



Bench Spectrometer

Oxford Instruments is a major manufacturer of scientific and industrial analytical instrumentation and a world leader in X-ray fluorescence analysis.

Business and IT challenge

Oxford Instruments' previous product line of bench-top X-ray spectrometers was designed in the 1980's. Although extremely successful, by the late 90's the instrument began to lose market share to newer competitor products. Although well liked in the marketplace, the instrument needed completely new software to match competitors' products on functionality and ease of use.

Oxford Instruments started the Twin-X project to develop and launch a new product. The Twin-X would have more advanced X-ray detection technology, as well as a sophisticated software system to control the detection process and provide an attractive and user-friendly graphical interface. The system also had to be compatible with Oxford Instruments' large library of existing analytical spectrum processing routines, which would provide the analytic capabilities for the new system.

Delivering the vision

Tessella was awarded a contract to project manage a mixed team of Tessella and Oxford Instruments staff, working on the design and implementation of the instrument software.

The underlying system was written in Visual C++ using the ATL/COM libraries. The low-level instrument control components needed to be multi-threaded and highly responsive to the demands of a real-time data acquisition system. The high-level user interface was built using Visual Basic ActiveX components because of its ability for rapid prototyping and code reuse.

Data storage was implemented using the Microsoft JET database engine and ADO libraries to provide a persistent store area for completed sample results and spectra.

The software provided sophisticated searching and retrieval tools for accessing the spectrum database and for statistical processing of results.



The Oxford Instruments Twin-X

The new system went through an exhaustive testing cycle including the development of software for automated lifecycle testing, which culminated in a powerful, and very robust software platform.

Results and benefits

The new instrument has become an immediate hit with laboratories around the world. This success has reinforced Oxford Instruments' presence as a leader in scientific analytical instrumentation.

The software developed with the help of Tessella has also gone on to become the platform for all future X-ray fluorescence instrument developments by Oxford Instruments.

Tessella plc 26 The Quadrant, Abingdon Science Park, Abingdon, Oxfordshire OX14 3YS, UK
T: +44 (0)1235 555511 | F: +44 (0)1235 553301 | E: info@tessella.com

Tessella Inc 233 Needham Street, Suite 300, Newton, MA 02464, USA
T: 1 617 454 1220 | F: 1 617 454 1001 | E: info@tessella.com



Tessella – successfully delivering IT and consulting services to world leaders in R&D, science and engineering.

For decades, Tessella has been successfully delivering IT and consulting services to world leaders in R&D, science, and engineering. Through the application of scientific methods and rigorous quality procedures, we enable clients in life sciences, energy, the public sector, and consumer industries to achieve a wide range of objectives, including, forecasting floods, developing fusion power, enhancing military sensor capability, increasing drug discovery and development efficiency, and reducing risk to health and the environment in the extraction and production of oil and gas. With offices in Europe and North America, global companies rely on Tessella for business critical assignments.

Copyright © Tessella plc 2009. all trademarks acknowledged. Issue: V1.R3.M0 | Feb.09



www.tessella.com