market 15/2003 to remove regulatory obligations imposed on Síminn, as the market is considered no longer fulfilling the three criteria test. In practice, several network access agreements have been established between Icelandic mobile operators and service providers.

In FYROM, T-Mobile is required to provide MVNO access and national roaming and must submit a reference offer for the NRA approval. In Turkey, Turkcell has to provide national roaming and MVNO access. In Albania, AMC and Vodafone Albania are required to offer access and call origination on cost-oriented terms to calling cards operators and providers of 0800 services. They also must offer national roaming and MVNO access on commercial terms.

In Kosovo in May 2008, the NRA adopted a policy framework for MVNOs and issued licences to two MVNOs. While there are no legal obligations for access, MVNOs can be launched on the basis of a commercial agreement with one of the two MNOs. Since 2008, two MVNOs have been operational in Kosovo.

In Bosnia & Herzegovina, the NRA has developed guidelines for introducing MVNO and service providers and relevant access provisions were introduced in the first RIOs of mobile operators that were published in April 2011.

10. Price control and regulatory cost accounting for wholesale prices

When an operator is designated as having SMP in a wholesale market, fixed or mobile, NRAs are entitled under article 13 of Access Directive 2002/19/EC to impose a cost accounting obligation to ensure that operators subject to price regulation follow fair, objective, and transparent criteria when allocating their costs to services. The directive does not mandate any specific price control methodology. The European Commission recommendation on the regulatory treatment of fixed and mobile termination rates adopted on May 7, 2009, however, envisages that by the end of 2012 NRAs should set both FTRs and MTRs using a pure bottom-up long-run incremental costs (pure BU-LRIC) model.

Because the implementation of a sound cost accounting methodology is typically a time consuming and resource intensive process, both for the NRAs and the regulated SMP operators, most of the NRAs in the monitored countries have not yet implemented cost-based pricing of regulated wholesale services but opted for the use of some form of benchmarking-based price controls.

So far only regulators in Iceland, FYROM, Turkey and Albania have made progress in implementing cost accounting methodologies. In Iceland, the regulator applies a top-down LRAIC model for setting mobile termination rates and a FDC model with historical cost base for setting fixed interconnection and LLU prices. In July 2010 the Macedonian NRA completed a BU-LRIC cost model for mobile networks and set individual glide paths for MTRs of T-Mobile, One and VIP until August 2013. In October 2010 it also completed a BU-LRIC model for fixed networks that will replace the currently used top-down LRIC methodology. The Albanian NRA completed its work on BU-LRAIC models for fixed and mobile networks in July 2010 and from 2011 regulated interconnection prices of fixed and mobile operators with SMP are set based on the new methodologies.

Retail minus methodologies are the most common approach used by regulators in the monitored countries to set prices for wholesale bitstream access and wholesale line rental.

M. Universal service and end-user rights

1. Scope of universal service and provider designation mechanism

Universal Service Directive 2002/22/EC defines universal service (US) as the *"minimum set of services of specified quality to which all end-users have access, at an affordable price in the light of specific national conditions, without distorting competition"*. The current scope of universal service includes:

- connection to the public telephone network at a fixed location;
- access at a fixed location to publicly available telephone services (PATS), including functional internet access;
- provision of directories and directory enquiry services; and
- public payphones.

The Universal Service Directive also requires any designation of US providers to be carried out by "an efficient, objective, transparent and non-discriminatory designation mechanism, whereby no

undertaking is a priori excluded from being designated”. These rules allow the designation of one or more undertakings to guarantee the provision of universal service and even different or several undertakings to provide different elements of universal service or to cover different parts of the national territory. Furthermore, according to article 8 and recital 8 of the Universal Service Directive, mobile networks may be used for the provision of universal service on a technology neutral basis.

National legislation in all monitored countries defines the scope of universal service as broadly corresponding to the elements listed in the Universal Service Directive. However, only Croatia, Iceland, FYROM and Montenegro have so far carried out universal service provider designation procedures in line with the requirements set out in the EU regulatory framework.

In Croatia, the first designation of the incumbent operator HT as USO provider for a 5-year period took place in November 2005 for the entire scope of services. In October 2010, following an open tender procedure, the Croatian NRA designated two providers for different US components: Imenik – for provision of directory services and T-HT – for all other US components, for another five-year period.

In Iceland, the NRA designated in 2007 following a public consultation procedure, nation-wide USO providers for the following service components: the incumbent operator, Síminn – for the provision of functional internet access and public payphones, the incumbent’s infrastructure subsidiary, Mila – for provision of connections at a fixed location, and Já Upplýsingarveitur – for provision of directory and directory enquiry services, including equivalent access for disabled users. All designations expire in 2011, and so far PTA has renewed the designation of Já Upplýsingarveitur for provision of directory and directory enquiry services for a three-year term, with possible extension until February 10, 2016. Designation procedures for other service components are expected to be launched before the end of 2011. In Iceland, the provision of access to 112 emergency services is also considered as a separate component of universal service. Emergency response services for 112 are provided by Neyðarlínan under a contract with no specific time limit. The Icelandic legislation entitles Neyðarlínan to compensation of its losses through a universal service fund, in the same manner as for other designated US providers, as further discussed in the section below.

In Montenegro, the regulator designated for a five-year term nation-wide US providers for three components in January 2011, following a public tender procedure. Telenor, a mobile network operator, was designated to offer connections and access to publicly available telephony services, including functional internet access at a fixed location. MCA Maribor was designated as a provider for directory and directory enquiry services. No provider was designated for the provision of public payphones.

In FYROM, the regulator completed the tender procedure to designate nation-wide US providers for a five-year term in June 2011. R3 Infomedia was designated as a US provider for directory and directory enquiry services, whereas the incumbent operator, Makedonski Telekom, was designated for all other components.

In Serbia, in March 2010 the regulator imposed universal service obligations on all licensed fixed and mobile public network operators: i.e. Telekom Srbija, Telenor, VIP mobile and Orion Telecom. The exact scope of the designations and specific geographic coverage requirements applicable to each operator will be set out in separate NRA decisions.

In all the remaining countries, no decisions on the designation of the US providers have been taken yet.

In Turkey, the universal service legislation has not been applied in practice and universal service is provided by Türk Telekom under the requirements set out in its concession agreement. The Universal service law of 2005 envisages a tender procedure for the designation of universal service providers but this has not been implemented in practice.

In Albania, under the Law on electronic communications, the regulator can designate one or more universal service providers based on a public tender procedure, subject to the ministry approval. However, no designation mechanism has been established and no provider has been designated.

In Bosnia & Herzegovina, the requirement to offer the minimum scope of universal service is covered by the terms of licences of the three incumbent operators.

In Kosovo, the designation procedures for universal service providers are expected to be carried out after the adoption of the new Law on electronic communications.

2. Minimum data rates within universal service scope

The scope of the universal service obligation (USO) was not addressed in the review preceding adoption of the EU 2009 regulatory framework. Article 4(2) of the amended Universal Service Directive still mentions that a connection to a public communications network provided under the USO should provide “*data rates that are sufficient to permit functional internet access, taking into account prevailing technologies used by the majority of subscribers and technological feasibility.*” However, the recital 8 in the revised Universal Service Directive on functional internet access has been amended to allow member states to set the minimum data rates for functional internet access beyond narrowband rates.

The Commission is currently assessing whether the concept of universal service as it is designed today is still in line with the evolution of the electronic communications market. It is expected to publish a communication on the review of the scope of the USO in 2012, depending on the outcome of the discussion.

So far, the Commission has not been supporting the extension of the USO scope to include broadband as it could have negative effects on competition and disrupt the market. For the purposes of the recommendation, the Commission considers an internet connection with a download speed higher than 144 kbps as a broadband connection. It also suggests several thresholds for the selection of specific broadband data rates, requiring a thorough analysis to be undertaken by member states.

The table below provides an overview of the minimum data rates that have been defined by the monitored countries as functional internet access within the US scope. In Turkey, Bosnia & Herzegovina and Kosovo, minimum data rates for functional internet access have not been defined. The highest minimum data rate in the monitored countries has been defined in Montenegro, corresponding to the minimum broadband speed of 144 kbps. In Iceland the minimum data rate is 128 kbps corresponds to the level supported by ISDN services.



Figure M.1 - Minimum data rates within USO scope

3. Universal service funding

Article 12 of the Universal Service Directive 2002/22/EC requires NRAs to calculate the net cost of universal service provision where they consider that it may represent an unfair burden on the provider. According to article 13, NRAs may either introduce a public funding mechanism for compensation or share the net cost between operators.

In parallel with its ongoing review of the universal service concept, the European Commission is considering to address the financing aspects of USO as part of its non-binding recommendation expected in 2012. One of the Commission’s non-binding proposals is to introduce caps for the contributions of operators to the universal service in cases where a cost-sharing mechanism is implemented. Any additional costs above the cap should be financed from public funds.

In particular, the Commission proposes that no contributions should be paid by operators with less than €5m in annual revenue, whereas for larger operators USO contributions should be capped at 0.40-0.65% of revenues and should be strictly proportionate to revenue-based market shares. The caps would also limit the burden on operators if member states decide to include broadband in the USO scope.

National legislation in all monitored countries foresees some form of net cost sharing between operators rather than a public funding mechanism.

In practice, however, the funding mechanism has been only applied in Iceland, where two US providers have received payments from the fund. In 2009, Síminn received one-time payment of €757,117 (ISK 127m) as a compensation for net losses occurred in roll-out of ISDN services in 2000-2005. Neyðarlínan, the provider of 112 emergency response services, received compensation over the past three years: €189,000 (ISK 30.10m) in 2008, €209,000 (ISK 33.37m) in 2009 and €240,000 (ISK 38.23m) in 2010. In 2009, the contributions amounted to 0.65% of the operators' accounting revenue, whereas in 2010 this percentage was reduced to 0.10%. The largest contributors to the universal service fund were Síminn (43%), Vodafone (27%), Mila (13%), Nova (5%) and Tal (4%).

In Turkey, contributions to the universal service fund have been collected from several sources, including revenue-based contributions by telecommunications operators and transfers from the NRA budget. These contributions are allocated to the US fund kept by the Undersecretary of Treasury but no decision on compensation to the US providers has been made so far.

4. Subscriber directories

a) Subscriber inclusion in directories

Article 25 (1) of the Universal Service Directive states that all subscribers shall have a right to a directory entry. The ePrivacy Directive 2002/58/EC addresses subscribers' privacy interests with regard to directories. According to article 12 (2) of the ePrivacy Directive, subscribers shall be given the opportunity to determine whether their personal data should be included in a public directory, and if so, which data, and to verify, correct or withdraw such data. Not being included in a public subscriber directory, verifying, correcting or withdrawing personal data from it shall be free of charge.

In all monitored countries, subscribers have the right to be included in the directory, and operators may not charge for inclusion. Subscribers also have the right not to be included in the directory free of charge in all countries. The respective legislation typically applies to all subscribers, including subscribers of mobile services and subscribers with pre-paid contracts. Serbia does not have primary legislation on these topics and the rules currently only apply to fixed subscribers.

b) Availability of comprehensive directories and directory enquiry services

According to article 5 of the Universal Service Directive, at least one comprehensive directory (in printed or in electronic form) and at least one comprehensive telephone directory enquiry service shall be available to end-users. NRAs may therefore select the provider of a comprehensive directory and directory enquiry service by means of designating a universal service provider after a public tender.

Directory enquiry services are offered by several providers on competitive basis. This requires that interested undertakings get access to the subscriber data under reasonable conditions. Often, NRA intervention is necessary, because operators are reluctant to provide the data or ask for unreasonably high charges. Another requirement for a competitive market of directory enquiry services is that no such service is provided below costs. In particular the incumbent may not cross-subsidise its own directory enquiry service. Again, this might need some intervention by the NRA or the competition authority.

Currently comprehensive directories and directory enquiry services are available only in two of the monitored countries: Croatia and Iceland. In both countries this has been assured through designating universal service providers. In 2011, universal service providers for comprehensive directories and directory enquiry services have been also designated in Montenegro and FYROM.

In Croatia, Iceland and Turkey the national legislation contains provisions enabling all providers of directory and directory enquiry services to request access to subscriber data of all providers of publicly available telecommunications services at cost based prices and under non-discriminatory conditions. In Kosovo all providers of directory and directory enquiry services are entitled to access to subscriber data at reasonable prices and under non-discriminatory conditions. In Montenegro, FYROM and Albania, only designated US providers are entitled to access to subscriber data at cost-based prices and under non-discriminatory conditions.

5. 112 emergency number

Article 12 of the Universal Service Directive requires that all end-users of the electronic communications service for originating national calls to a number or numbers in a national telephone numbering plan, including users of public pay telephones, are able to call the emergency services free of charge and without having to use any means of payment, by using the single European emergency call number 112. Furthermore, caller location information must be made available free of charge to the authority handling emergency calls as soon as the call reaches that authority.

The amended EU 2009 regulatory framework ensures that European citizens gain better access to emergency services by extending the 112 access requirements from traditional telephony to new technologies (such as VoIP), strengthening operators' obligation to provide information about caller location to emergency authorities and improving access to 112 for people with disabilities.

The single European emergency number 112 has been implemented in Croatia, Iceland, Montenegro, Turkey and Kosovo. In Turkey, 112 is implemented only for access to medical emergency services, while access to other emergency services is currently being implemented. In all remaining countries, other numbers are being used for access to emergency services that are free of charge for callers.

6. Itemised billing

Article 10 and Annex I of the Universal Service Directive give subscribers the right to receive itemised bills in order to allow them to verify and control their charges, adequately monitor their usage and thereby exercise a reasonable degree of control over their bills. The details are to be laid down by the NRAs.

Article 7 of the e-Privacy Directive addresses privacy concerns in relation to itemised billing, in particular the rights of calling users (because telephones are often used by persons other than the subscriber) and called subscribers. It also gives subscribers the right to receive non-itemised bills.

All monitored countries have implemented legislative provisions enabling subscribers to receive itemised bills as well as provisions that give subscribers the right to receive non-itemised bills.

The provisions in the e-Privacy Directive, which address the conflict of interest between subscribers (who have to pay and want to check the bill) and other users or called users (which might not want the subscriber to know their details), are vague and this is also reflected in the legislations of the monitored countries. No country obliges operators to disguise the last digits in the numbers. All countries, except Turkey, require operators not to include calls to toll-free numbers and emergency numbers in itemised bills, which gives some level of protection of privacy if a user calls a toll-free helpline and does not want the subscriber to know about this call. In Bosnia & Herzegovina, this obligation only applies to fixed network operators.

7. Quality of service

Article 11 of the Universal Service Directive states that NRAs may set specific quality of service (QoS) targets for key performance indicators (e.g. repair time for line faults) for the designated universal service providers. The standards are set out in annex III to the directive, specifying ETSI EG 202 057-1 version 1.3.1 of July 2008.

QoS obligations exist in most of the monitored countries and the ETSI standards are followed for the method of measurements. In Croatia, Iceland, FYROM and Serbia the results of QoS measurements for fixed and mobile network operators and the designated US providers are published annually by the NRA and the operators themselves. In Montenegro, the QoS obligations only apply to the designated US providers and will be published both by the operators and the NRA.

In Bosnia & Herzegovina, a regulation on QoS measurements for fixed network operators has been adopted in 2011 and the QoS reports will be published by operators and the NRAs every six months starting from 2012. Mobile operators have an obligation to measure QoS and to report to the NRA but the publication procedures are still to be defined in a separate regulation.

There are no specific regulations concerning the publication of QoS indicators in Turkey and in Kosovo.

8. Contract regulation

The ease with which an end user can switch between telecommunications service providers (churn) is an important factor for competition. Operators have an incentive to lock end users to their network in

order to recuperate their investments by proposing fixed-term contracts with penalties for cancellation before the end of the fixed term.

Article 30(5) of the revised Universal Service Directive provides that contracts between consumers and service providers should not mandate an initial commitment period that exceeds 24 months. The users shall also have a possibility to subscribe to a contract with a maximum duration of 12 months.

Article 20(2) of the Universal Service Directive entitles subscribers to withdrawal from their contract without penalty upon notice of modification to the contractual conditions. Such a notice may not be shorter than one month.

This study assessed the following aspects related to end-user contracts: (i) limits to the initial commitment period, (ii) contractual penalties for early cancellation, (iii) notice period for contract termination, (iv) automatic renewal of the contract and (v) cancellation without penalty upon changes to service conditions.

The shortest initial commitment period of six months is foreseen in Iceland. In Croatia, the July 2011 amendments to the Law on Electronic Communications envisage the maximum initial commitment period of 24 months. Also, in line with the requirements of the article 30(5) of the amended Universal Service Directive, the service providers are required to offer a possibility to subscribe to a 12-month contract. In other countries, the maximum initial commitment period is not regulated, but in practice it is usually limited to 24 months. In Montenegro, the regulator has been considering a proposal to introduce a possibility of contract duration of 12 months.

Cancellation penalties are typically limited to the amount of subscription fees owed until the end of the agreed fixed contractual term. In Croatia, according to the July 2011 amendments to the Electronic communications act, the subscriber may terminate the contract at any time. The amount of the penalties in the case of early cancellation is to be calculated either as the monthly fees owed for the remainder of the period of mandatory contract duration or the fee corresponding to the received benefits (e.g. discounts, terminal equipment subsidies, etc.) – whichever is more advantageous to the consumer at the time of contract termination.

The minimum notice period for consumers for contract termination is not regulated and varies from immediate termination at any time (Croatia, Iceland) to 15 days in FYROM, 30 days in Turkey, Albania, Bosnia & Herzegovina and up to three months in Montenegro.

Automatic contract renewal typically is not regulated and it is a common practice of the service providers in the monitored countries to extend automatically expiring contracts on the same terms and conditions for an undetermined period.

In all monitored countries end users are entitled to terminate contracts without penalties upon changes to general terms and conditions and service providers are required to inform end users of any such changes with a minimum notice period of 30 days.

9. Resolution of disputes between service providers and end users

Dispute resolution mechanism between service providers and end users is an essential part of the consumer rights provisions in the amended EU 2009 regulatory framework. Article 34 of the Universal Service Directive requires that transparent, non-discriminatory, simple and inexpensive out-of-court procedures should be established for dealing with unresolved disputes between consumers and undertakings providing electronic communications networks and/or services related to the contractual conditions. Such procedures should enable disputes to be settled fairly and promptly and where warranted, allow reimbursement and/or compensation scheme and should not deprive the consumer of the legal protection afforded by national law.

In all monitored countries, except Albania, out-of-court resolution mechanisms for disputes between end users and providers of electronic communications services have been established by the NRAs. In Albania, the NRA can address consumer complaints through adopting non-binding recommendations and regulations but it has no power to resolve individual disputes between end users and service providers.

In Iceland, consumer disputes can be also addressed to the National Consumer Protection Agency. In Turkey, there are separate consumer courts organised for handling disputes between consumers and service providers. In Croatia, a mediation procedure is available under the separate mediation body within the Chamber of Commerce.

In most of the monitored countries no compensation mechanism is foreseen for out-of court dispute resolution procedures. The exceptions are Croatia and Montenegro, where NRAs may impose the level of compensation. In most of the other monitored countries the compensation is set by the competent courts.

Average time for resolving end-user disputes varies among the monitored countries from 20 days to four months.

N. Regulation of retail tariffs

Under article 17 of the Universal Service Directive, NRAs should impose regulatory controls on retail services only if obligations imposed at the wholesale level failed to ensure effective competition. In all monitored countries, retail fixed telephony tariffs of the fixed incumbent operators are subject to different forms of price control. The incumbents are also required to notify in advance to the regulators proposed changes to their retail prices. In Turkey, price controls in a form of price caps also apply to mobile telephony prices, an obligation stemming from concession agreements that are still in place.

A cost-based approach is theoretically closer to the philosophy of the EU regulatory framework while a price cap approach has the advantage of being easier to use. Although price cap methodologies are still in use in some of the monitored countries, other tariff regulatory methodologies have been appearing over the last few years, gradually replacing price caps.

Two out of the nine monitoring countries apply a price cap approach, Montenegro and Bosnia & Herzegovina. Croatia has a price squeeze test for fixed retail tariffs based on the SMP operator's own costs, where retail prices have to cover the SMP operator's own network and commercial costs. Serbia and Kosovo are using a cost-based assessment, the details have not been made available but it is understood that neither of them has implemented a comprehensive costing model. In Turkey, CPI-3.3% was applied to the fixed voice telephony basket until December 31, 2009. A bylaw on tariffs that came into force on November 12, 2009 introduced an advance retail tariff notification requirement for the incumbent Türk Telekom and a lower limit applicable to all fixed operators.

All countries have included a provision for formal advance notification of any new retail prices of the regulated retail prices to the NRA. Where a prior period is specified, it ranges from 15 to 45 days.

O. Fixed retail telephony tariffs

1. Retail tariff rebalancing

Most of the monitored countries are still in the process of implementing the overall rebalancing of fixed telephony tariffs.

The ending of monopolies in all countries has meant that the incumbent fixed line operators are bringing their tariffs more into balance with the underlying costs of providing their services. Where monopoly providers keep monthly rental and local call charges low in order to make basic service more affordable, this move is traditionally subsidised by excessive prices on national and international calls.

NRAs have typically enforced a tariff rebalancing process, where retail tariffs are allowed to adjust within a defined basket of services with the overall changes in the customers' bills being kept within an applied "price cap". After a period of adjustment the dual process of competition and tariff rebalancing should bring benefits to consumers in the form of lower overall bills. Those customers that stay with the incumbent may have to pay more in line rental than before, but any increases are generally offset by reduced call charges in a more competitive market.

With retail tariff rebalancing, the market should benefit significantly because, when relative tariffs more in balance with the underlying relative costs, the investment decisions for the incumbent and new operators are not distorted by loss-making services and the need for cross-subsidy.

For comparison, the EU experience on fixed retail tariffs according to the Digital Agenda Scoreboard shows the following trends⁹:

- *Rentals and local tariffs rise:*
In the EU member states, over the period from 2000 to 2010, the EU-27 weighted average

⁹ http://ec.europa.eu/information_society/digital-agenda/scoreboard/docs/pillar/studies/voice_tariff_1998_2010.pdf

residential monthly rental per month has risen by 38%, from €11.15 per month (including VAT) to €15.36 per month. At the same time, the EU-27 weighted average charges for a 10 minutes local call have risen by 10.4%.

- *While national and international call tariffs fall:*
Over the same period, from 2000 to 2010, international call baskets for residential customers have fallen in price by over 55%, and the EU-27 weighted average charges for a 10 minutes national long distance call have fallen by 45%.

With the only exception of Iceland, rebalancing of the incumbent operator's retail tariffs is ongoing in all monitored countries. Three countries, Croatia, FYROM and Turkey appear to have made the most significant progress in terms of implementing tariff rebalancing since 2006.

The graph below shows that only Iceland, Croatia and Turkey have approached the cost oriented charges for monthly line rentals, coming close to the EU-27 average of €15.00 per month. Other countries, including FYROM, Turkey, Bosnia & Herzegovina, Montenegro and Kosovo, have made some progress to increase monthly rentals over the last five years. In Serbia, the monthly rental was increased by almost 11% in July 2011, after an 80% increase already implemented between October 2009 and July 2010. The price of residential monthly rental is now at a level comparable with other countries in the region (€5.15 per month; whereas in 2006 the price was 56 €cents).

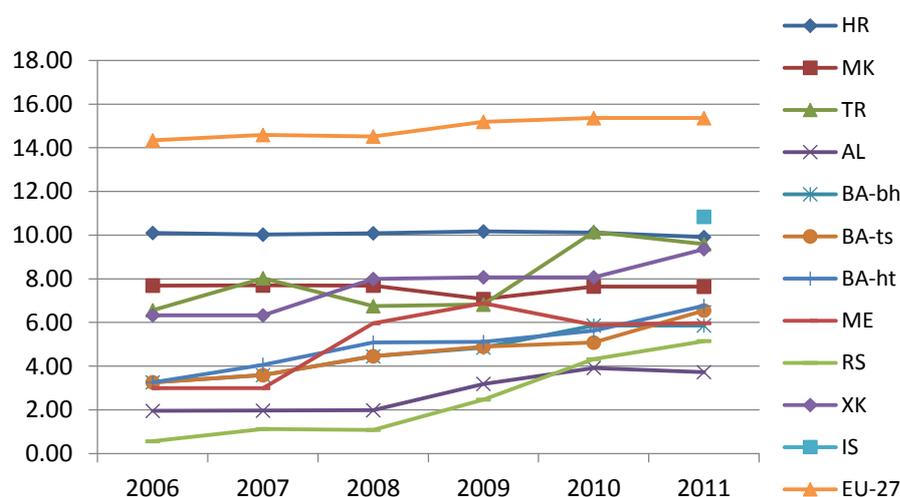


Figure O.1 - Residential line rentals by incumbent in euro, including VAT

Incumbents' local call tariffs in most of the monitored countries have increased since 2006. In Turkey local call prices are now 60% higher than the EU-27 weighted average. Prices in Croatia and Iceland are close to the EU average. Serbia, traditionally showing the lowest local call prices in the SEE region shows a 130% increase from 2010, with prices now aligned with the remaining group of the countries.

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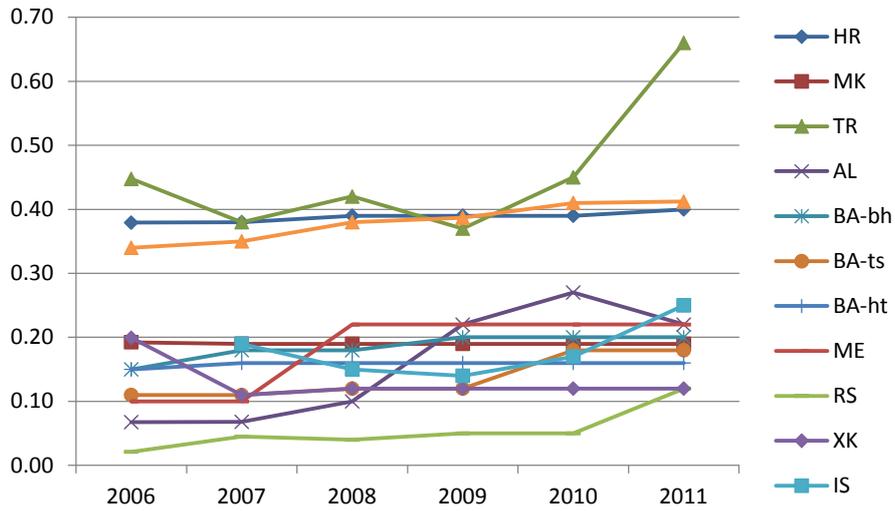


Figure O.2 - Residential charges for a 10-minute local call by incumbent in euro, including VAT

Meanwhile, as the figure below shows, the cost of making a 10-minute national long distance call on the incumbent's network has decreased remarkably since 2006 in Turkey, Albania and Kosovo. Both in Albania and in Turkey long distance prices were at levels considerably above the EU average, and, along with Croatia are now aligned with the EU average prices. Most of the monitored countries, including Iceland, show long distance prices which are well below the EU average.

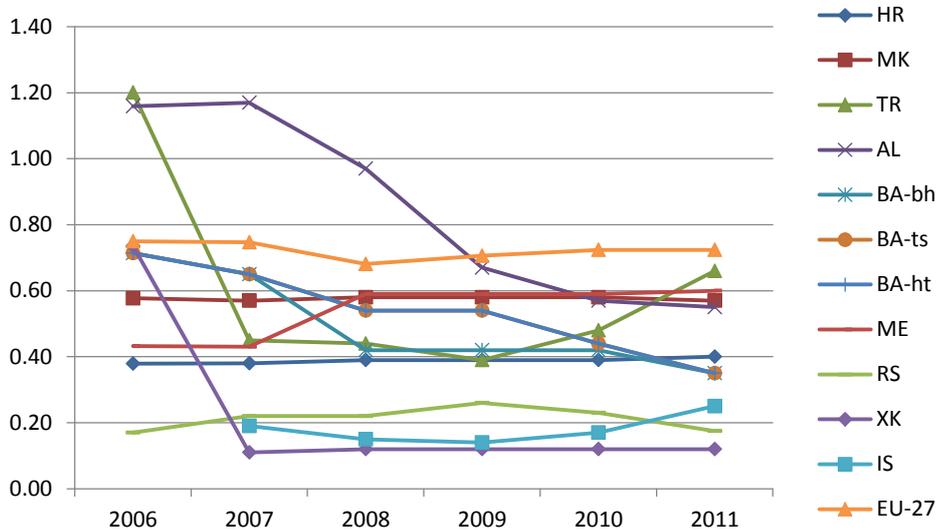


Figure O.3 - Residential charges for a 10-minute long distance call by incumbent in euro, including VAT

The level of charges for fixed to mobile calls shows decreasing trends since 2006. Turkey has now the lowest rate, in spite of being only a few years ago one of the countries with the highest fixed to mobile rates. Albania, which until 2007 had the highest fixed to mobile call charges, has also seen sharp reductions and currently presents fixed to mobile call prices aligned with the other monitored countries' average.

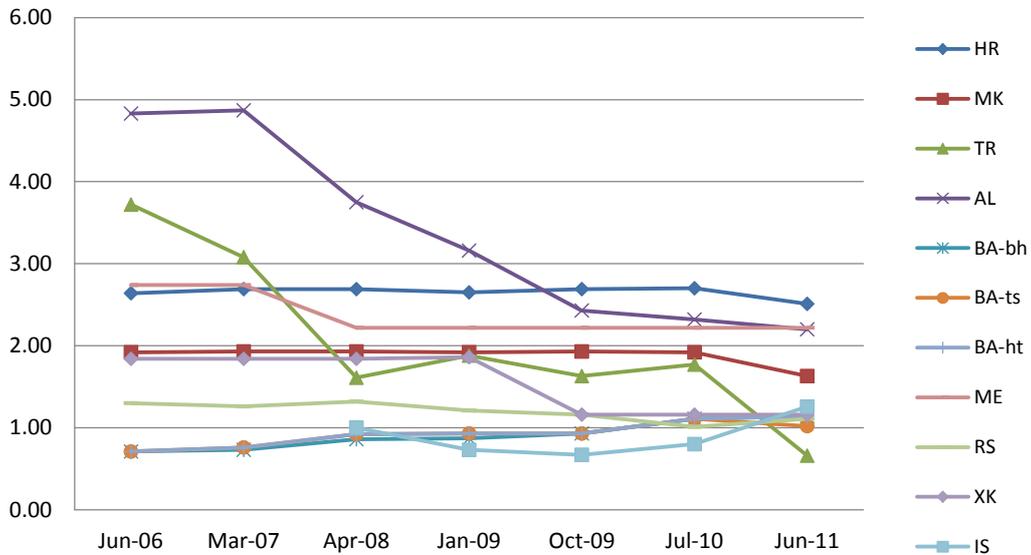


Figure O.4 - Residential charges for a 10-minute fixed to mobile call by incumbent in euro, including VAT

For international calls, all incumbents appear to be responding to competitive conditions. Tariffs have shown a decreasing trend since 2006, as illustrated by the call charges to the UK.

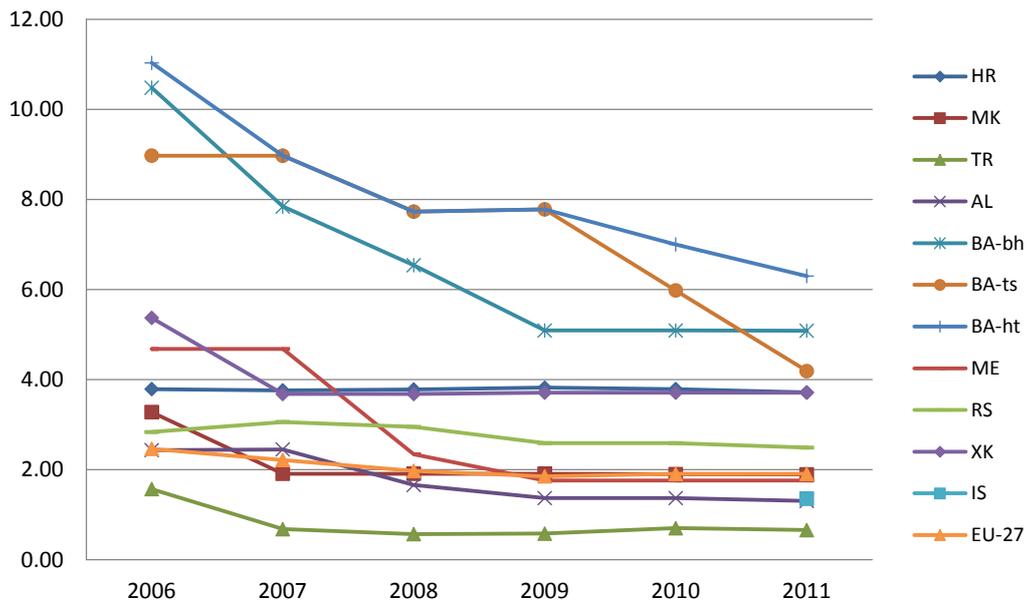


Figure O.5 - Residential charges for a 10-minute international call to UK by incumbent in euro, incl. VAT

2. Monthly subscription fees for residential and business users

This section reviews the monthly rental prices for PSTN fixed lines for residential subscribers in nominal euro with value added tax included and for business subscribers, without VAT. The table below provides a ranking of standard residential monthly rental, starting from the cheapest to the most expensive standard residential monthly rental. Two separate columns show low usage residential monthly rental and business monthly rental.

Country	Standard residential monthly rental	Low usage residential monthly rental	Business monthly rental
Albania	€3.73	-	€11.25
Serbia	€5.24 (including €1.62 of calls)	€2.62 (including €1.62 of calls)	€4.44
Bosnia & Herzegovina	€5.8-€6.7 (including €2.3-€2.8 of calls)	€2.51 (including €1.6-€2 of calls)	€8.39 (including €1.9-€2.3 of calls)
Montenegro	€5.97 (including €1.10 of calls)	€3.04	€5.10
FYROM	€7.64	€4.21	€11.35
Croatia	€9.91 (including €2.28 of calls)	€4.95 (including €3.31 of calls)	€9.40
Kosovo	€9.36 (incl. unlimited local calls Mon-Fri)	€4.68	€17.99 (incl. unlimited local calls Mon-Fri)
Turkey	€10.15 (including €6.60 of calls)	-	€7.54 (including €5.69 of calls)
Iceland	€10.80	-	€10.30

Table O.1 - Monthly subscription fees

Residential subscribers pay less than business subscribers in most of the countries, particularly in Albania, Bosnia & Herzegovina, FYROM and Kosovo. Montenegro and Serbia have the same charges for both subscriber categories after eliminating the difference caused by VAT. During 2011, the only significant changes took place in Serbia, where the residential and business monthly rental was increased by almost 11% after the 80% increase which had already been implemented between October 2009 and July 2010.

3. One-off connection charges

This section analyses the initial charges for the new line connection and reconnection for residential and business subscriptions. The new line connection charge is the price of a new installation in a location that has not been connected before. The reconnection charge is the price for the connection of an existing subscriber line to a new subscriber, for example when a new family takes over an apartment where the previous occupant was already connected. The table below shows the applicable charges ranking from the cheapest to the most expensive reconnection charge.

Country	Residential (including VAT)		Business (excluding VAT)	
	New line connection charge	Reconnection charge	New line connection charge	Reconnection charge
Kosovo	€10.00	€2.02	Same as residential	Same as residential
Turkey	€3.28	€3.28	Same as residential	Same as residential
Serbia	€60.45	€4.50	€103.33	Same as residential
FYROM	€23.73	€7.64 (monthly rental)	Same as residential	€11.35 (monthly rental)
Croatia	€82.56	€9.91 (monthly rental)	Same as residential	Same as residential
Montenegro	€64.99	€12.50	Same as residential	Same as residential
Iceland	€17.71	€17.71	Same as residential	Same as residential

Country	Residential (including VAT)		Business (excluding VAT)	
	New line connection charge	Reconnection charge	New line connection charge	Reconnection charge
Bosnia & Herzegovina	€36 to €48	€36 to €48	Same as residential	Same as residential
Albania	€40.23	€40.23	Same as residential	Same as residential

Table O.2 - Connection charges

Contrary to monthly subscription fees, there are no differences between residential and business charges with the exception of Serbia where business customers pay almost twice the price for a new line connection.

In general, a reconnection charge is significantly cheaper than a new installation (as would be expected by the lower costs involved). The exceptions are Albania, Bosnia and Herzegovina, Iceland and Turkey where the prices are the same.

Initial connection charges are higher than monthly rental charges, ranging from 7% difference in Kosovo to being over 10 times greater in Albania. The exception is Turkey, where monthly rental charges are three times higher than the initial connection charge.

4. Local fixed telephony tariffs

As a result of the progress achieved in tariff rebalancing and the introduction of improved market entry conditions, over the last few years competition in fixed voice call markets has progressed in most of the monitored countries. It should be noted however that in some countries local calls prices still reflect difficulties for alternative operators¹⁰ to compete. In all countries, except Albania and Kosovo, alternative service providers are quoting cheaper local call prices than the incumbents. In Kosovo, a 10-minute local call on the fixed network of an alternative operator cost almost 70 eurocents, approximately twice as high as the price charged by a competitive operator in Croatia.

It is interesting to note that even in the countries with relatively low local prices and tariff rebalancing clearly far from completed, such as Serbia or Bosnia & Herzegovina, alternative operators charge local prices which are lower than the incumbent's.

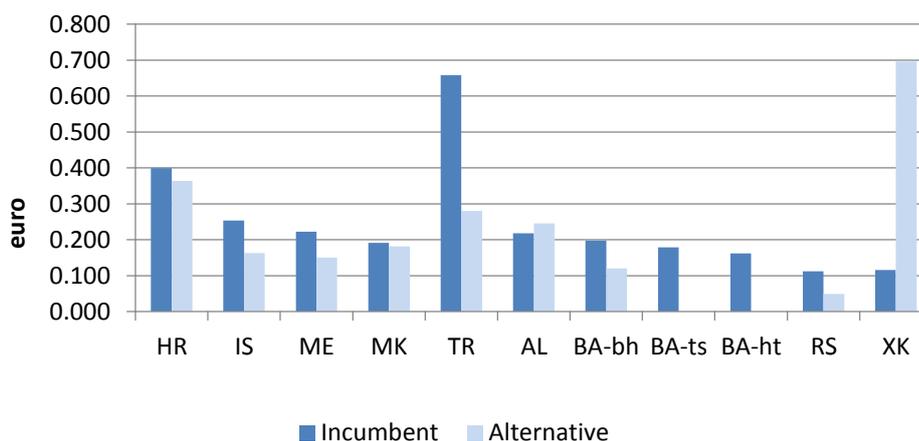


Figure O.6 - 10-minute local call charges for residential users in eurocents, including VAT, 2011

¹⁰ The list of alternative operators chosen for comparisons in this report is available in Table J.7 of the annex.

5. Long distance fixed telephony tariffs

In FYROM, Turkey, and Montenegro it is considerably cheaper to use an alternative operator for a 10-minute long distance national call. Alternative operators' prices are also cheaper in Croatia, Iceland and Albania. Conversely, incumbents' national long distance prices are lower in Bosnia and Herzegovina and Serbia.

Croatia, Iceland and Kosovo do not differentiate between local and long distance prices, as the whole country is defined as one national zone.

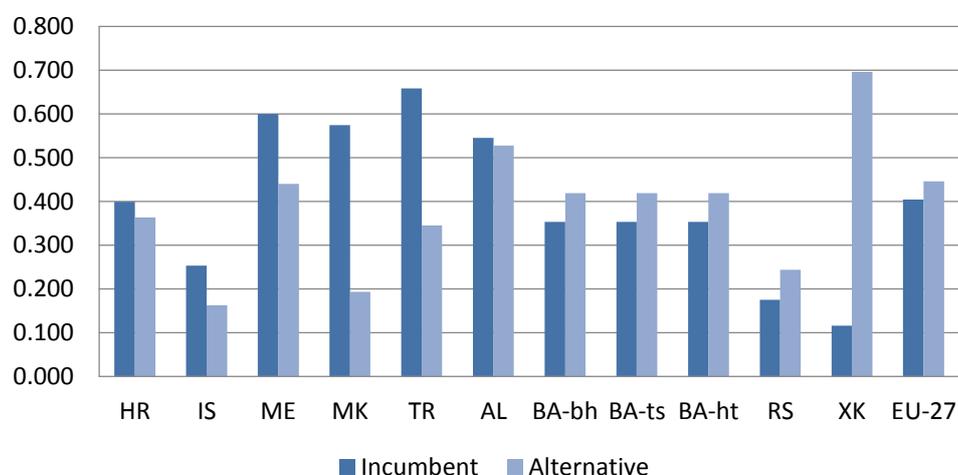


Figure O.7 - 10-minute national call charges for residential users in euro, including VAT, 2011

6. Fixed to mobile tariffs

In all monitored countries the prices for fixed to mobile calls are considerably higher than for long distance calls. The only exception is Turkey where the incumbent's long distance and fixed to mobile prices are the same.

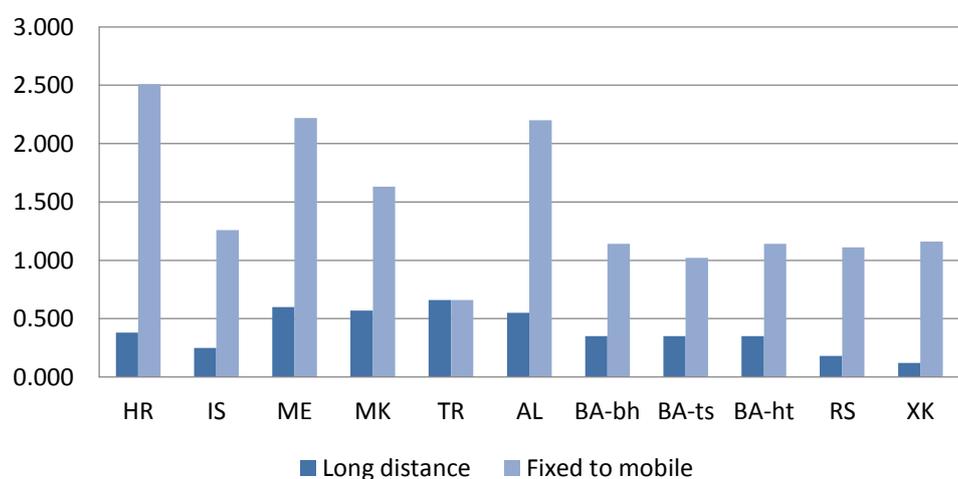


Figure O.8 - 10-minute fixed to mobile and national charges for residential users in euro, including VAT, 2011

In Bosnia & Herzegovina, where the differences are the smallest, a 10-minute call from a residential fixed line to a mobile number is approximately 3 times more expensive than national calls to fixed lines. In Croatia and Serbia, fixed to mobile calls are 6 times more expensive, but the difference is the largest in Kosovo, where fixed to mobile calls are almost 10 times more expensive.

Country	10-minute fixed national long distance call	10- minute fixed to mobile call	Price Ratio
Turkey	€0.66	€0.66	0
FYROM	€0.57	€1.63	2.8
Bosnia & Herzegovina	€0.35	€1.02-1.14	2.9/3.2
Montenegro	€0.59	€2.22	3.8
Albania	€0.55	€2.20	4.0
Iceland	€0.25	€1.26	5.0
Serbia	€0.18	€1.11	6.3
Croatia	€0.38	€2.51	6.6
Kosovo	€0.12	€1.16	10
Simple Average	€0.395	€1.45	4.5

Table O.3 - Comparison of incumbents' charges for residential fixed to mobile charges and charges for national fixed calls

The simple average for the monitored countries is €1.45 for a 10-minute fixed to mobile call, which is 4.5 times the average for a fixed national call. This ratio has been quite stable since 2009.

In Montenegro, Albania, Croatia, and Bosnia & Herzegovina, alternative operators offer calls to mobile networks at tariffs that are lower than the incumbent's. In Serbia, where competition was introduced only recently, the competitor's price is only 1% cheaper than the incumbent's. In Iceland, Kosovo, FYROM and Turkey alternative operators' prices are higher than the incumbent's prices.

Turkey clearly stands out among the monitored countries, as alternative operators' charges are almost 2.5 times higher than the incumbent's, as shown in the next graph. Conversely, in Montenegro the incumbent's fixed to mobile prices are considerably higher than the prices offered by alternative operators.

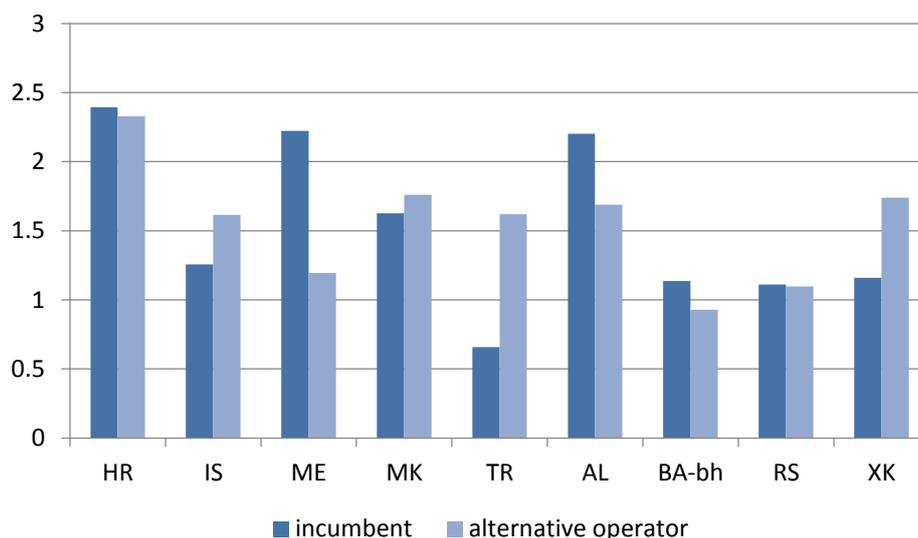


Figure O.9 - 10-minute fixed to mobile call charges for residential users in euro, including VAT, 2011

7. International tariffs

The report compares the cost of a 10-minute call to the UK and to the USA for each monitored country. There is considerable variation in the prices, as the graphs below illustrate, with Bosnia & Herzegovina being the most expensive while Turkey the cheapest.

Alternative operators are generally offering significantly lower prices than the incumbents for calls to the UK, with average discounts of 41%, and to the USA with average discounts of 39% both for residential and business customers. The largest discounts of over 70% are offered by alternative fixed operators in Serbia, and Kosovo, while the smallest discounts of less than 20% are to be found in FYROM, Iceland, Turkey and Croatia.

In Albania, alternative operators' charges are now approximately 50% cheaper than the incumbent's. This represents a considerable change from 2010, when the incumbent still controlled international interconnection, resulting in alternative operators charging significantly higher prices to customers for international calls.

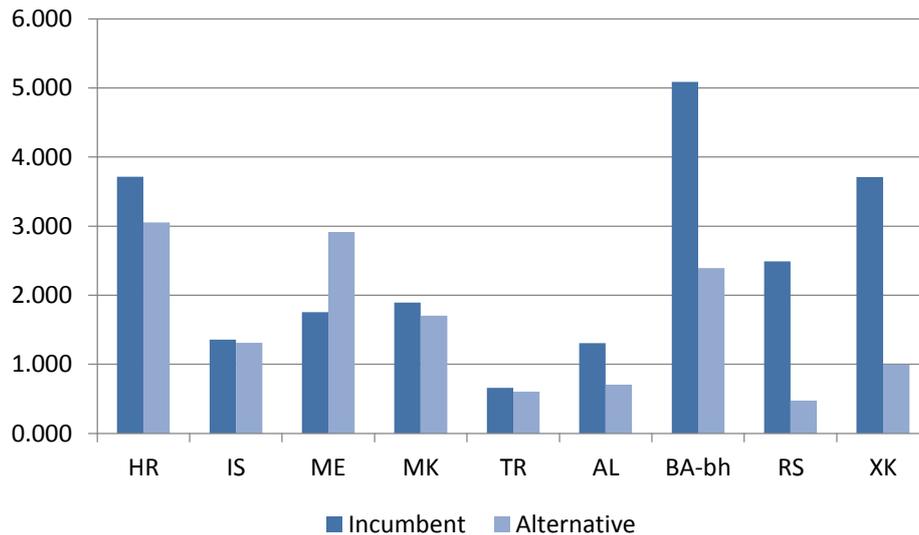


Figure O.10 - Residential charges for a 10-minute call to the UK in euro, including VAT, 2011

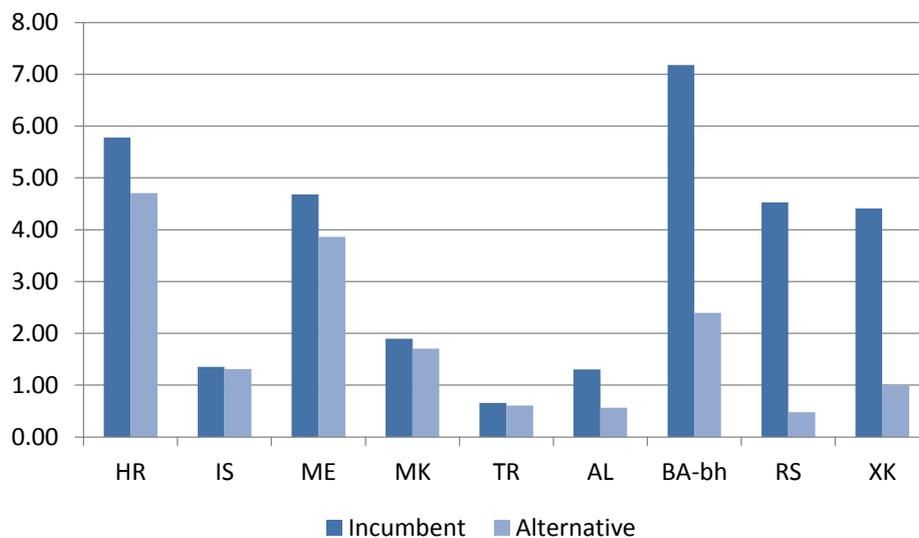


Figure O.11 - Residential charges for a 10-minute call to the USA in euro, including VAT, 2011

As illustrated in the Figure O.12 below, international prices are still considerably higher than any other kind of calls – including fixed to mobile – in Serbia, Bosnia & Herzegovina, Montenegro and Kosovo. The situation is more comparable with the EU-27 trends in the remaining countries.

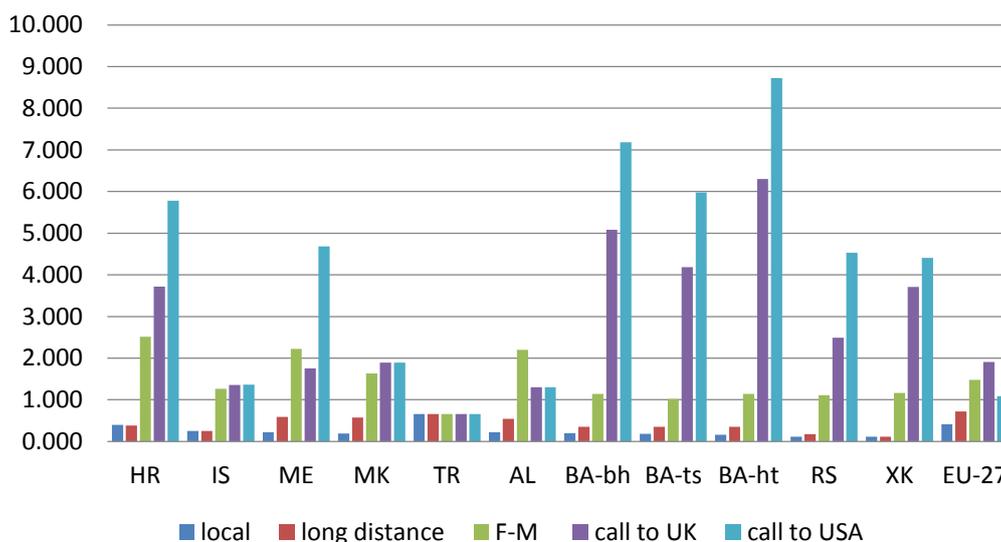


Figure O.12 - Summary of incumbent's residential charges for a 10-minute in euro, including VAT, 2011

P. Mobile retail tariffs

Mobile network operators provide a range of tariff options that are rather complicated and difficult to compare. Consumers have to take into account a significant number of parameters, including the initial activation charge, monthly subscription charge, peak and off-peak tariffs, “free” calls and text messages included in the package, volume-dependent tariffs, SMS tariffs, tariffs for calls within the same network (on-net calls), tariffs for calls to other mobile networks (off-net), calls to fixed networks and, of course, cross-subsidies for the handset.

In order to be able to make comparisons between its member countries, the OECD constructed a set of mobile tariff “baskets” building on its work in fixed telephony baskets.¹¹ These baskets are updated to reflect changing usage patterns. The current basket is referred to as the 2006 version, while the previous basket is referred to as the 2002 version. This report uses the 2006 baskets that can be directly compared with the EU results which also use the same methodology.

The results for low usage mobile basket in the monitored countries show that most countries have offerings that are cheaper than the simple average of EU mobile operators €9.07 per month, according to the Digital Agenda Scoreboard report. The only exceptions are found in Turkey, in Bosnia & Herzegovina, and in Iceland.

¹¹ <http://www.oecd.org/dataoecd/56/23/41049579.pdf>

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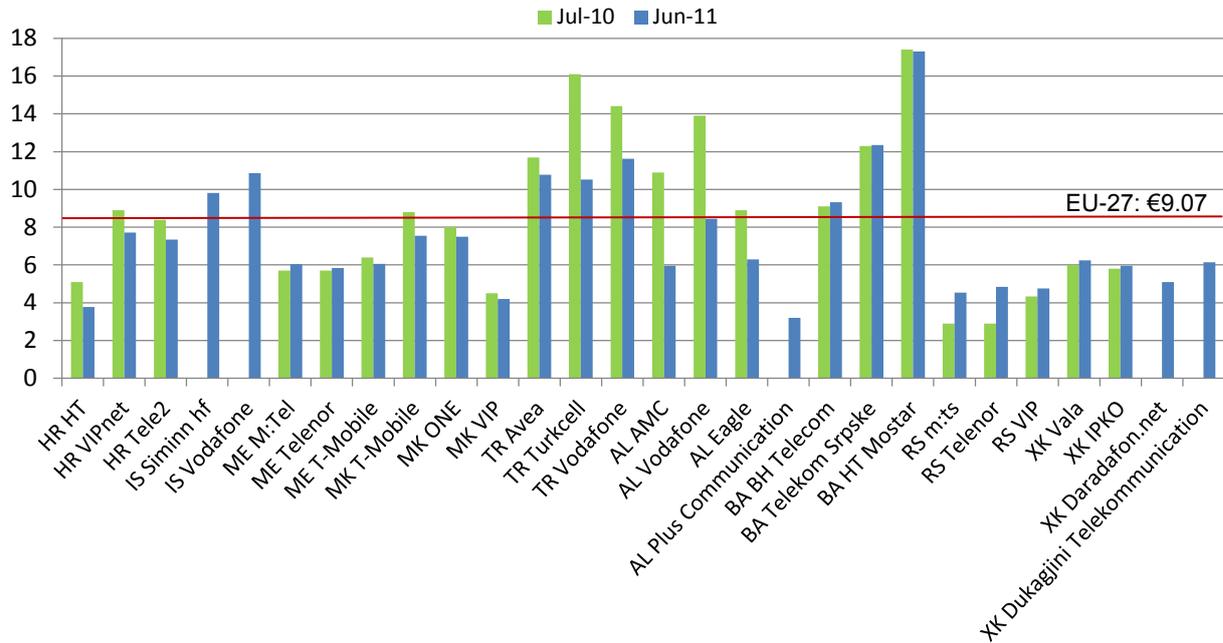


Figure P.1 - Low usage basket in euro per month, including VAT

For medium usage baskets, where the EU average price is €15.3, offerings in Turkey, in Bosnia & Herzegovina, and for one operator in Albania remain significantly higher, while Croatia, Iceland, FYROM, Montenegro, Serbia and Kosovo have offerings below than, or aligned with the average EU-27 charges.

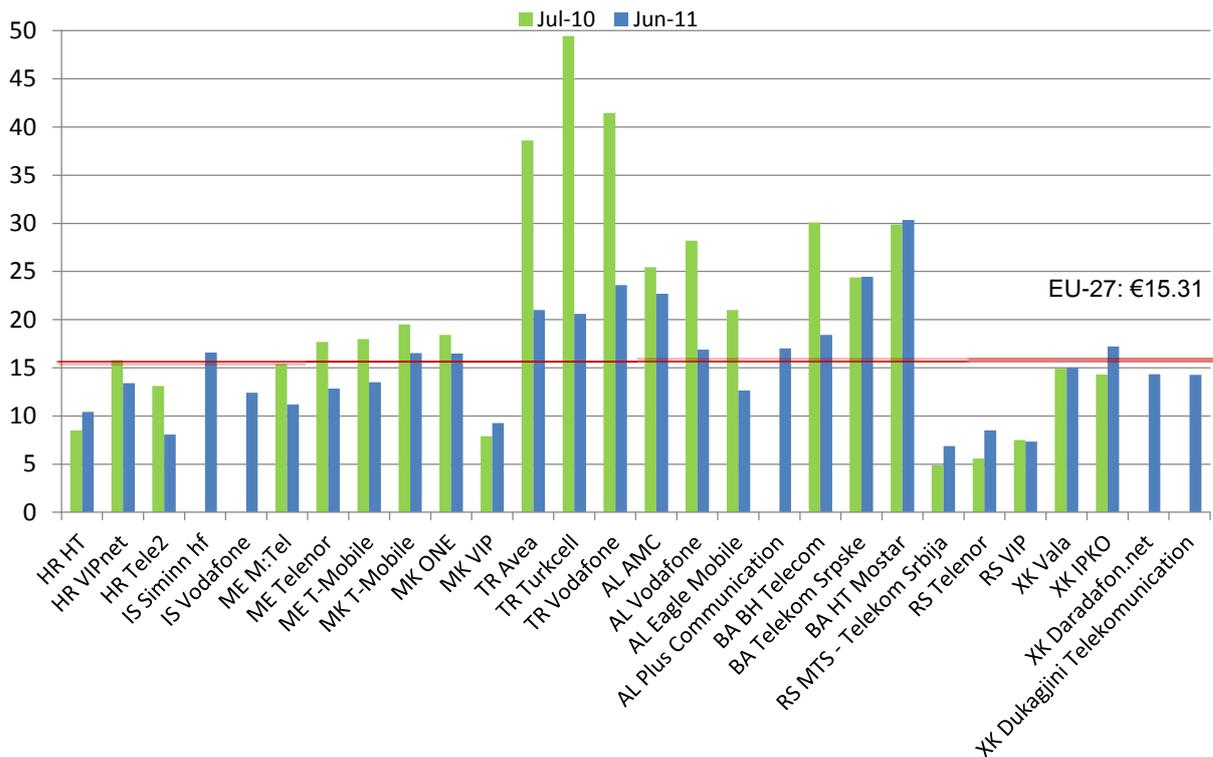


Figure P.2 - Medium usage basket in euro per month, including VAT

For high usage baskets Bosnia & Herzegovina are significantly above the EU average of €24.22, while offers in other countries, notably, Montenegro, Iceland, Albania and Kosovo are aligned with the EU average prices or, as in the case of Serbia and FYROM, offer better deals.

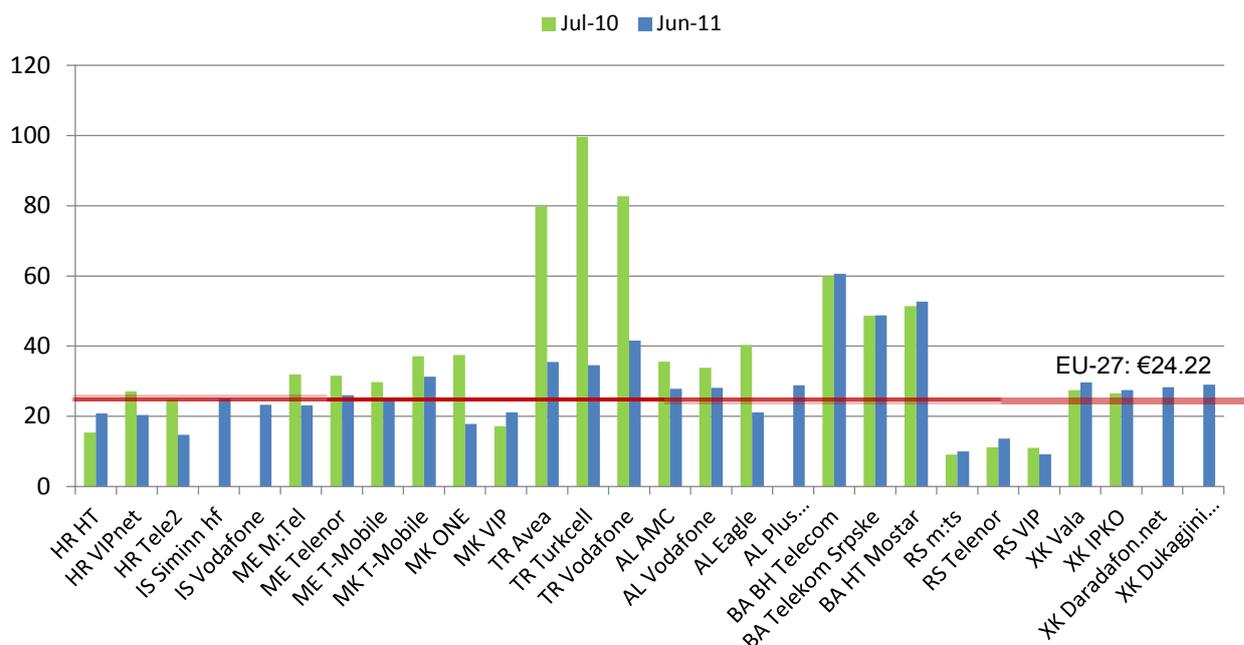


Figure P.3 - High usage basket in euro per month, including VAT

Q. Leased lines retail prices

1. National leased lines

Assessment of leased lines retail prices in the monitored countries shows that regulation has not yet made a significant effect on leased lines pricing.

Leased lines are important telecommunications services for business customers. They are used to link their premises together nationally and internationally with dedicated private lines of fixed capacity.

Analysed in this report are retail prices for 2 km leased lines of 2 Mbps and 34 Mbps transmission capacity. All prices are annual, excluding VAT and without any one-off or connection charges.

The Digital Agenda Scoreboard report shows that the EU average prices for “basic circuits” leased lines now stand at €6,192 per year (excluding VAT) for 2 Mbps and € 33,756 per year for 34 Mbps¹²: However, there still remain large variations in leased lines pricing for offerings with the same functional characteristics in terms of capacity and distance across the EU member states.

In most of the monitored countries, prices for 2 km leased lines of 2 Mbps have remained substantially unchanged for several years, with slight differences shown in Figure Q.1 below mostly due to exchange rates variations. However during the last year prices were considerably reduced in Albania, FYROM and, for one of the incumbents’ operators (Telekom BH) in Bosnia & Herzegovina. Conversely, prices were increased by 48% in Serbia.

The range of charges for the same functional offering is very wide across the region. Iceland has the lowest annual charges among the monitored countries for at €519 per year, immediately followed by

¹² Simple average (no 2010 data available for France and Finland).

http://ec.europa.eu/information_society/digital-agenda/scoreboard/docs/pillar/studies/voice_tariff_1998_2010.pdf.

Albania and Turkey, with prices at € 1,571 and € 2,248. The highest annual prices for these offerings are in FYROM, Serbia and Croatia.

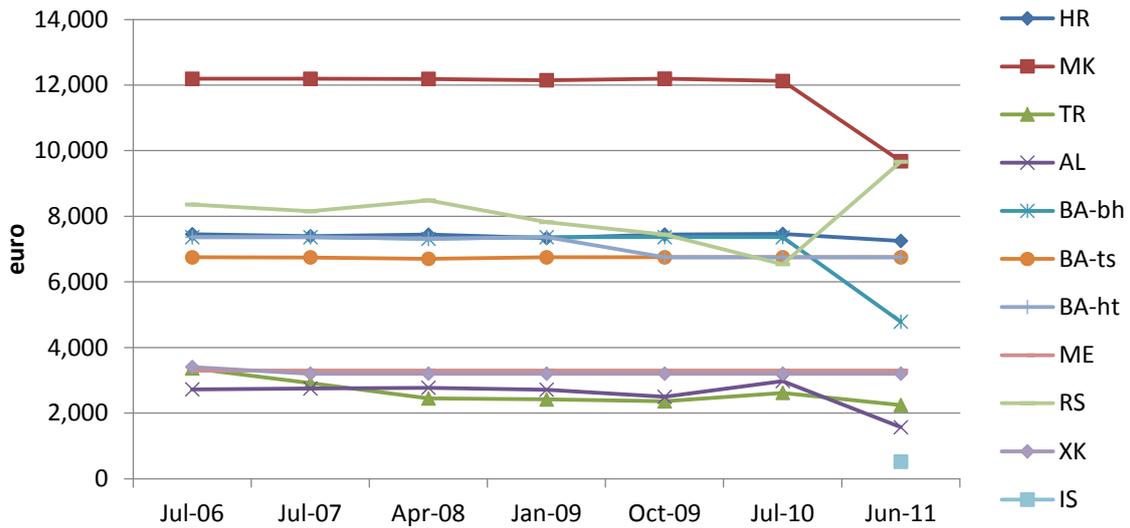


Figure Q.1 - Annual retail prices for 2 km 2 Mbps leased lines

For 34 Mbps, the lowest retail prices are in Iceland at €2,175 per year, followed by Turkey and Kosovo respectively at €12,358 and €15,048 per year. The most expensive prices are in Serbia at €85,250 per year, which also increased the price from 2010 by 48%. In Albania, the prices for leased lines of 34 Mbps have been quoted for the first time in 2011 at €26,850 per year. In FYROM, since 2009, 34 Mbps leased lines are only available through radio links.

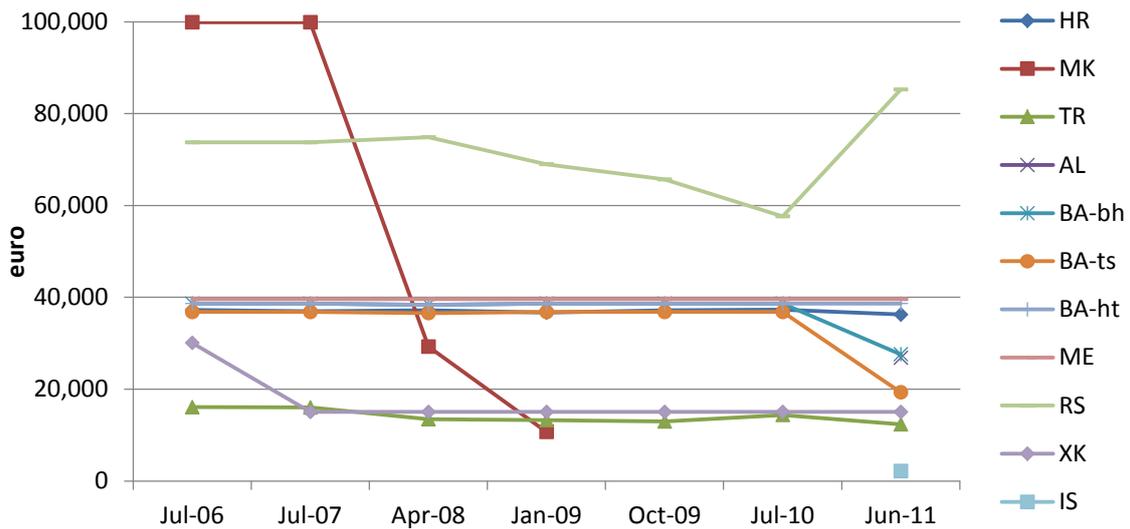


Figure Q.2 - Annual retail prices for 2 km 34 Mbps leased lines

2. International leased lines

International leased lines have traditionally been provided in the form of two half-circuits: one national half-circuit being connected to another half-circuit or to a transit circuit near the border, with the corresponding arrangement in the destination country. International half-circuit prices are not presented for Iceland, as they are defined commercially and are confidential. This report analyses half circuit tariffs to a near country and also to a distant country (the UK).

For 2 Mbps half circuits to a near country, retail prices were reduced significantly since 2008. Albania and Turkey show the highest prices among the monitored countries by a significant margin. However in Albania the price was reduced by almost 50% from the previous year. All other incumbents have reduced charges to below € 100,000 per year. In FYROM, prices were significantly reduced based on the bylaw adopted by the NRA in September 2008, and were further reduced by 78% during the last year. FYROM has now the lowest prices. Significant price reductions were also observed in Kosovo and Serbia.

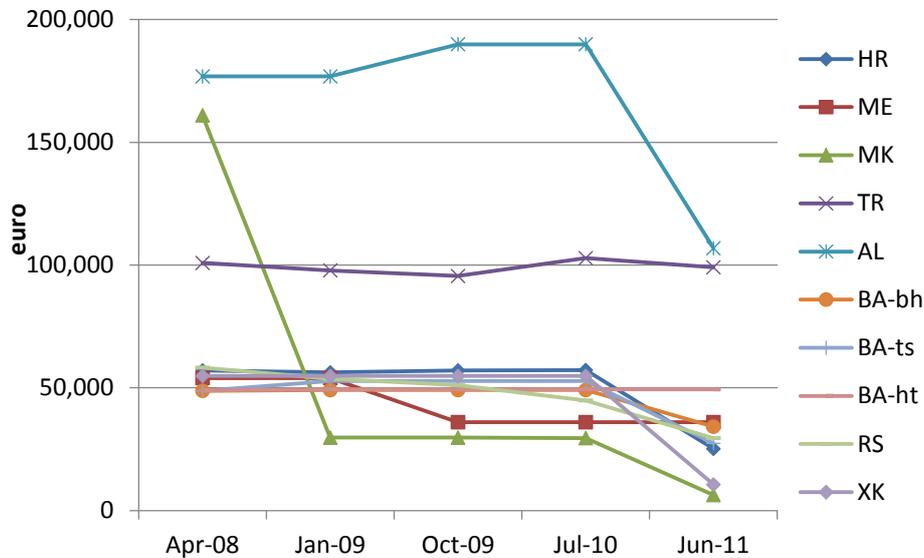


Figure Q.3 - Annual prices for international half circuits 2 Mbps to near country

In the case of 2 Mbps half circuits to the UK, charges have fallen significantly from 2010 in Albania, Serbia, Kosovo and FYROM. Again, the Albanian and Turkish incumbents' charges are significantly higher than in the rest of the region at above € 150,000 per year. All other incumbents are keeping charges at below € 50,000 per year. Although charging the highest prices until 2008, FYROM has now the lowest ones, currently at € 18,000 per year as a result of a further 52% reduction during the last months.

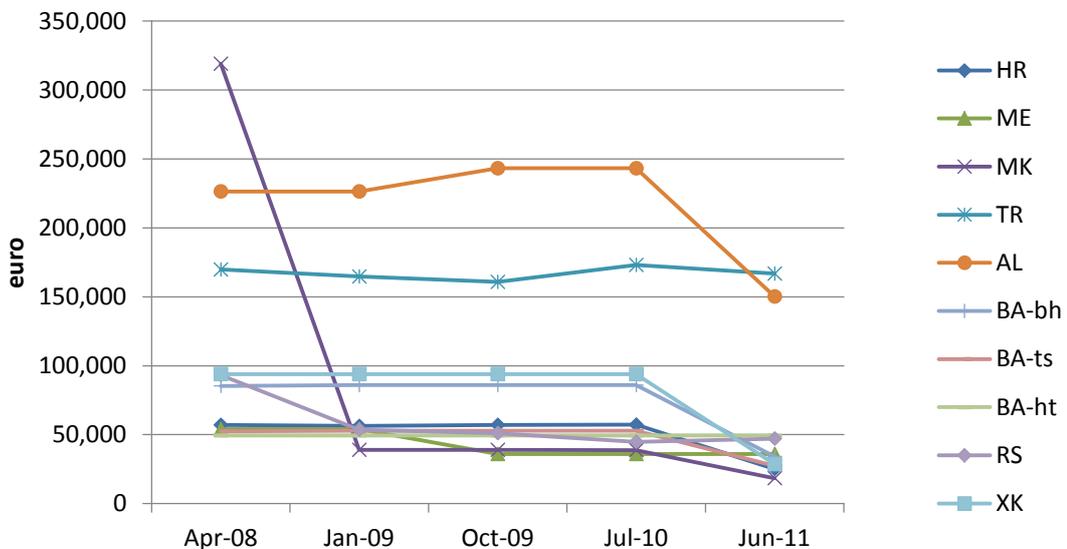


Figure Q.4 - Annual prices for international half circuits 2 Mbps to the UK

In the case of 34 Mbps half circuits, the lowest prices are offered in FYROM, at approximately €25,000 per year to a near country and slightly above €55,000 to the UK. Albania and Turkey both offer 34 Mbps at over 1,000,000 per year to the UK. Prices are not publicly listed for Iceland and Croatia.

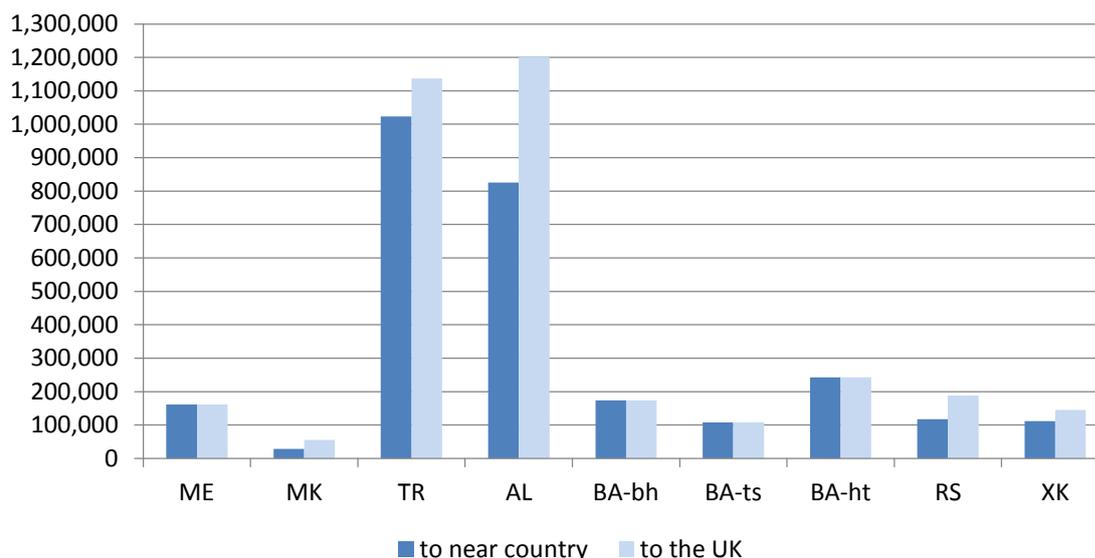


Figure Q.5 - Annual prices for international 34 Mbps half circuits

R. Broadband retail prices

1. Fixed broadband Internet access retail prices

This report analyses broadband offerings of the incumbent and the major alternative operator in each of the monitored countries with the following download speeds: below 1 Mbps; between 1 and 2 Mbps; between 2 and 4 Mbps; between 4 and 8 Mbps; between 8 and 20 Mbps; and above 20 Mbps.

An assessment of the offerings available in the nine countries shows a situation similar to the one observed in the EU member states: the lower speed offerings are phased out by higher speeds (see Table R.1 below).

	<1 Mbps		1-2 Mbps		2-4 Mbps		4-8 Mbps		8-20 Mbps		>20 Mbps	
	INC	ANO	INC	ANO	INC	ANO	INC	ANO	INC	ANO	INC	ANO
HR	×	×	×	×	×	✓	✓	✓	✓	✓	✓	✓
IS	×	×	×	×	×	×	×	×	✓	✓	✓	✓
ME	×	×	✓	✓	✓	✓	✓	✓	×	✓	×	×
MK	×	×	×	×	×	×	✓	✓	✓	✓	✓	×
TR	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AL	×	×	×	✓	✓	✓	✓	✓	✓	✓	×	×
BA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	×
RS	×	×	✓	×	×	×	✓	✓	✓	✓	×	✓
XK	✓	×	✓	✓	✓	✓	✓	×	✓	×	×	×

Table R.1 - Availability of broadband offers by incumbents and alternative operators at different speeds

Broadband lines with speeds below 1 Mbps are only offered by the incumbent in Bosnia & Herzegovina and Kosovo at approximately €11 per month. The offerings between 1 Mbps and 2 Mbps are not available in Croatia, Iceland, and FYROM. Monthly prices range from €10 to €23.

The monthly charges for 2-4 Mbps connections show significant variations across countries. The lowest prices are offered in Croatia by an alternative operator at €5.25 per month. It is interesting to note that the incumbent in 2010 had an offer at €10.92 which is no longer available. At the other end of the scale, HT in Bosnia & Herzegovina has the most expensive offer at €41 per month, immediately followed by Turkey where the cheapest price is offered by an alternative operator at €28 per month.

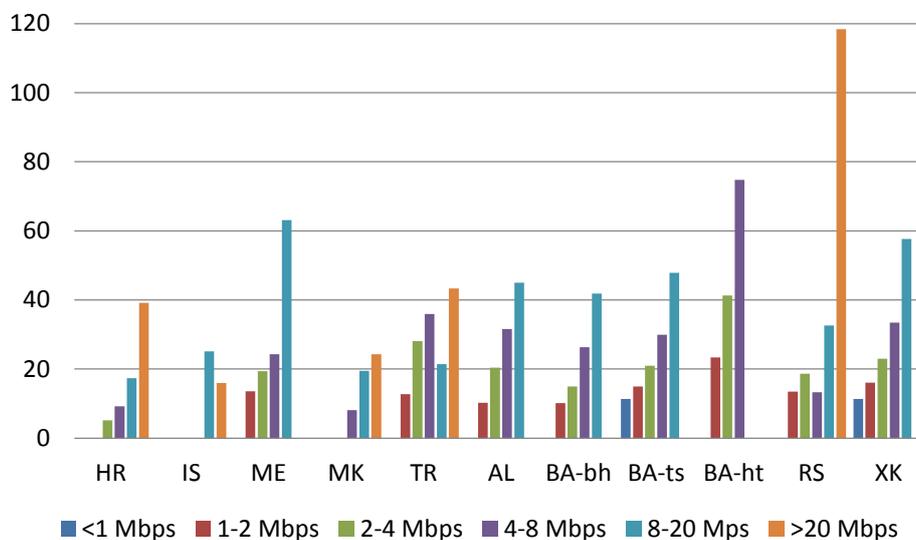


Figure R.1 - Broadband monthly subscription charges – cheapest offers available, in euro, including VAT

The two figures below compare broadband monthly subscription charges for 4-8 Mbps and 8-20 Mbps offerings by the incumbent and alternative operator.

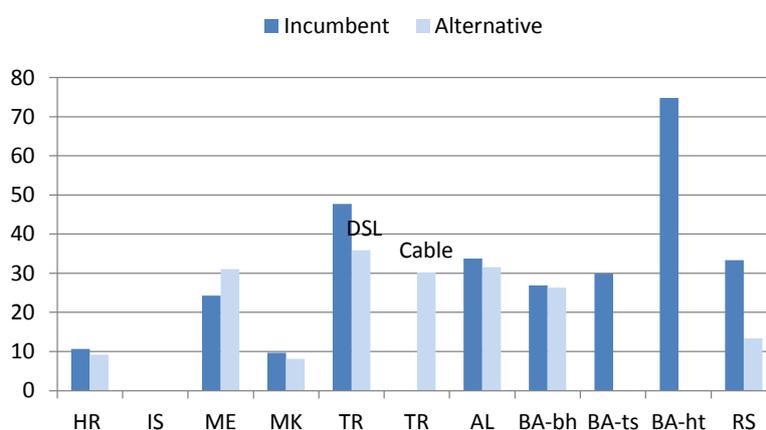


Figure R.2 - Monthly retail 4-8 Mbps broadband subscription prices in euro (including VAT)

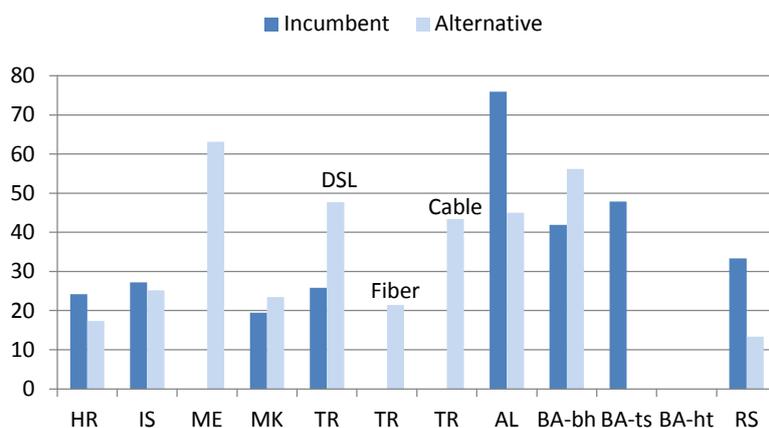


Figure R.3 - Monthly retail 8-20 Mbps broadband subscription prices in euro (including VAT)

Very competitive monthly prices for offers between 4 Mbps and 8 Mbps, at or even below €10, are available in Croatia and FYROM. In Serbia an alternative operator offers broadband access slightly above €13, against the incumbent's offer at €33. In other countries prices range from €25 to €35 approximately. In Turkey the cheapest offer is at €21.45 by an alternative operator, and is provided on fibre network.

The most expensive offers in this speed range are observed in Albania, Bosnia & Herzegovina, and Kosovo where prices are above €40, reaching a peak of €76 with the Albanian incumbent's offer.

Broadband offers above 20 Mbps are only available in a minority of countries. In Iceland, Croatia and Turkey the market is extremely competitive as both the incumbent and alternative operators have offers in this speed range. In Iceland the incumbent operator's offer is at €24.17, and the one by the main alternative operator is 39% cheaper. In Croatia the incumbent and alternative operators have offers at €49 and €39 respectively. In Turkey the incumbent has an offer at €65, against an alternative operator's offer 34% cheaper.

In FYROM only the incumbent operator has an offer at this speed, at a monthly price slightly below €25. At the other end of the scale, in Serbia above 20 Mbps broadband access is offered only by an alternative operator at €118 per month.

S. Wholesale tariffs

1. Call termination on fixed networks

Assessment of call termination on fixed networks in the monitored countries shows that call termination charges are gradually converging towards the EU average level. In some countries this has been the result of regulatory intervention and price controls that in the absence of more complex regulatory mechanisms such as cost accounting models typically apply benchmarking against the level of charges in the EU member states.

According to the Digital Agenda Scoreboard report, in 2010 the weighted average EU-27 call termination charges on the incumbent's fixed network were the following¹³:

- Local level 0.47 eurocents per minute (23% decrease from 2005)
- Single transit level 0.68 eurocents per minute (28% decrease from 2005)
- Double transit level 0.80 eurocents per minute (42% decrease from 2005)

The figures below show call termination rates on the incumbent's fixed network as of June 2011 (except for Serbian rates that reflect the situation as of September 2011).

¹³ http://ec.europa.eu/information_society/digital-agenda/scoreboard/docs/pillar/electronic_communications.pdf

In all of the monitored countries, the fixed incumbent operators apply the same termination charges regardless of whether the call originates on national fixed or mobile networks. In Serbia, the same fixed termination rates for calls originating in fixed and mobile networks were introduced in June 2011, however, the level of charges was slightly increased at the same time.

Iceland is the only country where call termination charges on the incumbent's fixed network at the local level are set below the EU average. Croatia, FYROM, Turkey (since 2009), Serbia and Bosnia and Herzegovina are setting prices which are at comparable levels with the EU, or at least below €1. In Montenegro and Kosovo, prices are five and eight times higher, respectively, than in the EU-27.

In October 2009, tariffs considerably decreased in Serbia (peak time termination charges decreased respectively by 84% at local level, by 67% at single transit and by 75% at double transit level). However in August 2011 local termination was increased again, at €0.713, a level which is however 42% lower than the 2009 rate. In Albania, following the implementation on new BU-LRAIC cost model, from September 1, 2010 Altelecom's fixed termination rates have nearly doubled at all levels of interconnection.

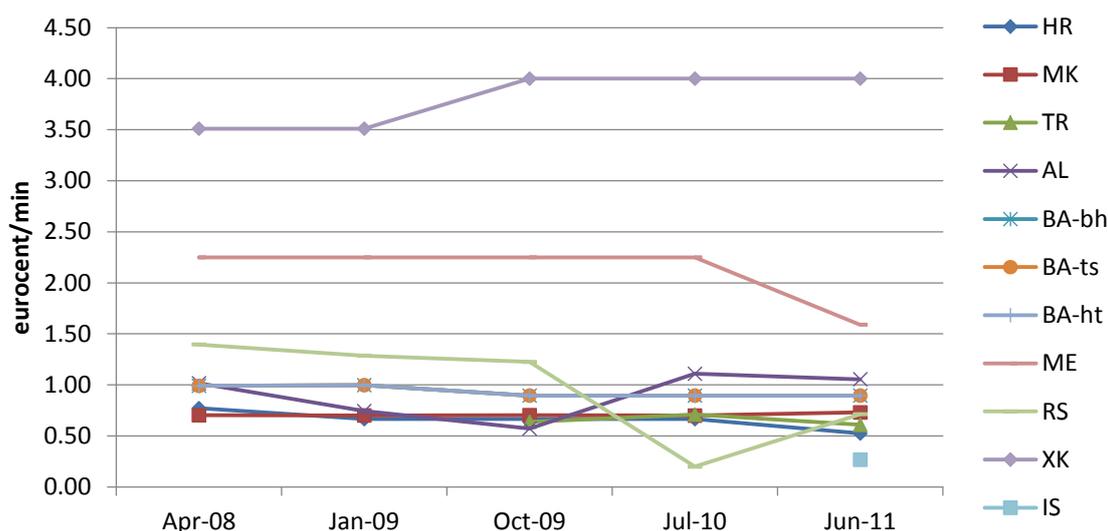


Figure S.1 - Local call termination charges on the incumbent's fixed network, peak time

At the single transit level, call termination charges on the incumbent's fixed network are close to the EU average only in Turkey and in Croatia. The highest rates are in Montenegro, in spite of the 30% decrease during the last year.

In Albania, the charges decreased by 23.5% during 2009 and increased by 104% in 2010. Single transit termination decreased from October 2009 in Serbia by 62%, but a 32% increase was introduced again in 2011. Call termination charges are still higher than the EU average in Bosnia & Herzegovina, in spite of the 12.5% decrease in 2009. In Kosovo and Iceland, call termination is only offered at the local level.

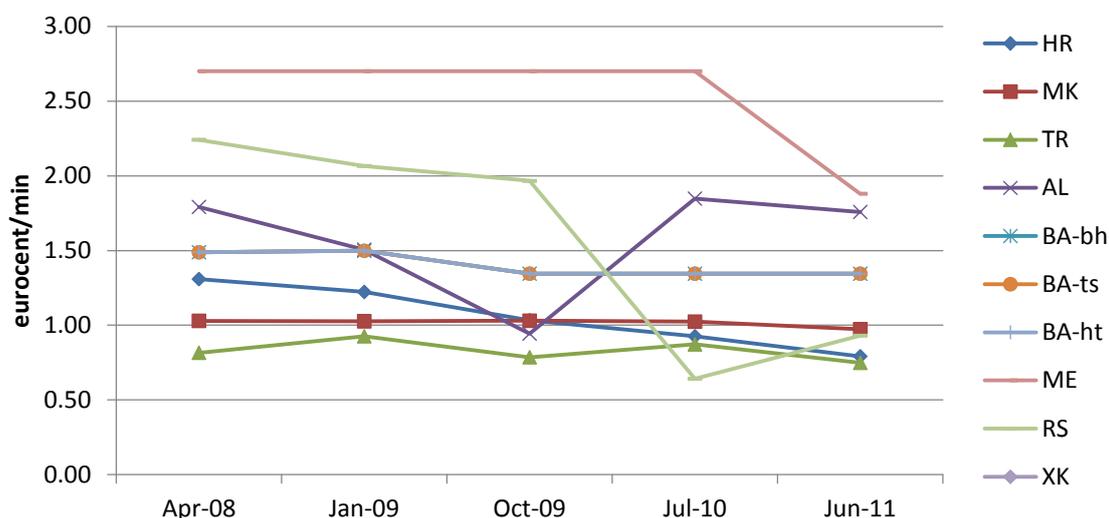


Figure S.2 - Single transit call termination charges on the incumbent's fixed network, peak time

At the double transit level, Turkey and Serbia are the only countries with rates below €1 and close to the EU-27 average of €0.80. Rates remain considerably higher than EU-27 average in Albania, Bosnia and Herzegovina and in Croatia. In Serbia the incumbent's double transit termination charge decreased by 70% from October 2009, and in August 2011 increased by 13%.

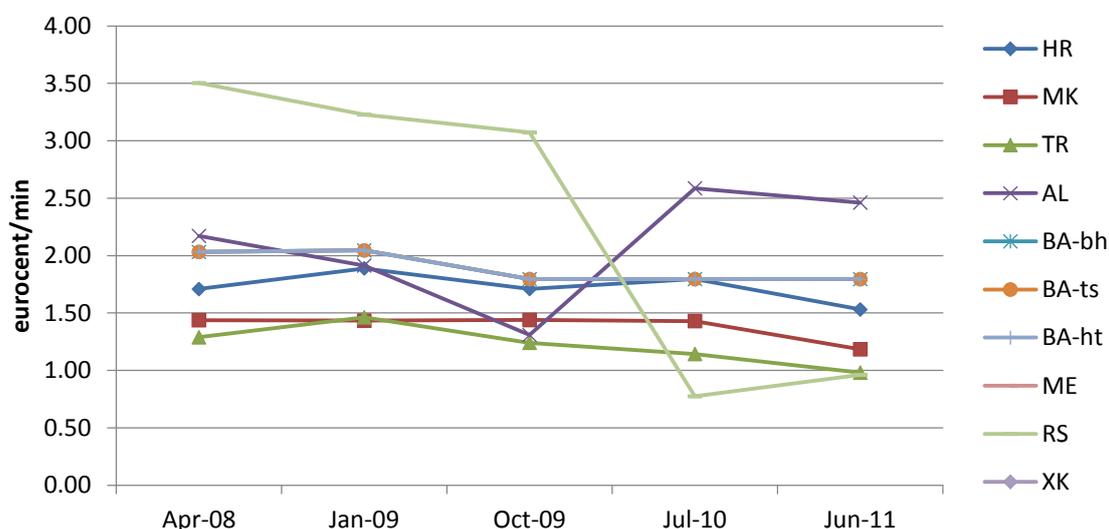


Figure S.3 - Double transit call termination charges on the incumbent's fixed network, peak time

Figure S.4 **Error! Reference source not found.**, Figure S.5 and Figure S.6 below show call termination charges on the fixed networks of the incumbent and the major alternative operator in the monitored countries, in comparison with the EU-27 average values according to the Digital Agenda Scoreboard report¹⁴.

In Iceland, the alternative operators' fixed termination rates are set at the level slightly above the incumbent's local call termination. Call termination is only offered at the local level. In Turkey, Albania and Montenegro asymmetries are more significant. In Croatia alternative operators interconnect only at the single transit level, and their rate is higher than the incumbent's. Fixed to fixed call termination charges are reciprocal in Serbia, FYROM, Bosnia & Herzegovina and in Kosovo.

¹⁴ http://ec.europa.eu/information_society/digital-agenda/scoreboard/docs/pillar/electronic_communications.pdf

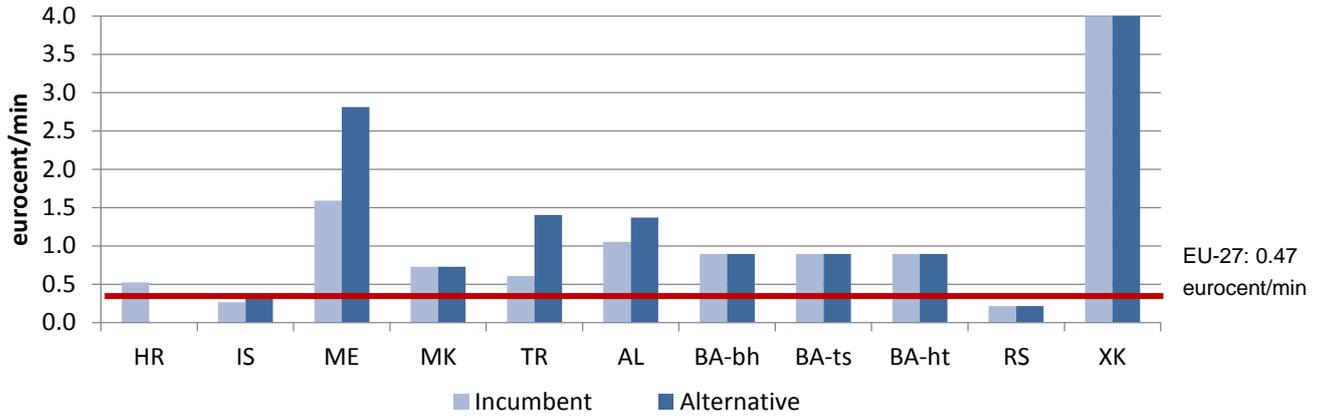


Figure S.4 - Local call termination on the fixed incumbent and alternative network

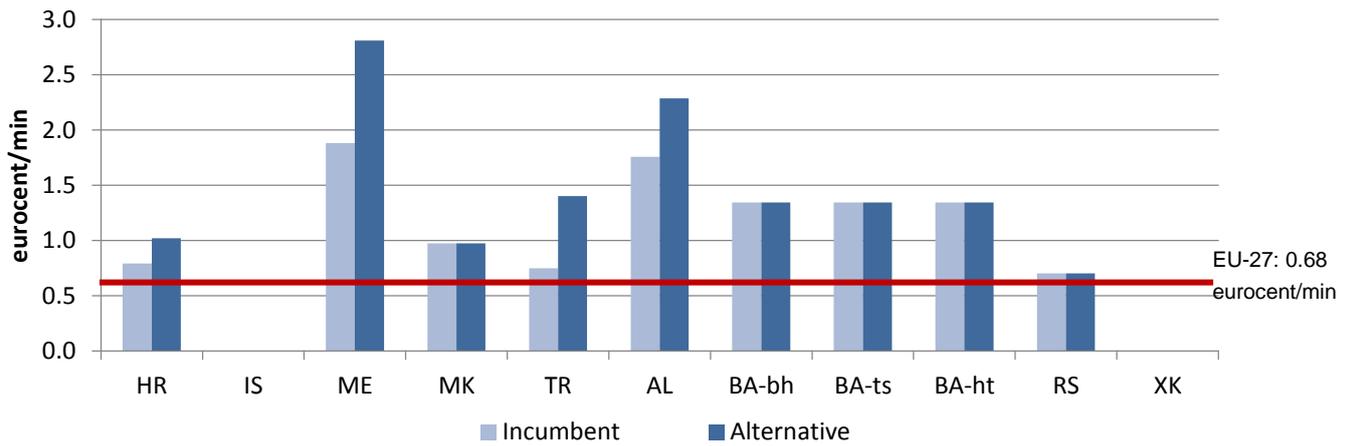


Figure S.5 - Single transit call termination on the fixed incumbent and alternative network

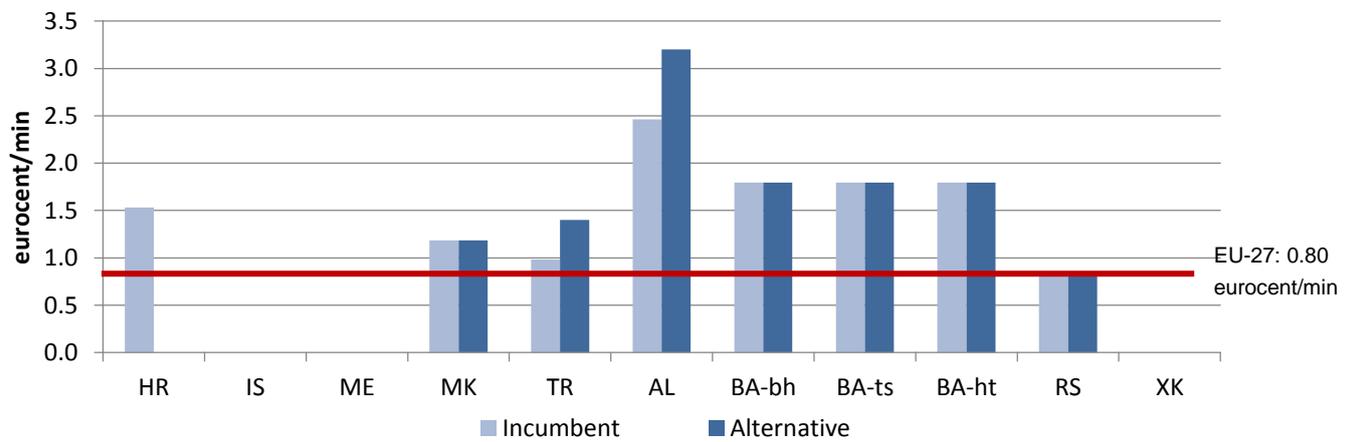


Figure S.6 - Double transit call termination on the fixed incumbent and alternative network

2. Call termination on mobile networks

Call termination charges on mobile networks in the monitored countries remain significantly higher than fixed network termination charges. At the same time, similar to the EU, mobile termination rates in these countries have been subject to substantial reductions over the last few years.

According to the Digital Agenda Scoreboard report, the weighted average EU-27 termination charges on mobile networks from 2005 fell by 57%, and are now at a level of 5.46 €cents per minute¹⁵.

Error! Reference source not found.S.7 illustrates the developments in mobile termination rates in the monitored countries between 2008 and 2011. Where there are several mobile operators in a country with different termination rates, the lowest rate is presented that usually corresponds to the largest mobile operator. In most of the countries, mobile operators apply the same termination charges regardless of whether the terminated call originates on a national fixed or mobile network. In Bosnia & Herzegovina, it appears that there is no direct interconnection between the mobile networks and all calls are terminated through the fixed networks. The differences between fixed to mobile and mobile to fixed termination rates are further addressed in Figure S.7.

In all of the countries, mobile operators do not differentiate between peak and off-peak termination rates.

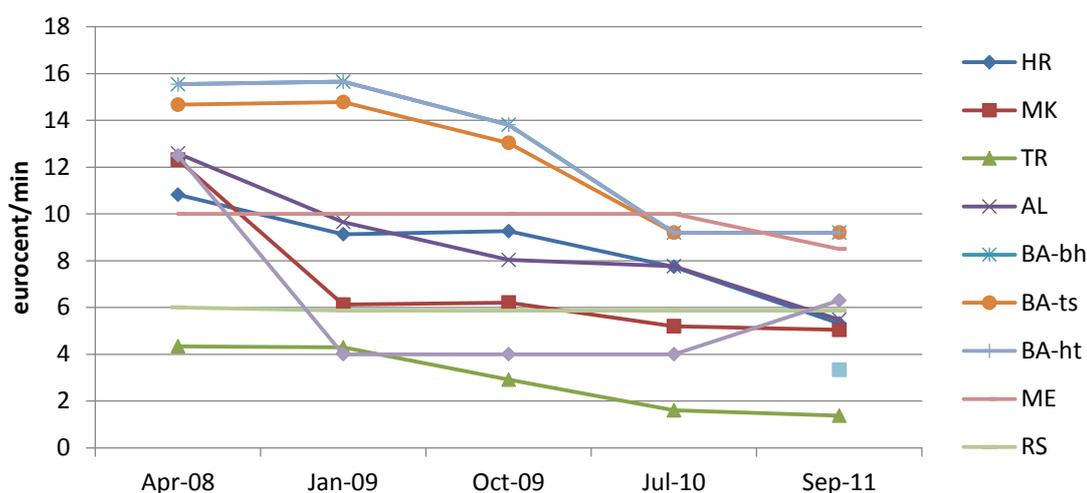


Figure S.7 - Fixed to mobile termination rates, peak time

Over the last few years, mobile termination rates have decreased considerably in all countries. In 2011 MTR reductions were implemented in Montenegro (15%), in Croatia (29%) and in Albania (30%, two subsequent reductions in March and September 2011, in addition to the abolishment of the set up charge for the three mobile operators with SMP). In Croatia mobile operators had already been required to cut their MTRs by over 15% in January 2010. In Turkey a major cut in MTRs (by over 50%) was imposed by the regulator in April 2010, this followed another major 30% decrease already implemented in March 2009. In Iceland and FYROM, since 2010 the NRAs have been applying step-by-step glide paths for reductions in MTRs until 2013. In Albania, the regulator in February 2011 set glide paths for reductions in MTRs of the operators with SMP until 2015.

The figure below shows the mobile termination rates of all mobile operators in the monitored countries as of September 2011. Mobile termination rates of all operators in Turkey and Serbia, as well as the two biggest operators in FYROM are set at the level below the EU average. In Croatia and Albania the rates of the biggest operators are only slightly above the EU average. At the same time, in Montenegro and Bosnia and Herzegovina fixed to mobile termination rates are significantly above the EU average level.

¹⁵ http://ec.europa.eu/information_society/digital-agenda/scoreboard/docs/pillar/electronic_communications.pdf

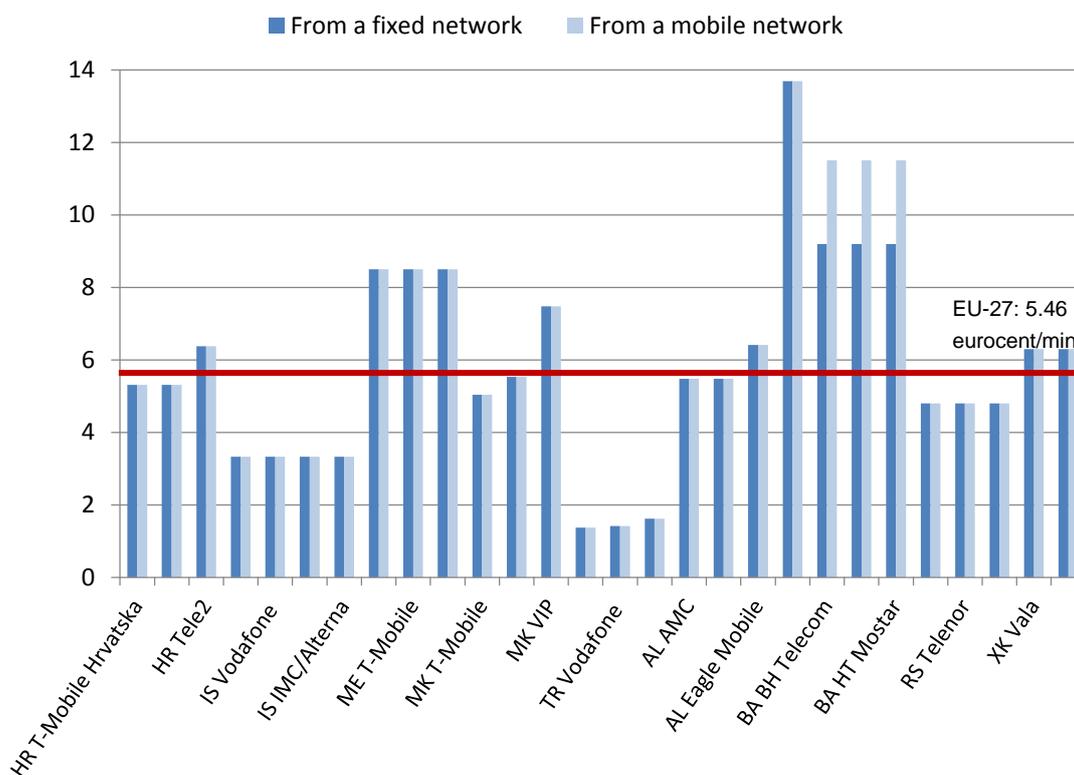


Figure S.8 - Mobile termination rates, peak time, September 2011

3. Local loop unbundling charges

Local loop unbundling prices have been set by regulators in most of the monitored countries, except Kosovo, although actual implementation of LLU is still limited to four countries: Croatia, Iceland, Turkey and FYROM.

Error! Reference source not found.S.9 and **Error! Reference source not found.S.10** below compare the one-off connection charges and monthly rental prices for full and shared LLU access in the monitored countries and the EU-27 averages according to the Digital Agenda Scoreboard report.¹⁶ The connection charges in Croatia, Iceland, Turkey, Montenegro and Albania are well below the EU average, while in Serbia and Bosnia & Herzegovina price levels are quite comparable to the EU level.

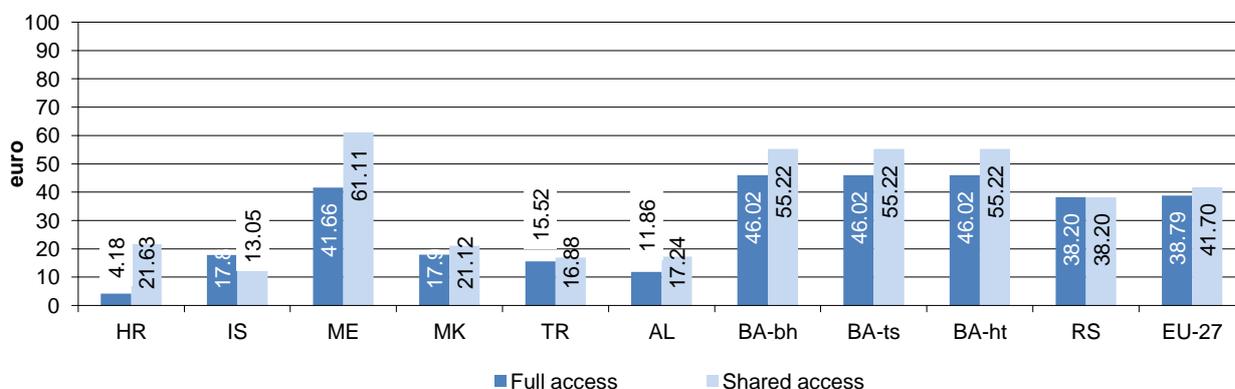


Figure S.9 - Connection prices for fully unbundled loop and shared access, June 2011

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http://ec.europa.eu/information_society/policy/ecomm/doc/implementation_enforcement/annualreports/15threport/15report_part2.pdf

Monthly rental charges in all monitored countries, for both full and shared LLU access are set at the levels close to the EU average.

It should be noted, however, that in three of the monitored countries, including Serbia, Albania and Bosnia & Herzegovina, LLU monthly prices tend to be higher than line rental charges, a situation which might affect take-up of LLU.

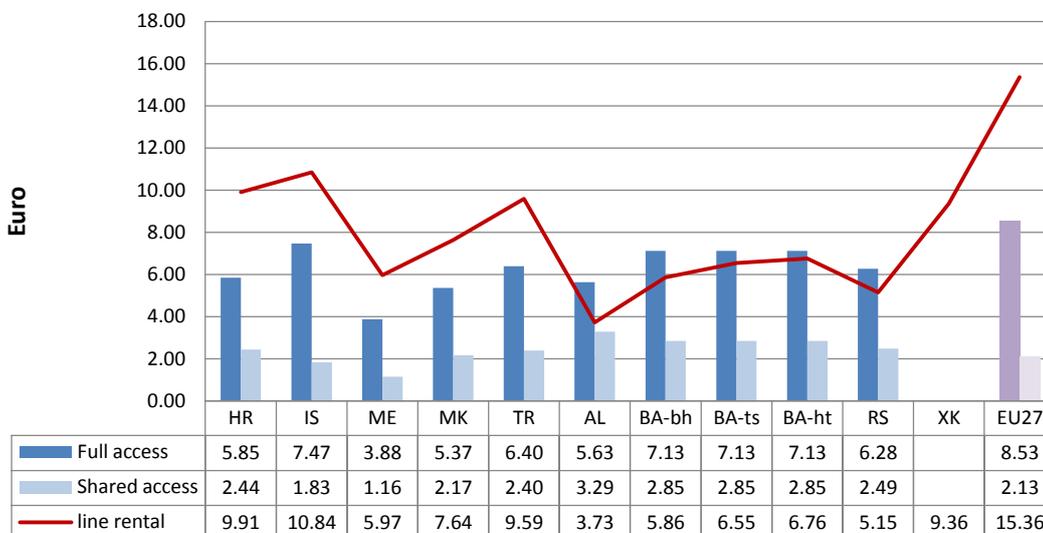


Figure S.10 - Monthly rental prices for fully unbundled loop and shared access, June 2011

T. Fundamental rights and freedoms

The adoption of the EU 2009 regulatory framework raised a new discussion on fundamental rights and freedoms in the information society. A controversy between European Parliament and the Council on amendment 138 (renumbered 46 in second reading) delayed adoption of the package. The text, which was finally agreed in the conciliation procedure, became law as new article 1 para. 3a of the Framework Directive: *“Measures taken by Member States regarding end-users’ access to, or use of, services and applications through electronic communications networks shall respect the fundamental rights and freedoms of natural persons as guaranteed by the European Convention for the Protection of Human Rights and Fundamental Freedoms and general principles of Community law.”* In particular, measures that would restrict end-users access to services and applications may only be imposed if they are *“appropriate, proportionate and necessary within a democratic society”* and duly respect *“the principle of the presumption of innocence and the right to privacy”*.

Issues which have been controversial in several EU member states include the following:

- Laws or proposed bills that would restrict certain end-users’ rights to access the internet, in particular end-users who repeatedly infringed copyright laws.

In this context it is being discussed whether such laws interfere with fundamental rights, in particular whether the law puts the burden of proof on the end-user and whether the applied procedure respects the rights of innocent end-users who might suffer the consequences of misconduct carried out by other users of the same account.

According to the new provision in the Framework Directive, the procedure before blocking a person is not necessarily to be taken by a judge, but it must be fair and impartial and must include the right to be heard of the persons concerned (except in urgent cases). After the decision, the right to effective and timely judicial review shall be guaranteed.

- Laws or proposed bills that would restrict end-users’ rights to access certain websites, in particular if these websites contain illegal content.

In this context it is discussed how the applied procedures differentiate between legitimate and illegal content, how to supervise the administration of the blacklist of blocked websites and how blocked users and content providers can appeal decisions. It is particularly problematic to deal with websites that contain a large amount of legitimate content and only singular illegal files (for example the popular video portals), because any decision to block access to the illegal content can interfere with many innocent users' fundamental rights.

1. Constitutional rights

All monitored countries have constitutional guarantees for the freedom of expression and the right to respect for private and family life.

However, there is not much case law of the constitutional courts. In FYROM and Serbia, constitutional complaints against newly introduced data retention provisions are pending. A judgment of the Serbian Constitutional Court also repealed a provision in the former Law on telecommunications, which allowed interception not only under court orders but also under other (unspecified) laws (case IUz 149/2008). The Turkish Constitutional Court has adopted several judgments on freedom of expression.

2. Freedom of expression and information on the internet

Turkish Law no. 5651¹⁷, which was enacted on May 4, 2007, is the only law in the monitored countries, which foresees a mechanism to block access to certain websites.

The law contains a catalogue of eight different crimes: provocation for committing suicide, sexual exploitation of children, facilitating the use of narcotics or psychotropic substances, procurement of hazardous material for health, prostitution, pornography, providing a place and possibilities for gambling and crimes against the Atatürk-Law no. 5816.

If there is reasonable suspicion of content which constitutes one of the crimes listed in this catalogue, a decision to block access can be adopted by a judge during the prosecution or by a court during the trial. In urgent cases, a public prosecutor can also decide to block access for 24 hours, pending approval by a judge.

Separately, the Telecommunication Communication Presidency, which is part of the regulator ICTA, can ex officio block the access to a certain web site as an administrative precaution.

The law does not contain a mechanism that would ensure proportionality of the blocking orders. In particular, popular video portals such as YouTube¹⁸, Geocities, DailyMotion and Google have been blocked in Turkey, because singular videos were found as infringing the law. The law does not require the decision-making bodies to weigh the interest in blocking a certain video against the interest of innocent users to upload or download the vast number of legal videos on such websites.

According to the OSCE¹⁹, access to approximately 5,000 websites has been blocked until June 2010. In January 2010, OSCE criticised that at least 197 court blocking orders were issued outside the scope of the law and that the Telecommunication Communication Presidency stopped publishing details about its administrative blocking decisions in May 2009.

According to the European Commission's last progress report, the "*frequent website bans ... are disproportionate in scope and duration*". Mainstream web portals have been banned for several years. "*Law n°5651 on the Internet limits freedom of expression and restricts citizens' right to access information.*"²⁰

¹⁷ Law on the regulation of publications on internet and suppression of crimes committed by means of such publications, Law no. 5651, dated May 4, 2007

¹⁸ With regard to YouTube, a court in Ankara [decided](#) on October 30, 2010 to stop blocking the site, after YouTube removed some contested videos. However, only a few days later a court ordered a new ban, based on other videos considered as infringing the law.

¹⁹ Organization for Security and Co-operation in Europe, Report of the OSCE Representative on Freedom of the Media on Turkey and Internet Censorship, January 2010, <http://www.osce.org/fom/41091>, see also the press release of June 22, 2010, <http://www.osce.org/fom/69467>.

²⁰ Turkey 2010 Progress Report, [SEC\(2010\)1327](#), page 18. See also the answer given by the European Commission to written questions E-6023/08 and E-6068/08 of members of the European Parliament, <http://www.europarl.europa.eu/sides/getAllAnswers.do?reference=E-2008-6023&language=EN>

A draft law²¹ to transpose the Electronic Commerce Directive has been submitted to parliament. The law would however not change the liability of internet service providers significantly, and would not amend Law no. 5651.

In 2011, a plan to introduce obligatory filtering systems for web access caused widespread concern about censorship. ICTA adopted in August 2011 Principles and procedures concerning the safe internet service²², which contains a reduced version of the original plans and will become operational on November 22, 2011.

The new provisions oblige all internet service providers to provide a filtering system which blocks access to certain domain names, IP addresses and ports, with two pre-defined profiles, a 'child profile' and a 'family profile'. Within the latter, access to game sites, chatting sites and social media sites can be blocked on an optional basis. The profiles are defined and updated by working boards within ICTA and the providers are not allowed to edit the lists submitted by the working boards.

In the version adopted in August 2011, installation of the system is mandatory for providers, but not for subscribers. For subscribers who do not opt in, internet access will not change (article 5). Subscribers who have opted in, may switch between the profiles and opt out at any time.

U. Information society statistics

A Council Resolution²³ of 2003 and a Regulation²⁴ of the European Parliament and the Council adopted in 2004 defined indicators and required Member States to collect certain information in order to measure progress toward the objectives defined in Lisbon in March 2000 and later in the eEurope action plan of 2002. The collected data are published regularly by Eurostat.²⁵ The eEurope benchmarking is being further developed under the i2010 benchmarking framework²⁶, currently as the i2010 benchmarking framework for 2011 to 2015. Commission Regulations adjust the legal framework annually.²⁷

1. Status of information society statistics

In all of the monitored countries, the national statistics institutes are responsible for information society indicators. The quality of available data depends on whether the statistics institutes apply Eurostat methodology. This is now the case in five of the monitored countries, whereas for the other four almost no statistical data is available.

- Croatia, Iceland, FYROM, Turkey collect data in comprehensive annual surveys and their statistics are integrated with Eurostat²⁸ data and publications. Surveys are on annual basis and comprehensive. Table P.1 of the annex contains detailed information about the data available for the years 2008 to 2010.
- Serbia collects data with the same methodology and also on annual basis, but the statistics are not published via the Eurostat website. Table P.1 of the annex contains the data submitted by the Statistical Office of the Republic of Serbia.
- The national statistics institute in Montenegro has conducted a pilot in 2010 and will start regular research based on Eurostat methodology in October 2011.
- Albania and Bosnia & Herzegovina have announced that their statistics institutes will gather data based on Eurostat methodology.

²¹ The draft law is published at <http://www.basbakanlik.gov.tr/Handlers/FileHandler.ashx?FileId=6593> (in Turkish).

²² See http://www.btk.gov.tr/mevzuat/kurul_kararlari/dosyalar/2011%20DK-14-461.pdf (in Turkish and English).

²³ Council Resolution of February 18, 2003 on the implementation of the eEurope 2005 Action Plan, 2003/C 48/02

²⁴ Regulation (EC) No 808/2004 of the European Parliament and the Council of April 21, 2004 concerning Community statistics on the information society; amended by Regulation (EC) No 1006/2009

²⁵ See the Information society statistics, a sub-category of the theme Industry, Trade and Services:

http://epp.eurostat.ec.europa.eu/portal/page/portal/information_society/introduction

²⁶ http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm

²⁷ See Commission Regulations (EC) No 1099/2005, 1031/2006, 847/2007, 960/2008, 1023/2009 and 821/2010.

²⁸ <http://epp.eurostat.ec.europa.eu/>

- In Kosovo, the Statistical Office and the Telecommunications Regulatory Authority would be responsible for information society statistics, but there are no concrete plans yet to integrate statistics with Eurostat methodology.

2. Selected statistical data

For many of the available statistical indicators, Croatia, FYROM, Turkey and Serbia are below the EU-27 average but above Bulgaria and Romania. Iceland can be compared with Denmark and Sweden and is generally far above the EU-27.

The following figures show households and enterprises having access to broadband and individuals regularly using the internet. For comparison, the figures include Bulgaria, Romania, Greece, Denmark, Sweden and the EU-27 average.

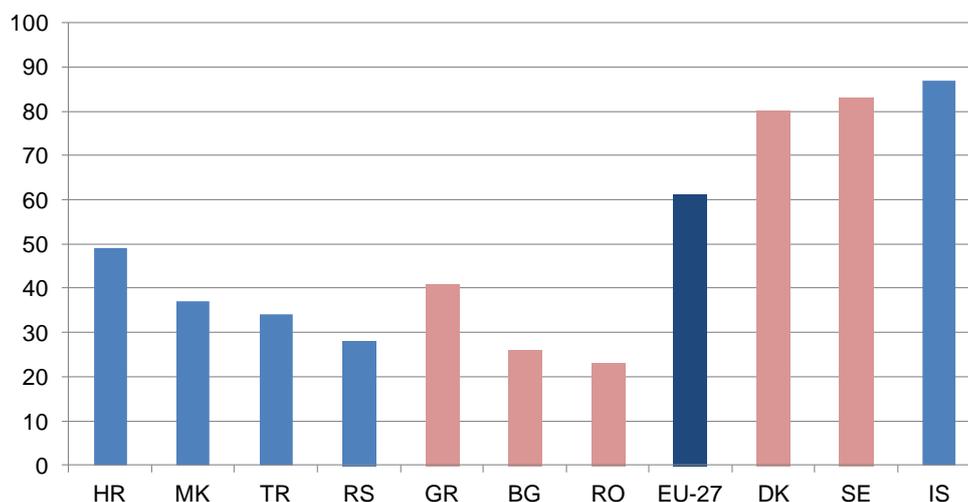


Figure U.1 - Households which have broadband access (Eurostat 2010)

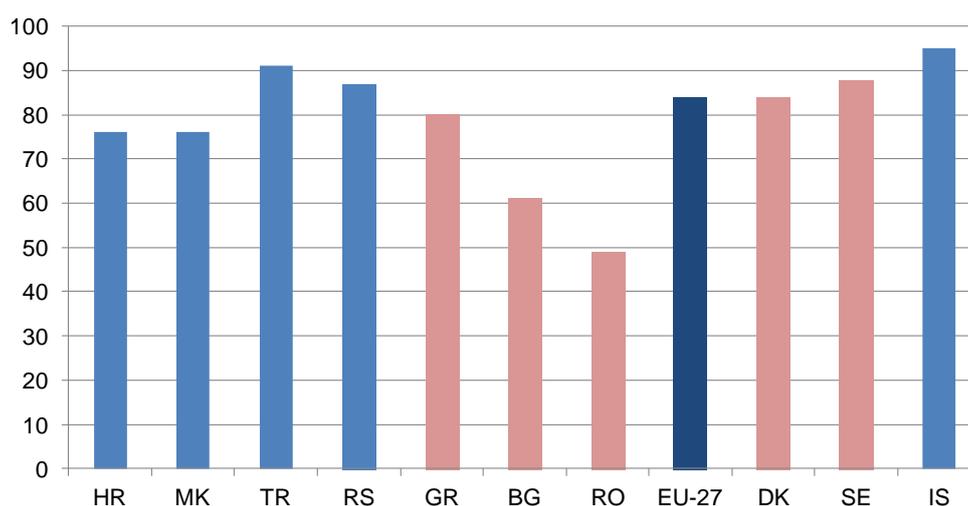


Figure U.2 - Enterprises which have broadband access (Eurostat 2010)

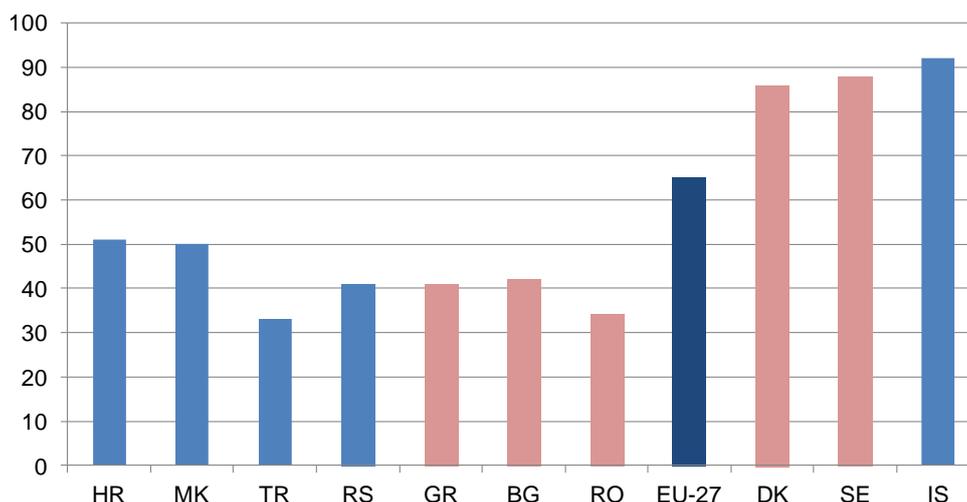


Figure U.3 - Individuals regularly using the internet (Eurostat 2010)

V. Network and information security

To address security challenges to the information society, the European Union institutions have developed several lines of action:

- The regulatory framework on electronic communications requires providers of public communications networks and publicly available electronic communications services to safeguard network security (articles 13a and 13b Framework Directive) and the security of processing personal data (article 4 e-Privacy Directive). The e-Privacy Directive also deals with specific questions such as spam and cookies.
- Computer crime has been identified as an area of serious crime with a cross-border dimension that needs combat on a common basis (article 83 TFEU). The Council adopted a framework decision²⁹ which echoes the Council of Europe Convention on Cybercrime and some other initiatives more specifically aimed at protecting minors. The framework decisions will probably soon be replaced by directives.³⁰
- The European Network and Information Security Agency (ENISA) is established³¹ as an institutionalised means of cooperation between member states. Its tasks include the collection of information, the analysis of current and emerging network risks, the development of common methodologies and the promotion of exchanges of best practices as well as methods of alert.
- The Commission proposed³² an action plan on Critical Information Infrastructure Protection (CIIP) to protect Europe from large scale cyber-attacks and disruptions and enhance preparedness, security and resilience. The action plan calls for establishing Computer Emergency Response Teams (CERTs) in all member states. Member states cooperate in an European Forum for Member States (EFMS, established in 2009) and cooperation between public and private sector is supported by the European Public-Private Partnership for Resilience (EP3R).

The EU 2009 regulatory framework significantly enhanced the competent national authorities' role in network security. The new articles 13a and 13b of the Framework Directive oblige operators to take appropriate measures to secure their networks and ensure the continuity of supply of services. Security

²⁹ Council Framework Decision [2005/222/JHA](#) of February 24, 2005 on attacks against information systems.

³⁰ On March 29, 2010 the Commission adopted a [Proposal](#) for a Directive of the European Parliament and of the Council on combating the sexual abuse, sexual exploitation of children and child pornography, repealing Framework Decision 2004/68/JHA, COM(2010) 94 final, and on September 30, 2010 a [Proposal](#) for a Directive of the European Parliament and of the Council on attacks against information systems and repealing Council Framework Decision 2005/222/JHA, COM(2010) 517 final.

³¹ ENISA was established by Regulation (EC) [460/2004](#) and its mandate was extended by Regulation (EC) [1007/2008](#) and another time by Regulation (EC) [580/2011](#).

³² Commission Communication of March 30, 2009, [COM\(2009\)149 final](#), followed by a Communication on March 31, 2011, [COM\(2011\) 163 final](#).

breaches must be notified to the NRA, which has to report annually to ENISA. The NRA may submit operators to a security audit.

Amendments to article 4 of the e-Privacy Directive enhance the protection of personal data and the role of the relevant national authorities (which are not necessarily identical with the NRAs). National authorities shall be able to audit the security measures taken by service providers. Providers will be obliged to notify the authority and affected subscribers or individuals in case of a personal data breach.

1. Network security obligations for providers of communications services

The new articles 13a and 13b of the Framework Directive oblige operators to secure their networks and to ensure continuity of supply of service.

All participating countries have a provision in their laws (Turkey in secondary legislation), which require operators to undertake such network security measures.

However, all those provisions – except the newly amended Croatian law – have been drafted before the EU 2009 regulatory framework and are therefore less detailed.

Most countries use a wording that requires “*appropriate*” technical and organisational measures, sometimes also referring to the expected risks or allowing the operators to weigh the risks against the costs of security measures.

Turkey and Iceland have detailed rules in secondary legislation and oblige operators to implement information security management systems according to defined standards.

In Iceland, PTA adopted in 2007 a set of three rules on the protection of information in public communications networks³³, the functionality of public communications networks³⁴ and the protection, functionality and quality of IP communications services³⁵. The rules apply to all providers of public communications networks or services without regard of their size.

The rules are very detailed and require operators to conduct a risk assessment, to prepare business continuity plans and to publish their security policy. Information security management may be based on the standard ISO/IEC 27001 and ISO/IEC 17799. The rules also contain several provisions which go into technical details, for example the configuration of mail servers.

The Turkish bylaw on security of electronic communications (adopted in 2008) also obliges operators to implement information security management systems according to the standard ISO/IEC 27001. Operators must be audited and certified annually on the basis of this standard. The bylaw also requires operators to conduct an annual risk assessment analysis and to report the results of this analysis to the regulator. However, in Turkey these rules apply only to equity companies which provide electronic communications networks or services.

The standard ISO/IEC 27001 is currently the most important standard on information security management. It replaced the former ISO/IEC 17799 standard, which was based on the widely used British Standard BS 7799. Such standards on information security management require organisations to implement a high level management committee with responsibility for information security issues. A written security policy should be accessible to all employees. The standards usually refrain from specifying certain technical measures, but contain long lists of topics that should be taken into account by the management and addressed by the security policy in order to achieve an appropriate level of protection.

Besides Croatia, Iceland and Turkey, Serbia and the Kosovo also have provisions in their laws that allow the NRA to audit operators' security measures. In other countries there is no explicit provision on such audits, although it might be possible that the NRA uses some general supervision powers from the law.

Article 13a of the Framework Directive requires operators to notify the NRA in case of significant security breaches. Such provisions can already be found in the laws of Croatia, Iceland, Montenegro, Turkey, Bosnia & Herzegovina and Serbia.

³³ <http://www.pfs.is/file.aspx?id=1871>

³⁴ <http://www.pfs.is/file.aspx?id=1872>

³⁵ <http://www.pfs.is/file.aspx?id=1873>

The number of Computer Emergency Response Teams (CERTs) is increasing, although only in Croatia and Turkey, which have CERTs operating since several years, the CERTs are also operating websites with frequent updates, alerts and security advice.³⁶ In Iceland and Serbia, academic institutions operate CERTs and are connected with ENISA³⁷ and other international institutions³⁸, but do not operate websites addressed to the general public.³⁹ Montenegro established its CERT recently in the Ministry for Information Society and Telecommunications and Bosnia & Herzegovina in the Ministry of Security. Albania plans establishing a CERT and in Kosovo the draft law on electronic communications would give TRA the task to operate a CERT. FYROM has not reported a plan to establish a CERT.

2. Security of processing personal data

According to article 4 of the amended e-Privacy Directive (2002/58/EC), all providers of publicly available electronic communications services must take “*appropriate technical and organisational measures*” to safeguard security of their services. This is a general provision which does not prescribe specific security measures, but refers to the “*state of the art*”, the costs of implementation and a level of security “*appropriate to the risk presented*”.

The EU 2009 regulatory framework introduced significant amendments. In the case of a personal data breach providers will in future be obliged to notify the breach to the competent national authority. If the personal data breach is likely to adversely affect the personal data or privacy of subscribers or individuals, the provider shall also inform the subscribers and individuals affected. EU member states had to transpose these amendments into national law by May 25, 2011.

All monitored countries have transposed article 4 of the e-Privacy Directive (in its original version) into their national legislation, where it can typically be found in the law on electronic communications.

In five of the monitored countries the body responsible for supervision is the NRA, rather than the data protection authority. In FYROM and Bosnia & Herzegovina, the data protection authority is responsible for supervision. In Croatia and Serbia, both authorities have supervisory powers. In Albania the two authorities have signed a memorandum of understanding.

Most countries have transposed the provision in the general form of the e-Privacy Directive, i.e. they require “appropriate” measures without specifying details. In Kosovo the new Law on the protection on personal data is more specific and suggests encrypting personal data before transmitting them over telecommunications networks.

The amended directive contains very detailed provisions on notifying the affected subscribers and/or the responsible authority in case of personal data breaches. No country except Croatia has already an exact transposition of the new provisions, but some have already similar rules:

- In Iceland, operators must inform the customers if confidentiality is seriously jeopardised. They also must report security incidents to Computer Security Incidents Response Teams (CSIRTs), which are coordinated by PTA.
- In Serbia, operators must notify personal data breaches to the data protection authority, and, under conditions, also to the subscribers and individuals affected by the breach.
- In Turkey operators must inform the affected subscribers, but there is no explicit obligation to notify personal data breaches to an authority.
- In Montenegro there is an obligation to inform the NRA and the users, but the provision refers to problems with the “security of communications” and not to personal data breaches.
- In FYROM, Albania, Bosnia & Herzegovina and Kosovo there is no explicit obligation to notify, neither an authority nor affected subscribers.

³⁶ Croatia: CARNET www.cert.hr and Turkey: TR CERT: www.tr-cert.gov.tr and www.bilgiguvenligi.gov.tr.

³⁷ ENISA maintains an inventory of CERTs all over Europe: <http://www.enisa.europa.eu/act/cert/background/inv>

³⁸ See in particular TERENA's trusted introducer mailing list, <http://www.terena.org/activities/tf-csirt/> and https://www.trusted-introducer.org/teams/country_LICSA.html

³⁹ Iceland: RHnet www.rhnet.is and Serbia: AMRES-CSIRT csirt.amres.ac.rs.

The amended directive also requires member states to entitle competent authorities to audit operators' security measures.

- In Croatia, Iceland, Turkey, Serbia and Kosovo the NRA has a legal basis to audit the security measures.
- In Montenegro, FYROM, Albania and Bosnia & Herzegovina there is no explicit provision allowing a national authority to audit personal data security measures, although it might be possible that the NRA or the data protection authority can use some general inspection powers for that purpose.

3. Cybercrime

This report analysed, whether the participating countries have ratified and transposed into national legislation the Council of Europe Convention on Cybercrime.

Turkey signed the convention in 2010. Turkey has not yet ratified the convention, but the Turkish legislation has been aligned with it. Kosovo also has not ratified the convention, but adopted in 2010 a law to transpose it into national legislation. All other participating entities have ratified the convention.

All countries except Bosnia & Herzegovina have aligned their legislation with the convention. In Bosnia & Herzegovina there is no cyber crime legislation at state level, but at entity level the Republika Srpska has some cyber crime provisions in its criminal code.

In Montenegro and Serbia, the criminal code does not consider computer-related forgery as a crime. Iceland amended its General Penal Code before it ratified the convention, but it did not transpose all provisions. There is no provision that punishes system interference as criminal offences. The provision on illegal access protects private data like letters or diaries, but does not seem to protect the data of a company.

The table below shows whether specific acts are considered to be criminal offences, based on the list in the Convention on Cybercrime. Where the table shows a check mark, we could identify a certain provision in the criminal code or some other national law, which matches a provision in the Convention on Cybercrime, although it might not exactly cover the same crimes. Where the table shows an X, we could not identify such a provision.

	HR	IS	ME	MK	TR	AL	BA	RS	XK
Illegal access	✓	✓	✓	✓	✓	✓	✗	✓	✓
Illegal interception	✓	✓	✓	✓	✓	✓	✗	✓	✓
Data interference	✓	✓	✓	✓	✓	✓	✗	✓	✓
System interference	✓	✗	✓	✓	✓	✓	✗	✓	✓
Computer-related forgery	✓	✓	✗	✓	✓	✓	✗	✗	✓
Computer-related fraud	✓	✓	✓	✓	✓	✓	✗	✓	✓
Offences related to child pornography	✓	✓	✓	✓	✓	✓	✗	✓	✓
Offences related to infringements of copyright and related rights	✓	✓	✓	✓	✓	✓	✗	✓	✓
✓ is a criminal offence, ✗ is not a criminal offence									

Table V.1 - Computer related criminal offences

W. Electronic commerce and electronic signatures

1. Market access and liability

The Electronic Commerce Directive 2000/31/EC established a general authorisation scheme for providers of information society services. It also supports such providers by limiting the providers' liability for actions of their customers.

- According to article 4 Member States shall ensure that the taking up and pursuit of the activity of an information society service provider may not be made subject to prior authorisation or any other requirement having equivalent effect.
- Articles 12 to 14 exempt certain activities of internet service providers ('mere conduit', caching and hosting) from criminal and civil liability under certain conditions.
- According to article 15 Member States shall neither impose on providers a general obligation to monitor the information they transmit or store nor a general obligation to actively seek facts or circumstances indicating illegal activity.

All monitored countries except Iceland and Turkey transposed these requirements into their national legislation.

Iceland adopted an Act on electronic commerce and other electronic services in 2002. Although the law is based on the directive, it is not a precise transposition. For example, the law does not explicitly state that information society services are not obliged to monitor their subscribers or to seek for illegal activities. The law does not oblige providers to monitor, but it also does not protect providers from being obliged by other laws or court decisions.

In Turkey, a draft law has been sent to parliament. The new law would however not align the provisions on liability of ISPs. Whereas the Electronic Commerce Directive limits the liability of access providers ('mere conduit'), the Turkish Law no. 5651⁴⁰ obliges them to block access to websites if a court or the NRA has decided that the website constitutes a criminal offence (see chapter T on fundamental rights above).

The table below provides an overview of alignment with the mentioned provisions of the Electronic Commerce Directive:

	HR	IS	ME	MK	TR	AL	BA	RS	XK
No prior authorisation for information society services	✓	✓	✓	✓	✗	✓	✓	✓	✓
Limited liability for 'mere conduit', caching and hosting	✓	✓	✓	✓	✗	✓	✓	✓	✓
No obligation to actively monitor or seek for illegal activities	✓	✗	✓	✓	✓	✓	✓	✓	✓
✓ transposed, ✗ not transposed									

Table W.1 - Market access and liability of information society services

2. Market access and supervision of certification services

According to Article 3 of the Electronic Signatures Directive, Member States

- shall not make the provision of certification services subject to prior authorisation;
- may introduce voluntary accreditation schemes aiming on enhanced levels of certification service provision; and
- shall ensure the establishment of a supervision scheme for certification service providers issuing qualified certificates.

⁴⁰ Law on the regulation of publications on internet and suppression of crimes committed by means of such publications, Law no. 5651, dated May 4, 2007

The requirement not to make the provision of certification services subject to prior authorisation has been transposed in Croatia, Iceland, Montenegro, Albania and Kosovo. In the other countries, there are potential problems which might hinder market access:

- In FYROM certification service providers must register their activity with the Ministry of Finance 30 days prior beginning of their operation. According to the registration process as it is currently defined in secondary legislation, providers must wait for finalisation of the registration procedure before being allowed to issue certificates.
- Serbia requires prior authorisation of providers of qualified electronic signatures. However, after adoption of new secondary legislation on the registration procedure, four providers issuing qualified certificates have entered the market.
- Although Turkey does not require prior authorisation, providers of qualified certificates must notify their services two months in advance, which is unusually long. In case of an incomplete notification the authority may suspend the activity of the provider for the duration of a month.
- In Bosnia & Herzegovina the law also does not require prior authorisation, but market access might be hindered by the fact that the law requires providers to notify their services to a supervision body which has not been established.

Croatia is the only monitored country with its own voluntary accreditation scheme; which has been established under the Croatian Accreditation Agency following a July 2008 amendment to the Electronic signature act. Establishing a voluntary accreditation scheme is, however, not required by the Electronic Signatures Directive and only about half of the EU Member States have done so.

Supervision schemes have been established in Croatia (Ministry of Economy, Labour and Entrepreneurship and State Inspectors' Office), Iceland (Consumer Agency), Montenegro (Ministry for Information Society and Telecommunication), FYROM (Ministry of Finance), Turkey (Information and Communication Technologies Authority), Albania (National Authority for Electronic Certification), and Serbia (Digital Agenda Administration). In Bosnia & Herzegovina and in Kosovo no supervisory body has yet been established.

3. Electronic signature market data

The available market data shows a picture similar to many other European countries: the legal framework for electronic contracts and electronic signatures exists, but there is little demand for certificates, at least for qualified certificates.

- In Croatia, the state-owned Financial Agency (Fina) is the only issuer of qualified certificates. As of June 2011 there have been 26,000 valid qualified certificates.
- In Iceland, one certification-service provider issues qualified certificates. About 100,000 certificates have been issued, and about half of this number is active.
- In Montenegro, the Post of Montenegro has recently entered the market and is now the only provider issuing qualified certificates. 1,882 certificates have been issued so far, almost all to enterprises.
- In FYROM, two certification-service providers issue qualified certificates, but no data on the number of certificates is available.
- In Turkey, there are four certification-service providers that issue qualified certificates. The number of qualified certificates is growing fast (from 123,000 to 315,000 in the course of 2010), but it is still a small number compared with the size of the country.
- The Albanian Post has started to issue qualified certificates, but no numbers are available yet.
- Serbia has four providers, which have issued about 3,200 valid certificates in total.
- Bosnia & Herzegovina and Kosovo do not have a provider issuing qualified certificates.

Table W.2 below provides an overview of electronic signature regulations.

	HR	IS	ME	MK	TR	AL	BA	RS	XK
Legal recognition requirements on electronic contracts and electronic signatures transposed	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prior authorisation not required before market access	✓	✓	✓	*	*	✓	*	*	✓
Supervision system established	✓	✓	✓	✓	✓	✓	✗	✓	✗
Voluntary accreditation scheme established	✓	–	–	–	–	–	–	–	–
Number of certification-service providers issuing qualified certificates	1	1	1	2	4	1	–	4	–
✓ = transposed/established, ✗ = not established although required by the Directive – = not established, * = potential problems for market access									

Table W.2 - Electronic signature regulation and market data

X. Data protection

1. Protection of confidentiality of communications

According to article 5 e-Privacy Directive 2002/58/EC, member states shall ensure the confidentiality of communications and the related traffic data through national legislation. In particular, they shall prohibit listening, tapping, storage or other kinds of interception or surveillance of communications and the related traffic data by persons other than users, without the consent of the users concerned, with the exception of lawful interception.

This requirement has usually been transposed in the telecommunications law, by a provision in the privacy chapter that prohibits interception, and a misdemeanour provision that defines the penalties for infringements. Sometimes the telecommunications law only prohibits operators or their staff from interception, but does not impose penalties on third parties who intercept a communication. Often, a provision in the Criminal Code qualifies any form of illegal interception (whether it is the operator or somebody else) as a criminal offence.

Bosnia & Herzegovina is the only monitored country which does not have a provision against illegal interception. In FYROM there are provisions in the Law on electronic communications and in the Criminal Code, though not all forms of illegal interception are covered. If somebody who is not an operator intercepts a communication that is not an audio conversation (for example, intercepting e-mails or SMS), this is not covered by either of the two provisions.

The table below shows whether the penalties are imposed on illegal interception by the operator and/or illegal interception by third parties.

	HR	IS	ME	MK	TR	AL	BA	RS	XK
Illegal interception by operators and their staff	✓	✓	✓	✓	✓	✓	✗	✓	✓
Illegal interception by third parties	✓	✓	✓	*	✓	✓	✗	✓	✓
✓ = legal provisions exist, * = legal provision does not cover all cases, ✗ = no legal provision									

Table X.1 - Protection of confidentiality of communications

2. Traffic and location data

According to article 6 of the e-Privacy Directive, traffic data relating to subscribers and users must be erased or made anonymous when it is no longer needed for the purpose of a communication, for billing and interconnection payments, or for lawful interception. All monitored countries except Bosnia & Herzegovina and FYROM have transposed this provision. Most countries referred to the period during which the bill may be lawfully challenged or payment can be pursued (which is typically dependent on the contract between the operator and the subscriber).

In FYROM, article 112 (1) of the Law on electronic communications originally said that traffic data must be erased as soon as possible. Amendments adopted in June 2010 removed this principle entirely and replaced it by the obligation to retain all raw traffic data for 24 months. Paragraph 2 of this article still says that operators may store data as long as needed for billing.

Article 6(3) of the e-Privacy Directive requires the subscriber's informed consent before providers can use traffic data for marketing their own services or for the provision of value added services.

Article 9 of the e-Privacy Directive contains provisions to protect location data. In particular, the use of location data needs informed consent by the user or subscriber and even where consent has been obtained, the user or subscriber must be able to temporarily refuse the processing of location data.

Serbia's new Law on electronic communications transposed these provisions. As the following table shows, Bosnia & Herzegovina still needs to align its law in order to protect traffic and location data, and FYROM has introduced the above mentioned discrepancy between its law and article 6 of the e-Privacy Directive. In Iceland, the law requires informed consent, before location data may be used, but the law does not give the user or subscriber the right to temporarily refuse processing.

	HR	IS	ME	MK	TR	AL	BA	RS	XK
Traffic data must be deleted as soon as possible, except if needed for billing, or for data retention?	✓	✓	✓	✗	✓	✓	✗	✓	✓
Informed consent required before traffic data may be used for marketing?	✓	✓	✓	✓	✓	✓	✗	✓	✓
Informed consent required before location data may be used? Possibility to refuse temporarily, even if consent was given before?	✓	✗	✓	✓	✓	✓	✗	✓	✓
✓ = transposed, ✗ = not transposed									

Table X.2 - Traffic and location data

3. Unsolicited communications (spam)

Article 13 of the e-Privacy Directive requires unsolicited commercial communications by e-mail to be subject to the individual's prior consent (opt-in), except for the sending of direct marketing emails to existing customers. For companies, EU member states are free to require an opt-in or an opt-out scheme.

In addition to other requirements, article 7 of the Electronic Commerce Directive states that if unsolicited commercial communications by e-mail is allowed, it must be clearly identifiable and service providers who send such communications must respect opt-out registers.

Most of the monitored countries prohibit spam, without making a distinction between unsolicited e-mail addressed to an individual or to a company. Only Bosnia & Herzegovina does not have explicit legislation on spam. Turkey's draft law on electronic commerce would introduce a distinction between individuals and companies and would allow spam sent to companies.

Kosovo is the only monitored country where unsolicited commercial communications is explicitly allowed, but article 94 of the draft law on electronic communications would forbid spam.

Y. Lawful interception and data retention

1. Lawful interception

All nine countries have some legal framework for lawful interception, which typically obliges all providers of (public) communications networks and services under the respective electronic communications law.

The laws also have in common that they do not compensate operators, neither for the installation of the required surveillance equipment, nor on a case-by-case basis.

2. Data retention

According to the e-Privacy Directive, providers typically have to erase traffic data as soon as they no longer need them for their legitimate purposes (in particular for billing, see Table X.2 above). However, article 15(1) of the e-Privacy Directive establishes an exception to that principle and allows member states to adopt legislation providing for the retention of data for a limited period where this constitutes a necessary, appropriate and proportionate measure in a democratic society to safeguard national security (state security), defence, public security, and the prevention, investigation, detection and prosecution of criminal offences or of unauthorised use of electronic communication systems.

Directive 2006/24/EC on Data Retention harmonises member states' laws on the retention of traffic, location and identification data to ensure the investigation, detection and prosecution of 'serious crimes'. All categories of data covered by the directive must be retained for a minimum of six months and for a maximum of two years.

Data retention has proved to be a controversial topic, with many member states having delayed its introduction, in particular with regard to retention of internet data. Constitutional courts in Romania and Germany repealed the national implementation of the directive.⁴¹ On February 10, 2009 the European Court of Justice dismissed an action for annulment of the directive brought by Ireland, but further lawsuits are pending.⁴²

All participating countries except Kosovo now have some form of data retention provision in their laws, but in most countries the exact types of data to be retained are only loosely specified.

- FYROM and Serbia adopted data retention provisions in 2010 and oblige all operators to retain traffic data, but do not specify the details. In Serbia the law foresees that this would be regulated by a bylaw. In both countries these provisions have been challenged at the constitutional courts. The cases are still pending.
- The Albanian law obliges all providers of public electronic communications networks to retain data, but the list of data to be retained only includes telephony data. There is no specific requirement to retain internet data.
- In Turkey, article 6 of Law no. 5651 obliges internet access providers to retain traffic data, but does not specify the duration. The law only says that the duration would be between six months and two years, and set by a bylaw that has not been adopted.
- The law in Montenegro also does not specify the exact duration, but refers to a period of six months to two years.
- Iceland has not transposed the Data Retention Directive, but has only a short provision which lists some categories of data that must be retained for six months.

In all countries which oblige operators to retain data, operators have to bear the costs and are not entitled to ask for compensation.

Most countries oblige operators to retain traffic data for both telephony and internet access, except Turkey (internet only), Albania (telephony only) and Kosovo (no obligation).

⁴¹ Romanian Constitutional Court, October 9, 2009, [decision no. 1258\(1\)](#) and German Federal Constitutional Court, March 2, 2010, [case 1 BvR 256/08](#)

⁴² ECJ February 10, 2009, case C-301/06 Ireland v Parliament and Council

Some countries have additional requirements, for example the new provisions in FYROM oblige operators to retain the data in the territory of the country. This seems not to be in line with the requirements of the Data Protection Directive 95/46/EC, which aims for a free flow of data within the internal market. FYROM also requires operators to have their surveillance equipment approved.

Z. Management of internet domains

The management of internet domains is (with the exception of the .eu domain) not regulated by EU legislation. Nevertheless, availability of domain names, easy registration processes and low prices are important for the creative industries of a country. If it is difficult to register or if there are high prices, users will choose a domain name under a generic top-level domain or under the country code top-level domain of another country.

We can distinguish at least three different functions that might be regulated by law (but are often unregulated, in particular if the traditionally established system works satisfactorily):

- drafting and adopting the national domain name policy, in particular the rules on who can register a domain name, rules on accrediting registrars and dispute settlement provisions;
- the function of the registry, that is the body which manages the central database and the domain name servers; and
- the function of registering the individual domain names, maintaining the customer contact and billing (registrar function).

1. National domain name registry and policy

In five of the monitored countries, an academic institution has the task of the national registry, in particular a university data centre (Bosnia & Herzegovina, Croatia, FYROM and Turkey) or an association of university institutions and ISPs (Serbia).

In these countries there was traditionally no explicit legislation on domain name management. The typical legal basis of the national registry is a ministry or government decision which was the basis of the contract with IANA or ICANN. The national domain name policy was usually decided by the registry itself, for example in the form of the registry's statute or general business conditions. Some countries have adopted, or are preparing explicit legislation on domain names:

- In Croatia an ordinance based on the Electronic communications act introduced in 2010 a new legal basis for domain name administration and liberalised the market for registrars. Whereas CARNet was previously the only registrar, CARNet is now the registry and has accredited 14 registrars.
- Turkey has adopted a bylaw on internet domain names and will re-delegate the .tr top level domain on this new legal basis. In FYROM a new law on the Macedonian Academic Research Network (MARNet) was adopted in 2010 and confirmed MARNet's role as the national registry. Iceland plans to adopt an Act on the top level domain in parliament's autumn session of 2011. The law will move the responsibility for domain name policy from the registry to the Ministry of Interior. A licence issued by PTA will in future become the legal basis of the registry.
- In Bosnia & Herzegovina and in Serbia there is no explicit legislation on domain name management. In Bosnia & Herzegovina, the Ministry of Communications and Transport intends to adopt a policy on the .ba top-level domain.
- In Albania the telecommunications regulator is the national registry and has, since June 2008, an explicit legal basis in the Law on electronic communications. Kosovo does not yet have a top level domain.

The most noteworthy example in the region is Montenegro, which is in the lucky situation to have a country code (ME) that is also a frequently used English word. This makes Montenegrin domain names attractive for English speaking users. Montenegro was the first country in the region to choose a fully market based approach in its domain name policy and to clearly separate the policy function and the registry function:

- On the basis of the Law on the property of the Republic of Montenegro, the government adopted a decision establishing the Council for the “.me” domain. This council decides on the domain name policy.
- The council announced a public invitation for selecting the agent for the registry function. In this international tender, a joint venture of GoDaddy (one of the largest players in the domain name business) and a Montenegrin company won the tender.

2. Registrars of domain names

By separating the function of the national registry and the registrars, a state can introduce competition on the domain name market. This makes access to domain names easier and cheaper. Normally, domain name owners do not operate their own name servers and have to use the services of an ISP for this purpose. If this ISP also may act as registrar and has direct electronic access to the national domain name registry, the process of registering the domain name is significantly simplified.

The monitored countries can be clustered in two groups, as shown in the following table. Kosovo belongs to neither of the groups, because it does not have a top level domain yet.

There is a clear trend towards competition. Croatia allows competition between registrars since 2010. In Albania, AKEP is upgrading its technical systems and will in future be able to support competition between registrars. In Turkey, competition is low, as the registry itself has registered about 90% of the domains and only 9 registrars are currently accredited. ICTA aims to enhance competition in the process of re-delegating the .tr top level domain name.

	Competition model	“Registry is only registrar” model
Competition between registrars exists	Yes	No
Countries	HR, IS, ME, TR, BA, RS	MK, AL
Who accredits registrars	The registry	–
Electronic interface exists	Yes	No
Number of registrars	HR: 14, IS: 61, ME: 150, TR: 9, BA: 19, RS: 34	1 (the registry)
Price per domain and year	HR: €0 to €21 IS: €39 ME: €10 TR: €1.90 to €10 BA: €15.3 (first year: €40.9) RS: €2.5 to €13.5 Does not include registrar functions	MK: €4.29 to €8.58 AL: €7 Includes registrar functions

Table Z.1 - Registrars of domain names

Iceland has the highest annual charge of €39. Bosnia & Herzegovina has a similarly high charge of €40.9 in the first year, but €15.3 in following years.

In all other countries the prices are similar. Even the two countries where the registry also has to charge the registrar functions, FYROM and Albania, have relatively low charges. Several registries offer discounts for certain types of domains. In Croatia, about 80% of the registered domains are free of charge. For legal persons and persons that offer registered services, the first domain is free if it corresponds to the registrant’s name.

Iceland, Montenegro and Serbia are the only countries where foreign undertakings may become accredited registrars (in Iceland and Serbia, however, it is required that the undertaking has a local presence). This and the attractiveness of the domain name .me for English speaking domain name users explain the large number of accredited registrars.

3. Cyber squatting and dispute resolution

All eight monitored countries that have their own top level domain have included policies against cyber squatting in their regulations or into the general business conditions of the registry.

Also, all eight countries introduced an out-of-court dispute resolution mechanism in the form of arbitration before a dispute goes to court. In Croatia, Bosnia & Herzegovina and Montenegro, dispute resolution is based on ICANN's Uniform Domain Dispute Resolution Policy.

Turkey is setting its rules on cyber squatting and dispute resolution on a new legal basis. The new rules will apply after the re-delegation of ".tr".

4. Domain market data

It is difficult to compare the numbers of registered domain names because the situation in the monitored countries is too different. However, the following figure shows the number of the registered sub domains of the relevant ccTLD, based on data from May to July 2011. The figure shows the absolute number of domain names (left axis, columns) and the number of domain names per 1000 inhabitants (right axis, dots).

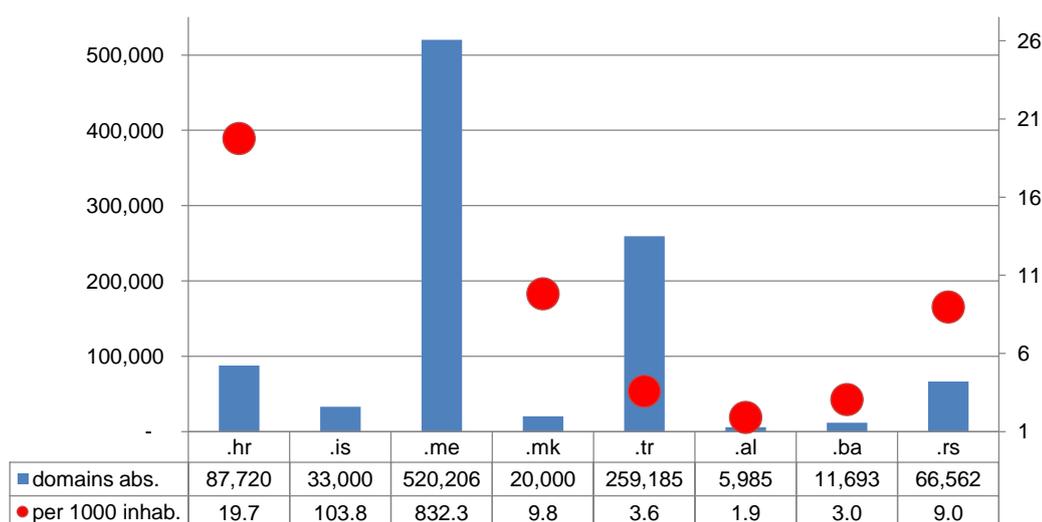


Figure Z.1 - Domain names, absolute and per 1000 inhabitants

The .me top level domain is highly attractive for foreigners. Montenegro reported 520,206 domain names by June 2011, twice as much as in Turkey. The number continues to grow by about 10,000 new domain names per month. Almost all of this interest in Montenegrin domain names comes from other countries. There are about 820 .me domain names per 1000 inhabitants, two orders of magnitude more than in other countries of the SEE region.

Iceland has also a very high number of domain names per inhabitants, more than five times higher than in Croatia. The high figures of Montenegro and Iceland are not visible in the figure above.

Serbia successfully replaced about 34,000 .yu domains (end of 2007) by about 67,000 .rs. domains (as of July 2011). Serbia will also have an additional top level domain in Cyrillic letters, .cpб. The new top level domain is already operational and registration will start in 4Q 2011.

In comparison with population, usage of the .al, .ba and .tr top level domains is relatively low. Albania stands out with a particularly low figure, which might be related to the fact that Albania does not have competition between registrars. Turkey only has a large number of .tr domains due to the size of country.

VI. COUNTRY PROFILES

A. Croatia

1. Legislative framework

Croatia is the first and so far the only of the monitored countries that has implemented the EU 2009 regulatory framework.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2008	2011	2003	2002	✓	2005

2. Institutional framework

The national regulatory authority was established in 2003 as the Croatian Telecommunications Agency (HAT). In 2008 HAT was merged with the Postal Services Council into the current Croatian Post and Electronic Communications Agency (HAKOM). The administrative capacities of HAKOM have been significantly enhanced over the last years. The long duration of appeal proceedings at courts remains to be a problem.

NRA	NRA appeals	Government	Other	State ownership
Croatian Post and Electronic Communications Agency (HAKOM)	Appeals against regulatory decisions are decided by the High Administrative Court.	Ministry of the Sea, Transport and Infrastructure (MMPI) is responsible for policy making in the electronic communications sector. Central State Administration Office for e-Croatia is responsible for information society policy	Croatian Competition Agency (since 1997) Agency for Electronic Media (since 2007)	The state sold 51% of its stakes in the fixed incumbent T-Hrvatski Telekom to Deutsche Telekom in 1999 and 2001. By the end of 2010, state's shareholding was eliminated.

3. Market access conditions

Croatia implemented full liberalisation of electronic communications networks and services in 2003. General authorisation for all electronic communications networks and services was introduced in 2008.

Liberalisation of fixed voice telephony			Liberalisation of data networks	General authorisation	Remaining restrictions
local	national	international			
2003			1999	2008	none

4. Spectrum assignments

Croatia has three mobile network operators with spectrum authorisations in the 900 MHz, the 1800 MHz and the 2.1 GHz bands. Since 2009 the mobile licences are technology neutral. Analogue switch-off in Croatia was completed in October 2010, earlier than in most EU member states, but there is an unresolved issue of interference with the neighbouring countries that creates a serious barrier for allocating digital dividend spectrum to wireless broadband services. Out of 56 initially issued regional licences for broadband wireless access in the 3.5 GHz band, currently remain 11 valid licenses, with the rest having expired or returned to the regulator.

900 MHz	1800 MHz	2.1 GHz	3.5 GHz	3G in 900/1800?
3 licences 1995, 1998, 2007	3 licences 2004, 2007, 2011	3 licences 2004	30 regional licenses	allowed in 2009

5. Competitive safeguards

Croatia introduced most of the competitive safeguards during 2005 – 2006. National roaming is offered to the new entrant mobile operator on commercial basis. Wholesale line rental was introduced in 2011. A remaining task is to develop LRIC cost models for fixed and mobile services.

	CS	CPS	NP fixed	NP mobile	RIO fixed	RIO mobile	RUO	WBA	WLR	MVNO	nat. roaming	LRIC fixed	LRIC mobile	tariff rebal.
2005	x	x	x	x	✓	✓	x	x	x	x	✓	x	x	✓
	2005	2005	2006	2006	2005	2005	2005	2007	–	–	–	–	–	–
2011	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	✓	x	x	✓

6. Market structure

The incumbent HT is the main provider of fixed services, but alternative operators gained about 30% market share in provision of voice telephony and fixed broadband services. One of the major alternative operators Iskon Internet is 100% owned by the incumbent. Croatia has three mobile network operators: HT (T-Mobile), VIPnet and Tele2, with respective market shares of 47%, 39% and 14%.

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration	Electronic communications as % of GDP
2005	38%	64%	0.6%	-	4.9%
2011	39%	117%	19%	7.6%	3.7% (2009)

7. Outlook

Croatia fulfilled the EU accession requirements for information society and media in terms of aligning its legislation with the EU *acquis*. The remaining task for HAKOM is the finalisation of cost accounting models and ensuring sustainable competition in the fixed broadband market characterised by increasing consolidation and growing significance of multiple play offers.

B. Iceland

1. Legislative framework

With the implementation of the agreement on the European Economic Area (EEA) in 1994, Iceland, adopted most of the relevant EU legislation on the internal market and the level of harmonisation of national legislation with the EU *acquis* is comparable to that of the EU member states. Amendments to transpose the EU 2009 regulatory framework have been prepared, but the adoption is pending the integration of the new framework into the EEA agreement.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2003	drafted	2002	2001	✓	2003

2. Institutional framework

The national regulatory authority is the Post and Telecommunications Administration of Iceland (PTA) established in 1997 as “*an independent institution under the ultimate administration of the Minister of the Interior*”. Traditionally PTA has been funded through administrative fees, frequency fees and numbering fees that have been allocated to PTA operations with an authorisation in the national budget. Following the economic crisis of 2008, PTA has been subject to certain budgetary restrictions in allocation of its funds, which raises concerns about its financial independence.

NRA	NRA appeals	Government	Other	State ownership
Post and Telecom Administration of Iceland (PTA)	Rulings Committee for electronic communications and postal affairs. Three members are appointed by the Minister of the Interior and three members by the Supreme Court.	Ministry of the Interior is responsible for policy making in the electronic communications sector. Prime Minister's Office is responsible for the information society policy	Consumer Agency Competition Authority (ICA)	State shareholding of 98.8% in the incumbent operator Síminn was fully privatised in 2005. State retains a stake in the company Farice operating international submarine fibre optic cables.

3. Market access conditions

Iceland was first among the monitored countries to introduce full liberalisation of telecommunications networks and services on January 1, 1998, in line with the requirements set out in the agreement on the European Economic Area (EEA) in accordance with the European Commission Directive 96/19/EC. General authorisation for all electronic communications networks and services was introduced in 2003.

Liberalisation of fixed voice telephony			Liberalisation of data networks	General authorisation	Remaining restrictions
local	national	international			
	1998		1997	2003	none

4. Spectrum assignments

There are three mobile network operators that have been assigned spectrum in the 900 MHz, 1800 MHz and the 2.1 GHz bands. The fourth operator is assigned only a smaller spectrum block in the 1800 MHz band. Since 2008, mobile operators are allowed to use UMTS technology in the 900 MHz and the 1800 MHz bands. The current licences of the two largest operators will expire in 2012 and the NRA plans to reallocate large parts of frequencies in the context of licence renewal. Analogue switch-off is also planned for 2012.

There are six national licences to operate fixed wireless access networks in the 3.5 GHz band.

900 MHz	1800 MHz	2.1 GHz	3.5 GHz	3G in 900/1800?
3 licences 1996, 1998, 2007	4 licences 2000 (3), 2009 (1)	3 licences 2007	6 national licenses	allowed in 2008

5. Competitive safeguards

Iceland implemented most of the competitive safeguards during 1998 – 2005, long before other monitored countries. Wholesale line rental was one of the last competitive safeguards introduced in 2011. The work on cost analysis in fixed interconnection and access markets is ongoing.

	CS	CPS	NP fixed	NP mobile	RIO fixed	RIO mobile	RUO	WBA	WLR	MVNO	nat. roaming	LRIC fixed	LRIC mobile	tariff rebal.
2005	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✓
	1998	2000	2000	2004	2002	2005	2003	2008	2011	2007	2007	–	2010	2003
2011	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓

6. Market structure

Over the past few years, the Icelandic telecommunications market has undergone important structural changes and became increasingly consolidated. In fixed telephony services, the market is split 70%, 26% and 4% between Síminn, Fjaraskipti (Vodafone) and Tal. In the provision of fixed broadband services, the respective market shares of the same operators are 52%, 30% and 13%. In 2007, Síminn's fixed network infrastructure was structurally separated from the company's other operations, and a separate company, Míla ehf was established. Both companies are owned by Skipti hf.

In mobile telephony services, the principal players are Síminn, Vodafone and Nova, with the respective market shares of 42%, 31% and 22%. A fourth company, Alterna (IMC) started to offer mobile telephony services in 2010.

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration	Electronic communications as % of GDP
2005	45%	101%	27%	-	2.93%
2011	48%	107%	38%	10.8%	2.87% (2009)

7. Outlook

Iceland has achieved a high level of alignment with the EU *acquis*. Among the central priorities remains the transposition of the revised regulatory framework for electronic communications, carrying out the second round market analysis by the NRA, strengthening the financial independence of the NRA and its enforcement powers.

C. Montenegro

1. Legislative framework

Montenegro has largely aligned its legislation with the *acquis* and was the first of the monitored countries to transpose the Audiovisual Media Services Directive in 2010. However, Montenegro has not yet drafted amendments to transpose the EU 2009 regulatory framework.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2008	no draft yet	2004	2003	✓	2008

2. Institutional framework

The Agency for Electronic Communications and Postal Services (EKIP) is the national regulatory authority. It was established in 2001, but its competencies and name were changed first in 2005, when it took over regulation of the postal sector, and then in 2008, when it became the sole authority responsible for spectrum assignments. The Law on Electronic Communications adopted in 2008 undermined EKIP's independence by making the ministry the appellate body for regulatory decisions. Insufficient administrative capacity of the ministry also presents an area of concern.

NRA	NRA appeals	Government	Other	State ownership
Agency for Electronic Communications and Postal Services (EKIP) is legally independent of operators.	Appeals against regulatory decisions may be filed to the ministry. Decisions of the ministry can be appealed to the Supreme Administrative Court.	At the end of 2010, competencies were moved from the Ministry of Maritime Affairs, Transportation and Telecommunications to the Ministry for Information Society and Telecommunications	Directorate for Protection of Competition (since 2007) Broadcasting Agency (since 2003)	The state does not hold any shares of operators. In 2005, government sold its 76.53% of fixed incumbent Crnogorski Telekom.

3. Market access conditions

Montenegro formally liberalised its telecommunications markets at the beginning of 2004, but the high licensing fees created a barrier to entry until 2007. General authorisation for all electronic communications networks and services was introduced in 2008.

Liberalisation of fixed voice telephony			Liberalisation of data networks	General authorisation	Remaining restrictions
local	national	international			
2004			2004	2008	none

4. Spectrum assignments

Montenegro has three mobile operators, with equivalent spectrum assignments in all three bands: the 900 MHz, the 1800 MHz and the 2.1 GHz. Since 2010, operators are allowed to use the GSM bands for UMTS services. Montenegro has also awarded several licences for fixed wireless access. Analogue switch-off is planned for 2012.

900 MHz	1800 MHz	2.1 GHz	3.5 GHz	3G in 900/1800?
3 licences 2002 (2), 2007	3 licences 2002 (2), 2007	3 licences 2007	5 licences 2007 (4), 2009	allowed in 2010

5. Competitive safeguards

Montenegro is lagging behind with implementation of competitive safeguards, but has made major progress after the first market analyses were completed by EKIP in November 2010. In particular, new reference offers were published by the incumbent operator for interconnection (which now covers both, CS and CPS), wholesale broadband access, wholesale line rental and LLU. The practical

implementation is still at a very early stage. No decision has been taken on the implementation of number portability in fixed and mobile networks.

	CS	CPS	NP fixed	NP mobile	RIO fixed	RIO mobile	RUO	WBA	WLR	MVNO	nat. roaming	LRIC fixed	LRIC mobile	tariff rebal.
2005	x	x	x	x	✓	x	x	x	x	x	x	x	x	x
	2007	2011	-	-	-	-	-	-	-	-	-	-	-	-
2011	✓	✓	x	x	✓	✓	✓	✓	✓	x	x	x	x	x

6. Market structure

The fixed telephony market is strongly dominated by Crnogorski Telekom, which has 96% market share in provision of fixed voice telephony and 87% in provision of fixed broadband. Competition has emerged in mobile networks with three operators having similar market shares. Mobile penetration is very high even compared with EU member states and 23% of population use mobile broadband.

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration	Electronic communications as % of GDP
2005	31%	78%	-	-	11.7%
2011	27%	173%	11%	5.5%	9.3% (2009)

7. Outlook

Competition in fixed markets remains low, as most of the competitive safeguards introduced in 2011 have not yet been implemented in practice. EKIP made some progress in 2010 with its first market analyses and continued analysing further markets in 2011.

Administrative capacity of EKIP has been improved while the capacity of the ministry remains limited. The appeal system raises concerns over the NRA independence.

D. The former Yugoslav Republic of Macedonia (FYROM)

1. Legislative framework

FYROM has largely aligned its legislation with the EU *acquis* and was second of the monitored countries (after Iceland) to adopt the EU 2003 regulatory framework. However, FYROM has not yet drafted amendments to transpose the EU 2009 regulatory framework.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2005	no draft yet	2007	2001	✓	2001, 2009

2. Institutional framework

The Agency for Electronic Communications was established in 2005 as an independent authority. Its initial activities were seriously hampered by the lack of administrative capacity. The situation only improved in 2009 following the recruitment of new qualified staff. At government level, there is still little administrative capacity for drafting legislation and policy setting.

NRA	NRA appeals	Government	Other	State ownership
Agency for Electronic Communications (AEC)	Appeals against regulatory decisions can be brought before the Administrative Court.	Competences for policy making in the electronic communications sector are being transferred from the Ministry of Transport and Communications to the Ministry of Information Society and Administration .	Commission for Protection of Competition (since 2005) Broadcasting Council (since 1997)	In 2000 the state sold 51% of its shares in the fixed incumbent Makedonski Telekom. Currently, government controls 34.81% plus one golden share.

3. Market access conditions

Fixed voice telephony was liberalised by introducing a general authorisation framework in 2005. The concession contracts of the fixed incumbent and the mobile operators were abolished and replaced by general authorisation in 2008.

Liberalisation of fixed voice telephony			Liberalisation of data networks	General authorisation	Remaining restrictions
local	National	international			
2005			1998/2000	2005	none

4. Spectrum assignments

FYROM has three mobile network operators. UMTS licences were awarded late, in 2008, and only to the two established operators. In 2009 the frequency plan was amended to allow UMTS in the 900 and 1800 MHz bands. Most of the regional and national licences for fixed wireless access issued in 2007 have been returned to the regulator and currently there is only one active licensee operating in all six regions. Analogue switch-off is planned for 2013.

900 MHz	1800 MHz	2.1 GHz	3.5 GHz	3G in 900/1800?
3 licences 2001, 2001, 2007	2 licences 2008, 2009	2 licences Feb. & Dec. 2008	6 regional licences (1 licensee)	allowed in 2009

5. Competitive safeguards

In terms of implementing competitive safeguards, FYROM is ahead of most of the monitored countries. As shown in the table, most safeguards were introduced in 2007 and 2008, although the practical implementation mainly took place in 2009. FYROM was also the first country to implement LRIC cost accounting for fixed and mobile networks.

	CS	CPS	NP fixed	NP mobile	RIO fixed	RIO mobile	RUO	WBA	WLR	MVNO	nat. roaming	LRIC fixed	LRIC mobile	tariff rebal.
2005	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2007	2007	2008	2008	2006	2008	2006	2007	2009	2010	2007	2008	2010	–
2011	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x

6. Market structure

Makedonski Telekom is the incumbent provider of fixed services. Alternative fixed operators have gained a market share of about 24%. In the provision of fixed broadband services where the incumbent faces a particularly strong competition from cable operators its market share has shrunk to below 50%.

There are three mobile network operators, but only two offering UMTS. Fixed broadband penetration is moderate and mobile broadband still in an early phase.

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration	Electronic communications as % of GDP
2005	29%	49%	0.1%	-	7.8%
2011	20%	106%	13%	0.4%	7.0% (2009)

7. Outlook

AEC has been successful in completing its first round of market analyses and implementing a broad range of competitive safeguards.

Increased efforts are necessary to align the legislative framework fully with the *acquis*, in particular the EU 2009 regulatory framework, and to strengthen the administrative capacity of the ministry.

E. Turkey

1. Legislative framework

Turkey's legislation is a complex hierarchy of laws, bylaws and regulations – and some important issues are only addressed by secondary legislation. The process of aligning legislation with the *acquis* has been slow and not without setbacks, such as the adoption in 2007 of the controversial Law 5651 that obliges internet service providers to block access to websites with illegal content. Turkey is the last of the enlargement countries to adopt legislation transposing the Electronic Commerce Directive: a [draft law](#) was prepared by the Ministry of Justice with the contribution of other institutions and submitted to the Grand National Assembly of Turkey on December 27, 2010. The Electronic Communications Law of 2008 is based on the EU 2003 regulatory framework.

Electronic communications law	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2008	✗	2004	✓	Secondary legislation

2. Institutional framework

Legislation adopted in 2008 introduced a clearer distinction between the competencies of the regulator, ICTA, and the ministry and stipulated ICTA's independence. However, the ministry is still responsible for the implementation of universal service and has the authority to launch tender procedures for spectrum authorisations.

NRA	NRA appeals	Government	Other	State ownership
Information and Communication Technologies Authority (ICTA, until 2008: Telecommunications Authority)	Appeals against regulatory decisions are decided by courts (Council of State or Administrative Court).	Ministry of Transport and Communications is responsible for policy making in the electronic communications sector. Ministry of Development (taken over responsibilities of the State Planning Organization since June 2011) is responsible for long-term strategies.	Competition Authority (since 1997) Radio and Television Supreme Council (since 1994)	In 2005 the state sold 55% of its shares in the fixed incumbent Türk Telekom. Currently, the state holds 30% and a golden share of Türk Telekom and controls the satellite and cable TV operator Türksat. Indirectly, through Türk Telekom, the state also controls 24% in the mobile operator Avea,

3. Market access conditions

Full liberalisation of fixed voice telephony has been a slow process. Although the new Electronic Communications law came into force in 2008, the general authorisation framework and liberalisation of local services became effective only in May 2009. Older authorisation and concession agreements that were signed before the entry into force of the new law have not been aligned with the new legal framework and will remain in force until they expire (i.e. until 2029), are annulled or terminated. This includes the authorisation agreement for Türksat (satellite operator), the concession agreement for Turk Telekom and the six concession agreements for the mobile operators (one each for GSM and for UMTS).

A change in the authorisation ordinance introduced in September 2011 prevents the operators with concession agreements from offering other services. This effectively blocks, for example, Turk Telekom from acting as an MVNO (unless it founds a new legal entity through which to do so).

Liberalisation of fixed voice telephony			Liberalisation of data networks	General authorisation	Remaining restrictions
local	national	international			
2009	2004	2004	2006	2009	Concession agreements in place

4. Spectrum assignments

Turkey has three mobile network operators, each offering GSM and UMTS services. The UMTS licences were awarded only in November 2008, later than in most other markets in the SEE region. Turkey has not awarded licences for fixed wireless access. In September 2011, ICTA prepared a decision to allow 3G services in the 900 MHz and the 1800 MHz, which is now awaiting approval from the ministry.

Analogue switch-off is planned for 2014.

900 MHz	1800 MHz	2.1 GHz	3.5 GHz	3G in 900/1800?
3 licences 1998 (2), 2000	1 licence 2000	3 licences 2008	no licence	X

5. Competitive safeguards

Turkey has made significant progress with introducing competitive safeguards since 2005, as shown in the table below. Tariff rebalancing is also well advanced. Because liberalisation of local calls was late (2009), carrier (pre-) selection for local calls was only implemented only in 2009.

Following the analysis of wholesale market for access and call origination on mobile networks, Turkcell as an operator with SMP, is required to provide on reasonable request, national roaming and MVNO access.

	CS	CPS	NP fixed	NP mobile	RIO fixed	RIO mobile	RUO	WBA	WLR	MVNO	nat. roaming	LRIC fixed	LRIC mobile	tariff rebal.
2005	X	X	X	X	✓	✓	X	X	X	X	X	X	X	X
	2006 (2009 local)	2006 (2009 local)	2009	2008	-	-	2006	2007	2011	2009	2009	2009	2009	-
2011	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

6. Market structure

Competition in the fixed telephony sector started late, as Türk Telekom had exclusive rights to the provision of local networks and services until 2009. The mobile sector is more competitive, as there are three mobile network operators, although Turkcell has more than a 50% market share. Fixed broadband penetration is moderate (10.3% on March 31, 2011). Mobile broadband penetration is low, due to the late launch of UMTS.

	Fixed line penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration	Electronic communications as % of GDP
2005	29%	49%	0.7%	-	3.6%
2010	22%	85%	10%	2%	2.0% (2009)

7. Outlook

Turkey has made significant progress in aligning its legislation with the EU regulatory framework and implementing competitive safeguards. However, major inconsistencies still remain in the authorisation regime, provisions on access and interconnection, regulation of retail tariffs and spectrum management.

There is still work to be done to ensure effective implementation of regulatory obligations, in particular in fixed voice and broadband markets. ICTA's draft work plan for 2012 includes a project to review Turkish regulation in line with recent updates in the EU regulation.

Legislative alignment in the field of information society issues is progressing slowly and there are some major discrepancies from the EU rules. The provisions on internet content that may potentially limit the freedom of expression present a particular area of concern.

F. Albania

1. Legislative framework

Albania has implemented the EU *acquis* relatively late, between 2008 and 2010. The electronic communications law is based on the EU 2003 regulatory framework. Amendments for introducing the EU 2009 regulatory framework were prepared in 2010, but the adoption has been delayed.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2008	drafted 2010	2009	2008	✓	2010

2. Institutional framework

The national regulatory authority was established in 2000 as an independent legal entity. However, its independence has in practice been hampered as parliament repeatedly replaced the entire board upon government initiative. Also, the administrative capacity and resources of the regulator remain limited.

NRA	NRA appeals	Government	Other	State ownership
Electronic and Postal Communications Authority (AKEP, until 2008: TRE)	Appeals against regulatory decisions can be brought before district civil courts. Appeal procedures are slow and inefficient.	Since 2009 the Ministry for Innovation and ICT is responsible for all information society topics.	National Agency on Information Society (since 2007) Competition Authority (since 2004) National Council on Radio Television (since 1999)	In 2007 the state reduced its stakes in the fixed incumbent Albtelecom and mobile operator, Eagle Mobile, from 100% to 24%.

3. Market access conditions

General authorisation for all electronic communications networks and services was introduced in 2008. Albania still has some legal restrictions preventing cable networks from offering voice services or broadband access (currently cable operators have to establish a separate entity to be able to do so), but these should be removed by the drafted new law on audiovisual media.

Liberalisation of fixed voice telephony			Liberalisation of data networks	General authorisation	Remaining restrictions
local	national	international			
1998 (rural) 2007 (urban)	2003	2005	1998	2008	cable operators

4. Spectrum assignments

Liberalisation of access to spectrum is slow and hampered by political interventions. AKEP prepared issuing four UMTS licences in 2010, but the minister decided to award only one licence in 2010, then another in 2011. Albania has not awarded licences for fixed wireless access and has not yet decided on analogue switch-off.

900 MHz	1800 MHz	2.1 GHz	3.5 GHz	3G in 900/1800?
4 licences 1999, 2001, 2004, 2009	4 licences 1999, 2001, 2004, 2009	2 licences 2010, 2011	No licence	✗

5. Competitive safeguards

Albania is lagging behind with implementation of competitive safeguards, but made progress with the introduction of mobile number portability in May 2011 and plans to implement fixed number portability before the end of 2011. Following the recent market analysis, regulatory obligations to implement carrier selection and carrier pre-selection, local loop unbundling and wholesale broadband access have been imposed on Albtelecom. The practical implementation however is not foreseen before 2012.

	CS	CPS	NP fixed	NP mobile	RIO fixed	RIO mobile	RUO	WBA	WLR	MVNO	nat. roaming	LRIC fixed	LRIC mobile	tariff rebal.
2005	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2012	2012	2011	2011	2009	2009	–	2011	–	–	–	2009	2009	–
2011	x	x	x	✓	✓	✓	x	x	x	x	x	✓	✓	x

6. Market structure

Fixed lines penetration and broadband penetration are amongst the lowest in the region. Albtelecom remains the dominant player. The mobile sector is still dominated by AMC and Vodafone, as the third and fourth operator became operational only in 2008 and 2010, respectively.

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration	Electronic communications as % of GDP
2005	9%	39%	no DSL available	-	6.2%
2011	11%	140%	3.6%	0.2%	5.9% (2009)

7. Outlook

Regulation of electronic communications markets and information society services has developed slowly, but gained speed over the past three years. New government policies and AKEP's work plans set ambitious goals to complete implementation of the EU *acquis* in due course.

However, practical implementation has often been hampered by a lack of institutional stability or by political interventions. The NRA needs additional resources to introduce further competitive safeguards and to enforce its decisions.

G. Bosnia and Herzegovina

1. Legislative framework

Bosnia and Herzegovina is lagging behind its neighbouring countries. The electronic communications law is mainly based on the EU 1998 regulatory framework and the country has not made progress with drafting a new electronic communications law or cybercrime legislation. Against the background of continued discussions on division of powers between the entities and the state, separate electronic commerce and electronic signature laws have been adopted at state level and in the Republika Srpska and are not aligned with each other.

The legislative processes were further slowed down by the delays in the establishment of the state level legislative and executive authorities following the general elections of October 2010.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
x	no draft yet	2007	2006	x	x

2. Institutional framework

The Communications Regulatory Agency (RAK) was established in 2001 as a converged regulator for telecommunications and media. Implementation of the EU regulatory framework is hindered by a lack of administrative capacity and resources both at the regulator and in the ministry. The Council of Ministers has failed to appoint the Director General of RAK since 2007 and RAK council members since 2009.

NRA	NRA appeals	Government	Other	State ownership
Communications Regulatory Agency (RAK, since 2001), converged regulator for electronic communications and media	Appeals against regulatory decisions are decided by the State Court. The appeal procedure can take several years.	Council of Ministers is responsible for adopting policies. Ministry of Communications and Transport drafts policies and legislation.	Council of Competition (since 2004) Plans to establish an Agency for Development of the Information Society at state level have not been successful.	There are three incumbent operators. Telekom Srpske is fully privatised, but the other two (BH Telecom and HT Mostar) are still controlled by the Federation of Bosnia & Herzegovina.

3. Market access conditions

Liberalisation of the telecommunications markets was completed at the beginning of 2006. The authorisation regime however remains based on individual licences. No decision has been taken on the introduction of general authorisation regime, although RAK has been consulting on a possibility to implement it for internet service providers. In January 2011, RAK reduced annual licensing fees for operators of public fixed telephony networks and for providers of public voice telephony services.

Liberalisation of fixed voice telephony			Liberalisation of data networks	General authorisation	Remaining restrictions
local	national	international			
2002	2002	2006	2002	x	none

4. Spectrum assignments

The three incumbent operators have equivalent spectrum blocks in all three bands. UMTS licences were awarded late, in 2009. Since 2010, the 900 and 1800 MHz bands are technology neutral and allow deployment of 3G services. The digital switchover is planned to be finalised by the end of 2011. No licences for fixed wireless access have been awarded, but several operators offer wireless broadband services in the unlicensed 2.4 GHz and 5 GHz bands.

900 MHz	1800 MHz	2.1 GHz	3.5 GHz	3G in 900/1800?
3 licences 2004	3 licences 2004	3 licences 2009	no licence	allowed in 2010

5. Competitive safeguards

Bosnia and Herzegovina has been slow with implementation of competitive safeguards. However, several important competitive safeguards have been introduced and implemented over the past two years. Carrier pre-selection introduced in 2007, finally became available in practice in 2009. First reference interconnection offers were published by mobile operators in April 2011 together with provisions enabling MVNO access. Number portability in fixed networks was introduced in September 2011, whereas in mobile networks it is expected to become available in January 2012.

	CS	CPS	NP fixed	NP mobile	RIO fixed	RIO mobile	RUO	WBA	WLR	MVNO	nat. roaming	LRIC fixed	LRIC mobile	tariff rebal.
2005	x	x	x	x	x	x	x	x	x	x	✓	x	x	x
	2007	2010	2011	–	2006	2011	2010	–	–	2011	–	–	–	–
2011	✓	✓	✓	x	✓	✓	✓	x	x	✓	✓	x	x	x

6. Market structure

The specific aspect of Bosnia and Herzegovina is the existence of three regional incumbent operators. The incumbents face little competition with regard to fixed voice telephony services, but strong competition from alternative cable and wireless networks offering broadband access. Each of the incumbents also offers mobile services nation-wide. Mobile broadband is still at a very early phase.

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration	Electronic communications as % of GDP
2005	25%	34%	0.1%	-	7.6%
2011	25%	81%	10%	1.5%	5.3% (2009)

7. Outlook

Bosnia and Herzegovina is impaired by the lack of coordination between different levels and institutions within its government, the struggle for competencies between the state and the entities and overall limited administrative capacity. This has hindered alignment of legislation with the EU 2003 and 2009 regulatory frameworks and weakened the position of the NRA.

Nevertheless, RAK has made major progress in implementing competitive safeguards and adopting regulations on market analysis based on the EU regulatory framework. The key priorities for the regulator are carrying out market analysis and enforcement of regulatory obligations.

H. Serbia

1. Legislative framework

With the adoption of the Law on Electronic Communications of 2010, Serbia has aligned its legislation with the EU 2003 regulatory framework and also introduced some elements of the EU 2009 framework. Most of the required secondary legislation has been adopted by the NRA, although the implementation still remains at an early stage.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2010	no draft yet	2009	2004	✓	2009

2. Institutional framework

The national regulatory authority, RATEL, was established as an independent legal entity in 2003, but became operational only in 2005. Since its establishment, RATEL's independence has been undermined by the ministry's supervision powers and by the systematic delays in approval of its board members. The administrative capacity of RATEL has improved recently, but its expertise on implementation of the regulatory framework still needs to be strengthened.

NRA	NRA appeals	Government	Other	State ownership
Republic Electronic Communications Agency (RATEL Agency)	Appeals against regulatory decisions can be brought before the Administrative Court and can be further appealed to the Supreme Court.	Ministry for Culture, Media and the information Society (took over the previous Ministry of Telecommunications and Information Society in 2011) Administration for Digital Agenda within the Ministry is specifically responsible for information society issues	Commission for Protection of Competition (since 2005) Republic Broadcasting Agency (since 2003)	Government still controls 80% and a golden share of the incumbent Telekom Srbija

3. Market access conditions

Serbia is the last among the monitored countries to liberalise its fixed voice telephony markets. Although markets have been formally liberalised since June 2005, only two licences were issued to alternative operators: a fixed wireless access licence in 2009 and a fixed network licence in 2010. The new general authorisation framework will only come fully into force at the beginning of 2012.

Liberalisation of fixed voice telephony			Liberalisation of data networks	General authorisation	Remaining restrictions
local	national	international			
Formal liberalisation: 2005 De facto liberalisation: January 2012			2005 International gateways – 2008	2010 (except fixed voice) 2012 (fixed voice)	Fixed voice services (until end of 2011)

4. Spectrum assignments

Serbia has three mobile network operators, each offering GSM and UMTS services. Two national licences for fixed wireless access in the 410 MHz band were issued in 2009. The 3.5 GHz band is only used at specific locations, mainly within Belgrade and Novi Sad. Analogue switch-off has been planned for April 2012, but this deadline is unlikely to be met in practice in the absence of detailed implementation rules.

Mobile operators are not allowed to implement 3G services in the 900 MHz and the 1800 MHz bands pending adoption of the updated frequency distribution table.

900 MHz	1800 MHz	2.1 GHz	3.5 GHz	3G in 900/1800?
3 licences 2006	3 licences 2006	3 licences 2006	several local permits	X

5. Competitive safeguards

Serbia is lagging behind with implementation of competitive safeguards. Wholesale broadband access and national roaming are available based on commercial offers. The first RIO of the fixed incumbent operator was published in 2008. Implementation of number portability in mobile networks was implemented in 2011. In 2011 RATEL has made further progress on tariff rebalancing and completed its first round of market analyses. Implementation of further competitive safeguards is foreseen following the adoption of the final market analysis decisions at the end of 2011.

	CS	CPS	NP fixed	NP mobile	RIO fixed	RIO mobile	RUO	WBA	WLR	MVNO	nat. roaming	LRIC fixed	LRIC mobile	tariff rebal.
2005	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	-	-	-	2011	2008	-	-	2006	-	-	2006	-	-	-
2011	X	X	X	✓	✓	X	X	✓	X	X	✓	X	X	X

6. Market structure

Fixed lines penetration is the highest amongst the monitored countries in the SEE region, but Telekom Srbija remained the only licensed provider of fixed voice services until 2010. There is some competition in broadband access services, mainly from cable operators. In the xDSL market, alternative operators rely on the commercial wholesale bitstream access offer and international connectivity from Telekom Srbija and their position has been weakening in competition with the incumbent's retail offers.

In mobile telephony services, the market is split 56%, 30% and 14% between Telekom Srbija, Telenor and VIP mobile (based on subscriber numbers). Mobile broadband is at its early stage.

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration	Electronic communications as % of GDP
2005	34%	57%	<0.1%	-	4.5%
2011	42%	132%	12%	3%	5.0% (2009)

7. Outlook

Over the past two years, Serbia has achieved some progress in aligning its legislation with the EU *acquis*. RATEL has completed its first round of market analysis and the next major task is the effective implementation and enforcement of regulatory obligations.

In September 2010, the government adopted the strategy for the development of electronic communications from 2010 to 2020, but there is no implementation plan setting out specific targets and policy priorities in the short to medium term, which creates uncertainty for the market players.

Administrative capacity of the policy making body in the sector of information society needs to be further strengthened.

I. Kosovo (under UN Security Council Resolution 1244)

1. Legislative framework

Kosovo's information society legislation was based on a one-time legislative effort in the year 2002, which has not been followed by significant legislative activity over several years. Kosovo resumed its activity in 2010 and 2011 by adopting new cybercrime legislation and drafting a law that will transpose the EU 2003 and 2009 regulatory frameworks.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
drafted in 2011		2002	2002	2010	X

2. Institutional framework

The Telecommunications Regulatory Authority was established in 2003 as an independent legal entity. However, its operations have been subject to political and administrative interference. Furthermore, TRA is lacking human resources and has difficulties attracting and retaining qualified staff. All funds collected by TRA are transferred to the state and TRA is fully dependent on the state budget for its financing.

Administrative capacities both at the regulator and the ministry are limited. Competencies at government level have been moved to the Ministry of Economic Development, which is also in charge for state ownership functions and privatisation of the incumbent PTK.

NRA	NRA appeals	Government	Other	State ownership
Telecommunications Regulatory Authority (TRA)	Appeals against regulatory decisions can be brought before the Administrative Court. Appeal procedures take longer than one year.	Competencies for information society issues have been moved from the Ministry of Transport and Communications to the Ministry of Economic Development .	Competition Commission (since 2008) Independent Media Commission (since 2005)	The incumbent operator PTK is still 100% state owned. A procedure to privatise 75% was stopped in October 2011, but government will initiate a new procedure.

3. Market access conditions

Although telecommunications markets were formally liberalised in 2003, the practical implementation was delayed and PTK maintained exclusive rights for international gateways until the end of 2007. Kosovo is drafting a new law that will introduce a general authorisation framework for all electronic communications networks and services in 2012.

Liberalisation of fixed voice telephony			Liberalisation of data networks	General authorisation	Remaining restrictions
local	national	international			
2003	2003	2008	2003 International gateways – 2008	X	none

4. Spectrum assignments

Kosovo has only two authorised mobile network operators and is the only country in the SEE region not having awarded any UMTS licence. Kosovo has neither awarded licences for fixed wireless access, nor made the 900 and 1800 MHz bands technology neutral. Neither has it decided on a strategy for analogue switch-off and use of the digital dividend. Also, there remains an open issue of unauthorised mobile companies operating in Kosovo.

900 MHz	1800 MHz	2.1 GHz	3.5 GHz	3G in 900/1800?
2 licences 2004, 2007	1 licence 2007	no licence	no licence	X

5. Competitive safeguards

Kosovo is lagging behind with implementation of competitive safeguards. The first RIO of the fixed incumbent operator was approved in 2007. A regulatory framework for MVNOs was introduced in 2008 and two MVNOs became operational. Number portability cannot be fully implemented in the absence of the country code. TRA has adopted regulations on market analyses and has been working on the first analysis of fixed interconnection and access markets.

	CS	CPS	NP fixed	NP mobile	RIO fixed	RIO mobile	RUO	WBA	WLR	MVNO	nat. roaming	LRIC fixed	LRIC mobile	tariff rebal.
2005	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	-	-	-	-	2007	-	-	-	-	2008	-	-	-	-
2011	x	x	x	x	✓	x	x	x	x	✓	x	x	x	x

6. Market structure

Kosovo has the lowest fixed lines penetration in the region and fixed voice telephony is still dominated by the incumbent PTK. Internet and broadband access markets are more competitive, with more than 70% of market share held by alternative cable operators. There are two mobile network operators and two MVNOs, but the market continues to be dominated by the incumbent with over 70% market share.

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration	Electronic communications as % of GDP
2005	4%	16%	0.1%	-	6.8%
2011	5%	86%	6%	-	6.2% (2009)

7. Outlook

Kosovo has been slow in adopting legislation and implementing regulatory obligations, but has recently started drafting new legislation. In particular, it plans to adopt a new law transposing the EU 2003 and 2009 regulatory frameworks.

Administrative capacities of TRA and the ministry need to be strengthened to ensure effective implementation and enforcement of the regulatory framework. Also the scope of responsibilities and the division of tasks between different ministries and government institutions in the field of information society needs to be clarified.