

# Tetra Scientific Data Cloud for Scientific Data Engineers

## GUIDE

**Biopharma scientific data engineers want to provide scientists and data scientists with reliable, clean, centralized, and high-quality data. However, they face a significant dilemma:**

- Consolidating data for even a single sample or workflow involves coordinating data ingestion, migration, transformation, and access across multiple instruments, dozens of software versions, ELN, LIMS, and notebooking/visualization tools to support advanced analytics and AI/ML
- Scientific data workflows are often disjointed, involving *ad hoc* file storage, manual transcription and migration, and impromptu workarounds that are slow, error prone, and inefficient
- Both software and scientists employ inconsistent metadata attribution, leaving data unsearchable and difficult to find, access, and reuse

**The Tetra Scientific Data Cloud™** empowers scientific data engineers to configure pipelines that provide users with structured, vendor-agnostic data. Such data enables downstream usage in informatics applications like ELN, LIMS, accessibility via REST API and SQL for programmatic integration, and use with visualization tools, analytics, and AI/ML.



### Simplify pipeline management

- Leverage productized pipelines, or customize using self-service, with a platform that simplifies workload balance and orchestration
- Eliminate the need for individual data transformation mappings across each point-to-point connection



### Make data accessible to your scientists and data scientists quickly

- Set up automated data flows between instruments, informatics applications, and analytic programs
- Make data accessible for all users through platform search queries using the UI or through the programmatic API and SQL interfaces



## Ensure data is easily findable and interoperable

- Automate metadata enrichment, enabling context-based search
- Transform data into vendor-neutral formats that are interoperable across different instruments, informatics, and analytics software



## Leverage industry experience

- Take advantage of hands-on guidance from scientific data experts with established reputations across cloud technology, data, and life sciences

Before TetraScience	After TetraScience
Managing complex scientific data pipelines often involves a patchwork of makeshift, manual, and unreliable workflows	Productized and customizable pipelines automate the collection, transformation, and harmonization of instrument and application data, enabling best practices and the simplification of common scientific workflows
Point-to-point connectivity and data transformation requires unique integrations between each data source and target	Connect all data sources and targets to the Tetra Scientific Data Cloud, eliminating the need to create unique integrations between each source and target
Processing proprietary data formats for advanced analytics, visualization, and AI/ML tools requires custom solutions or error-prone manual processing	Streamlined harmonization to vendor-agnostic formats (Tetra Data) eliminates hours of manual processing, costly errors, and maximizes the value of downstream tools
Scientists and data scientists cannot intuitively find and retrieve their data, leading to delays or repeated experiments	The platform enriches data with metadata that is extracted from instruments and applications, allowing users to easily search for and access their primary data

The Tetra Scientific Data Cloud helps scientific data engineers vastly improve data quality and refocus their efforts on high-value work by allowing them to automate data flows, centralize storage, gain reliable search, and power advanced analytics.



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

**To learn more about how the Tetra Scientific Data Cloud can help scientific data engineers streamline their pipelines, visit [tetrascience.com](https://tetrascience.com).**

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