

THE Cruncher

New HRS communication strategy

We have decided to implement changes in the way we communicate with clients. We hope this will benefit both our clients and ourselves, and we welcome feedback of any kind from you as we implement these changes.

The Cruncher

We will now only send a paper version of the Cruncher twice a year. We like creating the Cruncher, and we get good feedback from it. However we believe electronic communication is now more effective as well as being more economical.

HRS eNews

We plan to send out to our clients up to 6 newsletters per year by e-mail. The format of e-mailed newsletters will be compatible with most e-mail systems, and will not contain large amounts of HTML, attachments, or other material likely to attract the attention of spam blockers or other e-mail restrictions. HRS eNews will be designed to allow you to quickly see if there is any material that might interest you, to show you the key points in the e-mail, and to allow you to follow up if you wish.

We recommend that people who use any of our products stay on the mailing list because it will be the preferred method to notify people of bug fixes, upgrades, hints and other information necessary to make full use of our products. However, you can opt out at any time.

Internet-based Product Demonstrations

For the last few years we have travelled NZ several times per year running seminars to present our products to interested clients. We will continue to do this, but we will also implement technology that allows us to demonstrate software via the Internet. One way to do this is by "webinars", where a group of people go to a web site that shows the product being demonstrated while at the same time they are on a conference telephone call that lets them hear and talk to the demonstrator. We will also be encouraging people to participate in something similar on a one-on-one basis. Send e-mail to products@hrs.co.nz to request a personal on-line demonstration of any of our products.

We have chosen a web conferencing

service that does not require installation of software, and expect that most people will be able to use this method of product demonstration, despite restrictions on the use of their computers.

Seminars and webinars will only be announced in HRS eNews, the Cruncher, and on our Web site. Make sure we have your e-mail address and do not opt out of the HRS eNews if you want notification.

Please let us have your current email address

We have printed on the address carrier for this Cruncher our record of your e-mail address, if we have one. Please let us know if you want to alter or add your e-mail address, so we can send you notifications of upgrades, special offers, seminars and general news.

Seminars

We will be presenting overviews of @RISK, Mathcad, STATISTICA and Survey software at our physical seminars in February. All four seminars will be held on one day, in Wellington (2 March) and Auckland (4 March). Details of these free seminars and a registration form are available at www.hrs.co.nz/seminars25.aspx. More information is given on page 4.


Webinars

We will be presenting free Web-based demonstrations of STATISTICA and of Mathcad on 24 Feb. Details of the webinars and a registration form are available at www.hrs.co.nz/Webinars25.aspx. The material will be similar to that in the seminars.

AULOS and Tsunamis

Indian Ocean tsunamis are a long way from us, but engineers in NZ have been preparing for similar incidents here for many years.

One of the more interesting examples is the Te Papa museum, which was redesigned after a study by Dr A. Barnett using AULOS showed significant flooding danger from tsunamis at the museum site. As a result, the site ground level was raised, and all exhibition material is held only on the higher floors. See <http://www.aulohydraulics.com/museum.html>



Inside ...

Statistics, OR and compilers

- STATISTICA Data Miner (SDM)* 2
- STATISTICA for process control* 2
- SDM now reads SAS files* 2
- Use R programs with SDM* 2
- LINGO 9 is released* 2
- LINDO API 3.0* 2
- The Survey System version 9* 2
- ModelAssist* 2
- Delphi 2005* 2
- FORTRAN Bench Marks* 2
- FlexLM -> FLEXnet* 2

Maths and Chemistry

- Red Sprites, Lightning & MATLAB* 3
- New MATLAB Products* 3
- Mathcad concurrent licenses* 3
- Mathematica 5.1* 3
- Mathematica 5.1 review for OR professionals* 3
- ChemOffice 2005* 3

Seminars, training and support

- We have a new technical support person* 4
- Seminars - Wellington & Auckland* 4
- Webinars* 4
- Training Courses* 4
- David Wilson* 4
- MATLAB and FEMLAB University Road Show* . 4

STATISTICA client stories

STATISTICA Data Miner (SDM)

STATISTICA Data Miner is a powerful and cost-effective product with many potential applications in NZ. We expect to make several sales in 2005, but the clients will take some time to get to the stage of being able to tell us their stories. In the mean time, here are links to two European examples of the use of SDM in the communications industry.

http://www.statsoft.com/company/success_stories/pdf/argonauten360.pdf

http://www.statsoft.com/company/success_stories/pdf/connex.pdf

STATISTICA for process control

Businesses selling product on the world market must use SPC techniques to show their clients that they have the process variability under control. However, just having the Shewart charts is not enough – you must also have the tools to help you locate and fix sources of unexpected variation. SEWESS from StatSoft is an enterprise-strength tool to perform this sort of work. A case history from the USA is given here: http://www.statsoft.com/company/success_stories/pdf/casestudy_gp_sewss2.pdf.

Use R programs with SDM

Many people involved in data mining will have already developed their own applications, often using the R programming language. Examples exist in the area of bioinformatics, where there are many algorithms written in R and freely available. These applications can be used within the STATISTICA Data Miner environment as “custom nodes”, as explained in the following white paper. http://www.statsoft.com/support/whitepapers/pdf/STATISTICA_Integrating_R.pdf

STATISTICA tip

Some people have found that when creating PDF files or printing STATISTICA graphs on Postscript printers there is a problem with symbols or 3D text not printing properly. This can be fixed by going to the “Graphs1” tab on the “Options” menu, and ticking the checkbox “Do not use bitmap copy operations when printing”.

SDM now reads SAS files

For a couple of years we have been having discussions with several major NZ organisations about using STATISTICA Data Miner, and one issue has always

been the import of existing data. These discussions have taken a great leap forward now we have shown that STATISTICA 7 can read several SAS file formats.

LINGO 9 is released

The new release of LINGO includes a wide range of solver enhancements that improve performance and robustness, as well as a number of new features that make expressing and solving models easier and more flexible.

See details of this leading optimisation program at <http://www.lindo.com/cgi/frameset.cgi?leftnews.html;newsltrf.html>

LINDO API 3.0

With the LINDO API, you can plug the power of the LINDO solvers for linear, nonlinear (convex & nonconvex), quadratic, quadratically constrained, and integer problems right into customised applications that you have written.

The LINDO API can also be run as a MATLAB callable function, so that when using MATLAB’s modelling and programming environment, you can build and solve models and create custom algorithms based upon the LINDO API’s routines and solvers. Contact Darrel.

The Survey System version 9

The Survey System has introduced a new user interface, direct importing of questionnaires from Word, and new reporting and respondent management features in the CATI environment.

ModelAssist

@RISK is a powerful risk analysis tool. ModelAssist is a self-contained training database with full navigation and search facilities, which guides the user in how to approach a risk issue, how to perform a technically correct risk analysis that provides real management insight, and how to present the findings.

With over 500 risk analysis topics, many videos, quizzes and over 140 example models, ModelAssist will help you to realise the full potential of your @RISK software, and to confidently develop accurate, defensible and useful risk analyses.

Contact Darrel to be sent a demo version, or to discuss purchase of the right number of copies for your organisation.

Delphi 2005

Delphi 2005 combines the familiar power of Delphi with more productivity-enhancing features for designing Web, database, and rich-client applications.

It has support for both C# and the Microsoft .NET Framework, while the rapid application development environment has Win32 support for GUI, Web, database, modelling and ALM.

For a detailed review go to <http://www.hrs.co.nz/delphi2005.aspx>.

FlexLM now FLEXnet

FLEXnet, formerly known as FlexLM, is the licence manager behind several of our products, such as MATLAB, Mathcad and now STATISTICA and @RISK. We don’t sell it separately, but we do end up supporting the use of it to clients with concurrent network licenses. Two of the features that are very useful are that you can “check out” individual licenses from a network for use on a laptop, and that you can reserve or partition licenses for particular groups of users.

There are various ways to find which people are using licences at any moment, so you can contact them to make way for a more urgent need. Contact support@hrs.co.nz if you want some of our ideas on this.

FORTRAN Bench Marks

You can see the results of a set of benchmarks tests on Windows platforms at <http://www.polyhedron.com/compare.html>. Tests on Linux and other platforms are also available on the Polyhedron site. A simple conclusion is that Intel Fortran 8.1 is great for performance, but that Lahey Fortran is great for diagnostic messages. You can also download the benchmark suite from http://www.polyhedron.com/compare/polyhedron_benchmark_suite.html.

Red Sprites, Lightning & MATLAB

Red sprites are seen as luminous streaks above thunderstorms, and are associated with lightning flashes.



Richard Dowden's studies on these streaks (started at Otago University) have led him to set up a system to locate and record lightning flashes around the world. Universities who participate in the WWLLN program get lightning stroke locations on monthly CDs which include code written in MATLAB for extracting location data for any region and for any time window they choose. However, most of the lightning, and so many of the sensor hosts, are in the tropics, and many of the universities in that region do not have access to MATLAB.

Professor Dowden tells us that these institutions will now greatly benefit from a standalone application he is creating by applying the MATLAB compiler to the MATLAB source code. He also noted "I am impressed that the new lightning analysis code in MATLAB, despite being much more sophisticated than the old code in C, is just as fast."

For more information on the lightning program go to <http://flash.ess.washington.edu/newwebpage.html>.

Mathcad concurrent licenses

Concurrent licenses are great value for products where you have many people who only use the software occasionally. A 5-user concurrent license can often support 20 or more users quite comfortably.

However, what if you only have 5 people in your office who would use the product? After a great deal of pressure from non-American distributors of Mathcad, Mathsoft have acknowledged the existence of relatively small industries in much of the world and now allow as few as one concurrent user instead of their previous minimum of 5 concurrent users.

We encourage people to start with a small number of licenses and then expand the number as the usage grows.

New MATLAB Products

Distributed Computing with MATLAB

The Distributed Computing Toolbox enables you to execute coarse-grained MATLAB algorithms and Simulink models in a cluster of computers. You can prototype and develop applications in the MATLAB environment and then use the Distributed Computing Toolbox to divide them into independent tasks. The MATLAB Distributed Computing Engine (available separately) evaluates these tasks on remote MATLAB sessions. A typical job might be divided into tasks that operate on unrelated data sets or individual sections of very large data sets, greatly speeding up your data-intensive applications.

SimDriveline

SimDriveline extends Simulink with tools for modelling and simulating the mechanics of driveline (drivetrain) systems. These tools include components (such as gears, rotating shafts, and clutches), standard transmission templates and engine and tyre models.

Video and Image Processing Blockset

The Video and Image Processing Blockset extends Simulink with a rich, customisable framework for the rapid design, simulation, implementation, and verification of video and image processing algorithms and systems.

Tools for RF design

The RF Toolbox extends the MATLAB technical computing environment with functions and a graphical user interface (GUI) for working with, analysing, and visualising the behaviour of radio frequency (RF) components. The toolbox lets you specify RF components such as filters, transmission lines, amplifiers, and mixers by their network parameters and physical properties.

The RF Blockset extends Simulink with a library of blocks to model the behaviour of radio frequency (RF) filters, transmission lines, amplifiers, and mixers.

Mathematica 5.1

Version 5.1 adds a host of new capabilities, especially for working with large-scale, diverse types of data. Complementing these new capabilities are enhancements to Mathematica's unique Automatic Algorithm Selection - the inherent intelligence that automatically applies the best algorithm to each task. There are more than 50 new functions, toolkits, and performance improvements in Mathematica 5.1.

For details, go to <http://www.wolfram.com/products/mathematica/newin51>

Mathematica 5.1 review for OR professionals

This review is explicitly from the viewpoint of an OR professional, but it was so well written that others may find it of use. <http://www.lionhrtpub.com/orms/orms-12-04/swr.html>. It is especially explicit when dealing with accessing Web services, building graphical user interfaces and accessing databases and spreadsheets.

ChemOffice 2005

The most apparent changes in this new version are the improved connectivity between Chem3D and ChemDraw. A review at <http://www.rsc.org/chemistryworld/comment/free/CW00410R066d.htm> concluded "Overall, ChemOffice 2005 is a vast improvement on an already excellent software suite. If you are looking for an integrated system to improve the quality of structural and chemical analysis, data handling and storage then ChemOffice Ultra is second to none."

IRL researchers collaborate using ChemOffice

The Carbohydrate Chemistry Team at Industrial Research Limited recently upgraded to a 40-user license of ChemOffice Ultra 2005, in order to facilitate sharing of chemical information among their staff. See what they do at <http://www.irl.cri.nz/carbo>.

Seminars - Wellington 2 March, Auckland 4 March

@RISK – Quantitative Risk Analysis in your spreadsheet

The Treasury and Transit NZ require the use of risk simulation on large proposals. This seminar is a discussion of the uses of @RISK and a demonstration of a manufacturing model. A must for anyone who is trying to estimate the cost of large projects.

Mathcad–Easy,auditablemathematical calculations

Come and see why Opus and many other engineering companies are training their staff to use Mathcad. Organisations use Mathcad when it is important to create mathematical documents that they are sure are correct, when time to create the document is an issue, and when they want to be able to re-use their calculation documents on new jobs.

To find out more

Go to our web page www.hrs.co.nz/seminars25.aspx. On that page you will find links to descriptions of each seminar, plus also links to short demonstration viewlets for each product. This is also where you can register for each seminar.

STATISTICA – Integrated statistical and graphical data analysis

Many local organisations have moved from better-known products to the new STATISTICA.

This is because data analysis using statistical and graphical methods in STATISTICA is flexible and interactive. You can also build customised interfaces and macros to assist with routine analysis. Let us show you STATISTICA 7!

Survey Software

Small and large companies are using our software, to carry out both surveys on paper and Web surveys. We will show you two products–SurveyPro for paper surveys, and SurveySolutions for web surveys. It is much easier to do surveys with these products than it is to use the combination of products supplied in MS Office.

HRS Webinars

We will run two webinars on Thursday 24th Feb - one to introduce STATISTICA and one to introduce Mathcad. The material will be similar to that in the physical seminars, but will be abbreviated. If you would rather attend a seminar by watching your computer screen while listening to your phone, then register now at www.hrs.co.nz/Webinars25.aspx.

MATLAB and FEMLAB University Road Show

Would you like to apply MATLAB to electromagnetics, fluid mechanics, structural dynamics, heat transfer or earth sciences, but do not know how to handle PDE's? The FEMLAB third party MATLAB toolbox (www.femlab.com) makes this easy.

HRS, in collaboration with Technic, the Australasian distributors of FEMLAB, are preparing a University Road Show to demonstrate MATLAB's latest features and how to extend its functionality with FEMLAB. Please contact femlab@hrs.co.nz if you are interested and we will send you the details when we finalise the dates.

We have a new technical support person

Our new support person is Glenn Tootill, pictured. He replaces David Schurmann. We wish David well, and are sure our customers will find that Glenn is an able replacement.

We encourage everyone to use our technical support services, because often you will only get the most out of the software by letting us get beside you. E-mail to support@hrs.co.nz to contact Glenn.



David Wilson

David is presently an Associate Professor in the Department of Electrotechnology at Auckland University of Technology and before joining AUT was a senior lecturer for over a decade at Karlstad University in Sweden, working on control and modelling of pulp digesters, paper board machines, and CMC production.

He is keen to see NZ engineers use products from The MathWorks to apply advanced methods of design and simulation, particularly in the industrial control environment, and is working with HRS to provide public training courses on these topics.

David can also provide basic or advanced training in control system design or simulation your own premises. Contact marc@hrs.co.nz to discuss your needs.

Training Courses

We are planning training for several products and techniques, starting in April. We will announce details in the HRS eNews in mid-February.

Topics will include:

- Quantitative Risk Analysis
- STATISTICA for data analysis
- MATLAB for signal processing
- Mathcad for engineers
- Introduction to Simulink

Get detailed information on the courses and register for them at www.hrs.co.nz/training25.

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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