

Features of the Cargotester.com LIMS system

An Internet-based Shared Application

Access your data wherever and whenever you go online, 24/7 around the world. We provide the hosting for the application so that your IT burden is limited to accessing the Internet. Compatible with IE 5.1+ and recent flavors of Mozilla/Firefox.

Individualized User Accounts

Each user is given a unique log-in account to access the application. Permissions are then granted on an user-type basis. User/personnel information is also maintained in the application and user access and data entry work is logged for better security and managerial oversight.

Company/Facility Accounts

Large companies are split into individual facilities accounts to better track facility specific data, but management can still monitor information company-wide. Facilities have access to each other's information through our facility ranking scheme.

Job-centric Dataflow Management

The system is organized around the workflow of the facility, with lists of the current jobs front-and-center. Data is entered through job specific drill down menus where all parties, personnel, contacts, reference numbers, products, tanks, samples, procedures and test results are entered or reviewed. The system's advanced job nomination system can quickly handle very complex assignments, and job templates automate the nomination of repeat work. The job memo and messaging system keeps track of written instructions, notes and other job related documents. The document upload feature allows scanned documents to be stored on the Internet for downloading by others with access to the job information.

Facility Specific Procedure Database

Enter a facility's lab procedures on a product or non-product specific basis, and/or/or not on a client specific basis. Individualized minimums, maximums, formats and defaults can be created for every product on a grade-specific level. Procedures can be grouped together into slates *ad infinitum*.

Industry Specific Product Database

Users can create products in the product database and then assign them to a set of standard industries. Elegantly assign grades and aliases to products to address the small distinctions between grades within the larger product category on a facility-by-facility basis (such as Isopropyl Alcohol having grades of 70% and 90%, and an alias of "Rubbing Alcohol").

Site/Location/Tank Database

If samples come from specific locations such as a storage tank then our tank database can help keep track of sample sources.

Contact Information Database

Contact information for all users is stored in the system for retrieval by other users. Look-up your contact's phone number or e-mail through our company/facility database.

Sample Storage and Disposal Tracking

Generate samples for jobs and then track their storage and disposal through the sample retain database. The system makes use of barcoding for easier data entry and retrieval.

Standard and Custom COA's

Compile standard or custom reports, including job summaries and COA's, to issue to customers through our report generating feature. Insert logos and signatures into the HTML formatted reports, or download the reports into Excel™. Reports saved in the system are updated automatically when test results are added or updated. One can then e-mail encrypted links to these saved reports to anyone.

PDA/Pocket PC Pages

Enter or retrieve lab results and other job information through Internet connected Pocket PC's. They are great for fieldwork data entry and retrieval.

Equipment and Supplies Tracking

Keep track of your equipment and its maintenance in our equipment database along with order tracking for consumable supplies.

Management Roll-up Reports (Data-mining)

Summarize weekly or monthly data in roll-up reports for individual or multiple facilities from the same company.

Personnel Assignments and Dispatching

Keep track of personnel assignments through our calendar and scheduling features, and dispatch field personnel through the system. The system can send text messages with job assignment details to cell phones that receive text messages.

Custom Module Creation

Let our programming team hook-up our system to your in-house accounting or other software, or even create other custom applications for enhanced utilization and integration.

Data and Connection Security

The system utilizes the latest in web security for maintaining data integrity and privacy.

Share Data with Customers and Vendors

Customers and vendors can log in to the site to see their data; or with custom applications, download it into their own computer systems.

Secure Export/Import External Data Exchange

The system uses stand-alone client specific external databases to securely exchange data to and from other foreign data sources and applications.

Cargotester.com LIMS Shared Application Feature

ASP Model of Sale

Cargotrader, Inc. has adopted an *ASP* business model for selling its Cargotester.com software to clients. "ASP" refers to **Application Service Provider**, and indicates that the client is using the software only as an Internet-ready service. Cargotrader, Inc. hosts the application online itself so that clients may use the software over the Internet.

Client Benefits

Clients benefit several ways from a shared application. There are the reduced costs, not only from the lack of the administrative IT hosting expenses, but also from sharing the costs of administering the application with several other clients. There is the benefit of better security, as the server farm is professionally managed and maintained, with backups and other physical protections. Security from hackers, disgruntled staff and buggy software (not properly updated to fix flaws) is also better when managed by the vendor. Not only is the application itself safer on a remote server, but so is the client's own internal computer network. Then we have the benefits of joint usage. By sharing an application, clients essentially have a common "watering hole" to meet at and conduct business. This greatly enhances the efficiency of work done on the site and eliminates the need to create bridges from one computer system to another. Another benefit is the assurance of data integrity from the inaccessibility of the remotely hosted database. When data is saved on our servers and *locked*, all parties can safely assume users of the system cannot make any changes. The final benefit is the use of the familiar web browser interface, which reduces the burdens of staff training.

Vendor Benefits

There are several benefits for the ASP vendor (Cargotrader, Inc.) to maintaining a shared application, and these benefits ultimately accrue to clients as well. Firstly, the administrative burden of maintaining the software is reduced whenever the software is updated; and this allows the software to be fixed or updated readily, rather than just periodically. Secondly, the software remains proprietary, reducing the risks from software piracy and hackers. The billing process is greatly simplified when based only on monthly user account fees and customization work, and the costs of hosting the application are spread out among several clients. Finally, the software remains on a stable and predictable platform.

Demo and Real Versions

The shared application comes in both a *demo* and a *real* version, which are identical in form and function, but which have separate databases and executable source code installations. Potential and current clients can access the demo version to test and train with, leaving the real version free of bad or incorrectly entered data. The two instances of the software do not share data but it can be copied from demo to real.

Large Client Custom Hosting

Particularly large clients may wish to utilize a custom hosting package where Cargotrader, Inc. provides hosting for an independent installation of the application.

Cargotester.com User Account and Company/Facility Features

Access to the Application Restricted to Active User Accounts

Clients of Cargotrader, Inc.'s Cargotester.com application access the system via the Internet by providing a username and password on a public *login* page. All client data is only available on secure non-public pages. A unique username and private password comprise the necessary key to unlock the non-public pages through an *active* Cargotester.com user account, which is accessible at any given time only once. Clients have the administrative option to set their facility's user accounts as either *closed* or *inactive* to deny user account access. The user account also includes the user's name, title, user type and facility information. A single user may have any number of user accounts. Other clients have no direct access to user account data.

User Accounts Tied to Single Facility Accounts

User accounts can only access one facility account each. On a practical level this means that logging in through an account will restrict user access to the data retrievable by that facility. A facility is a company unit. There are no company accounts *per se*, but facilities accounts are tied together by a private company ID. Not all facilities are equal, since there is a ranking scheme to determine how information is shared among facilities from the same company. Not all facilities are of the same type, either, since each facility account is set up with one of the standard facility types. There are several companies in the Cargotester.com database, some are Cargotrader, Inc. clients and others are included to support client data needs. In general, facilities from different companies do not share information unless they are parties together on the same job or parties assigned to the same report. The system stores a fair amount of facility information, including important addresses, preferences, settings and job-relevant information. The publicly available information makes a useful contact database.

User Account Types

User accounts are further restricted within the application by their selected user account types. There are five standard user account types. Each type has different access privileges to facility data, preferences and settings. Some types can see everything regarding a facility, while others cannot even log in to the system and exist merely to support contact/personnel features.

Data Logging

Key information entered by users into the system or sent out of the system by users is logged by the system for security purposes. Data logging is done automatically by the system. While there is no guarantee that the *owner* of the user account will be the actual data entry person since anyone with a user account's username and password can access that account, the logging does provide significant data entry security. Not all data logs are directly available to users. Administrative users are advised to contact Cargotrader, Inc. customer support for more information on data logging or for direct queries on a particular log. Not all application usage information is logged by the system as a practical matter. There are several other security features used by the system, so data logging is merely one of many.

Cargotester.com Static Information Databases

Company/Facility Information

The Cargotester.com system provides users with some publicly accessible information for all the companies and facilities in the system. Not all information is guaranteed to be current or accurate, but all the information on the various companies has been entered by either their staffs or by the Cargotrader, Inc. customer support staff. Information publicly available includes addresses, contacts and facility types. Some facilities manage product inventories and may allow public access to some of this information as well. Clients using the system manage their own public information. Not all information regarding companies or facilities is public (i.e. available to users of the system) and only users of the system can see the public information.

Lab Procedure Database

Facilities may wish to maintain a database of laboratory procedures in the system, either for their own use or use by vendors or clients. Procedures are run on samples of particular *products* (substances or objects). They may or may not be included in job assignments. Procedures may be public or private, product specific or non-products specific, location specific or non-location specific, lab specific or non-lab specific. Procedures may be assigned product grade-specific specs for result minimums, maximums, defaults and/or formats.

Product Database

There is a publicly accessible product database shared by users of the system. Generic product information, such as the CAS Number, is included along with the product name. Individual facilities may add grades ("pure", "denatured", etc.) or aliases ("glue", "Teflon", etc.) to products for their own use. Facilities involved in the transportation of bulk liquids can add temperature/density charts to the system. Products can also be assigned laboratory procedures. Considering the large number of products listed, facilities may wish to set visibility preferences for individual products.

Site/Location/Storage/Tank Database

Product storage facilities, using tanks, warehouses, container yards, etc., may wish to maintain information, either publicly or privately, on their storage facilities. This is particularly useful if products are routinely sampled as a check on storage conditions and quantity/quality information needs to be maintained. The system can track storage inventory information on various products as long as the tracking units match the standard units in the system. Calibration charts for tank storage can also be entered into the system to help automate inventory calculations.

Contact Information

User accounts in the system are stored with pertinent information, such as phone/fax numbers, e-mail addresses, job titles and job assignments. Not all user account information is public, but contact information is public within the system and clients may manage such information as they wish. *Cargotrader, Inc. does not guarantee the accuracy of any client given or client entered information publicly accessible in the application.*

Cargotester.com Job Dataflow Management Features

Job-centric Graphical User Interface

The graphical user interface of the Cargotester.com application is oriented around the dynamic job data of day-to-day facility/company operations. All job information is organized according to *job numbers* or *job reference numbers*. The system tracks all job information so that each job party is properly informed. A job is a parcel of work for the operations staff, whether billable or not, of a single or group of facilities. All parties (i.e. facilities) to a job must define the job the same way, but may use individualized reference numbers. Reference numbers are alphanumeric and may be sequential or non-sequential, and computer generator or manually created.

Job Types

Each job is assigned a job type from a standard list.

Party Types

Each party is assigned a party type from a standard list. A facility may be assigned to a job as more than one party, each as a unique type. The facility that generates the job nomination is also recorded as the job nominator, but this is not a selectable party type. Parties are notified of new nominations when logging in or via automatic e-mail.

Party Type Restrictions

Certain party types have privileges reserved, such as being able to modify a job nomination, change the status of other parties and enter or edit certain types of job information. Other privileges and restrictions are based on facility preferences.

Job Data Entry Restrictions

The entering of job information, in addition to being restricted in certain cases to particular party types, is further restricted in several ways. In order for certain types of data to be entered, the necessary background information must be selected for the job, including parties, products and procedures. Some data can only be entered if the job nomination is set up to allow it. Data in many cases can be modified or deleted only by the party that entered it originally. Data in many cases cannot be deleted unless dependent data is also deleted. In several key locations, data can be *locked* to prevent any client users from editing it or deleting it, regardless of other privileges. Once a job has been *completed* its data cannot be modified or deleted (though some residual data entries can be made later for certain types of information). Several job data entries are logged by the system to record the user account ID of the data entry user. A job cannot be canceled unless it contains no job data.

Connection to Static Data and Job Nomination Options

A key feature of the Cargotester.com application is the connection between the static background information in the system and the dynamic job data. By relying heavily on static data, jobs can be nominated quickly with fewer data entry errors because the static data selected comes from a common pool. To make nominations even easier, jobs can be nominated three different ways: through the standard interview process, by copying an old job to a new one, or by using a job template, which is particularly useful for those jobs that repeat themselves often.

Cargotester.com Personnel Features

Facility User Accounts As Personnel

The Cargotester.com application relies heavily on the concept of user accounts, which perform several functions. The primary function is to allow account holders to log in through the Internet. Since personnel information is stored with user accounts, they can also serve as a personnel database. There is a user account type called *staff* that has no log-in privileges but acts strictly like a personnel database.

Job Assignments for Personnel

The system can track the assignments of personnel on a job-by-job basis. After a job has been nominated, the dispatching feature can be used. One selects the staff and their assignments for a job. They can even be scheduled to appear at, or visit one or more of the facilities party to the job. That is, they can be scheduled to visit a client site or job site location by selecting the site and the times for the visit, and are not limited to one site or one time. The system has a data entry field in the user account table for job title, and a standard job description field for personnel assignments to jobs, but the two fields are unrelated in the database. Therefore, any user account is free to have any assignment for a job, and the assignment can change from job to job.

Text Messaging

After assigning them to a job, a text message can be sent to the worker's cell phone provided that it has text messaging capabilities. The message will include a brief description of the job and the locations, dates and times of any site visits. The e-mail address of the worker's text messaging option must be in the system for the feature to work. Most phone companies limit the length of text messages to less than 120 characters.

Assignment Calendar Views

There are two calendar views for reviewing job assignments. The main calendar view, under *Scheduling*, is for users to check their own assignments. There are several different options on the main calendar, showing the jobs, locations and other key bits of assignment information for the employee. The *alternate calendar* view is for management to monitor the personnel assignments already made and avoid scheduling problems. The alternate calendar view is in tabular form rather than in calendar form and has drill-down options for retrieving more information.

Limiting Access to Job Features and Data Based on Job Assignment Type

There are cases where it may be better to assign personnel to a job with a specific assignment type so as to limit or increase their data entry and retrieval options within the job. Contact your Cargotrader, Inc. customer support representative for more on this option.

Copying Assignments and Assigning Personnel for Other Job Parties

Job copying and job templates can repeat job assignments for personnel, and job nominators can briefly select the personnel for other job parties.

Cargotester.com Standard and Custom Report Features

Printable Lists

Because Cargotester.com is web-based, the HTML pages can be formatted either for the standard graphical user interface or for printing. Thus, on many pages with lists of information presented there will be a *printable version* option. While not any of the system's named reports, these printable lists can capture a lot of useful information.

Standard Multi-Option Reports

There are several standard *multi-option* reports in the system. These are generally job related reports. Multi-option reports have significantly more compilation options than the quick-reports and can pull together information from one to several jobs. While very powerful, they are made easier to use by having auto-fill features that preselect options from preferences and use inference logic. On several of the job data entry pages there are links to multi-option report option pages, with the job information preselected in the options. This enables users to bypass the regular report menus when compiling reports. Multi-option reports generally compile in HTML, though there is the compilation option to open the reports in Excel™.

Quick-Reports

There are also quick-reports for faster compiling, but they are limited in scope.

Management Roll-Up Reports

Management roll-up reports allow for the summarization of job data from more than one facility (within the same company). These reports also perform statistical calculations on the data for further analysis. Some reports compile with drill-down options to avoid clutter while still providing key details.

Customized Reports and Custom Options Pages

Any of the standard reports can be customized. The most obvious customization would be to replace the standard layout with custom layouts to match existing reports. Other means of customization include custom calculations, which will take the job data and generate results according to client-specified formulas or algorithms, and custom options pages where users can select more formatting or calculation features as well as input any last minute data.

Saving Reports in the System

Users have the option of saving any of the standard or custom reports they compile in the system. Permissions are set up when the report is saved as to who can retrieve the saved report. (Other restrictions on who can see the data also apply.) The data that the saved reports are compiled with can be updated without the need to recompile the saved report because saved reports always use the latest dataset when retrieved. One can e-mail temporary links to saved reports out of the system to anyone.

Grouped Reports

Saved report pages can be grouped together for a more coherent sense of organization. Saved report pages can belong to more than one report group.

Cargotester.com Sample Storage and Disposal Tracking Features

Generating Samples

The Cargotester.com system allows for the recording of sampling information during the job nomination process or at any point before the job is canceled or closed. Sampling information is job oriented but sample logs and search/lookup features allow for the review of information on samples from multiple jobs.

Sample Types

All samples are created as one of many standard sample types. In general, samples are either non-location dependent, location dependent or multi-location dependent. All samples contain a *product* or a mixture of products, and may be assigned a product *grade*. Samples are labeled with sample *tags* or ID's, and much additional information on the sample can be saved. The sampling *method/location* can also be chosen from one of the standard method types.

Sample Collecting

Sampling assignments are made initially during the job nomination process and their collection confirmation is entered through the job data menus. The sampler, sampling date, tag and seal numbers, and sampling method/location can all be noted. The tag number and collection date are saved to confirm the collection of the sample, at which point the sample can no longer be deleted from the job.

Sample Retain

Samples are often stored in a sample storage area called *retain*, and held for a period of time before their disposal. To keep track of the samples in a facility's retain area, the system allows for data entry of retain information, including the location of the sample and the retain date. The sample logbook feature can then be used to track all samples in retain. The system has the ability to print and use barcodes for labels.

Sample Disposal

Samples are held for a while in retain and then disposed of. The system can keep track of the disposal of samples including the disposal date, disposal method and disposal vendor. The sample logbook can then be referenced for sample disposal information. Sample disposal information can still be entered into a system after a job has been completed.

Procedures, Samples and Laboratory Results

There are several potential reasons to collect samples, but the most obvious reason is for the purpose of performing laboratory analysis on the contents of the sample. Thus, all laboratory procedures for a job are assigned to the job's samples and all lab results are associated with these assigned procedures. It is not required that every procedure be assigned to every sample (any number, including no procedures at all, can be assigned to a sample), nor that results be entered for every assigned lab procedure (in fact, more than one result can be entered per procedure). However, product specific procedures can only be assigned to samples containing the sample product. The results of a slate of tests run on a sample can be confirmed or locked by users of the system to prevent the results from being modified or deleted.

Cargotester.com External Connection Capabilities

Custom Modules

The Cargotester.com system is customizable with custom code modules hosted by Cargotrader, Inc. on our servers. Customization can either enhance the system with features not already present or allow for the system to integrate with other software via the Internet. Custom modules are ordered by clients on a contract basis from the Cargotrader, Inc. development team. Third party software cannot be used to connect directly to the Cargotester.com system. *This option is unrelated to custom reports.*

Third Party Access to the System

Cargotester.com clients can allow their clients and vendors (or others) access to the Cargotester.com system by setting up user accounts for these users. When these third party users access the system, it will most likely be either as a guest user account to the Cargotester.com client facility or as any type of user account to their own facility. In the former case users are limited to information available to all guest accounts for that client facility. In the latter case the third party users will have access only to their own facility-specific data, such as job data, procedures, product grades, product charts, custom reports, saved reports, user accounts, facility information, tank/storage information and company information. In other words, their user accounts will function like all other user accounts, and they will see their facility/company-specific information only. Third parties can also receive e-mailed saved report links without having to log in to the system.

Custom modules can be created for third parties to access data stored in the Cargotester.com system either with a custom user interface or a connection to an external application. The system-to-system data exchange can be controlled by the Cargotester.com client. The external application can be hosted by anyone, but the Cargotrader, Inc. development team will need to connect software from the Cargotester.com system to the external application. While in theory data exchange can go either way, in practice the complexity of the Cargotester.com system limits the exchange to downloading key information to the foreign application.

Client-Specific External Databases

In fostering data exchanges with foreign applications, the Cargotrader, Inc. development team may use intermediate databases setup between the Cargotester.com database and the client application. In this manner the data is accessible directly to the client in the intermediate database, but still allows for customization and security. Client IT development personnel or consultants will be able to directly connect to these databases.

Unique Access to Custom Modules and Databases

All custom modules and databases are written for the exclusive use of the clients who ordered them. Other clients of Cargotrader, Inc. will not have rights to use any such modules or databases without the consent of the ordering client. *However, all rights to the code developed by the Cargotrader, Inc. development team will be reserved by Cargotrader, Inc. for uses as it sees fit.*

Cargotester.com PDA/Pocket PC Wireless Features

Data Entry and Review Screen and Connection Bandwidth Recommendations

The standard data entry and review pages for the Cargotester.com application present large amounts of information on standard desktop monitors (800x600 resolution minimum and 1024x768 or larger resolution recommended). While the application is not graphically intensive, the data feed between client and server flows much better with higher than dial-up Internet connection speeds. While 53 Kbps is adequate, at least 128 Kbps is recommended.

Handheld Device Pages Available

To utilize the convenience of handheld computing devices connected to the Internet, Cargotrader, Inc. has included data entry and review pages suitable for such devices. The resolution of these pages is 320x240, with the data clutter and graphics kept to an absolute minimum. Color screens are highly recommended.

There are several data entry and review pages available for handheld devices. These include *Job Details*, *Enter Lab Results*, *Sample Collection*, *Sample Retain* and *Sample Disposal* pages, which are the most relevant for handheld use. These are not the same pages as those seen by desktop users, but entirely new versions designed to fit onto a smaller screen. They emulate the function and qualities of the desktop pages as closely as possible. The graphical user interface between the user and application is based on the interface of the handheld, so touchscreen features are prominently used.

Logging In to Handheld Pages

A user logs in to the handheld pages as they would the normal system, by going to www.cargotester.com and clicking on the *login* link (a page one can bookmark). They will be taken to the special handheld login page where they can enter their regular username and password. The system detects handheld devices automatically and will log a user in correctly to the PDA pages. The menu options on these pages have been greatly simplified.

Internet Connection Required

The PDA pages are not a standalone application. They still require a connection to the Internet for accessing. The most common Internet options are through a private wireless network when at the office, or a publicly accessible wireless network when out in the field. *All connection configurations are the responsibility of the user.*

Live Data

There is no difference as far as the application is concerned whether or not the data is entered via a desktop or handheld. Once the data has been entered by a user it is in the system, live, for all other relevant users to utilize. All of the security applicable to the desktop pages still apply to the handheld pages, so the data integrity remains the same.

Cargotester.com Equipment and Supplies Features

Equipment Database

The Cargotester.com application has a built-in equipment database for tracking the equipment located at a particular facility. There are no guidelines on what types of equipment should be entered into the database, but, in general, equipment that has some substantial value and needs to have its functions monitored would be the most appropriate for the database (for example, laboratory test equipment). The database includes data entry fields for the equipment name, model number, manufacturer, etc.

Supplies Ordering Database

The system also keeps track of supplies to order by indicating ordering thresholds, ordering information and the like. The supplies types are not limited arbitrarily, but in practice, it is recommended to limit the database to key supplies necessary for operations.

Equipment Maintenance Database

Along with an equipment description database is an equipment maintenance log database, so that the listed equipment can have its current status and work history recorded. There is also the option to move a piece of equipment from one facility to another (within the same company).

Equipment Maintenance Logs

There are printable versions of the maintenance logs for managerial review.

Supply Order Printouts

Printouts can be made of supply order requests and order fulfillment reports.