

ITU World Telecommunication/ICT Indicators Long Questionnaire 2023



Please complete the Answer and Notes columns in the table below.

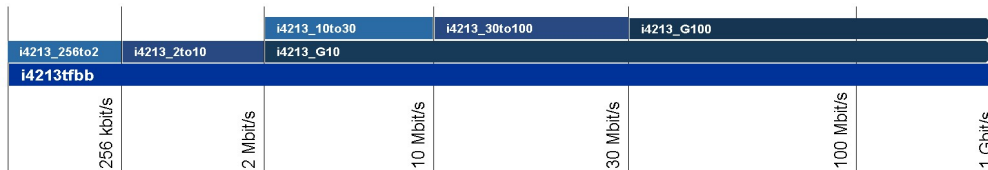
All numerical data must be entered WITHOUT any punctuation, i.e. no apostrophes, commas, spaces, etc.

All financial data (tariffs, revenues, capital expenditure) should be provided in LOCAL currency.

Section	Question
<p>PRIMARY CONTACT Please update the contact information for the primary recipient and email addresses for all recipients of this questionnaire. All fields with * are mandatory.</p> <p>Please note that in case of modifying a primary contact, future questionnaires/messages from ITU will be sent only to the new primary contact and set of email addresses.</p>	Is this the first time you complete the ITU World Telecommunication/ICT Indicators Survey? (Please complete the contact information below regardless of your answer to the above question.)
	Prefix (Mr, Mrs, etc) *
	First name *
	Last name *
	Title
	Organization *
	Phone (include + country code)
	Recipient email addresses *
	Website
	Is the above contact information the same for the person completing this questionnaire? Yes/No
<p>TECHNICAL CONTACT Please update the contact information for the person(s) who will respond to technical questions regarding this questionnaire. All fields with * are mandatory. The technical contact is for queries related to this questionnaire.</p>	Prefix (Mr, Mrs, etc) *
	First name *
	Last name *
	Title
	Organization *
	Phone (include + country code)
	Main email *
Website	
<p>FIXED TELEPHONE NETWORK</p>	<p>i112 - Fixed-telephone subscriptions Fixed-telephone subscriptions refers to the sum of active number of analogue fixed-telephone lines, voice-over-IP (VoIP) subscriptions, fixed wireless local loop (WLL) subscriptions, ISDN voice-channel equivalents and fixed public payphones.</p>
	<p>i116 - Percentage of fixed-telephone subscriptions that are residential Percentage of fixed-telephone subscriptions that are residential refers to the percentage obtained by dividing the number of active fixed-telephone subscriptions serving households (i.e. lines that are not used for business, government or other professional purposes or as public telephone stations) by the number of fixed-telephone subscriptions (Indicator 2) and then multiplying by 100. A household is defined as consisting of one or more people, who may or may not be related to each other, who share accommodation and who make common provision for food. Active subscriptions include all postpaid subscriptions and those prepaid subscriptions that have registered an activity in the past three months.</p>
	<p>i112IP - VoIP subscriptions VoIP subscriptions refers to the number of voice-over-Internet protocol (VoIP) fixed-line subscriptions. It is also known as voice over broadband (VoB), and includes VoIP subscriptions through fixed wireless, DSL, cable, fibre optic and other fixed-broadband Internet platforms that provide fixed telephony using IP. It excludes software-based VoIP applications (e.g. VoIP with Skype using computer-to-computer or computer-to-telephone). Those VoIP subscriptions that do not imply a recurrent monthly fee should only be counted if they have generated inbound or outbound traffic within the past three months.</p>
	<p>i112pt - Fixed-telephone numbers ported Fixed-telephone numbers ported refers to the number of porting transactions within the fixed-telephone line network that have been carried out for fixed-telephone numbers during the reference year.</p>
<p>MOBILE CELLULAR NETWORK</p>	<p>i271 - Mobile-cellular telephone subscriptions Mobile-cellular telephone subscriptions refers to the number of subscriptions to a public mobile-telephone service that provide access to the PSTN using cellular technology. The indicator includes the number of postpaid subscriptions, and the number of active prepaid accounts (i.e. that have been used during the last three months). The indicator applies to all mobile-cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, private trunked mobile radio, telepoint, radio paging, M2M and telemetry services.</p>
	<p>i271p - Prepaid mobile-cellular telephone subscriptions Refers to the total number of mobile-cellular telephone subscriptions that use prepaid refills. These are subscriptions where, instead of paying an ongoing monthly fee, users purchase blocks of usage time. Only active subscriptions should be included (those used at least once in the last three months for making or receiving a call or carrying out a non-voice activity such as sending or reading an SMS or accessing the Internet). It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, private trunked mobile radio, telepoint, radio paging, M2M and telemetry services.</p>
	<p>i271m2m - M2M mobile-network subscriptions M2M mobile-network subscriptions refers to the number of mobile-cellular machine-to-machine subscriptions that are assigned for use in machines and devices (cars, smart meters, consumer electronics) for the exchange of data between networked devices, and are not part of a consumer subscription. For instance, SIM-cards in personal navigation devices, smart meters, trains and automobiles should be included. Mobile dongles and tablet subscriptions should be excluded.</p>
	<p>i271pt - Mobile-cellular numbers ported Mobile-cellular numbers ported refers to the number of mobile porting transactions that have been carried out during the reference year.</p>
	<p>i271_spec_a - Amount of spectrum offered for IMT systems, in MHz Amount of spectrum allocated for IMT systems refers to the total spectrum, in MHz, made available for use (i.e. allocated) through any formal national publication, such as a national frequency plan, for IMT systems, including any of the air interfaces in accordance with ITU-R Recommendations concerning these standards for mobile communications. This process, known as allocation of spectrum, is decided by the governmental agency responsible for spectrum management and defines a band and a specific capacity (in MHz) to be put for a specific commercial use. This stage does not assign the spectrum yet to any particular operator.</p> <p>Please ensure that the amount of spectrum offered disaggregated by block is not greater than the total amount of spectrum offered (i271spec_a).</p>

	<ul style="list-style-type: none"> • i271_spec_a1 - Amount of spectrum offered for IMT systems in Block < 1GHz Amount of spectrum allocated for IMT systems refers to the spectrum block up to 1 GHz. • i271_spec_a1to6 - Amount of spectrum offered for IMT systems in Block 1 GHz - 6 GHz Amount of spectrum allocated for IMT systems refers to the spectrum Block that is greater than 1 GHz and less than 6 GHz. • i271_spec_aG6 - Amount of spectrum offered for IMT systems in Block > 6 GHz Amount of spectrum allocated for IMT systems refers to the spectrum block that is greater than 6 GHz. <p>i271_spec_li - Amount of spectrum licensed for IMT systems, in MHz Amount of spectrum licensed for IMT systems refers to the total spectrum, in MHz, assigned nationally, including any of the air interfaces in accordance with ITU-R Recommendations concerning these standards for mobile communications. Assignment implies granting a specific block in a specific frequency band to a firm or institution (a licensee).</p> <p>Please ensure that the amount of spectrum licensed disaggregated by block is not greater than the total amount of spectrum licensed (i271_spec_li).</p> <ul style="list-style-type: none"> • i271_spec_li1 - Amount of spectrum licensed for IMT systems in Block < 1GHz Amount of spectrum licensed for IMT systems refers to the spectrum block up to 1 GHz. • i271_spec_li1to6 - Amount of spectrum licensed for IMT systems in Block 1 GHz - 6 GHz Amount of spectrum licensed for IMT systems refers to the spectrum Block that is greater than 1 GHz and less than 6 GHz. • i271_spec_liG6 - Amount of spectrum licensed for IMT systems in Block > 6 GHz Amount of spectrum licensed for IMT systems refers to the spectrum block that is greater than 6 GHz.
INTERNET	<p>i4214u - International bandwidth usage, in Mbit/s Average usage of all international links including fiber-optic cables, radio links and traffic processed by satellite ground stations and teleports to orbital satellites (expressed in Mbit/s). All international links used by all types of operators, namely fixed, mobile and satellite operators should be taken into account. The average should be calculated over the 12-month period of the reference year. For each individual international link, if the traffic is asymmetric, i.e. incoming traffic is not equal to outgoing traffic, then the higher value out of the two should be provided. The combined average usage of all international links can be reported as the sum of the average usage of each individual link.</p> <p>i4214l - Lit/equipped international bandwidth capacity, in Mbit/s Total lit/equipped international bandwidth capacity refers to the total lit/equipped capacity of international links, namely fiber-optic cables, international radio links and satellite uplinks to orbital satellites in the end of the reference year (expressed in Mbit/s). If the traffic is asymmetric (i.e. incoming traffic and outgoing traffic is not equal), then the higher value out of the two should be provided.</p> <p>i4213cv - Number of households covered by a fixed wired network, by network technology The number of households covered by a fixed wired network, cabled households or homes passed denote the availability of but not necessarily the subscription to or usage of fixed network services. Households should be classified as covered, cabled or 'passed' if the network provider already provisions or could provision a 'last mile' connection to the fixed wired network within a short period of time (i.e. a few days) and without an extraordinary commitment of resources. An extraordinary commitment of resources involves any of the following: installing or extending cable from local switching center, a DSLAM, CMTS, OLT, fiber node, optical splitter, FTTC cabinet, HFC node, building a duct, installing poles, leasing a line. Fixed wireless networks, mobile networks, nomadic networks and satellite networks are excluded from this indicator. In the case of network overlap in a given geographical unit – i.e. several networks/operators covering the same locations –, perfect overlap should be assumed unless available information justifies a different conclusion.</p> <p>This question asks for a breakdown by technology as follows:</p> <ul style="list-style-type: none"> • i4213cv_trad - Number of households passed by the traditional copper-based network NEW 2023 Refers to the number of households covered by the traditional public switched telephone network (PSTN). Includes a wide range of traditional copper-based technologies: copper wire in the last mile, digital subscriber line (DSL), Asynchronous digital subscriber line technology (i.e. ADSL, ADSL2, ADSL2+) and very-high-bit-rate digital subscriber technology (VDSL/VDSL Vectoring). • i4213cv_cab - Number of households covered by cable TV networks Refers to the number of households covered by cable TV (CATV) networks using coaxial cable. Households covered by standard (i.e. DOC SIS 1) and advanced cable broadband standards (including DOCSIS 3.x) are included. • i4213cv_fttp - Number of households covered by fiber-based Refers to the number of households covered by fibre-to-the-premises (FTTP) networks. This indicator includes the fiber to- the-home (FTTH), fibre-to-the-building (FTTB) and Fiber-to-the-distribution point (FTTdp) network configurations. Fibre-to-the-cabinet and fibre-to-the-node are excluded. • i4213cv_o - Number of households covered by other fixed-wired networks Refers to households covered by other fixed wired networks (other than copper/DSL, CATV, and FTTP).
	<p>i4213fbb - Fixed-broadband subscriptions Refers to fixed subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 kbit/s. This includes cable modem, DSL, fibre-to-the-home/building, other fixed (wired)-broadband subscriptions, satellite broadband and terrestrial fixed wireless broadband. This total is measured irrespective of the method of payment. It excludes subscriptions that have access to data communications (including the Internet) via mobile-cellular networks. It should include fixed WiMAX and any other fixed wireless technologies. It includes both residential subscriptions and subscriptions for organizations. This question also asks for the number of fixed-broadband subscriptions disaggregated by speed.</p> <p>Fixed-broadband subscriptions by speed: refers to the number of fixed broadband subscriptions to the public Internet (i4213fbb) split by advertised download speed. Advertised speed refers to the speed at which the ISP markets the subscription, rather than the actual speed the user may experience. Speed is measured in megabits per second (Mbit/s).</p>

The breakdown by speed is made according to the following criteria.



Please ensure that the number of subscriptions disaggregated by speed is not greater than the total number of fixed-broadband subscriptions (i4213ffb).

- i4213_256to2 - 256 kbit/s to less than 2 Mbit/s subscriptions**
 Refers to all fixed-broadband Internet subscriptions with advertised downstream speeds equal to, or greater than, 256 kbit/s and less than 2 Mbit/s.
- i4213_2to10 - 2 Mbit/s to less than 10 Mbit/s subscriptions**
 Refers to all fixed-broadband Internet subscriptions with advertised downstream speeds equal to, or greater than, 2 Mbit/s and less than 10 Mbit/s.
- i4213_G10 - Equal to or above 10 Mbit/s subscriptions**
 Refers to all fixed-broadband Internet subscriptions with advertised downstream speeds equal to, or greater than, 10 Mbit/s.

Please note that $i4213ffb = i4213_256to2 + i4213_2to10 + i4213_G10$

- i4213_10to30 - 10 Mbit/s to less than 30 Mbit/s subscription**
 Refers to all fixed-broadband Internet subscriptions with advertised downstream speeds equal to, or greater than, 10 Mbit/s and less than 30 Mbit/s.
- i4213_30to100 - 30 Mbit/s to less than 100 Mbit/s subscriptions**
 Refers to all fixed-broadband Internet subscriptions with advertised downstream speeds equal to, or greater than, 30 Mbit/s and less than 100 Mbit/s.
- i4213_G100 - Equal to or above 100 Mbit/s subscriptions**
 Refers to all fixed-broadband Internet subscriptions with advertised downstream speeds equal to, or greater than, 100 Mbit/s.

Please note that $i4213_G10 = i4213_10to30 + i4213_30to100 + i4213_G100$

FIXED-BROADBAND BY TECHNOLOGY/SPEED

Fixed broadband subscriptions by technology

Refers to fixed subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 kbit/s. This includes cable modem, DSL, fibre-to-the-home/building, other fixed (wired)-broadband subscriptions, satellite broadband and terrestrial fixed wireless broadband. This total is measured irrespective of the method of payment. It excludes subscriptions that have access to data communications (including the Internet) via mobile-cellular networks. It should include fixed WiMAX and any other fixed wireless technologies. It includes both residential subscriptions and subscriptions for organizations.

This question asks for a breakdown by technology as follows:



Please ensure that the number of subscriptions disaggregated by technology, is not greater than the total number of fixed-broadband subscriptions (i4213ffb).

- i4213cab - Cable modem Internet subscriptions**
 Cable modem Internet subscriptions refers to the number of Internet subscriptions using a cable modem service to access the Internet, at downstream speeds greater than, equal to, 256 kbit/s. Cable modem is a modem attached to a cable television network.
- i4213dsl - DSL Internet subscriptions**
 DSL Internet subscriptions refers to the number of Internet subscriptions using digital subscriber line (DSL) services to access the Internet, at downstream speeds greater than or equal to 256 kbit/s. DSL is a technology for bringing high-bandwidth information to homes and small businesses over ordinary copper telephone lines. It should exclude very high-speed digital subscriber line (VDSL) subscriptions if these are provided using fibre directly to the premises.
- i4213ftth/b - Fibre-to-the-home/building Internet subscriptions**
 Fibre-to-the-home/building Internet subscriptions refers to the number of Internet subscriptions using fibre-to-the-home or fibre-to-the-building, at downstream speeds equal to, or greater than, 256 kbit/s. This should include subscriptions where fibre goes directly to the subscriber's premises or fibre-to-the-building subscriptions that terminate no more than 2 metres from an external wall of the building. Fibre-to-the-cabinet and fibre-to-the-node are excluded.
- i4213ob - Other fixed (wired)-broadband subscriptions**
 Other fixed-broadband subscriptions refers to Internet subscriptions using other fixed-broadband technologies to access the Internet (other than DSL, cable modem, and fibre), at downstream speeds equal to, or greater than, 256 kbit/s. This includes technologies such as ethernet LAN, and broadband-over-powerline (BPL) communications. Ethernet LAN subscriptions refer to subscriptions using IEEE 802.3 technology. BPL subscriptions refer to subscriptions using broadband-over-powerline services. Users of temporary broadband access (e.g. roaming between PWLAN hotspots), users of WiMAX and those with Internet access via mobile-cellular networks are excluded.
- i271s - Satellite broadband subscriptions**
 Satellite broadband subscriptions refers to the number of satellite Internet subscriptions with an advertised download speed of at least 256 kbit/s. It refers to the retail subscription technology and not to the backbone technology.

	<p>• i271fw - Terrestrial fixed wireless broadband subscriptions Terrestrial fixed wireless broadband subscriptions refers to the number of terrestrial fixed wireless Internet subscriptions with an advertised download speed of at least 256 kbit/s. This includes fixed WiMAX and fixed wireless subscriptions, but excludes occasional users at hotspots and Wi-Fi hotspot subscribers. It also excludes mobile-broadband subscriptions where users can access a service throughout the country wherever coverage is available.</p> <p>Please note that $i4213tffb = i4213cab + i4213dsl + i4213fth/b + i4213job + i271s + i271fw$</p> <p>i4213ffb_o - Fixed-broadband subscriptions for organizations Fixed-broadband subscriptions for organizations refers to the total subscriptions contracted by public and private organizations (i.e. non-residential customers) to access the public Internet at a fixed location at downstream speeds greater than, or equal to, 256 kbit/s. This includes cable modem, DSL, fibre-to-the-home/building and fixed wireless broadband technologies. It excludes residential subscriptions and subscriptions that have access to data communications (including the Internet) via mobile networks.</p>
MOBILE NETWORK COVERAGE	<p>i271pop - Percentage of the population covered by a mobile-cellular network Percentage of the population covered by a mobile-cellular network refers to the percentage of inhabitants within range of a mobile-cellular signal, irrespective of whether or not they are subscribers or users. This is calculated by dividing the number of inhabitants within range of a mobile-cellular signal by the total population and multiplying by 100.</p>
	<p>• i271G - Percentage of the population covered by at least a 3G mobile network Percentage of the population covered by at least a 3G mobile network refers to the percentage of inhabitants that are within range of at least a 3G mobile-cellular signal, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants that are covered by at least a 3G mobile-cellular signal by the total population and multiplying by 100. It excludes people covered only by GPRS, EDGE or CDMA 1xRTT.</p>
	<p>• i271GA - Percentage of the population covered by at least an LTE/WiMAX mobile network Percentage of the population covered by at least an LTE/WiMAX mobile network refers to the percentage of inhabitants that live within range of LTE/LTE-Advanced, mobile WiMAX/WirelessMAN or other more advanced mobile-cellular networks, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants that are covered by the previously mentioned mobile-cellular technologies by the total population and multiplying by 100. It excludes people covered only by HSPA, UMTS, EV-DO and previous 3G technologies, and also excludes fixed WiMAX coverage.</p>
	<p>• i271G5_pop - Percentage of the population covered by at least a 5G mobile network Percentage of the population covered by 5G mobile network refers to the percentage of inhabitants that are within range of at least a 5G mobile-cellular signal, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants that are covered by a 5G mobile-cellular signal by the total population and multiplying by 100.</p>
MOBILE BROADBAND	<p>i271mw - Active mobile-broadband subscriptions Active mobile-broadband subscriptions refers to the sum of active handset-based and computer-based (USB/dongles) mobile-broadband subscriptions to the public Internet. It covers actual subscribers, not potential subscribers, even though the latter may have broadband-enabled handsets. Subscriptions must include a recurring subscription fee or pass a usage requirement – users must have accessed the Internet in the last three months. It includes subscriptions to mobile-broadband networks that provide download speeds of at least 256 kbit/s (e.g. WCDMA, HSPA, CDMA2000 1x EV-DO, WiMAX IEEE 802.16e and LTE), and excludes subscriptions that only have access to GPRS, EDGE and CDMA 1xRTT.</p> <p>This question also request for this two-sub-indicators:</p> <ul style="list-style-type: none"> • i271mb_active - Data and voice mobile-broadband subscriptions Data and voice mobile-broadband subscriptions refers to subscriptions to mobile-broadband services that allow access to the open Internet via HTTP and in which data services are contracted together with voice services (mobile voice and data plans) or as an add-on package to a voice plan. These are typically smartphone-based subscriptions with voice and data services used in the same terminal. Data and voice mobile-broadband subscriptions with specific recurring subscription fees for Internet access are included regardless of actual use. Prepaid and pay-per-use data and voice mobile-broadband subscriptions should only be counted if they have been used to access the Internet in the last three months. M2M subscriptions should be excluded. The indicator includes subscriptions to mobile networks that provide download speeds of at least 256 kbit/s (e.g. CDMA, HSPA, CDMA2000 1x EV-DO, WiMAX IEEE 802.16e and LTE), and excludes lower-speed technologies such as GPRS, EDGE and CDMA 1xRTT. • i271md - Data-only mobile-broadband subscriptions Data-only mobile-broadband subscriptions refers to subscriptions to mobile broadband services that allow access to the open Internet via HTTP and that do not include voice services, i.e. subscriptions that offer mobile broadband as a standalone service, such as mobile-broadband subscriptions for datacards, USB modem/dongle and tablets. Data-only mobile-broadband subscriptions with recurring subscription fees are included regardless of actual use. Prepaid and pay-per-use data-only mobile-broadband subscriptions should only be counted if they have been used to access the Internet in the last three months. M2M subscriptions should be excluded. The indicator includes subscriptions to mobile networks that provide download speeds of at least 256 kbit/s (e.g. WCDMA, HSPA, CDMA2000 1x EV-DO, WiMAX IEEE 802.16e and LTE), and excludes lower-speed technologies such as GPRS, EDGE and CDMA 1xRTT. It excludes data subscriptions that are contracted together with mobile voice services. <p>Please note that $i271mw = i271mb_active + i271md$</p>
	<p>i271mwa - Active subscriptions to LTE/WiMAX mobile-broadband networks Active subscriptions to LTE/WiMAX mobile-broadband networks refers to subscriptions that have generated Internet traffic in the last 90 days in LTE/mobile WiMAX and other advanced mobile-broadband networks, such as LTE-Advanced and WirelessMAN. It excludes subscriptions having generated Internet traffic only in HSPA, UMTS, EV-DO and previous 3G networks, and also excludes fixed WiMAX subscriptions.</p>
	<p>i271mw_5G - Active subscriptions to 5G/ IMT-2020 mobile broadband Refers to subscriptions that have generated Internet traffic in the last 90 days in 5G/IMT-2020 mobile-broadband network. It includes data only, USB/dongle subscriptions, includes both postpaid and prepaid subscriptions, as well as both residential and business subscriptions. The indicator excludes subscriptions having generated Internet traffic only in LTE/4G, HSPA, UMTS, EV-DO and previous 3G networks, and also excludes fixed wireless subscriptions. This indicator aims at collecting all individual subscriptions to mobile broadband with 5G/ IMT-2020, hence it excludes any other possible use of 5G/ IMT-2020 networks as IoT, massive M2M or ultra-low latency reliable services.</p>

<p style="text-align: center;">BUNDLED TELECOMMUNICATION SERVICES</p>	<p>A bundled telecommunication services is defined as a prepaid or postpaid subscription meeting all of the following criteria:</p> <ol style="list-style-type: none"> 1. A commercial offer that includes two or more of the following services: fixed telephone, mobile voice, fixed broadband, mobile broadband, pay TV; 2. marketed as a single offer, with a single invoice and with a single price for the set of services included in the bundle; 3. subscribed under conditions that cannot be obtained by adding single play offers together. <p>Subscriptions to mobile-voice and mobile-broadband bundles: to be reported in i271mb_active</p> <ul style="list-style-type: none"> • i4213_2x - Subscriptions to fixed-broadband and fixed-telephone bundles Subscriptions to fixed-broadband and fixed-telephone bundles refers to the number of bundled telecommunication subscriptions including fixed-broadband and fixed-telephone services. Only those subscriptions that meet the criteria established in the definition of bundled telecommunication services should be included. Subscriptions that include additional telecommunication services – such as triple play subscriptions including fixed telephony, fixed broadband and pay TV – should be excluded. • i4213_3x - Subscriptions to fixed-broadband, fixed-telephone and pay-TV bundles Subscriptions to fixed-broadband, fixed-telephone and pay-TV bundles refers to the number of bundled telecommunication subscriptions including fixed-broadband, fixed-telephone and pay-TV services. Only those subscriptions that meet the criteria established in the definition of bundled telecommunication services should be included. Subscriptions that include additional telecommunication services – such as quadruple play subscriptions including fixed telephony, fixed broadband, pay TV and mobile voice/data – should not be counted under this indicator.
<p style="text-align: center;">QUALITY OF SERVICE</p>	<p>i146u - Mobile-cellular unsuccessful call ratio (%) Mobile-cellular unsuccessful call ratio refers to the ratio of unsuccessful mobile-cellular calls to the total number of mobile-cellular call attempts in the given year. An unsuccessful call is a call attempt to a valid number, while in a coverage area, where neither the call is answered nor called party busy tone nor ringing tone, is recognized at the access of the calling user within 40 seconds from the instant when the last digit of the destination subscriber number is received by the network. The data should be expressed in per cent.</p> <p>i146d - Mobile-cellular dropped call ratio (%) Mobile-cellular dropped call ratio refers to the proportion of incoming and outgoing mobile-cellular calls which, once they have been correctly established and therefore have an assigned traffic channel, are dropped or interrupted prior to their normal completion by the user, the cause of the early termination being within the operator's network. The data should be expressed in per cent.</p> <p><u>Average Download Throughput</u></p> <p>i147dl - Average Download Throughput for Fixed Broadband, in bits The volume of data (in bits) downloaded in one second. Calculated as the total transferred data volume (in bits) divided by the total timeframe. The download throughput should be measured for all fixed network technologies, including xDSL, WFBB, GPON, DTH Satellite, etc.</p> <p>i146mwdl - Average Download Throughput for Mobile Broadband, in bits The volume of data (in bits) uploaded and downloaded in one second. Calculated as the total transferred data volume (in bits) divided by the total timeframe. The download throughput should be measured for all technologies used to deliver mobile broadband service, i.e. GSM, UMTS, LTE, 5G, etc.</p> <p><u>Average Upload Throughput</u></p> <p>i147ul - Average upload Throughput for Fixed Broadband, in bits The volume of data (in bits) uploaded in one second. Calculated as the total transferred data volume (in bits) divided by the total timeframe. The download throughput should be measured for all fixed network technologies, including xDSL, WFBB, GPON, DTH Satellite, etc.</p> <p>i146mwul - Average Upload Throughput for Mobile Broadband, in bits The volume of data (in bits) uploaded and downloaded in one second. Calculated as the total transferred data volume (in bits) divided by the total timeframe. The upload throughput should be measured for all technologies used to deliver mobile broadband service, i.e. GSM, UMTS, LTE, 5G, etc.</p> <p><u>Packet Latency</u></p> <p>i147l - Packet Latency for Fixed Broadband, in milliseconds The round trip time taken for a packet to reach its destination and return to the source (in milliseconds), within the country. It is calculated as the total packet latency measured in ms divided by the number of tests.</p> <p>i146mwl - Packet Latency for Mobile Broadband, in milliseconds The round trip time taken for a packet to reach its destination and return to the source (in milliseconds), within the country. It is calculated as the total packet latency measured in ms divided by the number of tests.</p> <p>i147f - Fault Resolution Period for Fixed Broadband Service, in hours The average time taken to clear customer fault reports for fixed broadband networks (in hours). Computed as the total number of working hours taken for all faults cleared by total the number of faults.</p>
	<p>As agreed in EGTI 20202, some traffic indicators have been combined</p> <p>i133fo - Total outgoing voice traffic from (originating on) fixed-telephone networks, in minutes. NEW 2023 Refers to effective (completed) outgoing minutes of telephone traffic originating from fixed-telephone voice traffic, including managed VoIP. This includes any destination: domestic and international, fixed as well as mobile networks. This indicator should be reported as the number of minutes of traffic during the reference year. This should exclude minutes used for dial-up Internet access.</p> <p>i133fi - Total incoming voice traffic to fixed-telephone networks (fixed-telephone network destination), in minutes. NEW 2023 Refers to effective (completed) incoming minutes of voice traffic to fixed-telephone network destination. The traffic can originate from any source: domestic as well as international, fixed or mobile networks. This indicator should be reported as the number of minutes of traffic during the reference year.</p>

TRAFFIC	<p>i133mm - Total outgoing mobile voice traffic, in minutes. NEW 2023 Refers to effective (completed) outgoing minutes of voice mobile traffic originating from mobile-telephone, including any destination: to fixed-telephone, minutes to mobile-phone subscribers and to any destinations outside that country. This indicator should be reported as the number of minutes of traffic during the reference year.</p>
	<p>i1331mi - Total incoming voice traffic to mobile networks (as destination), in minutes. NEW 2023 Refers to effective (completed) incoming minutes of voice traffic to mobile network destination. The traffic can originate from any source, domestic as well as international, fixed or mobile networks. This indicator should be reported as the number of minutes of traffic during the reference year.</p>
	<p>i132t - Total international outgoing telephone traffic, in minutes. Refers to effective (completed) international outgoing minutes of telephone traffic originating from national networks, fixed and mobile, including managed VoIP. This indicator should be reported as the number of minutes of traffic during the reference year.</p>
	<p>i133sms - SMS sent Refers to the total number of mobile short-message service (SMS) messages sent, both to national and international destinations. This should exclude messages sent from computers to mobile handsets or to other computers.</p>
	<p>i135tfb - Fixed-broadband Internet traffic (exabytes) Fixed-broadband Internet traffic (exabytes) refers to traffic generated by fixed-broadband subscribers measured at the end-user access point. It should be measured adding up download and upload traffic. This should exclude wholesale traffic, walled garden, IPTV and cable TV traffic. If figures are reported in a different unit from the Exabyte, the unit should be indicated in a note. Traffic should be reported in exabytes. Please note that 1 EB = 10⁹ GB = 10⁶ TB = 10³ PB</p>
	<p>i136mwi - Mobile-broadband Internet traffic (within the country) Mobile-broadband Internet traffic (within the country) refers to broadband traffic volumes originated within the country from 3G networks or other more advanced mobile-networks, including 3G upgrades, evolutions or equivalent standards in terms of data transmission speeds. Traffic should be collected and aggregated at the country level for all 3G or more advanced mobile networks within the country. Download and upload traffic should be added up and reported together. Traffic should be measured at the end-user access point. Wholesale and walled-garden traffic should be excluded. The traffic should be reported in exabytes. If figures are reported in a different unit from the Exabyte, the unit should be indicated in a note. Traffic should be reported in exabytes. Please note that 1 EB = 10⁹ GB = 10⁶ TB = 10³ PB</p>
INTERNATIONAL ROAMING	<p>i133rm - Number of countries with which there is a[n operator-level] roaming agreement Total number of countries, with which there is a roaming agreement. If there are several operators with a different number of roaming agreements, the total number of countries with roaming agreement. For example, if operator 'A' has agreement with country '1', '2', '3', '4', and '5' where as operator 'B' has agreement with country '1', '6', and '7'. The total number of countries with which there is a roaming agreement should be '7'.</p>
	<p>i133crm - Number of countries with which there is a country-level roaming agreement Total number of countries, with which there is an agreement between the answering country and other countries securing a free or special roaming tariff approach in relation to existing national tariffs. An example is the roaming like at home initiative in EU.</p>
	<p>i136mwo - Mobile-broadband Internet traffic (outside the country, roaming out) in Exabytes Mobile-broadband Internet traffic (outside the country, roaming out) refers to broadband traffic volumes originated outside the country from 3G networks or other more advanced mobile-networks, including 3G upgrades, evolutions or equivalent standards in terms of data transmission speeds. Traffic should be collected and aggregated at the country level for all customers of domestic operators roaming outside the country and using 3G or more advanced mobile networks. Download and upload traffic should be added up and reported together. Traffic should be measured at the end-user access point. Wholesale and walled-garden traffic should be excluded. Traffic should be reported in exabytes.</p>
	<p>i136mwoa - Mobile-broadband Internet traffic (outside the country, roaming out on CLRAs) in Exabytes Mobile-broadband Internet traffic (outside the country, roaming out) refers to broadband traffic volumes originated by own customers in foreign networks in countries with which the focal country has a country-level roaming agreement (CLRA), from 3G networks or other more advanced mobile-networks, including 3G upgrades, evolutions or equivalent standards in terms of data transmission speeds. Download and upload traffic should be added up and reported together. Traffic should be measured at the end-user access point. Wholesale and walled-garden traffic should be excluded. Traffic should be reported in exabytes.</p>
	<p>i1336wm - Roaming by home subscribers abroad (outbound roaming), in minutes Roaming by home subscribers abroad (outbound roaming) refers to the total call minutes made and received by own customers in foreign networks (outbound roaming), i.e. retail international roaming minutes from own network subscribers roaming on foreign networks abroad. The indicator excludes minutes from users who are not subscribers to domestic mobile networks and are temporarily roaming on domestic mobile networks.</p>
	<p>i1334wma - Roaming by home subscribers abroad (outbound roaming on CLRAs), in minutes Roaming by home subscribers abroad (outbound roaming) refers to the total call minutes made and received by customers of the focal country in foreign networks (outbound roaming), i.e. retail international roaming minutes from own network subscribers roaming on foreign networks abroad in countries with which the focal country has country-level roaming agreement (CRLA). The indicator excludes minutes from users who are not subscribers to domestic mobile networks and are temporarily roaming on domestic mobile networks.</p>
REVENUE	<p>i75 - Revenue from all telecommunication services Revenue from all telecommunication services refers to revenue earned from retail fixed-telephone, mobile-cellular, Internet and data services offered by telecommunication operators (both network and virtual, including resellers) offering services within the country during the financial year under review. It includes retail revenues earned from the transmission of TV signals, but excludes revenues from TV content creation. Data reported should exclude: (i) wholesale revenues (e.g. termination rates), (ii) revenues from device sales and rents, (iii) VAT and excise taxes. Any deviation from the definition should be specified in a note, including clarifications on what TV revenues are included/excluded (e.g. IPTV, cable TV, pay satellite and free-to-air TV). Note: all values should be expressed in local currency at current prices.</p>

<p>(in local currency at current prices)</p>	<ul style="list-style-type: none"> • i741 - Revenue from mobile services Revenue from mobile networks refers to retail revenue earned from the provision of mobile-cellular communication services, including all voice, SMS and data (narrowband and broadband) services offered by mobile operators offering services within the country during the financial year under review. Revenues from value added services (e.g. premium SMS) should be included. Data reported should exclude: (i) wholesale revenues (e.g. termination rates), (ii) revenues from device sales and rents, (iii) VAT and excise taxes. Any deviation from the definition should be specified in a note. <p>Note: all values should be expressed in local currency at current prices.</p>
<p>INVESTMENT (in local currency at current prices)</p>	<p>i81 - Annual investment in telecommunication services refers to the investment during the financial year made by entities providing telecommunication networks and/or services (including fixed, mobile and Internet services, as well as the transmission of TV signals) for acquiring or upgrading fixed assets (usually referred to as CAPEX), less disinvestment owing to disposals of fixed assets. Fixed assets should include tangible assets, such as buildings and networks, and non-tangible assets, such as computer software and intellectual property. The definition closely corresponds to the concept of gross fixed capital formation, as defined in the System of National Accounts 2008. The indicator is a measure of investment made by entities providing telecommunication networks and/or services in the country, and includes expenditure on initial installations and additions to existing installations where the usage is expected to be over an extended period of time. It excludes expenditure on fees for operating licenses and the use of radio spectrum.</p> <p>Note: all values should be expressed in local currency at current prices.</p>
	<ul style="list-style-type: none"> • i841f - Annual foreign investment in telecommunications Annual foreign investment in telecommunications refers to investment during the financial year in telecommunication services (including fixed, mobile and Internet services) coming from foreign sources, also referred to as foreign direct investment (FDI). <p>Note: all values should be expressed in local currency at current prices.</p>
<p>PERSONS EMPLOYED</p>	<p>i51 - Persons employed in full-time equivalents Persons employed in full-time equivalents refers to the total number of persons, in full-time equivalent (FTE) units, employed by telecommunication operators in the country for the provision of telecommunication services, including fixed-telephone, mobile-cellular, Internet and data services. This indicator excludes staff working in broadcasting businesses that offer only traditional broadcasting services. Part-time staff should be expressed in terms of full-time staff equivalents (FTE).</p>
	<ul style="list-style-type: none"> • i51f - Persons employed by all telecommunication operators, female Refers to the total female, in full-time equivalent (FTE) units, employed by telecommunication operators in the country for the provision of telecommunication services, including fixed, mobile and Internet services. This indicator excludes staff working in broadcasting businesses that offer only traditional broadcasting services.
<p>PAY TV</p>	<p>i965IP - IPTV subscriptions IPTV subscriptions refers to the number of subscriptions to Internet protocol television (IPTV), i.e. TV delivered over an IP-based network managed to support the required level of quality of service, quality of experience, security, interactivity and reliability. This does not include video accessed over the public Internet – for example, by streaming – and subscriptions to over-the-top audiovisual content providers.</p>
	<p>i965s - Satellite-TV subscriptions Satellite-TV subscriptions refers to the number of pay direct-to-home (DTH) satellite subscriptions, i.e. pay TV received via a satellite dish capable of receiving satellite television broadcasts. This does not include free-to-air satellite TV.</p>
	<p>i965cab - Cable-TV subscriptions Cable-TV subscriptions refers to multichannel TV programming delivered over coaxial cable networks. It includes both analogue and digital cable-TV subscriptions. If the breakdown of analogue/digital cable-TV subscriptions is available, data for each type of cable-TV subscriptions should be specified in a note. It excludes IPTV delivered over cable-TV networks.</p>
	<p>i965oth - Other TV subscriptions Other TV subscriptions refers to pay-TV subscriptions other than IPTV, satellite TV and cable TV. This includes subscriptions to TV platforms such as microwave multipoint distribution systems (MMDS) and pay digital terrestrial television (pay DTT). Free-to-air TV should not be included. The TV platforms corresponding to the data reported should be indicated in a note.</p>