Feed analysis future based on Internet management

The art of controlling multiple near infrared analysis instruments is something that leading European laboratory MasterLab in The Netherlands is familiar with. So when the idea of using an Internet-based network to simplify and improve near infrared (NIR) analysis operations came along the laboratory was quick to test the concept. The new system, called RINA™ (Remote INternet Analysis), is now being put into practice with great expectations for improved analysis operations and improved customer service. 'In Focus' visited MasterLab to find out more.

MasterLab BV, an operating company of Trouw Nutrition International/Nutreco, is one of Europe's top laboratories in the animal nutrition, food and pharmaceutical area. Quality analysis and customer service are top-of-mind for experts like Jos Zegers, a NIR and Microscopy analyst who is responsible for running the company's NIR operations. His goals are becoming more achievable with the new RINA networking software as it simplifies operations and allows greater control of individual NIR instruments.

Not that the idea of managing a population of instruments from a central location is anything new to MasterLab. The concept was first employed in 1992 using ISI software and PS 6250 instruments. Today, there are 17 client NIRSystems instruments in the MasterLab network. Some are within the parent Nutreco organization and others are at external customer sites such as feed mills located relatively close by in Belgium and Germany or as far away as Russia, Mexico and Brazil.

The network server is located at the MasterLab facility in Boxmeer. Jos Zegers is both the network administrator and the network manager for the 17 connected instruments.

What's new about RINA is that it provides new software facilities to smoothen and simplify the running of the network, including a 'network manager' function installed between the server and client instruments that makes it simple to manage and control remote instruments from a central location.

In addition to the MasterLab local network, there is also a line from the server to a Nutreco facility in Norway - the ARC aqua feed research centre in Stavanger

Under a watchful eye: central control allows all prediction models and products to be set up just once for the entire network

where another installation of the network manager software module is used to manage a separate group of local client instruments.

Simplified operations

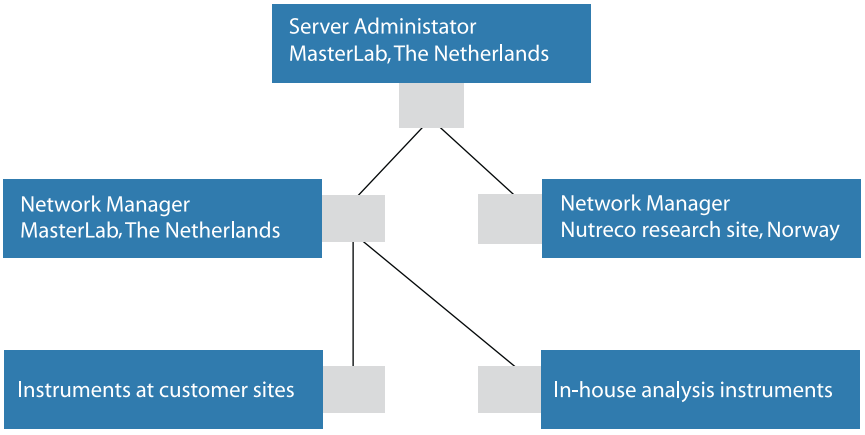
Using the network manager software directly from his computer saves Jos Zegers a lot of time and greatly improves control.

Previously, he would need to send out 17 emails with file attachments whenever there was a calibration update. He would also have to rely on others to make timely use of the files and update the local instrument correctly. "Things can go wrong and you have no way of knowing about it," he says.

Now he can make just one update for everyone. "With RINA I can control everything in the network right here from the network server," says Zegers. "Another advantage is that it is easier to protect equations from piracy."

An important aspect of RINA for Zegers is that now he can see what is going on at local sites. "With RINA you have an overview," he says. He explains how he can see diagnostics for all the instruments and how they are performing and whether daily routines are being followed, for example, if check cells are being measured in the morning before analysis operations start.

Keeping an eye on outliers also allows him to see how the samples are performing in the database for a calibration. "It can be that some clients have some deviating material and you can monitor this, making it easier to check calibrations and parameters," says Zegers. This is a facility that can help to protect MasterLab's image. Before, if a calibration was not being used correctly it could reflect badly on MasterLab. But now, no one can just blame the instrument or calibration because MasterLab will know exactly what is going on.



The MasterLab network: any changes or updates are easily made and positively implemented throughout the network using a Network Manager program

Improved customer service

The RINA network will also help to provide a better customer-service by making it possible to do more measurements and allowing more flexible NIR services.

Operational Manager Albert Swinkels tells how, in the past, the customer would only consider buying a calibration for important, frequently-measured products and not for products that were controlled only occasionally.

RINA can change this by making it more practical and cost-effective to provide more flexible options. For instance, if a MasterLab customer only needs to measure a product once a month, they can use a calibration based on the RINA server instead of buying a calibration for use at their local site. Swinkels says: "Even a small feed mill can make many measurements – they can choose between free access to a calibration paying a fixed amount per year or using a pay-per-measurement option."

An advantage of the concept is that the feed mill will know that their measurements are always based on the latest update of a calibration.

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Inevitably, demand is growing for more calibrations and parameters and the ability to keep an eye on the performance of calibrations is essential. "Of course, customers want lots of different things and it can be difficult to manage," says Swinkels. "But now we can handle it through RINA."

New frontiers in analysis operations

The current goal for RINA is to get all 17 instruments included, but many other possibilities are envisioned with a future supported by effective NIR network operations. Regardless of whether an instrument is placed in the laboratorie's own facility in The Netherlands or at a site in Mexico or Eastern Europe, it will be just as simple to make updates and ensure that everything is working correctly.

This will be particularly important as networks expand in the future as Jos Zegers explains. "The more your network grows the more you have to do on a daily basis."

General Manager Klaas van Schalm touches on another advantage with RINA – the fact that you do not need to worry about availability of local laboratories and expertise in NIR analysis when setting-up a Greenfield site. For instance, RINA can provide a perfect base for activities in the rapidly expanding aqua-feed area with the possibility to install standardized instruments and then control them directly from a central location. Location or lack of local expertise in NIR analysis is no longer a barrier. "It is also helps that FOSS provides easy-to-use standardized instruments like the InfraXact" says van Schalm.

RINA future

Looking ahead, MasterLab expects the RINA network to improve their total approach to quality by taking NIR operations to a higher level more quickly than would be possible with existing tools and technology.

They can look forward to a more total approach to NIR analysis including more efficient operations and improved customer services, for example by helping smaller producers take more advantage of NIR. A wider use of calibrations is expected with an estimated 20% increase in the amount of measurements made in the coming years.

In the broader picture, RINA has a great potential to support Nutreco operations with a trouble-free runway for NIR analysis operations in emerging markets in any corner of the globe.

Operational Manager, Albert Swinkels highlights the growing relevance of RINA. "The more we develop internationally, the more important it becomes for us to have such a solution like RINA," he says. ■

by Richard Mills

RINA

The RINA software suite provides an Internet-based network connecting individual instruments to a control centre. NIR experts at the centre can perform monitoring and management tasks remotely, allowing the local user to get on with routine analysis operations secure in the knowledge that an instrument is running perfectly and delivering reliable results. Remote troubleshooting can also be performed, avoiding the need for an on-site expert.

All prediction models and products are set up in RINA just once for the entire network. Any changes or updates are easily made and positively implemented throughout the network using a Network Manager program. This assures the integrity of the complete analytical system. Centralized calibration operations also protect against unauthorised use and copying of calibration data.

Customer hosted RINA and FOSS hosted RINA

MasterLab is employing 'Customer hosted RINA'. As the name implies, this version is intended for large organisations who wish to run their own RINA operations.

A separate version, 'FOSS Hosted RINA' is also available for those who wish to use FOSS services to manage some, or all of the tasks associated with running a NIR network.