

Thermo Scientific™ Data Manager™

Challenge: Raw data is generated by multiple disconnected instruments across the lab, in multiple formats. Data is difficult to search, share and access for reporting and reuse. Management and scientists cannot fully leverage the company's intellectual property resulting in duplication of effort. In addition, personnel and IT costs are high managing multiple systems.

Solution: Integrate instruments across the lab providing a paperless environment. Centralize data capture, viewing and archiving. Enable data to be accessed across the organization, by anyone who needs it, in a common format. Data is secure, manual data manipulation is eliminated, costs are reduced, and information becomes knowledge for management decision making.



Data Manager gives you long-term data preservation, accessibility and retrieval of raw instrument data so you can share, compare, search, query and reuse instrument and document data across your organization.

Regulatory Drivers to Centralize Data

The penalties for improper maintenance of records can be very severe – ranging from the closing down of a business to imprisonment of its directors and staff for fraud. Providing a complete data 'chain of custody' is essential for R&D and law enforcement

Financial Drivers to Centralize Data

International Data Corp. (IDC) estimated that poorly managed knowledge costs the U.S. Fortune 500 companies alone about \$12 billion a year. Substandard performance, intellectual rework, and the lack of available knowledge management resources were identified by IDC as the key causes of this cost.

Thermo Scientific Data Manager is designed to meet the requirements for securely storing and rapidly retrieving scientific data from multiple instrument formats. Through a unique library of over 150 powerful file converters that automatically generate XML versions of the data, the archived information can be viewed on virtually any platform without using the original instrument software.

The data sharing and recall capabilities of the system can aid development of new ways of reanalyzing samples and developing predictive models that are impossible when the information is scattered across the company in individual workstations and multiple disparate formats. Data Manager is the most effective solution of its kind for protecting scientific intellectual property and extracting maximum value from past and future R&D activities.

Data Manager allows authorized users to retrieve and display specific data files at a point in the future, without relying on the original vendor's software, operating system or hardware. Data Manager achieves this by archiving data in a "normalized" XML-based format, providing the ability to easily retrieve original raw data or converted files and to respond much more promptly and effectively to requests from colleagues, regulatory or legal bodies.

By archiving data in a normalized XML-based format and exposing it via web services, Data Manager easily integrates with existing informatics investments such as LIMS, CDS, ELN, as well as enterprise systems such as ERP, increasing the utility, value, availability and longevity of scientific data.

Designed to Deliver Connected Productivity

The advantages of integrating all scientific and laboratory information into a single application are far-reaching: enhanced availability, protection of data and intellectual property, elimination of duplicate searches and streamlined information management throughout the organization. Designed to meet stringent regulatory requirements, Thermo Scientific Data Manager is an ideal solution for capturing and managing data from analytical instruments and business applications: instrument output files, certificates of analysis and reports, product specifications, standard operating procedures (SOPs), and much more.

Data Manager is your gateway to connecting your lab and enterprise data to help you make faster, more informed decisions at all levels of the organization. With Data Manager, all your laboratory documents and instrument protocols are converted into a structured format, and easily embedded in your database—so it will have the same integrity, longevity and accessibility as traditional alphanumeric data. This 1) enables data consumers to find the information they need through a single search, including research reports, spreadsheets, product specifications, instrument output files and more, 2) promotes timely and effective use and reanalysis of lab data, and 3) removing data silos reduces rework and transforms the information produced in your lab into a valuable global asset for your organization.

Designed for Regulatory Compliance and Long-Term Archiving

Data Manager delivers functionality that enables compliance with Good Laboratory Practice (GLP), Good Automated Laboratory Practice (GALP), Good Manufacturing Practice (GMP) and Good Automated Manufacturing Practice (GAMP) under the auspices of all major regulatory authorities,

How does Data Manager work?

- Based upon user-defined rules, Data Manager sweeps the instrument file system or database and packages all new or updated raw data and reports. This data package is transferred securely to a specified data repository.
- Proprietary converters understand the specific raw data format then render an accurate normalized copy of the raw data in a vendor neutral XML format.
- Descriptive metadata is extracted from the raw data and XML via user-defined rules and stored in the database as properties of the data package to aid structured retrieval e.g. date/time created, analyst, application type, sample name, component names, batch, LIMS ID, etc.
- A full text index of the raw data is created to allow rapid unstructured searching of the packaged data.
- Data items can be rapidly found through structured or unstructured queries through the user interface or from 3rd party applications via the data manager web services. The recalled raw data can be re-processed in the original system or the normalized XML may be viewed, reported and processed via the web, tablet or applications such as GRAMS/AI, Omnic and Chromeleon.
- Data Manager can be configured to capture a relevant text document or PDF along with the actual instrument data. Once the instrument data files are gathered together they are moved to the server. There the appropriate converter creates an XML copy that is then stored, alongside the original data, and indexed in a secure file store. File stores may be geographically distributed while the indexes are stored centrally. This reduces the need for file transfer while maintaining the benefits of a global system. Data Manager viewers such as GRAMS Envision lend themselves to remote deployment solutions, such as Citrix or Thermo Scientific Web Access, that further reduce the need for file transfer.



As part of a paperless lab environment, Data Manager can contribute to a reduction in paperwork, manual review time and data transcription, improving efficiency, productivity, consistency and quality and reducing costs by over 20%.

including U.S. FDA, U.S. EPA and OECD. This includes extensive functionality to allow customers to use Data Manager as a critical component in enabling laboratory solutions compliant with 21 CFR Part 11.

Data Manager ensures compliance by delivering comprehensive audit trailing, workstation security, operator/role/group security configurations, passwords and login security, and electronic signature functionality for signing/approving archived data.

Data Manager is a vital component of any paperless lab environment, enabling consolidation of analytical results and access to raw data and instruments from web browsers and mobile devices. Users have access to all instrument data via a single interface. The technology converts raw data to a vendor neutral XML storage format to ensure future proof data archiving and facilitate data and information sharing across the organization.

For more information about Data Manager, call us at the number closest to you, email us at marketing.informatics@thermofisher.com, or visit www.thermoscientific.com/SDMS.

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