

IN THE VANGUARD OF TELEVISION BROADCASTING



Professor Mark Krivocheev

A visionary who contributed to building many television

In this year of intensive preparations for the first session of the ITU Regional Radiocommunication Conference (RRC-04), one name appears frequently and is associated with numerous achievements in the evolution of television: the name of Professor Mark Krivocheev (Russian Federation). The long-standing Chairman of the CCIR* Study Group 11 (Television broadcasting service) and, later, of ITU-R Study Group 6 (Broadcasting services) has contributed to building many television avenues. Here is a glimpse of some of his achievements, which are relevant to the issues on the RRC-04 agenda:

* CCIR stands for International Radio Consultative Committee, which became the Radiocommunication Sector (ITU-R) in 1993.

- Professor Krivocheev was one of the originators of the 625-lines (50 Hz) TV standard that was developed in the former Union of Soviet Socialist Republics (USSR) in the early 1940s. This system, which requires a channel width of 8 MHz, was approved in 1945 as an official USSR standard. The first transmissions based on this standard went on air in Moscow in September 1948. It was later approved as a national standard in several countries in Eastern Europe. The concept of the 625 lines per frame was subsequently implemented in the Western European standard, which requires a channel width of 7 MHz. The 625-lines concept was maintained in the developments that ensued for colour television standards and for standards dealing with digital modulation schemes.
- Professor Krivocheev was very active in the development of planning criteria and associated parameters for compatibility assessment, which preceded the establishment of the European Broadcasting Agreement (Stockholm, 1952) and the associated frequency assignment plans for the VHF band (Bands I, II and III). He participated in the elaboration of the first frequency assignment plan for television broadcasting in the USSR, in 1951, which was later incorporated into the Stockholm Plan of 1952.
- During the period 1951–1961, which preceded the VHF/UHF European Broadcasting Conference in Stockholm in 1961, he made a substantive contribution to the development of the frequency planning methodology, including on the required protection ratios for the 625-lines/8 MHz system. These were used at the Stockholm Conference to revise the VHF plans and establish the UHF plans.
- In the early 1970s, when digital modulation techniques appeared on the scene, Professor Krivocheev was one of the key strategists that oriented the CCIR studies

towards the adoption of a study programme dealing with bit-rate reduction in digital coding of television signals. This study programme served as a vehicle for new developments, including the resolution of many critical issues, such as the necessary bandwidth for transmitting the digital TV channel. The programme also served to demonstrate that technical solutions were possible which would allow, with substantive modulation compression, to use conventional channel widths (6 MHz, 7 MHz or 8 MHz), for transmitting the digital terrestrial TV signal, including high-definition television (HDTV).

- He reconfirmed his visionary nature in his address, in December 1992, when he envisaged a "third Stockholm Plan", which would encompass the digital terrestrial television broadcasting. He contributed substantively to the standardization of HDTV, as well as to developments in interactive broadcasting.

It would be overly ambitious to try to cover all of Professor Krivocheev's outstanding contributions to the development of television standards and their implementation in this brief overview. His long and dedicated involvement in television and his visionary approach to the ITU-R studies have helped transform the television broadcasting service.