

case study

Intertek

Remote Sampler

CSols

laboratory systems integration

CSols Remote Sampler is helping Intertek in the Netherlands monitoring Dutch public swimming waters

Background

In May 2011 Intertek was granted with the European contract for swimming water monitoring and bathing water testing across the Netherlands, the program is being executed on behalf of the Dutch Rijkswaterstaat. Rijkswaterstaat is one of the largest water quality monitoring institutes in The Netherlands, they manage the Netherlands' main highway network and main waterway network.



Water Sampling

This monitoring and sampling programme helps determine the water quality of natural swimming waters and supports the law on "hygiene and safety of bathing facilities and swimming areas" and other natural swimming waters.

Running from April to September each year this monitoring includes field observations and surface water sampling, with laboratory analyses performed for bacteriological parameters to ensure water is safe for bathing back at the Intertek site in Geleen.

Every year, millions of Dutch residents and tourists go swimming in lakes, streams, and the ocean with water playing an important role for Dutch tourism. Water covers 20% of the total surface of The Netherlands and this is combined with a coastline of 450 km or 1/3 of the country's total borderline.

Intertek in Geleen, part of Intertek plc., supports chemical companies in the field of innovation, characterisation of materials, product and process optimisation, plastics processing in test runs, quality assessment, chemical analyses, troubleshooting and the implementation of (inter)national legislation. In addition the locations also delivers technical services related to emission, industrial hygiene and water monitoring. Intertek Geleen is ISO 9001 accredited, and has ISO 17025 accreditation for numerous tests and analyses.

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Sampling logistics

As part of the public swimming water program Intertek monitors over 200 public natural swimming water locations. Intertek was first awarded the project in 2009, which was extended in 2011 until 2014.

Sampling and sample transport logistics are very challenging. During the swimming season, Intertek employees travel over 50,000 kilometers to collect water samples from all locations in all weather conditions. Sampling is performed at coastal beaches, lakes and streams with weekly inspections at the bathing sites. As well as field observations a full complement of both chemical and biological tests are conducted back at the laboratory. Of particular importance are the levels of cyanobacteria, ecoli etc.



[Intertek's Geleen laboratory](#)

CSols Remote Sampler

In order to better manage the collection of field samples and to ensure regulatory compliance for the contract Intertek looked around at software and devices that could help meet its obligations. In 2011 they purchased the CSols Remote Sampler system to be based at its Geleen site for all surface waters where all the samplers are based.

CSols Remote Sampler is a solution that combines software with runs ruggedized, handheld PDAs and Windows Tablet PCs and was designed to make the job of obtaining field samples easier, more cost effective and more controlled for Water / Environmental laboratories. During the swimming season 4500 samples were taken and 63200 results were entered directly into SampleManager using CSols Remote Sampler PDAs.

Benefits of CSols Remote Sampler

Real experiences at Intertek have proven the following benefits:

- Significant time savings during the scheduling and administration of samples both prior to and after collection through the automation of sample logging and test assignment into LIMS
- Significant reduction in paper usage
- Positive identification of sampling points to meet regulatory requirements
- Flexibility to cope with emergency samples and switches of collection runs, all controlled from the centralised hub based software resident on a secure PC in the laboratory or depot
- Elimination of all paper run lists and transcription errors
- Improvements in sample integrity and accuracy of data collection
- Full sample custody trail of all sample bottles throughout the collection process
- Flexibility to be readily configured to match local sample collection and data capture requirements



CSols Remote Sampler

Remote Sampler allows swimming water samples to be taken and recorded in situ, and uploaded directly into LIMS from remote location e.g. beaches, lakes thus saving time, and reducing transcription errors. The devices also automatically capture the accurate GPS coordinates and the time of sampling to maintain a full custody audit. Communication back to LIMS is typically via mobile broadband and secure file transfer.

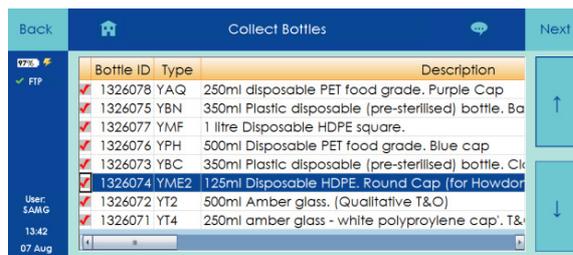
CSols Remote Sampler can be used in situations, not only where LIMS drives Sample Collection but also where samples are collected in an ad-hoc way. In both cases, details of collection are passed back to LIMS (in the latter case with new LIMS samples being logged automatically). The software ensures highly secure sampling and provides GPS and/or barcode proof of collection from the correct locations. Bottle barcoding can be integrated directly with LIMS and chain of custody functionality tracks bottles back to the lab.

Intertek has invested in this integrated approach, linking their enterprise level Thermo Scientific SampleManager LIMS with CSols Remote Sampler PDAs, to build upon their technological advances and to further establish their public position as a trusted provider of

quality water testing services. Note that CSols Remote Sampler can be readily connected to other Laboratory Information Management systems

Additional Intertek and Industry Needs

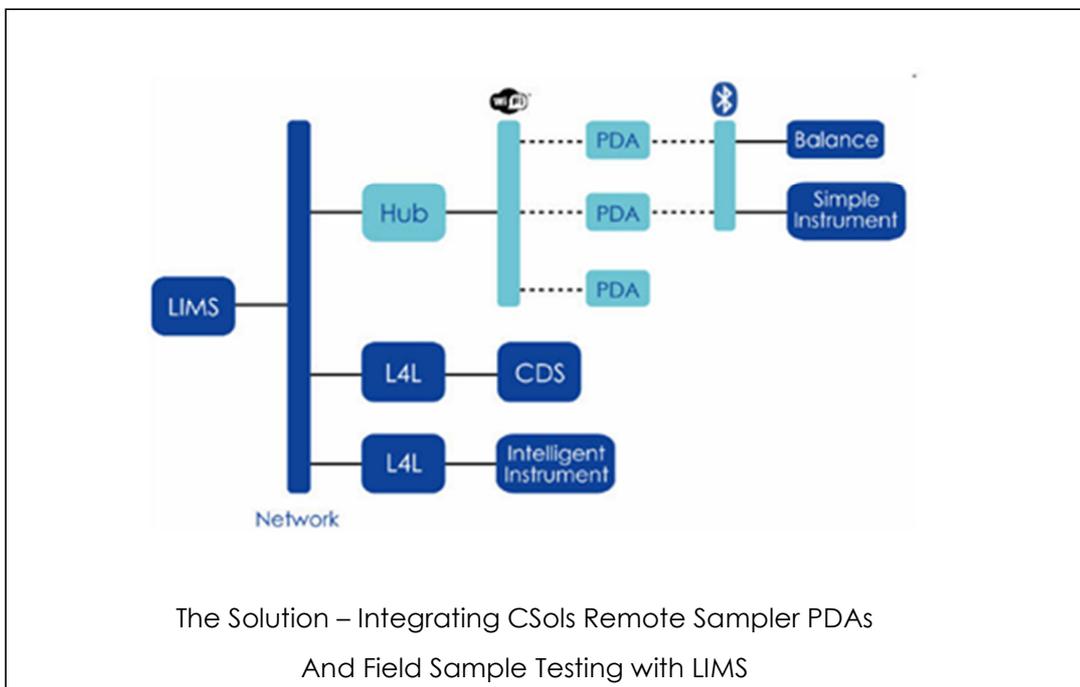
For many years, companies that have been involved in water and wastewater sampling have identified a need for a solution to automate current manual/paper processes in the field, that would also integrate with LIMS. Water companies have to collect their water samples in a closely regulated environment. Sampling plans are held in LIMS (having been agreed and set up in advance to meet regulatory requirements) and these plans are used to generate a collection run for each sampler. The collection run defines where samples must be taken from, what sample bottles must be collected and what onsite tests have to be performed.



Bottle ID	Type	Description
1326078 YAQ	250ml disposable PET food grade, Purple Cap	
1326075 YBN	350ml Plastic disposable (pre-sterilised) bottle, Ba	
1326077 YMF	1 litre Disposable HDPE square.	
1326076 YPH	500ml Disposable PET food grade, Blue cap	
1326073 YBC	350ml Plastic disposable (pre-sterilised) bottle, Cl	
1326074 YME2	125ml Disposable HDPE, Round Cap (for Howdor	
1326072 YT2	500ml Amber glass. (Qualitative T&O)	
1326071 YT4	250ml amber glass - white polypropylene cap', T&	

Collection Run showing bottle to be collected

Details of what has been carried out in the field then used to be manually entered into the LIMS. A solution was needed that would automate this last step, but not make the samplers' job any more difficult or onerous. Intertek's goal was to make the field sampling process more efficient and improve the audit trail. Ruggedized PDAs (personal digital



assistants) are an ideal solution as they are small, easy to use, and have a number of useful technologies built-in, such as GPS, GPRS, bar code readers, WiFi and Bluetooth.



Intertek use ruggedized Gotive H42 PDAs and these are mounted in a number of their sampler vans. The PDA's can also be easily carried to e.g. beach locations where they are also used to check that the sampling point is within a specified distance of the required sampling point in order to meet regulatory requirements.

PDA mounted in van

Regulatory Requirements / Requirements for Sampling

CSols Remote Sampler chain of custody meets the requirements of the regulatory bodies e.g. The Dutch Government (Rijkswaterstaat), UK Environment Agency, DWI / DWTS, Food Standards Agency, UKAS and other National and International Accreditation Agencies. Future regulatory requirements can be readily accommodated.

xtra benefits over paper based systems

The Remote Sampler wizard helps samplers with the whole sampling process to make sampling more convenient and so improve the quality of collection and data capture leading to significant savings in time across the organisation.



Features include:

- Integrated Satellite navigation to a location or an address to reduce driving time
- Simple data entry, no scribbling with a pen, just tapping with one finger
- Paper free - no bits of paper to get wet, damaged or lose
- Ability to add and review comments about the sample or sampling event, to handle planned, random and ad hoc sampling for full history



Sat Nav / GPS can be integrated into the system

- Automatic time, date and GPS coordinate stamping when sampling and bottles are scanned



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- Real time verification, alerts and easy pick list selection of all the required data required for the sample(s) configurable for different sample types to make data entry very simple
- Automatic calculations for field test measurements

Conclusions

With both a regulatory and efficiency driving rationale, Intertek has equipped its laboratories with the technologies and infrastructure that allow it to deliver consistent support to ensure the quality of The Netherland's bathing waters. To deliver consistent, reliable service while demonstrating regulatory compliance. The seamless integration of CSols Remote Sampler system with LIMS has improved operational efficiency, providing Intertek with a full sample recording, management and reporting system, whilst automating workflow and integrating with their other laboratory instrumentation and systems.

The tight integration of CSols Remote Sampler with Thermo Scientific's SampleManager LIMS means that data needs only to be entered once via Remote Sampler in the field and it is then uploaded automatically into the LIMS via wireless GPRS/FTP connectivity. This integration of an enterprise level LIMS with a remote field testing PDA has improved the efficiency and security of data entry and has greatly enhanced sample identification and tracking across Intertek labs and field collection points. As all samples are now recorded on a single electronic database, the integrated solution has provided Intertek with a means to retrieve and report data in a way that would never have been possible previously.



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About Intertek

Intertek is the leading quality solutions provider to industries worldwide. From auditing and inspection, to testing, training, advisory, quality assurance and certification, Intertek adds value to customers' products, processes and assets. With a network of more than 1,000 laboratories and offices and over 35,000 people in more than 100 countries, Intertek supports companies' success in a global marketplace. Intertek helps its customers to meet end users' expectations for safety, sustainability, performance, integrity and desirability in virtually any market worldwide. Visit www.intertek.com.

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About CSols

CSols is a laboratory informatics company, formed in 1990, whose dedicated passion is to maximize your return on investment by improving the effectiveness, productivity and quality of laboratories of all types. In order to deliver those goals we've distilled our knowledge and expertise into a range of software products and solutions that go 'Beyond the Technology' that is commonly used in today's sophisticated laboratories to help you. Our products help form a seamless link between sophisticated instruments or laboratory information systems (LIMS) and the laboratory scientist, analyst or technician. CSols solutions help remove the tedium and error rates associated with manual transcription and so maximize the investment in the instrument itself, the reagents used as well as all the laboratory personnel. Our current range of products include a series of software packages that can be combined with our skill and expertise to give you a solution that meets your requirements.

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Further Information

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