



On approval of the Rules for the connection and interaction of telecommunications networks, including the passage of traffic and the procedure for mutual settlements

Unofficial translation

The order of the acting Minister of Investment and Development of the Republic of Kazakhstan dated January 28, 2016 № 119. Registered with the Ministry of Justice of the Republic of Kazakhstan on February 29, 2016 № 13340.

Unofficial translation

Footnote. The heading - as amended by the Order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan № 34/ҒК dated January 31, 2023 (shall be enforced ten calendar days after the day of its first official publication).

In accordance with subparagraph 19-13) of paragraph 1, Article 8 of the Law of the Republic of Kazakhstan dated July 5, 2004 "On Communications" **I hereby ORDER:**

1. To approve the attached Rules for the connection and interaction of telecommunication networks, including the passage of traffic and the procedure for mutual settlements.

Footnote. Paragraph 1 - as amended by the order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan № 34/ҒК dated January 31, 2023 (shall be enforced ten calendar days after the day of its first official publication).

2. The Committee for Communications, Informatization and Information of the Ministry of Investment and Development of the Republic of Kazakhstan (Қазанғап Т.Б) shall:

1) provide the state registration of this order with the Ministry of Justice of the Republic of Kazakhstan;

2) direct a printed and electronic copy of this order for official publication to periodicals and the legal information system "Adilet" within ten calendar days after its state registration with the Ministry of Justice of the Republic of Kazakhstan, and also to the Republican Center of Legal Information within ten calendar days from the date of receipt of the registered order for inclusion in the Reference Control Bank of Regulatory Legal acts of the Republic of Kazakhstan;

3) place this order on the Internet resource of the Ministry of Investment and Development of the Republic of Kazakhstan and on the intranet portal of the state bodies;

4) within ten working days after the state registration of this order with the Ministry of Justice of the Republic of Kazakhstan, report to the Legal Department of the Ministry of Investment and Development of the Republic of Kazakhstan on execution of the actions provided for in subparagraphs 1), 2) and 3) of paragraph 2 of this order.

3. Control over the execution of this order shall be assigned to the supervising Vice Minister of Investment and Development of the Republic of Kazakhstan.

4. This order shall take effect upon expiry of ten calendar days after the date of its first official publication.

*Acting Minister
of Investment and Development
of the Republic of Kazakhstan*

Zh. Kassymbek

Approved by
Order № 119
of the acting Minister
of Investment and Development
of the Republic of Kazakhstan
dated January 28, 2016

The Rules

**for interconnection and interaction of telecommunications networks,
including traffic transmission and the procedure for mutual settlements**

Footnote. The heading of the Rules - as amended by the Order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan № 34/HK dated January 31, 2023 (shall be enforced ten calendar days after the day of its first official publication).

1. General Provisions

1. These Rules for the connection and interaction of telecommunications networks, including the passage of traffic and the procedure for mutual settlements (hereinafter referred to as the Rules) have been developed in accordance with subparagraph 19-13) of paragraph 1 of Article 8 of the Law of the Republic of Kazakhstan "On Communications" (hereinafter referred to as the Law), shall determine the procedure for connection and interaction of telecommunications networks.

Footnote. Paragraph 1 - as amended by the order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan № 34/HK dated January 31, 2023 (shall be enforced ten calendar days after the day of its first official publication).

2. In these Rules, in addition to the concepts used in the Law, the following concepts shall be applied:

1) Subscriber A number - the number of the calling (initiating a call) subscriber, consisting of a sequence of decimal digits, corresponding to the three characteristics of the structure, length and uniqueness of the number specified in [ITU-T E.164]. The number provides unique identification of the caller;

2) a circuit-switched network - a telecommunications network in which a composite communication channel (connection) is created through several transit nodes from several series-connected channels for the duration of information transmission (until the connection is

disconnected) to create a communication session. Examples of such a network are telephone networks of various levels in which the routing of a call and creation of a connection are provided by the signaling system CCS7;

3) communication channel - a complex of telecommunication means and a distribution medium that provides signal transmission between telecommunication means in a frequency band or at a transmission speed characteristic of this communication channel. Depending on the type of communication, the channels are divided into telephone, telegraph, data transfers, and on the territorial basis, into international, intercity (trunk), zonal and local;

4) a communications operator is an individual or legal entity registered in the territory of the Republic of Kazakhstan, providing communications services and (or) operating communications networks;

5) billing system - application software designed to automatically perform accounting operations for telecommunication services provided to subscribers, and inter-operator traffic transmission services between communications operators, as well as their charging and billing for payment. The initial data for subsequent processing in the billing system about the services provided by the communications operator come from the data transmission measurement system, which is part of the telecommunications network switching equipment;

6) connection of one telecommunications network (means of communication) to another - organization of technological interaction between two telecommunications networks, in which it becomes possible to establish a connection and transfer information between users of communication services of these networks;

7) settlement rates - the price (tariff) that provides reimbursement of economically justified costs and profits calculated on the basis of data on separate accounting of income, expenses and assets involved, or data of economic analysis and financial statements, including the cost of providing and servicing technical equipment and facilities providing traffic transfer through the telecommunication network at a certain stage of the technological process in the order and volumes established by the legislation of the Republic of Kazakhstan;

8) interconnection (connection) point - the place (port) where one network is physically linked with another;

9) a standard point of attachment (connection) is telecommunications equipment designed to connect one network to another using standard technical conditions;

10) local telephone operator - a fixed-line operator that provides local telephone services;

11) load - the total time of occupation of the switching-system outlet with incoming calls flow at a specified time interval;

12) switching equipment - an automatic telephone exchange in a network with channel switching technology or a software switch for providing telephone services in a network with information packet switching technology;

13) telecommunications network of inter-city and international communications operator - a telecommunications network of a telecommunications operator of a telecommunications

network that is in general use that meets the established requirements of the authorized body, designed to transfer long-distance and international traffic at the appropriate network levels purposed to provide communication services;

14) connecting line - a set of technical means, including a communication line and parts of station equipment, providing interaction between connecting and connected telecommunication networks;

15) connecting operator - a telecommunications operator linking the networks of other telecommunications operators and network owners, as well as access points of telecommunications providers, with its network, upon their request.

16) connected operator - a telecommunications operator, a network owner, a telecommunications provider, applying for linking its network and / or access points of telecommunications providers with the network of the connecting operator;

17) connection level - the network level determined by the hierarchy and numbering plan of the connecting telecommunications network and at which another telecommunications network is connected;

18) routing number - address information used in cellular networks and public telecommunications for making calls to the ported mobile subscriber number;

19) interconnection to public telecommunications network at the intrazonal level - linking one telecommunications network with another, in which the connected local telecommunications network (network fragment) receives its own intrazonal access code "ab" and connects to the automatic trunk station (hereinafter - ATS) interconnecting the telecommunication networks;

20) interconnection to public telecommunications network at the local level – linking of the telecommunications network with the connecting local telecommunications network, if the numbering resource of the local network is committed;

21) interconnection to public telecommunications network at the inter-city level - linking one telecommunications network with another, in which the number of area code "ABC" or the "DEF" code or the prefix of the inter-city and / or international communication operator is assigned to the connected telecommunication network (network fragment), and the connected network is interconnected to the inter-city transit node (hereinafter - ITN) or the ATS of the connecting telecommunication network;

22) packet-switch(ing) network - a telecommunications network in which the transmitted information is divided into packets of a limited size, and the communication channel between the network nodes is occupied only for the duration of the packet transmission and is released after its completion. The incoming packet is first stored in the node, and then is transmitted further along one of the channels, depending on the end terminal, in which the packets are reconnected;

23) prefix - an identifier consisting of one or a string of digits and characters that select various formats of numbers, networks and (or) services;

- 24) recipient operator - a cellular operator, into the communication network of which the subscriber number is ported;
- 25) unauthorized traffic - traffic that is transmitted in violation of the traffic transit requirements established by these rules and not provided for by the terms of the interconnection and interaction agreement, including traffic with substitution of the caller's number;
- 26) clock network synchronization system (hereinafter- CNS system) – a set of technical means that provide synchronization signals to all elements of the digital telecommunications network;
- 27) telecommunications network owner - an individual or legal entity that owns part of the public telecommunications network and (or) the corresponding category of a unified telecommunications network (hereinafter - the network owner);
- 28) telecommunications operator - a telecommunications operator that owns a telecommunications network by right of ownership or other property rights, ensuring its operation, development, and providing paid and / or gratuitous telecommunication and / or information services;
- 29) telecommunications provider - a telecom operator that does not have its own telecommunications network, providing access services to the networks and services of telecommunications operators and providing paid or gratuitous telecommunications services and / or information services through the telecommunications operator's network, which are classified by type of telecommunications service provided;
- 30) telecommunications provider access node - equipment that receives data from users and prepares them for transmission over the network of the telecommunications operator;
- 31) telecommunications provider access node - a set of hardware and software of the telecommunications provider that provide telecommunications and / or information services over the network of a telecommunications operator;
- 32) terminal - subscriber terminal device;
- 33) traffic units - second, minute of telephone connection or Kbyte of information transmitted over a telecommunications network;
- 34) technical capability - availability of functioning technical means and communication facilities in the telecommunication network coverage area necessary for interconnecting telecommunications networks (equipment) and traffic transmission, as well as availability of free resources and functional capabilities of telecommunications networks and equipment;
- 35) traffic routing regulation - the establishment of rules by which these or other methods and routes of traffic transmission on telecommunication networks and between them are selected (or excluded);
- 36) fixed-line communication network - a telecommunications network whose end terminals have a geographically fixed location. Fixed telephone networks are divided into:

local telecommunications networks, telecommunications networks of operators of intercity and / or international communications, fixed-satellite communications;

37) mobile communications network - a telecommunications network that does not have a permanent geographically determined location within the service area (cellular, trunking, satellite telecommunications network);

38) departmental communications network – intended to meet managerial and organizational goals of state and local self-government bodies in accordance with their powers, also to implement the production and management goals of state enterprises and institutions;

39) special communications networks - intended to meet the needs of authorized state bodies, military command, national security and internal affairs bodies of the Republic of Kazakhstan, which can use public telecommunications networks as a basis;

40) corporate communications network - intended for managerial and internal production goals of legal entities;

41) ported (transferred) mobile subscriber number - a subscriber number in relation to which the procedure of porting (transfer) of a subscriber number from one mobile operator to another with the preservation of this subscriber number was performed;

42) interconnection at the international level - organization of interaction of telecommunications networks of international communication operators through international switching centers (hereinafter - ISC);

43) mini-automatic telephone exchanges - automatic telephone exchanges (hereinafter - ATE) with a capacity of not more than 128 numbers;

44) call initiator network - a network of the communications operator to which a subscriber initiating a call is connected;

45) IP-telephony operator - a telecom operator providing real-time telephone communication services through a packet-switch network;

46) IP - telephony - a technology enabling the use of a packet-switch network as a means of arranging telephone communications in real time;

48) “All Call Query” (request for all calls) - a direct call routing method for traffic transmission to the ported mobile subscriber numbers, in which the call initiator network makes a request to the operational database of the ported numbers to obtain information on the ported number and further routing of the call destination.

Footnote. Paragraph 2 as amended by the order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan dated 02.08.2024 № 465/ HK (comes into force ten calendar days after the date of its first official publication).

3. These Rules provide for the order of organizational and technical interaction between:

1) operators of fixed communications network with each other, operators of mobile communications network with each other, operators of fixed communications network with

operators of mobile communications network, if their telecommunications networks have interconnection with public telecommunications networks;

2) owners of departmental, special, corporate telecommunications networks with each other and with operators of a fixed and / or mobile communication network, if their telecommunication networks are connected to public telecommunication networks;

3) operators of fixed and / or mobile network with telecommunications providers when connecting access nodes of telecommunications providers to their telecommunications networks, if their telecommunications networks are connected to public telecommunications networks.

4. These Rules shall apply to all communications operators and owners whose networks (equipment) are connected to the public telecommunications network of the Republic of Kazakhstan.

Organization of interaction of technical personnel in case of faults and emergencies, also routing of the calls of departmental, corporate, special communications networks and ATE of public telecommunication networks shall be carried out in accordance with Appendix 1 to these Rules.

The load standards and connection quality in public telecommunication networks are defined in Appendix 2 to these Rules.

Technical requirements for ATE connected to public telecommunication networks are defined in Appendix 3 to these Rules.

Features of connecting mini-ATE, parameters of subscriber line circuits on which ATEs are switched, are defined in Appendix 4 to these Rules.

5. Legal relations and organizational and technical interaction between telecom operators, network operators and owners and the procedure for mutual settlements shall be governed by the agreement on telecommunications networks interconnection and interaction (hereinafter the “Interconnection and interaction agreement”) concluded between them in accordance with the civil legislation of the Republic of Kazakhstan.

2. Order of interconnection and interaction of telecommunications networks

6. Telecommunications networks connected to public telecommunications networks shall be considered as components of public telecommunication networks. At the interfacing (pairing) of dedicated networks and (with) public telecommunications networks, they shall go into the category of public telecommunications networks. Organization of traffic with the use of serial numbers, GSM-gateways, any other equipment included simultaneously in public telecommunications networks and dedicated networks shall not be allowed.

7. On the connected networks, the following requirements shall be met:

1) safeguarding reliability and manageability of communications, taking into account network technological features based on uniform standards effective in the Republic of Kazakhstan;

2) safeguarding resiliency and information security, functions of operational-search measures, work in emergency situations on communications recovery;

3) ensuring certification of billing systems in certification bodies accredited by the relevant authorized body in technical regulation and metrology;

4) pertaining to telecommunication networks of operators of intercity and (or) international communications.

8. General technical requirements set to all networks constituting a unified telecommunications network of the Republic of Kazakhstan for the construction, network structure, clock network synchronization system, signaling systems, numbering plans, network management and types of switching equipment used must comply with the document of the unified telecommunications network of the Republic of Kazakhstan and ITU-T recommendations.

9. The switching station (equipment) of the connected network can be used for interconnection purposes by only one communication operator.

9-1. Connection of telecommunications networks of telecom operators to public telecommunications networks shall be carried out after bringing the connected switching equipment into compliance with the requirements established by the technical regulation "General requirements for telecommunications equipment to ensure the conduct of operational-search activities, collection and storage of service information about subscribers", approved by Order of the Chairman of the Committee National Security of the Republic of Kazakhstan dated July 27, 2021 № 85/ке (registered in the State Register of Normative Legal Acts under № 23744). Connection for certification for compliance with the requirements established by the specified technical regulation is carried out within a period of not more than 30 calendar days.

Footnote. The Rules are supplemented by paragraph 9-1 in accordance with the Order of the Minister of Information and Communications of the Republic of Kazakhstan dated 10.21.2016 № 218 (shall be enforced ten calendar days after the day of its first official publication); as amended by the Order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan № 34/HK dated January 31, 2023 (shall be enforced ten calendar days after the day of its first official publication).

10. Organizational and technical interaction shall include two stages, the first stage - interaction in the process of connecting networks comprises:

1) request of the connected operator to the connecting operator to determine the possibility of interconnecting networks and / or access nodes of telecommunications providers and receipt by the connected operator from the connecting operator of the standard technical conditions for interconnection, drawn up in accordance with the form of Appendix 5 to these Rules and the draft connection Agreement.

The connecting operator, if technically possible, within no more than thirty calendar days, if the interconnection is carried out within the same numbering area, and no more than sixty

calendar days, in case of simultaneous interconnection in different numbering areas, shall provide technical conditions indicating the specific actions required to be performed for interconnection, and shall provide the technical feasibility for interconnection to a standard point of interconnection (connection).

In request for cable laying in a telephone (underground) conduit for interconnection purposes, the owner of the cable (telephone) conduit, in the absence of technical capability, shall indicate in the technical conditions the measures to be taken to remove the obstacle to cable laying;

2) development by the connected operator of design and estimate documentation for the connection;

3) implementation by the connected operator of the project for interconnection and (or) fulfillment of technical conditions;

4) network connection in test mode.

Completion of the first stage shall be the signing of the Act of completed specifications, the testing Act and the commissioning of the connected network.

Upon signing of these two acts, by mutual agreement, the connecting and connected operators shall sign the interconnection Agreement within no more than three business days.

The second stage is interaction in the process of providing telecommunication services after completion of the networks interconnection, which shall include solution of the following issues:

1) interaction in the provision of services;

2) organization of traffic routing;

3) ensuring the quality of the services provided.

11. The connected operator shall send an application in any form to the connecting operator for the issuance of technical conditions for connection (hereinafter referred to as the Application). The following shall be attached to the application:

1) an electronic form of permission to provide communications services issued by an authorized body (for communications operators whose activities are subject to licensing);

2) technical characteristics of the network (mounted capacity, type(s) of equipment used, type(s) of signalling, network structure and volume of predicted traffic (load);

3) certificates of conformity for the equipment used in accordance with the Conformity Assessment Rules approved by the Order of the Acting Minister of Trade and Integration of the Republic of Kazakhstan dated June 29, 2021 № 433-HK (registered in the State Register of Normative Legal Acts under № 23364);

4) a copy of the approved order of the authorized body on the allocation of the numbering resource;

5) an electronic form of permission to provide long-distance and/or international telephone services (for long-distance and/or international communications operators).

Footnote. Paragraph 11 - as amended by the Order of the Minister of Digital Development , Innovation and Aerospace Industry of the Republic of Kazakhstan № 34/HK dated January 31, 2023 (shall be enforced ten calendar days after the day of its first official publication); as amended by the order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan dated 02.08.2024 № 465/HK (comes into force ten calendar days after the date of its first official publication).

12. In the event that the owner of the network, previously connected to telecommunication networks, makes a decision on the provision of paid services, the network owner shall notify the connecting operator within ten calendar days, receive and fulfill the specified technical conditions, and also renew the connection Agreement or amend the concluded Agreement in accordance with these Rules.

In the event that the connecting operator reveals the fact of providing paid services by the network owner without the appropriate registration, the connecting operator shall disconnect the connected network.

13. In case of disagreement with the technical conditions for the connection, the connected operator may request alternative technical conditions from the connecting operator, having notified the authorized body in the field of communications about it.

14. On the basis of the technical conditions for the connection, the operator to be connected, if necessary, shall develop design documentation for their implementation, and fulfill the requirements provided for in paragraph 11 of these Rules.

15. If the capacity of the connected network is more than 2000 numbers, it is allowed, and if the capacity is more than 10000 numbers, it is recommended that the process of connecting to public telecommunication networks be carried out in several stages. The stages shall be determined by the consensual decision of the parties in accordance with the issued licenses and shall be indicated in the technical conditions for interconnection. In the technical specifications and design documentation for the initial stages of the interconnection works, the subsequent stages should be taken into account.

16. The connection of the primary capacity of the connected network at the first stage and the additional capacity at subsequent stages shall be carried out after the full implementation of the technical conditions of the corresponding stage for the interconnection and acceptance of the work and objects in the manner defined by these Rules and standard-technical documents.

17. During the execution of the first stage, the connected operator shall notify the connecting operator in writing of the fulfillment of technical conditions.

Verification of the technical conditions fulfillment and availability of equipment for connection points shall be carried out by representatives of the connecting and connected operators.

The Act of completed technical conditions shall be supplemented by the inspection results , measurement protocols, operating technical documentation, Acts of performed hidden works

and, by consent of the parties, the Act on delimitation of the service area of the equipment of connection points).

18. Organization of interconnection of telecommunications networks shall include determination of the method, conditions and requirements for the parties in the process of interconnection. The technical requirements for each specific case shall be determined by the technical conditions for interconnection issued by the interconnecting operator.

Long-distance and (or) international communication operators are required to publish a list of standard connection points in accordance with subparagraph 1) of paragraph 3-1 of Article 26 of the Law of the Republic of Kazakhstan "On Communications".

Footnote. Paragraph 18 as amended by the order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan dated 02.08.2024 № 465/HK (comes into force ten calendar days after the date of its first official publication).

19. Interconnection of telecommunications networks to public telecommunications networks shall be allowed at the levels and in the points in accordance with the numbering resource that is assigned to the operator by the authorized body in the field of communications.

It shall be allowed to connect to the public telecommunication networks the networks of the same operator in several geographically dispersed points. In this case, in each of these points all the requirements established by these Rules must be fulfilled.

20. When issuing technical specifications for interconnection, power increase of various elements of the interconnected and interconnecting networks (inter-station and switching capacities, capacities of communication lines) may be taken into account. By consent of the parties, the costs of the capacity increase may be borne by the operators of the connected and connecting networks using this network element in proportion to the capacity involved in the interests of one or another operator. 21. Upon fulfillment of the technical conditions between the communication operators (owners) of the connected and connecting networks, an agreement shall be concluded establishing all issues of mutual settlements, the parties' responsibility for the quality of the services provided.

22. Financing of design and construction works carried out during the interconnection of telecommunication networks shall be made on contractual basis.

23. Interconnection of telecommunications networks of the communication operators shall be made in the presence of a certificate for the equipment used.

24. The organization of connection to the network of a telecommunications operator is based on the following principles:

1) provision of information to telecommunications operators on standard connection points (connection) and connection conditions are determined in accordance with paragraph 18 of these Rules;

2) compliance with equal conditions for connection of telecommunications networks and traffic transmission for all telecommunications operators, network owners, and telecommunications providers providing similar services;

3) provision of connection and traffic transmission services by a telecommunications operator to other telecommunications operators and network owners is carried out under the same conditions and traffic transmission technology as when organizing these services by a telecommunications operator within its network and (or) providing these services to affiliated persons;

4) provision of an itemized invoice for payment for connection and traffic transmission services;

5) compliance with the confidentiality regime between the parties with respect to information about competitors and clients;

6) provision of the opportunity for a fee-based use, on a contractual basis, of synchronization systems, operational support systems, billing systems, and other hardware and software necessary for the provision of new services; "unseparated" network components, including subscriber lines;

7) provision of the opportunity to implement, on a contractual basis, the paid use of infrastructure elements (for example, buildings, poles, telephone (cable) ducts, channels, antenna mast structures, etc.).

Footnote. Paragraph 24 - as amended by the order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan dated 02.08.2024 № 465/ HK (comes into force ten calendar days after the date of its first official publication).

25. For telecommunications operators, the Agreement of connection, on the basis of which the terms of provision of services for connection of other telecommunications networks are determined, as well as the related obligations for interaction of networks and traffic transmission, is a public agreement.

Footnote. Paragraph 25 - as amended by the order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan dated 02.08.2024 № 465/ HK (comes into force ten calendar days after the date of its first official publication).

26. Discrimination of telecom operators is not allowed when issuing technical specifications for connection. The telecommunications operator sets equal conditions for connection and traffic transmission for the connected networks of operators.

Footnote. Paragraph 26 - as amended by the order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan dated 02.08.2024 № 465/ HK (comes into force ten calendar days after the date of its first official publication).

27. If the connecting operator fulfills all the requirements stipulated by these Rules, the refusal of the telecommunications operator to conclude the Connection Agreement is not allowed.

Footnote. Paragraph 27 - as amended by the order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan dated 02.08.2024 № 465/ HK (comes into force ten calendar days after the date of its first official publication).

28. Local interconnection:

1) fixed local communication networks with each other, fixed communication networks with mobile communication networks (mobile radiotelephone communication, trunking and cellular communication) connected to public telecommunications networks, is carried out with the allocation of a corresponding local network numbering resource;

2) via switching stations of the connected network with inclusion in the local digital telephone exchange of the connecting network on which outgoing and incoming traffic of the connected network must be recorded (accounted for);

3) by including switching stations of the connected network in the local digital telephone exchange of the connecting network. Interconnection can be made by digital communication channels, on channel switching technology formed by:

connecting lines;

recording-completing trunk lines designed to transmit outgoing long-distance telephone messages of a local telecommunications network;

trunk telephone circuit connecting the trunk telephone exchange with the local telecommunication network station and intended for transmission of incoming long-distance messages;

and voice transmission channels on information packet switching technology;

4) if the capacity of the connected station is not less than 3500 numbers, in the availability of a reserve capacity at the automatic trunk station (hereinafter - ATS), organization of direct channels is permissible between the switching stations of the connected network and the ATS of public telecommunication networks located in the same numbering area;

5) if the capacity of the connected network creates an excess reserve of the existing numbering of the local network, the authorized body in the field of communications shall take measures to resolve it.

Footnote. Paragraph 28 as amended by the order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan dated 02.08.2024 № 465/ HK (comes into force ten calendar days after the date of its first official publication).

29. Intra-area interconnection:

1) for intra-area interconnection, the connected network is included as a local network with the assignment of the intra-area access code “ab” within the geographic numbering area;

2) in the absence of numbering resource for interconnection of telecommunication networks at the local level, a network with a capacity of at least 5000 numbers can be interconnected, as agreed with the operator of the connecting network, at the intra-area level with the inclusion of switching stations of the connected network in the ATS of this numbering area.

30. Inter-city interconnection - connection of one telecommunications network to another, in which the connected network of the operator (network owner) is included in the standard points of interconnection (connection) at the automatic trunk station or at the inter-city transit node (ITN) of the connecting network. In this case, the numbering resource is committed to the connected network — the code of the geographically determined zone ABC, the access code “X1X2” in ABC, the code of the non-geographically determined zone DEF, the code of the operator in the service access code (hereinafter- SAC), the prefix for choosing the intercity and / or international communication operator (hereinafter - PoP).

31. International interconnection:

1) interconnection at the international level shall be carried out for the networks of international telecommunications operators, in which the interconnected telecommunication network is linked to the international network switching center (hereinafter - ISC), which carries out the interconnection;

2) interaction between the ISC of the connected and connecting networks shall be carried out by organizing communication channels between them;

3) during interaction of the international communication operators' networks with each other (ISC- ISC), organization of bypasses shall be planned to enable traffic transmission in the event of accidents and emergency on one of the networks, both within the national network and in the access to foreign public telecommunication networks.

32. Interconnection of telecommunication networks of operators of intercity and (or) international communications shall be organized at the intercity and (or) international level.

33. Interconnection of local telecommunication networks to the networks of intercity and (or) international communication operators shall be organized as follows:

1) interconnection of local telecommunication networks connected to public telecommunication networks to the networks of intercity and (or) international communication operators shall be carried out through the connection points of the local level of the connecting network (transit nodes of automatic telephone exchanges - ATS TN, automatic trunk telephone exchange ATS) of the operator of intercity and (or) international communications on which outgoing and incoming traffic must be recorded;

2) the subscribers shall select the local telephone operator connected to the public telecommunication networks, the network of the intercity and (or) international communication operator through the operator prefix (OP) assigned to the intercity and international communication operator.

34. Interconnection of the network of the intercity operator to the network of the operator of intercity and international communication shall be organized as follows:

1) the network of the intercity communication operator network is interconnected to the network of the intercity and international communication operator at the intercity level between the ATS of these operators located in the same geographical numbering area (ABC);

2) interaction between the ATS of the connecting network and the ATS of the connected network shall be carried out by organizing direct communication channels between them;

3) accounting for outgoing and incoming intercity traffic shall be carried out by both operators of intercity and (or) international communication, or, by agreement, a single settlement center, owned by one of the interacting communication operators.

35. Interconnection of the network of the international communication operator to the network of the intercity and international communication operator shall be organized as follows:

1) the network of the operator of international communication is connected to the network of the intercity and international communication operator between the ISC networks of the connected and connecting operators;

2) interaction between the ISC of the connected and connecting networks is carried out by organizing communication channels between them;

3) when interacting with the networks of intercity and international communication operators and international communication operators (ISC- ISC), organization of bypasses shall be planned to enable traffic transmission in case of accidents and emergency situations on one of the networks, both within the national network and access to foreign public telecommunications networks.

36. Interconnection of the network of the intercity and international communication operator to the network of another operator of intercity and international communication shall be organized respectively between the ATS and ATS of one geographical area, ISC and ISC of the networks of the connected and connecting operators.

37. Excluded by the order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan dated 02.08.2024 № 465/HK (comes into force ten calendar days after the day of its first official publication).

38. A corporate telecommunications network may be interconnected to public telecommunications networks as a corporate client by installing an institutional switching station within the administrative territory:

at the local level;

at the intercity level, if it combines network sections distributed across different administrative territories with the allocation of the corresponding numbering resource (“DEF” code);

or have a direct connection to a mobile network.

If the owner of the corporate network intends to provide billable services, interconnection to public telecommunication networks shall be made provided that:

1) the connected part of the network can be programmatically or technically separated by the owner from the rest of the network used for internal production purposes (control of technological processes in production);

2) the connected part of the network meets the requirements for the functioning of the telecommunications network set in these Rules;

3) the owner of the corporate telecommunications network keeps separate records of the costs of operating the network used for managerial and internal production purposes (technological process control in production) and its part, interconnected to telecommunications networks.

39. Interconnection of mobile networks:

1) public mobile wireless telephone and trunking communication networks can be interconnected to public telecommunication networks at the long-distance, intra-area and (or) local level with committing of the corresponding numbering resource in accordance with the regulatory enactments or by agreement between communication operators;

2) networks of mobile wireless telephone communication and mobile satellite communication of general use, for which a DEF code of a non-geographic numbering area is assigned, shall be interconnected to public telecommunication networks at the intercity level, for traffic transmission to subscribers of other numbering areas and at the areal level through ATS of the geographic numbering area where the mobile network switch is located to enable traffic transmission within the given geographic numbering area;

3) cellular networks for which a DEF code of the non-geographical numbering area is assigned shall be interconnected to public telecommunications networks at the intercity level, the cellular networks shall be interconnected at the respective levels of switching equipment of these networks by organizing direct communication channels;

4) public mobile wireless telephone and trunking communication networks, which are assigned the “ab” code in the geographic numbering area ABC, shall be interconnected to public telecommunication networks through ATS of this geographic numbering area . The numbering plan of the connected network shall be included in the numbering plan of the geographical area;

5) public mobile wireless telephone and trunking communication networks that received the local area network abx / abXX ATE index are interconnected through switching stations of the local network. The numbering plan of the connected network shall be included in the numbering plan of the local network.

40. Interconnection of telegraph and telex networks:

1) interconnection to public telex communication networks shall be permitted for departmental telegraph-telex networks and telematic services;

2) interconnection to telegraph and telex communication networks shall be carried out at the level of subscriber terminating points or installations;

3) interconnection at the level of subscriber installations means interconnection of a user terminal to the telecommunications network, through which the operator transmits and receives information;

4) interconnection of public telegraph and telex communication networks with message switching shall be permitted for telegraph and telex networks of the operators;

5) in some cases, if the connected technical equipment is available in the connected network, it shall be permitted, on the basis of instructions from the authorized body in communications, to interconnect to the telegraph communication networks at the level of channel switching stations (substations) or message switching centers (concentrator units);

6) specific points of interconnection and numbering allocated to the connected network shall be established by the public telegraph network operator.

41. Interconnection to public telecommunications networks of access nodes of telecommunication providers shall be made in one of the following ways:

1) by connecting the equipment to the ATS of the public telecommunications network using the operator code in the SAC designated by the authorized body in communications. In this case access shall be arranged only for subscribers of the numbering area, to the ATS of which the equipment is connected;

2) by connecting the equipment to the public telecommunications network at the local level through unidirectional communication channels outgoing from local network subscribers included in the standard interconnection (connection) point.

42. To arrange access to the telecommunication providers' services, the local telecommunication networks operators shall provide subscriber lines to the telecommunication providers with the allocation of subscriber numbers or serial numbers. The agreement on allocation of subscriber lines shall indicate the purpose for which they are allocated.

The order of assigning serial numbers and interaction of telecommunication providers with local telecommunications networks communication operators, the assigned serial number are specified in Appendix 6 to these Rules.

43. Interconnection of access points of IP-telephony operators to the network of intercity and (or) international communication operators shall be carried out at the intercity level using the SAC. Along with using the operator code in the SAC, a local telephone number assigned as a service access number can be used. In this case connection of IP - telephony operators' access nodes remains on intercity level.

44. The SAC and operator code X1X2X3X4 shall be assigned by the authorized body in communications.

45. Access to the IP-telephony operators' services shall be organized for subscribers of the ABC numbering area, to the ATS of which the operator's access node is connected.

46. Direct connection of the access nodes of IP telephony operators to the mobile networks equipment shall not be permitted.

47. Technical conditions for interconnection shall be issued in accordance with the request for interconnection and contain the following:

1) method of interconnecting networks (communication facilities), enabling the connection, indicating the relevant line-cable and station facilities used, ownership of these facilities, station equipment;

2) use of existing telecommunication facilities for the traffic transmission of the interconnected network, in the absence of such, the need to build new facilities by consent of the parties;

3) types of equipment and its technical parameters at the networks connection points - signal levels, signal spectra, transmission speeds and other parameters of the joints;

4) signaling systems used;

5) binding to the clocking network system;

6) numbering resource allocated to the connected operator by the authorized body in communications;

7) measures required to accomplish the interconnection, preliminary list of construction and installation works;

8) stages of interconnection works;

9) duration term (at least six months).

Restrictive list of signaling protocols supported by digital stations in public telecommunication networks is given in Appendix 7 to these Rules.

48. Technical conditions for accession shall be specified within the terms envisaged for their issuance in the following events:

1) numbering changes on the network that made the interconnection;

2) upgrading, reconstruction or replacement of technical means of the network that made the interconnection, directly interacting with the connected network, requiring a change in the signaling systems and the like;

3) need to upgrade equipment on the connected network and (or) expand its capacity;

4) changes in the interconnection level in accordance with regulatory acts of the authorized body in communications;

5) obtaining by the connected operator of other licenses to exercise business activities in telecommunications requiring networks interconnection.

49. In the upgrading of public telecommunication networks, the connecting operator, after approval of the upgrade project, shall notify in 4 (four) months all the concerned telecommunication operators, network owners, telecommunication providers of possible changes in the technical conditions. If necessary, the connecting operator issues changes in the technical conditions to the connected operator no later than three months before the start of upgrades.

At the same time, the connected operator requests the connecting operator to clarify the technical conditions for interconnecting its network to the public telecommunications network

Specification of the technical conditions for interconnection shall be carried out in the manner and terms determined by these Rules for the issuance of technical conditions. Upon completion of the interconnection works, in accordance with the new technical specifications, the interacting communication operators shall clarify the connection and interaction Agreement.

In the event of changes or clarification of the technical conditions of interconnection, changes or additions must be substantiated, optimally necessary and within the range of issues regulated by these Rules.

50. In the event of revealed non-compliance of the inter connection with normative legal or regulatory and technical acts, the connecting operator shall give to the connected operator the technical conditions that comply with these Rules. The costs arising from this shall be incurred by both interacting operators in the amount determined by the agreement between them.

51. The communications operator shall:

- 1) afford to its networks users the right to choose any intercity and (or) international communications operator;
- 2) provide interconnection and traffic transmission services that meet the quality standards , technical standards, and terms of the connection Agreement;
- 3) afford on its networks the possibility to interconnect to the ported mobile subscriber numbers using the All Call Query direct routing method with the use of information on the assigned routing numbers received from the centralized database of subscriber numbers.

52. An agreement shall be concluded between the communication operators and / or network owners participating in the single technological process of providing interconnection and traffic transmission services, stipulating:

- 1) mutual responsibility for the quality of the services provided for interconnecting and traffic transmission;
- 2) damage compensation procedure to the communications operators and / or network owners in case of non-fulfillment or improper fulfillment of the requirements of regulatory acts on technical operation, which led to deterioration in the quality of services or their non-provision;
- 3) powers of the communications operators and / or network owners in billing for interconnection and traffic transmission services provided by other communications operators and / or network owners, and account settlement procedure for these services;
- 4) procedure for handling claims received from interacting communication operators and / or network owners;
- 5) procedure for traffic transmission of the interacting networks operators;
- 6) conditions and procedure of accounts settlement for traffic transmission;
- 7) issues of interaction between systems of operational-technical network management;

8) timely provision of information to other telecommunications operators, network owners, telecommunications providers on communications failures that entail interruptions in the provision of services, and taking a set of measures to restore communications in the shortest possible time;

9) timely notification of telecommunications operators, network owners, telecommunications providers of scheduled service maintenance works on the network, which could lead to interruptions in the provision of services;

10) ensuring correct transmission of signal parameters in accordance with the common channel signaling of the CCS7 networks or SIP-T / SIP-I protocols, including the number of the caller (subscriber A number) for local, intercity and / or international calls, if any in the source records of the switching equipment of the communications operator (detailed call recording - Call Detail Record).

Footnote. Paragraph 52 as amended by order № 218 of the Minister of Information and Communications of the Republic of Kazakhstan dated October 21, 2016 (shall be enforced upon expiry of ten calendar days after the date of its first official publication).

53. The communications operator involved in establishing a telephone connection shall transmit information on the calling subscriber number (subscriber number A) unchanged, in keeping with the ITU recommendations [ITU-T E.157] and requirements of these Rules.

In the event of inconsistencies in the quality parameters of the provided services with the current standards, the interacting telecommunications operators, network owners, and telecommunications providers, shall immediately find out the causes of disruptions in the operation of telecommunications networks and take measures to eliminate these causes. In this event, the costs shall be reimbursed to the telecommunications operator, network owner, telecommunications provider, in whose equipment operation the discrepancy with the current standards was found out.

54. With the introduction of time-based accounting of local telephone connections, the communications operators shall afford an opportunity to subscribers of free connections to social facilities of a locality in agreement with local executive bodies that reimburse the communications operators' expenses for these purposes.

3. Order of traffic routing on telecommunications network and settlements

55. Communications operators shall carry out the traffic routing of their networks in accordance with these Rules and also in accordance with the terms of the connection Agreement.

56. Each telecommunications operator, network owner, telecommunications provider operating in the territory of the Republic of Kazakhstan, shall independently manage routing of the traffic that closes within its network and comply with the instructions of the authorized body in communications in case of emergency.

1) on routing of the traffic that closes within the national network;

- 2) on routing of international outgoing, incoming and transit traffic;
- 3) on traffic routing to the ported mobile subscriber numbers;
- 4) on collection, analysis and providing complete information on the technical condition and operation of its network.

57. Routing of the traffic outside the Republic of Kazakhstan shall not be allowed when making interconnections at the local, intra-area and intercity levels.

58. To recover the existing debt the communications operator shall be entitled to restrict incoming long-distance and / or international traffic until such debt is paid.

The communications operator may restrict certain numbers of incoming long-distance and / or international traffic in case of incorrect transmission of signal parameters in accordance with the general-channel signaling of CCS7 networks or SIP-T / SIP-I protocols, including the number of the calling subscriber (subscriber number A) in case of local, long-distance and / or international call, if it is present in the source records of the switching equipment of the telecom operator receiving traffic to its network (Call Detail Record).

In other cases, the restriction of admission by operators of any kind of communication, incoming / transit traffic without a relevant court resolution shall not be allowed.

Footnote. Paragraph 58 as amended by order № 218 of the Minister of Information and Communications of the Republic of Kazakhstan dated October 21, 2016 (shall be enforced upon expiry of ten calendar days after the date of its first official publication).

59. Routing of local, long-distance, international telephone traffic, data traffic (including traffic of IP-telephony operators), traffic from / to the cellular network on the technical means of the networks formed as a result of interconnection shall be allowed solely on the basis of agreements concluded between the connecting and connected operators.

Telecommunications operators, network owners, telecommunications providers shall not be allowed to carry out unauthorized traffic routing on local, long-distance, international and cellular networks.

60. When routing the traffic to the ported (transferred) mobile subscriber numbers, the communications operators shall use routing numbers assigned to subscriber numbers in entering of the subscriber numbers into the centralized database.

At the same time, traffic initiated on the territory of the Republic of Kazakhstan is routed through the call initiator network. Call routing (connection) is carried out at the network level of the recipient operator.

The incoming international voice traffic is routed to the network of cellular communication operators by international (long-distance) communication operators via the ISC to which the call was routed.

Incoming international non-voice traffic (SMS / MMS) is routed by the recipient operator.

61. Outgoing, incoming, transit international telephone traffic of public telecommunication networks and communication networks connected to the public telecommunication network shall be routed through the switching field of the ISC of the operators of intercity and (or)

international communications of the public telecommunications network of the Republic of Kazakhstan, in accordance with the connection Agreement.

62. Prefixes for the choice by the subscriber of the long-distance, international, cellular communications operator and telecommunications providers shall be assigned by the authorized body in communications and shall be used solely for outgoing communication from the subscriber.

In the incoming communication, the choice of the communication operator's network from the incoming international (long-distance) station shall be made in accordance with the agreement between communication operators on the direction of incoming traffic to the subscribers of local telecommunications networks.

63. To avoid damage, obstruction of the network use by subscribers, overloads and emergencies in communications networks, the communications operators shall not be allowed to conduct activities that encourage an increase in the incoming traffic volume from the networks of other operators.

64. In the event of damage, congestion and emergency situations on the network, telecommunications operators and network owners shall immediately take agreed measures to restore communications and service quality, organize workarounds for traffic routing to the destinations.

Traffic routing schemes on workarounds, procedure for generating workarounds shall be established by joint decisions of the telecommunications operators and / or network owners.

The operational management of the restoration of communications and service quality shall be carried out by one of the operators of long-distance and international communications

65. When passing unauthorized traffic, including traffic with substitution of the subscriber number (A number), the telecommunications operator receiving the traffic, the owners of telecommunications networks, within one day shall notify the telecom operator from which this traffic was received. A telecom operator that has received a notification about the passage of unauthorized traffic from its network must, within three calendar days, find out the reasons and take measures to eliminate such traffic.

If the passage of unauthorized traffic is not eliminated, the telecom operator, owners of telecommunications networks that receive such traffic on their network, shall apply to the judicial authorities.

Footnote. Paragraph 65 is in the wording of the order of the Minister of Digital Development, Innovations and Aerospace Industry of the Republic of Kazakhstan dated 13.06.2023 № 181/HK (shall be enforced upon expiry of ten calendar days after the day of its first official publication).

66. The relationship between communications operators and / or networks owners interacting as a result of interconnection of telecommunications networks shall be based on the following general provisions in making settlements:

- 1) maximum use of telecommunication network resources (bandwidth of switching stations, channels and lines);
- 2) stimulation of the improvement of call service quality indicators and provision of interconnection and traffic transmission services;
- 3) equal partnership, including the use of symmetric settlement rates in the settlements for the same traffic categories;
- 4) regard to the contribution of each party to the construction and operation of the station and line structures of the telecommunications network.

The calculated rates for the passage of inter-operator traffic are determined by the parties to the agreement.

When establishing inter-operator rates, the use of asymmetric rates for transmission of traffic of the same category shall not be allowed.

Footnote. Paragraph 66 as amended by the order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan dated 02.08.2024 № 465/HK (comes into force ten calendar days after the day of its first official publication).

67. The procedure of settlements between communication operators and / or network owners for the provided network resources shall be determined with regard to:

- 1) relation to ownership of technical means and telecommunications facilities, providing access to public telecommunications networks;
- 2) the level of interconnection to public telecommunication networks;
- 3) inter-carrier settlements for traffic routing over public telecommunication networks.

68. The tariff for interconnection services shall be a one-time fee and reflect the cost of the communication operator (network owner) arising from the provision of interconnection services based on reimbursement of economically justified expenses and profits (not more than three times the refinancing rate established by the National Bank of the Republic of Kazakhstan) for creation and allocation of a standard point of interconnection (connection).

When calculating a one-time fee for interconnection services, the costs of renting space and premises shall not be included.

The existing connection capacity shall be expanded on a contractual basis, with regard to the interests of both parties.

69. Settlements for routing of all types of traffic shall be based on the accounts generated by the interacting communication operators' own certified billing systems.

The inter-operator accounting for SMS traffic shall not include technical automatic notifications of mobile operators sent to subscribers (for example, about subscriber availability or inaccessibility). Only SMS messages initiated and received by subscribers of telecommunications services shall be included in the calculations.

The basis for forming subscriber billing system for the traffic routing services provided shall be the data of the connection duration measurement system and the data transmission

measurement system, which must be entered in the register of the state system for ensuring the uniformity of measurements and have a valid verification certificate.

70. In the interaction of the connecting and connected operators, the settlements between them shall be carried out for the actual traffic (incoming, outgoing and transit types of traffic), for interconnection services, for leased facilities and telecommunication facilities and other services.

In the inter-carrier settlements for the routed traffic, the communications operator, for which the direction is outgoing and which receives a fee from the subscriber, shall settle accounts with the communications operator for which the traffic routed on this direction is incoming or transit, on the basis of the accounting rates agreed by the interacting parties and provided for by the connection Agreement.

In the event that one operator provides telecommunications services to a subscriber of another operator on prepaid cards or direct agreements with them, the settlements between them shall be based on additional agreements providing for payments to the operator ensuring a subscriber termination at the outgoing connection, based on the settlement rates.

71. Settlements between the connected and connecting communications operators shall be made for:

1) traffic transmission services:

local (incoming, outgoing, transit);

intercity (intra-area) (incoming, outgoing, transit);

international (intra-area) (incoming, outgoing, transit);

on (from) the mobile operators' network;

IP telephony (Internet telephony) operators;

traffic of uncertain directions entering the network of telecom operators;

SMS MMS;

2) access services to the channels of the transport network:

lease of a communication channel (analog or digital) and (or) a connecting line between different interconnection points with the networks of other communications operators;

3) services for organizing access to the network of a communications operator:

works on organization and interconnection of the channel and (or) connecting line between the interconnected networks (from the network of each of the connected operators to the connection point, depending on the geographical location of the connection point);

4) access to the services of the connecting communication operator:

conducting billing and collecting payments from subscribers;

lease or use of cable conduits and technological property for the interconnection purposes;

maintenance and inspection of the equipment;

5) interconnection services.

72. Intercity and international communications operators and international communications operators shall make settlements with foreign international communication operators for international traffic.

73. Settlements of communication operators for the international traffic routing shall be made on contractual basis and in accordance with the legislation in the field of communications and natural monopolies, and regulated markets.

74. Settlements between communication operators for communication services at the expense of the called subscriber shall be carried out on contractual basis between the interacting operators.

75. Settlements between the communication operators of interacting networks interconnected at the intra-area or local level shall include recommendations of these Rules and ITU recommendations (D series) according to the method of payment per traffic unit based on settlement rates, also, if necessary, on additional lease agreements for the use of connecting lines, communication channels and telecommunications facilities.

76. In the accounting between operators, a standard 64 kbit / s digital channel and one four-wire channel with transmission speed of 50 Baud are adopted for one connecting line. The E1 stream is taken as 30 standard digital channels in accordance with G.704 recommendation of paragraph 5.2 “2048 kbit / s junction carrying $n * 64$ kbit / s channels”.

Separation in the $n * 64$ channel stream into incoming and outgoing depends on the types of services provided by the communications operator of the interconnected network, and is determined at the stage of issuing and fulfilling the technical conditions for the interconnection.

The standard point of interconnection (connection) is formed by the digital port E1, which provides 30 digital channels for transmitting voice or data, a separate channel for synchronization and a separate channel for transmitting control signals, a total of 32 channels of 64 kbit / s and a speed of 2 Mbps, as well as speech signal transmission channel (encapsulation of a standard digital channel of 64 kbit / s) on information packet switching technology via the IP network. It is recommended to make interconnection with the organization of channel groups with multiplicity of 30.

77. Settlements between the communications operators for traffic routing shall be based on connection agreements and legislation in the field of communications and natural monopolies and regulated markets.

78. To organize and conduct settlements between the communications operators, measurement of both outgoing and incoming traffic shall be made. In this case, each communications operator shall save the primary data on the used load traffic routes for reconciliation with other operators in accordance with the terms of the concluded agreements for at least three years and shall be responsible for the accuracy of the data.

79. To obtain reliable data on the volumes of traffic transmitted in different directions, the communications operators shall take measures to afford the possibility of determining its

volumes and quality of the call service in all the used connection directions, including direct and bypass channels.

80. By agreement between the communications operators, the collection and processing of the traffic data can be carried out through a single settlement center owned by one of the interacting communications operators.

81. It is recommended to take one calendar month as a billing period. By agreement between the operators, a different billing period may be used.

82. Technical means used for traffic accounting, including systems for measuring the duration of connections and data transmission of the communications operator, must be entered in the register of the state system for ensuring the uniformity of measurements and have a valid verification certificate.

Appendix 1
to the Rules of interconnection and
interaction of telecommunications
networks

Organization of interaction of technical personnel at faults and emergencies, also routing of the calls of departmental, corporate, special communications networks and ATE of public telecommunications networks

1. Organization of interaction of technical personnel of the connected ATE at faults and emergency situations

1. Faults may occur on the station equipment, on the equipment of transmission systems and line structures belonging to the connected or supporting automatic telephone exchanges (hereinafter - ATE). Faults are classified into three categories:

1) the first category - accidents leading to a complete loss of operability of the plant equipment and the channels included in them;

2) the second category - accidents leading to the failure of separate modules or units that do not affect the loss of traffic;

3) the third category - accidents that slightly affect operation of the station or directions included in it, damage to individual subscriber circuits or channels.

2. The terms for eliminating accidents, depending on the category of damage, shall be regulated by technological charts and specified in the additional agreement upon connection.

3. Emergency condition of the equipment or line structures connected to the ATE of public communications network shall be determined by the technical staff of the interacting ATEs based on alarm signals.

4. The technical staff of the interacting ATEs shall find out the cause of the damage. Each party shall eliminate damage in its network area. After elimination of accidents and restoration of the damaged equipment operability, control checks of this equipment shall be carried out.

5. Scheduled checks of the operability of equipment of the line terminations between the connected and the key point ATEs shall be carried out in accordance with the plans of control checks according to the relevant technical operation instructions for this type of equipment.

6. In the event of conducting maintenance and measuring works, which may lead to a temporary deterioration in the quality of communication between interacting ATEs, the technical staff of both exchanges shall notify the dispatching service of the communication operator about it.

2. Call routing

7. The connected ATE shall afford an opportunity to establish the following main types of communication:

- 1) between subscribers of the connected ATE (in-station connections);
- 2) with subscribers of public telecommunications networks (local, long-distance and international);
- 3) access to special services.

8. Outgoing external communication from the connected ATE accessed to the ATE of the public telecommunications network can be made through dialing by the subscribers of departmental, corporate, special and mini ATE of the single-digit prefix (recommended Pm = 9) and subsequent dialing of the full number of the required subscriber.

9. Outgoing long-distance, international communication from subscribers of the connected ATE shall be carried out by dialing the exit prefix, further by dialing “8” (or “8-10”), in the long run “0” and “00”, respectively, and then dialing the long-distance (international) number

10. Outgoing communication to the special services from the above subscribers shall be carried out by dialing the exit prefix, and then the special service number. Access to special services shall be allowed without exit index dialing.

11. Subscribers of the connected ATE without entitlement to external communication shall be afforded the opportunity of establishing free external communication with emergency special services (101, 102, 103, 104).

12. In the establishment of connection between subscribers of the connected ATE, the internal abbreviated number (three-digit or four-digit, depending on the capacity of the connected ATE) can be used.

Appendix 2
to the Rules of interconnection and
interaction of telecommunications
networks

Standards of load and connection quality

Any ATE type connected to public telecommunications networks must be connected via trunk lines with a load rate per line (channel) of up to 0.7 Erl.

The connected ATEs of any type shall be included in public telecommunications networks through base, combined or transit digital switching stations.

The connected ATEs can be connected via trunk lines with a load rate per line (channel) of up to 0.7 Erl or via subscriber lines (hereinafter - SL).

The average total (outgoing and incoming) telephone load per SL should be no more than 0.15 Erl.

Possibility shall be afforded to limit the load on the SL. The load limitation should be made for each SL between mini ATE (capacity of no more than 128 numbers) and base ATE. In the absence of means on the ATE to limit the load, at the connection of this ATE to the telephone network, as agreed with the connecting party, a certain number of mini ATE subscribers who have access to the local network shall be rigidly fixed.

The connection quality is determined by the loss norms listed in Table 1.

Table 1. Standards of quality indicators

Name of indicator	Norm value
Probability of losses between the inputs of neighboring stations should not exceed:	0,5 %
in outgoing local connection	0,5 %
in incoming local connection	0,1 %
in incoming intercity, international connection	
Deadlines for damage repair related to:	45 minutes on attended, 2 hrs on unattended ATE
1) switching equipment	
2) line-cable equipment:	
in inter-station communication, trunk and distribution cables, with opening of splices, when the cable is not completely damaged, with the capacity:	
up to 200x2 inclusive	18 hours
up to 400x2 inclusive	24 hours
up to 600x2 inclusive	30 hours
up to 800x2 inclusive	36 hours
up to 1200x2 inclusive	60 hours
up to 1400x2	70 hours
up to 1600x2	80 hours
up to 1800x2	96 hours
up to 2000x2	120 hours
up to 2400x2	144 hours
3) in interstation communication, trunk and distribution cables, when the cable span has to be replaced, with the capacity:	
up to 300x2 inclusive	36 hours

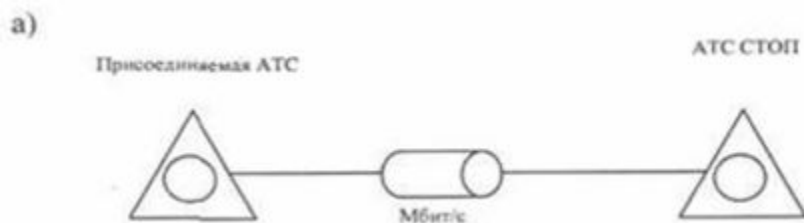
up to 400x2 inclusive	48 hours
up to 600x2 inclusive	60 hours
up to 800x2 inclusive	72 hours
up to 1200x2 inclusive	100 hours
up to 1400x2	120 hours
up to 1600x2	140 hours
up to 1800x2	150 hours
up to 2000x2	170 hours
up to 2400x2	190 hours
4) in high-frequency cables of interstation communication or inter-exchange high-frequency communication lines	24 hours
with replacement of cable or support lines	48 hours
5) damage repair in the optical cable coupling	48 hours

Appendix 3
to the Rules of interconnection and
interaction of telecommunications
networks

Technical requirements to ATEs connected to public telecommunications networks

1. Options for connecting ATEs to public telecommunications networks:

1) interconnection of connected ATEs via digital trunk lines:



a) Connected ATE Mbit/s ATE STOP

Parameters of PCM digital junction lines with transmission rate of 2048 kbit / s should be in accordance with ITU-T Recommendations G.703, G.704 and G.732.

2. Options for connecting mini ATE to public telecommunications networks:

1) connection of mini-ATE to the ATE of telecommunications network via analogue subscriber lines:



Connected ATE ATE STOP

- use of analog subscriber circuits (SS) in digital ATE;
- transmission of line signals in loop method;
- dialing transmission - by battery pulses or DTMF signaling;

3. Organization of access for mini ATE:

1) mini ATEs shall be included in public telecommunications networks through subscriber circuits of digital base or combined ATE via two-wire subscriber lines;

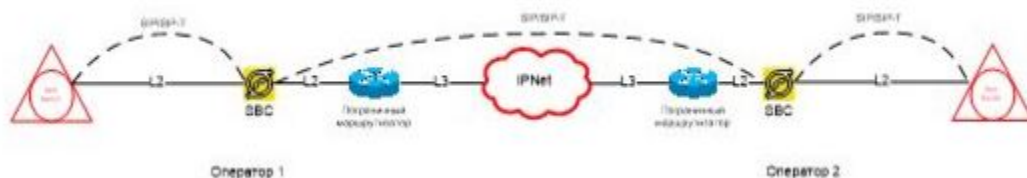
2) the use of subscriber circuits of the base ATE as connecting lines for mini-ATE should not violate the operation system of subscriber lines (sanity checks, measurements);

3) inclusion of mini ATE in public telecommunications networks shall be made on digital ATE;

4) digit "9" is recommended for use as local prefix (PM) for access to telecommunication networks.

4. Interconnection of connected switching stations over packet-switched network.

This interconnection type is accomplished by physically docking the Internet networks of the connected and connecting operators via 1/10 GE channels, with the organization of a virtual private network (VLAN / VPN) for the transfer of network traffic, installation of SBC equipment (session controller) at the network boundary of each operator and subsequent organization of voice transmission channels and call control signaling on the information packets switching technology. Networks of Internet operators should support quality technologies of transmitted speech of at least 3.5 points on the scale of the Mean expert assessment of speech intelligibility (MOS - Mean Opinion Score).



Operator1 IPNet Operator2

5. Organization of series selection.

When organizing a link to any special service, subscriber circuits (SC) shall be used on the ATE, enabling series selection. In this case, load limits shall be imposed: for each subscriber line < 0.15 Erl.

Features of mini ATE interconnecting. Parameters of subscriber line circuits on which mini ATEs are switched

1. Parameters of subscriber circuits on which mini ATE are switched are the sum of the parameters of: physical lines, four-terminal device of mini-ATEs, its subscriber lines and telephone sets, and shall not exceed the norms established for subscriber lines. Parameters on direct current, including the subscriber circuit of mini ATE shall be:

1) stub resistance, taking into account the input interface impedance - not more than 1800 Ohms;

2) insulation resistance between wires or between each wire and "ground" - not less than 20 kOhm;

3) capacitance between the wires or each wire and the "ground" - not more than 0.5 mF;

4) peak attenuation at the frequency of 1020 Hz - not more than 35 dB for a cable with a core diameter of 0.5 mm and not more than 45 dB for a cable with a core diameter of 0.32 mm.

2. A mini-ATE must receive an incoming call on subscriber lines (alternating current voltage of 95 +/- 5 V and frequency of 25 Hz), and simulate the response signal "Subscriber line loop opening."

Appendix 5
to the Rules of interconnection and
interaction of telecommunications
networks

Form

Technical conditions for interconnection

Technical conditions for connection

№ ____ of " ____ " _____ 20__ year

(connecting operator)

makes interconnection to the network (of connected operator, network owner) on the following technical conditions:

1. Level of connection

shall be determined by types of services, provided by connected operator (network owner), in accordance with the rules of interconnection and interaction of telecommunications networks.

2. Network numbering

in accordance with respective order of the authorized body in communications.

3. connected network capacity

in accordance with respective order of the authorized body in communications.

Type of equipment to be connected

in accordance with request of connected operator (network owner) for interconnection of its network to the network of the connecting operator and certificate of conformity for equipment used, registered in the register of the State certification system of the Republic of Kazakhstan.

4. Trunk signaling

in accordance with:

request of the connected operator (network owner) for interconnection of its network to the network of the connecting operator;

certificate of conformity for equipment used, registered in the register of the State certification system of the Republic of Kazakhstan.

restrictive list of signaling protocols supported by digital stations in public telecommunications networks.

5. Organization of interexchange communication

in accordance with p.1 and p.4 of these Technical conditions.

6. Synchronization

Equipment of connected operator (network owner) shall be synchronized with telecommunications networks of the connecting operator on one of the following options:

1) from own synchronization source with stability coefficient

of synchronization signal at least 10-11. (connected operator (network owner) shall attach to request for interconnection a Certificate of conformity for the synchronization source, registered in the register of the State certification system of the Republic of Kazakhstan and technical parameters of the source);

2) from the clocking synchronization (CNS) network of the connecting operator.

7. Billing.

1) telephone traffic accounting shall be based on data of the time accounting equipment

of connections of the connecting operator and connected operator (network owner);

2) in exit of subscriber of connected operator's (network owner's)

network to intra-area, long-distance and international communication, via the connecting operator's network, the traffic accounting

shall be made at the ATS (IcTN/ISC) of the connected operator (network owner);

3) the time accounting equipment shall be supplied with certificate of conformity for measuring equipment type and verification certificate.

8. Telephone traffic routing.

Via the switching field of the connecting operator

the traffic is routed from (to) subscriber of connected operator's

(network owner's) network to (from) (s) the public telecommunications network.

9. Project works.

1) the connected operator (network owner) shall provide

project documentation for inclusion in the telecommunications network of the connecting operator. Before receiving technical specifications for organization of trunking and preparation of project documentation

(PD) the connected operator (network owner) shall settle location of the terminal equipment with branch connecting operator (in whose service area the trunk interconnection is made);

2) the connecting operator shall be provided with a copy of the Act on approval of PD, on compliance with these technical specifications and

technical conditions for trunking. The Act shall be signed by the authorized representatives of the connecting operator (in whose service area the trunk interconnection is made)

and of the connected operator (network owner).

10. Construction and installation works.

1) the connected operator (network owner) shall be provided with the technical conditions for trunking in the branch of the connecting operator (in whose service area the trunk interconnection is made);

2) all the works related to the organization of trunking

(channels lease, cable laying, terminal equipment installation), shall be coordinated with the branch connecting operator (in whose service area the trunk interconnection is made).

11. General issues.

1) construction and installation works (cable pulling diagram, terminal equipment installation) shall be coordinated with the branch connecting operator

(in whose service area the trunk interconnection is made);

2) the connected operator (network owner) shall ensure the

provision of terminal equipment with electric power, coordinating all the works and power supply requirements with the branch connecting

operator (in whose service area the trunk interconnection is made);

3) completion of the works on fulfillment of these Technical condition

shall be filed under an Act with indication of the interconnection level, network numbering,

signaling type, class of connection to CNS base network, synchronization option and readiness for test connection. The Act shall be signed by

the authorized representative of the branch connecting operator

(in whose service area the trunk interconnection is made) and of

the connected operator (network owner). The connecting operator shall be given a copy of the Act;

4) before interconnection of the connected operator's network to the

telecommunications network of the connecting operator, testing shall be carried out.

Upon positive testing results, Act shall be drawn on testing results and commissioning

for commercial use. A copy of the Act shall be given to the connecting

operator. The Act shall indicate interconnection point, network numbering,

number of network resources involved, synchronization option,

terms of testing, testing results and date of interconnection for commercial use.

The Act shall be signed by the authorized representatives of the branch connecting operator,

in whose service area the trunk interconnection is made and of the connected operator (network owner);

5) in the event of exceeded distributed load intensity of 0,7 Erl per trunking line, the channel capacity has to be augmented;

6) interconnection to the connecting operator's telecommunications network shall be made upon fulfillment of these Technical conditions;

7) in the event that these Technical conditions are not fulfilled within six months from the date of their issue, these Technical conditions shall be annulled;

8) interconnection of the network of the connected communication operator (network owner) to the connecting operator's telecommunications network within these technical conditions shall be used solely for services, stipulated by the interconnection and interaction Agreement;

9) In the absence of free network resources (port capacity) at the time of

fulfilling technical conditions by the connected operator, this connection will be possible after retrofitting by

_____ the connecting operator;

10) any changes to the network synchronization scheme of the connected operator (network owner) shall be coordinated with the connecting operator.

Name of the branch connecting operator

Head of the branch connecting operator (full name and signature)

Appendix 6
to the Rules of interconnection and
interaction of telecommunications
networks

Order of assigning serial numbers and interaction of telecommunications providers with local telecommunications networks operators, assigning serial numbers

1. Serial numbers can be assigned by operators of local telecommunications networks to organize user access to the services provided by the owners of special, information-reference and servicing services and on the basis of connection agreements for interconnection for telecommunication services operators.

2. Series connection is understood as a set of subscriber lines having the same group station number, series completion number. The series connection can be the number corresponding to the station number, or the abbreviated number.

3. Serial numbers can be provided to the following services:

- 1) special;
- 2) information and reference;
- 3) servicing.

4. Requirements for recipients of the serial number:

1) the total (outgoing and incoming) intensity of the load created during the peak busy hour (hereinafter - PBH) on each series connection line should not exceed 0.15 Erl;

2) the serial numbers assigned to the services indicated in subparagraphs 1), 2) and 3) of paragraph 3 of this Appendix are used on one-way scheme with inhibition of outgoing communication to these services;

3) conditions for connection of equipment are negotiated in each case;

4) the services that are assigned an abbreviated or regular subscriber number of the local telecommunication network, shall be provided with access from any subscriber telephone number or public phone of the connecting network;

5) in all cases of obtaining serial numbers, the number of subscriber lines involved must not exceed 15 (fifteen). If the specified number of lines is exceeded, the communications operator (recipient) shall direct a request to the connecting operator for connecting the access point of its network to public telecommunication networks at the local level with the use of inter-exchange trunk lines.

5. The numbering of allocated subscriber lines for series selection shall be determined by the respective operators of local telecommunications networks.

6. Communication between subscribers of local telecommunications network with subscribers having serial numbers shall be set up by dialing an abbreviated number or a regular subscriber number used on the given network.

7. The procedure for assigning serial numbers in the interests of communications operators:

1) the serial number recipient shall direct a request in an arbitrary form to the local telecommunications network operator for assigning of the serial number, which shall include:
rationale for the use of serial number;
types and characteristics of the equipment used, for the connection with which a serial number is required.

In the absence of the indicated information, the request is not subject to examination;

2) the local telecommunications network operator shall examine the request and conclude an agreement (if technically possible) with the applicant for the use of serial numbers within a month;

in the absence of free line capacity for the subscriber lines trunking, the technical conditions for the subscriber lines trunking shall be issued to the applicant within a month. The agreement shall be signed after the applicant fulfills the technical conditions.

Refusal to consider the application is possible in the absence of serial numbers of the connecting operator. The refusal shall be given in writing within 15 working days from the application date.

8. Load accounting on series selection lines:

1) when assigning serial numbers to communications operators, the local telecommunications network operator shall:

provide uniform load distribution on all lines of the serial number;

determine the PBH for each communications operator to which the serial number is assigned;

make and approve schedules, in accordance with which the load level is measured on each subscriber line of series selection;

2) the measurement data shall be drawn up in an act reflecting the following information:
date and time of measurements;

measurement results;

measures required to bring the load level to normal.

The Act shall be the ground for making decisions on the local network operator's interaction with the serial number recipient;

3) if the average load on one subscriber line of the serial number in PBH, defined as the quotient of dividing the total load by the number of lines exceeds the normal level, the communications operator shall increase the number of lines.

9. Interaction of the local telecommunications network operator with the serial numbers recipient:

1) in case of exceeded load standards specified in paragraph 3 of this Appendix, the local telecommunications network operator shall direct a written notice to the serial number recipient with a copy of the act on load measurements, and also issue, upon agreement with him, technical conditions for increasing the number of lines or technical conditions for interconnection on interoffice trunk lines;

2) the recipient shall take measures to reduce the load or to increase the number of series selection subscriber lines;

3) if the serial numbers receiver does not take measures to establish the normal load level, access to the serial number from public telecommunication networks can be suspended until the deficiencies are eliminated.

Appendix 7 to the Rules
of interconnection and interaction
of telecommunications networks

Restrictive list of signaling protocols, supported by digital stations in public telecommunications networks

Content:

1) Table 1. Restrictive list of signaling protocols for international network

2) Table 2. Restrictive list of signaling protocols for long distance network

3) Table 3. Restrictive list of signaling protocols for SLM and ZSL

4) Table 4. Restrictive list of signaling protocols for junction of public telecommunications networks with networks of mobile communication, networks of communications operators (network owners)

5) Table 5. Restrictive list of signaling protocols for urban and rural telecommunications networks

Table 1 - Restrictive list of signaling protocols for international network

№	Network section	Signaling system	Note
1	International network: ISC-ISC	CCS - 7, including subsystems: MTP: ITU-T Q.700-Q.714; TUP: ITU-T Q.720-Q.724; ISUP: ITU-T Q.767; SCCP: ITU-T Q.711-Q.716; TCAP: ITU-T Q.771-Q.775;	Interaction for for networks by channel switching is allowed
		SIP-T/SIP-I: IETF RFC 3261, 3372, 3398; ITU-T Q.1912.5. RTP/RTCP: IETF RFC 1889, RFC1890	Interaction for networks by packet switching is allowed

Table 2- Restrictive list of signaling protocols for long distance network

№	Network section	Signaling system	Note
1	ATE – ATE; ATE - ISC	CCS - 7, including subsystems: MTP: national specification ISUP: national specification SCCP: national specification TCAP: national specification	With translation of subscriber "A" number for channel switching networks
		SIP-T/SIP-I: IETF RFC 3261, 3372, 3398; ITU-T Q.1912.5. RTP/RTCP: IETF RFC 1889, RFC1890	With translation of subscriber "A" number for packet switching networks

Table 3- Restrictive list of signaling protocols for TJL and RCC

№	Network section	Signaling system	Note
1	RCC	CCS - 7 MTP: national specification ISUP: national specification SCCP: national specification TCAP: national specification	With translation of subscriber "A" number for networks by channel switching
		SIP-T/SIP-I: IETF RFC 3261, 3372, 3398; ITU-T Q.1912.5. RTP/RTCP: IETF RFC 1889, RFC1890	With translation of subscriber "A" number for networks by packet switching
2	TJL	CCS - 7 MTP: national specification ISUP: national specification SCCP: national specification TCAP: national specification	With translation of subscriber "A" number for networks by channel switching
		SIP-T/SIP-I: IETF RFC 3261, 3372, 3398; ITU-T Q.1912.5. RTP/RTCP: IETF RFC 1889, RFC1890	With translation of subscriber "A" number for networks by packet switching

**Table 4- Restrictive list of signaling protocols for junction of public telecommunications networks of the Republic of Kazakhstan
with networks of mobile communications, networks of communications operators (network owners)**

№	Network section	Signaling system	Note
1.	RCC	CCS - 7 MTP: national specification ISUP: national specification	With translation of subscriber "A" number for networks by channel switching
		SIP-T/SIP-I: IETF RFC 3261, 3372, 3398; ITU-T Q.1912.5. RTP/RTCP: IETF RFC 1889, RFC1890	With translation of subscriber "A" number for networks by packet switching
2.	TJL	CCS- 7 MTP: national specification ISUP: national specification	With translation of subscriber "A" number for networks by channel switching
		SIP-T/SIP-I: IETF RFC 3261, 3372, 3398; ITU-T Q.1912.5. RTP/RTCP: IETF RFC 1889, RFC1890	With translation of subscriber "A" number for networks by packet switching
3.	Trunk(intercity)	CCS- 7 MTP: national specification ISUP: national specification	With translation of subscriber "A" number for networks by channel switching
		SIP-T/SIP-I: IETF RFC 3261, 3372, 3398; ITU-T Q.1912.5. RTP/RTCP: IETF RFC 1889, RFC1890	With translation of subscriber "A" number for networks by packet switching
4.	TL	CCS - 7 MTP: national specification ISUP: national specification	With translation of subscriber "A" number for networks by channel switching
		SIP-T/SIP-I: IETF RFC 3261, 3372, 3398; ITU-T Q.1912.5. RTP/RTCP: IETF RFC 1889, RFC1890	With translation of subscriber "A" number for networks by packet switching
		CCS - 7	

6.	International roaming	MTP: ITU-T 1988 Q.700-Q.714 SCCP: ITU-T 1988 Q.711-Q.716 TCAP: ITU-T 1988 Q.771-Q.775 MAP: GSM 09.02 (for GSM standard)	With translation of subscriber "A" number for networks by channel switching
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It is allowed to use EDSS1 signaling with PRI interface in the interconnection of corporate and departmental networks to the public networks of the Republic of Kazakhstan

Table 5 - Restrictive list of signaling protocols for urban and rural telecommunications network

Signaling system	National network section		
	UTN	RTN	Junction with PSN
Line signaling			
1. CCS	In accordance with national specification		
2. SIP-T/SIP-I	IETF RFC 3261, 3372, 3398; ITU-T Q.1912.5. RTP/RTCP: IETF RFC 1889, RFC1890		
3. V 5.1	In accordance with GTS on SP and concentrators		
4. V 5.2	In accordance with GTS on SP and concentrators. In accordance with national specification		
5. Subscriber loop signaling	II. 7.2.4.2.4		
6. EDSS1	In accordance with GTS on ATE with ISDN functions. In accordance with national specification		
7. Signaling system on the junction with telematic services and data transfer networks			X ITU-T Protocols
8. H.248	In accordance with GTS on SP and concentrators. In accordance with national specification		

List of abbreviations

Abbreviations	Expansion
MCЭ-T (ITU-T)	International electric communication union, telecommunication standardization sector
ETSI	Европейский институт телекоммуникационных стандартов (European Telecommunication Standards Institute)
TC (TS)	Technical conditions (technical standards)
ATS	Automatic trunk station

ISC	International switching center
ITN	Intercity transit node
ATE	Automatic telephone exchange
UTN	Urban telephone network
RTN	Rural telephone network
TMN	Управление сетью телекоммуникаций (Telecommunication Management Network)
ANI	Automatic number identification
RCC	Recording-completing circuit
CCS - 7	Common channel signaling system (on ITU-T-N 7 classification)
TL	Trunk lines
TJL	Trunk junction lines
IETF	Internet Engineering Task Force - Целевая группа инженерной поддержки Интернет
ISUP	ISDN User Part – call control protocol, transferring call control information between network nodes, supporting CCS-7 signaling
MAP	Mobile Application Part
MTP	Message Transfer Part –(MTP3) CCS-7messages transfer part, level 3.
MUP	Mobile User Part
RTP	Real-Time Transport Protocol
RFC	Request for Comments
SCCP	Signaling Connection Control Part – CCS-7 signaling connection control part
SIP	Session Initiation Protocol
SIP-I	SIP-ISUP version of protocol SIP, developed by ITU-T and intended for network interaction provision
SIP-T	version of SIP protocol, developed by committee of Internet Problems Engineering Group and intended for network interaction provision
TCAP	Transaction Capabilities Application Part – signaling part with capabilities of transactions
TUP	Telephone User Part