

KISTERS Australia News

June 2009

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From The GM's Desk

By Bill Steen

It appears that the Australian water industry is always in a state of change.

In December last year we witnessed the formation of the Murray-Darling Basin Authority which in turn absorbed all the functions of the former Murray-Darling Basin Commission.

Queensland is already a long way down the path of change with the South East Queensland (Restructuring) Act 2007 resulting in the State Government taking control of the dams, weirs, bulk water pipes and water and waste water treatment plants, while councils will control the domestic distribution system and water retail businesses.

More recently the NSW government has undertaken a major re-shuffle with the creation of a new "super" department [NSW Premier's words not mine]. The new department will impact on the NSW Department of Water and Energy (DWE). The water side of the DWE will be merged into a new Department of Environment, Climate Change and Water (DECCW), and the energy side of the agency will be merged into a new Department of Industry and Investment (DII).

The Australian Bureau of Meteorology as we are all aware has undergone massive changes over the past few years in regards to the Water for the Future strategy. This has included the

management and distribution of funding to improve Australia's water resources information.

It was therefore of great interest to read the Minister for Climate Change and Water Senator Penny Wong media release dated 5th June 2009:

"Water for the Future has four priorities: taking action on climate change, using water wisely, securing our water supplies and supporting healthy rivers.

To deliver on these priorities, we need robust, consistent and easily-accessible information - like that to be provided by the Australian Water Resources Information System.

On completion, this system will provide up-to-date information on water resource availability and use, water trading, and forecasts of water availability months ahead."

The project involves compiling water data from more than 240 organisations into a single national repository for water information.

"From early next year, Australians will be able to go to the Bureau's website to view, search and download water data.

This information will be invaluable for water corporations, government agencies, irrigators and the wider community, and will inform much better decision-making about storing, allocating and using our water resources.

The Bureau of Meteorology is working closely with State and Territory agencies to ensure that all water data that is fed into the system is as accurate, comprehensive, consistent and up-to-date as possible."

Almost \$30 million in Commonwealth funding has already been allocated by the Bureau to help States and Territories to improve their data management capabilities, with \$20 million available in 2009-10 to support further work.

So all in all it looks like change is good and progress is well and truly in hand.

Look forward to seeing you at this years User Group to be held in Canberra on the 11th & 12th August.

Bill Steen
General Manager
Kisters Pty Ltd

2009 Australian Kisters User Group Meeting

The 2009 Australian Kisters Users Group meeting will be held in Canberra at Rydges Lakeside Canberra Hotel on August 11 and 12, 2009.

The cost to attend the meeting for the two days is \$550 (GST incl). This includes morning tea, lunch and afternoon tea on both days and the conference dinner on Tuesday 11th August (venue to be advised).

A registration form is distributed with this newsletter.

Accommodation is available at Rydges – please contact them for pricing/availability - <http://www.rydges.com/hotel/0/RACANB/Rydges-Lakeside-Canberra.htm>

Another hotel adjacent to Rydges is the Diamant Canberra -

<http://www.diamant.com.au/diamant/canberra-pages/luxury-hotel-canberra.html>

See

http://maps.google.com.au/maps?f=q&source=s_q&hl=en&geocode=&q=rydges+lakeside+hotel+canberra&sl=-25.335448,135.745076&sspn=40.321106,72.949219&ie=UTF8&ll=-35.283655,149.127045&spn=0.0043,0.008905&t=h&z=17 for the location of the conference.

For further information please contact Debbie Cockburn on debbie.cockburn@kisters.com.au or 02 62882024.

The 2010 meeting will be in Perth on October 19, preceding the AHA meeting on October 20 and 21.

User Presentations

Given we will have two days for the meeting we are particularly keen for you to present papers on issues that interest you. Please contact us in the first instance with suggestions for topics you might like to present - anything relating to Hydstra, hydrology, equipment or computing that is interesting to the audience will be welcome.

We are particularly interested in hearing about your field visit practices, with respect to instrument management, station visits, PDA usage, barcode scanners etc.

Some prompts to get you thinking:

- Telemetry and SCADA
- Instrument management
- Site visits
- Document and image management

2009 KNA User Group Meeting

The KISTERS North America Users Group Meeting is set for August 17-18, 2009 in San Diego, CA at the Bahia Hotel, the same venue as last year.

KISTERS hydrology related products will be featured including WISKI and Hydstra. There will be presenters from the United States, Germany and Australia giving presentations on product and industry related topics.

To make this meeting a success we need the participation of current WISKI and Hydstra users. If you would like to make a presentation about the product that you are using and a related project where you have used the product, we would like to hear about it.



Bahia Hotel, San Diego

KISTERS Joins OGC

Klaus Kisters, Klaus@kisters.de

Michael Natschke, Michael.Natschke@kisters.de

Stefan Fuest, stefan.fuest@kisters.de

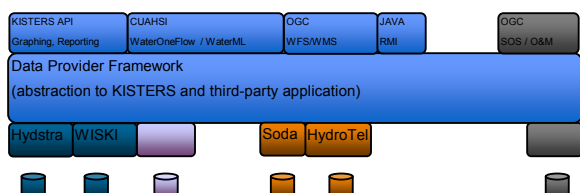
As standardization is becoming more important for the international hydrological community KISTERS decided a few years ago to collaborate closely together with different standardization working groups and committees. Our first initiative was to work with Prof. David R. Maidment, Center for Research in Water Resources, University of Texas at Austin, on the CUAHSI initiative and WISKI became one of the first off-the-shelf products for hydrology which supported WaterML.

Parallel to that contribution KISTERS collaborates intensively with ESRI to couple the KISTERS and the ESRI software. An ArcGIS-Extension already exists and additional results in customer projects will be seen in 2009/2010. This will take advantage of ArcHydro database and ArcGIS Engine technology.

The Open Geospatial Consortium (OGC) is very well known in the GIS-world. The technical documents provided by OGC describe standard

interfaces and encodings which are accepted in the industry as the manufacturer independent standard. For more information see www.geospatial.org. The importance of GIS for hydrology and meteorology is obvious and therefore it was sensible for OGC to establish "standard working groups" and "domain groups" for the themes "hydrology" and "meteorology". Some of you have probably heard about SensorML and SensorWEB of the Observations & Measurement model or the Catalogue Service which provides metadata about geospatial data, services and related resources.

The main purpose of the KISTERS membership is to get access to preliminary papers and standards and to follow the discussions to take the future OGC standards for our product design into account. Data exposed through the web services will be implemented as a virtual data source for our WebDataProvider, the KiTSM Agent Framework and the KiTSM Client Applications.



By supporting these standards we hope to contribute to a common understanding of objects used to express the hydrological data world (rivers, sites, stations, parameter types, time series types, units and conversions) and especially how these objects are described as part of the meta data management.

Our focus is also to develop a common understanding of time series data and how it is processed over time by applicable calculation methods (such as peaks over threshold, standard statistics, long term values etc.).

By contributing to and implementing the standard services/interfaces we hope for an easier transfer of data between the data consumers, but also wider use of our data presentation layers (standard reports and data visualization in graphs or maps).

We will be giving a presentation about "The benefit of open standardization for KISTERS time-series management software" at the next annual ESRI user conference in San Diego, July 13-17. For more information about ESRI see www.esri.com.

Perl Training Courses

We recently completed two weeks of Perl training at our offices. The first week was *Programming Perl*, delivered by Paul Fenwick from Perl Training Australia, and the second week was *Using Perl with Hydstria*, delivered by Peter Heweston. Some brave souls were game enough to attend both courses in succession, but unfortunately their brains exploded.



A coven of Perl wizards

At some time in the future we may repeat the *Using Perl with Hydstria* course, so please register possible interest with us now and we will let you know if and when another course is planned. The pre-requisite to attendance at this course is successful completion of the Perl Training Australia four day introductory course (or equivalent). Perl Training Australia run courses around Australia at regular intervals, see their web site for details.

2009 NZ HydroTel/Kisters User Group

The New Zealand iQuest/Kisters User Group meeting was held in Auckland, New Zealand. Users from all over New Zealand convened to hear an update on iQuest's technology and a brief update on plans for Hydstria version 10. The day concluded with a dinner held at the conference venue.



2009 WISKI Conference

Roland Funke

The Conseil Général du Haut-Rhin, responsible for water management and flood protection in the upper Alsace region, had invited the international WISKI users' community for this year's annual meeting. More than 40 users from 16 organisations in 10 countries came into the picturesque city of Colmar, France, to discuss latest developments around WISKI, their projects and tasks in hydrological data management among each other and with the KISTERS experts. Core topics of the conference were the move to WISKI 7, modelling and forecasting and new WISKI developments for an enhanced integration of new field technologies. Beside this solutions for WISKI as a Service were presented and E-learning was discussed as an efficient opportunity to train beginners on the WISKI package and keep advanced staff up-to-date.

Simon Wood from the Environment Agency propagated the International WISKI Working Group and invited everyone to become member of this group. For details see separate article.

For further information, copies of the Powerpoint presentations or contact with the user community, please contact Roland Funke (roland.funke@kisters.de).



Hydstra Product News

Quality 255

Is illegal. Internally in Hydstra programs quality 255 means no data, i.e. a gap between blocks. HYEXTR will report 255 for such periods, however you must not re-import 255 as the job will fail.

In the past we may have incorrectly let Q255 through, so it may appear in your archive in places. HYGIENE will report on these instances, and you should correct them to 151 or something more suitable.

HYBOMEXP as a pathway for other data

HYBOMEXP is used to export data from Hydstra to BOM. Its main purpose is to export real Hydstra time-series files. However it is possible to convert data from non-Hydstra systems in your organisation into Hydstra TS files, and thence send them to BOM via HYBOMEXP. The trick is to manage block modification times carefully so you don't end up sending all the data every time. HYIMPORT is the only program that can import data into TS files and control block modification times.

Talk to us if this technique seems of interest.

HYBOMEXP Version 4

A new release of HYBOMEXP will be emailed to all registered users next month. New features include:

- Better reporting of what was sent, including an HTML formatted report
- Better handling of changes to site lists and variable filters
- Automatic cleanup of earlier submissions
- Restructured INI file with automated INI upgrade tool
- Checking for duplicate data

Hydstra/Web and IE8

We have been pleased with the compatibility of Internet Explorer 8 as it has been rolled out to clients. It appears to work fine with Hydstra/Web, and it is definitely faster than IE7. You will be upgraded to IE8 automatically if you accept automatic Windows updates. If you do have problems with IE8 it has a compatibility mode which allows you to re-open a page in IE7 mode.

Finding Lost Application Screens

If you are in the habit of using dual screens at work, and a single screen when away from your desk it is possible to leave a Hydstra application on the 'wrong' screen, so that when it opens it is not visible.

There is a way of recovering a lost application if you know which side of your laptop it is on - left or right, and this will be related to where your second screen normally is.

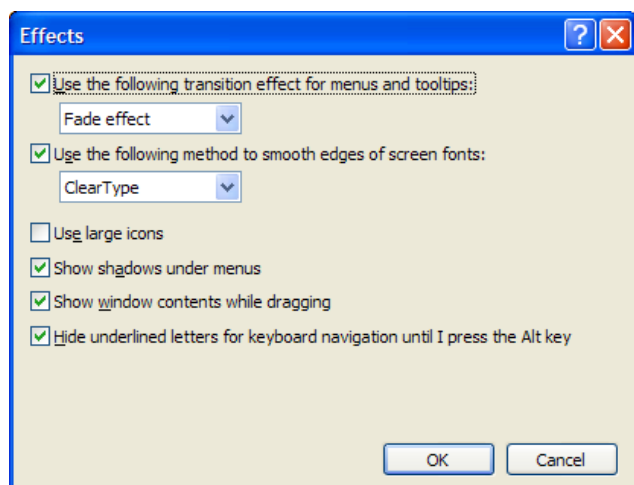
- <Alt/Tab> to select the lost application
- <Alt/Space> to get system menu on the application
- <M> to chose Move Window option
- Arrow keys will move window back onto visible screen

- <Enter> to drop the screen in its new place
In Hydstra V10 applications will always open completely within a visible screen.

Creating More Readable PNG Files

Many of you are using HYLOT and other programs to create PNG graphics files to go up onto the web. It may come as a surprise to you to learn that some screen settings on the PC that creates the PNG can dramatically affect the quality of the images, but it seems to be true.

For best quality images and readable text, on XP right click on your desktop and choose Display Properties/Appearance/Effects and then choose ClearType as the method of smoothing screen fonts:



Windows Vista has ClearType on by default.

Advanced Filtering in HYMANAGE

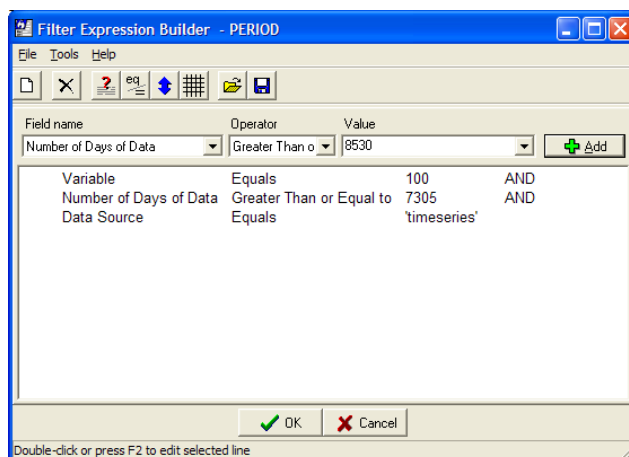
HYMANAGE is sometimes a little clumsy in the way it applies filters, but with some thought you can get much more out of it than you might have imagined.

Supposing someone comes to you and asks:

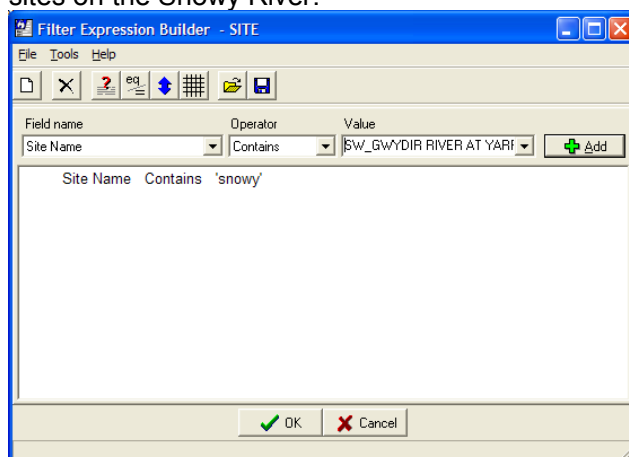
Please list the sites on the Snowy River that have more than 20 years of water level data.

The solution is relatively easy to achieve, but it requires a couple of steps:

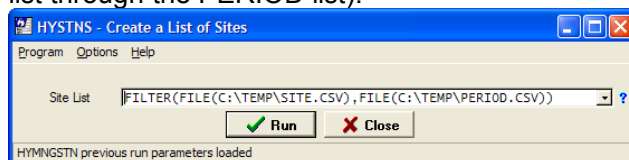
- Start the SITE manage, unlink, and go down to PERIOD
- Set a filter on PERIOD to find all the records with 20 years (approx 7305 days) of water level from the TIMESERIES datasource:



- Export the result to a CSV file c:\temp\period.csv. You can export all fields, or just STATION if you like.
- Now go up to SITE and set a filter to find all the sites on the Snowy River:



- Export that list to c:\temp\site.csv
- Now apply a Site List filter to SITE, using the intersection of the last two sets (filter the SITE list through the PERIOD list):



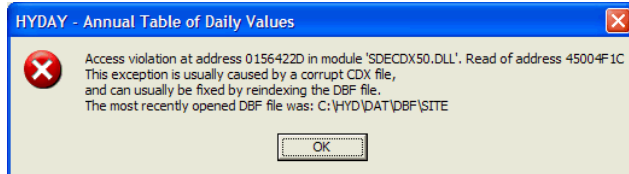
- The result will be a list of all sites that meet both criteria.

The principle to remember here is that you can export data from one table to make a site list which can be applied to another table.

Unfortunately you can't mix site list filters with data filters, which means that some queries are still hard to resolve without going to SQL.

SDECDX50.DLL Errors

If you ever see an error in SDECDX50.DLL it is highly likely to be a Foxpro index problem, and you can usually fix them by re-indexing the offending table. If you don't know which table it was, shut down Hydstra and re-index everything (with TS=3 permission). In Version 10 we have been able to detect this class of error and report them better:



Current release is Hydstra 9.6.6

The current release of Hydstra is version 9.6.6. It rolls up a lot of changes and enhancements made since the beginning of this year. 9.6 will be the last version 9 release, though we may release more patches if necessary.

The 9.6.6 release is available from the FTP site as a zipped ISO file, please contact us for ftp details if you want to download it. Also please notify us when you go live with 9.6, as it is important that we keep accurate records of which version everyone is running.

You can also find a patch for 9.6.6 on the FTP site which updates many EXEs with bug fixes and enhancements.

You can find a summary of what's new in 9.6 at <http://hydstra.kisters.com.au/>.

Hydstra 10.0.0

Version 10 will be released before the User Group meeting. Major developments in V10 include:

- Consolidating all DBF tables to a single path (DBFPATH). This will impact any scripts that assume RATEPATH or GAUGPATH are in a different location.
- Starting on the move to alphanumeric variables and sub-variables (to be completed in V11).
- Enhancing the notion of datasources, and collapsing suffixes, datasets and datasources together into a single concept.
- Enhancements to the underlying binary time-series file formats to further improve accuracy and round-tripping.
- Improved support for Oracle, PostgreSQL and SQL Server. (There will be a cost associated with migrating to another database.)
- Moving to Perl 5.10.

Because V10 implements a number of significant

changes, you should plan for a period of in-house testing before V10 is deployed if you have a lot of scripts or run a complex Hydstra system. During the testing you should check that all your local scripts and processes operate as expected.

We will be discussing upgrading to V10 at the User Group meeting in some detail.

Hydstra V10 and Strawberry Perl

We have upgraded our Perl system to Strawberry Perl version 5.10 as part of the Hydstra V10 release.

It has been a long time since we changed Perl versions and many new developments have occurred in the interim. All existing Perl code out there in user land should run without change (we hope!).

As part of these changes we have introduced a new HYCONFIG path PERLPATH of `hyd\sys\perl`. Batch jobs that start outside the Hydstra environment will need minor modifications to run with Hydstra 10, namely something like:

```
set
path=h:\hyd\sys\run;h:\hyd\sys\perl\bin;%
path%
set perl5lib=h:\hyd\sys\run
set hyconfig.ini=h:\hyd\hyconfig.ini
```

KISTERS Resource Optimization

Klaus Kisters, Klaus@kisters.de

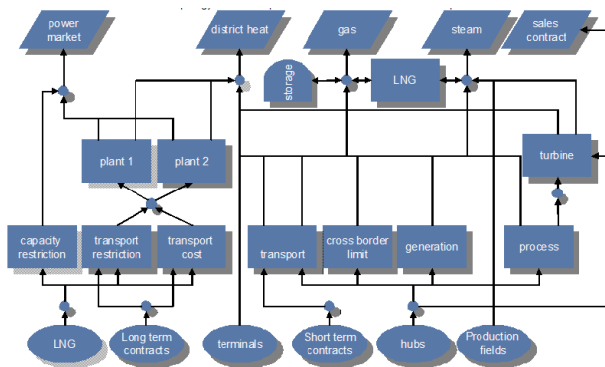
In 2005 KISTERS acquired EUS, a university spinoff from the University of Dortmund, Institute for Energy Management. KISTERS gained products for energy management including a program suite for the management of virtual power plants. The basic idea behind a virtual power plant management is to manage and optimize different renewable power generations which are usually small and regional. By pooling them you get a so called "virtual power plant". The algorithms of the optimization model take into account physical, technical, legal, financial and risk constraints and variables. To enable our customers to manage their own optimization system we have developed a topology editor and a scenario manager.

ResOpt has very good performance and will solve the optimization problem so that there is still time left for the decision-making process and the management of the real-world system.

At the end of 2008 we started to extend the team around the virtual power plant management suite and designed a new product called ResOpt

(Resource Optimization) which will be available as BelVis ResOpt V3 in the 2nd half of 2009. BelVis ResOpt is designed in a generic way so that BelVis ResOpt can also be used to optimize a dam system, a hydropower schema or any other system which can be controlled and managed. The ResOpt system runs on top of our time series management system which provides the needed data and all the all pre- and postprocessing tools like visualization and communication.

In ResOpt an overall optimum means minimal costs or maximal profits from assets, markets and commercial contracts. They are combined with physical or logical restrictions and forecast loads or schedules which have to be fulfilled. This is modelled with our topology editor and optimized with a standard mathematical optimization solver. The main objective of BelVis ResOpt is to improve the decision-making for the efficient resource management for energy generation, water management, dam operation, water supply or any other resource utilization.



WISKI 7 news

By Michael Natschke

With the latest two versions of WISKI the KiTSM Agent functionality has been extended.

New agents have been added to the library such as calculation of percentiles and standard deviations, cubic spline interpolation, and a general correction agent or "roll out" agent. The "roll out" agent is very handy to create profile time series (such as seasonal alarming levels or minimum river flows etc).

A pre-processing capability has been introduced into the agent framework. Little helper functions such as changing the interpolation type, excluding an additional data quality or aggregation function enable the users to define exceptions from the rule. The pre-processing function is called and applied before the data point enters the actual agent source code. This keeps the agents tidy and

opens the calculation system to the user.

The agent framework has been extended to raise alarms with the KISTERS Alarm Manager. Validation routines such as threshold exceedance or rate of change can be configured to generate an alarm message based upon an XML template. Each time the validation criterion fails the validator parses significant information into the assigned XML template and sends it off to the KISTERS Alarm Manager.

Since WISKI 7.0.13 runtime calculations are supported. Any agent can be preconfigured and registered globally by a unique name. Recurring standard calculations do not need to be configured manually for each parameter; the runtime calculations are displayed automatically. This minimizes the configuration effort and increases efficiency.

Next to the enhancements in the calculation framework the new face of the KISTERS scripting language has been implemented. KiBasic has become the scripting language KiScript and provides easy dot notations to access and calculate with time series data. With KiScript users can write their own calculations, validations and/or reports.

Additional features such as the configurable station status history and the colour & symbol iteration for time series graphs are also available with the latest release.

The current release is 7.0.15. The major feature is the "bulk operation". The bulk operations provide front end functionality to distribute parameter and time series (incl. standard agent configuration). This feature will save a lot of configuration time. A single parameter or a single time series can be easily created for a list of stations.

iQuest Newsletter

iQuest have started distributing their own newsletter, which can be found on the web at www.iquest.co.nz. Please contact malcolm.barr@iquest.co.nz if you wish to have the newsletter sent to you regularly.

Contact Information

This newsletter is published by Kisters Pty Ltd and edited by Peter Heweston.

Homepage: <http://www.kisters.com.au>

All support and accounts questions should be directed to support@hydstra.com.

All personal Kisters email addresses in Australia are of the form
firstname.lastname@kisters.com.au, but all general emails should be addressed to
support@hydstra.com.

Canberra

Unit 4A, 24 Mahony Court
Weston ACT 2611
PO Box 3476
Weston Creek ACT 2611, Australia
Phone +61 2 6288 2302, Fax +61 2 6288 9061,
Email support@hydstra.com

Hobart

Level 4, 2 Kirksway Place,
Battery Point, Tas 7004
GPO Box 1390
Hobart, Tas. 7001
Phone +61 3 6224 8252, Fax +61 3 6224 8414

Sacramento

7777 Greenback Lane, suite 209
Citrus Heights, CA 95610
Phone +1 916 723 1441, Fax: +1 916 723 1626

Aachen

Charlottenburger Allee 5
52068 Aachen, Nordrhein-Westfalen, Germany
Phone +49 241 9671-0, Fax +49 241 9671-555

France

KISTERS France SAS
11Bd de la République
78400 Chatou
Phone +33 1 30 71 62 54

Italy

Temistocle Li Vigni, General Manager
GEOSPHERA Hi-Tech Supplies
85 Via Panoramica
Ercolano (NA) 80056 - ITALY
<http://www.geosphera.com>
Phone +39 081 777 9541,
Fax +39 081 739 2596
Mobile +39 335 601 3998

Spain

C / Gabilondo N°15 Principal
E-47007 Valladolid, Spain

Phone +34 983-228134, Fax +34 983-276876

Shanghai

Fushan Road 450, 10F
Pudong New Area
200122 Shanghai
China

iQuest (NZ) Ltd

PO Box 15 169
Dinsdale
Hamilton 3243 New Zealand
Core Facilities Building
Waikato Innovation Park
Ruakura Lane
Hamilton 3214 New Zealand
Phone +64 7 857 0812 (DDI), Fax +64 7 857 0811,
Mobile +64 21 489 617