MSC-LIMS™ *Insights*

The source for news and tips of interest to users of MSC-LIMS,
an affordable laboratory information management system for small labs.

Welcome

Welcome to **MSC-LIMS** *Insights*.
This newsletter will help current MSC-LIMS users get the most out of their software, and will complement the product literature and downloadable demo that prospective users can find on our web site at www.msc-lims.com.

Join our mailing list for more information. Sign up at www.msc-lims.com/lims/maillist.html.

This newsletter is for and about MSC-LIMS users. We welcome your comments, and your suggestions for topics you would like to see addressed in upcoming issues. Please send your thoughts to newsletter@msc-lims.com. ◣

Your Keyboard is Your Friend
Windows Logo Key Shortcuts

In addition to opening the Start menu, the Windows logo key 🪟 (WinKey for short) available on most keyboards provides a number of useful keyboard shortcuts.

How often do you minimize or move application windows just to get to a shortcut on your Windows desktop? Next time try WinKey+D.

Here is a list of useful WinKey shortcuts:

➢ Use WinKey to display or hide the Start menu.
➢ Use WinKey+Break to display the System Properties dialog.
➢ Use WinKey+D to hide all windows and display the desktop. Press it again to restore all windows.
➢ Use WinKey+M to minimize all windows and WinKey+Shift+M to restore all minimized windows.
➢ Use WinKey+E to open Windows Explorer.
➢ Use WinKey+F to search for a file or folder and Ctrl+WinKey+F to search for a computer.
➢ Use WinKey+F1 to display Windows Help.
➢ Use WinKey+L to lock your computer.
➢ Use WinKey+R to open the Run dialog. ◣

In this Issue

From the Developer

When providing on-site training for new MSC-LIMS users, I often conclude the visit with a description of our technical support policies. The MSC-LIMS documentation is thorough but we know it will not answer all questions, so I invite users to contact us with questions. In fact, I note that I would be concerned if I did not hear from the new user.

If you are new to MSC-LIMS, remember that you have unlimited technical support for all Annual Subscription licenses and all Full System licenses with current Annual Maintenance. While we prefer email, we answer all support requests within 24 hours during normal business hours (Monday through Friday 8:00 AM to 5:00 PM Mountain Time).

And speaking of support, sometimes it seems we are providing as much support for Excel as we are for MSC-LIMS. To us, that confirms how important MSC-LIMS' Excel interface has become for many users. In that light, take a look at the new invoice and final report templates we have added to the File Library. You may find a few new ideas for your reports within these example templates.

Rick Collard is the founder of Mountain States Consulting and the principal developer of the MSC-LIMS software. You can reach Rick by email at rcollard@msc-lims.com.

Notes from Technical Support

Microsoft Access cannot open this file

We frequently email zip files or place zip files on our web site and email a link to download. These zip files normally contain an Access MDB or MDE file such as our LimsCode3 files. When you attempt to extract the contents of the zip file or open MSC-LIMS after extracting the LimsCode3 file, you may encounter the following message:

```
Microsoft Access cannot open this file.
This file is located outside your
intranet or on an untrusted site.
Microsoft Access will not open the file
due to potential security problems.
To open the file, copy it to your
machine or an accessible network
location.
```

This message is a result of updated security features Microsoft added to the Attachment Manager in Windows XP Service Pack 2. The Attachment Manager is designed to help protect your computer from unsafe email attachments and from unsafe files downloaded from the Internet. You can read more about the Attachment Manager in the following article:

Description of how the Attachment Manager works in Windows XP Service Pack 2
http://support.microsoft.com/default.aspx?scid=kb;en-us;883260

If you receive the error message above, the Attachment Manager has blocked the file. After verifying that the blocked file was supplied by MSC, you can unblock the file by following these steps:

1. In Windows Explorer, right-click the blocked file, and then click Properties.
2. In the General tab, click Unblock.

Wrong Subtotals in Excel Sample Tracking Templates

After exporting the Sample Tracking report's data to one of the example sample tracking Excel templates several users have reported that the totals appear in an incorrect order. Microsoft has acknowledged this problem for Excel 2002 and Excel 2003 in the following knowledge base article:

Multilevel subtotals are in the wrong position in Excel 2002 and in Excel 2003
http://support.microsoft.com/kb/831824/

The problem has been fixed in Excel 2003 Service Pack 1 and in an Excel 2002 post-Service Pack 3 hotfix package. However, a simple registry change described in the above article can also be used to solve the problem by reverting to the subtotal functionality of Excel 97 and Excel 2000.

Feature Article

Calculate Sample Turnaround with a UDR

Knowing the sample turnaround time for specific samples processed within your lab can be a valuable managerial tool. This article shows you how to use sample dates and times and a user-defined report (UDR) to calculate this important metric. While you can export sample data to an Excel template to perform similar calculations, a simple UDR works well.

Begin by selecting the Define Report option on the Samples menu to create a new UDR. Enter a report name and optional sort order, select an appropriate template from the list then select the Columns tab to add the UDR's columns.

You can determine a sample's turnaround time using date arithmetic and any of the sample's date and time values. For example, you may define turnaround as the time elapsed between sample login and sample completion. If you are using the reported date and time feature, you may use reported date to calculate elapsed time. For our example we will use received date and time through reported date and time to calculate turnaround time.

In addition to calculating and displaying turnaround time, we want our UDR to display the dates and times on which the calculation is based. Add columns A and B to the UDR to display received date and time and reported date and time, respectively. Enter an appropriate column label then select the "Received date and time" and "Reported date and time" Visual Basic for Applications (VBA) expression from the column's Expression pick list.

VBA's DateDiff function is an ideal solution for our turnaround calculation. You can use DateDiff to determine the difference (i.e. the number of time intervals) between two dates, times, or dates and times in seconds, minutes, days, weeks, etc. Below are a few examples. Note that like an Excel formula VBA expressions in a UDR column begin with an equal sign. See Table 1, below.

Instead of the literal times and dates in the examples above, we simply use the appropriate MSC-LIMS field name in the UDR column expression. Before we create our expression we should review the available LIMS date and time fields. Table 2 shows the date and time fields available for each sample. A sample's analyses have their own dates and times, which are not listed here. Note that the fields whose values are automatically assigned by the LIMS contain both a date and a time. All other sample fields contain either a date or a time and they may have no data for optional fields.

Table 1

Expression	Result	Units
=DateDiff("s", #8:00#, #10:00#)	7200	Seconds
=DateDiff("n", #8:00#, #10:00#)	120	Minutes
=DateDiff("n", #1/1/07 8:00#, #1/2/07 10:00#)	1560	Minutes
=DateDiff("h", #1/1/07 8:00#, #1/2/07 10:00#)	26	Hours
=DateDiff("d", #1/1/07 8:00#, #1/2/07 10:00#)	1	Days

Table 2

Field	Data Type	Description
AddedDate	Date and Time	Date and time sample was logged
CollectedDate	Date	Date sample was collected
CollectedTime	Time	Optional time sample was collected
CompletedDate	Date and Time	Date and time sample was completed
DueDate	Date	Optional date sample is due
ReceivedDate	Date	Optional date sample was received
ReceivedTime	Time	Optional time sample was received
ReportedDate	Date and Time	Date and time sample was reported
StartedDate	Date	Optional date tests were started
UpdatedDate	Date and Time	Date and time sample was last updated

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To calculate the number of hours elapsed between the sample's login date and time and completed date we can use this expression:

```
=DateDiff("h", AddedDate, CompletedDate)
```

The expression above is simple because both the AddedDate and CompletedDate fields include both a date and a time. What if we want to calculate the difference between received date and time and reported date? The serial values Microsoft Access uses for dates and times allow us to simply add the separate date and time values to create a single date and time value. To calculate the number of hours elapsed between the sample's received date and time and reported date we can use this expression:

```
=DateDiff("h", ReceivedDate + ReceivedTime, ReportedDate)
```

The expression above works properly if you always enter a received time with the received date when logging samples. If you sometimes omit the received time we need to update our expression to insert a default time value when the received time is blank. We can use VBA's Nz function to provide a default time (midnight in our example) when there is no received time:

```
=DateDiff("h", ReceivedDate + Nz(ReceivedTime, #0:00#), ReportedDate)
```

Add the expression above to column C in the UDR with an appropriate column label.

Since we would also like to see the average turnaround for the samples queried for the report, simply enable the Average summary statistic for column C.

The UDR definition in the screen capture, below left, shows a sample's turnaround in hours but that may not be intuitive when turnarounds are measured in days. Can we display each sample's turnaround in days and hours? Here's an expression that will work:

```
=DateDiff("h",
[ReceivedDate]+Nz([ReceivedTime],#0:00#),
[ReportedDate]) \ 24 & " days " &
DateDiff("h",
[ReceivedDate]+Nz([ReceivedTime],#0:00#),
[ReportedDate]) Mod 24 & " hrs"
```

This expression uses the DateDiff function twice. The result of the first DateDiff is divided by 24 using the backslash integer division operator to return a whole number of days (e.g. 60 \ 24 returns 2). The result of the second DateDiff is used with the Mod operator to return the remainder of the division (e.g. 60 Mod 24 returns 12). The results are concatenated with literal text to produce the desired output. If DateDiff returns 60 hours, the expression above produces the text string "2 days 12 hrs".

With our turnaround now in days and hours you will notice that the column's average is only averaging the days. This is to be expected since we are asking our report to average text strings in the form "2 days 12 hrs". Only the first number is used when calculating the average.

If we really want our turnaround average in the same form, we can calculate and display the average using our own expression in the UDR's report Text field located on the Headers and Footers tab. Here's a report text expression to calculate the average turnaround in days and hours:

```
="Average Turnaround:  " & Avg(DateDiff("h",
[ReceivedDate]+Nz([ReceivedTime], #0:00#),
[ReportedDate])) \ 24 & " Days " &
Avg(DateDiff("h",
[ReceivedDate]+Nz(ReceivedTime, #0:00#),
[ReportedDate])) Mod 24 & " Hours."
```

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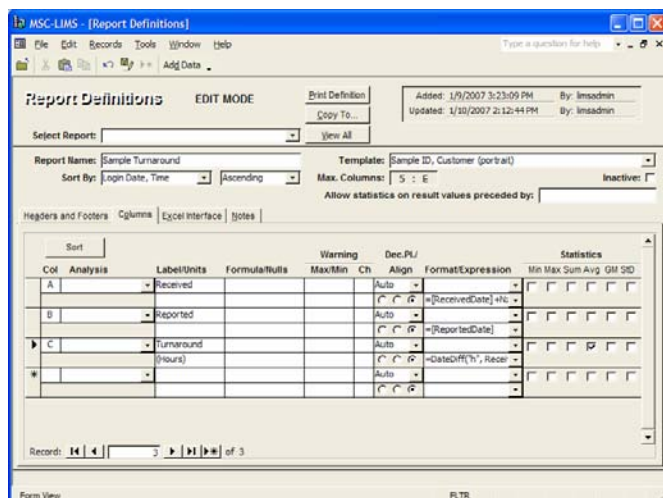
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The UDR report text field is often used to display disclaimers following the report's data. As shown above, it can also include VBA expressions to calculate and display special statistics or even cross-column calculations that can not be accomplished using the default column statistics. With a few VBA expressions, UDRs in MSC-LIMS offer a powerful solution.

For Customers Only

This section of *MSC-LIMS Insights* is devoted to current users of MSC-LIMS. Here we briefly introduce only the most recent additional to MSC-LIMS.com Customers Only pages. Use your login name and password to log on to the Customers Only section of our website. While you are there, visit these features:

File Library

Invoice Templates

Use one of these templates to create your own custom invoices by exporting data from an MSC-LIMS' invoice report. One template creates an invoice with the data grouped by sample and another template groups the data by batch. See each template's Read Me sheet for more information.

Final Report Templates

Export data from the Sample Summary report to one of these templates to create multi-sample final reports. List samples and their analyses in consecutive rows or use a format where samples are listed in consecutive columns and the analyses in rows or vice versa. See each template's Read Me sheet for more information.

Discussion Forum

Help design a chemical and supply inventory feature

We are still looking for a few sites willing to participate in the design of a new chemical and supply inventory feature for an upcoming version. If you can benefit from the addition of such a feature, please join the discussion.

Contact Us

Questions, comments, suggestions? Reach us at:

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