



## iQuest News – December 2011

Welcome to our first and only newsletter for the year! 2011 has been very busy for us, with several large software and hardware projects keeping us occupied. We have released the new barometrically compensated level sensor - the iLevel, completed the much awaited upgrade of the iRIS 350 to the iRIS 350X, overhauled the HydroTel™ Client/Server communications, created a new HydroTel™ Web Client (details below) and moved nearly all software development to the latest Embarcadero tools.

This year has also seen the first major sale of hardware into South America with 50 iRIS 150 dataloggers going into Brazil and potential for further orders. We have also supplied several hundred hardware products into New South Wales for their various hydrometric and water metering projects this year. We have also been pleased to have had significant sales into our local NZ market with a number of organisations upgrading and taking on new projects.

Overall, it has been a very successful year and we'd like to take this opportunity to thank you all for your support and feedback!

### Staff News

Steffi went home to India in May for 4 months with her husband James and returned with her first baby boy Jhuan (Jo) born on 14 June. Steffi and her family have since been granted permanent residence in New Zealand and with the help of James' mum they have settled back into Hamilton and Steffi came back to iQuest full time in late August.

Our part-timers have had some outstanding achievements this year. Justin (Mike's son) won the HP Touch The Future competition (<http://www.facebook.com/HPAppChallenge>), developing an application for the HP Touchpad. He developed a traveller's aid integrating Google Maps and Google Places to quickly find specific locations based on type. Jared has been selected for a summer internship at the University of Waikato Computer Science Department and is working there at the moment. He will do Honours for his Bachelor of Computing and Mathematical Sciences next year.

On the sporting and fitness front, Jacquie had most of the year off from Touch refereeing due to injury but she is on the mend now. Chris took up softball again after a few years off and his team went on to win the regional final last weekend. Mike scuba dived and walked all over and around Rarotonga instead of relaxing on the beach. Malcolm ran the Auckland marathon (somewhat slower than his last effort 6 years ago!).

### HUGM 2011

The HydroTel™ User Group Meeting was held in Rotorua back in May. This was a very full day as we had not held a HUGM in 2010. There were approximately 30 attendees, including several who were there for the first time.

There were a number of presentations on HydroTel, hardware products and even case studies. These included one each by Mike Lysaght from our Australian agents (Hydrological Services) and Phil White from Auckland Council.

Malcolm presented a light-hearted overview of us as "Kisterians" and how being part of the Kisters Group has been of benefit to all. We always value the candid and comprehensive discussion that takes place during the day and also over the usual excellent HUGM dinner. This input is fed back into our ongoing development and support planning.



## Products

### Software Products

#### HydroTel™

HydroTel™ is now up to Version 4.7. The Server and Client are now built using Embarcadero RAD Studio XE which has allowed us to radically change the communication layer between them. The Borland Socket Server which had served HydroTel™ faithfully for 10 years was causing a bottleneck. This could sometimes make the system frustratingly slow when more than a handful of clients were in use, as it queued each request. The Borland Socket Server was removed in Version 4.5 and client/server communication is now fully parallel-processed, resulting in better user experience in large systems.

V4.7 included a significant component change with the Comms Agent being split into three separate agents. Previously, the single Comms Agent managed all communications tasks via every interface and protocol type. The three new agents are:

- HydCommsAgent. This agent now only supports serial (direct RS232/RS485, radio, dial-up etc) and UDP interfaces.
- HydTCPServerCommsAgent. Provides listening TCP server interface(s) for incoming connections from IP capable dataloggers and iCE3 3Gs.
- HydTCPClientCommsAgent. Initiates outbound TCP client connections to remote TCP servers, which include some satellite based devices and iRIS 350X and iCE3 3Gs in TCP server mode.

As part of the current V4.8 development, all Agents except those using RS232 communications have now been migrated to the RAD Studio XE tools. Full testing of these will take place in the new year. The remaining agents such as Comms and SMS that use a serial port require low-level changes to the Serial Comms framework. This significant but non-urgent task will also be tackled next year.

#### HydroTel™ Web Client

The HydroTel™ Web Client concept is now a reality, with the initial development funded as a project for the NSW Office Of Water. The Web Client provides HydroTel™ users with the ability to access the key functions of HydroTel™ from any web browser (tested against IE 8/9, Firefox and Chrome).

This product will continue to be developed to include as much HydroTel™ functionality as possible and will become available for other users in the future. Current functionality includes:

- Login to different security groups;
- Configure, add and remove Districts, Catchments, Sites, Objects and Points;
- Configure Loggers;
- View all data at District, Catchment, Site, Object or Point level including images and notes;
- View Graphs and Samples, and combine multiple traces on a single graph;
- Change User Profile;
- View Event Logs and Comms Logs;



## iLink2

iLink2 as it is currently dubbed, is a state-of-the-art successor to our existing and now somewhat dated datalogger support application, iLink. Development of iLink2 is now well advanced and we hope that the first release will be in the first quarter of 2012.

As a preliminary "teaser", this screen-shot shows iLink2 connected to an iRIS 350X which is logging data from an iLevel via SDI-12. The view displays the name, units of measurement, current value and last logged value from each enabled sensor in real-time. This resizable main form auto-matically adjusts to neatly show all enabled sensors up to the maximum of 20 in the iRIS 350X.

WP (kPa)	WL (m)	WT (degC)	AP (kPa)	AT (degC)	Batt (Volts)	Quadrature Encoder.
102.038 102.043	0.371 0.372	24.31 24.25	98.397 98.384	29.29 29.21	17.13 17.14	0 4710 4707

To keep it streamlined and forward looking, it has been designed to only support our current products (iRIS 150, iRIS 350X, iCE3 3G and iLevel). These all use the same basic configuration and datalogging methods. iLink2 includes the same comprehensive device configuration forms as used in HydroTel™ (from V4.6). It also uses the same iQuest protocol communications engine as the HydroTel™ Comms Agent which now synchronises development of the two.

iLink2 is the first software product we have written to be fully translatable. It will be translated into German and Spanish prior to its initial release. Other languages will be added later as needed.

NOTE: When iLink2 is complete and well-proven to provide complete configuration support, it is our intention to phase out the terminal based configuration in the current hardware products. Removing support for this will free up considerable resources in the devices, simplify the code making it easier to manage and also reduce the number of modes their RS232 port can be in!

The existing iLink will still be supported and maintained to a limited extent to provide ongoing management options for all our older products.



## Hardware Products

### iRIS 350X Communication Option Modules

Two optional communications boards are now available for the iRIS 350X. These modules are fitted in place of the standard wireless modem module. Note: they can only be used in iRIS 350Xs with PCB revision 1.2 or later (serial number AG4-0685+). The two modules are:

**Ethernet:** This enables the iRIS 350X to directly connect to LANs or Ethernet capable satellite equipment such as Inmarsat BGAN units.

**Iridium SBD (Short Burst Data):** This option gives a compact, low power solution for satellite communication in remote areas. It also requires the HydroTel Iridium Agent to be installed to process the incoming data from the Iridium system.

We are currently developing a third comms option module that will provide RS232 / RS485 connectivity.

These pictures show the three communications options:



Standard Wireless Modem



Ethernet Module



Iridium Module

## KiLog Integration

The Kisters Group has an open and collaborative view between fellow companies to share ideas and technology. Out of this is the aim to reuse and integrate common "modules" into what are generally very different products, developed with different tools.

Recently Steffi has been working on a project to integrate HydroTel™ with the common Kisters Logging module "KiLog". This will enable seamless viewing of HydroTel event logs from WISKI or other Kisters applications.

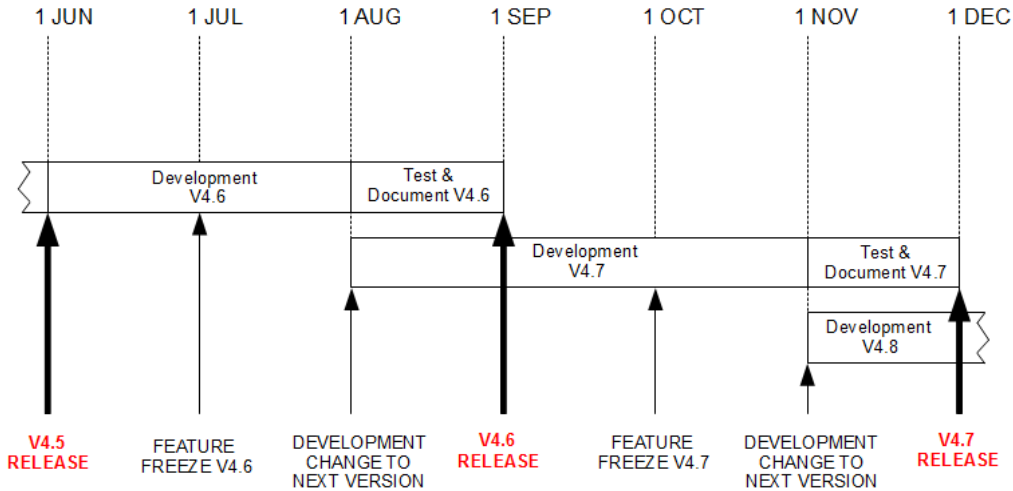
## Kisters Technical Workshop

Malcolm and Ross will be heading out from summer heat into winter chill in late January when they attend the 2012 Kisters Technical and Partners week in Aachen, Germany. This event is held annually and has proved to be a very productive and worthwhile opportunity for us to have quality time with our international colleagues from the Kisters Group of companies.



## Release Policy review

As most of you will now be aware, we now have a structured quarterly release policy for our Software products and for Firmware and Software for our Hardware products (see diagram below). This has been in place since May and in 2012 we will review this. It is likely that we will move to less frequent releases now that HydroTel™ has had many lingering "anomalies" ironed out. This will allow us to include more enhancements between releases. Any feedback on this topic is appreciated.



## In Closing...

Our final day for this year is Thursday, 22nd December and we open again on Monday, 9th of January 2011.

**In the event that you require any support or help over the holiday period, please call Mike's mobile on +64 21 763-953. Second on the list is Dave and his mobile is +64 21 489-617.**

We wish you all, your families and colleagues a very Merry Christmas and happy New Year. We hope you are all able to take some time out and be refreshed - ready for 2012, which promises to be quite a year!



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