

"I consider this is a good job that should be supported. It is highly developed in terms of the practical approach and is extremely valuable in relation to evolution of non-Von Neumann architectures."

Ph.D., Senior Research Associate, IPMCE Russian Academy of Sciences (RAS), A.M. Stepanov

"The appearance of a Russian start-up company that introduces new processor architecture and a real, reasonable market launch business plan to high tech market is quite an unusual phenomenon. The importance of this project not only in the social value and real commercial prospects, but also in the implementation of the project - it is an essential and scientifically grounded step in the development of national systems engineering: the project is able to integrate the domestic architecture, domestic CAD and the domestic production of microchips. Now it is difficult to estimate the place that the proposed architecture can take on the market. It may be the market of general purpose processors, but on the market of embedded and special applications requiring high performance with minimum dimensions and ultra-low power consumption it can become a serious competitor to traditional von-Neumann solutions. I especially want to emphasize the achievements of the project team: is extremely inspired with new developments and we have to support their engineering courage - courage to develop new products and not copy them. "

Head of RAS Innovation Agency, E.B. Babayan

Participants of scientific seminar "New Architecture: multicellular processor", having heard and discussed the report of the Head of JSC "Ural architectural laboratory" Streltsov N.V. consider it necessary to mention the following basic results of scientific discussion on the topic of the seminar:

Scientific seminar "New Architecture: multicellular processor" given in accordance with the decision of the Commission for Modernization and Technological Development of Sverdlovsk region from 01.07.2010

The result of the seminar was to obtain independent scientific expert appraisal of the project on the development and implementation of competitive domestic multicellular DSP-processor IP-core, which is as follows:

- Project authors proposed a classification of processor architectures, which allowed to formulate their improvement direction;
- The classification lies in specification of two fundamentally different architecture types - "with stored program" and "with stored algorithm". The classification reflected "von Neumann" and "post-von Neumann" architecture as well such known classes of architectures as SISD, SIMD,

MISD, MIMD and all others previously developed together with architectures known in literature, including multicore and data flow machines;

- In 2004 in accordance with the classification a new IP-core was developed and called "synputer", which is based on test results and by scientific community was recognized as "the best product of the year " at the annual international conference on Digital Signal Processing (2003, Dallas, USA);

- Multicellular processor IP-core was created on the basis of "synputer" solutions used as prototype: 4, 8, 16 cells processor description was designed and tested on RTL model, training was conducted on FPGA-model (XC2V4000) of 4-cell processor and synthesis was implemented for technical process of 0.18 nm. $V = 1.8V$ (options: 10Mhz/40MIPS; 50MHz/200MIPS), estimate characteristics for estimated performance, power consumption, and analogue comparison were presented;

- The technical novelty of the project is confirmed by 7 patents, including three formally established in the EU and the U.S..

Design work on multicellular processor is of great current interest and on conditions of further development and production of competitive products embodying scientific and technical concepts presented at the seminar, it can be recommended for industrial implementation.

Chairman of the Scientific Seminar RANS, S.L. Goldstein