

FROM THE RUSSIAN GUEST EDITORS

WHAT is telecommunications in Russia?

The answer is different in Khabarovsk, Moscow, St. Petersburg and Novosibirsk. The network of the country is rather large, with more than 40 million subscribers on the territory of the former U.S.S.R. in 1991, and united all over the territory. At the same time, the switching equipment is mainly electromechanical using national signaling systems. More than 30% of the existing digital switches are concentrated in Moscow and St. Petersburg, and it is virtually impossible to find them in the small towns on the banks of Volga.

Our aim is to inform the reader about the regulations and circumstances unifying the network, as well as about its peculiarities in their mixture and mutual influence. It is impossible to clarify all issues in a limited set of papers on all aspects of Russian telecommunications, so we have concentrated our attention on the public network as a fundamental part of the Russian telecommunications system.

The contents of the Russian papers is almost totally applicable to all former parts of the former Soviet Union; even the developments of recent years have not indicated any differences. In selecting topics and laying out the contents of the Russian section in this JSAC issue, the Russian Editors started from switching and transmission systems. Network issues are introduced first in the paper on rural networks and are discussed further in an important review of highly distinctive call processing and signaling systems in the Russian networks. Further on, a special part of the network structure is described to show how the numerous special services are connected. An example of a large metropolitan network management system indicated that the importance of network management has been recognized. Although almost all papers touch upon future development of the Russian telecommunications network, this subject is discussed in much detail in the last two papers. The most important points made in the papers are as follows.

Before the 1990's, the network was based almost exclusively on the domestic telecommunications equipment built according to the country-specific national standards. This is why the signaling, AM A, and calling party identification, as well as some other call processing characteristics, are so specific to the Russian networks; in many aspects, they are totally different from what is known in the West. The paper by B. S. Goldstein and L. G. Slutsky, "Distinctive characteristics of call handling procedure and signaling logic in Russian public telephone network," is a key paper which helps us to understand the fundamentals of Russian networks. These issues are especially important for the introduction of modern digital switches into the Russian networks. The basic concepts of such modernization are discussed in "Digitalization of urban and rural telephone networks in Russia" by V. A. Dokuchaev, A. P. Pshenichnikov, and N. A. Sokolov, and in "Switching equipment adaptation for Russian public telephone network" by B. S. Goldstein. Together, these three papers provide a perspective of the emerging network development in Russia.

Currently, foreign systems are being imported, but manufacturing of domestic systems remains a strategic necessity, so development of new systems continues. The paper "Switching systems in Russian urban telephone networks" by A. E. Koucheryavy and A. R. Sinyakov deals with the characteristic features of the domestic crossbar exchanges now in use as well as of ATC-90 now in design. The paper contains information about the history of the

switching system design, and today's situation in the area. With respect to the long-distance and rural networks, similar issues are discussed in "Toll telephone exchanges and signaling systems in Russian long-distance network" by V. I. Gloukhov and M. A. Zharkov, and "Design concepts for rural telephone networks in Russia" by E. A. Melamud. A review of transmission systems is given in "Development of the urban and rural transmission networks of Russia" by B. Z. Berlin and N. A. Sokolov.

The paper "Telephone access to special services in Russia" by V. L. Morev, N. V. Nikolaev, A. L. Moroz, and A. U. Vinogradov discusses the services provided to the subscribers by special service offices in the country. Finally, the paper "Automation and centralization of maintenance processes in St.-Petersburg telephone network transmission systems" by B. Z. Berlin and A. A. Kostin introduces a modern approach to large metropolitan network maintenance – new for the Russian networks.

We hope that the proposed set of papers will give the reader a good and rather comprehensive review of the public telephone network in Russia.

Andrew E. Koucheryavy was born in Leningrad, U.S.S.R., in 1952. He received the Dipl.-Eng. degree in electrical communication from Leningrad Institute for Electrical Communications, and the Ph.D. degree in technical sciences from Central Research Telecommunications Institute, Moscow, in 1974 and 1982, respectively.

Since 1974 he has worked at the Research Institute of Telecommunications (LONIIS). From 1974 to 1981 he was a Circuit Design Engineer; from 1981 to 1983 he was a member of the Scientific Staff at LONIIS; and from 1983 to 1986 he was a Chief of the Switching Laboratory and Department. Since 1986 he has been a Technical Director of LONIIS (research and development). His areas of interest include network planning, teletraffic theory, telephone exchange design, and statistical diagnostic.

Dr. Koucheryavy is a Chairman of St. Petersburg section "Telephony" of the Russian Communication Society A. S. Popov. In 1993 he was a Chairman of the Organizing Committee of ITC-sponsored St. Petersburg Regional International Teletraffic Seminar "Digital Communications Network Management." He is a member of Committee 3 (Telephony and Switching Systems) of the Russian State Scientific Council of the Ministry of Communication, and a member of TSB ITU, Study Group 11.

Boris S. Goldstein was born in Odessa, U.S.S.R., on June 6, 1951. He was educated in the U.S.S.R. and received the Dipl.-Ing. degree in electrical communication, the M.E. degree in mathematics, and the Ph.D. degree in technical sciences from Leningrad Institute for Electrical Communications and from Leningrad State University in 1973, 1977, 1982, and 1994, respectively.

He has been with Leningrad R&D Institute of Telecommunications since 1973, working on the research and development of SPC switching equipment, ASCD systems, PSTN maintenance centres, digital central office equipment, as a Design Engineer (software development) and a Network Analyst. From 1985 to 1990 he was a Head of Laboratory and, since 1990, he is Software Branch Director. His areas of expertise include communication switching, software, signaling systems, and combination equipment performance evaluation. He is actively involved in the digital switching system ATSC-90 development project as the

Head of Software Design. Dr. Goldstein is a two-time recipient of the Russian Ministry of Communications Award of Excellence. He is especially known for his work in the Russian PSTN signalling system, call handling products, signaling converters and simulators design for different exchanges adaptation for CIS telephone networks. He is a member of Committee 3 (Telephony and Switching Systems) of the Russian State Scientific Council of Ministry of Communication, a member of the Russian Communication Society A. S. Popov, and a member of the TSB STU (former CCITT) 10 Committee. He organized and chaired the Technical Committee of the St. Petersburg International Teletraffic Seminar in 1993.