

THE Cruncher

Release 13 of the MathWorks family of products

Release 13 of the MathWorks products will begin shipping in early August. It includes MATLAB 6.5, which provides faster execution by using the patented JIT Acceleration technology.

MATLAB 6.5 now becomes a powerful alternative to manual coding in C for technical computing applications. MATLAB programs in some cases now run hundreds of times faster than before. As well as the long-established productivity gain of working in the intuitive MATLAB programming language, the accelerated MATLAB performance may enable users to skip the additional step and trouble of recoding their work in C. They can use a single environment throughout their projects and, if they wish, deploy algorithms and applications as automatically generated C/

C++ code, Excel add-ins, and COM objects.

Another component with improvements is Simulink 5, which provides new support for multi-domain modelling and simulation coupled with embedded target support, so creating an environment for “end-to-end” embedded system design, from system-level modelling to embedded-software code generation.

Simulink 5 provides new capabilities, including: multi-domain modelling for mechanical, electrical power and wireless systems; production code generation for microcontrollers; and major improvements in DSP code generation. These enhancements address the key steps in embedded-system development, including modelling the physical behaviours of real systems, designing software algorithms, and

generating code that is as efficient and compact as hand-written code.

“The multi-domain modelling and simulation capabilities of Simulink 5, coupled with its enhanced code generation capability, will have a strong impact on how embedded systems are designed and implemented,” said Paul Zorfass, senior analyst with International Data Corporation/FTI. *“I expect that the features for embedded-system development will address the needs of existing Simulink users and also extend the product’s use in software engineering groups that develop embedded system software.”*

This release also includes support for MacOS X, 10 new products, and upgrades of more than 40 other products.

New Catalogue

We have called our catalogue a “software guide” because we think one of the biggest obstacles to people buying our software is that they don’t know what is available and how it can help them in their work. We have structured the document as a guide that tells you what you can use the programs for as well the features of the programs. Keep it on your shelf for the next time you think “There must be an easier way to do this!”.

Slide shows

We have recently updated and improved all our slide shows, and added a new one that demonstrates the main features of STATISTICA Data Miner. If you don’t know what to expect from Mathcad, MATLAB, SurveyPro, STATISTICA or STATISTICA Data Miner, then these automated slide shows provide a quick introduction. They use PowerPoint to take you through a demonstration similar to the one provided in more depth at the HRS seminars. See www.hrs.co.nz/slideshows.

Conference - NZ Society for Risk Management

HRS with the assistance of Palisade Corporation is pleased to be a Bronze sponsor of The New Zealand Society for Risk Management Inaugural Conference, Te Papa, Wellington, 2-4 October, 2002. The topic is “From theory to practice - bringing the strands together”. The conference will include international and local keynote speakers, and have themes that include Business, Health and Environmental Impact. The conference web site is www.risksociety.org.nz/conferences.html.



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STATISTICA

STATISTICA Data Miner

This product was released just after the last Cruncher was published - it is superb!

Ray presented a paper on the use of *STATISTICA* Data Miner at a recent NZ Statistical Association meeting and has summarised the program presentation part of it in an automated slide show available from the HRS web site.

The key difference between SDM and other similar products is that the world-class data mining features are seamlessly integrated with all the statistical and graphing functionality of the basic *STATISTICA* program. Because all of *STATISTICA* uses standard Windows techniques, including Visual Basic, it is easy to incorporate SDM into your existing or planned enterprise solutions.

See the slide show at www.hrs.co.nz/slideshows.

STATISTICA QC Miner

This is the unique combination of StatSoft's quality control and improvement software with its cutting-edge *STATISTICA* Data Miner software.

Its intended use is to uncover hidden trends, explain known patterns and predict the future in an industrial setting.

All quality control charts, process capability analyses, experimental design procedures and Six Sigma methods and charts are integrated with a comprehensive library of techniques for exploratory and predictive data mining.

This range of techniques in a fully network-sensitive environment makes *STATISTICA* QC Miner the ultimate data mining solution in large-scale industrial environments.

For details go to www.statsoft.com/qcminer.html

Crystal Ball

We have sometimes wondered whether we should sell this competitor to @RISK, but our training consultants have always assured us we should stick to @RISK alone.

We recently viewed a comparison between @RISK 4.5 and Crystal Ball.

The main point that Ray took from it is that @RISK has the lead because it is much more integrated with Excel and uses the latest Windows conventions much more effectively than its competitor. It is also faster.

Because @RISK functions are extensions to the Excel function list, and can be totally integrated into your expressions, you have far more flexibility in defining your models.

The presentation is at www.palisade.com/html/crystal_ball/riskvsch/default.htm but it requires a high-bandwidth connection to run smoothly.

A free converter is available to automatically convert Crystal Ball models to @RISK 4.5 models.

For a limited time we can offer a very competitive price to crossgrade Crystal Ball to @RISK. Contact Glen.

Palisade technical support

Although HRS continues to offer free technical support for all Palisade products (particularly @RISK) there will be situations where we need to bring in the experts at Palisade. Because Palisade are now charging for support, all users of Palisade software need to consider the benefits of joining one of the Palisade maintenance schemes.

Gold maintenance, strongly recommended by HRS, covers all support calls and supplies all new versions released during your maintenance period. If you purchase it through us we will also give you a discount of 20% off the price for one person to attend our Value, Risk and Quantitative Decision Making Course. When you are a maintenance customer you can deal with us and get all the assistance you need with no further charges.

If you do not have maintenance we will do our best to help you from our own knowledge, but if the problem requires assistance from Palisade then we will have to charge you \$75 + gst per incident to recoup Palisade's maintenance charge. To get on the maintenance program please contact Glen.

Maple in education - a user story

Andrew Saunders told us "Northland Polytechnic has had a real problem with its Mathematics curriculum delivery. Our students traditionally have poor skills and perception of mathematics, and are often Math phobic. Earlier this year Northland Polytechnic purchased Maple to add a different medium and perspective to our core mathematics teaching. It has been tremendously successful with improvements shown in retention, success and enjoyment of Mathematics as a subject." His problem now is to fund the extra licenses needed to cope with the demand. Are there sources of funds Andrew could approach? Contact Ray.

See www.hrs.co.nz/maple for more on Maple.

NZ Statistical Association

The recent conference of this association had a very strong emphasis on data mining, with a full day workshop run by the machine learning group at the University of Waikato and several papers on data mining as an extension of statistical methodology. HRS contributed a paper that presented *STATISTICA* Data Miner integrated into a statistical approach to data mining.

Societies of interest to our clients

We occasionally meet people who are not aware of societies that support activities related to their work. The Royal Society website (www.rsni.org) is a good place to look for details of societies, but is not complete.

The Business Analyst Institute of NZ (BAINZ) is a relatively new organisation that we are pleased to assist by giving them publicity here.

Their web site at www.bainz.org.nz will give you the full details. Their mission statement is "To promote business analysis (Information Technology) as a profession and contribute to the on-going development of best practice."

If you would like a mention for your pet society in a future Cruncher please let Ray know.

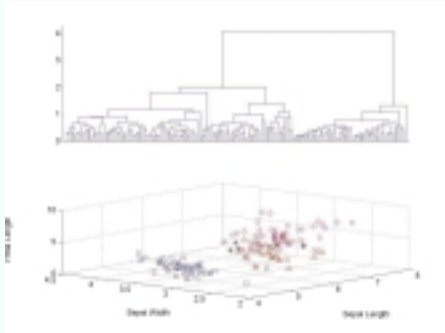
Did you know that if you torture the data long enough, eventually it will confess?



The MathWorks

MATLAB Statistics toolbox

Some of our customers have been using MATLAB as a tool for developing statistical algorithms, finding it more intuitive than S-plus. The statistics toolbox has not been used in much of this work, but with the improvements that have been provided in the new release (version 3) we feel that it has matured enough that MATLAB with the statistics toolbox can be considered a viable alternative to the high-end statistics packages, where the goal is to build customised analysis routines or deployable special-purpose applications.



Examples of graphs in the new Statistics MATLAB Toolbox

See more on MATLAB at www.hrs.co.nz/matlab.

Student MATLAB

We now have a system in place to distribute Student MATLAB through University bookstores. It is only available to students, and is a very fully functioned product, designed to work in well with class exercises in a wide range of engineering and other disciplines. In NZ, it is only available for Windows at the moment, but a MacOS X version is contemplated for next year. The Linux version is not yet available internationally.

If you are a lecturer who sees a need for your students to use it, please notify your student bookstore of the likely demand, and ask them to contact us about purchasing supplies. We can supply students directly, but would much prefer that the stores acted as retailers. If you wish to evaluate this product, please contact Marc.

MATLAB for MacOS X available now!

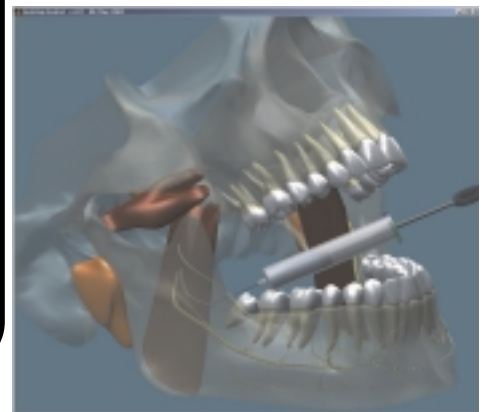
With release 13, The MathWorks has extended the powerful capabilities of its flagship offerings, MATLAB and Simulink, to the extensive Macintosh user base within the scientific and academic communities.

Desktop Dentist

Mike Paulin, at the zoology department of University of Otago, uses MATLAB to build virtual organisms for basic research and applications in biology. In cooperation with staff and students of the School of Dentistry and others, he is building a working 3D model of a human mouth designed for teaching aspects of dentistry.

Students can rotate and “x-ray” the model, see the organization of teeth and nerves in 3D in a way not otherwise possible, and zoom in to examine microstructure. Most importantly, the MATLAB model is not merely a 3D graphic but a physical simulation of neural and biomechanical structures relevant to dental practice. Scratch a tooth with the virtual probe and the associated nerves will respond.

Mike started using MATLAB in 1985! He would be interested to talk to anyone who could assist with funding this work.



The Desktop Dentist in x-ray mode allows the student to see a ‘live’ demonstration of correct injection procedure for mandibular nerve block, and to interactively explore what happens when it is done right (or not).

Dr.Beam

When preparing material for the “software guide” Ray often had to set up programs to create interesting screen shots.

When doing this for Dr.Beam, he was struck by how well designed the software is. There is a lot of finite element analysis going on in the background, but you would never know it.

Even though Ray has a physics and not an engineering background, in 15 minutes he was able to set up a complex set of forces on a beam and understand the resulting stress diagrams.

Dr.Frame does the same job for 2D problems, and is just as easy to set up.

Ray believes that although the larger engineering firms have access to full scale finite element programs, there will be many situations where the simplicity of use of Dr.Beam will make it a much more cost-effective way to get answers to day-to-day problems.

Compaq and Intel versions of Fortran

Intel is currently working on converging Intel Fortran for Windows and Compaq Visual Fortran. Intel’s plan is to produce Intel Fortran products to which Compaq Visual Fortran users can move without disrupting their development efforts. In the second half of 2003 Intel is planning an Intel Fortran for Windows release that is based on the Compaq Visual Fortran front-end and the Intel back-end.

HRS can supply both Compaq and Intel Fortran compilers. See www.hrs.co.nz/cvfortran

Mathcad academic

Mathcad Professional “Priced for Education” now includes a FREE Bonus Pack! This package gives you a huge set of software at a small fraction of the commercial retail price. See www.hrs.co.nz/mathcad.

Mathematica 4.2

With Mathematica 4.2, Wolfram Research, Inc. introduces the first technical computing system with full XML support and seamless Java integration. Now users can access any Java program from within Mathematica and work directly with XML data and documents.

Version 4.2 also brings important advancements in linear programming, statistics, optimization, combinatorics, graph theory, and technical publishing.

See www.hrs.co.nz/mathematica for more details.

Those on subscription should by now have received their copy from us. If not, please contact Marc.

Seminars and training

Mathcad wins awards

Cadalyst Five Star award.

Cadalyst Magazine, one of the engineering industry's leading providers of computer-aided design news and information, has named MathSoft's Mathcad 2001i as one of its 2002 All-Stars.

www.cadalyst.com/reviews/2002allstr/2002allstr.htm

SIIA award

The Software & Information Industry Association (SIIA) has named Mathcad® 2001 Premium the "Best Numeric/Database Application" business software in the 2002 Codie Awards, recognizing Mathcad's track record of success as the corporate computing standard for engineering organisations.

www.sii.net/codies2002/winners.htm

Make Maple easier to use – your way

With the Maplets™ package, you can create your own graphical user interfaces to Maple. Maplets give users access to their Maple applications through buttons, text areas, menus, and other graphical elements that they specify. Maple code recedes safely into the background, sparing users from having to understand its syntax or enter Maple commands

Maple 8 includes Avogadro's number, the proton magnetic shielding correction, and over 13 000 other scientific constants from physics and chemistry.

Maple 8 already knows the Periodic Table. With a single Maple command, you can access the basic chemical properties of any element or isotope.

See www.hrs.co.nz/maple or contact Marc.

Mathworks webinars

Webinars presently scheduled are as follows:

Documenting, Testing, and Verifying Designs in SIMULINK. 8/22/2002

Design an 802.11b with SIMULINK. 8/28/2002

DSP Blockset new features and enhanced capabilities. Sept 26 2002

Controller Tuning and Plant Modeling Sept 27 2002

You can enrol at <http://us3.webex.com/mathworksosevents/onstage/mainframe.php>.

Note that sometimes these are added at short notice. We email those people who we know have an interest in MATLAB each month to keep them up to date. Let us know if you are not on our list and want to be.

Archived webinars

You can see a list of previous seminars at the following site, and choose the ones you want to watch, in your own time but without being able to contact the speaker.

www.mathworks.com/company/events/archived_webinars.shtml

New seminars

In our latest round of seminars we have added two more specialised *STATISTICA* seminars, on statistics in industry, and on Data Mining, as well as retaining a basic introduction to *STATISTICA*.

We have modified the "operations research" one, to cover in more detail Monte-Carlo risk analysis and to add a demonstration of decision trees.

The Mathcad and SurveyPro seminars are much the same as the last time they were presented. See the flyer distributed with this newsletter, or go to www.hrs.co.nz/seminars.

@RISK training

Our next public @RISK training course is in Auckland, 21-22 Nov, 2002. Details are at www.hrs.co.nz/training You can enrol for the course on our web site, or give Glen a call.

Service packs

Patches are available for all users of Scientific Workplace (to 4.1), Smartsketch (SP1) and Mathcad 2001i (SP1). Find links to them at www.hrs.co.nz/updates.

New staff member

We have expanded our marketing department by appointing Bobbi Oliver as a full time marketing manager. We expect that we will be able to provide you with much more timely and in-depth product information, and assure you that we still have the same emphasis on facts rather than hype. Bobbi is the person to contact if there is some way we can assist your professional organisation by sponsorship or advertising in your newsletter.



Contacting us ...

We are based in Hamilton, but supply, support and demonstrate our products throughout New Zealand.

Product information:
www.hrs.co.nz

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