



REPORT 3

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

2011-2013

April 2013

Executive Summary

This report is the third in a series of four study reports. It monitors the electronic communications and information society sectors in the nine countries that are currently taking part in an ongoing process of the enlargement of the European Union: Croatia, Iceland, the former Yugoslav Republic of Macedonia (Macedonia), Montenegro, Serbia, Turkey, Albania, Bosnia & Herzegovina and Kosovo*. It reports on the key developments between July 2012 and March 2013 and the progress made by 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 slow pace of economic recovery across Europe, following the financial crisis of 2008-2009, has hit the enlargement countries hard. The early shoots of recovery seen in 2010 were not sustained in 2011. A further contraction experienced by both the EU and most of the enlargement countries in the second half of 2012 is likely to postpone the onset of the recovery towards mid-2013.

The total value of the electronic communications market in the nine enlargement countries in 2011 (the latest full year for which data is available) stood at €16.39bn, which represents a 5.8% year-on-year increase. Revenues for mobile telephony services, accounting for almost 60% of the market, returned to steady growth of 5.6% in 2011 after a period of stagnation in 2010. Revenues for fixed voice telephony services, accounting for less than 25% of the market, declined or remained stable in most countries. The strongest revenue growth was recorded by internet and cable television services.

Overall investment in electronic communications in the nine countries in 2011 was €2.52bn, which represents a 4.6% increase from €2.41bn reported in 2010. The level of investment, however, diverged significantly across individual countries and sectors.

The steady decline in the number of traditional fixed telephone lines in the enlargement countries has continued, and even somewhat accelerated in 2012, largely due to fixed-to-mobile substitution. The average fixed line penetration per population for the nine enlargement countries was 21.6% as of June 2012, down one percentage point from 22.6% at end 2011. There is nonetheless a significant variation between countries, with penetration ranging from 47.6% in Iceland, which is well above the EU average, to just 4.7% in Kosovo. The VoIP segment continued to grow in all countries and as of June 2012 accounted for over 20% of all fixed lines in Croatia and 27% in Macedonia.

Despite the growth in VoIP connections of alternative operators, the fixed telephony market remains dominated by incumbents. Only in Iceland and Croatia is the incumbent's market share comparable to the EU average, followed by a somewhat higher market share in Macedonia. In two countries, Turkey and Albania, alternative operators have made greater inroads in the market for international calls than in the domestic calls markets; whereas in the remaining four countries – Montenegro, Serbia, Bosnia & Herzegovina and Kosovo – there are hardly any signs of competition in the fixed voice telephony sector. In Serbia, the introduction of effective competition in fixed telephony will be further delayed following the NRA's decision to postpone the implementation of number portability on fixed networks until 2014.

The total number of mobile subscriptions in the nine countries decreased by nearly 2m in the six months to end-June 2012, to reach 92.27m, which corresponds to an average penetration rate of 94%. The decrease was mainly due to adjustments in the active subscriber figures

*This designation is without prejudice to positions on status, and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo declaration of independence.

reported by Albania and Montenegro. The share of postpaid-to-prepaid subscriptions increased in all enlargement countries in the first six months of 2012, suggesting a maturing of market conditions. The shift towards postpaid was most apparent in Croatia, Montenegro and Turkey.

The subscription-based market share of the leading mobile operator decreased in all enlargement countries, except Bosnia & Herzegovina, in the first six months of 2012. The market shares of third-placed operators continued to rise: Iceland's Nova and Macedonia's VIP now have market shares above 27%, MTEL in Montenegro has passed the 25% threshold and Albania's Eagle Mobile has reached 24%.

Number portability on mobile networks is now available in all countries, except Kosovo. In Bosnia & Herzegovina, after repeated delays, it was finally introduced in January 2013. The launch of MVNOs anticipated in Bosnia & Herzegovina in 2012, however, has been postponed indefinitely by the government.

Particularly strong reductions in retail mobile prices since March 2012 were reported in Serbia, Turkey, Albania and Kosovo, whereas mobile termination rates were reduced in Croatia, Iceland, Macedonia, Albania and Kosovo.

The fixed broadband market in the enlargement countries grew at a slower pace of just 1.4% in the first six months of 2012, compared with the growth of 10% in the full-year 2011. At end-June 2012 the total number of fixed broadband subscriptions in the nine countries stood at 10.74m, which corresponds to an average penetration rate of 11% of the population. Iceland reported the highest fixed broadband penetration rate of 34.7%, above the EU-27 average of 28.2%, followed by Croatia with 19.9%, while the seven other countries are lagging behind. In terms of technology, xDSL accounts for 80% of fixed broadband connections in the enlargement countries and plays a leading role in all countries except Kosovo, where cable connections represent over 70% of the fixed broadband market.

The number of fibre-based broadband lines in the enlargement countries increased more than 40% in the first six months of 2012, to total almost 650,000 connections. In Turkey, the number of fibre connections increased by more than 200,000 in the first half of 2012 to approach the half-million mark. In Iceland, Albania and Bosnia & Herzegovina fibre connections now account for about 20% of total fixed broadband lines.

Incumbents continue to dominate the fixed broadband market, retaining more than 40% of lines in all countries except Kosovo, where the incumbent's market share is below 25%. In the xDSL segment, the incumbent's market shares are well above 60% in all countries except Albania, where alternative operators deliver over 55% of xDSL connections over their own networks. In Iceland, following several investigations opened by the Icelandic Competition Authority against the incumbent operator Síminn, a regulatory settlement has been reached. It places binding commitments on the incumbent to implement organisational and structural changes aimed at achieving stronger separation between its retail and wholesale subsidiaries and ensuring equal access to wholesale inputs for competitors.

Mobile broadband remained the fastest growing segment of the broadband market. The use of smartphones and other handheld devices rocketed in 2012, and the mobile broadband penetration rate in Iceland, Croatia and Serbia surpassed the EU-27 average of 48%.

Only Croatia and Iceland have completed analogue terrestrial switchover and successfully awarded the available digital dividend spectrum for wireless broadband. The recent spectrum auction in Iceland paved the way for a new entrant operator that will have to ensure under its network coverage obligations the availability of mobile broadband services with a minimum speed of 30 Mbps to 99.5% of the population by 2020. Macedonia plans to have terminated analogue transmissions by June 1, 2013, while most of the remaining countries have given up their initial plans for early switchover dates. In Bosnia & Herzegovina the switchover has been postponed to December 2014 and in Turkey, Albania, Montenegro, Serbia and Kosovo – to the first half of 2015.

All countries, except Bosnia & Herzegovina, have adopted or are currently drafting national broadband plans. The new Icelandic telecom policy adopted in November 2012 confirmed the ambitious target of ensuring the availability of broadband at 30 Mbps to 90% of the population by end 2014.

Electronic communications legislation based on the EU 2009 regulatory framework is now in place in Croatia, Albania and Kosovo. However, Kosovo will need secondary legislation to implement the framework completely. Iceland and Montenegro have drafted legislation to transpose the EU 2009 regulatory framework, but no drafts have yet been prepared in Macedonia, Serbia, Turkey or Bosnia & Herzegovina. The latter is also the only country with legislation that is not based on the EU 2003 regulatory framework.

In most of the monitored countries, the current institutional frameworks fall short of ensuring an adequate level of financial autonomy for the NRAs in accordance with the requirements of the EU 2009 framework. In many of the countries, notably Serbia, Montenegro and Kosovo, there has been a worrying trend of governments adopting measures to restrict NRAs' control over their budgets and their ability to decide on the salary level of their staff. In Bosnia & Herzegovina, the operational independence of the NRA continues to be constrained by arbitrary government interventions in regulatory decisions and prescriptive sector policies that slow down regulatory processes.

Most countries have adopted legislation on electronic commerce, data protection, electronic signatures and cybercrime, based on EU standards. Turkey is an exception; it has transposed neither the Electronic Commerce Directive nor the Data Protection Directive. Only Croatia, Montenegro and Albania have so far transposed the Audiovisual Media Services Directive.

Six of the monitored countries – Croatia, Iceland, Macedonia, Serbia, Turkey and Montenegro – collect on a regular basis national statistics on the key information society indicators based on Eurostat methodology.

For many of the available statistical indicators, Croatia, Macedonia, Montenegro, Serbia and Turkey are below the EU-27 average, whereas Iceland can be compared with Denmark and Sweden and is generally far above the EU-27 average. For example, the percentage of individuals regularly using the internet ranges from 38% in Turkey to 58% in Croatia, whereas the respective indicator in Iceland is 95%, well over the EU-27 average of 69% and also above the Digital Agenda target of 75% by 2015. Internet services for buying online are used by 4% of individuals in Macedonia, 9% in Turkey, 14% in Serbia, 23% in Croatia and 54% in Iceland - which is again above the EU-27 average of 44% and above the Digital Agenda target of 50% by 2015.

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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*, the former Yugoslav Republic of Macedonia (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.

Croatia is an acceding country. The EU accession treaty between Croatia and the EU was signed on December 9, 2011. Subject to its ratification by all the EU member states, Croatia is expected to join the EU on July 1, 2013.

Five other countries, Iceland, Macedonia, Montenegro, Serbia and Turkey, have been granted the status of EU candidate countries and accession negotiations are now underway with Turkey, Iceland and Montenegro.

Albania and Bosnia & Herzegovina have signed a Stabilisation and Association Agreement with the EU. An exceptional case is Kosovo (under the United Nations Security Council resolution 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 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 this 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 third 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 acceding country, followed by the five candidate and the three potential candidate countries. It also introduces two letter codes that are 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).

*This designation is without prejudice to positions on status, and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo declaration of independence.

Country	Code	Comments
Croatia	HR	Croatia is an acceding country. The EU and Croatia signed Croatia's EU Accession Treaty on December 9, 2011. Subject to ratification of the Treaty by all the Member States and Croatia, Croatia will become the EU's 28th Member State on July 1, 2013.
Iceland	IS	-
FYR Macedonia	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. A short term 'Macedonia' is frequently used in this report without prejudice to positions on the official name of the country.
Montenegro	ME	-
Serbia	RS	-
Turkey	TR	-
Albania	AL	-
Bosnia & Herzegovina	BA	<p>Bosnia & Herzegovina (BiH) comprises two entities:</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 country:</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
Kosovo*	XK	<p>*This designation is without prejudice to positions on status, and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo declaration of independence.</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.</p>

Table A.1 – Enlargement countries covered in the report



Figure A.1 – Enlargement countries covered in the report

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 has been taken from Eurostat and national statistical offices.

Country	Electronic communications	Information society services
HR	Croatian Agency for Post and Electronic Communications (HAKOM)	Ministry of Maritime Affairs, Transport and Infrastructure Ministry of Administration (former eCroatia office)
IS	Post and Telecom Administration (PTA)	Ministry of the Interior
MK	Agency for Electronic Communications (AEC)	Ministry of Information Society and Administration
ME	Agency for Electronic Communications and Postal Services (EKIP)	Ministry for Information Society and Telecommunications
RS	Republic Agency for Electronic Communications (RATEL)	Ministry of Foreign and Internal Trade and Telecommunications
TR	Information and Communication Technologies Authority (ICTA)	Ministry of Development Ministry of Transport, Maritime Affairs and Communications
AL	Electronic and Postal Communications Authority (AKEP)	National Agency on Information Society (NAIS)
BA	Communications Regulatory Agency (RAK)	Ministry of Communications and Transport
XK	Regulatory Authority for Electronic and Postal Communications (ARKEP)	Ministry of Economic Development

Table A.2 – Authorities participating in the 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. Addresses institutional frameworks and regulatory processes, market analyses, regulatory obligations imposed on operators with SMP, competitive safeguards, universal service and consumer protection regulation.
2. Electronic communications: Price information. Covers a range of retail and wholesale tariffs.
3. Electronic communications: Market information. 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. Covers regulatory aspects of information society services and a limited set of statistical indicators.

The information provided by authorities was reviewed and validated by Cullen International experts.

IV. INTERIM STUDY REPORT STRUCTURE

The structure of the nine-monthly interim study reports comprises three 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, the key legal and policy documents, regulatory decisions and market structure.
- Cross-country comparative data: Presented as Annex 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.

V. SUMMARY REPORT

A. General economic background

The slow pace of economic recovery across Europe, following the recession of 2008-2009, has hit the enlargement countries hard. A return to recession among some of their most important EU trading partners meant the early shoots of recovery seen in 2010 were not sustained in 2011.

Turkey bucked the trend, experiencing a boom in 2011 with GDP growth of 8.5%, driven by strong domestic demand, which then slowed in 2012 and was accompanied by a reduction in GDP growth to a projected 2.5%. Turkey's GDP growth is forecast to increase only slightly in 2013, to around 3.0%.

Croatia's economy contracted in the winter of 2011/2012 and GDP growth is forecast to remain negative until 2014. Serbia's economy also dipped back into recession in 2012 and although a small recovery is expected in 2013 on the back of a growth in exports, domestic demand is forecast to remain subdued.

The economic crisis led to substantial fluctuations in exchange rates against the euro, but these largely settled in 2011-2012. The Turkish lira had appreciated against the euro in 2010 before depreciating again in 2011. In 2012 the Serbian dinar depreciated against the euro.

During the economic downturn some governments had recourse to fiscal measures such as increasing the overall tax burden or introducing 'crisis taxes' targeting the telecommunications sector in particular, in order to battle growing budget deficits.

A temporary additional 10% tax on mobile communications services was in place in Serbia between June 2009 and January 2011, and a 6% tax on mobile communications services was applied in Croatia between August 2009 and February 2012 and again between March 2012 and July 2012. Both countries also increased the VAT rate in 2012: it was raised to 25% in Croatia from March 1, 2012 and to 20% in Serbia from October 1, 2012.

Turkey's Special Communications tax, which since 1999 has been levied on consumers in addition to 18% VAT, remains in place.

The population of the EU-27 and of Turkey has been increasing over the past five years. Although the EU-27 population grew by approximately 1.7% from 2007 – 2012, however, Turkey's population grew more than four times as fast, by 7.2%.

Most other enlargement countries have seen a gradual decline in their populations, which is clearly shown in the new census data published for several of the countries in 2011, including Croatia, Serbia and Albania.

B. Electronic communications market overview

The total value of the electronic communications market in the nine enlargement countries in 2011 was calculated as €16.39bn. This represents an increase year on year of 5.8% (using revised figures for 2010, which have been updated since the last report, and total €15.49bn).

Almost 60% of the market is represented by mobile services and in 2011 there was a return to steady growth of 5.6% in the mobile sector, where growth had stagnated in 2010. In line with trends elsewhere in Europe, growth in revenue from mobile voice services is expected to slow or even decline, however, as markets in the enlargement countries reach maturity.

Fixed voice telephony represents just under a quarter of the market but the traditional fixed voice telephony sector is declining or stable in all countries.

The internet services sector, in contrast, is growing fast – particularly where revenue from mobile internet services is taken into account. Turkey's largest mobile operator Turkcell, for example, reported a 60% year-on-year increase in mobile data revenues in 2011 to TRY 724m (€309m).

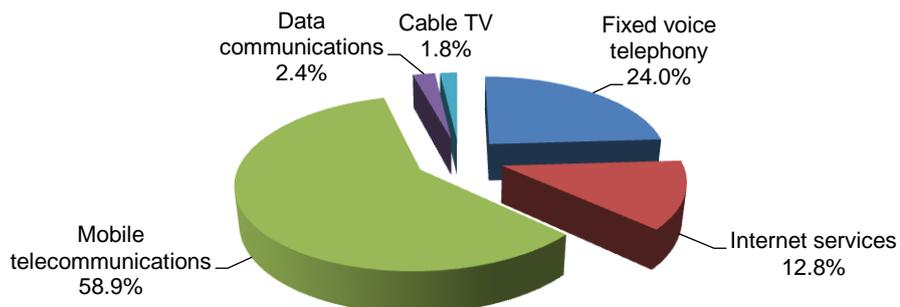


Figure B.1 – Electronic communications market revenue share by service category in 2011

The cable television sector, in the countries where it operates, also recorded steady growth. Although revenue from cable TV services in the enlargement countries appeared to jump 33% year-on-year, this was partly due to Croatian regulator HAKOM adding IPTV revenue figures together with the cable TV-revenue figures as of January 2011. In Serbia, which is the largest market for cable TV services among the enlargement countries, cable TV revenues rose 16.3% year-on-year.

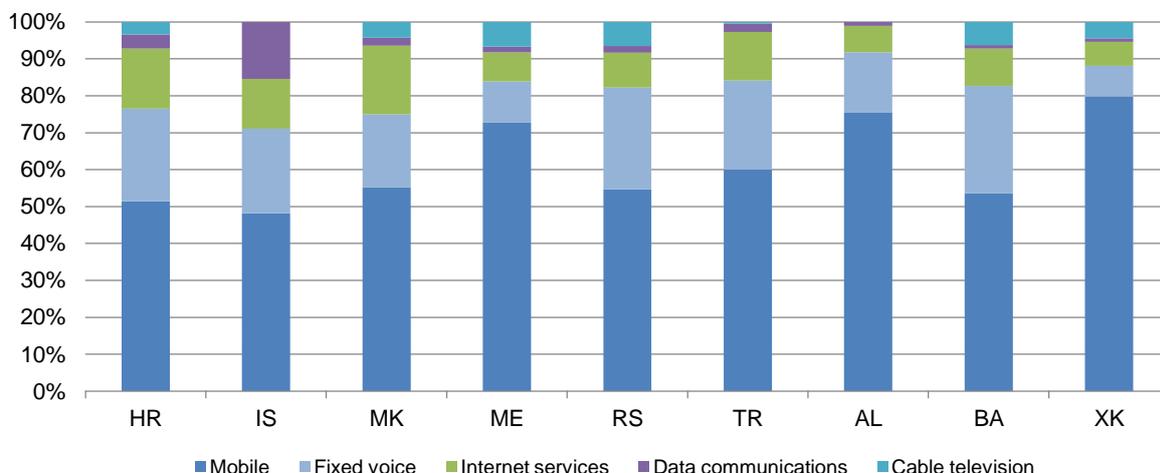


Figure B.2 – Electronic communications market, as % of revenue by service category by country in 2011

Overall investment in electronic communications in the nine countries in 2011 was €2.52bn. This represents a 4.6% increase from 2010, when the total was €2.41bn.

Total investment in the sector rose in Macedonia, Albania, Kosovo and Turkey – in the latter case fuelled in particular by investment in fibre infrastructure.

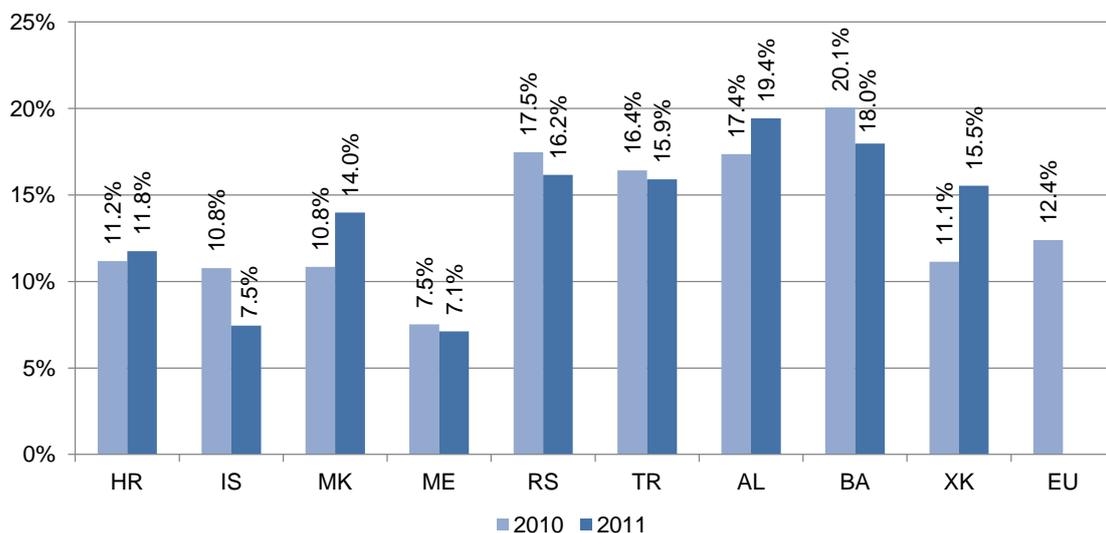


Figure B.3 - Investment as % of revenue in the electronic communications sector, full-year 2010 vs 2011

In Croatia, total investment dropped 9.3% year-on-year to HRK 1.57bn (€210.8m) in 2011, in part because incumbent operator HT reduced its network investments in both broadband access infrastructure and core infrastructure. Total revenues, however, dropped 13.7%, resulting in a slight rise in investment as a percentage of revenue.

In Iceland, investment in support services held up in 2011 at ISK 1.09bn (€6.74m), while investment in mobile telephony more than halved compared with 2010, to just ISK 500m (€3.1m) in 2011.

In Kosovo, there was a significant decrease in investment in fixed voice telephony, due to the government's decision to freeze most of the capital and investment projects at the incumbent operator because of the privatisation process. In contrast, there was a significant rise in investment in mobile telephony services.

1. Fixed voice telephony market

The steady decline in the total number of fixed telephone lines in the enlargement countries has continued, and even somewhat accelerated, in 2012. Whereas the number of lines fell by approximately one million per year in 2010 and 2011 to reach 21.94m at end 2011, in the six months to June 2012 it declined by a further 0.78m to reach 21.16m. The total looks likely to drop below 20m in 2013.

Turkey, as the largest market, has a significant impact on these headline figures – and in Turkey the number of PSTN lines declined by more than 700,000 (4.8%) in the six months to June 2012, largely thanks to fixed-to-mobile substitution. (No official data is available on the number of VoIP subscriptions in Turkey as of June 2012.) The total number of fixed lines also declined in all other markets (no June 2012 data is available for Serbia).

The average fixed-line penetration for the nine enlargement countries was 21.6% as of June 2012, down one percentage point from 22.6% at end 2011. There is, however, a significant variation between countries, with penetration ranging from 47.6% in Iceland, which is well above the EU average, to just 4.7% in Kosovo.

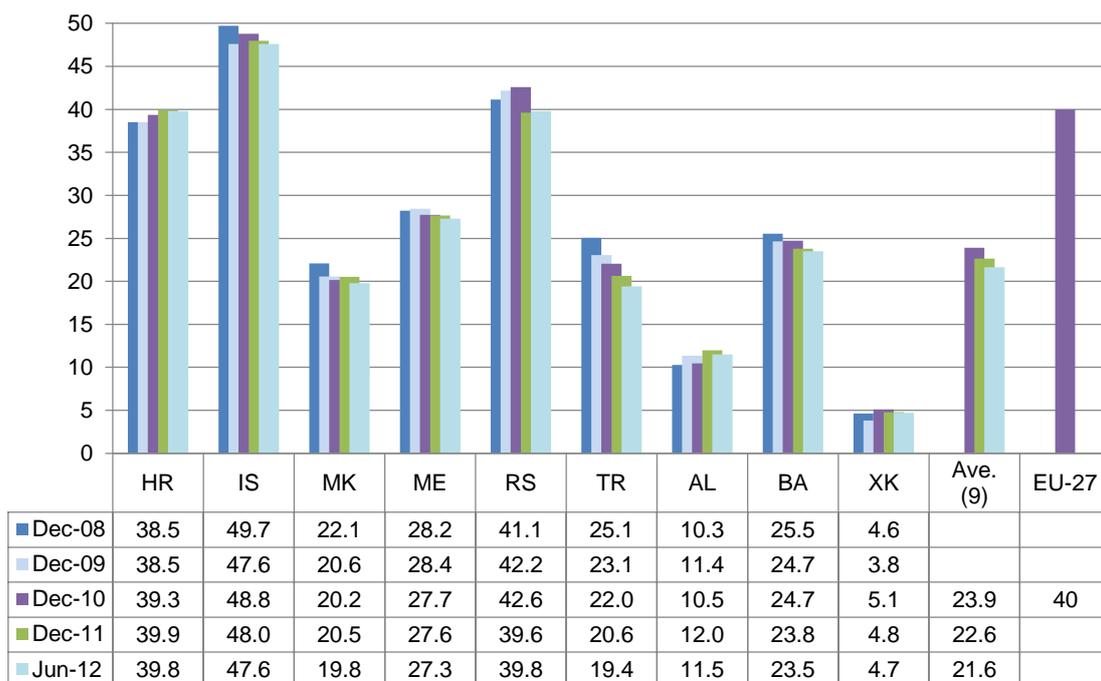


Figure B.4 - Fixed lines per 100 population

In Croatia, the number of VoIP subscriptions increased more than 10% in the six months to end-June 2012, exceeding 350,000. As a result, VoIP subscriptions now account for 20% of total fixed line connections in Croatia.

In Macedonia, the share of VoIP subscriptions has reached 27% of all fixed line connections, of which about one third are fixed lines provided over GSM networks. Also in Bosnia & Herzegovina, about one third of all fixed VoIP connections are provided over mobile networks. For Turkey, as already mentioned above, no accurate data on the number of VoIP subscriptions was available at the time of publication. For Serbia, the figures below reflect the situation as of December 2011.

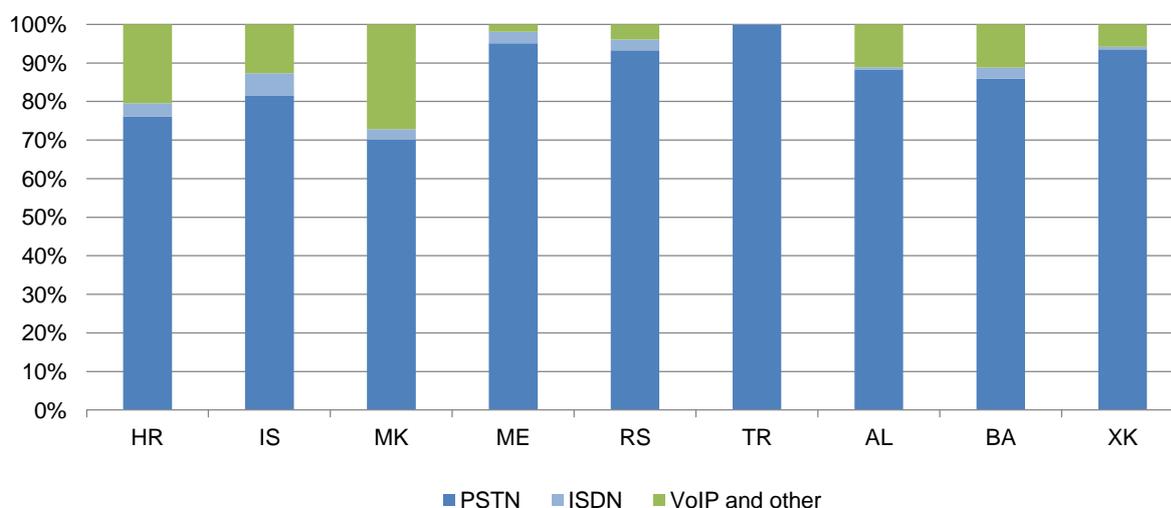


Figure B.5 – Fixed network lines by technology, June 2012

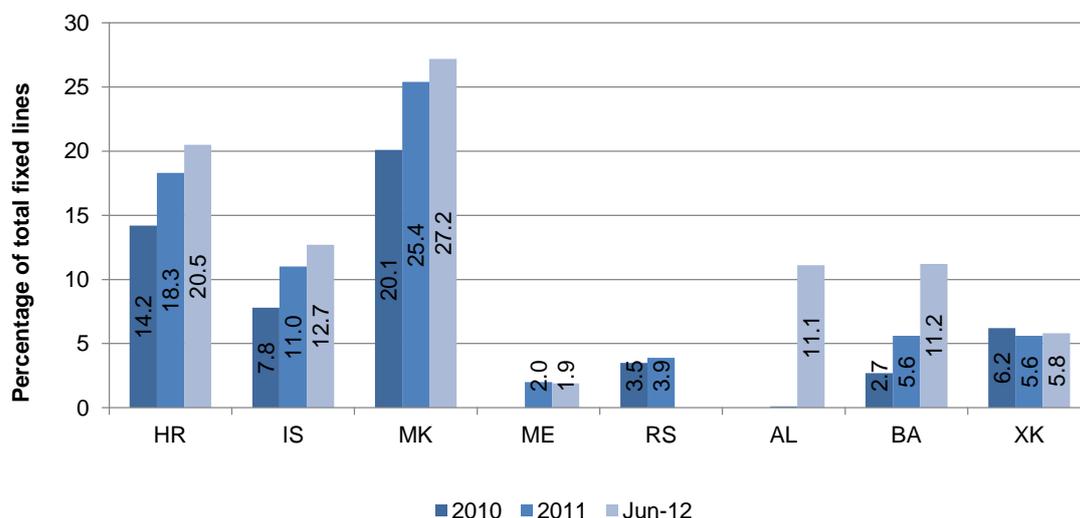


Figure B.6 - VoIP as a percentage of total fixed lines, Dec. 2010, Dec. 2011 and June 2012

Despite growth in the number of VoIP connections of alternative operators, the fixed telephony market remains dominated by incumbents.

Alternative operators have made greater inroads in the market for international calls than in the domestic calls markets – notably in Turkey (30.4% market share in international calls versus 11.3% for national calls, measured by minutes of traffic) and Albania (29% and 3% for international and national calls respectively, measured by minutes of traffic).

In four countries (Montenegro, Serbia, Bosnia & Herzegovina and Kosovo), however, the incumbent has retained a market share of more than 80% for international traffic, suggesting that basic measures to introduce competition by opening international gateways have not always been effective.

In Iceland the incumbent's overall market share is lower than in the eight enlargement countries in South Eastern Europe and is comparable to the EU average. Market shares in Croatia are also close to the EU average.

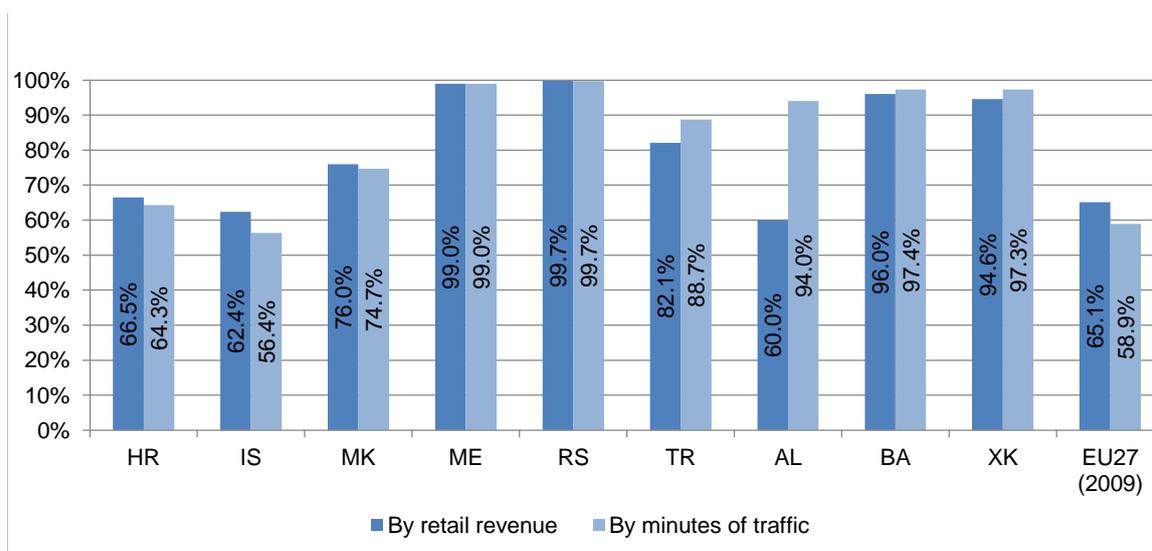


Figure B.7 - Incumbent operators' overall market shares in fixed voice telephony, Dec. 2011 (%)

In Albania, in 2011 the incumbent provided some offers of bundles of national call minutes for a fixed fee. This explains the rise in the incumbent's share of national call traffic compared with 2010 despite a fall in the incumbent's share of retail revenue from fixed calls. At the same time, the voice telephony users of the largest alternative operators in Albania have tended to use a low number of national call minutes, choosing to buy a fixed voice telephony subscription mainly because it is bundled with a broadband subscription.

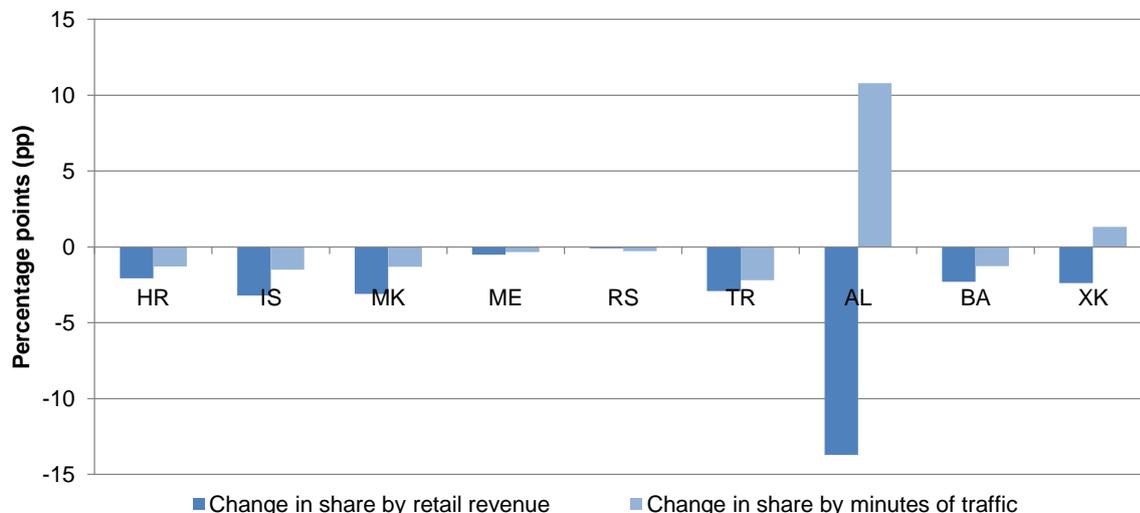


Figure B.8 - Change in incumbent operator's market share (pp), Dec. 2010 – Dec. 2011

Although alternative operators are only slowly increasing their share of revenue, the number of subscribers using alternative providers for fixed voice telephony services increased in most enlargement countries in the six months to June 2012.

In Macedonia, this growth continues to be fuelled by cable operators, as well as CS/CPS and WLR offers. In Albania, alternative operators connect the vast majority of their subscribers via their own networks, as CS/CPS services became fully operational only in May 2012 and are not widely used. Also in Kosovo, where CS/CPS services are not available, alternative operators are using their own infrastructure – mostly cable networks. In Montenegro, subscribers of alternative operators are using CS and direct access but neither CPS nor WLR has been used in practice.

In Serbia there were two alternative network operators active in the fixed voice telephony market as of June 2012 but a third alternative provider, a major cable operator (SBB), launched its services in October 2012. Neither CS/CPS nor WLR has been implemented in Serbia.

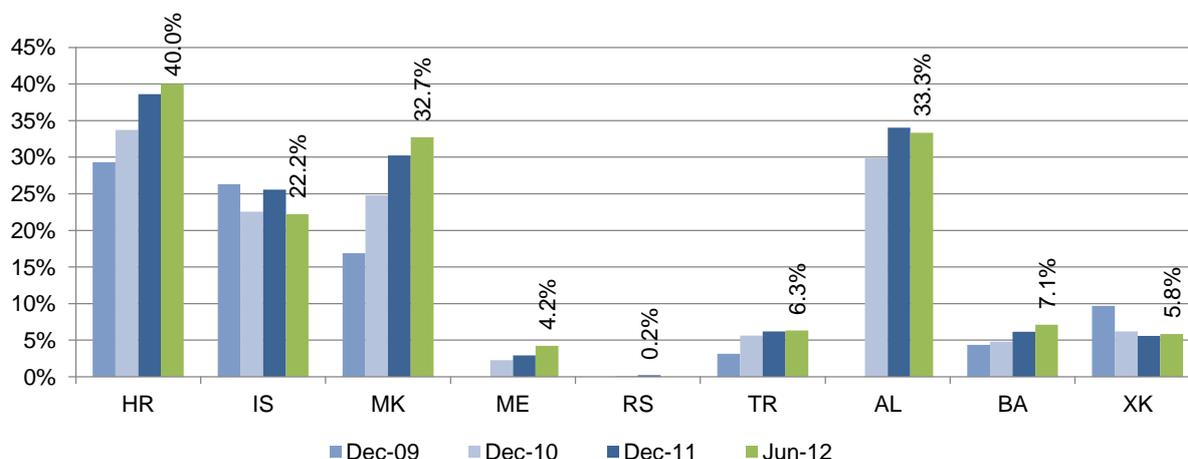


Figure B.9 - Subscribers using alternative fixed voice telephony providers, as % of total fixed lines

2. Mobile market

The total number of mobile subscriptions in the nine enlargement countries decreased by nearly 2m in the six months to end-June 2012, to reach 92.27m. This was mainly due to an adjustment in the figure for Albania to count only active subscriptions, defined as those that have made or received at least one call or SMS in the last three months.

Previously reported numbers had referred to operators' own definitions for active subscriptions – for example, prepaid SIM cards credited at least once in the last 12 months. Under the new definition, total subscriptions in Albania dropped from 5.2m to 3.2m.

In Croatia, a similar standardisation of the definition of an active prepaid account that was applied at the beginning of 2011 resulted in a similar drop in the recorded mobile penetration rate.

The significant reduction in the mobile penetration rate for Montenegro between December 2011 and June 2012 was the result of a one-off deactivation of inactive prepaid users in January 2012.

Turkey and Kosovo both recorded steady growth in mobile subscriptions but in Turkey's case this was largely in line with population growth, resulting in a stable mobile penetration rate.

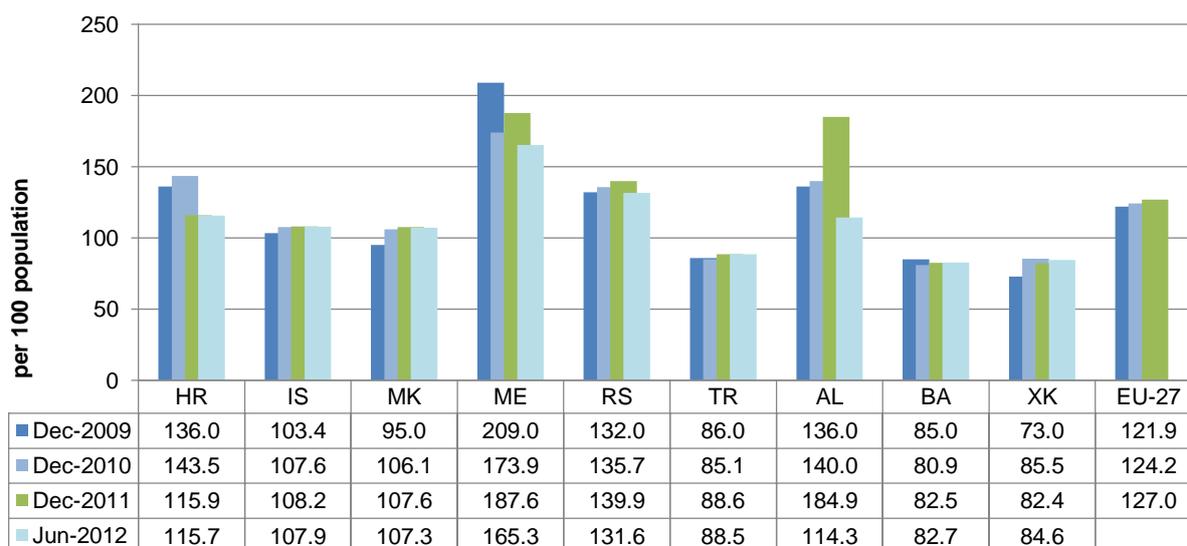


Figure B.10 - Mobile subscriptions per 100 population, by country, Dec. 2009 – June 2012

For Albania, as of June 2012 the figure shown is for active subscriptions, defined as those that have made or received at least a call or SMS in the last three months.

The share of postpaid-to-prepaid subscriptions increased in all enlargement countries in the first six months of 2012, suggesting a maturing of market conditions. The shift towards postpaid was most apparent in Croatia, Montenegro and Turkey.

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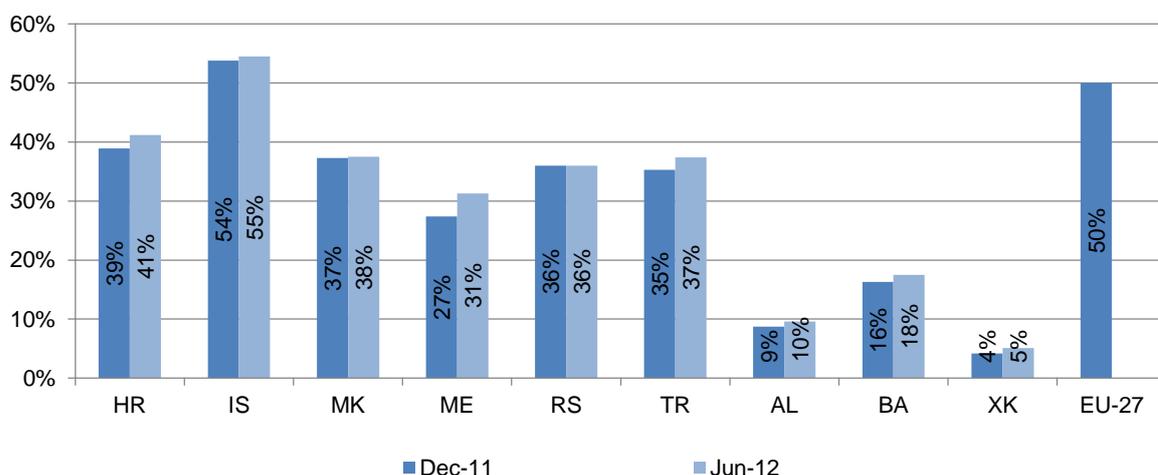


Figure B.11 - Mobile subscriptions - postpaid as a share of total, Dec. 2011 vs June 2012

Competition has been effectively implemented in all mobile markets. In Kosovo, although there are only two mobile network operators, there are also two service providers using the networks of both respective mobile operators.

The leading operator lost market share (measured by subscriptions) in all enlargement countries except Bosnia Herzegovina in the first six months of 2012; third-placed operators made notable gains.

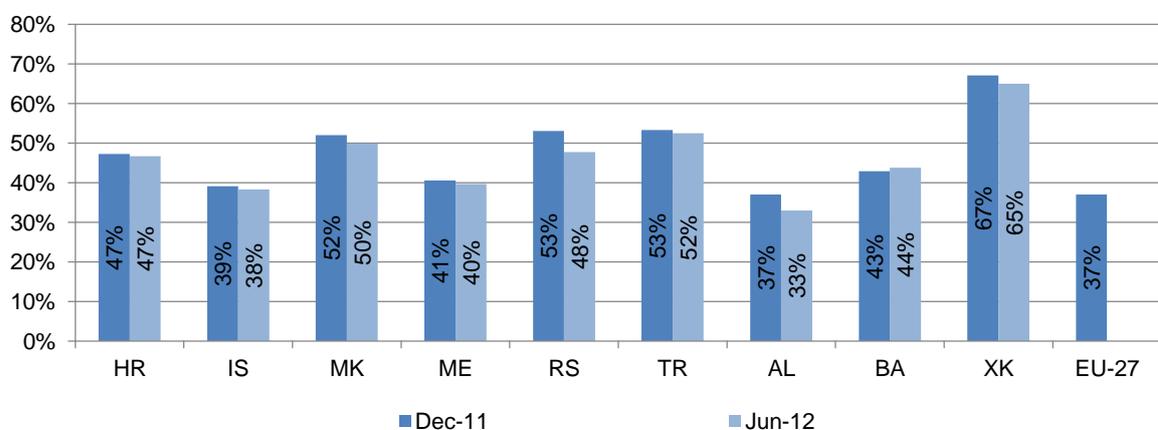


Figure B.12 - Leading mobile operator's market share by subscriptions, Dec. 2011 vs June 2012

The market shares of third-placed operators have continued to rise – Iceland's Nova and Macedonia's VIP now have shares in excess of 27% (measured by subscriptions), while Mtel in Montenegro has crossed the 25% threshold and Albania's Eagle mobile has reached 24%.

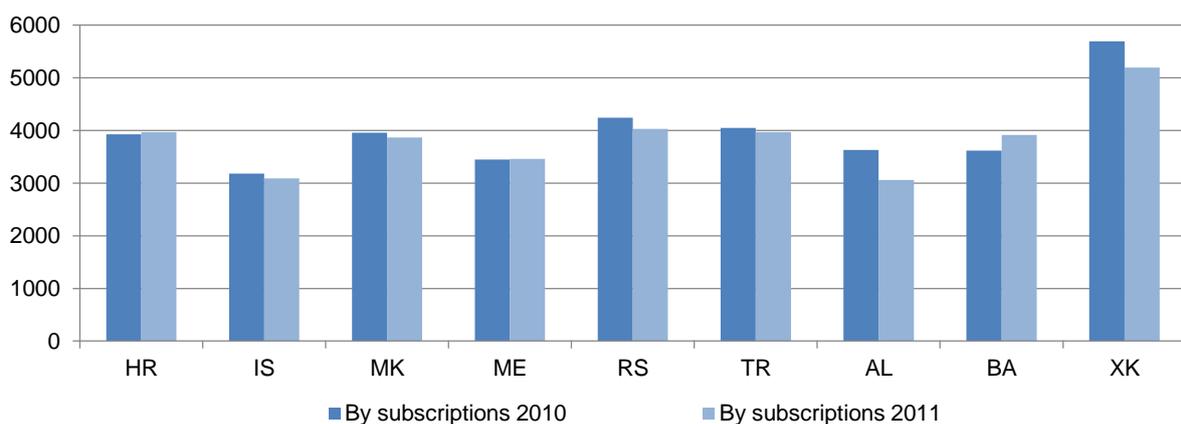
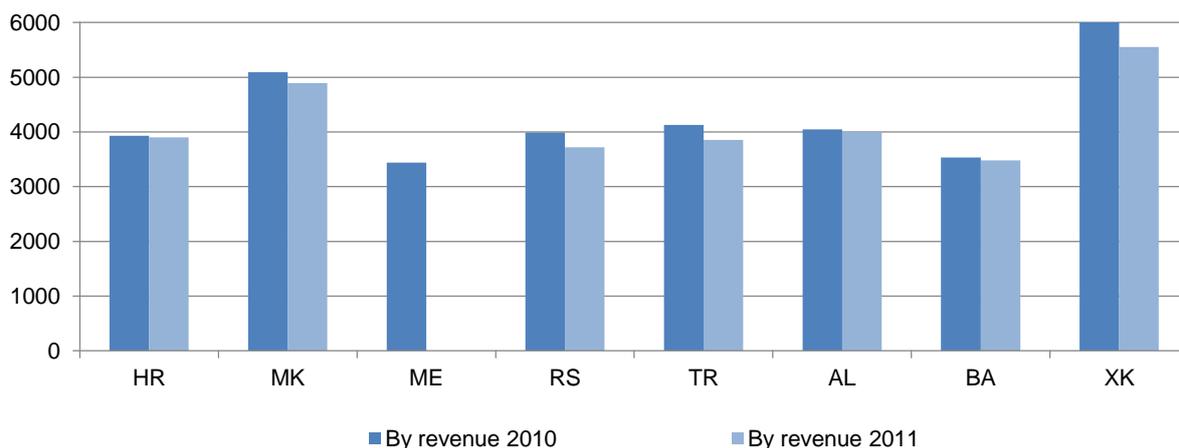


Figure B.13 - Mobile market concentration levels, HHI, by subscriptions

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 measured both in terms of subscriptions and in terms of revenues is falling in most of the enlargement countries – a sign of improved competitiveness.



Iceland: revenue -based market shares are confidential

Figure B.14 - Mobile market concentration levels, HHI, by revenue

3. Fixed broadband market

The fixed broadband market in the enlargement countries grew at a slower pace of just 1.4% in the first six months of 2012, compared with growth of 10% in the full-year 2011. At end-June 2012 the total number of fixed broadband subscriptions in the nine countries stood at 10.74m. (The latest available data for Serbia is from December 2011, so the final figure for June 2012 could be expected to be at least 50,000 higher if adjusted to account for growth in Serbia.)

The slowdown can be attributed partly to a stagnation of the DSL market in Turkey, which accounts for three-quarters of subscriptions in the region, as Turk Telekom concentrated its investment on its FTTH/B roll-out. (Uptake of FTTH/B subscriptions increased in Turkey in the second half of 2012.)

Growth was steady in other markets and strongest in Albania, where fixed broadband subscriptions exceeded 150,000.

The fixed broadband penetration rate, measured as the overall number of fixed broadband lines divided by the national population, averaged 11.0% in the nine enlargement countries at the end of June 2012.

Only in Iceland was the penetration above the EU average, at 34.7%, while in the eight other countries it was significantly below the EU-27 average rate (which was 28.2% as of end-June 2012). The highest fixed broadband penetration level among these eight countries was observed in Croatia (19.9%) – which was above the level of Romania and Bulgaria that joined the EU in 2007.

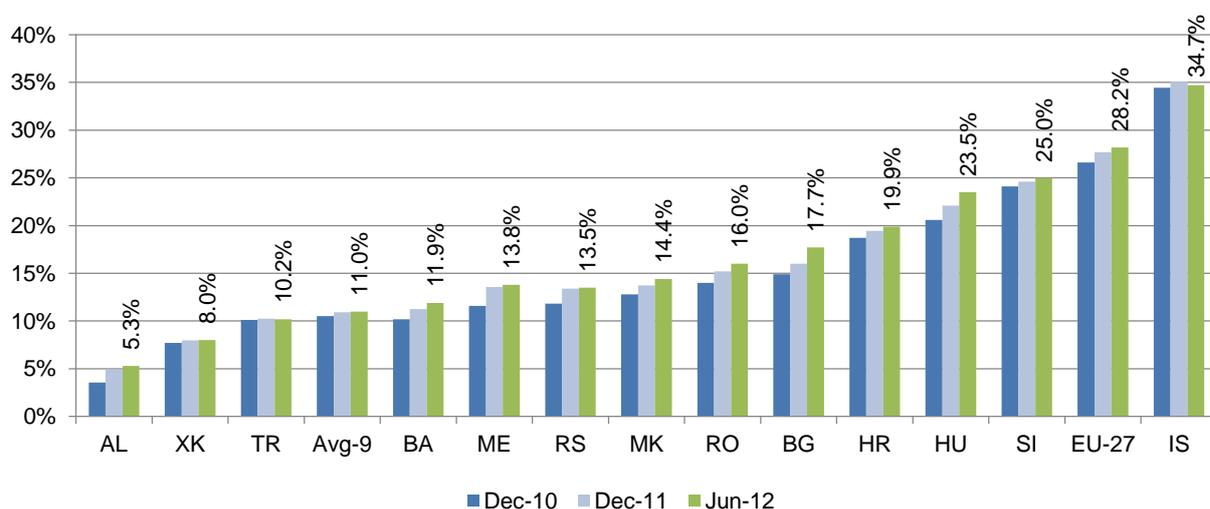


Figure B.15 - Fixed broadband penetration rate per population, Dec. 2010 – June 2012

The picture is similar for the fixed broadband penetration rate per household, with Croatia not far below the EU-27 average and Iceland well above (see [Figure R.6](#)). Data on penetration per household is not available for Albania, Bosnia & Herzegovina and Kosovo but would be relatively higher than broadband penetration per population because of the larger than average number of inhabitants per household (more than six in Kosovo).

The fastest growth in the fixed broadband penetration rate (measured per population) in the 18 months from end 2010 to June 2012 was recorded in Montenegro, where the rate jumped by 2.5 percentage points to 13.8%. This brings Montenegro's penetration closer to that of Bulgaria and Romania.

There was also strong growth in the broadband penetration rate in Serbia, Albania and Bosnia & Herzegovina, where the rate jumped by 1.7 percentage points. (In the case of Serbia the latest data available is for December 2011 – hence the growth rate shown is for the 12-month period to end-2011 and growth up to June 2012 can be expected to be higher.)

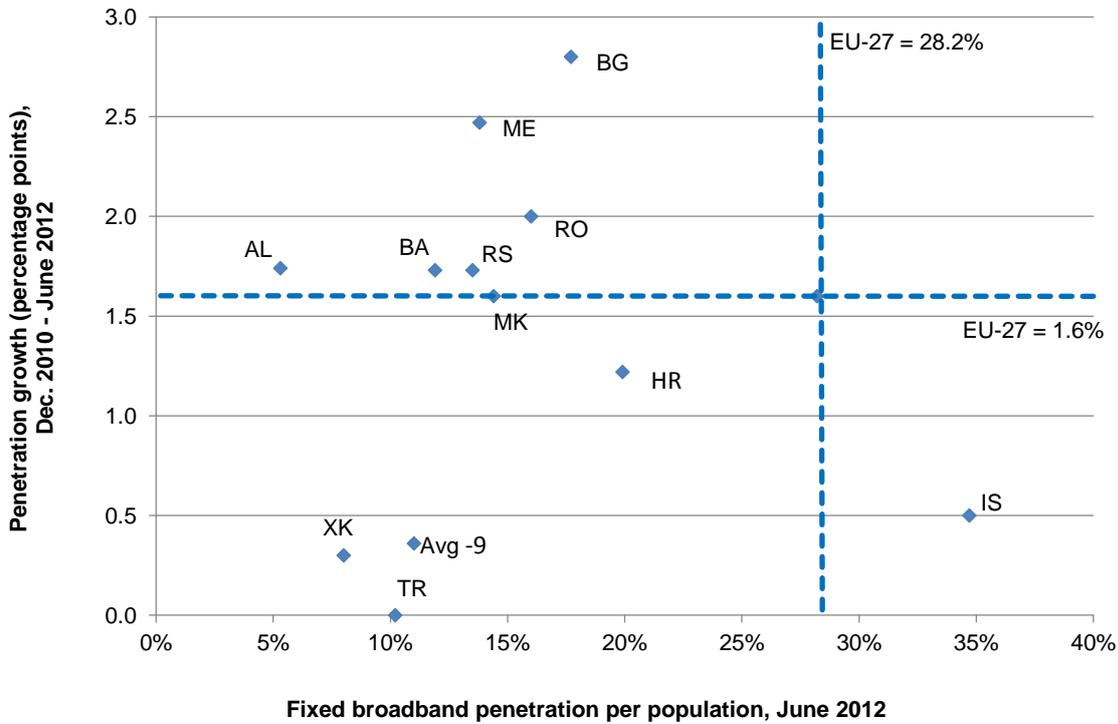


Figure B.16 - Fixed broadband growth dynamics, Dec 2010 – June 2012

A clear correlation can be seen between fixed broadband penetration and GDP per capita, with Croatia further up the scale towards the European average than the cluster of other South-East-Europe enlargement countries.

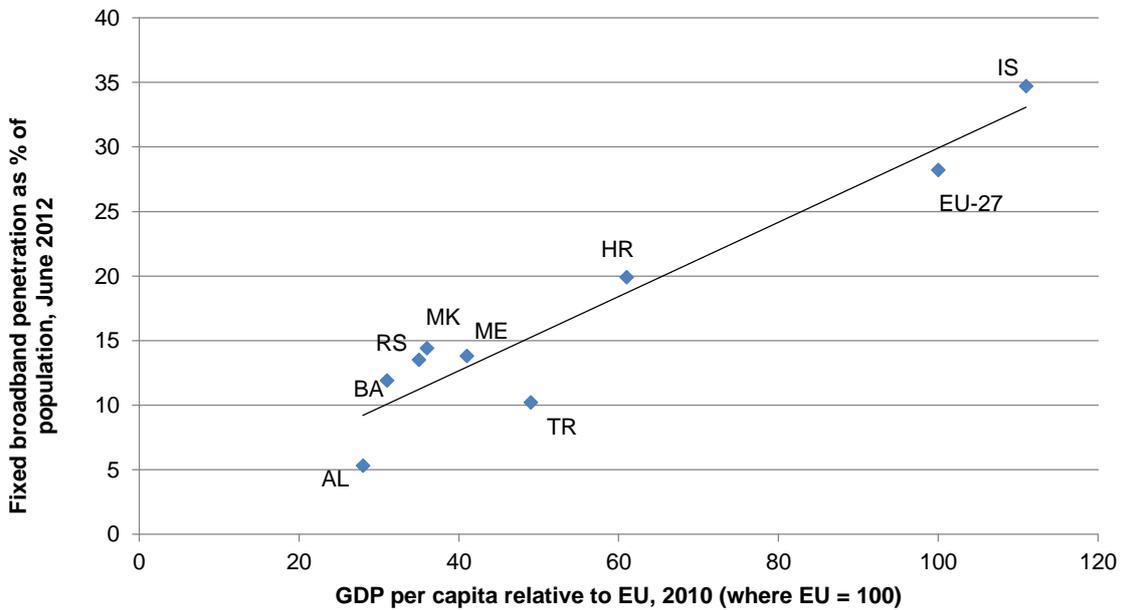


Figure B.17 - Fixed broadband penetration versus GDP per capita relative to EU

Incumbents continue to dominate the market: although all countries except Iceland and Montenegro have at least 35 active ISPs, the incumbent ISP retains more than a 40% market share everywhere except Kosovo.

In Iceland, Macedonia, Serbia and Albania the incumbent's market share is nonetheless comparable with the EU average incumbent market share (by connections) of 42.6%.

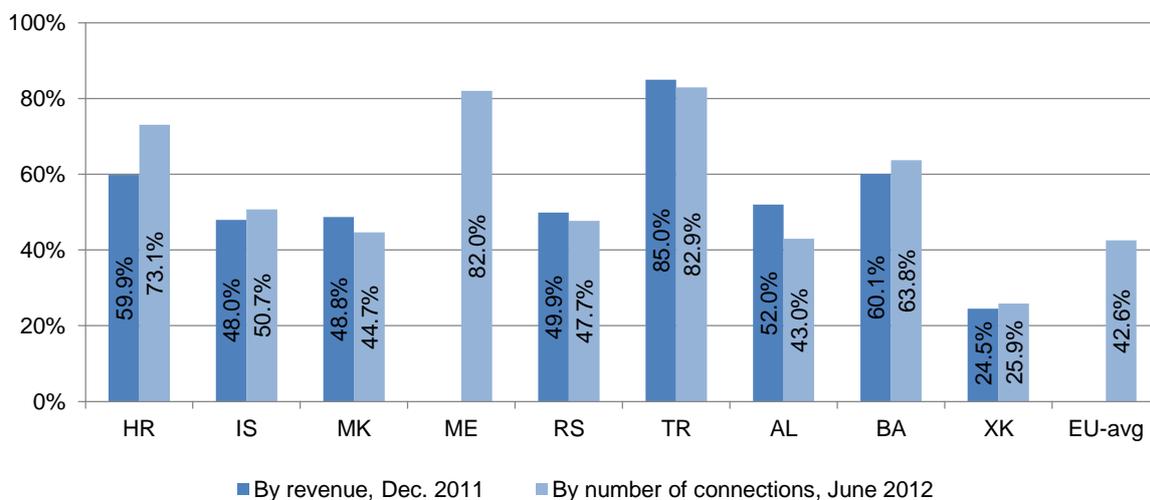
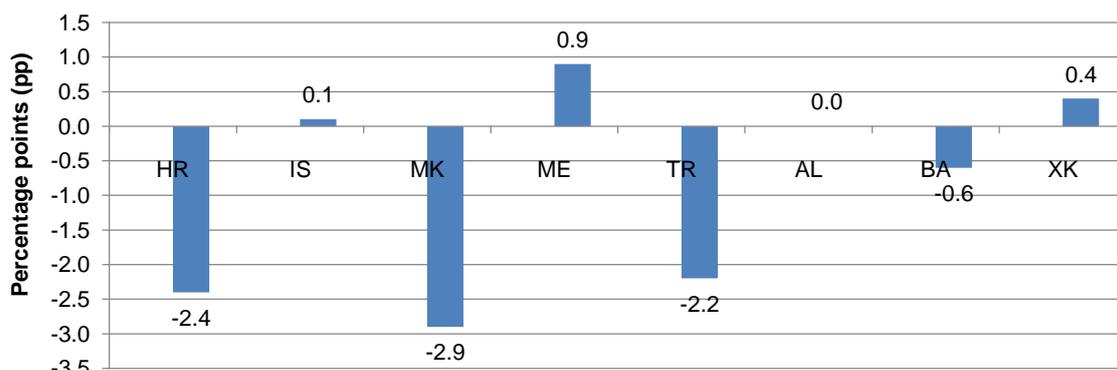


Figure B.18 - Incumbent ISP's market share, by revenue 2011 and by connections June 2012

While the incumbent's share by connections fell in all markets except Serbia in 2011, incumbents regained ground in Montenegro, Kosovo and Iceland in the first half of 2012 (no June 2012 data is available for Serbia). Incumbents in Macedonia, Croatia and Turkey all lost more than two percentage points of market share in the six-month period, however.



No June 2012 data is available for Serbia

Figure B.19 - Change in incumbent ISP's retail market share by number of connections, Dec. 2011 – June 2012

When it comes to the split by technology, xDSL accounts for 80% of fixed broadband connections in the enlargement countries and plays a leading role in all countries except Kosovo, where cable operators have a stronger share of the fixed broadband market.

In Albania and Bosnia & Herzegovina, alternative operators are using their own xDSL networks. The share of xDSL lines attributable to the incumbent in Albania appears to have dropped because Albtelecom's xDSL connections connected via MSANS are counted as FTTx (see Figure B.20 below) and are therefore not included in the incumbent's xDSL total in Figure B.21.

In Serbia and Turkey alternative operators providing xDSL are almost entirely dependent on bitstream services.

In Croatia, most alternative operators are using full LLU, while in Iceland a greater proportion use shared access.

In Macedonia, starting from June 2012 alternative operator ONE modified its contract with the incumbent to move its end-users from layer 4 (resale) to layer 3 (bitstream access) services. Previously, no alternative operators had been using bitstream in Macedonia.

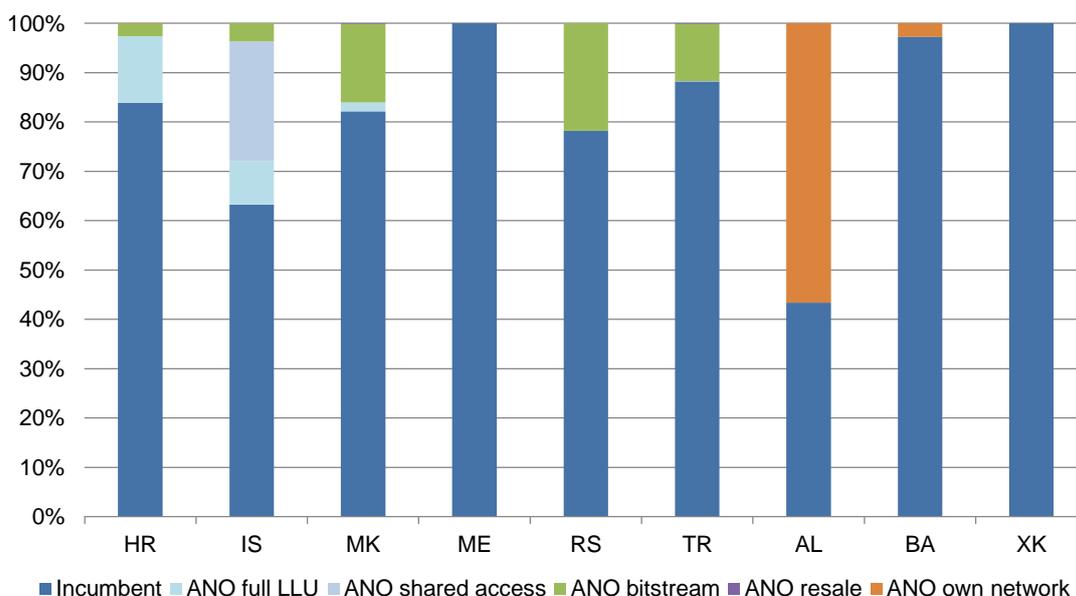


Figure B.20 - xDSL lines by type of access, June 2012 (%)

Cable networks gained market share in most countries in which they operate, notably in Croatia where net additions of cable broadband connections (11,111) exceeded DSL net additions (8,181) in absolute terms in the first six months of 2012, despite total xDSL connections outnumbering total cable connections in Croatia by nearly 10 to one.

The size of the fibre market in the enlargement countries increased more than 40% in the first six months of 2012, to total almost 650,000 connections.

In Montenegro the number of fibre connections doubled (albeit from a very low base) to reach 2,348, equivalent to 2.8% of the total broadband market. The penetration of fibre is at a similar level in Serbia's nascent fibre broadband market (no data is available for June 2012).

In Turkey the number of fibre broadband connections increased by more than 200,000 in the first six months of 2012 to approach the half-million mark, driven by investment from both the incumbent operator Turk Telekom and alternative operator Turkcell-Superonline.

Growth in fibre was also strong in Iceland, where the number of fibre connections increased by 21.8% in the first six months of 2012, with the result that fibre accounted for 19% of all fixed broadband connections in Iceland.

In Bosnia & Herzegovina, BH Telecom had 109,701 FTTC lines at end-June 2012, which are now being reported as FTTx lines in this report (not xDSL), since BH Telecom is deploying fibre to the street cabinet.

In Albania, FTTx for the incumbent Albtelecom refers mainly to xDSL connections connected via MSANS. (The remainder of Albtelecom's FTTN connections are counted as xDSL.) In the first half of 2012 there was a large jump in the number of customers connected to MSANS, hence the share of FTTx connections in Albania more than doubled to 21%.

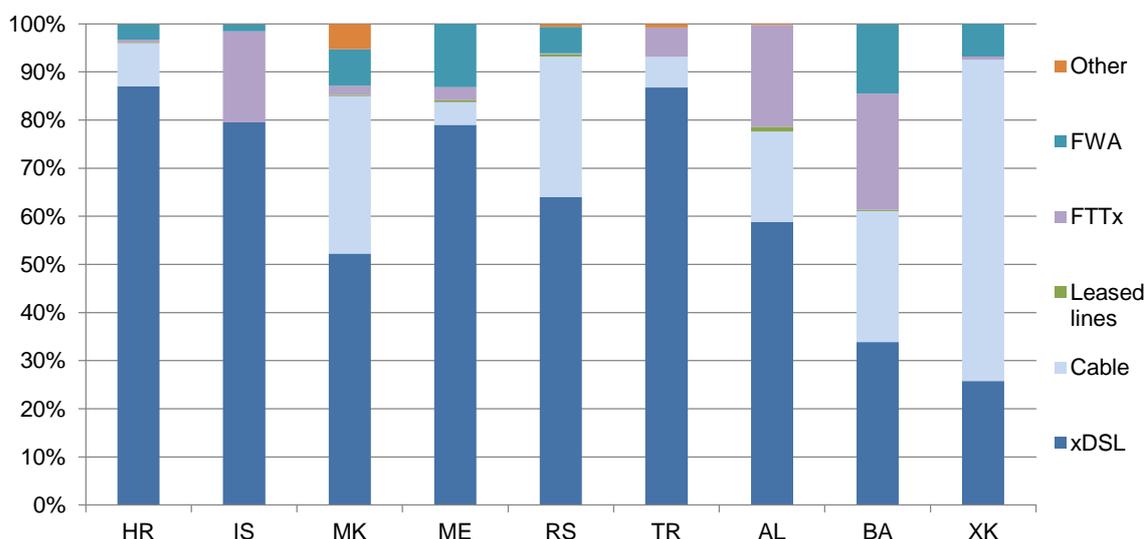


Figure B.21 - Fixed retail broadband connections by technology, June 2012

The distribution of retail broadband lines by speeds shows a steady movement towards higher-speed packages in all countries.

Users in Iceland have by far the fastest connections – and because VDSL and fibre packages in Iceland are both now advertised as offering speeds up to 50 Mbps, 34% of connections in Iceland are now categorised in the highest speed category.

In Turkey the majority of users buy connections advertised as ‘up to 8 Mbps’ – and Turk Telekom reported that as of June 2012, 87% of total customers were connected to such packages or higher speeds.

In Kosovo there has been a significant increase in the numbers of users on higher-speed packages in June 2012 compared with December 2011, thanks to the fact that all operators have increased their capacities while prices have remained unchanged.

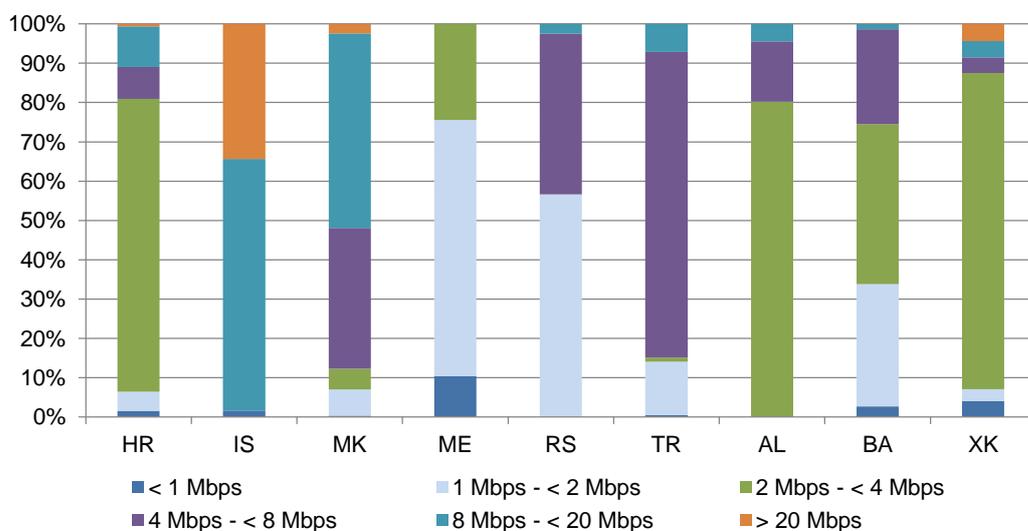


Figure B.22 - Distribution of retail broadband lines by download speeds, June 2012

Users in Turkey and Serbia have access to very high speed packages offering speeds up to 100 Mbps, and in addition Turkish alternative operator Superonline is advertising speeds up to 1 Gbps in 11 cities.

In Kosovo, cable operator Kujtesa is now advertising download speeds up to 60 Mbps, some five times faster than DSL packages offered by the incumbent.

In Iceland, while ADSL is still advertised as offering speeds up to 12 Mbps, VDSL, like fibre, is now advertised as offering speeds up to 50 Mbps.

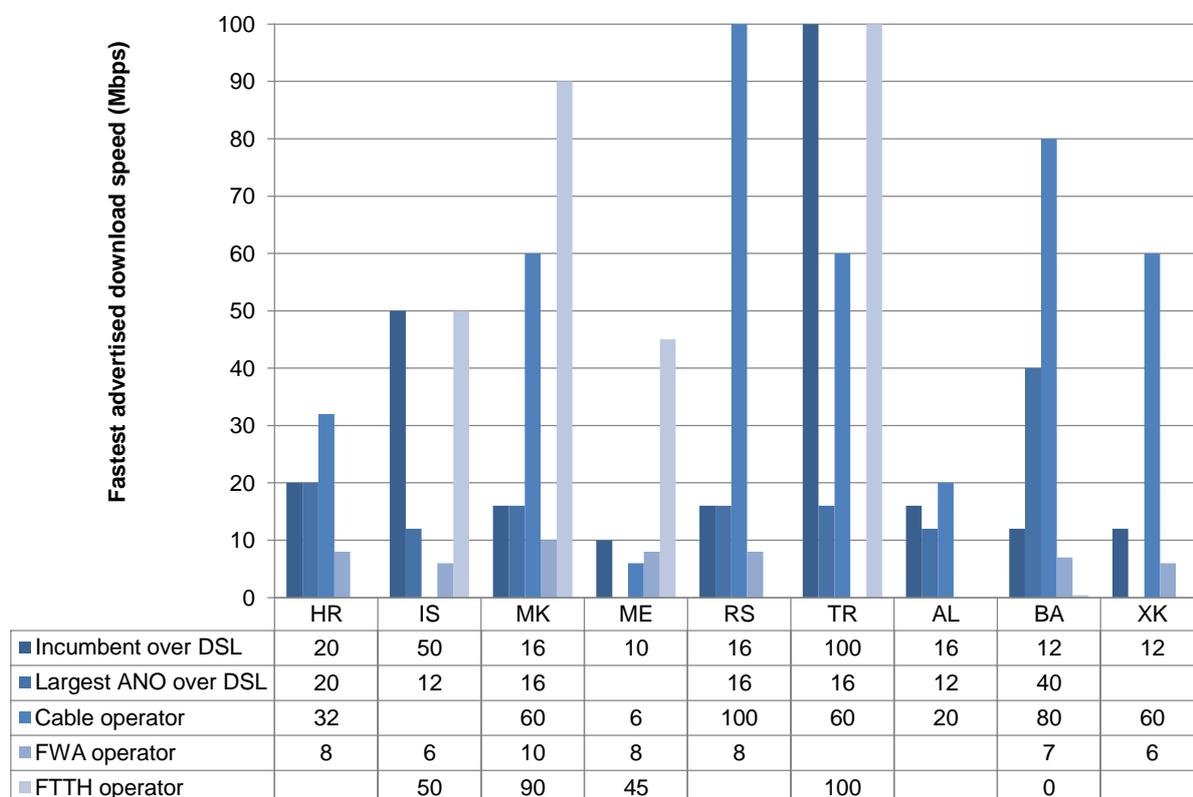


Figure B.23 - Fastest advertised retail broadband connection (Mbps), by country, June 2012

4. Mobile broadband market

Mobile broadband is the fastest growing and most dynamic segment of the electronic communications market. Despite the fact that many fixed broadband operators are offering users access to higher-speed packages, mobile broadband remains an appealing alternative thanks its flexibility. Indeed, in some areas where there is no fixed broadband coverage, mobile networks provide the only form of broadband access.

Dedicated 3G mobile datacards/modems offer a substitute, as well as a supplement, to fixed broadband connections. In 2010 their penetration rate doubled in most enlargement countries, having started from a very low base, but by the first half of 2012 growth had slowed, as the market matured and smartphones and tablets offered an alternative (see Figure B.24).

In Croatia, the apparent fall in the penetration rate in 2011 was caused by the change in the definition of an active prepaid subscription, which, as for voice connections, was standardised to include only subscriptions that had been used or topped up in the last 90 days.

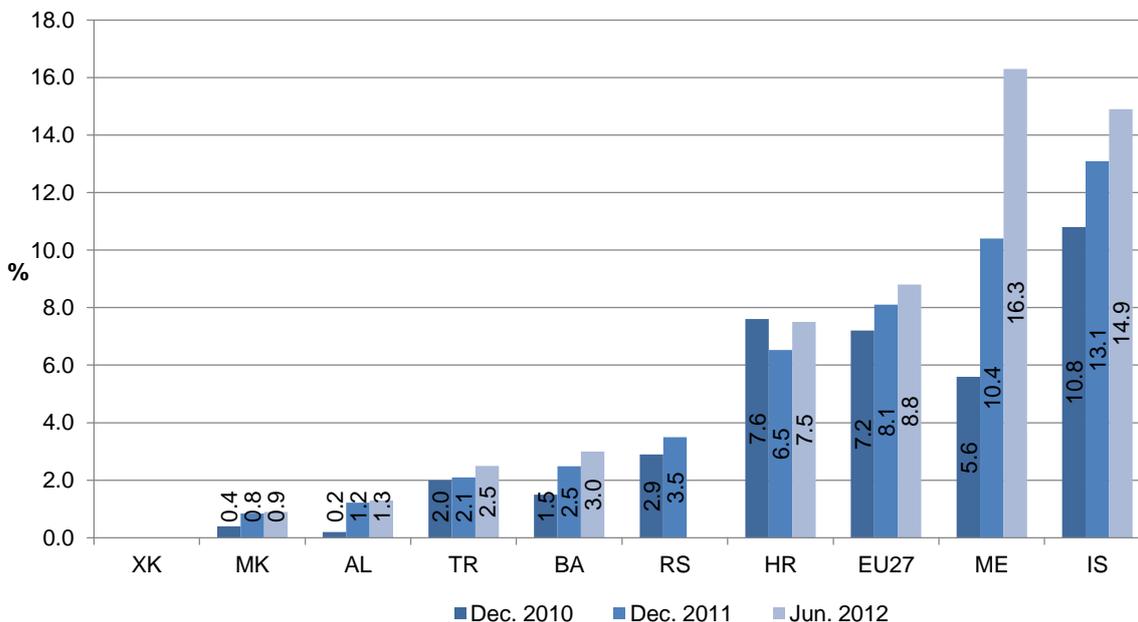


Figure B.24 – Dedicated datacards/wireless modems per 100 population, Dec. 2010, Dec. 2011 and June 2012

The use of smartphones or other handheld devices to access mobile broadband services rocketed in 2012.

In Serbia and Croatia the mobile broadband penetration rate (measured for all devices including handhels and dedicated datacards/modems) exceeded the EU-27 average as of June 2012, with approximately half the population using mobile broadband services.

In Iceland the penetration rate hit 64%, bringing it closer to the Nordic markets, where mobile broadband penetration rates were over 90% as of June 2012.

Growth in the number of mobile broadband connections, as well as traffic volumes, is expected to continue in 2013.

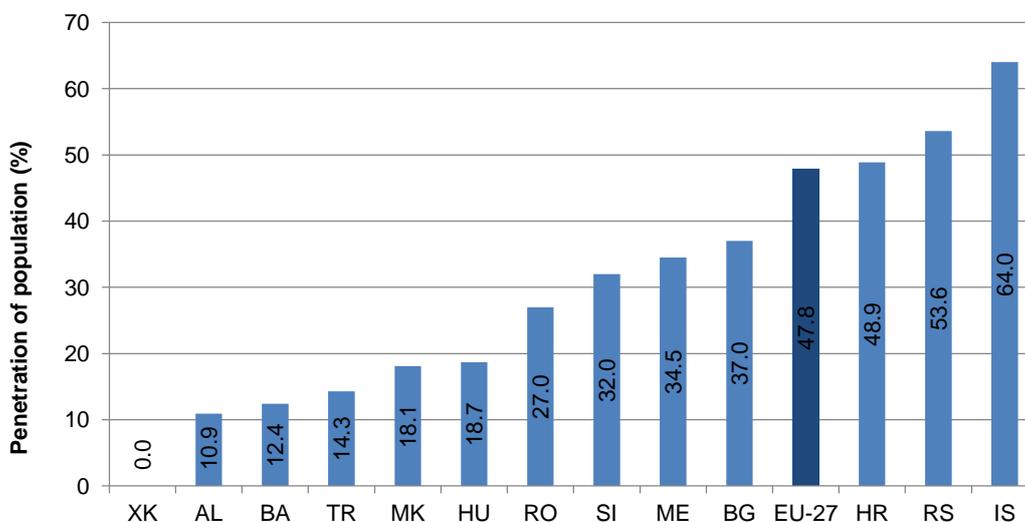


Figure B.25 - Mobile broadband penetration (all devices, including handhels), June 30, 2012

C. National broadband targets

Governments in six of the nine enlargement countries (Croatia, Iceland, Montenegro, Serbia, Kosovo and Turkey) have set political targets for broadband coverage or take-up at specified minimum speeds to be reached in the coming years. In Albania, the national policy document setting out broadband coverage targets is currently being drafted. In Croatia there are specific targets for fixed broadband penetration, whereas in other countries targets are technology and service-neutral.

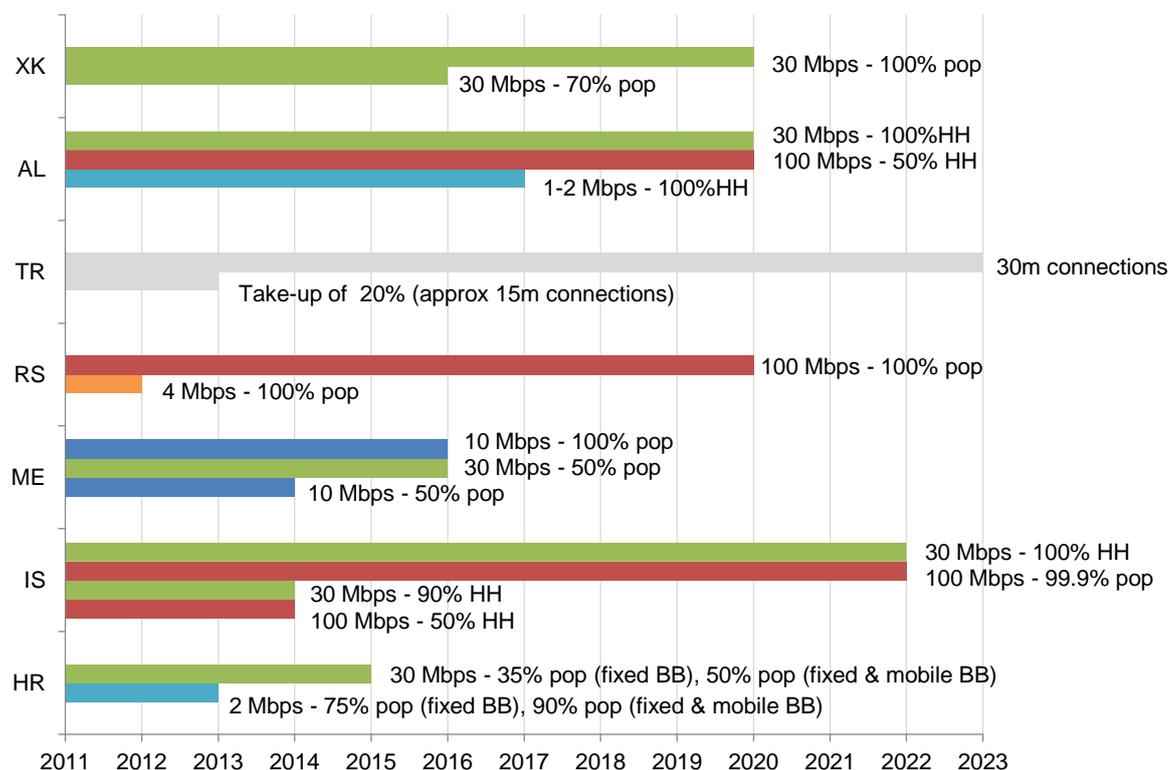


Figure C.1 - National broadband targets

No national broadband targets are specified for Macedonia and Bosnia & Herzegovina.

In Croatia and Montenegro the basic broadband coverage targets have been included in the universal service obligation (USO): Montenegro – 144 kbps (from January 2011); Croatia – 144 kbps (from March 2013); 1 Mbps (from January 2015). See [section J.1](#) on the scope of universal service and provider designation mechanism.

D. Legislative, policy and institutional framework

1. Information society legislation

All participating entities have been 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 which is currently in force, not the later amendments.

	HR	IS	MK	ME	RS	TR	AL	BA	XK
Electronic communications law	2008	2003	2005	2008	2010	2008	2008	2003	2012
Based on EU 2003 regulatory framework?	✓	✓	✓	✓	✓	✓	✓	✗	✓
Draft for implementing EU 2009 regulatory framework?	–	✓	–	✓	–	–	–	–	–
EU 2009 regulatory framework adopted?	✓	–	–	–	–	–	✓	–	✓
Electronic commerce law	2003	2002	2007	2004	2009	✗	2009	2007	2012
Electronic signature law	2002	2001	2001	2003	2004	2004	2008	2006	2012
Audiovisual media law based on AVMSD	2009	✗	✗	2010	✗	✗	2013	✗	✗
Data protection law	2003	2000	2005	2008	2008	✗	2008	2006	2010
Cybercrime legislation	✓	✓	✓	✓	✓	✓	✓	✗	✓
Electronic document law or E-government law	2005	–	2001 2009	2008	2009	2 nd legis- lation	2010	–	2012

Table D.1 – Information society legislation

The most important part of the *acquis* is the regulatory framework for electronic communications. All countries except Bosnia & Herzegovina have adopted laws which are based on the EU 2003 regulatory framework.

Three countries have now also aligned their laws with the EU 2009 regulatory framework and two more have prepared draft legislation. Croatia adopted amendments to its law in 2011. In October 2012 Kosovo adopted a new law, which is based on the EU 2003 and 2009 frameworks. Albania adopted amendments to transpose the EU 2009 framework, also in October 2012.

Audiovisual media regulation is not assessed in the scope of this study. Croatia in 2009 and Montenegro in 2010 adopted new Laws on electronic media. The Albanian parliament followed on March 4, 2013. 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.¹ 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.

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 S.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.

¹ The draft is published (in Turkish) at <http://www.basbakanlik.gov.tr/Handlers/FileHandler.ashx?FileId=6593>

In most of the monitored countries the legislation is structured in similar way: 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 Law no. 5809 on electronic communications adopted in 2008 has not entirely replaced the 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. In April 2012 a new Law on the information society services was published in the official gazette, which covers electronic commerce, liability of ISPs, distance contracts, electronic invoicing, electronic payments, electronic signatures, data protection, electronic signatures and protection of information systems. Data protection is covered by a separate law of 2010. Kosovo has also renewed its electronic communications legislation by a new law on electronic communications, which came into force in November 2012 and replaced the former law on telecommunications.
- Bosnia & Herzegovina has laws both at state level and at the level of its two entities, in particular both the Federation of Bosnia & Herzegovina and the entity Republika Srpska have laws on electronic commerce and electronic signature.

2. Ongoing legislative work

Aligning national legislation with the EU *acquis* 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. 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 (in 2011).
- Iceland has been transposing EU directives as soon as they are incorporated into the EEA Agreement. However, the EU 2009 regulatory framework has still not been adopted by the responsible EEA bodies. Therefore the prepared draft bill for transposing the EU 2009 regulatory framework is still waiting for adoption in parliament. Iceland has also plans to transpose the Audiovisual Media Services Directive and identified during the screening process several details that need transposition.²
- Kosovo has largely renewed its entire information society legislation in 2012. A new Law on the information society services was adopted in spring and a new Law on electronic communications in October 2012. Some parts of the EU regulatory framework need transposition by secondary legislation.

² 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

- Albania has also adopted important pieces of primary legislation recently. Amendments to align the law on electronic communications with the EU 2009 regulatory framework came into force in November 2012 and the new audiovisual media law was adopted on March 4, 2013. Albania also works on the final alignment of the law on electronic commerce with the Electronic Commerce Directive.
- Montenegro has consulted on a proposal to transpose the EU 2009 regulatory framework in March 2012. The responsible Ministry for Information Society and Telecommunication expects adoption by government in 2Q 2013 and adoption in parliament by end of 2013. The ministry is also preparing legislation on e-governance and amendments to the e-commerce law.
- In Macedonia the Ministry of Information Society and Administration established a working group for transposition of the EU 2009 regulatory framework in October 2012.
- Although Turkey has been actively drafting new laws, the parliamentary procedure is slow. The draft law on data protection was submitted to Parliament in 2008 and the draft electronic commerce law in 2010. Newly adopted legislation is not always based on the EU *acquis* and sometimes does not aim at full alignment. Turkey does not yet have specific plans 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. Work on transposing the EU 2009 regulatory framework has not yet started. Drafting work is being finalised on amendments to the law on electronic commerce and on a new law on electronic media.
- Bosnia & Herzegovina is lagging behind. Its Communications Law is mainly based on the EU 1998 framework and there is no 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. However, the responsible Ministry of Communications and Transport is now working on a new draft law on electronic communications (based on the EU 2003 and 2009 regulatory frameworks) and two broadcasting laws.

3. Information society policy

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

This study assesses 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 C.2 of the annex.

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

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

Table D.2 – Information society policy documents

The Albanian government adopted in May 2012 a new strategy on switchover from analogue to digital terrestrial TV broadcasting and has drafted a new national broadband plan. The Icelandic parliament adopted in November 2012 the new Telecom policy statement for the years 2011 to 2022 (including electronic communications, broadband, digital TV, network security and cybercrime).

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.

In Kosovo, a new electronic communications sector policy for 2013 – 2020 was approved by the government in March 2013. Kosovo has also established a working group to prepare a digital TV switchover strategy.

Some of the policy documents mentioned in the table above are relatively old or have even expired. In particular in Bosnia & Herzegovina the main information society policy document was adopted in 2004 and the policy for the telecommunications sector in 2008. Although the telecom policy expired in 2012, no new policy document has been drafted yet.

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 C.3 of the annex.

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

	HR	IS	MK	ME	RS	TR	AL	BA	XK
Electronic Signatures Directive: supervisory authority	✓	✓	✓	✓	✓	✓	✓	✗	✗
Data protection authority	✓	✓	✓	✓	✓	✗	✓	✓	✓
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									

Table D.3 – Responsible bodies for electronic communications and information society

In Serbia the responsible ministry is now the Ministry of Foreign and Internal Trade and Telecommunications. There are plans to merge the postal regulator RAPUS with the NRA, RATEL.

In Kosovo the new Law on electronic communications changed the name of the regulator to Regulatory Authority of Electronic and Postal Communications. The regulator now also has the task to establish a CERT. The new Law on the information society services has entitled the Ministry of Economic Development to establish a supervisory authority for electronic signatures. The Kosovo Agency of Statistics has not yet been given the task to develop information society statistics.

In Iceland the NRA is now also operating a CERT, following a change of the law on electronic communications in 2012.

Turkey has not yet adopted a data protection law or electronic commerce law and therefore also no authorities for supervising these fields. Turkey is planning a reorganisation of responsibilities in the fields of domain name administration.

Bosnia & Herzegovina has an electronic signature law since 2006, but has not yet established a supervisory authority.

Macedonia has not yet established a CERT.

E. National regulatory authorities

The establishment of the independent national regulatory authority (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 arbitrary political intervention and (iii) functional effectiveness assured through adequate human and financial resources and enforcement powers.

The two latter aspects of NRA independence have been particularly emphasised in the provisions of the 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 the appointment and dismissal of NRA management, and to ensure that NRAs have own independent budgets and sufficient number of qualified staff.

While the need for the NRAs to be independent from the market actors seems to be widely recognised and accepted by the monitored countries, the main findings of the reporting period reveal a worrying tendency by some of the countries to disregard the enhanced political independence and separate budget requirements of Article 3(3a) of the Framework Directive. These developments are further discussed below.

1. NRA structural separation

Under the EU regulatory framework, there has been no requirement for the privatisation of any state-owned telecommunications undertakings but any reduction in the state shareholding usually strengthens the independence of the NRA as well as its credibility with other interested stakeholders.

Article 3(2) 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 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 the remaining countries the level of state ownership in one or several telecommunications operators ranges from 24% up to 100%. The governments in Macedonia and Turkey also retain 'golden shares' in the incumbent operators, i.e. special powers granted by law or by the articles of association of a company allowing the state to maintain a special influence in the operators concerned.

In most of the countries, state ownership is typically associated with the incumbent operators that previously had enjoyed the monopoly status. The exception is Iceland that had fully privatised its incumbent operator, Síminn, in July 2005. In 2007 Síminn was split by its private owner, Skipti ehf, into three separate companies: Síminn hf, a major provider of full range of fixed and mobile telecommunications services for residential and business users; Fasteignafélagið Jörfi ehf, a real estate company, and Míla ehf which owns and operates the national trunk and access networks. The Icelandic state retains a stake in Farice ehf that operates submarine fibre optic cables from Iceland to Denmark and the UK.

In Turkey, in addition to the incumbent operator Türk Telekom with its internet subsidiary TTNNet and the mobile operator Avea, the government also owns Türksat, the major provider of satellite and cable TV services. In Bosnia & Herzegovina, the entity government of the Federation retains a majority ownership in two incumbent operators: BH Telecom and HT Mostar.

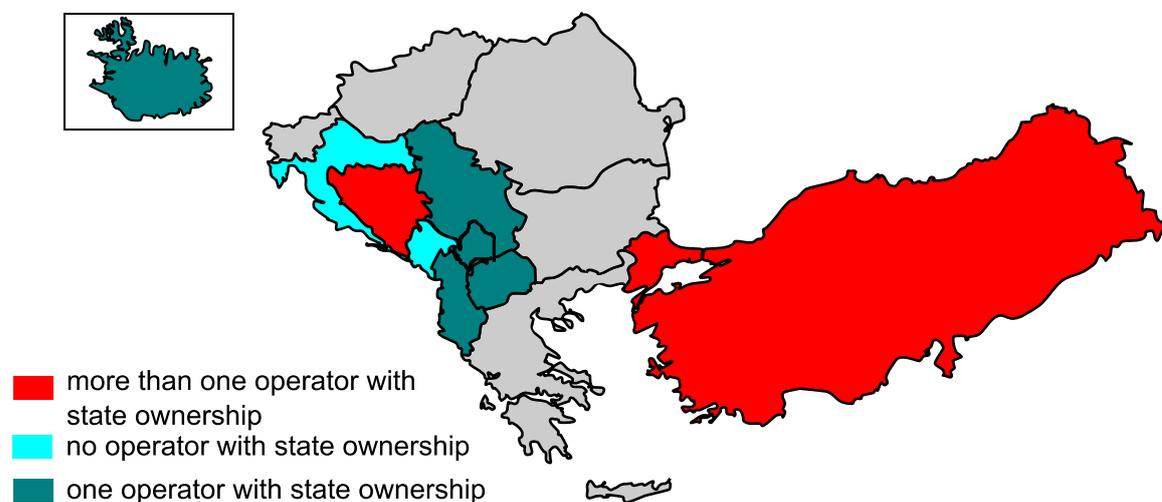


Figure E.1 – State ownership of telecommunications operators

In most of the countries with state ownership in the telecom sector, the policy making and regulatory functions, at least formally, have been structurally separated from the functions associated with the ownership and control of state-owned undertakings. Only in Kosovo, the control of the incumbent operator remains with the Ministry of Economic Development that is also responsible for policy making and legislation in the telecom and information society sector.

The incumbent operator in Kosovo is currently undergoing the final phase of the privatisation process that was relaunched in 2012 following the first unsuccessful attempt cancelled in 2011.

In December 2012 the Turkish government announced plans to reduce the state's 31.68% stake in Türk Telekom through a secondary public offering of around 7%.

2. Division of responsibilities between the government and the NRA

The EU regulatory framework recognises that NRAs should follow general policy guidelines formulated by the responsible ministers. It also acknowledges the legitimacy of supervision of NRAs' activities in accordance with the national constitutional law. At the same time, Article 3.3a of the Framework Directive explicitly prohibits NRAs from seeking or taking instructions in relation to their regulatory tasks from any other body.

Concerns about possible political influence can be raised by the mere possibility that NRAs could be put under pressure from arbitrary political intervention. Therefore, the effective independence of the NRA is best achieved by providing it with a distinct legal mandate and eliminating political interference in its day-to-day tasks.

The concept of NRA independence in the monitored countries has been progressively introduced in the national regulatory frameworks alongside the adoption of new laws on electronic communications. In many of the countries, the common objective of recent legislative changes has been to make more distinct the 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.

The 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 Croatia, further separation of policy-making from regulatory and enforcement tasks was implemented in 2011 following the amendments to the Law on Electronic Communications that transferred all inspection functions from the ministry to the NRA. Similar inspection functions enabling control and enforcement of the electronic communications legislation and regulations exist within the competencies of the relevant ministries in Serbia and in Montenegro. In Montenegro, however, the inspection tasks since 2012 are carried out by the market directorate under the Ministry of Economy.

The Macedonian Law on Electronic Communications was amended several times during 2010 – 2012 to clarify the role of the NRA and the scope of its responsibilities.

In Kosovo, the respective tasks carried out by the ministry and by the NRA have been set out in the new Electronic Communications Law adopted in November 2012.

There is a significant variation between the nine countries concerning the range of specific regulatory aspects that envisage some form of governmental or ministerial involvement in addition to overall policy-making responsibility, as illustrated by the table below.

Country	Spectrum management	Universal service	Inspection/enforcement	Appellate review
HR	✓	-	-	-
IS	-	-	-	✓
MK	✓	✓	-	-
ME	✓	✓	✓	✓

Country	Spectrum management	Universal service	Inspection/enforcement	Appellate review
RS	✓	✓	✓	-
TR	✓	✓	-	-
AL	✓	✓	-	-
BA	-	✓	-	-
XK	✓	✓	-	-

Table E.1 – Government involvement in specific tasks in electronic communications sector

In all countries, with the exception of Iceland and Bosnia & Herzegovina, the government is involved in spectrum management tasks, in addition to defining spectrum policy. These tasks may include approval of the frequency allocation table, definition of the spectrum award procedures or the number of spectrum authorisations to be issued for specific services.

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

In Montenegro, the current Law on Electronic Communications assigns to the ministry the powers of administrative review over the NRA's decisions as the first instance appeal body, effectively undermining the NRA's independence. The new draft law that is expected to be adopted in 2013 however envisages that the ministry would no longer have any appellate powers and the NRA decisions could be only appealed to the administrative court.

In Iceland, the ministry has no appellate powers over the NRA's decisions, but is involved in the appointment of the members of the sector-specific appeal body for electronic communications. Furthermore, the NRA has to seek the ministry's approval in order to be able to appeal decisions of this appeal body to the courts.

In Bosnia & Herzegovina, the role of the central government in electronic communications sector is formally limited to general policy making. The Law on Communications provides that "neither the Council of Ministers, nor individual ministers nor any other person shall in any way interfere in the decision-making of the Agency in individual cases". In practice, however, the government may still interfere on case-by-case basis with the regulatory decisions of the NRA. One example is the amendment to the sector policy adopted by the Council of Ministers in September 2012 that would postpone the introduction of MVNOs for an indefinite time, effectively overturning the recent regulations of the NRA aimed at enabling market entry for MVNOs. Furthermore, the sector policies issued by the Council of Ministers are adopted with significant delays due to complex and inefficient legislative procedures and take a form of a detailed and prescriptive action plan for the NRA, which in practice slows down regulatory processes and limits the NRA's ability to respond to dynamic market conditions.

3. Appointment and dismissal of the NRA management

The rules and procedures for the appointment and dismissal of the NRA management are highly relevant to independence. The EU 2009 regulatory framework introduced an explicit requirement for transparent and clearly defined in advance grounds and procedures for the dismissal of the NRA management, including publication of a reasoned decision at the time of dismissal.

With the exception of Iceland, the management structure of the NRAs in the monitored countries is organised as a collegial body which is typically called a governing board, a council or a commission and is composed of five to seven members. Iceland is the only country where the NRA is headed by a single managing director who oversees all regulatory, management, and administrative activities of the regulatory authority.

In the majority of the countries where the NRAs are headed by collegiate bodies the organisational structures typically also includes an executive director who handles the day-to-day management and administrative functions of the regulator. In Albania, Kosovo and Turkey, there is no separate executive director's position, and this function is assigned to the chairperson of the managing collegial body.

Country	Management	Appointment by	Term in office	Reappointment
HR	 / 	Parliament following Government proposal	5 years (4 years for Director)	Unlimited
IS		Government	5 years	Unlimited
MK	 / 	Parliament	5 years	Two terms
ME	 / 	Parliament following Government proposal	5 years (4 years for Director)	Two terms
RS	 / 	Parliament following Government proposal	5 years	Two terms (unlimited for Director)
TR		Council of Ministers, with final approval by President	5 years	Unlimited
AL		Parliament following Government proposal	5 years	Two terms
BA	 / 	Parliament following Government proposal (Director by government)	4 years	Two terms
XK		Parliament following Government proposal	5 years	Two terms

Table E.2 – NRA management

The appointment procedures for the NRA management also vary from country to country with the appointment: (i) by parliament only (Macedonia), (ii) by parliament following a government proposal (Albania, Croatia, Bosnia & Herzegovina, Montenegro, Serbia, Kosovo), or (iii) by the government only (Iceland).

In Turkey, following a nomination procedure involving industry, consumer bodies and the relevant ministry, 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, the appointment is usually done by the NRA collegial body, with the exception of Bosnia & Herzegovina which requests the approval of the Council of Ministers.

The office term of the board and the executive director is generally four to five years with the possibility of one renewal, with the exception of Croatia, Iceland and Turkey where there is no restrictions on reappointment. In Serbia, the possibility of reappointment without limitations is only foreseen for the director of the NRA.

Grounds for discharge and dismissal are rather similar in all monitored countries, mostly listing the following specific 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.

In addition to common provisions on dismissal for individual persons, national legislation in Macedonia and Montenegro provides for a possibility of collective dismissal of the NRA management under specific circumstances. In Macedonia, the NRA's five-member commission could be dismissed before the expiry of their term as a result of the failure to submit the annual report or the annual activity plan of the NRA to the National Assembly. In Montenegro, a collective dismissal of the NRA's five-member council and the executive

director is foreseen in the case of the disapproval of the NRA's financial report by Parliament. This provision has been challenged before the Constitutional Court, which has not yet ruled on the issue.

In Croatia, following an amendment to the Law on Electronic Communications reducing the number of the NRA council members from seven to five, the entire council of HAKOM was dismissed and a new five-member council was appointed on February 22, 2013.

Bosnia & Herzegovina approved in December 2012 amendments to the Law on Communications that introduce a complex three-step nomination procedure for the members of the NRA council, involving (i) an initial selection of 14 candidates by a parliamentary ad hoc commission, (ii) a proposal by the Council of Ministers for the seven-member board on the basis of the initially shortlisted candidates, and (iii) the final approval by parliament. In the presence of persistent political divisions within the Bosnian government, it remains, however, questionable whether these more complex procedures would help to resolve the current situation where the central government institutions have been unable to agree upon a new appointment of the NRA management after the office terms of the executive director and the NRA council members expired in 2007 and in early 2009, respectively.

4. NRA budget and sources of financing

The EU regulatory framework explicitly recognises that an essential condition for guaranteeing NRAs' independence is the adequacy of their financial and human resources, to enable them to carry out the tasks assigned to them. The financial resources available to the NRA and its ability to attract and retain suitably qualified staff are particularly important aspects in assessing the capacity of the NRA to operate effectively. Furthermore, Article 3.3a of the Framework Directive contains an additional requirement to ensure that NRAs have own separate annual budgets.

The requirements for NRA's financial autonomy are counterbalanced by Article 12 of the Authorisation Directive that 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.

In most of the monitored countries, the current institutional frameworks fall short of ensuring an adequate level of NRAs' financial autonomy in accordance with the requirements of the EU 2009 framework. Furthermore, even in the countries where until recently NRAs had been granted a relatively high degree of financial independence, there has been a worrying trend to adopt measures restricting NRAs' control over their budgets and allocation of available funds, as well as the ability to decide on the salary level of their staff. Such measures typically have been triggered by economic conditions and overall pressure to implement cost savings in public administration.

Only the regulators in Croatia and Macedonia currently maintain relative budgetary independence and are allowed to transfer surplus funds to their next year's budget. These funds could be further allocated by the NRAs to the development of electronic communications and information society services in compliance with the state aid rules.

In Iceland, following the economic breakdown in 2008, the NRA has been required to reserve 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 amounted to 13.5% of all fees collected by PTA. From 2013, the regulator should be able to use these funds provided that this has been explicitly approved in its budget.

In Serbia, amendments to the budget system law adopted in September 2012 restrict the NRA's ability to decide independently on the level of its administrative charges introducing a requirement for such charges to be defined in a separate law adopted on proposal of the ministry of finance. At the same time, RATEL was also required to reduce the salaries of its employees to the level of civil servants. Whereas the Law on Electronic Communications provides that any surplus funds collected by RATEL should be transferred to the state budget for further allocation to the development of the electronic communications and information society sector, the Law on Cinematography adopted in December 2011 also requires the NRA to transfer 10% of its gross revenue to the National Film Centre, a body in charge of

promoting domestic film production. The cumulative effect of these measures raises further concerns about RATEL’s financial independence.

In Montenegro, following amendments to the Law on Electronic Communications adopted on January 29, 2013, the NRA is no longer allowed to allocate any surplus of collected funds to its next year’s budget, but instead has to transfer it to the state budget. At the same time, the NRA was also required to reduce the salaries of its top management and implement reductions to its previously approved budget for 2013.

In Kosovo, the NRA, ARKEP, has no independent budget and is funded from the state budget. All administrative charges collected by ARKEP are transferred directly to the state budget.

As a general rule, the annual financial plans 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 figure below shows the NRAs’ operational budget in 2011 in relation to the size of the regulated electronic communications markets.



Figure E.2 – NRA operational expenses as % of electronic communications market revenue, 2011

The main sources of NRA funding vary. In 2011, spectrum usage fees were the main source of financing of the NRAs in Albania (90%), Turkey (84%), Macedonia (74%) and Kosovo (69%). Annual fees paid by licensed operators 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 and Montenegro are mainly composed of annual revenue-based and spectrum usage fees. In Serbia, the NRA funding is balanced among several different revenue sources.

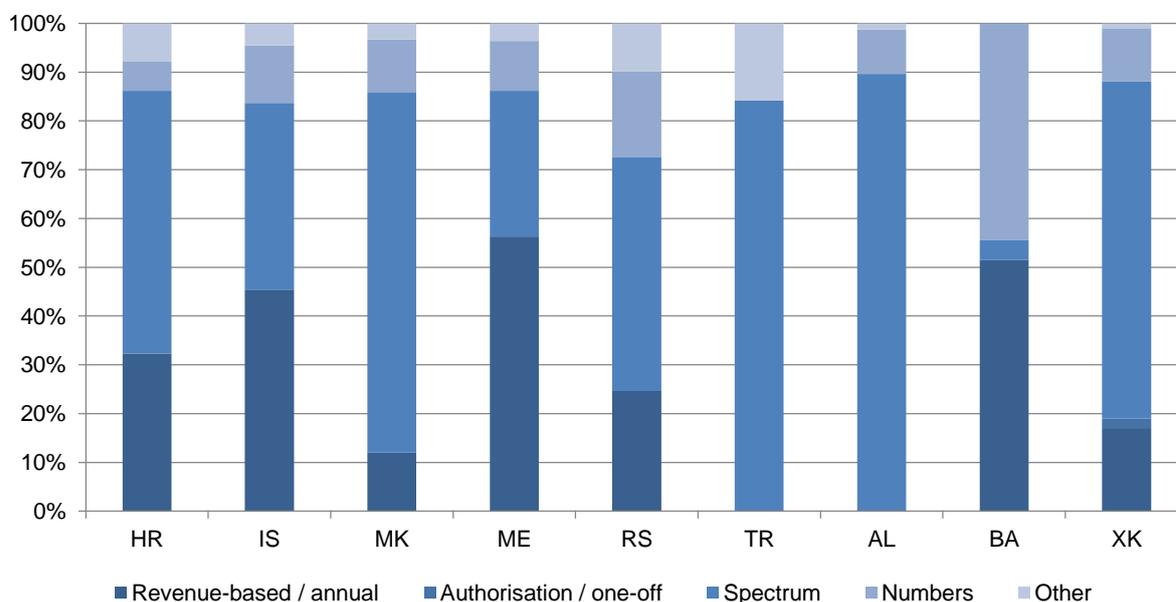


Figure E.3 – NRA funding sources in 2011

5. NRA staffing

The total number of the NRA staff ranges from a team of 27 in Iceland to 763 in Turkey, as shown in the figure below. During 2012, some staff increases have been reported by Macedonia and Bosnia & Herzegovina,

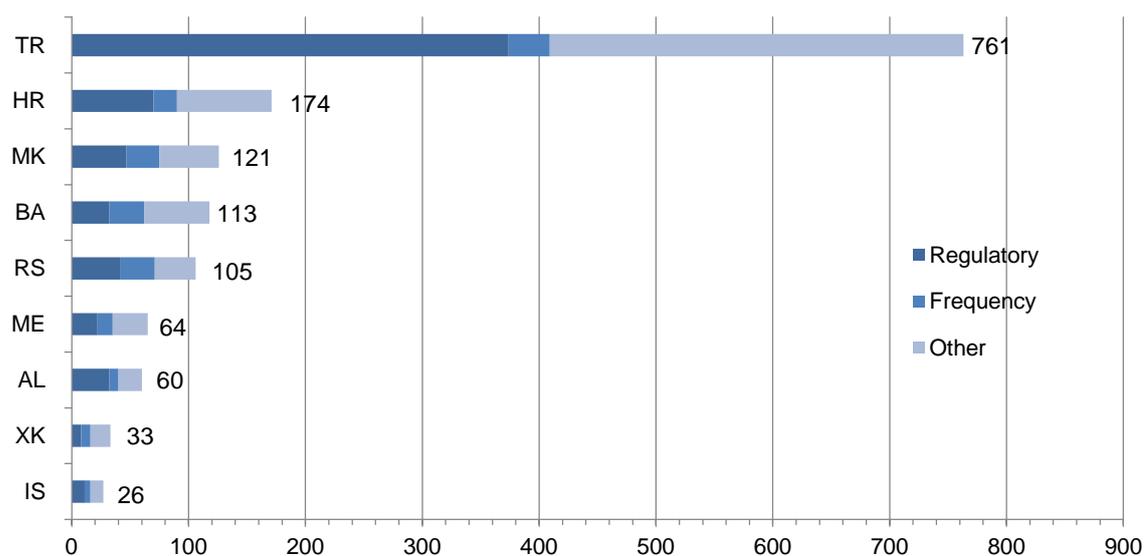


Figure E.4 – NRA organisation: total staff and regulatory and frequency experts

The distribution of the number of staff handling electronic communications regulatory tasks and frequency monitoring tasks also varies. Kosovo reported the lowest number of eight regulatory experts, raising concerns about a lack of competent resources to ensure implementation and enforcement of the regulatory framework. In Iceland, the number of regulatory experts is 11, whereas in Turkey it is as many as 374. In the remaining countries, the number of NRA regulatory experts ranges from 22 in Montenegro to 70 in Croatia.

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, Kosovo, Turkey and since October 2012 also in Serbia, the salaries of the NRA staff are linked to the salary levels of civil service positions.

6. NRA accountability

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

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 policy objectives governing the regulator; (ii) specific requirements for reporting and review of the NRA's 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, has been increasing parliamentary involvement in the approval of the NRA's plans and the review of its performance.

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

In Macedonia, Montenegro, Albania and Kosovo, parliament plays the central role in the approval of the NRA's activity plans and financial plans, as well as in the review of the annual

reports. In Montenegro, parliamentary approval of the NRA's budget replaced the previous system of 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 Turkey, parliament approves the NRA budget.

In Serbia, the NRA's financial plan is subject to government approval, whereas the annual report on the NRA activities is submitted to parliament.

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

There is no credible independence unless the NRA has the necessary enforcement powers to carry out its tasks. The NRAs bear the primary responsibility of ensuring compliance with the obligations imposed on SMP operators after carrying out a market analysis procedure. To that effect, the NRAs should have specific investigatory and sanctioning powers.

In order to ensure effective compliance of the undertakings with regulatory obligations, the NRA's 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 misconduct. Moreover, the threat of sanctions should also be sufficiently real to deter SMP operators from failing to comply with their regulatory obligations.

Country	Power to impose fines	Maximum amount
HR	Directly	5% annual gross revenue
IS	Limited (linked to enforcement of specific obligations)	~ €3,000 per day
MK	Referral to court	10% annual gross revenue
ME	Referral to court	€16,500 (300 minimum wages)
RS	Referral to court	~ €20,000
TR	Directly	3% annual gross revenue
AL	Directly	10% annual gross revenue
BA	Directly	€76,000 - €153,000
XK	Directly	7% annual gross revenue

Table E.3 – NRA powers to impose fines

Only in five countries: Croatia, Turkey, Albania, Bosnia & Herzegovina and Kosovo, the NRAs have the power to impose fines directly. In Croatia, the possibility for the NRA to impose fines directly was introduced with the amendments to the Law on Electronic Communications adopted in 2011 that transferred the inspection and enforcement tasks from the ministry to the NRA. Now the fines for non-compliance with the legislation and regulatory obligations could be either imposed directly by the NRAs' inspectors carrying monitoring tasks.

In Macedonia, Montenegro and Serbia, the NRAs are required to initiate a misdemeanour procedure before the relevant court in order to impose a fine. In Iceland, the NRA's power to impose fines is limited to enforcement of specific obligations (i.e. no possibility to impose financial sanctions for general non-compliance with the law).

In five countries, the maximum amount of any fine is set as a percentage of the total annual turnover, with the level varying from 3% to 10%: Turkey (3%), Croatia (5%), Kosovo (7%), Macedonia and Albania (both, 10%). In Montenegro, Serbia and Bosnia & Herzegovina the maximum fine is set as a specific monetary amount. In Iceland, there is a maximum amount of €3,000 that can be imposed on a daily basis but there is no maximum limit to the total amount of fine.

In 2012, financial penalties have been applied in practice by regulators in Croatia, Montenegro, Turkey, Albania, Bosnia & Herzegovina and Kosovo.

8. Resolution of disputes between undertakings

Article 20 of the Framework Directive establishes a requirement for 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 for certain special circumstances.

In the monitored countries, the deadline for the NRA to resolve a dispute varies from one to four months. Four countries envisage particularly short deadline of 30 days for dispute resolution: Albania, Montenegro and Kosovo, although this deadline can be extended in exceptional circumstances.

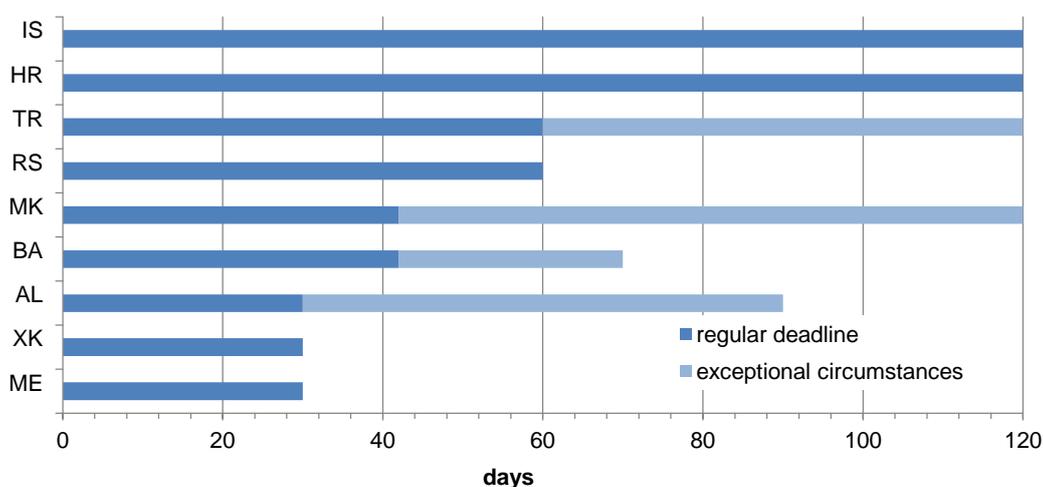


Figure E.5 – Deadlines for resolution of disputes between undertakings

Some countries specify a minimum period of unsuccessful negotiation from 45 days up to 60 days before the dispute can be passed to the NRA.

All countries, with the exception of Bosnia & Herzegovina, have an obligation for the NRAs to publish their decisions on disputes.

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 requirement of independence for the appeal body, similar to that existing for the NRA itself. The article also establishes several requirements for the appeal mechanism:

- The appeal body may be a court or a non-judicial body. In the latter case, the second level of appeal must be a court or a tribunal.

- An appeal of the NRA's 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's decisions are final and the first level of appeal 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's decisions in the first instance are appealed to the Ministry of Information Society and Telecommunications. In Iceland, the NRA's decisions are first 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 the independence of the appeal body. In Montenegro, however, the new draft law on electronic communications proposes to make EKIP decisions final in the administrative procedure with administrative court as the first appeal instance.

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 all countries, except Macedonia, the appeal body is able to consider the merits of the case. In Macedonia the court is limited in the appeal process to consideration of the correct application of the law and administrative procedures. Also, all countries, except Macedonia, 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 level 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 years were reported in most countries, but some improvement has been observed in Croatia and Serbia.

In countries where the first level of appeal 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 appeals within 30 days, with this limit being 60 days in Bosnia & Herzegovina. 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 an appeal is eight weeks.

10. NRA transparency and participation

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 with 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 consultations on specific decisions. The average period for comments is 30 days, with a maximum of up to two months in Croatia and Montenegro and a minimum of 10 days in Serbia.

It has not yet become common practice for the NRAs to publish a summary of the received responses to the consultation along with their reasoned opinion. Only regulators in Croatia, Macedonia, Montenegro and Serbia publish the summary of the public consultation responses as part of their regular procedures.

In all countries it is a regular practice for NRAs to publish 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 intermediate phase in the transition from a regulated monopoly to normal competition, governed only by general competition law. Under this theory, 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 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.

As a practical step towards convergence of competition law and sector specific regulation, 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 practice, 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. Several major telecom-related cases had been investigated in 2011-2012 by NCAs in Croatia, Iceland, Turkey and Albania.

In Iceland, the incumbent operator Síminn was fined €2.26m after the NCA concluded in April 2012 that the operator had abused its dominant position in the mobile communications market. Following a number of complaints received by the Icelandic NCA, several other investigations were opened involving Síminn and associated companies within Skipti group. On March 26, 2013 a regulatory settlement³ was reached between Skipti group and the Icelandic Competition Authority. As a result of this settlement, Skipti has made commitments to implement substantial organisational and structural changes aimed at achieving stronger separation of the wholesale subsidiary Míla from Síminn and other group companies and also ensuring that Síminn's competitors would have equal access to wholesale inputs sold by Míla. Skipti has also accepted to pay €1.9m in settlement to the government.

F. 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. By now all monitored countries have liberalised electronic communications networks and services.

³ <http://www.samkeppni.is/urlausnir/akvardanir/nr/2114>

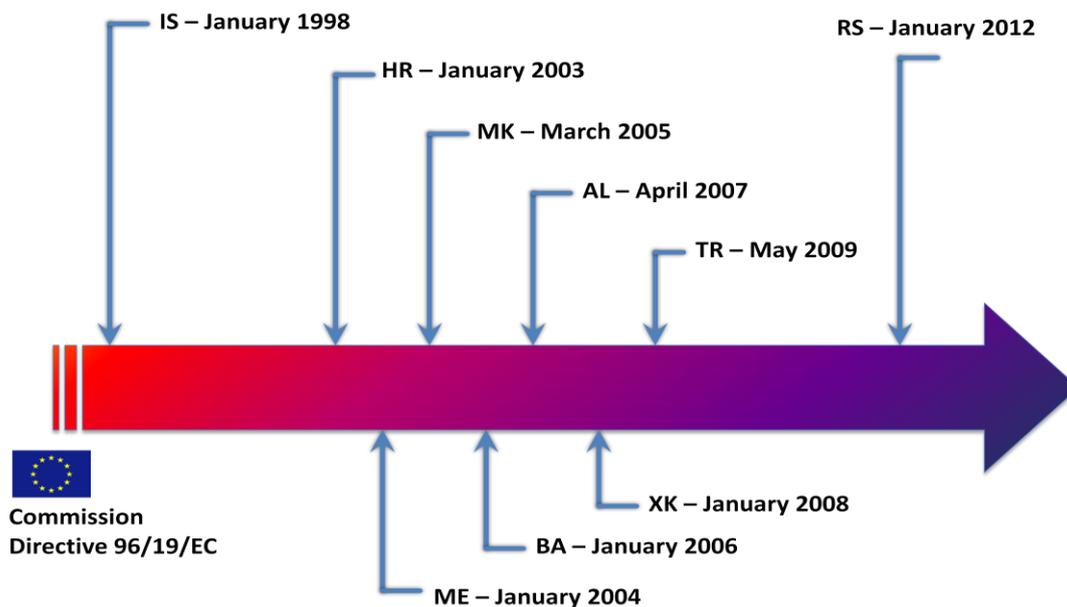


Figure F.1 – Full liberalisation of telecommunications markets

2. Authorisation regime for electronic communications services

The EU 2003 regulatory framework had 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.

Seven of the monitored countries have implemented a general authorisation regime for all categories of electronic communications services: Croatia, Iceland, Macedonia, Montenegro, Serbia, Turkey and Albania. In Kosovo, general authorisation with notification to the NRA is foreseen under the new Law on Electronic Communications adopted in November 2012. The implementing regulation on general authorisation regime is expected to be adopted during Q2 2013.

In Bosnia & Herzegovina, the authorisation regime continues to be based on individual licences and no decision has been taken to introduce the general authorisation regime.

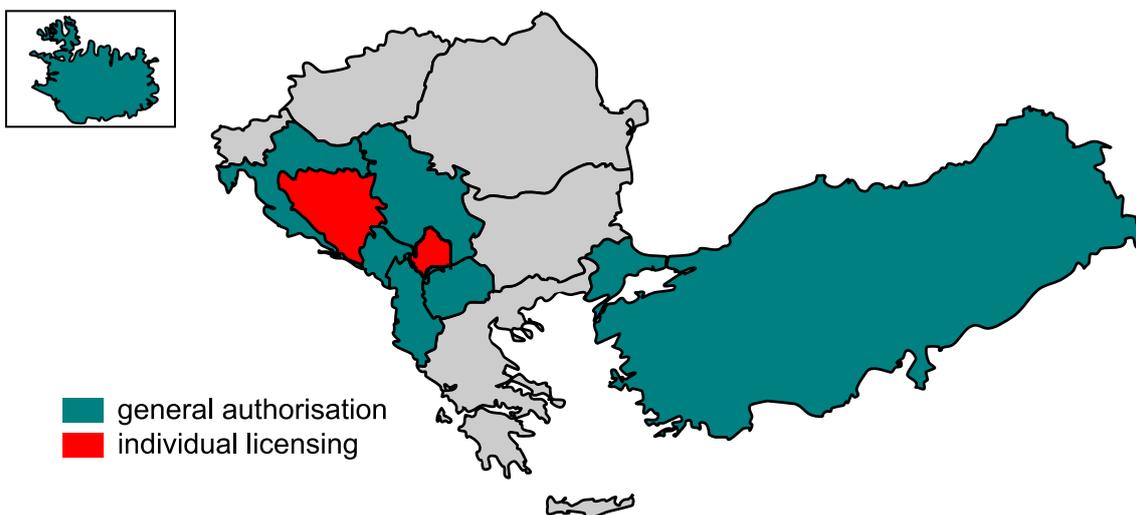


Figure F.2 – Authorisation regime for electronic communications services

In Turkey, authorisation and concession agreements issued before the entry into force of the Electronic Communications Law of November 2008 will, however, remain in force until their expiry (due in 2023 for GSM services, in 2029 for 3G services and in 2026 for Türk Telekom). Currently, Turksat (the satellite provider) operates under an authorisation agreement, Türk Telekom and the three mobile providers operate under concession agreements. Specific obligations and conditions stemming from the respective authorisation and concession agreements also continue to apply to the authorisation holders. These conditions in particular include retail price control regulations and universal service obligations.

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 applies from January 1, 2012.

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	0.25%
IS	2003	0	0.38%
MK	2005	0	0.07-0.35% (max €250,000)
ME	2008	€1,000	1.06% (max 1.5%)
RS	2010-2012	0	0.08-0.5%
TR	2009	0	0.35%
AL	2008	0	0 (max 0.5%)
BA	X	€255 - €511	€511 - €255,000
XK	2013 (to be implemented)	to be decided	0.30%

Table F.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 and Montenegro. In Macedonia, in addition to the general authorisation with a notification to the NRA, cable TV operators are required to register the provision of broadcasting retransmission services with the media regulator.

In Serbia, in addition to the general authorisation with a notification to the NRA, an approval for content is required from the media regulator. In Turkey and Albania, in addition to the general authorisation with a notification to the NRA, a separate licence has to be obtained from the media regulator. A general authorisation is foreseen by the new Law on Audio Visual Media Services adopted in March 2013. Furthermore, in Albania cable TV operators have been 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. 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, Serbia and Kosovo. In Turkey, a new regulation on rights of way for fixed and mobile communications infrastructure and networks was adopted by the Ministry of Transport, Maritime Affairs and Communications in December 2012. The regulation defines the rules and procedures for granting access to rights of way and facility sharing, sets out maximum fees for access to public properties and provides a basis for establishing a register of electronic communications infrastructure (EHABS).

In Albania, a new legislation on the rights of way for electronic communications infrastructure has been drafted since 2011, but currently is still awaiting parliamentary approval.

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. In the majority of the monitored countries decentralised and bureaucratic procedures for granting rights of way by local authorities remain a major obstacle for new market entry and infrastructure deployment.

G. 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 spectrum. Frequencies for the military sector are normally decided outside this framework.

In Iceland, Macedonia and Bosnia & Herzegovina, NRAs are responsible for the full scope of frequency management functions, including frequency allocation and frequency assignments for telecommunications and broadcasting. In Macedonia, the NRA is however required to obtain a consent from the government before adopting the national frequency allocation plan.

In Turkey, the NRA is responsible for frequency allocation and for frequency assignment for electronic communications, while frequency assignment for broadcasting is carried out by the broadcasting authority. In Croatia, Montenegro, Serbia and Kosovo, 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, 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. The Albanian NRA is responsible for frequency assignments for telecommunications and the broadcasting authority for frequency assignments to broadcasters.

2. 2G/3G spectrum licences issued to mobile operators

Seven of the monitored countries have three mobile network operators: Croatia, Macedonia, Montenegro, Serbia, Turkey and Bosnia & Herzegovina. In Macedonia, only two of the three 2G operators have been assigned 3G spectrum, while in other six countries all mobile operators have been assigned both 2G and 3G spectrum.

In Iceland and Albania, there are four mobile network operators. In Iceland, three operators have 2G/3G spectrum assignments and one smaller operator only 2G spectrum. In Albania, three of the four mobile operators have been awarded both 2G and 3G spectrum. In Kosovo, there are two 2G mobile operators and no 3G spectrum has been awarded yet.

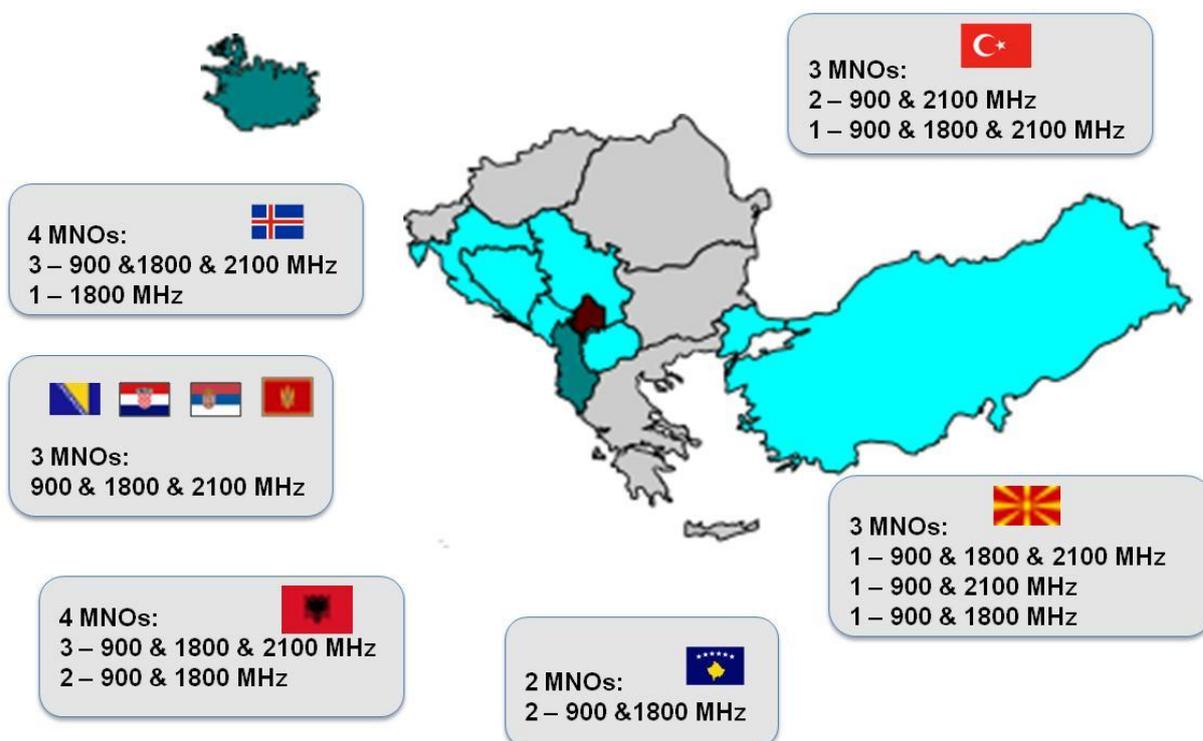


Figure G.1 – Spectrum assignments in 900 MHz, 1800 MHz and 2100 MHz bands

The distribution of spectrum assignments demonstrates some asymmetries, typically between established operators and new entrants. In practice, these asymmetries mean that mobile operators with spectrum assignments in the higher 1800 MHz band often face higher network deployment cost.

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 compared with 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 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 to the three existing ones. In practice, no new entrant was interested and one of the existing operators, Telenor, was announced the winner with a €1.65m bid. According to the rules of the tender procedure, it had to offer two thirds of the won spectrum in all three bands to two other operators. Only one of them, Crnogorski Telekom, accepted one third of the awarded spectrum, paying to Telenor one third of the bid price. Since the third operator MTEL was not interested, Telenor kept two thirds of the awarded spectrum.

In Macedonia, ONE does not have any spectrum in the 1800 MHz band, while the late entrant VIP operator did not acquire any 3G spectrum in the 2100 MHz band. Furthermore, in the beginning of 2012, because of the high frequency usage fees, ONE decided to return to the regulator some part of its still unused spectrum in the 2100 band. In August 2012, VIP was awarded additional spectrum in the 1800 MHz, as the only bidder in a comparative selection procedure.

In Iceland, the late entrant operator, Nova, was awarded a smaller spectrum assignment in the 900 MHz band than the two largest operators, Síminn and Fjarskipti. The fourth and the smallest Icelandic operator, Alterna (IMC) only had a very small spectrum assignment in the 1800 MHz and no spectrum in either 900 MHz or 2100 MHz bands. Some of these asymmetries were addressed by the NRA in the refarming process of 2G spectrum, when additional spectrum in the 1800 MHz was issued to Nova and IMC. Further five blocks of 2x5 MHz in the 1800 MHz band were put for auction together with the 800 MHz spectrum in February 2013. According to the results announced by PTA on March 14, 2013, three blocks in the 1800 MHz were won by Síminn, one by Fjarskipti and one by Nova.

In Albania, all four mobile operators have similar spectrum assignments in the 900 MHz and 1800 MHz bands, but three of them, Vodafone, AMC and Eagle Mobile have been awarded spectrum in the 2100 MHz. Eagle Mobile acquired 3G spectrum in December 2012, following a tender procedure for two additional licences in the 2100 MHz band. The remaining one spectrum licence in the 2100 MHz remains was not awarded, as the bid submitted by the fourth operator, Plus Communications was below the minimum reserve price.

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

In October 2009, Council Directive 87/372/EEC (the 'GSM Directive') was amended, removing the restriction that reserved the 900 MHz spectrum exclusively for GSM services. The Commission has also approved 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 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 the 2x5 MHz blocks required for deployment of UMTS and LTE.

Two of the monitored countries have allowed both UMTS and LTE services along with GSM in the 900 MHz and 1800 MHz bands: Croatia and Montenegro, while three others - Iceland, Macedonia and Bosnia & Herzegovina – have so far only allowed UMTS. Two Croatian mobile operators, VIPnet and Hrvatski Telekom, were first in the SEE region to launch commercial LTE services in the 1800 MHz band in March 2012. In Montenegro, LTE 1800 trials have been conducted by Telenor.

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, Fjarskipti and Nova. Further amendments to the spectrum assignments in the 900 MHz and 1800 MHz were undertaken in the context of the renewal of mobile licences in February 2012. As a result, spectrum assignments were redistributed and additional spectrum in the 1800 MHz band was assigned to Nova and IMC in order to allow contiguous 2x5 MHz spectrum blocks. LTE services in the 1800 MHz band have been allowed following the auction of 800 MHz and 1800 MHz spectrum completed in March 2013.

In Serbia, the new radio frequency allocation plan adopted on October 2012 allows the usage of the 900 MHz and 1800 MHz bands for electronic communications networks on technology neutral basis. The licences issued to mobile operators however still have to be amended. Also in Kosovo, the frequency allocation plan has been modified to allow the use of 900 MHz and 1800 MHz bands on technology neutral basis but the necessary implementing regulations still need to be prepared by ARKEP.

In Turkey, ICTA presented a proposal to the Ministry of Transport, Maritime Affairs and Communications on refarming of the 900/1800 MHz bands in September 2011. According to this proposal, the deployment of UMTS services in these bands would be allowed after

amending and redistributing the current spectrum assignments among operators. As part of this process, it is planned to auction 2x8.6 MHz of spectrum in the E-GSM band (880-890 MHz paired with 925-935 MHz) to operators that currently hold less than 2x10 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, Macedonia and Montenegro. All of the regional licences issued in Croatia have either expired or have been returned to the regulator, and in December 2011 a new single national licence was issued to an alternative operator. In Macedonia, out of two initially issued national and 18 regional licences, there are only six valid regional licences covering the whole national territory issued to one licensee. 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 the provision of broadband wireless access services have been issued so far. In Turkey, however, Türk Telekom was allowed to use the 3.5 GHz on trial basis in rural areas within the scope of its universal service obligation.

In Bosnia & Herzegovina 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 band that will be freed up with the switchover from analogue to digital terrestrial television broadcasting. The Geneva 2006 regional agreement sets June 17, 2015 as the date after which countries in Europe, Middle East and Africa may use these frequencies for digital services, without being required to protect the analogue services of neighbouring countries against interference. Therefore this date is generally viewed as an internationally mandated analogue switch-off date, at least along national borders.⁴

The European Commission called on all EU member states to have completed their analogue terrestrial broadcasting switch-off by January 1, 2012. In March 2012, the first EU-wide five-year Radio Spectrum Policy Programme (RSPP) was agreed, including a package of measures intended to facilitate investment in fast and ultra-fast broadband networks. The main objective is to make more spectrum available for wireless broadband services. The RSPP sets a deadline of January 2013 for all member states to carry out the authorisation process to allow the use of the 800 MHz band for wireless broadband, with derogations until the end of 2015 in exceptional cases.

Only Croatia and Iceland had completed their analogue terrestrial switchover by January 1, 2012. Macedonia plans to have terminated analogue transmissions by June 1, 2013.

In Bosnia & Herzegovina, a new switch-off date of December 1, 2014 was approved on May 10, 2012, instead of the initially envisaged December 1, 2011 that was not achievable in practice.

In Serbia, the initial date of April 4, 2012 was postponed by the government until as late as June 17, 2015. Also in Montenegro, the earlier adopted December 31, 2012 switch-off date was postponed to June 17, 2015.

⁴ http://www.itu.int/newsroom/press_releases/2006/11.html

Turkey has plans to complete switchover by March 2015.

In Albania, the new national strategy for analogue switch-off adopted in May 2012 envisages a region-by-region approach, starting from April 2013 and ending in January 2015, with the ultimate deadline of June 17, 2015. At the same time, Albania is reported to operate already now well developed DVB-T and DVB-H networks with national coverage.⁵ The networks, however, operate outside of the licensing framework for broadcast services adopted by parliament in May 2007.

June 17, 2015 is also being considered by Kosovo, although no final decision has been taken yet.

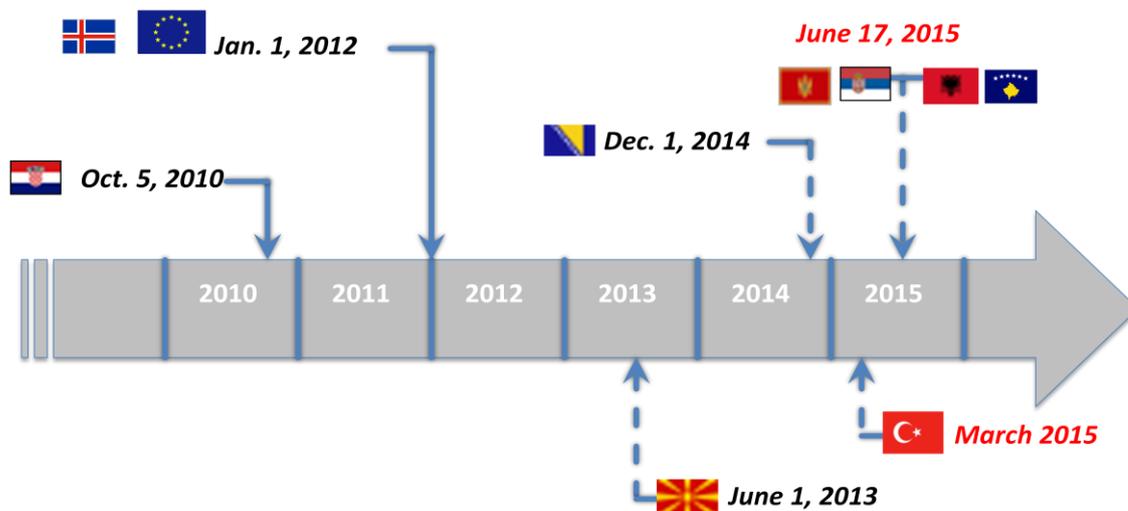


Figure G.2 – Analogue switch-off schedule in the Enlargement countries

At this stage, only two countries have awarded the digital dividend spectrum in the 800 MHz for wireless broadband: Iceland and Croatia. In Macedonia, tender procedures held in 2012 to award a single block of 2x10 MHz were unsuccessful.

In Croatia, the award procedure for the 800 MHz spectrum was completed in October 2012. Two licences of 2x10 MHz were awarded to Hrvatski Telekom and VIPnet, while a third spectrum block of 2x10 MHz has remained unassigned.

In Iceland the auction for one block of 2x10 MHz and four blocks of 2x5 MHz in the 800 MHz band, jointly with the available spectrum in the 1800 MHz band, was launched in February 2013. According to the auction results announced by PTA on March 14, 2013, the largest 2x10 MHz block together with one of the 2x5 MHz blocks was won by a new entrant, 365 Media (owned by the country's largest media group). The remaining spectrum was won by two existing operators: Fjarskipti won two blocks of 2x5 MHz and Nova won one 2x5 MHz block. The licences are expected to be awarded by mid-April 2013. The licence conditions include extensive network coverage obligations and a requirement to offer mobile broadband services with minimum speeds of 2 Mbps by 2014, 10 Mbps by 2016 and 30 Mbps by 2020.

H. 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).

⁵ <http://www.digitag.org/WebLetters/2008/External-Aug2008.html>

So far, seven countries have adopted regulations according to the EU guidelines and competition law principles and completed at least one round of market analysis: Croatia, Iceland, Montenegro, Macedonia, 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 Bosnia & Herzegovina still has a primary law based on the EU 1998 regulatory framework, the NRA adopted a Rule on analysis of electronic communications markets in October 2011 that provides legal basis for regular analyses of electronic communications markets and imposition of *ex ante* regulatory obligations on operators with SMP.

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, Macedonia, Turkey, Albania and Kosovo have so far relied on the 2003 European Commission recommendation in defining relevant markets, whereas the NRAs in Croatia, Montenegro, Bosnia & Herzegovina and Serbia have applied the 2007 version of the recommendation.

The frequency of the market analyses mandated in the legislation varies between the countries:

- once every year – in Bosnia & Herzegovina;
- every two years – in Albania;
- every three years – in Croatia, Iceland, Serbia, Turkey and Kosovo; and
- left to the discretion of the NRA – in Macedonia 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 in July 2009 its first round analysis of five markets of the 2007 Commission recommendation on relevant markets – wholesale fixed call origination, wholesale fixed call termination, wholesale infrastructure access and wholesale broadband access (markets 2-5/2007) and wholesale mobile call termination (market 7/2007). Regulatory obligations were imposed on SMP operators in each of these markets.

In 2011, HAKOM carried out its analysis of further markets and imposed regulatory obligations on the incumbent operator, Hrvatski Telekom, that was found to have SMP in the retail markets for fixed access (market 1/2007), and local and national calls (markets 3 and 5/2003). At the same time, HAKOM deregulated retail markets for international calls (markets 4 and 6/2003) after finding them no longer fulfilling the three criteria test. In November 2011, HAKOM completed its analysis of wholesale terminating segments of leased lines (market 6/2007) and trunk segments of leased lines (market 14/2003). In both markets Hrvatski Telekom was found to have SMP. However, in the market for trunk segments of leased lines the regulation only applies to the non-competitive routes. HAKOM still plans to carry out the analysis of the retail market for minimum set of leased lines (market 7/2003).

In March 2012, HAKOM adopted its final measures on the market for retail broadband internet access services and a closely related market for transmission of pay TV services. The scope of regulatory obligations imposed on Hrvatski Telekom and its subsidiary Iskon Internet includes retail price control, non-discrimination and prohibition of unjustified bundling that would apply to both retail broadband access and IPTV services.

Recently, HAKOM has launched its second round market analysis. During January - March 2013, it has consulted on draft analysis of the three markets: wholesale mobile call termination (market 7/2007) and wholesale fixed call origination and termination (markets 2-3/2007). A consultation on the draft analysis of wholesale infrastructure access and wholesale broadband access (markets 4-5/2007) is planned to be launched in April 2013.

b) Iceland

The Icelandic regulator, PTA, completed in its first round analysis of the markets defined in line with the 2003 Commission recommendation in 2008. 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.

The second round 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. This market was again analysed in 2011 and as a result of the final measures adopted in January 2012, an MVNO was designated as having SMP in addition to the four mobile network operators. In March 2012, PTA completed its second round analysis of the wholesale market for mobile access and call origination (market 15/2003) finding this market as no longer meeting the three criteria test and removing from Síminn all previously imposed regulatory obligations.

In December 2012, PTA completed its second round analysis of the wholesale markets for fixed call origination (market 2/2007), fixed call termination (market 3/2007) and fixed transit services (market 100/2003). In the fixed call termination market, PTA has designated as having SMP three alternative operators, in addition to previously designated Síminn and Fjarskipti, and imposed fully symmetrical price control obligations based on benchmarking to countries with “pure LRIC”. The wholesale market for fixed transit services was deregulated as no longer satisfying the three criteria test.

In January 2013, PTA completed consultations on its draft second round analysis of retail fixed access and call services (markets 1-6/2003).

c) Macedonia

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 broadband access (markets 11 and 12/2003), and wholesale mobile access and call origination (market 15/2003). Also in 2010, 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 where all three mobile operators were designated as having SMP and imposed a full set of regulatory obligations including price control based on LRIC methodology.

In May 2012, AEC finalised its third round analysis of wholesale mobile call termination (market 7/2007), introducing new price control obligations that envisage fully symmetrical mobile termination rates for all three operators from September 1, 2013 and implementation of pure LRIC methodology from September 1, 2014. In October 2012 AEC completed its second round analysis of wholesale infrastructure and broadband access (markets 4-5/2007).

d) Montenegro

The Montenegrin regulator, EKIP, completed in November 2010 its first round of market analysis defined according to the 2007 Commission 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 and in December 2011 it adopted final measures on the following markets that were found relevant to *ex ante* regulation: retail fixed local and national calls (markets 3 and 5/2003), retail fixed international calls (markets 4 and 6/2003), wholesale 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).

Currently, EKIP is working on an assessment whether two additional markets satisfy the criteria test for *ex ante* regulation: the retail broadband internet access services and retail mobile telephony services. In 2013, the regulator also plans to start its work on the second round analysis of the relevant markets.

e) Serbia

In November 2011, the Serbian regulator, RATEL, adopted final decisions on its first round of market analyses. The list of analysed markets includes the seven markets of the 2007 Commission recommendation and two 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.

In October 2012, on operators' request, RATEL reassessed its analysis of two markets: retail distribution of media content and wholesale broadband access. In December 2012 RATEL adopted final decisions confirming its initial conclusions for both markets.

f) Turkey

The Turkish regulator, ICTA, has completed during December 2012 – March 2013 its third round analysis of the following markets: wholesale mobile call termination (market 16/2003), wholesale mobile access and call origination (market 15/2003), wholesale fixed call origination, termination and transit (markets 8-10/2003) and wholesale broadband access (market 12/2003). The market for wholesale fixed transit services has been deregulated as it was found no longer satisfying the three criteria test. In all other markets, ICTA has essentially maintained the same SMP designations with some additional regulatory obligations comparing to its previous round of market analysis.

Currently, ICTA is finalising its third round analysis of the wholesale and retail leased lines markets – where it has proposed partial deregulation of trunk segments in competitive areas – and also the wholesale market for unbundled access (market 11/2003).

The validity period of the previously adopted decisions on second round analysis of retail markets for fixed access and call services (markets 1-6/2003) has been extended until December 31, 2013 and ICTA intends to complete new analysis of these markets during 2013.

g) Albania

The Albanian regulator, AKEP, has carried out two complete rounds of market analyses. The analysed markets correspond to 16 relevant markets of the 2003 Commission recommendation and an additional wholesale market for SMS termination.

In July 2012, AKEP completed the third round analysis of wholesale mobile access and call origination (market 15/2003) and mobile call termination (market 16/2003). The mobile call origination market was deregulated as AKEP concluded that it no longer satisfied the three criteria test. In mobile call termination market, AKEP designated the fourth mobile operator, Plus Communication, as having SMP and confirmed glide paths for reduction in mobile termination rates for all four mobile operators until September 2015.

h) Bosnia & Herzegovina

Until now, the Bosnian regulatory framework has been based on the 25% market share threshold for 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 RAK, the Bosnian 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.

Between January 23 and March 8, 2013, RAK consulted on its first market analysis of wholesale mobile call termination (market 7/2007).

i) Kosovo*

In December 2010, ARKEP, the NRA (previously 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.

In February 2012 ARKEP completed 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). Currently ARKEP is analysing the wholesale market for call termination on individual mobile networks (M16/2003) and the markets for retail and wholesale leased lines (markets 7, 13-14/2003).

I. Competitive safeguards

1. Competitive safeguards overview

The next sections address implementation of the competitive safeguards which constitute the basic mechanisms enabling competition in a liberalised electronic communications market. The table below provides an overview of the implementation status of competitive safeguards in the monitored countries.

	HR	IS	MK	ME	RS	TR	AL	BA	XK
Carrier selection/ pre-selection	✓	✓	✓	✓	✗	✓	✓	✓	✗
Fixed number portability	✓	✓	✓	✓	✗	✓	✓	✓	✗
Mobile number portability	✓	✓	✓	✓	✓	✓	✓	✓	✗
Fixed Reference Interconnection Offer	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reference Unbundling Offer	✓	✓	✓	✓	✓	✓	✓	✓	✗
Wholesale broadband access	✓	✓	✓	✓	✓	✓	✓	✗	✗
Wholesale line rental	✓	✓	✓	✓	✗	✓	✗	✗	✗
Mobile Reference Interconnection Offer	✓	✓	✓	✓	✓	✓	✓	✓	✗
National roaming	✓	✓	✓	✓	✓	✗	✓	✓	✗
MVNO/SP access	✓	✓	✓	✓	✗	✓	✓	✗	✓

Legend: ✓ - available/regulated ✗ - not available

Table I.1 – Implementation of competitive safeguards

2. Carrier selection and pre-selection

Carrier selection (CS) and carrier pre-selection (CPS) along with number portability in the EU were mandated already under the 1998 ONP regulatory framework. At the early stage of liberalising telecommunications market, these facilities were viewed as key facilitators of consumer choice and effective competition in a liberalised telecommunications environment.

Under the 2002 regulatory framework, CS/CPS was also still considered a key enabler of competition in the fixed telephony market. Article 19 of the Universal Service Directive 2002/22/EC provided that operators with SMP in the markets for the provision of connection to and use of the public telephone network at a fixed location had to offer CS/CPS. Unlike wholesale obligations under articles 9-13 of the Access Directive 2002/19/EC that could be discretionary imposed by the NRA, CS/CPS obligation would be triggered automatically by the SMP designation in the fixed retail markets.

In the revised 2009 regulatory framework, article 19 of the Universal Service Directive has been repealed as redundant. Recital 20 of the amending Directive in particular says the following: *"To continue to impose carrier selection and carrier pre-selection directly in Community legislation could hamper technological progress. These remedies should rather be imposed by national regulatory authorities as a result of market analysis carried out in accordance with the procedures set out in Framework Directive 2002/21/EC and through the obligations referred to in Article 12 of Access Directive 2002/19/EC."*

CS/CPS has been implemented in all monitored countries, with the exception of Serbia and Kosovo.

In Croatia, CS since its introduction in 2005 has gradually become less attractive commercially and no longer offered by any provider. CPS remains to be used, but the number of active users decreased to 217,000 in 2012 after reaching its peak of 240,000 in 2011. In Iceland, the number of active CPS users is around 4,300, a slight decrease from 4,500 in 2011.

In Macedonia, the number of CPS users has continued to increase and reached around 25,000 in 2012 from 20,500 in 2011. In Montenegro, the number of CS users has reached 3,900, reporting more than double increase from 1,500 in 2011. In Turkey, the number of CS users declined from 260,000 in 2011 to 174,000 in 2012, which is partially outweighed by the increase in CPS users: from 313,000 in 2011 to 403,000 in 2012. Bosnia & Herzegovina reported around 46,000 CS users in 2012, a slight increase from 44,000 reported in 2011.

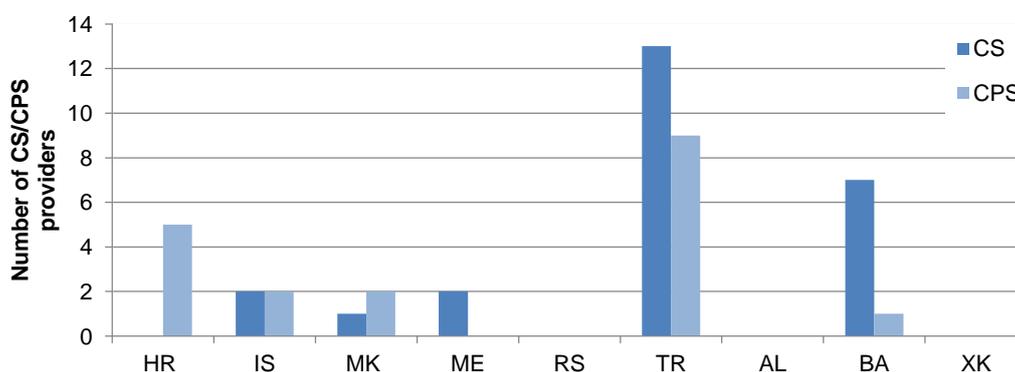


Figure I.1 – Number of providers offering CS and CPS services commercially

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 must be also available for both geographic and non-geographic numbers.

Croatia, Iceland, Macedonia, Montenegro, Turkey, Albania and Bosnia & Herzegovina have implemented number portability for both fixed and mobile networks. In September 2012, number portability became available for fixed networks in Albania, and in January 2013 for mobile networks in Bosnia & Herzegovina. In Serbia, number portability is currently only available for mobile networks while its implementation in fixed networks initially scheduled for December 2012, has been further delayed and now is expected to be fully completed in March 2014.

The table below shows further details concerning implementation of number portability, inter-operator charges (except, 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	700,000	Oct. 2006	€6.80	476,000
IS	Sep. 2000	€3.33	27,000	Oct. 2004	€3.33	45,000
MK	Sep. 2008	€3.23	95,000	Sep. 2008	€3.23	79,000
ME	Dec. 2011	-	320	Dec. 2011	-	3,100
RS	<i>March 2014</i>	€9.80	-	July 2011	€9.80	95,000
TR	Sep. 2009	€0.90	284,000	Nov. 2008	€0.90	48.5m
AL	Sep. 2012	€4.28	20	May 2011	€4.28	9,000
BA	Sep. 2011	€10.26 (end user)	1,500	Jan. 2013	€10.26 (end user)	-
XK	<i>Not decided</i>	-	-	<i>Not decided</i>	-	-

Note: implementation statistics refer to November 2012, except September 2012 for Bosnia & Herzegovina.

Table I.2 – 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 requirement for the porting of a number to be carried out within one working day. In the monitored countries, only in Iceland and since 2012, also in Bosnia & Herzegovina is the number porting required to be completed within one day, for both fixed and mobile networks.

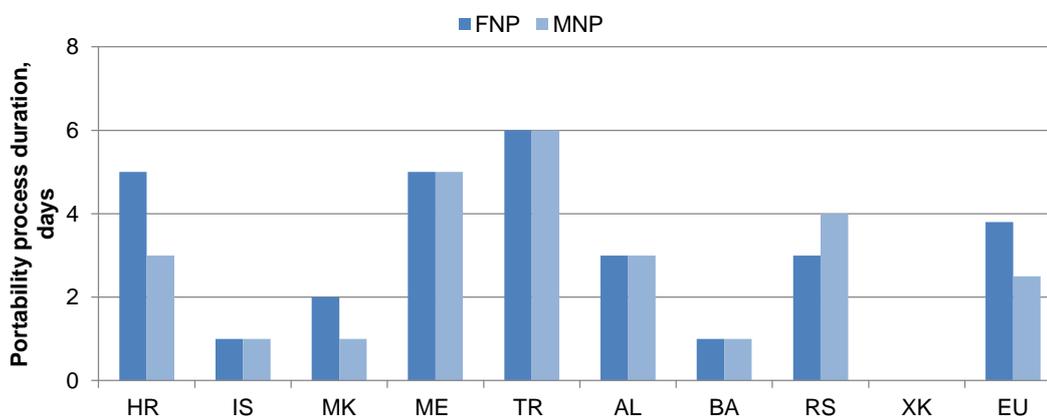


Figure I.2 – Number portability – maximum process duration allowed by regulation

4. Reference interconnection offers

One of the key factors enabling a competitive telecommunications market is 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 incumbent operators in all monitored countries. In Macedonia, Montenegro and Serbia this obligation also applies to the provision

of call termination services by major alternative operators designated as having SMP in the market for call termination on fixed networks.

In mobile networks, RIOs have been published by MNOs designated as having SMP in Croatia, Macedonia, Montenegro, Turkey, Albania, Bosnia & Herzegovina and Serbia. In Iceland, the obligation to publish RIO was removed, following the third round analysis of mobile call termination market completed in January 2012. In Kosovo, there is no requirement for mobile operators to publish RIO.

5. Wholesale unbundled access

The least replicable element in the establishment of a 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 represent over 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.

The obligation to provide unbundled access has been now imposed on the fixed incumbent operators in all monitored countries.

In Croatia, reference unbundling offer (RUO) was introduced by the incumbent operator in October 2005 and by the end of 2012 there were over 227,000 fully unbundled loops used by five alternative operators. However, 30% 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 92,000 fully unbundled loops about 70% are used by the incumbent's retail arm, Siminn. Also, out of 46,000 shared unbundled loops, about 76% are used by Siminn. Furthermore, the use of LLU has been declining as alternative operators are investing in own fibre infrastructure.

In Macedonia, LLU has been available since 2006. There is only one agreement for full LLU in place and by the end of 2011 there were around 2,800 unbundled loops (which represents a further decline from about 3,000 lines reported a year ago).

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 October 2012 there were around 1,300 fully unbundled loops and some 4,500 shared unbundled loops (on a network of around 16 million lines).

In Montenegro LLU was introduced in 2011, following the publication of the reference offer in February 2011. The first reference unbundling offers were approved by the regulator in Serbia in April 2012 and in Albania – in May 2012. There has been no practical implementation so far in any of these three countries, although one LLU agreement has been reported in Serbia.

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 and some 100 first shared loops have been reported as of first half 2012.

In Kosovo, based on ARKEP decision on SMP obligations adopted in February 2012, PTK has presented its first RUO for approval to the NRA.

6. Wholesale broadband access and resale

Wholesale bitstream access is another option that enables alternative operators to offer broadband services to customers by using a high speed access link to the customer premises installed by the incumbent operator, whereby the incumbent hands over data traffic according to an agreed standard and at a specified interconnection point.

Availability of bitstream access varies considerably across the monitored countries. Regulatory obligations to offer wholesale bitstream access have been imposed in all countries, except Bosnia & Herzegovina and Kosovo. In Croatia, Iceland, Macedonia, Montenegro, Serbia and Turkey different options for bitstream access have been available on the basis of regulated reference offers.

In Croatia, the regulated reference offer for bitstream access with handover at IP level has been available since December 2007. Since December 2011, reference offer covers both copper and FTTH networks and includes access options at optical line terminal (OLT) levels. As of first half 2012 there were six agreements in place covering over 43,000 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. There are 11 access agreements in place covering around 3,000 bitstream access lines and about 9,000 lines offered as resale.

In Macedonia, 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. In 2012 there were three agreements covering nearly 25,000 broadband lines.

In Serbia, bitstream access with handover at the IP level was initially introduced by the incumbent operator on commercial basis, but from April 2012 is also available in the form of a regulated reference offer. Currently there are 22 agreements in place covering over 135,000 lines.

An obligation to provide bitstream access with IP handover and resale was imposed on Türk Telekom as early as in 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. At the end of 2011 there were 36 resale and 17 bitstream access agreements in place, covering respectively, circa 14,000 and 700,000 broadband lines supplied 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. In Albania, the first reference offer for wholesale bitstream access was published by Albtelecom in February 2013.

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 combination with carrier pre-selection, WLR enables alternative operators to take control over the billing relationship with the end user.

WLR has been implemented in Croatia, Macedonia and Turkey. In Macedonia, the first incumbent's reference offer was approved by the NRA in March 2009. There is currently one WLR agreement in place covering around 25,000 lines. In Croatia, the first reference offer was published in July 2011 and as of end 2012 there were five WLR agreements in place covering over 123,000 lines. In Turkey, WLR reference offer was also introduced in July 2011 and as of January 2013 there are nine agreements in place covering around 478,000 lines (representing a tenfold increase since June 2012).

Regulatory obligations to provide WLR and to publish reference offers have been imposed on the incumbent operators in Iceland and Montenegro, but so far there has been no practical implementation.

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 obligations covering passive and active NGA infrastructure elements.

So far, only regulators in Croatia, Macedonia and Montenegro have addressed fibre deployments within the scope of their analyses 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 Macedonia 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 Macedonia. The obligation to provide wholesale broadband access over FTTH network has been only implemented in Croatia and since December 2011 the reference offer for bitstream access over fibre published by the Croatian incumbent operator includes OLT access option for an FTTH-based wholesale product.

In Turkey, in order to encourage investments in NGA networks, ICTA decided on October 3, 2011 to exclude fibre from market analysis for the next five years or until the percentage of fibre-based subscriptions reaches the 25% of all fixed broadband subscriptions. ICTA also requested Turk Telekom to comply with its own commitments made to ICTA in August 2010, where it pledged to provide wholesale resale and bitstream services over its fibre network on non-discriminatory terms and to notify ICTA of the tariffs for these services before they become operational.

Terms and conditions for facility sharing, including access to ducts and poles, are set out in Turk Telekom's reference offer for co-location and facility sharing offer approved by ICTA. Turk Telekom's RUO also includes a possibility for alternative operators to request access to SLU on case-by-case basis. However, there has been no practice of SLU until now.

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 non-regulated commercial terms.

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 Macedonia and Serbia, 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, Macedonia, Montenegro, Turkey and Albania.

In March 2012, the Icelandic regulator, however, decided 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 Macedonia, T-Mobile is required to provide MVNO access and national roaming and publish a reference offer. Also in Turkey, Turkcell has to provide MVNO access and its reference offer was approved in February 2013. In Montenegro, all three mobile operators have been designated as having SMP in the market for wholesale mobile access and call origination. In Albania, AMC and Vodafone Albania were required to offer access and call origination on cost-oriented terms to calling cards operators and providers of 0800 services, as well as national roaming and MVNO access on commercial terms. However, in its third round analysis of market 15/2003 concluded in July 2012, AKEP decided to deregulate this market as no longer fulfilling the three criteria test.

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, MVNO operations can be launched on the basis of commercial agreements with the two established MNOs.

In Bosnia & Herzegovina, the NRA has developed guidelines for introducing MVNOs and relevant access provisions were introduced in the first RIOs of mobile operators published in April 2011. However, the introduction of MVNOs to the Bosnian mobile market was postponed for an indefinite period after the Council of Ministers decided to modify the telecom sector policy in September 2012.

10. Price control and regulatory cost accounting for wholesale prices

When an operator is designated as having SMP in a fixed or mobile wholesale market, NRAs are entitled under article 13 of Access Directive 2002/19/EC to impose a cost accounting obligation to ensure that price control regulation is based on fair, objective, and transparent criteria for allocating 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 in the EU member states should set both FTRs and MTRs using a pure bottom-up long-run incremental costs (pure BU-LRIC) model.

As 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.

Only regulators in Macedonia, Turkey and Albania have implemented cost accounting methodologies based on BU-LRIC.

The Macedonian NRA, AEC, has been applying BU-LRIC cost models since 2010 for setting regulated access, call origination and termination prices in mobile networks and interconnection and LLU prices in fixed networks. In May 2012, AEC completed its work on a pure BU-LRIC model for mobile networks and adopted a decision which sets out a new glide path for the reduction of the MTRs of the three mobile operators in the period from June 1, 2012 to September 1, 2014. In October 2012 AEC also updated its BU LRIC model for fixed network, which in addition to setting interconnection and LLU prices is now also used for wholesale bitstream access, leased lines, duct infrastructure and dark fibre prices.

The Albanian NRA completed its work on BU-LRAIC models for fixed and mobile networks in July 2010 and from 2011 regulated fixed interconnection prices of fixed and mobile operators

with SMP are set based on these methodologies. From 2012, BU-LRAIC is also used for setting LLU prices. In Turkey, BU LRIC is used for setting fixed and mobile interconnection prices as well as prices for LLU, leased lines and wholesale line rental.

In Iceland, following its recent analyses of fixed and mobile call termination markets, the regulator has decided to apply a benchmarking methodology for setting fixed and mobile termination rates, based on the countries where these prices are set based on pure BU-LRIC.

Retail minus methodologies are the most common approach in the monitored countries for setting prices for regulated wholesale bitstream access and wholesale line rental.

J. 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;
- public payphones; and
- special measures for disabled users.

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, Macedonia 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, T-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. In 2011, PTA renewed the designation of Já Upplýsingarveitur for a three-year term, with possible extension until February 10, 2016, whereas the designations of Síminn and Mila were extended until December 31, 2013. 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 Macedonia, AEC 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 Montenegro, EKIP designated for a five-year term nation-wide USO 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. In April 2012 the government amended the universal service regulations removing the provision of public payphones from the scope of US.

In Serbia, in March 2010 the regulator, RATEL, imposed universal service obligations on all licensed fixed and mobile public network operators: Telekom Srbija, Telenor, VIP mobile and Orion Telecom. The exact scope of the designations and specific geographic coverage requirements applicable to each operator were approved by RATEL in March 2013.

In Turkey, the main components of the universal service have been 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 and in January 2013 the Ministry of Transport, Maritime Affairs and Communications organised a first such tender for provision of mobile network coverage to currently uncovered 1,799 rural areas with a population of less than 500, under a universal services obligation for three years. The lowest bid of TRY 312m (€133m) was submitted by Turkcell and following the decision to grant Turkcell the status of universal service provider, the US contract was signed on February 20, 2013.

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 Albania and Kosovo currently there are no obligations in place related to the provision of universal service.

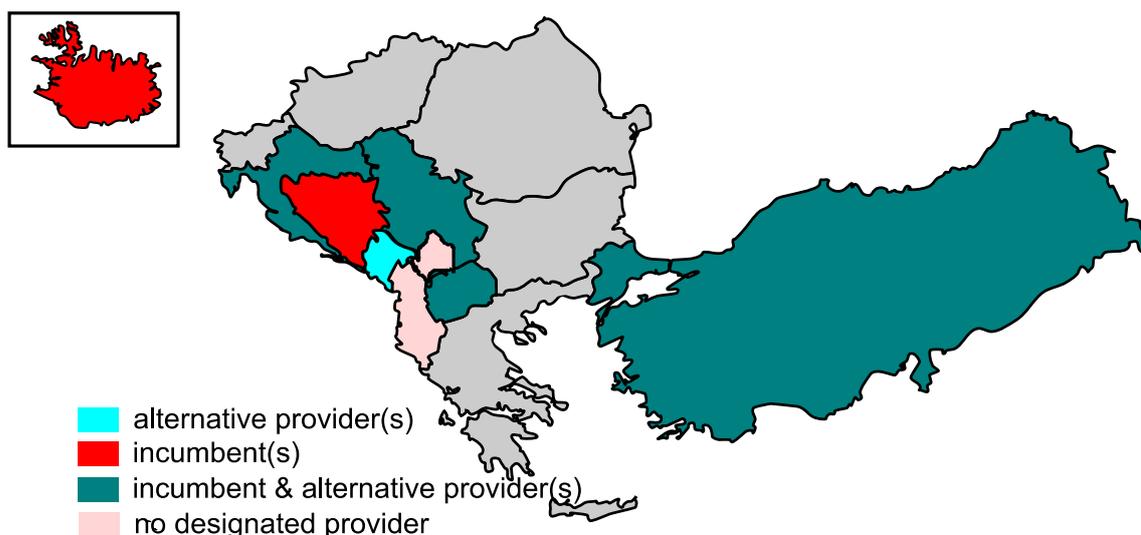


Figure J.1 – USO providers by type of operator

In Albania, the regulator, AKEP, completed in November 2012 a consultation on the implementation of universal service where it concluded that no US providers should be designated at this stage. The main conclusion of the study has been that the main component of the access to public telephone services at fixed location is sufficiently provided by the market, and therefore no US provider should be designated. APEK also concluded that broadband access should not yet be included within the US scope, mainly due to still relatively

low penetration and take up. Regarding provision of comprehensive directory and directory enquiry services, AKEP intends to adopt regulatory measures, such as mandatory provision to subscriber information, to facilitate provision of these services on market basis.

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 ensure “*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 and is planning to issue a recommendation on the inclusion of broadband in the USO scope in 2013.

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.

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 are not defined.

The functional internet access rate corresponding to the minimum broadband speed of 144 kbps applies in Montenegro and since March 2013 also in Croatia. The new universal service regulation adopted in Croatia in December 2012 envisages a further upgrade of functional internet access to 1 Mbps from January 1, 2015. In Iceland the minimum data rate is 128 kbps corresponds to the level supported by ISDN services. However, following the recent auction of the 800 MHz spectrum, the coverage obligations attached to licences should ensure availability of a 2 Mbps broadband to 98% population by the end of 2014, a 10 Mbps to 99.5% population by the end of 2016, and a 30 Mbps to 99.5% population by the end of 2020.

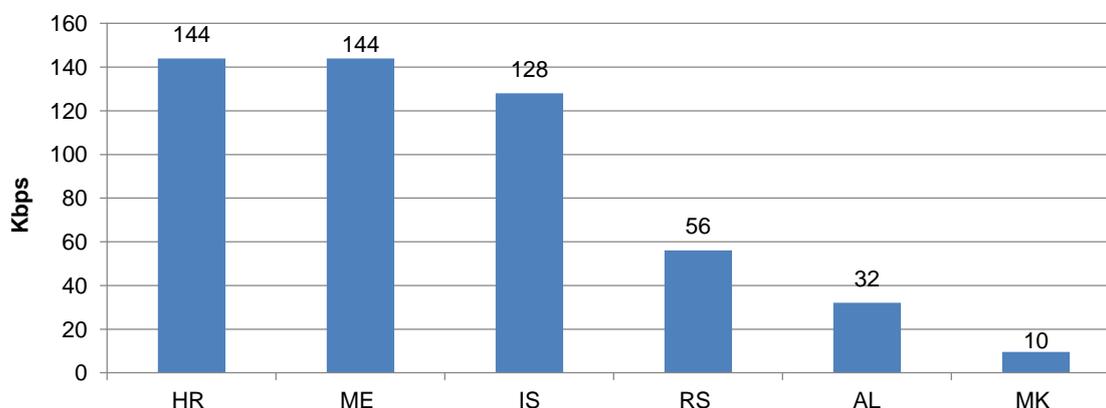


Figure J.2 – Minimum download speed rates within USO scope

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 2013. The draft recommendation states that member states should fund the USO from an “*appropriate mix*” of public and sector-specific funding. To avoid market distortions, the telecoms sector should not bear the costs of the USO alone, also considering that broadband benefits society as a whole, not the telecoms sector alone. The Commission also proposes that only operators with the minimum 5% share of national electronic communications turnover should contribute to sharing the costs of USO, and the level of such contributions should be capped at around 0.5% of turnover.

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

Country	Method of funding	Contributions criteria	Compensation in practice?
HR	Cost sharing	Only by operators with market shares above 2% No compensation if US provider's market share is above 70% (by revenue)	X
IS	Cost sharing	Set at 0.10% of revenue	✓
MK	Cost sharing	Only by operators with annual revenue of min €100,000	X
ME	Cost sharing	Only by operators with market shares above 1% Max 0.35% of revenue	✓
RS	Cost sharing	Not defined	X
TR	Cost sharing	Transfers from the NRA budget (ca 20% of the NRA total revenue)	X
AL	Cost sharing	Max 1% of revenue	X
BA	Cost sharing (proposed)	Not defined	X
XK	Not defined	Not defined	X

Table J.1 – Universal service funding mechanisms

In practice, the industry funding mechanism has been applied in Iceland and Montenegro.

In Iceland, 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 five years: €189,000 (ISK 30.10m) in 2008, €209,000 (ISK 33.37m) in 2009, €240,000 (ISK 38.23m) in 2010, €250,000 (ISK 42.00m) in 2011 and €280,000 (ISK 46.00m) in 2012. 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 Montenegro, on July 26, 2012 EKIP approved the net cost of US provision related to comprehensive directory services by Teleinfo, in the amount of €125,000. The largest contributors to the universal service fund were: Crnogorski Telekom (45%), Telenor (31%) and Mtel (17%).

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. These contributions are allocated by the Ministry of Transport, Maritime Affairs and Communications to the Central Accounting Office's account under “universal service revenues” title, but no decision on compensation to the US providers has been made so far.

4. Subscriber directories

- 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 offered by the designated US providers in Croatia, Iceland, Macedonia and Montenegro. In Turkey, the service is available on commercial basis. In other countries, distributed directories exist where operators offer access only to the data of the subscribers within their networks.
- 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 Macedonia and Montenegro, only designated US providers are entitled to access to subscriber data at cost-based prices and under non-discriminatory conditions. In Albania, Bosnia & Herzegovina, Serbia and Kosovo access to subscriber data is provided on commercial terms.

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 all remaining countries, other national numbers are being used for access to emergency services that are free of charge for callers.

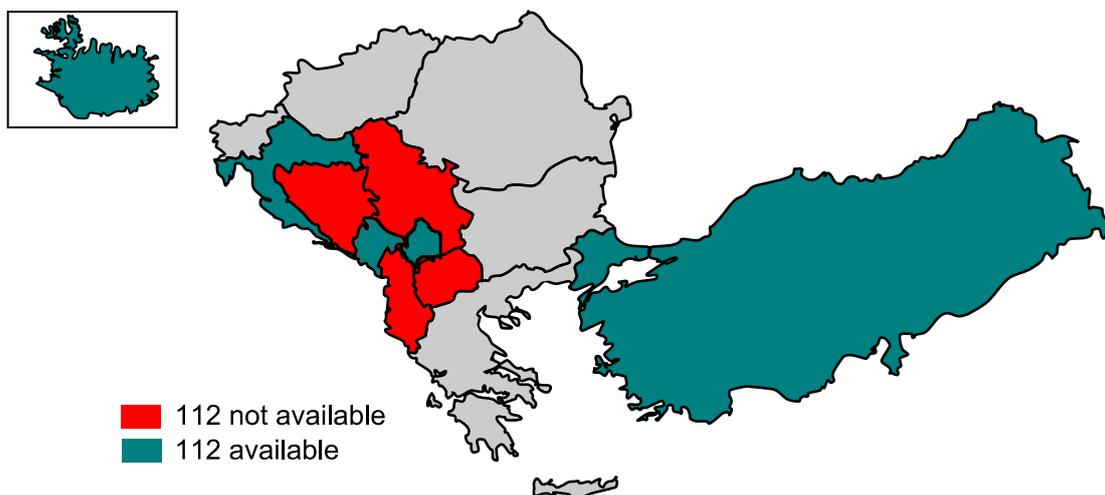


Figure J.3 – European emergency number (112) availability

6. 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, Macedonia, Montenegro, Serbia and Albania the results of QoS measurements for fixed and mobile network operators are published annually by the NRA and the operators themselves. More detailed requirements, including specific QoS targets, apply to the designated US providers in Croatia, Iceland and Montenegro.

In Bosnia & Herzegovina, a regulation on QoS measurements for fixed network operators was adopted in 2011 and the QoS reports must 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.

In Turkey, the general framework of QoS for internet, fixed voice telephony and mobile services is defined in a by-law adopted in 2011 and three more detailed communiqués for fixed broadband internet, fixed voice telephony and mobile voice services had been published in 2011-2012. QoS reports must be published by operators or by the NRA.

In Kosovo, a draft regulation on QoS requirements for fixed and mobile networks has been prepared by the NRA and published for consultation in February 2013.

7. 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 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. Similar provisions were adopted in Albania in October 2012 as part of amendments to the Law on Electronic Communications transposing the EU 2009 framework.

In other countries, the maximum initial commitment period is not regulated, but in practice is usually limited to 24 months.

Cancellation penalties are typically limited to the amount of subscription fees owed until the end of the agreed fixed contractual term. In Croatia, 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 (discounts, terminal equipment subsidies, etc.) – whichever is more advantageous to the subscriber 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 Macedonia, 30 days in Turkey, Albania, Bosnia & Herzegovina and up to three months in Montenegro.

Automatic contract renewal without explicit subscriber consent is not allowed in Croatia, Iceland, Macedonia and Bosnia & Herzegovina.

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.

8. 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, out-of-court resolution mechanisms for disputes between end users and providers of electronic communications services have been established by the NRAs. In Albania, amendments to the Law on Electronic Communications adopted in October 2012 include new provisions enabling AKEP to resolve disputes between subscribers 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 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 under specific conditions. In other monitored countries the compensation can only be set by a competent court.

Average time for resolving end-user disputes varies among the monitored countries from 15 days to four months.

Country	NRA	Other	Duration (number of disputes)
HR	✓	✗	2-3 months (1082 in 2011)
IS	✓	Consumer Agency	Max 4 months (101 in 2011)
MK	✓	✗	36 days (687 in 2011)
ME	✓	Ministry (second instance)	30 days (109 in 2011)
RS	✓	✗	1.5 months (700 in 2011)
TR	✓	Consumer Courts	20 days (17,730 in 2011)
AL	✓	✗	Max 15 days
BA	✓	✗	30 days (15 in 2011)
XK	✓	✗	30 days

Table J.2 – Consumer dispute resolution

K. Regulation of retail tariffs

Under article 17 of the Universal Service Directive, NRAs should apply regulatory controls on retail services only if obligations imposed at the wholesale level failed to ensure effective competition.

In all monitored countries, except for Iceland, retail fixed telephony tariffs of the incumbent operators are subject to different forms of price control.

In Croatia, retail price controls apply to the retail tariffs of the fixed incumbent operator Hrvatski Telekom and its subsidiary Iskon Internet for access to the public telephone network at fixed location, fixed national calls and retail broadband access services (including multiple play offers involving pay TV packages). Both operators are required to present their retail tariffs for advance approval by the regulator based on a price squeeze test.

In Macedonia and Montenegro, fixed telephony tariffs for access and call services of the incumbent operators are also subject to advance approval by the regulators: in Macedonia based on a margin squeeze test and in Montenegro based on international benchmarking.

In Serbia, a cost orientation obligation applies to retail tariffs for fixed access and call services of the incumbent operator, Telekom Srbija and cable TV subscriptions of SBB, both subject to advance approval by the regulator.

In Turkey, Albania and Bosnia & Herzegovina different forms of price caps apply to the regulated tariffs in addition to advance notification requirements of any tariff changes to the regulators.

In Turkey, price caps apply to retail tariffs for national call services of all mobile operators and the fixed incumbent, Turk Telekom. In addition, the largest mobile operator Turkcell is also subject to a price control of its on-net calls: the weighted average call price in each of Turkcell's retail on-net tariff packages must not be lower than the average MTR charged by Turkcell to other operators.

In Albania, following SMP designation in retail fixed markets, Altelecom's retail tariffs for residential and business customers are regulated based on a set of price caps applicable from September 1, 2010. Altelecom may increase tariffs for off-net calls (including international calls), when the termination rate in other networks increases. In these cases Altelecom should notify proposed tariff changes to AKEP.

In Bosnia & Herzegovina, retail price controls apply to the full range of retail tariffs for fixed, mobile and leased line services of the three incumbent operators. In addition, price caps apply to fixed connection and monthly subscription fees, fixed national and international calls and mobile to fixed national calls. A new set of price caps, valid from January 1, 2013 to December 31, 2015, was approved in November 2012.

In Kosovo, retail fixed telephony tariffs of the fixed incumbent operator PTK are subject to cost-orientation based on an FDC methodology.

In countries where there is a formal advance notification requirement for any changes of regulated retail prices, the notification period typically ranges from 15 to 45 days.

L. Fixed retail telephony tariffs

1. Retail tariff rebalancing

In this section, prices for the enlargement countries refer to October 2012 unless specified otherwise.

Where monopoly providers kept monthly rental and local call charges low in order to make basic service more affordable, this move was traditionally subsidised by excessive prices on national and international calls. 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.

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. Although consumers may have to pay more for the line rental than before, such price increases are generally offset by reduced call charges in a more competitive market.

Finally, the market as a whole should benefit from the rebalancing process, as bringing retail tariffs more in balance with the underlying costs makes the investment decisions of the incumbent and new entrants less distorted by loss-making services and the need for cross-subsidy.

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

The graph below shows that Iceland, Croatia, Kosovo and Turkey have approached cost oriented charges for monthly line rentals that are comparable with the EU average level. Other countries, including Macedonia, Bosnia & Herzegovina and Montenegro, have made some progress to increase monthly rentals over the last six years. In Serbia and Albania residential monthly rental prices more than doubled from 2006, but are still much below the rates in other enlargement countries.

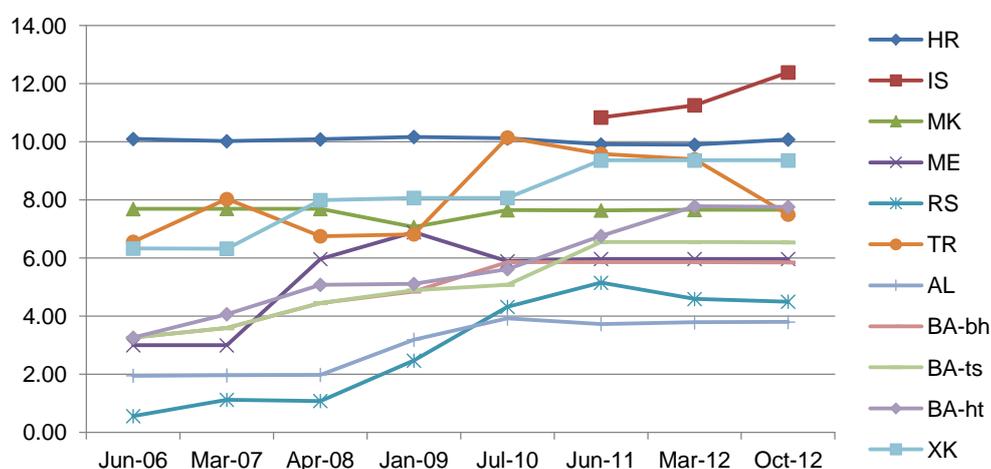


Figure L.1 – Residential line rentals by incumbent in euro, including VAT

Incumbents' local call tariffs in most of the monitored countries have increased since 2006. In Turkey local call prices are now approximately 155% higher than the enlargement countries' average of €0.27 for a ten minute call. Serbia, traditionally showing the lowest local call prices in the SEE region reported a 130% price increase in 2011, with prices now aligned with the remaining group of countries with the only exception of Turkey. In Iceland, local calls increased by 13% from June 2011 to October 2012 net of exchange rate variation.

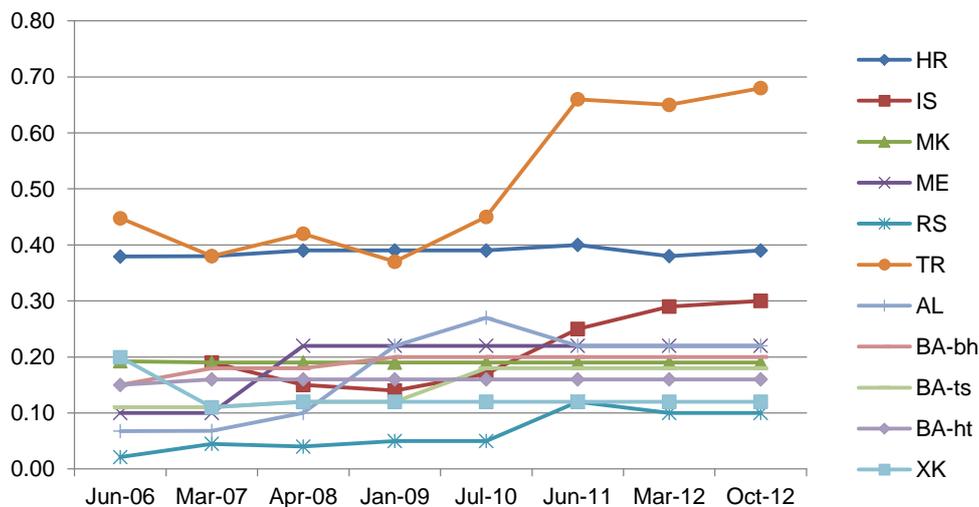


Figure L.2 – Residential charges for a 10-minute local call by incumbent in euro, including VAT

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. In Bosnia and Herzegovina prices show a continued decrease since 2006. However in all countries national long distance prices were relatively stable during 2011 – 2012.

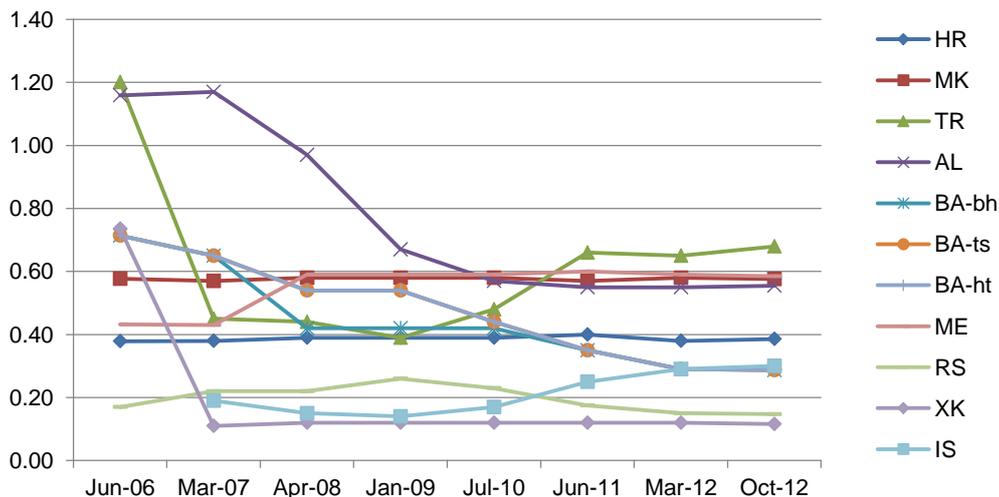


Figure L.3 – Residential charges for a 10-minute long distance call by incumbent in euro, including VAT

The level of charges for fixed to mobile calls shows decreasing trends since 2006. Turkey has now the lowest rate, changing from 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.

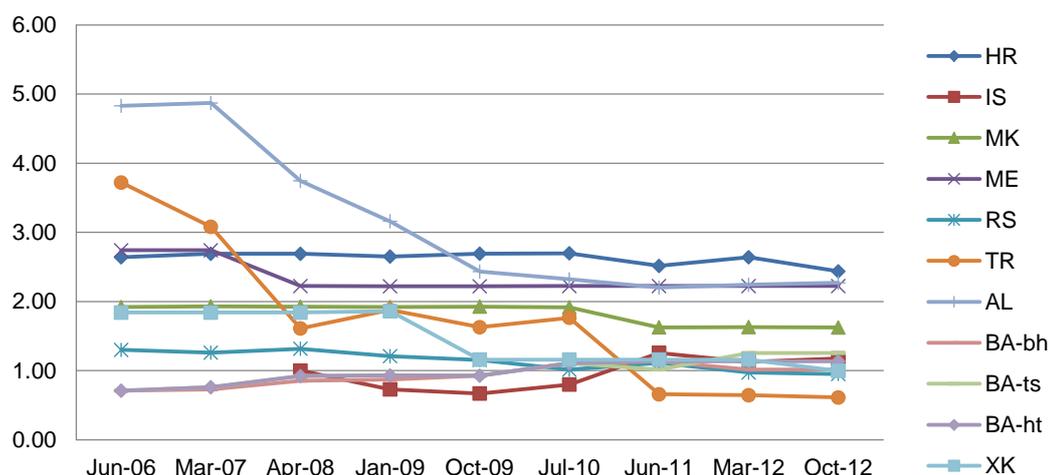


Figure L.4 – Residential charges for a 10-minute fixed to mobile call by incumbent in euro, including VAT

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. In Bosnia and Herzegovina prices were considerably higher, if compared to the rest of the monitored countries until 2009, but have been approaching closer to the average level more recently. In Iceland, Macedonia, Albania, Turkey and Serbia international call prices are the lowest among the enlargement countries.

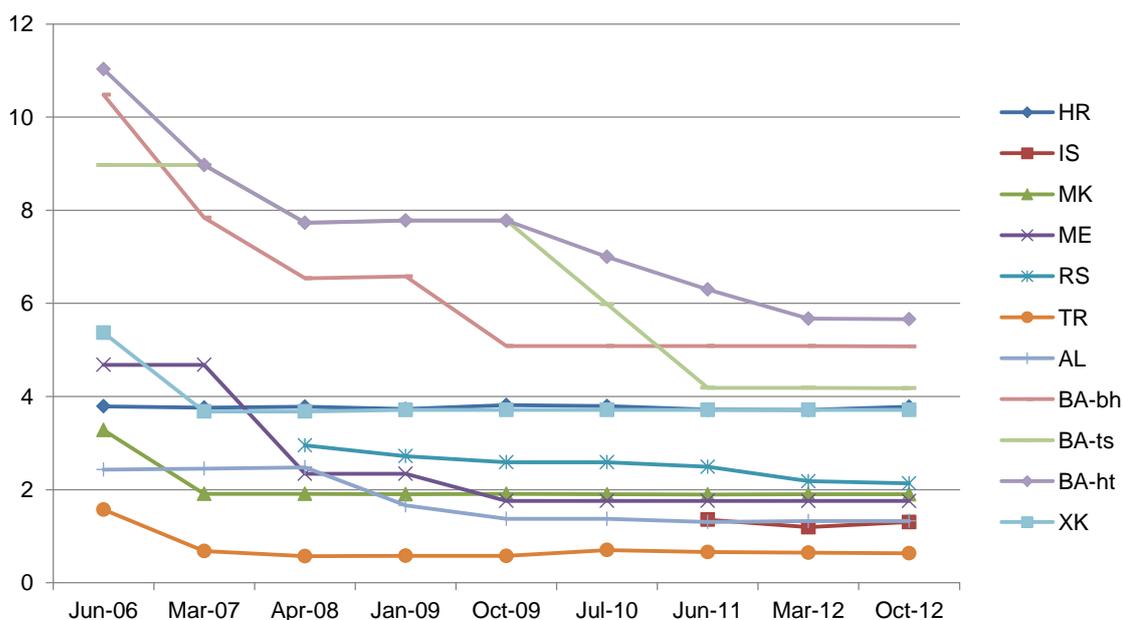


Figure L.5 – Residential charges for a 10-minute international call to UK by incumbent in euro, incl. VAT

2. Monthly subscription fees for residential and business users

In this section, the monthly rental prices for PSTN fixed lines for residential subscribers are shown with VAT included and for business subscribers, without VAT.

The business monthly rental prices remain significantly more expensive than residential prices in four countries: Turkey, Albania, Bosnia & Herzegovina and Kosovo. In Albania, the business rental prices are nearly three times, and in Kosovo – nearly two times more expensive than residential prices.

From March to October 2012 the only remarkable change was observed for business monthly rentals in Macedonia where business rates were aligned with residential rates (before VAT), resulting in a decrease of 43%.

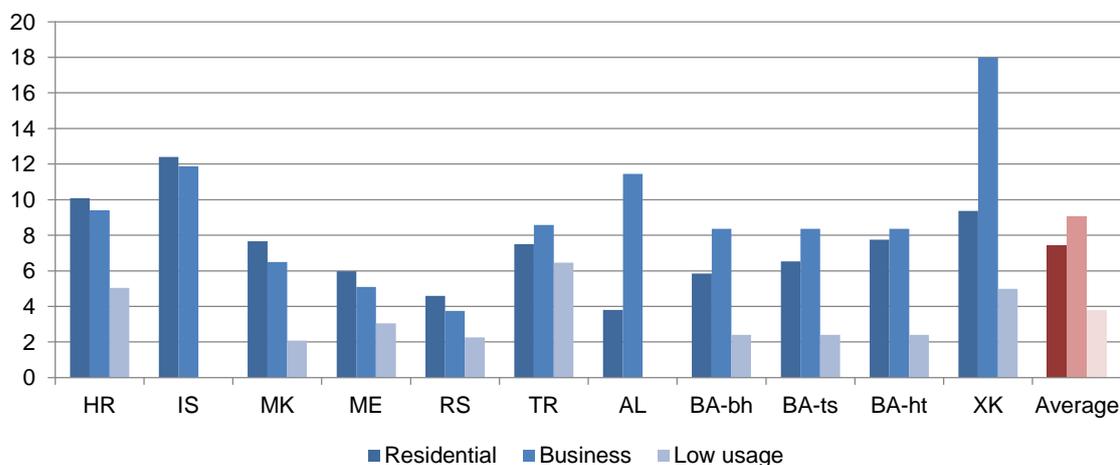


Figure L.6 – Residential and business monthly subscription fees in euro, with included calls, Oct. 2012

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 of the connection of an existing subscriber line to a new subscriber. The figure below shows the applicable charges.

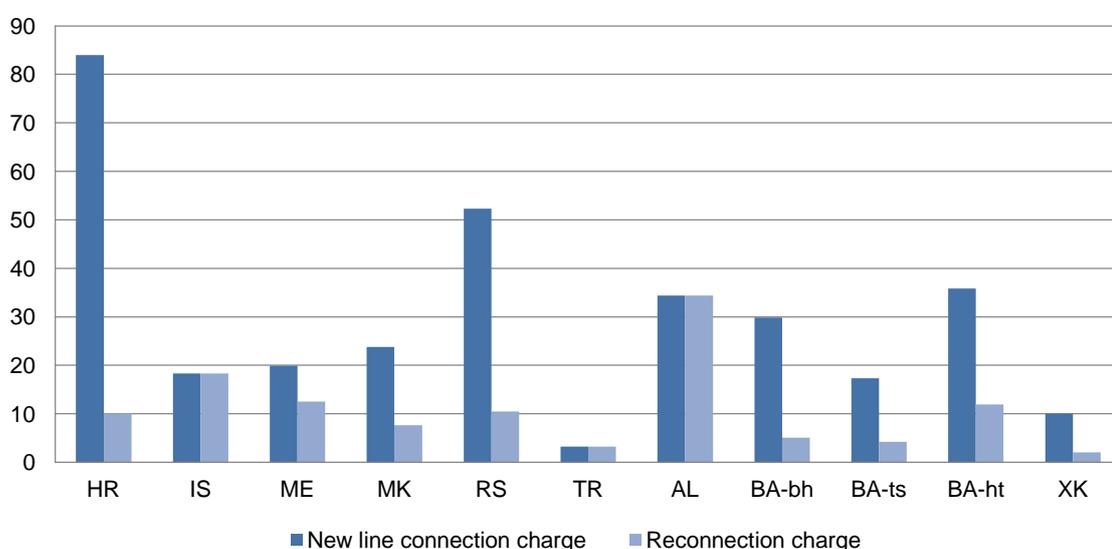


Figure L.7 – New line connection charge and reconnection charge in euro, incl. VAT, Oct. 2012

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 only exceptions are Albania and Turkey, where the prices are the same. In Bosnia & Herzegovina and Iceland new line connection and reconnection charges have been differentiated only from 2012. In Serbia the reconnection charges were increased, both for residential and business customers from less than €4 to over €10 from March to October 2012 (+168%).

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. In all countries, except Albania, Montenegro and Kosovo, alternative service providers are quoting lower local call prices than the incumbents.⁶ This applies even to the countries with relatively low local prices and tariff rebalancing far from being completed, such as Serbia or Bosnia & Herzegovina.

In Kosovo, a 10-minute local call on the fixed network of an alternative operator cost almost 60 eurocents, almost twice as high as the price charged by a competitive operator in Croatia.

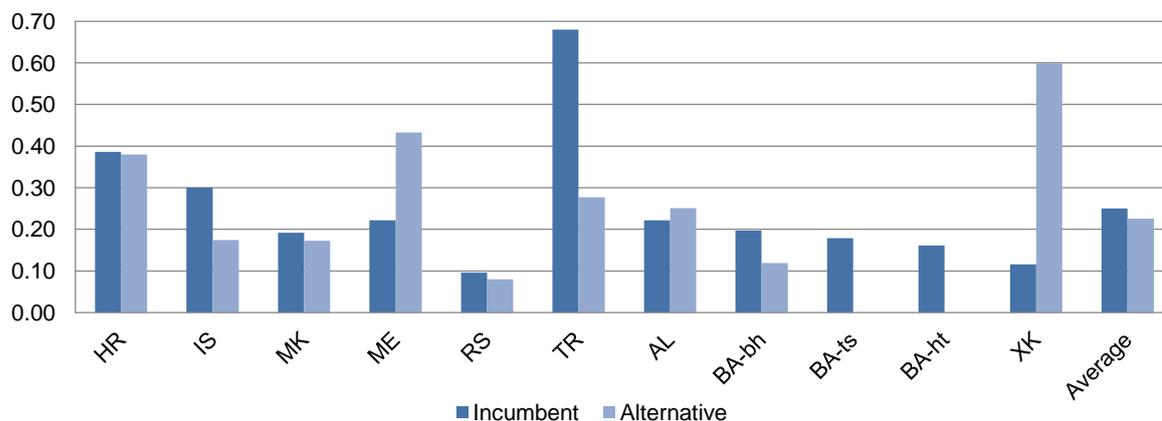


Figure L.8 – 10-minute local call charges for residential users in eurocents, including VAT, Oct. 2012

5. Long distance fixed telephony tariffs

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

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

⁶ The list of alternative operators chosen for comparisons in this report is available in Table K.5 of the annex.

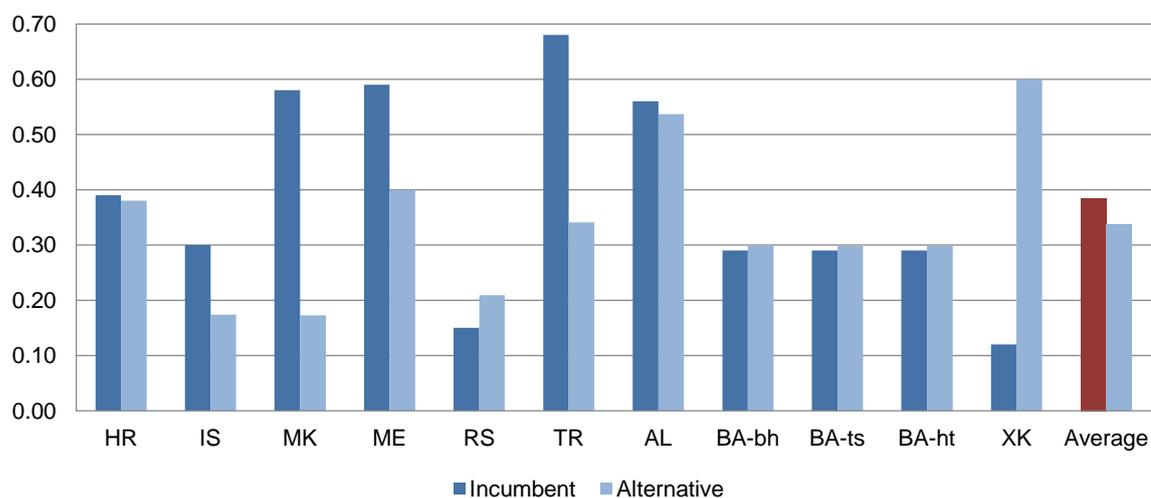


Figure L.9 – 10-minute national call charges for residential users in euro, including VAT, Oct. 2012

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.

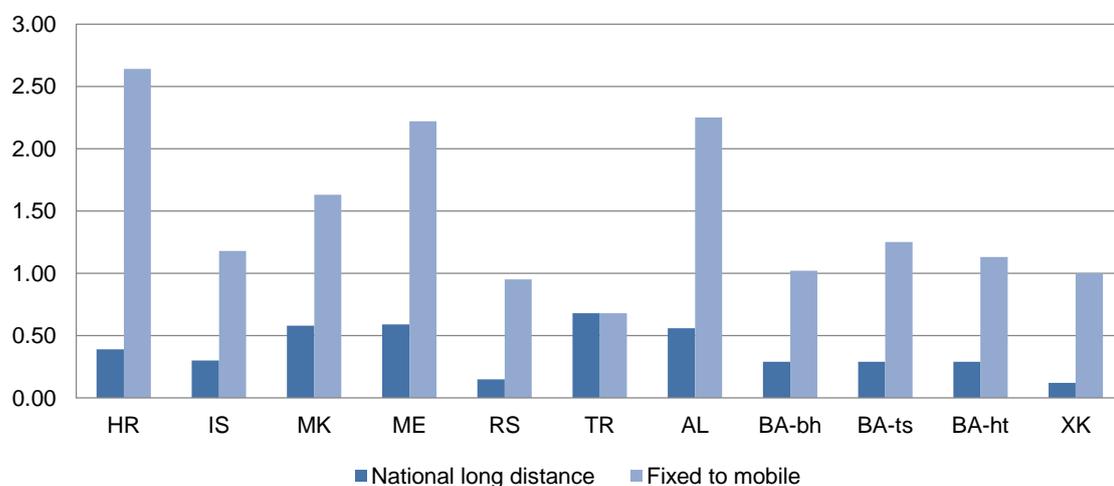


Figure L.10 – 10-minute fixed to mobile and long distance charges for residential users in euro, incl. VAT, Oct. 2012

In Macedonia, a 10-minute call from a residential fixed line to a mobile number is approximately three times more expensive than national calls to fixed lines and in Bosnia & Herzegovina, Albania, Iceland and Montenegro it is approximately four times more expensive. In Croatia and Serbia, fixed to mobile calls are six times more expensive, but the difference is the largest in Kosovo, where fixed to mobile calls are over eight times more expensive.

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Country	10-minute fixed national long distance call	10- minute fixed to mobile call	Price Ratio
Turkey	€0.68	€0.68	1
Macedonia	€0.58	€1.63	2.8
Bosnia & Herzegovina	€0.29	€1.02–1.25	3.5–4.3
Montenegro	€0.59	€2.22	3.8
Iceland	€0.30	€1.18	3.9
Albania	€0.56	€2.25	4.0
Serbia	€0.15	€0.95	6.3
Croatia	€0.39	€2.64	6.8
Kosovo	€0.12	€1.00	8.3
Simple Average	€0.39	€1.45	3.8

Table L.1 – Incumbents’ charges for residential fixed to mobile calls and charges for national fixed calls, Oct. 2012

The simple average for the monitored countries is €1.45 for a 10-minute fixed to mobile call, which is 3.8 times the average for a fixed national call. This ratio has been quite stable since 2009, although in October 2012 a 19% increase is observed from the level reported in March 2012.

In Montenegro, Albania, Croatia and Macedonia, alternative operators offer calls to mobile networks at tariffs that are lower than the incumbents’. In Serbia, where competition was introduced only recently, the competitor’s price is only 1% cheaper than the incumbent’s. In Iceland, Kosovo, Bosnia & Herzegovina and Turkey alternative operators’ prices are higher than the incumbent’s prices. In Bosnia & Herzegovina, alternative operators are not able to offer cheaper fixed to mobile calls largely due to the fact that the largest incumbent’s, BH Telecom, fixed to mobile retail prices have been set lower than the fixed to mobile termination rates of its mobile subsidiary and other two mobile operators.

Turkey and Kosovo clearly stand out among the monitored countries, as alternative operators’ charges are almost twice as high as the incumbent’s, as shown in the next graph.

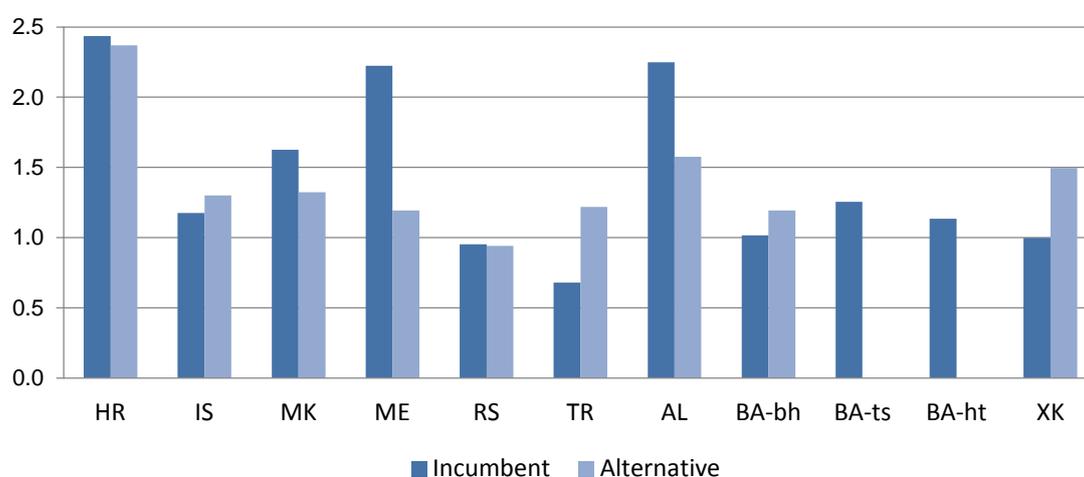


Figure L.11 – 10-minute fixed to mobile call charges for residential users in euro, including VAT, Oct. 2012

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.

With the exception of Montenegro, where the incumbent is offering lower international call rates, and Iceland where prices are very similar, alternative operators are generally offering significantly better prices than the incumbents for international calls. Calls to the UK are 80% and 70% cheaper if placed through an alternative operator in Serbia, Kosovo and Bosnia and Herzegovina, and between 50% and 60% in Turkey, Macedonia and Albania.

Alternative operators tend to offer lower prices for calls to the USA, almost 90% lower than the incumbent in Serbia, and 74% in Kosovo. In Albania, alternative operators' charges are now approximately 56% cheaper than the incumbent's. A completely opposite situation is observed in Montenegro, where calls to the USA originated on the incumbent's network are almost 75% cheaper than calls originated on the alternative operator's network.

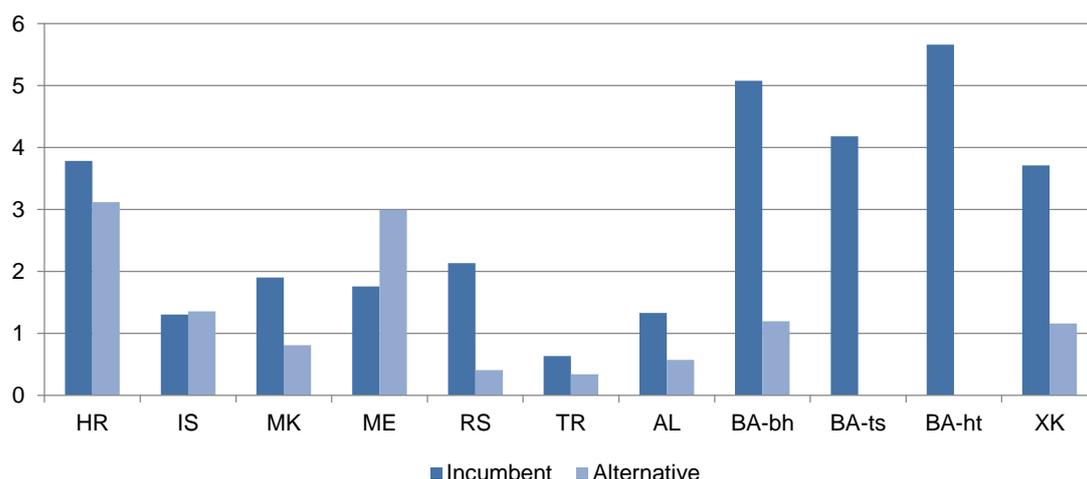


Figure L.12 – Residential charges for a 10-minute call to the UK in euro, incl. VAT, Oct. 2012

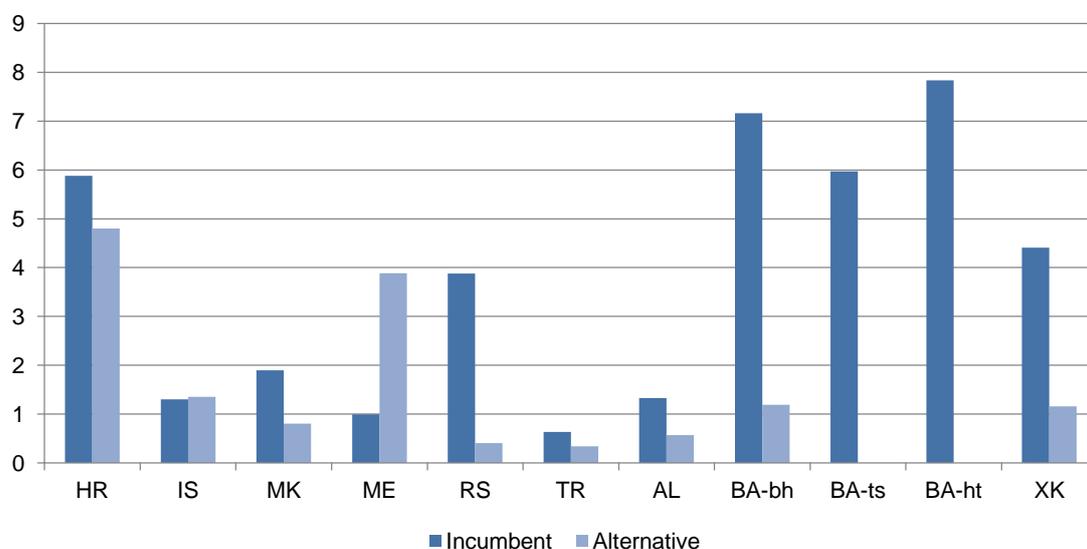


Figure L.13 – Residential charges for a 10-minute call to the USA in euro, including VAT, Oct. 2012

As illustrated in the Figure L.14 below, international prices are still considerably higher than any other type of calls – including fixed to mobile – in Bosnia & Herzegovina, Serbia, Croatia and Kosovo, and to a lesser extent, in Iceland and Macedonia.

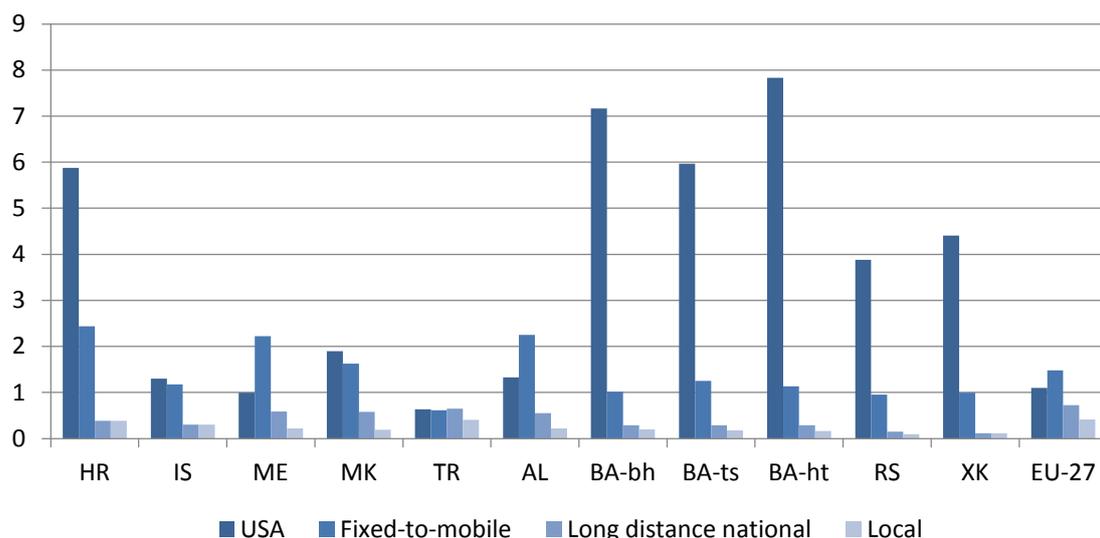


Figure L.14 – Summary of incumbent's residential charges for a 10-minute call in euro, including VAT, Oct. 2012

M. 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.⁷ These baskets are updated to reflect changing usage patterns. This report uses the 2006 baskets that can be directly compared with the EU results which also use the same methodology.

As of October 2012, the highest prices for the low user basket were observed in Iceland, Macedonia and Turkey. In Macedonia prices increased considerably, with offers by the two largest operators more than doubled from March 2012.

⁷ <http://www.oecd.org/dataoecd/56/23/41049579.pdf>

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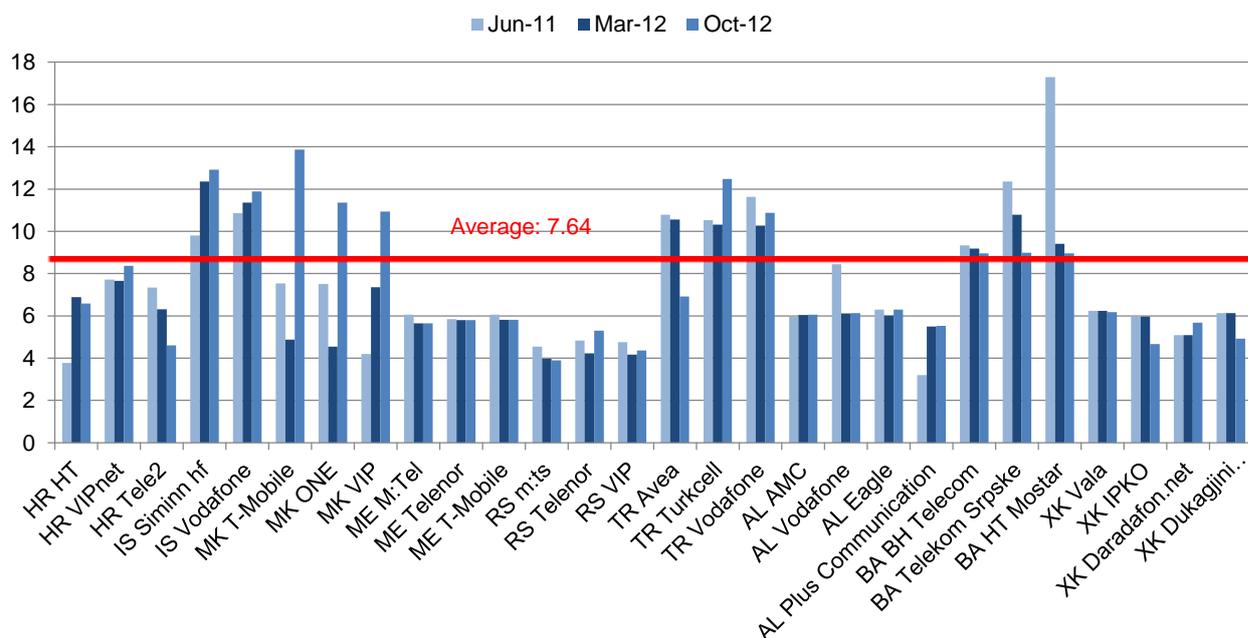


Figure M.1 – Low usage basket in euro per month, including VAT

For medium usage baskets, prices in Turkey decreased on average by 46% from March 2012. Price decreases were observed also in Albania, Serbia and Kosovo. In Macedonia prices in this basket increased on average by 44%.

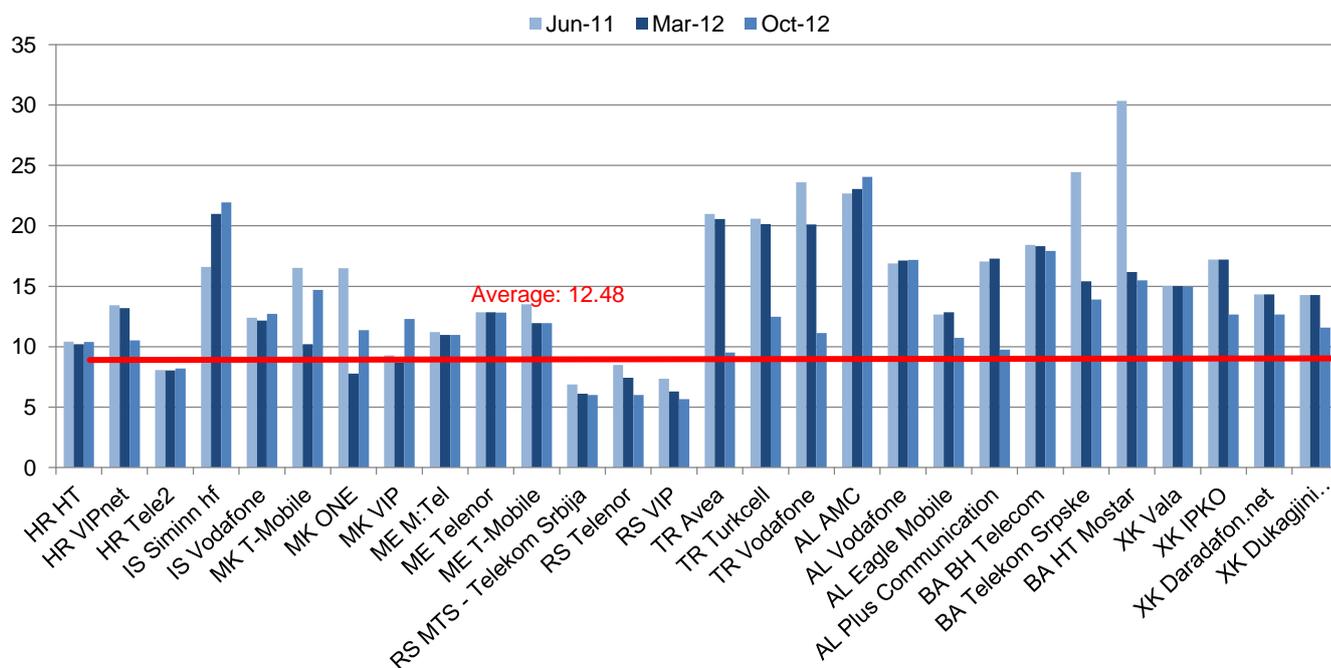


Figure M.2 – Medium usage basket in euro per month, including VAT

For high usage, prices decreased in most countries, with the only exception of the Icelandic incumbent, which increased prices from March 2012 by 52%. In the same period in Turkey prices decreased on average by 68%. Prices of virtual operators in Kosovo are now lower than the prices offered by the largest mobile operator Vala.

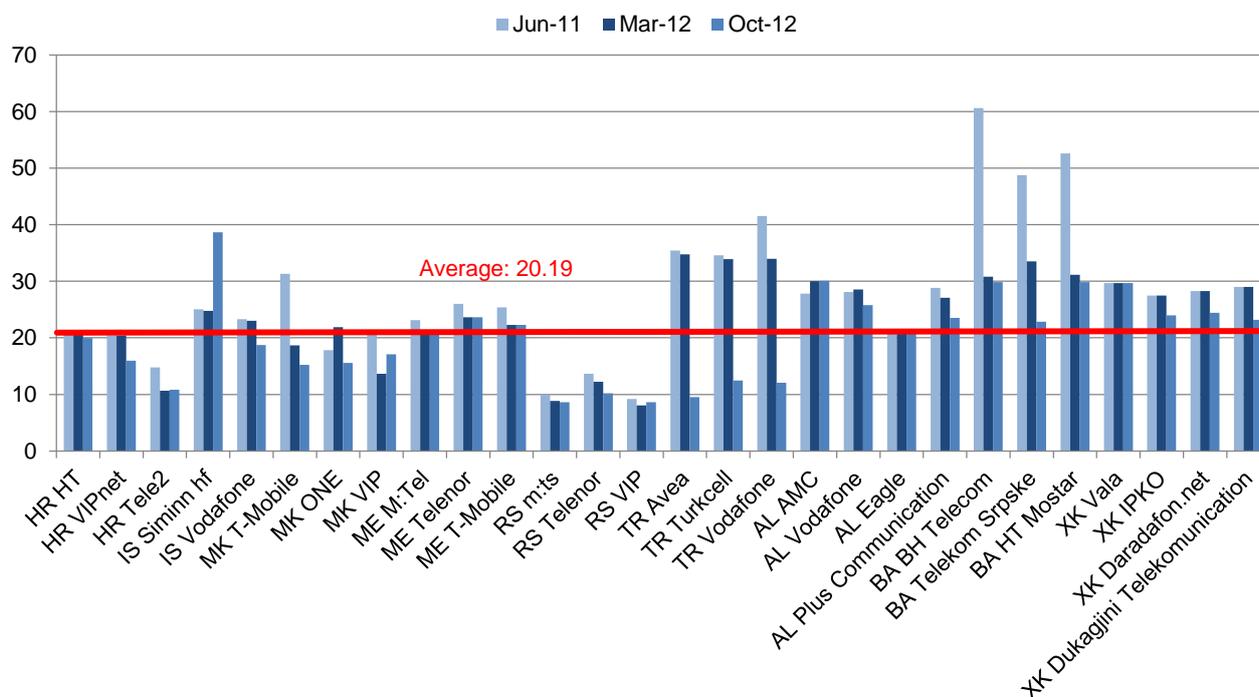


Figure M.3 – High usage basket in euro per month, including VAT

N. 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 N.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	X	X	X	✓	✓	X	X	✓	✓	✓	X	X
IS	X	X	X	X	X	X	X	X	✓	✓	✓	✓
MK	X	X	X	X	X	X	✓	X	✓	✓	✓	✓
ME	X	X	✓	✓	✓	✓	✓	✓	X	✓	✓	X
RS	X	X	✓	X	✓	X	✓	X	✓	✓	X	✓
TR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AL	X	X	X	✓	✓	✓	✓	✓	✓	✓	X	✓
BA	X	X	✓	✓	✓	✓	✓	✓	✓	✓	X	✓
XK	X	X	✓	X	✓	X	✓	✓	✓	✓	✓	✓

Table N.1 – Availability of broadband offers by incumbents and alternative operators at different speeds

Broadband lines with speeds below 1 Mbps are only offered in Turkey by both incumbent and alternative operator at approximately €19 per month. The offerings between 1 Mbps and 2 Mbps are available in all countries except Iceland and Macedonia. Monthly prices have decreased considerably from 2011, as they now range in most countries from €5 to €16. Only in Turkey offerings between 1 Mbps and 2 Mbps increased considerably from March 2012, now offered by the incumbent at €30 and at approximately €25 by the alternative operator, a higher price compared with higher speed offers. 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 €9.20 per month. At the other end of the scale, Turk Telekom has the most expensive offer at €38 per month.

Decreasing prices are observed for offers from 4 Mbps up to 20 Mbps, where most of the competitive pressure seems to be exercised by both incumbents and alternative operators.

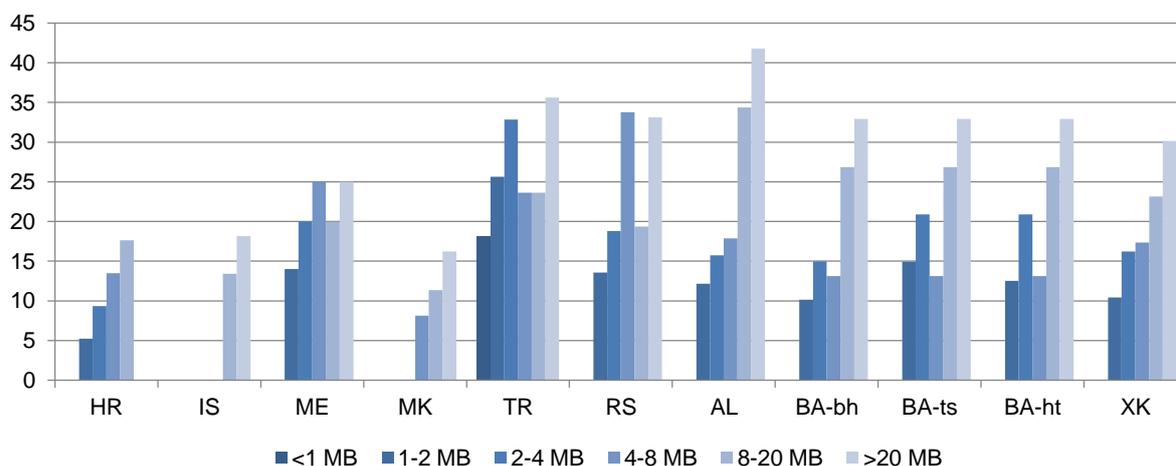


Figure N.1 – Broadband monthly subscription charges – cheapest offers, in euro, incl. VAT, Oct. 2012

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

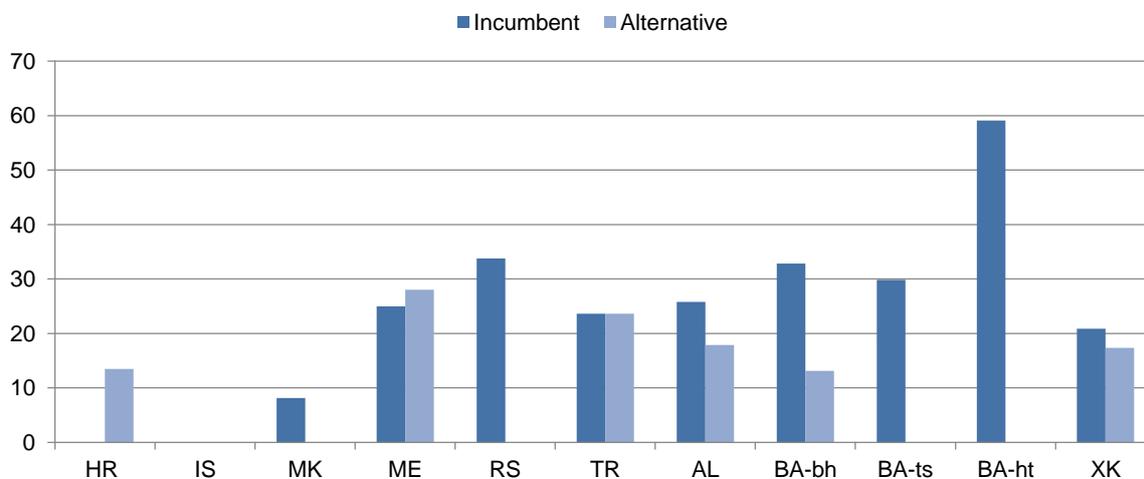


Figure N.2 – Monthly retail 4–8 Mbps broadband subscription prices in euro, incl. VAT, Oct. 2012

Very competitive monthly prices for offers between 4 Mbps and 8 Mbps, ranging between €13 and €20, are offered by alternative operators in Croatia, Albania and Bosnia & Herzegovina, and Kosovo. In other countries prices range from €20 to €35. The most expensive offers in this speed range are observed in Bosnia & Herzegovina (HT Mostar only) at a price slightly above €59. For comparison, according to a recent research published by the European Commission⁸, median prices of broadband standalone products with a download speed between 4 and 8 Mbps were the lowest in Latvia (€11.8), Denmark (€15.5) and Romania (€17.2) and the highest in Slovenia (€38.4), Spain (€42.4) and Poland (€49.9).

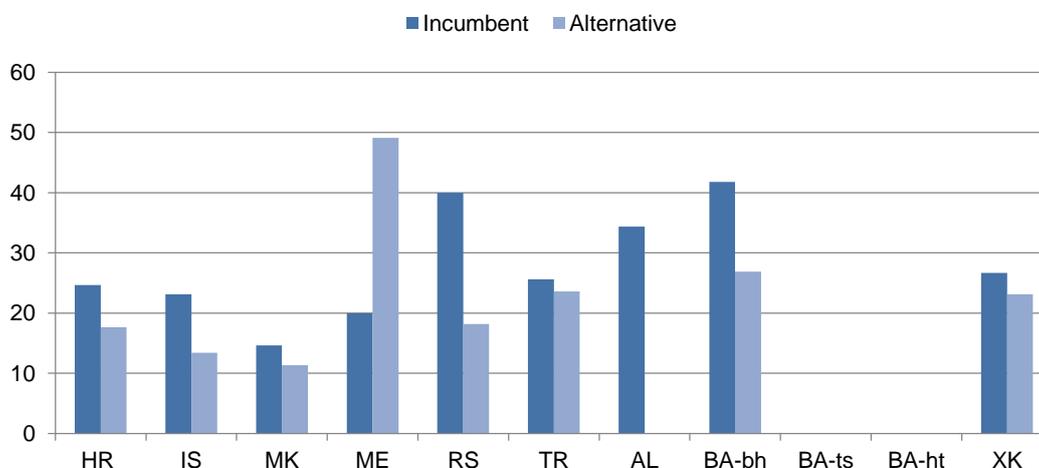


Figure N.3 – Monthly retail 8–20 Mbps broadband subscription prices in euro, including VAT, Oct. 2012

Broadband offers between 8 and 20 Mbps are available in all countries, with offers by the incumbent and the alternative operator, with the only exception of Albania where this speed is only offered by the incumbent.

Broadband packages at speeds above 20 Mbps have been reported in all countries except Croatia, in most cases by both incumbents and alternative operators. Higher speed broadband is currently offered only by alternative operators in Serbia, Albania and Bosnia and Herzegovina. In Montenegro the incumbent operator has an offer at this speed at a monthly price slightly below €25; the largest alternative operator's offer has a considerably higher price, at almost €70 per month. In Turkey prices for above 20 Mbps offers have considerably decreased, now ranging between €35 and €38 per month. In Macedonia the incumbent offers 20 Mbps broadband access at a price of €16 per month.

O. Leased lines retail prices

1. National leased lines

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.

⁸ Working Document: broadband lines in the EU. Situation at 1 July 2012
http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?doc_id=1700

In most of the monitored countries, prices for 2 km leased lines of 2 Mbps have remained substantially unchanged for several years. The slight differences shown in Figure O.1 below are mostly due to exchange rates variations.

The most significant decrease in the prices of leased lines since March 2012 was observed in Macedonia where the prices of Makedonski Telekom were reduced by nearly 60% as a result of the implementation of a new LRIC model approved by AEC in October 2012.⁹

In Montenegro wholesale and retail prices of leased lines of Crnogorski Telekom were reduced from June 2012 by 30-40%, following implementation of the new wholesale reference offer and new price methodology imposed by the NRA in its market analysis of leased lines markets¹⁰.

Iceland has the lowest annual charges among the monitored countries at €537 per year, immediately followed by Albania and Turkey, with prices at € 1,599 and € 2,222.

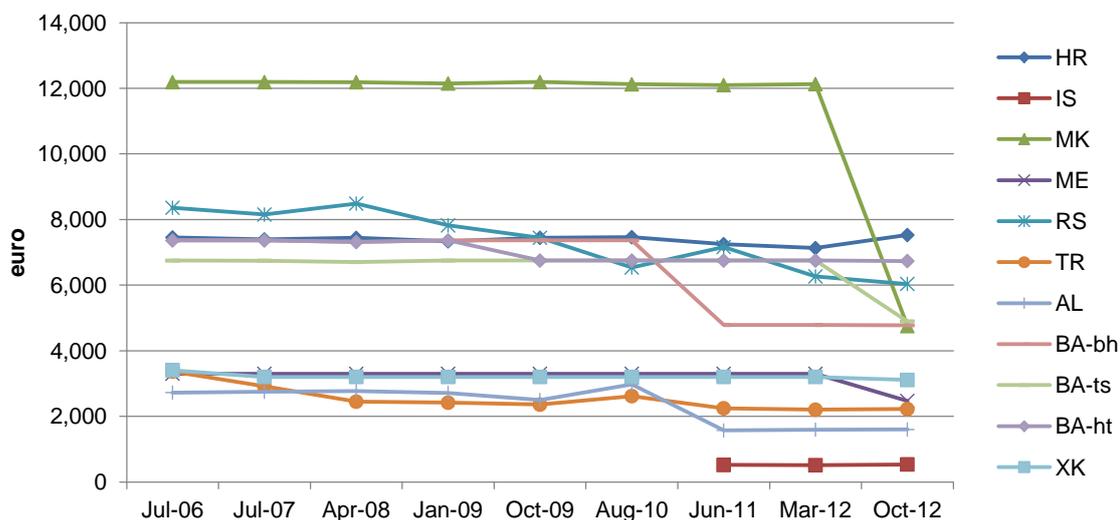


Figure O.1 – Annual retail prices for 2 km 2 Mbps leased lines

⁹ http://www.telekom.mk/domestic_mk/?z=1195

¹⁰ http://www.ekip.me/download/Saopstenje%20za%20LL_promjene.pdf

For 34 Mbps, the lowest retail prices are in Iceland at €2,249 per year, followed by Turkey and Kosovo respectively at €12,218 and €15,048 per year. In Montenegro prices dropped, from March 2012 by 65% and are now aligned with prices in Turkey and Kosovo. The most expensive prices are in Serbia at €53,247 per year. In Albania, the prices for leased lines of 34 Mbps have been quoted for the first time in 2011 and are slightly below €30,000 per year. In Macedonia 34 Mbps leased lines are only available through radio links and prices are not shown in the figure.

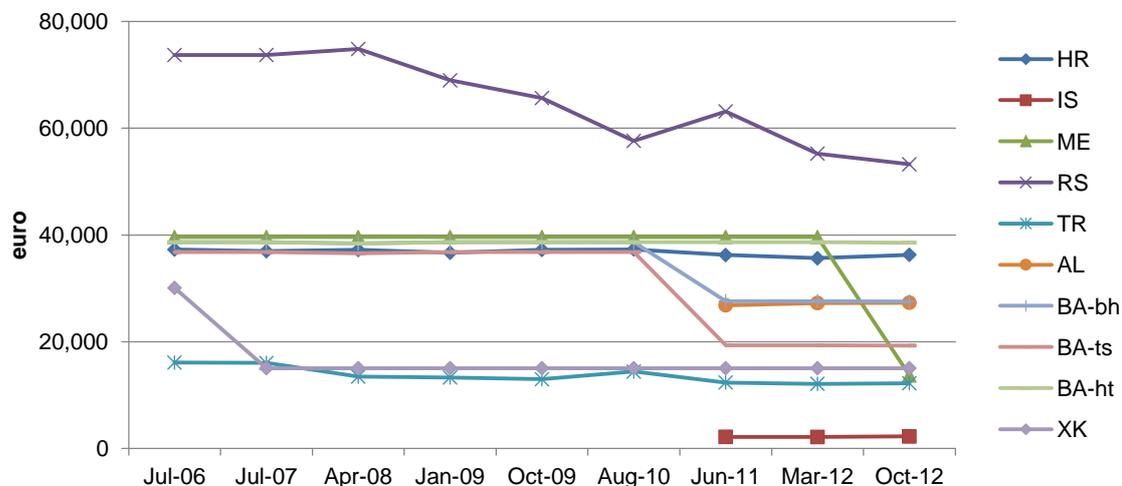


Figure O.2 – Annual retail prices for 2 km 34 Mbps leased lines

2. International leased lines

International leased lines have been traditionally 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 and, from 2012, for Croatia, 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, at levels close to €100,000. In Albania the price was reduced by almost 50% from the 2010 to 2011 and has remained stable since then. All other incumbents have reduced charges at levels below €50,000 per year. In Macedonia, prices were significantly reduced based on the bylaw adopted by the NRA in 2008, and were further reduced over the last year few years, but from March 2012 increased again at a level of 21,600 per year. Kosovo has the lowest prices, which were further reduced in from March 2012 by 32%, a level of €7,200 per year.

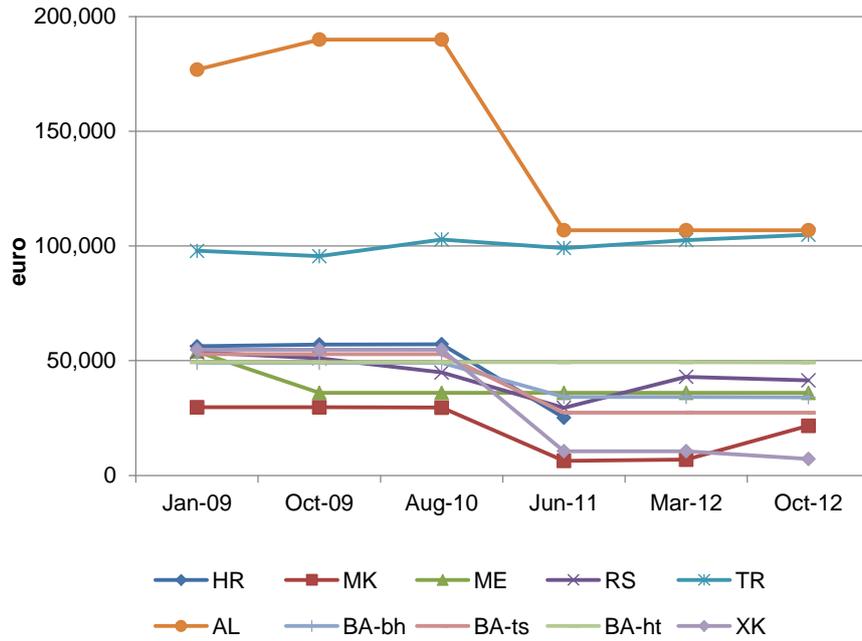


Figure O.3 – Annual prices for international half circuits 2 Mbps to near country

In the case of 2 Mbps half circuits to the UK, charges have fallen significantly from 2010 in Albania, Serbia, Kosovo and Macedonia. 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. From 2011 to 2012 prices remained stable in all monitored countries.

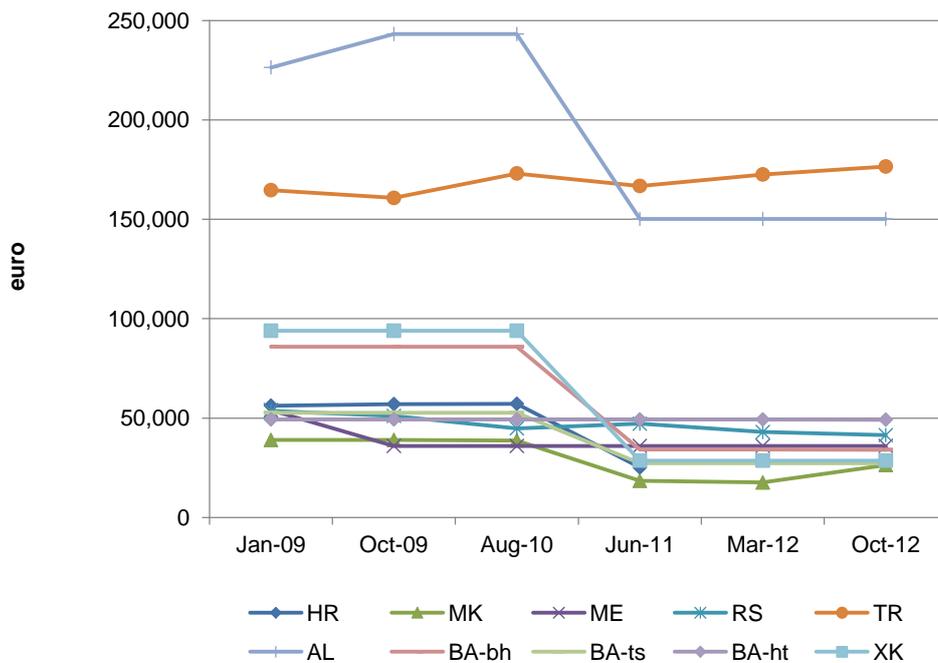


Figure O.4 – Annual prices for international half circuits 2 Mbps to the UK

In the case of 34 Mbps half circuits, the lowest prices are offered in Macedonia, at approximately €28,000 per year to a near country and slightly above €55,000 to the UK. In Kosovo prices to a near country are even lower, at a level below €20,000 per year. Prices are significantly higher in Turkey and Albania, where annual prices for an international half circuit to the UK are above €1m. International half circuit prices are not publicly listed for Iceland and Croatia, as they are defined commercially.

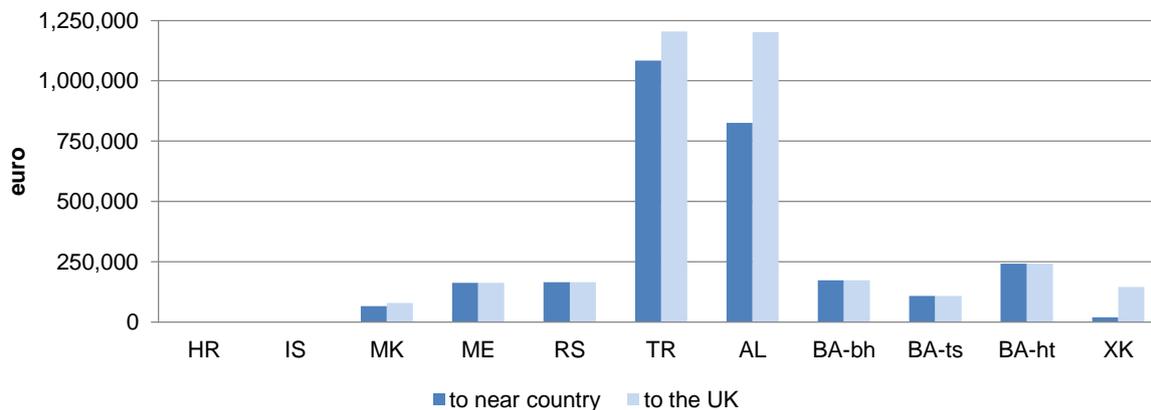


Figure O.5 – Annual prices for international 34 Mbps half circuits

P. 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 the absence of more complex regulatory mechanisms such as cost accounting models, NRAs typically apply benchmarking against the level of charges in the EU member states.

According to the BEREC report on fixed and mobile termination rates in the EU as of January 2012, the weighted average EU-27 call termination charges on the incumbent's fixed network were the following¹¹:

- Local level 0.54 eurocents per minute
- Single transit level 0.66 eurocents per minute
- Double transit level 0.80 eurocents per minute

The figures below show call termination rates on the incumbent's fixed network as of October 2012.

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. In Kosovo fixed termination only takes place at the single transit level.

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. In Croatia, Macedonia, Serbia and Turkey, local fixed call termination rates are set close to the EU average of 0.54 eurocents.

¹¹ Body of European Regulators for Electronic Communications (BEREC) 'Termination Rates Benchmark Snapshot (January 2012)' http://erg.eu.int/doc/bor_12_56_tr_integrated_snapshot_final.pdf

In Montenegro, fixed termination prices were at levels considerably higher than in the other monitored countries, but have been considerably decreasing over the last two years. In Albania, following the implementation on new BU-LRAIC cost model, from September 1, 2010 Albtelecom’s fixed termination rates have nearly doubled at all levels of interconnection.

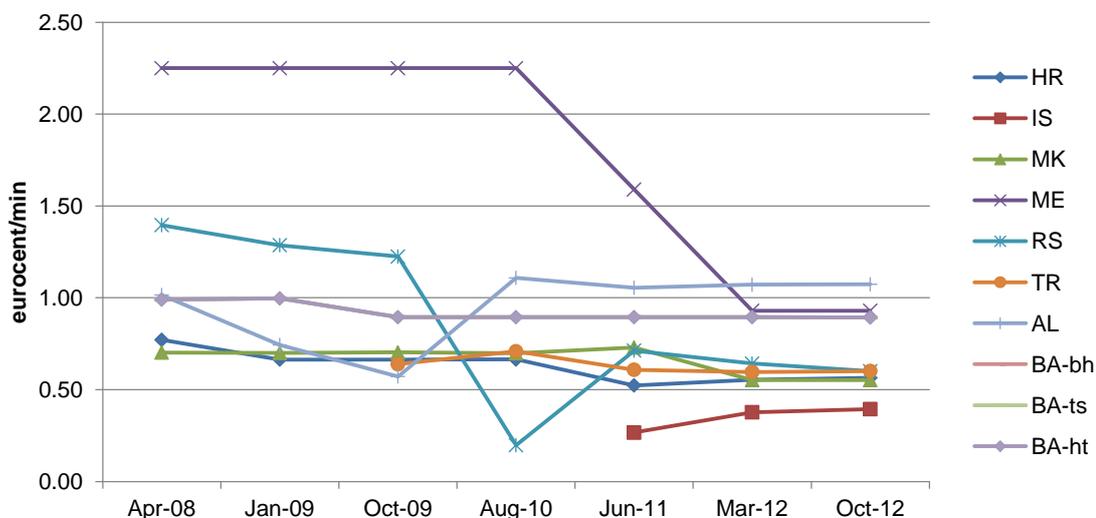


Figure P.1 – Local call termination charges on the incumbent’s fixed network, peak time

At the single transit level, call termination charges on the incumbent’s fixed network are close to the EU average of 0.66 €cents in Turkey, Croatia, Macedonia, and from 2010 in Serbia. The highest rates are in Kosovo, where fixed interconnection rates are at 4 eurocents per minute. In Montenegro, fixed termination rates have been traditionally high, but following a 30% decrease in 2011 and an additional 43% decrease in 2012 they are now slightly above 1 eurocent.

In Albania, the charges decreased by 23.5% during 2009, increased by 104% in 2010 and remained stable since then. Single transit termination in Serbia decreased by 62% in 2009 and is now among the lowest in the region. In Iceland call termination is only offered at the local level.

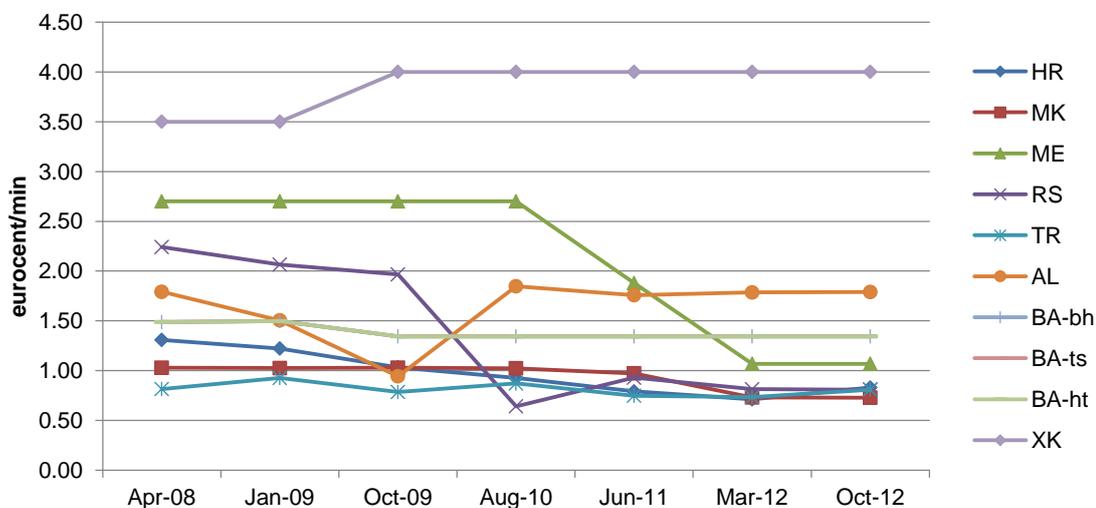


Figure P.2 – Single transit call termination charges on the incumbent’s fixed network, peak time

At the double transit level, Turkey, Macedonia and Serbia are the only countries with rates below 1 eurocent and close to the EU average of 0.80 eurocents. Rates remain considerably higher than the EU average in Albania, Bosnia and Herzegovina and in Croatia. In Croatia, from March 2012 the double transit rate increased by 19%. In Serbia the incumbent's double transit termination charge decreased by 70% from October 2009 and is now the lowest among the monitored countries.

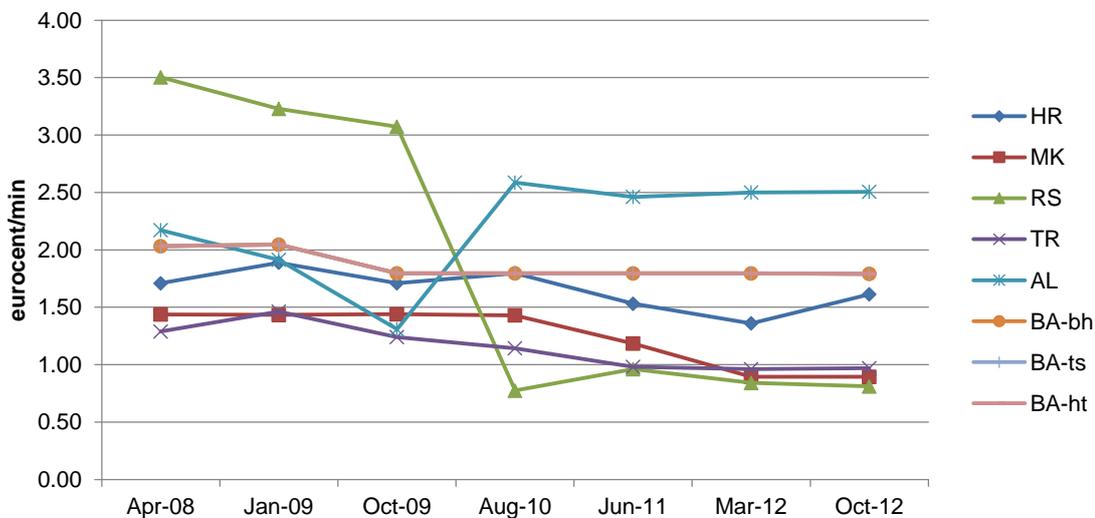


Figure P.3 – Double transit call termination charges on the incumbent's fixed network, peak time

Figure P.4, Figure P.5 and Figure P.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 average values according to the BEREC report¹².

In Iceland, the alternative operators' fixed termination rates are set slightly above the incumbent's rate. Call termination is only offered at the local level. In Turkey and Albania asymmetries are more significant. In Croatia, Montenegro, and Kosovo alternative operators interconnect only at the single transit level. In Macedonia alternative operators interconnect at the double transit (national) level.

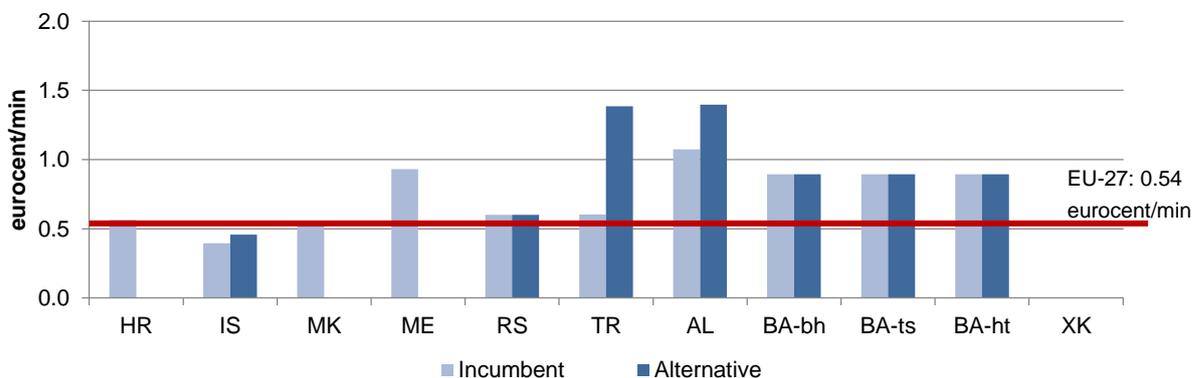


Figure P.4 – Local call termination on the fixed incumbent and alternative network, Oct. 2012

¹² Body of European Regulators for Electronic Communications (BEREC) 'Termination Rates Benchmark Snapshot (January 2012)' http://erg.eu.int/doc/bor_12_56_tr_integrated_snapshot_final.pdf

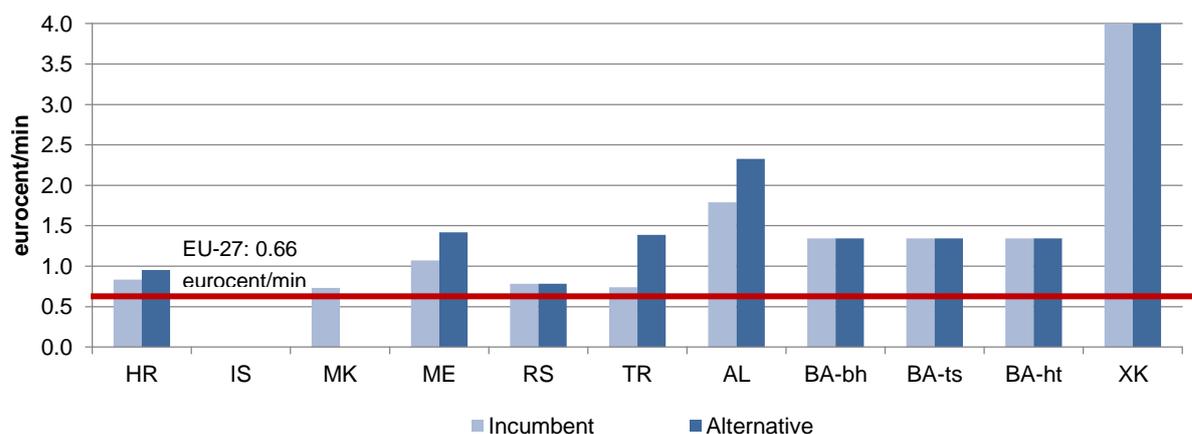


Figure P.5 – Single transit call termination on the fixed incumbent and alternative network, Oct. 2012

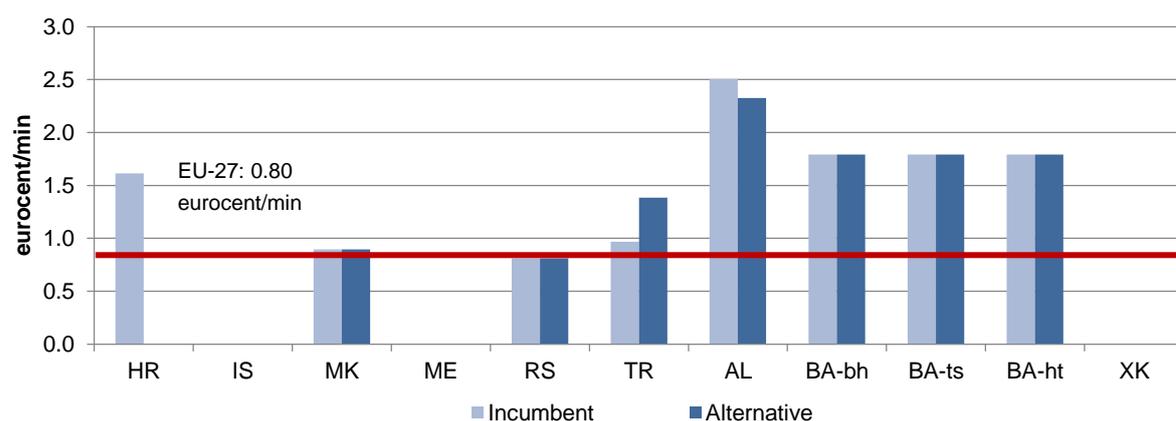


Figure P.6 – Double transit call termination on the fixed incumbent and alternative network, Oct. 2012

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 have been subject to substantial reductions over the last few years.

a) Mobile termination rates (MTRs) – regulation and glide paths

The European Commission recommendation of May 2009 on fixed and mobile termination rates says that, by the end of 2012, NRAs in the EU member states should set symmetric termination rates based on the costs incurred by an efficient operator.¹³ Such costs should be calculated using a bottom-up ‘pure’ LRIC model based on current costs.

In Croatia, implementation of pure BU LRIC methodology in line with the EC recommendation is foreseen from July 1, 2013 – following the country’s EU accession. Iceland has not implemented a pure LRIC cost model, but decided to use benchmarking with the EU countries that have implemented pure LRIC from July 1, 2013.

Regulators in Albania, Macedonia and Turkey have been regulating MTRs based on bottom up cost models, however based on LRIC (LRAIC) cost methodologies and not with pure LRIC. In Macedonia, implementation of a pure LRIC rate is envisaged from September 2014.

¹³ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF>

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Below is the summary of the glide paths for the reductions in MTRs that have been approved by regulators in the enlargement countries.

Country	Glide paths						
Croatia	Implementation of pure BU LRIC methodology is foreseen from July 1, 2013.						
	MTR per minute		Jan. 1, 2010	Jan. 1, 2011	July 1, 2011	Jan. 1, 2012	Jan. 1, 2013
	T-Mobile and VIPnet	HRK	0.56	0.396	0.396	0.301	0.195
		€cents	7.44	5.26	5.26	4.00	2.59
	Tele2 MTR/minute	HRK	0.728	0.515	0.475	0.331	0.195
€cents		9.67	6.84	6.31	4.40	2.59	
Tele2 maximum allowed asymmetry (x% above T-Mobile and VIPnet)	%	30%	30%	20%	10%	0%	
Iceland	Price control and monitoring of MTRs – from July 1, 2013 fully symmetrical MTRs based on benchmarking against countries with “pure” LRIC.						
	The decision regards all SMP operators, i.e. 3 MNOs and 2 MVNOs - Síminn hf., Fjarskipti ehf (Vodafone), IMC Island hf., Nova hf., and Tal ehf. (IP-fjarskipti). (PTA decision of Jan. 13, 2012 (third round market analysis of mobile termination market).						
	Glide path of MTRs applicable to all operators (PTA decision No. 32/2012 of November 1, 2012):						
	MTR per minute		Jan. 1, 2013		July. 1, 2013		
All operators with SMP	ISK		4		1.66		
	€cents		2.5		1.00		
Macedonia	MTR per minute		Sep. 1, 2010	Sep. 1, 2011	June 1, 2012	Sep. 1, 2013	Sep. 1, 2014
	T-Mobile	MKD	3.2	3.1	3.00	1.20	0.9
		€cents	5.2	5.1	4.88	1.95	1.46
	One	MKD	3.6	3.4	4.0	1.2	0.9
		€cents	5.8	5.5	6.5	1.95	1.46
	VIP	MKD	5.4	4.6	4.0	1.2	0.9
		€cents	8.8	7.5	6.5	1.95	1.46
Montenegro	MTR per minute		Dec. 2010		Dec. 2011		
	All operators (Telenor, T-Mobile, M-Tel)		8.50 €cent		7.07 €cent		
Turkey	MTR per peak minute		Before May 1, 2009	May 1, 2009 – March 31, 2010	From April 1, 2010		
	Turkcell	TRY	0.091	0.0655	0.0313		
		€cents	3.91	2.81	1.34		
	Vodafone	TRY	0.095	0.0675	0.0323		
		€cents	4.08	2.90	1.39		
	Avea	TRY	0.112	0.0775	0.0370		
		€cents	4.81	3.33	1.59		

Country	Glide paths						
Albania	On July 4, 2012 AKEP designated all four Albanian MNOs as having SMP in the wholesale market for voice call termination on individual mobile networks (see AKEP decisions No. 2119, 2120, 2121 and 2122 of July 4, 2012). For the three established operators - Vodafone, AMC and Eagle Mobile – AKEP confirmed the glide paths set out in its previous decisions No. 1506, 1507 and 1508 of February 10, 2011 (as shown below):						
	MTR per minute		1.03.2011-31.08.2011	1.09.2011-31.08.2012	1.09.2012-31.08.2013	1.09.2013-	
	Vodafone and AMC	ALL	8.85	7.57	6.10	4.57	
		€cents	6.37	5.45	4.39	3.29	
	Eagle mobile	ALL	10.89	8.85	6.52	4.57	
		€cents	7.84	6.37	4.69	3.29	
	For the late entrant, Plus Communications, designated as having SMP for the first time, the following glide path was approved:						
	MTR per minute		Until 31.08.2012	1.09.2012-31.08.2013	1.09.2013-31.08.2014	1.09.2014-31.08.2015	1.09.2015-
	Plus Communications	ALL	18.90*	12.92*	8.85	6.52	4.57
		€cents	13.61*	9.30*	6.37	4.69	3.29
* plus an additional surcharge per call of ALL 0.57 (€0.41). Plus Communications was allowed to apply per call charges only until 31.08.2012, thereafter only per minute charges apply. Exchange rate: 1 ALL = 0.72 €cent							
Kosovo	Following expiry of interconnection agreements in April 2011, and no agreement reached between the two operators IPKO and PTK on October 31, 2012 the functional commission for dispute resolution decided to introduce a glide path on MTRs until July 2014.						
	MTR per minute	Nov. 1, 2012	July 1, 2013	Jan. 1, 2014	July 1, 2014		
	PTK and IPKO	4.4 €cent	3.6 €cent	3.0 €cent	2.3 €cent		

Table P.1 – Glide path for MTRs reductions approved by NRAs in enlargement countries

Traffic originating abroad has been explicitly excluded from the scope of regulated call termination markets (both fixed and mobile) in all enlargement countries, with the only exception of Iceland.

b) Mobile termination rates – actual level as of October 2012

According to the BEREC report on fixed and mobile termination rates in the EU as of July 2012, the simple average for EU stands at 3.57 €cents per minute¹⁴ (a decrease of 11% from January 2012).

Figure P.7 illustrates the developments in mobile termination rates in the monitored countries between 2008 and October 2012. 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 P.8.

¹⁴ Body of European Regulators for Electronic Communications (BEREC) 'Termination Rates Benchmark Snapshot (July 2012)' http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/972-termination-rates-benchmark-snapshot-as-of-july-2012-integrated-report-on-mobile-termination-rates-sms-termination-rates

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

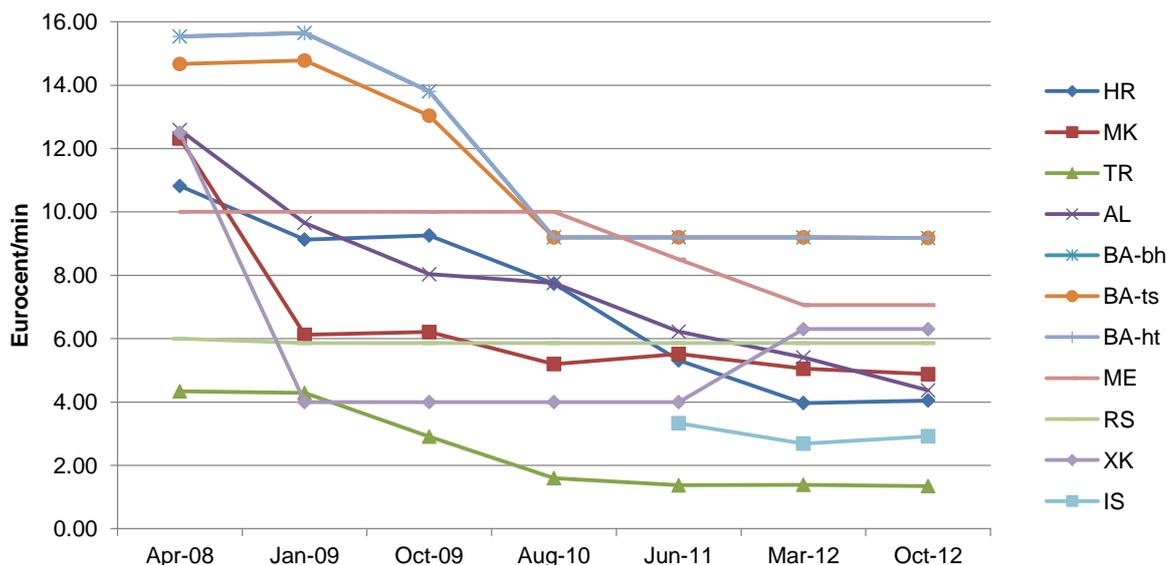


Figure P.7 – Fixed to mobile termination rates, peak time

Over the last few years, mobile termination rates have decreased in all countries. From September 2011, MTR reductions were implemented in Croatia (24%), Iceland (18.2%), Macedonia (depending on operator, from 3 to 15%), Montenegro (24.7%), Serbia (9.5%) and Albania (14.4%). Kosovo is the only country where MTRs increased, from 4 to 6.8 €cents per minute (an increase of 57%). From March 2012 the only remarkable changes were observed in Albania, where MTRs decreased by 19% where MTRs are at a level aligned with the EU average.

The figure below shows the mobile termination rates of all mobile operators in the monitored countries as of October 2012. Mobile termination rates of all operators in Iceland and Turkey are set at the level below the EU average. In Serbia and in Croatia the rates are also below the EU average, although only for Tele2 in Croatia MTRs are slightly above. At the same time, in Bosnia and Herzegovina, Macedonia, Kosovo and Montenegro fixed to mobile termination rates are significantly above the EU average level.

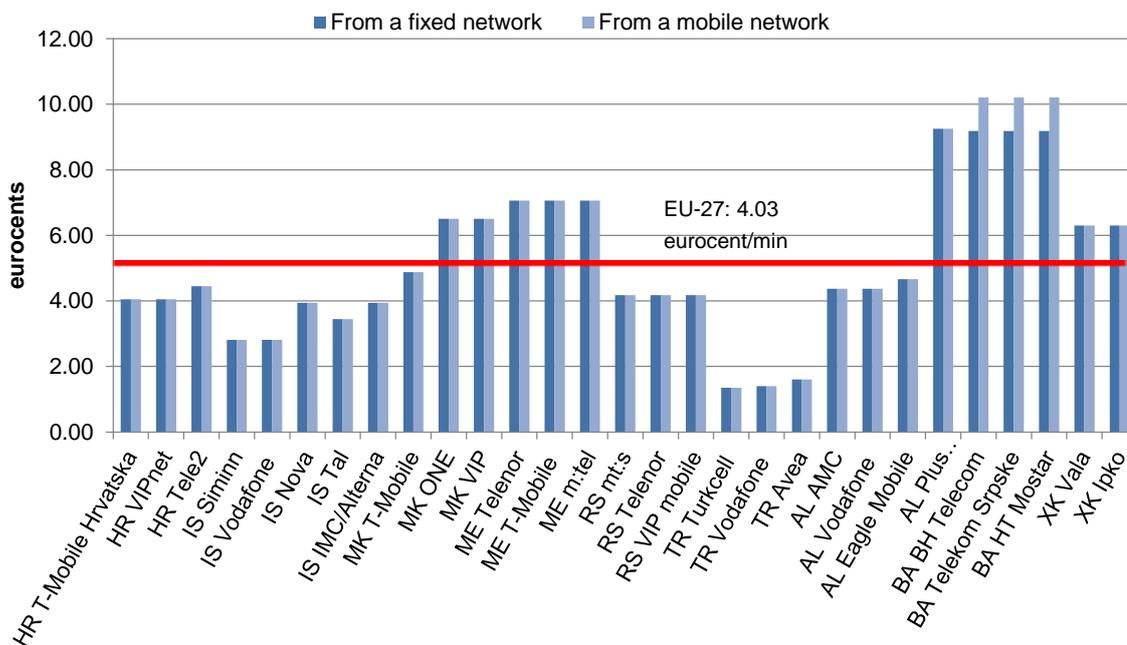


Figure P.8 – Mobile termination rates, peak time, Oct. 2012

3. Local loop unbundling charges

Local loop unbundling prices have been set by regulators in most of the monitored countries, except Kosovo. In Kosovo in October 2012 PTK (SMP operator in LLU market) presented to ARKEP the first reference unbundling offer (RUO) for approval. ARKEP launched the public consultation on RUO in December 2012 and the process is still ongoing.

Implementation of LLU is still limited to four countries: Croatia, Iceland, and, to a lesser extent, Turkey and Macedonia.

Figure P.9 and Figure P.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 as of October 2011, according to the Digital Agenda Scoreboard report 2012.¹⁵ The connection charges in Croatia, Iceland, Turkey, Macedonia and Albania are well below the EU average, while in Serbia, Montenegro and Bosnia & Herzegovina price levels are comparable to the EU level. Prices indicated for Kosovo are the ones proposed by the regulator in a public consultation and not yet in force.

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

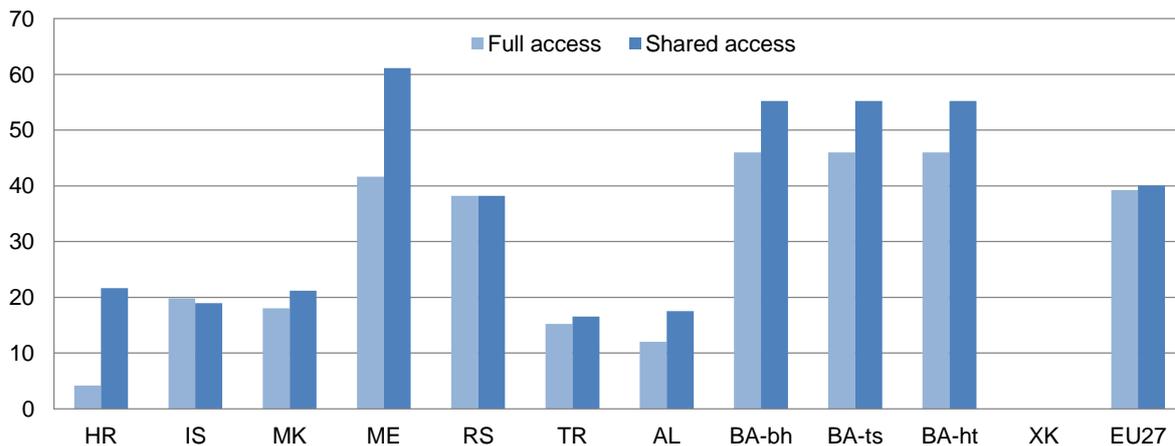


Figure P.9 – Connection prices for fully unbundled loop and shared access, Oct. 2012

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, full LLU monthly prices tend to be higher than line rental charges, a situation which might affect take-up of LLU.

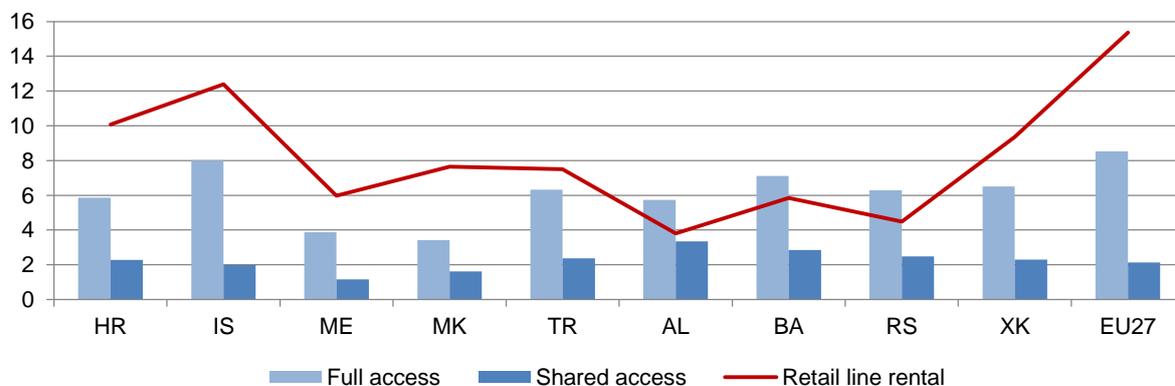


Figure P.10 – Monthly rental prices for fully unbundled loop and shared access, Oct. 2012¹⁶

¹⁶ EU-27 line rental charges as of Oct. 2010. LLU prices as of Oct. 2011

Q. 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.

There is not much case law of the constitutional courts, but the constitutional courts in Macedonia and Serbia adopted interesting decisions on lawful interception and data retention issues. The Turkish Constitutional Court has adopted several judgments on freedom of expression.

On December 15, 2010 the Constitutional Court of Macedonia adopted a decision (case 139/2010) which repealed several provisions in the law on electronic communications that granted public authorities the right to intercept and to access retained data.

The Constitutional Court of Serbia adopted two judgments which clarified that each form of surveillance of electronic communications needs court approval. In 2009 the court repealed a provision in the previous Law on telecommunications and in 2012 provisions in the Law on Military Security and Intelligence Agency.

Two cases are pending at the Constitutional Court of Serbia, one on the provisions on data retention in the new Law on electronic communications and one on the provisions on obtaining listings, locations and other information about the citizen's telecommunications traffic in the Criminal Procedure Code.

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.

NB. Macedonia reported that it has plans to block websites, but without providing any details on which websites would be blocked or which safeguards would protect innocent users. Iceland recently had some political discussion to ban online porn, but it has not reached the stage of drafting a law.

The Turkish 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 a 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 Communications Presidency (TCP), 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 ensure proportionality of the blocking orders and it is therefore possible that a large online portal is blocked because singular items were found as infringing the law. In particular in 2010 Turkey was widely criticised for blocking popular video portals such as YouTube, Geocities, DailyMotion and Google.¹⁸

On December 18, 2012 the European Court of Human Rights [decided](#) in the case [Ahmet Yıldırım v. Turkey](#) that Turkey violated article 10 of the European Convention on Human Rights by blocking access to Google Sites. The applicant had published his academic work on a [website](#) hosted by Google Sites. A Turkish court had blocked all access to Google Sites because of another hosted website whose owner had been accused of insulting the memory of Atatürk. The chamber judgment is not final. Both parties may request referral to the Grand Chamber within three months.

According to the European Commission's last progress¹⁹ report, "*frequent website bans are cause for serious concern and there is a need to revise the law on the internet.*"

TCP provides an interface to check whether any given domain name or IP address is subject to a decision of independent courts and/or TCP, and provides information on the relevant decision.²⁰

The website [engelliweb.com](#) lists 25,229 blocked websites as of March 29, 2013, about 25% more than in June 2012.²¹

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 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>.

¹⁹ Turkey 2012 Progress Report, [SWD\(2012\) 336](#), page 72.

²⁰ <http://eekg.tib.gov.tr/>

²¹ Statistics of the Telecommunication Communication Presidency have also been [published](#) at the online portal Güvenli Web. However, the [link to the PDF file](#) provided on this page is broken.

A draft law²² to transpose the Electronic Commerce Directive was submitted to parliament in 2010, but has not been adopted yet. The law would however not change the liability of internet service providers significantly, and would not amend Law no. 5651.

In 2011 ICTA adopted Principles and procedures concerning the safe internet service²³, which introduced an internet access filtering system based on a 'child profile' and a 'family profile'. The plan was criticised strongly. Taking account of the criticism, the finally adopted version is mandatory for internet service providers, but for subscribers it is voluntary on opt-in basis. Internet access remains unfiltered for subscribers that do not opt-in. Subscribers who have opted in may switch between the profiles and opt out at any time.

R. Information society statistics

A Council Resolution²⁴ of 2003 and a Regulation²⁵ 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.²⁶ The eEurope benchmarking is being further developed under the i2010 benchmarking framework, 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 six, soon for seven, of the monitored countries, whereas for Bosnia & Herzegovina and Kosovo almost no statistical data is available.

- Croatia, Iceland, Macedonia and Turkey collect data in comprehensive annual surveys and their statistics are integrated with Eurostat²⁸ data and publications. Table Q.1 of the annex contains detailed information about the data available for the years 2009 to 2012.
- Serbia collects data with the same methodology and also on annual basis, but the statistics are not published by Eurostat. Table Q.1 of the annex contains data from the Statistical Office of the Republic of Serbia for the years 2009 to 2011.
- Montenegro has started regular research based on Eurostat methodology in October 2011. Table Q.1 of the annex contains data from the Statistical Office of Montenegro (MONSTAT) for 2011.
- The Albanian Institute of Statistics INSTAT has started to collect information society statistics. First results were scheduled for publication in March 2013, but are not included in this report.

²² The draft law is published at <http://www.basbakanlik.gov.tr/Handlers/FileHandler.ashx?FileId=6593> (in Turkish).

²³ See http://www.btk.gov.tr/mevzuat/kurul_kararlari/dosyalar/2011%20DK-14-461.pdf (in Turkish and English).

²⁴ Council Resolution of February 18, 2003 on the implementation of the eEurope 2005 Action Plan, 2003/C 48/02

²⁵ 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

²⁶ 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

²⁷ See Commission Regulations (EC) No 1099/2005, 1031/2006, 847/2007, 960/2008, 1023/2009, 821/2010, 937/2011 and 1083/2012.

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

- Bosnia & Herzegovina has announced that its statistics institutes will gather data based on Eurostat methodology, but this will be delayed to 2013 or 2014.
- Kosovo has not yet reported concrete plans to integrate its statistics with Eurostat methodology.

2. Selected statistical data

For many of the available statistical indicators, Croatia, Macedonia, Montenegro, 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 average.

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.

Horizontal lines show the key performance targets of the Digital Agenda for Europe²⁹.

With regard to internet usage the Digital Agenda sets the target to increase regular internet usage from 60% to 75% by 2015, and from 41% to 60% among disadvantaged people. In Croatia and Macedonia regular internet usage is above 50% and above neighbouring EU member states. Montenegro reported a sharp increase from 2011 to 2012. In Serbia and Turkey the internet usage is comparable to that of Bulgaria and Romania.

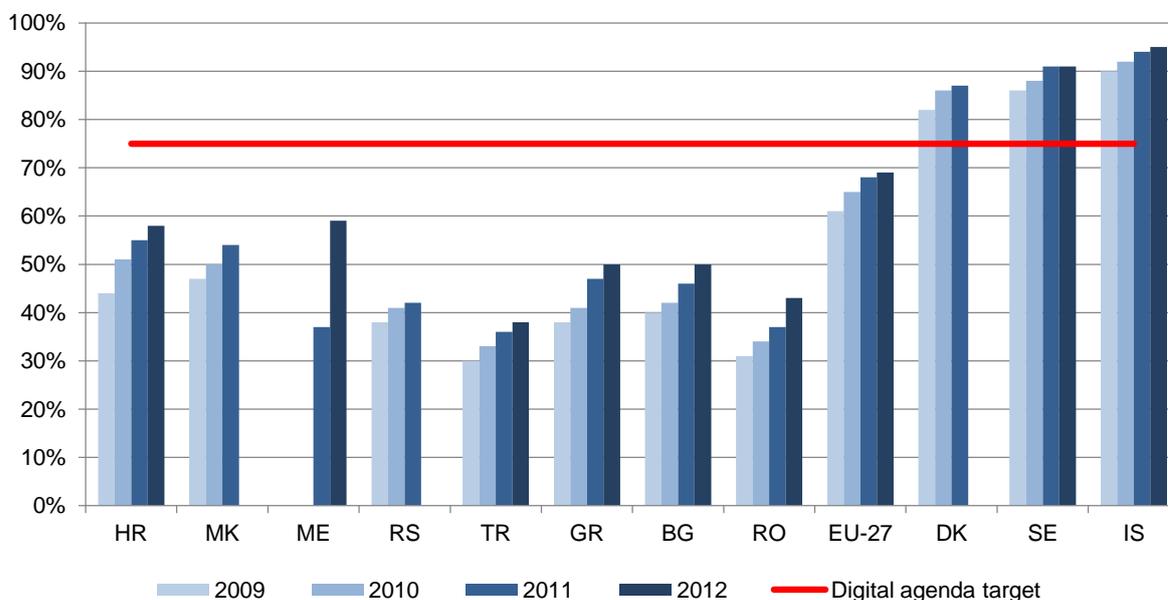


Figure R.1 – Individuals regularly using the internet (Eurostat/statistical offices)

²⁹ <http://ec.europa.eu/digital-agenda/en/scoreboard>

The Digital Agenda envisages halving the proportion of population that has never used the internet from 30% to 15% by 2015. All monitored countries except Iceland are well above this target. In Iceland only 3% have never used the internet.

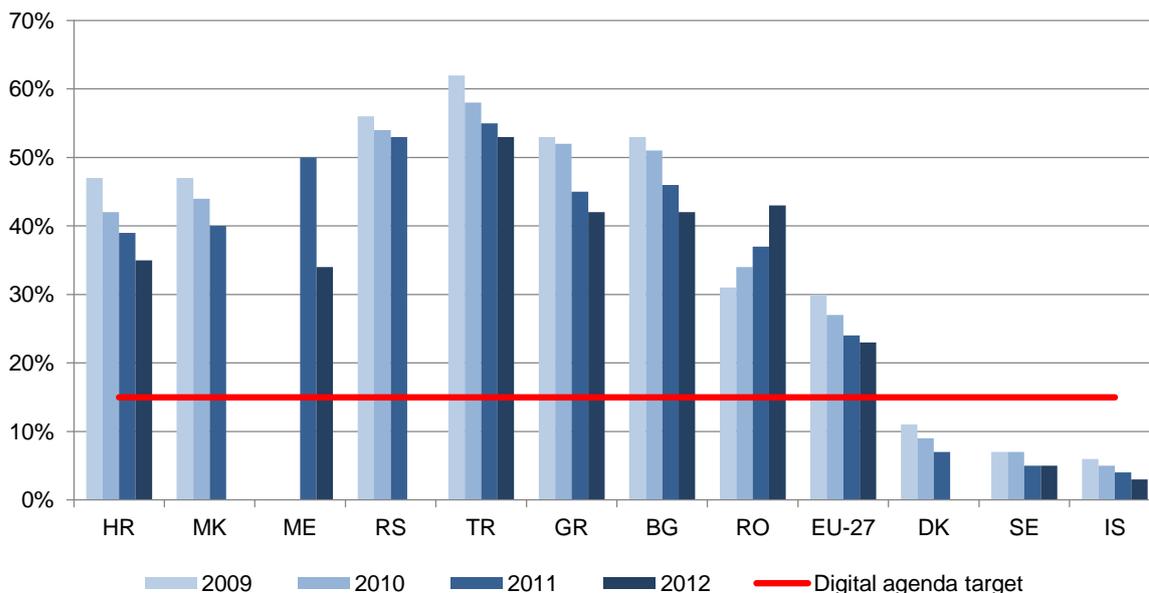


Figure R.2 – Individuals never having used the internet (Eurostat/statistical offices)

50% of EU citizens should use eGovernment by 2015, with more than half of them returning filled-in forms. The comparison with Greece, Bulgaria and Romania shows that there would be a higher potential for eGovernment usage even in countries with comparably low overall internet usage. These EU countries also show rapid increase of eGovernment usage when suitable services become available.

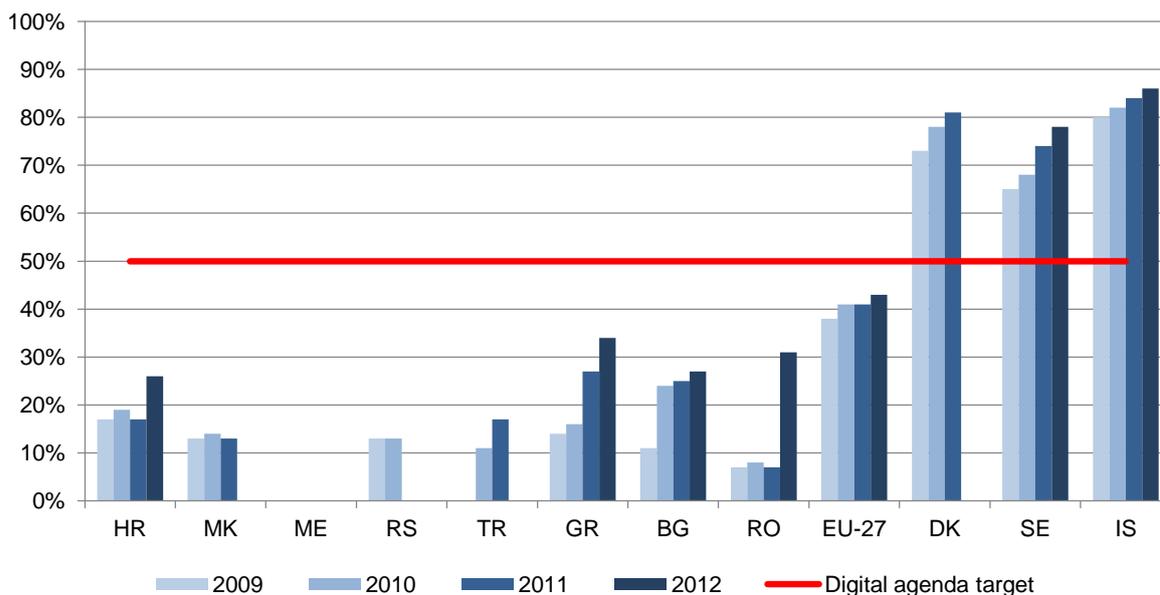


Figure R.3 – Individuals using the internet for interaction with public authorities (Eurostat/statistical offices)

Another Digital Agenda target is that 50% of the population should buy online by 2015, with 20% buying cross-border. This indicator is particularly low in all monitored countries, but there is significant growth in Croatia. Iceland is above the EU-27 average, but lower than its scores with regard to other indicators.

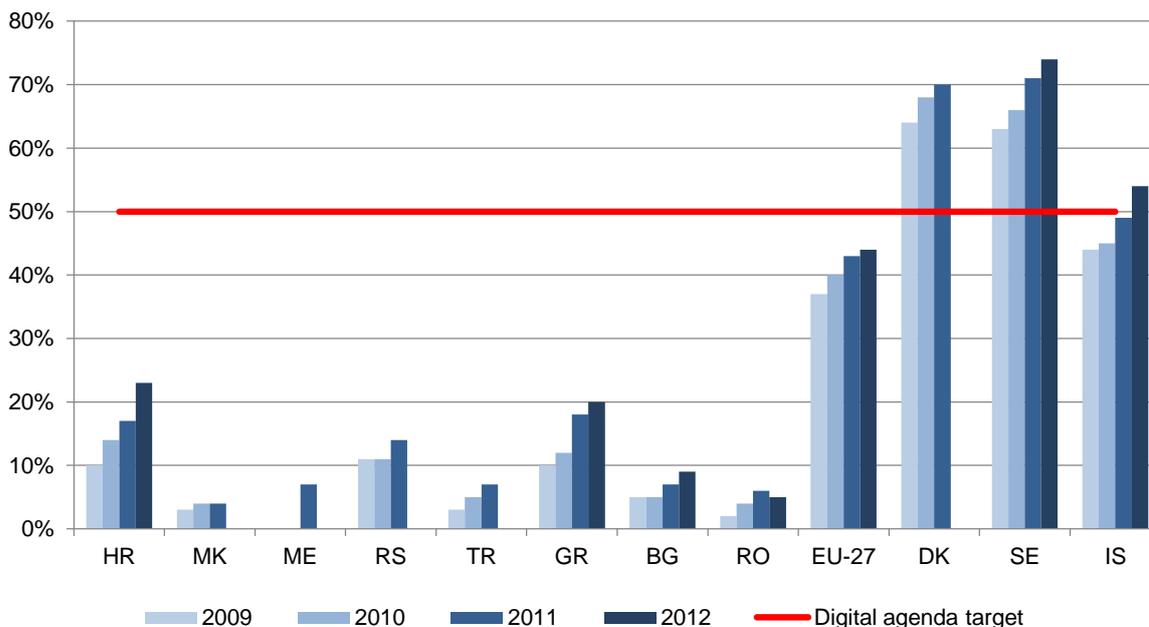


Figure R.4 – Individuals using the internet for ordering goods or services (Eurostat/statistical offices)

The number of households having internet access at home is increasing in all monitored countries, in particular in Croatia and Macedonia. In Serbia, Turkey and Montenegro, about 40% to 50% of households have internet access at home, which can be compared with the EU-27 average in the years 2004 (41%) to 2006 (49%). Iceland has a particularly high rate of 95% households connected to the internet, higher than any EU member state (except the Netherlands, which had slightly higher rates than Iceland in 2011 and have not yet reported 2012 data to Eurostat).

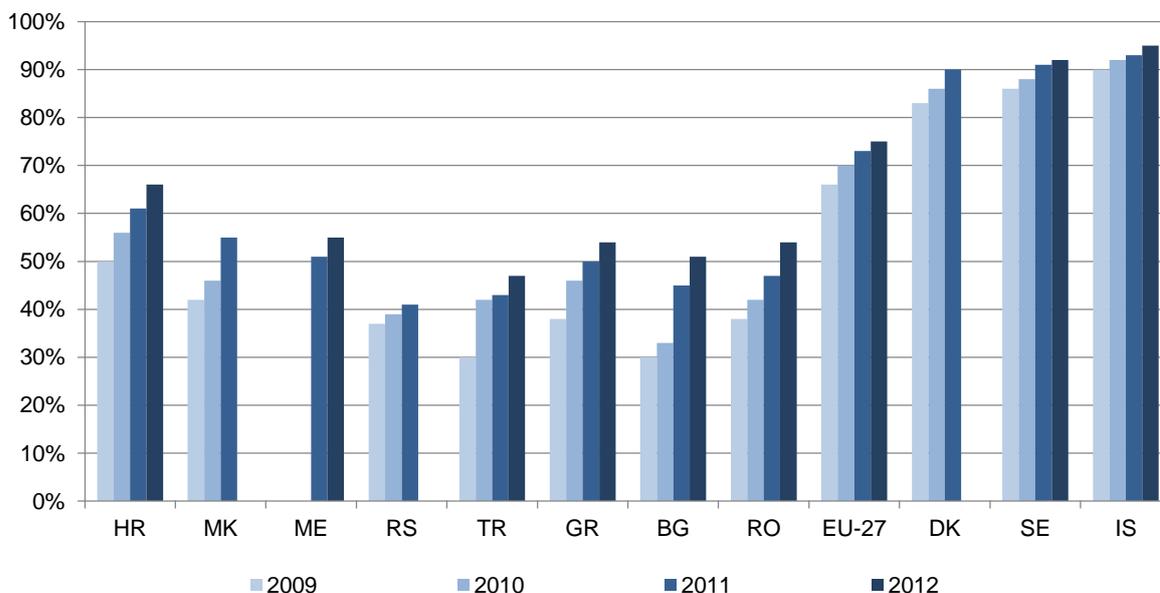


Figure R.5 – Households with internet access at home (Eurostat/statistical offices)

Looking at broadband access there is a slightly different picture in Macedonia and Serbia, where a significant number of households access internet using a narrowband connection (Macedonia 2011: 13%, Serbia 2011: 10%). In all other countries the number of households with narrowband internet access is significantly below 10%. Bulgaria and Romania show that the migration to broadband can be quick.

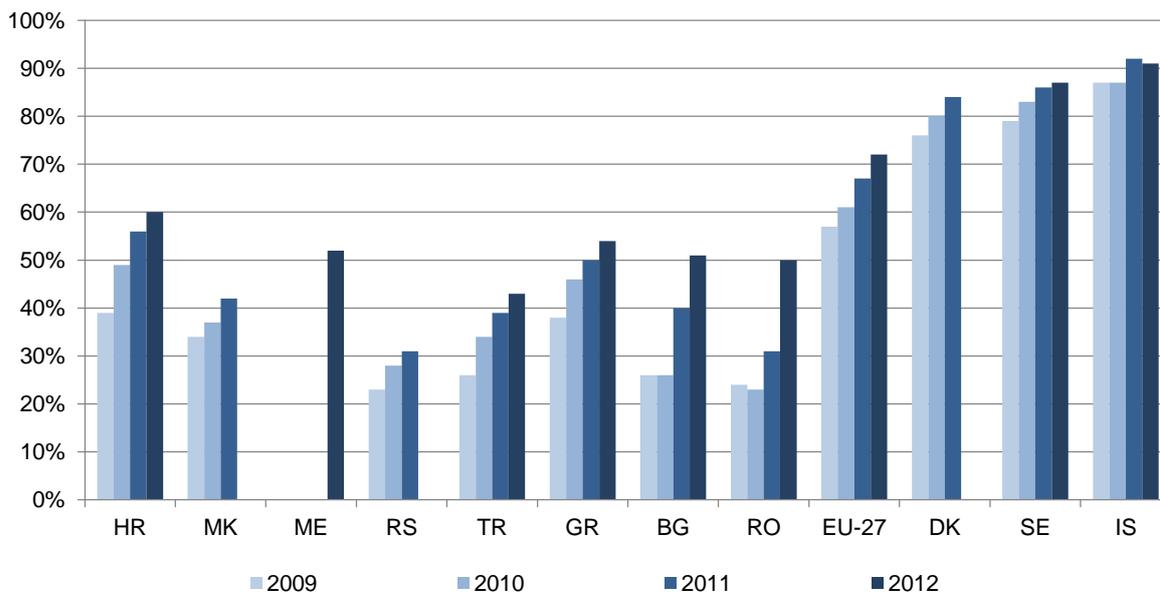


Figure R.6 – Households with broadband access (Eurostat/statistical offices)

In all monitored countries where data is available a broad majority of enterprises uses fixed broadband. Turkey reports a particularly high number (91%), above the EU-27 average.

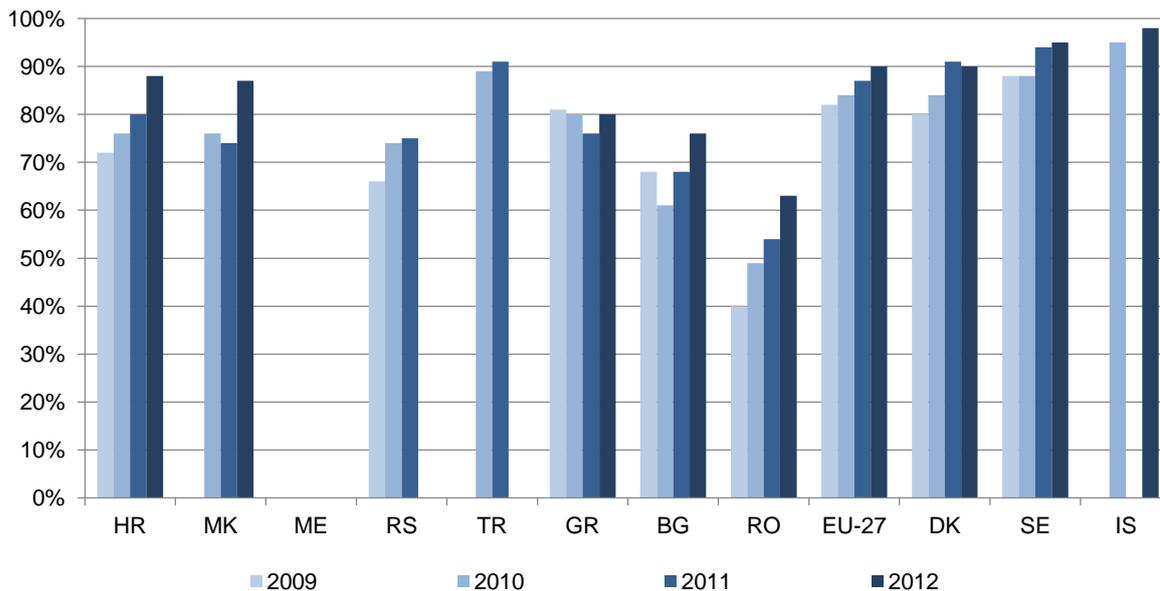


Figure R.7 – Enterprises with fixed broadband access (Eurostat/statistical offices)

S. Network and information security

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

- The EU regulatory framework for electronic communications requires providers of public communications networks and 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 decision³⁰ which echoes the Council of Europe Convention on Cybercrime. The European Parliament and the Council are currently debating to replace the framework decision by a directive.³¹
- The Commission has recently proposed a cyber security strategy³² and a directive 'concerning measures to ensure a high common level of network and information security across the Union'.³³
- The European Network and Information Security Agency (ENISA) is established³⁴ as an institutionalised means of cooperation between member states.
- The Commission proposed³⁵ 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) 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 require operators to take appropriate measures to secure their networks and ensure the continuity of supply of service. Security breaches must be notified to the NRA, which has to report annually to ENISA. The NRA may submit operators to a security audit.³⁶

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.

³⁰ Council Framework Decision [2005/222/JHA](#) of February 24, 2005 on attacks against information systems.

³¹ On September 30, 2010 the Commission adopted 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. First reading in the plenary of the European Parliament is expected soon.

³² Joint [communication](#) to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Cybersecurity strategy of the European Union. An open, safe and secure cyberspace. JOIN(2013) 1 final, February 7, 2013.

³³ Commission [proposal](#) for a Directive of the European Parliament and of the Council concerning measures to ensure a high common level of network and information security across the Union, COM(2013) 48 final, February 7, 2013.

³⁴ [ENISA](#) has been established by Regulation (EC) [460/2004](#) and its mandate has been extended by Regulation (EC) [1007/2008](#) and another time by Regulation (EC) [580/2011](#). Another extension is currently being discussed.

³⁵ Commission Communication of March 30, 2009, [COM\(2009\)149 final](#), followed by a Communication on March 31, 2011, [COM\(2011\) 163 final](#).

³⁶ ENISA published in December 2011 a [Technical Guideline on Minimum Security Measures](#) and a [Technical Guideline on Reporting Incidents](#). Both are non binding and were developed in cooperation with NRAs. <http://www.enisa.europa.eu/activities/Resilience-and-CIIP/Incidents%20reporting>

1. Network security obligations for providers of communications services

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 primary laws – in Turkey in secondary legislation –, which require operators to undertake such network security measures.

However, most of those provisions have been drafted before the EU 2009 regulatory framework and are therefore less detailed. Croatia, Kosovo and Albania have adopted more detailed provisions based on the EU 2009 amendments.

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 networks³⁷, the functionality of public communications networks³⁸ and the protection, functionality and quality of IP communications services³⁹. 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.

Most countries now have provisions in their laws that allow the NRA to audit operators' security measures. Only in Macedonia, Montenegro and Bosnia & Herzegovina 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 now be found in all laws except in Macedonia.

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.⁴⁰

³⁷ <http://www.pfs.is/file.aspx?id=1871>

³⁸ <http://www.pfs.is/file.aspx?id=1872>

³⁹ <http://www.pfs.is/file.aspx?id=1873>

⁴⁰ Croatia: CARNET www.cert.hr and Turkey: TR CERT: www.tr-cert.gov.tr and www.bilgiguvenligi.gov.tr.

- In Iceland and Serbia, academic institutions operate CERTs and are connected with ENISA⁴¹ and other international institutions⁴², but do not operate websites addressed to the general public.⁴³ The Icelandic regulator PTA has established a new CERT team based on amendments to the Electronic communications act in spring 2012.⁴⁴
- Montenegro and Bosnia & Herzegovina established CERTs in 2011 and Albania established the National Cyber Security Agency (ALCIRT) in 2012. All three are not yet included in ENISA's inventory.⁴⁵
- In Kosovo the new Law on electronic communications assigns to ARKEP the task to operate a CERT.
- Macedonia 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. Providers are now obliged to notify personal data breaches 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.

All monitored countries have adopted the provisions of 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 Iceland, Turkey and Albania the body responsible for supervision is the NRA, rather than the data protection authority. In Macedonia, Montenegro, Bosnia & Herzegovina and Kosovo 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 Law on the protection of personal data is more specific and suggests encrypting personal data before transmitting them over telecommunications networks.

The amended directive contains detailed provisions on notifying the affected subscribers and/or the responsible authority in case of personal data breaches. No country except Croatia and Albania 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. An obligation to notify personal data breaches to the NRA will come into force on July 24, 2013.

⁴¹ ENISA maintains an inventory of CERTs all over Europe: <http://www.enisa.europa.eu/act/cert/background/inv>

⁴² 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

⁴³ Iceland: RHnet www.rhnet.is and Serbia: AMRES-CSIRT csirt.amres.ac.rs.

⁴⁴ See <http://www.cert.is/en.html>.

⁴⁵ However, ALCIRT is included in the TERENA list.

- 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 Macedonia, Bosnia & Herzegovina and Kosovo there is no explicit obligation to notify, neither an authority nor affected subscribers.

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

- In all countries except Montenegro and Bosnia & Herzegovina the NRA or the data protection authority have powers to audit the security measures.
- In Montenegro 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. It has not yet ratified the convention, but the Turkish legislation has been aligned with it. Kosovo 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 the level of the two entities the entity 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	MK	ME	RS	TR	AL	BA	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 S.1 – Computer related criminal offences

T. 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 providers of 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 was sent to parliament in 2010, but has not been adopted yet. 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. 5651⁴⁶ obliges them to block access to websites if a court or the NRA has decided that the website constitutes a criminal offence (see [chapter Q.](#) on fundamental rights above).

⁴⁶ 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 table below provides an overview of alignment with the mentioned provisions of the Electronic Commerce Directive:

	HR	IS	MK	ME	RS	TR	AL	BA	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 T.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 1999/93/EC, 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.

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 Kosovo the directive has been transposed by the Law on the information society services of 2002, which has been replaced by a law with the same name that came into force in April 2012.

In the other countries, there are potential problems which might hinder market access:

- In Macedonia 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 and State Inspectors' Office), Iceland (Consumer Agency), Macedonia (Ministry of Finance), Montenegro (Inspection Directorate), Serbia (Ministry of Foreign and Internal Trade and Telecommunications), Turkey (Information and Communication Technologies Authority) and Albania (National Authority for Electronic Certification). In Bosnia & Herzegovina and in Kosovo no supervisory body has yet been established. However, the new law in Kosovo gives

the Ministry of Economic Development the task to set up a supervisory body by secondary legislation.

The competence for supervision has recently changed in Montenegro (which established a new Inspection Directorate, independent of ministries) and Serbia (which changed the competences of ministries).

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, except in Iceland. In Iceland about a third of the population is using qualified certificates. In all other countries less than 1% of the population use certificates.

- In Croatia, the state-owned Financial Agency (Fina) is the only issuer of qualified certificates. As of end 2011 there have been 37,700 valid qualified certificates. Croatia did not report newer data.
- In Iceland, one certification-service provider issues qualified certificates. About 200,000 certificates have been issued, and about half of this number is active (September 2012).
- In Macedonia, two certification-service providers issue qualified certificates, but no data on the number of certificates is available.
- In Montenegro, the Post of Montenegro is the only provider issuing qualified certificates. 2,660 certificates have been issued so far (October 2012).
- Serbia has four providers, which have issued about 14,000 qualified certificates.
- In Turkey, there are four certification-service providers that issue qualified certificates. The number of qualified certificates is growing fast (625,000 in 2Q 2012, about twice as much as at the beginning of 2011), but it is still less than 1% of the population.
- The Albanian Post has started to issue qualified certificates, but no numbers are available yet.
- Bosnia & Herzegovina and Kosovo do not have a provider issuing qualified certificates.

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

	HR	IS	MK	ME	RS	TR	AL	BA	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	2	1	4	4	1	–	–
✓ = transposed/established, ✗ = not established although required by the Directive – = not established, * = potential problems for market access									

Table T.2 – Electronic signature regulation and market data

U. Data protection

1. Protection of confidentiality of communications

According to article 5 e-Privacy Directive, 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 electronic communications law, by a provision in the privacy chapter that prohibits interception, and a misdemeanour provision that defines the penalties for infringements. Sometimes the electronic communications 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 Macedonia 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	MK	ME	RS	TR	AL	BA	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 U.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 Macedonia 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 Macedonia, 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. This has been transposed in all countries except Bosnia & Herzegovina.

For international operators it is important to know, whether they are prevented from cross-border transfer of traffic data, in particular for centralised billing solutions.

- Under EU data protection rules the national laws must not prevent cross-border data traffic into countries with an adequate level of protection, whereas data transfer to other countries needs additional safeguards. This issue of determining the adequate level of protection in other countries is usually addressed in the general data protection laws,

which transpose directive 95/46/EC. All monitored countries except Turkey have such a law.

- We examined whether additional rules in the electronic communications laws prevent operators from transferring traffic data to EU countries, even if it would be allowed under the general rules of the data protection law. This is the case in Macedonia and Turkey, which both require that traffic data must be stored in the country. In Macedonia this restriction was introduced by an amendment of the law in 2010. In Turkey a new bylaw will come into force in July 2013.

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. This rule has been transposed in all countries except Iceland and Bosnia & Herzegovina. 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.

As the following table shows, the EU rules on traffic and location data have been largely adopted in most monitored countries, with the exceptions of Bosnia & Herzegovina (which does not have any legislation on these issues), Macedonia (which has not resolved the problems arising from the June 2010 amendments) and a minor issue in Iceland. In Turkey the new bylaw, which was adopted in July 2012, is not aligned with EU rules. However, the date when this bylaw will come into force has been extended from January 2013 to July 2013 and the bylaw might be revised before it will come into force.

	HR	IS	MK	ME	RS	TR	AL	BA	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?	✓	✓	✓	✓	✓	✓	✓	✗	✓
No regulatory burdens to transfer traffic data into the EU (e.g. for billing)	✓	✓	✗	✓	✓	✗	✓	✓	✓
Informed consent required before location data may be used? Possibility to refuse temporarily, even if consent was given before?	✓	✗	✓	✓	✓	✗	✓	✗	✓
✓ = transposed, ✗ = not transposed									

Table U.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 by communications providers to their existing customers. For business users, 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.

Kosovo now has two provisions forbidding unsolicited communications, one in the new Law on the information society services and one in the new Law on electronic communications (both adopted in 2012).

Macedonia adopted in January 2012 an amendment that obliges mobile network operators to send unsolicited text messages (SMS) to roaming customers on behalf of the tourism agency, free of charge.

Turkey's draft law on electronic commerce would introduce a distinction between individuals and companies and would allow spam sent to companies.

V. Lawful interception and data retention

This report analyses separately lawful interception for criminal proceedings and lawful interception for other purposes.

1. Lawful interception for criminal proceedings

All countries have a legal framework for lawful interception, usually with provisions both in the electronic communications law and the criminal procedure code.

In Macedonia the current legal situation is still unclear. The Constitutional Court has repealed several provisions of the Law on electronic communications on December 15, 2010, in particular those provisions that granted public authorities access to operators' data. This has not been repaired by new legislation, although other parts of the law were amended in the meantime.

In Turkey the main legal basis is Law no. 5397 on Amendments to Certain Laws and the Criminal procedure code. Albania has provisions in the Law on electronic communications and the Criminal procedure code, but also a separate Law no. 9157 on telecommunication interception. In Bosnia & Herzegovina relevant provisions were introduced by amendments to the Law on communications and in the Criminal procedure code as well as detailed provisions in decisions of the Council of Ministers.

The legal framework generally obliges all providers of public electronic communications networks and services to cooperate. In all countries this includes the obligation to install interception equipment, usually without compensation from the state budget. In Kosovo there is compensation from the state budget. In Iceland only dominant operators are obliged to install interception equipment.

Interception is usually initiated by the public prosecutor, in Iceland by the police. In all countries it needs a decision by a judge or a court order. In several countries there is an exception for cases of urgency, but the court has to decide within 24 hours (Croatia, Kosovo) or within two working days (Albania) on the legitimacy of the interception.

All countries have some rules in their criminal procedure codes, which limit the interception to cases of serious crimes, either by an exhaustive list of crimes or by referring to the penalty that is foreseen for such crimes.

	HR	IS	MK	ME	RS	TR	AL	BA	XK
Legal framework exists	✓	✓	?	✓	✓	✓	✓	✓	✓
Court order required	✓	✓	✓	✓	✓	✓	✓	✓	✓
Interception is limited to serious crimes	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓ = foreseen in legal framework, ✗ = not foreseen in legal framework, ? = unclear legislation									

Table V.1 – Lawful interception for criminal proceedings

2. Lawful interception for other purposes

With regard to lawful interception for national security, public security or defence/military purposes, the legal framework is less clear than for criminal proceedings. However, the data delivered for this report is more detailed than in the previous report.

All countries have an authority for national security or public security which is entitled to lawful interception. This is either a dedicated intelligence agency (most countries) or the police (Iceland). Croatia, Macedonia, Serbia and Albania also reported a legal basis for lawful interception for defence/military purposes.

No country allows lawful interception for mere administrative misdemeanours.

In all countries, except Albania, interception requires a prior approval by a court or a judge. In Albania a decision by the general prosecutor is needed, who has an independent role similar to a judge, but with a limited term of office. Some countries allow exceptions for urgent cases, but require ex post approval by a court.

Only Iceland, Macedonia, Bosnia & Herzegovina and Kosovo foresee that the intercepted persons must be informed after they have been intercepted. Only Macedonia, Serbia, Bosnia & Herzegovina and Kosovo reported a procedure under which intercepted persons can appeal the measure at court. In Turkey the legality of interceptions is scrutinised by the Telecommunication Communication Presidency, in Albania by the General Prosecutor.

The following table provides an overview on lawful interception for purposes other than criminal proceedings.

	HR	IS	MK	ME	RS	TR	AL	BA	XK
Legal framework for lawful interception for national security/public security	✓	✓	✓	✓	✓	✓	✓	✓	✓
Legal framework for lawful interception for defence/military purposes	✓	–	✓	–	✓	–	✓	–	–
Court order required	✓	✓	✓	✓	✓	✓	✓*	✓	✓
Intercepted persons must be informed	✗	✓	✓	✗	✗	✗	✗	✓	✓
Intercepted persons can appeal	✗	✗	✓	✗	✓	✗	✗	✓	✓
✓ = foreseen in legal framework, ✗ = not foreseen in legal framework, – = no such interception, * = General Prosecutor order required									

Table V.2 – Lawful interception for other purposes

3. Data retention

According to the e-Privacy Directive, providers have to erase traffic data as soon as they no longer need them for their legitimate purposes (in particular for billing, see Table U.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.⁴⁷ On February 10, 2009 the European Court of Justice dismissed⁴⁸ an action for annulment of the directive brought by Ireland, but further lawsuits are pending.⁴⁹ The European Commission is currently reviewing the directive.

All participating countries have addressed data retention in some form in their legislation. Kosovo has a provision on data retention in its new Law on electronic communications. Albania amended many provisions in its Law on electronic communications, including the article on data retention. Turkey adopted a bylaw, which will come into force on July 24, 2013.

In Macedonia and Serbia the respective provisions were challenged at the constitutional courts (see [section Q.1](#) above):

- In Macedonia the constitutional court repealed in December 2010 the provisions which grant public authorities access to retained data. This led to the paradoxical result that operators must retain traffic data for a period of 24 months, but the public prosecutor and courts are not entitled to use the retained data for criminal proceedings.
- In Serbia the constitutional court repealed on April 19, 2012 provisions in the Law of the Military Security and Intelligence Agency. Another lawsuit on provisions in the Law on electronic communications is pending. The ministry is waiting for this judgment before adopting prepared secondary legislation.

None of the countries has a clear definition of the purposes for which the retained data may be used in its electronic communications law. According to article 1 of the Data Retention Directive, the data should be held available “for the purpose of the investigation, detection and prosecution of serious crime”:

- Most of the countries simply do not specify any purpose for which the retained data may be used. The laws oblige operators to retain data, but do not regulate which authority may access the data under which conditions. This is in some contradiction with the finding that all countries require court approval for lawful interception (see [section V.1](#) above).
- Some countries define explicitly a wider context for using retained data. The Croatian law allows using retained data for the prosecution of criminal offences (without limiting to serious crimes), for defence and for national security. The Macedonian law contained a similar wording, which was however repealed by the constitutional court. Serbia allows the usage of retained data for criminal proceedings, for the security services and by the authorities in charge of internal affairs. In Bosnia & Herzegovina the relevant decisions of the Council of Ministers do not differentiate between criminal proceedings and the Intelligence-Security Agency. The new provisions in Albania and Kosovo simply refer to the criminal procedure code and the authorities mentioned therein.

In some countries the scope of the data to be retained or the duration is unclear:

- Macedonia 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, but adoption is delayed as the primary legislation is being examined by the constitutional court. In Macedonia operators must retain data although public authorities are no longer entitled to use them.

⁴⁷ Romanian Constitutional Court, October 9, 2009, [decision no. 1258\(1\)](#) and German Federal Constitutional Court, March 2, 2010, [case 1 BvR 256/08](#)

⁴⁸ ECJ February 10, 2009, case C-301/06 Ireland v Parliament and Council

⁴⁹ The Irish High Court has asked the Court of Justice of the European Union for a preliminary ruling in the case Digital Rights Ireland, C-293/12. The Austrian Constitutional Court has asked for a preliminary ruling in the case C-594/12 and the Austrian Data Protection Commission in the case C-46/13.

- The law in Montenegro 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 except Kosovo operators have to bear the costs and are not entitled to ask for a compensation. The new law in Kosovo foresees that data retention storage is paid for by state funds.

Most countries oblige operators to retain traffic data for both telephony and internet access. This is now also foreseen in the amended Albanian law and the new bylaw in Turkey. In Macedonia the exact types of data to be retained is still not specified clearly.

Some countries have additional requirements, for example the provisions in Macedonia and Turkey 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. Macedonia also requires operators to have their surveillance equipment approved.

W. 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 (Croatia, Macedonia, Turkey and Bosnia & Herzegovina) 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.
- In Albania the telecommunications regulator is the national registry and has, since June 2008, an explicit legal basis in the Law on electronic communications.

- Turkey has adopted a bylaw on internet domain names and plans to re-delegate the .tr top level domain on this new legal basis. In Macedonia 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, which would move the responsibility for domain name policy from the registry to the Ministry of Interior. A licence issued by PTA would in future become the legal basis of the registry. However, adoption of this law has been delayed again.
- 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.
- 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.

There is a clear trend towards competition. Croatia allows competition between registrars since 2010. In Albania, AKEP has upgraded its technical systems and will support competition between registrars from May 2013. In Turkey, competition is low, as the registry itself has registered about 90% of the domains and only 13 registrars are currently accredited, nine of which are active. ICTA aims to enhance competition in the process of re-delegating the .tr top level domain name.

From May 2013 Macedonia will be the only country in the region without competition between registrars.

	Competition model	“Registry is only registrar” model
Competition between registrars	Yes	No
Countries	HR, IS, ME, RS, TR, AL, BA	MK
Who accredits registrars	The registry	–
Electronic interface	Yes	No
Number of registrars	HR: 14, IS: 61, ME: 159, RS: 37, TR: 13, BA: 19 AL: 1, competition from May 2013	1 (the registry)

	Competition model	“Registry is only registrar” model
Price per domain and year	HR: €0 to €50 (80% of domains: €0) IS: €39 ME: €10 RS: €3 to €15 TR: €2 to €11 AL: €7 BA: €15.3 (first year: €40.9) Does not include registrar functions	MK: €5 to €10 Includes registrar functions

Table W.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 in Macedonia and Albania (until May 2013), the two countries where the registry also had to charge for the registrar functions, the charges have been relatively low. 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. 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 October/November 2012 (except Croatia: February 2012). The figure shows the absolute number of domain names (left axis, columns) and the number of domain names per 1000 inhabitants (right axis, dots).

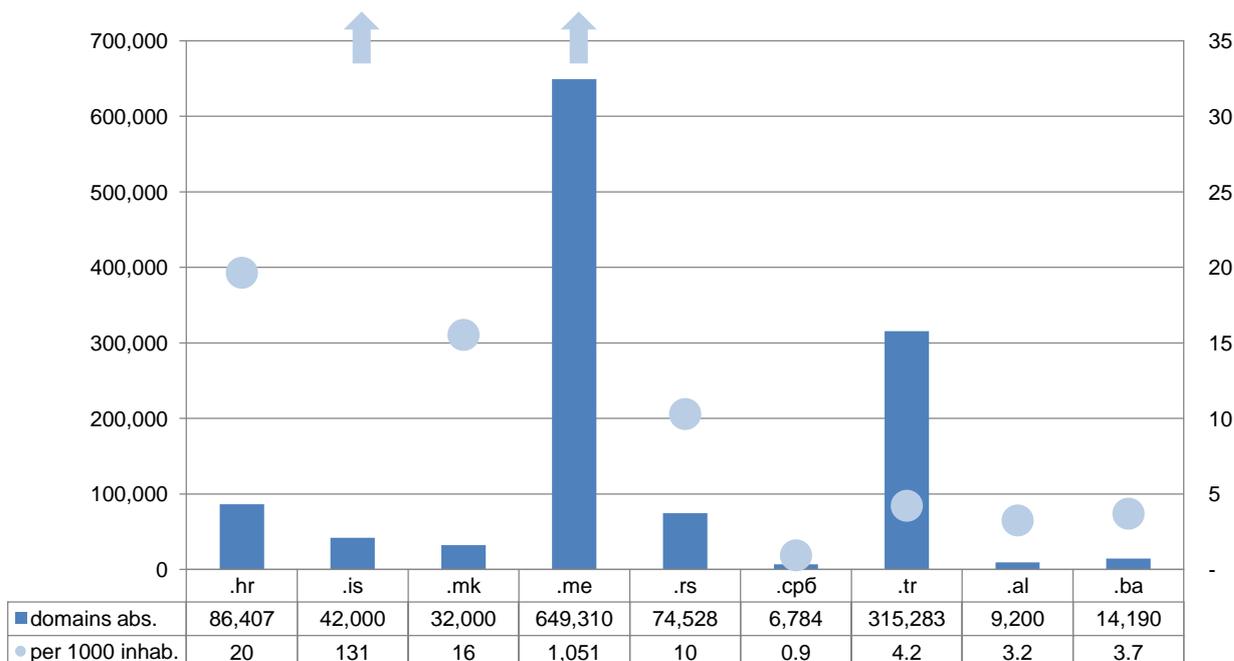


Figure W.1 – Domain names, absolute and per 1000 inhabitants

The .me top level domain is highly attractive for foreigners. Montenegro reported 649,310 domain names by October 2012, twice as much as in Turkey. Almost all of this interest in Montenegrin domain names comes from other countries. Montenegro now has more domain names than inhabitants, whereas other countries in the SEE region have about 3 to 20 domain names per 1000 inhabitants.

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 launched an additional top level domain in Cyrillic letters, .cpб, in January 2012. During a sunrise period of six months only the users of an .rs domain name could register the transliterated domain name in Cyrillic letters. 6,784 cpб domains were registered by November 1, 2012.

In comparison with the size of the 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 (until April 2013). The large absolute number of .tr domains in Turkey is explained by the size of country.

VI. COUNTRY PROFILES

A. Croatia

1. Legislative framework

Croatia was the first among the monitored countries to implement 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).

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 Maritime Affairs, Transport and Infrastructure (MPPI) is responsible for policy making in the electronic communications sector. Ministry of Administration is responsible for ICT policy in public sector	Croatian Competition Agency (since 1997) Agency for Electronic Media (since 2007)	The state sold 51% of its stakes in the fixed incumbent 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 GHz bands. Since 2009 the mobile licences are technology neutral and the frequency plan has been amended to allow UMTS and LTE services in the GSM bands.

Analogue switch-off in Croatia was completed in October 2010, earlier than in most of the EU member states. The 800 MHz spectrum was awarded for mobile broadband services in October 2012. Two licences of 2x10 MHz were issued to Hrvatski Telekom (HT) and VIPnet, while a third block of 2x10 MHz remained unassigned.

Numerous regional licences for wireless broadband access have either expired or returned to the regulator and a single national licence in the 3.5 GHz was issued in late 2011.

800 MHz	900 MHz	1800 MHz	2 GHz	3.5 GHz	3G/4G in 900/1800?
2 licences 2012	3 licences 1995, 1998, 2007	3 licences 2004, 2007, 2011	3 licences 2004	1 national licence	3G/4G allowed

5. Competitive safeguards

Croatia introduced most of the competitive safeguards during 2005 – 2006. National roaming is offered to the late 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	–	–	–	–	–	–
2013	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	X	✓

6. Market structure

The incumbent HT remains the main provider of fixed services. Alternative operators gained over 40% market share in voice telephony and about 30% in fixed broadband services.

There are three mobile network operators: HT, VIPnet and Tele2, with respective market shares of 47%, 39% and 14%, by subscriptions.

Telekom Austria's VIPnet recently added to its mobile portfolio fixed broadband and pay-TV services after acquiring in 2011 a major cable TV company B.net and in 2013 a regional satellite TV provider Digi TV.

	Fixed line penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration (data cards)	Electronic communications as % of GDP
2005	38%	64%	0.6%	-	4.9%
2012	40%	116%	20%	7.5%	3.9% (2010)

7. Outlook

Croatia fulfilled the EU accession requirements for information society and media in terms of aligning its legislation with the EU *acquis*.

Looking ahead, the main challenges for HAKOM are completing its work on LRIC cost accounting models for fixed and mobile networks and carrying out the new round of market analyses. Following the EU accession, HAKOM would be required to notify its proposed regulatory measures to the European Commission, BEREC and other NRAs and ensure consistent implementation of the EU regulatory framework.

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.

A draft bill transposing the EU 2009 regulatory framework was submitted to Parliament in 2012. However, since the EU 2009 framework has not been formally included into the EEA-agreement, the adoption has been postponed.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2003	Draft	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”. PTA is 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 electronic communications and information society sectors	Consumer Agency Competition Authority (ICA)	The incumbent operator Síminn was fully privatised in 2005. State retains 28% stake in the company Farice operating international submarine fibre optic cables.

3. Market access conditions

Iceland was first among the monitored countries to implement 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

Iceland has four mobile network operators, three of which – Síminn, Fjarskipti and Nova - have spectrum assignments in the 900 MHz, 1800 MHz and 2 GHz bands. The fourth operator, IMC, has only a smaller spectrum block in the 1800 MHz band. As a result of spectrum refarming process completed in 2012, some additional spectrum was assigned to Nova and IMC enabling 5 MHz channelling arrangements.

Since 2008, the use of UMTS technology is allowed in the 900 MHz and the 1800 MHz bands, whereas LTE services in the 1800 MHz band have been allowed following the auction of 800 MHz and 1800 MHz spectrum completed in March 2013. In the 1800 MHz band, Síminn won three blocks of 2x5 MHz, while Fjarskipti and Nova won one block of 2x5 MHz each.

Analogue switch-off was completed in January 2012. The auction for released spectrum in the 800 MHz band, jointly with available spectrum in the 1800 MHz band, was completed in March 2013. The largest 2x10 MHz block and one of the 2x5 MHz blocks was won by a new entrant, 365 Media (owned by the country's largest media group). The remaining spectrum was won by two existing operators: Fjarskipti (two blocks of 2x5 MHz) and Nova (one 2x5 MHz block).

There are seven regional licences to operate wireless access networks in the 3.5 GHz band.

800 MHz	900 MHz	1800 MHz	2.1 GHz	3.5 GHz	3G/4G in 900/1800?
3 licences April 2013	3 licences 1996, 1998, 2007	4 licences 2000/2013 (3), 2009 (1)	3 licences 2007	7 regional licences	3G in 900 3G/4G in 1800

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, but not yet implemented in practice. Regulation of fixed and mobile termination rates is based on a benchmarking methodology that applies the level of regulated termination rates in the countries that have implemented pure LRIC models in line with the EC recommendation.

	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	-	-	2003
2013	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓

6. Market structure

Over the past few years, the Icelandic telecommunications market has undergone important structural changes and became increasingly consolidated. In 2007, Síminn's fixed network infrastructure was structurally separated from the company's retail operations, and a separate company, Míla was established. Structural separation between Míla and Síminn, non-discrimination and equivalence of access to wholesale inputs sold by Míla has been further enforced in the recent settlement between the Icelandic NCA and Skipti group.

In fixed telephony services, the market is split 75%, 17% and 7% (by subscriber lines) between Síminn, Fjarskipti and Tal. In the provision of fixed broadband services, the respective market shares of the same operators are 51%, 32% and 9%.

In mobile telephony services, the principal players are Siminn, Vodafone and Nova, with the respective market shares of 38%, 29% and 28% (by subscriptions). An MVNO, Tal, has a market share of just below 5%.

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration (data cards)	Electronic communications as % of GDP
2005	45%	101%	27%	-	2.93%
2012	48%	108%	35%	15%	1.49% (2010)

7. Outlook

Iceland has achieved a high level of alignment with the EU *acquis*, but the transposition of the 2009 regulatory framework for electronic communications still has to be completed. The financial independence of the regulator and its enforcement powers need to be strengthened.

Among main priorities for PTA is completing its second round of market analyses and effective implementation of regulatory obligations.

C. The former Yugoslav Republic of Macedonia

1. Legislative framework

Macedonia 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. The work on amendments to transpose the EU 2009 regulatory framework was started in 2012.

The Law on electronic communications has been amended frequently, including two smaller amendments in 2012. Some of the amendments have been rather controversial, such as the provisions on data retention and access to retained traffic data adopted in 2010, which were partly repealed by the Constitutional Court in December 2010 and have not been reassessed since then.

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, competencies for information society and electronic communications are now consolidated under the Ministry of Information Society and Administration. There is still insufficient 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.	Ministry of Information Society and Administration (since 2011)	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 36.81% 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

Macedonia has three mobile network operators: Makedonski Telekom has spectrum in the 900 MHz, 1800 MHz and 2 GHz bands, ONE in the 900 MHz and 2 GHz bands, and the third-entrant VIP in the 900 MHz and 1800 MHz bands. VIP had recently doubled its spectrum holdings in the 1800 MHz band following a spectrum tender held by AEC in summer 2012 where VIP was the only bidder.

In 2009 the frequency plan was amended to allow UMTS in the 900 and 1800 MHz bands.

Most of the licences for fixed wireless access issued in 2007 were returned to the regulator and currently there is only one active licensee operating in all six regions.

Analogue switch-off is planned for June 2013. AEC has granted one national DVB-T licence to broadcast in the 470-862MHz frequency band and assigned two multiplexes (MUX6 and MUX7) to the mobile operator ONE. ONE will start digital transmissions from June 1, 2013.

In 2012, AEC undertook two attempts to award one licence for a 2x10 MHz block in the 800 MHz band. However, both tenders turned unsuccessful, possibly due to relatively high spectrum fees combined with extensive network rollout obligations.

800 MHz	900 MHz	1800 MHz	2 GHz	3.5 GHz	3G/4G in 900/1800?
-	3 licences 2001, 2001, 2007	2 licences 2007/2012, 2009	2 licences Feb. & Dec. 2008	6 regional licences (1 licensee)	3G allowed

5. Competitive safeguards

Most competitive safeguards in Macedonia were introduced in 2007 and 2008, although the practical implementation mainly took place in 2009. Macedonia was also the first among the monitored countries 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	-
2012	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

6. Market structure

Makedonski Telekom is the incumbent provider of fixed voice telephony and broadband services. Alternative fixed operators have gained a market share of about 33% in voice telephony and over 55% in broadband (by subscriber lines). In the provision of fixed broadband services the incumbent faces a particularly strong competition from cable operators that now supply over 33% of all fixed broadband connections.

The mobile subsidiary of the incumbent operator, T-Mobile, controls about 50% market share, whereas the third mobile entrant, VIP with 27% market share has now overtaken the second mobile operator ONE with 23% (by subscriptions).

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration (data cards)	Electronic communications as % of GDP
2005	29%	49%	0.1%	-	7.8%
2012	20%	107%	14%	0.9%	5.7% (2010)

7. Outlook

AEC has been carrying out its next round of market analyses and implementing a broad range of competitive safeguards. In particular, it has made major progress with implementing consistent LRIC-based price control methodologies for regulated wholesale products in fixed and mobile networks.

The ambitious regulatory strategy adopted by AEC for the years 2012–2016 envisages assignment of additional spectrum for mobile broadband on technology neutral basis. Interest of operators in spectrum however has been low, which might be caused by high spectrum fees and coverage requirements in combination with still relatively immature broadband market.

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.

D. 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.

The draft new Law on Electronic Communications transposing the EU 2009 regulatory framework was prepared by the Ministry for Information Society and Telecommunications in late 2012 and is now awaiting the government approval before being presented to Parliament.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2008	Draft	2004	2003	✓	2008

2. Institutional framework

The Agency for Electronic Communications and Postal Services (EKIP) is the national regulatory authority, established in 2001, but its competencies and name were changed first in 2005, when it took over regulation of the postal sector, and again in 2008, when it became the sole authority responsible for spectrum assignments.

The Ministry for Information Society and Telecommunications plays the key role in adopting the secondary acts foreseen under the primary legislation. However, certain authorities of the ministry and EKIP sometimes overlap. For example, the ministry is authorised to adopt regulations relating to electronic communications, while EKIP also prepares regulations itself as well as provides expert inputs for the development of regulations by the ministry. Furthermore, as the ministry has limited capacity, there could be delays in adopting relevant regulations.

The law also gives the ministry the powers to review EKIP's decisions as the first appeal instance, effectively undermining the regulator's independence.

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.	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 spectrum assignments in the 900 MHz, the 1800 MHz and the 2 GHz. In late 2011 additional spectrum available in these bands was distributed between Telenor and Crnogorski Telekom, whereas the third operator MTEL did not show interest in additional spectrum.

Mobile operators are allowed to use the GSM bands for UMTS and LTE services. Montenegro has also awarded several licences for fixed wireless access.

Analogue switch-off initially planned for 2012, has been postponed until June 17, 2015.

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

5. Competitive safeguards

Major progress was made in 2011 following the first round of market analyses completed by EKIP. Reference offers were published by the incumbent operator for interconnection (including CS and CPS), wholesale broadband access, wholesale line rental and LLU. Number portability in fixed and mobile networks, regulatory obligations enabling MVNO access and national roaming on all three mobile networks were also introduced in late 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
	2008	2011	2011	2011	2008	2012	2011	2011	2011	2012	2012	-	-	-
2013	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	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 82% in provision of fixed broadband.

A competitive environment has emerged in mobile networks with three operators having similar market shares: Telenor (40%), Crnogorski Telekom (34%) and MTEL (26%).

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration (data cards)	Electronic communications as % of GDP
2005	31%	78%	-	-	11.7%
2012	28%	165%	13.8%	16.3%	8.7% (2010)

7. Outlook

Competition in fixed voice telephony and broadband services remains low, as most of the competitive safeguards introduced in 2011 have not yet produced visible changes in the market.

Mobile services have been the most dynamic sector and mobile broadband is now widely available on a competitive basis. In 2012 mobile broadband grew rapidly and has now overtaken fixed broadband.

Certain aspects of the present institutional framework, such as the appellate powers of the ministry and legislative provisions on the collective dismissal of EKIP's management, raise major concerns over the NRA independence. The NRA's financial autonomy has been further restricted by the recent amendments to the Law on Electronic Communications which would require EKIP to transfer any surplus of collected funds to the state budget.

E. 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.

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 in 2003 but became operational only in 2005. During its first years of operations, RATEL's independence had been challenged by the ministry's supervision powers and by the systematic delays in approval of its board members.

The Ministry of Foreign and Internal Trade and Telecommunications has overall responsibility for policy in the sector, including spectrum and universal service. The Administration for Digital Agenda within the ministry is specifically responsible for information society issues.

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.	The Ministry of Foreign and Internal Trade and Telecommunications 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 controls 58.11% of the incumbent Telekom Srbija (the remaining 20% is owned by Telekom Srbija, 6.94% by its former employees and 14.95% by citizens of Serbia)

3. Market access conditions

Serbia was the last among the monitored countries to liberalise fixed voice telephony in January 2012. Although the market was formally opened to competition 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. From January 1, 2012 general authorisation regime applies to all types of electronic communications services.

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 2008 (international gateways)	2010 (except fixed voice) 2012 (fixed voice)	none

4. Spectrum assignments

Serbia has three mobile network operators, each holding spectrum assignments in the 900 MHz, 1800 MHz and 2 GHz bands. The frequency allocation plan adopted on October 2012 allows the usage of the 900 MHz and 1800 MHz bands for electronic communications networks on technology neutral basis, but the licences issued to mobile operators still have to be amended to allow 3G/4G services in these bands.

Two national licences for CDMA-based fixed wireless access in the 410 MHz band were issued in 2009. The use of the 3.5 GHz band is only authorised at specific locations, mainly within Belgrade and Novi Sad.

Analogue switch-off initially planned for April 2012, has been postponed until June 17, 2015.

800 MHz	900 MHz	1800 MHz	2 GHz	3.5 GHz	3G/4G in 900/1800?
-	3 licences 2006	3 licences 2006	3 licences 2006	several local permits	In progress

5. Competitive safeguards

Serbia is lagging behind with implementation of competitive safeguards. However, following the adoption of the market analysis decisions at the end of 2011, some progress has been reported with introducing key competitive safeguards in the first half of 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
	-	-	2014	2011	2008	2012	2012	2006	-	-	2006	-	-	-
2013	x	x	x	✓	✓	✓	✓	✓	x	x	✓	x	x	x

6. Market structure

Telekom Srbija remained the only licensed provider of fixed voice services until 2010 and its market share still remains close to 100%.

In fixed broadband services, competitors have gained market share of about 50%. Main competition comes from cable operators, whereas the position of alternative xDSL providers relying on wholesale bitstream access product from Telekom Srbija has been weakening in competition with the incumbent's own retail offers.

In mobile telephony services, the market is split 48%, 34% and 18% between Telekom Srbija, Telenor and VIP mobile (based on subscriber numbers).

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration (data cards)	Electronic communications as % of GDP
2005	34%	57%	<0.1%	-	4.5%
2012	40%	132%	13.5%	3.5%	5.3% (2010)

7. Outlook

Serbia has been progressively aligning its legislation with the EU *acquis*, but implementation of the competitive safeguards is still lagging behind, in particular in the fixed telephony market. The recent decision to postpone effective implementation of fixed number portability until 2014 will further delay competition in the provision of fixed voice telephony services.

The amendments to the budget system law and the law on salaries in the public sector adopted in September 2012 further constrain RATEL's budget autonomy and its ability to recruit and retain competent staff. In this context, the independence of the NRA and its capacity to effectively perform its regulatory functions remains a major concern.

F. Turkey

1. Legislative framework

Turkey's Electronic Communications Law of 2008 brought the Turkish regulatory framework closer to the EU 2003 framework. Turkey does not yet have specific plans for transposing the EU 2009 regulatory framework. Turkey's legislation remains a complex hierarchy of laws, bylaws and regulations, with several key issues addressed only by secondary legislation. In a recent development, the entry into force of a new bylaw on data protection and privacy has been postponed to July 2013; its provisions are not fully aligned with the EU Data Retention Directive.

Turkey has still to adopt a law transposing the Electronic Commerce Directive: although a [draft law](#) was prepared by the Ministry of Justice and submitted to the Grand National Assembly of Turkey on December 27, 2010, there has been no further progress towards its adoption. The new law would not, however, align the provisions on liability of ISPs.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2008	X	X	2004	✓	Secondary legislation

2. Institutional framework

Legislation adopted in 2008 introduced a clearer distinction between the competencies of the regulator, ICTA, and government ministries and stipulated ICTA's independence. However, the Ministry of Transport, Maritime Affairs and Communications has the authority to launch tender procedures for spectrum authorisations and remains responsible for the implementation of universal service. In January 2013 it organised a tender for the provision of mobile network coverage to 1,799 rural areas under a three-year universal service obligation. Turkcell was declared the winner in February 2013.

In December 2012 the Turkish government announced plans to reduce the state's 30% stake in Türk Telekom through a secondary public offering of around 7%.

NRA	NRA appeals	Government	Other	State ownership
The Information and Communication Technologies Authority (ICTA, until 2008: Telecommunications Authority)	Appeals against regulatory decisions are decided by courts (Council of State or Administrative Court).	The Ministry of Transport Maritime Affairs 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 Turk Telekom. Currently, the state holds 30% and a golden share of Turk Telekom and controls the satellite and cable TV operator Turksat. Indirectly, through Turk Telekom, the state also controls 27% of 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, unless they are annulled or terminated. This includes the authorisation agreement for Turksat (satellite operator), the concession agreement for Turk Telekom valid until 2026 and the six concession agreements for the mobile operators (one each for GSM – valid until 2023 and one each for UMTS – valid until 2029).

A change in the authorisation ordinance introduced in September 2011 requires operators authorised under concession agreements to limit the provided services to the ones explicitly covered within the scope of concession agreements. In practice this implies that operators have to establish separate new business entities should they wish to provide additional services outside the scope of their concession agreements.

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. Turkey has not awarded licences for fixed wireless access (although Türk Telekom has been allowed to use the 3.5 GHz band on a trial basis in rural areas within the scope of its universal service obligation). Analogue switch-off is planned to be completed by March 2015.

In 3Q 2011 ICTA drafted a proposal to allow 3G services in the 900 and 1800 MHz bands, which it sent to the ministry as an input for consideration in policy making. It also proposed that before this change takes place, additional spectrum in the 900 MHz (E-GSM) and 1800 MHz bands may be auctioned to operators that do not have a certain amount of frequencies in these respective bands.

800 MHz	900 MHz	1800 MHz	2 GHz	3.5 GHz	3G/4G in 900/1800?
-q	3 licences 1998 (2), 2000	1 licence 2000	3 licences 2008	-	X

5. Competitive safeguards

Turkey has introduced a full range of 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 implemented only in 2009. Turk Telekom's first reference offer for WLR was approved in July 2011, and as of January 2013 there are nine agreements in place covering around 478,000 lines (representing a tenfold increase since June 2012). ICTA also approved Turk Telekom's first reference offer for leased lines in December 2011.

In order to encourage investment in NGA networks, ICTA decided on October 3, 2011 to exclude access to fibre (FTTH/B) from market analysis for the next five years or until the percentage of fibre-based subscriptions reaches 25% of all fixed broadband subscriptions. Turk Telekom, however, has an obligation based on its own commitments to offer bitstream and resale services over its fibre network.

Following the analysis of the wholesale market for access and call origination on mobile networks, Turkcell, as an operator with SMP, is required to provide MVNO access in accordance with its reference offer. Turkey's complex tax structure has in practice created a barrier to MVNO market entry, however.

	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	-
2013	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	✓

6. Market structure

Competition in the fixed networks sector started late, as Turk Telekom had exclusive rights to the provision of local networks and services until 2009. In the internet market, the retail and wholesale arms of Turk Telekom were separated in 2006, when retail subsidiary TNet was established. In 2Q 2012 the Council of State stopped the execution of an ICTA decision of August 2011 that had allowed Turk Telekom to provide retail bundled internet services from January 1, 2012 under its own brand.

The mobile sector is more competitive, as there are three mobile network operators, although Turkcell has more than a 50% market share of both subscriptions and revenues. While fixed broadband penetration is moderate, mobile broadband penetration has grown fast in 2011-2012, reaching 14.3% (counting access via all devices, including smartphones).

	Fixed line penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration (data cards)	Electronic communications as % of GDP
2005	29%	49%	0.7%	-	3.6%
2012	19.4%	88.5%	10.2%	2.5%	1.8% (2010)

7. Outlook

Turkey has made significant progress in aligning its legislation with the EU 2003 regulatory framework and implementing competitive safeguards. However, major inconsistencies still remain in the authorisation regime, regulation of retail tariffs and spectrum management.

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.

G. Albania

1. Legislative framework

Albania has implemented the EU *acquis* relatively late. The Law on electronic communications, which transposed the EU 2003 regulatory framework, was adopted in 2008. Amendments to transpose the EU 2009 regulatory framework were prepared in 2010, but only adopted in October 2012.

After several years of discussion in parliament, a new Law on audiovisual media was adopted in March 2013 to transpose the Audiovisual Media Service Directive.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2008	2012	2009	2008	✓	2010

2. Institutional framework

The national regulatory authority, AKEP, 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. In particular spectrum management and tariff regulation are subject to strong political influence. 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 Altelecom 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. Until the recent adoption of the new audiovisual media law, provisions in the law on broadcasting prevented cable network operators from providing other electronic communications services such as voice telephony or broadband access. However, cable operators could circumvent that restriction in practice by establishing a separate legal entity.

Liberalisation of fixed voice telephony			Liberalisation of data networks	General authorisation	Remaining restrictions
local	national	international			
1998 (rural) 2007 (urban)	2003	2005	1998	2008	none (since 2013)

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. A third licence was issued in December 2012, after a failed attempt in February 2012.

Albania has not awarded licences for fixed wireless access. A new strategy for analogue switch-off adopted in May 2012 provides for completing switchover by June 17, 2015.

800 MHz	900 MHz	1800 MHz	2 GHz	3.5 GHz	3G/4G in 900/1800?
-	4 licences 1999, 2001, 2004, 2009	4 licences 1999, 2001, 2004, 2009	3 licences 2010, 2011, 2012	-	✗

5. Competitive safeguards

Albania was lagging behind with implementation of competitive safeguards, but made progress in 2011 and 2012. The first RUO of Albtelecom was approved in May 2012. Fixed number portability was introduced in September 2012. Albtelecom published its first WBA offer in February 2013. AKEP imposed MVNO access and national roaming on the two largest MNOs, but deregulated the market in July 2012 as it did no longer fulfil the three criteria test.

	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	2012	2011	2009	2009	2012	2013	–	–	–	2009	2009	–
2013	✓	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	X

6. Market structure

Fixed lines penetration and broadband penetration are amongst the lowest in the region. Albtelecom remains the dominant fixed player and has still 94% market share by fixed voice telephony minutes, however only 60% market share by retail revenues. There is also significant competition in the fixed broadband market, with alternative operators providing 57% of the connections.

The mobile sector is still dominated by Vodafone (35% of subscriptions) and AMC (33%), but the third entrant Eagle gains market share significantly (24%). Mobile broadband is at an early stage of development.

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration (data cards)	Electronic communications as % of GDP
2005	9%	39%	no DSL available	-	6.2%
2012	12%	114%	5.3%	1.3%	4.7% (2010)

7. Outlook

Regulation of electronic communications markets and information society services has developed slowly, but gained speed over the past three years. Major progress has been made with the adoption of primary legislation to transpose the EU 2009 regulatory framework in October 2012 and the Audiovisual Media Service Directive in March 2013.

New government policies and AKEP's work plans set ambitious goals, but practical implementation has often been hampered by a lack of institutional stability as well as political interventions.

AKEP has made progress with implementing competitive safeguards, but still needs additional resources to complete the implementation and to enforce its decisions.

H. 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.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
x	x	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 sector policies issued by the Council of Ministers for a period of four to five years are often adopted with significant delays and take a form of a detailed and prescriptive action plan for the NRA, which in practice slows down regulatory processes and limits the NRA's ability to respond to dynamic market conditions. The latest telecom sector policy expired in 2012, but the drafting of the new policy has not even started. 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 BH Telecom and HT Mostar are 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.

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 the 900 MHz, 1800 MHz and 2 GHz bands. UMTS licences were awarded late, in 2009. Since 2010, the 900 and 1800 MHz bands are technology neutral and mobile licences allow deployment of UMTS services.

The digital switchover initially scheduled for the end of 2011 has been postponed until December 2014. 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.

800 MHz	900 MHz	1800 MHz	2 GHz	3.5 GHz	3G/4G in 900/1800?
-	3 licences 2004	3 licences 2004	3 licences 2009	-	3G allowed

5. Competitive safeguards

Bosnia and Herzegovina has been slow with implementation of competitive safeguards and hardly any progress was reported during 2012.

A new regulation on tariff rebalance for 2013-2015 was adopted in November 2012. Mobile number portability, after repeated delays, finally became available in January 2013. The introduction of MVNOs, despite all preparatory work completed by RAK, was postponed for an indefinite period by the Council of Ministers' decision adopted in September 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	2009	2011	2013	2006	2011	2010	-	-	-	-	-	-	-
2013	✓	✓	✓	✓	✓	✓	✓	X	X	X	✓	X	X	X

6. Market structure

The specific aspect of Bosnia and Herzegovina is the existence of three regional incumbent operators. There is little competition with regard to fixed voice telephony services and the cumulative market share of the three incumbents remains around 98% (by subscribers), where BH Telecom controls 50%, Telekom Srpske 35% and HT Mostar 13% of the market. New market entry in fixed voice telephony services remains problematic due to long drawn processes for establishing interconnection and lack of effective dispute resolution procedures.

In fixed broadband, the incumbents are facing competition from alternative cable providers and wireless networks, and their market share is now just below 64%.

The mobile market is divided among the three incumbent operators. BH Telecom and Telekom Srpske each control about 43% of the mobile subscribers, whereas HT Mostar has the remaining 13%.

	Fixed lines penetration	Mobile penetration	Fixed broadband penetration	Mobile broadband penetration (data cards)	Electronic communications as % of GDP
2005	25%	34%	0.1%	-	7.6%
2012	24%	83%	12.0%	3.0%	5.2% (2010)

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.

The current institutional framework falls short of ensuring adequate financial and operational independence of the NRA. Systematic delays in adopting sector policies by the Council of Ministers and arbitrary political interference with the regulatory decision-making undermine regulatory certainty and predictability for the telecom sector and also raise concerns over the NRA's capacity to perform its tasks effectively.

I. Kosovo*

1. Legislative framework

Kosovo has renewed its entire information society legislation in 2012. A new Law on the information society services comprising electronic commerce, electronic signature and other topics came into force in April 2012. The new Law on electronic communications was adopted in October 2012.

Several acts of secondary legislation will be required for full transposition of the EU 2009 regulatory framework, in particular with regard to universal service and spectrum policy.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2012		2012	2012	2010	2012

2. Institutional framework

The Telecommunications Regulatory Authority (TRA) was established in 2003 as an independent legal entity. The new Law on electronic communications replaced TRA by the Regulatory Authority of Electronic and Postal Communications (ARKEP), maintaining continuity of staff and management functions.

The NRA's operations have been subject to political and administrative interference. Furthermore, ARKEP is lacking human resources and has difficulties attracting and retaining qualified staff. All funds collected by ARKEP are transferred to the state and ARKEP is fully dependent on the state budget for its financing.

In 2011 the competencies at government level were 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
Regulatory Authority of Electronic and Postal Communications (ARKEP)	Appeals against regulatory decisions can be brought before the Administrative Court. Appeal procedures take longer than one year.	Ministry of Economic Development (since 2011)	Competition Commission (since 2008) Independent Media Commission (since 2005)	The incumbent operator PTK is still 100% state owned. A procedure to privatise 75% is in an advanced stage.

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. The new Law on electronic communications has replaced the licensing framework by a general authorisation regime for all electronic communications networks and services, but the necessary implementing regulations are expected to be adopted in Q2 2013.

Liberalisation of fixed voice telephony			Liberalisation of data networks	General authorisation	Remaining restrictions
local	national	international			
2003	2003	2008	2003 International gateways – 2008	2012	none

*This designation is without prejudice to positions on status, and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo declaration of independence.

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. The decision to make the 900 MHz and 1800 MHz bands technology neutral has been recently taken by the government, but implementing regulations still have to be adopted by ARKEP.

Kosovo has neither awarded licences for fixed wireless access, nor has it decided on a strategy for analogue switch-off and use of the digital dividend.

800 MHz	900 MHz	1800 MHz	2 GHz	3.5 GHz	3G/4G in 900/1800?
-	2 licences 2004, 2007	2 licences 2007, 2011	-	-	In progress

5. Competitive safeguards

Most of the competitive safeguards foreseen by the EU *acquis* have not been yet implemented in Kosovo, but TRA (now: ARKEP) has finalised its first analysis of retail and wholesale fixed telephony markets and the wholesale unbundled access market in 2012. ARKEP is now analysing the wholesale mobile call termination market and the wholesale and retail leased lines markets.

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.

	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	-	-	-	-
2013	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 about 75% of market share held by alternative cable operators. There are two mobile network operators and two MVNOs, but the mobile retail market continues to be dominated by the incumbent's mobile subsidiary Vala, with about 65% 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%
2012	5%	85%	8.0%	-	5.4% (2010)

7. Outlook

Over the last years Kosovo has undertaken significant efforts to align its legislation with the EU *acquis*.

Administrative capacities of ARKEP still need to be strengthened to ensure effective implementation and enforcement of the regulatory framework. ARKEP's budget and headcount are the smallest in the region. Most competitive safeguards have not yet been implemented.

The cancelled sale of the telecommunications part of PTK in late 2011, and the associated allegations of corruption, has unsettled the investment climate in the sector. It remains to be seen whether the re-launched privatisation of PTK will contribute to a more competitive outcome.