

Calibration

02 • 2007

WORLD

Calibration in the pharmaceutical industry

How often should calibrators be calibrated?

Customer success story

Eli Lilly and Company Limited
(Speke Operations), UK



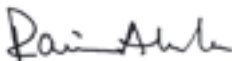
Developing business and solutions together with customers

Dear Calibration Professional, this is the second issue of CALIBRATION WORLD this year and I am happy to present to you some wonderful news again. First of all, I would like to thank all of you who are already our customers. Together with you we have made Beamex what we are today. Knowledgeable people working in the most advanced companies are the best partners when aiming for the best calibration solutions on the market. Secondly, I want to congratulate Sarlin, the owner of Beamex since 1984, on their 75th Anniversary 2007!

In the previous issue I had the pleasure of informing you that Beamex was introducing the world's first calibrator for calibrating Foundation Fieldbus H1 and Profibus PA transmitters. I now have the pleasure of telling you that the feedback from the market has been simply stunning. Fieldbus is really one of the hottest topics in process automation today. The Beamex solution is definitely one of the most significant things that has happened within the field of calibration for many years. In addition to fieldbus calibration, we introduced a completely new family of CMX calibration software at the beginning of this year. The CMX is a great example of a product family, which was developed using numerous valuable ideas and feedback from our customers since the mid-'80s when Beamex introduced its first calibration software.

Thanks to Beamex's efficient product development team, we can once again introduce to you something brand new – our new practical documenting calibrator MC4.

You will find all this and much more in this issue of CALIBRATION WORLD. Enjoy your reading!



Raimo Ahola

Managing Director, Beamex Group



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Calibration in the pharmace



A photograph of industrial machinery, likely a laser cutting or welding system, with a large, clear protective enclosure. The scene is bathed in a warm, yellow-orange light. The text "Optical industry" is overlaid in white, lowercase letters across the middle of the image.

Optical industry

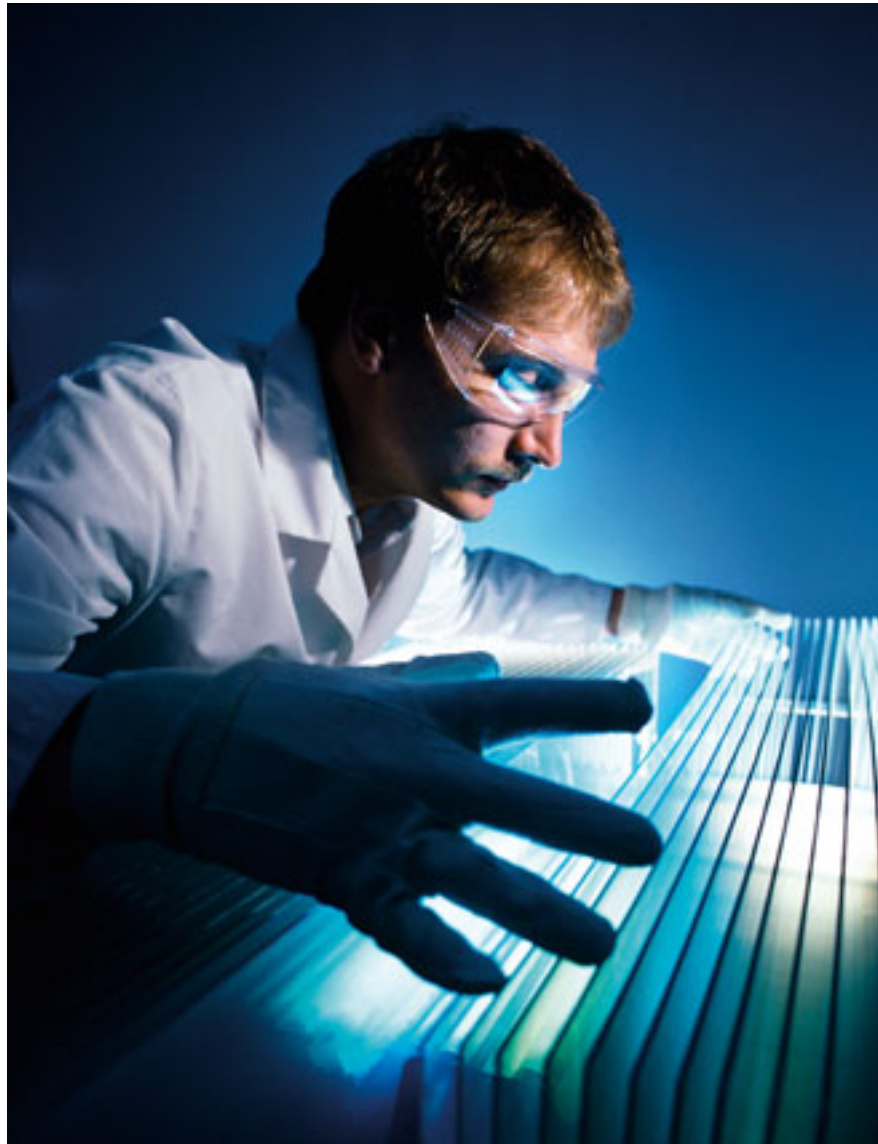
Pharmaceutical Operations

The pharmaceutical industry produces products that directly affect the life of the majority of the billions of people that inhabit the Earth. As such, a seemingly small mistake or failure could adversely affect the health of thousands of people. Regulators in the pharmaceutical industry recognize these stakes and have implemented various regulations to ensure the integrity of pharmaceutical processes and, hence, the safety and efficacy of the pharmaceutical products on which billions of people rely.

Individuals who are not directly associated with the pharmaceutical industry should take note because some aspects of these regulations are being adopted in the process industries. Therefore, it would be pragmatic to use equipment and adopt practices that either meet or can easily be upgraded to meet pharmaceutical requirements.

Some high-volume pharmaceuticals are often manufactured using continuous processing techniques; however, pharmaceutical manufacturing is typically performed in batches. As such, these processes typically incorporate many pressure and temperature measurements such as local indicators (gauges), transmitters and switches. Many of these measurements are at extreme conditions such as may be found in an autoclave. While there may be some flowmeters, batch processes typically incorporate weighing instruments to implement material additions. Some processes involve clean rooms where the measurement of low differential pressures is important.

Process measurements can be critical to ensure product quality. Calibrating instruments properly in a timely manner is an important aspect of ensuring that a pharmaceutical product is manufactured properly. Calibration documentation can be used to verify that calibrations have been performed properly prior to producing products. Should there be a problem, this information may prove to be a key factor in determining



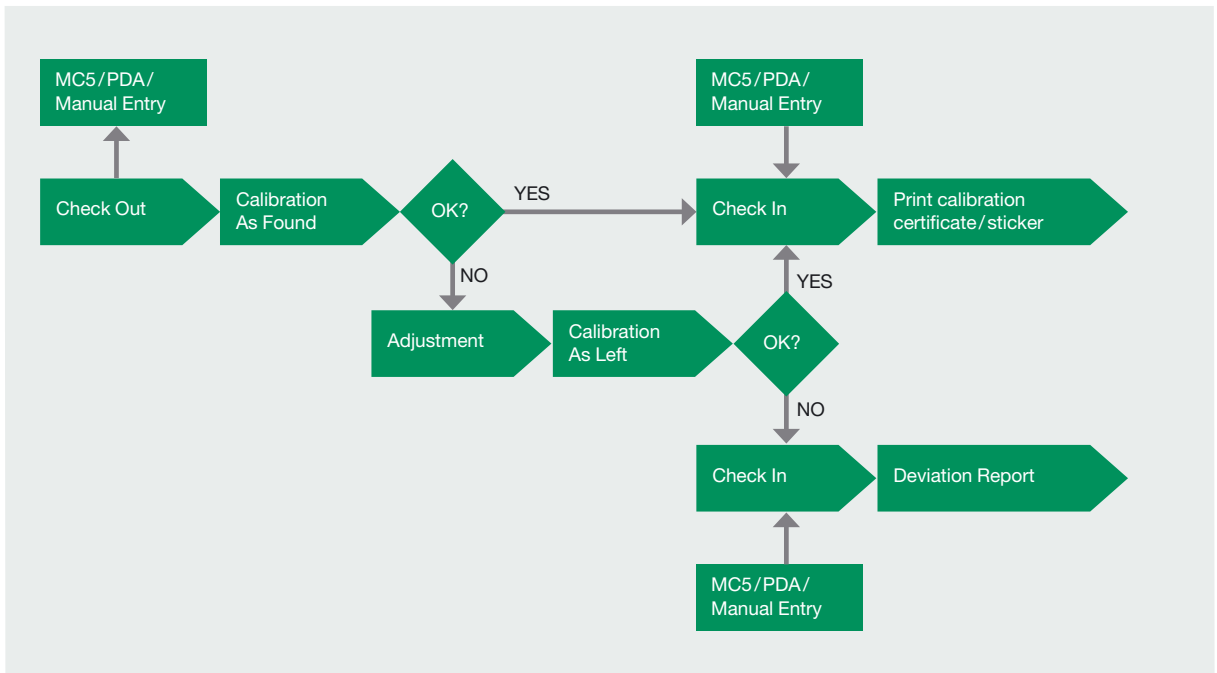
when, where and/or how an error was made. Therefore, governing bodies tend to regulate the type of information collected and the time interval between calibrations.

Manual Documentation of Pharmaceutical Calibrations

Whereas specific regulations may vary somewhat around the world, the underlying design premise behind

calibration requirements is to ensure that instrument calibrations are performed correctly. Traditionally, this meant generating a paper trail of calibration information including its time, date, test equipment, as-found data, as-left data, and the like.

However, this is only the “tip of the iceberg”. Calibration must be performed according to approved written procedures and the calibration records must be maintained for a certain period of



Calibration process in a pharmaceutical company with the Beamex calibration system.

time. Each instrument should have a master history record, a unique identity, calibration period, and calibration error limits. Product, process and safety instruments require that they be physically tagged and sometimes color-coded. The performance of calibration standards should be more accurate than the instrument being calibrated. The calibration of the calibration standard must be documented and performed periodically. Using calibration standards that are traceable to national and international standards is required. Additional documentation pertaining to the technician and his/her qualifications and certifications to perform calibrations would also be needed to be able to demonstrate that the individual has been trained and is qualified and competent to perform the calibrations.

In most countries, these instrumentation requirements must be implemented within in the general context stipulated by 21 CFR Part 211 (Current Good Manufacturing

Calibration must be performed according to approved written procedures and the calibration records must be maintained for a certain period of time.

Practice for Finished Pharmaceuticals). Among many other requirements, all instruments must be fit for their purpose and a documented change management system must be in place.

Pharmaceutical companies complied

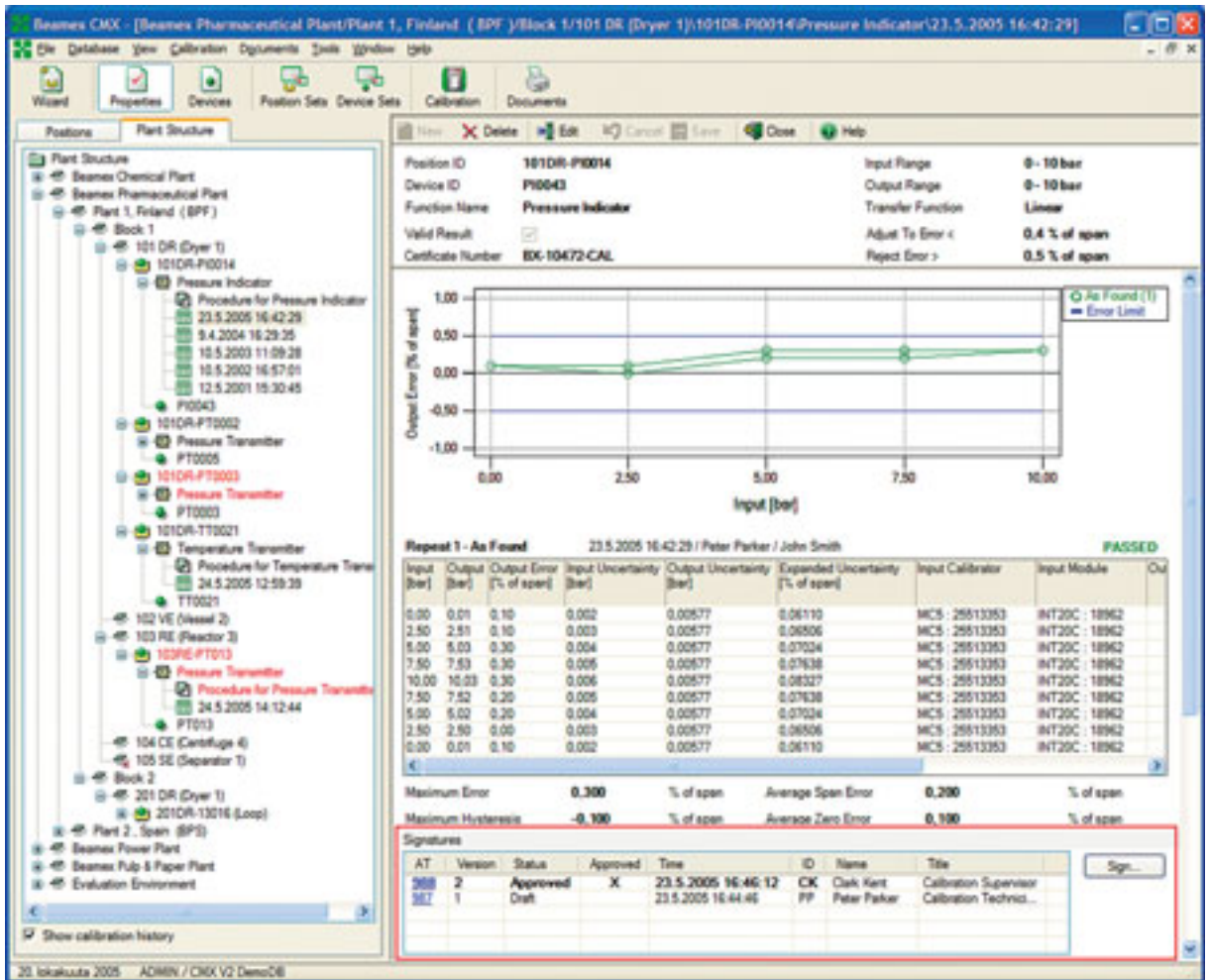
with these requirements by writing calibration information on paper forms that they developed for this purpose. Despite conformance with the regulations, paper documentation was both cumbersome and prone to human error. Simply put, it is not difficult to make mistakes when calculations are performed manually and most dates, times, measurements, calculation results, and the like are written by hand.

Electronic Documentation of Pharmaceutical Calibrations

Electronic documentation systems that do not require any paper were developed to overcome these disadvantages and reduce the amount of time technicians spend in complying with documentation regulations. However, electronic records do not inherently contain signatures that identify the person performing a calibration. Therefore, 21 CFR Part



Calibration in the pharmaceutical industry



CMX's change management complies to FDA requirements (21 CFR Part 11 Electronic Records and Electronic Signatures).

11 (Electronic Records; Electronic Signatures) addresses the additional issue of ensuring the documentation of these people.

Electronic calibration systems for the pharmaceutical industry that conform to the 21 CFR Parts 11 and 211, such as Beames's CMX calibration software and MC5 Multifunction Calibrators, can be integrated to provide automated documentation with less human intervention. This results in fewer human errors, improved work quality, and improved efficiency that can

directly affect profit. Moreover, locating the original electronic records in one database can not only reduce paper records into traceable electronic records with a history of change management, but can also turn the calibration system into a powerful repository of decision-making history that can be used to improve calibration procedures. Versatile security settings and multilevel user accounts help to ensure the security and integrity of the system and track authorized and unauthorized database actions.

Calibration Solutions for the Pharmaceutical Industry

Instruments designed to measure flow, level, pressure, temperature, and other variables are generally used to monitor and control pharmaceutical processes. In some applications, it is practical to remove these instruments and calibrate them on the bench. This is generally not the case as so many instruments are calibrated in the field. Fortunately, there are calibration systems that are specifically designed to operate safely

in rugged environments and hazardous locations.

A typical calibration process is illustrated in the figure, where the calibration master schedule identifies an instrument that needs to be calibrated and downloads the appropriate calibration data into a technician's handheld calibrator. After selecting the instrument from the calibrator's memory, the technician performs an automated "As Found" calibration. If the instrument does not pass calibration (as determined by the downloaded information in the calibrator), the technician can adjust the instrument and perform an automated "As Left" calibration. Data from both calibrations are stored in the handheld calibrator to be uploaded to the database where it is documented.

Fortunately, there are calibration systems that are specifically designed to operate safely in rugged environments and hazardous locations.

The Beamex CMX software integrates calibration management by allowing efficient planning and scheduling of calibration work. It not only alerts you when to calibrate, but also automatically takes data, creates documentation, adheres to cGMP regulations (21 CFR Parts 11 and 211), and tracks calibration history. This software generally makes calibration work faster and easier and is designed to integrate into management systems such as SAP/R3 and Maximo.

The Beamex MC5 is a portable

The Beamex CMX software integrates calibration management by allowing efficient planning and scheduling of calibration work.

multifunction calibrator that has modules that can accommodate wide ranges and many types of pressure, RTD, thermocouple, voltage, current, pulse, and frequency measurements.

The Beamex MCS100 modular calibration system is a test bench and calibration system for workshops and laboratories, which incorporates the functionality of the MC5 and can measure/generate additional parameters such as precision pressures. The ergonomic design and modular construction allow the user to select the necessary calibration functions in a cost-effective manner.

Summary

Here are a few points to remember:

- Automated electronic calibration and electronic documentation save time and are less prone to human error than manual calibration and paper documentation.
- Electronic documentation allows all calibration information to be located in one database for easy access and use.
- Proper calibration and its documentation are important for maintaining the safety and efficiency of pharmaceuticals.
- Portable Beamex calibrators for hazardous locations are designed for use in virtually all pharmaceutical plants.
- Beamex software follows the guidelines of 21 CFR Parts 11 and 211 and makes calibration and its documentation easy.

Beamex products for the pharmaceutical industry:

- MC5 Multifunction Calibrator
- MC5-IS Intrinsically Safe Multifunction Calibrator
- CMX Calibration Management Software

Beamex services for the pharmaceutical industry:

- Installation and training
- Validation services (CMX calibration management software)

How often should calibrators

Calibrating calibrators

For instance, a general rule for Beamex's MC5, is to start with a 1-year calibration period as the MC5 has a 1-year uncertainty specified. The calibration period can be changed in the future as you get cumulated stability history, which is compared with uncertainty requirements. In any case, there are many issues to be considered when deciding the calibration period of a calibrator, or any measuring equipment. This article discusses some of the things to be considered when specifying the calibration period and provides some general guidelines. The same guidelines that apply to a calibrator also apply to other measuring equipment in the traceability chain. These guidelines can even be used for process instrumentation.

“Uncertainty need is also one of the most important issues when specifying the calibration period.”

While maintaining a traceable calibration system, an important aspect is to determine how often the calibration equipment should be recalibrated. International standards (such as ISO9000, ISO10012, ISO17025, CFRs by FDA, GMP, etc.) require the creation of documented calibration programs. Among other things, this means that measuring equipment should be calibrated traceably at suitable periods and that the basis for calibration periods should be evaluated and documented.

When specifying a suitable calibration period for any measuring equipment, there are several things to be considered.



be calibrated?





Uncertainty need

One of the first things to consider is the uncertainty need of the customer for the measurement device. Actually, the initial selection of the measurement device should be also done based on this evaluation. Uncertainty need is also

“In critical applications, the costs for an out-of-tolerance situation can be extremely high (e.g. pharmaceutical applications) and therefore it is safer to calibrate the equipment more often.”

one of the most important issues when specifying the calibration period.

Stability history

When the customer has considered his/her needs and purchased suitable measuring equipment, then (s)he should follow the stability history of the measuring equipment. The stability history is an important criteria when deciding upon any changes to be made to the calibration period. Comparing the stability history of measuring equipment to the specified limits and uncertainty needs will already give good tools for evaluating the calibration period. Naturally, calibration management





software with history analysis is a great help in making this kind of analysis.

The cost of recalibration vs. consequences of an out-of-tolerance situation

One important thing is to optimize between the recalibration costs and the consequences of an out-of-tolerance situation. In critical applications, the costs for an out-of-tolerance situation can be extremely high (e.g. pharmaceutical applications) and therefore it is safer to calibrate the equipment more often. Then again, calibrations may be made less frequently with less critical applications in which out-of-tolerance consequences are not considered serious. Therefore, considering the consequences of an out-of-tolerance situation is important. The corrective actions in such a case should also be procedurized.

Some of the measurements taken in a factory, for example, affect the quality of a particular product to a greater extent than with other products. Therefore, some measurements are more critical than others and should be performed more often.

Initial calibration period

When you purchase calibration equipment that is unfamiliar to you, you must in any case decide what the initial calibration period will be, in which case using the manufacturer's recommendation is common. With critical applications, we recommend using a shorter calibration at first.

Other things to be considered

There are also other issues to be considered when specifying calibration period, such as the workload of the equipment, the environmental conditions where the equipment is being used, the amount of transportation and does the equipment look like being damaged.

In some cases, cross-checking against other similar measuring equipment may be used as a check to detect need for calibration. This kind of cross-checking may be done even before every measurement in some critical applications.

Naturally only appropriate metrological responsible personnel in the company can do any changes to calibration equipment's calibration period.

Summary

The main things to be considered when specifying calibration period for measuring equipment should include at least the following:

- The uncertainty needs of the measurements
- The stability history of the measuring equipment
- Equipment manufacturer's recommendations
- The risk and consequences of an out-of-tolerance situation
- Significance of the measurements

10,000 companies worldwide use our calibration solutions.

Read some of these success stories a

When it comes to process instrument calibration, the world's most successful companies turn to Beamex. At www.beamex.com/success, you can find the answer to the ultimate question – why companies have chosen Beamex – and learn from customer success stories how companies from various industries have utilized Beamex calibration solutions.

www.beamex.com/success

The background of the advertisement features a blue gradient sky. In the lower half, there are dark silhouettes of industrial structures, including tall distillation columns and a large cylindrical tank. Several workers are visible as small silhouettes on different levels of the equipment, suggesting an active industrial site.



t www.beamex.com/success

beamex

WORLD-CLASS CALIBRATION SOLUTIONS™

Portable calibrators
Workstations
Calibration software
Professional services
Industry solutions

Eli Lilly and Company Limited

11,000 calibrations a year, made mostly with Beamex calibration equipment.

Eli Lilly and Company is one of the world's largest research-based pharmaceutical companies dedicated to creating and delivering innovative pharmaceutical health care solutions that enable people to live longer, healthier and more active lives. Lilly employs more than 44,000 people worldwide and markets its products in 143 countries. The Lilly plant in Speke, Liverpool is a bulk manufacturer of animal health, veterinary, and pharmaceutical products. Each area of manufacture has a control group, which is responsible for calibrating the instrumentation that controls manufacturing processes. The Speke plant is Lilly's largest European manufacturing plant.

“The capability of the MC5 provides us with opportunities which we did not previously have, and we will be seeking to leverage these capabilities in our never-ending journey to improve the way we do things”, Derek concludes.

The purpose of calibrations is to ensure that the plant is in control of their manufacturing processes, and that the calibrations performed there

are documented and traceable to meet internationally recognised standards.

The situation

“We perform in excess of eleven thousand calibrations per annum across a wide range of instrumentation and control equipment”, Derek Cross begins. Derek is Site Reliability Engineer at Lilly's Speke plant.

Calibrating process instruments is considered essential at the Speke plant. “Quality calibration is crucial in demonstrating that we are in control of our processes; it is a key requirement in ensuring the safety, identity, strength, purity and quality of all our products”.

“Calibration is absolutely vital. Apart from being a heavily regulated industry, manufacturing medicines is a serious business that affects everyone's lives directly or indirectly, including our own employees and their families who are also customers. The importance of quality calibration of instrumentation, and how it relates to the manufacture of our products, cannot be overstated, it is well understood and acknowledged at all levels within our company. We invest heavily in the finest instrumentation, control systems, and secondary standard test equipment available to ensure we achieve the high standards of compliance we demand”.

The solution and main benefits

“We perform calibrations across a wide range of instrumentation, controlling numerous process parameters, temperature, pressure, flow, weight, pH, conductivity, dissolved oxygen and speed, among other things”.

The entire process of planning and managing calibrations is well organized. “Our maintenance program is controlled via a (CMMS) computerized maintenance management system. Each department has an Engineering Planner

and Engineering Co-ordinator, whose role is to plan and schedule maintenance work for our engineering people”, Derek clarifies. The requirements for calibration equipment are high. “Accuracy, reliability, traceability, robustness, electronic documentation storage and interface capabilities”.

“We invest heavily in the finest instrumentation, control systems, and secondary standard test equipment available to ensure we achieve the high standards of compliance we demand”.

“At Speke we have invested in the Beamex MC5 Multifunction Calibrator based on its accuracy specification, multifunction capabilities and robustness. Additionally, we knew the MC5 had the capabilities to interface with existing systems on site, which gave us the potential to leverage calibration documentation capabilities. The MC5 is our primary calibration standard on site and it is used extensively with the majority of calibrations”.

Using Beamex's calibration equipment has provided many benefits. “The MC5 is a relatively new addition to our

d, Speke Operations, UK



“We perform in excess of eleven thousand calibrations per annum across a wide range of instrumentation and control equipment”.



secondary measurement standards, and the initial feedback has been excellent. The main benefits have yet to be realized, and we are currently working through the requirements of interfacing the Beamex MC5 to existing systems so we can download calibration schemes to the MC5, perform calibrations, then upload results, creating the possibility of a paperless calibration system”, Derek states. “The capability of the MC5 provides us with opportunities which we did not previously have, and we will be seeking to leverage these capabilities in our never-ending journey to improve the way we do things”, Derek concludes.

Case story in brief

Customer profile

Eli Lilly and Company Limited,
Speke Operations
United Kingdom

Business Situation

The Lilly plant in Speke, Liverpool is a bulk manufacturer of animal health, veterinary and pharmaceutical products. The Speke plant is Lilly’s largest European manufacturing plant. Approximately 11,000 calibrations are performed annually across a wide range of instrumentation. The majority of the calibrations are made using Beamex calibration equipment, the MC5 and MC5-IS. Quality calibration is crucial in demonstrating that the plant is in control of their processes; it is a key requirement in ensuring the safety, identity, strength, purity and quality of all their products.

Solution description

- MC5 Multifunction Calibrator
- MC5-IS Intrinsically Safe Multifunction Calibrator

Main benefits

- Accuracy, multifunction capabilities and robustness of Beamex calibrators
- Possibility of a paperless calibration system

MC4 - a new compact-sized documenting calibrator

■ Later this year Beamex will introduce the MC4, a new compact-sized documenting process calibrator. Being a multifunction calibrator, the MC4 is suitable for calibrating various process parameters, such as pressure, temperature and electrical signals. As the MC4 is a documenting calibrator, instrument data can be sent from computer to MC4 and calibration results can be uploaded from

the MC4 to a computer using Beamex CMX calibration software. With the MC4, making automated and documented calibrations of process instruments is fast and easy. The MC4 will be introduced in detail in the next issue of CALIBRATION WORLD later this year.

For more information, contact info@beamex.com



Celebrating the 75th anniversary of Sarlin



Patrik Wikström, Chairman of Sarlin and grandson of the founder of Sarlin.

■ Sarlin, the parent company of Beamex, celebrates its 75th anniversary this year. Erik Sarlin (M.Sc. Eng.) established Sarlin in 1932 and the company started by importing technical products and equipment. Erik Sarlin was the Managing Director of Sarlin from 1932 to 1946 and after that he continued as the Chairman of the Board until 1975. The company has expanded its business and grown extensively since the early days, but it has still remained a family-owned, private company. The current Chairman of Sarlin is Patrik Wikström, the grandson of Erik Sarlin.

Nowadays Sarlin is a group of three different companies, including Beamex. Sarlin acquired Beamex in the mid-eighties and Beamex is the most international company in the Sarlin Group.

Continuously developing the company and its operations, passionately focusing on meeting and exceeding customer needs, as well as developing the company on a long-term basis have made Sarlin a highly successful company.

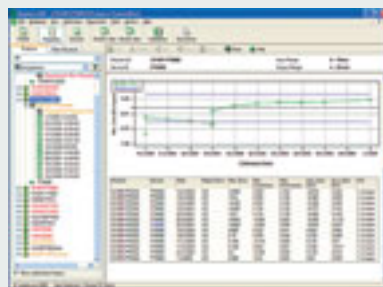
Congratulations!

The new Beamex CMX calibration software family

■ Choose the calibration software that best meets your needs. Beamex has recently introduced a complete family of CMX calibration management software products. The products include CMX Light, CMX Professional and CMX Enterprise. They are developed to meet various purposes. CMX Light is easy-to-use calibration software for a single workstation. It is the calibration solution for a company that wish for advanced, yet simple to use, calibration software. CMX Professional is calibration software with unlimited possibilities. It is suitable for large and mid-sized companies, which require an advanced and

efficient calibration system that meets demanding and specific requirements. CMX Enterprise is all-in-one calibration solution for large companies. It meets the needs of corporations with large calibration assets and multiple plants.

For more information about the CMX calibration software family, visit www.beamex.com



“ 90 % of CMX customers state that using Beamex products has improved the efficiency of their calibration procedures.

– Beamex Customer Survey 2006

Customers say that Beamex's solutions improve efficiency

■ High ratings also for accuracy, product quality and functionality.

In December 2006, Beamex executed the most extensive customer survey in the company's history. Nearly 10,000 customers were invited to participate in the survey and a large portion of them provided responses. The survey was made in 7 different languages. Responses were received from over 50 countries in total. "The study was very important for us, as we develop our products, services and operations by listening our customers," Raimo Ahola, managing director of Beamex Group, explains. "Also, we simply wanted to improve our understanding of what we are good at and what needs to be improved," he continues.

Overall customer satisfaction

very high. Customers are satisfied

with Beamex products in the areas that matter most when choosing calibration equipment and software: measurement accuracy, reliability and quality, functionality and ease-of-use.

Beamex partners valued for their technical know-how and reliability.

Overall, Beamex customers are very satisfied with the company's operations, customer service and sales partners, which the company has in over 50 countries. The sales partners received positive feedback especially for their technical know-how, overall reliability and quality and also for conducting business in a professional manner.

Highlights of the study

- 96 % of the customers will probably recommend Beamex to a colleague.
- 90 % of the customers using CMX calibration software state that using Beamex products has improved the efficiency of their calibration procedures.
- 96 % of the customers using MC5 Multifunction Calibrator are either very satisfied or satisfied with the measurement accuracy of the calibrator.
- 3 out of 4 customers say that using Beamex products has resulted in cost-savings in some part of their operations.
- 4 out of 5 customers say that investment in Beamex products is an investment that pays itself back.

Beamex opens offices in Texas and northeastern USA

■ In a short period of time, Beamex, Inc. has opened two new offices in the USA, one in Texas and one in the North East. Marshawn Merriwether runs the Texas office and Eric P. Hayston the northeastern office. Marshawn is located in Houston, Texas where he is responsible for sales and customer service for Beamex's customers in the Texas area. Eric is located in Rhode Island where he is responsible for sales and customers service for Beamex's customers in the northeastern part of the US including Pennsylvania, New York, Rhode Island and the New England states such as Connecticut, Vermont and New Hampshire.

This is an important step for Beamex in expanding their operations in the USA and focusing on improving sales and customer service for US customers. "Both Texas and the North East are very large and important markets for

calibration equipment and software. Also, we already have a solid customer base in both areas. Therefore, it's a natural move for us to improve our sales and customer service in those areas by opening local Beamex offices", explains Jan-Henrik Svensson, VP of Sales & Marketing. Beamex's US headquarters is located in Marietta (GA).

Beamex, Inc. Texas Office:
Marshawn Merriwether,
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Beamex, Inc. North East Office:
Eric P. Hayston, Area Sales Manager
eric.hayston@beamex.com

Complete contact details for Beamex, Inc. offices can be found at:
www.beamex.com



Alex Maxfield has been appointed as Director of Beamex Limited in the UK.

Alex Maxfield, the new director of Beamex Limited (UK)

■ Alex Maxfield has been appointed Director of Beamex Limited in the UK. He started working with Beamex in January, 2007. Alex holds a key position at Beamex Group, as the UK is one of the three countries where Beamex offices are located. In addition to the UK, Beamex has offices in Finland and the USA.

Alex is a qualified mechanical engineer with 18 years of experience in using and selling instrumentation, software and services to the defense, power generation, automotive, general industrial and medical markets. For the last 10 years he has held senior sales and marketing related positions at two instrument manufacturers.

"We are very excited that Alex is joining Beamex Limited. He is a perfect fit to our already experienced and competent team in the UK.", explains Raimo Ahola, the Managing Director of Beamex Group.

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3rd place for Beamex in Control's Readers' Choice Awards

■ In its recent 2007 Readers' Choice Awards, Control Magazine asked its readers to rate the best vendors in different product categories. This year more than 700 automation professionals from various process industries gave their opinion on the subject. This was the 15th annual Readers' Choice survey made by Control Magazine.

Beamex was awarded 3rd place in the category "Portable Calibrators". This is the first time in the survey's fifteen-year history that Beamex placed among the top three companies in the mentioned category. This award is considered a major achievement at Beamex and it is highly valued. "More and more we are

focusing on fulfilling the needs of the US market and customers there; this award is definitely proof that we are on the right track. I am very pleased about the results.", explains Raimo Ahola, the Managing Director of Beamex Group.

With more than 70,000 readers, Control Magazine is the only North American publication that is exclusively dedicated to process automation. At Beamex, the opinions of calibration professionals in the US are valuable and highly respected. We are very grateful to Control Magazine readers for voting for us and rating us so highly on the calibration equipment we develop and manufacture.

Learn hands-on about Beamex calibration solutions at an event near you.

June

ROMCONTROLA

Bucharest, Romania
June 5th–8th, 2007
Exhibitor: MDS Electric srl

ISA Expo Control 2007

Mexico City, Mexico
June 6th–8th, 2007
Exhibitor: Turbo Control S.A. de C.V.

Hobart Table Top

Hobart (TAS), Australia
June 6th, 2007
Exhibitor: AMS Instrumentation & Calibration Pty Ltd

POWID

Pittsburgh (PA), USA
June 10th–15th, 2007
Exhibitor: Beamex

Perth "IT for Plant Control" Symposium

Perth (WA), Australia
June 20th, 2007
Exhibitor: AMS Instrumentation & Calibration Pty Ltd

MSR-Spezialmesse Rhein-Main

Frankfurt-Höchst, Germany
June 27th, 2007
Exhibitor: Germex GmbH

July

Melbourne "IT for Plant Control" Symposium

Melbourne (VIC), Australia
July 11th, 2007
Exhibitor: AMS Instrumentation & Calibration Pty Ltd

NCSL

Saint Paul (MN), USA
Jul 29- Aug 2, 2007
Exhibitor: Beamex

August

Gladstone Table Top

Gladstone (QLD), Australia
August 2nd, 2007
Exhibitor: AMS Instrumentation & Calibration Pty Ltd

Sydney "Cyber Security" Symposium

Sydney (NSW), Australia
August 9th, 2007
Exhibitor: AMS Instrumentation & Calibration Pty Ltd

Geelong Table Top

Geelong (VIC), Australia
August 22nd, 2007
Exhibitor: AMS Instrumentation & Calibration Pty Ltd

September

Offshore Europe

Aberdeen, UK
September 4th–9th, 2007
Exhibitor: Beamex

Automaatio 07

Helsinki, Finland
September 4th–6th, 2007
Exhibitor: Beamex

Adelaide Table Top

Adelaide (SA), Australia
September 9th, 2007
Exhibitor: AMS Instrumentation & Calibration Pty Ltd

Emerson Exchange 2007

Dallas (TX), USA
September 10th–14th, 2007
Exhibitor: Beamex

Oil and Gas Expo

New Plymouth, New Zealand
September 12th–13th, 2007
Exhibitor: Custom Controls Ltda.

MSR-Spezialmesse Südost

Rosenheim, Germany
September 19th, 2007
Exhibitor: Germex GmbH

October

49th International Engineering Fair

Brno, Czech Republic
October 1st–5th, 2007
Exhibitor: D-Ex Limited, s.r.o.

Elektrotechnik 2007

Utrecht, The Netherlands
October 1st–5th, 2007
Exhibitor: HPR Techniek B.V./CI & S

ISA SHOW 2007

Houston (TX), USA
October 2nd–4th, 2007
Exhibitor: Beamex

TECNIEXPO

Barcelona, Spain
October 3th–5th, 2007
Exhibitor: Gometrics S.A.

M + R 2007

Brussels, Belgium
October 4th, 2007
Exhibitor: Thermibel SA

Process Automation 2007

Oslo, Norway
October 9th–11th, 2007
Exhibitor: Process Partner AS

Scanautomatic

Gothenburg, Sweden
October 9th–12th, 2007
Exhibitor: JMEX AB

Newcastle Table Top

Newcastle (NSW), Australia
October 10th, 2007
Exhibitor: AMS Instrumentation & Calibration Pty Ltd

Gladstone "IT for Plant Control" Symposium

Gladstone (QLD), Australia
October 11th, 2007
Exhibitor: AMS Instrumentation & Calibration Pty Ltd

Perth Table Top

Perth (WA), Australia
October 17th, 2007
Exhibitor: AMS Instrumentation & Calibration Pty Ltd

Oil & Gas 2007

Buenos Aires, Argentina
October 22nd - 27th, 2007
Exhibitor: Ing. Capino S.R.L.

Wollongong Table Top

Wollongong (NSW), Australia
October 31st, 2007
Exhibitor: AMS Instrumentation & Calibration Pty Ltd

November

Dandenong Table Top

Dandenong (VIC), Australia
November 13th, 2007
Exhibitor: AMS Instrumentation & Calibration Pty Ltd

Country focus: Australia

Beamex sales partner: AMS Instrumentation & Calibration Pty Ltd



Interview with Dirk Kuiper, the General Manager of AMS Instrumentation & Calibration Pty Ltd.

Q: Give us an introduction of your company.

A: AMS Instrumentation & Calibration Pty Ltd supplies a complete range of instrumentation and calibration equipment suitable for a wide variety of industries.

The company's head office is based in Victoria and it also has branches in Sydney, Brisbane and Perth. AMS provides a high technical competence and engineering background with more than 30 years' experience. The company was established in 1973 and now employs 15 people. With a combined staff experience of more than 125 years AMS can offer solutions to best suit its customers' needs.

Q: How does the future look for AMS Instrumentation & Calibration Pty Ltd?

A: Our growth required AMS to move into



**Dirk Kuiper, the General Manager of
AMS Instrumentation & Calibration
Pty Ltd.**

larger offices in Melbourne and Sydney. The new offices have more than doubled in size, giving AMS the opportunity to maintain more stock and increasingly service local needs.

Q: How does Beamex products meet the needs of Australian companies?

A: One of the main product lines for AMS is the complete range of calibration

equipment for pressure, temperature and electrical devices from Beamex. Together with the newly released calibration software packages of CMX-Light, CMX-Professional and CMX-Enterprise, it can now provide complete calibration solutions to all industries. Additional options available are complete workbenches to suit workshops.

Q: What are the benefits for the customer who does business with your company?

A: AMS has the right products for difficult applications, as well as technical back-up. AMS doesn't just service the general application markets, but also the niche markets where the products are needed to handle severe and difficult applications.

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Beamex's global and competent
partner network, our products
and services are available
in more than 60 countries?
For more information, visit
www.beamex.com**

Beamex in brief

Beamex is a leading worldwide provider of calibration solutions that meet even the most demanding requirements of process instrumentation. Beamex offers a comprehensive range of products and services — from portable calibrators to workstations, calibration accessories, calibration software, industry-specific solutions and professional services. Through Beamex's partner network, their products and services are available in more than 60 countries.

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Re-calibration and service

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Beamex products and services

Portable calibrators

Beamex's range of portable MC calibrators for field calibration is known for their accuracy, versatility and also for meeting both high and uncompromised quality standards.

- MC5 Multifunction Calibrator
- MC5-IS Intrinsically Safe Multifunction Calibrator
- MC3 Multifunction Calibrators
- MC2 Series

Workstations

A workstation can be considered ideal when most of maintenance and calibration tasks are performed in the workshop.

- MCS100 Workstation
- MC5P Calibration Host Module

Accessories

Beamex's calibration accessories complete your investment into calibration equipment.

- External pressure modules
- Calibration hand-pumps
- Spare parts

Calibration software

Plan, manage and document all your calibrations efficiently and safely using Beamex's calibration software.

- CMX Light
- CMX Professional
- CMX Enterprise

Professional services

An essential part of a total calibration solution is Professional Services — service and re-calibration, installation and training, software support, validation services and integration services.

- Re-calibration and service
- Installation and training
- Software Service Agreement (SSA)
- Validation services (pharmaceutical industry)
- Integration services





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Portable calibrators

Workstations

Calibration software

Professional services

Industry solutions

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