

Lims1 SETUP TABLES

To establish a LIMS which will meet the requirements of all types of laboratory operations the system must be capable of a high level of customisation. In many systems this level of flexibility is only provided through a system development process which requires a high level of LIMS vendor or IT support to develop database queries, user screens and custom reports (Ref: *Lims1 vs. Classic LIMS*).

A primary design criteria for Lims1 is that...

“The system must be capable of being fully established and maintained by laboratory staff.”

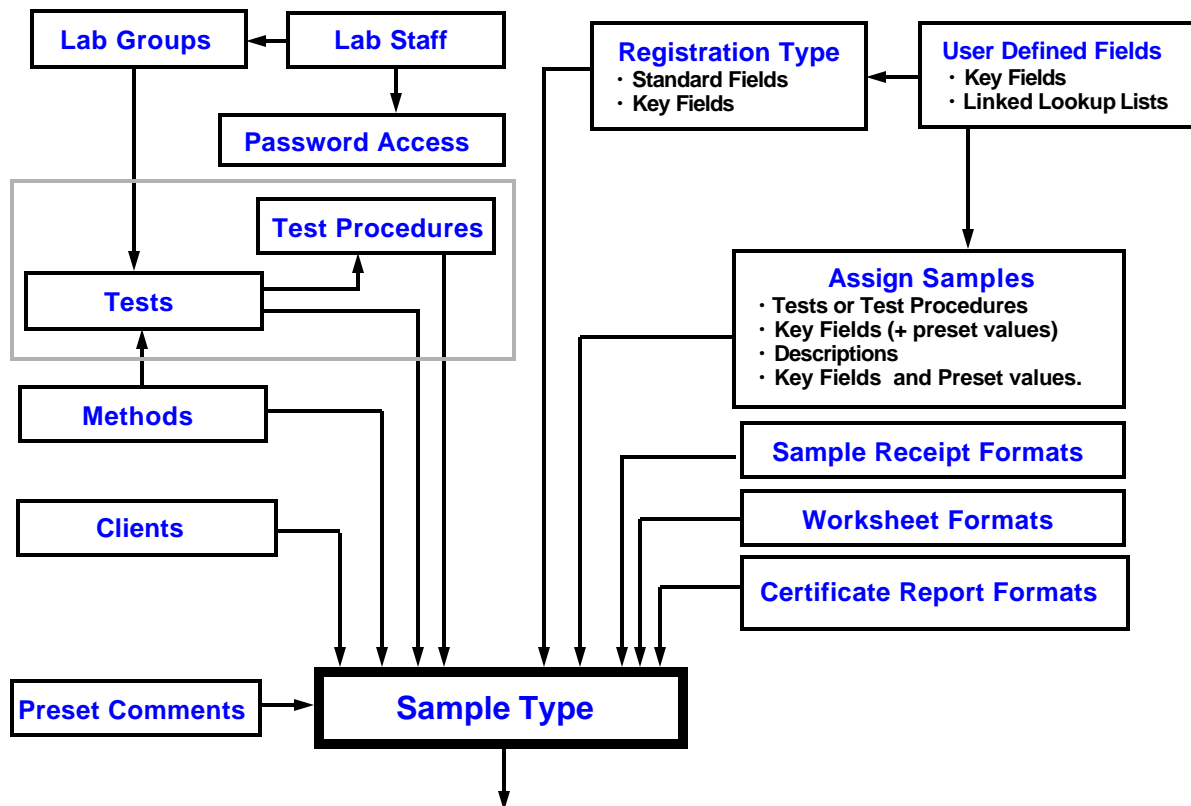
To provide these services a comprehensive system of Lims1 Setup Tables is included in the core system as well as a built-in LIMS Report Format Generator as developed by LTech Australia.

System Setup Tables include a range of individual Setup Table Types as shown in the diagram below with links between setup tables as indicated.

The key element of Setup Tables is the **Sample Type** Table which effectively groups sets of sub-tables and other links into a single entity which represents all testing, data entry and reporting conditions for a given Type of Analysis.

In constructing system Setup Tables any number of Sample Types may be established to meet individual laboratory requirements for types of analysis undertaken.

Lims1 Setup Tables Diagram
 { Details provided on following pages }



A Sample Type is selected when Work is Registered

A Sample Type is used to link analytical conditions into a composite record which is then selected during sample Registration to establish all the data entry and reporting conditions.

These conditions established pre-defined parameters for the job registration but may also be modified to suit the individual registration requirements.

Lims1 Setup Tables are provided as a separate application which may be accessed directly from the core Lims1 system. During the setup process new tables and links may be created and then directly tested from the core system.

Lims1 Setup Tables Tabbed Notebook

System Setup Tables are presented in the form of a Tabbed Notebook as shown below where each notebook tab represents a specific Setup Table List.

Setup Table Types are created or modified by selecting the Setup Table and using New, Edit or Copy buttons located at the top of the screen.

Sample Types							
Sample Type	Description	Use	#Assign	Report Format	Lab. Group	Unit Group	
AA-METALS	AA Metals	Test	6	A2SC_IMAGES	METALS		
BAC-RODX	Bac, Rod, Cocci, YM	Test	6	BYCYM_S	MICRO		
BASIC	Register Basic Sample Type	Test	3	A1TC	GENERAL		
BLD-SCR	Blood Screening	Procedure	2	CLINICAL1	CLINICAL		
BOS	BOS Analysis	Test	7	FINAL_CERT_M	METALS		
BQC-AG	AG QC	Test	4	BQC-R1	PROD-QC1		

Sample Type Setup - Example of Table Links

Example of Sample Type setup form with links to other system Setup Tables.

Registration Type
Link Job Registration Fields and conditions.

Report Format
Link to Certificate Report Format

Worksheet Format
Link to Laboratory Worksheet Format.

Sample Receipt
Link to Sample Receipt Format.

Assigned Tests
Link Tests performed by Sample Type.
{ see below }

Assigning Test Links

To assign (link) a range of Tests to a Sample Type, Tests are selected from the Tests Library List on the left and added to the Assigned Tests list on the right.

Test	Description	Type	
A-PH1	pH	Numeric	
A-PHEN-TOT	Total Phenolics (as Phenol)	Numeric	
A-PHOS-TOT	Total Phosphorus*	Numeric	
A-PP_DDD	p'p'-DDD	Numeric	

Sample Type BASIC

- PH-A
- M-ALKTOT
- A-CHLORIDE

Description of Setup Tables

User Defined Fields

To provide a maximum level of system flexibility and customisation Lims1 Setup Tables include a Library of **User Defined Fields** which are established by the laboratory for use during Job Registration and Sample information entry.

If for example we wanted to enter information regarding a Location from which a given batch of Samples was taken then a User Defined Field of SAMPLE_LOCATION with a Descriptions of "Sample Location" could be created.

This User Defined Field (and any number of additional Fields) can then be Linked to a **Registration Type** (see below) related to the type of samples which require entry of this information.

If we have a fixed number of Sample Locations we can also Link the SAMPLE_LOCATION Field to a **Lookup List** which contains a listing of the locations.

Registration Types

A multi-discipline laboratory will be required to process many types of samples and types of analysis which require different type of login screens for entry of details related to the work.

Using **Registrations Types** a Library of Registration Form configurations can be established to meet these individual requirements including a range of User Defined Fields and other options.

Registration Types are linked to **Sample Types** (see below) as part of the Sample Type setup process.

Assigned Samples

In addition to pre-establishing Registration Information Fields, sets of Sample Fields may be established for use in specific **Sample Types**.

For example if a batch of water samples is being processed the following information may be required for each individual sample: 1) Sample ID, 2) Depth, 3) Temperature.

Each of these fields would be established as a **User Defined Field** and these fields assigned to a **Sample Type** as a Sample Key Field.

During Job Registration a spreadsheet of Sample Fields is accessed for entry of information against each of the fields.

Linked Sample Fields

You may also link Sample Fields so that entry of a value in one field will automatically select and enter values for other fields or pre-define Sample Fields based on Type of Samples being analysed.

Laboratory Staff

Includes staff names, titles, position and entry of unlimited detail information.

Laboratory Staff are also assigned passwords and **Password Privileges** for access to various Lims1 operations and functions.

Password Access

To access Lims1 a User Password is entered (optional) which establishes the identity of the user and each user is established a range of Privileges based on the entered password.

For example a user may have log-in privileges, results entry privileges, approval privileges, system setup access privileges, etc. Passwords are also used in system Audit Trails to indicate staff who have entered or changed results information and other Lims1 information.

Laboratory Groups

A Laboratory Group consists of one or more members of Laboratory Staff. A Laboratory Group can then be assigned responsibility for a range of Tests or when entering Results of Analysis.

Description of Setup Tables...cont.

Tests

The Tests Library is used to establish Tests for entry of results into the system and provides an extensive range of parameters for entry and reporting of tests results.

There are three types of Tests which may be established....

- 1) Numeric : Entry of a numeric value for the result of analysis.
- 2) Calculated: Perform calculation based on results entered using formula defined by the laboratory.
- 3) Text : Enter Text information as a result with selection from Lookup Lists .

Common Test Parameters

Parameters Common to all types of Tests.

- Reference : Reference Code for Test linking.
- Description : The Test Description which appears in Results Entry forms.
- Heading : The Test Description to appear on Laboratory Reports.
- Method : Link to Method record for the Test.
- Group : Link to Laboratory Group responsible for performing the analysis.

Numeric Test Parameters

The range of parameters which may be established for numeric test includes the following.

- Units : Units in which the result is to be entered/reported.
- Upper Limit : Maximum allowed limit for the result.
- Lower Limit : Minimum allowed limit for the result.
- Upper Pass : Maximum Pass Value for the result.
- Lower Pass : Minimum Pass Value for the result.
- Precision : Number of Decimal places to apply to result (if Significant Figures not used).
- Sig. Figures : Automatic conversion to Significant Figures based on result range.
- Inst. ID : Link to Laboratory Instrument Identifiers for data import.

Calculation Test Parameters

Identical to Numeric Tests with parameters applied to the Calculated Result.

Text Test Parameters

- Field Length : Maximum number of characters which may be entered.
- Default Value : A Default value for the result may be automatically assigned.
- Fail Value : Text which indicates the Test has Failed.
- Lookup List : Lookup List linked to Test for selection of a result.

Tests established in the Test Library are in turn linked to either **Test Procedures** (Groups of Tests) or directly to a **Sample Type**.

Test Procedures

Test Procedures are used to group a range of Tests together where they are to be treated as a single entity during the result entry and reporting process.

For example if a Metals Analysis is to be performed using a laboratory instrument a Test Procedure - METAL_101 might be created and the range of Metals Tests to be performed in the analysis would be linked to the Test Procedure.

Methods

Methodology to be used in performing Tests (linked to individual Tests).

A Method record may include the following parameters...

- Reference : Method Reference for linking to Tests.
- Description : Description of Method.
- Method ID: : Method Identification Code.
- Version : Method Version No.
- Methodology: Unlimited descriptive text.
- Method File : Link to Methods Documentation Files (MS-Word, PDF, etc.).

One of the primary purposes of Methods is to include Methods information on Certificates of Analysis and other laboratory documents.

Description of Setup Tables...cont.

Clients

A Library of clients who use the laboratories services which includes the following information...

Reference	: Reference Code for selection and linking.
Client Name	: Full Name of Client.
Department	: Department.
Address	: Full address details.
Communications	: Telephone, Fax, Email.
Contacts	: Listing of Contact Names, Titles, Phone, Fax, Email.
Client Job Ref	: Internal use by the laboratory.
Client Type	: Internal use by the laboratory.
Priority	: Set of Priorities which may be assigned to clients.
Client Notes	: Unlimited text for additional information related to the client.

Invoice Client

If the Lims1 - Invoice/Accounts Module is in use then an additional set of client details is available related to invoicing the client.

Preset Comments

Lims1 **Job Registrations** include a range of free text, unlimited Comment Fields including Job, Sample and Result Comments as well as comments which may be automatically linked to Sample Types.

Preset Comments provide the ability to select a Pre-defined Comment for inclusion in these comment fields in addition to text manually entered into the Comment.

Sample Types

Sample Types are used for linking a range of Setup Tables into a single entity to define all Registration, Results Entry and Laboratory Reporting conditions for a given type of sample.

A **Sample Type** has the following range of information and Setup Table links may be applied...

Reference	: Reference Code for selection/linking of Sample Type to Job Registration.
Description	: Description of Sample Type.
Registration Type	: Select to establish Registration Form fields and setup conditions.
Tests/Procedures	: Link an unlimited number of Tests or Test Procedures to the Sample Type.
Sample Fields	: Link a range of Information Fields for entry of Sample Information.
Number of Samples	: If constant number of samples, may be defined here.
Completion Days	: Use for calculation of Turn-around Times and Due Dates for Job Registration.
Laboratory Group	: Laboratory Group assigned to Sample Type.
Certificate Format	: Link to Report Format Generator - Certificate of Analysis Report Format.
Worksheet Format	: Link to Report Format Generator - Laboratory Report Format.
Receipt Format	: Link to Report Format Generator - Sample Receipt Report Format.

During routine operations, when a **Job Registration** is created, a **Sample Type** is selected for use with the new Job Registration. On selection, all of the above parameters and links are applied to the Registration.

Once selected, all of these parameters are 'de-linked' from the Sample Type and any of the above conditions may be modified to suit the individual requirements of the work logged in. For example the default set of Tests assigned by the Sample Type may be modified (added, removed or edited) to suit individual requirements of the samples logged into the system.