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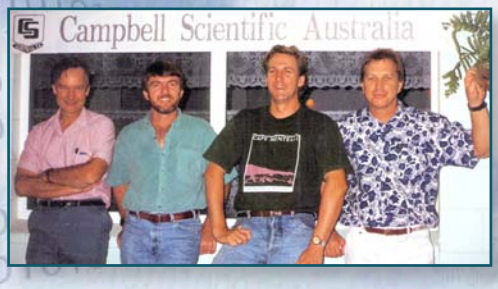

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A Change of Leadership at CSA

After 18 years at the helm of CSA, it is with mixed feelings that I have resigned as Managing Director.

In 1993, I was fortunate enough to obtain three year's leave without pay from CSIRO where I had worked for the previous twenty years. Starting out as a one man band in an empty warehouse, I was full of enthusiasm with little idea of the rollercoaster ride that was ahead of me. Throughout that journey, it has been a constant comfort to know that I have always had the full support and friendship of the Campbell Scientific group of companies behind me. This, combined with a product range of exceptional quality, has always meant that CSA would rise to be the wonderful success that it is today.

When we started in CSA in 1993, we were a barely known instrumentation name in Australia. Our goal from the start was to become the number one data logger brand sold in Australia and it is with great pride we can state that this goal was achieved several years ago. As the new kid on the block, we initially had serious competition from names such as Datataker, Mindata, MACE, Unidata, Monitor Sensors and Environdata. With prices significantly higher than the competition and a strong "Buy Australian" sentiment at the time, it wasn't going to be easy. Our policy from the start was to provide exceptional customer service - a policy that we have tried to maintain to this day. For the most part, I feel we have been successful. We still regularly receive comments from clients, new and old, on the quality of service we provide.

As I recently cleaned out my office, it was interesting to look back over my diaries for the last 18 years and to see just how many of the early customers are still Campbell Scientific clients today. A significant number of our customers have become mentors, friends, colleagues and drinking partners over that time, and it is this side of the business that I will miss the most. Hopefully my part time role will still involve some customer interaction in the future.

Much of the credit for the success of CSA must go the incredible people that have worked for our company over the last 18 years for without them CSA would not have survived. Names such as Alex Thomas, Chris Kellett, Ron Russo, Jason Beringer, Chris Goding, Simon Leeds, Sue Lingard, Gavin Shaw, Corinne Malot, Michelle Douglas, Jason Gunders, Belinda Beer and more recently Dave Boadle and his intrepid team of application engineers are amongst those with whom you would be familiar. To these people I owe a debt of gratitude. You have made my role much easier than it would have otherwise been.

Finally, Paul Campbell, Bert Tanner and Keith Bristow have also played a pivotal role in the success and development of our company. Thank you for your counsel, your wisdom, and your patience as I have stumbled through the process of making CSA a success.

The recent passing of my good mate and mentor, Bert Tanner was a major factor in my decision to retire. Bert died not long after he had announced his retirement and before he could enjoy the fruits of his labour. It was a wake-up call that made me re-evaluate my lifestyle and decide to spend more time with my wife and grown up children, my grandson, on travelling and on hobbies that I had shelved due to lack of time.

I am indeed fortunate that CSA has given me the ability to retire at fifty seven and hopefully have quite a few more years of active lifestyle before I begin to slow down.

I thank each and every one of you with whom I've been involved while at the helm of CSA and thank you for your custom and friendship. I hope that I will see you around the traps in my semi-retirement. I say semi-retirement because I have accepted the role of Chairman of the CSA Board and part time Director so hopefully I will still manage to attend the occasional conference and customer visit in the future.

And in with the new...

CSA's New Managing Director is Rob Kurz

Rob has a degree in Electronic Engineering from Curtin University in WA. Rob started his career in the mining/rail industry in Australia and pioneered much of the work done in developing instrumentation & data logging equipment to understand long train dynamics & diesel electric locomotive performance. Rob spent the first nine years of his working life with Rio Tinto Corporation before relocating to the then world leader in rail system data acquisition, Hasler Ltd. in Switzerland. After several years as a technical and project manager, Rob moved into a Sales Management role to manage a range of public and private customers throughout the United Kingdom and North America .

In the mid nineties, Rob moved into the telecom industry and held several senior sales and management operations roles in Europe and the Americas with Ascom Transmission, a Swiss based telecommunications products group. When Ascom was subsequently acquired by Keymile, Rob successfully took on the role of Managing Director of the startup company Keymile Brazil Ltda, and was based in Rio de Janeiro . From 2008 – 2010, Rob rounded out his North American career back in the rail industry with UGL Rail, managing the sales and business development operations in North America.

Given Rob's extensive experience in data acquisition, telecommunications, sales, product management , and business operations, the Board of CSA is excited at the prospect of having Rob lead our company to new heights. We welcome Rob, his wife Audrey and their two teenage children to Townsville. Having spent their family life in Switzerland, the USA and Brazil, they are no strangers to moving abroad or to living in warm climates. Rob and his family moved to Townsville early January from the United States, and despite these past experiences , it was a still quite an adventure for the family to sit through Cyclone Yasi after only a short time in Australia.

A Message from Rob

It's been only several weeks now since Steve handed over the day to day operations of CSA and already many strengths of CSA have become very apparent to me.

As a provider of world class data logging and environmental monitoring solutions, "you the customers", are very much in focus during the CSA succession implementation.

We demonstrated our commitment to maintaining our market leadership position by passing on price decreases of up to 10% as a result of the continual strength of the Australian dollar. As a small company based in Australia we are aware of the effects of the strong economy and substantial inflation on local products and services and we are working very hard to maintain our competitive price on products and outstanding support to all customers.

This year we will be very active supporting the various industry trade shows and I will make a concerted effort to attend them and hopefully meet many of you in person. I will be attending OzWater 2011 *in Adelaide in May. Later in the year we will be present at the Bushfire CRC Conference Sydney, Irrigation Australia in Launceston and OZflux in Perth. Additionally, Steve and I will visit several of our customers over the next few months as part of the handover process.*

I also recommend customers take advantage of the suite of training courses on offer. Our products very often are integrated into complex measurement systems and our specialised training will benefit users of these systems immensely.

As the new MD I will be working closely with the CSA team to ensure we continue providing our customers with excellent products at exceptional value for money with outstanding support.

Unfortunately Cyclone Yasi cut power to our premises for over a week and we were unable to operate over that time. It was a timely reminder of how the environment affects our daily lives and I am looking forward to working in a company where our products are used to monitor nature's ever-changing and unpredictable elements.

Finally should you feel compelled to contact me directly with comments and suggestions please contact me on rob@campbellsci.com.au, or at our Townsville office on +61 7 4772 0444.

Are you planning on wasting your allocated budget this year?
Don't leave your end of financial year orders until the last moment.
Order now to avoid the traditional June last minute rush!

news cont.

Departures

Since our last Online, one of our three Gavins, Gavin Feather, has left CSA for greener pastures. Gavin started with CSA way back in 1999 as a trainee electronics technician. Gavin completed a four year electronics traineeship under our guidance before moving from production into the repair department. While working as a repair tech, Gavin completed a Bachelor's Degree in Computer Science at James Cook University. In 2005, Gavin left CSA to work as a data technician with the Australian Institute of Marine Science where he played a pivotal role in the design, configuration and deployment of the GBROOS project at Heron Island & One Tree Island on the Great Barrier Reef. Gavin returned to CSA as an Application Engineer in 2009 where he subsequently served many of our clients. Gavin has now left CSA to work for Hoban Smith Industries, one of our key clients in the mining industry. We wish Gavin every success in his new position & thank him sincerely for his contribution to CSA over the years.

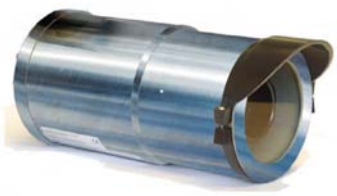
Arrivals

Daniel Roebuck joined CSA as a trainee Application Engineer in October 2010. Now that Dan has completed his training, he is doing a great job of dealing with customers on a daily basis. Dan has dual degrees; both a Bachelor of Applied Physics and a Bachelor of Information Technology from CQU Out of work, Dan enjoys hiking, squash, computer games, tennis and karate in which he has achieved a black belt. Dan also enjoys socializing with his mates and is a regular attendee at Dave Boadle's weekend get-togethers.

David Hammond from the UK is our most recent Application Engineer to be appointed. David has an MSc in Applied Meteorology and a PhD in Transportation Meteorology, both from the University of Birmingham. David hits the ground with his feet running due to the fact that he has worked with Campbell Scientific Ltd in the UK for the last several years in the R&D Department. David is a keen mountain biker and can't wait for his shipping container to arrive from the UK so that he can get back in the saddle. As a meteorologist, David felt extremely fortunate to be able to study Cyclone Yasi in great depth from the balcony of his unit in only his second week in Townsville. David's wife Laura, a fully trained nurse, has found immediate employment in the Mater Hospital post-operative department. It is a tremendously brave move for a young couple to relocate and start a new life in Australia and we wish them both the very best for a wonderful future.

New Products

CC5MPX
High Resolution Digital Network Camera



The CC5MPX is Campbell Scientific's first high resolution digital network camera with video capabilities. It's designed to operate in extreme temperatures with minimal power consumption while producing images of up to 5 megapixels.

FEATURES

- 5 Mega pixel Image Sensor
- Video Capable of 720P 1280x720 (MPEG4), 640x480 (MPEG), 320x240 (MPEG4)
- C-Mount Lens with a DC IRIS
- Programmable Still Image Resolutions (JPEG)
  - 2592x1944 (5MP)
  - 1280x960
  - 1280x720
  - 640x480
  - 640x352
  - 320x240
  - 320x180
- Image or Video Capture Triggers
  - 2 Independant Self Timers
  - Motion Detection
  - Web Page Control
  - External Trigger
- Communications
  - Web Page Interface
  - FTP
  - Email
  - Web Page Control

Contact us for more information

SNEAK PREVIEW - COMING IN 2011
OBS500
Turbidity Probe with Antifouling

The **OBS500** combines a backscatter sensor (better at measuring high turbidity) with a second sidescatter sensor (better at measuring lower turbidity). This SDI-12 probe uses digital processing.

The OBS500 incorporates the CleanSense™ Antifouling Method (patent pending) to ensure the accuracy of its measurements. The CleanSense method uses a shutter/wiper mechanism to protect and clean the optics. This antifouling method also includes a chamber filled with a biocide that continuously leaches out over the optics while the probe is in the closed position.

Contact us to be notified when this product is released

clearance products

We Need More Room!

Our warehouse manager is getting seriously cranky & wants this gear to go, so we're offering the following items at greatly reduced prices.

SDS-122 Serial Data Switch

The SDS-122 is a two-way data switch that allows two modem devices to be connected to one datalogger. For example, this allows you to toggle between retrieving data from the datalogger locally (e.g., with a laptop computer) while the datalogger is also connected to a telephone modem. The SDS-122 is controlled by a datalogger control port or logic signals. The SDS-122 can support both DTE and DCE devices without the need for a null modem cable, and can operate in either automatic or manual mode.

Usually $750 - **Now Only $250** (3 only)

CR1000 or CR800 Stack Mounting Kit

The 17565 stack bracket is used in CR800 or CR1000 applications where it is desirable to have the datalogger attached to a bracket and up off the enclosure backplate rather than mounted directly to the enclosure backplate. The bracket mounts to the backplate of our enclosures using screws and grommets in the diamond-shaped holes. The base of the datalogger mounts in the keyhole slots and a small peripheral can be secured with the Velcro strap underneath the datalogger.

Usually $37 - **Now Just $20** (4 only)

LLAC4 - 4 Channel Low Level AC Module

The LLAC4 is a small peripheral that increases the number of low-level ac signals a data logger can monitor. The module enables four data logger control ports to emulate pulse counting channels by converting the low level ac signals to the logic levels read by the control ports. To use the LLAC4, the data logger control ports must accept high frequency pulses. Data Loggers whose control ports accept high frequency pulses are our CR23X and CR5000. The CR200-series loggers are also compatible but the low-level ac signals must not exceed 1 kHz.

The LLAC4 is often used to measure up to four anemometers, and is especially useful for wind profiling applications.

Usually $240 **Now Selling for $150** (4 only)

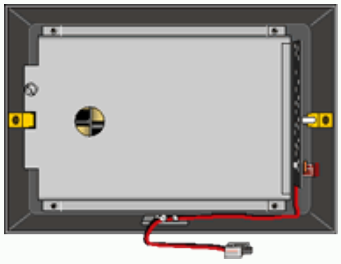
3 ROD 15CM TDR PROBE RG58 CBL x 15M

The CS630 is used in TDR100-based systems. This probe consists of a Sanoprene head, three pointed rods, and a standard RG58 cable. The length of each rod is 15 centimeters, allowing the probe to be used in high electrical conductivity soils (maximum soil bulk electrical conductivity of 3.5 deciSiemens/meter). The RG58 cable is suitable for lengths up to 15 meters as measured from the tips of the probe's rods to the TDR100 reflectometer.

Usually $190 - **Only $100** (8 to clear)

CR3000 Alkaline Battery Base

This CR3000 or CR23X base option can be ordered to replace a damaged base or to retrofit the datalogger with a different base option. The 10519 includes ten alkaline D cells.



Usually $530 - **Sale Price - $250** (one only)

CR5000 Base w/Sealed Rechargeable Battery

Order the sealed-rechargeable base to replace a damaged base or to retrofit a CR5000 that has a low-profile (no battery) base. The 10516 includes two 6-V, 7-Ahr sealed rechargeable batteries (installed) and charging circuitry.

Usually $690 - **Now Only $250** (one only)

CS408 - Pressuresys Pressure Transducer SDI-12 with 10M Cable

The CS408 is an SDI-12 submersible pressure transducer, manufactured by Pressure Systems, that measures surface water, ground water, or hostile fluid levels. It has a piezoresistive sensor that incorporate an isolated stainless steel diaphragm into a stainless steel package.

Usually $2420 - **Now Half Price - $1210** (2 only)

Application of CS616 to Determine the Water Balance from a Raingarden

Perrine Hamel – Department of Civil Engineering, Monash University

Urbanisation dramatically modifies the catchments water cycle. Specifically, hydrological studies have shown that the increase in impervious areas in a catchment is responsible for highly detrimental effects on streams: changes in both water quality and flow regimes have been identified as major stressors of stream ecosystems. To address this issue, Water Sensitive Urban Design has been developed around the world for several decades: this alternative way of managing stormwater makes use of a wide range of techniques, from the implementation of rainwater harvesting tanks to the use of all kind of infiltration systems (e.g. swales, biofilters, "raingardens"). The overarching aim is to keep as much water as possible in the catchment (further lost by reuse or evapotranspiration) to alleviate the stream ecosystems' stress in urban environments.

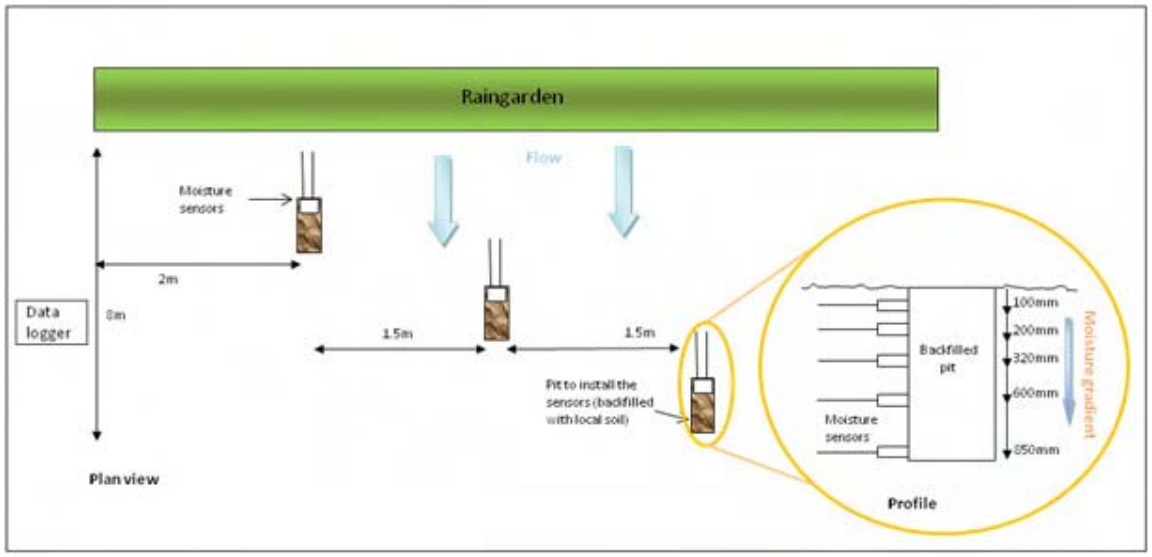


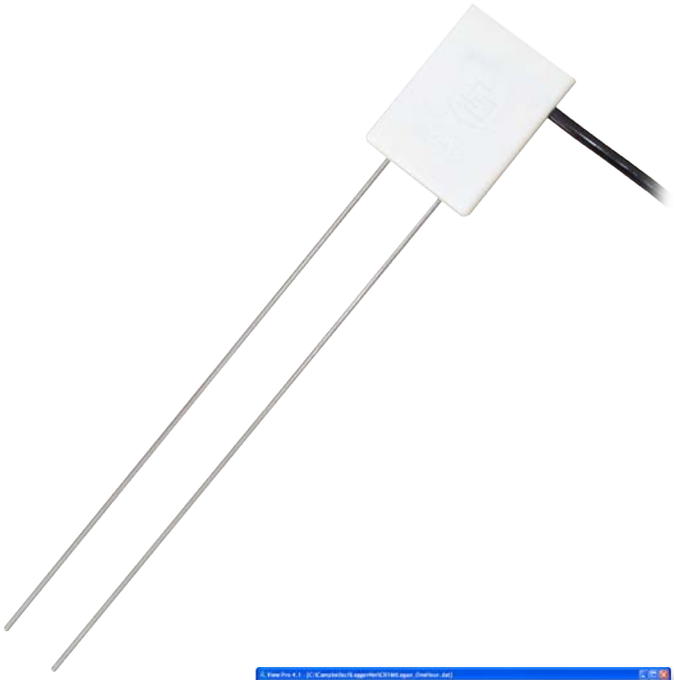
Figure 1 - Raingarden experimental set up

However, there is still little known on the consequences of a large scale implementation of these systems. Will they enhance evapotranspiration (with the beneficial effects on urban microclimate)? Will they efficiently contribute to the groundwater recharge? A prerequisite to address these questions is the knowledge of the local water balance of a raingarden: therefore it is of great interest to partition the fluxes coming from a raingarden (i.e. determine the ratio between seepage and evapotranspiration).

To achieve this objective an experiment carried out by Monash University's researchers started in the 450ha Little Stringybark Creek catchment (surroundings of Melbourne). It consisted in monitoring a raingarden for inflow and outflow, water level in the trench, and surrounding soil moisture profiles. Therefore, at three locations of the site, soil moisture probes (CS616) were inserted (rods facing the raingarden) at 10, 20, 32, 60 and 85 cm depths (see Figure 1). Data are recorded every 30 min, allowing to assess the extent to which the raingarden influences soil moisture. Finally, processing the moisture profile data with a soil water redistribution model makes it possible to infer the resulting evapotranspiration and deep seepage from the surrounding soils.

CS616 / CS625 Water Content Reflectometer

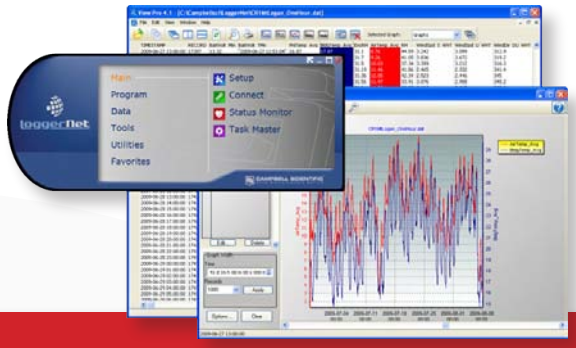
Time-Domain Reflectometry is a proven technique for measuring volumetric water content. The CS616 and CS625 sensors allow data logger users to monitor soil moisture using TDR-based principles without the costly cable testing equipment that is generally used in research applications.



The probes consist of an epoxy-coated circuit board that is connected to two, 30cm stainless steel rods. When activated, the circuit board generates an electrical output which is transmitted along the rods. The time taken for the transmission and subsequent reflection of this signal is based on the dielectric permittivity of the material in contact with the rods. In the case of soil, this is governed predominantly by water content.

The sensor output is connected to one of the data logger's single ended analog inputs by the four-conductor cable. The data logger program is used to convert the probe's analog (square wave) output into a volumetric water content measurement.

The CS616 probes are suitable for use with our CR800 series, CR1000, CR3000 & CR5000 data loggers, while the CS625 has been specifically designed to work with our smallest data logger, the CR200 series.



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- Campbell Scientific Data Logger Hardware, Operations & Capabilities
- Introduction to PakBus & Loggernet
- Hands on programming using the CRBasic language
- Network & Advanced features of PakBus & Campbell Data Loggers and much more.....

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"Very valuable - wish I'd done it earlier"

"Trainer excellent - will be sending more people"

"Same as in the field - excellent subject expert"

"Very happy with what I'm going away with"

"Fantastic presenter"

"Outstanding knowledge"

Oceanography in the Gulf of Mexico

Recent events in the Gulf of Mexico—oil spill, red-tide algae blooms—have shown the need for real-time accessibility of oceanographic data for this region. Quick access to this information can show the extent of damage and help in planning responses. In response to this need, Florida State University (FSU) was asked to design a telemetry system that would retrieve oceanographic measurements from a tower located about 12 mi off shore.

The tower already hosted a weather station with various atmospheric instruments and a Campbell Scientific CR3000 datalogger. The CR3000 stored data from the sensors and then transmitted the data to shore via a radio modem. FSU had the task of integrating an existing group of oceanographic instruments on the ocean bottom to the datalogger and radio system on the tower.

Before this project was undertaken, each of the oceanographic instruments stored its data until divers could visit the site, uninstall the instruments, go to the surface and retrieve the data, and return the instruments to the bottom. Integrating the ocean-bottom sensors into the telemetry system on the tower would make a huge difference in the accessibility of this highly desirable information.

Eric Howarth, a biologist with FSU, was able to design a system in which a cable carries the data from the sensors, through a conduit secured to the ocean bottom, then up to the telemetry system high on the tower.

As the system now functions, the oceanographic intelligent sensors and sondes are mounted in a protective housing in water 66 ft deep and about 625 ft away from the tower. The instruments measure current speed and direction, wave height, water temperature, conductivity, pH, turbidity, and dissolved oxygen and nitrate.

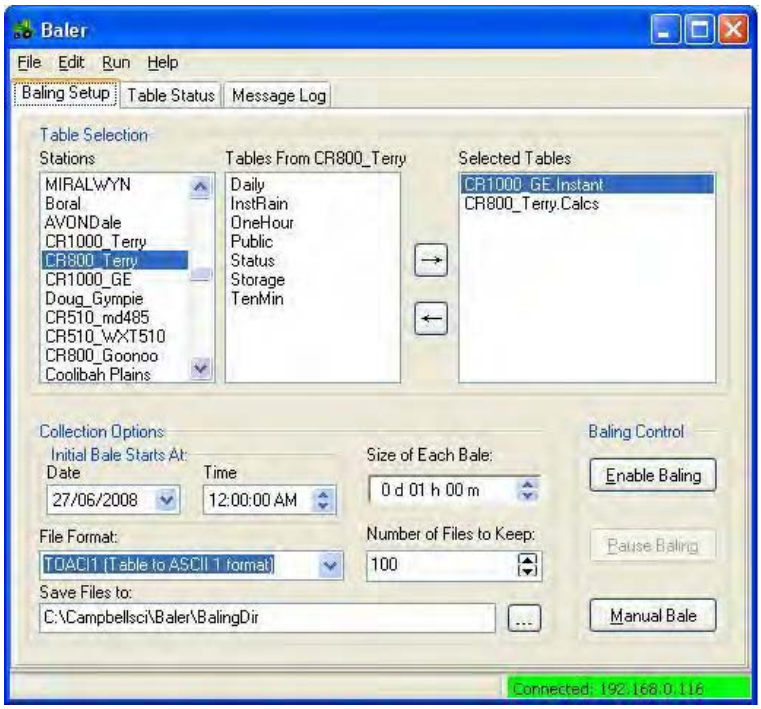
The input from all of these different sensors is measured and stored by a CR1000 datalogger, as scheduled by on-site or remote onshore programming. The CR1000 passes the information to the existing CR3000, and the CR3000 transmits both the oceanographic data and the atmospheric data (from the sensors on the tower) via radio to an onshore site. The dataloggers' ability to communicate with each other, with sensors, and with other peripherals via PakBus® (our own protocol), Modbus, and RS-232 was a significant benefit to the project.

The integration of the oceanographic instruments with the telemetry system on the tower resulted in a reliable, low-power solution. This solution enables consistent flow of data from the underwater sensors, and remote control of measurement frequency and power supply.

Reprint Courtesy of CSI

BALER

The Baler application is very similar to the DataFiler application in that it retrieves data from the Loggernet cache and stores that data in an ASCII file. The Baler however can perform this retrieval automatically and then split the data it collects over multiple files each with its own timestamp. The application is called Baler because each file created contains data from a set interval (one file per hour for example), these are called "Bales". The Baler main window is shown right:



Baler is a stand alone product which is installed separately to Loggernet and has its own manual.

Basic Usage

The main screen contains three lists:

Stations List:	These are the stations set up in the remote server's Setup screen. Click on a station to view it's data tables.
Tables List:	These are all the tables defined for the station selected in the stations list, click a table then click the right pointing arrow to add it to the download schedule. Tables can be added from multiple stations, they do not all have to be from the same station.
Selected List:	This list shows all the tables currently selected for scheduled download, to remove a table from the schedule, select the table then click the left pointing arrow.

Below the three list controls is the collection options area. This is where the schedule is configured:

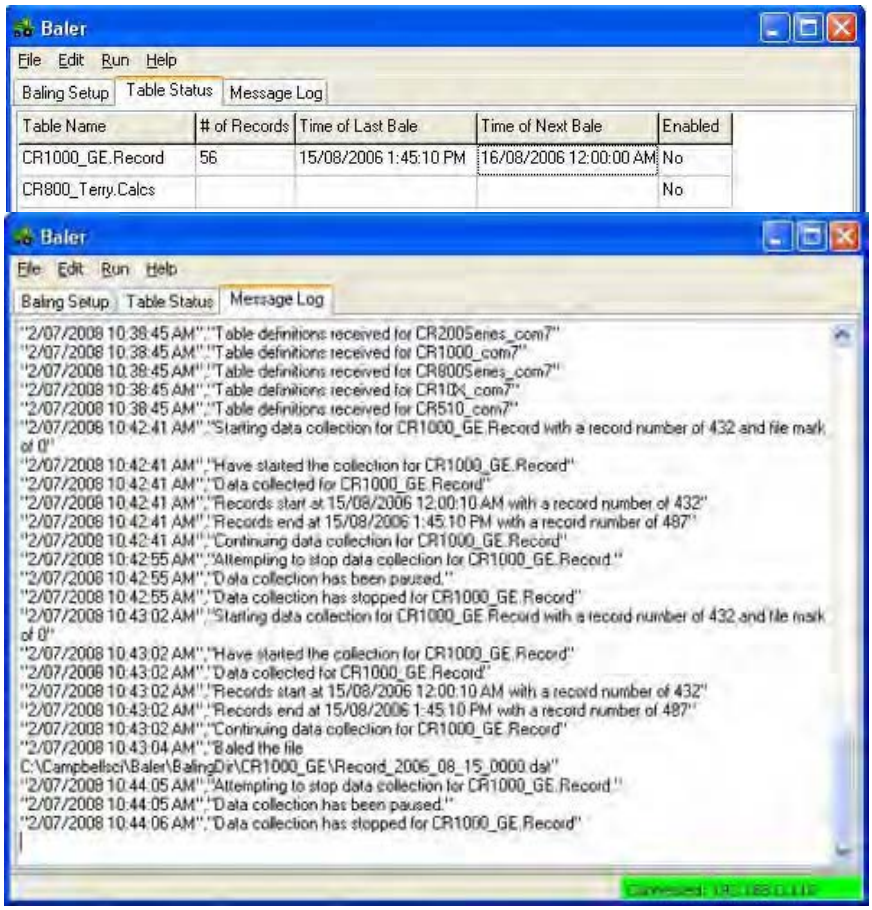
1. Start by configuring a start time to set the first data to be collected.
2. Set the size of each bale (how much time to store in one file).
3. Set the file format, how many files to keep and where to store the files.

Once everything has been set up, press the enable baling button to start the scheduled retrievals. Baler will retrieve all the historical data and split it up into separate files, then will continue to retrieve new data until the Pause Baling button is pressed. Data will continue to be collected as soon as it is available on the server and placed in a temporary file inside the folder specified in "Save Files to:". Once the "Bale Size" interval is up, this temporary data will be written to a new file. It is important to note that the "Bale Size" set up here is not the interval on which Baler will retrieve data from the Server. Baler will retrieve data according to the schedule set up on the Server end, and then add that data to a new file on the "Bale Size" interval.

The Manual Bale button will perform a once off retrieval without the need for a schedule. It will collect all the data up until this point and split it into multiple files as the scheduled retrievals would.

More Information

Once a schedule has been set up in the main screen, there are two tabs which give information about how the schedule is running. The first is the Table Status tab:



This screen shows each table that is set up for baling, the number of records collected in the last retrieval and the times of the last and next retrieval. The final column shows whether the data table has scheduled collection enabled on the server.

The second information tab is the Message Log:

This window logs each operation Baler performs, the logs are written in plain English and explain the process of collecting data from the server. This window will keep the last 300 messages, there is no option to save these log messages to a file. The log can be cleared by from the Edit menu by selecting Clear Messages.

More Options

Wait for Holes

When a data collection attempt is made from a table-based datalogger, depending on LoggerNet's data collection mode, data may not be retrieved in the order it was recorded by the datalogger. LoggerNet may request the most recent record first and then back-fill the data. This data collection method may create areas in the data cache where data is missing. The discontinuity in the collected data is referred to as a hole. Baler's default behaviour is to bale on schedule regardless of holes. If a hole is encountered in the LoggerNet cache, the resulting bale may have one or more missing records or the records in the bale may be out of order. If records are missing from the bale, when LoggerNet eventually collects the hole, the records will be added to a subsequent bale. They will, therefore, be found in a different bale than would be expected based on filenames. Select Edit | Wait for Holes to force Baler to wait until holes are filled before continuing to bale.

Select All Enabled Tables

Baler has the option to select all the tables enabled for scheduled collection then removing unwanted tables. This may be an easier method than searching through a long list of stations which are not being collected from to find the desired station. This can be selected from Edit | Select All Enabled Tables.

Log Messages

When this option is enabled, all Baling activity is saved to the LoggerNet server's transaction log (Trans$.log). The file is saved in LoggerNet's working directory, in the Logs folder (by default C:\CampbellSci\LoggerNet\Logs). This does not save Log information to the computer LoggernetData is installed on, this forces Loggernet on the Server to include Baler information in it's log files.

Auto Start

Baler can also be set up to begin automatic retrieval when the program is first started, this could be useful if the local computer is restarted often, or restarted remotely. In this case Baler could be added as a Start Up application in Windows, then with Auto-Start enabled, Baler will automatically start retrieving data. This option is toggled using File | Auto Start.