



# Monitoring regulatory and market development for electronic communications and information society services in Enlargement Countries

## Report 4



### Fourth REPORT – February 2014

A study prepared for the European Commission DG  
Communications Networks, Content & Technology by



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By the European Commission, Directorate-General of Communications Networks, Content & Technology.

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KK-04-14-226-EN-N

ISBN 978-92-79-36549-2

DOI 10.2759/43116

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## Executive Summary

This report concludes the series of four interim study reports produced in the period from 2011 to 2014 in the context of a European Commission's project monitoring the electronic communications and information society sectors in the nine countries that have been 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 analyses the key developments between April 2013 and January 2014 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 nine-month reporting period was marked by a number of events significant to the EU enlargement process. Croatia joined the EU as its 28th member state. Serbia and Kosovo reached a landmark agreement on the normalisation of relations that paved the way to starting the negotiations on the Stabilisation and Association Agreement between the European Union and Kosovo in October 2013 and opening the EU accession negotiations with Serbia in January 2014. At the same time, Iceland took a decision to suspend the EU accession talks, following the elections of April 2013.

Nearly all of the South East European countries that were in recession in 2012 recorded positive growth in 2013. These include Bosnia & Herzegovina, Macedonia, Montenegro and Serbia. Turkey, Albania and Kosovo, although also experiencing a significant slowdown in 2012, avoided the recession and continued recovering in 2013. The recession in Croatia that took hold in 2009 persisted throughout 2013 and is likely to continue for a sixth consecutive year in 2014, as the economy struggles with long-standing problems of competitiveness, a large public sector and adverse labour market conditions. The Icelandic economy has been growing since late 2010, albeit at a slower pace in 2012 and 2013 than previously anticipated. The growth is however expected to pick up in 2014.

The total value of the electronic communications market in the nine countries in 2012 was €17.15bn. This represents a year-on-year increase of 4.2%, sustaining the trend seen in 2011. There was growth in all sectors except fixed voice telephony, which accounted for less than 20% of the total revenue share in 2012, down from 24% in 2011, as a result of fixed-to-mobile substitution. Broadband services remain the engine of growth, with revenues rising almost 20% year-on-year.

Overall investment in electronic communications in the nine countries was €3.23bn in 2012. This represents a 27% increase from €2.54bn reported in 2011 and was driven mainly by fibre investments in Turkey.

The decline in the total number of fixed telephone lines in the enlargement countries accelerated in 2012. Whereas the number of lines had fallen by approximately one million per year in 2010 and 2011, in 2012 it fell by 1.6m to reach 20.34m. The total is expected to have dropped below 20m in 2013. As analogue telephony declined, voice over IP connections rose: Croatia reported a 40% increase in VoIP connections in 2012 to exceed 450,000 that accounted for 28% of the country's total fixed line connections.

Despite growth in alternative operators' VoIP connections, the fixed telephony market remains dominated by incumbents. In Turkey, however, the incumbent's market share by revenue fell dramatically, from 82% in 2011 to 67% in 2012, thanks to alternative operators taking a much larger share of the market for fixed-to-mobile calls.

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\*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.

In Serbia the entry of new alternative fixed voice telephony network operators caused the incumbent's traffic-based market share of the international calls market to fall from 98% in 2011 to 91% in 2012. Three additional operators were authorised in 2013, bringing the total to eight at the end of the year, which is expected to lead to a rise in the number of subscribers using alternative providers in 2014. If there are no more delays, fixed telephony users in Serbia should be able to change operators and keep their existing number from April 2014.

In the mobile sector, the total number of subscriptions in the nine enlargement countries fell by 295,000 in 2012, to reach 93.93m. The apparently insignificant decline however masks the difference in trends between countries and the effect of changes in the methodology for counting active users. In particular, the mobile subscriber figures were adjusted downwards in Albania, Serbia and Montenegro resulting in a strong decrease in mobile subscriptions in 2012. This decrease was nevertheless more than offset by steady growth in Turkey, Kosovo and Bosnia & Herzegovina.

The leading mobile operator lost its subscription-based market share in all the enlargement countries in 2012, except Bosnia & Herzegovina and Albania. Mobile service providers, meanwhile, launched operations in Croatia and Bosnia & Herzegovina and recent commercial agreements have also been reported in Macedonia and Serbia.

The fixed broadband market in the monitored countries grew by 4.6% in 2012 measured by number of active connections, which was less than half of the 10% growth rate recorded in 2011. At the end of 2012 the total number of fixed broadband lines in the nine countries was 11.08m, equivalent to an average penetration rate of 11.3%. The slowdown can be attributed partly to a stagnation of the DSL market in Turkey, which accounts for 60% of broadband subscriptions in the nine countries, as mobile broadband became an increasingly competitive alternative. Albania, Serbia and Macedonia, in contrast, all recorded strong growth of more than 10% in the number of fixed broadband connections – with the total in Serbia exceeding 1m for the first time.

While incumbent operators continue to dominate the fixed broadband market, the incumbent's share by connections fell in all countries except Montenegro and Iceland in 2012, continuing the trend seen in 2011. The Croatian incumbent Hrvatski Telekom was particularly hard hit, but the incumbents in Turkey, Macedonia and Bosnia & Herzegovina also each lost more than two percentage points in market share.

In terms of technology, xDSL continued to play a leading role, accounting for 79% of fixed broadband connections in the enlargement countries, while cable accounted for 12%. It was in the FTTx sector that operators made the greatest gains, however – with the total number of FTTx connections in the nine countries increasing by 145% in 2012 to exceed 750,000, equivalent to 7% of total fixed broadband lines.

In Iceland the number of fibre connections increased 30% in 2012, with the result that fibre accounted for 20% of all fixed broadband lines. In Turkey, fibre connections increased by almost 380,000 in 2012 to nearly two-thirds of a million, driven by investment from both the incumbent operator Turk Telekom and the alternative operator Turkcell-Superonline. In Serbia and in Montenegro the number of fibre broadband subscriptions more than tripled, albeit from a small base. In Albania, the share of FTTx connections more than doubled to reach 25%, following a large jump in 2012 in Albtelcom's xDSL connections via MSANs.

The distribution of retail broadband lines by speeds shows a steady movement towards higher-speed packages in all countries – with growth especially in the 2-4 Mbps and 4-8 Mbps categories.

Mobile broadband is the fastest growing and most dynamic segment of the electronic communications market. Growth in the penetration rate of dedicated 3G mobile datacards slowed in 2012, however, as access via smartphones and tablets increasingly offered an alternative. In Serbia and Croatia the mobile broadband penetration rate, measured for all

devices including smartphones, exceeded 50% and was close to the EU average of 54%. In Iceland the penetration rate reached 72%, and the recent launch of LTE networks by three Icelandic mobile operators is expected to further boost mobile broadband growth.

Spectrum policy is the area where most of the enlargement countries are still lagging behind the EU. Only Croatia, Iceland and Macedonia have completed digital terrestrial switchover and assigned the entire digital dividend spectrum in the 800 MHz band to mobile broadband. None of the nine countries has so far made the 2.6 GHz band available for mobile broadband and in some countries also parts of the spectrum in the 900 MHz, 1800 MHz, 2 GHz and 3.4 GHz bands remain unassigned.

Four countries have allowed both 3G and 4G services along with GSM in the 900 MHz and 1800 MHz bands: Croatia, Macedonia, Montenegro and Kosovo. In Iceland, UMTS and LTE services are allowed in the 1800 MHz band, whereas the 900 MHz band only allows UMTS. In Bosnia & Herzegovina, UMTS services have been allowed in both bands, but there has been no decision on the use of LTE. In Albania, the regulator is now consulting on a draft proposal to amend the spectrum authorisations of the four mobile operators allowing the use of 3G and 4G technologies in the 900 MHz and 1800 MHz bands.

Electronic communications legislation based on the EU 2009 regulatory framework is now in place in four countries: Croatia, Albania, Kosovo, and since August 2013 also in Montenegro. In Macedonia, a new Law on electronic communications aligned with the EU 2009 framework was adopted by parliament on February 20, 2014. New legislation based on the EU 2009 framework is currently also being drafted in Serbia and in Bosnia & Herzegovina. The latter remains the only enlargement country with legislation that is not even aligned with the EU 2003 regulatory framework.

Despite the progressive alignment of national electronic communications legislation to the EU *acquis*, the current institutional frameworks of the enlargement countries often fall short of ensuring an adequate level of the financial and operational independence for the national regulatory authorities. Also the administrative capacities of the policy making bodies in most of the countries remain limited and present another area of concern.

National statistics on the key information society indicators based on Eurostat methodology are regularly collected in six of the monitored countries: Croatia, Iceland, Macedonia, Montenegro, Serbia and Turkey. With broadband access becoming increasingly widespread and affordable, a steady progress has been reported over the past four years in the SEE countries, which however has not been sufficient to reduce the disparities in ICT take up. The proportion of regular internet users varied among the countries, ranging from 95% in Iceland, which is well above the EU average of 69%, to below 40% in Turkey. Large digital divides also remain when looking at the share of the population who never used the internet. Whereas in Iceland only 3% of the population have no experience in internet use, which is already significantly below the EU target of 15% non-users set for 2015 in the Digital Agenda, the five SEE countries showed proportions between 34% and 53% for the population being excluded and without internet skills.

Rapidly growing online services and the increasing role of ICT in the society also create a wide range of new human rights challenges and ethical dilemmas for policy makers and the industry alike, especially when it comes to the need to protect the right to privacy, freedom of expression and access to information. In this context, the Turkish internet law adopted in February 2014 and building upon internet restrictions introduced in 2007 represents a controversial piece of legislation. Whereas the government insists that the new measures are intended to protect privacy, they potentially extend the possibilities for internet censorship and control over internet users' online activities that could not be compatible with the European standards.

## Table of Contents

I.	INTRODUCTION.....	8
II.	PARTICIPATING COUNTRIES.....	8
III.	METHODOLOGY.....	10
IV.	INTERIM STUDY REPORT STRUCTURE.....	11
V.	SUMMARY REPORT.....	12
	A. General economic background.....	12
	B. Electronic communications market overview.....	13
	C. National broadband targets.....	30
	D. Legislative, policy and institutional framework.....	31
	E. National regulatory authorities.....	35
	F. Market access conditions in electronic communications.....	48
	G. Radio spectrum.....	51
	H. Regulatory framework for market analyses.....	56
	I. Competitive safeguards.....	60
	J. Universal service and end-user rights.....	67
	K. Regulation of retail tariffs.....	74
	L. Fixed retail telephony tariffs.....	75
	M. Mobile retail tariffs.....	84
	N. Broadband retail prices.....	86
	O. Leased lines retail prices.....	88
	P. Wholesale tariffs.....	92
	Q. Fundamental rights and freedoms.....	101
	R. Information society statistics.....	103
	S. Network and information security.....	107
	T. Electronic commerce and electronic signatures.....	111
	U. Data protection.....	114
	V. Lawful interception and data retention.....	116
	W. Management of internet domains.....	119
VI.	COUNTRY PROFILES.....	122
	A. Croatia.....	122
	B. Iceland.....	124
	C. The former Yugoslav Republic of Macedonia.....	126
	D. Montenegro.....	129
	E. Serbia.....	131
	F. Turkey.....	133
	G. Albania.....	136
	H. Bosnia and Herzegovina.....	138
	I. Kosovo.....	141

## List of Tables

Table A.1 – Enlargement countries covered in the report.....	9
Table D.1 – Information society legislation.....	31
Table D.2 – Information society policy documents.....	34
Table D.3 – Responsible bodies for electronic communications and information society .....	35
Table E.1 – Government involvement in specific tasks in electronic communications sector .....	38
Table E.2 – NRA management.....	39
Table E.3 – NRA powers to impose fines.....	44
Table F.1 – Authorisation regime for electronic communications services .....	49
Table I.1 – Implementation of competitive safeguards.....	60
Table I.2 – Implementation of number portability in fixed and mobile networks .....	62
Table J.1 – Universal service funding mechanisms .....	70
Table J.2 – Consumer dispute resolution.....	74
Table N.1 – Availability of broadband offers by incumbents and alternative operators at different speeds .....	86
Table S.1 – Computer related criminal offences .....	111
Table T.1 – Market access and liability of information society services.....	112
Table T.2 – Electronic signature regulation and market data.....	113
Table U.1 – Protection of confidentiality of communications.....	114
Table U.2 – Traffic and location data .....	115
Table V.1 – Lawful interception for criminal proceedings.....	116
Table V.2 – Lawful interception for other purposes.....	117

## List of Figures

Figure A.1 – GDP growth rates in 2006-2012 and 2013 forecasts, in percent .....	12
Figure B.1 – Electronic communications market revenue share by service category in 2012 .....	13
Figure B.2 – Electronic communications market, % of revenue by service category by country in 2012.....	14
Figure B.3 – Percentage change in investment, expressed in euro, full-year 2011 vs full-year 2012.....	14
Figure B.4 – Investment as % of revenue in electronic communications, full-year 2011 vs full-year 2012 .....	15
Figure B.5 – Fixed lines per 100 population .....	16
Figure B.6 – Fixed network voice lines by technology, Dec. 31, 2012 .....	16
Figure B.7 – VoIP as a percentage of total fixed lines, Dec. 2010, Dec. 2011 and Dec. 2012 .....	17
Figure B.8 – Incumbent operators' overall market shares in fixed voice telephony, full year 2012 (%) .....	17
Figure B.9 – Change in incumbent operator's market share (pp), Dec. 2011 – Dec. 2012 .....	18
Figure B.10 – Subscribers using alternative fixed voice telephony providers, as % of total fixed lines.....	18
Figure B.11 – Mobile subscriptions per 100 population, by country, Dec. 2009 – Dec. 2012.....	19
Figure B.12 – Mobile subscriptions - postpaid as a share of total, Dec. 2011 vs Dec. 2012 .....	20
Figure B.13 – Leading mobile operator's market share by subscriptions, Dec. 2011 vs Dec. 2012 .....	20
Figure B.14 – Mobile market concentration levels, HHI, by subscriptions .....	21
Figure B.15 – Mobile market concentration levels, HHI, by revenue .....	21
Figure B.16 – Fixed broadband penetration rate per population, Dec. 2009 – Dec. 2012.....	22
Figure B.17 – Fixed broadband growth dynamics, Dec. 2011 – Dec. 2012 .....	23
Figure B.18 – Fixed broadband penetration versus GDP per capita relative to EU, Dec. 2012.....	23
Figure B.19 – Incumbent ISP's market share, by revenue and by connections, Dec. 2012 .....	24
Figure B.20 – Change in incumbent ISP's retail market share by connections, Dec. 2011 – Dec. 2012 .....	24
Figure B.21 – Fixed retail broadband connections by technology, Dec. 31, 2012.....	25
Figure B.22 – xDSL lines by type of access, Dec. 2012 (%).....	26
Figure B.23 – Change in FTTx subscriptions (%), Dec. 2011 – Dec. 2012 .....	26
Figure B.24 – Distribution of retail broadband lines by download speeds, Dec. 31, 2012 .....	27
Figure B.25 – Fastest advertised retail broadband connection (Mbps), by country.....	28
Figure B.26 – Dedicated data cards/ wireless modems per 100 population, Dec. 2010, Dec. 2011 and Dec. 2012 .....	29
Figure B.27 – Mobile broadband penetration (all devices, incl. handhelds), June 30, 2012 and Dec. 31, 2012.....	29
Figure C.1 – National broadband targets .....	30
Figure E.1 – State ownership of telecommunications operators .....	37
Figure E.2 – NRA operational expenses as % of electronic communications market revenue, 2011-2012.....	41
Figure E.3 – NRA funding sources in 2012.....	42
Figure E.4 – NRA organisation: total staff and regulatory and frequency experts .....	42
Figure E.5 – Deadlines for resolution of disputes between undertakings .....	45
Figure F.1 – Full liberalisation of telecommunications markets.....	48
Figure F.2 – Authorisation regime for electronic communications services.....	49
Figure G.1 – Spectrum assignments in 800 MHz, 900 MHz, 1800 MHz and 2100 MHz bands.....	52
Figure G.2 – Analogue switch-off schedule in the Enlargement countries .....	54
Figure I.1 – Number of providers offering CS and CPS services commercially.....	61
Figure I.2 – Number portability – maximum process duration allowed by regulation.....	62
Figure J.1 – USO providers by type of operator.....	69
Figure J.2 – Minimum download speed rates within USO scope .....	70

Figure J.3 – European emergency number (112) availability .....	72
Figure L.1 – Residential line rentals by incumbent in euro, incl. VAT .....	76
Figure L.2 – Residential charges for a 10-minute local call by incumbent in euro, incl. VAT .....	76
Figure L.3 – Residential charges for a 10-minute long distance call by incumbent in euro, incl. VAT .....	77
Figure L.4 – Residential charges for a 10-minute fixed to mobile call by incumbent in euro, incl. VAT .....	77
Figure L.5 – Residential charges for a 10-minute international call to UK by incumbent in euro, incl. VAT .....	78
Figure L.6 – Residential, business, and low usage monthly subscription fees, with included calls, Sep. 2013 .....	79
Figure L.7 – New line connection charge and reconnection charge for residential customers in euro, incl. VAT .....	79
Figure L.8 – 10-minute local call charges for residential users in eurocents, incl. VAT, Sep. 2013.....	80
Figure L.9 – 10-minute national long distance call charges for residential users in euro, incl. VAT, Sep. 2013 .....	81
Figure L.10 – 10-minute fixed to mobile and national charges for residential users in euro, incl. VAT, Sep. 2013.....	81
Figure L.11 – 10-minute fixed to mobile call charges for residential users in euro, incl. VAT, Sep. 2013.....	82
Figure L.12 – Residential charges for a 10-minute call to the UK in euro, incl. VAT, Sep. 2013 .....	83
Figure L.13 – Residential charges for a 10-minute call to the USA in euro, incl. VAT, Sep. 2013.....	83
Figure L.14 – Summary of incumbent’s residential charges for a 10-minute call in euro, incl. VAT, Sep. 2013 .....	84
Figure M.1 – Low usage basket in euro per month, incl. VAT.....	85
Figure M.2 – Medium usage basket in euro per month, incl. VAT.....	85
Figure M.3 – High usage basket in euro per month, incl. VAT .....	86
Figure N.1 – Broadband monthly subscription – cheapest offers available, in euro, incl. VAT, Sep. 2013.....	87
Figure N.2 – Monthly retail 4-8 Mbps broadband subscription prices in euro, incl. VAT, Sep. 2013 .....	87
Figure N.3 – Monthly retail 8-20 Mbps broadband subscription prices in euro, incl. VAT, Sep. 2013 .....	88
Figure O.1 – Annual retail prices for 2 km 2 Mbps leased lines .....	89
Figure O.2 – Annual retail prices for 2 km 34 Mbps leased lines .....	89
Figure O.3 – Annual prices for international half circuits 2 Mbps to near country.....	90
Figure O.4 – Annual prices for international half circuits 2 Mbps to the UK .....	91
Figure O.5 – Annual prices for international 34 Mbps half circuits, Sep. 2013 .....	91
Figure P.1 – Local call termination charges on the incumbent’s fixed network, peak time .....	93
Figure P.2 – Single transit call termination charges on the incumbent’s fixed network, peak time .....	93
Figure P.3 – Double transit call termination charges on the incumbent’s fixed network, peak time.....	94
Figure P.4 – Local call termination on the fixed incumbent and alternative network, Sep. 2013 .....	94
Figure P.5 – Single transit call termination on the fixed incumbent and alternative network, Sep. 2013 .....	95
Figure P.6 – Double transit call termination on the fixed incumbent and alternative network, Sep. 2013.....	95
Figure P.7 – MTR glide paths (€cents per minute) .....	98
Figure P.8 – Fixed to mobile termination rates, peak time .....	99
Figure P.9 – Mobile termination rates, peak time, Sep. 2013.....	99
Figure P.10 – Connection prices for fully unbundled loop and shared access, Sep. 2013 .....	100
Figure P.11 – Monthly rental prices for fully unbundled loop and shared access, Sep. 2013.....	100
Figure R.1 – Individuals regularly using the internet (Eurostat/statistical offices).....	104
Figure R.2 – Individuals never having used the internet (Eurostat/statistical offices).....	105
Figure R.3 – Individuals using the internet for interaction with public authorities (Eurostat/statistical offices) .....	105
Figure R.4 – Individuals using the internet for ordering goods or services (Eurostat/statistical offices).....	106
Figure R.5 – Households with internet access at home (Eurostat/statistical offices).....	106
Figure R.6 – Households with broadband access (Eurostat/statistical offices) .....	107
Figure R.7 – Enterprises with fixed broadband access (Eurostat/statistical offices).....	107
Figure W.1 – Domain names, absolute and per 1000 inhabitants.....	121

## I. INTRODUCTION

The project, titled “Monitoring regulatory and market developments for electronic communications and information society services in Enlargement countries”, has been a three year initiative funded by the European Commission and managed by Cullen International.

The nine 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 became the 28th EU member state on July 1, 2013 and after Slovenia, it is the second former Yugoslav republic to join the EU after a decade-long negotiation process.

Five other countries, Iceland, Macedonia, Montenegro, Serbia and Turkey, have been officially recognised as the EU candidate countries. Accession negotiations are currently underway with Turkey and Montenegro and since January 21, 2014 also opened with Serbia. Against the background of the unresolved dispute over the official country name, no starting date for negotiations with Macedonia has been announced yet. Accession negotiations with Iceland were launched in July 2010, but following the government elections of April 2013, the country took a decision to suspend the EU accession talks.

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 the 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. On October 28, 2013 the negotiations on the Stabilisation and Association Agreement were opened with Kosovo.

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 European Commission and the authorities in the nine countries 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 report concludes the series of four interim study reports that have been 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: Croatia that joined the EU on July 1, 2013, followed by the five candidate countries 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).

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\*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 became the EU's 28 <sup>th</sup> member state on July 1, 2013.
Iceland	IS	As of September 2013, Iceland has suspended EU accession talks indefinitely.
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 prejudge 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 &amp; Herzegovina (BiH) comprises two entities:</p> <ul style="list-style-type: none"> <li>• The Federation of Bosnia &amp; Herzegovina</li> <li>• Republika Srpska</li> </ul> <p>A separate federal district of Brčko belongs to both.</p> <p>Bosnia &amp; 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"> <li>• BH Telecom d.d Sarajevo (BA-bh) based in Sarajevo, the Federation of Bosnia &amp; Herzegovina</li> <li>• Hrvatske Telekomunikacije d.o.o. Mostar (BA-ht) based in Mostar, the Federation of Bosnia &amp; Herzegovina</li> <li>• Telekom Srpske a.d. Banja Luka (BA-ts) based in Banja Luka, Republika Srpska</li> </ul>
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

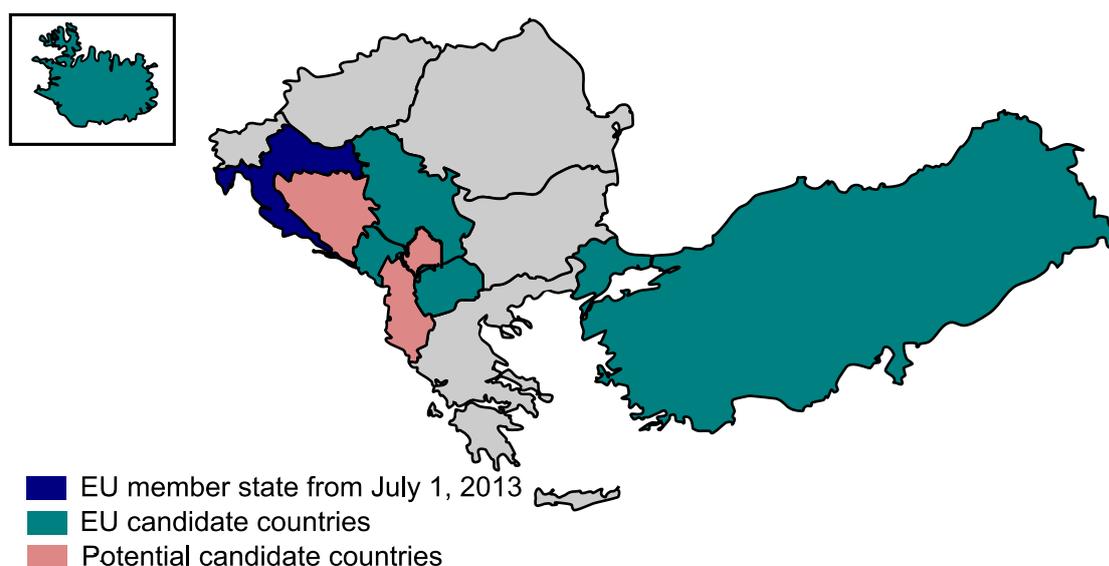


Figure I – Enlargement countries covered in the report

### III. METHODOLOGY

In the data collection process, the project has relied 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.<sup>1</sup> 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
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.

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<sup>1</sup> The Icelandic authorities ceased contributing to this project following the suspension of the accession talks in 2013. The main source of information for this report have been the official publications of the PTA.

#### 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 enlargement countries all suffered from a renewed slowdown in their economies in 2012 – in most cases experiencing a return to recession that mirrored the downturn in the economies of their most important EU trading partners. Although Iceland, Turkey, Albania and Kosovo avoided a recession, they too experienced a significant slowdown in growth after the relative boom of 2011.

Turkey had recorded impressive GDP growth of 9.2% and 8.8% in 2010 and 2011 respectively, driven by strong domestic demand, which then slowed in 2012, resulting in a drop in GDP growth to 2.2%. Turkey's GDP growth is forecast to have increased to 3.5% in 2013, as consumer spending revived in the last quarter of the year. Nevertheless, the appetite for investment in Turkey may have suffered somewhat from domestic political unrest and the civil war in neighbouring Syria.

Croatia's economy plunged back into recession in 2012 and is forecast to have continued to contract in 2013, despite its accession in the EU on July 1, 2013. Its entry into the EU's excessive deficit procedure may speed the introduction of structural reforms but growth is forecast to be minimal in 2014. The Croatian incumbent Hrvatski Telekom commented in its Q3 2013 results that the EU accession and the related adoption of the EU regulatory framework had impacted the group's performance, with a greater fall in roaming revenue than had been expected.

Other enlargement countries are forecasting a more positive economic picture for 2013 – with Serbia, Macedonia, Montenegro, Bosnia & Herzegovina and Kosovo all projected to have returned to modest growth. In Serbia, growth has been driven by exports – and the structural reform measures started in 2013 are expected to stimulate a further rebalancing of the economy away from consumption towards investments and exports.

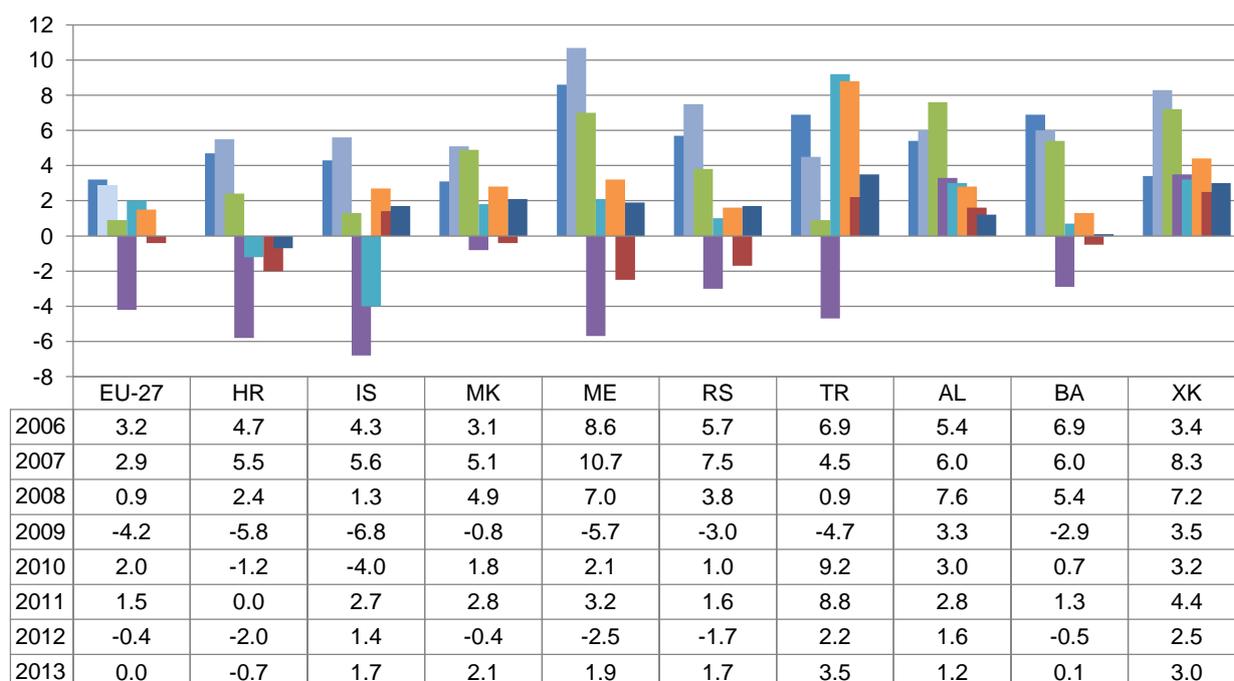


Figure A.1 – GDP growth rates in 2006-2012 and 2013 forecasts, in percent

The economic crisis led to substantial fluctuations in exchange rates against the euro from 2009, but these largely settled in 2011-2012. The Turkish lira had appreciated against the euro in 2010 before depreciating back to its previous average in 2011. Since mid-2013 it has depreciated significantly more against the euro, however. In 2012 the Serbian dinar depreciated against the euro but was broadly stable in 2013.

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.

In Montenegro a special tax of €1 per month on active mobile SIM cards and cable TV connections, as well as on access to certain other services of public interest, was introduced in July 2012 and remained in force until January 1, 2014. The VAT rate was also increased from 17% to 19% on June 30, 2013.

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.

In Turkey, in addition to VAT, there is a Special Communications Tax (SCT) of 25% on mobile network services, 15% on fixed voice telephony services and 5% on Internet services. Since its introduction in 1999 it has been collected by operators from end-users on a monthly basis.

Most of the enlargement countries have seen a gradual decline in their populations, which is clearly shown in the census data published for several of the countries in 2011, including Croatia, Serbia and Albania. The exception is Turkey, where the population has been increasing over the past five years. While the EU-27 population grew by approximately 1.7% between 2007 and 2012, Turkey’s population grew more than four times as fast, by 7.2%.

## B. Electronic communications market overview

### 1. Revenue and investment

The total value of the electronic communications market in the nine enlargement countries in 2012 was calculated as €17.15bn. This represents an increase year on year of 4.2%, sustaining the trend seen in 2011.

There was growth in all sectors except fixed voice telephony services that experienced 14.2% year-on-year decline in revenue as a result of fixed-to-mobile substitution. Fixed voice telephony accounted for less than 20% of the total revenue share in 2012, down from 24% in 2011 and 26.5% in 2010.

Approximately 60% of the market continues to be represented by mobile services, and revenues in the mobile sector sustained a steady single-digit growth rate of 7% in 2012. The picture was not uniform across the nine countries, however, with Croatia, Macedonia, Montenegro and Kosovo recording small declines in mobile revenues, while Serbia, Turkey, Albania and Bosnia & Herzegovina all reported healthy growth in the sector of 7% or more.

The internet services remain the main engine of growth, with revenues rising almost 20% year-on-year, particularly where revenue from mobile internet services is taken into account.

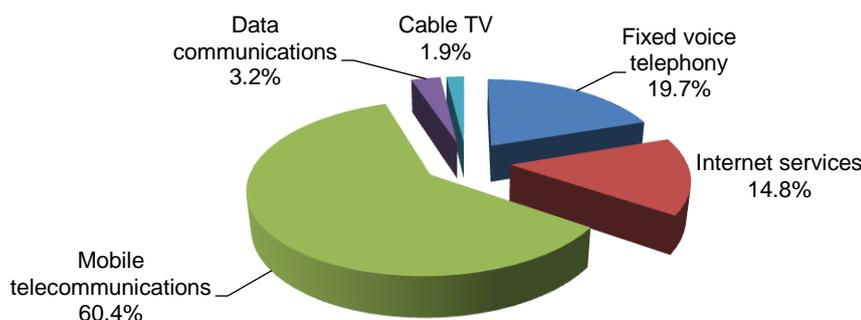


Figure B.1 – Electronic communications market revenue share by service category in 2012

Enlargement countries monitoring report 4 – February 2014

The strong growth of 34.8% in revenue from data communications (defined as data transmission services over fixed networks based on leased lines, IP-VPN, Frame Relay and ATM technology) was boosted by a large increase in the figure for Turkey. This can be attributed to the fibre network expansion of alternative operators, and in particular their investment in trunk lines connecting the major cities.

Revenues from cable television services were up 8.9% year-on-year. Growth was particularly strong in Serbia, Turkey and Kosovo.

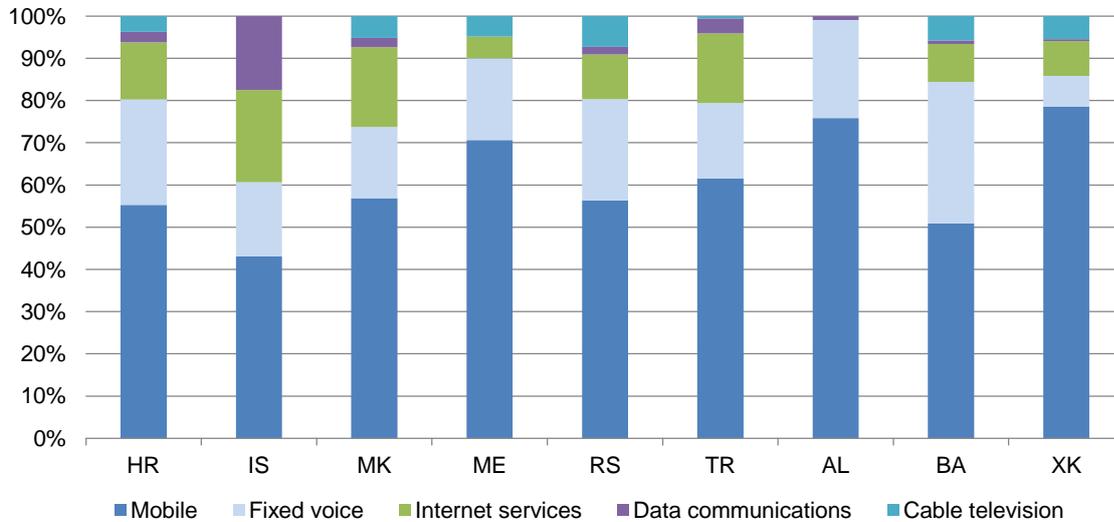


Figure B.2 – Electronic communications market, % of revenue by service category by country in 2012

Overall investment in electronic communications in the nine countries was €3.23bn in 2012. This represents a 27% increase from 2011, when the total was €2.54bn, and has been driven mainly by fibre investments in Turkey. Investment in fixed voice and internet services in Turkey doubled year-on-year to more than €1.3bn in 2012, thanks to heavy investment by both Turk Telekom and the alternative operators.

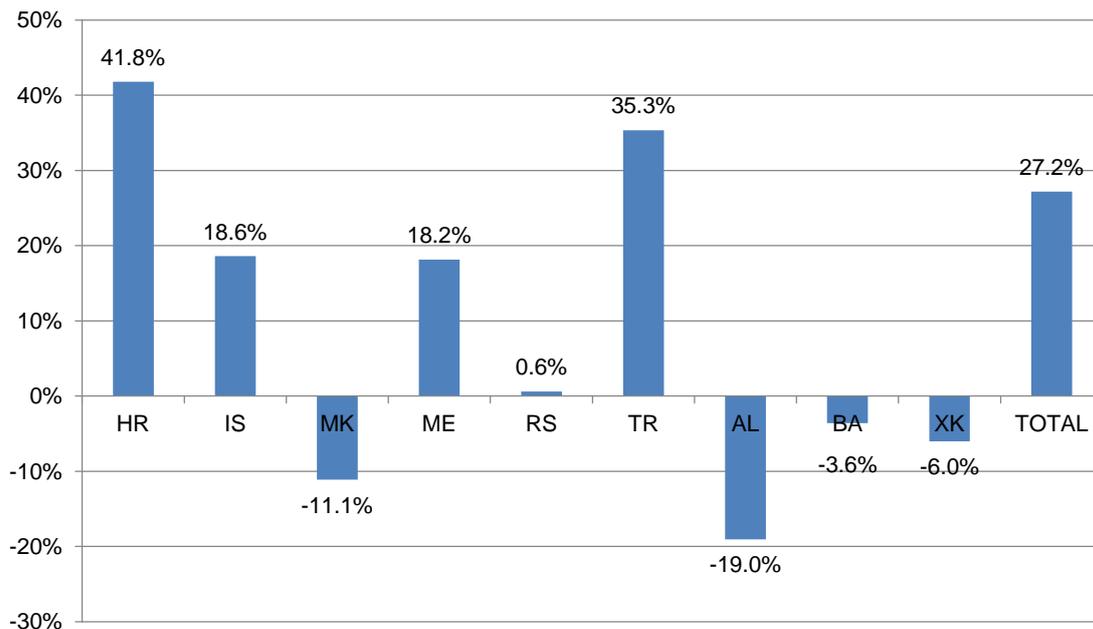


Figure B.3 – Percentage change in investment, expressed in euro, full-year 2011 vs full-year 2012

The investment picture across the other enlargement countries is mixed, however, with total investment in electronic communications rising year-on-year in Croatia, Iceland, Montenegro and Serbia but falling in Macedonia, Albania, Bosnia & Herzegovina and Kosovo. The same picture can be seen in the figures for investment as a percentage of revenue.

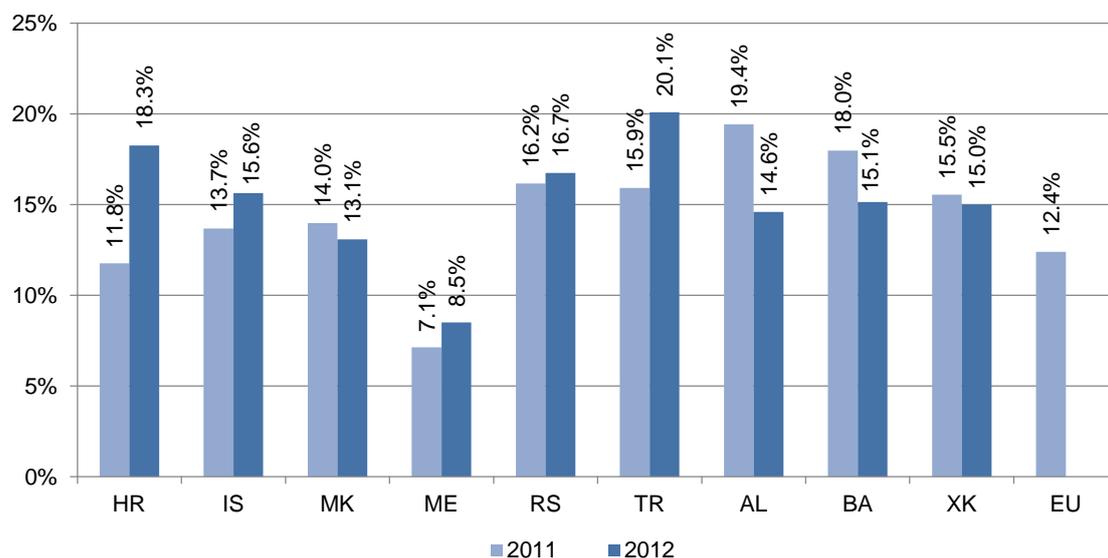


Figure B.4 – Investment as % of revenue in electronic communications, full-year 2011 vs full-year 2012

In Croatia, total investment increased 42% year-on-year to HRK 2.25bn (€299m) in 2012, following a 9.3% drop in 2011 when incumbent operator HT had reduced its network investments in both broadband access infrastructure and core infrastructure.

In Kosovo, there was a decrease in investment in fixed voice telephony in both 2011 and 2012, 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 all the enlargement countries, even where incumbents have continued investing, the financial strain that the economic crisis has placed on some small alternative operators means consolidation can be expected in the sector in 2014.

## 2. Fixed voice telephony market

The decline in the total number of fixed telephone lines in the enlargement countries accelerated in 2012, thanks to continued fixed-to-mobile substitution. Whereas the number of lines had fallen by approximately one million per year in 2010 and 2011, in 2012 it fell by 1.6m to reach 20.34m. The total is expected to have dropped below 20m in 2013.

The decline in the number of fixed lines was greater in the residential user-segment, while the number of business lines declined by only 5% year-on-year.

Turkey, as the largest market, has a significant impact on these headline figures – and in Turkey the number of PSTN lines declined by 1.35m (8.9%) in 2012 (no official data is available on the number of VoIP subscriptions in Turkey). The total number of fixed lines also declined in all other countries.

The decline in the number of fixed lines resulted in reduced fixed line penetration rated per 100 population in all countries, notably Croatia and Turkey. The average fixed-line penetration for the nine enlargement countries was 20.7% as of December 2012, down almost two percentage points in the year, from 22.6% at end 2011. There remains significant variation between countries, however, with penetration ranging from over 40% in Iceland, to just 4.5% in Kosovo.

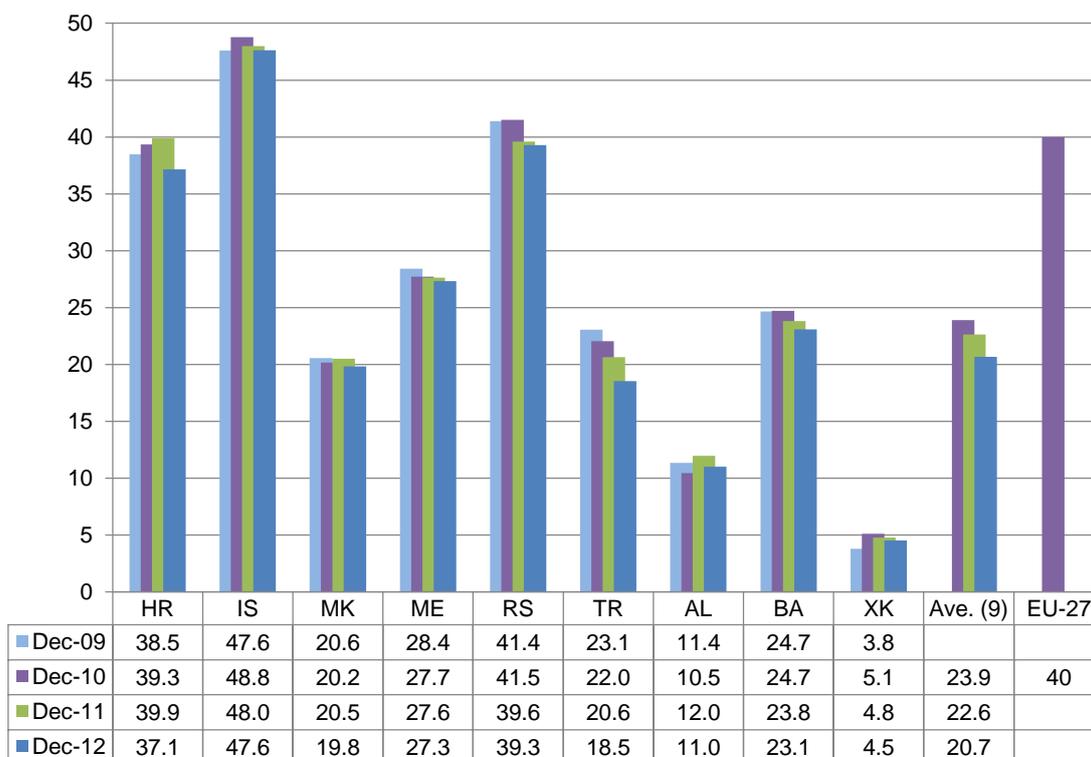


Figure B.5 – Fixed lines per 100 population

Croatia reported the largest number of VoIP subscriptions, which increased 40% in 2012 to exceed 450,000. As a result, VoIP subscriptions accounted for 28% of total fixed line connections in Croatia at end 2012.

In Macedonia, the share of VoIP subscriptions has reached 29% of all fixed line connections, of which nearly one third are fixed lines provided over GSM networks. Also in Bosnia & Herzegovina, about one third of the subscriptions counted as 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.

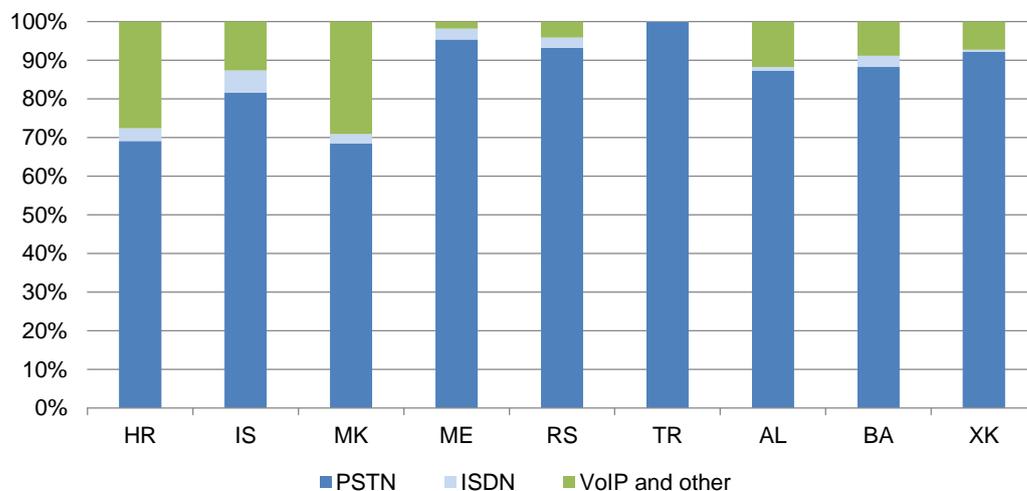


Figure B.6 – Fixed network voice lines by technology, Dec. 31, 2012

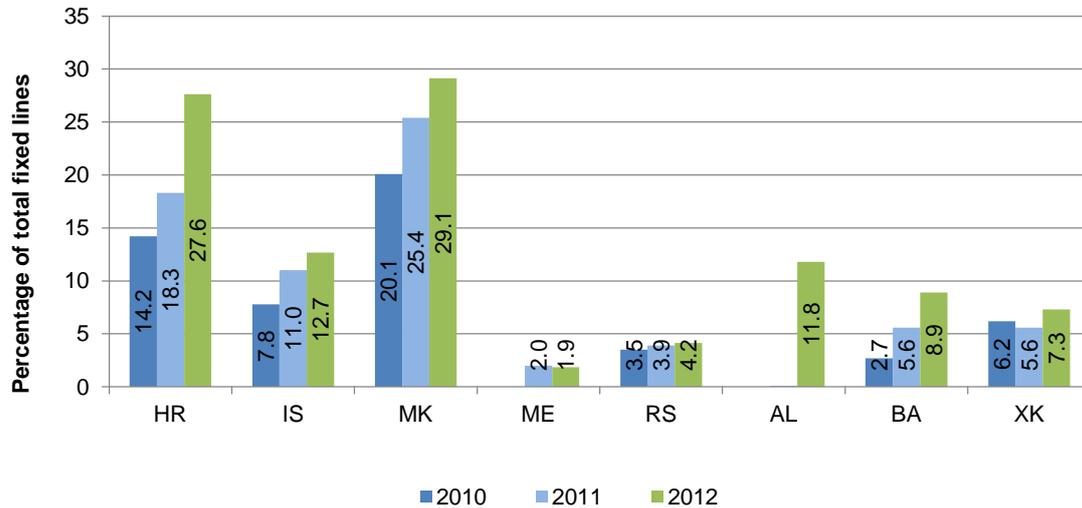


Figure B.7 – VoIP as a percentage of total fixed lines, Dec. 2010, Dec. 2011 and Dec. 2012

Despite growth in the number of VoIP connections of alternative operators, the fixed telephony market remains dominated by incumbents, which have a market share of over 70% in terms of traffic in all countries except Iceland and Croatia.

The incumbent's market share by revenue has fallen dramatically in Turkey, however, from 82% in 2011 to 67% in 2012. While in 2011 the Turkish incumbent lost market share in the international calls, in 2012 it has also lost significant market share in the national calls market. This has been due, in part, to alternative operators taking a much larger share of the market for fixed-to-mobile calls.

In Serbia the entry of new alternative network operators in the fixed voice telephony market has also caused the incumbent's market share of the international calls market (measured by minutes of traffic) to fall, from 98% in 2011 to 91% in 2012.

In Albania too, alternative operators are taking an increasing volume of the international calls market (45% in 2012 compared with 29% in 2011, measured by minutes of traffic).

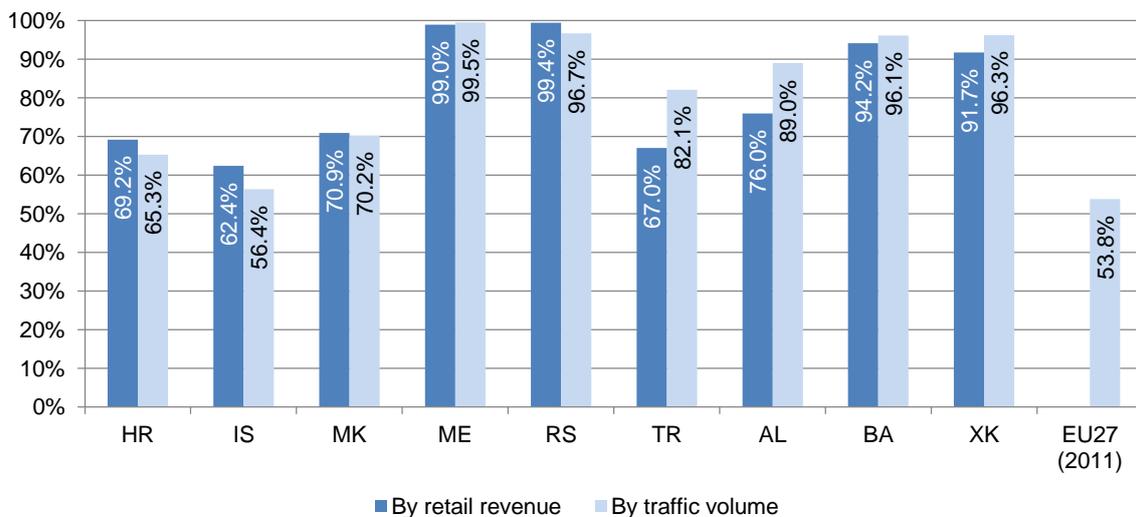


Figure B.8 – Incumbent operators' overall market shares in fixed voice telephony, full year 2012 (%)

In Albania, in 2011 the incumbent provided some offers of bundles of national call minutes for a fixed fee. The offers inflated the incumbent's share of national call traffic in 2011 and a depressed its share of retail revenue from fixed calls in 2011. The distribution of both traffic and revenues normalised in 2012, closer to the 2010 levels.

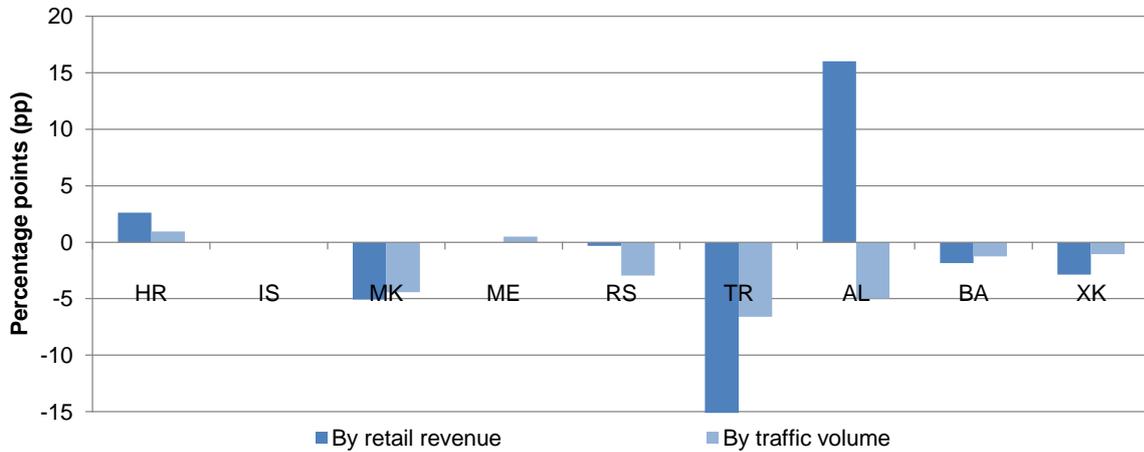


Figure B.9 – Change in incumbent operator's market share (pp), Dec. 2011 – Dec. 2012

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

In Serbia there were five authorised public fixed telephony network operators on December 31, 2012, up from three in June 2012. (Three additional operators have been authorised in 2013, now bringing the total to eight at end 2013.) As a result, the number of subscribers using alternative providers for fixed voice telephony services in Serbia rose from 6,461 on December 31, 2011 to 18,217 on December 31, 2012.

In Croatia, the apparent decline in the number of subscribers using alternative providers for fixed voice telephony services is mainly caused by a change in the methodology used by one of the alternative operators to calculate the number of business subscribers. Previously it counted lines, whereas now it counts subscribers – meaning that if one subscriber has several hundred lines the totals are significantly different.

In Macedonia, growth in the number of subscribers using alternative providers 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.

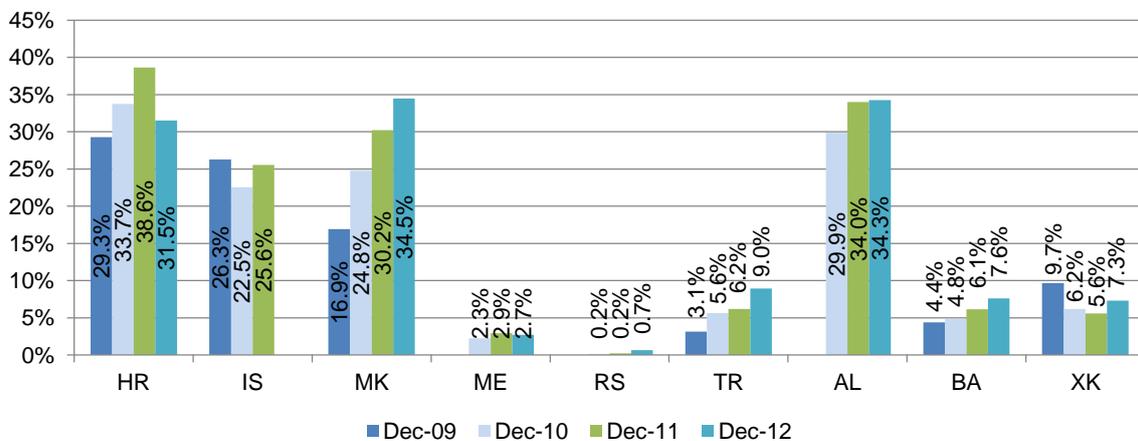


Figure B.10 – Subscribers using alternative fixed voice telephony providers, as % of total fixed lines

### 3. Mobile market

The total number of mobile subscriptions in the nine enlargement countries fell by 295,000 in 2012, to reach 93.93m. The apparently moderate decline masks the difference in trends between countries, however.

The total for Albania appeared to drop by 1.7m (or 32%) in 2012, to 3.54m. This is because the numbers reported for 2011 for Albania referred to total subscriptions, based on the operators' own definitions for active SIMs (credited at least once in the last 12 months etc.), whereas the numbers for 2012 are only for active subscriptions, defined as those that have made or received at least a call or SMS in the last three months.

Similarly in Serbia, a decrease of more than 1m mobile subscriptions was recorded in 2012, from 10.18m to 9.14m (a 10% fall). This was because the Serbian regulator RATEL modified its methodology for counting mobile subscriptions such that it now counts only the subscriptions that have been active in the preceding three months.

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

The significant reduction in the mobile penetration rate for Montenegro was, meanwhile, the result of a one-off deactivation of inactive prepaid users in January 2012.

The above-mentioned decreases in subscriptions were partly offset by steady growth in Turkey (2.36m net adds, or 3.6% growth) Kosovo (185,000 net adds, 12.5% growth) and Bosnia & Herzegovina (186,000 net adds, 5.9% growth).

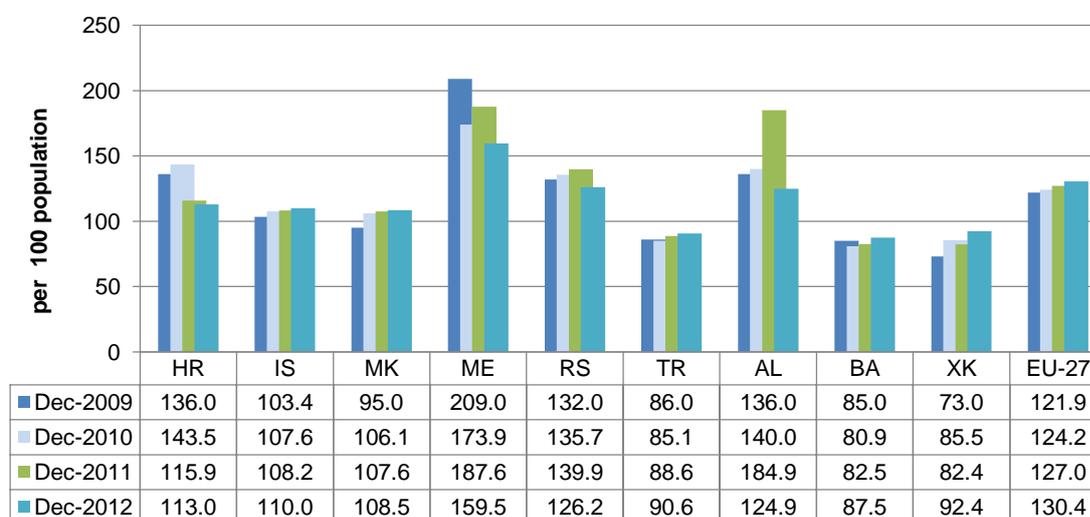


Figure B.11 – Mobile subscriptions per 100 population, by country, Dec. 2009 – Dec. 2012

The share of postpaid-to-prepaid subscriptions increased in all enlargement countries in 2012. The trend suggests a maturing of market conditions, but is also a result of decisions no longer to count inactive prepaid SIMs in some countries, as described above, notably in Albania, Montenegro and Serbia.

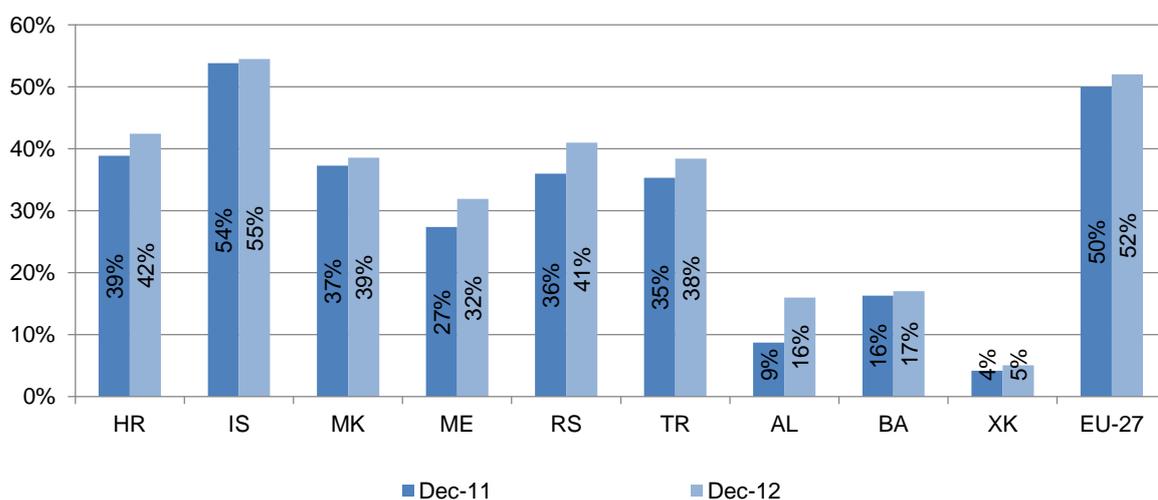


Figure B.12 – Mobile subscriptions - postpaid as a share of total, Dec. 2011 vs Dec. 2012

There are at least three mobile network operators in all of the monitored countries, except Kosovo where there are only two mobile networks. Albania and Iceland stand out with four and five mobile network operators, respectively. Mobile virtual network operators (MVNOs) and service providers had been long established in Iceland and Kosovo, but recently also made inroads in other countries. Service providers have launched operations in Croatia and Bosnia & Herzegovina. Recent commercial agreements have been also reported in Macedonia and Serbia.

The leading operator lost market share (measured by subscriptions) in all the enlargement countries in 2012, except Bosnia & Herzegovina, where BH Telecom made a small gain, and Albania. The introduction of the new standardised definition of an active subscription in Albania resulted in a loss in market share for third-placed operator Eagle Mobile, to the benefit of the established operators AMC and Vodafone.

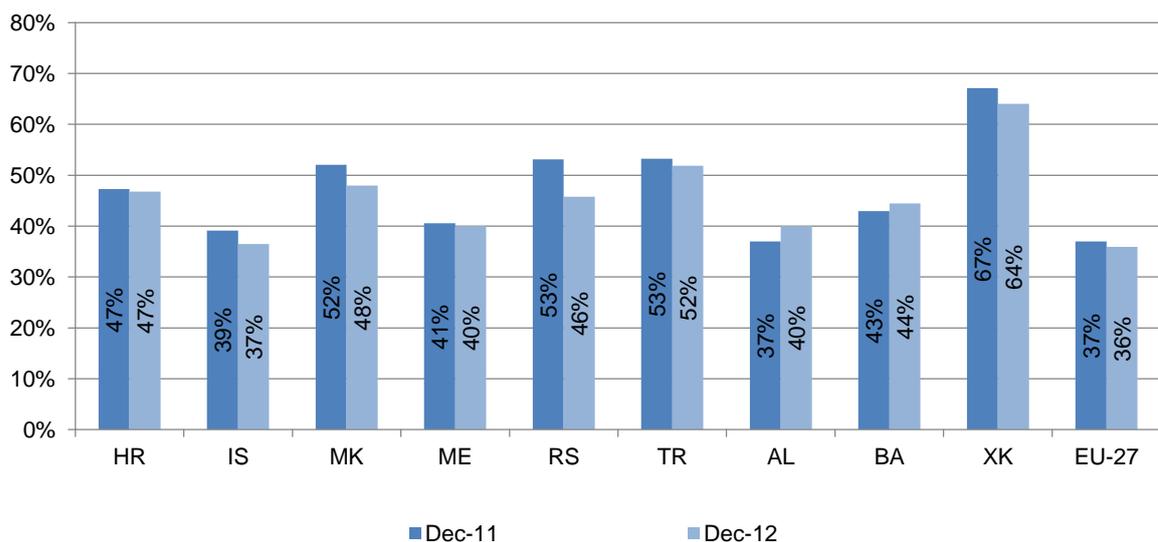


Figure B.13 – Leading mobile operator's market share by subscriptions, Dec. 2011 vs Dec. 2012

The market shares of third-placed operators in other countries continued to rise, however – subscription-based market shares of Iceland's Nova and Macedonia's VIP now exceed 28%, while Mtel in Montenegro and VIP mobile in Serbia have crossed the 25% and 20% thresholds, respectively.

The Herfindahl-Hirschmann Index (HHI), the sum of the squares of the market shares, is commonly used in assessing market concentration in competition law. The HHI value for the mobile markets measured both in terms of subscriptions and in terms of revenue has been falling in most of the enlargement countries. Exceptionally, the HHI shows a large increase in

the market concentration level in Albania. This is, again, because subscription market shares for 2012 have been calculated based on the new, more stringent, definition of an ‘active’ subscription, which resulted in much lower subscriber figures for the smaller operators.

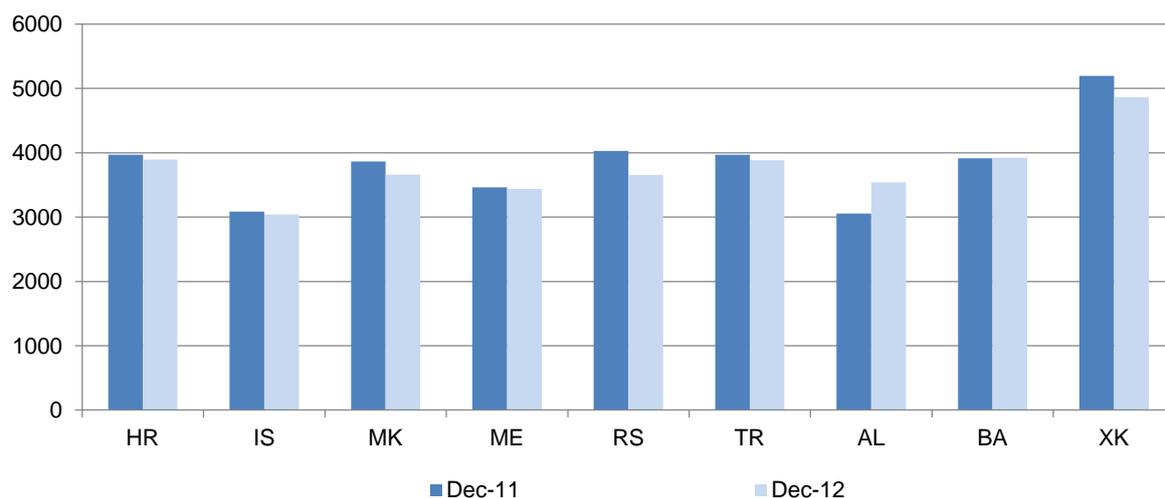
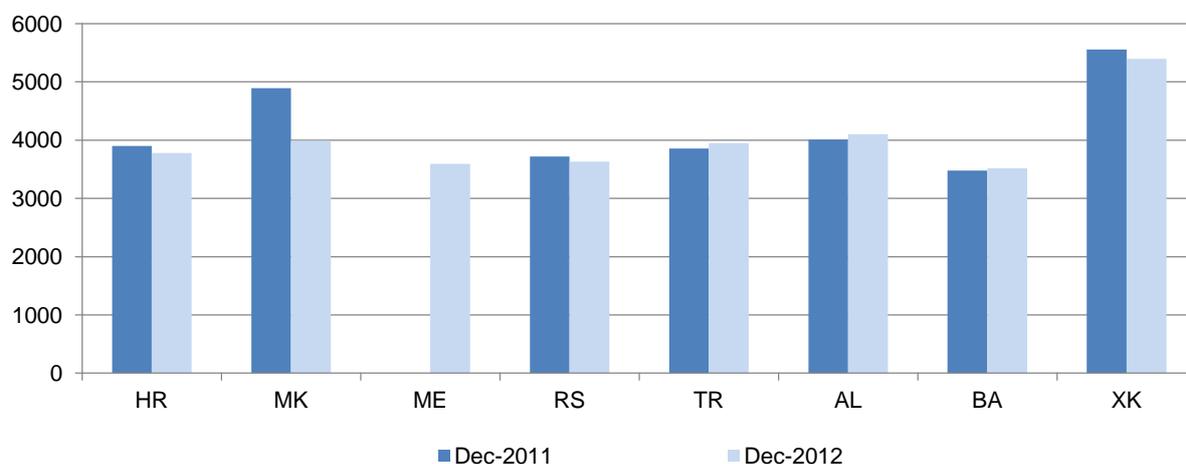


Figure B.14 – Mobile market concentration levels, HHI, by subscriptions

In Turkey, the leading mobile operator Turkcell gained market share in terms of revenue, partly due to the success of its mobile broadband offerings, which accounted for 12% of Turkcell’s revenues for the full year 2012.



Iceland: revenue -based market shares are confidential.

Figure B.15 – Mobile market concentration levels, HHI, by revenue

#### 4. Fixed broadband market

The fixed broadband market in the enlargement countries measured by the number of active connections grew by 4.6% in 2012, which was less than half of the 10% growth rate recorded in 2011. At the end of 2012 the total number of fixed broadband subscriptions in the nine countries was 11.08m.

The slowdown can be attributed partly to a stagnation of the DSL market in Turkey, which accounts for 60% of broadband subscriptions in the nine countries, with Turk Telekom concentrating its investment on its FTTH/B roll-out. The number of FTTx subscriptions in Turkey increased by 141% in 2012 to exceed 645,000. Nevertheless, total growth in the

number of fixed broadband lines in Turkey was just 3.3% in 2012, as mobile broadband became an increasingly competitive alternative.

Albania, Serbia and Macedonia all recorded strong growth of more than 10% in the number of fixed broadband connections – with the total in Serbia exceeding 1m for the first time.

The fixed broadband penetration rate, measured as the overall number of fixed broadband lines divided by the national population, averaged 11.3% in the nine enlargement countries at the end of 2012.

Only in Iceland was the penetration above the EU average, at 35.4%, while in the eight other countries it was significantly below the EU-27 average rate of 28.8%. Croatia passed the 20% threshold, however, recording a penetration rate of 20.2% at end-2012, which was above the level of Romania and Bulgaria that joined the EU in 2007.

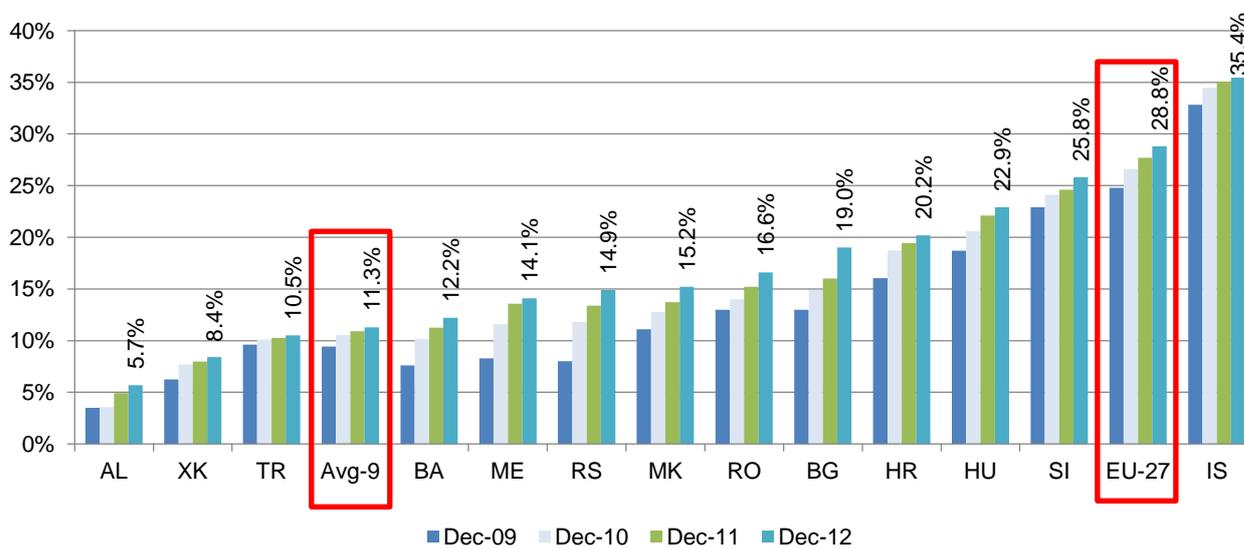


Figure B.16 – Fixed broadband penetration rate per population, Dec. 2009 – Dec. 2012

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 Annex Table Q.1). 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 household size (more than six persons in Kosovo).

The fastest growth in the fixed broadband penetration rate (measured per population) in 2012 was recorded in Serbia, where the rate jumped by 1.51 percentage points to 14.9%. This brings Serbia’s penetration rate very close to Macedonia’s, which similarly grew by 1.47 percentage points, and not far behind that of Romania.

All other enlargement countries recorded fixed broadband penetration-growth rates below the EU average of 1.1 percentage points – despite mostly starting from rather low penetration rates.

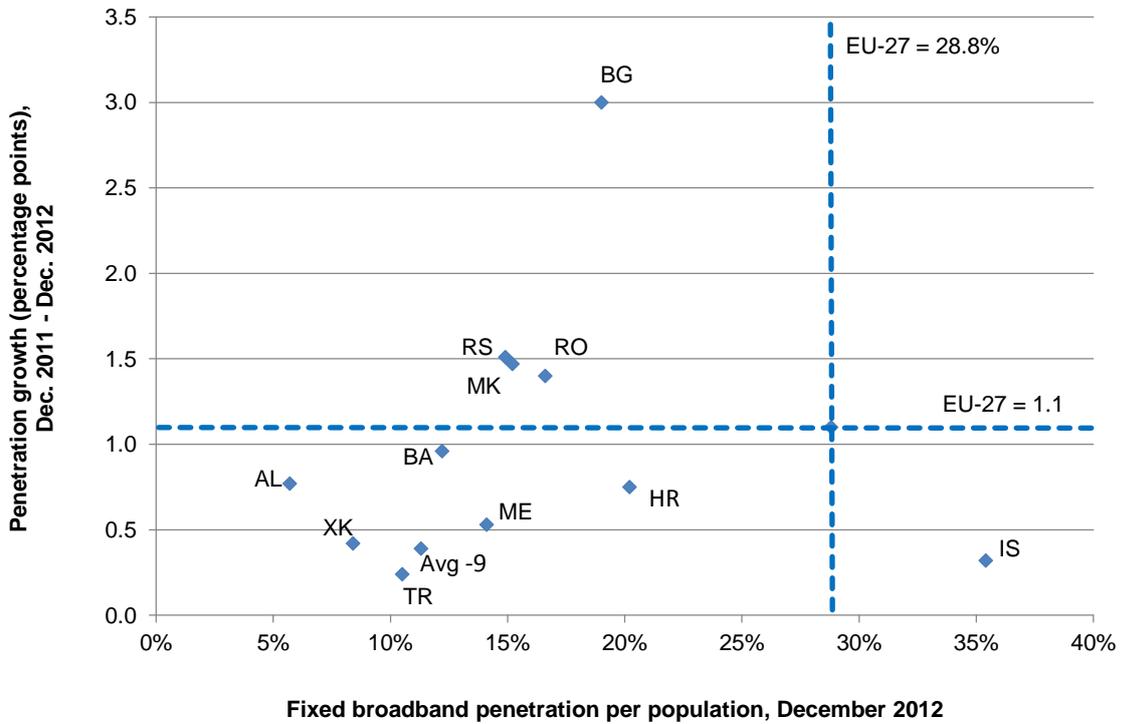


Figure B.17 – Fixed broadband growth dynamics, Dec. 2011 – Dec. 2012

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 SEE enlargement countries. Turkey, meanwhile, deviated from the trend in 2011 when it experienced a boom in its GDP per capita that was not matched by a commensurate increase in its fixed broadband penetration rate.

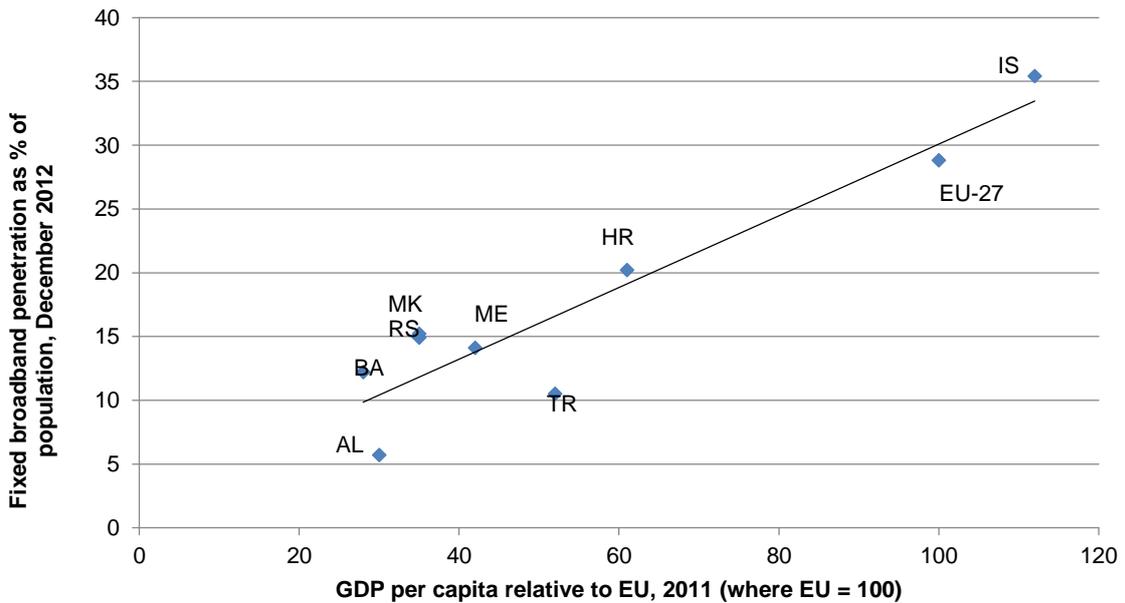


Figure B.18 – Fixed broadband penetration versus GDP per capita relative to EU, Dec. 2012

Incumbent operators continue to dominate the fixed broadband market: although all countries except Iceland and Montenegro have at least 38 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 measured by connections is nonetheless comparable with the EU average of 42.3%.

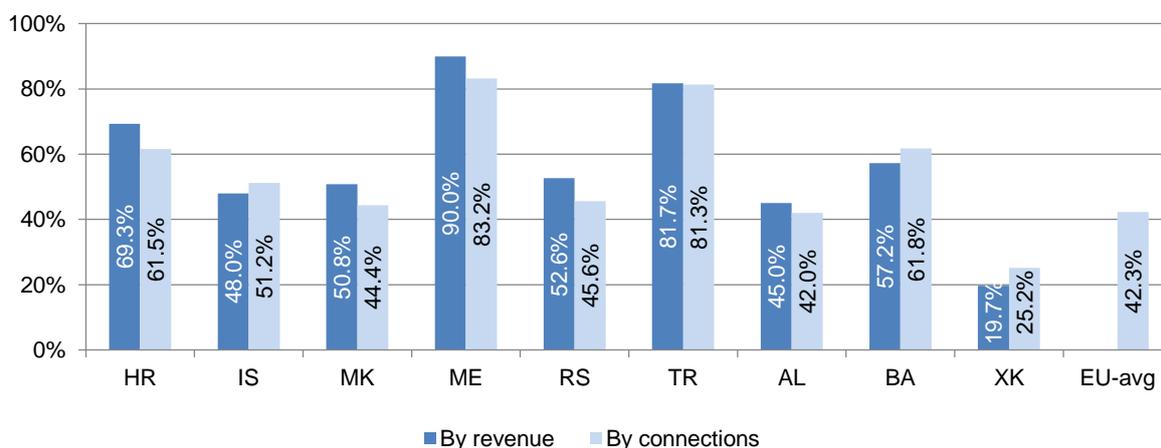


Figure B.19 – Incumbent ISP's market share, by revenue and by connections, Dec. 2012

Notes:

Croatia: The incumbent's market share by connections includes data for Iskon, which is 100% owned by HT.

Iceland: Data for market share by revenues is for 2011.

The incumbent's share by connections fell in all markets except Montenegro and Iceland in 2012, continuing the trend from 2011. Croatian incumbent, Hrvatski Telekom, was particularly hard hit, but the incumbents in Turkey, Macedonia and Bosnia & Herzegovina also each lost more than two percentage points of the market share.

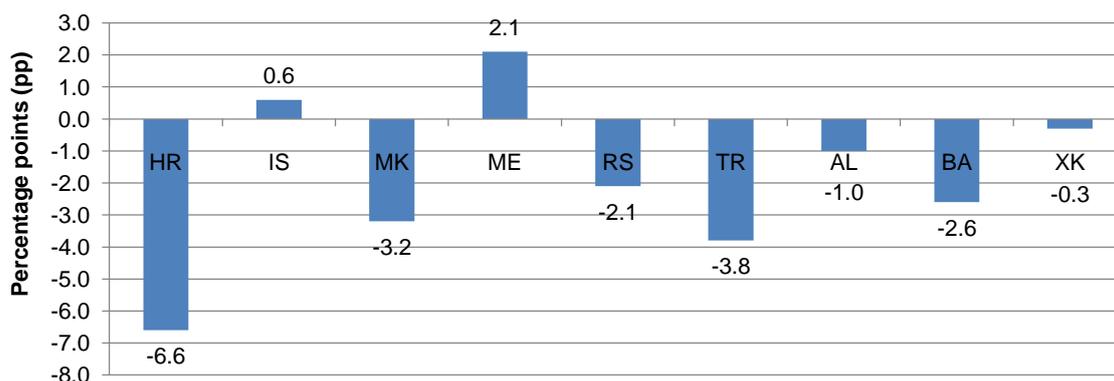


Figure B.20 – Change in incumbent ISP's retail market share by connections, Dec. 2011 – Dec. 2012

When it comes to the split by technology, xDSL accounts for 79% of fixed broadband connections in the enlargement countries and plays a leading role in all markets. The second most significant platform is cable which accounts for about 12% of fixed broadband connections. For comparison, in the EU-27 as of December 31, 2012 xDSL accounted for 74% of all fixed broadband connections, while the share of cable stood at 17%.<sup>2</sup>

There are, however, significant variations across the countries. There is a strong cable presence in Serbia, Macedonia and Kosovo – and cable networks gained market share in most countries in which they operate, notably in Croatia, where cable broadband connections

<sup>2</sup> [http://ec.europa.eu/information\\_society/newsroom/cf/dae/document.cfm?action=display&doc\\_id=2375](http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?action=display&doc_id=2375)

increased 26% year-on-year to exceed 67,000. In Kosovo, cable networks account for over 70% of all fixed broadband connections.

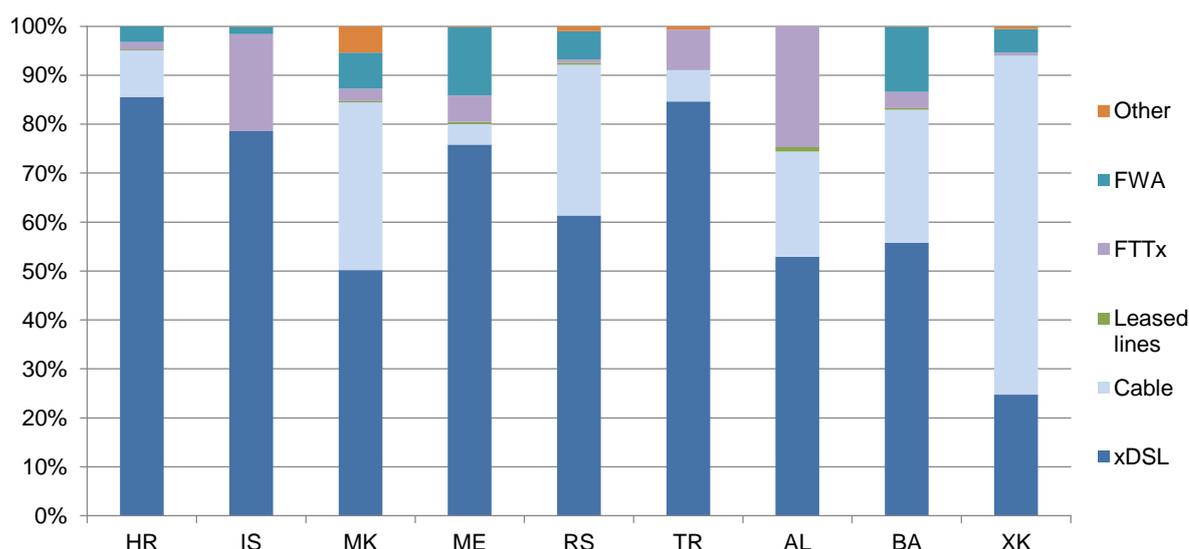


Figure B.21 – Fixed retail broadband connections by technology, Dec. 31, 2012

As far as the xDSL market is concerned, over 86% of fixed broadband lines in the enlargement countries in this segment are controlled by the incumbents. For comparison, in the EU-27 the incumbents' market share in the xDSL market is 54%.

In Albania and, to a lesser extent, in Bosnia & Herzegovina, alternative operators are using their own xDSL networks. The share of xDSL lines attributable to the incumbent in Albania also appears low because Altelecom's xDSL connections connected via MSANS are counted as FTTx (see Figure B.21) and are therefore not included in the incumbent's xDSL total in Figure B.22 below.

In Croatia, most alternative operators are using full LLU, while in Iceland a greater proportion use shared access. In Croatia, although alternative operators mainly rely on LLU and bitstream, the number of subscribers connected via alternative operators' own xDSL networks quadrupled in the second half of 2012 to exceed 2,000 lines (1.6% of total retail xDSL lines supplied by alternative operators).

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

In Macedonia, alternative operator ONE modified its contract with the incumbent during 2012 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.

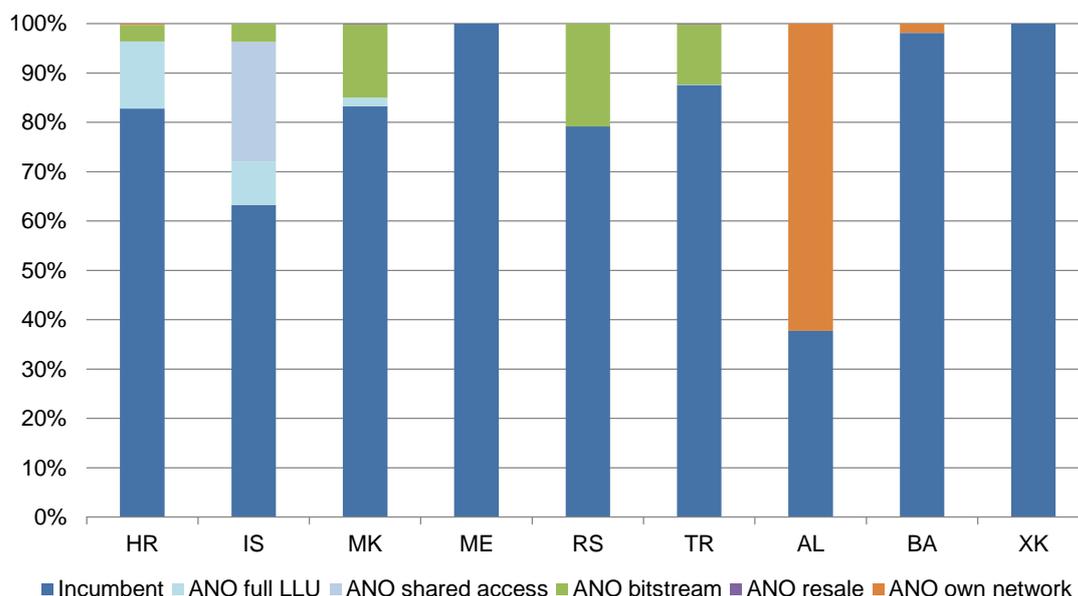


Figure B.22 – xDSL lines by type of access, Dec. 2012 (%)

It was in the FTTx sector that operators made the greatest gains, however – with the total number of FTTx connections in the enlargement countries increasing by 145% in 2012 to exceed 750,000, accounting for 7% of all fixed broadband lines in the nine countries.

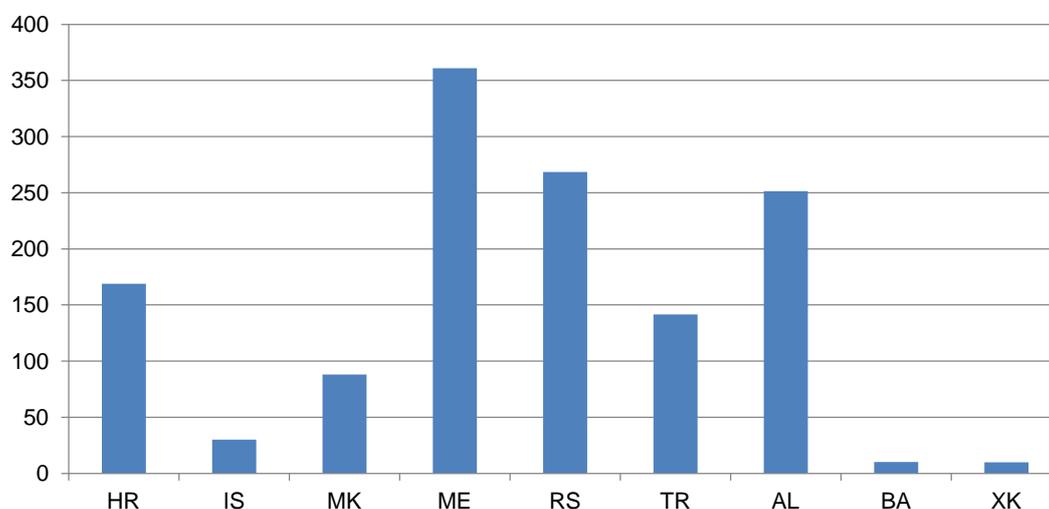


Figure B.23 – Change in FTTx subscriptions (%), Dec. 2011 – Dec. 2012

Growth in fibre was strong in Iceland, where the number of fibre connections increased 30% in 2012, with the result that fibre accounted for 20% of all fixed broadband connections.

In Croatia, the incumbent had 7,006 FTTx connections and a comparable number of 6,463 connections was deployed by alternative operators at end 2012.

In Turkey the number of fibre broadband connections increased by almost 380,000 in 2012 to nearly two-thirds of a million, driven by investment from both the incumbent operator Turk Telekom and alternative operator Turkcell-Superonline.

In Serbia and in Montenegro the number of fibre broadband subscriptions more than tripled, albeit from a small base, to account for 0.7% and 5.4% of Serbia's and Montenegro's total retail broadband connections respectively.

In Albania, FTTx connections of the incumbent Altelecom refer mainly to xDSL connections connected via MSANS. In 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 reach 25%.

The distribution of retail broadband lines by speeds shows a steady movement towards higher-speed packages in all countries – with growth especially in the 2-4 Mbps and 4-8 Mbps categories.

In Croatia, however, operators’ retail offers now have to comply with the “*Ordinance on the methods and the conditions for the provision of electronic communications networks and services*”. The Ordinance defines stricter conditions regarding the advertised and actual speed provided. As a result, the data for December 2012 appears to show an increase in the number of users in Croatia on lower-speed packages (up to 4 Mbps) and a corresponding decrease in the number of users on higher-speed packages. The speed category 8-20 Mbps is most affected, with the number of retail broadband lines at such speeds appearing to fall from more than 90,000 to just over 20,000.

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, more than one third 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 in its 4Q 2012 results that 90% of its 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 December 2012 compared with June 2012, and also compared with December 2011. This can mainly be attributed to cable network operators upgrading connections to DOCSIS 3.0 while leaving prices unchanged.

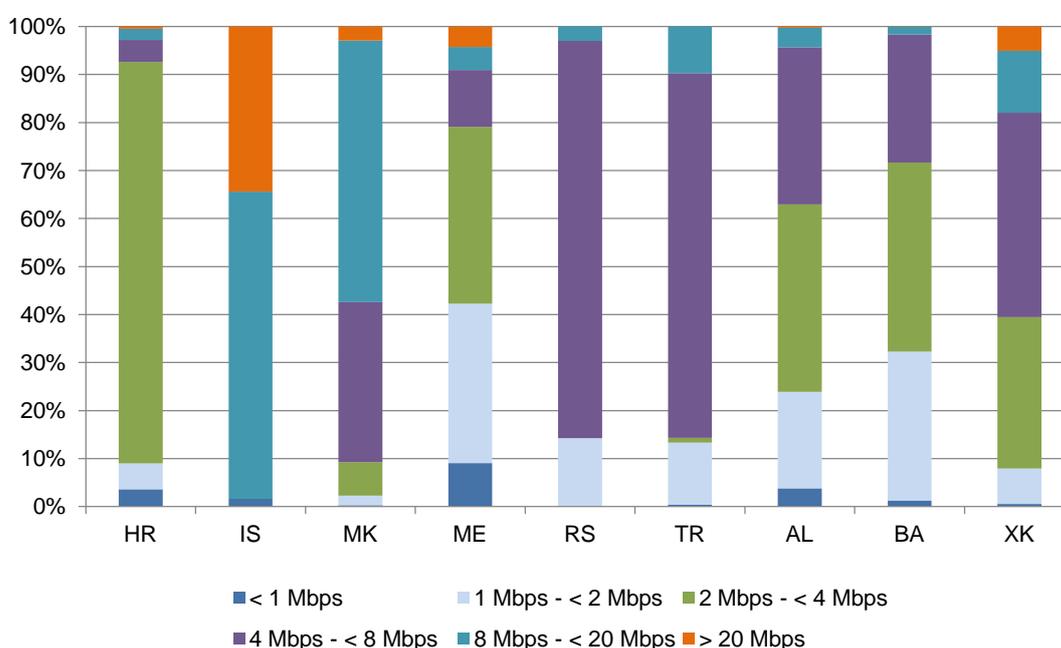


Figure B.24 – Distribution of retail broadband lines by download speeds, Dec. 31, 2012

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

In Albania, Bosnia & Herzegovina, Serbia and Kosovo the increase in speeds has been driven by cable operators, as they have been upgrading their networks to DOCSIS 3.0.

In Kosovo, cable operator IPKO is now advertising download speeds up to 80 Mbps, more than six times faster than the DSL packages offered by the incumbent.

In Macedonia, on the other hand, it is the incumbent operator Makedonski Telekom’s fibre network that offers the highest advertised download speeds of 90 Mbps.

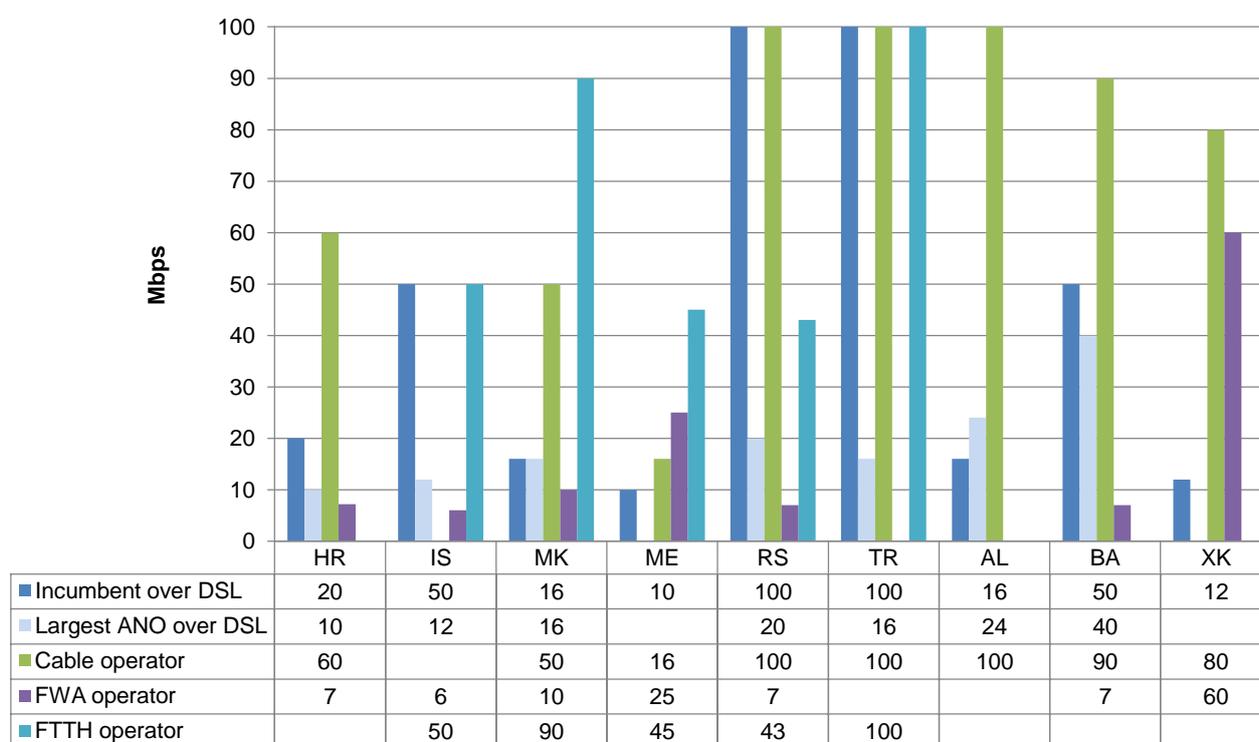


Figure B.25 – Fastest advertised retail broadband connection (Mbps), by country

## 5. 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 appealing, thanks to 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 in 2011 and in 2012 growth has slowed, as the market has matured and smartphones and tablets have offered an alternative.

In Croatia, the apparent fall in the mobile broadband 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.

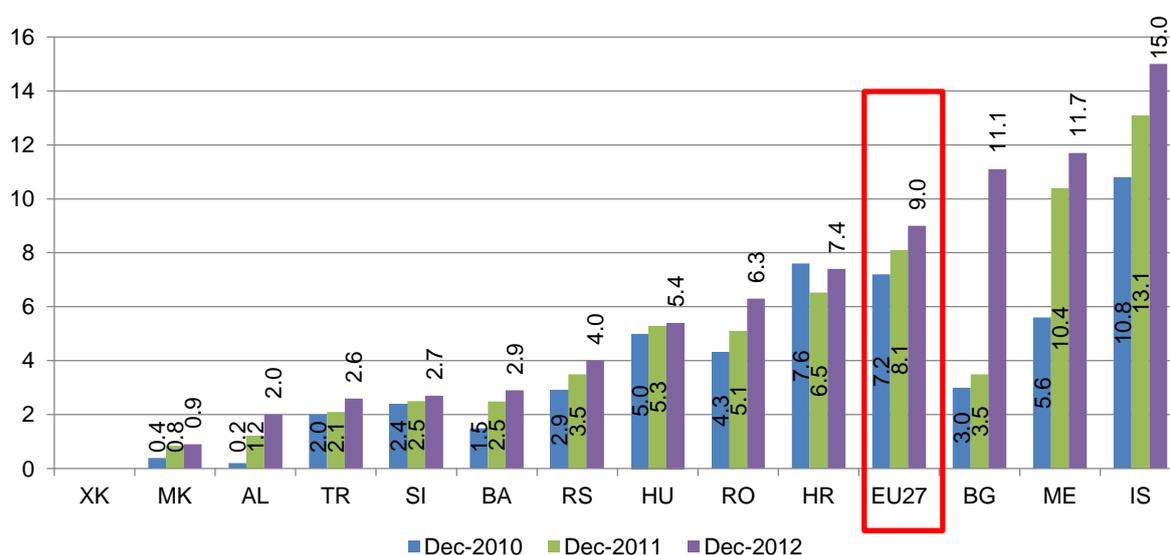


Figure B.26 – Dedicated data cards/ wireless modems per 100 population, Dec. 2010, Dec. 2011 and Dec. 2012

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 handhelds and dedicated datacards/modems) exceeded 50% and was close to the EU-27 average at end-2012 of 54%.

In Iceland the penetration rate reached 72%, bringing it closer to the Nordic markets, where mobile broadband penetration rates are around 100%. The recent launch of LTE networks by three Icelandic mobile operators is expected to further boost mobile broadband growth.

In almost all markets, mobile operators have been promoting bundle packages of data combined with voice minutes and SMS which, when offered in conjunction with an increasingly wide choice of smartphones and tablets, has fuelled the growth in mobile broadband subscriptions and traffic in 2013.

The trend is expected to continue in 2014, particularly with large mobile operators such as Turkcell promoting lower-cost smartphones like its own-brand T40, which is retailing for TRY 499 (around €185).

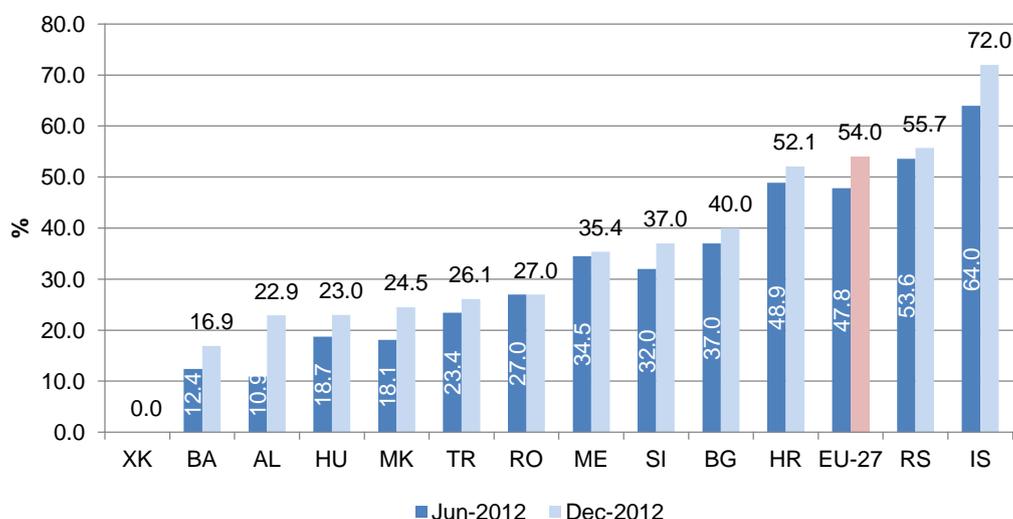


Figure B.27 – Mobile broadband penetration (all devices, incl. handhelds), June 30, 2012 and Dec. 31, 2012

### C. National broadband targets

Governments in seven of the nine enlargement countries (Croatia, Iceland, Montenegro, Serbia, Turkey, Albania and Kosovo) have set political targets for broadband coverage or take-up at specified minimum speeds to be reached in the coming years.

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

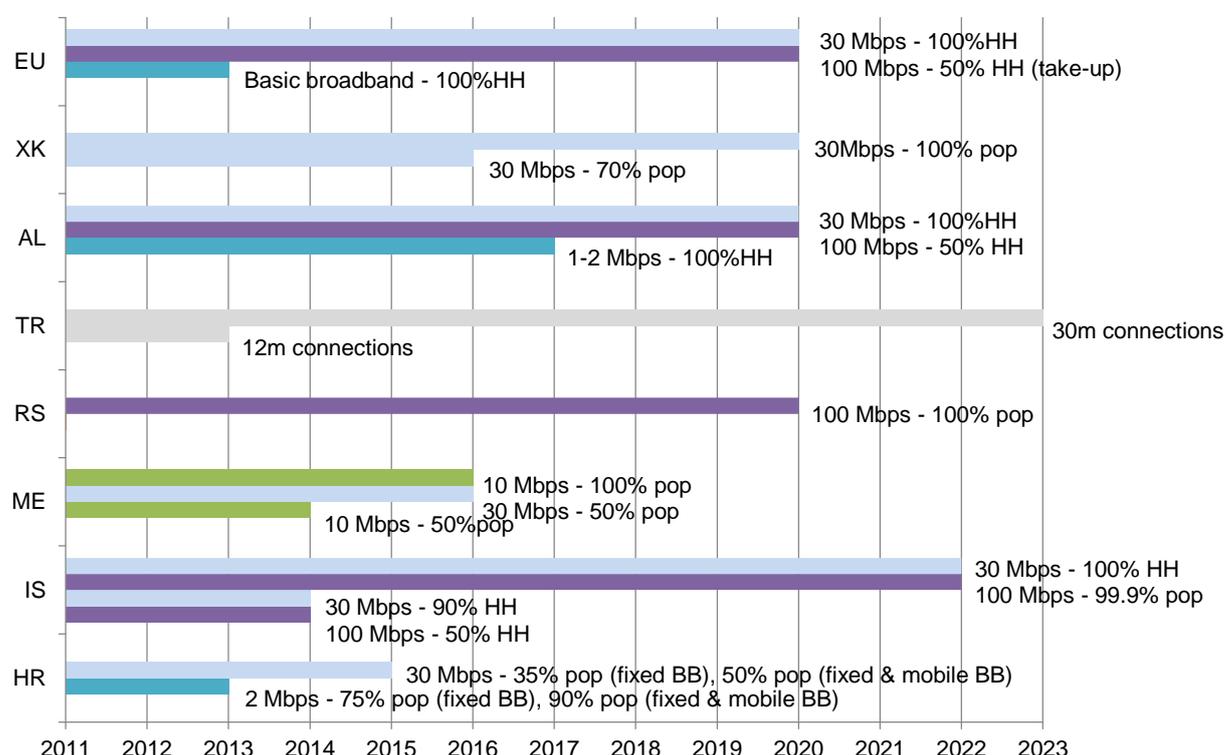


Figure C.1 – National broadband targets

In Croatia, the Ministry of Maritime Affairs, Transport and Infrastructure has been drafting a national framework programme for broadband infrastructure development in commercially unattractive areas that proposes €712m required financing for 2014-2020, of which €253m is envisaged from the EU funds and €44.6 from the national public funds (the rest to be funded by private partners).

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). The [section J.1](#) below provides details on the scope of universal service and provider designation mechanism.

## D. Legislative, policy and institutional framework

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
<b>Electronic communications law</b>	2008	2003	2005	2013	2010	2008	2008	2003	2012
<b>Based on EU 2003 regulatory framework?</b>	✓	✓	✓	✓	✓	✓	✓	✗	✓
<b>Draft for implementing EU 2009 regulatory framework?</b>	–	✓	–	–	–	–	–	✓	–
<b>EU 2009 regulatory framework adopted?</b>	✓	–	✓	✓	–	–	✓	–	✓
<b>Electronic commerce law</b>	2003	2002	2007	2004	2009	✗	2009	2007	2012
<b>Electronic signature law</b>	2002	2001	2001	2003	2004	2004	2008	2006	2012
<b>Audiovisual media law based on AVMSD</b>	2009	2011	2013	2010	✗	✗	2013	✗	✗
<b>Data protection law</b>	2003	2000	2005	2008	2008	✗	2008	2006	2010
<b>Cybercrime legislation</b>	✓	✓	✓	✓	✓	✓	✓	✗	✓
<b>Electronic document law or E-government law</b>	2005	–	2001 2009	2008	2009	2 <sup>nd</sup> 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.

Five countries have now also aligned their laws with the EU 2009 regulatory framework and one more has 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 amended its legislation in line with the EU 2009 framework also in October 2012. Montenegro adopted a new electronic communications law in August 2013, which has replaced the previous law from 2008. In Macedonia, a new Law on electronic communications aligned with the EU 2009 framework was adopted by parliament on February 20, 2014 (shortly before publication of this report).

Audiovisual media regulation is not assessed in the scope of this study. Croatia in 2009 and Montenegro in 2010 were the first to adopt new Laws on electronic media based on the Audiovisual Media Services Directive (AVMSD). In Iceland the new media act implementing AVMSD was adopted in April 2011 and was further amended in March 2013. Albania followed on March 4, 2013 and Macedonia in December 2013. The other countries have not yet transposed the directive. Serbia, however, has reported work on draft legislation, including the new draft Law on public information and media, the Law on public media services and the Law on electronic media.

All countries except Turkey have implemented the Electronic Commerce Directive 2000/31/EC. Turkey is preparing a draft transposing the directive.<sup>3</sup> The Turkish Law no. 5651 addresses some of the topics regulated in the directive, but some aspects are not fully aligned with it and they have not been addressed in the draft law either. The provisions on liability of

<sup>3</sup> The draft is published (in Turkish) at <http://www.basbakanlik.gov.tr/Handlers/FileHandler.ashx?FileId=6593>

internet service providers raise particular concerns, especially in the context of the recently adopted internet law.

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.

In most of the monitored countries the legislation is structured in similar way: including 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 those previous laws. In particular Law no. 406 on telegrams and telephones (enacted in 1924) and the Wireless Law no. 2813 (enacted in 1983) are still in force, although most of their articles have been either repealed or replaced by new text during the last years. Law no. 406 is now mostly about the incumbent's legal status, but also the legal basis of a telecommunications tax. The Wireless Law no. 2813 received a new title and is now called Law no. 2813 on the Establishment of the Information Technologies and Communications Authority.
- In Kosovo most of the information society legislation was adopted in 2002 as a single law, the Law on the information society services. In April 2012 it was replaced by a new Law on the information society services, 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 also covered by a separate law of 2010. Kosovo also adopted a new law on electronic communications, which came into force in November 2012 and replaced the 2003 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 Republika Srpska have laws on electronic commerce and electronic signature.

## 1. Recent and 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 monitored countries show significant differences with respect to the question whether their responsible ministries are actively pursuing this task.

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

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

The differences between monitored countries can be summarised as follows:

- In accordance with its EU accession commitments, Croatia brought its legislation in line with the information society *acquis*, and was the first of the monitored countries to implement 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 and the Audiovisual Media Services Directive still have not been adopted by the responsible EEA bodies. Also, the new Icelandic government has suspended the activities to prepare for EU membership. Prior to that decision, Iceland had prepared a draft bill for transposing the EU 2009 regulatory framework and identified during the screening process several details that would need transposition.<sup>4</sup>
- 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. Kosovo is currently preparing legislation on digital switch-over.
- Albania also adopted important pieces of primary legislation in the past two years. 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. In spring 2013 Albania also adopted amendments to fully align the Law on electronic commerce with the Electronic Commerce Directive.
- Montenegro adopted a new law on electronic communications in August 2013 based on the EU 2009 regulatory framework. In July 2013 the Ministry for Information Society and Telecommunication adopted bylaws implementing the law on information security. Amendments to the e-commerce law are in the parliamentary procedure. Legislation on e-governance and amendments to the law on electronic media (to fully transpose the Audiovisual Media Services Directive) are under preparation.
- In Macedonia the Ministry of Information Society and Administration established a working group for transposition of the EU 2009 regulatory framework in October 2012. The ministry published on November 6, 2013 a draft new law on electronic communications for consultation. The draft was finalised in January 2014 and adopted by parliament on February 20, 2014. In December 2013 parliament adopted a new law on audiovisual media.
- Serbia adopted the new law on electronic communications aligned with the EU 2003 framework in 2010. Work on transposing the EU 2009 regulatory framework started in July 2013. Drafts are being prepared to amend the law on electronic commerce and for a law on information security.
- Although Turkey is actively adopting new laws, the parliamentary procedure is generally 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 is not aimed at full alignment. In February 2014 Turkey has adopted amendments to its internet law which are criticised by international observers as a measure to increase internet censorship. Turkey does not yet have specific plans for transposing the EU 2009 regulatory framework.
- 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. However, a new electronic communications law based on the EU 2003 and 2009 regulatory frameworks has been drafted and published for initial consultation in autumn 2013.

## 2. Information society policy

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

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<sup>4</sup> 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](http://europe.mfa.is/media/ees_i/Chapter-10-Draft-Position-Paper-Iceland---FINAL.pdf)

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.

As the following table shows, each country except Croatia has a strategy document for information society in general and for electronic communications, and also separate documents for most or all topics covered by this report. Some of the policy documents mentioned in the table below are relatively old or even long 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.

	HR	IS	MK	ME	RS	TR	AL	BA	XK
<b>Information society in general</b>	✗	✓	✓	✓	✓	✓	✓	✓	✓
<b>Electronic communications</b>	✗	✓	✓	✓	✓	✓	✓	✓	✓
<b>Broadband</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Digital TV</b>	✓	✓	✓	✓	✓	✗	✓	✓	(✓)
<b>Network security</b>	✗	✓	✓	✗	✓	✓	✗	✓	✓
<b>Cybercrime</b>	✗	✓	✗	✗	✓	✓	✗	✓	✓
<b>E-Government</b>	✗	✓	✓	✓	✓	✓	✓	✓	✓
<b>E-Business</b>	✗	✓	✓	✗	✓	✓	✓	✓	✗
✓ is covered by a policy document, (✓) policy drafted, ✗ not explicitly covered by a policy document									

Table D.2 – Information society policy documents

The Albanian government adopted in May 2013 a new broadband strategy. In Kosovo, a new strategy for the electronic communications sector was approved by government in March 2013. Kosovo has also drafted a strategy for digital TV switchover.

### 3. 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 monitored countries have designated a responsible body. The names and websites of these bodies can be found in Table C.4 of the annex.

	HR	IS	MK	ME	RS	TR	AL	BA	XK
<b>Electronic communications legislation and policy</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Information society policy</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>National regulatory authority</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>National competition authority</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Audiovisual media regulator</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Body responsible for R&amp;TTE</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Information society statistics</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓

	HR	IS	MK	ME	RS	TR	AL	BA	XK
<b>Electronic Commerce Directive: supervision and national contact point</b>	✓	✓	✓	✓	✓	✗	✓	✓	✓
<b>Electronic Signatures Directive: supervisory authority</b>	✓	✓	✓	✓	✓	✓	✓	✗	✗
<b>Data protection authority</b>	✓	✓	✓	✓	✓	✗	✓	✓	✓
<b>Network security (Art. 13a, 13b Framework Directive)</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Personal data security (Art. 4 e-Privacy Directive)</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Enforcement of intellectual property rights</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Computer emergency response team (CERT)</b>	✓	✓	✗	✓	✓	✓	✓	✗	✗
<b>Domain name policy</b>	✓	✓	✓	✓	✓	✓	✓	✓	–
<b>Domain name registry</b>	✓	✓	✓	✓	✓	✓	✓	✓	–
✓ responsibility defined, ✗ no dedicated body responsible, – not applicable									

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

In Albania a new government assumed office in September 2013, after the parliamentary elections of June 23, 2013. The responsible ministry is now the Ministry of Innovation and Public Administration.

In Kosovo the new Law on electronic communications changed the name of the regulator to Regulatory Authority of Electronic and Postal Communications. The new Law on the information society services has entitled the Ministry of Economic Development to establish a supervisory authority for electronic signatures. The recently adopted sector policy gave the Kosovo Agency of Statistics the task to develop information society statistics.

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 is in the process of establishing a CERT. In Bosnia & Herzegovina the Ministry of Security has the task to establish a CERT. In Kosovo the new law gave the regulator the task to establish a CERT.

Croatia and Serbia have prepared plans that would extend the scope of responsibilities of the NRAs to cover additional sectors. The Croatian NRA, HAKOM, would take over the responsibilities for railway infrastructure, whereas, the Serbian NRA, RATEL, would be merged with the postal regulator, RAPUS.

## 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 this report reveal a worrying tendency by some of the countries to disregard the enhanced political and financial independence 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, Serbia 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.

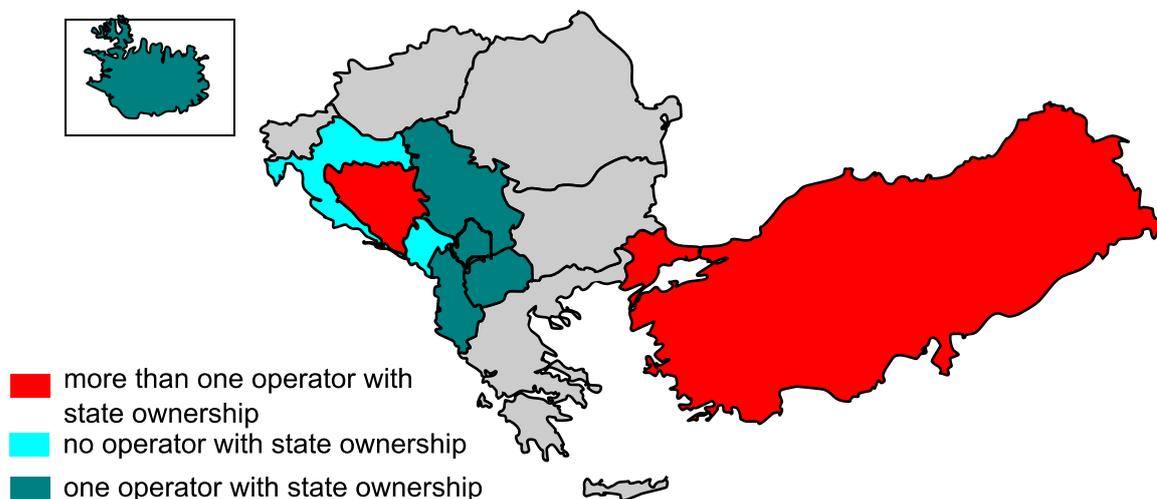


Figure E.1 – State ownership of telecommunications operators

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.

The exception is Kosovo, where the control of the incumbent operator, PTK, remains with the Ministry of Economic Development that is also responsible for policy making and legislation in the telecom and information society sector. The privatisation process of PTK initially launched in late 2010 was cancelled in October 2011 and re-launched again in 2012. In April 2013 the government approved the reported €227m bid of Germany's Axos Capital for the privatisation of 75% of PTK, but the deal failed to receive parliamentary approval and the privatisation process was cancelled in December 2013.

## 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.

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, until recently the Ministry for Information Society and Telecommunications retained the powers of administrative review of the NRA's decisions as the first instance appeal body, effectively undermining the NRA's independence. These appellate powers have been removed by the new law on electronic communications adopted in August 2013 and now the NRA's decisions can 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 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	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 and Montenegro), (ii) by parliament following a government proposal (Albania, Croatia, Bosnia & Herzegovina, 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 Montenegro, the new procedures for the appointment and dismissal of the NRA management that do not foresee any involvement of the government have been introduced by new law on electronic communications adopted in August 2013.

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 a separate 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 of individual officials, 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 is foreseen in the case of the disapproval of the NRA's financial report by Parliament. Under the new law adopted in August 2013, this provision however no longer applies to the executive director of the NRA.

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 an ad hoc parliamentary 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. The central government institutions in Bosnia & Herzegovina for several years were 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. A breakthrough was however achieved in November 2013 when parliament finally appointed the seven RAK council members.

#### 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, 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, 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 have been allowed to transfer surplus funds to their next year's budget. The Croatian regulator, HAKOM, has been allocating these funds to support broadband infrastructure development in rural areas in compliance with the state aid rules. In 2013, HAKOM took decision to rebalance its budget and reduce the fees to be paid by operators in 2014 for market regulation and spectrum management by 20% and 30%, respectively.

In Iceland, following the economic breakdown in 2008, the NRA was required to reserve surplus funds as "restricted equity" on its balance sheet which it was 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 is allowed 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. 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 not allowed to allocate any surplus of collected funds to its next year's budget and adjust its regulatory fees accordingly, but instead has to transfer it to the state budget. The same provision is envisaged under the new Law on Electronic Communications adopted in August 2013 and will remain in force until January 1, 2016. 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 relation to the size of the regulated electronic communications markets.

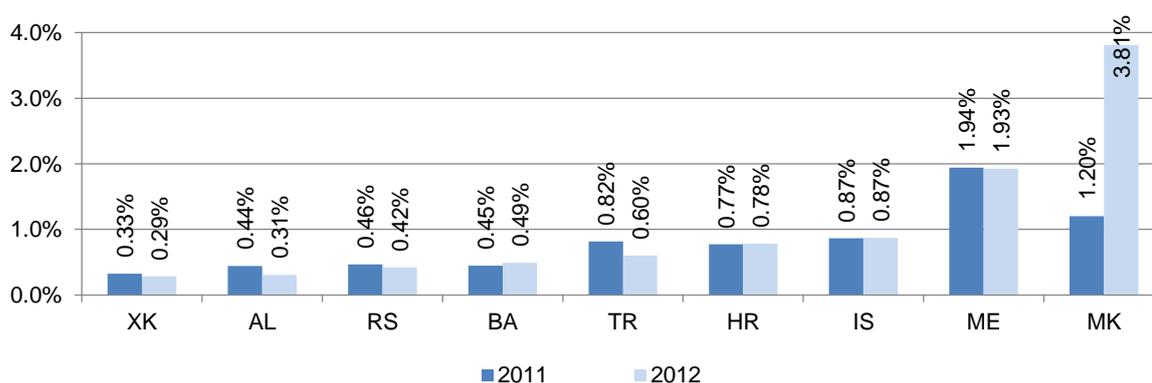


Figure E.2 – NRA operational expenses as % of electronic communications market revenue, 2011-2012

For the majority of the NRAs, the operational budget varies in the range of 0.3-0.9% of total market revenue, with the exception of somewhat higher figures in Montenegro and Macedonia. The increase in the 2012 operational budget of the Macedonian NRA primarily refers to the investment in the new office facilities that has been financed from the accumulated surplus revenue of the NRA over several years.

The main sources of NRA funding vary. In 2012, spectrum usage fees were the main source of financing of the NRAs in Albania (89%), Turkey (89%), Macedonia (74%), Kosovo (74%) and Croatia (55%). Annual fees paid by licensed operators and numbering usage fees are the main funding source for the NRA in Bosnia & Herzegovina (47% and 48%, respectively), while the funding sources for the NRAs in Iceland, Montenegro and Serbia are mainly composed of annual revenue-based and spectrum usage fees.

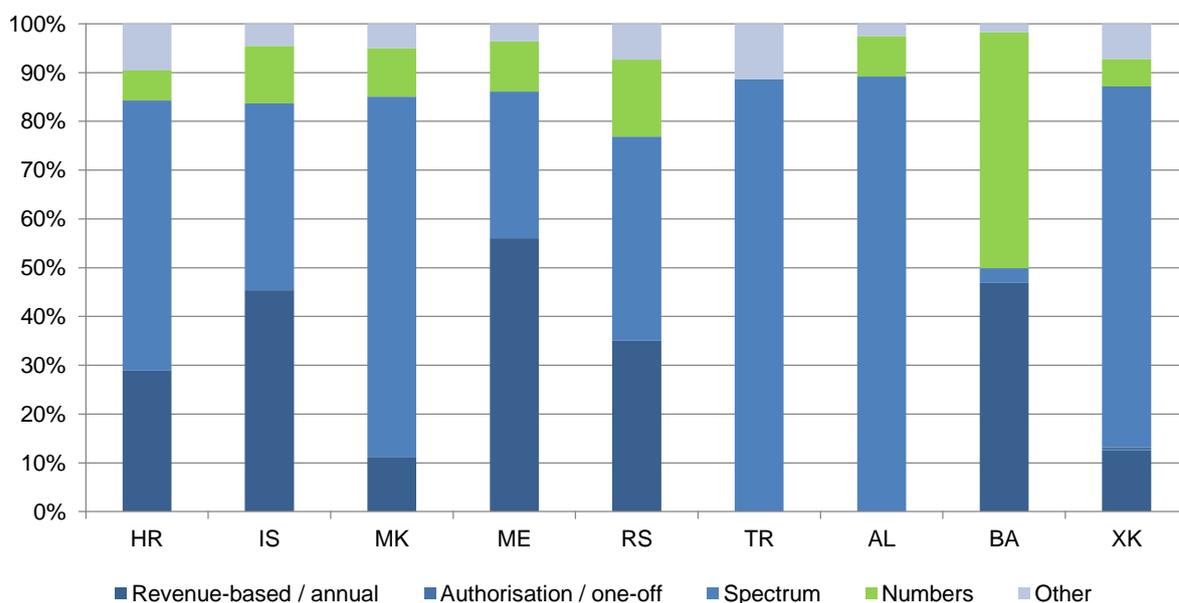


Figure E.3 – NRA funding sources in 2012

### 5. NRA staffing

The total number of the NRA staff ranges from a team of 22 in Iceland to 805 in Turkey, as shown in the figure below. During 2013, a notable staff increase has been reported by the NRA in Turkey, which stands out with the highest number of staff. In other countries the staff figures remained at the same level as in 2012 or even reduced.

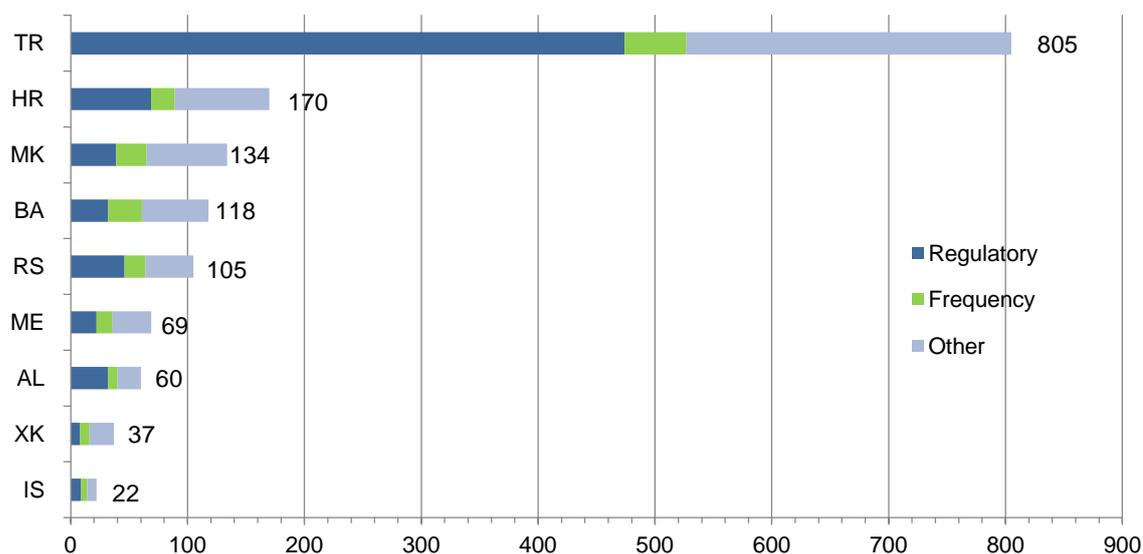


Figure E.4 – NRA organisation: total staff and regulatory and frequency experts

The distribution of the number of staff handling electronic communications regulatory tasks and frequency monitoring 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. Kosovo is closely followed by Iceland with nine regulatory experts, down from eleven in 2012. Turkey stands out with 474 regulatory experts. In the remaining countries, the number of NRA regulatory experts ranges from 22 in Montenegro to 69 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. Furthermore, following the amendments to the Budget System Law passed by the Serbian parliament in December 2013 that introduce a ban on recruiting new employees in the public sector until 2016, the Serbian NRA has been restricted from employing new staff, except in exceptional circumstances and with the government's consent.<sup>5</sup>

## 6. NRA accountability

With greater independence of the NRA also comes the accountability issue, particularly in the countries where the legal and judicial systems are still immature. Independence must be balanced with clearly identified requirements for accountability, including procedural rules, audit and 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 regulatory tasks and priorities aimed at achieving the 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 audit and 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.

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<sup>5</sup> <http://www.parlament.gov.rs/upload/archive/files/cir/pdf/zakoni/2013/4566-13.pdf>

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 in June 2011. The new Montenegrin law on electronic communications adopted in August 2013 further emphasises the NRA accountability to parliament making parliament the sole authority responsible for the appointment and dismissal of the NRA management and the review of the NRA performance.

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

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 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 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 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	10% annual gross revenue
RS	Referral to court	~ €20,000
TR	Directly	3% annual gross revenue
AL	Directly	€715,000
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 imposed directly by the NRAs' inspectors carrying out monitoring tasks and also by referring the case to a competent misdemeanour court.

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 but there is no possibility to impose financial sanctions for general non-compliance with the law.

In five countries the maximum amount of the 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 Montenegro (both 10%). In Montenegro, the maximum level of 10% of annual turnover is set by the new law on electronic communications adopted in August 2013; previously this amount was limited to 300 minimum wages (around €16,500). On the contrary, in Albania, the maximum amount of fine, previously set at 10% of annual turnover, is now capped at €715,000. Also in 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 2013, financial penalties have been applied in practice by the regulators in Kosovo, whereas several misdemeanour proceedings are pending before the courts in Croatia, Macedonia and Montenegro.

## 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.

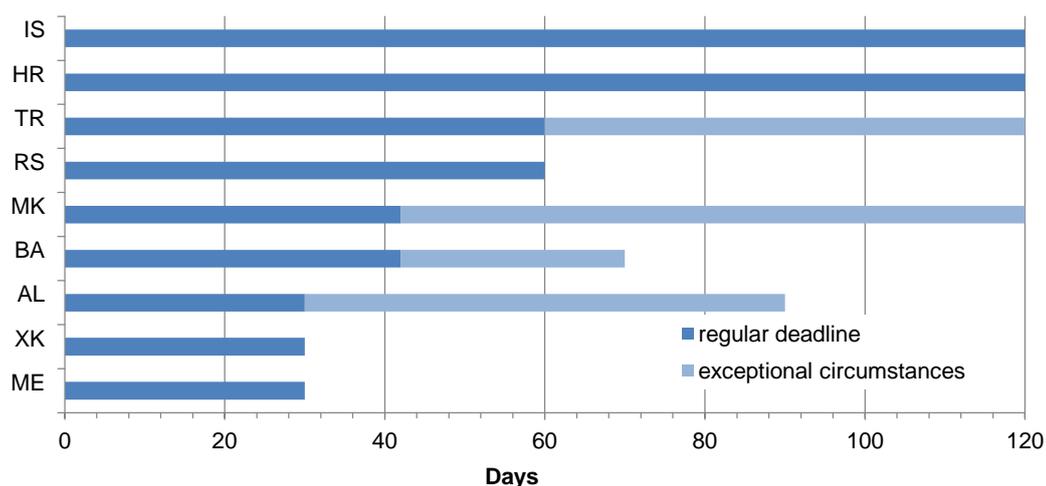


Figure E.5 – Deadlines for resolution of disputes between undertakings

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 six of the monitored countries, the NRA's decisions are final and the first level of appeal is a court: Croatia, Macedonia, Montenegro, Serbia, Turkey and Kosovo. In Montenegro, the new law adopted in August 2013 makes EKIP decisions final in the administrative procedure with administrative court as the first appeal instance (previously, the NRA's decisions had to be initially appealed to the Ministry of Information Society and Telecommunications).

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 Iceland, the NRA's decisions are first appealed to the Rulings Committee for electronic communications and postal affairs, appointed by the Ministry of Interior.

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.

The judicial review systems do not foresee any specific deadlines for adopting decisions on appeals submitted to court procedures. Lengthy and inefficient 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, whereas in Bosnia & Herzegovina the respective limit is 60 days. 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 established practices to organise public consultations on specific decisions. The average period for comments is 30 days, with a maximum of 45 days in Croatia and a minimum of ten 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 a summary of the public consultation responses as part of their regular procedures.

## 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 2012-2013 by NCAs in Croatia, Iceland, Turkey and Albania.

In Croatia, two recent cases opened by the NCA are concerned with alleged abuses of dominant position by the incumbent operator Hrvatski Telekom in the broadband internet market through refusal to supply wholesale inputs to alternative operators and in the pay-TV broadcasting transmission market through applying exclusive rights for sports content over its IPTV service. Another case is concerned with the notified concentration of Hrvatski Telekom and one of the largest alternative telephony and broadband providers, Optima Telekom.

In Turkey, several investigations opened by the NCA have been concerned with the alleged abuses of dominant position by the incumbent operator Türk Telekom and its retail internet subsidiary TTNNet in the markets for retail and wholesale fixed broadband internet access services. The investigation was closed in January 2014 concluding that there was no violation of competition rules.<sup>6</sup> In May 2013 the NCA opened an investigation into Türk Telekom over the alleged sale of fixed telephone charge cards to its dealers at prices below production costs.<sup>7</sup>

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 settlement<sup>8</sup> 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 also accepted to pay €1.9m in settlement to the government.

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<sup>6</sup> <http://www.rekabet.gov.tr/default.aspx?nsw=yH0zrJKr0jeJ2UCg+k+5Jg==SgKWD+pQltw=>

<sup>7</sup> <http://www.rekabet.gov.tr/default.aspx?nsw=zryOYRoiyV8Mx5S8YZ2OqA==SgKWD+pQltw=>

<sup>8</sup> <http://www.samkeppni.is/urlausnir/akvardanir/nr/2114>

In Albania, in March 2013 the NCA opened an in-depth investigation into Vodafone Albania for alleged abuse of dominance in the retail mobile market. The focus of the investigation has been the difference between on-net and off-net tariffs creating “the club effect” that restricts competition by locking in the customers in one single network. The investigation was closed in January 2014 concluding that Vodafone had not abused its dominant position in the mobile communications market.<sup>9</sup> The NCA however stated in its ruling that the strategy followed by Vodafone “creates competition concerns in the mobile market and may have negative effects for the smaller competitors in the long term.”

## 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. 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. However, by now all monitored countries have liberalised electronic communications networks and services.

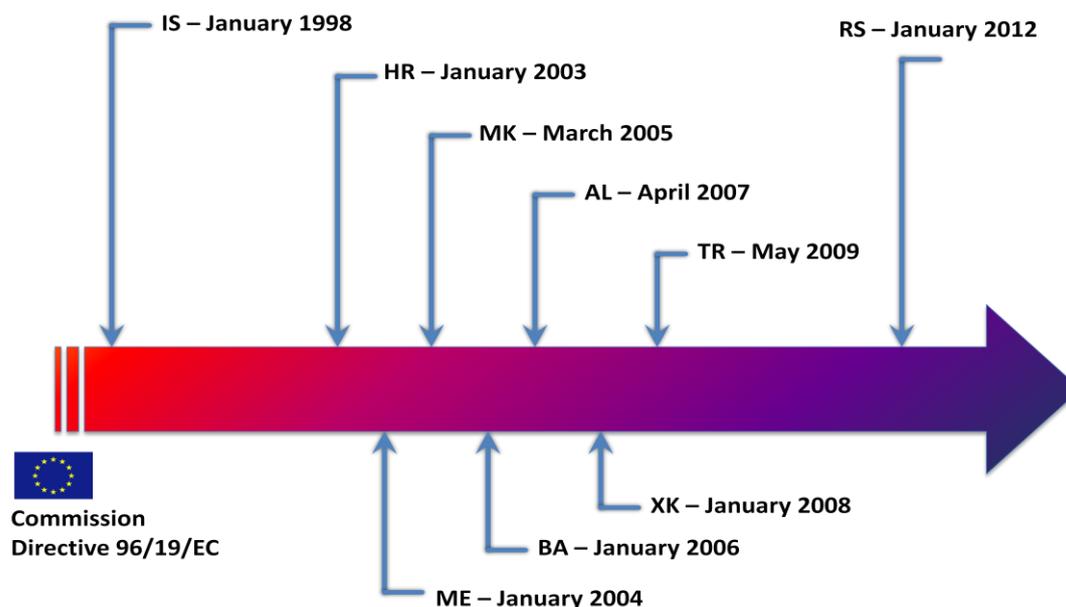


Figure F.1 – Full liberalisation of telecommunications markets

### 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 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

<sup>9</sup> [http://www.caa.gov.al/uploads/decisions/Vendimi\\_303-\\_HTH\\_Vodafone.pdf](http://www.caa.gov.al/uploads/decisions/Vendimi_303-_HTH_Vodafone.pdf)

foreseen under the new Law on Electronic Communications adopted in November 2012. The draft implementing regulation on general authorisation regime was published for consultation in December 2013 and is expected to be adopted in early 2014.

In Bosnia & Herzegovina, the authorisation regime is based on individual licences. The general authorisation is, however, envisaged in the draft new law on electronic communications published by the Ministry of Communications and Transport for initial consultation in September 2013.

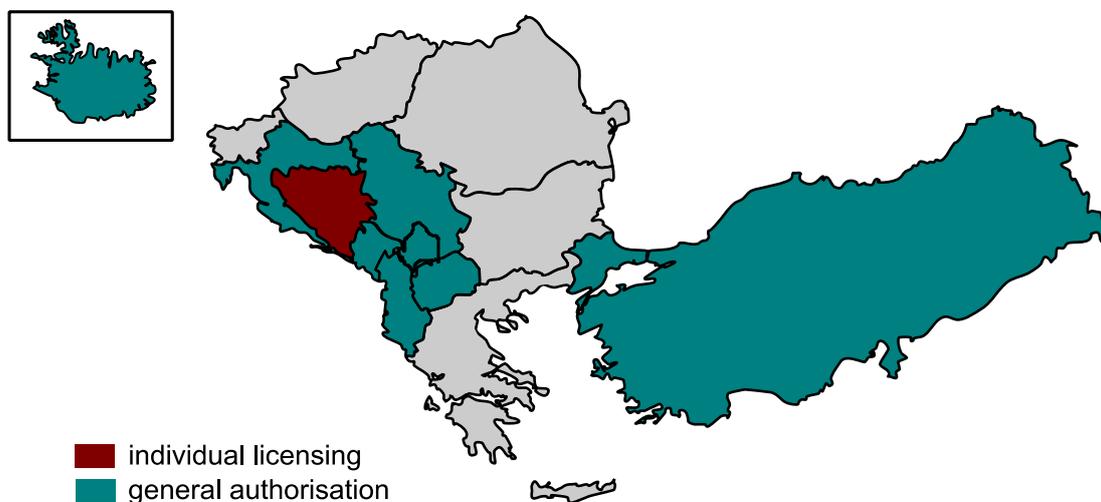


Figure F.2 – Authorisation regime for electronic communications services

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, Türksat (the satellite provider) operates under an authorisation agreement, while Türk Telekom and the three mobile operators – 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 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% (in 2013); 0 - 0.20% (in 2014)
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	0.08-0.4%
TR	2009	0	0.35%
AL	2008	0	0 (max 0.5%)
BA	x	€255 - €511	€511 - €255,000
XK	2014	0	0 – 0.5%

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. A similar procedure under general authorisation regime also applies in Albania under the new Law on Audio Visual Media Services adopted in March 2013.

In Serbia, in addition to the general authorisation with a notification to the NRA, an approval for content transmission is required from the media regulator. In Kosovo, cable TV services can be provided based on an approval from the Independent Media Commission (IMC) subject to demonstrating established commercial agreements with content providers for content redistribution.

In Turkey, in addition to the general authorisation with a notification to the NRA, a separate licence has to be obtained from the media regulator. 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 deploying new infrastructure, 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 rolling out 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 non-discriminatory access to public and private land. In addition, more specific procedural issues are set out in the relevant acts on spatial planning and constructions. Nevertheless, the existence of a patchwork of lengthy, uncoordinated and unclear permit granting procedures in most of the countries remains to be a major concern area for all operators, fixed and mobile, incumbents and new entrants alike. In addition to different administrative requirements for access to public land, access to private buildings and property in some countries appears even more problematic.

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. In Albania, a new legislation on the rights of way for electronic communications infrastructure has been drafted but its adoption is pending in parliament since 2011.

The deadlines for issuing construction permits 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 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 that specifies which frequency bands can be used for specific services; 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 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 and Serbia frequency allocation is carried out by the government on the basis of a proposal of the NRA, while the NRA performs all frequency assignment tasks.

In Albania, the government decides on the national frequency allocation plan on the basis of a proposal by the minister in charge of electronic communications sector. The Albanian NRA is responsible for frequency assignments for telecommunications and the broadcasting authority for frequency assignments to broadcasters. A similar regime also applies in Kosovo.

### 2. 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 in the 2 GHz band, while in other six countries all mobile operators have been assigned both 2G and 3G spectrum. Following the recent digital dividend spectrum awards that are further described below, two mobile operators in Croatia and three mobile operators in Macedonia have been assigned 4G spectrum in the 800 MHz band.

In Albania there are four mobile network operators, of which three have been awarded both 2G and 3G spectrum. In December 2013 AKEP concluded a consultation on awarding the remaining 3G spectrum in the 2 GHz band.

In Iceland, three operators have 2G/3G spectrum assignments and one smaller operator only 2G spectrum. In addition, two of the established operators have been awarded 4G spectrum in the 800 MHz band and there is also a fifth new entrant operator that won most of the 800 MHz spectrum in the recent award procedure.

In Kosovo, there are two 2G mobile operators and no 3G or 4G spectrum has been awarded.

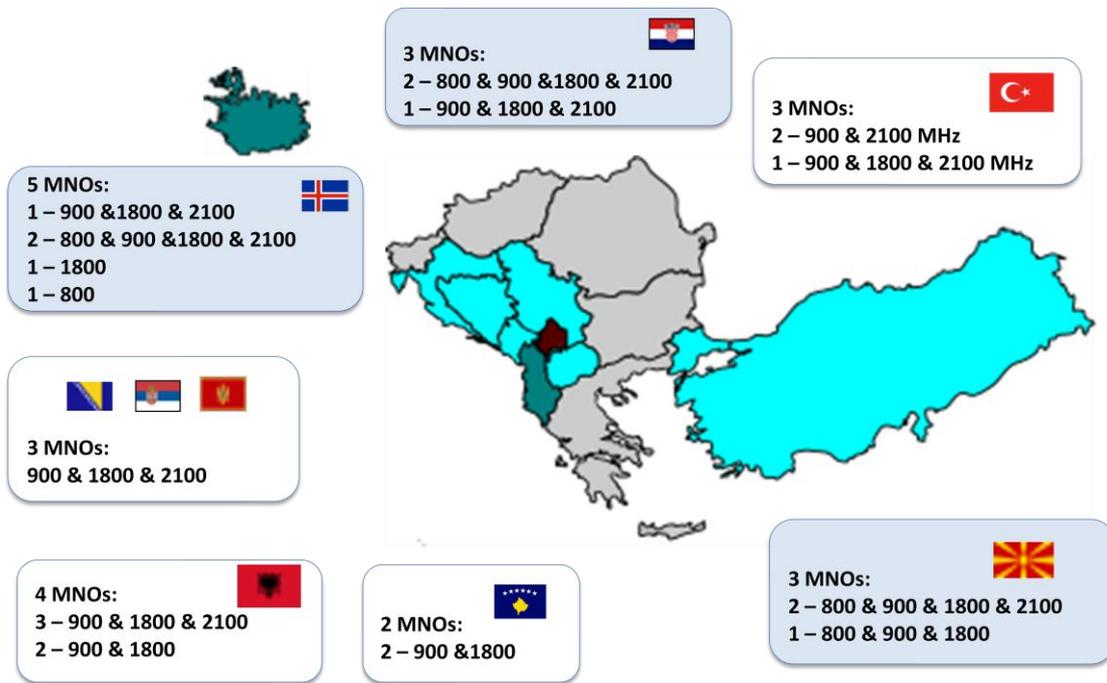


Figure G.1 – Spectrum assignments in 800 MHz, 900 MHz, 1800 MHz and 2100 MHz bands

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.

### 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 European Commission also approved technical parameters enabling 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 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.

Four of the monitored countries have allowed both UMTS and LTE services along with GSM in the 900 MHz and 1800 MHz bands: Croatia, Macedonia, Montenegro and Kosovo. 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 Macedonia, the national frequency plan was amended on July 18, 2013, to allow the use of GSM, UMTS, WiMAX and LTE technologies in the 900 MHz and 1800 MHz bands.

In Kosovo, on October 4, 2013 ARKEP adopted a decision on liberalisation of spectrum for mobile broadband services that allows the two mobile operators to use UMTS, LTE and WiMAX within the scope of their existing 900 MHz and 1800 MHz licences from December 1, 2013, subject to an administrative payment set in proportion to their market shares (i.e. €966.5 thousand for Vala and €633.5 thousand for IPKO).

In Iceland, both UMTS and LTE services have been allowed in the 1800 MHz band, whereas the 900 MHz band currently only allows UMTS in parallel with GSM. Three commercial LTE networks in the 1800 MHz band have been launched in Iceland. In April 2013, Nova was the first to roll out commercial LTE services covering the whole Reykjavik area. In July 2013, rival Fjarskipti followed suit and launched its LTE network in Reykjavik and Borgarnes. In January 2014, the third LTE network was launched by the incumbent operator Síminn.

In Bosnia & Herzegovina, UMTS services have been allowed along with GSM in both 900 MHz and 1800 MHz bands, but there has been no decision on the use of LTE in these bands.

In Serbia, the radio frequency allocation plan adopted on October 2012 allows the use of the 900 MHz and 1800 MHz bands for electronic communications networks on technology neutral basis. However, a separate rulebook on frequency assignment plan for GSM/DCS 1800 systems still restricts the use of the 900 MHz and 1800 MHz bands to GSM. A draft amendment to this rulebook published for consultation by RATEL in September 2013 proposed to assign additional spectrum in the 900 MHz and 1800 MHz bands to the three mobile operators ensuring that they all have equal blocks of spectrum in both bands.<sup>10</sup> The amendment however did not propose to lift the technology restriction limiting the use of these bands to GSM services. A separate proposal was presented by RATEL in December 2013 suggesting an amendment to the Electronic Communications Law that would make the principle of technology neutrality applicable for all frequency bands that are used for electronic communications services.<sup>11</sup> At this stage, however, the issue of implementing technology neutrality in the 900 MHz and 1800 MHz, as well as possible interference with other government users of these bands remains unresolved.

In Albania, the national frequency plan was amended in February 2013 to allow UMTS and LTE technologies in the 900 MHz and 1800 MHz bands. In January 2014 AKEP published for consultation a draft proposal to amend the current spectrum authorisations of the four mobile operators allowing the use of 3G and 4G technologies in the 900 MHz and 1800 MHz bands.

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 provider of wireless broadband internet services. 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 Kosovo, as a result of the auction procedure held in December 2013 a 2x20 MHz spectrum block was assigned in the 3.6-3.8 GHz band to the single winner, IPKO. The NRA plans to launch another procedure for the available spectrum in the 3.4-3.8 GHz band during the first half of 2014.

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<sup>10</sup> Currently, the third entrant operator, VIP Mobile, has a much smaller spectrum block in the 900 MHz band than the two other operators, but at the same time it has a twice bigger block in the 1800 MHz band.

<sup>11</sup>[http://www.ratel.rs/информације/новости.82.html?article\\_id=1452](http://www.ratel.rs/информације/новости.82.html?article_id=1452)

In Albania, Bosnia & Herzegovina and Turkey no licences for the provision of broadband wireless access services have been issued so far. In Turkey, 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 has to 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.<sup>12</sup>

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 analogue terrestrial switch-off by January 1, 2012, while Macedonia had 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. In Serbia, the initial date of April 4, 2012 was postponed by the government until as late as June 17, 2015, whereas the first phase of digital switchover is scheduled to start in the second half of 2014. Also in Montenegro, the earlier adopted December 31, 2012 switch-off date was postponed to June 17, 2015.

Turkey has plans to complete switchover by March 2015. In Albania, the 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. The same date is also being considered by Kosovo, although no final decision has been taken yet.

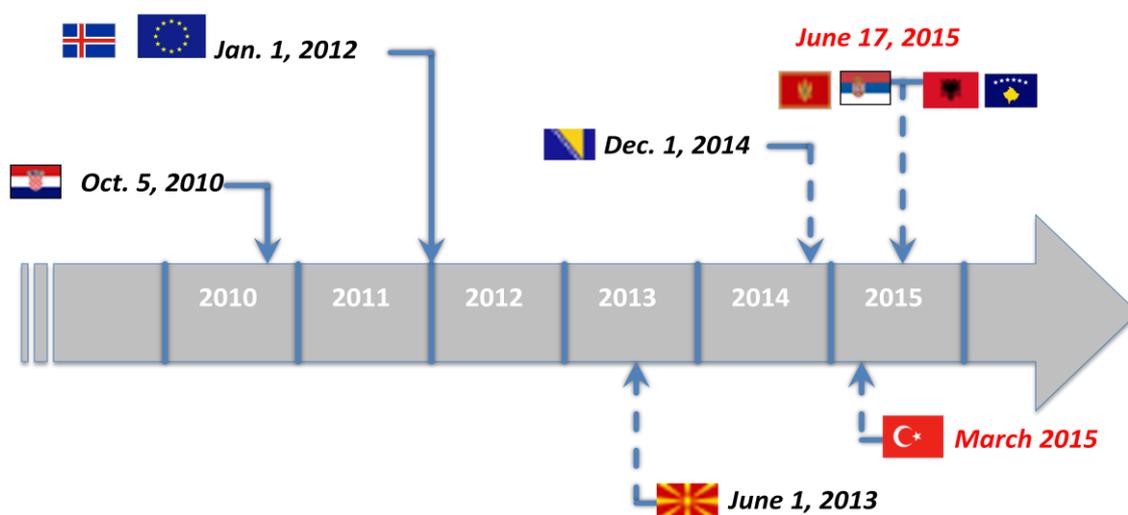


Figure G.2 – Analogue switch-off schedule in the Enlargement countries

<sup>12</sup> [http://www.itu.int/newsroom/press\\_releases/2006/11.html](http://www.itu.int/newsroom/press_releases/2006/11.html)

At this stage, three countries have awarded the digital dividend spectrum in the 800 MHz for wireless broadband: Iceland, Croatia and Macedonia.

In Croatia, the award of the 800 MHz spectrum was completed as a result of a two-step procedure. In October 2012, following a public tender procedure, two licences of 2x10 MHz were awarded to Hrvatski Telekom and VIPnet, while a third spectrum block of 2x10 MHz remained unassigned. In November 2013, the same two operators won the two remaining blocks of 2x5 MHz in an auction procedure.

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 completed in March 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 one 2x5 MHz block. 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.

Also in Macedonia, in June 2013 the digital dividend spectrum in the 800 MHz band was auctioned jointly with the available spectrum in the 1800 MHz band. As a result of the auction, each of the three existing mobile operators obtained a 2x10 MHz block in the 800 MHz band.

## 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).

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, in October 2011 the Bosnian NRA adopted a Rule on analysis of electronic communications markets 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 European Commission 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 relied on the 2003 recommendation in their initial definitions of the 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, Montenegro, Serbia, Turkey and Kosovo; and
- left to the discretion of the NRA – in Macedonia.

### 2. Analysis of relevant markets by NRAs

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

#### a) Croatia

The Croatian regulator, HAKOM, completed its first round analysis of relevant markets during 2009-2012 and is currently finalising its second round analysis.

In July 2009 HAKOM ruled on 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 completed 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, it deregulated retail markets for international calls (markets 4 and 6/2003) as no longer fulfilling the three criteria test. Also in 2011, HAKOM assessed 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.

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.

During 2013 HAKOM completed its second round analysis of wholesale markets for fixed call origination and termination (markets 2-3/2007), mobile call termination (market 7/2007) and wholesale infrastructure access and broadband access (markets 4-5/2007). In this second round, HAKOM mainly maintained the initial SMP designations and regulatory obligations imposed in the first round, but focused on implementing price control and cost orientation obligations, as well as access remedies applicable to NGA networks.

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 reassessed again 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 and a fully symmetrical price control obligations were imposed based on benchmarking against countries with “pure” LRIC. In March 2012, PTA deregulated the wholesale market for mobile access and call origination (market 15/2003) finding this market as no longer meeting the three criteria test.

In December 2012, PTA completed its second round analysis of the wholesale markets for fixed call origination, termination and transit services (markets 2-3/2007 and 10/2003). In the fixed call termination market, PTA 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 June 2013 PTA completed its second round analysis of retail fixed access and call services (markets 1-6/2003). It decided to maintain the SMP designation and the regulatory obligations imposed on Síminn in the fixed access market (market 1), but deregulated the fixed call markets (markets 3-6/2003) as they were found no longer fulfilling the three criteria test.

In 2013 PTA also assessed the wholesale infrastructure access and wholesale broadband access markets (markets 4-5/2007). An initial consultation was completed in May 2013, but then revised proposals were published for an additional consultation in December 2013. The original proposals have been revised following the regulatory settlement reached between Skipti group and the Icelandic Competition Authority in March 2013 (see section E.11 above). Following this settlement, some of the regulated wholesale products, including wholesale bitstream access, have been transferred from Síminn to, so the revised PTA measures propose to designate Míla as having SMP in both markets. Other changes have been proposed regarding specific regulatory obligations.

In November 2013 PTA published for consultation its proposals regarding the second round analysis of the leased lines markets: the retail market for the minimum set of leased lines (market 7/2003) and the wholesale market for terminating segments of leased lines (market 6/2007). PTA has proposed to deregulate the retail leased lines market as no longer fulfilling the three criteria test. On the wholesale market for terminating segments, it proposed to maintain the regulatory obligations on Míla, but to remove the SMP designation and regulatory obligations previously imposed on Síminn.

c) Macedonia

In 2010 the Macedonian NRA, AEC, completed its first round analysis of retail fixed access and call services (markets 1-6/2003), retail and wholesale leased lines (markets 7, 13 and 14/2003), wholesale fixed call origination, termination and transit (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 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 the third round analysis of wholesale mobile call termination (market 7/2007), introducing new price control obligations that envisage 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).

During 2013 AEC carried out its second round analysis of wholesale fixed call origination, termination and transit (markets 8-10/2003), with a specific focus on implementation of IP-based interconnection and migration to all-IP network by the incumbent operator that was fully completed in December 2013.

d) Montenegro

The Montenegrin regulator, EKIP, completed in November 2010 its first round analysis of the markets 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 adopted final measures on additional markets that were found relevant to *ex ante* regulation: retail fixed calls (markets 3-6/2003), 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).

In November 2013 EKIP completed the second round analysis of the seven relevant markets that were analysed in 2010, maintaining the same SMP designations and the regulatory obligations as imposed in 2010. In 2013 EKIP also carried out 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 December 2013 it published for consultation its draft findings concluding that the retail broadband internet access services markets should be subject to *ex ante* regulation and proposing to designate the incumbent operator as having SMP in this market with extensive regulatory obligations of transparency, non-discrimination, price control and accounting separation.

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 revised 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. In 2013, following a court order, RATEL revised its analysis of the markets for retail fixed call services (markets 3-6/2003), wholesale network infrastructure and broadband access (markets 4-5/2007) and wholesale leased lines (market 6/2007) – also maintaining the same conclusions.

f) Turkey

The Turkish regulator, ICTA, completed during December 2012 – April 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), wholesale unbundled access and broadband access (markets 11-12/2003) as well as retail and wholesale leased lines (markets 7, 13-14/2003). The market for wholesale fixed transit services was deregulated as no longer satisfying the three criteria test. In all other markets, ICTA essentially maintained the same SMP designations with some additional regulatory obligations comparing to its previous round of market analysis.

The validity period of the decisions on second round analysis of the retail markets for fixed access and call services (markets 1-6/2003) was extended until December 31, 2013. On December 20, 2013 ICTA published for consultation its draft decisions on the third round analysis of the retail fixed access and call services. ICTA is proposing to fully deregulate the fixed call services market and the fixed access market for residential users. It however proposes to maintain the regulation in the fixed access market for business users and to introduce margin squeeze test as a new remedy in the wholesale fixed call origination market.

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 it was found no longer satisfying 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.

In July 2013 AKEP amended its market analysis regulation that now includes the updated list of seven relevant markets based on the 2007 Commission recommendation and requires AKEP to carry out the three criteria test for any additional markets.

In July 2013 AKEP completed its third round analysis of retail fixed access and call services (markets 1-6/2003) and wholesale fixed call origination, termination and transit services (markets 8-10/2003). In retail fixed telephony markets, AKEP maintained the designation of the incumbent operator as having SMP, but has removed previously imposed cost orientation and price control obligations. In the wholesale fixed call termination market, AKEP designated as having SMP, in addition to the incumbent operator, 77 alternative fixed network operators and the mobile operator AMC offering fixed services over its GSM network. Also in the context of regulatory obligations imposed in the fixed call termination market, AKEP addressed migration to all-IP network by the incumbent operator and decommissioning of local exchanges.

In February 2014 AKEP concluded its second round analysis of wholesale and retail leased lines (markets 7, 13-14/2003) and wholesale unbundled access and broadband access (markets 4-5/2007). Retail leased lines and trunk segments of leased lines were deregulated, whereas in the markets for terminating segments of leased lines AKEP maintained the SMP designation and regulatory obligations imposed on Albtelecom. In the wholesale unbundled access and broadband access markets, AKEP has extended the scope of regulatory obligations to apply to NGA deployments of Albtelecom and introduced price control obligations based on retail minus for wholesale broadband access.

A new decision on the second round analysis of wholesale SMS termination market is expected shortly.

h) Bosnia & Herzegovina

Until recently, 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.

In June 2013 RAK completed its first market analysis of wholesale mobile call termination (market 7/2007) designating the three mobile operators as having SMP and imposing a full set of regulatory obligations, including cost orientation and a glide path for mobile termination rates until July 2015. In November 2013 RAK consulted on its draft market analysis of wholesale fixed call termination (market 3/2007) and is currently also analysing wholesale infrastructure access and broadband access (markets 4-5/2007).

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). In 2013 ARKEP completed its analysis of wholesale and retail leased lines (markets 7, 13-14/2003) concluding that no operator has SMP in these markets. Currently ARKEP is analysing the wholesale market for call termination on individual mobile networks (M16/2003).

## 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 was repealed as redundant. Recital 20 of the amending Directive in particular states: *"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 is 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 165,000 in 2013 after reaching its peak of 240,000 in 2011. In Iceland, the number of active CPS users is now below 4,000, a decrease from 4,500 in 2011.

In Macedonia, the number of CPS users, on the contrary, has continued to increase and exceeded 26,000 in 2013, compared to 20,500 in 2011. In Montenegro, the number of CS users in 2013 has decreased by more than half reaching 1,800 compared to the peak of 3,900 users reported in 2012.

In Turkey, the number of CS users slightly increased to 190,000 in 2013 from 174,000 in 2012, whereas the number of CPS reported a significant decline from 400,000 in 2012 to less than 160,000 in 2013. Bosnia & Herzegovina reported around 47,000 CS users in 2013, about the same level as reported in 2012.

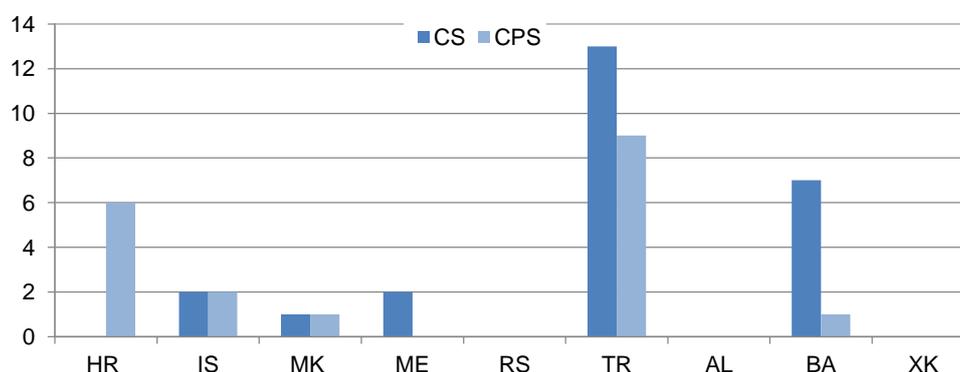


Figure I.1 – Number of providers offering CS and CPS services commercially

## 3. Number portability

Number portability is an important competitive safeguard enabling 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 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 April 2014.

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

	Fixed number portability			Mobile number portability		
	Introduction	Inter-operator charge	Statistics	Introduction	Inter-operator charge	Statistics
HR	July 2005	€6.80	754,000	Oct. 2006	€6.80	483,000
IS	Sep. 2000	€3.33	28,000	Oct. 2004	€3.33	46,000
MK	Sep. 2008	€3.23	118,000	Sep. 2008	€3.23	105,000
ME	Dec. 2011	-	700	Dec. 2011	-	6,300
RS	<i>April 2014</i>	€9.80	-	July 2011	€9.80	160,000
TR	Sep. 2009	€0.90	558,000	Nov. 2008	€0.90	65m
AL	Sep. 2012	€4.28	1,400	May 2011	€4.28	205,000
BA	Sep. 2011	€10.26 (end-user)	5,100	Jan. 2013	€10.26 (end-user)	2,000
XK	<i>Not decided</i>	-	-	<i>Not decided</i>	-	-

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. Only two of the monitored countries, Iceland and Bosnia & Herzegovina, have set a requirement to complete the porting process within one day, for both fixed and mobile networks.

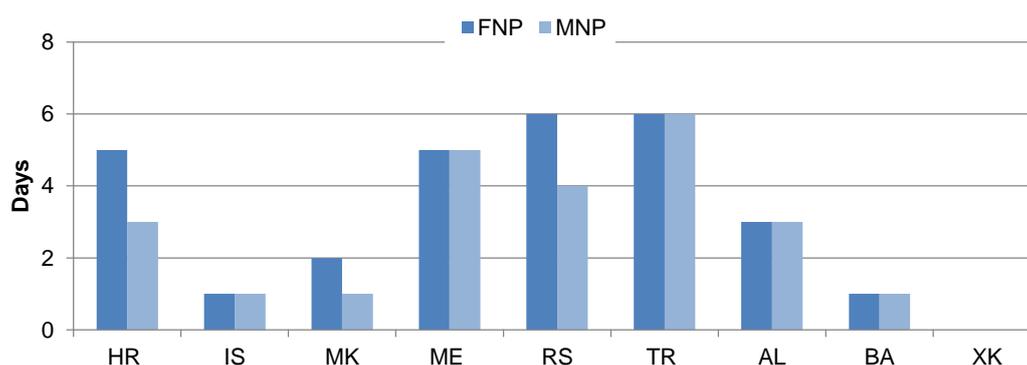


Figure I.2 – Number portability – maximum process duration allowed by regulation

#### 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 covering call termination have been published by MNOs designated as having SMP in Croatia, Macedonia, Montenegro, Serbia, Turkey, Albania, and Bosnia & Herzegovina. In Macedonia and Montenegro, MNOs with SMP in the market for mobile access and call origination have also published RIOs covering the respective services.

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 connection to an end-user location is the access to the cable from the local telephone exchange to the premises of the customer (also called “the local loop” or “the last mile”). 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 important instrument in broadband deployment.

In the EU, this issue 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 (RUO). The regulation was later replaced by a corresponding requirement in article 9(4) of the Access Directive 2002/19/EC. The existence of 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 imposed on the fixed incumbent operators in all monitored countries. Progress in the implementation of LLU, however, differs extensively across the nine countries and has depended on a number of factors:

- the timeliness of the regulatory decisions mandating LLU access;
- the extent to which incumbents have deployed their networks and upgraded their facilities to offer xDSL;
- the practical implementation issues related to collocation procedures and pricing;
- the implementation of other closely related competitive safeguards, such as number portability and rebalancing of retail subscriber line rental prices;
- the extent to which new entrant network operators have been deploying alternative access network infrastructure (e.g. based on cable, fibre or wireless access technologies).

In Croatia, reference unbundling offer (RUO) was introduced by the incumbent operator in October 2005 and by mid-2013 there were some 167,000 fully unbundled loops used by five alternative operators (which represents over 20% decline from the level reported in 2012). Furthermore, 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 subsidiary, Síminn. Also, out of 46,000 shared unbundled loops, about 76% are used by Síminn. 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 3,300 unbundled loops.

In Turkey, LLU has been available since 2006 and currently there are 9 agreements in place for both full and shared LLU access. However, the number of unbundled loops remains very low. As of mid-2013 there were 1,720 fully unbundled loops and some 1,703 shared loops (on a network of around 16 million lines).

In Bosnia & Herzegovina, the first RUOs approved by the NRA were published by the three incumbent operators in January 2010. Only one LLU agreement covering some 29 shared lines was reported in mid-2013.

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 regulators 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 Kosovo, based on ARKEP decision on SMP obligations adopted in February 2012, PTK has presented its first RUO for approval to the NRA, but there has been no practical implementation so far.

## 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. By mid-2013 there had been seven agreements in place covering over 52,000 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 over 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 2013 there were three agreements covering over 26,000 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 as a regulated reference offer. In 2013 there were 12 agreements in place covering around 130,000 active 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. In 2013 there were 62 resale and 17 bitstream access agreements in place, covering respectively, over 14,000 and 895,000 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 analyses of the wholesale broadband access markets, but there has been no implementation in practice so far. 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, Iceland, Macedonia and Turkey. In Macedonia, the first incumbent's reference offer was approved by the NRA in March 2009. There were two WLR agreements in place in 2013 covering over 25,000 lines. In Croatia, the first reference

offer was published in July 2011 and in 2013 there were five WLR agreements in place covering 105,000 lines. In Turkey, WLR reference offer was also introduced in July 2011 and by July 2013 there had been seven agreements in place covering over 920,000 lines (by December 2013 this number had reached 1,155,000 lines).

In Iceland, the regulatory obligation to provide WLR was imposed on the incumbent operator in 2008, but in practice the reference offer only became available in July 2012. There was one agreement in 2013 covering around 300 lines.

The obligation to offer WLR is also imposed on the incumbent operator in 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, Montenegro and Albania 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 covers access to ducts and dark fibre, while in Montenegro includes duct access and fibre unbundling. In Albania, the second round analysis of wholesale infrastructure access also includes a requirement for Albtelecom to offer access to ducts and dark fibre.

Active NGA infrastructure has been included in the scope of the market for wholesale broadband access (market 5/2007) by regulators in Croatia and Montenegro. Since December 2011, the reference broadband offer published by the Croatian incumbent operator includes OLT access option for an FTTH-based wholesale product, and since October 2013 the incumbent is also required to publish a reference offer for a FTTC/VDSL based 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 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.

Turk Telekom has been obliged to share its ducts in its access and backhaul network as an SMP operator in the market for access to physical network infrastructure. Accordingly, terms and conditions for facility sharing, including access to ducts and poles, are set out in its reference offer for co-location and facility sharing approved by ICTA. However, in April 2013 ICTA took a decision imposing duct sharing on all operators that have their own fixed electronic communications infrastructure.

In Albania, access to active NGA products is now regulated in the scope of wholesale broadband access market. Also, the reference broadband access offer published by Albtelecom in April 2013 includes an access option over FTTC/VDSL.

## 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 Hrvatski Telekom's 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 agreements on national roaming with the established mobile operators.

Another way of supporting 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 was found 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. The first MVNO agreement however was concluded in 2013 on commercial basis between a service provider Albaphone and the mobile operator One.

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 completed 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 developed guidelines for introducing full MVNOs and relevant access provisions were introduced in the first RIOs of mobile operators published in April 2011. However, the introduction of full 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. Currently it is only possible for service providers to enter the market based on reseller-type commercial agreements with the mobile operators, without the possibility to negotiate own interconnection agreements or to apply for own numbering resources. One such agreement between Telekom Srpske (m:tel) and IZI mobil was reached in early 2012 and services launched in June 2012.

In Serbia, a major cable provider SBB has reached a commercial agreement to launch MVNO operation using the network of one of the three MNOs. The services however have not been launched yet, as MVNO's right to number portability was challenged by the incumbent operator.

## 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, envisaged 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.

Implementation of a cost accounting methodology has been considered a time consuming and resource intensive process, both for the NRAs and the regulated SMP operators, and therefore regulators in most of the monitored countries had opted for the use of some form of benchmarking-based price controls. Recently, however, the development of cost accounting methodologies based on current cost accounting and LRIC principles has been a priority for the regulators in Croatia, Macedonia, Turkey and Albania. Also in Montenegro, the implementation of LRIC methodology for regulated wholesale services is envisaged in the 2014-2015 timeframe.

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 Croatia, the regulator has completed its work on BU-LRIC methodologies for fixed and mobile networks in 2013. Implementation of "pure" LRIC-based fixed and mobile termination rates is envisaged from January 1, 2015.

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 is the most common approach in the monitored countries for setting prices for the regulated wholesale line rental products.

## 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 the 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 (with minimum 128 kbps data speed) 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. Between November 22 and December 13, 2013 PTA consulted on the review of the universal service, proposing to remove USO obligations related to data transmission services and public payphones. PTA however, proposed to maintain temporarily the obligation to provide connection to public telephone network currently imposed on Mila.

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.

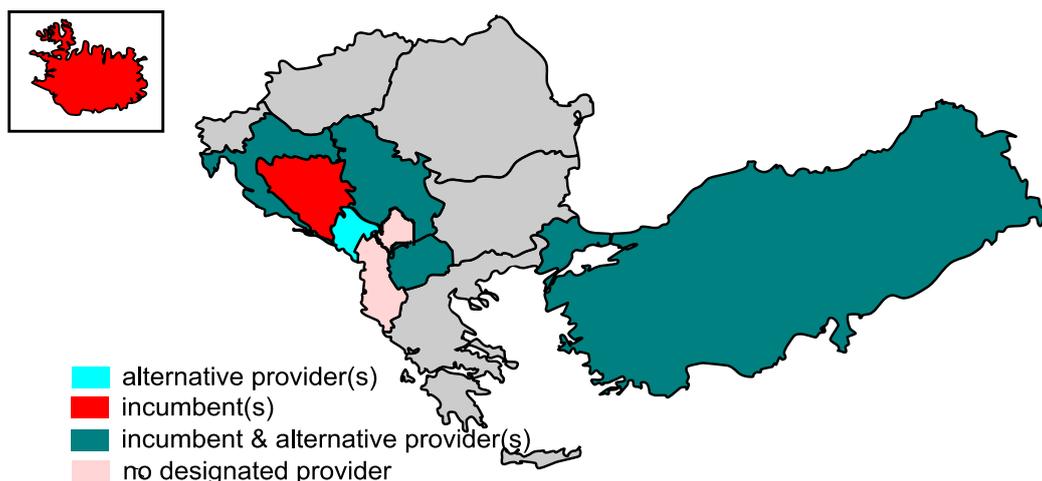


Figure J.1 – USO providers by type of operator

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 relatively low penetration and take up. Regarding provision of comprehensive directory and directory enquiry services, AKEP intends to adopt regulatory measures, such as mandatory access 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 figure 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.

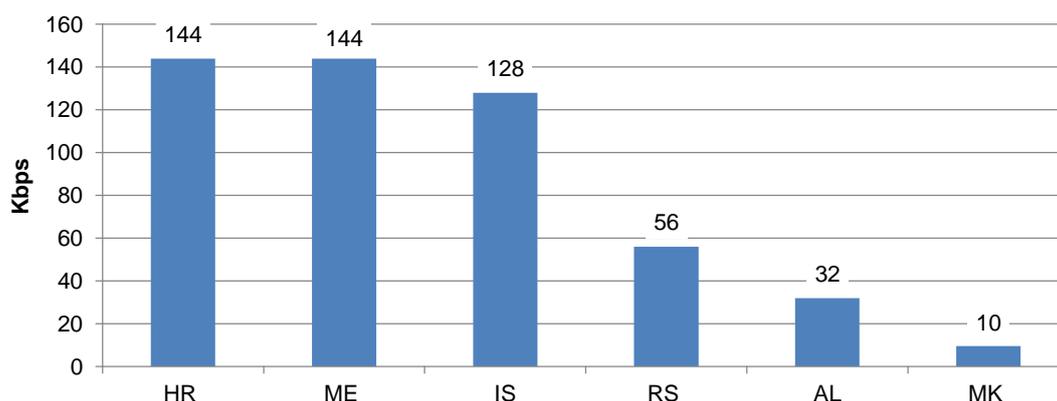


Figure J.2 – Minimum download speed rates within USO scope

### 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.

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 2%	✓
RS	Cost sharing	Not defined	X
TR	Cost sharing	Transferred from the NRA budget (ca 20% of the NRA revenue)	X
AL	Cost sharing	Max 1% of revenue	X
BA	Not defined	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, EKIP approved the net cost of US provision related to comprehensive directory services by Teleinfo, in the amount of €125,000 in 2011 and €201,000 in 2012. The largest contributors to the universal service fund were: Crnogorski Telekom (45%), Telenor (31%) and Mtel (17%).

In Macedonia, both designated US providers have requested compensation of the net USO cost. R3 Infomedia failed to provide the requested accounting separation statements and its request has been rejected by the NRA. The decision on the request from Makedonski Telekom is pending.

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 by the Ministry of Transport, Maritime Affairs and Communications to the Central Accounting Office's account under "universal service revenues" title. So far, no USO cost compensation payments have been made but Turkcell is expected to be compensated from this fund after winning the USO tender to provide access to mobile telephony network in rural areas.

#### 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, Kosovo, and partially in Turkey. Recently it has been also introduced in Serbia. In all remaining countries, other national numbers are being used for access to emergency services that are free of charge for callers.

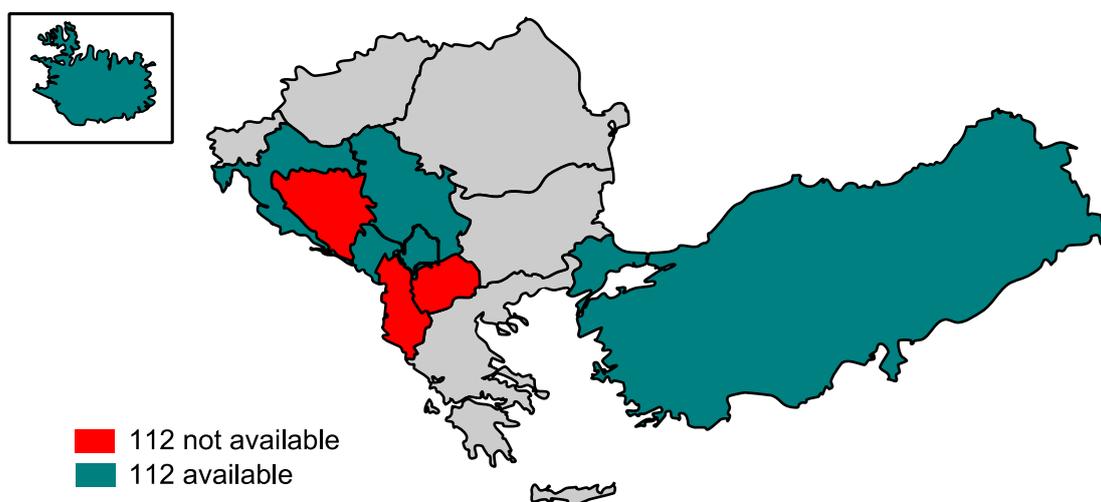


Figure J.3 – European emergency number (112) availability

## 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.

Over the past few years, the focus of the NRAs' activities in the monitored countries has been increasingly shifting towards monitoring QoS in electronic communications. QoS obligations exist in most of the 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 regulation on QoS requirements for fixed and mobile networks was approved by the NRA following a public consultation in December 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 and also in Montenegro in August 2013 as part of legislation 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 varies from immediate termination at any time (Croatia, Iceland and Montenegro) to 15 days in Macedonia and 30 days in Turkey, Albania, Bosnia & Herzegovina and Kosovo.

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

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, disputes between consumers and service providers are handled by Arbitration Committees for consumer complaints and the Ombudsman's office.

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 (2339 in 2012)
IS	✓	Consumer Agency	Max 4 months (101 in 2011)
MK	✓	✗	27 days (1284 in 2012)
ME	✓	Ministry (second instance)	30 days (223 in 2012)
RS	✓	✗	1.5 months (870 in 2012)
TR	✓	Ombudsman	15-20 days (39,973 in 2012)
AL	✓	✗	Max 15 days
BA	✓	✗	30 days (50 in 2012)
XK	✓	✗	15 days (13 in 2012)

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 regulatory obligations imposed on SMP operators 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 tariff controls or price caps apply to regulated retail 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 price of a call 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, Albtelcom's retail tariffs for residential and business customers were regulated based on a set of price caps applicable from September 1, 2010 until December 31, 2013. Following the third round analysis of retail fixed access and call services (markets 1-6/2003) completed by AKEP in July 2013, the price control obligations for Albtelcom's fixed retail tariffs have been phased out as of January 1, 2014. Albtelcom however is required to 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. Typically it only applies to SMP operators. In Iceland, however, there is an obligation for all providers of public voice telephony services, both fixed and mobile, to give 30-day notice to the NRA of any retail price changes.

## L. Fixed retail telephony tariffs

### 1. Retail tariff rebalancing

In this section, prices for the enlargement countries refer to September 1, 2013 except for Iceland, whose prices in this report refer to October 2012 (unless specified otherwise).

Most of the monitored countries – Montenegro, Serbia, Albania, Bosnia & Herzegovina and Kosovo – are still in the process of implementing the overall rebalancing of fixed telephony tariffs of the incumbent operators.

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 meant that the incumbent operators have to bring 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.

The graph below shows that only Iceland, Croatia, Kosovo and Turkey have approached the 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

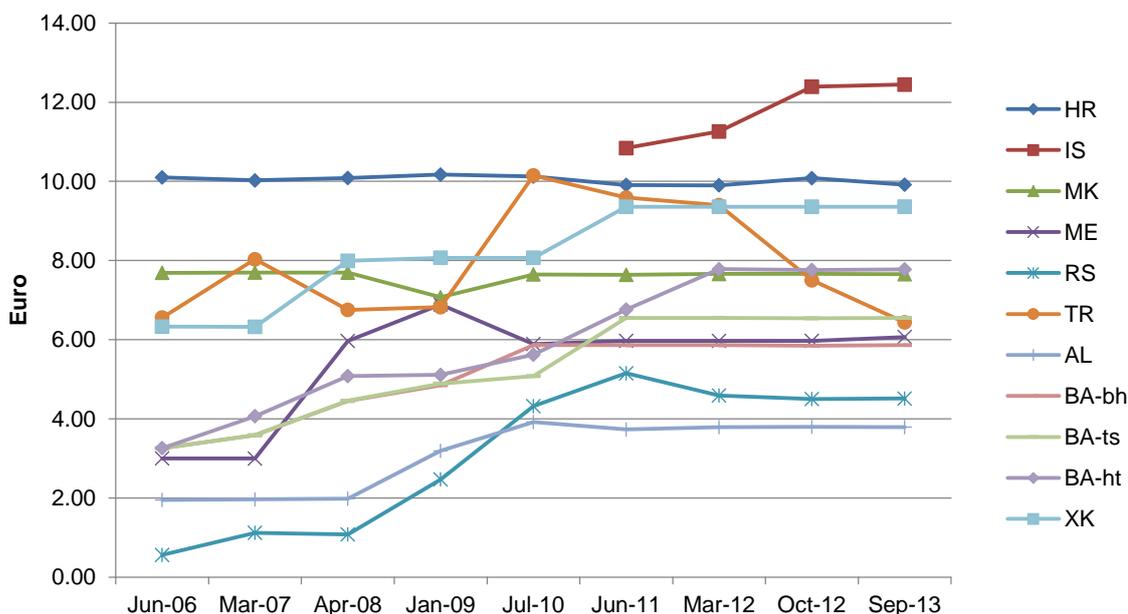


Figure L.1 – Residential line rentals by incumbent in euro, incl. VAT

Incumbents' local call tariffs in most of the monitored countries have increased since 2006. 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.

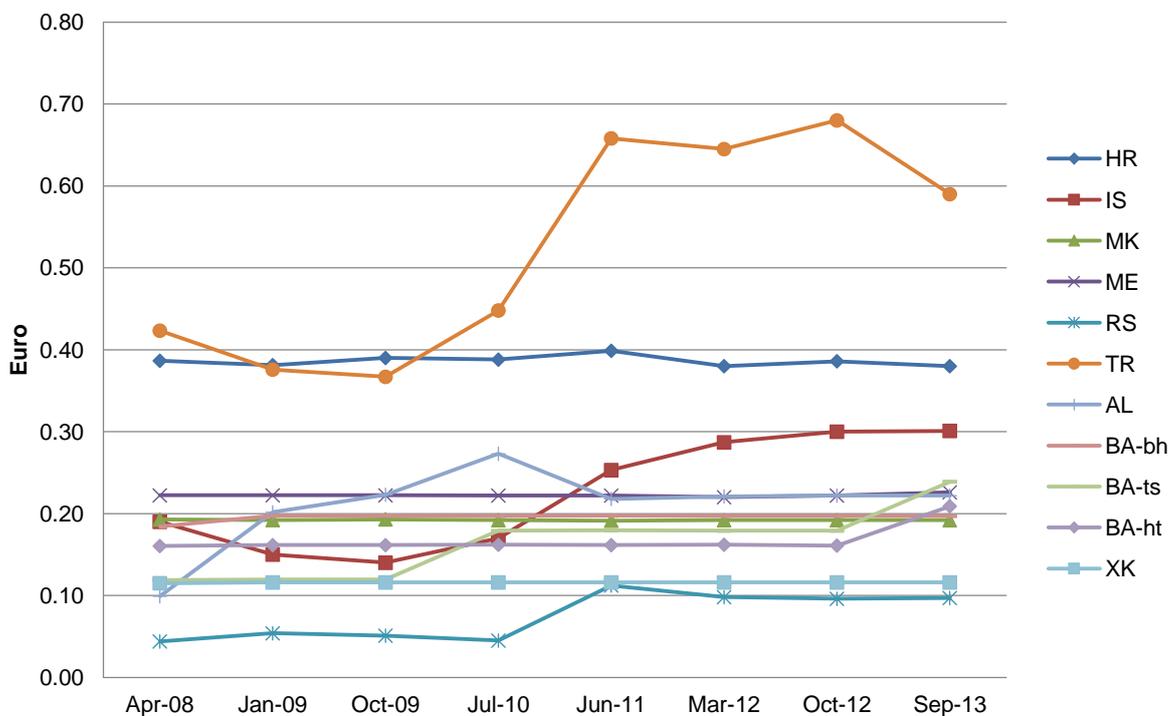


Figure L.2 – Residential charges for a 10-minute local call by incumbent in euro, incl. VAT

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 Albania, Bosnia and Herzegovina 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 – 2013.

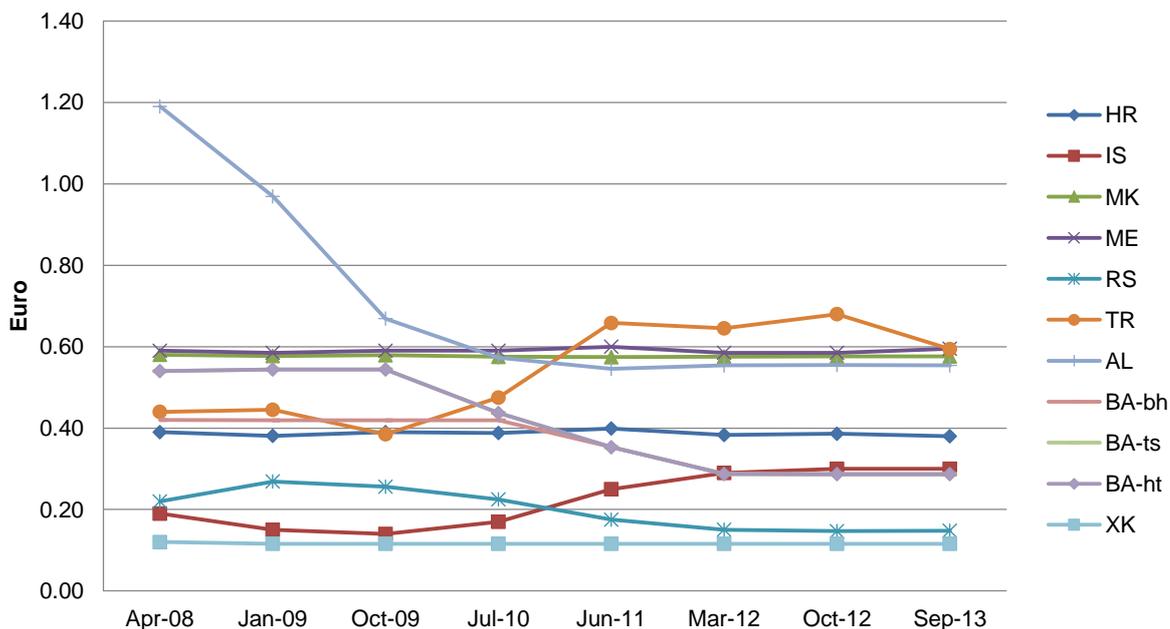


Figure L.3 – Residential charges for a 10-minute long distance call by incumbent in euro, incl. VAT

The level of charges for fixed to mobile calls has been decreasing since 2006. Turkey has the lowest rate, following a sharp decrease in 2011. In Kosovo rates decreased over 37% in 2009, by 14% from March 2012 to October 2012, and by 9.3% in 2013. 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 average level in other monitored countries.

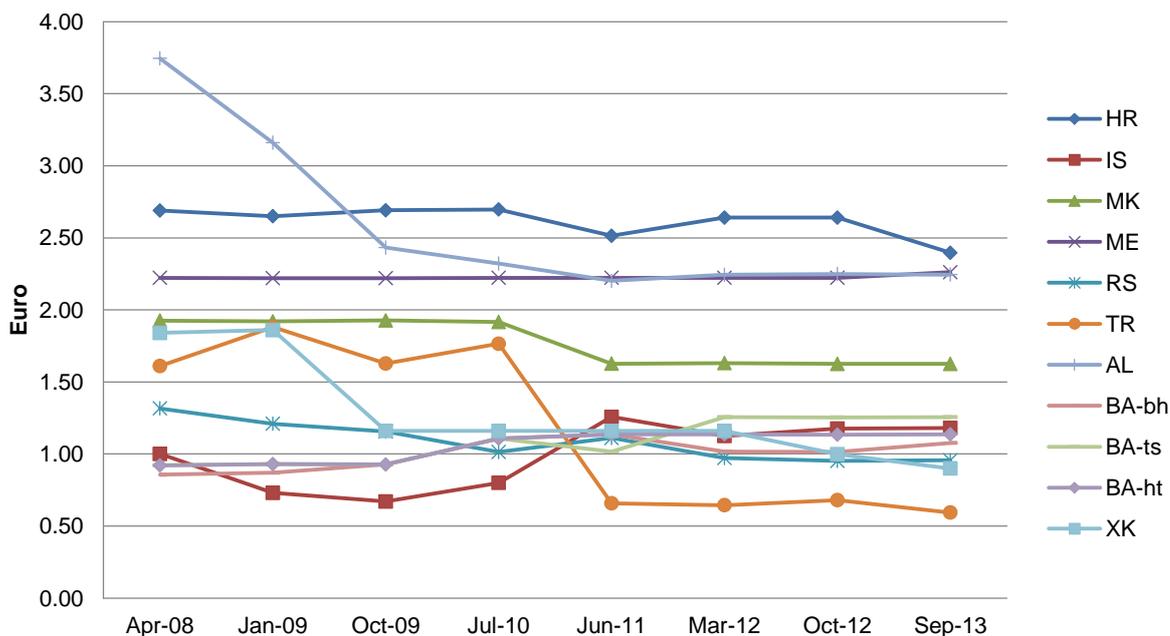


Figure L.4 – Residential charges for a 10-minute fixed to mobile call by incumbent in euro, incl. VAT

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. Prices vary considerably across the monitored countries. 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.

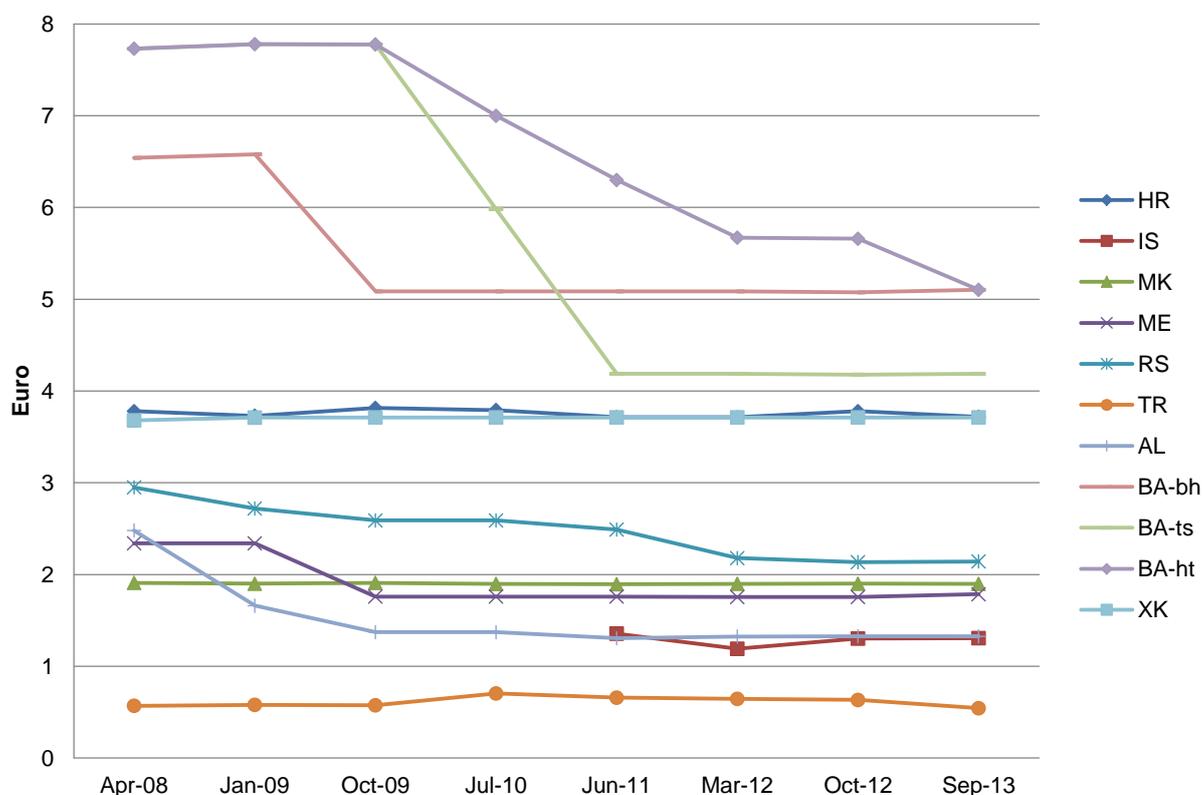


Figure L.5 – Residential charges for a 10-minute international call to UK by incumbent in euro, incl. VAT

## 2. Monthly subscription fees for residential and business users

This section reviews the monthly rental prices for PSTN fixed lines for residential subscribers in nominal euro with value added tax included and for business subscribers, without VAT. Residential subscribers pay less than business subscribers only in Albania and Kosovo. Most countries have the same charges for both subscriber categories after eliminating the difference caused by VAT, as is shown in the chart below.

From 2011 the only significant change took place in Bosnia Herzegovina, where the residential monthly rate of HT Mostar increased by 15%, and in Iceland, where the residential rate increased by 5%. A similar increase was observed for business rental rates. In Bosnia and Herzegovina the three incumbent operators also decreased the minutes of local calls included in the standard monthly package. In Turkey and Kosovo, residential rental rates include particularly high number of on-net calls: 3,000 minutes of calls during off-peak time (Turk Telekom) and 2,500 minutes of calls (PTK), respectively.

Low usage residential monthly packages are available in all countries except Iceland and Albania.

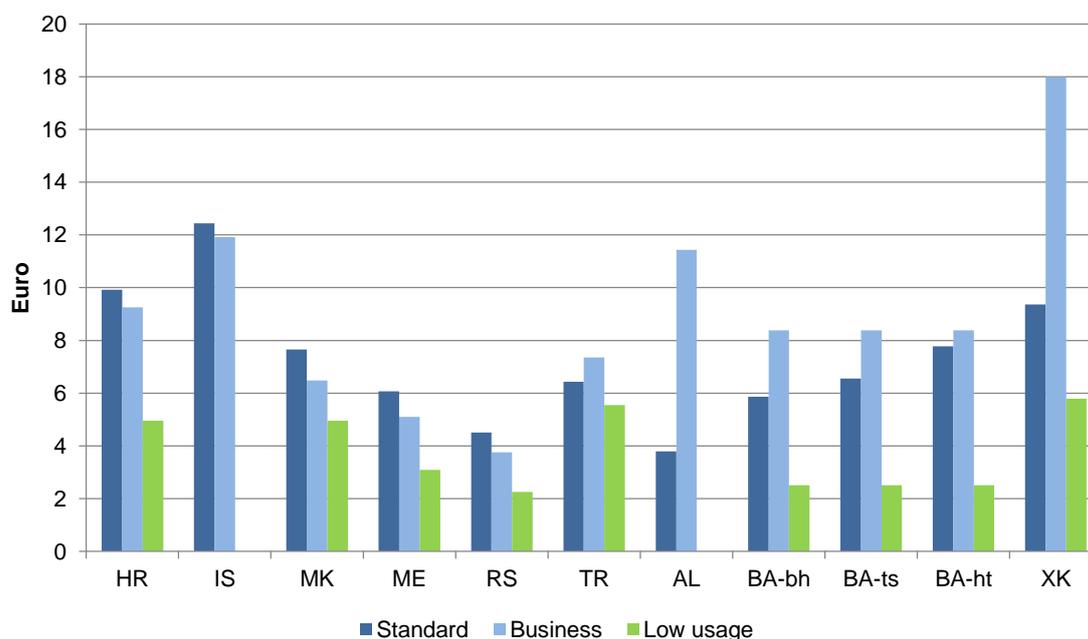


Figure L.6 – Residential, business, and low usage monthly subscription fees, with included calls, Sep. 2013

### 3. One-off connection charges

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

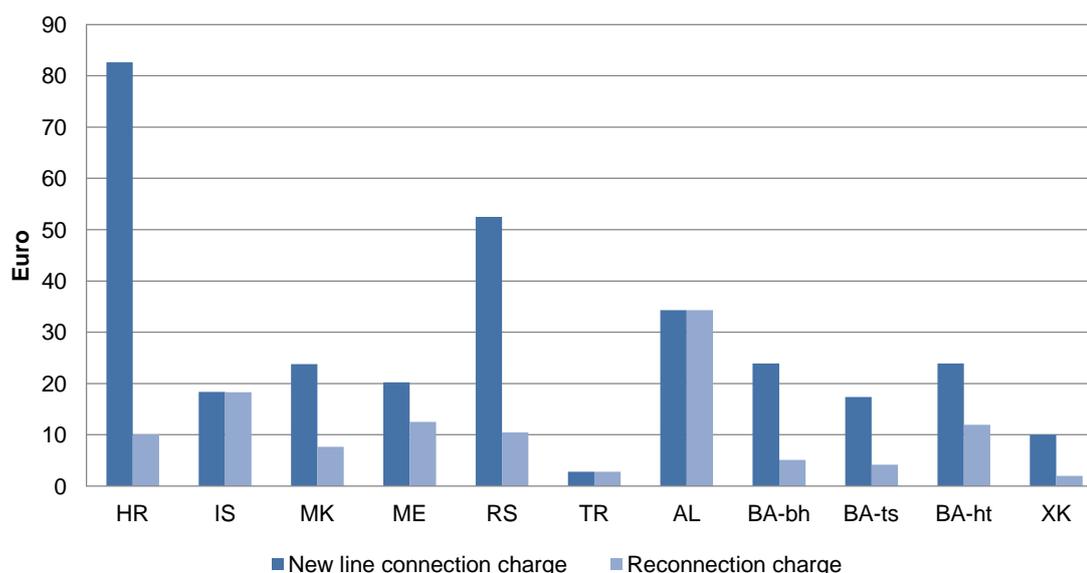


Figure L.7 – New line connection charge and reconnection charge for residential customers in euro, incl. VAT

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, Iceland, and Turkey where the prices are the same. In Bosnia and Herzegovina the new line connection and

reconnection charges have been differentiated only from 2012. The new line connection charges decreased, from October 2012 to September 2013 by 20% for BH Telekom, and by 33% for HT Mostar. 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 (an increase by 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.<sup>13</sup> 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.

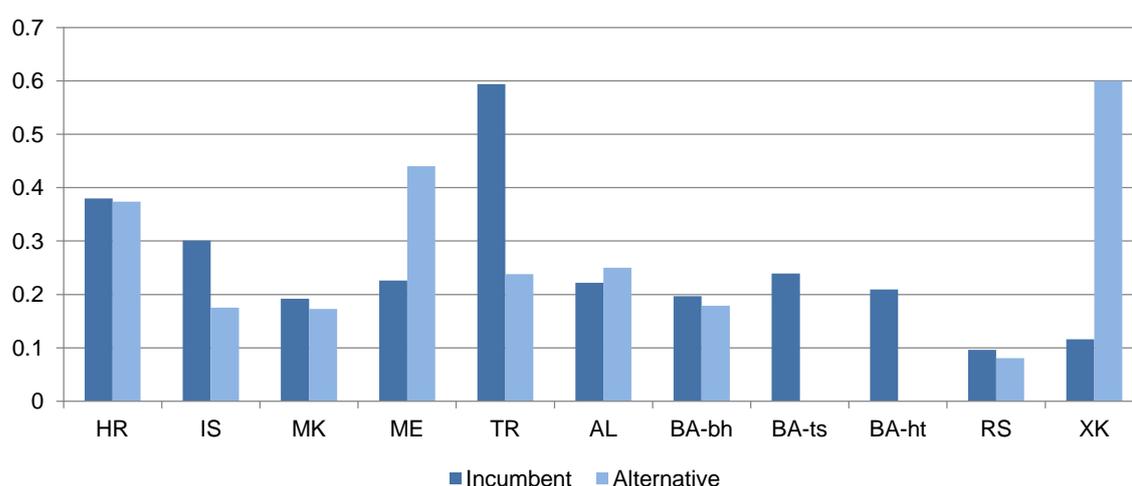


Figure L.8 – 10-minute local call charges for residential users in eurocents, incl. VAT, Sep. 2013

#### 5. Long distance fixed telephony tariffs

In Iceland, Macedonia, Montenegro and Turkey 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.

<sup>13</sup> The list of alternative operators chosen for comparisons in this report is available in Table K.5 of the annex.

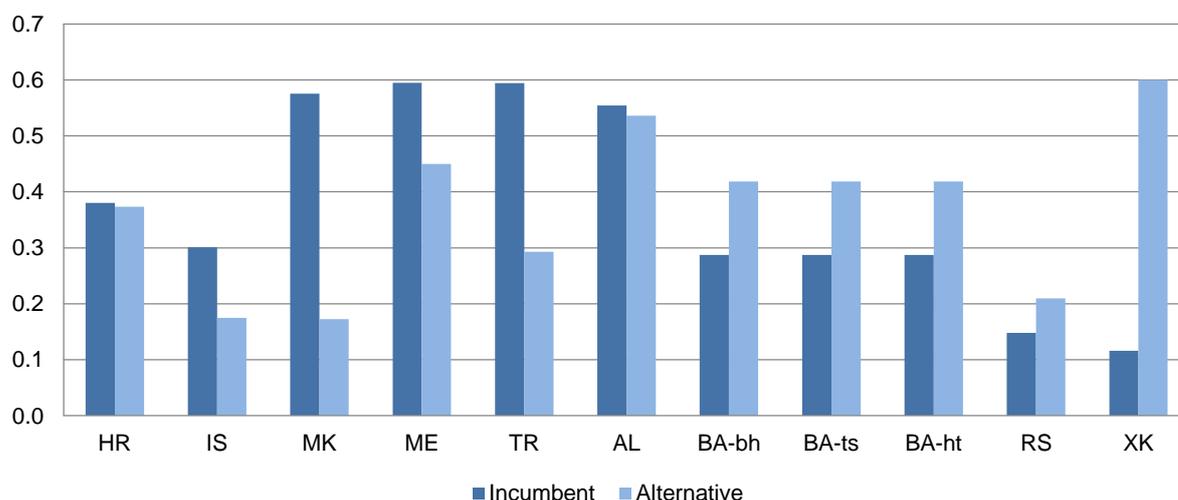


Figure L.9 – 10-minute national long distance call charges for residential users in euro, incl. VAT, Sep. 2013

## 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: for some tariff plans like the one selected for this report<sup>14</sup>, the incumbent offers the same price for calls originated on the incumbent fixed network and terminating either on fixed or on mobile network.

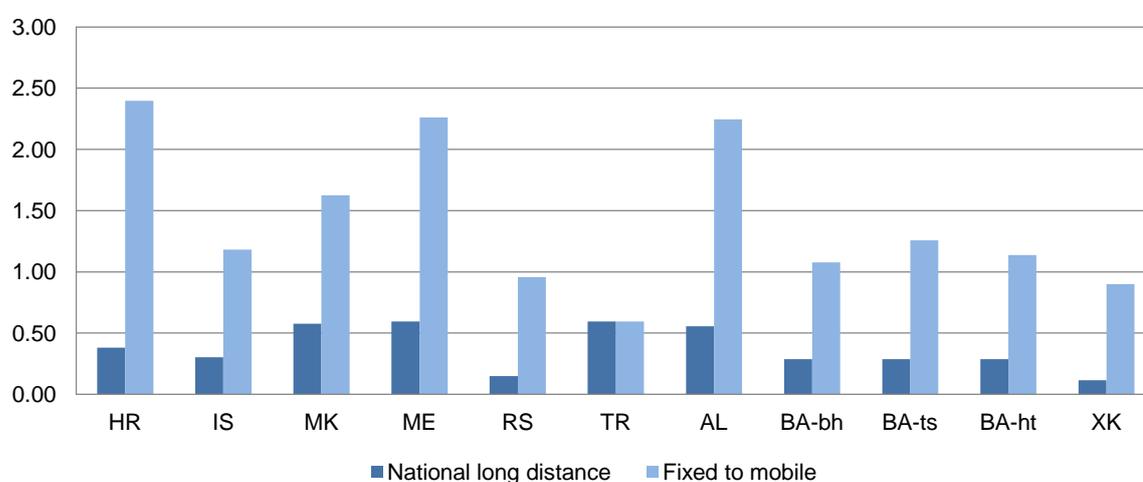


Figure L.10 – 10-minute fixed to mobile and national charges for residential users in euro, incl. VAT, Sep. 2013

In Macedonia, where the difference is smallest, a 10-minute call from a residential fixed line to a mobile number is 2.8 times more expensive than national calls terminating on a fixed line. In Iceland, Montenegro, Albania and Bosnia & Herzegovina the difference is a bit higher, approximately three to four times more expensive. In Serbia and Croatia fixed calls to a mobile network are over 6 times more expensive than national long distance calls. In Kosovo the difference is the largest, as fixed to mobile calls are almost 8 times more expensive than national long distance calls.

<sup>14</sup> SadeHatt tariff plan. This plan is considered as the entry level, base tariff option for the customers. It also includes 3000 minutes of on-net calls which can be used between 19:00-07:00.

Country	10-minute fixed national long distance call	10- minute fixed to mobile call	Price Ratio
Turkey	€0.59	€0.59	1
Macedonia	€0.58	€1.63	2.8
Montenegro	€0.60	€2.26	3.8
Iceland	€0.30	€1.18	3.9
Bosnia & Herzegovina	€0.29	€1.08-1.26	3.8-4.4
Albania	€0.55	€2.25	4.0
Croatia	€0.38	€2.40	6.3
Serbia	€0.15	€0.96	6.5
Kosovo	€0.12	€0.90	7.8
<b>Simple Average</b>	<b>€0.36</b>	<b>€1.49</b>	<b>3.8</b>

Table L.1 – Incumbents' charges for residential fixed to mobile calls and national fixed calls, Sep. 2013

The simple average for the monitored countries is €1.49 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.

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

Kosovo and Turkey clearly stand out among the monitored countries, as alternative operators' fixed to mobile charges are significantly higher than the incumbent's, as shown in the next graph.

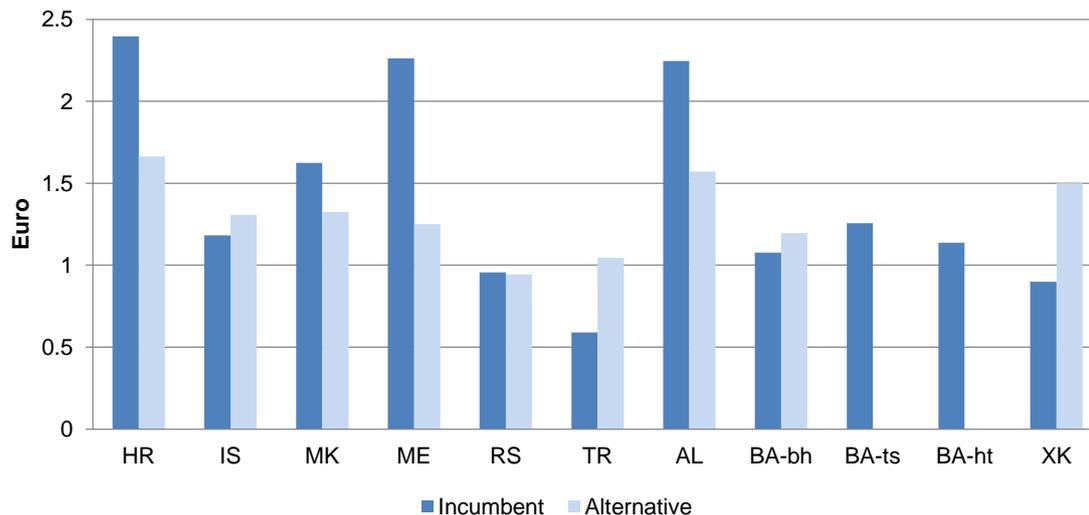


Figure L.11 – 10-minute fixed to mobile call charges for residential users in euro, incl. VAT, Sep. 2013

## 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 only 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 70% to 80% cheaper if placed through an alternative operator in Serbia, Kosovo and Bosnia and Herzegovina, and between 45% 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 and Macedonia alternative operators' charges are now approximately 57% cheaper than the incumbent's. This represents a considerable change from 2010, when the incumbent still controlled international interconnection, resulting in alternative operators charging significantly higher prices to customers for international calls. A completely opposite situation is observed in Montenegro, where calls to the USA originated on the incumbent's network are 75% cheaper than calls originated on the alternative operator's network.

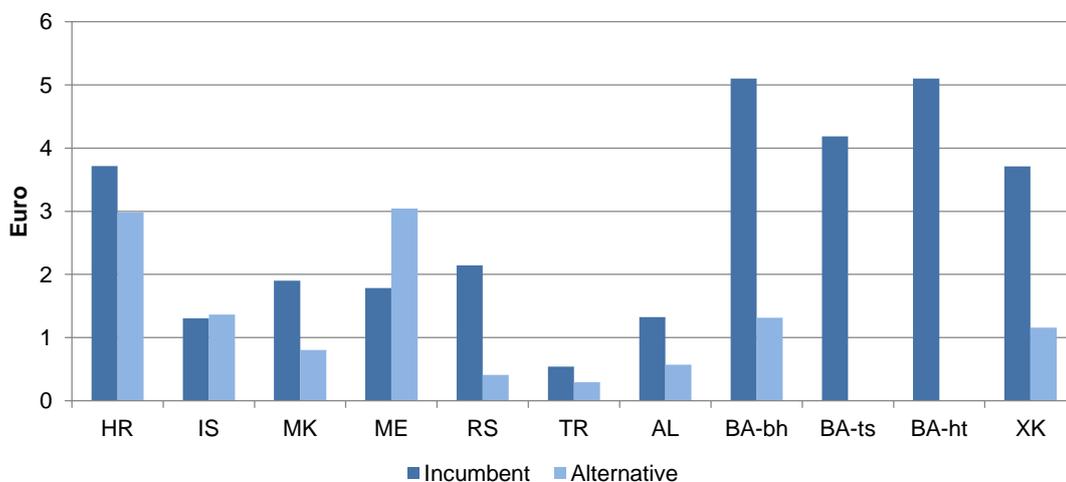


Figure L.12 – Residential charges for a 10-minute call to the UK in euro, incl. VAT, Sep. 2013

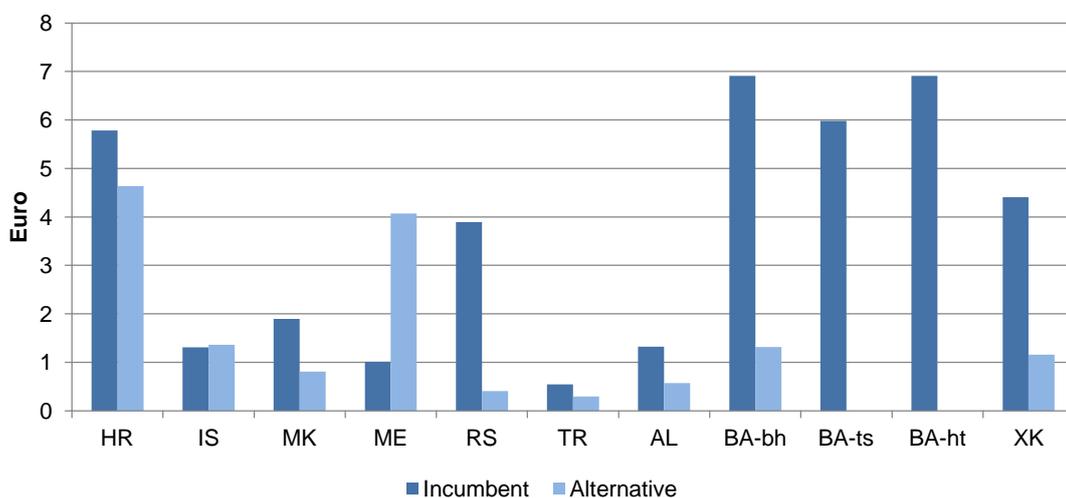


Figure L.13 – Residential charges for a 10-minute call to the USA in euro, incl. VAT, Sep. 2013

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. The situation is more comparable with the EU-27 (as of 2010) average prices in the remaining countries.

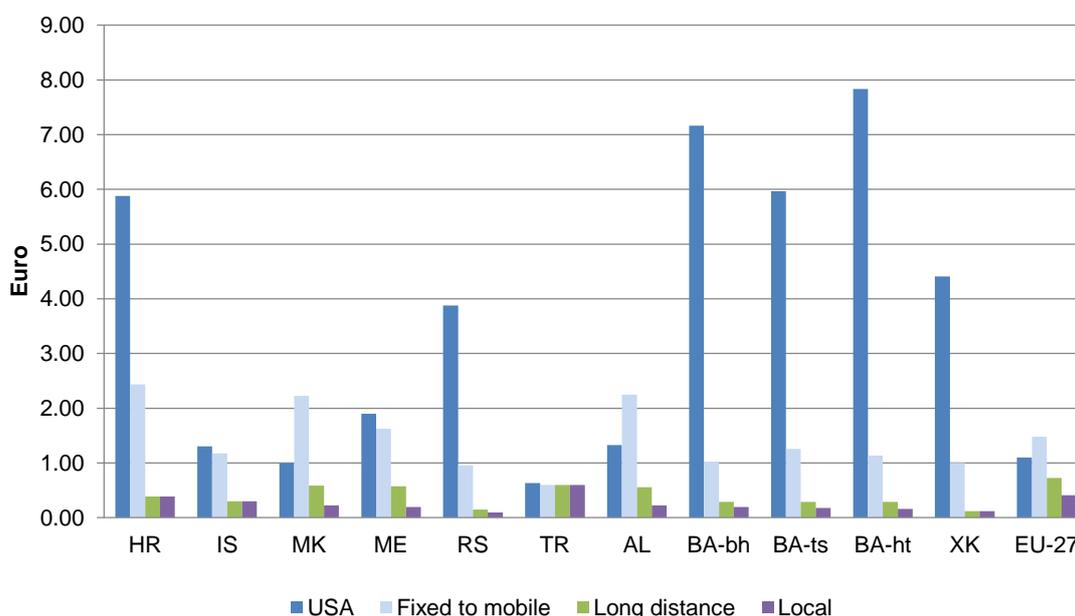


Figure L.14 – Summary of incumbent’s residential charges for a 10-minute call in euro, incl. VAT, Sep. 2013

### 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.<sup>15</sup> These baskets are updated to reflect changing usage patterns. The current basket is referred to as the 2006 version, while the previous basket is referred to as the 2002 version. This report uses the 2006 baskets that can be directly compared with the EU results which also use the same methodology.

From October 2012, the sharpest price decreases for low user baskets were observed in Croatia (all operators), and, for some operators only, in Macedonia, Turkey and Kosovo.

<sup>15</sup> <http://www.oecd.org/dataoecd/56/23/41049579.pdf>

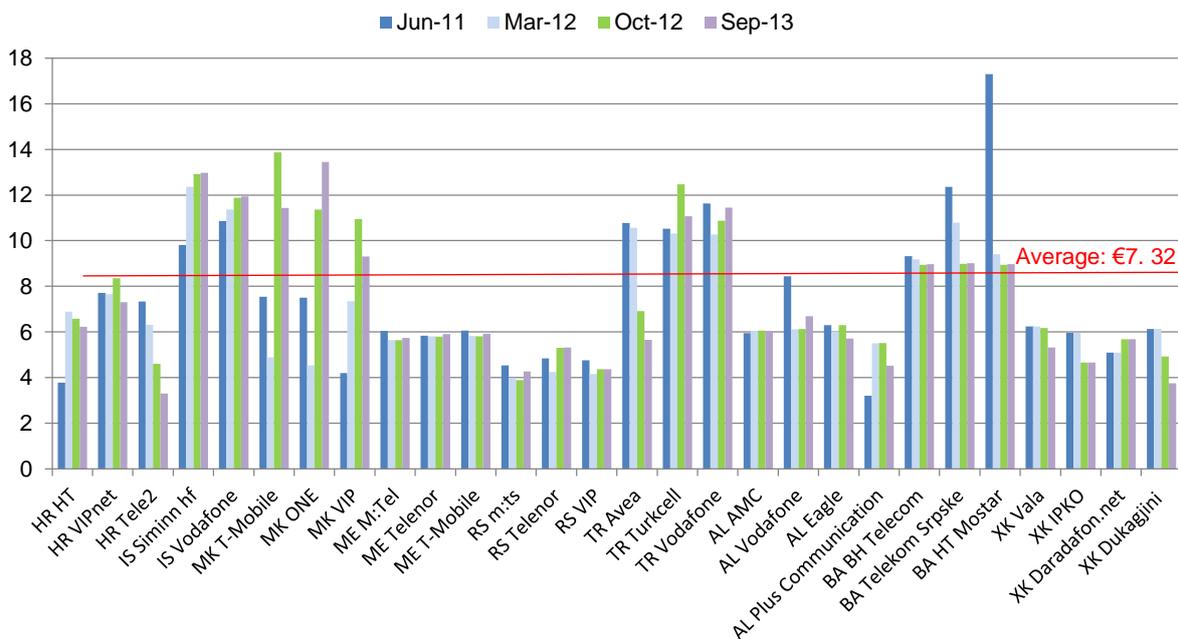


Figure M.1 – Low usage basket in euro per month, incl. VAT

In Croatia Tele2 is offering a €3.31 package available for each of the three baskets that in practice resulted in a decrease of 58% and 68% respectively for medium user and the high user baskets. A considerable decrease of prices for all operators was observed in the high-user basket in Albania. Prices had been relatively stable from November 2012 in Serbia and in Bosnia and Herzegovina. Prices of MVNO Dukagjini Telekommunikation, in Kosovo, decreased for all baskets.

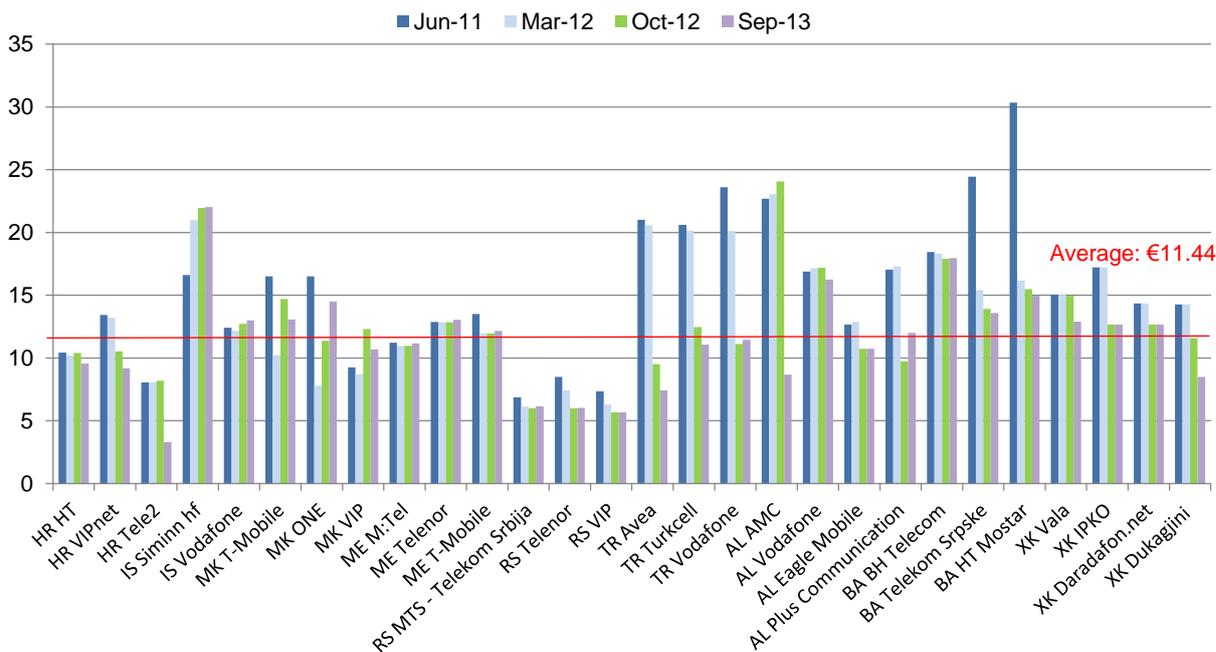


Figure M.2 – Medium usage basket in euro per month, incl. VAT

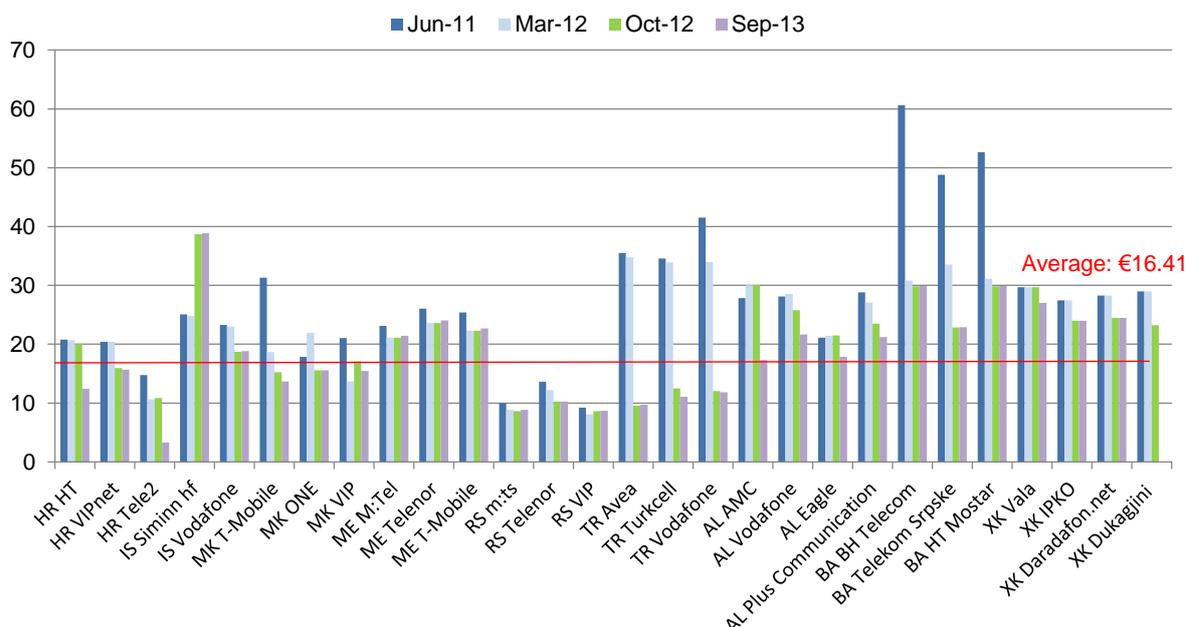


Figure M.3 – High usage basket in euro per month, incl. VAT

## 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	✗	✗	✓	✓	✓	✗	✓	✓	✓	✗	✗	✓
IS	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✗
MK	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✓	✗
ME	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
RS	✗	✗	✓	✗	✓	✗	✓	✓	✓	✓	✓	✓
TR	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AL	✗	✗	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓
BA	✗	✗	✓	✗	✓	✗	✓	✓	✓	✓	✓	✓
XK	✗	✗	✓	✗	✓	✗	✓	✓	✓	✓	✓	✓

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

Broadband lines with speeds below 1 Mbps are no longer offered in any of the monitored countries. The offerings between 1 Mbps and 2 Mbps are not available only in Iceland and Macedonia. Monthly prices have decreased considerably from 2011, as they now range in

most countries from €5 to €10. Only in Montenegro prices for 1-2 Mbps broadband access reach €15.

The monthly charges for 2-4 Mbps connections show significant variations across countries. The lowest prices are offered in Bosnia and Herzegovina by the incumbent operator at €5.98 per month. At the other end of the scale, HT Mostar has the most expensive offer at €20.94 per month. Prices close to €20 are also offered in this speed range in Montenegro and Serbia.

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. In Macedonia there are 4-8 Mbps offers at €8 and offers above 20 Mbps at €16. Offers above 20 Mbps are now available in most countries at prices between €16 and €33. In Albania broadband offers above 20 Mbps are now available, but at a price of almost €280.

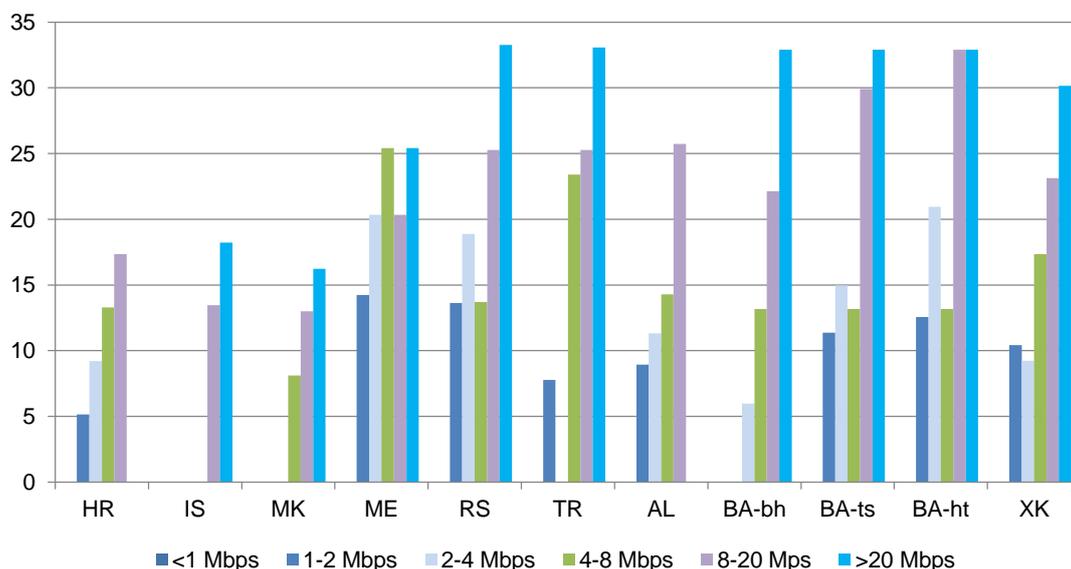


Figure N.1 – Broadband monthly subscription – cheapest offers available, in euro, incl. VAT, Sep. 2013

The two figures below compare broadband monthly subscription charges for 4-8 Mbps and 8-20 Mbps offerings by the incumbent and alternative operator. With the only exception of Montenegro and Bosnia and Herzegovina, in all countries alternative operators are offering higher speed packages at lower prices.

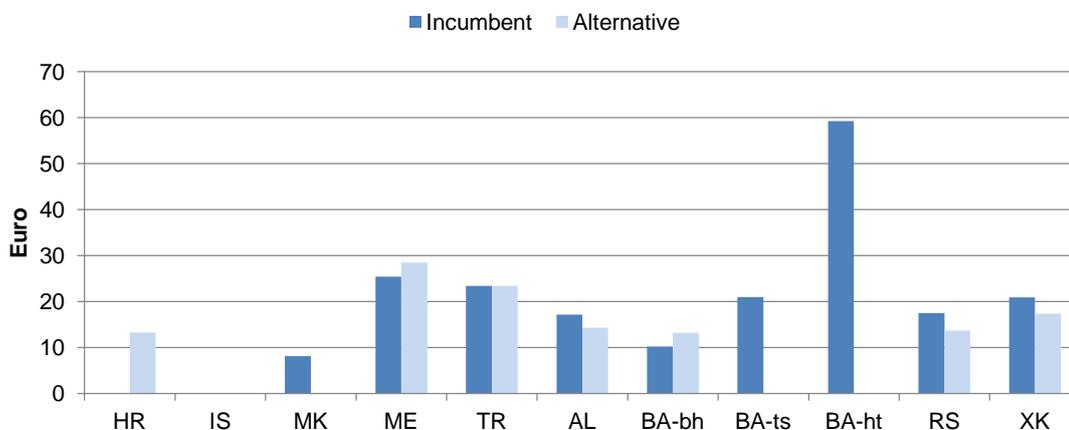


Figure N.2 – Monthly retail 4-8 Mbps broadband subscription prices in euro, incl. VAT, Sep. 2013

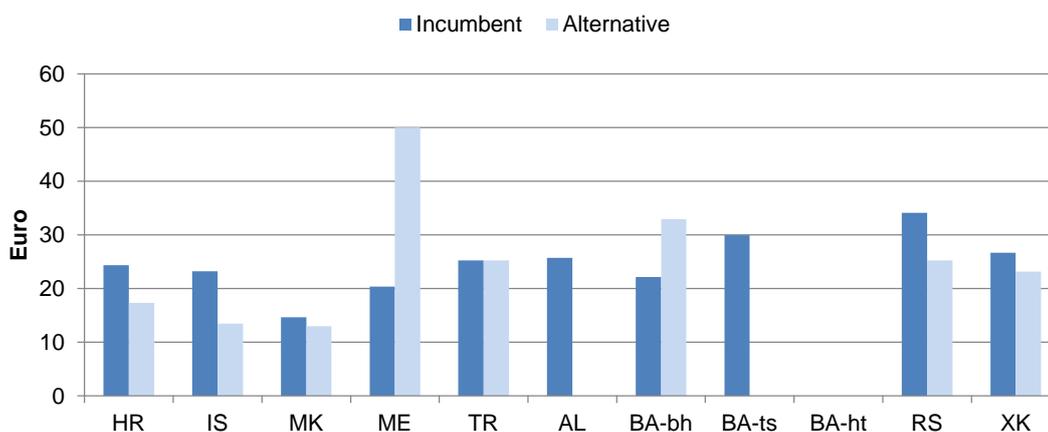


Figure N.3 – Monthly retail 8-20 Mbps broadband subscription prices in euro, incl. VAT, Sep. 2013

## O. Leased lines retail prices

### 1. National leased lines

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

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

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

In most of the monitored countries, prices for 2 km leased lines of 2 Mbps have remained substantially unchanged for several years, with slight differences shown in Figure O.1 below mostly due to exchange rates variations. The only remarkable exception is Macedonia, where from April 2012 following regulatory intervention<sup>16</sup> a 2 km leased line at 2 Mbps decreased from €12,000 per year to €4,700 in October 2012, and again to €2,023 in September 2013.

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 markets<sup>17</sup>. In Turkey a 15% price decrease was observed for this type of leased line from October 2012 to September 2013. In all other countries prices remained relatively stable over the last three years.

The range of charges for the same functional offering is very wide across the region. Iceland has the lowest annual charges among the monitored countries at approximately €540 per year, immediately followed by Albania and Turkey, with prices at €1,600 and €1,900 respectively. The highest annual prices for these offerings are now in Croatia, Serbia and in Bosnia and Herzegovina.

<sup>16</sup> On December 4, 2012 Makedonski Telekom's RO for leased lines was amended and the new prices were set according to the results of the final LRIC model for leased lines, dark fibre and duct prices published by AEC on October 16, 2012. [http://www.telekom.mk/domestic\\_mk/?z=1195](http://www.telekom.mk/domestic_mk/?z=1195)

<sup>17</sup> [http://www.ekip.me/download/Saopstenje%20za%20LL\\_promjene.pdf](http://www.ekip.me/download/Saopstenje%20za%20LL_promjene.pdf)

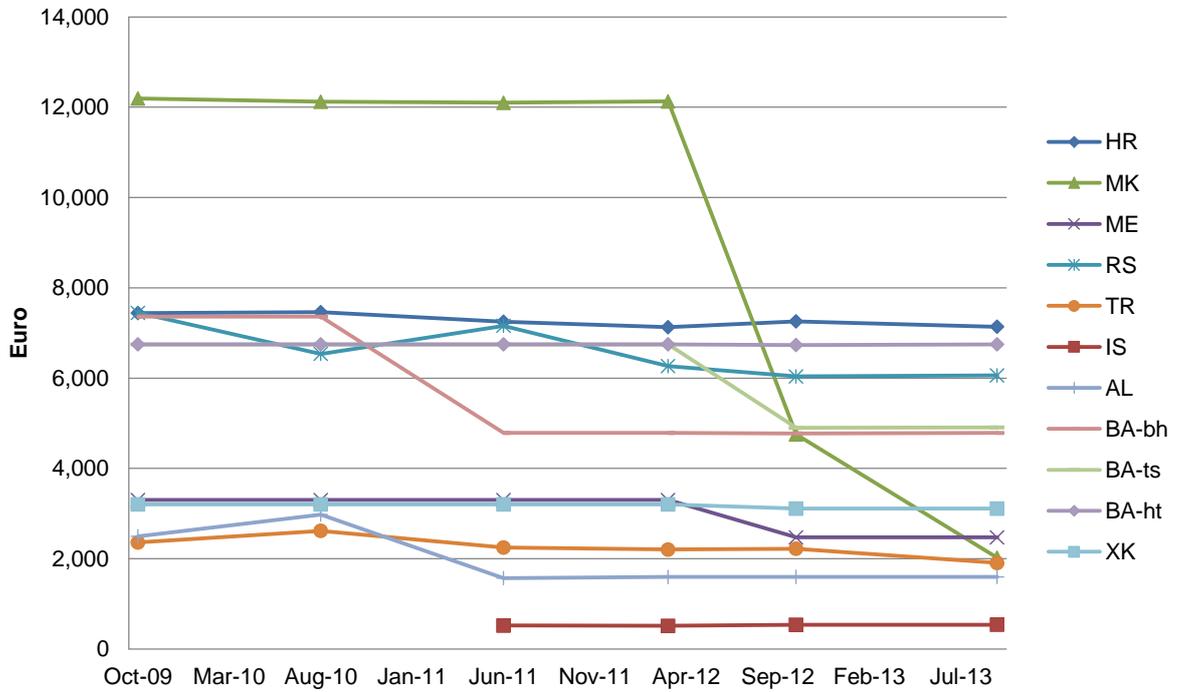


Figure O.1 – Annual retail prices for 2 km 2 Mbps leased lines

For 34 Mbps, the lowest retail prices are in Iceland at €2,260 per year, followed by Macedonia at approximately €7,500, and Turkey and Kosovo at a bit over €10,000 per year. In Montenegro prices dropped, from March 2012 by 65% and are now aligned with prices in Turkey and Kosovo. The highest prices are in Serbia at over €53,000 per year. In Albania, the prices for leased lines of 34 Mbps were 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.

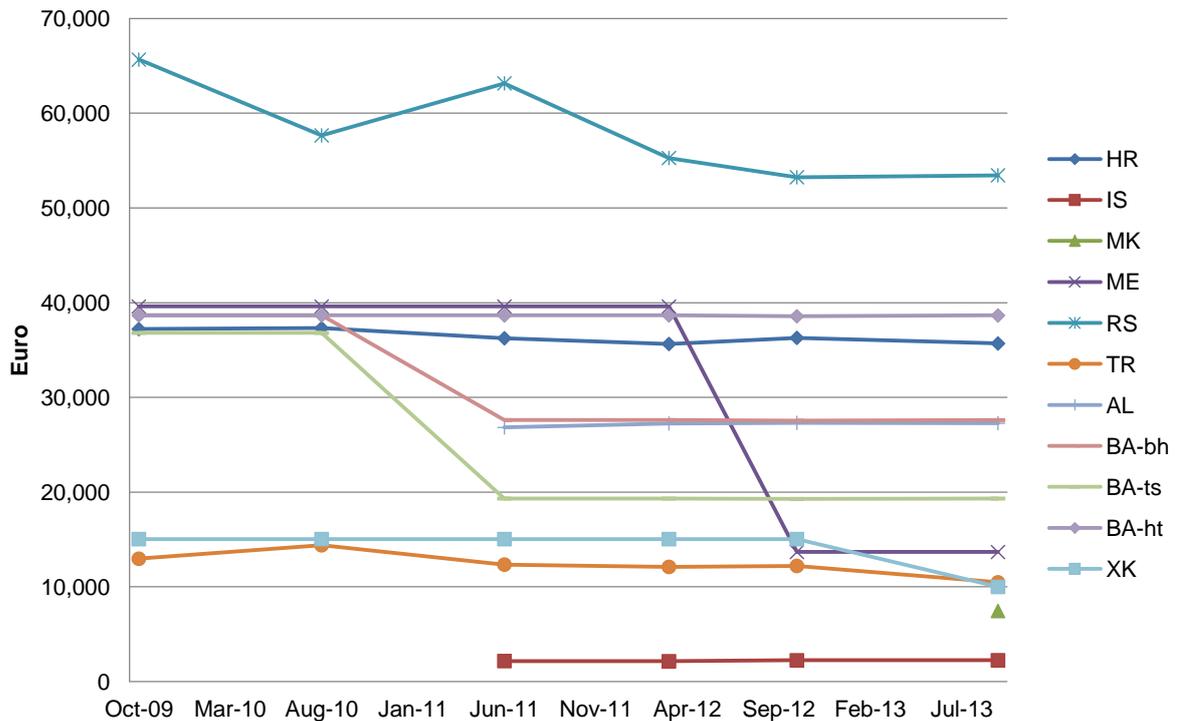


Figure O.2 – Annual retail prices for 2 km 34 Mbps leased lines

## 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 and are now at a level of approximately 11,000 per year. Kosovo has the lowest prices, which were further reduced in from March 2012 by 32%, a level of €7,200 per year.

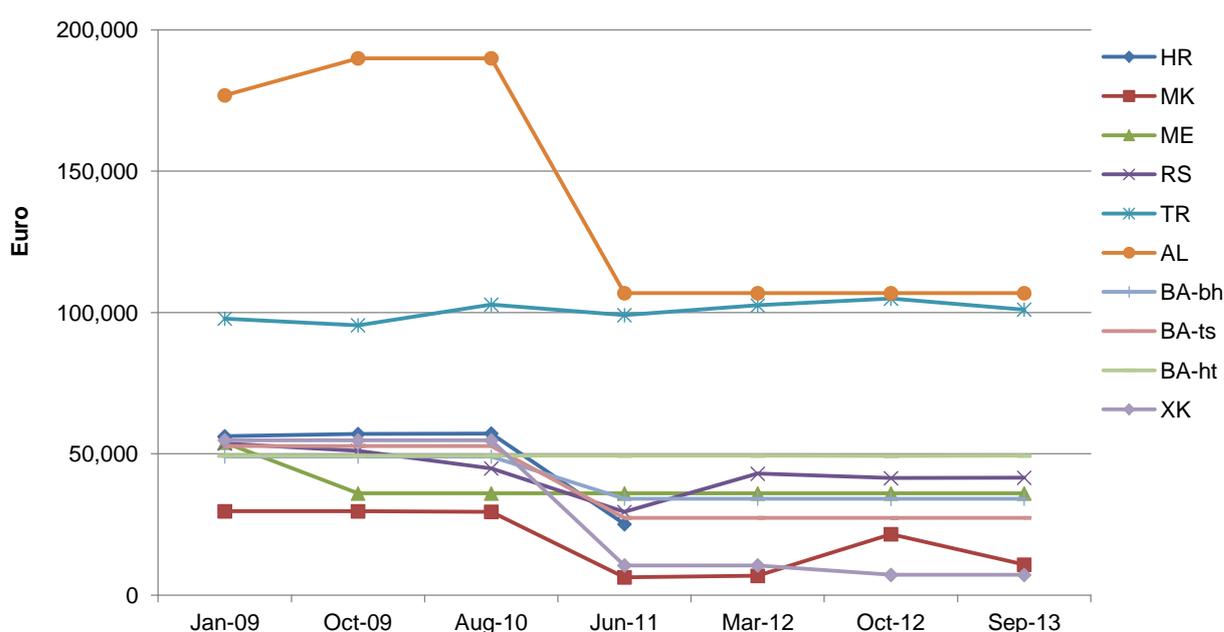


Figure O.3 – Annual prices for international half circuits 2 Mbps to near country

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, with prices respectively above € 150,000 and € 170,000 per year. All other incumbents are keeping charges at below € 50,000 per year. From 2011 to 2013 prices remained stable in all monitored countries. A substantial decrease was observed from October 2012 only in Macedonia, where now the annual price for this type of leased line is quoted at €17,400.

International half circuit prices are not publicly listed for Iceland and Croatia, as they are defined commercially.

Enlargement countries monitoring report 4 – February 2014

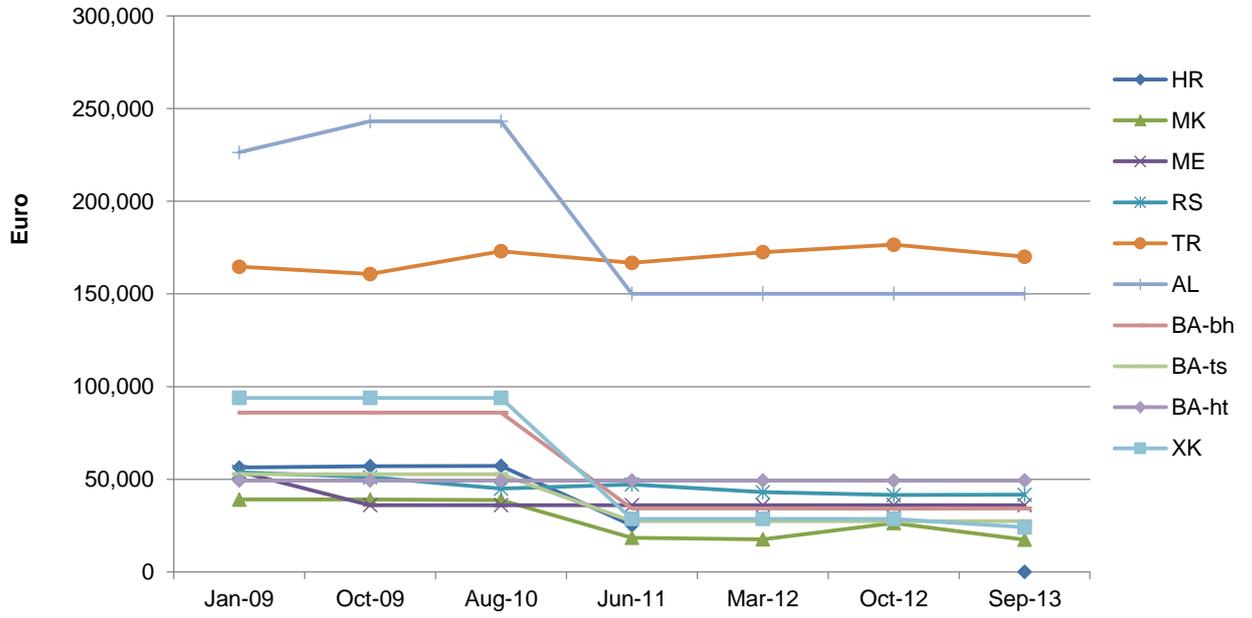


Figure O.4 – Annual prices for international half circuits 2 Mbps to the UK

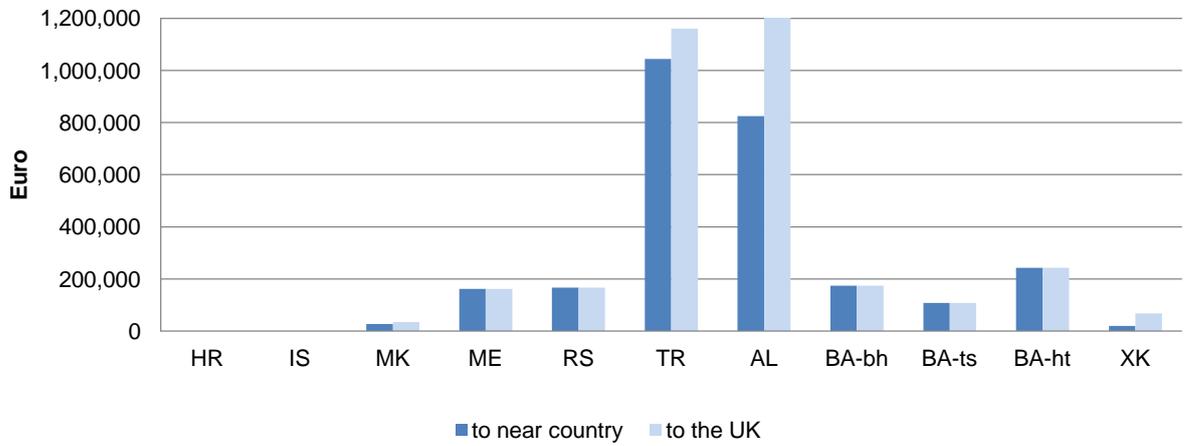


Figure O.5 – Annual prices for international 34 Mbps half circuits, Sep. 2013

## 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 some countries this has been the result of regulatory intervention and price controls that in the absence of more complex regulatory mechanisms such as cost accounting models typically apply benchmarking against the level of charges in the EU member states.

According to the BEREC report on fixed and mobile termination rates in the EU as of January 1, 2013, the weighted average EU-27 call termination charges on the incumbent's fixed network were the following<sup>18</sup>:

- Local level                                      0.50 eurocents per minute
- Single transit level                            0.60 eurocents per minute
- Double transit level                            0.82 eurocents per minute

The figures below show termination rates on the incumbent's fixed network as of September 1, 2013.

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 tandem 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. Croatia, Macedonia, Turkey (since 2009) and Serbia are setting prices which are at comparable levels with the EU. However, it is also worth noting that in Serbia local fixed termination rates of the incumbent operator as of September 1, 2013 were set above its retail prices for fixed local calls at off-peak time: 0.6 eurocent per minute and 0.48 eurocent per minute, respectively.

In Montenegro, fixed termination prices were at levels considerably higher than in the other monitored countries, but have been decreasing in 2011 and 2012. Following the third round analysis of the wholesale fixed call termination market completed in November 2013, the local fixed termination rates are set to decrease by further 20% in January 2014: from 0.93 eurocent to 0.77 eurocent per minute.

In Croatia, on October 30, 2013 the regulator adopted a decision<sup>19</sup> on a glide path for LRAIC+ based rates to be applied starting from January 1, 2014 towards a "pure" BU LRIC based fixed termination rate to be applied from January 1, 2015. As of January 1, 2014 local fixed termination rates are set to decrease by some 40%.

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.

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<sup>18</sup> EU-27 weighted average as of January 2013 (source: BEREC) Source: Body of European Regulators for Electronic Communications (BEREC) 'Termination Rates Benchmark Snapshot (Jan. 2013)' [http://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/reports/1279-termination-rates-benchmark-snapshot-as-of-july-2012-integrated-report-on-mobile-termination-rates-amp-sms-termination-rates](http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/1279-termination-rates-benchmark-snapshot-as-of-july-2012-integrated-report-on-mobile-termination-rates-amp-sms-termination-rates)  
<sup>19</sup> [http://www.hakom.hr/UserDocsImages/2013/odluke\\_rjesenja\\_presude/IZ-AT-OD-EK-prijedlog%20za%20notifikaciju-cijene%20originacije%20i%20terminacije-20131030.pdf](http://www.hakom.hr/UserDocsImages/2013/odluke_rjesenja_presude/IZ-AT-OD-EK-prijedlog%20za%20notifikaciju-cijene%20originacije%20i%20terminacije-20131030.pdf)

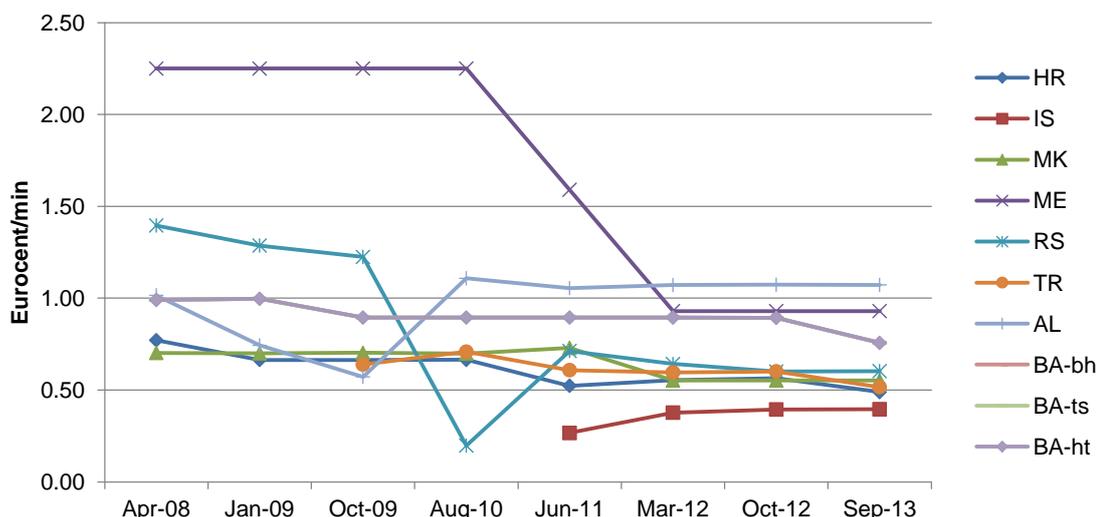


Figure P.1 – Local call termination charges on the incumbent's fixed network, peak time

At the single transit level, call termination charges on the incumbent's fixed network are close to the EU average of 0.60 €cents in Turkey, Croatia, Macedonia, and from 2010 in Serbia.

The highest rates were in Kosovo until 2012, at 4 eurocents per minute. The interconnection agreement expired in April 2011. The operators did not reach any agreement and on October 31, 2012, following a dispute resolution between IPKO and PTK, the regulator decided to introduce a symmetric rates' glide path on fixed interconnection rates until July 1, 2014. The new agreement is based on ARKEP's decision No. 271 on the "Dispute resolution between PTK and IPKO" and was signed by both parties on January 9, 2013. The respective rates in September 2013 were set at 1.5 eurocent per minute.

In Montenegro, FTRs 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. Following the third round analysis of the wholesale fixed call termination market completed in November 2013, the single transit fixed termination rates are set to decrease by further 6% in January 2014: from 1.07 eurocent to 1.01 eurocent per minute.

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 SEE region. In Croatia, single transit termination rates are set to decrease by some 43% as of January 1, 2014. In Iceland call termination is only offered at the local level.

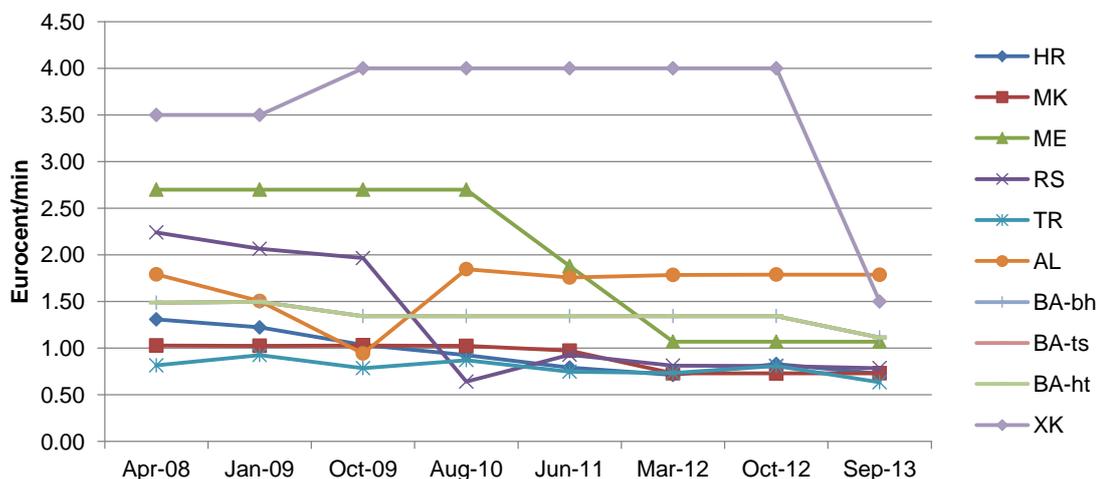


Figure P.2 – Single transit call termination charges on the incumbent's fixed network, peak time

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 0.82 eurocent. Rates remain considerably higher than EU average in Albania, Bosnia and Herzegovina and in Croatia. In Croatia, however, double transit termination charges are set to decrease by 46% as of January 1, 2014. In Serbia the incumbent's double transit termination charge decreased by 70% from October 2009 and is now the lowest among the monitored countries.

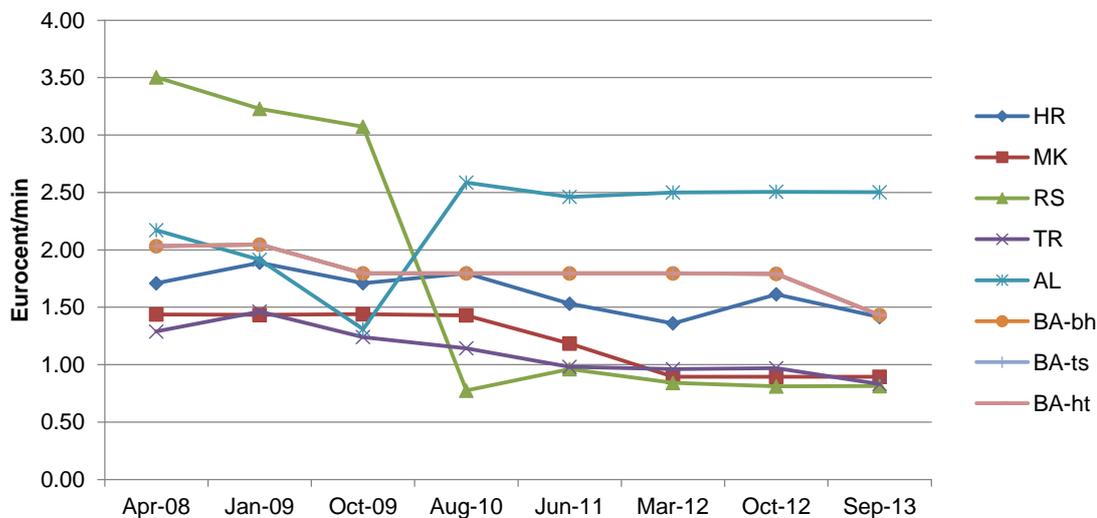


Figure P.3 – Double transit call termination charges on the incumbent's fixed network, peak time

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 report<sup>20</sup>.

In Iceland, the alternative operators' fixed termination rates are set at the level slightly above the incumbent's local call termination. Call termination is only offered at the local level. In Turkey 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.

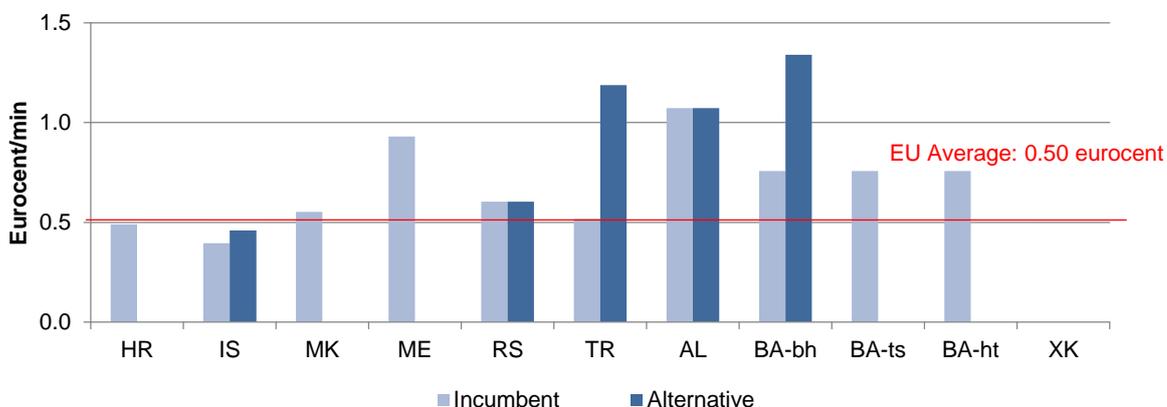


Figure P.4 – Local call termination on the fixed incumbent and alternative network, Sep. 2013

<sup>20</sup> EU-27 weighted average as of January 2013 (source: BEREC)  
 Source: Body of European Regulators for Electronic Communications (BEREC) 'Termination Rates Benchmark Snapshot (Jan. 2013)' [http://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/reports/1279-termination-rates-benchmark-snapshot-as-of-july-2012-integrated-report-on-mobile-termination-rates-amp-sms-termination-rates](http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/1279-termination-rates-benchmark-snapshot-as-of-july-2012-integrated-report-on-mobile-termination-rates-amp-sms-termination-rates)

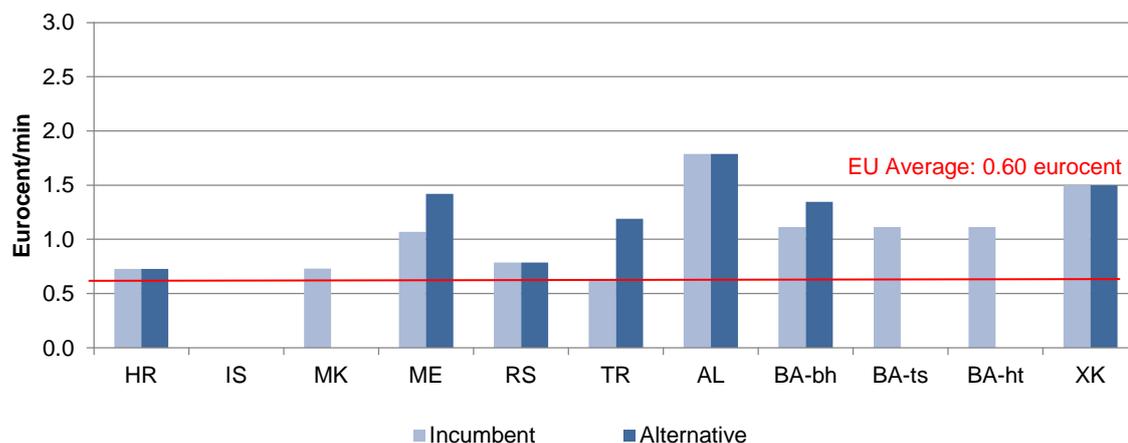


Figure P.5 – Single transit call termination on the fixed incumbent and alternative network, Sep. 2013

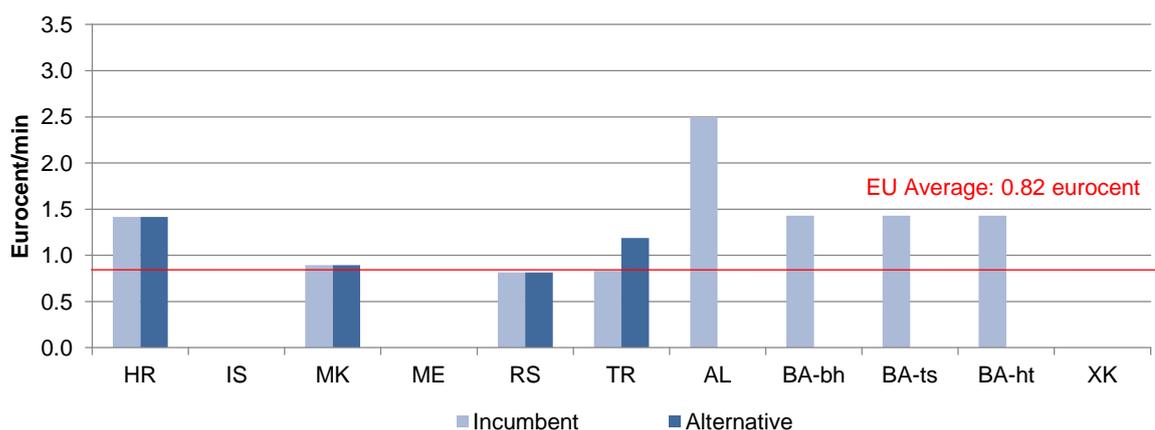


Figure P.6 – Double transit call termination on the fixed incumbent and alternative network, Sep. 2013

## 2. Call termination on mobile networks

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

### 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. Such costs should be calculated using a bottom-up ‘pure’ LRIC model based on current costs.

As regulators in the enlargement countries have been following the EU regulatory practices on analysis of relevant markets, some of them have decided to implement significant reductions in MTRs, following their analyses of the wholesale market for voice call termination rates on mobile networks, often in the form of glide paths of gradual MTR reductions.

So far, only the regulators in Albania, Croatia, Macedonia and Turkey have been regulating MTRs based on BU LRIC (LRAIC) cost methodologies. In Croatia, from July 1, 2013, mobile termination rates of the three operators found to have SMP – Hrvatski Telekom, VIPnet and Tele2 - are set based on LRAIC+. Implementation of pure LRIC-based MTRs is foreseen from January 1, 2015.

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

Country	Glide path for reduction in MTRs				
Croatia	From July 1, 2013 MTRs of three operators with SMP – HT, VIPnet and Tele2 are set based on LRAIC+. Implementation of “pure LRIC”-based MTRs is foreseen from Jan. 1, 2015. HAKOM <a href="#">decision</a> of June 10, 2013 sets out the following glide path for reductions in MTRs applicable to termination of national traffic:				
	<b>MTR per minute (national traffic)</b>		<b>July 1, 2013</b>	<b>Jan. 1, 2014</b>	<b>Jan. 1, 2015</b>
	T-Mobile, VIPnet, Tele2	HRK	0.1933	0.1282	0.0630
		€cents	2.556	1.695	0.833
A separate glide path for reduction in MTRs applies to termination of international traffic:					
<b>MTR per minute (international traffic)</b>		<b>July 1, 2013</b>	<b>July 1, 2014</b>	<b>Jan. 1, 2015</b>	
T-Mobile, VIPnet, Tele2	HRK	0.45	0.32	0.0630	
	€cents	5.950	4.231	0.833	
Iceland	Glide path for MTRs applicable to all operators with SMP, i.e. 3 MNOs and 2 MVNOs - Síminn hf., Fjarskipti ehf (Vodafone), IMC Island hf., Nova hf., and Tal ehf. (IP-fjarskipti) was initially set out in PTA decision No. 32/2012 of November 1, 2012. This decision also provided for the implementation of fully symmetrical MTRs based on benchmarking against countries with “pure” LRIC from July 1, 2013.				
	On June 30, 2013 the Appellate Committee for Electronic Communications and Postal Affairs repealed the part of the PTA decision mandating the reduction in MTRs from July 1, 2013. On October 31, 2013 PTA <a href="#">confirmed</a> the MTRs valid for 2013 and postponed the reduction until Jan. 1, 2014:				
	<b>MTR per minute (all traffic)</b>		<b>Jan. 1, 2013</b>	<b>Jan. 1, 2014</b>	
	All MNOs	ISK	4	1.64	
€cents		2.54	1.04		
FYR Macedonia	AEC <a href="#">adopted</a> its decision on the third round analysis of the market for mobile voice call termination on May 30, 2012, setting MTRs up to Sep. 1, 2014. Glide paths were set for the period between June 1, 2012 and Aug. 31, 2013 based on the existing BU LRIC+ methodology; from Sep. 1, 2013 until Aug. 31, 2014 based on a revised BU LRIC+ methodology; and from Sep. 1, 2014 based on the newly developed pure BU LRIC methodology. The glide path allowed a temporary increase in the MTR of One from June 1, 2012, taking into consideration its reduced market share.				
	Following a request from One, AEC decided in August 2013 to postpone the implementation of the next step in the glide path and the introduction of symmetry by two months, i.e. until Nov. 1, 2013 instead of Sep. 1, 2013. The final date for implementation of pure LRIC at Sep. 1, 2014 remains unchanged.				
	<b>MTR per minute (national traffic)</b>		<b>June 2012</b>	<b>Nov. 1, 2013</b>	<b>Sep. 1, 2014</b>
	T-Mobile	3 MKD	1.2 MKD	0.9 MKD	
4.878 €cents		1.951 €cents	1.463 €cents		
ONE	4 MKD	1.2 MKD	0.9 MKD		
	6.504 €cents	1.951 €cents	1.463 €cents		
VIP	4 MKD	1.2 MKD	0.9 MKD		
	6.504 €cents	1.951 €cents	1.463 €cents		
Montenegro	MTRs, valid from Jan. 1 2013 for all MNOs, are at 4 €cents per minute.				
	The 2 <sup>nd</sup> round market analysis decision on M7/2007 adopted in Nov. 2013 sets out a new cost-oriented MTR of 2.2 €cent per minute, calculated based on FAC HCA, from March 1, 2014 (for national calls).				

## Enlargement countries monitoring report 4 – February 2014

Country	Glide path for reduction in MTRs																																											
Serbia	RATEL decision of August 20, 2013 sets out the glide path for reductions in MTRs (for national calls): <table border="1" data-bbox="459 259 1339 376"> <thead> <tr> <th colspan="2">MTR per minute (national traffic)</th> <th>Jan. 1, 2014</th> <th>Jan. 1, 2015</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Telekom Srbija (MTS), Telenor, Vip</td> <td>RSD</td> <td>3.95</td> <td>3.43</td> </tr> <tr> <td>€cents</td> <td>3.454</td> <td>3.00</td> </tr> </tbody> </table>					MTR per minute (national traffic)		Jan. 1, 2014	Jan. 1, 2015	Telekom Srbija (MTS), Telenor, Vip	RSD	3.95	3.43	€cents	3.454	3.00																												
MTR per minute (national traffic)		Jan. 1, 2014	Jan. 1, 2015																																									
Telekom Srbija (MTS), Telenor, Vip	RSD	3.95	3.43																																									
	€cents	3.454	3.00																																									
Turkey	ICTA does not regulate MTRs via announced glide path. In general MTRs are revised annually. Current tariffs, which are approved to be valid from July 1, 2013, are valid until the new tariffs are approved by ICTA.																																											
Albania	AKEP decisions for <a href="#">AMC</a> , <a href="#">Vodafone Albania</a> , <a href="#">Eagle Mobile</a> and <a href="#">Plus Communications</a> of July 4, 2012, approved the glide path until Sep. 2015 based on BU LRAIC model: <table border="1" data-bbox="416 600 1382 891"> <thead> <tr> <th colspan="2">MTR per minute (national traffic)</th> <th>Sep.1, 2012- Aug. 31, 2013</th> <th>Sep.1, 2013- Aug. 31, 2014</th> <th>Sep.1, 2014- Aug. 31, 2015</th> <th>Sep.1, 2015-</th> </tr> </thead> <tbody> <tr> <td rowspan="2">AMC, Vodafone</td> <td>ALL</td> <td>6.10</td> <td>4.57</td> <td>4.57</td> <td>4.57</td> </tr> <tr> <td>€cents</td> <td>4.361</td> <td>3.267</td> <td>3.267</td> <td>3.267</td> </tr> <tr> <td rowspan="2">Eagle Mobile</td> <td>ALL</td> <td>6.52</td> <td>4.57</td> <td>4.57</td> <td>4.57</td> </tr> <tr> <td>€cents</td> <td>4.661</td> <td>3.267</td> <td>3.267</td> <td>3.267</td> </tr> <tr> <td rowspan="2">Plus Communications</td> <td>ALL</td> <td>12.92</td> <td>8.85</td> <td>6.52</td> <td>4.57</td> </tr> <tr> <td>€cents</td> <td>9.236</td> <td>6.326</td> <td>4.661</td> <td>3.267</td> </tr> </tbody> </table> <p>On Jan. 16, 2014 AKEP <a href="#">published</a> for consultation a proposal for a new glide path for MTRs based on international benchmarking with countries that have implemented a pure LRIC methodology. It also envisages reaching fully symmetrical MTRs of ALL 1.48 (1.06 €cents) by Jan. 1, 2016.</p>					MTR per minute (national traffic)		Sep.1, 2012- Aug. 31, 2013	Sep.1, 2013- Aug. 31, 2014	Sep.1, 2014- Aug. 31, 2015	Sep.1, 2015-	AMC, Vodafone	ALL	6.10	4.57	4.57	4.57	€cents	4.361	3.267	3.267	3.267	Eagle Mobile	ALL	6.52	4.57	4.57	4.57	€cents	4.661	3.267	3.267	3.267	Plus Communications	ALL	12.92	8.85	6.52	4.57	€cents	9.236	6.326	4.661	3.267
MTR per minute (national traffic)		Sep.1, 2012- Aug. 31, 2013	Sep.1, 2013- Aug. 31, 2014	Sep.1, 2014- Aug. 31, 2015	Sep.1, 2015-																																							
AMC, Vodafone	ALL	6.10	4.57	4.57	4.57																																							
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Eagle Mobile	ALL	6.52	4.57	4.57	4.57																																							
	€cents	4.661	3.267	3.267	3.267																																							
Plus Communications	ALL	12.92	8.85	6.52	4.57																																							
	€cents	9.236	6.326	4.661	3.267																																							
Bosnia & Herzegovina	RAK decision of April 2013 sets out the following glide path for reductions in MTRs applicable to termination of national traffic (analysis of market 7, April 2013, p. 45): <table border="1" data-bbox="411 1070 1386 1227"> <thead> <tr> <th colspan="2">MTR per minute (national traffic)</th> <th>July 1, 2013</th> <th>Jan. 1, 2014</th> <th>July 1, 2014</th> <th>Jan. 1, 2015</th> <th>July 1, 2015</th> </tr> </thead> <tbody> <tr> <td rowspan="2">BH Telecom Telekom Srpske HT Mostar</td> <td>BAM</td> <td>0.144</td> <td>0.122</td> <td>0.104</td> <td>0.085</td> <td>0.070</td> </tr> <tr> <td>€cents</td> <td>7.363</td> <td>6.238</td> <td>5.317</td> <td>4.346</td> <td>3.579</td> </tr> </tbody> </table>					MTR per minute (national traffic)		July 1, 2013	Jan. 1, 2014	July 1, 2014	Jan. 1, 2015	July 1, 2015	BH Telecom Telekom Srpske HT Mostar	BAM	0.144	0.122	0.104	0.085	0.070	€cents	7.363	6.238	5.317	4.346	3.579																			
MTR per minute (national traffic)		July 1, 2013	Jan. 1, 2014	July 1, 2014	Jan. 1, 2015	July 1, 2015																																						
BH Telecom Telekom Srpske HT Mostar	BAM	0.144	0.122	0.104	0.085	0.070																																						
	€cents	7.363	6.238	5.317	4.346	3.579																																						
Kosovo*	Glide path for reductions in MTRs applicable to termination of national traffic for the two operators PTK and IPKO JSC was introduced based on ARKEP's Board decision No. 271: <table border="1" data-bbox="406 1328 1391 1451"> <thead> <tr> <th rowspan="2">MTR per minute (national traffic)</th> <th colspan="4">Prices in €cents</th> </tr> <tr> <th>Nov. 1, 2012</th> <th>July 1, 2013</th> <th>Jan. 1, 2014</th> <th>July 1, 2014</th> </tr> </thead> <tbody> <tr> <td>Vala, IPKO</td> <td>4.4</td> <td>3.6</td> <td>3.0</td> <td>2.3</td> </tr> </tbody> </table>					MTR per minute (national traffic)	Prices in €cents				Nov. 1, 2012	July 1, 2013	Jan. 1, 2014	July 1, 2014	Vala, IPKO	4.4	3.6	3.0	2.3																									
MTR per minute (national traffic)	Prices in €cents																																											
	Nov. 1, 2012	July 1, 2013	Jan. 1, 2014	July 1, 2014																																								
Vala, IPKO	4.4	3.6	3.0	2.3																																								

Traffic originating abroad has been explicitly excluded from the scope of regulated call termination markets (both fixed and mobile) in all monitored countries, with the exception of Iceland where same termination rates apply to national and international traffic, and Croatia where since July 1, 2013 mobile termination rates for international calls are regulated subject to a separate glide path and are set to reach symmetry with national MTRs by January 1, 2015.

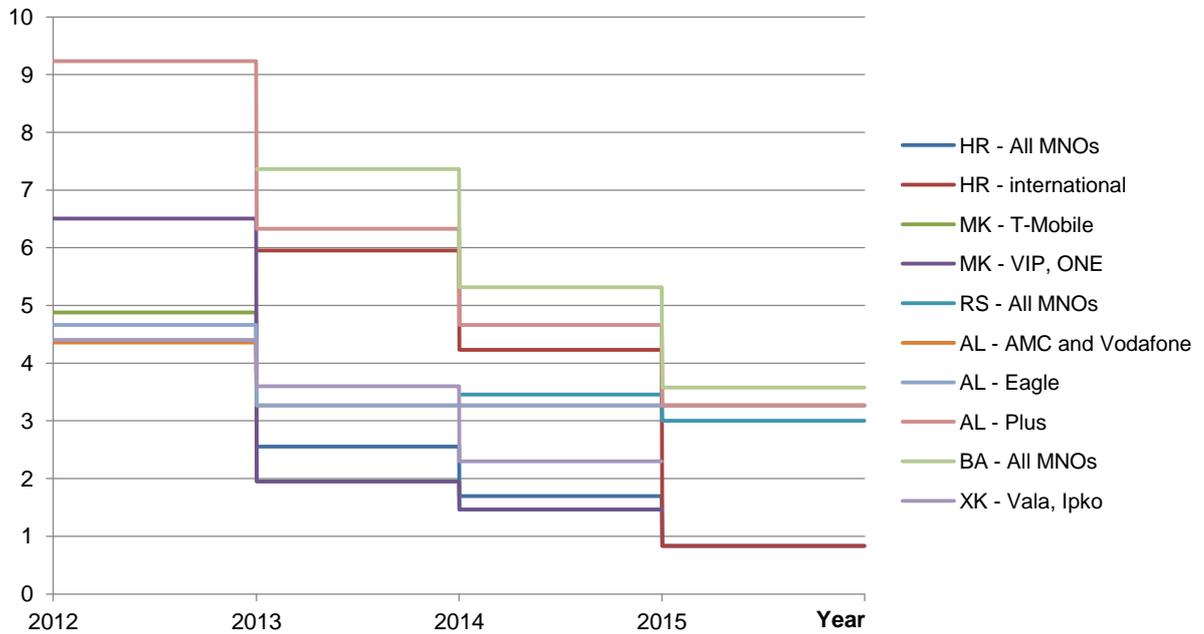


Figure P.7 – MTR glide paths (€cents per minute)

b) Mobile termination rates – actual level as of September 2013

BEREC report on fixed and mobile termination rates in the EU as of January 2013, the weighted average for EU stands at 1.90 €cents per minute<sup>21</sup>.

Figure P.8 illustrates the developments in mobile termination rates in the monitored countries between 2008 and September 2013. 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 Turkey, with the regulation on interconnection charges of September 27, 2011 mobile termination rates for calls originated abroad and terminated in Turkey have been excluded from the scope of tariff control regulation.

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.9.

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

<sup>21</sup> 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](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)

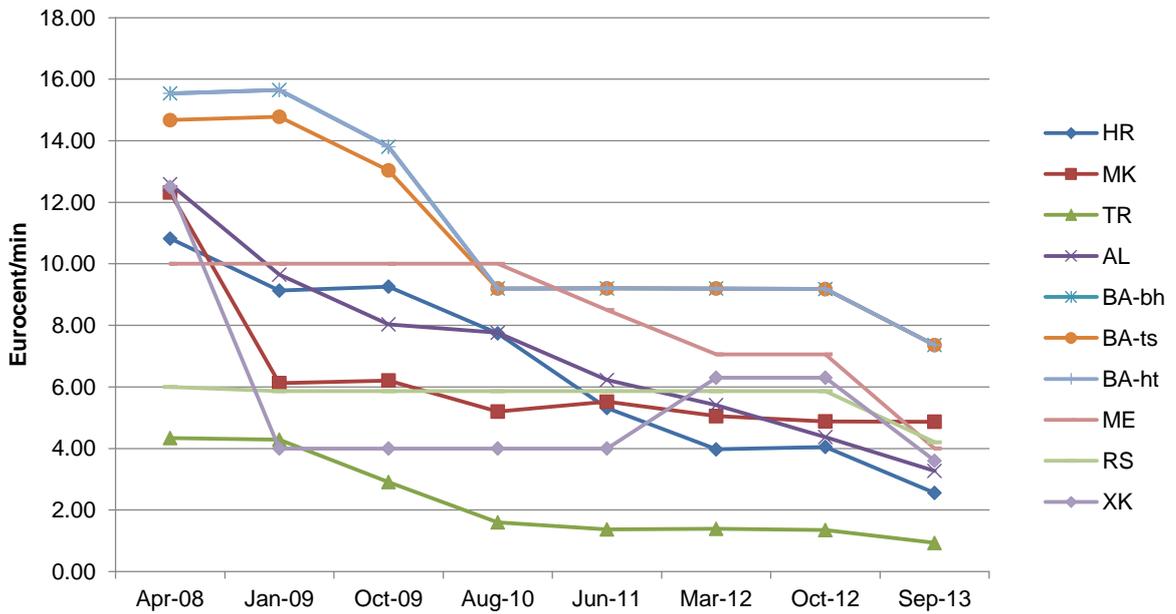


Figure P.8 – Fixed to mobile termination rates, peak time

Over the last few years, mobile termination rates have decreased in all countries. From October 2012, the most substantial MTR reductions were implemented in Kosovo (43%), Croatia (36%), Albania (25%), Turkey (20%) and Bosnia and Herzegovina (20%).

The figure below shows the mobile termination rates of all mobile operators in the monitored countries as of September 2013. With the only exception of Turkey, mobile termination rates of all operators are set at the level above the EU average.

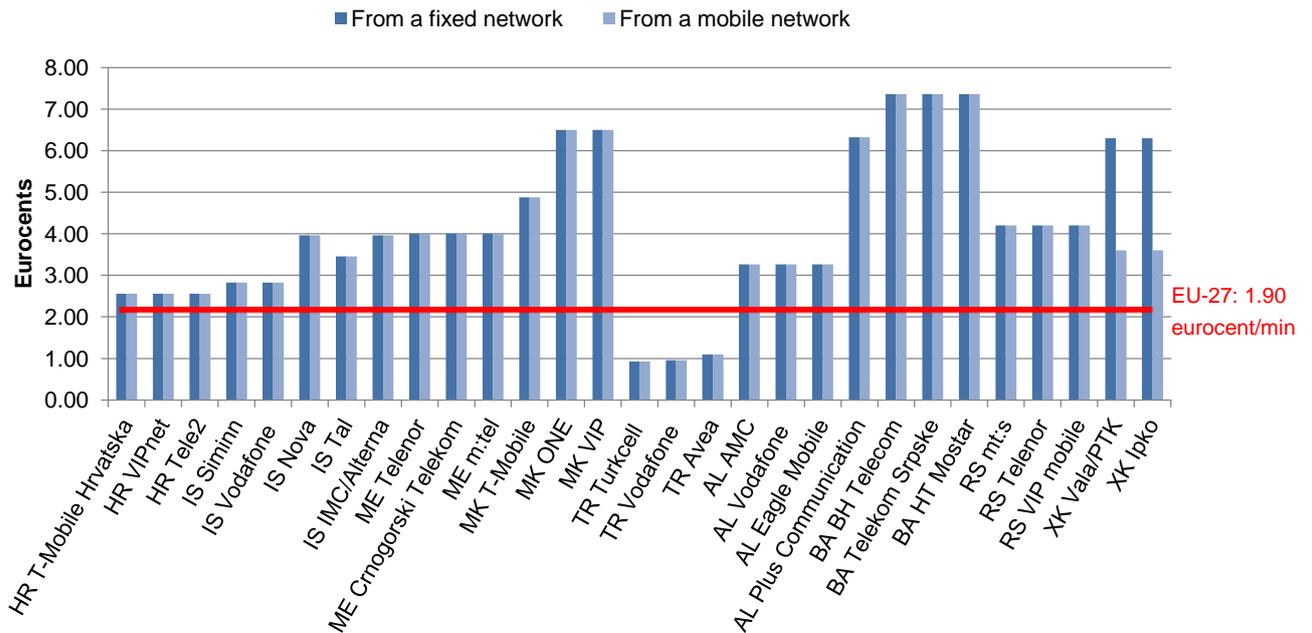


Figure P.9 – Mobile termination rates, peak time, Sep. 2013

### 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 TRA the Reference Unbundling Offer (RUO) for approval. The Authority 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.

The tables 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.<sup>22</sup> 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

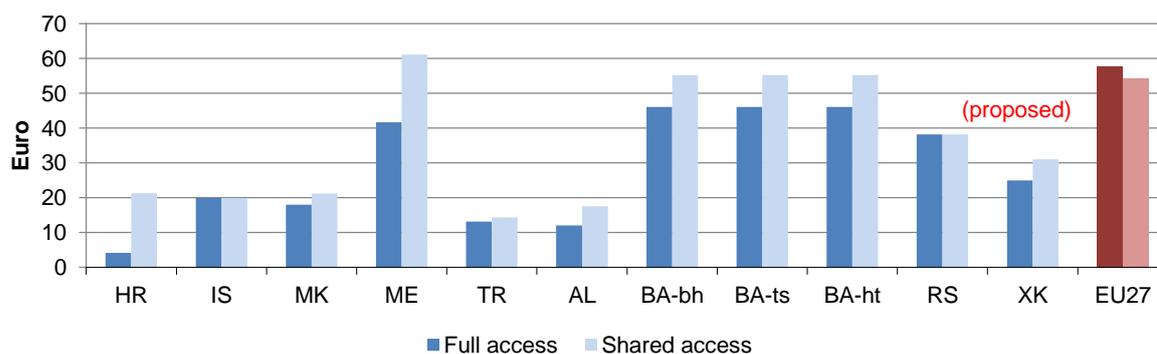


Figure P.10 – Connection prices for fully unbundled loop and shared access, Sep. 2013

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 the take-up of LLU.

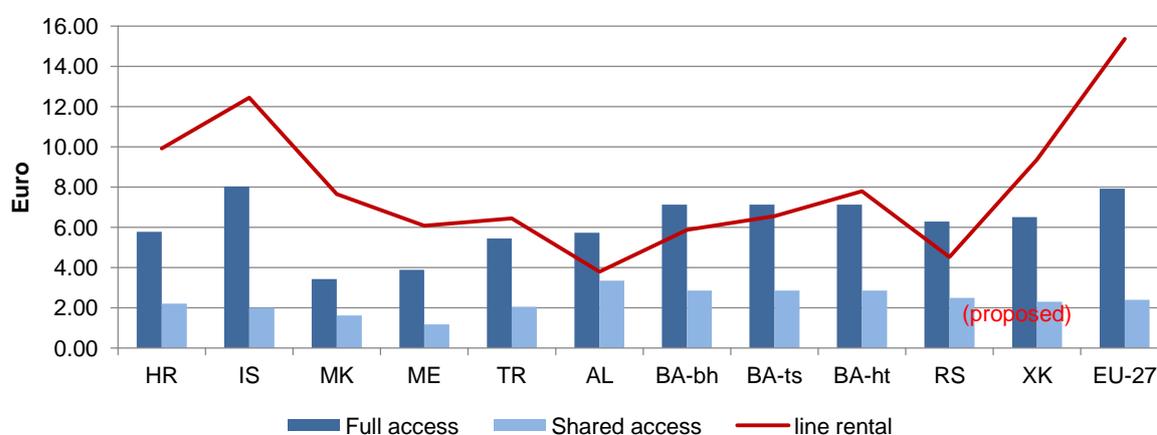


Figure P.11 – Monthly rental prices for fully unbundled loop and shared access, Sep. 2013<sup>23</sup>

<sup>22</sup> [http://ec.europa.eu/information\\_society/digital-agenda/scoreboard/docs/pillar/electronic\\_communications.pdf](http://ec.europa.eu/information_society/digital-agenda/scoreboard/docs/pillar/electronic_communications.pdf)

<sup>23</sup> 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 the new article 1(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 repealed several provisions in the law on electronic communications (case 139/2010) that granted law enforcement authorities the right to access retained traffic data as well as contained extensive requirements for electronic communications providers related to operation and maintenance of interception equipment.

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.

In June 2013 the court repealed several provisions on data retention in the Law on electronic communications, requiring that details (which authorities may access retained data and how

data retention must be conducted) have to be regulated by the law itself and must not be delegated to other laws or to secondary legislation.

Another case is still pending at the Constitutional Court of Serbia, regarding the provisions in the Criminal Procedure Code on obtaining listings, locations and other information about the citizen's telecommunications traffic.

## 2. Freedom of expression and information on the internet

Turkish Law no. 5651<sup>24</sup>, which was enacted on May 4, 2007, is the only law in the monitored countries, which foresees a mechanism to block access to certain websites.

The 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.<sup>25</sup>

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.

According to the European Commission's last progress<sup>26</sup> report, the 4th Judicial Reform Package improved the legal framework on freedom of expression, but problems remain, including "frequent website bans and the fact that freedom of expression and media freedom are in practice hampered by the approach taken by the audio-visual regulator and the judiciary".

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.<sup>27</sup>

The website [engelliweb.com](#) listed 33,095 blocked websites as of October 25, 2013, about 30% more than in March 2013 and 80% more than in June 2012. By January 30, 2014 the number of blocked websites had increased to 40,482.

According to statistics published by TCP, website blocks have been primarily imposed because of obscenity (74.82% of cases), sexual abuse of children (18.88%), prostitution

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<sup>24</sup> 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

<sup>25</sup> Organisation 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>.

<sup>26</sup> Turkey 2013 [Progress Report](#), page 13.

<sup>27</sup> <http://eekg.tib.gov.tr/>

(4.66%) and gambling (1.31%) and only in 0.33% of cases for the other reasons listed in the law.<sup>28</sup>

In 2011 ICTA adopted Principles and procedures concerning the safe internet service<sup>29</sup>, 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.

In February 2014 a new bill<sup>30</sup> was passed by the Turkish parliament proposing amendments to Law no. 5651 that would allow website blocking ahead of receiving a court order and also extend content filtering methods. It would be possible to block content at URL or IP address level, and not just by domain name, or by using specific keywords. ISPs would be also required to retain users' data records for up to two years and obliged to provide authorities with that information upon request and without notifying the user in question. The bill initially approved by parliament would enable authorities to obtain internet traffic data without a court order. However, the finally adopted version contains amendments that require authorities to seek a court order, except when there is the threat of cyber attack or viruses. The law has been widely criticised as a measure to increase internet censorship.

## R. Information society statistics

A Council Resolution<sup>31</sup> of 2003 and a Regulation<sup>32</sup> 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.<sup>33</sup> 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.<sup>34</sup>

### 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 Eurostat<sup>35</sup> 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 so far only some data, in particular on the year 2009, have been 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 2012.

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<sup>28</sup> Statistics of the Telecommunication Communication Presidency as of March 21, 2013, [published](#) at the online portal Güvenli Web

<sup>29</sup> See [http://www.btk.gov.tr/mevzuat/kurul\\_kararlari/dosyalar/2011%20DK-14-461.pdf](http://www.btk.gov.tr/mevzuat/kurul_kararlari/dosyalar/2011%20DK-14-461.pdf) (in Turkish and English).

<sup>30</sup> Law no. 6518, <http://www.tbmm.gov.tr/kanunlar/k6518.html>.

<sup>31</sup> Council Resolution of February 18, 2003 on the implementation of the eEurope 2005 Action Plan, 2003/C 48/02

<sup>32</sup> 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

<sup>33</sup> 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](http://epp.eurostat.ec.europa.eu/portal/page/portal/information_society/introduction)

<sup>34</sup> See Commission Regulations (EC) No 1099/2005, 1031/2006, 847/2007, 960/2008, 1023/2009, 821/2010, 937/2011, 1083/2012 and 859/2013.

<sup>35</sup> <http://epp.eurostat.ec.europa.eu/>

- Montenegro 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 are now scheduled for publication in early 2014.
- Bosnia & Herzegovina has announced that its statistics institutes will gather data based on Eurostat methodology, but this has been delayed.
- In Kosovo the new policy for the electronic communications sector (2013–2020) assigned to the Statistical Agency the task to collect information society statistics based on Eurostat methodology.

## 2. Selected statistical data

For many of the available statistical indicators, Croatia, Macedonia, Montenegro, Turkey and Serbia are below the EU-28 average but above Bulgaria and Romania. Iceland can be compared with Denmark and Sweden and is generally far above the EU-28 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-28 average.

Horizontal lines show the key performance targets of the Digital Agenda for Europe<sup>36</sup>.

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. Sharp increases from 2011 to 2012 were reported in Montenegro and in Serbia. In Turkey the internet usage remains below 50%.

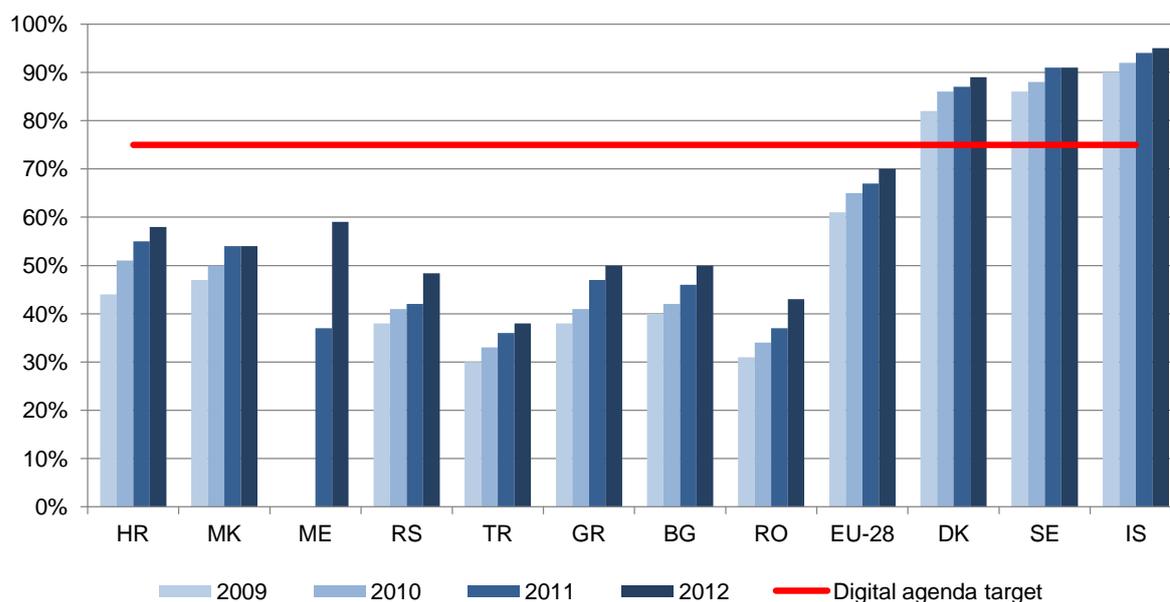


Figure R.1 – Individuals regularly using the internet (Eurostat/statistical offices)

<sup>36</sup> <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.

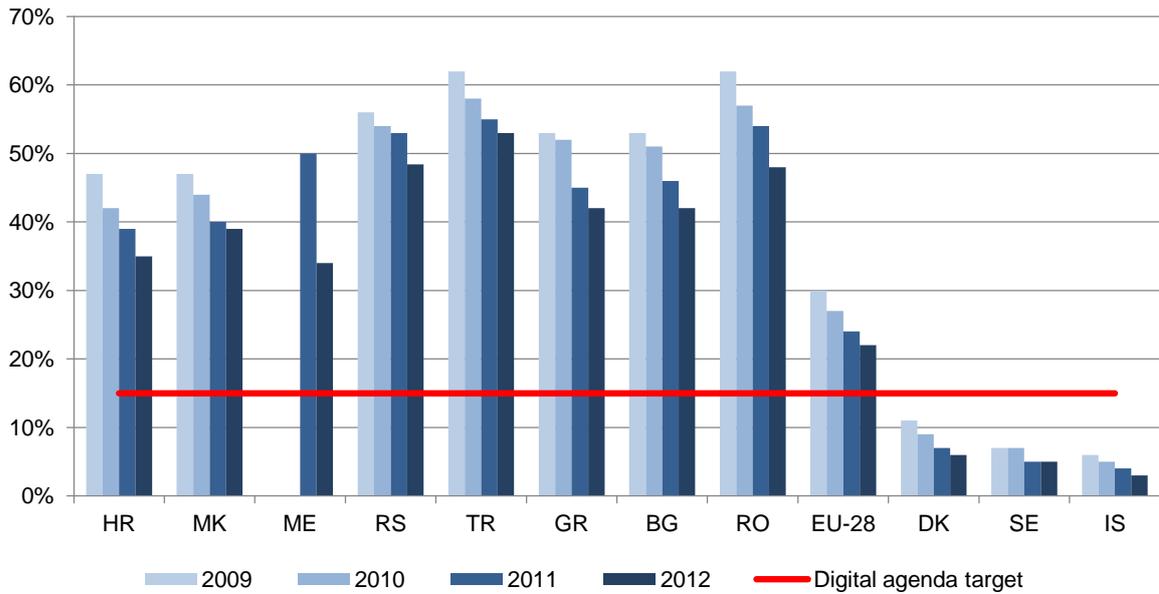


Figure R.2 – Individuals never having used the internet (Eurostat/statistical offices)

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.

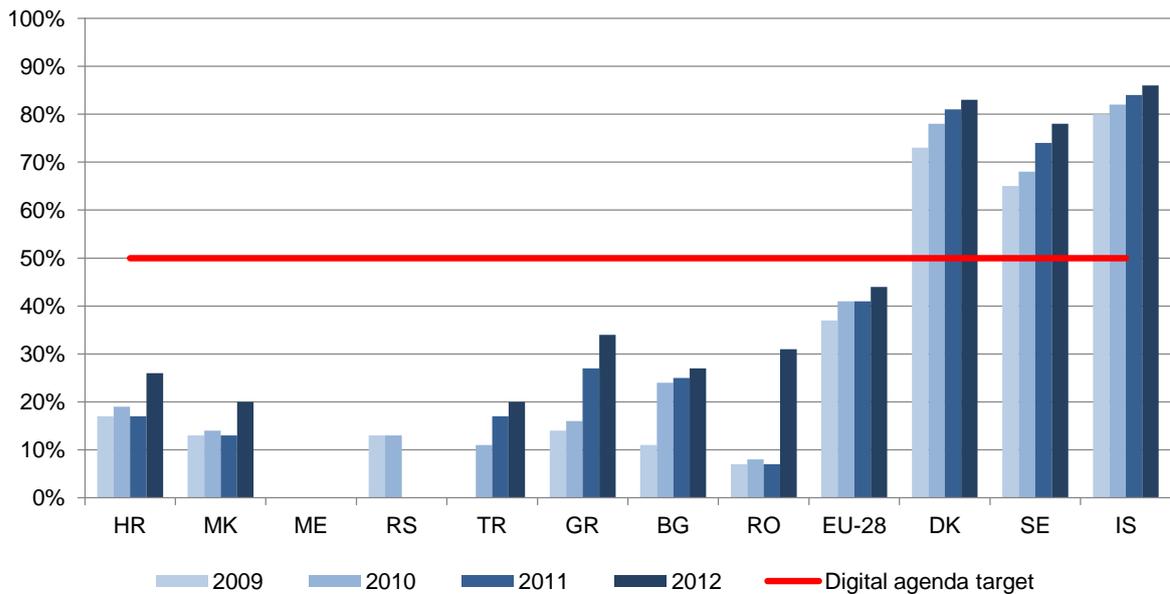


Figure R.3 – Individuals using the internet for interaction with public authorities (Eurostat/statistical offices)

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-28 average and now also above the target, but lower than its scores with regard to other indicators.

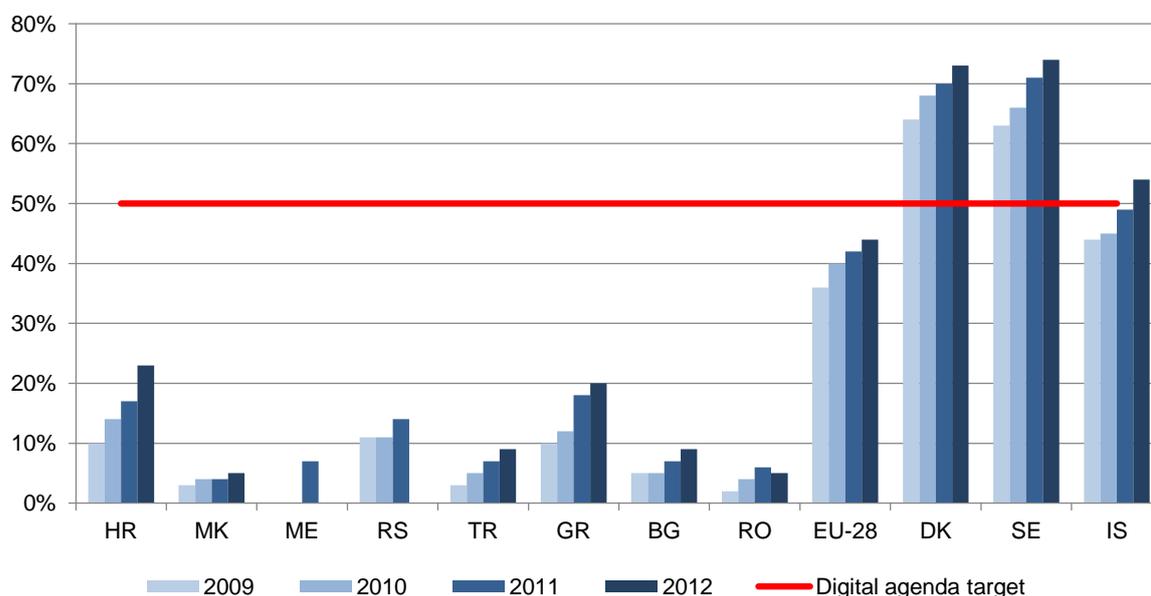


Figure R.4 – Individuals using the internet for ordering goods or services (Eurostat/statistical offices)

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 (in 2012).

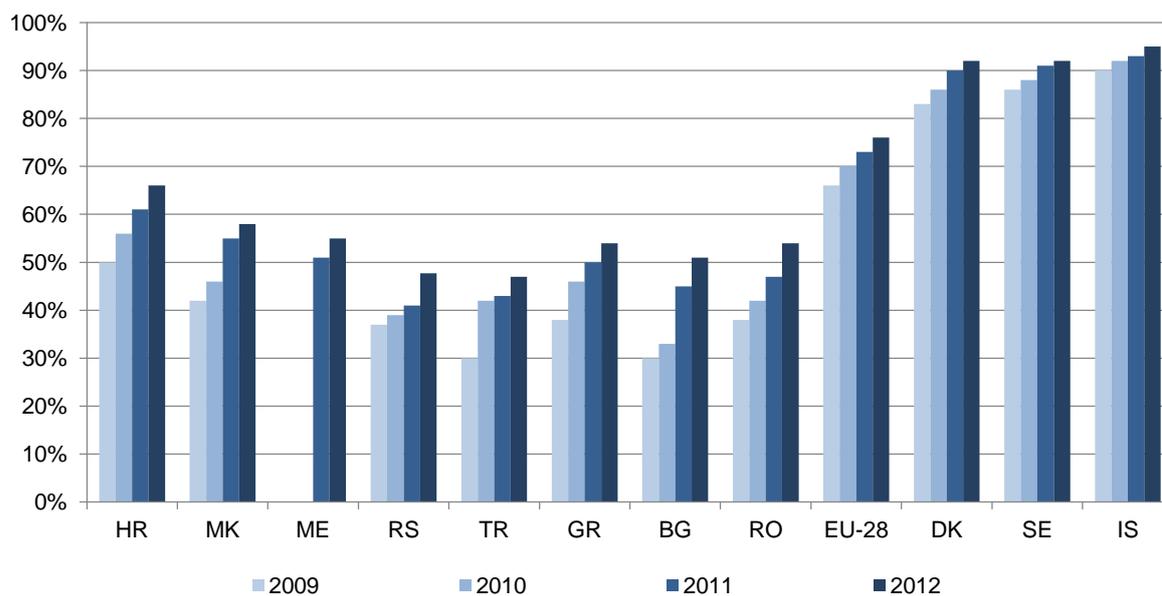


Figure R.5 – Households with internet access at home (Eurostat/statistical offices)

Looking at broadband access there is a slightly different picture in Serbia, where a significant number of households access internet using a narrowband connection (Serbia 2011: 10%). In all other countries the number of households with narrowband internet access is significantly below 10%. Bulgaria, Romania and now also Macedonia (2011/2012) show that the migration to broadband can make quick progress.

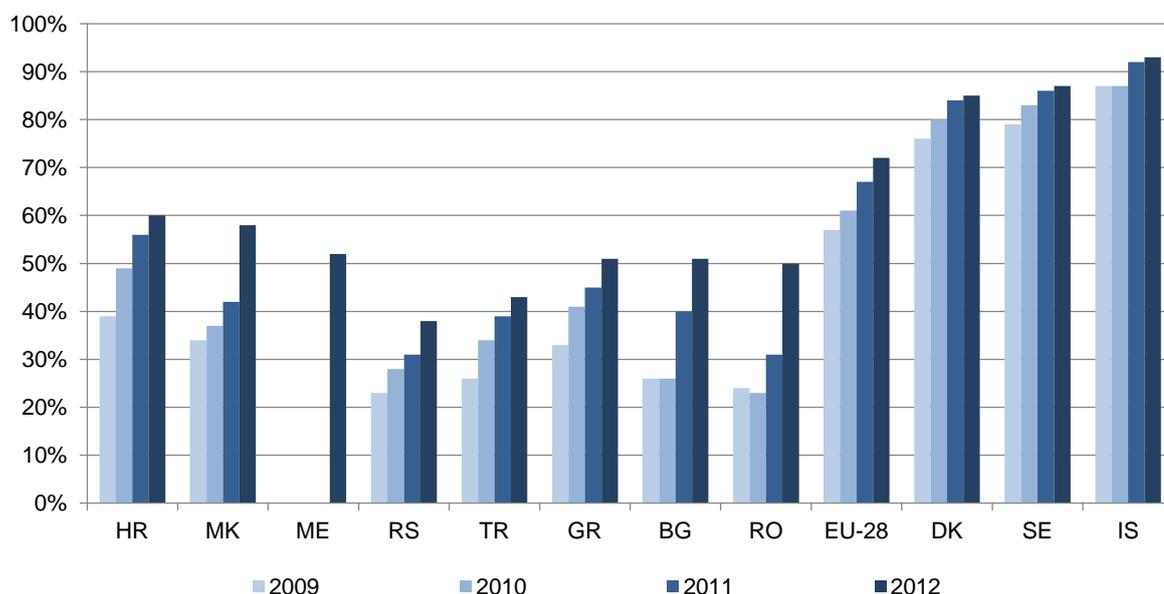


Figure R.6 – Households with broadband access (Eurostat/statistical offices)

In all monitored countries where data is available a broad majority of enterprises uses fixed broadband. Turkey reports a particularly high number (92%), above the EU-28 average.

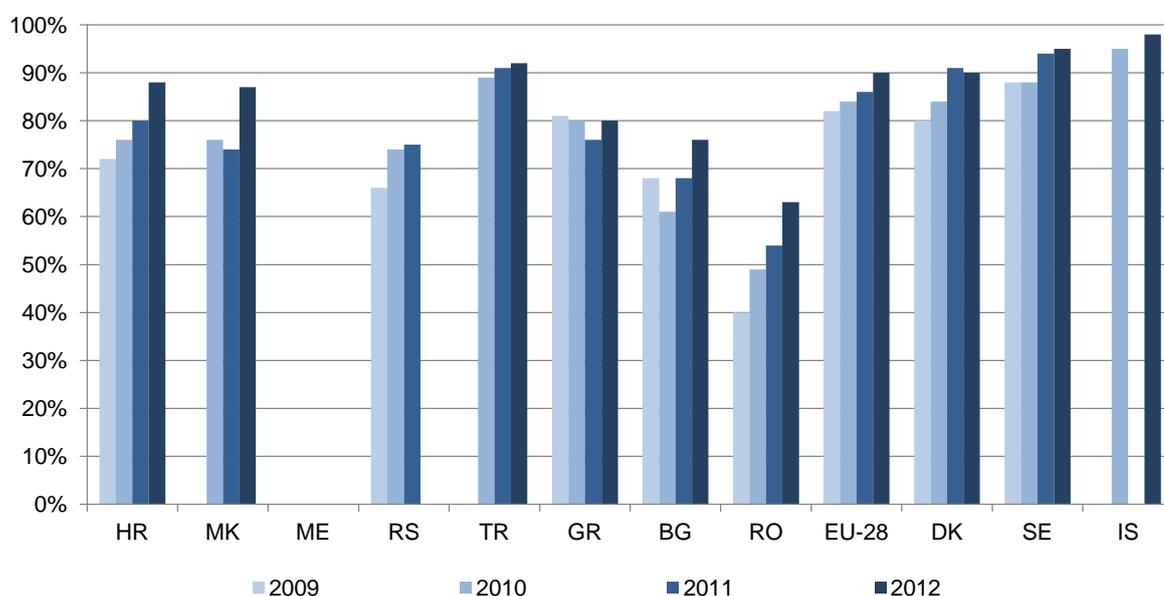


Figure R.7 – Enterprises with fixed broadband access (Eurostat/statistical offices)

## 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 decision<sup>37</sup> which echoed the Council of Europe Convention on Cybercrime and has recently been replaced by Directive 2013/40/EU on attacks against information systems.<sup>38</sup>

- The Commission has proposed a cyber security strategy<sup>39</sup> and a directive ‘concerning measures to ensure a high common level of network and information security across the Union’.<sup>40</sup>
- The European Network and Information Security Agency (ENISA) is established<sup>41</sup> as an institutionalised means of cooperation between member states.
- The Commission proposed<sup>42</sup> 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 a 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 role of competent national authorities 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 service supply. Security breaches must be notified to the NRA, which has to report annually to ENISA. The NRA may submit operators to a security audit.<sup>43</sup>

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 personal data breaches.

## 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 service supply.

All monitored countries have provisions in their primary laws (in Turkey in secondary legislation), which require operators to undertake the necessary network security measures.

However, several of those provisions had been drafted before the EU 2009 regulatory framework and are therefore less detailed. Croatia, Kosovo, Albania and Montenegro have adopted more recent and 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.

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<sup>37</sup> Council Framework Decision [2005/222/JHA](#) of February 24, 2005 on attacks against information systems.

<sup>38</sup> Directive [2013/40/EU](#) of the European Parliament and the Council of August 12, 2013 on attacks against information systems and replacing Council Framework Decision 2005/222/JHA.

<sup>39</sup> 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.

<sup>40</sup> 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.

<sup>41</sup> ENISA has been established by Regulation (EC) [460/2004](#). Its mandate has been extended by Regulation (EC) [1007/2008](#) and another time by Regulation (EC) [580/2011](#). Regulation (EC) [526/2013](#) gave ENISA a new mandate from 2013 to 2020.

<sup>42</sup> Commission Communication of March 30, 2009, [COM\(2009\)149 final](#), followed by a Communication on March 31, 2011, [COM\(2011\) 163 final](#).

<sup>43</sup> 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>

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 networks<sup>44</sup>, the functionality of public communications networks<sup>45</sup> and the protection, functionality and quality of IP communications services<sup>46</sup>. 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 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. The new law in Montenegro allows the NRA to perform such audits.

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.<sup>47</sup>

The ENISA inventory<sup>48</sup> of CERTs in Europe lists CERTS in Albania (ALCIRT), Croatia (CARNET CERT, CERT ZSIS, HR-CERT), Iceland (CERT.IS, RHnet CERT), Montenegro (CIRT.ME), Serbia (AMRES-CSIRT) and Turkey (TR-CERT, Ulak-CSIRT).

Bosnia & Herzegovina, Kosovo and Macedonia have reported plans to establish a CERT.

## 2. Security of personal data processing

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*".

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<sup>44</sup> <http://www.pfs.is/file.aspx?id=1871>

<sup>45</sup> <http://www.pfs.is/file.aspx?id=1872>

<sup>46</sup> <http://www.pfs.is/file.aspx?id=1873>

<sup>47</sup> Croatia: CARNET [www.cert.hr](http://www.cert.hr) and Turkey: [www.bilgiguvenligi.gov.tr](http://www.bilgiguvenligi.gov.tr).

<sup>48</sup> <http://www.enisa.europa.eu/act/cert/background/inv>

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, Bosnia & Herzegovina and Kosovo the data protection authority is responsible for supervision. In Croatia, Montenegro (under the new law of 2013) 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. Only Croatia, Albania and Montenegro have already an exact transposition of the new provisions, but some other countries have 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.
- 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 Bosnia & Herzegovina, the NRA or the data protection authority have powers to audit the security measures.

### 3. Cybercrime

This report analysed whether the monitored 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.

Kosovo now has several overlapping provisions in two laws, the Law on prevention and fight of the cyber crime (2010) and the Law on information society services (2012).

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. A cross in the table indicates that we could not identify such a provision.

	HR	IS	MK	ME	RS	TR	AL	BA	XK
<b>Illegal access</b>	✓	✓	✓	✓	✓	✓	✓	✗	✓
<b>Illegal interception</b>	✓	✓	✓	✓	✓	✓	✓	✗	✓
<b>Data interference</b>	✓	✓	✓	✓	✓	✓	✓	✗	✓
<b>System interference</b>	✓	✗	✓	✓	✓	✓	✓	✗	✓
<b>Computer-related forgery</b>	✓	✓	✓	✗	✗	✓	✓	✗	✓
<b>Computer-related fraud</b>	✓	✓	✓	✓	✓	✓	✓	✗	✓
<b>Offences related to child pornography</b>	✓	✓	✓	✓	✓	✓	✓	✗	✓
<b>Offences related to infringements of copyright and related rights</b>	✓	✓	✓	✓	✓	✓	✓	✗	✓
✓ 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 so far. 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. 5651<sup>49</sup> 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).

The table below shows the alignment of national legislation with the mentioned provisions of the Electronic Commerce Directive:

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

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 was 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 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.

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<sup>49</sup> 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

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.

### 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, no newer data available).
- 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. 3,001 certificates have been issued so far (August 2013).
- Serbia has four providers, which have issued about 22,600 qualified certificates.
- In Turkey, there are five certification-service providers that issue qualified certificates. The number of qualified certificates is growing fast (904,000 in May 2013, about three times as much as at the beginning of 2011), but it is still only about 1% of the population.
- Albania now has two certification service-providers issuing qualified certificates, one of them AKSHI (providing certificates for the public administration).
- 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
<b>Legal recognition requirements on electronic contracts and electronic signatures transposed</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Prior authorisation not required before market access</b>	✓	✓	*	✓	*	*	✓	*	✓
<b>Supervision system established</b>	✓	✓	✓	✓	✓	✓	✓	✗	✗
<b>Voluntary accreditation scheme established</b>	✓	–	–	–	–	–	–	–	–
<b>Number of certification-service providers issuing qualified certificates</b>	1	1	2	1	4	5	2	–	–
✓ = 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. In Montenegro the new Law on electronic communications (2013) does not have a misdemeanour provision to enforce the provisions on confidentiality of communications.

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
<b>Illegal interception by operators and their staff</b>	✓	✓	✓	*	✓	✓	✓	✗	✓
<b>Illegal interception by third parties</b>	✓	✓	*	*	✓	✓	✓	✗	✓
<b>✓ = legal provisions exist, * = legal provision insufficient, ✗ = no legal provision</b>									

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. The draft for the new law on electronic communications recently published for consultation, however, contains an explicit requirement to erase or to make anonymous traffic data as soon as it is no longer needed for communication purposes, for billing and interconnection payments, marketing of the operator's own services subject to prior subscribers' consent, or for lawful interception and data retention.

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. The data protection law in Montenegro allows free transfer of personal data to EU and EEA countries, but does not transpose the EU rules for data transfer into other countries with adequate level of protection.
- This study also examined whether additional rules in the electronic communications laws prevent operators from transferring traffic data to EU countries, even where 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. The new law on electronic communications maintains that traffic data may not be stored outside of the country.

In Turkey a new bylaw foreseeing this restriction was adopted in July 2012. The bylaw was amended before it came into force and the relevant provision was moved from article 9 to article 4. The provision still forbids transferring personal data abroad, but according to the last amendment it only comes into force on January 1, 2014, about a year later than originally foreseen.

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 of 2012 is not aligned with the EU rules.

	HR	IS	MK	ME	RS	TR	AL	BA	XK
<b>Traffic data must be deleted as soon as possible, except if needed for billing, or for data retention?</b>	✓	✓	✗	✓	✓	✗	✓	✗	✓
<b>Informed consent required before traffic data may be used for marketing?</b>	✓	✓	✓	✓	✓	✓	✓	✗	✓
<b>No regulatory burdens to transfer traffic data into the EU (e.g. for billing)</b>	✓	✓	✗	✗	✓	✗	✓	✓	✓
<b>Informed consent required before location data may be used? Possibility to refuse temporarily, even if consent was given before?</b>	✓	✗	✓	✓	✓	✓	✓	✗	✓
✓ = transposed, ✗ = not transposed, – see comment above									

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

In Macedonia the legal basis for lawful interception is defined by provisions in the Law on electronic communications, the Law on interception of communications and the Criminal procedure code. In June 2010 the Law on electronic communications was amended to introduce extensive obligations for all providers of public electronic communications networks and services related to installation, maintenance and operation of interception equipment at their own expense. These detailed technical requirements were repealed by a Constitutional Court's ruling of December 15, 2010, which however maintained the legal basis for lawful interception set out in article 115-a of the Law on electronic communications.

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.

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), 48 hours (Macedonia) or within two working days (Albania) on the legitimacy of the interception.

All countries have rules in their criminal procedure codes that limit 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
<b>Legal framework exists</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Court order required</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Interception is limited to serious crimes</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓ = foreseen in legal framework, ✗ = not foreseen in legal framework									

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.

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
<b>Legal framework for lawful interception for national security/public security</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Legal framework for lawful interception for defence/military purposes</b>	✓	–	✓	–	✓	–	✓	–	–
<b>Court order required</b>	✓	✓	✓	✓	✓	✓	✓*	✓	✓
<b>Intercepted persons must be informed</b>	✗	✓	✓	✗	✗	✗	✗	✓	✗
<b>Intercepted persons can appeal</b>	✗	✗	✓	✗	✓	✗	✗	✓	✓
✓ = 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, Germany and the Czech Republic repealed the national implementation of

the directive.<sup>50</sup> On February 10, 2009 the European Court of Justice dismissed<sup>51</sup> an action for annulment of the directive brought by Ireland, but further lawsuits are pending.<sup>52</sup> The European Commission is currently reviewing the directive.

All monitored countries have addressed data retention in some form in their legislation. Kosovo has a provision on data retention in the new Law on electronic communications. Albania amended in 2012 several provisions in the Law on electronic communications, including the article on data retention. Turkey adopted a bylaw, which came into force on July 24, 2013. Additionally, in February 2014 a new law was adopted by the Turkish parliament introducing amendments to the Law no. 5651 that among other things would oblige both web hosting companies and ISPs to keep records of all the internet activities of all users for up to two years.<sup>53</sup>

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

- In Macedonia the constitutional court repealed in December 2010 the provisions which grant public authorities access to retained data. Based on the repealed provisions operators would be required to establish a permanent and direct access to their networks for the law enforcement authorities and enable direct data retrieval by the authorities. Currently operators are still required to retain traffic data for a period of 24 months, but there are no provisions that would specify which authorities and under which conditions may request access to the retained data.
- In Serbia the constitutional court repealed on April 19, 2012 provisions in the Law of the Military Security and Intelligence Agency and on June 13, 2013 several provisions in the Law on electronic communications. The repealed provisions in particular contained an obligation for operators to provide access to the retained data on request of the authorised bodies and subject to conditions and procedures further defined in other laws and administrative acts. Draft amendments to the Law on electronic communications published for consultation on November 29, 2013 include a proposal to replace the repealed provisions with an explicit requirement that access to the retained data can only be provided on a basis of a court order. The draft also clarifies that only technical conditions for data retention can be further defined in 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 chapter U.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

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<sup>50</sup> Romanian Constitutional Court, October 9, 2009, [decision no. 1258\(1\)](#); German Federal Constitutional Court, March 2, 2010, [case 1 BvR 256/08](#); Czech Constitutional Court, March 22, 2011, [case Pl. ÚS 24/10 \(94/2011 Coll\)](#)

<sup>51</sup> ECJ February 10, 2009, case C-301/06 Ireland v Parliament and Council

<sup>52</sup> 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.

<sup>53</sup> Law no. 6518, <http://www.tbmm.gov.tr/kanunlar/k6518.html>.

Intelligence-Security Agency. The new provisions in Albania and Kosovo simply refer to the criminal procedure code and the authorities mentioned therein. The new law in Montenegro refers to criminal offences, defence, national security and search and rescue.

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

- The law in Montenegro does not specify the exact duration, but refers to a period of six months to two years. The same unclear provision already existed in the previous law and has been maintained in the new law of 2013.
- 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.
- Most countries oblige operators to retain traffic data for both telephony and internet access. In Macedonia the exact types of data to be retained is not clearly specified.

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

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 (with the exception of the .eu domain) is 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.

All monitored countries have introduced competition between registrars over the last years.

Croatia allows competition between registrars since 2010. In Albania, AKEP has upgraded its technical systems and supports competition between registrars since 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. Macedonia was the last country in the region without competition between registrars, but has now started the process of accreditation of registrars to introduce competition.

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 August to October 2013 (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).

Enlargement countries monitoring report 4 – February 2014

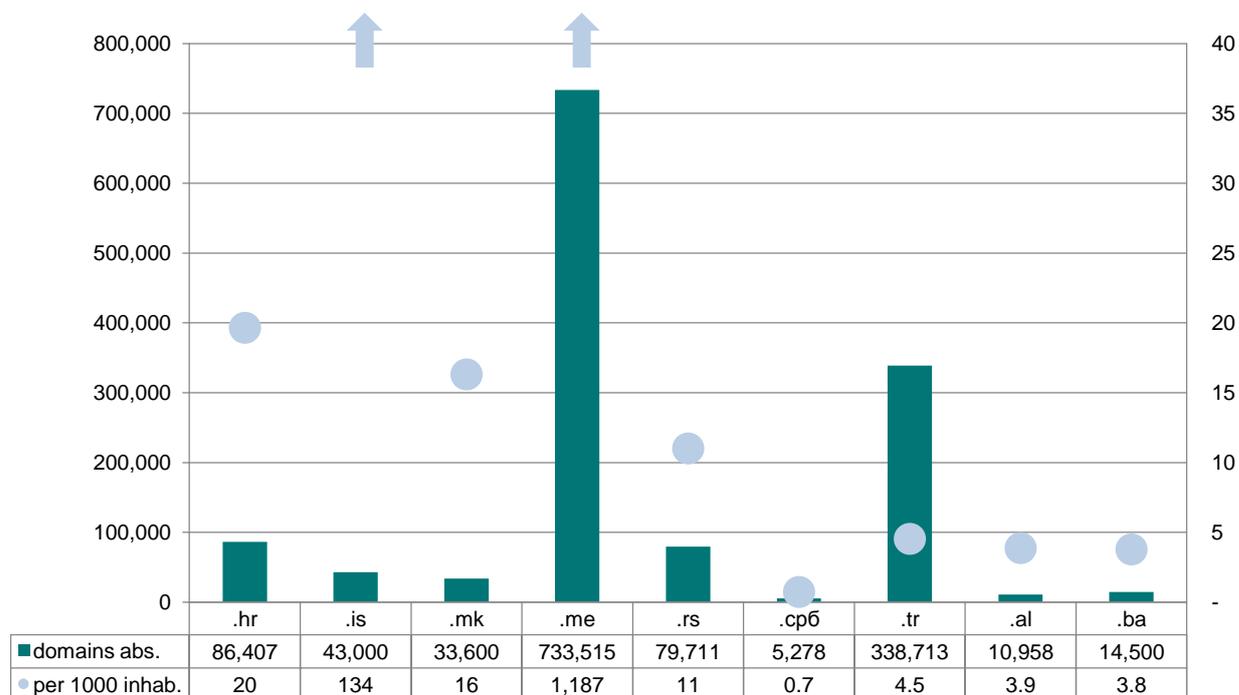


Figure W.1 – Domain names, absolute and per 1000 inhabitants

The .me top level domain is highly attractive internationally. Montenegro reported 733,515 domain names by September 2013, 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 4 to 20 domain names per 1000 inhabitants.

Iceland has also a very high number of domain names per inhabitants, more than six 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. 5,278 cpб domains were registered by August 15, 2013.

## VI. COUNTRY PROFILES

### A. Croatia

#### 1. Legislative framework

Croatia became the 28<sup>th</sup> EU member state on July 1, 2013. It was the first among the monitored countries to implement the EU 2009 regulatory framework for electronic communications, in accordance with its accession commitments.

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). In 2014 the scope of HAKOM's responsibilities will be extended to cover railway infrastructure.

NRA	NRA appeals	Government	Other	State ownership
<a href="#">Croatian Post and Electronic Communications Agency (HAKOM)</a>	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	<a href="#">Croatian Competition Agency</a> (since 1997) <a href="#">Agency for Electronic Media</a> (since 2007)	The state sold 51% of its stakes in the fixed incumbent Hrvatski Telekom (HT) 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: Hrvatski Telekom, VIPnet and Tele2, each having spectrum assignments in the 900 MHz, the 1800 MHz and the 2 GHz bands. Since 2009 the mobile licences are technology neutral and the frequency plan allows the use of UMTS and LTE services in the 900 MHz and the 1800 MHz 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 following two subsequent tender procedures. In October 2012 two blocks of 2x10 MHz were awarded to Hrvatski Telekom and VIPnet, while a third spectrum block of 2x10 MHz remained unassigned. In November 2013, the same two operators won the two remaining blocks of 2x5 MHz.

Numerous regional licences for wireless broadband access either expired or were returned to the regulator and a single national licence for broadband wireless access in the 3.5 GHz was issued in 2012.

800 MHz	900 MHz	1800 MHz	2 GHz	3.5 GHz	3G/4G in 900/1800?
2 licences 2012, 2013	3 licences 1995, 1998, 2007	3 licences 2004, 2007, 2011	3 licences 2004	1 national licence 2012	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.

In 2013 the regulator has completed its work on 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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

## 6. Market structure

The incumbent HT remains the main provider of fixed services. Protracted recession, declining voice revenue, further market consolidation and increasing demand for bundled services had a significant negative impact on the smaller Croatian alternative operators. The market share of alternative operators in fixed voice telephony fell to 31.5% in 2012 from the peak of 38.6% reported in 2011. However, in the provision of fixed broadband services, the market share of alternative operators increased from 31% in 2011 to 39% in 2012.

The market shares of the three mobile network operators remained relatively stable. In 2012 the subscription-based market shares of HT, VIPnet and Tele2 were 47%, 39% and 14%, respectively. Several reseller-type MVNOs were launched by supermarket chains based on commercial agreements with mobile operators, but so far they have not had a significant impact on the market.

	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	37%	113%	20%	7.4%	3.6% (2011)

## 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 to carry out the new round of market analyses that following the EU accession, it would be required to notify to the European Commission, BEREC and other NRAs and to ensure consistent implementation of the EU regulatory framework.

Other regulatory priorities include implementation of the margin squeeze test methodology and development of the integrated infrastructure registry as an important tool in reducing the network deployment costs.

## 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. Furthermore, following the government elections of April 2013, Iceland took a decision to suspend the EU accession talks.

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”.

NRA	NRA appeals	Government	Other	State ownership
<a href="#">Post and Telecom Administration of Iceland</a> (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.	<a href="#">Ministry of the Interior</a> is responsible for policy making in electronic communications and information society sectors	<a href="#">Consumer Agency</a> <a href="#">Competition Authority</a> (ICA)	The incumbent operator 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 the 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) and 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 active 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. Since 2008, the use of UMTS technology is allowed in the 900 MHz and the 1800 MHz bands, whereas LTE in the 1800 MHz is allowed following a combined auction of 800 MHz and 1800 MHz spectrum in March 2013.

Analogue switch-off was completed in January 2012 and the auction for released spectrum in the 800 MHz band, jointly with available spectrum in the 1800 MHz band, was held 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 implemented in 2012. 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

Following the privatisation of the incumbent network operator, 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, has been further enforced in the recent settlement between the Icelandic NCA and Skipti group aimed at ensuring non-discrimination and equivalence of access to wholesale inputs sold by Míla.

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 Síminn, Fjarskipti (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%. In November 2013, Fjarskipti and Nova announced plans to enter into a network sharing agreement to operate a joint mobile network under a newly established common infrastructure company, equally owned by the two operators. The agreement remains subject to approval by the NCA and the NRA.<sup>54</sup>

	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%	110%	35%	15%	1.61% (2011)

## 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 has not been completed, for instance as regards the financial independence of the regulator and its enforcement powers.

Among main priorities for PTA is completing its second round of market analysis of wholesale broadband access and wholesale physical infrastructure access markets and effective implementation of regulatory obligations.

<sup>54</sup> <http://blogg.nova.is/?cat=b0ee36e0-77fd-4de0-a111-460f87db9b0a>

## 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 for electronic communications already in 2005.

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.

A new Law on electronic communications based on the EU 2009 regulatory framework for electronic communications was published for consultation in November 2013 and adopted by parliament on February 20, 2014.<sup>55</sup>

A new Media Law and a new Audio and Audiovisual Law aimed at transposing the Audiovisual Media Service Directive were adopted by parliament at the end of 2013. The new legislation, however, has been criticised by media stakeholders as potentially restricting media freedom and also raising concerns over the independence of the media regulator.

EU 2003 regulatory framework	EU 2009 regulatory framework	Electronic commerce law	Electronic signature law	Cybercrime legislation	E-government legislation
2005	2014	2007	2001	✓	2001, 2009

### 2. Institutional framework

The Agency for Electronic Communications (AEC) 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 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
<a href="#">Agency for Electronic Communications (AEC)</a>	Appeals against regulatory decisions can be brought before the Administrative Court.	<a href="#">Ministry of Information Society and Administration</a> (since 2011)	<a href="#">Commission for Protection of Competition</a> (since 2005) <a href="#">Broadcasting Council</a> (since 1997)	In 2000 the state sold 51% of its shares in the fixed incumbent Makedonski Telekom. Currently, government controls 34.81% plus one golden share.

### 3. Market access conditions

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

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

<sup>55</sup> <http://www.sobranie.mk/ext/materialdetails.aspx?Id=57f011c0-b8a7-45aa-8c14-2d54f1c9f397>

#### 4. Spectrum assignments

Macedonia has three mobile network operators. As a result of several spectrum award procedures, Makedonski Telekom and ONE have spectrum in the 900 MHz, 1800 MHz and 2 GHz bands, while the third-entrant VIP in the 900 MHz and 1800 MHz bands. The frequency plan was first amended in 2009 to allow UMTS in the 900 and 1800 MHz bands, and a further amendment to allow LTE was adopted in 2013.

Analogue switch-off was finalised on June 1, 2013. The entire digital dividend spectrum in the 800 MHz band and the remaining blocks in the 1800 MHz were awarded to the three existing mobile operators in August 2013. Each of the three operators obtained a 2x10 MHz block in the 800 MHz band and a 2x15 MHz block in 1800 MHz band.

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.

800 MHz	900 MHz	1800 MHz	2 GHz	3.5 GHz	3G/4G in 900/1800?
3 licences 2013	3 licences 2001, 2001, 2007	6 licences (3 licensees) 2007/2012/2013, 2009/2013, 2013	2 licences Feb. & Dec. 2008	6 regional licences (1 licensee)	3G/4G 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	-
2013	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

#### 6. Market structure

Makedonski Telekom is the incumbent provider of fixed voice telephony and broadband services and has a fixed telephony market share of about 70% (by revenue and traffic minutes). There is significant competition in fixed broadband, in particular from cable operators. Alternative fixed operators provide about 45% of the fixed broadband connections and collect about 50% of the revenue.

The mobile subsidiary of the incumbent operator, T-Mobile, controls about 48% market share, whereas the third mobile entrant, VIP with 28% market share has overtaken the second mobile operator ONE with 24% (by subscriptions). 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	29%	49%	0.1%	-	7.8%
2012	20%	109%	15%	0.9%	5.1% (2011)

## 7. Outlook

The key priority for the policy making and regulatory bodies in Macedonia, following the adoption of the new Law on electronic communications, is to complete the implementing secondary legislation in order to achieve the full alignment with the EU *acquis*.

AEC has carried out two rounds of market analyses for most of the regulated electronic communications markets. In particular, it addressed in 2013 the competitive conditions and regulatory obligations imposed in the fixed interconnection markets in the context of the migration to all-IP network recently completed by the incumbent operator. In 2014, AEC plans to reassess the retail fixed telephony markets covering access and call services, wholesale broadband access and physical network infrastructure access, as well as wholesale broadcasting transmission services.

The refarming of the 900 MHz and 1800 MHz spectrum along with the successfully completed tender for the digital dividend spectrum is expected to boost the development of relatively immature mobile broadband market.

## D. Montenegro

### 1. Legislative framework

Montenegro has largely harmonised its national legislation with the EU *acquis*. It was among the first of the monitored countries to align its legislation with the Audiovisual Media Service Directive in 2010. In August 2013 it adopted a new Law on electronic communications based on 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	2013	2004	2003	✓	2008

### 2. Institutional framework

The Agency for Electronic Communications and Postal Services (EKIP) is the national regulatory authority. Established in 2001 as a regulatory authority for the telecommunications, it took over regulation of the postal sector in 2005, and in 2008 it became the sole authority responsible for spectrum assignments in telecom and media sectors.

The Ministry for Information Society and Telecommunications is responsible for sector policies and the primary legislation. It also plays the key role in adopting secondary acts. Until recently, the ministry also had the powers to review EKIP's decisions as the first appeal instance, but following the adoption of the new law in August 2013, EKIP's decisions are final in the administrative procedure and can only be appealed to the court.

NRA	NRA appeals	Government	Other	State ownership
<a href="#">Agency for Electronic Communications and Postal Services</a> (EKIP) is legally independent of operators.	Starting from August 2013, appeals against regulatory decisions can be brought before the Supreme Administrative Court.	<a href="#">Ministry for Information Society and Telecommunications</a>	<a href="#">Directorate for Protection of Competition</a> (since 2007) <a href="#">Broadcasting Agency</a> (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.

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

Montenegro has awarded several licences for fixed wireless access.

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	6 licences 2010, 2012 (2), 2013 (3)	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. Implementation of LRIC-based cost accounting methodologies is envisaged during 2014-2015.

	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 over 97% market share in provision of fixed voice telephony and 83% in provision of fixed broadband.

A competitive environment has emerged in mobile networks with three operators having comparable subscription-based 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	27%	160%	14.1%	11.7%	7.9% (2011)

## 7. Outlook

In order to complete alignment of the national regulatory framework with the EU *acquis*, Montenegro still needs to adopt the necessary implementing legislation envisaged under the recently adopted new Law on electronic communications.

The new law provides for more consistent and transparent institutional framework as the responsibility for appointment and dismissal of the NRA management has been fully transferred to parliament. However, it maintains provisions on the collective dismissal of EKIP's management as well as the requirement for EKIP to transfer any surplus of its collected funds to the state budget, raising concerns over the NRA's independence.

Competition in fixed voice telephony and broadband services remains low, and most of the competitive safeguards introduced in 2011 have not yet produced visible changes in the market. The regulatory measures adopted by EKIP as a result of its second round analysis of the relevant markets completed in November 2013 essentially uphold the same scope of regulatory obligations.

Mobile services have been the most dynamic sector and mobile broadband is now widely available on a competitive basis. The growth in the mobile sector however has been slowed down by a sector-specific tax of €1 per month for each individual SIM card that has been in place starting from mid-2012 until end 2013.

## 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. The work on drafting new legislation based on the EU 2009 framework is planned for 2014.

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. Draft legislative amendments published for consultation in November 2013 propose merging RATEL with the Regulatory Agency for Postal Services (RAPUS) creating a single regulatory body responsible for electronic communications and postal sectors.

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

NRA	NRA appeals	Government	Other	State ownership
<a href="#">Republic Electronic Communications Agency</a> (RATEL Agency)	Appeals against regulatory decisions can be brought before the Administrative Court and can be further appealed to the Supreme Court.	<a href="#">The Ministry of Foreign and Internal Trade and Telecommunications</a> <a href="#">Administration for Digital Agenda</a> within the Ministry is specifically responsible for information society issues	<a href="#">Commission for Protection of Competition</a> (since 2005) <a href="#">Republic Broadcasting Agency</a> (since 2003)	Government controls directly 58.11% of the incumbent Telekom Srbija (including a golden share). 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 fully liberalise fixed voice telephony in January 2012. Although the market was formally opened to competition in June 2005, fixed voice telephony network and services remained subject to individual licensing and only two licences were issued to alternative providers between 2009 and 2012.

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 third entrant operator, VIP Mobile, has a smaller spectrum block in the 900 MHz band than the two other operators Telekom Srbija and Telenor, but it has a twice bigger block in the 1800 MHz band.

The frequency allocation plan adopted on October 2012 allows the usage of the 900 MHz and 1800 MHz bands on technology neutral basis, but the frequency assignment rules for these bands still have to be amended to allow 3G and 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	X

## 5. Competitive safeguards

Serbia is lagging behind with implementation of competitive safeguards. Following the adoption of the market analysis decisions at the end of 2011, only a limited progress has been reported with introducing some of the key competitive safeguards. The introduction of fixed number portability has been further delayed until April 2014.

	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

## 6. Market structure

Telekom Srbija remained the only licensed provider of fixed voice services until 2010 and its market share is still close to 100%. In fixed broadband services, competitors have gained market share of about 46%. 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 46%, 34% and 20% 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	39%	126%	15%	4%	5% (2011)

## 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 decision to postpone implementation of fixed number portability until 2014 has further delayed competition in the provision of fixed voice telephony services.

Despite the October 2012 amendments to the national frequency allocation plan allowing the deployment of 3G and 4G services in the 900 MHz and the 1800 MHz, the spectrum assignment rules for these bands restrict the use of these bands to GSM services and effectively delay the introduction of high-speed mobile broadband services.

The amendments to the budget system law and the law on salaries in the public sector further constrain RATEL's budget autonomy and its ability to recruit and retain competent staff. 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 has not announced any plans to transpose the EU 2009 regulatory framework, however, and Turkey's legislation remains a complex hierarchy of laws, bylaws and regulations, with several key issues addressed only by secondary legislation.

In July 2013 a new bylaw on the processing of personal data and protection of privacy entered into force; its provisions are not fully aligned with the EU Data Retention Directive.

In February 2014 the Turkish parliament adopted amendments<sup>56</sup> to the Law no. 5651 of May 2007 on "Regulation of publications on the internet and combating crimes committed by means of such publications". The amendments would allow the Telecommunication Communications Presidency within the Turkish NRA to block internet content at the URL-level with a four hour notice and without first seeking a court ruling.<sup>57</sup> They would also effectively extend the data retention obligations as well as the liability of ISPs.

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.

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.

NRA	NRA appeals	Government	Other	State ownership
The <a href="#">Information and Communication Technologies Authority</a> (ICTA, until 2008: Telecommunications Authority)	Appeals against regulatory decisions are decided by courts (Council of State or Administrative Court).	The <a href="#">Ministry of Transport, Maritime Affairs and Communications</a> is responsible for policy making in the electronic communications sector. <a href="#">Ministry of Development</a> is responsible for long-term strategies.	<a href="#">Competition Authority</a> (since 1997) <a href="#">Radio and Television Supreme Council</a> (since 1994)	In 2005 the state sold 55% of its shares in the fixed incumbent Turk Telekom. The state still holds 31.68% and a golden share of Turk Telekom and controls the satellite and cable TV operator Turksat. Indirectly, through Turk Telekom, the state also controls 28.5% of the mobile operator Avea.

### 3. Market access conditions

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.

<sup>56</sup> Law no. 6518, <http://www.tbmm.gov.tr/kanunlar/k6518.html>.

<sup>57</sup> TCP would have to seek a court ruling within 24 hours if it blocks access to content on the grounds of a privacy violation; and the court will have 48 hours in which to reach a decision.

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).

The September 2011 amendment of the authorisation ordinance requires operators authorised under concession agreements to limit the services provided to those 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?
-	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. 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 July 2013 there are seven agreements in place covering more than 920,000 lines (nearly double the number six months earlier). 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 not to regulate physical access to fibre (FTTH/B) for the next five years or until fibre-based subscriptions reach 25% of all fixed broadband connections. 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. The requirement for both an MVNO and its host network to make a treasury share payment 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	-

	CS	CPS	NP fixed	NP mobile	RIO fixed	RIO mobile	RJO	WBA	WLR	MVNO	nat. roaming	LRIC fixed	LRIC mobile	tariff rebal.
2013	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓

## 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, reaching 16.3% at end-2012 (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	18.5%	90.6%	10.5 %	2.6%	1.98% (2011)

## 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 blocking internet content that may potentially limit the freedom of expression present a particular area of concern.

## G. Albania

### 1. Legislative framework

Albania has started implementing the EU *acquis* relatively late, but in the last few years it has made a major progress in aligning its legislation with the EU rules and closing the remaining gaps.

The Law on electronic communications implementing the EU 2003 regulatory framework was adopted in 2008, while amendments to transpose the EU 2009 regulatory framework were adopted in October 2012.

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

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 1998 as an independent legal entity. However, its independence has in practice been hampered as parliament repeatedly replaced the entire board upon government initiative. Spectrum management and tariff regulation have been subject to strong political influence.

Political interventions to replace individual AKEP board members had also occurred shortly before and after the June 2013 elections and mirrored in both cases the party politics at the government level. The administrative capacity and resources of the regulator and the ministry remain limited.

NRA	NRA appeals	Government	Other	State ownership
<a href="#">Electronic and Postal Communications Authority</a> (AKEP, until 2008: TRE)	Appeals against regulatory decisions can be brought before district civil courts. Appeal procedures are slow and inefficient.	In Sep. 2013 a new government assumed office and the <a href="#">Ministry for Innovation and Public Administration</a> took over the information society tasks of the former Ministry for Innovation and ICT	<a href="#">National Agency on Information Society</a> (since 2007) <a href="#">Competition Authority</a> (since 2004) <a href="#">Authority on Audiovisual Media</a> (since 1999, until 2013: National Council on Radio Television)	In 2007 the state reduced its stakes in the fixed incumbent Albtelecom and mobile operator Eagle Mobile from 100% to 24%.

### 3. Market access conditions

General authorisation for all electronic communications networks and services was introduced in 2008. 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 has been slow and hampered by political interventions. Albania has four mobile operators: three of them have been assigned spectrum in the 900 MHz, the 1800 MHz and the 2 GHz bands, while the fourth operator only has the 900 MHz and the 1800 MHz spectrum. AKEP prepared issuing four UMTS licences in 2010, but following the minister's decision only one licence was awarded in 2010, then another in 2011. A third licence was issued in December 2012, after a failed attempt in February 2012.

The national frequency plan was amended in early 2013 to allow the use of 3G and 4G in the 900 MHz and 1800 MHz bands. In January 2014 AKEP published for consultation a draft proposal to amend the current spectrum authorisations of the four mobile operators allowing the use of 3G and 4G technologies in both bands.

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	-	X

## 5. Competitive safeguards

Albania was slow 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 wholesale broadband access offer in February 2013. The obligation to offer MVNO access and national roaming obligations was imposed on the two largest MNOs in March 2010 and applied until July 2012, but it did not attract any new entry into a market with four network operators.

	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 telephony and broadband penetration are amongst the lowest in the region. Albtelecom remains the dominant fixed player with 89% market share by voice traffic and 67% by revenue. Competition has emerged in the fixed broadband market, with alternative operators providing 58% of the connections over their own infrastructure.

The mobile sector is dominated by Vodafone (42% of subscriptions and 46% of revenue, both market shares growing) and AMC (40% of subscriptions and 29% of revenue). 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	11%	125%	5.7%	2.0%	4.7% (2010)

## 7. Outlook

The alignment of the national regulatory framework for electronic communications and information society services has developed slowly, but gained speed over the past four years. Major progress has been made with the adoption of primary legislation based on the EU 2009 regulatory framework in October 2012 and the Audiovisual Media Service Directive in March 2013. Practical implementation, however, has often been hampered by a lack of institutional stability as well as frequent political interventions.

The Albanian mobile market has undergone rapid growth fuelled by competition among four mobile network operators. The deployment of mobile broadband, however, has been hampered by the late introduction of 3G services and further regulatory measures are required to complete refarming of 900 MHz and 1800 MHz spectrum for 3G and 4G mobile broadband services.

## H. Bosnia and Herzegovina

### 1. Legislative framework

Implementation of the EU *acquis* in Bosnia and Herzegovina is lagging behind its neighbouring countries. The electronic communications law is mainly based on the EU 1998 framework. A preliminary draft of the new electronic communications law was published for consultation in September 2013.

Against the background of continued discussions on division of powers between the entities and the state, separate electronic commerce and electronic signature laws were 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. Appointment of RAK management envisages complex procedures involving both the Council of Ministers and parliament. In the presence of persistent political divisions within the Bosnian government, the central institutions had not been able to appoint RAK council members since 2009 and the new appointment was only approved by parliament in November 2013.

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 previous sector policy expired in 2012, but the new policy for 2013-2017 has not been yet approved.

NRA	NRA appeals	Government	Other	State ownership
<a href="#">Communications Regulatory Agency</a> (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. <a href="#">Ministry of Communications and Transport</a> drafts policies and legislation.	<a href="#">Council of Competition</a> (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 (owned by Telekom Srbija). 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. General authorisation regime is envisaged by the draft new electronic communications law.

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 in these bands.

The digital switchover initially scheduled for the end of 2011 is 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

The progress of implementing competitive safeguards has been slow. A new regulation on retail tariff rebalancing in fixed networks for 2013-2015 was adopted in November 2012. Mobile number portability, after repeated delays, became available in January 2013. The licensing of full MVNOs, despite the preparatory work completed by RAK, was postponed for an indefinite period by the Council of Ministers' decision adopted in September 2012. The market entry is however possible for service providers without own interconnection agreements and numbering resources, relying entirely on the infrastructure of the existing mobile operators.

	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 entity-based incumbent operators. There is little competition in provision of fixed voice telephony services and the three incumbent operators retain about 95% of subscribers where BH Telecom controls 48%, Telekom Srpske 34% and HT Mostar 13% of the market. New market entry in fixed voice telephony remains problematic due to long drawn processes for establishing interconnection and lack of effective dispute resolution procedures.

In fixed broadband, the incumbents are facing much stronger competition from alternative operators deploying cable and wireless networks that have achieved over 40% market share (both by revenue and by subscriptions). In 2013 the fragmented broadband market demonstrated a growing trend towards consolidation, which is resulting in smaller operators making gains and posing an increasing challenge to incumbent operators. Telemach continued acquiring smaller cable operators, while Telekom Slovenije owned Blicnet took over No Limit Technology. In response, one of the incumbents, Telekom Srpske, announced plans to acquire a Sarajevo-based major alternative operator, Logosoft.

In the mobile market BH Telecom controls around 44%, Telekom Srpske 42% and HT Mostar 13.5% of mobile subscriptions. A new service provider IZI mobil entered the mobile market in 2012 based on a commercial agreement with Telekom Srpske and reached about 0.5% market share in 2013.

	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	23%	87.5%	12.0%	3.0%	5% (2011)

## 7. Outlook

The alignment of the national legislation for electronic communications and information society services with the EU *acquis* is progressing very slowly. 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 raise concerns over the NRA's capacity to perform its tasks effectively.

The key priority for the regulator is to continue its work on the recently launched analysis of relevant electronic communications markets and effective implementation of the imposed regulatory measures.

I. Kosovo\*

1. Legislative framework

The ability of Kosovo to fully implement the EU acquis for electronic communications and information society services has been hampered by the issues related to its status and recognition within international organisations. Kosovo is not a member of the International Telecommunications Union (ITU) and therefore it has limited control over numbering and frequency resources. It does not have its own country code and continues to use three different country codes: the Serbian dialling code for the fixed network and the dialling codes of Monaco and Slovenia for two mobile networks. Kosovo does not have an internet domain name either.

In September 2013, Serbia and Kosovo reached an agreement on telecommunications under the EU-facilitated dialogue. In particular the agreement provides for Kosovo to be allocated a 3-digit international dialling code from the ITU as of 2015. It also provides for Telekom Srbija to operate legally in Kosovo until 2015.

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

Several secondary acts are still required to complete the alignment with 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 frequent political and administrative interference and it is fully dependent on the state budget for its financing. Furthermore, ARKEP is lacking human resources and has difficulties attracting and retaining qualified staff.

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
<a href="#">Regulatory Authority of Electronic and Postal Communications (ARKEP)</a>	Appeals against regulatory decisions can be brought before the Administrative Court. Appeal procedures take longer than one year.	<a href="#">Ministry of Economic Development</a> (since 2011)	<a href="#">Competition Commission</a> (since 2008) <a href="#">Independent Media Commission</a> (since 2005)	The incumbent operator PTK is 100% state owned. A procedure to privatise 75% was cancelled.

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 its implementation

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\*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.

has been delayed and the draft regulation on general authorisation regime was published for consultation only in December 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

#### 4. Spectrum assignments

Kosovo has two authorised mobile network operators that each have licences for only 2x10 MHz in the 900 MHz band and 2x10 MHz in the 1800 MHz band. Kosovo so far has not awarded any UMTS licence in the 2 GHz. From December 1, 2013 the mobile operators are allowed to deploy 3G and 4G technologies within the scope of their existing 900 MHz and 1800 MHz licences, subject to an administrative payment set in proportion to their market shares.

Following an auction for broadband wireless access spectrum in the 3.4-3.8 GHz band, only a single block of 2x20 MHz spectrum was assigned to the winning bidder in December 2013. ARKEP intends to launch another auction for the remaining BWA spectrum in 2014.

Kosovo plans to complete digital switchover by June 17, 2015. A draft law on digitisation of terrestrial broadcasting prepared by the Ministry of Economic Development and a draft strategy for digital switchover prepared by the Independent Media Commission are awaiting government approval.

800 MHz	900 MHz	1800 MHz	2 GHz	3.5 GHz	3G/4G in 900/1800?
-	2 licences 2004, 2007	2 licences 2007, 2011	-	1 licence 2013	3G/4G allowed

#### 5. Competitive safeguards

Although ARKEP made progress with its first analysis of relevant electronic communications markets over the past two years, most of the competitive safeguards foreseen by the EU *acquis* have not been yet implemented. Number portability cannot be fully implemented in the absence of the country code.

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.

	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 line penetration in the region and fixed voice telephony is still dominated by the incumbent PTK with the market share above 90%.

Broadband penetration has been developing slowly mainly stimulated by effective competition from alternative operators deploying cable and wireless access networks. Cable accounts for over 70% of all broadband connections, while the market share of the incumbent operator is about 25% (the lowest among the monitored countries).

There are two mobile network operators and two MVNOs. The incumbent's mobile subsidiary Vala retains 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	4.5%	92%	8.4%	-	5.4% (2010)

## 7. Outlook

Over the last years Kosovo undertook significant efforts to align its legislation with the EU *acquis*, however the practical implementation is lagging behind. The introduction of the key competitive safeguards has been slow, partly due to a number of status-related issues (such as the lack of the own country code), and partly due to the insufficient administrative capacity of the regulator.

The agreement on telecommunications recently reached with Serbia offers an opportunity to resolve a number of outstanding issues. However, the issue of the NRA independence that has been challenged by political interference, lack of resources and low salaries still needs to be effectively addressed.

## European Commission

### **Monitoring regulatory and market developments for electronic communications and information society services in Enlargement Countries – Report 4**

143 pages

KK-04-14-226-EN-N

ISBN 978-92-79-36549-2

DOI 10.2759/43116

