

The First “World Computer Congress”, Paris, 1959

by Balint Domolki



Dr. Balint Domolki graduated in Mathematics and then received a postgraduate degree in Computer Science. He served as President and Honorary President of the John von Neumann Computer Society and held managing positions in various Hungarian software development organizations. He was founder and managing director of IQSOFT for the period 1990-97 and Chairman of its Board of Directors until 2003. Currently Balint is an expert at the National Council for Communications and Information Technology.

As a freshly graduated student of the Budapest University in 1957 I was lucky enough to be admitted in a team which was engaged in building the first electronic computer in Hungary¹. This gave me the possibility to join two of my older colleagues in attending the first International Conference on Information Processing in Paris in 1959. This was my very first trip over the borders of Hungary. At that time it was not customary for young people to travel abroad, especially not through what was called “Iron Curtain” so it has been quite difficult to decide what fascinated me in a larger extent:

- to be at the most prestigious, high level gathering of the representatives of the profession I have chosen for my life and be able to listen to “legendary” names known from the literature (access to which, by the way, was not so easy at that time!), or
- to be just in Paris, “capital of the world”!

Not trying to give an answer to this question, nevertheless, I may say, that although since that time I have attended many World Computer Congresses (even took part in the organization of some of them), the most important impact to my life was given by this conference in Paris.

More than 1700 persons from 37 countries² interested in electronic computers gathered in Paris in June 1959 for the International Conference on Information Processing, organized by UNESCO. The idea of such a conference was proposed by the Joint Computer Committee (USA) in 1957 and UNESCO performed a very careful preparatory work, involving 22 consultants from all over the world and all fields of computer science (a few well-known names were those of I.L. Auerbach, M.Goto, A. van Wijngarden, M.V. Wilkes,...).

¹ See: A Short History of Computers in Hungary, by Szentgyorgyi Z, Annals of the History of Computing Volume 21, Issue 3, Jul-Sep 1999 Page(s):49 - 57

² A figure to be envied by organizers of many recent World Computer Congresses

Five main topics were selected for the conference:

1. Methods of digital computing
2. Logical design of digital computers
3. Common symbolic language for digital computers
4. Automatic translation of languages
5. Pattern recognition and machine learning

In several countries “national groups” have been formed around academies of sciences and/or computer societies, proposing papers for the conference. Papers were first screened by these national groups and from the 163 proposed 60 were accepted for plenary presentation at the Conference.³

Additional events included

- a special session on “Computing Techniques of the Future” with topics like magnetic films, cryogenic components, parametrons, etc.
- 13 symposia on specific topics, including e.g. automatic programming (A. Perlis), methods of solving linear systems (J.H. Wilkinson) and programming procedures (E.W. Dijkstra)
- evening lectures on topics of general interest
- exhibition of information processing equipment AUTO-MATH 59, with a series of lectures presenting computers like Bull Gamma 60, IBM 7070, Hitachi HIPAD 501, RCA 501 etc.

Looking back to the program of the conference after almost 50 years, the following observations can be made:

- the program is dominated by topics about the structure of digital computers and their use for scientific and engineering computations (e.g. partial differential equations, meteorological calculations etc.)
- there is no trace of data processing in the sense as in later years it was used for business applications
- automatic translation of (natural) languages was considered as a very important topic, as there were big expectations about the development of such systems (not being realized for several decades...)
- programming languages were in the state of fast development, with main emphasis on “international algebraic language” later called ALGOL (born at a conference in Zurich in 1958). A basic paper on programming languages by F Bauer and K. Samelson was presented and J. Backus introduced here the ideas of syntax and semantic notations (later known as BNF – Backus-Naur Form)
- with such a strong interest on ALGOL it is notable, that the language COBOL, being born in the USA in these days was not mentioned at all. A paper titled “The structure and preparation of data-processing compilers” by Grace Hopper (who is commonly re-

³ Proceedings published in 1960 by UNESCO (Paris), R. Oldenbourg (München) and Butterworths (London) See: <http://www.informatik.uni-trier.de/~ley/db/conf/ifip/index.html>

ferred to as “the mother of COBOL”) can be found among the rejected papers.

- national projects for building computers were presented by W.L. *van der Poel* (Netherlands) and M. Lehman (Israel), persons who later became big names in computer science.
- under the heading of “Pattern recognition and machine learning” several topics related to “artificial intelligence” can be found, e.g. some early studies on speech recognition, the basic paper of H. *Gelernter* on geometrical theorem proving and the much cited study of *Newell-Shaw-Simon* on a “general problem solving program”.

A very important “by product” of the conference was the birth of IFIP. Quoting from the official announcement on June 18, 1959:

“Representatives of computer societies from 18 countries met in Paris today to take the preliminary steps necessary to create an International Federation of Information Processing Societies which would carry on the sponsorship of future international conferences on information processing, including mathematical and engineering aspects, to establish international committees to undertake special tasks falling within the spheres of action of national member societies, and advance the interests of these member societies in international co-operation in the burgeoning information processing field.”

A Provisional Bureau for the IFIPS has been set up chaired by I.L. *Auerbach* (USA) with vice-chairs A.A. *Dorodnicyn* (USSR) and A *van Wijngaarden* (Netherlands). By January 1, 1960, thirteen national professional technical societies had formally agreed to adhere to the statutes proposed by the Organizing Committee, and IFIP legally came into existence. The IFIP Council met for the first time in Rome June 16–17, 1960 and the series of world computer congresses continued in Munich in 1962.

It is clear that UNESCO had a very important role in organizing the worldwide cooperation in the information processing community. As P. *Auger*, Secretary General of the UNESCO-sponsored international conference said at the closing session:

“In sponsoring this current International Conference on Information Processing, UNESCO accepted responsibility only for convening the first international meeting for those interested in the science of information processing. We had expected, and apparently correctly so, that such a meeting would act as the catalyst for the formation of an international federation.”

The organizational work UNESCO performed in the preparation of the Conference was very professional and could serve as an example for organizers of future World Computer Congresses.

Moreover, as a service to the future, everything is very

well documented and can be found on the Internet at <http://unesdoc.unesco.org>. Another useful source of information is the memoirs of I.L. *Auerbach* <http://www.ifip.org/secretariat/corner/AuerbachonFouning.pdf> ■

Q&A with the CEPIS President



Niko Schlamberger is President of CEPIS and the Slovenian Society “INFORMATIKA” and Vice President of IFIP

NL: *CEPIS is pan-European, but there are regional ICT societies with their own agendas and sometimes competitive objectives. Comments?*

NS: First, we must realize that CEPIS is a membership organization. A brief pragmatic definition of such an entity is that it is established “by the members for the members”, which may be physical or legal entities. CEPIS has been established to make the voice of IT European professionals heard and it meets the purpose very competently in the European arena by being active and visible in many projects sponsored by the European Commission. This is important because CEPIS member societies are also active in the European space but as opposed to CEPIS this is not their primary area of concern. As an entity in its own right it has its own agenda but regardless of that it must serve its constituency’s plans, aims and goals. A part of this service is also supporting regional associations of its member societies, where and when it can do so. A necessary condition for such support is that CEPIS be provided input by interested parties upon which it may be able to react. The bottom line is that CEPIS must be supportive of national societies and their regional associations for which they should forward an adequate initiative. This has been failing in the past but could - and should - hopefully improve in future.

NL: *These ICT societies have a wealth of experience for the EU and their common interests are best dealt with at membership levels. How can CEPIS help promote their agendas?*

NS: There is a variety of ways to meet such an objective such as a newsletter, a portal, meetings and more. Among other things CEPIS is also a forum where European national computer societies meet regularly. Whereas the regional associations mostly focus on regional matters CEPIS could offer a wider European perspective to interested member societies, be it that they have something to offer or that they wish something to be provided with. It can and surely will make available a hospitable and understanding ground for such activities but also in this case my expectation would be that an initiative comes from those that have such wishes. ■