

Requirements for Network Interconnection

Fulfilment of the publication obligation under Decree no. HF 1595-34/2011 of the National Media and Communications Authority:

a) General requirements for interconnection

- The interconnection point required for call termination within Telenor Hungary's network shall be one or more of Telenor Hungary's network end points listed below.
- For the purpose of network interconnection no other than the CCS Signalling System No7 must be used.
- In each case the traffic shall be handed over together with the number of the calling party ("Number A").
- As 1st of January 2013 the call termination fee shall amount to HUF 7,06 per minute.
- Telenor Hungary shall measure the traffic handed over for termination, and shall issue monthly invoices on the basis of such measurements.
- Payment falls due 15 days after the invoice is issued.
- In order to minimise accounting risks, the party handing over the traffic shall provide a bank guarantee, the amount of which shall be determined according to the expected average traffic for the next two months.
- In their efforts to provide one another with services, Parties shall endeavour to cooperate in a manner that is both technically and economically reasonable and rational.

b) Detailed regulations of bidding and concluding agreements

The rules of procedure applicable to bidding and concluding agreements are the same as those in sections 4–10 of Government Decree No. 277/2003 (XII.24.).

c) Geographically defined points of interconnection

In each case, Telenor Hungary shall take over traffic at one of the interconnection points at its network switching centres. The party originating the traffic shall always be responsible for forwarding the traffic up to the interconnection point at its own expenses. The interconnection point shall be the place of performance and the limit of responsibility of the traffic services. If it is justified in terms of traffic or technology, more than one interconnection points may be used in order to interconnect the networks. The Parties shall agree on the interconnectivity points of their networks with due consideration to technical, traffic and economical factors. The interconnection point is the transmission technology equipment side of Telenor Hungary's digital distribution frame (DDF or ODF).

Interconnection sites proposed by Telenor Hungary:

1. *1139 Budapest, Teve street 41.*
2. *1117 Budapest, Budafoki street 64.*
3. *Székesfehérvár, Telenor Hungary*
4. *Győr, Telenor Hungary*
5. *Szolnok, Telenor Hungary*
6. *Miskolc, Telenor Hungary*
7. *Debrecen, Telenor Hungary*
8. *Sztaki - Budapest XIII, Victor Hugo street 18-2.*
9. *Dataplex - 1087 Budapest, Asztalos Sándor street 13.*
10. *Dataneum - Budapest X, Kozma street 3.*

d) Possible technical solutions for interconnection

The two networks may only be interconnected via digital circuits. The Party handing over the traffic shall be responsible for scaling the throughput capacity of the circuits used for interconnection. The requisite number of interfaces and link bundles shall be agreed upon by the handing-over Party and the terminating Party, and the latter Party may modify the quantities for technical reasons supported by measurements, provided they comply with the quality specifications.

The Parties shall use the CCS Signalling System No.7 (more specifically ISUPv3) on the interconnection interface. The Parties shall identify the codes for the signalling points in accordance with NMHH Decree No 3/2011. (IX.26.) on the national table of identifier allocations for electronic communications networks.

The called number shall be handed over by the Parties in the following format: service or network designation number + subscriber number, with Nature of Address = NAT value. The Parties shall always hand over the traffic generated in their network together with the calling party's number ("Number A").

The Parties shall make all possible efforts to include "Number A" also during transited traffic. The Parties agree that regardless of the call destination of the traffic transmitted between their networks, they shall not change "number A" and, if it is missing, they shall not substitute it with a fictitious number.

The Parties shall make all possible efforts to ensure that their contractual partners uphold this obligation with regards to traffic initiated from or terminated in the other Party's network.

Any echoes detected during the call must be eliminated by using an ingress blocker on the interface. The Party initiating the traffic shall be responsible for integrating the ingress blocker, at its own expenses.

e) The offered interconnection traffic service

Call termination - and other related services subject to separate agreements - within Telenor Hungary's network.

f) Service level quality requirements, including operation and maintenance

The Parties agree to use connections having the required capacities at all times. Compliance criteria include the availability of sufficient capacity for traffic routing without congestion and without delay and meeting the agreed quality requirements and the avoidance of reserving more than necessary number of ports at the interconnection points of the terminating network

Telenor Hungary guarantees that it will handle the traffic taken over with the same quality standards that it applies to traffic from any of its own subscribers or business partners.

Telenor Hungary hereby states that the quality specifications of its network are governed by the obligations specified in its concession agreements and in its general conditions of contract (ÁSZF).

The Parties have an obligation to monitor and maintain all the equipment that they install. The Parties warrant that their networks are suitable for being used for their intended purpose and that they will comply at all times with the quality requirements undertaken in their Concession Agreements or their Service Licences.

The minimum annual guaranteed availability of the switching centres of the Parties is 99.95%. The minimum availability of the link bundles between the networks of the Parties shall be 99.7%.

g) Interconnection interfaces

The MSC side interfaces of Telenor Hungary GSM and the interfaces of the Operator's switching centre shall comply with the following Hungarian and international standards and recommendations:

Layer	Interface standard, specifications
Physical layer	ITU-T No.7 MTP1 – G.703
Data connection and network layer	ITU-T No.7 MTP2-3
Upper layers	ITU-T No.7 ISUPv2 v. v3

h) Support services (operator-assisted services, emergency services)

Telenor Hungary does not operate operator-assisted services within its network. Emergency calls are terminated by Magyar Telekom nationwide, on the basis of sectoral agreements.

i) Rules for coordination between the parties within the scope of their cooperation obligation

Cooperation in processing subscriber data

The Parties shall only hand over subscribers' personal data to one another when so required by law or if the subscriber grants consent thereto in writing or in any documented manner. When handling subscribers' personal data, the Parties shall apply the effective provisions of Act CXII of 2011 on the Protection of Personal Data and Public Access to Data of Public Interest, the Electronic Communications Act (Eht.) and its implementation decrees.

Cooperation in order to sustain network quality

The Parties have an obligation to monitor and maintain all the equipment that they install. The contracting Parties warrant that their networks are suitable for being used for their intended purpose and that they will comply at all times with the quality requirements undertaken in their Concession Agreements or Service Licences.

The Parties shall cooperate with one another in maintaining the security and integrity of the operation of their networks. The Parties agree to immediately notify each other in writing about any fault – including quality deterioration and traffic overload detected in the other Party's network – specifying the exact time and circumstances of the problem detected.

Cooperation between the parties in the field of eliminating any faults includes, in particular:

- faults in the link bundles between the two networks,
- signalling problems during the interworking of the two networks,
- problems arising from the subscriber network(s) or terminal equipment that affect the other Party,
- faults in transmission technology connections and their terminal equipment.

Responsibility

The Parties are responsible vis-à-vis one another and towards third parties in the event of any complaints regarding the quality of the services they provide. If the issue

can be proven to originate from causes attributable to the other party, the party causing the problem shall assume responsibility.

Cooperation during fault elimination

The Parties shall take immediate action to repair any system technology and transmission technology faults detected in their systems that hinder or have any adverse effect on the other Party's service. The Parties shall inform one another of any such fault detected. The Parties shall allow one another (or their leased-line service provider) access to the equipment located at their respective sites.

Cooperation in the management of subscriber fault reports

The Parties shall transmit to the other Party and manage any subscriber fault report regarding the services provided by the other Party.

Cooperation in case of any change in the network:

If either Party changes its own system in a way that makes it necessary to modify the other Party's system or such that it may affect its basic operations, the Party initiating the modification shall notify the other Party as soon as possible prior to the planned modification. This notice shall contain the details and the technical characteristics of the modification, its possible effects on the other Party's system as well as all other information that the other Party may reasonably expect to receive in such a case. The Parties shall come to an agreement in order to set the deadline for such change. The modifying Party shall reimburse to the other Party all reasonable costs related to the necessary modifications on the other Party's network, except when

- the Parties agree that they will both modify their own networks in order to reach mutual benefits or
- the planned activities of the modifying Party include justifiable review or modification of the applied signal transmission so that it would comply with current national signal transmission standards.

In the above cases, each Party would cover the expenses of their own modifications.

Cooperation when introducing new services

If either Party is introducing a telecommunication service that is not required by law or by the agreement of the Parties to be accessible by the other Party, the other Party may initiate negotiations with regard to access to the new service or service option.

Cooperation in a state of emergency or any disaster

In terms of developing and implementing the action plan to be used in case of a state of emergency or any disaster, the Parties shall, as required by law and in compliance with the instructions of the minister(s) concerned, cooperate with other telecommunication service providers and telecommunication network operators. In the event of a state of emergency or any disaster, or when so required to protect public safety, the Parties shall act in compliance with the instructions of the government of the Republic of Hungary or the minister within the framework of the applicable laws.

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