

Hungary's Early Years in the Ryad

Mate Szabo

Carnegie Mellon University, USA

In 1968, Alexei Kosygin, the Chairman of the Council of Ministers of the Soviet Union initiated a cooperation among the countries of the Council for Mutual Economic Assistance (CMEA) to develop a Unified System of Electronic Computers (ES or Ryad). The Ryad program consisted in an upward-compatible series of computers in order to make up for the CMEA countries' deficits in computing technologies. The goal was achieved by the cloning of IBM's 360 (and later 370) system, different countries being responsible for different members of the series and some of the peripherals.

Hungary became responsible for the smallest member of the series, the R10, a computer that did not have a corresponding machine in the IBM 360 series. Hungary was interested in developing the R10 because development of small computers in Hungary was taking place already. At KFKI (Központi Fizikai Kutató Intézet, Central Research Institute for Physics) a clone of DEC PDP-8 was developed under the name TPA 1001 (Tárolt Program Analizátor, Stored Program Analyser) in 1966–1969. KFKI was not allowed to purchase a PDP computer as a consequence of the COCOM embargo. The TPA 1001 was in standardized production from 1968, first with transistors; later members of the TPA family were manufactured with integrated circuits, and at the end with microprocessors, and were in production until 1990 [5, 3]. Around the same time, at EMG (Elektronikus MÉRőkészülékek Gyára, The Factory for Electronic Measuring Instru-

ments), a computer family with transistors, EMG 830, was developed under the direction of Árpád Klatsmányi. The EMG 830 was introduced in 1968 and about 15 of them were produced during 1968–1970, its versions with integrated circuits, EMG 840, were developed during 1972–1974 but only one ended up in commercial use [2, 3].

In order to fulfill its responsibility towards Ryad, Hungary created an institution to coordinate the companies and parties involved in the country and to communicate with the institutions of other CMEA countries participating in the project. This new institution, called SzKI (Számítástechnikai Koordinációs Intézet, Institute for the Coordination of Computing Technology),¹ was founded at the end of 1968, and its chief executive officer was Zsolt Náray until 1990.²

Although there was no computer in the IBM 360 series that corresponded to the R10, it was not an independently developed computer. Around the time when Kosygin reached out to the leaders of CMEA countries, Hungary

¹ The institute used this name between 1968–1984, then it was called Számítástechnikai Kutató Intézet és Innovációs Központ (Research Institute and Innovation Center for Computing Technology, keeping SzKI as its acronym) during 1984–1991. After the political transition it survived first as SzKI corporation (1992–1993) and later as SzKI Limited Liability Company (1993–1995) [6].

² Náray left the KFKI, where he was directing the development of the TPA machines, for this position.

and France agreed to advance their industrial and scientific cooperations. As part of this cooperation Hungary bought the license of the 10010 and later Mitra 15 computers from Compagnie Internationale pour l'Informatique (CII) during 1968. The R10 was based on the Mitra 15 computer. It was first introduced in 1972 at the Budapesti Nemzetközi Vásár (Hungexpo) [7].

Beyond the primary goal of developing and coordinating the production of the R10, the SzKI attended to research and innovation tasks as well. As a result, 40% of the value of the license of the Mitra was covered by software and hardware development.³ Similarly, when SzKI purchased a Siemens 4004/45

computer in 1969, it was partially paid for in software developing commissions [6, 7]. This led to a long-term cooperation between Siemens and SzKI as a software developer.

In 1968 Hungary implemented an economic reform, called New Economic Mechanism. This introduced a limited, artificial internal market, gave larger freedom to corporations and relaxed the 'command' or 'planned economy' to a large extent [1, 4]. It made it possible for the SzKI to keep and manage (an exceptional) 50% of its (western) currency income, beyond financing itself from the internal and CMEA markets.

The aim of my talk is to elaborate on the early history of the SzKI and the R10. In particular, to give details of the computers mentioned and their peripherals, explain the relevant features of the changes in Hungary's economy, and detailed connections of the institutions involved.

³ The Mitra 15 was introduced at the Sicob (Salon des industries et du commerce de bureau) in 1971 with the presence and assistance of SzKI employees.

References

- [1] T. Bauer, "The Hungarian Alternative to Soviet-Type Planning", *Journal of Comparative Economics* 7, 1983, pp. 304-316.
- [2] M. Havass, "Az EMG gépcsald szoftvereiről". Available at: itf.njszt.hu, John von Neumann Computer Society, 2012, 7 pages.
- [3] G. Képes, G. Álló, *A jövő múltja. The Past of the Future. Bilingual exhibition catalog*. John von Neumann Computer Society, 2013.
- [4] J. Kornai, "The Dilemmas of a Socialist Economy: the Hungarian Experience", *Cambridge Journal of Economics* 4, 1980, pp. 147-157.
- [5] Gy. Kovács, "Hungarian Scientists in Information Technology", in Tatnall, Arthur (ed) *Reflections on the History of Computing*, Springer, 2012, pp. 289-319.
- [6] P. Németh, "Pótlapok az Szki Történetéhez", in Mojzes Imre and Talyigás Judit (eds) *Mozaikok a magyar informatikából*, Mil-Org Kft., 2005, pp. 73-80.
- [7] P. Németh, "Nagy projektek és szervezeti változások az Szki-ban", in *Volt egyszer egy Szki...*, Pannónia Print Nyomda, 2011, pp. 53-83.
- [8] Zs. Szentgyörgyi, "A Short History of Computing in Hungary", *IEEE Annals of the History of Computing* 21(3), 1999, pp. 49-57.