KISTERS Australia News

April 2018

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From The GM's Desk

By Bill Steen, General Manager, KISTERS Pty Ltd

Welcome to the first newsletter for 2018. Earlier this year Klaus Kisters and I met with a number of KISTERS clients in Australia and New Zealand. One of the interesting things that came up through our discussions was the increase in KISTERS presence within our region. Since coming on board with KISTERS at the end of 2003 the KISTERS Group now has increased to over 45 staff, six offices, and an extended reseller network within this region. This growth highlights the strategy that KISTERS is here for the long haul.

The KISTERS group in this region comprises of KISTERS Australia plus HyQuest Solutions Australia & New Zealand. HyQuest Solutions recently expanded their product and services portfolio into the oceanographic industry with the employment of Tim Waldby as a Systems and Services Manager in Perth Western Australia. HyQuest Solutions already supports the oceanographic industry through the HydroTel telemetry solution, which is used by many Australia port authorities, along with instrumentation and other related products.

KISTERS Australia works closely with HyQuest Solutions, especially in New Zealand with five new clients coming on board with KISTERS biological product, KiEco. There is a growing interest in this module.

On the home front there is a lot happening with a variety of new products and clients plus the ongoing client system customisations.

I'd like to welcome the return of Paul Sheahan to KISTERS as Assistant General Manager. You can find out more about Paul in the Staff News section of this newsletter, and I expect many of you will be meeting Paul in person in the near future.

Bill Steen
General Manager

KISTERS Pty Ltd

Effective Flood Protection

Lessons learned from hurricanes in the United States

Aachen/Germany, March 22, 2018

Extreme weather events that cause catastrophic damage are increasing in frequency worldwide. Last year's floods have certainly not been forgotten. For more effective flood response, short- and medium-term action planning and flood prevention, authorities here in Europe can use the same innovative solutions that are transforming the United States approach to forecasting hurricanes like Harvey and Irma. Developed by the German IT company KISTERS, the advanced software systems were used by scientific and technical advisors to local U.S. flood rescue teams and emergency response centres and they proved to be a success. The systems consolidate a large amount of information and present quick and clear visualizations of useful data regarding water levels and at-risk neighbourhoods. This information enables authorities to make sound and timely decisions. In contrast to either precipitation or discharge predictions alone, the KISTERS system both monitors the actual water level and accurately forecasts its rise at numerous local hotspots, giving emergency managers more time to plan and act.

Cloud solutions for water level notifications, predictions and alarms

The University Corporation for Atmospheric Research (UCAR), the National Oceanic and Atmospheric Administration (NOAA), the United States Geological Survey (USGS), ESRI and KISTERS worked closely together to implement the U.S. National Water Model (NWM) in 2017, which will be used to forecast discharge volumes for 2.7 million river reaches. The most critical information is not the expected discharge, but rather the anticipated water level or increase in water level within a specific time period. By combining measurement data from monitoring stations, results from forecasts and models provided by universities, and spatial-temporal information from precipitation radars, the NWM will soon be capable of delivering accurate and reliable results. KISTERS' powerful processing engine calculates current and predicted water levels for various time horizons. Authorities and emergency responders with appropriate authorization can access this information through an easy-to-navigate web portal at any time and from any location. Therefore, they are able to respond to flooding risks in a much more effective manner.

For employees of the American Red Cross, this solution proved to be a ground-breaking tool for comprehending the factors and impacts of Hurricane Harvey. They later applied the solution to monitor Hurricane Irma as well. Other projects on a national level are in development as KISTERS serves as a member of the Community Advisory Committee for Water Prediction. Similar KISTERS solutions for flood forecasting and flood warning are accessible for Europe.

Integrating measurement data, radar data and models

The data relevant for flood protection are contained in files that are many gigabytes in size and updated several times a day. KISTERS is one of the few providers whose software solutions can handle such an immense amount of data. In addition, proprietary web services use open data standards to overcome technical barriers that previously isolated all of this critical hydrological information. Powerful algorithms then transform the volume of data into useful, actionable insights. The KISTERS solution is able to show the expected number of flooded homes as well as cartographic representations of the water level, streamflow volumes and forecasted level of precipitation with additional data geoprocessing by ESRI, a KISTERS technology partner. Numerous visualization features allow users to

quickly and easily view and digest information, especially in time-sensitive situations like emergencies. For example, streamflow representations on the maps may change in thickness and colour; they may “pulse” during floods.

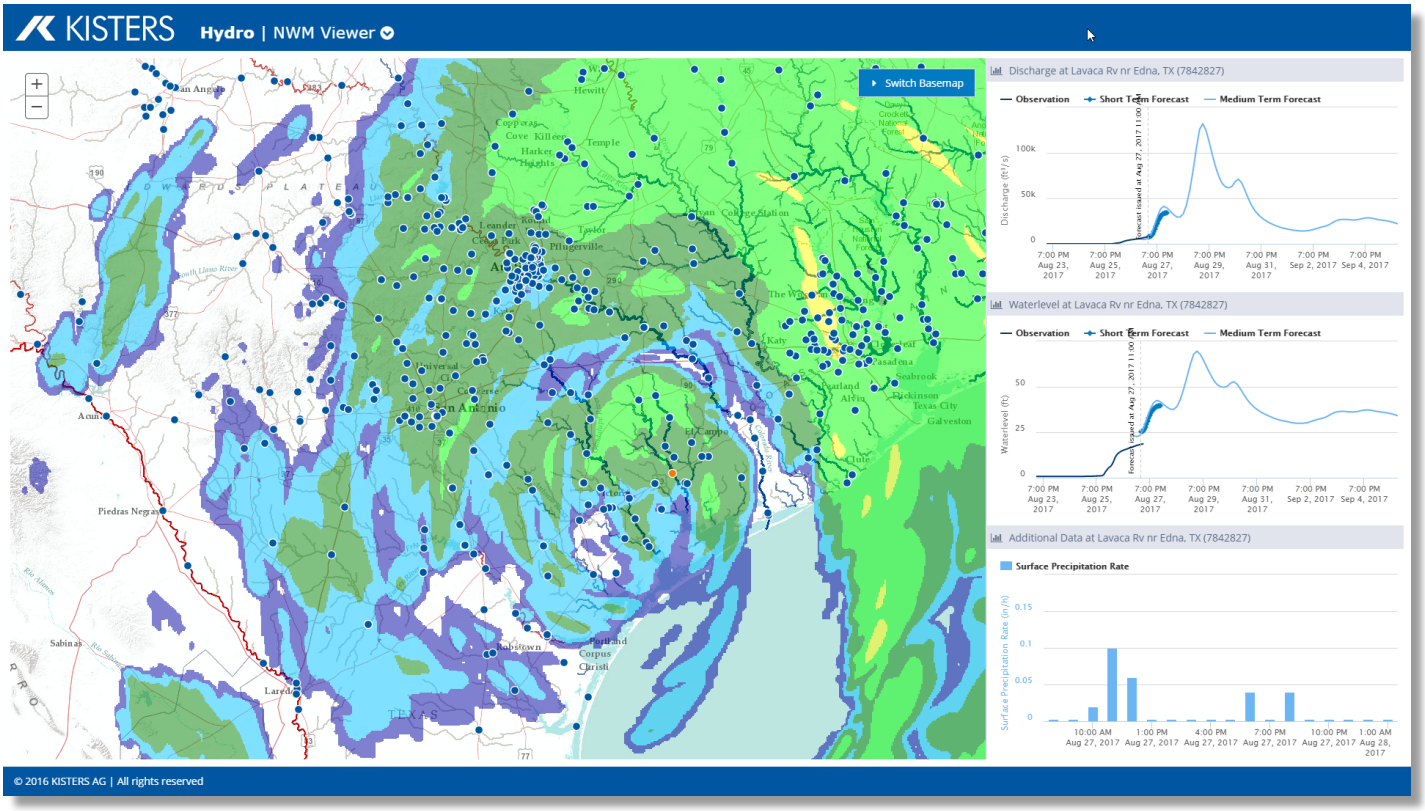


Image: KISTERS solution processed large amounts of data and displayed quick, clear and validated information on water level, discharge and precipitation during Hurricane Harvey in August, 2017. Source: KISTERS, ESRI, USGS, NOAA

Alert User Group Conference Ventura County

KISTERS recently attended the ALERT User Group Conference in Ventura County, California. Ventura was the location of the massive Thomas Fire which burned for nearly 40 days during last December and January. After full containment the fire burned 282000 square acres or 1141 square kilometres, destroying 1063 structures and damaging 280 structures.

About 130 individuals assembled for training in ALERT and ALERT2, time division multiple access (TDMA) information exchange protocols that support data collection capabilities for automated flood warning systems and environmental monitoring. Presentations relating to the Thomas Fire in California, Hurricane Harvey in Texas, and significant flooding events in Colorado revealed critical commonalities:

- Professionals must maintain humble and close working relationships across jurisdictional boundaries (i.e. cities and counties) and agencies such as police and fire departments. The influence of hydrologists, meteorologists and technicians has grown with the availability of data and the demand for science-based decisions. Following the Nuns and Tubbs fires and with the help of adjacent Napa County, Sonoma County Water Agency set up its own early flood monitoring system in record time to prepare for flooding risks as rainy season began in January.* (Napa already had an established system of rainfall and stream gages in place.)
- A mix of existing and new technologies is needed to address regulatory changes, advantages and limitations of new capabilities (e.g. radar sensors, acoustic Doppler velocimeters, drones, cameras), and cost containment for redundancy protocols.
- Accurate, long-term data management and efficient access to information is now more significant to decisions. Records from the past 150 years are available, but we’ve seen “500-year” flood events from a statistical perspective. A tour of the watershed protection district revealed data analysis needs beyond flood forecasting,

as Matilijia Dam demonstrates needs in the disciplines of dam safety, water quality and even soil moisture.

A dozen vendors represented hardware, software, and weather data services specific to modelling and decision support for flood events. KISTERS was pleased to connect with several industry partners since its data management and analytics solutions, Hydstra and WISKI, are designed to be neutral to hardware brands.

KISTERS was able to connect with multiple clients dedicated to long-term flood control and to recognize their commitment to data-driven public safety. Harris County Flood Control District (Houston, Texas) and Santa Clara Valley Water District (San Jose, California) keep their real-time flood data and analyse trends in WISKI, whereas San Bernardino County Flood Control District, San Diego County Flood Control District and Ventura County Watershed Protection District all perform hydrological data management and processing with Hydstra. Riverside County Flood Control and Water Conservation District (Riverside, California) is now applying equally rigorous quality control and analytical standards to its water quality data as it does to the hydrological information it collects.

In addition to data archiving and analysis, KISTERS' customers are enhancing their customer service and public education efforts. Orange County Watersheds (Santa Ana, California) will implement open data portal technology over its Hydstra platform. Implementation of the concept of open and transparent water data is relatively new to California, as the governor signed it into law in 2016. Australia already recognized the need for a water data portal during the Millennium Drought; the 2007 passage of the Commonwealth Water Act guided the Australian Bureau of Meteorology (ABM) to implement the Water Data Online website (http://www.bom.gov.au/waterdata/).

A hundred miles east of Ventura, the California Counties Information Services Directors Association (CCISDA) concurrently convened in Pomona. City information officers and IT leaders discussed making digital government services more accessible to Californians beyond emergencies.

Speakers emphasized the arsenal of tools used to monitor intensity of rainfall, rising streams and flow, as well as communicating flooding risks and danger from debris flows especially after wildfires.

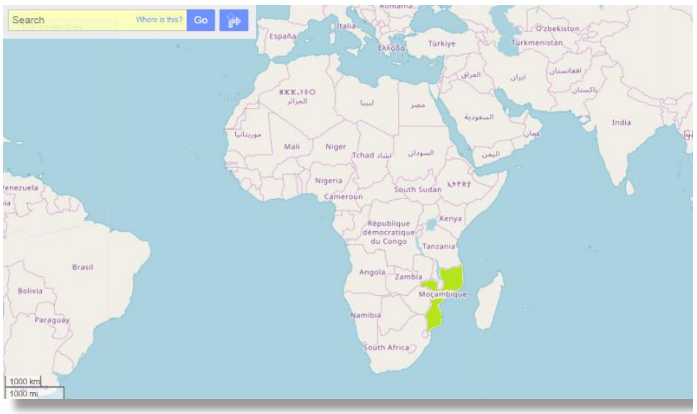
You can read more aboute the Thomas Fire at https://en.wikipedia.org/wiki/Thomas_Fire

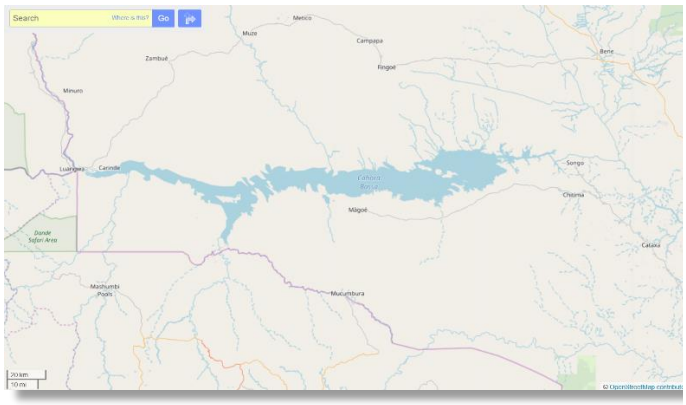
Hydstra in Mozambique

In March 2018 Damian Skinner from KISTERS Pty Ltd in Australia, Dylan Evans from KISTERS North America and Gina Gaspar, KISTERS' agent in Africa, travelled to Songo in Mozambique to install a Hydstra system with Hidroeléctrica de Cahora Bassa S. A. (HCB). HCB operates the Cahora Bassa hydropower plant, which has a capacity of 2,060 MW. The storage of Cahora Bassa lake on the Zambezi river is some 63,000 GL, or approximately 112 SydHarbs (for the uninitiated the SydHarb is a well-known local Australian unit of volume, being the volume of Sydney Harbour, some 560 GL).

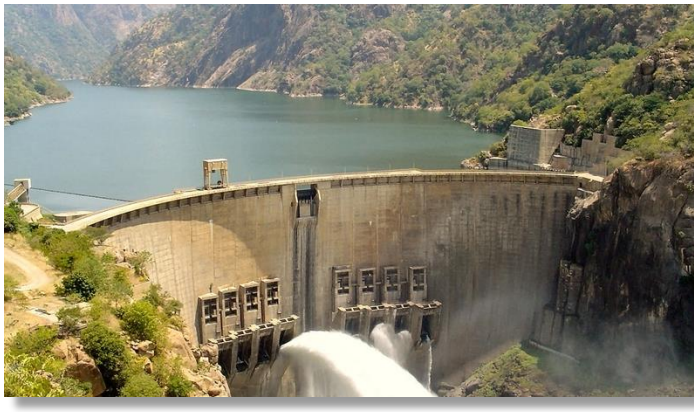
The KISTERS team deployed and configured Hydstra and developed importers for numerous sources of data over a one week period. Gina Gaspar was able to assist in translating most of the important Hydstra outputs into Portuguese. It is always entertaining for us to see Hydstra running in a language we in Australia can't speak!

The team will be returning to Mozambique within the next month or so to finalise the installation and provide further training.





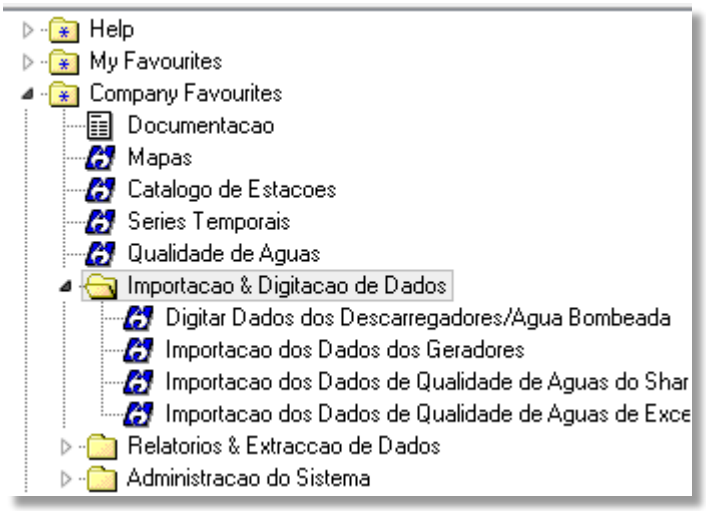
Mozambique



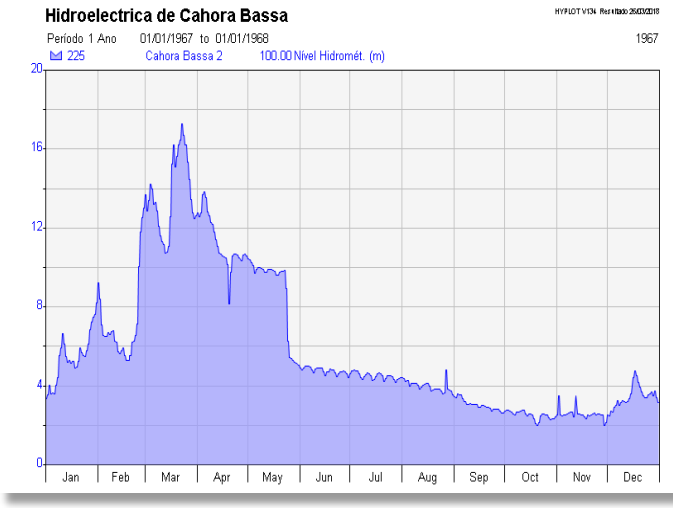
Cahora Bassa Dam

Cahora Bassa

Zambezi River



Hydstra in Portuguese



HYPLOT in Portuguese

Gina and Dylan

Damian

KISTERS at Ozwater2018

Chris Michl from KISTERS will be this year at Ozwater2018 presenting the intelligent alarming case study KISTERS did in 2017 for Yarra Valley Water.

The case study used the WISKI system and the Water Portal to integrate data sources from different SCADA, EM and GIS systems to analyse and interpret conditions in a sewer network.

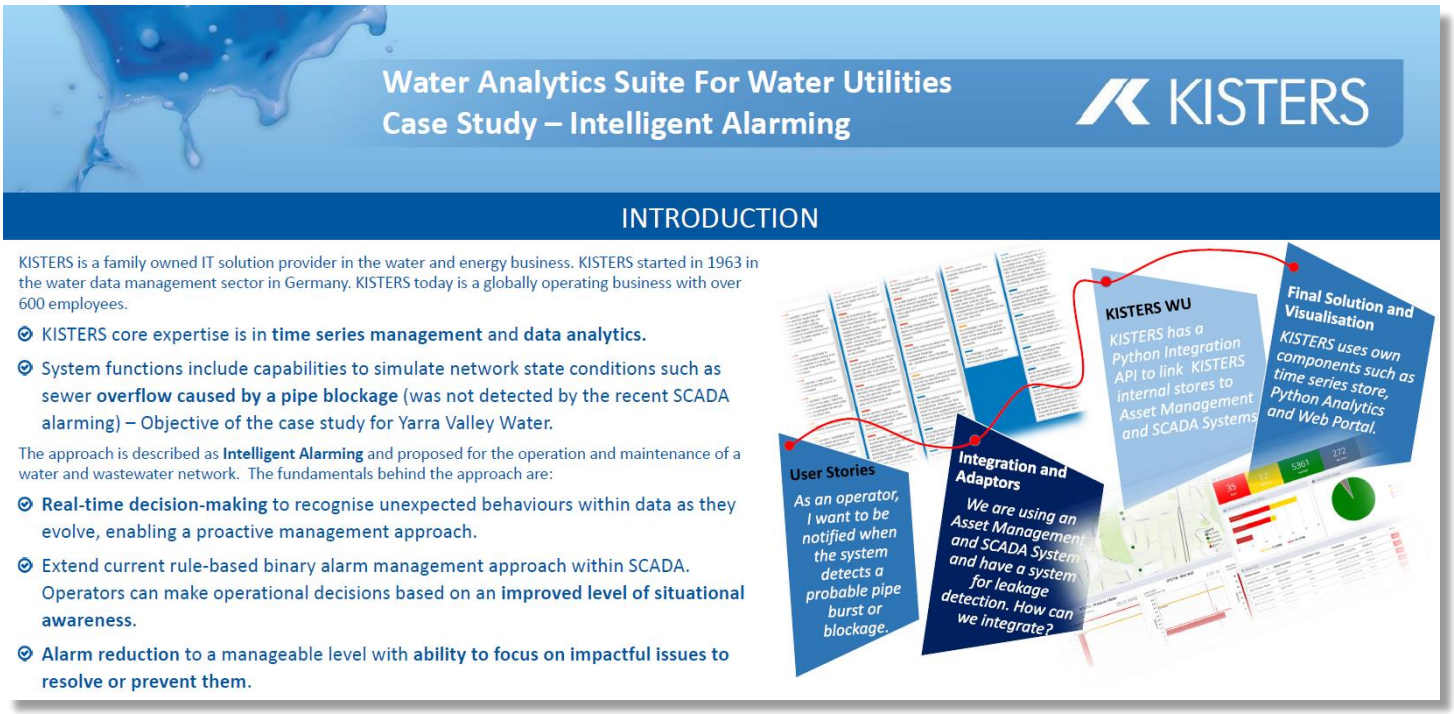
The specific issue examined was the creation of an alarm condition that can warn against the existence of a blockage in the sewer network. An analysis of historical data covering a known blockage event was undertaken to find predictive markers in the data, that could be used to create an alarm when a blockage occurs in the network. A previous alarm comparing the difference between pump cycles was also analysed. KISTERS analysis of the data indicated that a blockage event can be identified by the following conditions in the data of a upstream and downstream pumping station:

- Low inflow into downstream pumping station
- Difference in wet well levels – upstream wet well level exceeds downstream level
- Increase in pressure at upstream pumping station

These specific markers in the data were combined to trigger a warning (possible blockage – 2 of 3 conditions) or an alarm (probable blockage – 3 of 3 conditions). The previous alarm utilising the difference in pump cycles between upstream and downstream pump stations was shown to be a poor indicator of the presence of blockage in the network.

The case study contributed to work KISTERS is doing in the Solution Area Water Utility. KISTERS is working on a solution portfolio for Water Utilities in 2018 and will inform in more detailed in the next newsletters.

At Ozwater, Chris will give a poster pitch presentation in the session 'Excellence in Operations & Asset Management' (time 13:15 to 15:15) on Wednesday 9th of May as first speaker (Pitch Presentation 44, 84-Intelligent Alarming) regarding the case study and KISTERS Water Utility Solution Area. To talk to Chris during the conference look for the following poster:



Chris hopes to see you there!

Customer Survey Results

By Michael Natschke, Aachen

In November 2017 KISTERS invited all users of our water solutions to participate in a comprehensive customer survey. The results provided very useful customer feedback: statistical analyses on the one hand and on the other hand high-quality comments - with praise and suggestions for improvements.

Great variety of participants

Participation was higher than in typical customer surveys. We received feedback from all over the world, more than 60 % from our clients in Europe and almost 20 % from clients both in the US and in Australia. The participants showed great variety in terms of experience with our software, company size and fields of application. Thus we got a universal view of our solutions.

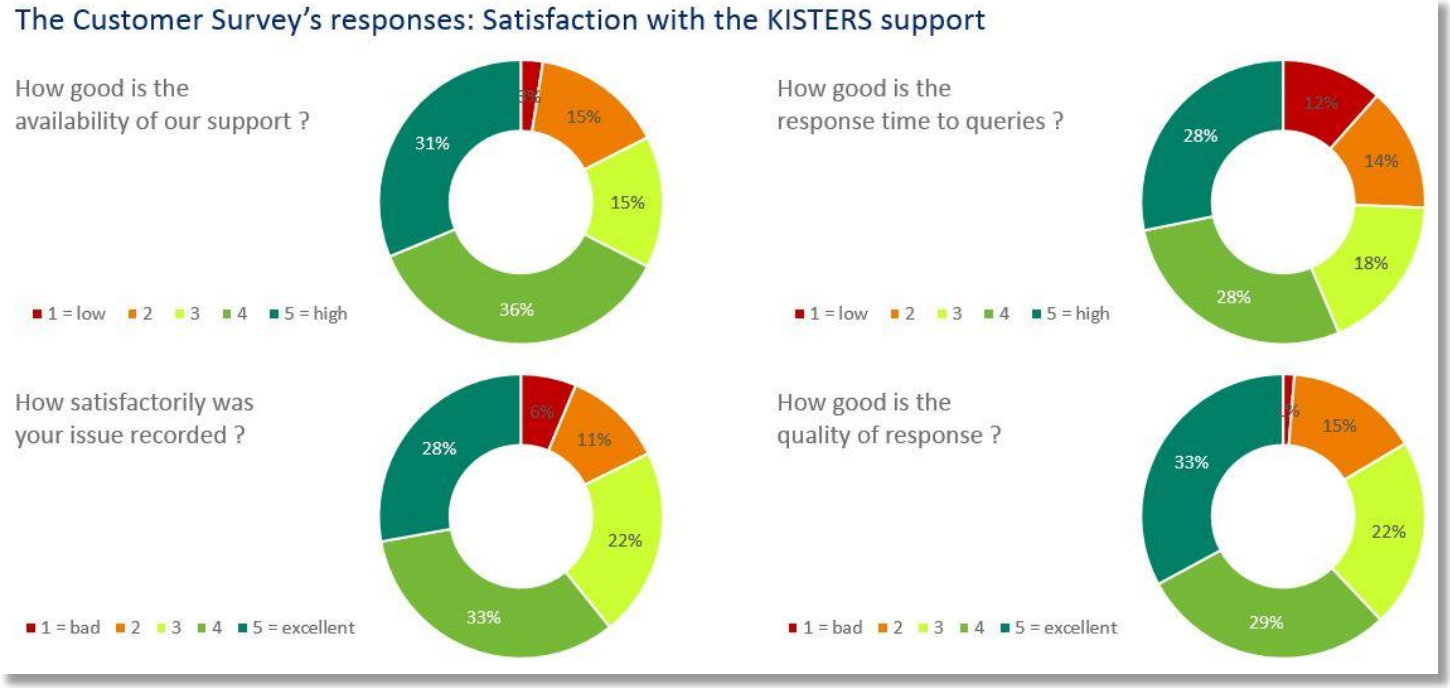
Top results for flexibility, reliability and support

Feedback confirms that our solutions fulfil the users' needs on a very high level in two important aspects among others: Three-quarters of the participants are highly satisfied with the flexibility of our solutions. Nearly as many participants rate the reliability as good or even very good. And above that, our technical support scored high in terms of availability, response times and resolution quality.

Clear trend toward web applications

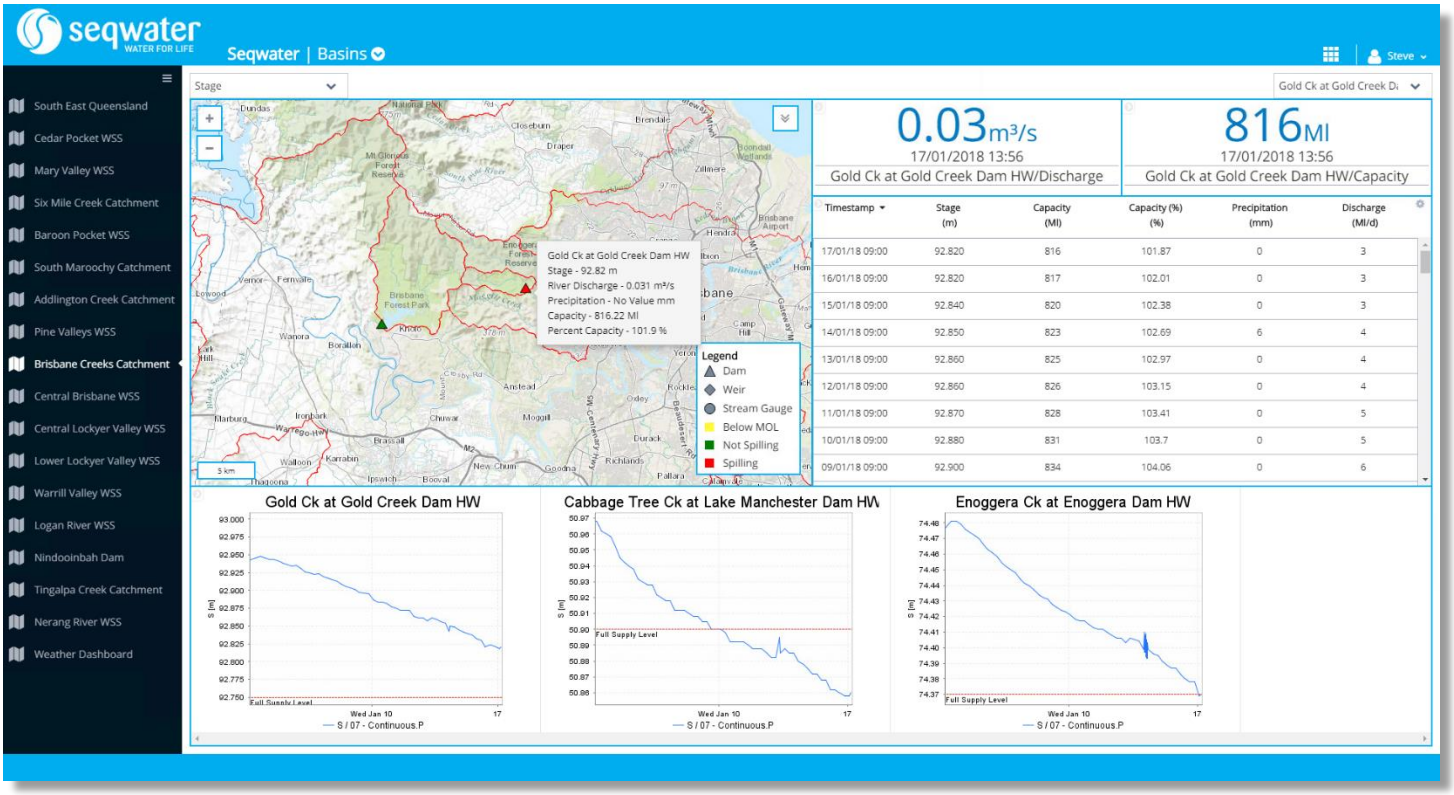
Many participants, especially workflow users, stated that they would like to see more applications running in the web browser. This confirms our conceptual understanding of specialist users, workflow users and public users as well as our development strategy towards more web applications.

Thank you to all for taking time filling out the questionnaire. Of course, we are going to further analyse your comments and suggestions. Our team of developers and solution area managers is already working on the identified improvement areas. We will keep you informed in the upcoming user groups in Australia, the US and Europe, and in our newsletters.



Water Portal Supporting Seqwater Dam Operators

In 2017, KISTERS developed together with Seqwater a Water Portal application for regional dam and catchment operations. The application as shown below presents an overview of recent catchment conditions and gives operators and staff recent information about dam releases, streamflow and rainfall information in the different Water Supply Schemas.



The application went live in March 2018 and is accessible in the Seqwater internal network for all staff. It also offers for dam operators a login to create individual dashboards. The application was developed in the KISTERS Water Portal framework which takes care of the direct interface to WISKI, user authentication and dashboard functionality.

For Seqwater some specific elements for navigation, mapping and data visualisation (real-time data and hourly aggregates) were developed which are also part of the KISTERS standard widget library. The application integrates the following components:

Navigation component

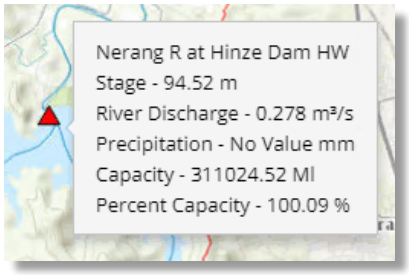
- Parameter and station selection based on Water Supply Schema
- Parameter selection updates displayed mini-graphs (parameter specific)
- For selected stations the last daily values are displayed for all measured parameters (daily or hourly display)

Map component

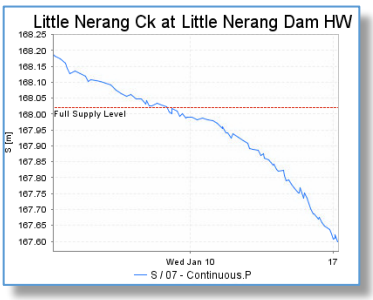
- Water supply Schema based mapping (with background information)
- Map object display based on station characteristic and condition of object (not spilling – normal, spilling, below minimum operation level) – WISKI classification agent
- Object hover over to show station name and last values of all parameters measured
- Click on map orders mini-graph

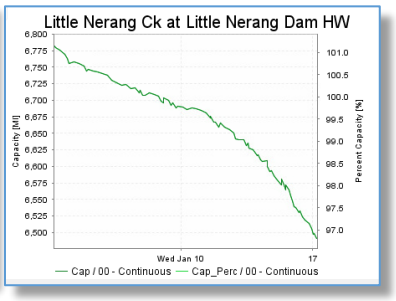
Data components

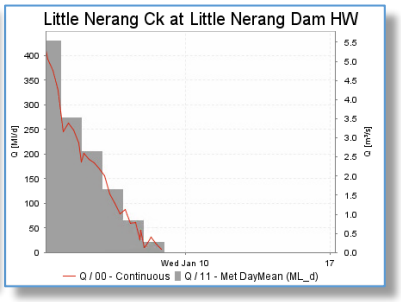
- Last value display in map



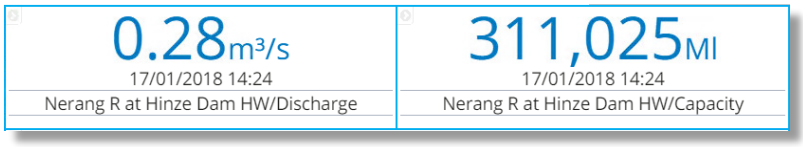
- Parameter based graph templates



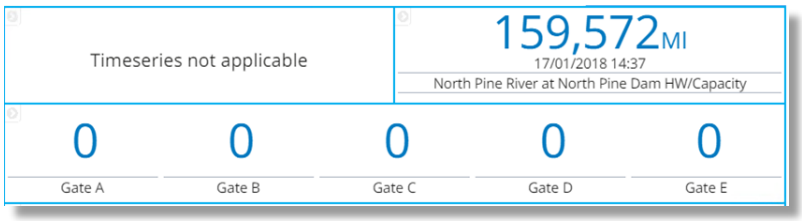




- Individual indicator widget to show last value of storage volume and release



- Multiple indicator widget to show recent gate settings and accumulated release



Contacts at Seqwater are:

John West (john.west@seqwater.com.au)

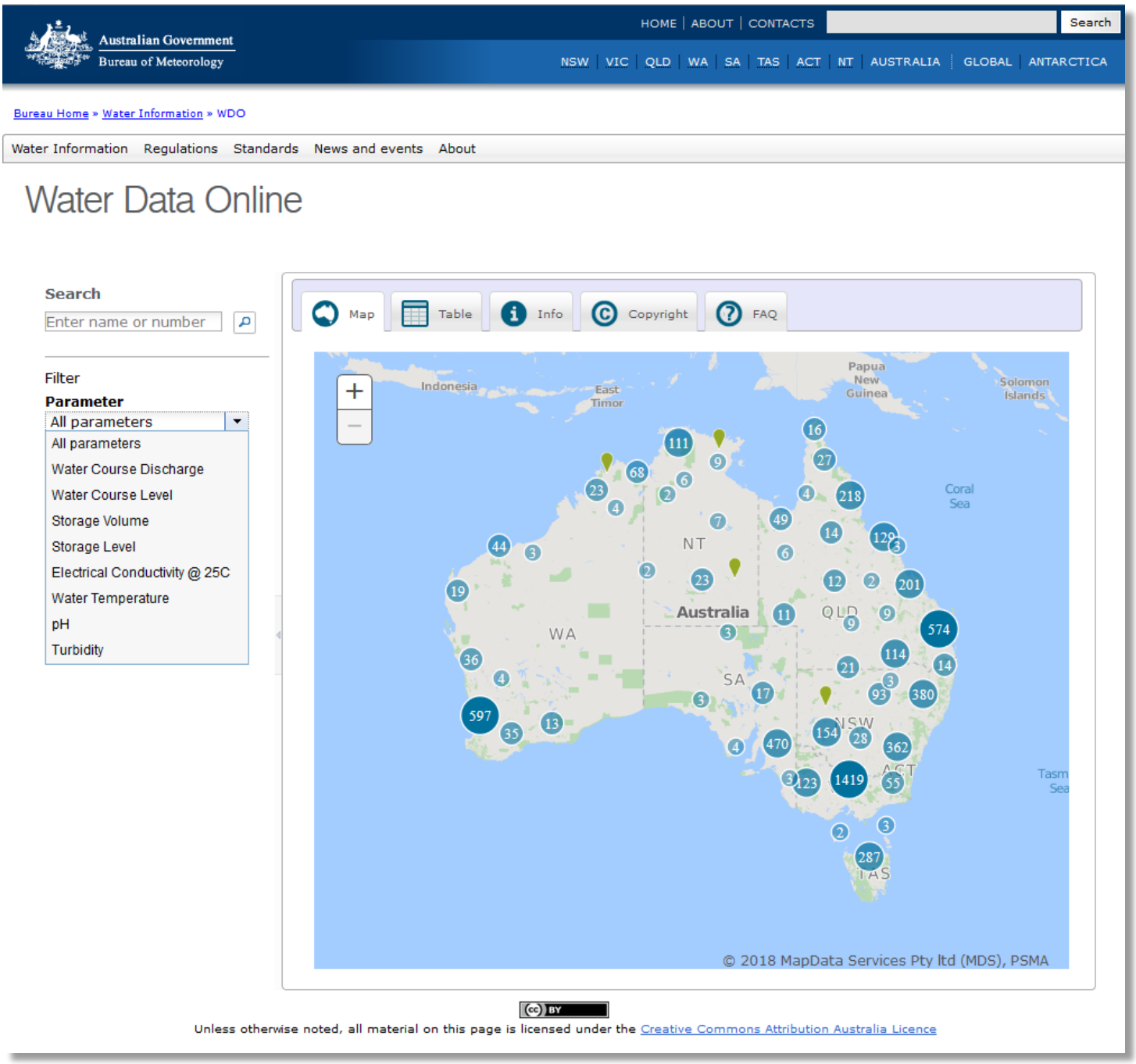
Kevin Loh (kevin.loh@seqwater.com.au)

Water Data Online Enhanced with Water Quality Data

In the last month extended data quality checking was carried out by the Bureau to prepare the release of water quality data. This was finalised in the last few weeks and a new version of Water Data Online was released on the 19th of April that includes these parameter enhancements. The system now allows access to reports and data of over 5800 stations across Australia covering 37 data owners with up to 8 different parameters. The parameters published in WDO are:

- Watercourse Level (Category 1a)
- Watercourse Discharge (Category 1b)
- Storage Level (Category 3a)
- Storage Volume (Category 3b)

- Electrical Conductivity @ 25C (Category 9a)
- Turbidity (Category 9d)
- pH (Category 9g)
- Water Temperature (Category 9h)



A very nice feature to access and integrate WDO content is the direct link to the station page. The URL only needs the correct wcode of the data owner and the station number. See example:

http://www.bom.gov.au/waterdata/station.html?dataowner=w00002&station=410777

Contacts at BOM are:

Joanne Sullivan (joanne.sullivan@bom.gov.au)

Todd Lovell: (todd.lovell@bom.gov.au)

Hydstra Product News

Hydstra V12 Release

Hydstra V12 has been released, and is available on the web site. We talked about V12 at the US and Australian User Group meetings, but the following points should outline some of the more important changes:

- New Delphi compiler XE6 with FireDAC Universal Data Access library should mean faster access to SQL Server data
- Support for HTML, PDF, CSV and XLSX outputs from many programs, such as HYDAY and HYFLOW
- Site id extended to 20 characters everywhere
- Time-series data in a single file, no index files any more
- Multiple log offsets in rating tables for US clients
- Help documentation distributed as HTML files
- Web services support CSV returns for some calls
- Synchronising datasource for accessing data from external web APIs
- HYCANVAS framework for processing GoCanvas field data submissions
- Reporting of site-based HYGIENE failures to region or site owners
- Significant refresh of the Hydstra/WEB look and feel.
- Hundreds of individual program enhancements

It is worth noting that now Hydstra V12 has been released, support for Hydstra V10 ceases. If you are still running V10 please plan to upgrade soon. Hydstra 10.04 was released in August 2012, almost six years ago, and 10.03 was released in September 2010, over seven years ago. Much has changed since then, both in our world, but more importantly in the Windows hardware and software world.

Please contact support for a V12 HYACCESS file, and plan to do an offline test upgrade first if at all possible. If you can't do a test upgrade we suggest you wait a few months before upgrading - remember the old adage about how you can tell the pioneers by the arrows in their backs.

Upgrading from Obsolete Hydstra Versions

Hydstra V9 still continues to run (just), even though it is unsupported. You may have difficulties registering and running the old HYDLL COM object on later versions of Windows as it requires registration as an administrator, which is why we introduced HYDLLP, which links as a DLL and doesn't require registration.

More serious problems will arise when you have to upgrade to a 64 bit operating system as many old 16 bit utilities in V9 won't run at all.

However you can put the V9 system on a modern 64 bit Windows 10 machine, on which it won't run, but it doesn't need to run to be upgraded to V10 and then V11 and V12.

If you are really stuck in the past you may need to start thinking about creating a 32 bit virtual machine running Windows XP to preserve your favourite legacy apps into the indefinite future.

Serious V12 Delphi Zip Problem

We have uncovered a serious bug with Delphi's library for zipping data files in V12, as is used in the Generalised Logger system and also HYBATCH. In Generalised Loggers the result was that raw data files were simply thrown away if HYCONFIG ZIPRAWDATA=YES. In HYBATCH creating outputs of type ZIP would silently fail.

The result of this bug is that if you have been using Generalised Loggers and HYGENMAN to manually process raw data files, all raw files since you installed V12 will be missing from the zip archives under \hyd\log\raw.

The bug has been fixed in V12 patches dated 13/03/2018 or later.

We apologise for this problem, which has only now been drawn to our attention. The Zip library we use is a third-party product and hence out of our direct control.

All other Hydstra zip processes, such as zipping HYDLOG, SVRIMP raw files etc. are zipped using Perl and are unaffected by this problem.

HYMANAGE Perl Hooks

You can now extend HYMANAGE by writing Perl jobs which appear as manage- and-table-sensitive menu items (e.g. under the "Data" or "Tools" menu). The menu items will appear and disappear as you switch from table to table. The Perl jobs will be passed two temporary files:

- An HFF file containing the current record you are sitting on
- An INI file specifying the location of each table in hymanage – archive or work area

After writing the Perl job, you need to add some items to your HYMANAGE.INI, under a section called [managename.tablename], and following the format of items in MAINMENU.INI.

HYGAUGE Enhancements

HYGAUGE can now open discharge measurements that have been exported in the USGS SWAMI format. HYGAUGE can import both ADCP measurements and regular discharge measurements from these files.

QRev is the USGS-approved application for processing ADCP measurements. HYGAUGE is now able to import files that have been exported in XML format from QRev.

The complete collection of supported gaugings formats can always be deduced from the MISCPATH version of HYGAUGE.INI under the [File Open] section. As you patch and upgrade your system you should read the release notes and copy across any relevant entries to your own HYGAUGE.INI in INIPATH if you have one.

The full list of supported importers at present includes:

```
[File Open]
Gauging File = *.hyg,
Scott Technical GLOG File = *.glr, hygauge.glog.pl
AquaCalc File = *.csv, hygauge.aquacalc.pl
Husky File = *.*, hygauge.husky.pl
Sontek FlowTracker File = *.dis, hygauge.flowtracker.pl
Sontek FlowTracker 2 File = *.ft, hygauge.flowtracker2.pl
Sontek RiverSurveyor Stationary Live File = *.dis, hygauge.riversurveyor_stationary.pl
Sontek RiverSurveyor Live File = *.dis, hygauge.riversurveyor_live.pl
RDI StreamPro File = *.txt, hygauge.streampro.pl
RDI WinRiver II File = *.xml, hygauge.winriver.pl
OTT ADC File = *.xml, hygauge.ott.pl
USGS SWAMI File = S_*.xml, hygauge.swami.pl
USGS QRev File = *_QRev.xml, hygauge.qrev.pl
```

HYGAUGE Error Calculations

Our colleagues in New Zealand recently completed a detailed review of the gauging error calculations from a number of different software packages. As a result of the review, led by Mike Ede of Marlborough District Council and Charles Pearson of NIWA, we have made a number of minor changes to the way HYGAUGE computes errors. The changes to HYGAUGE include:

1. Update the values in the [Width Error] and [Depth Error] lookup tables to use relative uncertainty values, rather than absolute uncertainty values.
2. Update the [Rating Error] and [Time Error] lookup tables to use the values from the ISO 748 2007 standard, rather than the values from the 1997 standard.
3. Update the values in the [Systematic Error] section so they reflect the uncertainty at the 95% confidence level, rather than the 68% confidence level.
4. Remove the 0 -> 0 entry from the [Point Error] lookup table.
5. Change interpolation method on all lookup tables, except the [Vertical Error] table, from linear to step.
6. Fix minor bugs in the application of the uncertainty equations within HYGAUGE.

The HYGAUGE documentation has been updated to state that HYGAUGE uses the lookup tables from the 2007 version of the ISO 748 standard, rather than the 1997 version.

Hydstra now produces identical error computations to Hilltop and Tideda, with somewhat larger error estimates than before the changes.

Electronic data submissions to USGS

Many of you in the US are familiar with the USGSCARD format produced by USDAY. For many years, this was the format the USGS required for sending finalized daily values, so they could be imported into their ADAPS database.

```
2       11414170            0006000003                  ENT
3            11414170199710 1    4.5    4.5    4.5    4.5    4.5    4.5    4.5    2.9
3            11414170199710 2    1.2    1.2    1.2    1.2    1.2    1.2    1.2    1.2
3            11414170199710 3    1.2    1.2    1.2    1.2    1.2    1.3    1.5    1.6
3            11414170199710 4    1.7    1.7    1.7    1.7    1.7    1.7    1.7
3            11414170199711 1    1.7    1.7    1.7    1.7    1.7    1.7    1.8    1.9
3            11414170199711 2    1.9    1.9    1.9    1.9    1.9    1.9    1.9    1.9
3            11414170199711 3    2.1     14    247    521    533    573    602    594
3            11414170199711 4    548    529    551    554    556    566
3            11414170199712 1    584    603    576    560    560    566    531    532
3            11414170199712 2    565    560    570    607    607    602    610    609
3            11414170199712 3    620    570    589    601    624    579    530    526
3            11414170199712 4    533    531    526    526    525    510    398
3            11414170199801 1    397    396    397    396    397    396    398    396
3            11414170199801 2    395    397    391    366    406    456    447    475
3            11414170199801 3    468    488    494    506    549    603    600    596
3            11414170199801 4    593    589    599    601    599    591    601
3            11414170199802 1    559    302    498    497    413    369    482    449
3            11414170199802 2    485    521    502    500    500    490    487    491
3            11414170199802 3    537    591    587    582    578    574    569    565
3            11414170199802 4    561    556    552    667
```

Now that the USGS has updated their database, you will be required to send data in a simpler CSV format. As of the 20171211 v12 and v11 patches, USDAY has a new Report Type option for exporting data in the required format. USDAY still supports the old USGSCARD format, but this option may be removed at a later date.

Hydstra Licencing in the Cloud

As agencies move their infrastructure into the cloud, the difficult issue of allowing users from other agencies to log in to Hydstra arises. The following extract from our updated Licensing Issues FAQ from the Help file explains our policy:

Can I use another agency's Citrix, Terminal Server or Cloud installation?

Yes, but you still need your own Hydstra licences. Under no circumstances can users from one agency access Hydstra software that uses another agency's HYACCESS.INI file.

Each agency that accesses another agency's Hydstra system must start Hydstra using a shortcut that points to their own HYACCESS.INI file.

If you already have some Hydstra licences and wish to then access someone else's Hydstra on their infrastructure you must purchase additional Hydstra seats on their system at your marginal seat cost. For example if you have a 10 user TS licence, and need two more seats on someone else's system, they will be priced as your seats 11 and 12, and you will be provided with a 2-seat HYACCESS.INI file for use on their infrastructure.

A handful of existing very long-term Hydstra users have a so-called 'corporate' licence. This is deemed to be a 99 seat licence for Hydstra licensing purposes, and additional seats are charged at the 100, 101 and 102 marginal seat cost.

Perl accessing Excel via ADO under Task Scheduler

Some older Perl processes use ADO to access Excel. We now have a mechanism that doesn't require the presence of Excel, but it does require some redevelopment of the script. A by-product of avoiding ADO is that the script will generally run much faster.

You may find that scheduled tasks have a problem accessing Excel via ADO in later operating systems, throwing errors like:

```
Microsoft Office Excel cannot access the file 'c:\test\SampleWorkbook.xlsm
```

Under some circumstances simply creating a folder of **c:\windows\syswow64\config\systemprofile\desktop** fixes the issue.

There is a discussion at https://social.msdn.microsoft.com/Forums/Lync/en-US/ac2549f5-fc1e-494d-9015-70cb31d3aeb2/opening-excel-workbook-fails-when-run-from-scheduled-task-on-windows-server-2008-rw?forum=exceldev although unfortunately the link within that discussion no longer works. However the above fix worked for at least one client who had migrated to new servers.

Proposed New Telemetry Points data source

We have implemented a new telemetry time-series table in V13, using a TELEMPTS table to store the data. The new datasource is a blocked datasource, which means SVRIMP can be configured to write data to this table directly, HYDMWB can edit the files, and HYWDTF_OUT can export only data that has changed.

- The feature will only available if you are using a SQL Server database
- Accessing TELEM data is somewhat slower than regular TS compressed files
- SVRIMP is slightly slower when writing incoming data to the TELEMPTS table

So what is the benefit?

- Depending on some configuration settings, you can completely eliminate file-sharing access problems. One program can be reading data while another program is writing new points.
- Various block-dependent export routines (like HYWDTF_OUT) see the data as if it were normal TS data, and can therefore run in “change mode”.

Proposed Removal of Telemetry Mode from DATASRC.INI

The new telemetry datasource replaces an experimental (and largely undocumented) telemetry mode into DATASRC.INI which forced all data into a single block per variable (TelemetryMode=yes). While this sped up data acquisition from SVRIMP it had a deleterious effect on HYWDTF_OUT, HYGENEXP, HYBOMEXP and other exporting programs, as the one large single block was touched every time a new point came in. We have now reconsidered our options and plan to remove telemetry mode. Please let us know if your DATARSC.INI has any datasources with TelemetryMode=Yes specified.

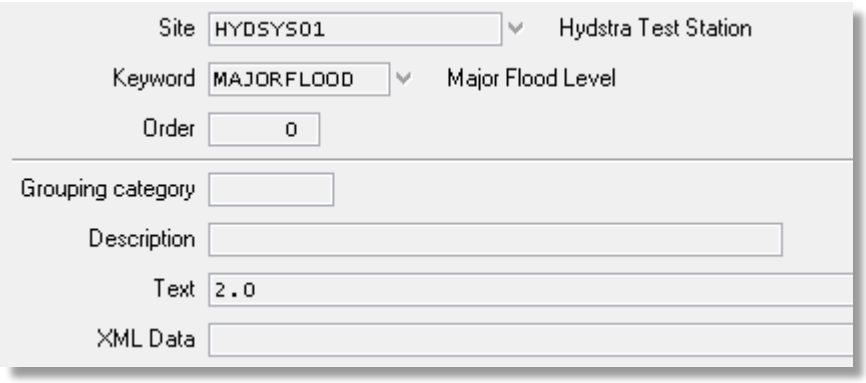
Proposed Removal of Time Series Tables

An even earlier attempt at putting time series into SQL involved the TS* collection of tables (TSFILES, TSBLOCKS, TSPOINTS, TSCOMNTS and TSLOCKS). We don't believe anyone is using these tables, or the datasource of type TSDATABASE, and again we propose to delete them in V13. Please let us know if you are using any datasource of type TSDATABASE.

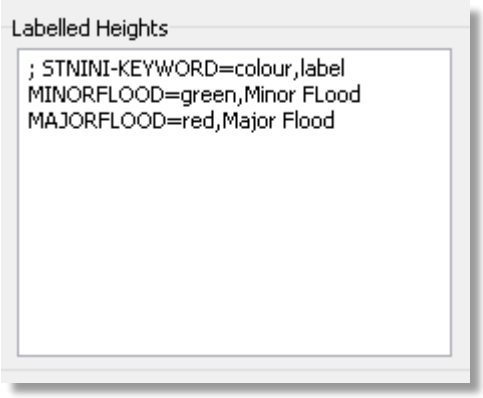
HYRATED Labelled Stage Heights

HYRATED can display a series of heights (different for each site) on the main rating display with a label. For example, spillway levels, historic floods, median-flow height etc.

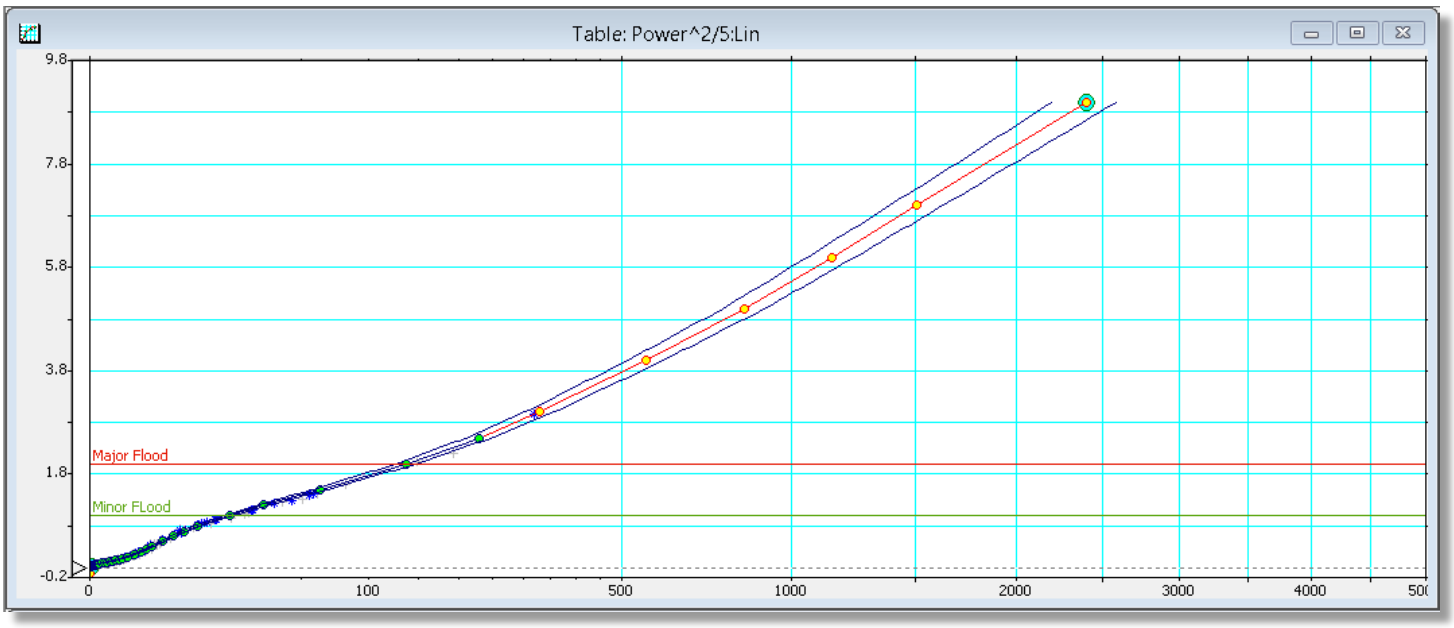
For example set up STNINI:



Then set the Options in HYRATED Options:



And final you see the main rating curve window in HYRATED:



Perl Tips and Techniques

Cumulating program log files

Sometimes it's convenient to print to the Perl log file with Prt('-L') but make the log file cumulative, or perhaps put the log file somewhere else. If you can guarantee singleton access then the following technique redirects output and appends to the end:

```
OpenFile(*hPROGLOGFILE,"${repdir}output.txt",'>>');
```

Hyexcel cell comments

HyExcel.pm has been enhanced to allow you to extract cell comments, provided you use ole=>1 and explicitly request comments=>1:

```
my $value=$excel->GetVal($sheet,$col,$row);
my $comment=$excel->GetComment($sheet,$col,$row)//'';
```

Hydllp utility routines

We have added a couple of utility routines to HydDllP.pm to assist Perl programmers:

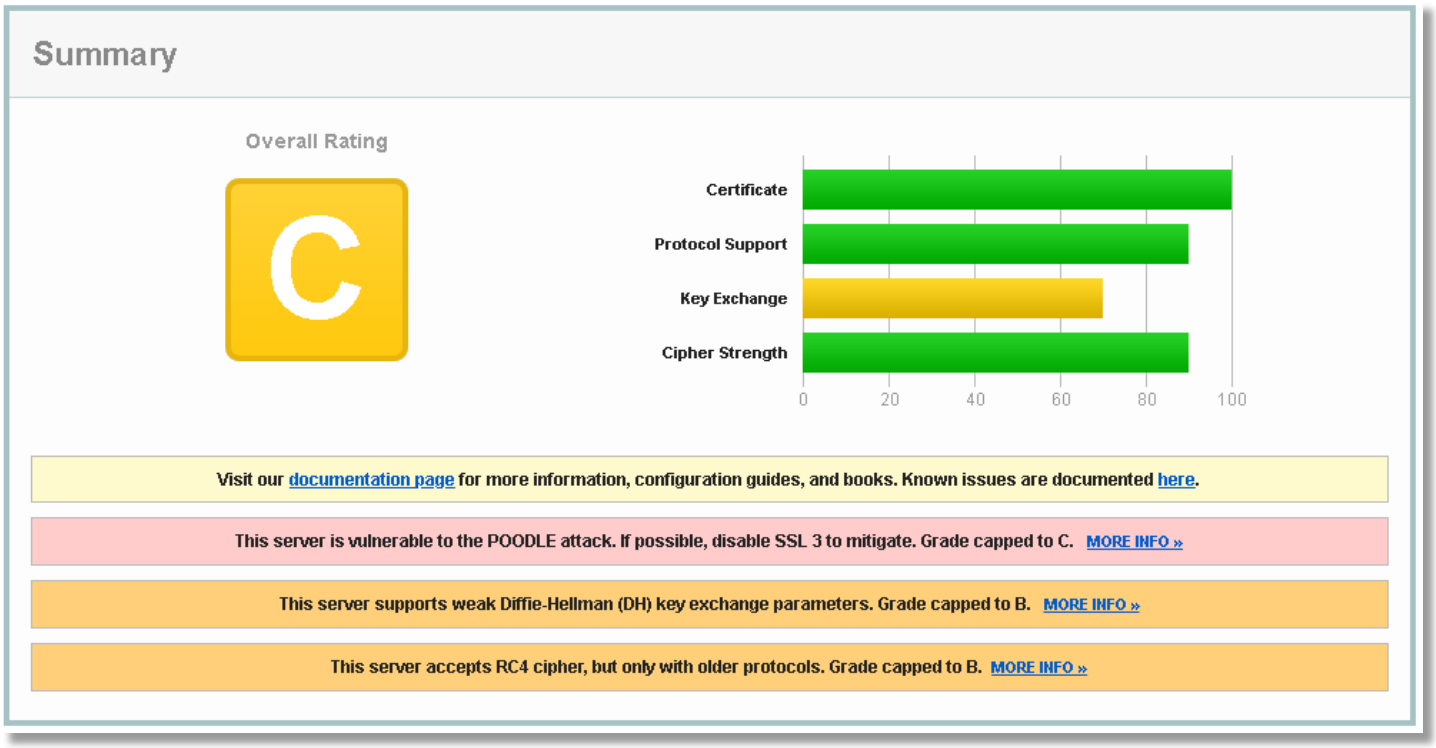
load_table loads a while table into memory, optionally filtered. Handy for retrieving SITE or VARIABLE info, or perhaps loading a CODE group.

db_validate validates that a specified record exists in a table - handy for checking that a SITE or VARIABLE exists. *db_validate* can also optionally log and report errors for you to reduce coding effort even further.

Web Site Security Tester

We have come across a useful tool for probing the security of your corporate web server. Go to https://www.ssllabs.com/ssltest/ and enter the URL of your web site. It will check a range of security settings on the web server and give your server a grading. To save potential embarrassment we suggest you check the box that says *'Do not show the results on the boards'*.

The result of the scan is a grading, with suggestions (often incomprehensible to all but the serious IT geek) on what needs improving:



WISKI Product News

Release Management and Client Base

The current software version is WISKI 7.4.7, which has many further functional developments for the water ecology package KiEco and performance improvements for WISKI server. WISKI 7.4.7 will be the recommended WISKI release for the rest of 2018. Most WISKI customers have recently upgraded to WISKI 7.4.7 or have upgrades pending.

WISKI Support Email and Help Desk

Contacts for the WISKI team at KISTERS in Australia:

Vicky, Chris, Markus and Callum (web developments) offer specialised support for the KISTERS products WISKI, KiWQM, KiEco, KiDSM, KiALM, Water Portal, WDO and KiWIS in Australia and New Zealand.

The 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.

The latest WISKI releases can be found on our download portal at http://kisters.com.au/downloadswiski.html, or can be accessed by navigating through to the support page from http://kisters.com.au.

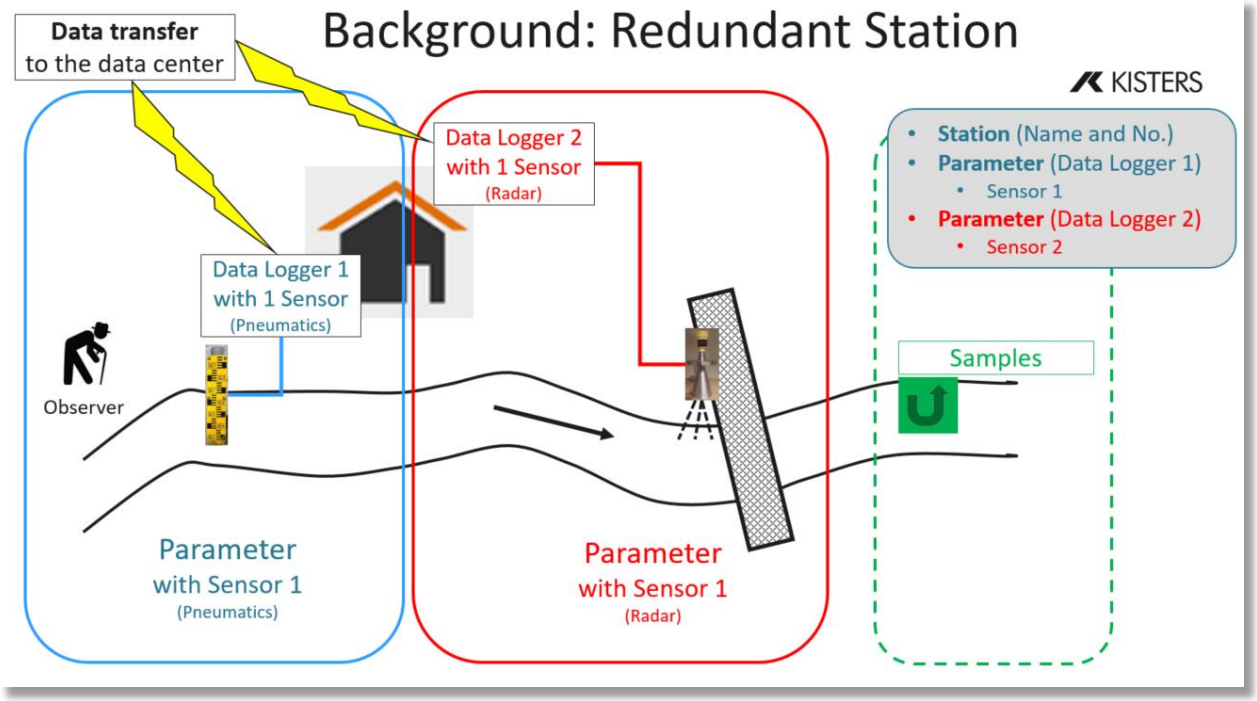
To acquire a username and password to access the download portal please contact the KISTERS support team over the phone at (02) 6154 5200 or email at Wiski-Support@kisters.com.au.

Latest WISKI developments

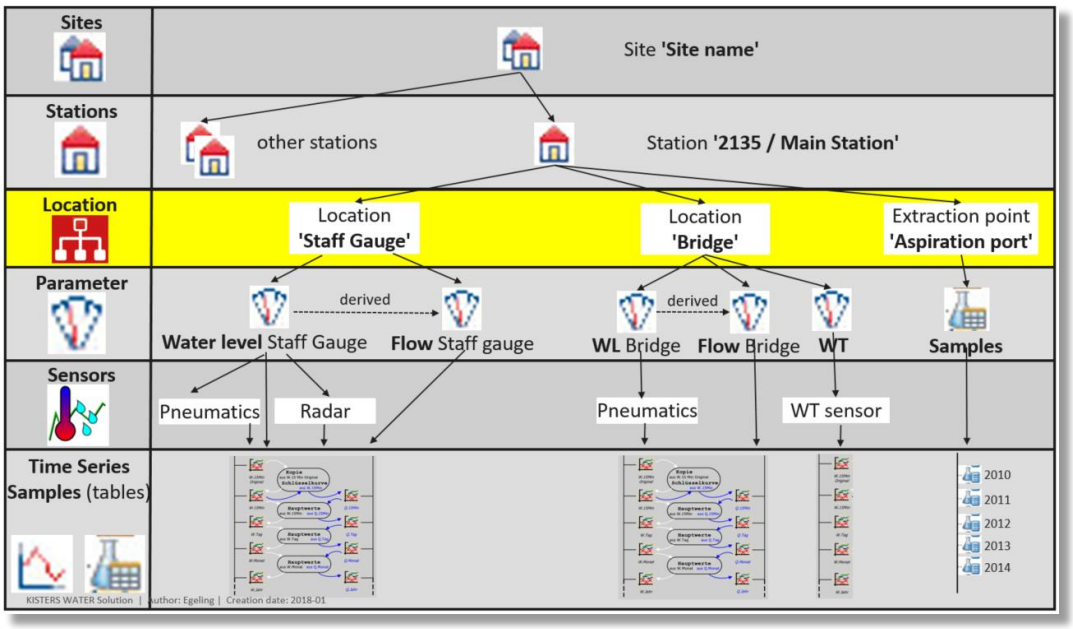
Improvements to the WISKI data structure using the location concept

The location concept allows users to add an additional level between the station and the parameter in the WISKI data structure. This leads to better structuring of data, in particular for Gauging Stations, where multiple sensors might be present to measure the same parameter, Groundwater Stations where multiple boreholes are present or Water Quality Stations. The location concept allows these separate locations to be accurately represented within the WISKI data structure and also allows the storage of additional attributes, such as coordinates and cross sections. This also allows for a clearer distinction of water level sensors as input parameters to rating curves.

Using the location concept a complex station architecture can now be easily represented in the WISKI data tree.



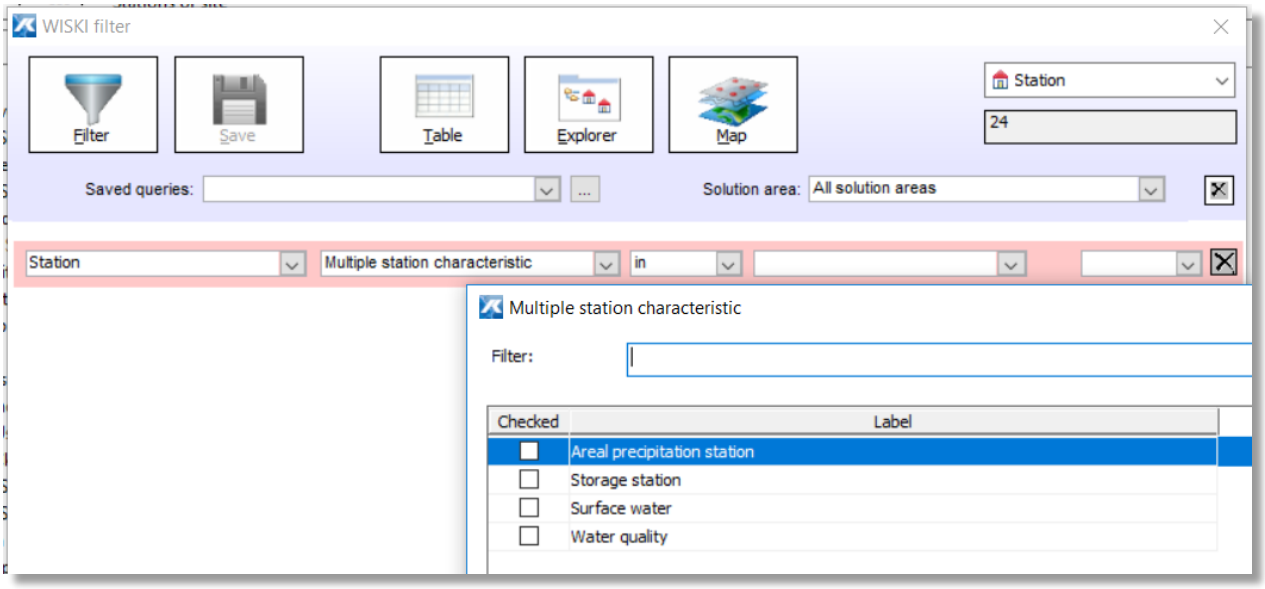
In the above example a station uses two loggers with three distinct locations: 'Staff Gauge', 'Bridge' and a WQ Extraction Point. In WISKI the Staff Gauge and Bridge locations can now each have their own Water Level and Flow Parameters.



Ultimately this leads to clearer organisation and better structuring of time series data. If you would like to know more about how to set up Station Locations in your system contact the WISKI support desk or consult the WISKI help file.

WISKI Filter enhancements

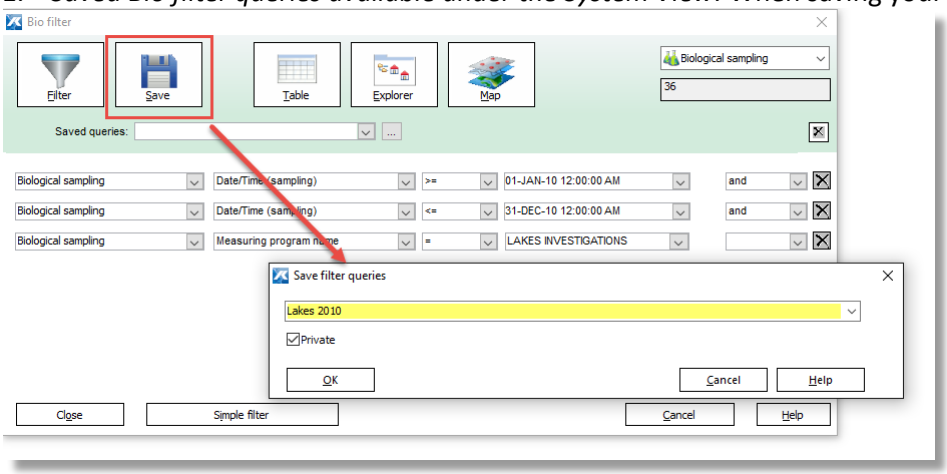
The WISKI filter has seen some recent improvements with the addition of some multiple selection attributes, which utilize a “in” or “not in” filter condition. This allows the construction of more complex queries that were not possible previously. For example you can now create a filter condition that states give me all stations that are not Water Quality Stations.



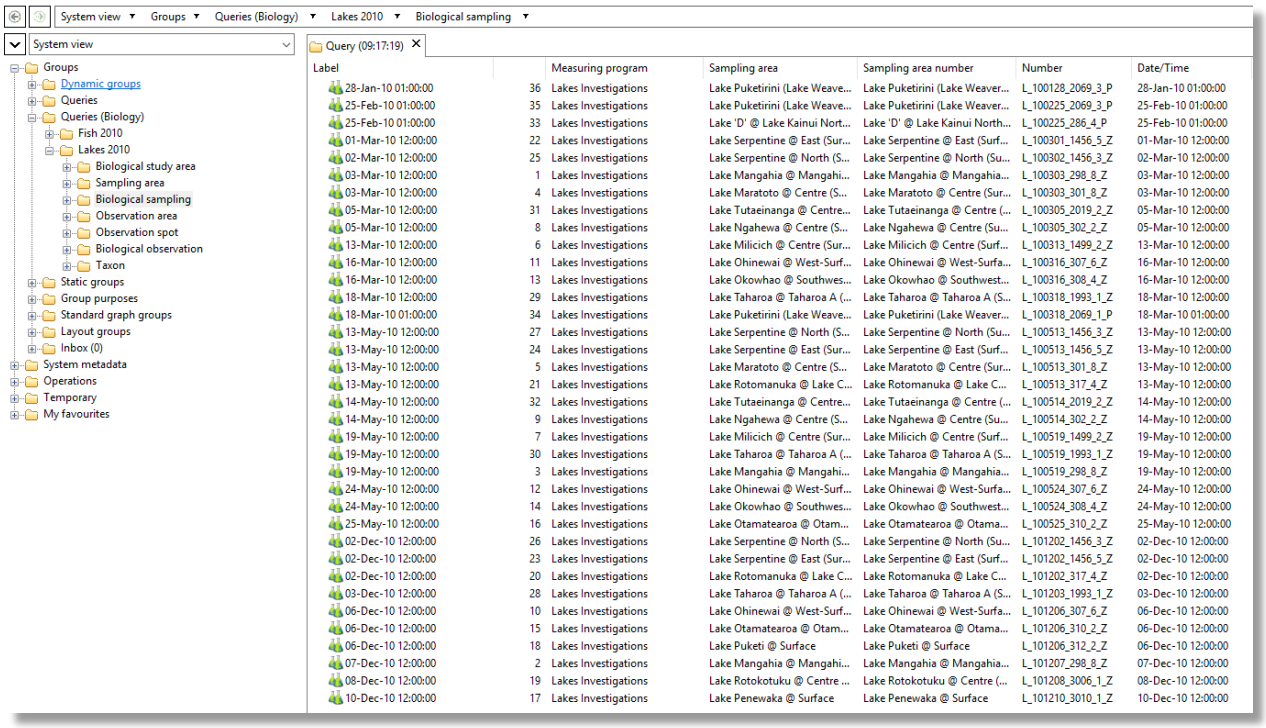
What’s new in KiEco 7.4.7

KISTERS’ Biological module KiEco is constantly being improved and updated through customer feedback and our internal review processes. Below is a snippet of some of the features that have recently been introduced, designed to improve the overall user experience and to increase productivity whilst working within the system.

1. *Saved Bio filter queries available under the System View:* When saving your queries from the Bio Filter here:

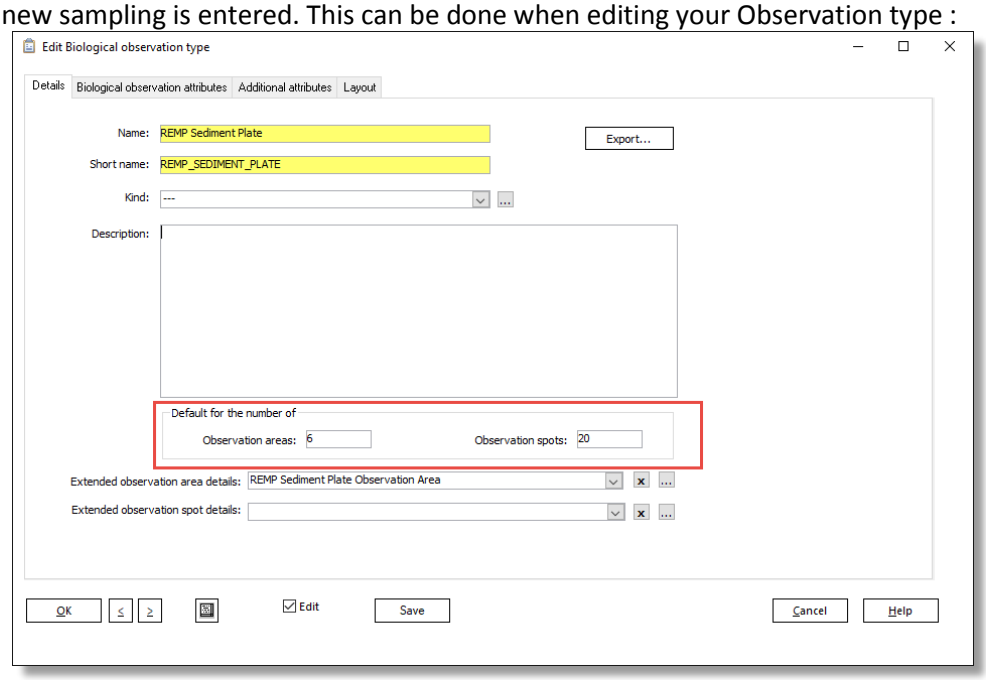


As well as being able to reuse the Filter query within the filter, the query and the results of the query can now also be found in the System view here:

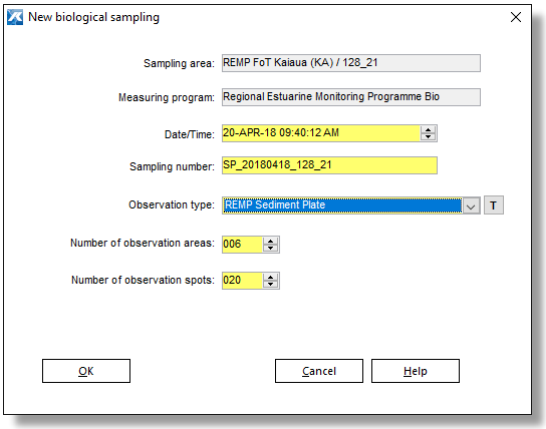


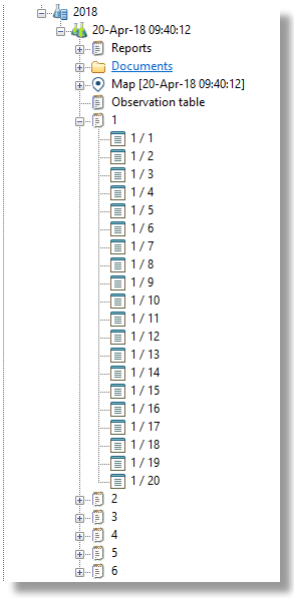
Label		Measuring program	Sampling area	Sampling area number	Number	Date/Time
28-Jan-10 01:00:00	36	Lakes Investigations	Lake Puketirini (Lake Weave...	Lake Puketirini (Lake Weaver...	L_100128_2069_3_P	28-Jan-10 01:00:00
25-Feb-10 01:00:00	35	Lakes Investigations	Lake Puketirini (Lake Weave...	Lake Puketirini (Lake Weaver...	L_100225_2069_3_P	25-Feb-10 01:00:00
25-Feb-10 01:00:00	33	Lakes Investigations	Lake 'D' @ Lake Kainui Nort...	Lake 'D' @ Lake Kainui North...	L_100225_286_4_P	25-Feb-10 01:00:00
01-Mar-10 12:00:00	22	Lakes Investigations	Lake Serpentine @ East (Sur...	Lake Serpentine @ East (Surf...	L_100301_1456_5_Z	01-Mar-10 12:00:00
02-Mar-10 12:00:00	25	Lakes Investigations	Lake Serpentine @ North (S...	Lake Serpentine @ North (Su...	L_100302_1456_3_Z	02-Mar-10 12:00:00
03-Mar-10 12:00:00	1	Lakes Investigations	Lake Mangahia @ Mangahi...	Lake Mangahia @ Mangahia...	L_100303_298_8_Z	03-Mar-10 12:00:00
03-Mar-10 12:00:00	4	Lakes Investigations	Lake Maratoto @ Centre (S...	Lake Maratoto @ Centre (Sur...	L_100303_301_8_Z	03-Mar-10 12:00:00
05-Mar-10 12:00:00	31	Lakes Investigations	Lake Tutaeinanga @ Centre...	Lake Tutaeinanga @ Centre (...	L_100305_2019_2_Z	05-Mar-10 12:00:00
05-Mar-10 12:00:00	8	Lakes Investigations	Lake Ngahewa @ Centre (S...	Lake Ngahewa @ Centre (Su...	L_100305_302_2_Z	05-Mar-10 12:00:00
13-Mar-10 12:00:00	6	Lakes Investigations	Lake Milicich @ Centre (Sur...	Lake Milicich @ Centre (Surf...	L_100313_1499_2_Z	13-Mar-10 12:00:00
16-Mar-10 12:00:00	11	Lakes Investigations	Lake Ohinewai @ West-Surf...	Lake Ohinewai @ West-Surfa...	L_100316_307_6_Z	16-Mar-10 12:00:00
16-Mar-10 12:00:00	13	Lakes Investigations	Lake Okowhao @ Southwes...	Lake Okowhao @ Southwest...	L_100316_308_4_Z	16-Mar-10 12:00:00
18-Mar-10 12:00:00	29	Lakes Investigations	Lake Taharoa @ Taharoa A (...	Lake Taharoa @ Taharoa A (S...	L_100318_1993_1_Z	18-Mar-10 12:00:00
18-Mar-10 01:00:00	34	Lakes Investigations	Lake Puketirini (Lake Weave...	Lake Puketirini (Lake Weaver...	L_100318_2069_1_P	18-Mar-10 01:00:00
13-May-10 12:00:00	27	Lakes Investigations	Lake Serpentine @ North (S...	Lake Serpentine @ North (Su...	L_100513_1456_3_Z	13-May-10 12:00:00
13-May-10 12:00:00	24	Lakes Investigations	Lake Serpentine @ East (Sur...	Lake Serpentine @ East (Surf...	L_100513_1456_5_Z	13-May-10 12:00:00
13-May-10 12:00:00	5	Lakes Investigations	Lake Maratoto @ Centre (S...	Lake Maratoto @ Centre (Sur...	L_100513_301_8_Z	13-May-10 12:00:00
13-May-10 12:00:00	21	Lakes Investigations	Lake Rotomanuka @ Lake C...	Lake Rotomanuka @ Lake C...	L_100513_317_4_Z	13-May-10 12:00:00
14-May-10 12:00:00	32	Lakes Investigations	Lake Tutaeinanga @ Centre...	Lake Tutaeinanga @ Centre (...	L_100514_2019_2_Z	14-May-10 12:00:00
14-May-10 12:00:00	9	Lakes Investigations	Lake Ngahewa @ Centre (S...	Lake Ngahewa @ Centre (Su...	L_100514_302_2_Z	14-May-10 12:00:00
19-May-10 12:00:00	7	Lakes Investigations	Lake Milicich @ Centre (Sur...	Lake Milicich @ Centre (Surf...	L_100519_1499_2_Z	19-May-10 12:00:00
19-May-10 12:00:00	30	Lakes Investigations	Lake Taharoa @ Taharoa A (...	Lake Taharoa @ Taharoa A (S...	L_100519_1993_1_Z	19-May-10 12:00:00
19-May-10 12:00:00	3	Lakes Investigations	Lake Mangahia @ Mangahi...	Lake Mangahia @ Mangahia...	L_100519_298_8_Z	19-May-10 12:00:00
24-May-10 12:00:00	12	Lakes Investigations	Lake Ohinewai @ West-Surf...	Lake Ohinewai @ West-Surfa...	L_100524_307_6_Z	24-May-10 12:00:00
24-May-10 12:00:00	14	Lakes Investigations	Lake Okowhao @ Southwes...	Lake Okowhao @ Southwest...	L_100524_308_4_Z	24-May-10 12:00:00
25-May-10 12:00:00	16	Lakes Investigations	Lake Otamatearoa @ Otam...	Lake Otamatearoa @ Otama...	L_100525_310_2_Z	25-May-10 12:00:00
02-Dec-10 12:00:00	26	Lakes Investigations	Lake Serpentine @ North (S...	Lake Serpentine @ North (Su...	L_101202_1456_3_Z	02-Dec-10 12:00:00
02-Dec-10 12:00:00	23	Lakes Investigations	Lake Serpentine @ East (Sur...	Lake Serpentine @ East (Surf...	L_101202_1456_5_Z	02-Dec-10 12:00:00
02-Dec-10 12:00:00	20	Lakes Investigations	Lake Rotomanuka @ Lake C...	Lake Rotomanuka @ Lake C...	L_101202_317_4_Z	02-Dec-10 12:00:00
03-Dec-10 12:00:00	28	Lakes Investigations	Lake Taharoa @ Taharoa A (...	Lake Taharoa @ Taharoa A (S...	L_101203_1993_1_Z	03-Dec-10 12:00:00
06-Dec-10 12:00:00	10	Lakes Investigations	Lake Ohinewai @ West-Surf...	Lake Ohinewai @ West-Surfa...	L_101206_307_6_Z	06-Dec-10 12:00:00
06-Dec-10 12:00:00	15	Lakes Investigations	Lake Otamatearoa @ Otam...	Lake Otamatearoa @ Otama...	L_101206_310_2_Z	06-Dec-10 12:00:00
06-Dec-10 12:00:00	18	Lakes Investigations	Lake Puketi @ Surface	Lake Puketi @ Surface	L_101206_312_2_Z	06-Dec-10 12:00:00
07-Dec-10 12:00:00	2	Lakes Investigations	Lake Mangahia @ Mangahi...	Lake Mangahia @ Mangahia...	L_101207_298_8_Z	07-Dec-10 12:00:00
08-Dec-10 12:00:00	19	Lakes Investigations	Lake Rotokotuku @ Centre ...	Lake Rotokotuku @ Centre (...	L_101208_3006_1_Z	08-Dec-10 12:00:00
10-Dec-10 12:00:00	17	Lakes Investigations	Lake Penewaka @ Surface	Lake Penewaka @ Surface	L_101210_3010_1_Z	10-Dec-10 12:00:00

2. *An Observation type can now have a default number of Observation Areas and Observation Spots.* As it is normally the case that a well-defined survey method will always have the same number of Observation Areas and Spots (e.g. transects and quadrats) it makes sense to have these defined against the Observation Type and rolled out whenever a new sampling is entered. This can be done when editing your Observation type :

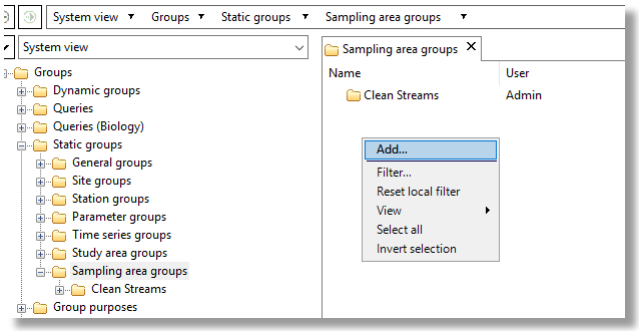


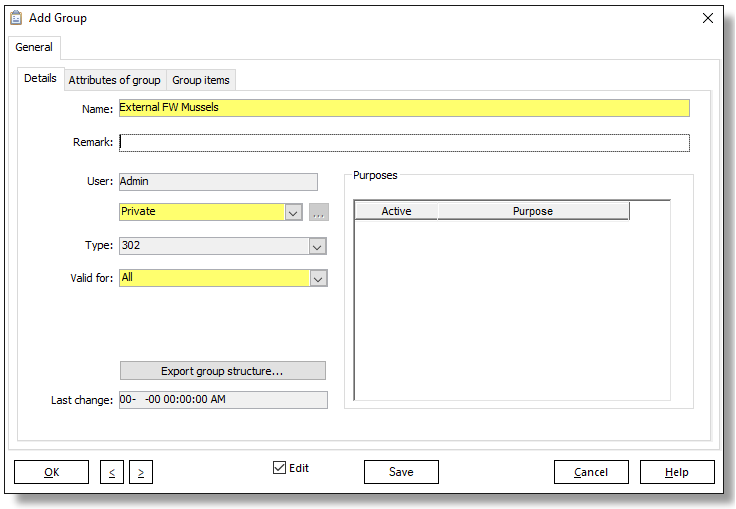
Then when you create your new sampling these numbers are prepopulated and automatically created



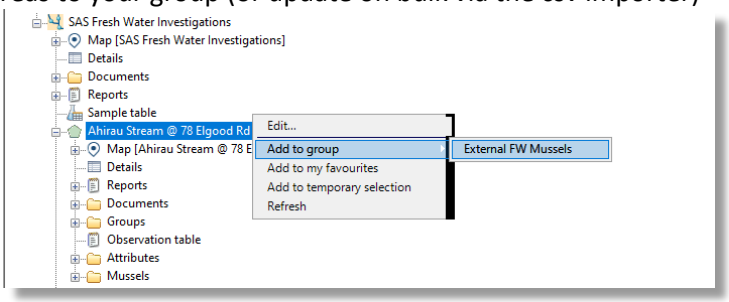


3. *Introduction of Study area and Sampling area groups.* The creation of static groups for Biological Study areas and Sampling areas is now possible. These groups can then be utilised in filters and when exporting and reporting. Create a new group in the System view as follows :

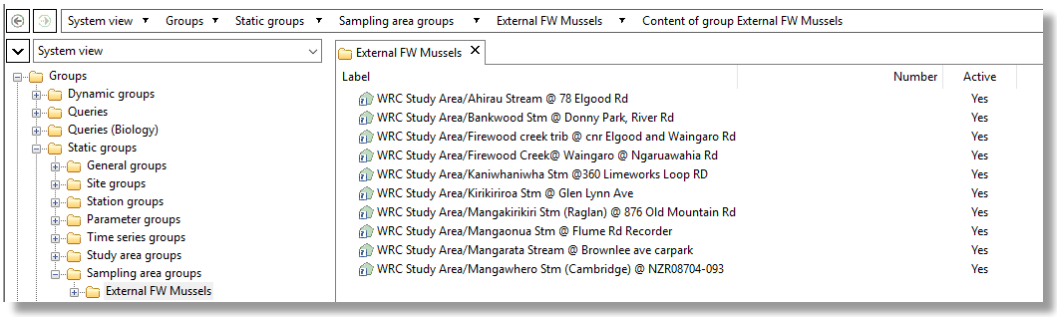




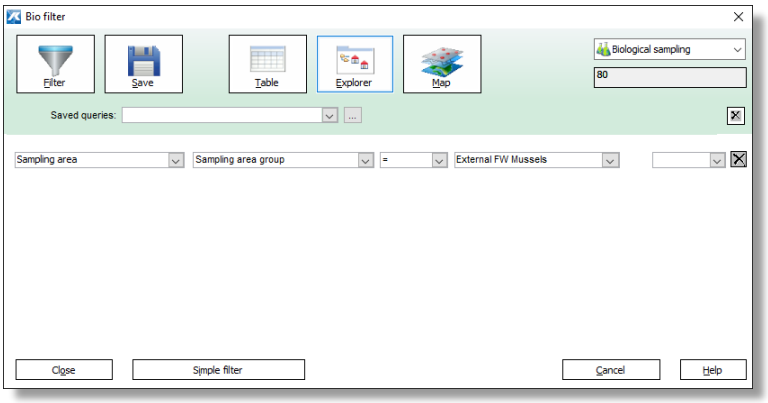
Manually add Sampling Areas to your group (or update on bulk via the csv importer)



Group members will then appear in the system view



And then use the group in the Bio filter



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

https://water.kisters.de/en/news/

https://water.kisters.de/en/press-room/

https://www.kisters.net/NA/news/

KISTERS Technology 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.

Staff News

Paul Sheahan Rejoins KISTERS

Paul Sheahan

We are pleased to welcome Paul Sheahan back into the KISTERS fold after an absence of a decade. Paul will be known to many older hands, having previously worked for KISTERS Pty Ltd and its predecessor company Hydstra Pty Ltd from 2001 through to 2008. He has had extensive experience in all aspects of the water industry and has a deep understanding of water data issues.

While Paul was with the BoM he was involved in a number of major projects including:

- Procurement of a time series data management system for the establishment the national hydrological archive.
- Designing the implementation of the WISKI system into the BoM to ensure that a very large system is stable and able to be maintained by a modest group.
- Procuring and deploying the National Hydrological data archive web presence - http://www.bom.gov.au/waterdata/
- Sourcing data though working with data supplier organisations.
- Working with KISTERS to enable tools to be provided for the provision of data to the BoM.
- Establishing the requirements for the first National hydrological data archive to be routinely updated.
- Establishing the national interoperability standards that enabled sharing and comparison of data from all agencies in Australia.

Paul 's title is Assistant General manager, and he will be acting as Bill Steen's deputy and will be involved in management and marketing issues within the Australasian KISTERS group.

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
- Advanced Hydstra

- Hydstra 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
- Basic WISKI
- Advanced WISKI
- 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 you interest and notify you when the next course is planned.

Training Schedule for 2018

Upcoming training courses are now published on the KISTERS website at http://kisters.com.au/training.html.

The following training courses are currently scheduled for 2018:

Course	Duration	Dates
Administering Hydstra	2 days	18 - 19 July, 2018
Basic Hydstra	2 days	17 - 18 October, 2018
Advanced Hydstra	2 days	21 - 22 November, 2018

If you are interested in other training or other dates, please email your interest to support@kisters.com.au.

Courses will be held at the KISTERS Canberra office. If you are interested in attending a course please contact us via support@kisters.com.au

Videos from Training Courses and User Group meetings

The slides and video presentations from previous Australian KISTERS User Group meetings are available from our web site at http://kisters.com.au/user_groups_aus.html . KISTERS clients can request a login from support@kisters.com.au to view the material.

We have also recorded a few Hydstra training course in their entirety, available at http://kisters.com.au/trainingvideos.html and again you can request access from support@kisters.com.au. Topics include

- Advanced Hydstra
- Hydstra Administration
- MODSYN modelling
- Advancing Your Hydstra Skills

It's worth noting that these videos are recorded live during real training courses and may include discussions with the trainees, sometimes on organisation-specific topics.

US users can request a login from KNA to view the KNA User Group videos at http://www.kisters.net/NA/kisters-portal/login/.

Information

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Note - KNA will be moving in March 2018 to

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