



KISTERS Australia News

December 2016

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From The GM's Desk

By Bill Steen, General Manager, KISTERS Pty Ltd

Welcome to the last newsletter for 2016.

It was good to catch up with many of you at the recent KISTERS user group meeting at the Australian Hydrographer's Association conference in Canberra and also at the KISTERS North America user group meeting in San Diego. It always impresses me the ways in which people are utilising KISTERS solutions and influencing the development of our products.

In San Diego users presented topics ranging from sedimentation load calculations, groundwater, remote data entry, KiWQM, and KiWIS. This was reflected in the user group in Canberra, where virtually the same topics were also addressed. It goes to show that although geographically separated the industry as a whole faces the same issues.

One particular presentation from David R. Maidment, Center for Research in Water Resources, University of Texas at Austin, on the USA National Water Model was extremely interesting. Each year David has presented his vision of water data usage, data exchange and presentation. This year David's vision has taken a massive leap forward with the new National Water Center established on the Tuscaloosa campus of University of Alabama by the National Weather Service and federal agency partners. The center has a mission to assess hydrology in a new way at the continental scale for the United States. As David said "he was in time-series heaven". Please visit <http://water.noaa.gov/about/nwm> to find out more on the USA National Water Model.

On behalf of KISTERS I wish you all a Merry Christmas and a safe and happy New Year

Bill Steen
General Manager

KISTERS Pty Ltd



KISTERS User Group Meetings 2016

KISTERS User Group Meetings

We recently completed the US and Australian KISTERS User Group Meetings. Thanks to everyone who attended the meetings, and special thanks to those who presented.

We recorded many of the sessions at both meetings using Camtasia, and the slides and recordings can be found on the KISTERS Australia web site at http://kisters.com.au/user_groups_au2016.html and http://kisters.com.au/user_groups_usa2016.html Please contact us for login details.

Unfortunately due to various technical mishaps a few of the sessions failed to record, so we only have the presentations for them.

The Hydstra related sessions presented included:

USA in San Diego

- U002 - What's New in Hydstra 2016 - Damian Skinner - KISTERS
- U003 - Hydstra Support Review - Dylan Evans - KNA
- U005 - PG&E Snapshot - Matt McPheeters - PGE
- U006 - Accessing Hydstra Data via SQL - Damian Skinner - KISTERS
- U007 - Automated Data Validation - Dylan Evans - KNA
- U008 - Newport Bay Sediment TMDL Using Hydstra for Fluvial Sediment Computations - Jamie Habben - OCC
- U010 - Managing Instruments for Improved Data Quality - Damian Skinner - KISTERS
- U011 - Using Hydstra at the California Department of Water Resources - Greg Smith - CWR
- U012 - Hydstra User Survey - Damian Skinner - KISTERS
- U013 - Insights into the Hydrologic Data Management Processes at a State Agency - Asmita Shukula - SWF
- U014 - KiWQM - Elena - KNA
- U015 - Producing PDF Outputs from Hydstra - Damian Skinner - KISTERS
- U016 - Applications of Canvas for Remote Data Entry - Damian Skinner - KISTERS

Australia in Canberra

- A101 - Welcome and Year in Review - Bill Steen - KISTERS
- A102 - KISTERS Reorganisation - Damian Skinner - KISTERS
- A103 - Water Quality and Biological Data at Natural Resources Wales - Vicky Isaac - KISTERS
- A104 - Water Web Update - Chris Michl - KISTERS
- A105 - Groundwater in California - Daman Skinner - KISTERS
- A106 - What's New in Hydstra 2016 - Trevor Magnusson - KISTERS
- A107 - Hydstra User Survey - Peter Heweston - KISTERS
- A108 - Accessing Hydstra Data via SQL - Peter Heweston - KISTERS
- A109 - Computer Industry Trends - Peter Heweston - KISTERS
- A110 - Streamlining Field Data Collection with Mobile Apps - Matt Hope - ARC
- A111 - Experiences in AWS - Tony Caine - Water NSW
- A112 - Producing PDF Outputs from Hydstra - Peter Heweston - KISTERS

UN Global Environment Monitoring System

By Vicky Isaac



Background

The United Nations Global Environment Monitoring System Water Programme (GEMS Water) is dedicated to providing environmental water quality data and information of the highest integrity, accessibility and interoperability. These data are used in water assessments and capacity building initiatives around the world.

<http://www.unep.org/gemswater/>

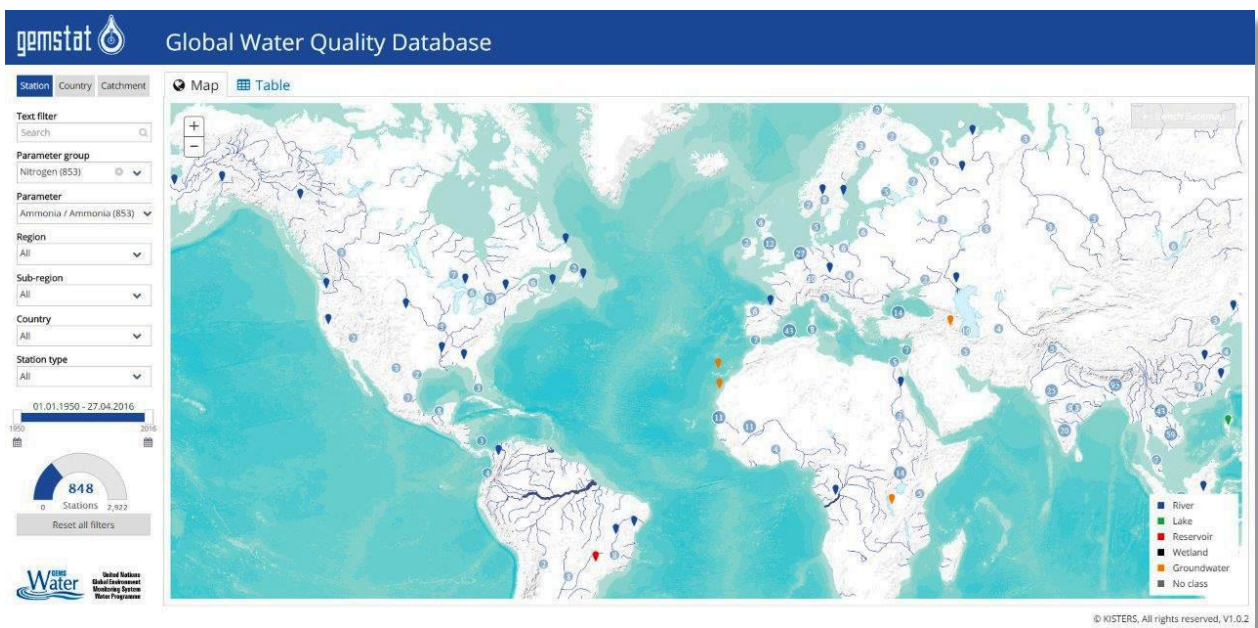
GEMS Water is committed to maintaining a database of consistent and reliable quality which is known as GEMStat. GEMStat is designed to share surface and ground water quality data sets collected from the GEMS Water Global Network. More than 100 countries participate in GEMS Water, providing data for more than 3,700 stations, over 100 determinands and close to 4.3 million data records. Data records range from 1977 to the present. GEMStat is hosted by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) through the German Federal Institute for Hydrology (FIH).

The water quality data and associated information is submitted to GEMStat by national focal points of governmental agencies, and collaborating focal points of non-governmental agencies. As such, data quality assurance and quality control are crucial components of the monitoring programme. GEMStat must ensure validity and reliability of the data and information being provided to UN water quality assessments or other data consumers by verifying the integrity of existing data, verifying the quality of incoming data and providing appropriate selection and use of the data.

The GEMStat project

After 35 years of successful operation of the global water quality database GEMStat in Canada, the German Federal Institute for Hydrology (FIH) took over the operation of GEMStat on April 1st, 2014. At this point FIH decided to completely redesign the data storage and management component as well as the representation of the data, including the data download portal. KISTERS water quality solutions were chosen to provide a fit for purpose water quality database storage system, client desktop application for data management and analysis and a publically accessible web portal viewer and data download components. This integrated water quality solution takes full advantage of features such as flexible data structuring, powerful calculations, scripting and graphing functionalities.

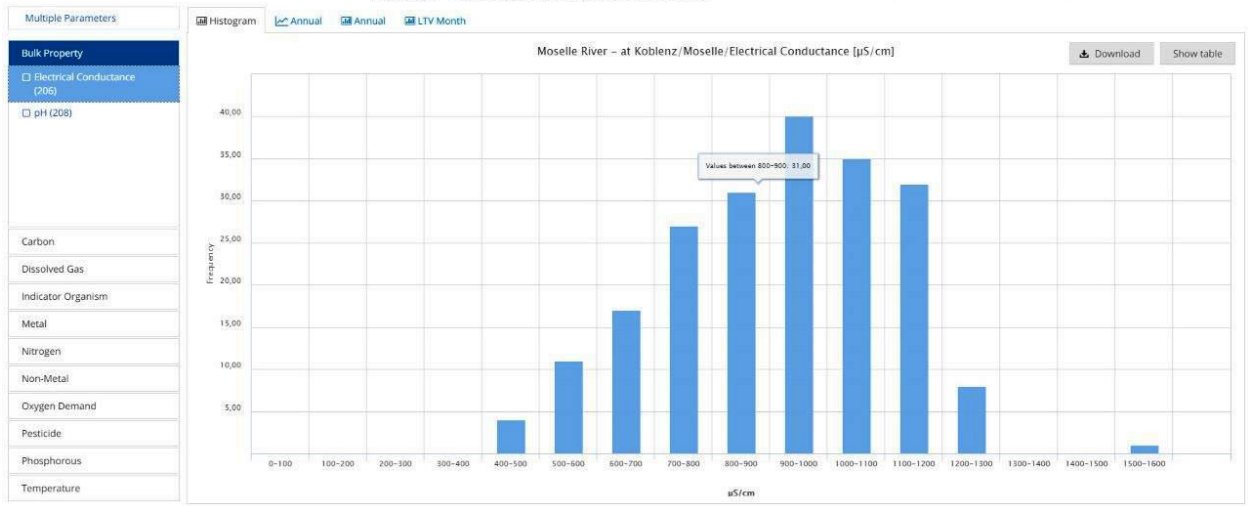
The GEMStat portal, as developed by KISTERS, is based on the standard KISTERS portal framework and provides a user-friendly, intuitive and highly performant solution for serving the public with standard data products (e.g. statistics or reports) and data suppliers and experts with advanced functionality (e.g. index calculation on station, catchment or country levels).



KISTERS commenced Phase 1 of the GEMStat portal redesign in September 2015, comprising the establishment of the Gemstat database and the initial open access portal solution. Phase 2, which comprises the secure access data portal for expert users, started in Q3/2016 and is planned to be completed in 2017. The Phase 1 GEMStat portal was presented during the United Nations Environment Assembly on May 23rd, 2016 in Nairobi.

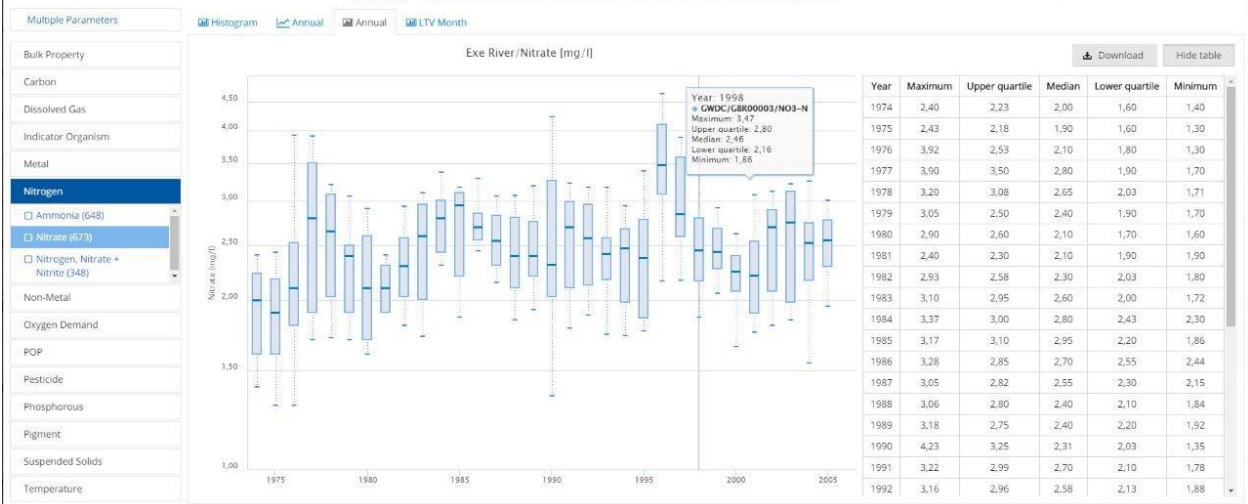
Moselle River - at Koblenz/Moselle

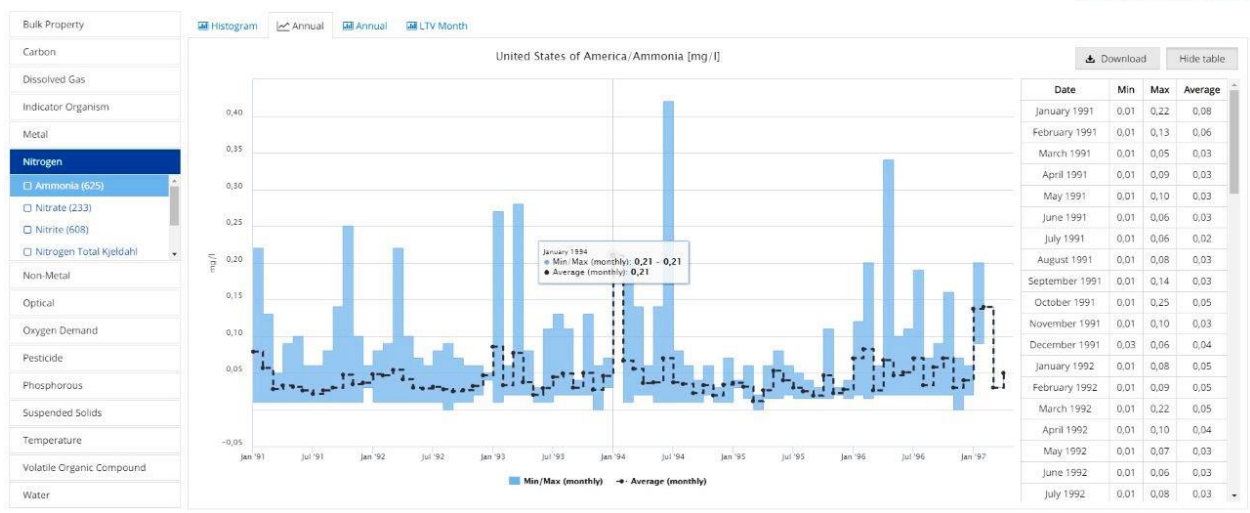
Station number DEU00005 Region Europe # Variables 36
 Latitude 50.35 Country Germany # Samples 273
 Longitude 7.55 Catchment RHIN Station type General, Surface water, Water quality, River
 Data provider Federal Institute of Hydrology - Global Runoff Data Center



Exe River

Station number GBR00003 Region Europe # Variables 53
 Latitude 50.8 Country United Kingdom # Samples 682
 Longitude -3.51 Catchment --- Station type General, Surface water, Water quality, River
 Data provider Department of Environment, Food and Rural Affairs - Environmental Statistics and Indicators





QRev - USGS Data Processing of ADCP Data

QRev is a Matlab program developed by The USGS Office of Surface Water (OSW) to compute the discharge from a moving-boat ADCP measurement using data collected with any of the Teledyne RD Instrument (TRDI) or SonTek bottom tracking ADCPs. QRev improves the consistency and efficiency of processing streamflow measurements by providing:

- Automated data quality checks with feedback to the user
- Automated data filtering
- Automated application of extrap, LC, and SMBA algorithms
- Consistent processing algorithms independent of the ADCP used to collect the data
- Improved handling of invalid data
- An estimated uncertainty to help guide the user in rating the measurement

Because QRev uses data filters, interpolation algorithms, and computations that may be different from WinRiver II and RiverSurveyor Live, the discharge computed with QRev using default settings may be different than discharges computed by WinRiver II and RiverSurveyor Live. It's worth noting that the USGS mandate the use of Qrev for ADCP moving boat gaugings.

The USGS is believed to put all its ADCP gaugings through Qrev. KISTERS clients interested in Qrev and ADCP methods can learn more at <https://hydroacoustics.usgs.gov/movingboat/QRev.shtml>.

KISTERS In Pakistan

By Damian Skinner

I recently had the pleasure of travelling to Pakistan with Geoff Podger and Mobin Ahmad from CSIRO to install Hydstra in several national and provincial water management agencies, including the Water and Power Development Authority,

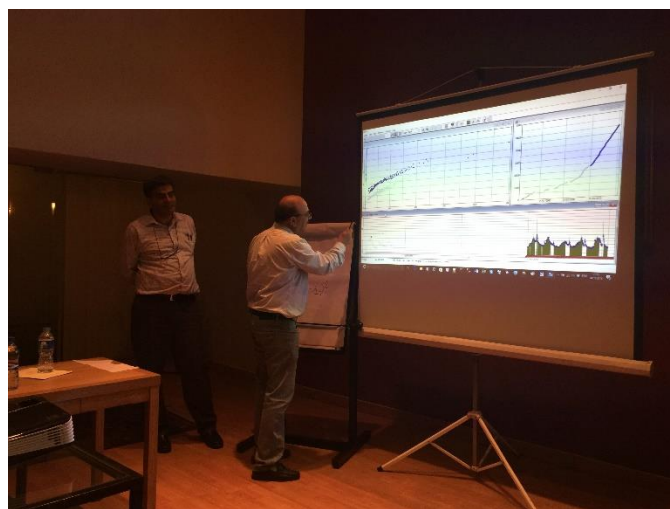
Indus River System Authority, Sindh Irrigation Department and Punjab Irrigation Department. Hydstra was selected as the preferred data management system to provide a foundation for a SOURCE model developed by CSIRO for the Indus Basin. The project was a part of Australia's Sustainable Development Investment Portfolio.

There are strong parallels between Pakistan and Australia in the governance of water management and water sharing. In Pakistan each province is responsible for managing their own water resources, with a formal Water Apportionment Accord specifying the rules for water sharing between provinces. The Indus River System Authority plays a role that is very similar to the Murray-Darling Basin Authority and federal issues are represented through the Ministry of Water and Power. KISTERS long experience with state and federal agencies in Australia has put us in the perfect position to meet the needs of similar agencies in Pakistan.

Thanks to the Australian High Commission in Pakistan for their support in Islamabad, and to CSIRO for their hospitality in Lahore. I've enjoyed being a part of a project that is making a real and important difference to the people of Pakistan.



Training Course in Lahore



Ratings Training

Hydstra Product News

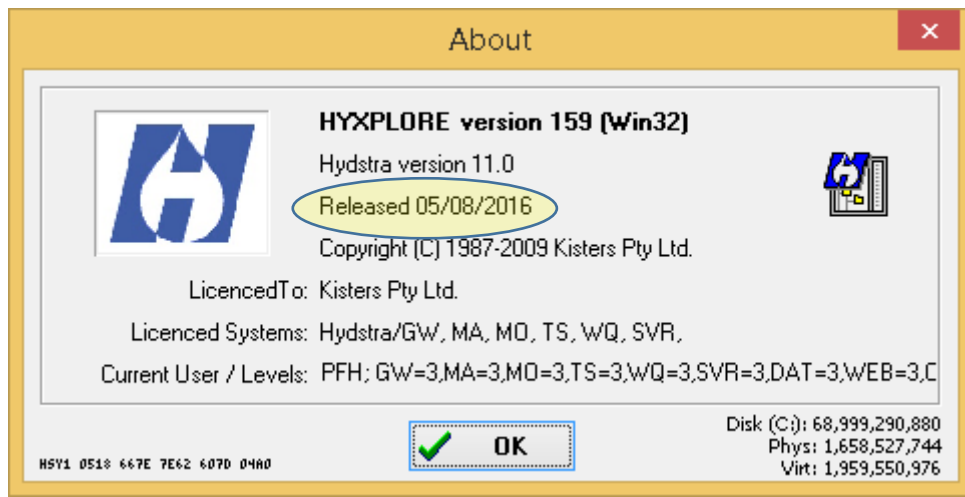
Hydstra V11 Release

Hydstra Version 11 is the current supported stable version of Hydstra, and is available for download from <http://kisters.com.au/downloads.html> . You will need to contact us at support@kisters.com.au for a V11 HYACCESS.INI before you upgrade to it.

A new patch is released every Friday, subject to release procedures completing successfully. An increasing amount of new development is now patched back to the current release, and is explicitly marked in the Change Log as having been patched.

As we slightly relax the rules about what we can and cannot patch it has become increasingly important that you run HYPATCHUP after installing a new patch. HYPATCHUP is configured to do whatever is necessary, but it may include restructuring and reindexing databases, and without running HYPATCHUP your system may be broken in some areas.

You can find out the date of your current patch by running Help/About from HYXPLORE:



The Released date is the date the system was compiled, prior to being tested and packaged up into a patch.

HYXPLORE will check if you have run HYPATCHUP and nag you about it if you haven't.

We recommend that you patch your system at least once every few months, as many new features are being continuously released through patches now.

Hydstra V12 Proposed Release

We have been working on the development of the next release of Hydstra for quite some time. The new version will be compiled with a more recent compiler which brings significant performance improvements, particularly for SQL Server users, as well as a myriad of program enhancements that could not be patched due to changes in database structure or module interfaces.

We currently plan to release Hydstra V12 sometime during the middle of 2017. At that stage Hydstra V10 will become unsupported. One of the findings we have already observed from responses to the Hydstra User Survey is that some of you are still running Hydstra V10. Hydstra 10.04 was released in August 2012, some four years ago, and 10.3 was released in September 2010, some six years ago.

We strongly encourage you to plan an upgrade to V11 in the next 12 months or you risk being left behind.

HYGIENE Test 32 – Stale Work Areas

We have added another test to HYGIENE in attempt to keep your results in the red. Test 32 examines public and private database work areas and reports on stale areas. The test runs under both SQL Server and Foxpro, though in many situations it can't see everyone's Foxpro work areas as they are hidden away on local disks. The test creates a batch job in JUNKPATH which should be carefully examined before being run, as it deletes all the stale tables and areas.

Enhanced Perl Module `hyexcel.pm`

We have enhanced the `hyexcel.pm` Perl module to read spreadsheets either using ADO methods, which requires Excel to be installed, or to use the Spreadsheet::Read module, which does not require Excel to be installed. Particularly for use on servers, the new mode (triggered by specifying `ole=>0`) is preferable, as IT groups are reluctant to install Office on servers.

There are some small but inevitable differences between the two modes, please carefully read the documentation for *hyexcel.pm* if you wish to change to using *ole=>O* mode (direct reading), particularly in the way that date columns are handled, and you will need to make a few changes to your programs and re-test them carefully.

Enhancements to HYDBSQL

HYDBSQL has been enhanced to increase its usefulness for generic reporting. New features include:

You can set and use internal variables using a syntax of the form

```
--set &v-varname.=value
```

Having set a variable you can use it later in conditionals and SQL statements.

You can express a one-line conditional using a syntax such as:

```
--ifflav=foxfile,select STATION,OWNER from SITE where OWNER=' '  
--ifflav=transactsql,select STATION,OWNER from SITE where OWNER is null or owner=' '
```

You can cause numeric columns to be totalled using syntax of the form

```
--totals=2,3,4,5
```

Read the HYDBSQL documentation for more ideas on how to enhance reports from database information.

Changes to Dropbox break HYQUICKWEB

Dropbox have foreshadowed that from 3 October 2016 for Basic accounts and from 1 September 2017 for Pro and Business accounts you will not be able to display an HTML file from out of Dropbox, hence using it as a cheap web site. Sadly this means that HYQUICKWEB in its basic form will no longer work, and you will need to upload the files from HYQUICKWEB to a proper web site somewhere, possibly using Syncovery or FTP. There are plenty of free or low cost web hosting options you can use, including GitHub Pages, Updog (<https://updog.co/>), HTMLDrop (<https://htmldrop.com/>), GoDaddy, etc, or you can explore <http://www.webhostingbest10.com/> for more ideas. For a few dollars a month you can easily host your own pages somewhere. We recommend using Syncovery (<https://www.syncovery.com/>) to push data to an external web site via FTP.

HYSYNCTS Synchronising Datasource

We have released and patched to V11 a new datasource that can synchronise an external source of data such as WaterML2 providers, Standard Hydstra, CDEC and many more in such a way that only new data is requested from the external source from time to time. This minimises the amount of web traffic while maintaining a permanent time-series file on your local system that is kept in sync with the external data source.

The datasource can be extended with new Perl plugins as required to deal with new sources of data. The current delivered set will consume the following sources of data:

- Any WaterML2 provider including the BOM, the USGS, and any KISTERS client running KiWIS
- Any Hydstra user publishing data via Standard Hydstra or Hydstra REST.
- The California Data Exchange Center (CDEC)

- Any incremental Hydstra process such as a MODSYN model, HYTSCOMB, etc. Those HYAUDIT result rollups that take hours could be reduced to a fraction of the time using a synchronising datasource.

Please read up on HYSYNCTS and the Synchronising Datasource for details on how to deploy and configure this new datasource. Contact KISTERS if you need us to develop new plugins for you.

Forcing Perl Datasources to Evaluate

Perl datasources have a lifetime for the datasource, and during that lifetime the Perl is not evaluated. Occasionally you might want to force the Perl to be executed again immediately, and there is now a syntactic method of doing that - add an exclamation mark to the end of the datasource expression:

```
T_LAG(A,100,60)!
```

For data updated daily you might use this mechanism to force an evaluation every night, which would then be cached during the day.

"Failed to set data for 'xxxx'" Errors

From time to time users have reported seeing messages in HYDLOG of the form "Failed to set data for 'xxxx'" where xxx can be various keywords. This error message refers to the inability of Hydstra to write a registry key. In HYDLOG you will see a fuller explanation of the problem, for example:

```
ThinClientFromRegistry() raised ERegistryException exception: "Failed to set data for 'ThinClient'" while trying to write to HKEY_CURRENT_USER\Software\HYDSYS\HyConfig
```

The solution to the problem is to use REGEDIT to create the offending registry path on the machine that Hydstra is running on and ensure that everyone has read/write permission to that key.

Sometimes a Group Policy prevents registry access, and you need to get IT to change the offending Group Policy.

Site list TABLE() function will now use the defined site field name if you don't specify it

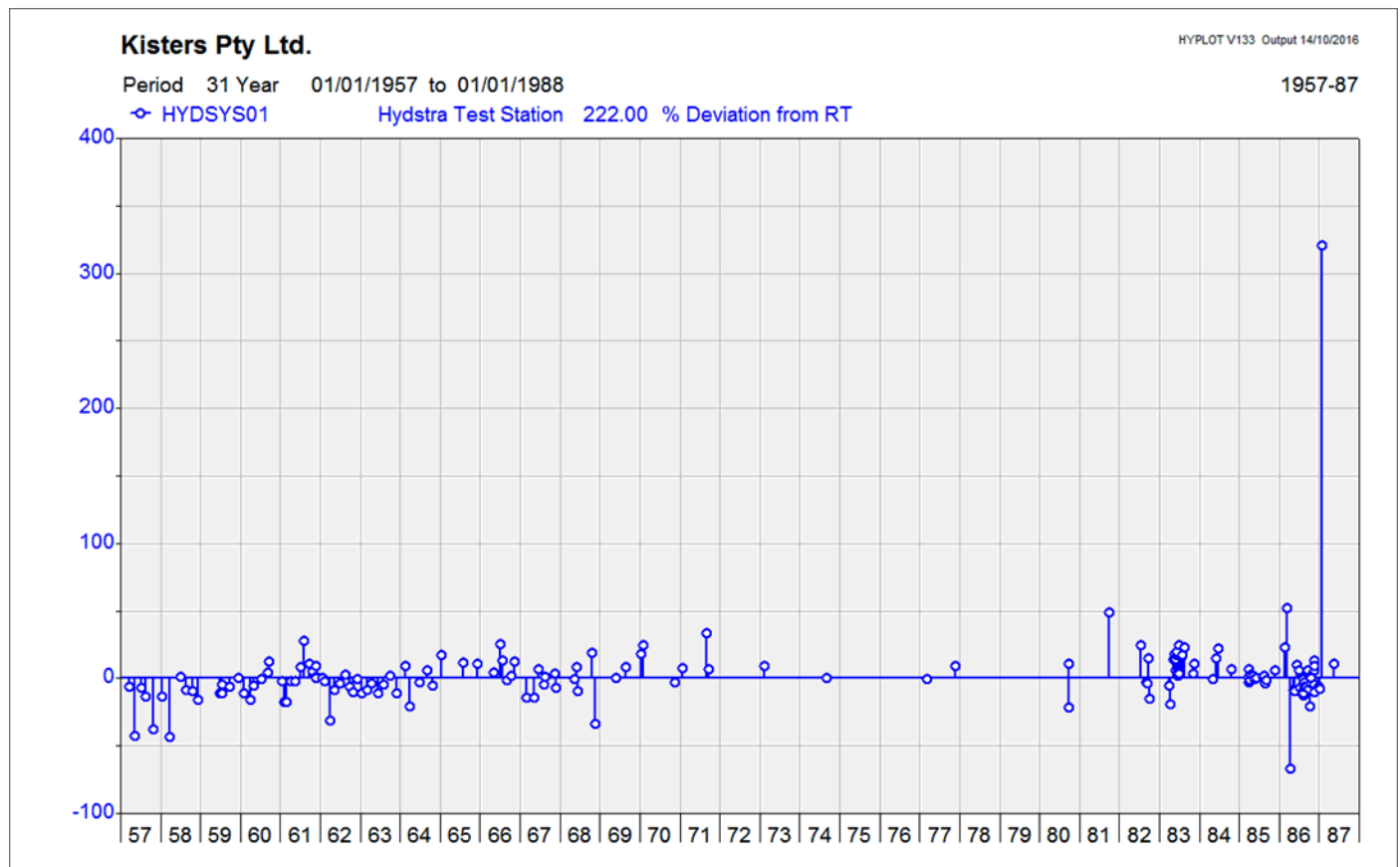
Previously, if you omitted the field name, it would be hardwired to "STATION" – which was correct for 99% of the time, but for some rare tables like GAUGINGS, you had to know that the station field was actually called "STN".

HYSTNS and the site list feature will now consult the internal schema, and use the correct field name, so this expression will now work:

```
TABLE(GAUGINGS)
```

New HYPLOT trace type: COMPZ

COMBPZ is like COMBP, except that it includes a horizontal zero line, and the “comb” lines go up (or down) from that, rather than using the plot baseline. This makes it particularly useful for deviation-type plots.



Instruments workbench now has a “Workshop mode”

HYINSTWB now has a workshop mode, designed for managing instruments at head office, rather than the existing visit-centric mode. In workshop mode:

- Only the “Scheduled Tasks”, “Faults and Other Tasks” and “Deployment” tabs are displayed
- You can only operate in “Live database update” mode – no .IWB files
- Only the INSTSER, INSTCAL and INSTHIST tables are updated

The main intention of Workshop mode is to allow the recording of instrument service and calibration work done while the instrument is in the workshop.

HYUSERACT User Activity Report

Program HYUSERACT allows you to list database change counts by user for configurable lists of tables. It can be useful to see who is actively changing important system tables, such as SITE, VARIABLE etc.

User Activity Report Type: TEST

User Group: *

Activity between 01/01/1850 and 01/01/2050

Job run: on 2016/11/29 at 10:16:33

| UID | Surname | First Name | Table | Added | Modified |
|--------|---------|------------|------------|-------|----------|
| CMR | Ramage | Callum | SITE | 1 | 1 |
| CMR | Ramage | Callum | Sub Totals | 1 | 1 |
| DANGUS | Angus | Denby | SITE | 0 | 6 |
| DANGUS | Angus | Denby | Sub Totals | 0 | 6 |
| DCS | Skinner | Damian | VARIABLE | 1 | 1 |
| DCS | Skinner | Damian | Sub Totals | 1 | 1 |
| DJE | Evans | Dylan | SITE | 1 | 1 |
| DJE | Evans | Dylan | VARIABLE | 0 | 1 |
| DJE | Evans | Dylan | Sub Totals | 1 | 2 |

FastField mobile data collection

Many of you are currently using Canvas (www.gocanvas.com) for mobile data collection. By all accounts, Canvas provides a simple interface for designing the data collection forms and an application programmer's interface (API), which has allowed us to develop scripts to download the data directly into Hydstra.

Unfortunately, the API is now only made available to users at their highest pricing tier (professional), which is US\$50 per user per month. For a large organisation with tens or hundreds of users, this can be a significant expense.

As an alternative to Canvas, we were recently introduced to FastField Mobile Forms (www.fastfieldforms.com). FastField appear to offer the same features as Canvas (web based form design, JSON based API, etc.) at a significantly cheaper price - US\$20 per user per month, with further discounts applied for certain scenarios.

FastField offer a 10 day free trial period, in which we were able to use their test application to make a number of submissions and write a proof-of-concept Perl script to download the data via the FastField API.

If you are interested in using your mobile devices for field data collection, but the cost has been a prohibitive factor, you may be interested in FastField Mobile Forms.

HighCharts implemented in Hydstra/WEB

New dynamic interactive charts are now available on the Custom Outputs page of Hydstra/WEB. These charts can be dynamically zoomed and panned to provide the user with a much more dynamic view of the data at a site.

To make them available you need to add an extra setting in the relevant Tab Options section of WEBHYD.INI, for example:

```
Outputs1 = Plot,plot  
Outputs2 = Dynamic plot,dynaplot  
Outputs3 = Table,data  
Outputs4 = Download,download
```

Once done the user will be presented with a *Dynamic plot* option on the Custom outputs page:

Rivers And Streams > Real Time Data - Rivers And Streams > 201-Tweed River Basin
201001 Oxley River At Eungella
All data times are Eastern Standard Time

| | | | |
|---------------|---------|------------------|-----------------------|
| Latest Values | Details | Prepared Outputs | Custom Outputs |
|---------------|---------|------------------|-----------------------|

Field Time Series Data

☒ Stream Water Level (100.00-100.00) 07/02/1962 to 09/09/2016
☐ Stream Discharge (100.00-141.00) 07/02/1962 to 09/09/2016
☐ Stream Discharge (100.00-141.01) 07/02/1962 to 09/09/2016

Period All data ▼ **Output** Plot ▼
Plot
Dynamic plot
Table
Download

Get Output

The user chooses which data they want to see:

Rivers And Streams > Real Time Data - Rivers And Streams > 201-Tweed River Basin
201001 Oxley River At Eungella
All data times are Eastern Standard Time

| | | | |
|---------------|---------|------------------|-----------------------|
| Latest Values | Details | Prepared Outputs | Custom Outputs |
|---------------|---------|------------------|-----------------------|

Field Time Series Data

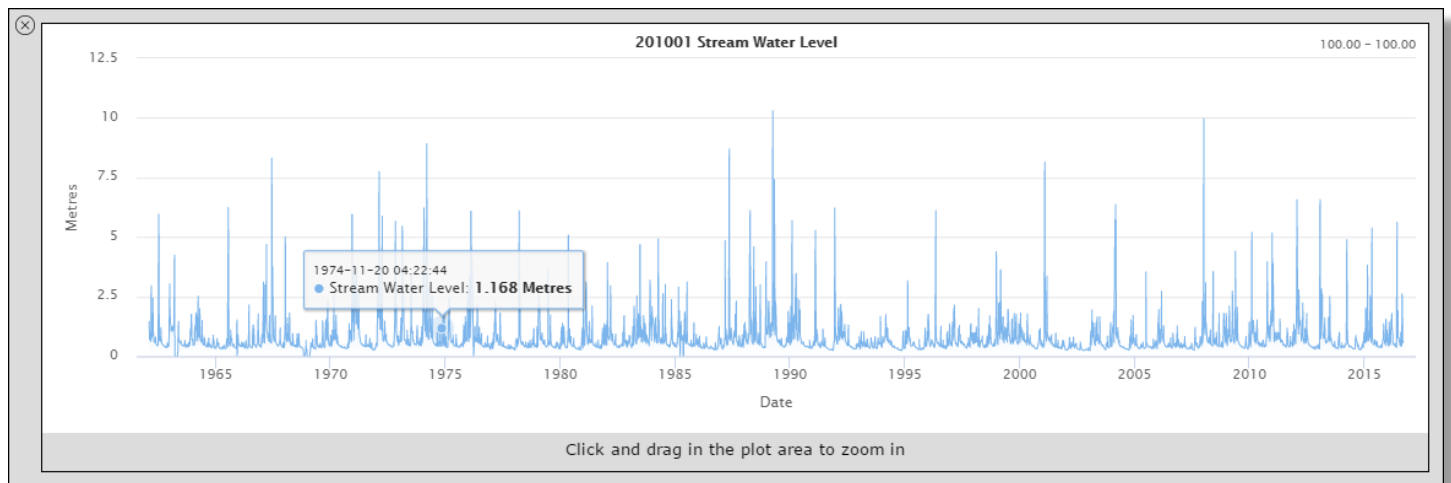
☒ Stream Water Level (100.00-100.00) 07/02/1962 to 09/09/2016
☐ Stream Discharge (100.00-141.00) 07/02/1962 to 09/09/2016
☐ Stream Discharge (100.00-141.01) 07/02/1962 to 09/09/2016

Period All data ▼ **Output** Dynamic plot ▼

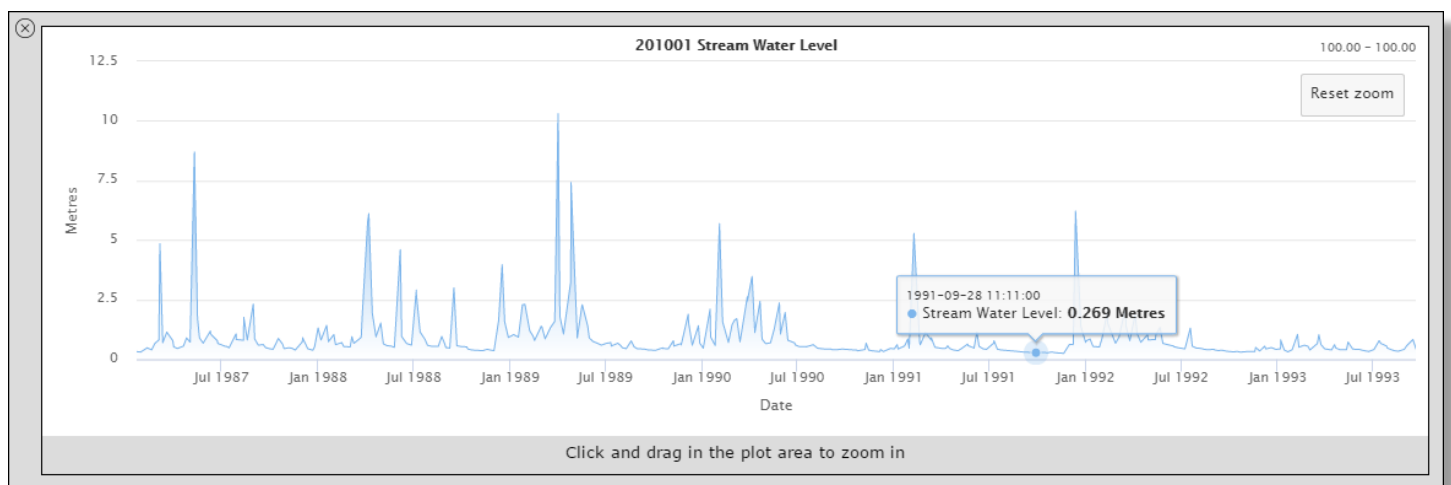
Get Output

Interactive plot - slower to load, data interpolated

And the resulting dynamic plot is displayed:



As you zoom in you can see more detail, and hover over individual points for point information:



If you have selected multiple variables they will be shown on a multi-trace plot:



WISKI Product News

Release Management and Client Base

The KISTERS team is in consultation with all WISKI, KiWQM and KiECO customers in Australia, NZ and South-East Asia to organise the timeframes to update to a recent 7.4.5 service release. The 7.4.5 release is running on all client systems on test environments or in production. As the holiday period is approaching most of the updates to new service releases will be done in early 2017.

Support Email, Help Desk and Bugzilla

Contacts for the WISKI team at KISTERS in Australia:

- Vicky, Chris, Markus and Callum (web developments) for specialised support for the KISTERS products WISKI, KiWQM, KiECO, KiDSM, KiALM, WISKI Web and KiWIS.
 - Phone number for support is +61 2 6154-5200, and the email address is wiski-support@kisters.com.au.
- If you are engaging in a particular dialog with Chris, Vicky, Markus or Callum please cc the support box so a central register of issues can be maintained.

Access download portal:

- Download portal can be found under <http://kisters.com.au/downloadswiski.html> , or can be accessed by navigating through to the support page from <http://kisters.com.au> .
- To acquire a username and password to access the download portal please contact the KISTERS support team over the phone at (02) 6154 5200 or email at Wiski-Support@kisters.com.au.

WiReD – New reporting options for WISKI data

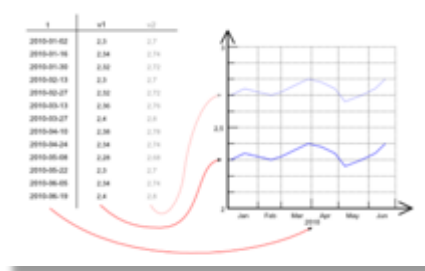
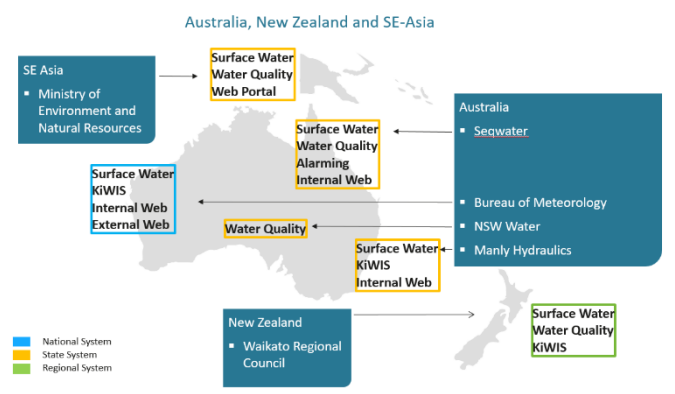
The WISKI integrated Report Designer (WiReD) is a modular reporting tool which is used to graphically present data from the WISKI database. WiReD provides an interactive editor to create reports and enable fast visualization of data. It has direct access to the WISKI server and can access time series data and water quality sample data as well as metadata stored in the database. The resulting reporting options are varied and include any combination of graphs, charts, metadata and maps or pictures. WiReD runs in a web browser and after installation no further software packages are required. Reports can be output in a number ways, including PDF.

The layout of the reports is document centered with millimetre accurate true to scale representations of data. Data visualisation options include:

- Time dependent graphics
- Parameter dependent graphics
- Box and Whisker plots
- Data tables
- Meta data reports

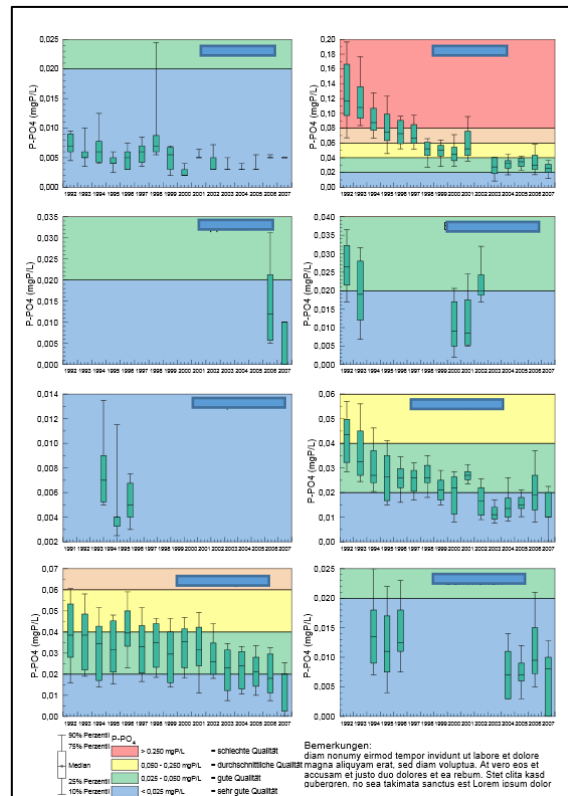
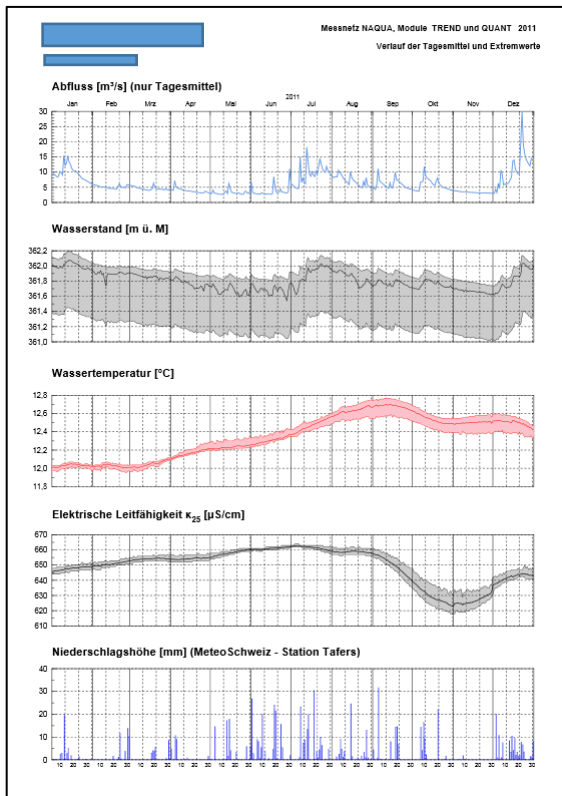
WiReD provides tools to display datasets using time- or parameter-driven

charts. You can tune the chart's appearance to match your needs with a variety of presentation models. When exact numeric values of measurements matter, you can create tables. As with graphs, data in tables can be drawn from



various sources. Tables can "roll out" the data in any direction, both horizontally and vertically. There are virtually no constraints on the cell layout and size of the repeated elements. The formatting features are as extensive as in well-known office suites. The displayed time range can be changed on the fly, with direct feedback. Time ranges for individual charts can not only be defined absolutely but also as relative offsets (i.e. "previous year").

Below are some example reports produced with WiReD, including a standard time series data report which also includes the mean, min and max of various time series. The other report is a water quality report, where the back ground colours indicate the relative quality (ie. Red = bad). For privacy reasons the station names have been covered by a blue bar.



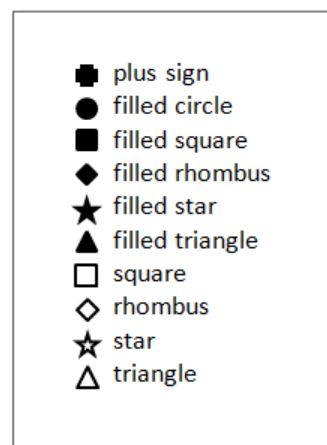
Did you know? WISKI Maps

Did you know you can change the symbology of a Station within the WISKI map – by station characteristic? To do this - go to the Station characteristic entries within your system view and select the characteristic that you wish to change:

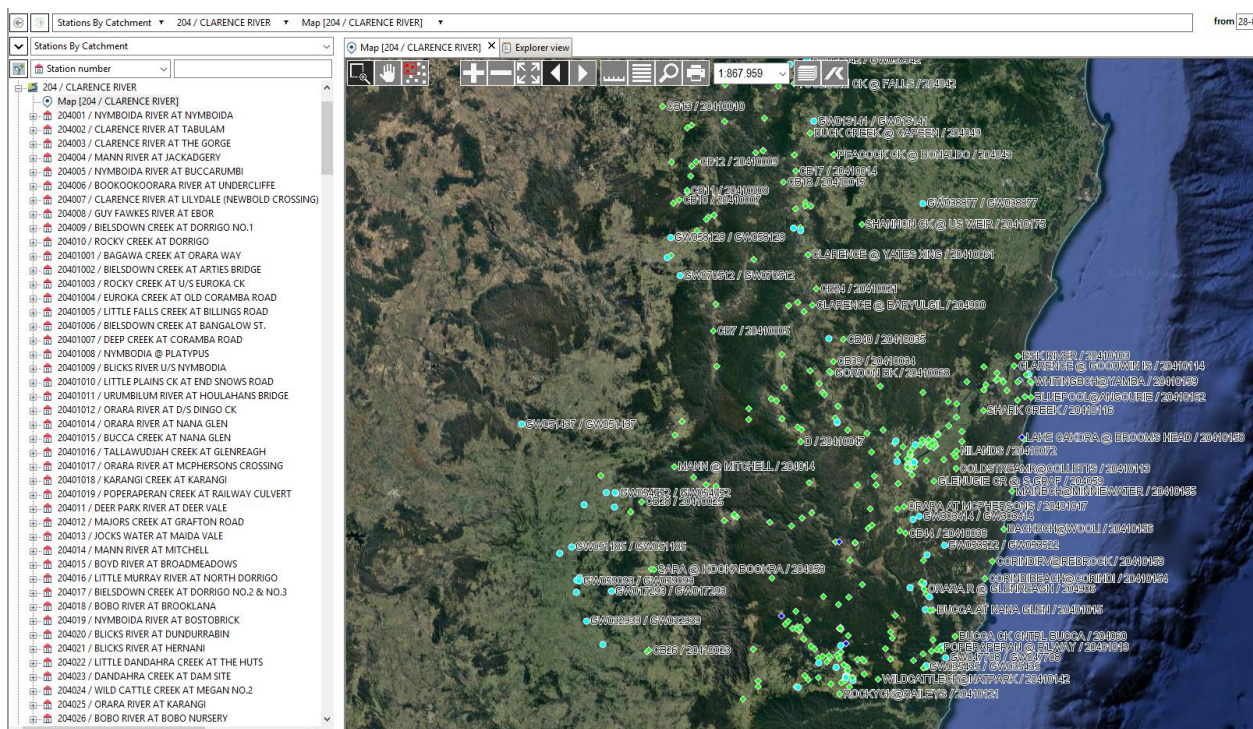
| System view ▾ System metadata ▾ Management ▾ Types ▾ Station characteristic ▾ | | | |
|---|--------|----------|------------|
| Station characteristic X | | | |
| Station characteristic | Active | External | Short name |
| 1 Area station | No | No | AR_STATION |
| 2 Areal precipitation station | No | No | AP_STATION |
| 3 Climate station | No | No | CL_STATION |
| 4 Estuary | Yes | No | ES_STATION |
| 5 General | Yes | No | GN_STATION |
| 6 Ground water | Yes | No | GW_STATION |
| 7 Pipe Flow | Yes | No | PL_STATION |
| 8 Secondary site | No | No | SE_STATION |
| 9 Surface Water Storage | Yes | No | ST_STATION |
| 10 Surface Water Stream | Yes | No | SW_STATION |
| 11 Tidal station | No | No | TL_STATION |
| 12 Treatment Plant | Yes | No | TP_STATION |
| 13 Waste Water | Yes | No | WW_STATION |
| 14 Water quality | Yes | No | WQ_STATION |
| 15 Weather | Yes | No | WE_STATION |
| 16 Wetland | Yes | No | WL_STATION |

Here you can set the colour and symbol of station characteristics as follows:

Available symbols :



The Maps will then apply the relevant symbology for the station's main characteristic.



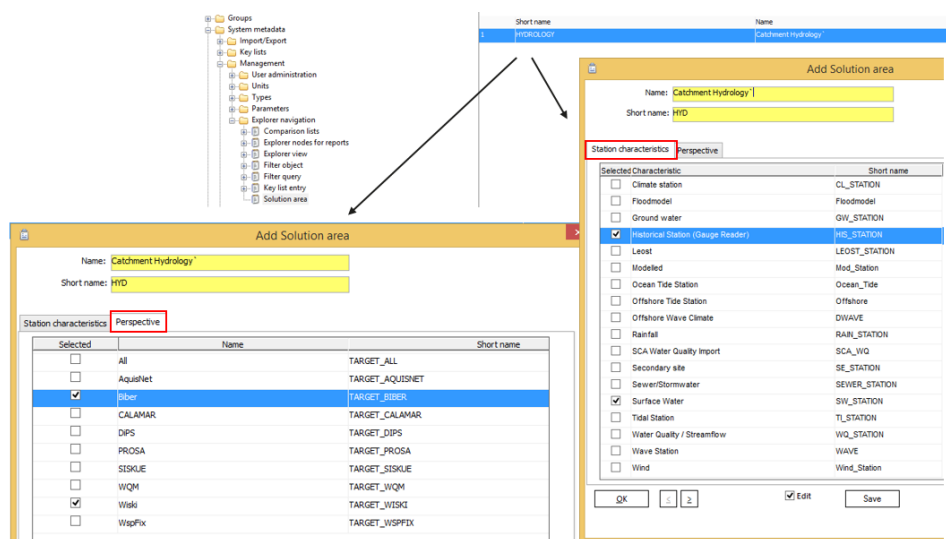
Solution areas part of WISKI 7.4.5

Another nice thing to know and which became part of the WISKI 7.4.5 software release are the solution areas. As you all know WISKI is used globally for many different data tasks in the water domain including surface water and groundwater monitoring, dam safety, hydro and wind power generation, meteorology, flood forecast and alarming and in urban hydrology. To organise the data complexity in these different fields is an ongoing task in our development and consulting teams. The concept of solution areas is one result of structuring the complexity.

Solution areas in WISKI now allow you to pre-organise your data before explorer views, filters, groups or your private working area are applied. They are configured in WISKI as a combination of the station characteristics and the preference.

The preferences are a specific view of the WISKI data base and most of our customers know that additional to the WISKI perspective (where the data tree is structured by site and station and which is designed to view time series) there are three additional perspectives:

- the BIBER perspective to view flow measurements,
- the WQM perspective to view sample data and
- the KiECO perspective to view biological observations.



As shown in the screen shots above there are also other perspectives available or in development like the AquisNet and CALAMAR perspectives to view and organise air quality time series and raster data.

Now in WISKI 7.4.5 you can link perspectives with station characteristics to create solution areas. Station characteristics are widely used by many of our customers as they group stations of a specific type like all rainfall, all tidal or all surface

water stations. Station characteristics also allow you to define dependencies between station groups.

They can be defined as:

- normal characteristic
- only as sub characteristic or
- only as main characteristic

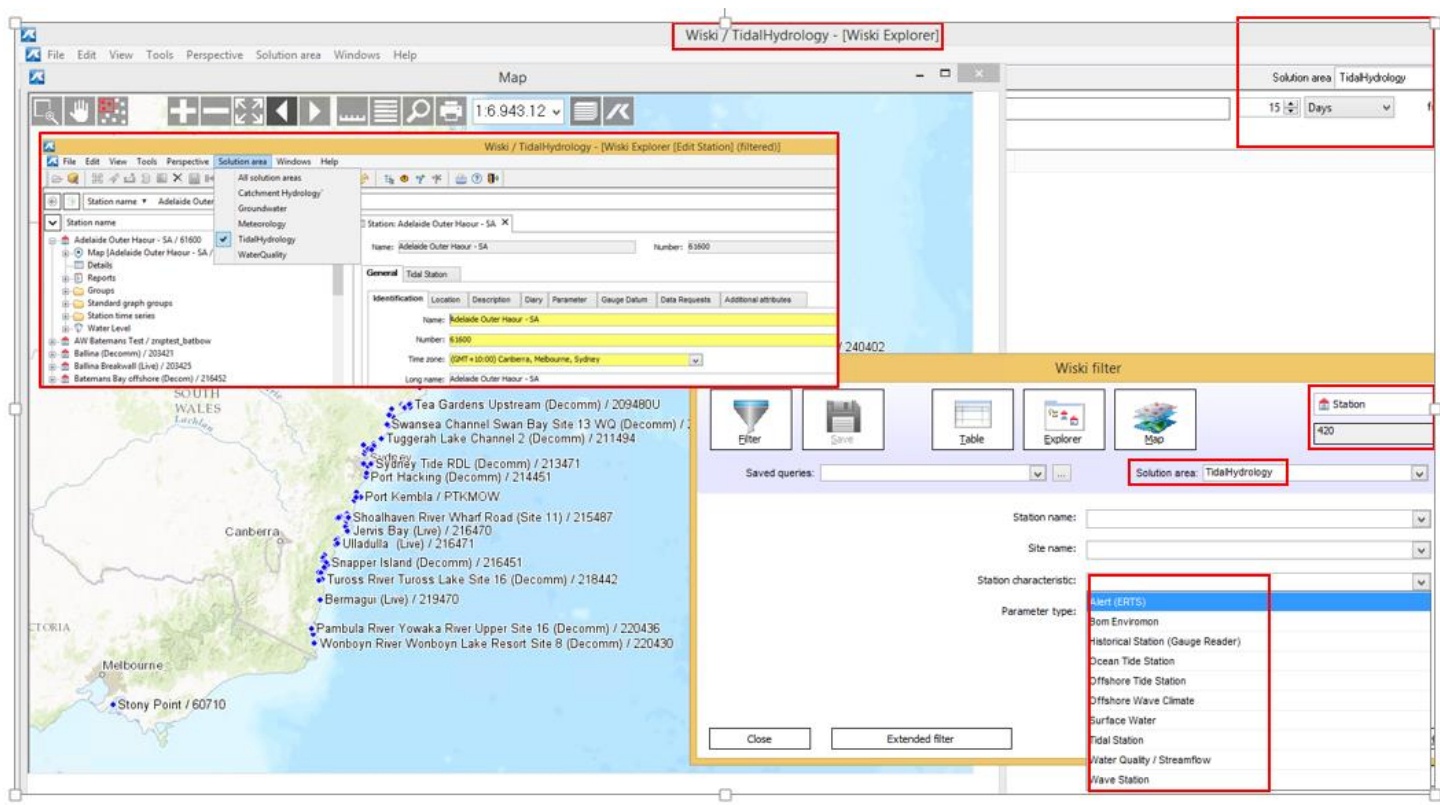
In the example a station characteristic of a 'climate station' is defined as a normal characteristic. Additionally, a second characteristic is created which is a 'rainfall station' as a sub-characteristic. The rainfall station is then assigned as a dependent characteristic to the climate station. The example shows how you can structure your system with an underlying concept of station characteristics and dependencies.

Please approach the WISKI team if you need help in setting up and structuring your system using solution

areas.

Once a solution area is defined it will become an entry in the WISKI main menu after restart. In the menu you can then select which solution area you want to work with and that predefines the stations and perspectives you are seeing in the WISKI explorer, WISKI filter and WISKI map (see below).

The image contains two screenshots of the 'Edit Station characteristic' dialog box. The top screenshot shows the configuration for a 'Climate station'. It has fields for 'Station characteristic' (Climate station), 'Short name' (CL_STATION), 'Remark', 'Category' (Hydrological station), and 'Kind' (Normal characteristic). Under 'Dependent characteristics', 'Rainfall' is listed and selected. The bottom screenshot shows the configuration for a 'Rainfall' station. It has fields for 'Station characteristic' (Rainfall), 'Short name' (RAIN_STATION), 'Remark', 'Category' (Hydrological station), and 'Kind' (Only as sub characteristic assignable). Under 'Dependent characteristics', 'Climate station' is listed and selected. Both screenshots have tabs for 'Details', 'Additional attributes', and 'Layout'.



The solution area concept is a step forward in better tailoring the KISTERS software for specific workflows and tasks. Further development will follow next year. We are happy to have you all on board to join that journey.

Staff News

Welcome Dylan Guo

By Song Guo

My wife and I are proud to introduce our son Dylan Jindong (劲东) Guo. His first name is Welsh meaning the son of the sea as my family is from a coastal city in China and Wales was our favourite part of the UK while we lived there. The middle name Jindong is in Chinese and means powerful/strong. We didn't have it ready until the day we brought him home when he gave me a hard kick in the face when I was trying to hold him!

The young Australian man was born on 7th Nov 2016 and weighed 3.22 kg at Calvary Hospital, Canberra.



Dylan Jindong Guo

Christmas Break

Many KISTERS staff will be taking leave over the Christmas break, and in consequence the Canberra office will be closed on 28, 29 and 30 December. However most staff will be away from the 19th of December until mid-January. Given that then a number of staff are off to Aachen for Water Week, the bottom line is it will be difficult to get much sense out of anyone until early February. However apart from the shutdown period the Support inbox and phone number will be manned.

Worldwide KISTERS News

You can keep up to date with all the news from KISTERS worldwide through the following links:

<http://www.kisters.eu/news.html>

<http://www.kisters.net/NA/news-and-events>

New Technology to Determine Rainfall Intensity from Photos



SmartRAIN is a new patented image-processing technology - developed by the Italian start-up WaterView - for measuring rainfall intensity from images shot during rain events. It is the core of an integrated IoT system: Off-the-shelf imaging devices (like smartphones or public IP cameras) build a network for rainfall measuring with very high spatial density.

Increasing the density of traditional rain gauging networks would

- importantly enhance the quality of real-time representations of rain events,
- feed forecasting models with better data,
- enable the implementation of optimal stormwater management strategies,
- improve the safety of urban and transport infrastructures, and
- reduce the costs of unmanaged events.

Many institutions can benefit from a real-time rain gauging service based on SmartRAIN, e.g. public bodies in charge of civil protection duties, entities that own or manage transport infrastructures, agencies that own or manage rain gauging networks, managers of urban drainage systems.

KISTERS is testing the SmartRAIN technology. In November we installed a camera with IP connection and light on the KISTERS FieldLab next to the rain gauging station. The camera takes pictures every minute and sends them to WaterView via internet. There, the images are analysed and transformed to rainfall intensity information. KISTERS is going to compare the SmartRAIN values with the measuring values from the close-by measuring station. We will report back on the results.

KISTERS On the Web

KISTERS technology is at the heart of an increasing number of customer web sites, whether they be based on Hydstra or WISKI web technology or their own web developers. You can visit a selection of client web sites via the link page at <http://kisters.com.au/webpublishing.html>.

If your web site uses KISTERS software please contact us with the URL and we'll add it to the list.

KISTERS Training

Training Courses

We are happy to provide training courses on any aspect of KISTERS software provided there are sufficient people interested in attending. Please contact us at support@kisters.com.au with expressions of interest for any training requirements you have. We can provide training at your office or here in Canberra. Training in Canberra is based on a per-person per-day cost, provided we have sufficient people attending (typically six), alternatively we charge our consulting rate divided by the number of attendees, allowing for preparation time and meal costs. Training at your office will be charged at our standard consulting rates per day for the trainer, plus preparation days, travel and accommodation at cost. Courses we can offer include:

- Basic Hydstra
- Basic WISKI
- Advanced Hydstra
- Advanced WISKI
- Hydstra Administration
- WISKI Administration
- Administering Hydstra/WEB
- Hydstra Modelling with MODSYN
- Hydstra/SVR Server
- Ratings and Gaugings with Hydstra
- Exporting data to the BOM using HYWDTF_OUT
- Using Perl with Hydstra
- Groundwater Data Management with Hydstra
- Water Quality Data Management with Hydstra
- KiWQM (WISKI Water Quality Module)
- KiECO (WISKI Biology Module)

Please contact us via support@kisters.com.au if you wish to attend. We will register your interest and notify you when the next course is planned.

At present we don't have any further courses scheduled this year. Please contact us if you have a specific training requirements for next year.

KISTERS Canberra Phone Numbers

We have been using a VOIP-based phone system based on open source Asterisk software in Canberra for some years now, and we have cancelled most of our analogue phone lines. Please use the following phone numbers if you wish to contact someone in Canberra directly:

| | |
|--------------|-----------------|
| 02 6154-5200 | KISTERS Support |
| 02 6154-5210 | Bill Steen |
| 02 6154-5211 | Damian Skinner |
| 02 6154-5212 | Markus Bauerle |
| 02 6154-5213 | Denby Angus |
| 02 6154-5214 | Rob Smith |
| 02 6154-5215 | Alain Remont |
| 02 6154-5216 | Chris Michl |
| 02 6154-5217 | Debbie Cockburn |
| 02 6154-5218 | Peter Heweston |
| 02 6154-5219 | Song Guo |

The VOIP system emails voice messages directly to the recipient if they are away from their desk.

The only analogue phone number that remains is the alternate support number 02 6288 2302. Our fax remains the same on 02 6288 9061.

Information

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