

DESI Report 2018

Telecoms chapter

SLOVENIA

Market developments

1. Competitive environment

Fixed broadband prices	SI-2016	SI-2017	EU-2017
Fixed broadband price index [values between 0-100]	75	73	87

Source: Commission Services based on Fixed Broadband Prices in Europe (Empirica). Digital Economy and Society Index 2018.

The Incumbent Telekom Slovenije still holds a 35% market share in fixed broadband connections and 44% of mobile subscriptions. The incumbent continues losing market share on fixed telephony market where it holds 51%. On the other hand, the number of VoIP connections of the incumbent is still growing and has in 2017 exceeded 37% of the total VoIP market. Furthermore, a bankruptcy procedure of the main alternative operator in the fixed infrastructure T-2 was annulled by the constitutional court.¹ In recent years Slovenia experiences a cross sector consolidation of telecommunication operators and media players. Due to increased competition the MVNO Izimobil exited the market and its customers were acquired by the incumbent. Furthermore, Simobil rebranded its name to A1 Slovenija in April 2017.

Currently, there are plans to merge the main commercial pay-TV with Telemach cable operator which is subject to regulatory approval. In particular, the cable operator Telemach who as well provides mobile services was very active in purchasing some smaller players on the market (Total TV, Maxtel). Moreover, KKS Radeče has been merged with Ansat while Elektro Gorenjska and JP LPT started to lease their network (dark fibre) to other operators. The new MVNO HoT mobil started to operate on the A1 Slovenija network.

Due to the decrease of fixed telephony over time and increase of the mobile telephony within the same period AKOS (Slovene National Regulatory Authority) concludes that mobile telephony could be a substitute for fixed telephony. However, according to AKOS such substitution is not valid in the opposite direction because fixed telephony cannot provide mobility which is essential for mobile telephony. Therefore, it is possible that the decrease of the fixed telephony services is moderate due to the bundle offers and end users choose to opt for fixed telephony among other services (internet and IPTV) as the cost increment for fixed telephony services is relatively insignificant. Moreover, when observing fixed to mobile substitution more broadly, that is including also broadband services, it is not possible yet to

¹ Moreover, in February 2018 the Constitutional court has upheld the Competition Protection Agency decision that the incumbent has between 1 July 2005 and 22 September 2008 abused its dominant position on the market against the T-2. In this context, the T-2 claims it will sue the incumbent for damages which according to T-2 amount to 261 million EUR.

conclude that end users would switch from fixed broadband connections to mobile services as generally fixed broadband services are still providing better quality of services and a wider variety of TV channels. Therefore AKOS concludes that mobile services for access to broadband are usually used as ancillary services and in cases where fixed broadband services are not available.

a. Fixed Markets

Fixed broadband market shares	SI-2016	SI-2017	EU-2017
Incumbent market share in fixed broadband	32.9%	35.2%	40.3%
Technology market shares			
DSL	40.3%	36.4%	64.2%
Cable	31.3%	29.2%	19.4%
FTTH/B	26.4%	30.2%	12.9%
Other	2.0%	4.2%	3.6%

Source: Communications Committee. Data as of July 2016 and July 2017.

Telekom Slovenije as the Incumbent has the highest market share of fixed broadband connections and is competing against consolidated multinational players (A1 Slovenija - Telekom Austria and Telemach – KKR). There are no capacity based interconnection models in place. There is increased competition on the business market as competitors are gaining market shares.

New entrants' DSL subscriptions by type of access (VDSL excluded)	SI-2016	SI-2017	EU-2017
Own network	-	-	0.5%
Full LLU	38.9%	37.1%	72.8%
Shared Access	3.3%	2.7%	4.1%
Bitstream	57.8%	60.2%	14.7%
Resale	-	-	7.8%

Source: Communications Committee. Data as of July 2016 and July 2017.

On the market bundles play a large role, which is recognized also by the AKOS and the TV services are the main driver of the market. Based on the quarterly reports, the flagship products are triple play packages (broadband, TV and VoIP). Quadruple play is rising, while the standalone and dual play bundles are further declining. In this context, new bundles were recently offered on the market, which contain as well other services such as electricity together with communications packages.

Coverage	SI-2016	SI-2017	EU-2017
Fixed broadband coverage (total)	98%	98%	97%
Fixed broadband coverage (rural)	92%	93%	92%
Fixed NGA coverage (total)	82%	83%	80%
Fixed NGA coverage (rural)	50%	54%	47%
Ultrafast coverage (total)	no data	75%	58%
4G coverage (average of operators)	90%	96%	91%

Source: Broadband Coverage Study (IHS and Point Topic). Data as of October 2016 and October 2017.

In Q2 2017 most fixed broadband connections were FttH. The number of VDSL and Cable (DOCSIS 3.0) connections are growing while the number of ADSL and Cable modem connections are decreasing. Slovenia is in EU average in terms of NGA connectivity and above average of ultrafast connectivity (83% and 75% respectively).

The highest demand in Q2 2017 is for fixed broadband internet connections with speeds from 10 to 30 Mbps. However, the number of fixed broadband internet connections with higher speeds are continuously increasing with 24% households take-up for speeds of 30 Mbps and above.

b. Mobile market

Mobile market	SI-2016	SI-2017	EU-2017
Market share of market leader	47%	44%	35%
Market share of second largest operator	30%	29%	28%
Number of MNOs	4	4	-
Number of MVNOs	4	4	-
Market share of MVNO (SIM cards)	3%	4%	-

Source: Communications Committee. Data as of October 2016 and October 2017.

The incumbent has the biggest market share of active mobile telephony users in Q2 2017 (45%), but its share is decreasing. HoT Mobil as a newcomer has gained users and already has a 0.4% market share of active mobile telephony users in Q2 2017 while the number of active users has grown to 1.2% at the end Q4 of 2017.

On the mobile market the merger of Telekom Slovenije and Izimobil was approved by the CPA on 16 August 2017 and by the end of 2017 Izimobil terminated offering pre-paid mobile services. All pre-paid contracts were taken over by Telekom Slovenije. The brand name Izi was also transferred to the incumbent.

Mobile broadband prices [EUR/PPP]	SI-2016	SI-2017	EU-2017
Least expensive offer for handset (1 GB + 300 calls basket)	€18	€9	€24
Least expensive offer for tablet and laptop (5 GB basket)	€15	€3	€17

Source: Mobile Broadband Price Study (Van Dijk and Empirica). Prices expressed in EUR/PPP, VAT included. Data as of February 2016 and February (handset) 2017 - July (tablet-laptop) 2017.

Regulatory developments

2. Supporting measures for deployment and investment in high-speed networks

a. Spectrum

The harmonised spectrum has already been assigned in a technology and service neutral way, so no refarming is needed. With regards to 2G and 3G networks phase-out there is no obligation and operators may choose to phase out any of the technologies according to market needs. Telekom Slovenije has started to phase out the 3G network while the 2G network will not be phased out in the near future. A1 Slovenija and Telemach have an excellent 3G coverage and there are no plans of phasing out the 3G as well as the 2G network in the near future. T-2 has majority 3G coverage with only 2100 MHz frequencies. Moreover, AKOS carried out a supervision of T-2 regarding fulfilment of its coverage obligations.

End 2016 and during the year 2017 AKOS in cooperation with the Ministry of Public Administration launched the initiative for the registration of projects for the first tests and the future use of 5G technology.² It was proposed to use the frequency band 3400 - 3800 MHz for testing 5G projects in the cities of Slovenia. Parts of the spectrum in the band 3400 - 3800 MHz and frequencies in UHF channels will be available on the basis of provisional decisions on the allocation of radio frequencies intended for the needs of measurements, attestations and other tests of radio equipment. Slovene 5G initiative encourages stakeholders to send proposals for 5G projects with an indication of which segment of the economy/society development this project was primarily intended. In accordance with the EU initiative 5G Action Plan for Europe, COM (2016) 588 – Action-8 Slovenia would like to apply for EU funding for the initiative to stimulate 5G innovation and take-up. In December 2017 government of Republic of Slovenia signed memorandum on cooperation with Hungarian government and universities of both countries in the area of 5G on Public Security, Protection and Rescue Technology (5G PPDR).

AKOS is preparing the 700 MHz band auction, which is planned for the year 2018, and will follow principles as to be timely and in predictable manner, encouraging front-runners and supporting peer learning, also with mentioned 5G PPDR pilot project. Some operators claim that planned auction is too early due to lack of compatible electronic communications equipment on the market. Furthermore, other spectrum bands are scheduled for auction in 2019. In this context, several operators complain about the high costs for spectrum which reduces their investment capacity.

b. National and EU investment in broadband

In general, over recent years there was a slight decrease of revenues in the telecommunications sector while investment activities are on the increase.³ Furthermore, the Ministry of Public Administration has issued two calls for expression of commercial interest which resulted in almost full coverage of Slovenia with private funds. Moreover, operators are investing in building infrastructure in the areas which were submitted to the ministry as the commercially interesting areas. In areas where there are no commercial interests, ministry plans in 2018 to publish three tenders for co-financing investment into high-speed broadband infrastructure.⁴

In the recent years there were several investments by the Incumbent in fixed infrastructure and equipment, base stations and licenses for frequencies. The Incumbent is investing in NGA networks while its initial plans for investments were redefined in 2015/2016 based on the State Strategy Digital Slovenia 2020. The initial plan included the re-usage of copper network, now this is only envisaged in the areas, where there are no other possibilities.

A1 Slovenija has mostly invested in its LTE access network, DSL modems and Femtocells. Telemach has invested in terminal equipment, renovation of fixed network, construction of

² <http://www.akos-rs.si/5g-pobuda-aktivnosti-v-zvezi-s-5g-pobudo-in-dodatni-poziv-k-prijavi-projektov>

³ In January 2017 the Ministry of information society has published a call for 18.5 Million EUR investment in building of high speed access networks of 100 Mbps speed and above in white areas.

⁴ One of them, value of €18.5 million is already in progress from 26 of January 2018.

base stations and frequency licences. T-2 has mainly invested in updates of its UMTS network while most of the investments were limited due to bankruptcy proceedings.

On 29 June 2017 it was the first meeting of the Slovenian Digital Coalition - digital.si which is composed of stakeholders from the economy, science, education, public sector and public administration government, the public sector NGOs, local self-government communities and civil society, digital champion, in order to jointly support the development of Slovenia and the implementation of the Digital Slovenia 2020 Strategy..⁵

In July 2017 the Ministry of Public Administration has established the Broadband Competence Office –BCO Slovenija with the aim of establishing single contact point for the provision of information in connection with broadband infrastructure. Its purpose is to inform citizens, local communities, electronic communications operators and other interested stakeholders about broadband infrastructure projects.

c. Implementation of the Broadband Cost Reduction Directive

On 20 August 2017, the amended Telecommunications Act, ZEKom-1C stepped into the force. The Act is transposing the Broadband Cost Reduction Directive⁶ which Slovenia has notified. AKOS has reported the increase in the notifications for planned building works. However, it does not keep accurate records of actual shared use of infrastructure. Furthermore, interest for co-investment increased significantly in recent years.

Slovenia decided to set two exemptions foreseen in the Directive. According to ZEKom-1C there is an exemption from obligation to notify planned civil works related to its physical infrastructure for civil works of insignificant importance in term of value, size or duration in Article 6(5). Another exemption relates to Article 8(4) of Directive regarding obligations related to in-building physical infrastructure for some categories of buildings. According to ZEKom-1C single dwellings and some other categories, such as buildings with total area up to 50 m², agricultural and forestry economic buildings, are exempted from obligations.

3. Regulatory function

Amended ZEKom-1C is changing the criteria on the AKOS financing since the government is approving yearly financial plan after it has been adopted by the agency council.⁷ The functioning of the AKOS is modified insofar that related ministries may issue its strategic priorities for the preparation of its work and financial plans.

AKOS imposed remedies regarding call termination on individual public telephone networks provided at a fixed location regardless the technology. Those include call termination supplied to any directly interconnected operator in the internal (EU) market for the purpose of

⁵ <http://www.digitalna.si/en/>

⁶ Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks (OJ L 155, 23.5.2014, p. 1).

⁷ The Court of Audit of the Republic of Slovenia has on 27 February 2018 published a negative opinion about the regularity of AKOS business in years 2014 and 2015 based on CoA Revision decision 3264-1/2016/7 issued on 10 March 2016.

terminating voice calls to subscribers of each individual public telephone network operator at a fixed location. Remedies were imposed for all SMP operators. FTR (0.0876 eurocents/min) by „bottom-up” pure LRIC model was prepared with consultant support by BWCS and with cooperation of the incumbent to follow EC recommendation. Furthermore, AKOS imposed access on reasonable request including also period for transition from TDM to all IP network for the incumbent.

In 2014, AKOS imposed also remedies regarding voice call termination on individual mobile networks regardless the technology which includes voice calls which are sent from any directly interconnected operator from the internal (EU) market to be terminated to the SMP operators’ end user. Price control based on Price control and cost accounting is imposed. MTR (1.14 eurocents/min) is calculated by „bottom-up” pure LRIC model which was prepared with consultant support by BWCS and with cooperation of SMP operators to follow EC recommendation.

After the market analysis and final decisions of April 2016 the non-EU calls are not subject to regulated price for call termination on fixed nor mobile networks. In this context, an issue is reported of non-EEA termination fraud, where a non-EEA number is replaced by an EEA number in order to profit from a price difference since non-EU call termination is not regulated and is usually higher. Because of such fraud, a user’s phone displays the wrong calling number or the number does not appear at all. Consequently, the user cannot call back or he gets the wrong person. Moreover, it is observed that operators are also faced with the inability to properly enforce the court orders of the competent authorities for the data retention and the loss of the revenue from the termination of such calls.

In 2017, AKOS carried out market analyses for the three relevant markets: 3a, 3b and 4. New regulatory decisions on markets 3a and 3b were already imposed on Telekom Slovenije, while the process of market analysis 4 has not yet been completed.

Regarding Access obligation for market 3a on copper network the price control and cost account for the Incumbent is set of monthly fee for LLU (8.09 EUR) and for shared LLU (3.27 EUR) which is based on LRIC+ cost model. For NGA network the monthly fee for FTTH and VULA is based on Economic replicability test.⁸ Other obligations on market 3a includes provision of access obligation (including VULA), non-discrimination obligation (including technical replicability obligation) and transparency obligation.

For market 3b the obligation includes provision of bitstream access and conditions for migration from copper to NGA networks, Non-discrimination obligation is based on Expression of Interest, and includes technical replicability which is done by incumbent for new retail offers, and transparency obligation in a form of publication of the reference offer. The incumbent as SMP on this market has obligation of price control and cost accounting on NGA products which include flagship products to be tested based on Economic replicability test developed by AKOS. Furthermore, non - NGA products (copper below 30 Mbit/s) cost accounting is based on LRIC+ methodology calculated by SMP operator and taking into

⁸ Which was developed by AKOS.

account LLU price with other costs such as DSLAM costs and backhaul costs. Cost accounting for other services is based on LRIC+ methodology calculated by SMP operator.

Furthermore, from 27 October 2017 to 1 December 2017 AKOS ran the national consultation concerning the market for wholesale high-quality access provided at a fixed location in Slovenia.⁹ In this context, there are some allegations regarding information availability since apparently not all of the relevant information was always available on AKOS web page.

On 5 October 2017 the Commission has sent a letter of formal notice to Slovenia for not notifying the analysis of Market 4. In the notice the commission has set a two month deadline for Slovenia to reply. On 20 October 2017 Slovenia has responded by letter in which it is asking for an extension of the deadline by 5 February 2018. In the request Slovenia has explained that in this extra period it hopes to complete the market 4 analysis and notify it to the Commission. The Commission has on 3 November 2017 responded with letter Ares(2017)5300954 by which it has approved the deadline extension as requested.¹⁰

AKOS has notified the review of wholesale local access provided at a fixed location market, and the review of wholesale central access provided at a fixed location for mass market products and Telekom Slovenije was designated as having significant market power on both relevant markets. Therefore, AKOS proposed to impose the following obligations, on both relevant markets: i) access to, and use of, specific network facilities; ii) non-discrimination; iii) transparency; iv) price control and cost accounting; and v) accounting separation. The Commission commented on: (i) the geographic differentiation of the price control remedy on the wholesale central access market, (ii) the choice of proportionate and justified access remedies and (iii) analysis of the relevant market since the last market analysis was notified to the Commission in 2010.¹¹

4. Consumer matters

In 2017 AKOS received 797 complaints in the field of electronic communications. Total number of resolved disputes reached 812 as some disputes received at the end of 2016 were also resolved in 2107. The large majority of complaints were related to the incorrect invoices and payments. AKOS reached 554 settlements in a mediation process (art. 220 ECA), decided in 122 cases with a binding decision and rejected 130 complaints due to the lack of competence or due to the fact that the complaint has been too late or was incomplete and the

⁹ Consequently, on 9 February 2018 the Commission has by Decision SI/2018/2050 opened an in-depth investigation into the proposal of the Slovenian telecoms regulator AKOS to make adjustments to the standard weighted average cost of capital (WACC) formula leading to higher prices of wholesale high-quality broadband access services because it considers that AKOS' proposal to adjust the standard formula for calculating the WACC in Slovenia is not compliant with EU telecoms rules.

¹⁰ On 10 January 2018 the Commission has received a notification of the draft measure from Slovenia notifying the delayed market 4 analysis. Currently, the draft measure submitted by Slovenia is being assessed by the commission services.

¹¹ The Commission pointed to the fact that, pursuant to Article 16(6) of the Framework Directive, as amended by Directive 2009/140/EC, NRAs must carry out an analysis of the relevant market and notify the corresponding draft measure in accordance with Article 7a within three years from the adoption of a previous measure relating to that market.

applicant has not remedied the deficiencies. In 6 cases the complaint has been referred to a competent authority.

Considering the high percentage of disputes regarding contractual penalties charged due to an early termination of the contract, AKOS in March 2017 organized a consultation with representatives of operators, the Electronic Communications Council and the Slovenian Consumers' Association. It encouraged operators to charge the costs proportionally regarding the duration of the contract, irrespective of the reason of termination. Nevertheless, no such costs should apply if the contract is terminated due to confirmed operator's breach of contract (e.g. unavailability of services). Operators embraced such approach while claiming that the majority had already adopted such an approach.

In 2017 two consultations with operators were held on a General act on the monitoring and control of data services consumption and on the form and method of publication of the notice regarding the change to the terms and conditions in the subscriber contract.^{12, 13}

a. Roaming

AKOS provided support to operators in implementation and fulfilment of the requirements of the Regulation, and in this context, organized three public consultations with operators and prepared an extensive document with 146 answers to questions exposed by operators. It has also prepared and published a roaming brochure for end-users with tips on the transition to RLAH (Roam Like at Home), including information on the rules that apply to fair use of services. Since 15 June 2017 AKOS received few disputes regarding non-compliance with the new roaming rules such as a lack of welcome-SMS, the cut-off limit for data did not activate, or the end-user was not informed of charges applicable outside EEA.

Moreover, there was no notice on drop in the usage of operator services due to the availability of OTT services; instead the usage of services in international roaming increased. Moreover, most of the operators have identified a significant data increase since the Roaming regulation and have experienced their retail revenues declined.

In line with the Decree on the implementation of RLAH¹⁴ in case of infringements of the Roaming Regulation, AKOS can impose administrative fines. For violations of Articles 3 (1, 2, 3, 4, 5, 6, 7), 4, 5 (1), 6.a, 6.c (2), 6.d (5), 6.e (1, 3, 4), 7, 9, 11 and 12 of the Regulation fines amount between €50 000 and €125 000 on operators with annual revenue above €200 million, between €20 000 and €50 000 on operators with annual revenue between €50 and €200 million, and between €10 000 and €20 000 on operators with annual revenue below €50 million. Moreover, the Decree provides imposition of fines on responsible individuals in the companies ranging between €1000 and €100.

¹² <http://www.akos-rs.si/predlog-splosnega-akta-o-spremljanju-in-nadzoru-porabe-podatkovnih-storitev>

¹³ <http://www.akos-rs.si/odgovor-na-prejete-predloge-in-pripombe-k-predlogu-splosnega-akta-o-spremembi-splosnega-akta-o-obliki-in-nacinu-obvestila-o-spremembi-pogojev-iz-narocniske-pogodbe>

¹⁴ Regulation (EU) No 531/2012 of the European Parliament and of the Council of 13 June 2012 on roaming on public mobile communications networks within the Union (OJ L 172, 30.6.2012, p. 10), as amended by Regulation (EU) 2015/2120 and Regulation (EU) 2017/920.

For violations of Articles 14, 15, 16(4) of the Regulation AKOS can impose fines between €30 000 and €100 000 on operators with annual revenue above €200 million, fines between €15 000 and €30 000 on operators with annual revenue between €50 and €200 million, and fines between €5 000 and €15 000 on operators with annual revenue below €50 million. Moreover, the Decree provides imposition of fines on responsible individuals in the companies ranging between €400 and €2 000.

Following the introduction of RLAH in June 2017, Slovenian subscribers consumed 1.5 times more voice and 6.4 times more data roaming services when travelling in the EU in summer 2017 compared to summer 2016.¹⁵

b. Net neutrality

The Decree on the implementation of the Regulation (EU) laying down measures concerning open internet access (Official Gazette of RS, Nr. 29/16), adopted on 20 April 2016, laid down the rules on penalties in line with the TSM Regulation¹⁶. Penalties are specified in Article 4.

The exact range of fines for infringements of Article 3, Article 4(1), (2) or Article 5(1), (2) of the TSM Regulation is between €500 and €15 000 for a smaller undertaking and entrepreneur and between €20 000 and €50 000 for a medium or large undertaking. Moreover, the Decree provides for the imposition of fines on responsible individuals in the companies or entrepreneur ranging between €200 and €2 000. AKOS is the competent authority to impose such fines. AKOS after consultation with operators also issued Recommendation regarding the implementation of the provisions of Regulation (EU) 2015/2120 concerning the provision of Internet access services.¹⁷

AKOS has a monitoring system (Akos Test Net) which is a user-oriented measurement tool that allows users to verify the quality and throughput of their broadband connection. The measurements can be done through web browser on the fixed connection or by dedicated mobile app adopted for Google Android and Apple iOS platform.

c. 112

Rising awareness about the importance of the emergency call number '112' as well as the notification of roaming users about the existence and the importance of the emergency call number 112 when they cross the national borders are defined in Art. 134/7 ECA-1C. Every year on February 11, many events take place in Slovenia in order to promote the existence and appropriate use of the EU emergency number. Administration of the Republic of Slovenia for Civil Protection and Disaster Relief which performs administrative and professional

¹⁵ Figures compare Q3/2017 with Q3/2016 retail roaming volumes according to the BEREC International Roaming Benchmark Report, April 2017-September 2017, published on 14 March 2018

¹⁶ Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union (OJ L 310, 26.11.2015, p. 1).

¹⁷ [http://www.akos-rs.si/priporocila-agencije-priporocilo-v-zvezi-z-izvajanjem-dolocil-uredbe-\(eu\)-2015-2120-glede-zagotavljanja-storitev-dostopa-do-interneta](http://www.akos-rs.si/priporocila-agencije-priporocilo-v-zvezi-z-izvajanjem-dolocil-uredbe-(eu)-2015-2120-glede-zagotavljanja-storitev-dostopa-do-interneta)

protection, rescue and relief tasks prepares on a yearly basis at this day open day events, which include a press conference and open visits of regional notification centres, while AKOS every year publishes an article about the 112 number on its website. According to Amended ZEKom-1C (ECA-1C), Ministry of public administration prepared new Rules on the quality of the service for an EU emergency number 112 and also for police number 113.¹⁸

d. Universal service

Universal service¹⁹ consists of provision of access at a fixed location and provision of telephone services, Directory enquiry and directories, and Public pay phones and other public voice telephony access points. Measures for disabled users and special rates for disadvantaged are included in every service.²⁰ The provision of all services is entrusted to the Incumbent with expiration on 2 December 2019. The provision of broadband access was not included in the universal service at the end of 2017.²¹

The market analysis shows that more than 99% of households have at least one commercial offer for broadband service available (either over fixed network or fixed wireless broadband access – FWBA). Only the households without commercial offer are entitled to universal service. The LTE network is enabler for FWBA and was imposed to A1 Slovenija as a part of special coverage obligation that has been fully implemented in July 2017.. It includes 10 Mbit/s download speed on fixed location with an outdoor antenna on rural areas. According to Article 124 of ECA-1C the download speed is defined as a speed subscribed by at least 80% of households with internet access which is currently at 10 Mbit/s.

5. Conclusion

Slovenia is progressing in terms of competitiveness of its telecommunications market both on the fixed and mobile segment. Bundled offers, mostly triple-play offers and increasingly quadruple-play offers, keep playing a significant role in communications packages, thus regulated access to Incumbent network is still required as to enable competition of mobile operators without good fixed network coverage.

In 2016 Slovenia has opted for goals to cover 96% of its population with internet speeds of at least 100 Mbps and the rest with speeds at least of 30 Mbps by the year 2020, which is more ambitious goal as in DAE. In order to achieve this target more investments in fixed line connectivity are needed, in particular in rural areas. Because of more ambitious goals of national digital agenda Slovenia might miss the key DAE target to ensure that the entire population has access to internet with speeds of at least 30 Mbps. Furthermore, relatively high

¹⁸ On 17 April 2018 the Slovene parliament has approved the law ZInfV to transpose the Directive (EU) 2016/1148 concerning measures for a high common level of security of network and information systems across the Union.

¹⁹ Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (OJ L 108, 24.4.2002, p. 51).

²⁰ In this context, on 17 April 2018 Slovene parliament has approved the ZDSMA law to transpose the Directive (EU) 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies.

²¹ However, on 17 April 2018 AKOS has issued a Decision to include Internet access with speeds of 4 Mbs / 512 Kbs into universal service.

prices for broadband connectivity (DESI price index 73) might be the reason for low take-up of fast broadband with speeds of 30 Mbps and above.

At the same time, persisting delays in market analysis of broadband market 4 prompted the Commission to open infringement proceedings in October 2017. Since then, AKOS has completed its analysis of market 4.

The 700 MHz auction for 5G is planned for 2018, especially considering commercially interests and pilot projects to support front runners and exploitation of new technologies and services in timely and in predictable manners. Moreover, AKOS in cooperation with the Ministry of Public Administration has launched the initiative for the first tests and the future use of 5G technology and proposes to use the frequency band 3400 - 3800 MHz for testing 5G projects in the cities of Slovenia.