NMC PhoNet 9000 – centre of telephone networks

- even small actors can put on a great show
- even small companies contribute to development
- even small countries have successful products

The **NMC PhoNet 9000** centre is designated for both non-professional and professional public and for management, commercial and engineering staff of operators of telephone networks. It consists of three parts: a register of networks, a tester of networks and a transit exchange.

The register is a database of identification data, telephone numbers, a lot of engineering and commercial information and specifications and also results of proactive tests. The tester of telephone networks simulates activities of telephones connected to fixed, mobile or internet networks and so it checks their functionality. The transit telephone exchange serves for interconnection of particular networks into a national overlay network with star-type configuration.

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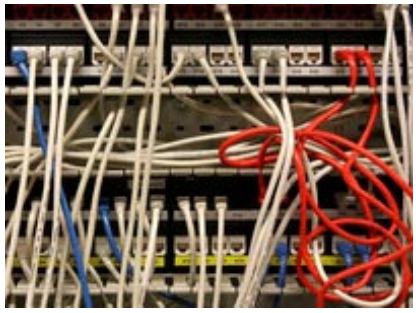


The **NMC PhoNet 9000** system is base upon the register of telephone networks, which serves for concentration of information about telephone networks and this information is then available for public looking for answers to the following questions: What fixed, mobile and VoIP networks exist? Where can links to web pages of all telephone networks be found? Which companies are operators of particular telephone networks? Where can links to web pages of all telephone operators be founds? How large are particular telephone networks? What assigned, borrowed and taken over telephone numbers do particular networks possess? Which networks support portability of telephone numbers? Which networks are NPAC partners and what identification codes do they possess? Which networks are xPhoNet partners and what identification code do they possess? Which networks have SS7 identification codes assigned? What various signalling and codecs do particular networks support? Where can commercial or engineering contacts to operators be found? What services do particular networks support? What terminals are supported by given networks? Where can engineering specifications of telephone interfaces of particular networks be found? What telephone charge prices do operators of telephone networks offer? What functional tests are rendered in particular networks? Which failures of telephone services are currently recognized and what particular failures occurred in the past? How large is failure rate of networks and what are its trends? What are typical reactions of networks and what are their trends? By what types of tie-lines and capacities are networks mutually interconnected? What operational or promotional announcement did an operator of a given network publish? To what telephone network is particular telephone number belonging? What fixed, mobile or VoIP network is the largest, the cheapest, the most reliable, the promptest, the nearest?

The tester of telephone networks is a part of **NMC PhoNet 9000**. It continuously performs independent check-up of serviceability of classic, mobile and VoIP networks. The tester systematically generates test calls within networks and among networks and makes records about all unsuccessful call attempts in the register of networks. In all types of networks, the ability to carry out inner, outgoing and incoming calls and also voice interconnections are verified. In VoIP type networks, there is also an extra verified network accessibility of exchanges and their ability of SIP registration of IP telephones. At the same time, reaction times of particular networks are being detected, these are evaluated and their minimum, average and maximum values are also stored in register of networks.

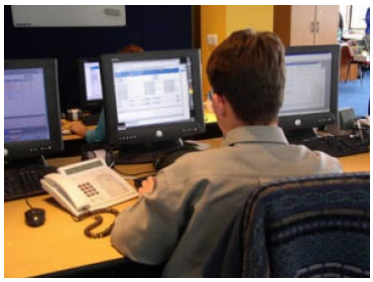
Thus, at **NMC PhoNet 9000** website, the public has the following global information about functionality of majority of networks available:

- ✓ data about current serviceability of particular telephone networks;
- ✓ data about total quantities and durations of failure rates of networks;
- ✓ data about important reaction times of particular telephone networks;

At web pages, persons of partner networks have also available detailed information about methods and parameters of tests of the networks operated by them (e.g. about IP addresses, telephone numbers or limits for reactions).

With **NMC PhoNet 9000**, operators of partner networks acquire special software for their supervision workplaces. By means of this SW, it is possible to monitor fault conditions of networks of all checked operators in detail.



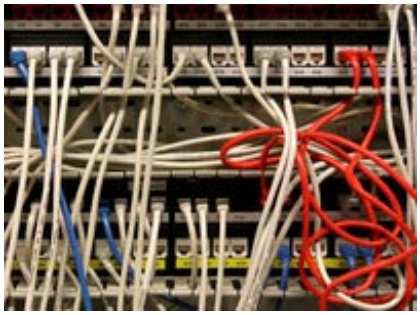


To large operators, **NMC PhoNet 9000** supplies information about situation of further networks, including VoIP networks of various sizes. Minor telephone operators acquire basic software for their supervision centres gradually being built. Service technicians may have access from portable computers to the same information like supervision centres. Thus, all operators have identical sight on the condition of majority of mutually interconnected fixed, mobile an VoIP networks. Partner networks may, in addition, monitor also functionality of their particular telephone exchanges.

By means of the **NMC PhoNet 9000**, partner networks are joinable into intra-national overlay VoIP star created by the transit telephone exchange. This exchange mediates three kinds of telephone connection:

- ✓ **Partner transit of calls** - mutual interconnection among all partner telephone networks.
- ✓ **National transit of calls** - interconnection of partner networks to all remaining domestic telephone networks.
- ✓ **International transit of calls** - interconnection of partner networks to telephone networks of some countries.

This way, small and new operators acquire very quickly and easily advantageous interconnection to all both domestic and international fixed, mobile and VoIP networks. Small and new operators will save expenses for building and operation of their own E1 connections of SS7 type, acquire advantages of direct connection into a group of great many VoIP networks and administration of data necessary for routing calls will become simpler. Thus, small and new operators are able to develop their business in the area of telephone services more advantageously.


Partner networks with non-existing tie-lines among them use the transit exchange as an advantageous way of their mutual interconnection. The networks with existing tie-lines among them then use the transit exchange as a back-up interconnection useful in cases of overload or failure of tie-lines.

Similarly, the networks that do not possess own connection to large domestic public networks use the transit exchange for outgoing and incoming calls to/from subscribers of all remaining domestic networks. Again, the networks with built-up own connection to remaining public networks use with advantage the transit exchange in case of overload or failure of tie-lines among networks.

Also, large domestic networks usually mediate standard way of connection to foreign telephone networks. When there is a call to/from these foreign networks, where a local **NMC PhoNet 9000** centre of telephone is also in operation, the transit exchange may also mediate advantageously international calls.

When a big number of national networks exist, it is impossible to create interconnection of each network to all remaining networks. For instance, for 150 telephone networks it would be necessary to build-up 11 175 connection trunks groups. That is the reason why small networks are connected to medium networks and these are connected to large networks. Interconnection of telephone networks into a star is much more transparent and economical. Routing of calls is, in a transit exchange, determined by numbering plans stored in the register of networks, that are automatically generated in it from the data about assigned, borrowed, lent, taken over and handed over numbers.

The **NMC PhoNet 9000** system is equipped with data interface, which serves for data transmission between the centre of telephone networks and information systems of partner telephone network. Via this interface, it is possible to read automatically some data from the register of networks (for instance numbering plans of all partner networks). Similarly, a partner network is able to write automatically some data into the register of networks (for instance operational message from a given partner network).

Thanks to **NMC PhoNet 9000**, telephone networks have these advantages:

- ❑ a logo of the partner network is placed on the website homepage;
- ❑ in the displayed offer, name of the partner network stands before others;
- ❑ partner name is mentioned in the "keywords" in HTML code header;
- ❑ partner name is mentioned in the "descriptions" in HTML code header;
- ❑ authorisation to insert/edit identification and engineering data;
- ❑ authorisation to insert/edit contact data related to its own network;
- ❑ authorisation to insert/edit data about prices related to its own network;
- ❑ authorisation to insert/edit operational data related to its own network;
- ❑ authorisation to insert/edit promotional data related to its own network;
- ❑ access to hidden contact data related to all networks;
- ❑ right to comment range and parameters of tests of its own network;
- ❑ access to detailed parameters of test assignment for its own network;
- ❑ access to detailed parameters of test results for its own network;
- ❑ right to use SW designated for supervisory centres of network;
- ❑ right to connect network into the star created by the transit exchange;
- ❑ right for partner transit of calls carried out by the transit exchange;
- ❑ right for national transit of calls carried out by the transit exchange;
- ❑ right for international transit of calls carried out by the transit exchange;
- ❑ right to be connected to data interface of the centre of telephone networks;
- ❑ right to read data from the register via the interface of SOAP type;
- ❑ right to write data into the register via the interface of SOAP type;
- ❑ right to print and export data stored in the centre of telephone networks;
- ❑ for favourable price for promotion banners displayed on the website.

The fact itself of being introduced in the register of telephone networks (i.e. in the central portal of telephone networks) is already the basic competitive advantage, as it is systematically propagated on Internet with various articles, presentations, seminaries and conferences.

The **NMC PhoNet 9000** centre of telephone networks has the capacity allowing attendance of all domestic telephone networks. Both the register and the tester are able to attend hundreds of networks. Transit exchange can transmit several ten thousands of simultaneous telephone calls.

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