MEDICAL

Diagnostic system design & development

sagentia

- Central laboratory & PoC systems
- Workflow development & optimization
- Rapid product development

System development

Sagentia develops diagnostic systems, instruments and consumables from point of care devices through to large scale central laboratory systems.

We cover applications in clinical chemistry, haematology, immunochemistry, molecular diagnostics and genomics. Our multi-disciplinary approach means we take a holistic view of the diagnostic system including the user and the assay. The result is a coherent architecture based on the technical and use-model requirements.

Sagentia in diagnostics

Sagentia offers broad cross-industry experience and specific life-science and in-vitro diagnostics systems expertise.

We deliver performance improvements in throughput, sensitivity, sample volumes and consumable cost. We automate and integrate sequencing workflows and develop intuitive, easy-to-use systems appropriate for CLIA-waiver and rapid market uptake.

Highly-sensitive, high-throughput, low sample volume systems

Electrochemical sensor design & assay optimization

Microwell arrays, paramagnetic particles & microfabrication

Thermal analysis; optics module development; data management

Standalone software development for molecular diagnostic applications

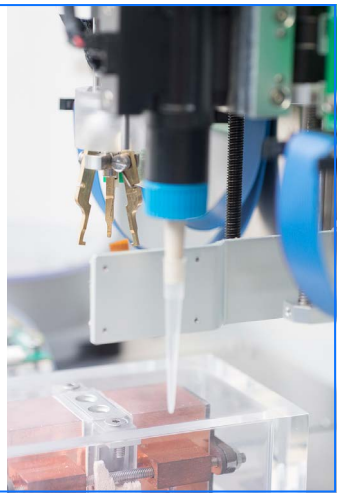
At Sagentia, we work across the development lifecycle:-

initial need and market analysis → concept generation → technology and product development → transfer to manufacture

Module optimization & development for clinical diagnostics instrument

Theoretical modelling, product design, prototyping & testing

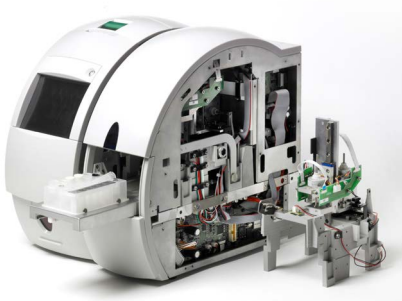
Full case study overleaf →



Real time PCR instrument

Point of care 'sample in, results out' capability using on board sample preparation

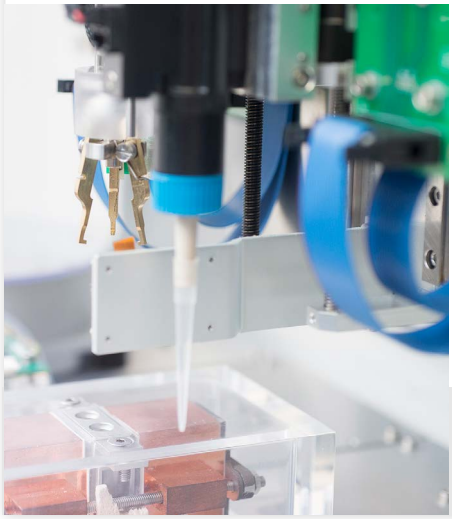
Full case study overleaf →



Module optimization & development for clinical diagnostics instrument

Challenge ¬

Our client wanted to develop their next-generation instrument and work with an external partner to help bring their timelines forward



Approach ¬

- Undertook mathematical modelling & applied physics to optimise & redesign the fluidics and magnetics in the instrument
- Validated our mathematical model through proof-of-principle and analytical testing, demonstrating both improved signal strength and co-efficient of variation
- Undertook detailed design and prototyping of two of the instrument's modules to enable the client to carry out systems integration and testing in their own labs

Benefit ¬

- The client met tight timelines and is now able to meet their target market launch for the system
- The project resulted in improved system performance in terms of reliability, repeatability and reduced variability

We delivered to tight timelines and the client met their target market launch for the system

Real time PCR instrument

Point of care 'sample in, results out' capability using on board sample preparation

Challenge ¬

Our client wanted a clinical instrument and consumable that would enable their prototype technology to be commercially exploited in the growing Point of Care market

Approach ¬

Working closely with the client Sagentia undertook:

- Extensive technical development of core IP components
- 6 processing modules able to be run in parallel
- System architecture covered assay and algorithm needs
- Successful integration of industrial and technical design requirements for the system and its complex multi-well consumable that is fundamentally easy to use

Benefit ¬

True "Sample in Results Out" capability using on-board sample preparation

- Real-time PCR instrument built around a novel system architecture
- Universally accepted industrial design using DFMA principles and minimal part count for a robust design and simple production
- Expandable system to meet all customers' needs
- Competitive costs for the system consumable

Contact us

The above are just two examples of our work in medical diagnostics. For more information, please email us at info@sagentia.com or visit us at www.sagentia/diagnostics