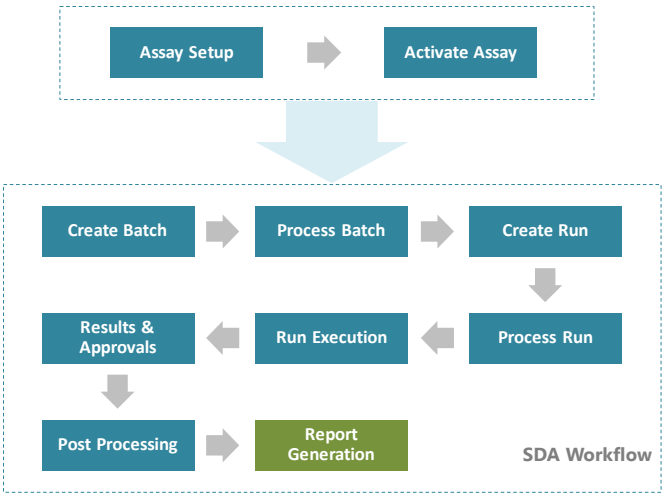
Case Study: Serial Dilution Assay Workflow for a Leading CRO

Client Requirements

Client is a leading contract research organization providing clinical research services to life sciences, pharmaceutical, and biotechnology organizations. Client needed to develop an application to manage the workflow of various generic serial dilution assays for its vaccines and biologics lab. The application also required to support input and output from Hamilton systems and include spreadsheet-like features for its set-up screens to define formulas and derive output/validation.

Given its extensive expertise in healthcare interoperability, integration and healthcare workflows, CitiusTech was chosen to develop the solution.



CitiusTech Solution

Requirement Analysis

CitiusTech put together a team of life sciences domain experts and clinical informatics specialists to do a detailed analysis of client's existing system. Based on its assessment, CitiusTech designed a flexible and a configurable system to implement the serial dilution assay workflow for clinical trials.

Solution Design

CitiusTech developed the serial dilution assay module, integrated with its existing Lab Information Management System (LIMS). The solution offered a flexible set-up screen for setting up assay and running and managing tests in batch mode. The key modules developed included following features -

- System assay format set-up
- Set-up screens included spreadsheet-like features to define formulas and derive output/validation
- Batch creation and management
- Run creation and management
- Raw data upload and general data manipulations
- Pre and post-run acceptance procedures
- Report set-up

Development and Deployment

CitiusTech team developed the solution using agile methodology. An on-shore team was set up for close interaction with the client. The solution designed included:

- Rich and user-friendly UI
- System to process large amount of data
- Open source libraries to perform heavy mathematical operations, setting up and generating graphs
- Utility to copy the report set up of one assay format to another assay format intra-database and inter-database to help users to save time and efforts when setting up reports

Release notes and required scripts were shared with the client to ease the deployment process.

Value Delivered

By partnering with CitiusTech, the client was able to:

- Define and implement the serial dilution assay workflow for clinical trials effectively and quickly
- Implement arithmetic engine to support all the arithmetic operations/functions provided by Microsoft Spreadsheet
- Develop flexible reporting module for on-going and future business needs
- Design a solution capable of interfacing with SAS engine to support future requirements

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About CitiusTech

CitiusTech is a specialist provider of healthcare technology services and solutions to medical technology companies, providers, payers and life sciences organizations. CitiusTech's services and solutions include healthcare software development, healthcare interoperability, regulatory compliance, BI/analytics, consumer engagement, care coordination and population health management.

CitiusTech helps customers accelerate innovation in healthcare through a number of solutions and accelerators for clinical quality reporting, healthcare big data, cloud computing, mobile health and predictive analytics. With cutting-edge technology expertise, world-class service quality and a global resource base, CitiusTech consistently delivers best-in-class solutions and an unmatched cost advantage to healthcare clients worldwide.

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