

**STARLIMS**  
**LIFE SCIENCES SOLUTION**  
**AND PORTAL / MOBILE**  
**SOLUTION FEATURE /**  
**FUNCTION SUMMARY**  
**DOCUMENT**

# ABSTRACT

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A reference guide and descriptive summary of  
the features and functions of  
STARLIMS' Life Sciences and  
Portal / Mobile Solutions organized  
by Lifecycle, Workflow, or Module.

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# MAIN MENU

## DATA REPOSITORIES

FEATURE / FUNCTIONALITY	DESCRIPTION
Material Types	The Material Types table allows you to create groups in which to associate similar materials in materials management. The same material types can be used later as filters to facilitate material selection in applications.
Organization Categories	When you enter organization contact information during login, the organization category is used as a filter to facilitate finding the correct submitting organization. Examples of organization categories are hospitals, businesses, and wards.
Test Capacity Definitions	You can put a process in place to handle the contingency when your laboratories are operating at maximum capacity and will start exceeding that capacity for performing tests. Use the Test Capacity Definitions table to supply test factors that equate to the number of tests that can be carried out by a laboratory.
Equipment Types	The Equipment Types table allows you to categorize instruments. For example, HPLC instruments from different manufacturers can be grouped within an HPLC equipment type. When you select an equipment type in the test and method, the options are filtered so that it displays only the equipment of that type available for the team.
QC Types	Quality Control (QC) samples are required in a laboratory to check for accuracy of instruments, the testing process, and the results provided to the customer for traceability and dependability of results. Use the QC Types module to list the types of controls used by your organization's laboratories.
Service Group Types	The Service Group Types table is used to make service group names available. Service groups are groups of analysts who test samples at a particular laboratory site. Service groups and their members are associated with a site in the Sites application. A site can have more than one service group.



FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Suppliers</b>	The Suppliers application contains detailed information about vendors who provide commodities used by a facility. Use this application to manage the information. For example, you can define supplier locations and contacts.
<b>Test Plan Groups</b>	Use the Test Plan Groups table to create categories in which you can later organize the test plans in Test Plan Manager. Test plans are typically built according to the type of testing, such as animal tests, when used in addition to human.
<b>Result Qualifiers</b>	Result qualifiers are used to further describe results in printed reports. They can be used to provide more detail. Typically a qualifier is a letter, such as A, that expands to a description. A power-user can code a crystal report to find a result qualifier and insert the description.
<b>Sublocation Types</b>	Sublocation types include shelves, racks, rows, or any arrangement in which you can store containers of samples or materials. They are found in freezers, cabinets, and other similar types of areas organized for storage.
<b>Location Types Hierarchy</b>	Location types include freezers, cabinets, and other similar types of storage areas. Because location types typically include sublocations, such as shelves, in the layouts, it is useful to first configure the sublocations to be included.
<b>Units Management</b>	Units Management is used to identify the units of measure used by laboratories. The interface allows users to specify measure types such as mass, units of measure such as kilograms, and conversions such as kilograms to ounces. When ordering materials and configuring quality controls, you select from this table.
<b>Conditions</b>	Conditions are used when storing inventory or samples and can include temperature, humidity, luminosity and other environmental parameters. Temperature is the most commonly used parameter.

## DATA REPOSITORIES

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FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Plate Configurations</b>	This application is used to create plate groups and plate templates. A plate template shows the positioning of regular samples and quality control (QC) samples to be used when testing samples in plate wells. After all related elements are in place, plate samples can be logged to become available for testing and other handling using an application such as Workflow Processing.
<b>Transport Temperatures</b>	When shipping outsourced samples according to test, the shipment temperature must be considered. Use this application table to make temperatures available for selection using the Transport Temperature tab in the Test Manager application.
<b>Hierarchical Structures</b>	Hierarchical Structures is a generic application which allows you to implement any hierarchical static table. For example, use it to build tables of tissues, diseases, species, and strains, or any other nomenclature suited to a hierarchical structure. Like other Data Repository tables, the hierarchical tree can have a name and a code for each element.
<b>Countries / States</b>	This repository is used to make lists of countries and states or provinces available for selection in other applications.
<b>Lookups</b>	You can use lookups to create lists of values that can be made available for selection using drop-down boxes within LIMS applications.
<b>Rejection and Warning Codes</b>	This table is used to configure three categories of messages: rejection, warning, or acceptance. The last is used to accept a sample back for processing after it's been rejected. When personnel find problems with the sample during the login process, they can click the Reject/Warning button in an application such as Clinical Sample Login to reject the sample, cancel the accessioning, and document the reason for the rejection.
<b>Shipping Carriers</b>	The Shipping Carriers application is used to setup carriers to be used for shipments by laboratories. You can also link to a carrier Website for tracking. Carriers will be used when outgoing shipments are created.

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Regions and Facilities</b>	Clinical trials can be done at facilities in diverse areas. Use this window to configure the default hierarchy of sites in each region and sub region, that is, country, state, and so on, where your clinical trials can be performed. In the Clinical Trial Manager, you can define any deviations from this default that are specific to a trial.
<b>Commercial Drugs Substances</b>	Medications can be considered when assigning tests for samples. Use this application to configure a list of commercial drugs and indicate which substances are contained in each. This selection list is available in other application windows such as the Medications tab when you log a clinical sample.
<b>Job Descriptions</b>	The Job Descriptions table is used to define job descriptions to assign to personnel. A job description can be assigned through the User Management application.
<b>LOINC Codes</b>	The LOINC Codes application is used to maintain the library of LOINC codes that will be available for use within STARLIMS. Logical Observation Identifier Names and Codes (LOINC) provides a set of universal names and ID codes for identifying laboratory results.
<b>SNOMED Codes</b>	Use to manage SNOMED codes. SNOMED is the Systemized Nomenclature of Medicine standard for clinical terms, such as organism names. The code is used to communicate information to outside agencies using a standardized format.
<b>Import Templates</b>	To expedite the accession process, when you expect bulk shipments of samples, kits, and so on, you can use eManifest files, or, when you want to pre process samples using barcodes on forms, use eRequisition. The Import Templates feature provides both template types. There can be multiple versions of templates. The system provides the data fields corresponding to LIMS fields to which you can add from a predefined list. Supported eManifest file types are CSV and XLS. An eRequisition template can support one or more barcodes.

## TEST/METHOD MANAGEMENT

FEATURE / FUNCTIONALITY	DESCRIPTION
Method Manager	Method Manager is used to predefine methods and attach instructions such as Standard Operating Procedures (SOP). You select from these predefined methods when configuring a test using Test Manager from within the same branch of the main menu.
Spec Schemas	The Spec Schemas application is used to create spec schemas within schema groups. Spec schemas can be used to apply calculations, validations, or define results of tests. For example, use a spec schema to perform a calculation on several measurements and then validate that the final result is within a specified range.
Test Manager	Use Test Manager to identify the tests that can be performed by your laboratory. Test configuration includes analytes used, spec schema used on results entered for each analyte, methods (such as SOPs) used in analysis, the equipment used for preparing samples and measuring results, the specifications (limits) to which results are compared, reagents that are used when a test is performed, and other test parameters.
Test Plan Manager	This application can be used to group test plans in test plan groups. The default test plan group and test plan, Clinical and Human, are typically used exclusively. Other facility-specific test plans may be created, such as for testing animals in a preclinical testing situation.
Micro Components	Micro components are used as parts of microbiological tests.
Service Manager	Use this module to configure services for any type of processing using a sequence of steps. Services processing can be adapted to handle actions performed on BioRepository samples. Examples include investigations for cancer, storing and shipping samples, and actions performed on biorepository inventory.
Service Generic Steps	You can define generic steps, such as an extraction step, that can be incorporated into more than one service, such as investigations for differing types of cancer. In the Service Processing application, samples at that generic step can be processed using the same form and available actions in any service incorporating the step.

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Question Forms</b>	A question form is used to get answers to specific questions when a patient specimen is logged. Use this application window to configure a form containing questions relevant to screening for a condition. For example, forms can include questions related to height and weight, recent blood transfusions, and so on.
<b>Test Panels</b>	Test Panels is an application for grouping one or more tests as a panel to be added during the clinical login process. This panel of tests is applied to the logged specimen in the laboratory. More than one panel can be added for an accession #.
<b>ICD Code Lookup</b>	The ICD Code Lookup application is used to maintain versions and codes from the International Statistical Classification of Diseases (ICD) codes for related health problems. ICD Codes can be linked to CPT Codes and both are details added to accession records and patient records.
<b>Batch Template Setup</b>	The Batch Template Setup module allows you to add tests to a template, associate equipment and a service group, and configure a workflow of steps for processing a batch of samples. Then, when samples are logged to be batch processed using those tests, personnel can use the Result Entry by Batch application to assign the samples to a batch and enter test results.
<b>CPT Codes/Medical Necessity</b>	You can add a list of CPT (Current Procedural Terminology) codes to be assigned to tasks and services provided by a medical practitioner, and used by insurers to determine the amount to be reimbursed.
<b>Login Rules</b>	The Login Rules application is used to define business rules related to clinical test requests. The rules can include criteria such as patient demographics and the tests that are being ordered. The application allows you to create alerts and reports when a certain rule is met during clinical sample login. For example, you can define an alert to be displayed when patient age is below two years.
<b>Rule Manager</b>	This application window allows creation of accessioning, result evaluation, and equipment exception rules which set actions to be performed by the LIMS when conditions, which can be configured at multiple levels, are met.

## CLINICAL TRIAL

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Trial Manager</b>	The Trial Manager module allows you to create and define clinical trials, also known as protocols or studies. Clinical trials can be used to help determine the efficacy of drugs and/or their potential side effects. Treatments can be tested according to population segments, such as infants, females between the ages of 18 and 45, people over 65 who have had chicken pox, laboratory animals and so on. This module allows you to configure a trial to define a visit schedule for the subject participants as well as assist in building collection kits. You can include details such as contacts and attach documents.
<b>Discrepancy Types</b>	Discrepancies occur when an action or behavior deviates from the expected action or behavior during trial sample login. The Discrepancy Types module is used to list discrepancies for information. During trial sample login, discrepancy information can be displayed. If a collection date violates trial structure, a discrepancy may be recorded to indicate this fact.

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Materials Manager</b>	The Materials Manager application displays materials by material type. The window includes, among other things, information that helps you define materials and their proper handling instructions. Some applications, such as alerts, open the Materials Manager application window and populate it according to the view for which it was opened. For example, the expiring recipes alert opens the Materials Manager window at the Recipes tab and displays only materials that have a recipe that is expiring.
<b>Storage Location Manager</b>	Storage Location Manager is used to define the storage hierarchy and properties of the storage farm, that is, storage areas that are within rooms within buildings at a specific site. Use it to configure the storage locations according to the actual appearance of the storage areas, such as shelves in freezers in a room.
<b>SPREC Manager</b>	Use to view and configure SPREC factors. Standard PRE-Analytical Code (SPREC) is composed of smaller codes of letters and numbers separated by dashes. Each of these smaller codes represents a characteristic of the sample. These characteristics are also called Types. Each position in a SPREC represents a specific type and the order of the types depends on state. For each type, you define a list of values for an analyst to choose from.
<b>SPREC Types</b>	Standard PRE-Analytical Code (SPREC) state types are inputs for the SPREC Manager configuration. Use types that are consistent with SPREC standards.
<b>Container Conditions</b>	Container Conditions is used to define the types of containers and storage conditions used for samples, as some tests can require certain container types and storage. The Collection Containers tab provides this list for container selection when you configure a test in Test Manager.

## WORKFLOW SETUP

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FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Workflow Items</b>	Workflow items are the source of sample types that will be inputs or outputs during workflow processing steps. You add sample types, container types, and, if applicable, plate templates from those available. Plate templates can be used empty or as a pre-arranged set of sample and/or replicate and control and/or replicate wells to aid plate mapping.
<b>Workflow Actions</b>	The Workflow Actions application is used to configure actions, also called transactions, to be available for selection in the Workflow Processing application transaction menus. Personnel use these actions, such as “Auto Map Samples to Plate,” to perform tasks such as moving samples into plate wells.
<b>Workflow Engine</b>	Workflow Engine is used to configure workflows that require multiple steps to support complex sample treatment and testing, such as DNA extraction and quantification. Each step typically has its own inputs, outputs, equipment, materials, transactions, routing, and so on.
<b>Master Workflows</b>	Use to create a master workflow made up of one or more workflows required to process samples through one or more tasks, such as DNA extraction and PCR amplification. Use workflows to prepare samples, store them, and/or produce a final result or conclusion. Master Workflows are added to tests in Test Manager to make them into workflow tests. Workflow tests are redirected to appear in Workflow Processing and related applications.



FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Interface Settings</b>	The Interface Settings application allows you to configure the communication links between your STARLIMS system and instruments or other systems. Configure each interface and its settings, mappings, and associated equipment. Examples of settings include the File Server or FTP Host for your inbound and outbound messages.
<b>Handlers</b>	The Handlers application is used to define handler IDs and associate these IDs with inbound and/or outbound handler scripts created at your site. Handler scripts link to STARLIMS database fields and/or handler aliases and are used to prepare inbound and outbound messages. This can include translating mapped aliases and implementing business logic during message parsing.
<b>Formats</b>	In this application, you must add a format that is referenced from within the Mappings application for mapping database fields to message fields. Select any version in the Formats grid to see the hierarchy of the segments in the message. In addition, you can export a version and its configured segments and fields and import them into another STARLIMS System.
<b>Mappings</b>	This application is used to create, configure, and delete mappings. From it, you can map STARLIMS fields and aliases to HL7 Fields. The calculation feature allows you to associate a script with the mapped field. This is useful when you want to perform a calculation on the field's data before sending or when receiving an HL7 message.

## ORGANIZATIONS/PROJECTS

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FEATURE / FUNCTIONALITY	DESCRIPTION
Turnaround Times	Turnaround time (TAT) is the number of working days from the day that the analysis of the samples can begin to the day that results are reported to the submitter. Use this module to add a premium for accelerated testing or offer a discount for longer turnaround times.
Price Lists	STARLIMS provides this tool to create, modify, copy, approve, print, and retire price lists. Each price list can include prices for both individual tests and profiles, which are groups of individual tests. Set up base and discounted lists and at least one default list.
Organization Lists	Manage information about all the organizations that receive services from or provide services to a laboratory, those that submit samples for testing or provide services for the lab. This application allows managing the external and internal contacts for each of these organization sites as well as their preferred delivery methods for sending the patient report test results. Delivery methods for reporting supported are: mail, email, fax, external interface such as HL7 or API.
Project Manager	The Project Manager application contains data about specific projects associated with organizations. The information includes terms, organization contacts, results, and invoice information.

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>User Management</b>	In a LIMS, users are electronic representations of the LIMS' physical users stored as records in tables. These records are subsequently used in validation for whether or not a user has access to the many screens, menus, and functions within STARLIMS.
<b>Concurrent Users</b>	The Concurrent Users application is used to monitor the STARLIMS users currently logged onto the system, the date and time their sessions were opened, and expiration dates for the sessions.
<b>Roles</b>	Role management provides the administrator with tools to add, delete and customize roles. A role is composed of a set of rights. The system changes appearance based on roles. Functionality is restricted or increased. For example, one lab analyst can be given a role for logging and/or reviewing information prior to performing tests. Another analyst can be given a role to see pending reminders, perform the tests, and enter results. Both analysts see a different set of applications available from the Dashboard.
<b>Comments Management</b>	Comments Management allows personnel to create "canned" comments and group them by categories. These predefined comments can be used later in several applications when personnel add comments to a record. The comments typically include text that is frequently used.
<b>Word Reports</b>	The Word Reports application allows you to create and attach a report, in Word, for a selected specimen. Patient information that has already been entered for the specimen is retrieved and inserted into the report. Additionally, you can type your own text into a word report editor that will replace variables in the Microsoft Word document.
<b>Tag Manager</b>	Tags are configured using the Tag Manager and then inserted in a Word Report template. Tags correspond to database table fields containing specimen-related information. Information that is already entered into the LIMS database table fields can then be transferred to a report using these tags.

## UTILITIES

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Metadata Templates</b>	Many STARLIMS applications have Metadata tabs for expanded information. These use metadata templates of data entry fields for flexibility in what fields can be displayed according to the item. For example, very different stored materials, such as boxes and reagents, may need different data entry fields. Boxes have a layout of cells whereas reagents do not. Metadata templates are typically used in Clinical Sample Login to allow for client-specific specimen information, and Patient Manager for client-specific patient-related information.
<b>Settings</b>	The Settings interface is used by system administrators to provide system information specific to viewing and modifying the business rules used in the various workflow processes.
<b>QBE Manager</b>	Personnel can use a query to list values from STARLIMS database tables according to conditions such as all positive Hepatitis A results from the endocrinology lab. You can use QBE Manager to add queries to list database table values in the system.
<b>General Workflow Manager</b>	Use this application to set up a workflow of multiple steps to create task flows used in STARLIMS applications such as Clinical Trials. Different users with different responsibilities can be assigned to perform the different steps. This can help to secure access to change sensitive information, provide for verification by different personnel, and ensure compliance with procedures or regulations.
<b>Designer Roles</b>	The Designer Roles application allows you to control system developers' access to categories of applications, scripts, data sources, images and reports. Administrators can give access rights to applications being worked on without exposing other areas of STARLIMS.
<b>Designer</b>	The Integrated Development Environment (IDE) provides the tools to create and manage new applications, SQL database queries, server side scripts, client side scripts, tables and more. A STARLIMS Enterprise Designer, such as a system developer, can open this application using the Designer menu option.
<b>Label Reports</b>	Use this application to create and manage reports, particularly barcode labels for specimen containers, that can be sent to the printer from LIMS applications.

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Email Manager</b>	The system can automatically send emails to alert particular users when events occur that may be of interest to them, such as the release of a final report. If an email does not go out as expected, it is queued in the Email Manager window where a system administrator can determine if there is an email problem and address the problem accordingly.
<b>Audit Trail Navigation Configuration</b>	Typically, the standard navigation tree view for auditing fits the needs of most sites. A power user who knows the STARLIMS database tables and other structures can use this application to configure navigation between audited tables to have more granularity.
<b>Audit Trail Viewer Configuration</b>	Use to view and configure the database tables and fields to be audited and for which the audit records are displayed in Audit Trail. The fields selected in the Display Fields pane are displayed when the user chooses View History from within an audited application.
<b>Communication Log</b>	Communication logs can be used by personnel to monitor efforts to contact the appropriate people regarding a patient or a specimen. Personnel can provide or view any resulting exchange of information. This interface lists communication logs according to specific levels, that is, the focus of the communication, such as a patient, specimen, or test. Select each level using the search feature.
<b>Log Manager</b>	Typically, this tool is used by administrators to log errors from applications, although they can also log errors manually. It is useful for those who fix the applications.
<b>Inventory Settings</b>	In a LIMS, users see only the tasks that they are allowed to perform. Inventory Settings is a tool used to configure users' ability to affect inventory. Use it to fit typical inventory tasks/ transactions to the jobs that users perform.
<b>Label Printing Mapping</b>	Use this application to tie a specific label type, report language, and label report together with a client computer. This allows expected LIMS values to be printed according to the label report on a specified printer.

## UTILITIES

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Application Settings</b>	Typically the Application Settings module will be used by system administrators and/or power-users only. Applications such as Double-blind Data Entry (DBDE), Sample Login, Patient Manager, Comments Management, Equipment Manager, and Test Manager can be configured to work according to these settings.
<b>Email Group Manager</b>	Use this application to group email addresses for the purpose of sending emails to a particular department or personnel who have a similar function. For example, an email group can be associated with an organization project.
<b>Hematology Plots Settings</b>	Use to add users who should see hematology plots in the Order/Result Review application window. Customize how they view these plots. Typically, users expected to need this feature are added when the system is initially set up. However, personnel can be added anytime.
<b>Device Manager</b>	Using the Device Manager module, personnel can define and manage devices used within their lab. These devices can include printers and faxes and can be used to distribute final reports to an organization's contacts.
<b>Features Users</b>	Some STARLIMS features require licensing for each user such as Advanced Analytics dashboards or STARLIMS for mobile devices. You attach these licenses to user names within Features Users.
<b>Key Management</b>	STARLIMS Life Sciences & Healthcare REST API provides order creation, order status and reporting services in communications with third party applications and/or systems with an API organized around the REST methodology. New API Keys are generated by a STARLIMS Administrator using the STARLIMS Key Management application.
<b>Traceability Event Manager</b>	Actions performed on a sample with the analyst's signature may be logged under the signatures tab in the Traceability window. Added events automatically have an enabled status which means they are logged. Use this application to enable or disable which are logged.
<b>RightFax Configuration</b>	STARLIMS can be integrated with RightFax for the Fax reporting delivery method.

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>DEI Database Structure</b>	<p>DEI is used to create an .sdp package that can be used to load configured records into another LIMS. This application provides tools to synchronize the Data Export/Import (DEI) structure with the structure stored in the DICTIONARY. Business relations between tables can be created. Options can be chosen for importing the data when the data already exists in the LIMS. Configuring a DEI database structure is the starting point. After job templates are created, power-users can configure DEI QBE templates to filter for data to be exported, and then personnel can export the data that they want.</p>
<b>DEI Job Templates</b>	<p>In this application, define job templates to select child tables and parent tables, attach scripts that will run before and after importing the DEI data, and export and import the data. Job templates are configured to work with application windows containing Import and Export buttons. If these buttons are not available, such as in Test Manager, an “ad hoc” QBE template can be created to use with DEI Export (discussed next).</p>
<b>DEI Export</b>	<p>Use the DEI Export wizard to create an .sdp package. It uses a DEI QBE template that belongs to the table that will be the starting point of the export process. (These “DEI-” templates are created using QBE Manager.)</p>
<b>DEI Import</b>	<p>Open the DEI Import application to import records or click the Import button in any application that contains that button. The wizard imports an existing .sdp package into the LIMS system. When the import is completed, the imported data is available in the table that was the starting point.</p>

## RESOURCES

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Sites</b>	Sites provides a simple method to view information about the organizational structure of existing laboratory sites. This is the main interface where STARLIMS administrators assign analysts (members) to service groups and service groups to sites. A member can belong to multiple sites. Personnel can configure each site's default location for receipt of specimens, sampling kits, and related biorepository materials. Default location storage conditions are also configurable. Each site can have a CLIA # and the Medical Director user account assigned. Both CLIA # and Medical Director can be displayed in the patient final report.
<b>QC Manager</b>	Quality Control (QC) Manager centralizes management of QC (quality control) materials and associates them with instruments on which they are tested. QC materials are tested according to combined factors, such as the service group doing testing, test method, equipment used, QC levels, and lot expiration date. QC Manager groups QC materials depending on which factor is the focus.
<b>Equipment Manager</b>	Use Equipment Manager to access and manage information about equipment used in each lab. Many laboratory tests are performed using equipment, such as for counting blood cells. You can use this application to track maintenance and calibration dates, list the reports that can be generated about equipment usage, and configure actions that should be performed when equipment is used.
<b>Courses</b>	The Courses application provides tools to create and manage analysts' training and certifications.
<b>Course Schedules</b>	Some laboratories, especially in regulated industries, require that analysts carrying out tests be certified to perform the test methods used in the lab. Using this application, training courses can be scheduled, participants selected and invited, and certifications granted.
<b>Analysts-Certifications</b>	When you assign tests to samples, they are routed according to test library to the appropriate laboratory service group. If your facility requires that the tests be performed in a certified lab or by a certified analyst, you can check on certifications when assigning samples to labs and analysts. You can use contact information to reach and advise analysts who are coming up for re certification.



FEATURE / FUNCTIONALITY	DESCRIPTION
<b>STARLIMS Web Portal</b>	This is a portal solution in HTML5 for submitters to the STARLIMS LIFE SCIENCES LIMS and it allows the user to create requests for testing of any panel, submit those requests to the lab, print a packing slip report, view recent requests, view details of each request, download final reports, and create queries and reports for the requests.
<b>STARLIMS Mobile Solution for Sample Collection</b>	The Mobile Solution can be installed in either Android or iOS phones and tablets. The Mobile Solution is used to enter requests, patient, and sample data in real time as sample collection is performed, then to submit the request for testing to the lab. The user is able to see recent requests, status, and details of each request.

## MOBILE APPS

When a user logs on to their site using the mySTARLIMS app on their mobile device, one or more of the following out-of-the-box apps may be available.

FEATURE / FUNCTIONALITY	DESCRIPTION
Sample Ordering	This mobile app allows you to skip the paperwork when ordering samples and tests for your patients and order them directly from your tablet device.
Kit Collection	This app allows you to document trial visits. You can easily create accessions for your trial kits, update trial subject information, record sample collection information, and even take photos as attachments.
Shipment Receiving (eManifest)	Process your sample shipments through the eManifest system. Scan-in your shipment tracking labels when you receive them.
Biorepository Picking	Pick and pack samples for your biorepository shipments as used in the biorepository work orders workflow.
User Management	Use to easily identify problem accounts using the the smart single-bar search, unlock user accounts, and reset passwords for user accounts that follow your organization's password policy.

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>HTML</b>	We support internet browsers compatible with HTML5 such as Chrome, Safari, Firefox, and Edge. Conversion of the XFD Framework to the more modern HTML5 provides a visual and navigational upgrade as well as independence from browser platforms. An HTML5 Converter utility is available for users to convert their custom interfaces to the platform supporting HTML.
<b>Advanced Analytics (AA)</b>	Use Advanced Analytics dashboards to display your real time data in charts such as Levey Jennings charts. For example, you can display a high-level overview of your lab's QC Failure ratio, the percent of QC warnings month by month, all of the QC lots, and color coded lots that had QC warnings. Out-of-the box dashboard workbooks include: Clinical Samples Analysis, Clinical Trials Insights, EQCM (Enhanced Quality Control Manager), Client Requests Analysis, Client Turnaround Time, Lab Workload, Test Workload Analysis, Tests Forecast, Turnaround Time Outliers, and System.UserActivity. You can also create your own dashboards.
<b>Scientific Document Management System (SDMS)</b>	If SDMS is installed for a facility, it can upload documents based on file type from network folders. Users working on documents using Microsoft Word, Excel, or Outlook can upload documents from those applications. An uploaded document can be stored or data from the document can be extracted using parsing templates. Depending on configuration, the data can be sent to STARLIMS tables. The SDMS Admin window is available for administrators to configure expected file types, file recognition, parsing, and workflows of steps assigned to personnel for processing a file. The SDMS applications used by personnel appear in the Notifications menu when SDMS is set to on. These are Incoming Queue, Documents, and My Tasks.
<b>Electronic Notebook (ELN)</b>	Electronic Notebooks (ELN) can be used to save notations and reference SOPs about tests performed as part of the sample processing life cycle. ELNs can be included in the transfer of data from an instrument into an ELN form then into the LIMS. After an ELN is configured, you attach the ELN to a test. Personnel log the samples on which the test is to be performed and when the samples are ready for results entry, the results entry application opens the ELN for results and supporting information. Building an ELN involves knowledge of Microsoft Excel formulas and communicating information to and from the LIMS.

# LIFECYCLE OPTIONS

## CLINICAL ACCESSIONING

FEATURE / FUNCTIONALITY	DESCRIPTION
Patient Manager	Specimens come from patients, so you configure required patient information, such as the patient name and gender, prior to committing that person's specimen record into the system. Complete this information directly using Patient Manager or through Clinical Sample Login.
Clinical Sample Login	To accession clinical specimens, use Clinical Sample Login. Required information must be completed before specimens can be committed. After committal, specimens enter the system with unique accession numbers used for tracking them through the workflow from accession through results entry and release.
Trial Sample Login	If a subject who is part of an existing clinical trial comes in for a scheduled visit, you log the visit using Trial Sample Login. In this window, you select an existing trial, indicate the type of visit, and create a record for the subject's visit in the system. Newly created subjects are added to the system and associated with the selected trial. For existing subjects, the system will find associated records in order to display previous metadata information regarding the subject.
Receive in Lab	A member of a service group uses this window to acknowledge receipt of patient specimens for processing in their laboratory if receipt is required. Transactions can be used to move individual specimens or containers of specimens to other storage locations instead of the default storage location.
Order/Result Review	This application allows you to review orders and results as they are received from instruments. Results can also be entered manually. Transactions are provided for retesting, outsourcing tests, adding more test panels, entering results again using double-blind data entry (DBDE), giving approvals, attaching documents, editing patient details, and so on.
DBDE	The Double-blind Data Entry (DBDE) window helps personnel ensure that accession data is entered correctly because the data must be entered a second time and non-matches must be resolved. DBDE requires an extra step in the processing of specimens.
DBDE Discrepancies	Specimen records for which accession data has been entered twice in DBDE, and for which there are discrepancies, appear in DBDE Discrepancies. Personnel must reconcile them before the specimen continues through the workflow.

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Import Queues</b>	<p>This application allows the user to import eManifest files or scan barcodes from eRequisition forms. The system checks for a released template that matches the input file or barcode. Data is imported after validation criteria is met, such as checking if required fields are completed. An import log is provided. Data that is successfully imported is placed in a queue pending processing. The user can then process the file using this same application and the system generates another log with any errors found. Specimen data that meets validation criteria is created as accessions with draft statuses in the system.</p>

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## WORKFLOW NOTIFICATIONS

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FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Workflow User Assignment</b>	This is an optional step used to assign or re-assign a specific user name to a run to process specimens or plates at a workflow step. Only one person can be assigned to process a specimen or plate at a specific step.
<b>My Workflow Processing/My Teams Workflow Processing</b>	Analysts use the application window to process the logged specimens that have been directed to a workflow, such as a molecular workflow, set up for the master workflow assigned to the test(s) ordered for the specimens. A logged specimen enters the first workflow step of a master workflow immediately or after workflow exceptions, if any, are resolved and/or overridden and continues through each step as pre-configured using the Workflow Engine. An analyst using My Workflow Processing sees only the pending specimens/plates and active runs assigned to him or her.
<b>Workflow Exceptions</b>	Personnel use this application to view issues that occurred when the system attempted to send specimens to a step in the Workflow Processing application. They can then fix the problem and send the specimen record back for processing.
<b>Workflow Review</b>	This application window looks the same as the Workflow Processing application window except it is only used for peer review. Personnel who are members of the same service group processing a workflow can peer review a workflow step. Runs finished for a workflow step will be available for peer review if the workflow step is configured to require peer review or if any specimen in the run was routed for peer review based on routing conditions.
<b>Workflow View</b>	Limited access may be available to some personnel to search for and view the steps being processed in workflows. When they open Workflow View, the Workflow Processing window opens and displays workflows and steps information as read-only.

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Pending Data Entry</b>	Displays pending requests for completion of mandatory question forms. Question forms, whether mandatory or optional, are attached to panels (of tests) which are assigned to logged specimens in the system.
<b>Results Entry By Run</b>	Typical use for this application is automatic results entry using an instrument. The samples are arranged in a run on the instrument. The run, also called a worksheet, may be used to assign analysts to perform tests and to make adjustments.
<b>Results Entry By Batch</b>	Use Results Entry by Batch to enter results for a group of samples. To start developing a batch of samples, select from defined batch templates. These are associated with a set of tests, in one or more panels, and assigned to logged samples. The batched samples must include tests using the same equipment and test method.
<b>Run Release</b>	Releasing results by run is an optional step that is performed if the test is not set to auto-release in the Test Manager. If a test is set for auto-release, personnel can skip this step. If it is not set, then a test must go through the approval process using “Run Release” following results entry. The release must be performed by a different person than the one who performed the results entry.
<b>Batch Release</b>	Releasing a batch is an optional step. It is performed if the test is not set to auto-release in Test Manager. Release can be performed either by a different user or the same user who performed the results entry, depending on the workflow defined. The “Different User” field is used to manage whether the same person who entered results can release the batch or if a different person must do so.
<b>DBDE By Run</b>	This is a results entry module using Double-blind Data Entry (DBDE) on a run of samples tested on the same instrument. Use it when you create a run, assign samples, and enter results using Results Entry by Run. Using DBDE By Run after results entry is a good practice but it is not enforced by the system.
<b>DBDE By Batch</b>	You can also use DBDE when batch processing a group of samples according to a batch template. Create a batch, assign samples, and enter results twice, first using Results Entry by Batch and then using DBDE By Batch.

## REMINDERS

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>DBDE Discrepancies</b>	Reconciling discrepancies between two sets of results entered by run or by batch can be done through the DBDE Discrepancies application. Panels for which discrepancies exist have their DBDE Status set to “Discrepancy” and this discrepancy must be resolved prior to releasing the panel.
<b>Micro Results Entry</b>	Each stage in a Microbiology workflow is defined as a step and some steps are dependent on other steps. This results entry interface reflects the steps that were set up within the Micro Settings window. Steps that are dependent on other steps are shown conditionally.
<b>Micro Batch Results Entry</b>	To enter microbiology results during a step defined as Batch, use the Micro Batch Results Entry reminder. The Samples panel allows you to edit results, change sample status, print worksheet(s) and search for samples by sample, run, or component. This application is useful for executing the same step, such as a media step, for several samples at one time.
<b>Micro Run Creation</b>	Some Microbiology steps, such as a direct smear, require quality controls to be added to a run before processing the step and entering results. When the Needs Run check box is marked for a step, the sample appears in the Micro Run Creation reminder where the assigned analyst can add the quality control(s).
<b>Micro Preliminary Report Release</b>	You can use this reminder to view reports sent from the Micro Results Entry application when an analyst clicks a “Send for Approval” button (buttons are configurable).
<b>Service Processing</b>	Use this application to process samples according to all steps in one particular service or one generic step used in multiple services. For example, you can process samples that share an extraction step. All samples waiting extraction are processed regardless of whether the extraction step is part of a breast, prostate cancer, or other investigation.
<b>Generate Invoices</b>	After a specimen is logged, the order appears in the Generate Invoices reminder where personnel can examine the test pricing and then send it to Invoice Release.
<b>Invoice Release</b>	When an invoice contains line items for all related charges and appears complete, use this window to create the invoice statement to send to the submitter, and then later enter payments and review the balance or paid in full.



## REMINDERS

FEATURE / FUNCTIONALITY	DESCRIPTION
Ship Outsource Samples	A site at your facility may outsource samples either internally or externally. After outsource samples are logged they appear in the Ship Outsource Samples application window if validation was met. From here these samples can be shipped to the outsource laboratory designated for the test. Internal outsource labs can access and update results in the LIMS. External labs send results back to personnel who have access to update the LIMS.
Receive Outsource Samples	Personnel expecting outsourced samples can log on to the internal outsource site where the testing is to be done and use this application to receive the samples.
Training Invitation	After a training course has been scheduled and an invitation sent, invitees can log on and see a new Reminder - Training Invitation (#).
Pending Recertifications	You can notify an analyst before certification expires by sending a pending recertification. Personnel use the Request Recertification button in the Analysts Certification application to do so.
Certifications for Release	If the Auto Certify field has been cleared in the certifications table, then re certification requires managerial approval. After the analyst has completed the re certification, the status in the certification table is Completed (as opposed to Certified) until a manager releases the certification using this application.

## ALERTS

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Activate Pending Users</b>	When a person opens a LIMS as a new user and clicks the “Sign up” button, this alert appears in the Life Cycle Options pane. An administrator can open this alert, and activate pending users by giving them an “Active” status.
<b>Interface Exceptions</b>	The Interface Exceptions application logs errors in outgoing and incoming message transfers. For example, if an instrument sends a message value of “2013” but, in the LIMS, a translation for this value was not provided and the Allow Untranslated Data option was not enabled, an exception will occur.
<b>Pending Maintenance</b>	The alert opens Equipment Manager to display equipment due for maintenance. You can give equipment an “In Service” status to show maintenance was done or remove equipment from service. You can track maintenance history, re-schedule regular maintenance, and run a maintenance report with date parameters.
<b>Pending Recertification</b>	The alert displays analysts that are due for recertification. You can recertify an analyst before certification expires by using the Request Recertification button in the Analysts Certification application.
<b>Create / View Alerts</b>	The Alert Management window opens when the “Create / View Alerts” menu item is clicked. You can use this application to send messages through the LIMS to other personnel.
<b>Administrative Alerts</b>	Personnel who were sent an alert from the alert management application will see an administrative alert in their Alerts menu.

## INVENTORY MANAGEMENT

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Inventory</b>	The Inventory application allows you to manage the consumption, restocking, testing, relocating, and disposing of materials at your facility. Inventory levels are adjusted as a material is pulled from or added back into stock. Consumable inventory may be received at the lab or created in-house using other materials which are already in inventory. Items may be created by following a recipe or in an ad-hoc manner not governed by a recipe.
<b>Biorepository</b>	Biorepositories and their submitters can use this application to manage a large volume of stored tissue and other biological samples. It integrates with Workflow Processing to support medical researchers in their use of molecular methods. There are safety mechanisms set up to support increasingly stringent regulations. The Biorepository application window works with inventory records and has transactions similar to the Inventory application window; however, the biorepository also has transactions to accommodate special requirements for handling biological specimens such as managing patient consent, setting accession information, reserving samples, increasing thaw count, and genealogy of specimens and/or tissue. Specific materials can be identified for inclusion in the biorepository.
<b>Inventory Pending Transaction</b>	Personnel can use this dialog box to reference the inventory that immediately concerns them. For example, if a custodian of a material requests an extension of the expiration date, the supervisor who must approve the extension will see this transaction when opening his or her pending transactions.
<b>Biorepository Pending Transaction</b>	Personnel can immediately locate biorepository tasks that are pending action. For example, use this reminder to find a pending biorepository specimen and open it in the main Biorepository window for examination and reception. When moving specimens you can use this dialog box directly to approve or decline changes in custodian.
<b>Location Management</b>	This application displays inventory based on location. Use it to view, move, dispose and increase freeze and thaw counts on the containers or inventory stored at a selected location. Transactions are available depending on the inventory item and user role.

# INVENTORY MANAGEMENT

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Cycle Counts</b>	Cycle counts are scheduled reconciliations of inventory. Each storage location can be assigned a cycle count frequency, with a minimum and maximum timeframe, when the inventory recorded in STARLIMS should be verified against what is actually in the location and storage container.
<b>Work Orders</b>	In order to facilitate shipping of inventory items at your facility, you can create a work order. A work order can list a collection of inventory items stored in various locations in your facility and can include an expected shipping date, expected packaging date, and a destination. After a work order is created, personnel can create packing lists, pack samples into storage containers, and then ship work order items out to destination labs.
<b>Packing List</b>	The Packing List application displays all released work orders, because the next logical step in processing the work order is packing a container, such as a box, with the work order items to be shipped. Personnel can create a packing list in order to aid in packing the items. Create a "Pack List" by defining an empty container with or without a cell layout, such as a box, and specifying the positions in the box where items are to be packed.
<b>Packing</b>	The Packing module is for the packaging of inventories that were ordered. Personnel provide the information to locate the items and the container/box/carton to use, and then position the items in the container for shipping. The Packing module can be used with or without a "Pack List."
<b>Shipping</b>	The Shipping application is used to manage shipments of inventory. Work order items can be packed together in boxes or moved individually. Inventories that were not included in a work order can be included in a shipment anyway. In order to ship items, personnel provide a destination, carrier, and a way bill number.
<b>Storage Containers Manager</b>	Storage Containers Manager displays biorepository containers. Personnel can use biorepository transactions consistent with handling these containers, such as Move (Change location), Move Contents, Shipping, and Dispose.

FEATURE / FUNCTIONALITY	DESCRIPTION
<b>Outsource Sample History</b>	Use the Outsource Sample History window at any time to search for samples that have been outsourced, see shipments that are in transit, and view alerts about missing samples.
<b>Report Query</b>	Use to run an SAP Crystal Report created to make a list that also meets one or more conditions. For example, to list accessions with warning or rejection messages, open Report Query, select a report template such as "RejWarnOrders," and use the other fields to enter criteria such as a date range to get the report that you want.
<b>System QBE</b>	This application can be used to flexibly query the system according to the data that you want to list. It works with QBE Manager and a QBE template which defines the tables and fields that can be queried and the data that can be returned from the query. Personnel can dynamically add or change query criteria. Any modification to the template can be "Saved As" another template that can be reused. The data that is returned from the query can be grouped and sorted using standard STARLIMS grid capabilities. In addition, the data that is returned from the query can be exported to Excel.
<b>Delivery Queue</b>	Delivery Queue lists "jobs" corresponding to sample results reports. Use it to send the reports in batches for efficiency. It directs any pending report to contacts associated with the sample for whom an automated delivery method has been set up. Personnel can associate contacts and delivery methods with a sample during accessioning.
<b>Interface Logs</b>	This is a monitoring application that displays incoming and outgoing messages between STARLIMS and other systems or equipment using the Interfaces module. Personnel can search, review messages, cancel a selected message, or re-send a selected message.

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