Foreword

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While reading through the Híradástechnika issues of the first half-year, I selected for English publication several articles which more or less are supporting the development of the telecommunications and communications sectors. Several interesting studies were written from the component and technology field. This half-year may well emphasise the fact that the recent achievements of electronics, nano technology and photonics have reached the level where they can play a determinant role in telecommunications.

Disregarding their sequence in the journal, first of all I want to speak of photonics. Three articles (those of Tamás Marozsák, Gábor Kovács, Attila Kovács – Ildikó Deme, respectively) report on photonic devices, new laser types, wavelength switches, semiconductor amplifiers and packet switched optical routers, which elements will certainly step up the propagation process of optical telecommunications. The Hungarian researchers are also doing their best to find out how to reduce the number of the electric/optical transformations along the connection. The number of the functions to be realised on the optical level is growing steadily, thus permitting the reduction of the broadband telecommunications costs. As newer and newer technologies emerging in the fields of photonics fulfil urgent needs, we have been endeavouring to present the achievements of the national research works in this issue, as well. It is worth contrasting these articles with our previous English issue, where the optical burst switching, the distributed parameter and Raman amplifiers have been brought into the light (December 2003).

Because the service itself and also the production require nano technologic solutions, we will first include in the following group a review of the National Nano Technology Conference. These achievements, however, are not connected with the modernisation of networks of the near future, being marked only with a tendency. This trend is underscored by the technologic researches that contributed to the creation of highly efficient solar cells, with the laser beam being a promising factor in the mounting miniaturisation and the precise completion of bores in the micrometer range (Edvárd Kuthy, Péter Gordon–Bálint Balogh).

Réka Limbek and Péter Sziklai handle one of the potential fields of high quality coding. This group may also outline the presentation of ENUM, the solution enabling the improvement of the service quality and linking the e-mail addresses to the phone number. Quality and reliability are important and play role also in the field of computer-technology. The investigation of fault-tolerant computers (Zoltán Katona) and of the relevant protocols is equally strengthening this tendency.

Thus we were studying to outline the development backgrounds of telecommunications, hoping that all these results will in the short term contribute to the enhancement both of the prices and to the quality of the different services. Mentioned last, but put first in the journal is the contribution of Orsolya Ferencz, with the presentation of an actually important solution of the Maxwell equations.

There is a chance that the technological and experimental background that we became familiar with could be used extensively in the near future. The acceptance of the countrywide implementation of the theoretical findings is a crucial factor. By means of these articles we intend to attract the attention to the results and suggest their use by the telecommunications industry. In one or two years from now we might be able to report in our English-language issue the realisation of the first end-to-end optical connection based on the photonic achievements. Along with this we would like also to have a report on the improvement of the reliability of the computer technology used for the control and the management of such a connection, i.e. on the experience that the failure rate is tending to zero.

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