OpreX™ Informatics Manager

Multifunction Electronic Lab Note

Bulletin 80G02A01-01EN

Yokogawa's
Multifunction Electronic Lab Notebook

OpreX™ Informatics Manager Multifunction Electronic Lab Notebook that not only digitizes research notes of each laboratory, but also connects R&D laboratories, life sciences production departments, quality control departments, and quality assurance departments through project management and document management functions. By providing subscriptions through cloud services, OpreX Informatics Manager reduces our customers' operational costs and workload while driving cross-organizational digital transformation.

To prevent security breaches, which have become an issue in recent years, multi-factor user authentication and access control functions are used to thoroughly protect confidential information, and support compliance with regulatory and industry standards.(*1)

OpreX™ Informatics Manager

Feature 1 Electronic Lab Notebook that transcends departmental barriers.

As research notes are digitized and integrated with project management and document management functions, the electronic lab notebook connects not only R&D laboratories, but also life science production, quality control, and quality assurance departments.

Feature 2 Resource management of people and equipment is realized.

OpreX Informatics Manager supports optimization of people and equipment resource management from the perspective of skills and schedule to manage your operational costs and workloads.

Feature 3 Data security and privacy protection in compliance with regulations.

Multi-factor user authentication and data access control functions ensure confidential information is protected, supporting compliance with regulations and industry standards.(*1)

*1: International standards for information security ISO/IEC27001:2013 and ISO/IEC 27017:2015 compliance.

Functions

Accelerate Project

Project Management + Dashboard + Task Management + Notifications

Work standardization

Approval + Template

Data Management

Document Management + Document Import/Export

Optimization of human and material resources

User Management + Skill Management + Schedule Management + Inventory Management

Pharmaceutical compliance

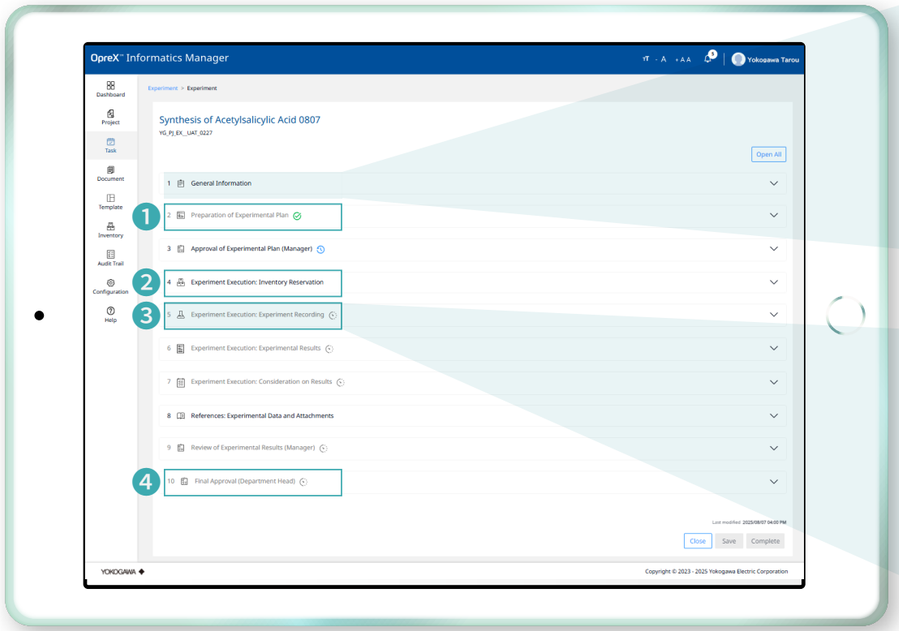
Two-factor Authentication + Audit Trail + Digital Signature

Others

Multi-lingual Support + ISO/IEC 27001 ISO/IEC 27017 + GDPR Compliance

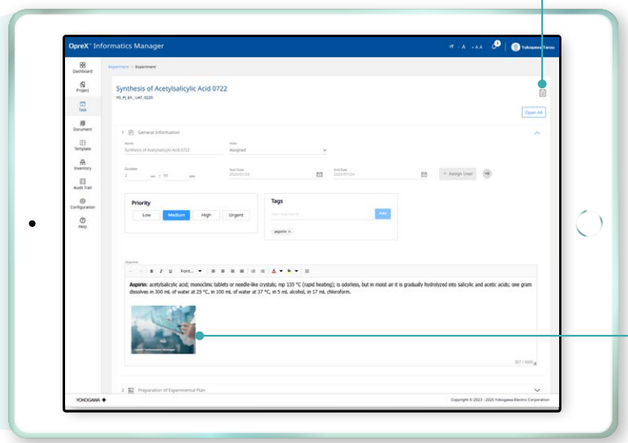
User Interface

Basic structure of the Note

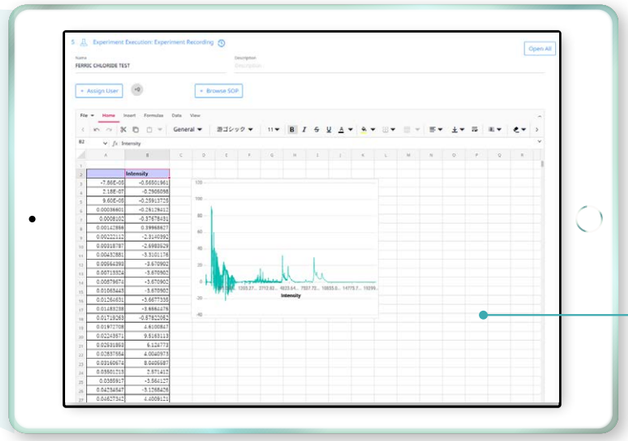


Note screens

Export report



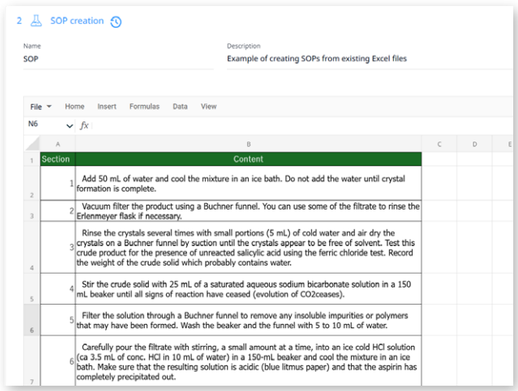
Pictures can be attached



Spread sheet and document can be imported and used as-is

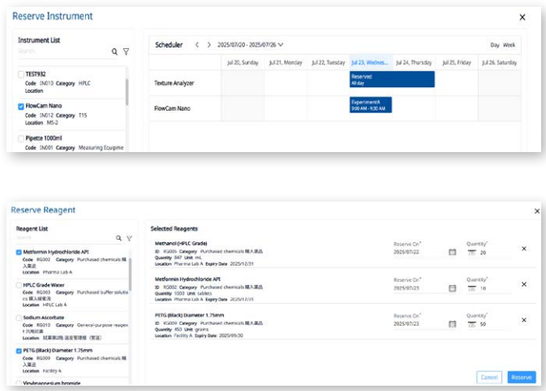
❶ Creation of Standard Operating Procedure (SOP)

Easily create new SOPs or import existing SOPs into your notebook.



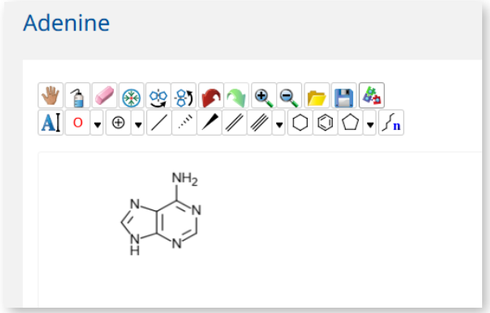
❷ Managing instruments and reagents

Instruments and reagents can be reserved directly from Note. Possible to plan and prepare for experiments smoothly.



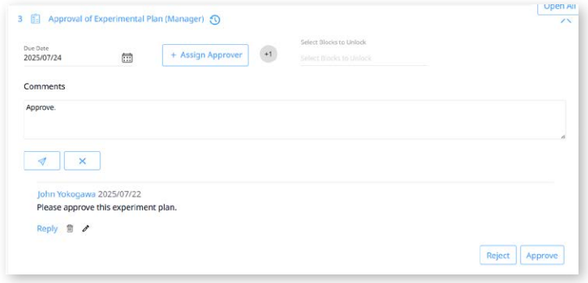
❸ Chemical drawing tool

ChemDoodle is a standard tool that can be used for chemical drawings. With this intuitive drawing tool, chemical structures can be created, edited, and data can be managed centrally.



❹ Approvals

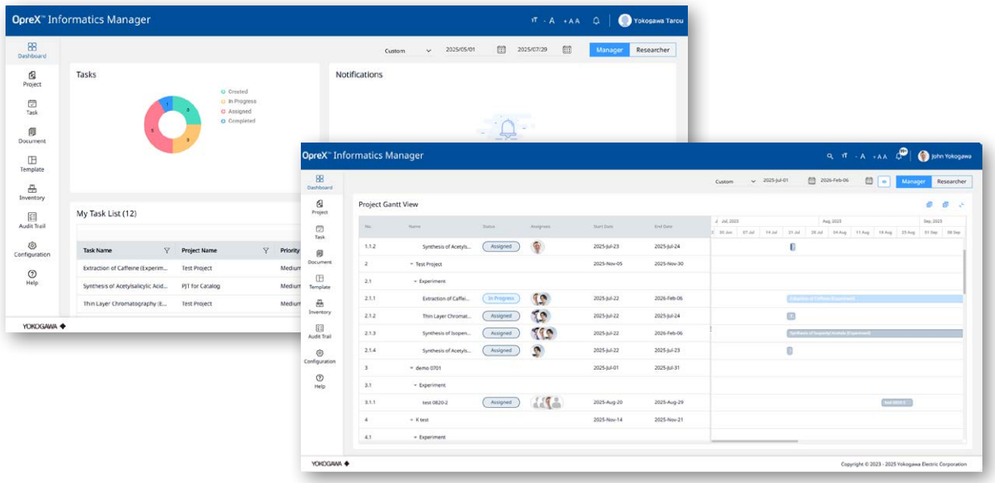
Once approved, the information can be locked to prevent editing or falsification.



Admin Interface

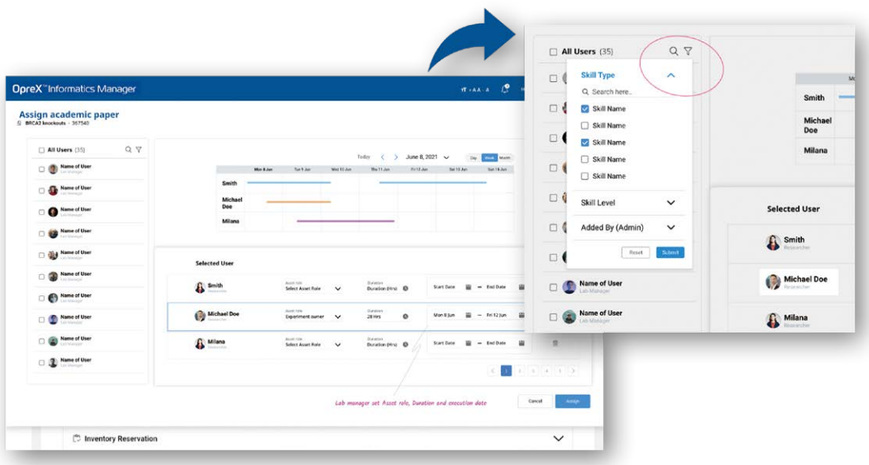
1 Intuitive dashboard

Monitor project status and progress of assigned activities driven by the task priority.
Visualize the entire schedule with a Gantt chart.



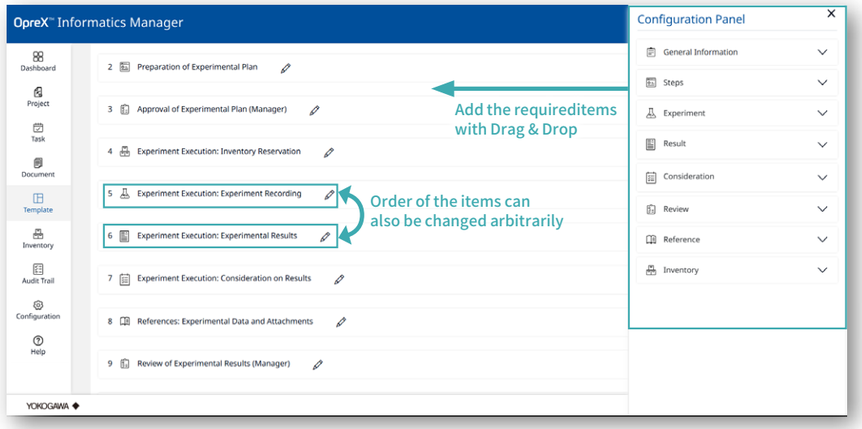
2 Assigning personnel and equipments

The most suitable person for a job can be assigned based on their skills and schedule.
Reservations for instruments and reagents can be made as per calibration records, and usage status.



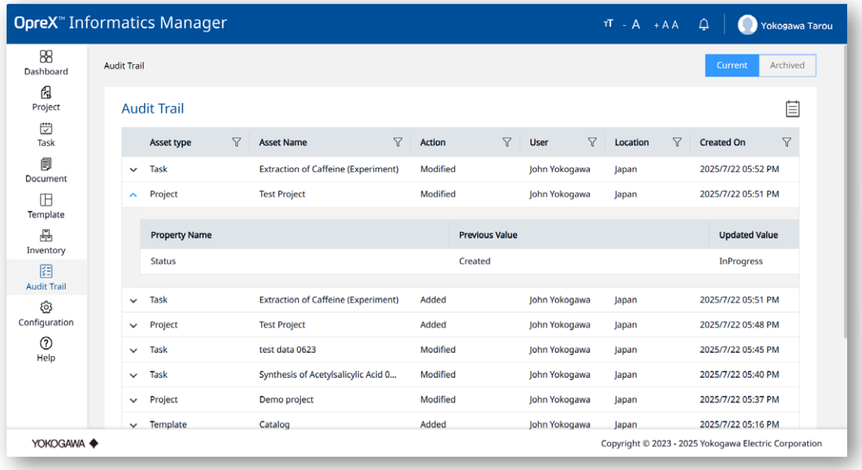
3 Standardization of laboratory notebooks Easily create templates & approval workflow

Templates can be effortlessly created by using the drag-and-drop functionality.
Efficient management of lab data is achieved by implementing a workflow feature that integrates review and approval flows.



4 Audit Trail to protect research data

With the Audit Trail, all the change history can be automatically recorded.
Complies with FDA 21 CFR Part 11 and GxP, and ensures data integrity and reliability.



Examples of utilization

OpreX™ Informatics Manager can be utilized in various industries.

Pharmaceutical industry

Centralized management and improved reproducibility of lab data in drug discovery

Challenge

In drug discovery research, accurately recording and sharing complex test conditions and results are essential. However, information is currently scattered across paper notebooks and individual files, causing challenges in reproducing and reutilizing of experimental findings.

Solution

- Lab notes, conditions, results, and attached data can be managed centrally on the cloud.
- With its record of test-wise templates, standardization of research and reproducibility can be ensured.

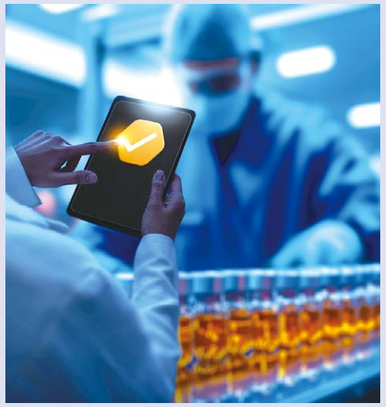
Benefits

- Precise lab records and improved searchability.
- Previous research findings can be effectively reused to accelerate the pace of research.
- Since data is managed centrally on the cloud, lab data can be shared in real-time across departments and sites.

Enhanced efficiency in parameter management and electronic recording in CMC areas

Challenge

The CMC serves as a bridge between R&D and manufacturing departments and must be able to handle a variety of recording formats. These records are often created by handwritten lab notebooks, spreadsheets, document creation software, and so on. As such, human intervention is required to link records and share information within and outside the organization, resulting in inefficiencies in the utilization and reuse of records.



Solution

- Offers flexible structure for templates and approval flow for both conventional and non-conventional recording.
- Provides centralized management of structured records for effective comparisons, search, and reusability.
- Realizes safe and smooth information sharing across departments while controlling the access rights.

Benefits

- Standardizes entire CMC operations and enables the linking and visualization of records.
- Ensures consistency of records and improved parameter management during technology transfer and scale-up.
- Centralized management of records enhances change management and audit processes.

Chemical industry

Efficient data management in organic synthetic research

Challenge

In organic synthesis experiments, complex reaction pathways and conditions must be accurately recorded. But with handwritten notes and recording in local PCs, data retrieval and sharing becomes complicated.

Solution

- With the cloud based central management of data, lab data can be shared and searched in real-time.
- With the integrated ChemDoodle, data structures and chemical schemes can be easily created and managed.

Benefits

- Past synthetic data can be easily searched and as a result reproducibility of tests is improved.
- Chemical structure can be digitized and integrated management of data can be realized.

Food industry

R&D and blending management of food ingredients

Challenge

To manufacture food and beverage products, precise management of raw material composition and formulation data is required. However, maintaining data consistency with paper or spreadsheet software is challenging, and reutilizing information from previous prototypes can be time-consuming.

Solution

- Data consistency can be ensured by unifying input format by using common templates.
- By incorporating the workflow feature, approval process can be made more efficient.

Benefits

- Centralized data management in the cloud enables real-time sharing of measured data, sensory evaluation, and consumer test results among development teams.
- Unified management of prototype and sensory evaluation data increases development speed.

Success Story

Research Process Optimization: Efficient Data Management with ELN

GlyTech, Inc.

Location: Kyoto, Japan Industry: Pharmaceutical

GlyTech, Inc.

Customer Challenge Improving the efficiency of management in the biomolecule synthesis process

Results
- Optimized operation of tasks and resources
- Efficient management of data and document
- Digitization and standardization of operational processes and documents
- Easy implementation

Company Overview

GlyTech, Inc. has established a technology for mass production of glycoconjugates, which are classified as complex N-glycans. Based on this technology, they are engaged in custom synthesis of glycogen reagents, peptides, glycopeptides, and glycoproteins for research, and sell them as raw materials for drug substances. In addition, based on the know-how cultivated through these manufacturing processes, they provide synthesis and analysis services for biopolymers that meet various needs. Their screening services for peptide binders with characteristic three-dimensional structures are also used to search for new lead compounds for pharmaceuticals.

Customer Issues

In the past, they used paper and laboratory notebooks to record research and production.

1. Previously synthesized compounds and associated data were not shared.
2. Project progress management was limited to reporting results at meetings, and real-time monitoring was not possible.
3. It took time to fill in the laboratory notebooks because they were written by hand as needed, and recorded data was not completely standardized.
4. Each worker carried out experiments according to a standardized procedure to some extent, but there were many aspects that were personal, as specific operating procedures and standards for judging the quality differed from person to person.

The project progress management described in Item 2 above was managed by sharing information at internal meetings and by filling in Excel tables. As indirect methods, they used systems such as an expense management system, a reagent management system, and groupware to check the progress. These methods worked to some extent, but it was inefficient because it took time and effort to create materials and progress tables while checking the data in the paper experiment notebooks, and detailed management was difficult.

Yokogawa Solutions

Mr. Ochiai, the leader of this project, recognized the need to improve the management in the biomolecule synthesis process, and started using OpreX Informatics Manager, an electronic laboratory notebook provided by Yokogawa. Mr. Ochiai talked about the background of PoC and its advantages.

Efficient operation of tasks and resources

Instant data sharing

Experiment data can be shared to facilitate access to past experiment operations. Saved data can also be used in online meetings.

Real-time progress management

For progress management, OpreX Informatics Manager enables managers to track progress whenever and wherever they want— even during a business trip.

More efficient and accurate input by using templates

By creating and utilizing templates, the time required for data input has been reduced. As a result, necessary items can be filled in and checked carefully, and data can be obtained with high reproducibility. Creating templates has also helped to get a better overall picture of the items to be described and the contents of the experiment before the experiment. Furthermore, by specifying specific operating procedures and required data items to be filled in, personalization has been prevented, and data can be unified.

Efficient data and document management

Easy data management

Paper lab notebooks were cumbersome. Tasks such as pasting data across multiple pages, reducing the print size, or putting it in separate files were necessary. With OpreX Informatics Manager, however, even a large amount of data can be saved together as one experiment, and bibliographies can also be attached.

Document history management

Historical documents were sent and received by email, but it was difficult to know which version was the latest. By using the document management function of OpreX Informatics Manager, they could immediately check the update history and the latest version, which greatly helped them to create common documents.

Digitization and standardization of operations and documents

Highly flexible operation

This is a highly versatile system. Researchers can customize it in accordance with their current workflow. By selecting and using only the necessary functions, the workload for system construction was reduced.

Improved legibility

While handwritten laboratory notebooks are sometimes difficult to read, electronic laboratory notebooks are easier to read because they can be displayed and enlarged as needed.

Easy installation

Use on a variety of devices

This browser-based application does not require special software and can be used on multiple devices such as PCs and tablets. Devices suitable for the laboratory environment can be used, and work can be performed anywhere, for example, data input in the laboratory can be reported in the office.

No maintenance personnel required

The use of the cloud eliminates the need for server maintenance and maintenance personnel. Since a dedicated IT administrator is not required, they felt that this system could be applied to small and medium-sized organizations like themselves and university laboratories.

User-friendly screen

People who normally use Microsoft Word and other common applications were able to use this system without any problems. They were also able to start using this system as soon as they received an explanation about how to start it up.

Customer Comments

"We are attracted by the enhanced functions for managing personnel information, equipment and reagents, and the chemical drawing software. We also have high expectations for system integration, which is being considered in the future.

Down the road, we will further improve operational efficiency by utilizing the functions to manage operations, equipment, reagents, and documents. The functions will help us (1) enhance ELN templates, (2) assign personnel according to their skills, and (3) manage equipment and reagent reservations."

*ELN: Electronic Lab Notebook

Mr. Hirofumi Ochiai, Assistant Director
Technology Department, Glytech, Inc.

Service Overview

Software as a Service(SaaS)

- Available immediately after signing contract.
- Easier implementation and maintenance.

Subscription license

- No installation engineering required.
- License includes maintenance service.

No change in device required

- Can be used in web browsers（Microsoft Edge ,Google Chrome, Safari）
- Supports iPad and Android devices.

Auto-update supported

- Functional update will be carried out by Yokogawa.
- Available as a SaaS offering, ensuring you always have access to the latest version.

Free trial is available

- Data entered during the trial will be saved and carried over upon subscription.
- You can try all features before installation.

The longer the contract, the more you save!

You can choose the contract period according to the experimental plan, schedule, and number of users.

Usage fee per year (Eg: For 20 users)

The more licenses you purchase, the more you save.

Discount is applied based on the number of licenses in the contract.

Usage fee per user (Eg: For a 1-year contract)

System Requirements

Device	Windows PC/Tablet, Android tablet, iPad ※Display resolution of 1920 x 1080 is recommended.
Browser	Microsoft Edge, Google Chrome, Safari ※Contact us to know about supported versions.

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