

# Enterprise Connectivity for Better Decision Making

## Integration Manager™

Flexible, Powerful Data Transformation Tool for Data Distribution Across the Enterprise





## Enterprise Connectivity for Better Decision Making

The world of laboratory informatics is changing. As laboratories look to streamline the flow of information, having multiple disparate systems with minimal to no connectivity is no longer an option. The shift to a laboratory fully integrated with the enterprise yields a greatly enriched user experience that allows individuals and organizations to not only manage and capture their data more efficiently and securely, but also to simplify their daily work flow. At a higher level, it enables management to make decisions based on current and pertinent information.

A coherent strategy that can connect data from Laboratory Information Management System (LIMS), Chromatography Data System (CDS), and other sources (e.g., enterprise resource planning [ERP] and manufacturing execution systems [MES]) across the enterprise is a key business driver today. One of the key challenges faced by organizations today is their inability to turn the vast amount of data generated into

useful information that enables them to make timely and effective decisions. With multiple applications across the enterprise generating reams of data that all sit in separate silos, aggregating and mining these data is a very real and complex problem. Many companies use manual or inefficient processes for collecting and aggregating data. Some companies use both structured and unstructured content. Oftentimes the reports that distill this mountain of data into relevant information are extremely tedious to create. In addition, because data formats and applications are frequently inconsistent and not well integrated, there is no coherent way for scientists to aggregate all of their work in one place. This complexity is compounded even further when a laboratory manager or director has to manage multiple teams or groups of work. All of these are barriers to making effective business decisions and increasing return on investment (ROI).

### The Problem: Lack of Connectivity Leads to Time and Revenue Loss

One of the most common reasons for purchasing a LIMS or CDS is its ability to connect with laboratory instrumentation and enterprise systems for better data management. Despite the fact that laboratories feel this connectivity is a requirement, it is not always achieved in

practice. A worldwide market research study on LIMS users conducted by Strategic Directions International (SDi, Los Angeles, CA) found that over 70% of labs have less than half of their instruments interfaced to their LIMS. This study and others like it illustrate the clear gap



between the connectivity a laboratory hopes to achieve and reality. The real or perceived complexity of linking these systems is one reason why this connectivity is currently not more prevalent. When an instrument is directly interfaced to the LIMS, the costly time, labor, and error introduction involved in the manual transfer of data are essentially eliminated.

Companies with no connectivity of data sources across the enterprise will find that transcribing data is slow, expensive and error-prone. It has been estimated that a typical laboratory employs one Full Time Employee (FTE) a week

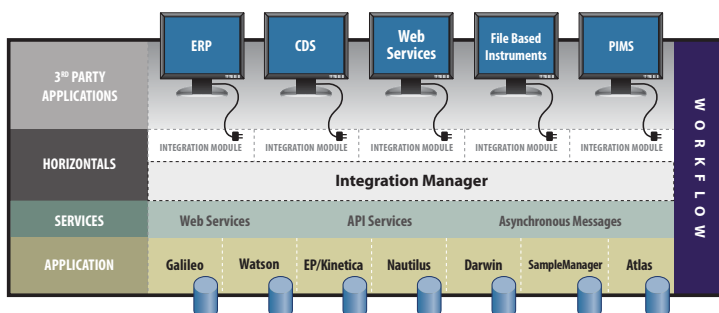
in manual data transcription alone, thereby costing the organization valuable personnel time and revenue. Manual data transcription and report creation prohibits the Lab Manager from focusing on the science of the laboratory. Furthermore, a lack of connectivity also prevents the Business Manager from being able to draw conclusions and make decisions based on the real time data that is generated in the lab. The result is time and revenue lost due to the time it takes for multiple laboratory personnel to gather data and prepare reports so that the information becomes part of a management decision that affects the business.

## The Solution: Thermo Scientific Integration Manager™

Thermo Scientific Integration Manager is a flexible and powerful data transformation tool that delivers automated data acquisition and point to point data distribution across the enterprise. This easily deployed system

provides connectivity to all parts of the laboratory workflow, translating data generated by any of the instruments, services, or third party enterprise applications that may be in place throughout the organization.

### Horizontal Integration Component



**Integration Manager connects laboratory and enterprise data sources to KBM dashboards, providing management timely access to accurate information from across the enterprise.**



## Instrument and Enterprise Connectivity in a Single Package.

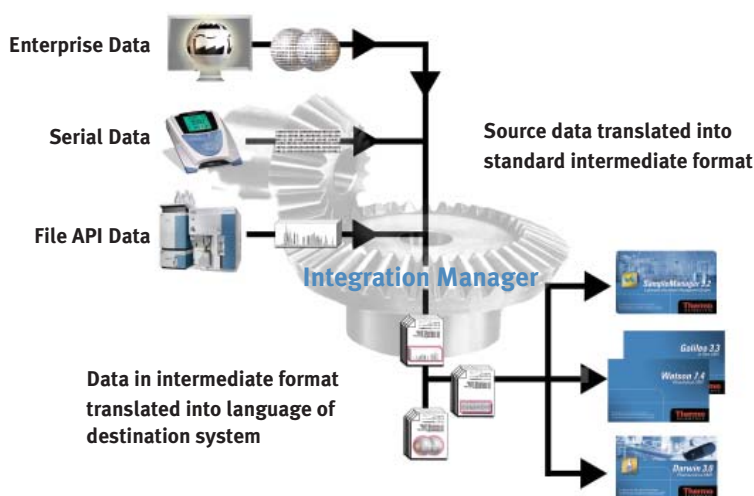
With Thermo Scientific Integration Manager, manual data aggregation for report preparation is greatly reduced thereby freeing laboratory personnel to focus on the science of the laboratory. In the process, management across the organization are enabled to utilize the information that results from the data generated in the laboratory—and tie it to general business decisions.

Most laboratories have in place many different types of instruments that historically generate data locally. They require human intervention to access data from each of the instruments individually before preparing a report that makes

use of the collected data. This collection of data is most often done through re-keying of report data, leading to human error in the time consuming transcription of data.

With Integration Manager, the disparate instruments in the laboratory can be fully integrated, which allows data to be collected electronically and stored in a central database, regardless of the individual report formats required for each instrument. Integration Manager acts as a 'translator' of all the individual languages of those disparate instruments to provide and accept data in the format appropriate for each instrument.

### The Integration Manager Workflow

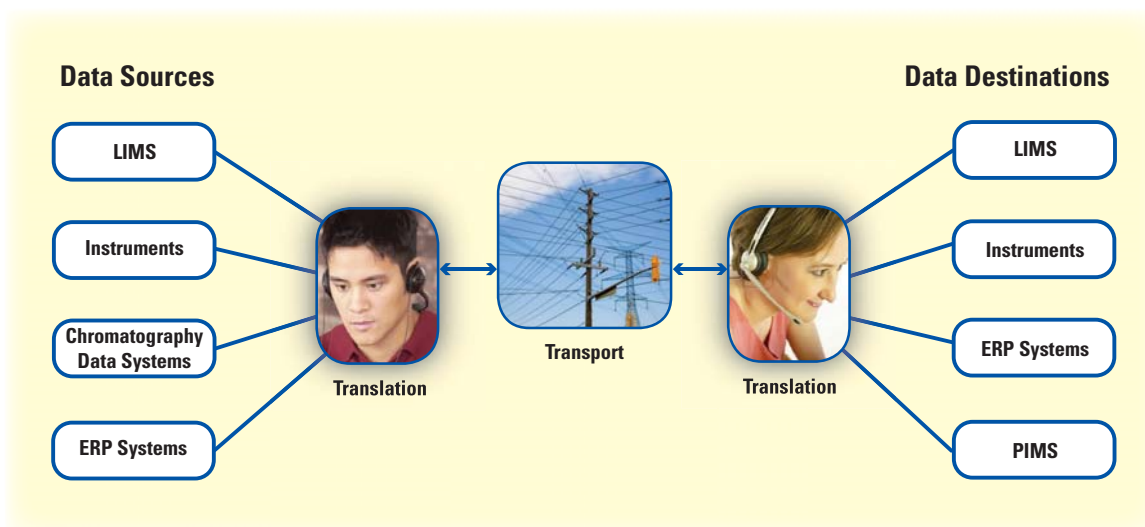


Through Integration Manager, data consolidated in the LIMS from instruments and manual laboratory processes can be seamlessly exposed to the enterprise. This allows all levels of management to access laboratory sourced data from within familiar systems. Process operations staff will see relevant laboratory batch data alongside online sensor readings within their familiar MES control panel (HMI-Human Machine Interface). Back office personnel in logistics and quality assurance will see up to the minute quality information within the corporate ERP system.





## Data Connectivity Across the Enterprise



**Integration Manager acts as a “translator” of the individual languages of the disparate data sources, accepting and delivering data in the format appropriate to each intended recipient.**

Thermo Scientific Integration Manager is a tool that can facilitate a secure and centralized data management system and is built on open standards architecture that is highly configurable for the specific needs of your enterprise.

This centralized data provided by Integration Manager allows the organization to save time in preparation of manual reporting, save costs in personnel time and eliminate potential errors created during manual processes.

A fully integrated laboratory will have taken advantage of the opportunities to marry its

instrumentation to its LIMS, and further enable the user base to access and aggregate data via. Net technologies across the enterprise. This connectivity will yield a greatly enriched user experience that allows individuals and organizations to not only manage and capture their data more efficiently and securely, but also to simplify their daily workflow and communicate more effectively. At a higher level, enterprise connectivity allows management to make decisions based on the current data and aggregated information from the entire operation.



## Thermo Scientific World Class Integration Support and Services

Thermo Scientific Integration Manager is supported by best-in-class services so that each installation is configured to the needs of your organization and so that you can realize the full power of Integration Manager throughout the enterprise.

### Support & Maintenance

Through a global network of experienced support professionals, we offer local language help desks to ensure our software deployments continue to operate efficiently and smoothly and that customers realize maximum benefit from their informatics investment over time. Our support services provide access to the latest software updates ensuring customers benefit from the latest informatics technology and applications.

We support over 1500 customers in more than 40 countries through seven regional helpdesks. We provide local language support and a timely and reliable service. A support and maintenance agreement provides access to the latest software releases and comprehensive technical assistance, ensuring maximum availability of your systems while helping you benefit from the latest informatics technology and applications. Our online support services include:

- Software updates and patches
- Product documentation
- Online problem submission and tracking
- Product list servers and user forums
- ...and much more

### Implementation & Project Management

We offer a full range of services to ensure you maximize the value of your informatics investment, including software implementation, project management and consulting, software development, and instrument and systems integration. With a global network of highly experienced professionals dedicated to delivering the best implementation and professional services in the market, Thermo Fisher Scientific can provide a complete laboratory automation solution.

### Integration Solutions

Our Informatics Professional Services team can create an integration solution that fits your needs. Along with our extensive LIMS integration experience, Integration Manager provides a comprehensive starting point for integration projects tailored to your specific environment. In addition to instrument and ERP integration, Integration Manager can be extended to support a variety of integration scenarios including file based, API, and Web Service data paths. Because all of these solutions are built upon a common platform, they can be shared across our products to fit your specific requirements.

### Validation & Compliance Services

Our dedicated validation and compliance consultants offer in-depth laboratory expertise and a full understanding of compliance requirements to help address issues such as 21 CFR Part 11. We provide validation consulting and planning, test development and execution, and validation training. With an in-depth knowledge of laboratory software and equipment, our consultants can help ensure laboratories meet compliance requirements in the most effective manner possible.



## A Single Solution for Instrument and Enterprise Connectivity

### Simple Configuration

- A single familiar interface for all system and instrument integration
- Purpose Built Agents make setup easy
- Wizards to define simple, one to many or rule based data routing
- Data Transformations can be user configured with the mapping tool
- Configuration settings and Transformations can be exported and shared
- The service manager tool standardizes agent installation

### Easy to Maintain

- The Administration Dashboard gives a system wide overview and control
- Issue Diagnosis is simplified by a detailed transaction audit trail and optional 'debug' logs
- Once configured, data transfer is automated and transparent to the user
- 'Loose coupling' ensures that upgrades to Integration Manager have no impact to the core LIMS system

### Robust and Scalable

- Throughput and up-time stability characteristics are defined and tested for each release
- Message delivery or storage and notification are guaranteed once data enters the system
- Microsoft Message Queue capability provides fail-safe connectivity
- Throughput can be increased simply by adding extra agents

### Integration Solution Extensibility

- Informatics Services can extend the functionality of Integration Manager
- New Agents can be created and added to existing Integration Manager implementations
- Transformations can be created to support new instruments and integration sources
- Existing transformations can be easily configured to handle new or unexpected data without program recompiling

# Thermo

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