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, hematology, 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 expertize.

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

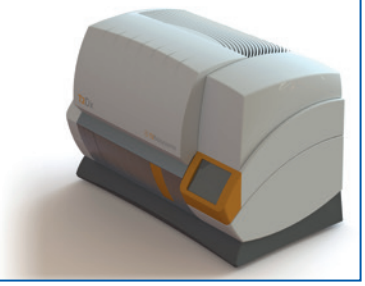
Full case study overleaf →

T2 Biosystems

"Sagentia's team has showed that they are willing to own the problem and ensure we meet aggressive timescales"

John McDonough
CEO, T2 Biosystems

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

T2 Biosystems

A flexible platform suitable for the analysis of pathogens, genomics, proteins and small molecule immunochemistry

Challenge ¬

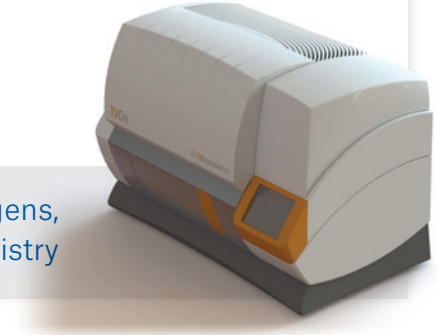
Our client required a novel IVD platform with sample PCR sample preparation and magnetic resonance detection

Approach ¬

- Sagentia's multi-disciplinary team started with system architecture and concept generation built around the client's proprietary technology
- We continued with Proof of Principle to de-risk and develop key system modules before then completing the detailed design of the entire system
- Finally, parallel activities were used to investigate the user interface, consumable design and ID

Benefit ¬

- We delivered a fully integrated system and consumable within the required timescales
- We provided the required functionality within the required footprint and BoM cost
- Verification and testing were made easier with full prototypes



A flexible platform suitable for the analysis of pathogens, genomics, proteins and small molecule immunochemistry

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