



# Genomic Research Systems Engagement Overview

## Client Challenge:

Our client needed a custom software solution that would ensure anonymity of a patient's clinical trial and specimen data during genetic research while allowing researchers to query across all data. Additionally, a complex inventory system was needed to track items such as specimen location, freeze/thaw counts, aliquot development, shipment management, and quality control. Finally, a workflow process was needed to track requests and ensure proper approvals were received prior to shipping specimens for genetic testing or allowing researchers to download approved clinical trial data.

## Solution:

Theoris Solutions Corp designed and developed a custom, web-based suite of applications to manage all aspects of specimen management, request approval, and query development/processing. Through multiple discussions with internal experts, a series of physical and logical encryption techniques and workflow processes were developed to allow scientists the ability to link clinical trial data with specimens while maintaining patient anonymity. This enabled researchers to query for specific sets of specimens based on phenotype and other characteristics, package the specimens and associated data into requests, and submit the request to an iterative workflow process for approval. This resulted in specimens being shipped for analysis and the approved data being available for download by researchers.

## Result:

- The solution resulted in the client's ability to satisfy regulatory bodies' compliance with patient anonymity and maintain the ability to track the specimen through the specimen lifecycle.
- Data and inventory systems capable of maintaining patient anonymity without breaking the link between a patient's clinical trial data and their specimens.
- Query system allowing researchers to iteratively query patient data to identify and stratify a set of specimens for use in a request.
- Request and workflow processes for getting a set of specimens and selected clinical trial data approved for use.
- Advanced inventory system capable of tracking and reporting information about specimens and their associated aliquots, shipment processing, and handling quality control measures.
- Interfaces for securely acquiring specimen, patient, and clinical trial data from other systems.

**Technologies:** Java/J2EE, SQL, HTML, JavaScript, JSP, AJAX

**Software/Tools:** Oracle, WebSphere, ClearCase, JBuilder

**Solution Type:** Custom Software Development

**Industry:** Life Sciences