Ready Hi-Tech Software Solutions

INTERFACE
INTERNET & SOFTWARE COMPANY

Interface Ltd., an experienced hi-tech Russian company, offers you a number of scientific and e-commerce solutions. We can optimize and customize all these solutions to better suit your needs.

BVision

## Tracking and analysis of animals' behavior

BVision is a robust system developed specially for the Morris water maze test. It combines very convenient tracking system and powerful analyzing tools, which allow taking animal tracks and estimating their various characteristics.

For: universities, pharmacology companies, ecology organizations, and large hospitals.

The system was applied in the Institute of Physiologically Active Compounds of the Russian Academy of Sciences to study effect of different compounds on spatial orientation and memory ability of experimental animals (Morris water maze test).

The goal of BVision is to get quantitative measurement and analysis of various aspects of animals' behavioral response (learning and memory abilities, decrease of mobility, etc.). The system consists of a video camera – to monitor and record the movements of the animals, video recorder - to record the trajectories on video tape, and computer software - to perform real-time tracking of the behavior, store experimental information in a database and analyze data. Experimental information can be viewed and revised.

The operation of the system and analysis are maximally automated and transparent to user making it possible for him to concentrate on the behavioral problems rather than on experimental routines. Experimental results can be presented graphically in different forms. The program allows to perform primary statistical analysis of the experimental data. To perform complex statistical analysis the system allows to export data to other programs such as Microsoft Excel, Statistica, etc.
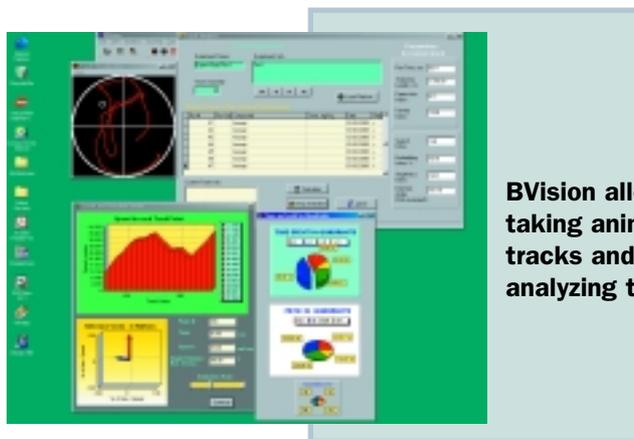
BVision allows taking animal tracks and analyzing them

CheD

Databases to operate with chemical information

CheD was developed to store, view, and search chemical structures, infrared, nuclear magnetic resonance, and mass spectra.

For: chemical plants, universities, research centers.

CheD is developed to store, retrieve and process chemical information. The product can work either as a stand-alone application or with a specially written Web server and some of DBMSs (Oracle, Interbase, MS SQL Server, etc).

There are new kinds of data fields introduced: arrays to store spectral information, Web and database links, and user-defined functions. CheD has an open architecture for customized types, controls, services to be added. Web server for chemical data exposure is created as a distributive, which can be installed on the Windows platform in several minutes.

Some modifications were made in the Centroid algorithm of diversity sorting, which uses cosine similarity metric. The modified algorithm is suitable for working with large databases on PC. For example, it takes less than

9 hours (on Pentium III, 800 MHz) for diversity sorting of the database with more than a million of records.

Who already uses CheD

The software is applied at Uniroyal Chemical, ChemDiv, TimTec, Chemical Block International, Harvard University; Moscow State University, many research institutes of the Russian Academy of Sciences.
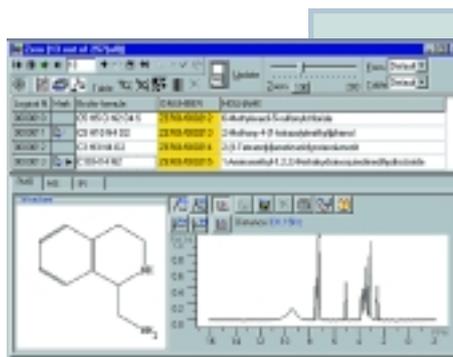
Structure analysis with CheD

W-edge

Structural analysis of random data

W-edge - software package for structural analysis of non-structural data. W-edge allows you to considerably save money and time when costly explorations and equipment are required.

For: geology, medicine, environmental assessment and non-destructive testing.

W-edge was specially developed to solve costly applied problems like searching deposits of mineral resources such as gold, oil and gas deposits by using measurement results of various geophysical fields.

W-edge is based on analyses and selection of stable clusters in 2D matrices/images. The program finds clusters of points, which form stable structures with self-organization properties. W-edge allows to analyze any data matrix including geophysical data like 2-D and 3-D seismic data, gravimetric, magnetic, geochemical data, as well as data of radioactivity (gamma-spectrometry) and satellite imagery.

W-edge - a package that consists of a core program and

a set of java classes, which determines the area of application. In accordance with the type of application W-edge can be used in various areas like medicine, geology, environmental assessment, non-destructive testing to analyze photo-images, geophysical data, medical images.

The most successful implementation was shown in oil and gas industry exploration to forecast the deposits of mineral resources.

Software solution enables to forecast the most prospective sites for oil exploration (yellow marks)
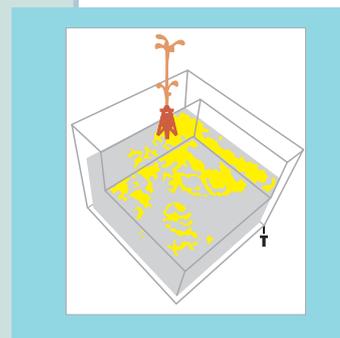
QDTRAM

Simulating static properties of electronic quantum devices

QDTRAM (Quantum Devices Transport Modeling) was designed for simulation of quantum electronic devices.

For: microelectronic and nanoelectronic industries, R&D departments at large corporations and at university laboratories dealing with nanoelectronics.

QDTRAM simulates and calculates the electrical characteristics of solid-state electronic devices with active regions of nanometer sizes. These devices are often called quantum or mesoscopic ones.

Who already uses QDTRAM

The system is already in use in some leading Russian electronics factories and research centers.

QDTRAM allows designing new nanoelectronic devices such as a resonance-tunneling diode by providing information on their current-voltage, voltage-capacity characteristics, the spatial potential distribution, current and charge densities, etc.

QDTRAM uses a one-dimensional numerical solution of self-consistent model based on Schrodinger, Poisson, and transport equations.

Unique features

- Local formalism.
- Ability to describe quantum and classic transport in the framework of unit formalism, which allows to take into account complex effects of interaction between quantum and classic regions in real devices.

MSP

Microalignment software package

MSP was designed for the alignment of microlenses on semiconductor lasers and quality control of semiconductor laser diodes.

For: ccompanies specialized in fiber- and microoptics, production of semiconductor lasers, and universities. The software is used in Rayteq Ltd.

MSP is developed for the computer-assisted alignment of microoptical components including fiber optics and semiconductor lasers and real-time analysis of the power distribution in laser diodes.

Emitted by a microoptical component, the light is supplied to CCD camera connected to computer via framegrabber.

The resulting image can be analyzed quantitatively, for example, to measure intensity within certain aperture, profile of distribution in vertical or horizontal planes, deviation from a certain direction, etc. The image and corresponding characteristics are displayed in real time, making it possible for adjuster to immediately correct the situation.