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News. Forty years of the Institute of Information Theory and Automation

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## Forty Years of the Institute of Information Theory and Automation

At the beginning of 1999 the Institute of Information Theory and Automation of the Academy of Sciences of the Czech Republic (till 1992 of the Czechoslovak Academy of Sciences) celebrates 40 years of its activity. The principal decision about its establishing was done during 1958 and since January 1, 1959 the Institute legally exists.

The time of its foundation was, in the mathematical and technical sciences in Czechoslovakia and generally East European Countries, characterized by a rapid development of information and control sciences. After the early fifties, when cybernetics and computers were struck by politically motivated distrust, Czechoslovak scientists continued to work in those fields with a great endeavour to bridge the existing gap. Luckily, researchers possessing sufficient background of knowledge existed even in those pioneering times and some of them formed the core of the first staff of the new institute.

The Institute of Information Theory and Automation (ÚTIA) was established as a merger of two academic laboratories: Department of Information Theory of the Institute for Radioengineering and Electronics, and Laboratory for Automation and Telematics.

Since its foundation, ÚTIA has been involved in systems, control and information sciences. In the 1960s significant results on the entropy of information sources and the capacity of transmission channels were derived. An algebraic approach to control system design was developed during the 1970s, and the 1980s are characterized by intensive research and interesting results in Bayesian approach to self-tuning control, theory of Rényi distances in probability spaces, and a method of mathematically modelling large-scale gas-distribution networks. These research topics generally continue also in 1990s, when the emphasis has been shifted towards research of theoretical problems connected with applications in various domains. The range of interest covers selected topics related to knowledge and data processing, pattern recognition, robust statistics, system identification and control and also econometric analysis.

The Institute currently holds research grants from many domestic and foreign agencies. It publishes the journal *Kybernetika*, and organizes, besides numerous occasional scientific meetings, also regular Prague Conferences on Information Theory, Statistical Decision, Functions and Random Processes whose series, starting in 1956, represents probably the longest tradition of still realized international conferences on applied probability and statistics in the world.

In 1999, forty years after its establishing, ÚTIA consists of 7 research and 4 service departments and it organizes also the area service department in the Academy of Sciences campus Mazanka.

Researchers of ÚTIA are active in the international committees and top governing boards of IFAC (International Federation of Automatic Control), IFIP (International Federation of Information Processing), IAPR (International Association of Pattern Recognition) and IEEE (Institute of Electrical and Electronics Engineers). In 1996 ÚTIA joined the European Research Consortium on Informatics and Mathematics (ERCIM).

ÚTIA has developed close research and teaching contacts with many academic and industrial institutions. It intensively cooperates namely with various faculties of the Charles University, Czech Technical University, University of Economy, West Bohemian University, Masaryk University and South Bohemian University. The Institute realizes long-time joined research projects, among others, with Honeywell, Inc., Terežín National Memorial and Terežín Initiative (Terežín was the location of concentration camp and ghetto during the Second World War).

The anniversary seminar held on January 12 at 2 p.m. in the Institute building (Pod vodárenskou věží 4, Praha 8) is to remember at least some of the results and activities

which characterize four decades of its existence. Besides short discussion communications, the following contributions are in the seminar programme.

14.00 – 14.30 *I. Vajda*: Information theory in ÚTIA

14.30 – 15.00 *J. Michálek*: Generalised random variables

15.00 – 15.20 *P. Pudil*: Operations research and history of the FORMATOR conferences

15.20 – 16.00 break

16.00 – 16.30 *M. Kárný*: Are the adaptive systems adapting?

16.30 – 17.00 *V. Kučera*: 40 years of the Institute, 40 years of modern control theory

17.00 – 17.30 discussion

Official language of the seminar is Czech.

*Milan Mares*