



METHODOLOGICAL EXPLANATION

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ELECTRONIC COMMUNICATION SERVICES

This methodological explanation relates to the data releases:

- Electronic Communication Services, Slovenia, quarterly (First Release)



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1 PURPOSE

The purpose of publishing the data is to monitor trends in public electronic communications services, primarily voice and data services.

Key statistics are:

- Number of fixed telephone connections
- Number of mobile network users
- Number of SMS messages sent
- Duration of outgoing traffic from the mobile network (in 1,000 min)
- Duration of outgoing traffic from the fixed network (in 1,000 min)

2 LEGAL FRAMEWORK

- [Annual Programme of Statistical Surveys \(LPSR\) \(only in Slovene\)](#)
- [National Statistics Act \(OJ RS, No. 45/95 and 9/01\)](#)
- Agreement on cooperation in transmission of data on market development of electronic communications between the Agency for Communication Networks and Services of the Republic of Slovenia (AKOS) and the Statistical Office of the Republic of Slovenia (SURS) – 21 June 2012

3 UNIT DESCRIBED BY THE PUBLISHED DATA

The unit described by the published quarterly data is the electronic communications service.

All electronic communications services except international roaming are available according to the status of the user (i.e. households/private and business).

4 SELECTION OF OBSERVATION UNIT

Concerning electronic communications services, observation units are active operators of networks and providers of public electronic communications services (further on: operators) registered in the Register of Operators at the Agency for Communication Networks and Services of the Republic of Slovenia (further on: AKOS, former APEK).

The survey covers all units that perform the activities surveyed and – concerning electronic communications services – are included in the official register of operators according to the Electronic Communications Act.

The coverage is full.

There are about 150 operators.

5 SOURCES AND METHODS OF DATA COLLECTION

Data are collected quarterly.

From 2007 on data on electronic communications services (KO-TEL/ČL) have been provided to SURS by Communications Networks and Services Agency of the Republic of Slovenia (AKOS) (administrative source).

AKOS collects data by quarterly questionnaire devoted to the development of the electronic communications market.

6 DEFINITIONS

Electronic communications network means transmission systems and, where appropriate, switching or routing equipment and other resources which permit the transmission of signals by wire, by radio, by optical or by other electromagnetic means, including satellite networks, fixed (circuit- and packet-switched, including the Internet) and mobile terrestrial networks, electricity cable systems, if they are used for the transmission of signals, networks used for radio and television broadcasting, and cable TV networks, irrespective of the type of information transmitted.

Electronic communications service means a service normally provided for remuneration which consists wholly or mainly of the transmission of signals on electronic communications networks, including telecommunications services and transmission services in networks used for broadcasting, but excluding services providing, or exercising editorial control over, content transmitted using electronic communications networks and services; it does not include information society services which do not consist wholly or mainly of the transmission of signals on electronic communications networks.

Public communications network means an electronic communications network used wholly or mainly for the provision of public electronic communications services, i.e. publicly available electronic communications services.

Publicly available telephone service means a service available to the general public that includes initiating and receiving national and international calls and statutorily defined accompanying services (access to emergency services, the provision of services providing information on subscribers, etc.).

Public telephone network means an electronic communications network which is used to provide publicly available telephone services and which enables the transfer between network termination points of speech and other communications, such as facsimile and data communications.

Fixed telephony service means services providing the users access to the public fixed telephone network or publicly available fixed telephone services.

Mobile telephony service means services providing the users access to public mobile telephone networks or publicly available mobile telephone services.

Call means a communication established by means of a publicly available telephone service allowing two-way communication in real time.

Calls within own network are telephone calls generated by end-users of the operator and realized within the operators public network exclusively.

Calls to the fixed network are telephone calls generated by end-users of the operator and mediated by this operator to public fixed telephone networks in the Republic of Slovenia, excluding the calls within own network.

Calls to the mobile network are telephone calls generated by end-users of the operator and mediated by this operator to public mobile telephone networks in the Republic of Slovenia, excluding the calls within own network.

Calls to international networks are telephone calls generated by end-users of the operator and mediated by this operator from own public telephone network to the networks abroad.

Traffic is the duration of calls generated by end-users, expressed in minutes.

Private users (households) are natural persons using publicly available electronic communications services, excluding entrepreneurs.

Business users are legal units or entrepreneurs using publicly available electronic communications services.

Connection (the main telephone line) is a physical network point allowing the subscriber to have access to a public switched network. It includes all technologies of access such as PSTN, ISDN, VoIP, xDSL, etc.

PSTN connection (Public Switched Telephone Network) is a public switched network allowing access to publicly available fixed telephone service via analogue technology.

Centrex (geocentrex) is a commercial business system with virtual subscriber's telephone exchange within the public telephone exchange in the public fixed telephone network.

ISDN (Integrated Service over Digital Network) is a digital network allowing integrated services such as simultaneous transmission of voice, picture and data.

ISDN BA (ISDN Basic Access) is the basic ISDN access, allowing two information channels with the capacity of 64 kbit/s and one channel (called D channel) with the capacity of 16 kbit/s.

ISDN PA (ISDN Primary Access) is the primary ISDN access, allowing 30 information channels with the capacity of 64 kbit/s and one channel (called D

channel) with the capacity of 16 kbit/s.

VoIP connection (Voice over Internet Protocol) is a broadband connection which enables the service of managed IP telephony. IP telephony or VoIP as a publicly available telephone service at a fixed location is a managed voice service, which has an assigned phone number from a public numbering space that enables portability and access to emergency services.

Dial up (narrowband) access is narrowband access to Internet providers through the public telephone network. The access is realized with the help of telephone modem using PSTN or ISDN network point. It is in function for the limited time of connection, while billing regularly depends upon the duration of the service.

Mobile network user is an active end-user of the public mobile operator who in the last 90 days at least once paid the subscription or used any payable service or filled the prepaid bill. Active SIM and eSIM cards are covered, including M2M SIM cards.

Mobile network prepaid user is a user of a prepaid system of the mobile operator whose prepaid bill has to be filled with a valid value for the use of the mobile network.

Mobile network subscriber is an end-user who has a contract with the mobile operator for the use of its services. This operator issues a monthly bill for the service.

SMS (Short Message Service) is a service allowing receiving and dispatching of short textual and numerical messages in mobile networks.

MMS (Multimedia Messaging Service) is a service allowing the transmission of multimedia messages among mobile phones that support this kind of service or between mobile phones and the Internet.

Roaming is a service providing the users of mobile networks the use of the networks of foreign operators with which the operator has concluded the inter-operator agreement on roaming. This kind of service enables the use of publicly available mobile telephone services abroad.

Outgoing traffic of outbound roamers in networks of foreign operators means traffic generated by the users of Slovenian operators while roaming in the networks of foreign operators.

Incoming traffic of outbound roamers in networks of foreign operators means traffic concluded to the users of Slovenian operators while roaming in the networks of foreign operators.

Outgoing traffic of inbound roamers in networks of Slovenian operators means traffic generated by the users of foreign operators while roaming in the networks of Slovenian operators.

Incoming traffic of inbound roamers in networks of Slovenian operators means traffic concluded to the users of foreign operators while roaming in the networks of Slovenian operators.

Internet is a worldwide public communications network of smaller interacting public communications networks, where the interaction, i.e. exchange of textual and audio-visual information, is based on the batch transmission of data using the TCP/IP protocol.

Broadband enables rapid transmission of data over the Internet with speeds from 144 kbit/s to several 10 or 100 Mbit/s, depending by the technology used. The most frequently used technologies are xDSL, cable modem connection, optical fibre access, UMTS, etc. For unlimited access users pay a monthly subscription, depending on the nominal speed of transmitted data in a single package.

DSL (Digital Subscriber Line) or xDSL is a broadband technology allowing rapid transmission of data over the standard copper telephone wires. It includes different variations of DSL technology, which are designed to increase bandwidth available over standard copper telephone wires, such as ADSL, VDSL, HDSL, SDSL, etc. The maximum speed that can be provided to the user by the operator reduces with the distance from the user's connection point to the company's central office that offers the DSL service.

Cable modem is a system allowing a broadband Internet connection over a cable network.

Optical fibre access connection is a broadband Internet connection over optical fibres, enabling the speed of several 100Mbit/s, irrespective of the distance of the user from the location of the operator.

Other broadband connections include all other ways of broadband Internet connection, such as the access over leased lines, fixed wireless access, access over satellite, etc.

Dial-up (narrowband) users are active users who in the last 90 days at least once used the dial-up (narrowband) service to access the Internet.

Mobile broadband access – data transfer in gigabytes (GB) is the amount of traffic made on mobile broadband access (upload and download) in 3G and advanced networks.

Operator is a network operator or a service provider.

Network operator is a legal entity or a natural person providing a public communication network or related capacity or informing the competent regulative institution about the intention to be active in providing a public communication network or related capacity.

Service provider is a legal entity or a natural person performing a public electronic communication service or informing the competent regulative institution about the intention to be active in performing a public electronic communication service.

7 EXPLANATIONS

7.1 CLASSIFICATIONS

Data are not published by any classification.

7.2 DATA PROCESSING

DATA EDITING

Data were edited by using appropriate individual corrections.

For more, see the general methodological explanations [Statistical data editing](#).

WEIGHTING

Weighting was not performed.

SEASONAL ADJUSTMENT

Seasonal adjustment is not applicable.

DATA PROCESSING OTHER

We perform manual logical and computational checks of the data, especially the sums and major deviations with previous years. The aggregate values must correspond to the sum of the individual values, which in practice does not happen with some variables before publication. The Agency for Communication Networks and Services (AKOS) can only provide aggregated data prior to publication, while individual records have not yet been finalized within this deadline. Thus, it is often not possible to perform a complete logical control at SURS. In practice, it also happens that errors are discovered by AKOS only after SURS's publication; so by 2015 we had many unplanned revisions of the results retrospectively. Since 2015, we have been solving this by publishing provisional data, which become final after one year, and later we no longer take into account corrections, except in the case of major deviations.

As most errors are made by the operators, AKOS wants to establish a better system for logical data control in the future, and its experts are also working on educating their reporting units. They are introducing assistance and control procedures (several telephone conversations with reporting units, pre-filled grey boxes in the questionnaire with preliminary data). If the reporting unit reported incorrectly, it must make corrections to the questionnaire itself. In this way, AKOS protects itself against possible accusations of data manipulation.

SURS does not perform imputations. In the case of unit and item non-response, AKOS uses data imputation according to the historical method. These data are subsequently revised by AKOS the following quarter, when the reporting unit reports the actual data.

7.3 INDICES

Indices are not published.

7.4 PRECISION

The precision is not calculated.

7.5 OTHER EXPLANATIONS

In matrices:

- Outgoing calls from fixed locations by status of user and connection, Slovenia, quarterly
- Outgoing traffic from fixed locations by status of user and connection, Slovenia, quarterly
- Outgoing calls from mobile network by status of user and connection, Slovenia, quarterly
- Outgoing traffic from mobile network by status of user and connection, Slovenia, quarterly

the totals do not always add up due to rounding to 1,000.

8 PUBLISHING

- SiStat Database: [Trade and services](#) - Electronic communication services; (absolute data, NUTS 0).
- SiStat Database: [Development and technology](#) - Electronic communication services; (absolute data, NUTS 0).
- First Release (Trade and Services, Electronic Communication Services): »Electronic Communication Services, Slovenia, quarterly«
- [Statobook](#)
- EUROSTAT (Statistical Office of the European Union)
- European Commission

9 REVISION OF THE DATA

9.1 PUBLISHING OF PRELIMINARY AND FINAL DATA

Provisional data become final after one year. Regular planned revisions are a consequence of including a new/more complete/additional data source.

Methodological explanation on revision of statistical data is available on

<http://www.stat.si/dokument/5299/RevisionOfStatisticalDataMEgeneral.pdf>.

Publishing of provisional and final data is planned. Due to the needs of users for timely information, provisional data are published that meet the criteria of the quality of official statistical data but do not meet the quality that can be met with complete coverage. Data are revised when recent, more complete and better data can significantly contribute to the quality of data-based decision-making.

The provisional data for the 2nd quarter of 2024 were revised with the publication of provisional data for the 3rd quarter of 2024.

9.2 FACTORS INFLUENCING COMPARABILITY OVER TIME

With the changed definition of fixed wireless access by the European Commission in the 2nd quarter of 2024, there was a break in the series in data on mobile network users, total and other broadband Internet connections, and data transfer in mobile broadband access.

10 OTHER METHODOLOGICAL MATERIALS

Methodological materials on SURS's website are available at <https://www.stat.si/statweb/en/Methods/QuestionnairesMethodologicalExplanationsQualityReports>.

- Questionnaire:
 - SURS does not collect data for this survey by using a questionnaire.
- Quality reports for the surveys:
 - Electronic Communication Services (KO-TEL/ČL)
 - Performance of enterprises in the telecommunication sector (KO-TEL/L)

Theme: Development and Technology, SubTheme: Electronic Communication Services

Theme: Trade and Services, SubTheme: Electronic Communication Services

- [Electronic Communications Act \(only in Slovene\) \(Official Gazette of the Republic of Slovenia, No. 130/2022\)](#)
- [Četrletna poročila o razvoju trga elektronskih komunikacij \(AKOS\)](#)
- [Portal eAnalyst \(AKOS\)](#)