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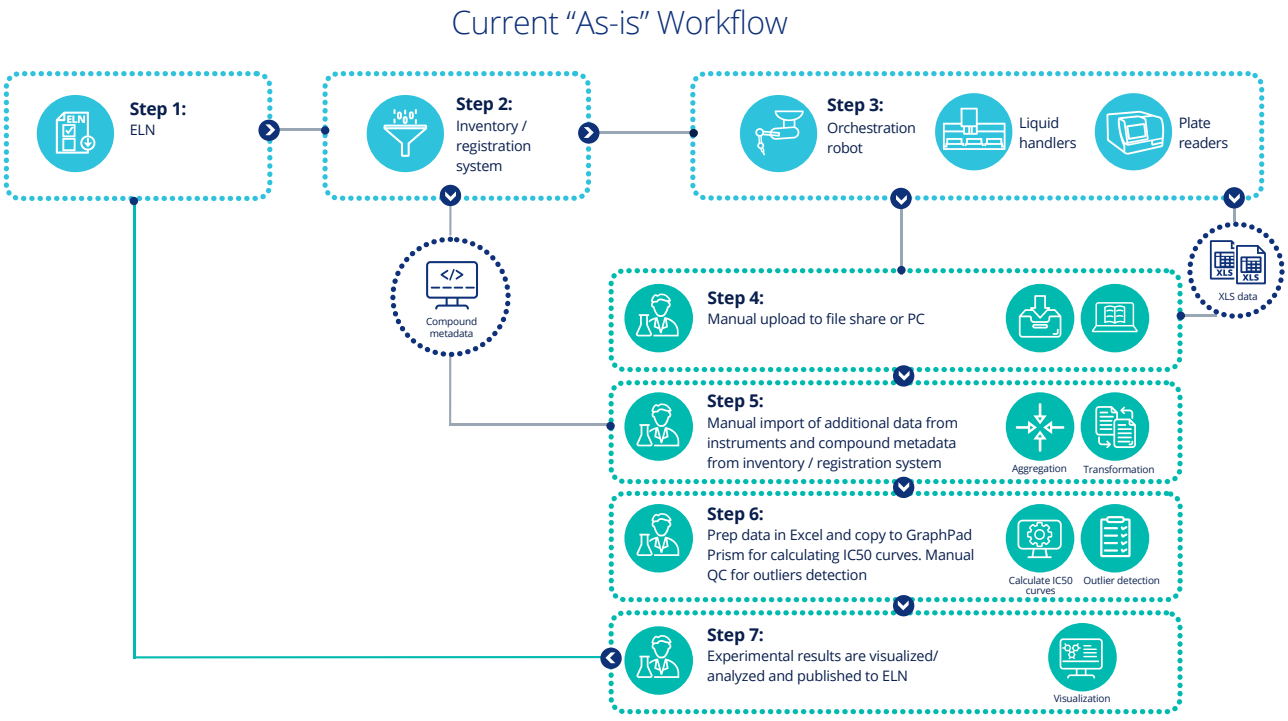
Accelerating High-Throughput Screening Insights With the Tetra Scientific Data Cloud™

Screen more entities in less time with improved data integrity, resulting in higher-quality leads for your discovery and development

SOLUTION BRIEF

High-throughput screening (HTS) still dominates the early discovery landscape – small molecules, large molecules, materials, and even cell therapies use this technology to parallelize experiments. While it enables biopharma organizations to more quickly iterate across parallel experiments to identify leads, the efficiency of HTS is gated by reliance on manual, error-prone processes to acquire large, complex data sets, transform them into usable formats, and update ELN and lab inventory management systems. These inefficient processes reduce "hit" or target ID throughput and ultimately delay downstream drug development phases.

Challenges of Current Solutions



The challenges lie largely with the data and, R&D IT and informatics teams play a key role in improving efficiency. Traditionally, HTS campaigns acquire large, complex data sets with multivariate information about a given library or pool of entities. These data, after (manual) review and triage, are loaded into a structure-activity relationship (SAR) database that allows for optimization along a vector (e.g. improved binding or lowered ½ in plasma). So what becomes of all that data?

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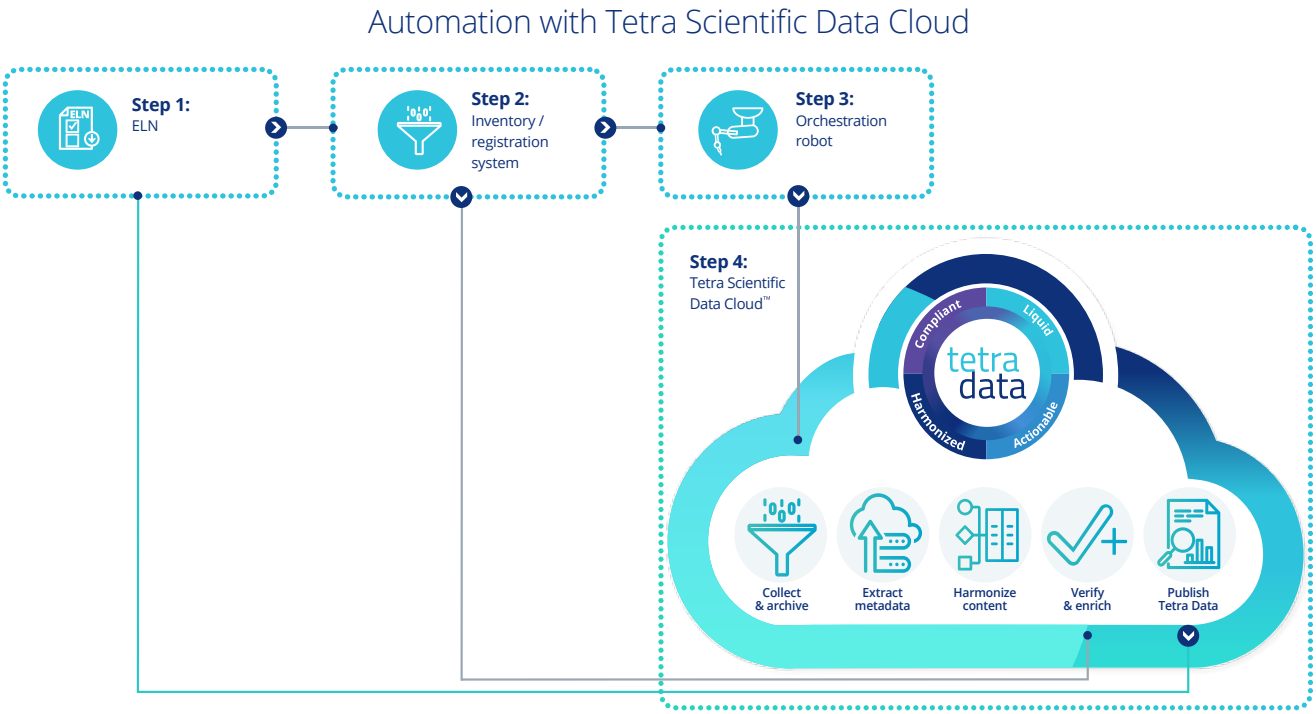
The process of manually searching for sample barcodes, assembling and transforming them into usable formats, and publishing to an electronic laboratory notebook (ELN) or lab information management system (LIMS) is tedious, error prone, and creates inefficient workflows, ultimately delaying screening campaigns.

Solution

The solution to these data challenges involves the following: automating end-to-end pipelines, connecting instruments and applications seamlessly via productized integrations, and harmonizing the data so it's FAIR (findable, accessible, interoperable, and reusable) in the cloud.

TetraScience's **High-Throughput Screening Tetra Scientific Application** brings cohesion and automation to your high-throughput screening workflows. With this application, IT can enable research teams to screen more entities in less time, identify higher quality lead candidates sooner, and bring critical treatments to market faster.



Features

- **Automated End-to-End Pipelines:** Pre-built and orchestrated to trigger activities and manage data collection, processing, and storage workflows
- **Enriched, FAIR Data:** Provides secure, accessible, centralized data storage and access in the cloud, enriched with metadata to be searchable using scientific context
- **Productized Integrations:** Connects seamlessly with instruments and informatics applications specific for the HTS use case, including liquid handlers, plate readers, inventory management, ELN, and compound registry
- **Data Harmonization:** Processes data across multiple vendors and formats prepared for advanced analytics and predictive modelling

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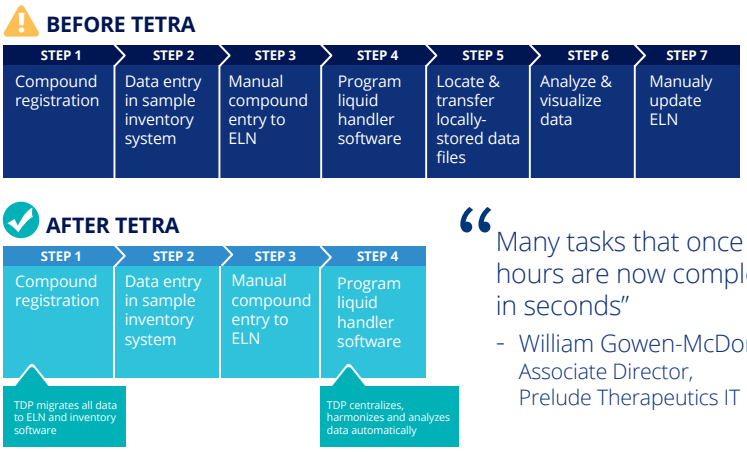
Customer Problems	TetraScience Solution Benefits
• Manual data location, collection, curation, and processing are slow and error prone • Scattered, disparate data cannot be used in downstream analysis and structure-activity relationship (SAR) applications • Lack of traceability from raw data to derived values results in loss of data scientific context	• Increases screening throughput and improves quality via automation • Harmonizes and centralizes data from multiple instruments and applications across multiple vendors and formats, making the data accessible and actionable for advanced analytics • Eliminates error-prone, manual updates to inventory and registration systems • Identifies higher-quality leads for optimization and development, reducing the number of false positives and negatives • Delivers data for SAR and *in-silico* evaluation, identifying higher probability candidates • Provides a historical record, traceability, and scientific context to screening data and derived results, eliminating data reprocessing

Selected Customer Outcomes

- 2-4x increased screening throughput from process automation
- 40-60% reduction in time spent manually aggregating data
- "Hands-off" testing and flow of data due to efficient process orchestration



> "Many tasks that once took hours are now completed in seconds"
>
> - William Gowen-McDonald
> Associate Director,
> Prelude Therapeutics IT

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TetraScience is the Scientific Data Cloud company with a mission to transform life sciences, accelerate discovery, and improve and extend human life.

The High-Throughput Screening Tetra Scientific Application increases screening throughput, improves efficiency, and enables higher-quality results. Please contact us to learn more.

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