United Institute of Informatics Problems

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Software package for image processing and analysis for vision systems in the microelectronic industry (SP IPA)

COUNTRY OF ORIGIN	IDENTIFIER	PUBLISHED	LAST UPDATE	DEADLINE
Belarus	BO5418	2022-08-10	2022-08-10	

Linked profile in other language

Программный комплекс обработки и анализа изображений для систем технического зрения в микроэлектронной промышленности (ПК ОАИ)

Responsible

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Summary

The Joint Institute for Informatics Problems offers consumers a software package for image processing and analysis for technical vision systems in the microelectronic industry (SP IPA) under a license agreement.

Description

The Joint Institute for Informatics Problems of the National Academy of Sciences of Belarus has developed a software package that provides preliminary processing, analysis and control of object parameters on images of topological layers of integrated circuits.

The main functions of the complex:
* input of design information into computer-aided design systems VLSI;
* operational collection of objective information about the quality of the performance of a particular technological operation;
* Obtaining the information necessary for express analysis of products of competing enterprises.

The SP IPA performs the following main operations:
* obtaining a complete image of the topology layer from fragments (frames) and providing subsequent interactive viewing of the entire image with the possibility of scaling it using a specialized editor, which is carried out using the developed software;
* pre-processing of images, spectral histogram analysis;
* segmentation and identification in the image at the direction of the operator of areas of a certain type with the possibility of their subsequent adjustment, automated preparation of a library of areas to be identified, identification of areas (combinations of areas) with the possibility of subsequent viewing and adjustment, approximation of the boundaries of the selected areas by straight line segments, the formation of processing scenarios.

The SP IPA operates in interactive mode under the control of the Windows or Linux RedHat operating system.

The SP IPA allows to significantly increase the productivity and quality of control of modern microelectronic products in a wide range of design standards and technologies. It can be used as an additional software tool for the analysis of integrated circuits in conjunction with automatic testing of semiconductor wafers.

The advantage over similar means of analysis and control lies in the development and application of new methods for digital processing of graphic information and optical control of the topology of modern microelectronic products. The institute is looking for industrial partners for the application and further development of the SP IPA.

Advantages and Innovations

The SP IPA is designed for processing and analyzing images of VLSI topological layers and preparing for topology restoration, which will reduce the complexity of the design and manufacture of integrated circuits, improve manufacturing quality, and increase yield.

The world level is provided by the development and application of new methods for pre-processing and analysis of images of control areas and an increase in the productivity and accuracy of optical control of the VLSI topology.

Stage of development

Already on the market

Comments regarding stage of development

Optical control of photomasks and VLSI semiconductor wafers is used at JSC KBTEM-OMO and SC Belmikroanalysis, a branch of NTC Belmicrosystems, JSC INTEGRAL.

Funding source

State budged
Internal

IPR status

Copyright

Sector group

ICT Industry & Services

CLIENT INFORMATION

Type and size of client

R&D institution

Year established

1965

NACE keywords

J.62.0 - Computer programming, consultancy and related activities
J.62.02 - Computer consultancy activities

M.72.19 - Other research and experimental development on natural sciences and engineering

Turnover (in EUR)
10-20M

Already engaged in transnational cooperation
Yes

Additional comments
The United Institute of Informatics Problems of the National Academy of Sciences of Belarus is the leading organization in Belarus in fundamental and applied research on information technologies: CAD/CAM/CAE systems, applied mathematics, high performance parallel computing, bioinformatics and medical informatics, geo-information systems, digi- tal cartographic systems, Space informatics, GRID technologies. The institute is the provider of scientific and educational Internet networks in Belarus. It takes part in state recommendations on information tech- nologies implementation, scientific support of infor- matization processes, prognosis in related science and technology fields in Belarus, high skill specialists training.

Main directions of research:
• Computer aided design, manufacturing and engineering (CAD/CAM/CAE)
• Processing and recognition of signals, images and speech
• Space and remote sensing data processing, geoinformation systems
• Input-output of video and graphical information
• Operations research and discrete optimization
• Information security
• Decision making support systems
• Bio- and medical informatics
• Computer networks and telematics applications
• Supercomputer systems and applications, parallel computing, GRID technologies
• Information retrieval systems.

The Institute cooperates with foreign universities, research centers and organizations in the field of informatics, actively participates in the implementation of joint international projects and programs.

Languages spoken
Russian

INFORMATION ABOUT PARTNERSHIP

Type of partnership considered
License agreement

Type and role of partner sought
Consumers interested in purchasing the software package for image processing and analysis for vision systems in the microelectronic industry (SP IPA) on the basis of a license agreement.

Type and size of partner sought
University

ATTACHMENTS

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