



### Case Study – DNA Testing

This client does DNA testing for medical doctors, hospitals and clinics to determine if their patients' illnesses are genetically based. This testing involves performing many sub-tests to detect certain DNA markers and then the correlation of this data into diagnostic advice. As a result, at any one time, there are many thousands of samples being processed in 96 well plates.

This client was the victim of its own success. As a result of the rapid growth of its business, this company was taking too long a time on average to process samples. It also had a substantial work-in-process backlog, which was costing the company a lot of money in unbilled work.



This client originally came to BellHawk Systems to have a scheduling system developed but ended up implementing a barcode tracking system instead.

The client had invested in a LIMS (laboratory information management system) that was customized to their specific business needs. The client believed that this gave them accurate sample tracking data. When we started to examine the tracking data in LIMS, to use as the basis of a work-flow scheduling system, we found that there were many instances in which the samples were not tracked for days or weeks. Typically "missing" samples were placed in a freezer in one of many specialized testing laboratories and simply forgotten until someone came looking for them.

As a result, it was decided to implement a BellHawk barcode tracking system, using the existing PCs scattered throughout the laboratories to access the LIM system. These were equipped with corded barcode scanners that were used to track barcoded vials, test tubes and 96 well plates, which contained the samples. This enabled the client to track the physical location and process step of each container of samples in detail and to produce reports on their testing progress.

As a result of this tracking, the client was able to identify and correct several major bottlenecks in its DNA processing flow. It also enabled the client to make more efficient use of its technical staff by dynamically deploying them to the laboratories with the heaviest processing workload.

We did complete a scheduling system for one major laboratory for this client, using BellHawk Systems' SimHawk™ artificial intelligence based simulation technology. But no-one used the resultant system as, once supervisors and managers had good real-time tracking data, they did not need a scheduling system to assist them with making personnel assignments.

The barcode tracking system was loosely integrated with the LIM System, taking data about sample containers to be tracked from LIMS. The barcode tracking system was, however, not used to track any clinical data to avoid the need for validation.

As a result of getting good real-time tracking data, this client was able to significantly shorten the time to process samples, eliminate the "missing" sample problem, and substantially improve cash-flow by reducing their work-in-process backlog.

For more information about BellHawk, please see our website at [www.BellHawk.com](http://www.BellHawk.com). For a free consultation on how to solve your barcode tracking problems, please call 508-865-8070 x302.