

LifeCheck Technical Note

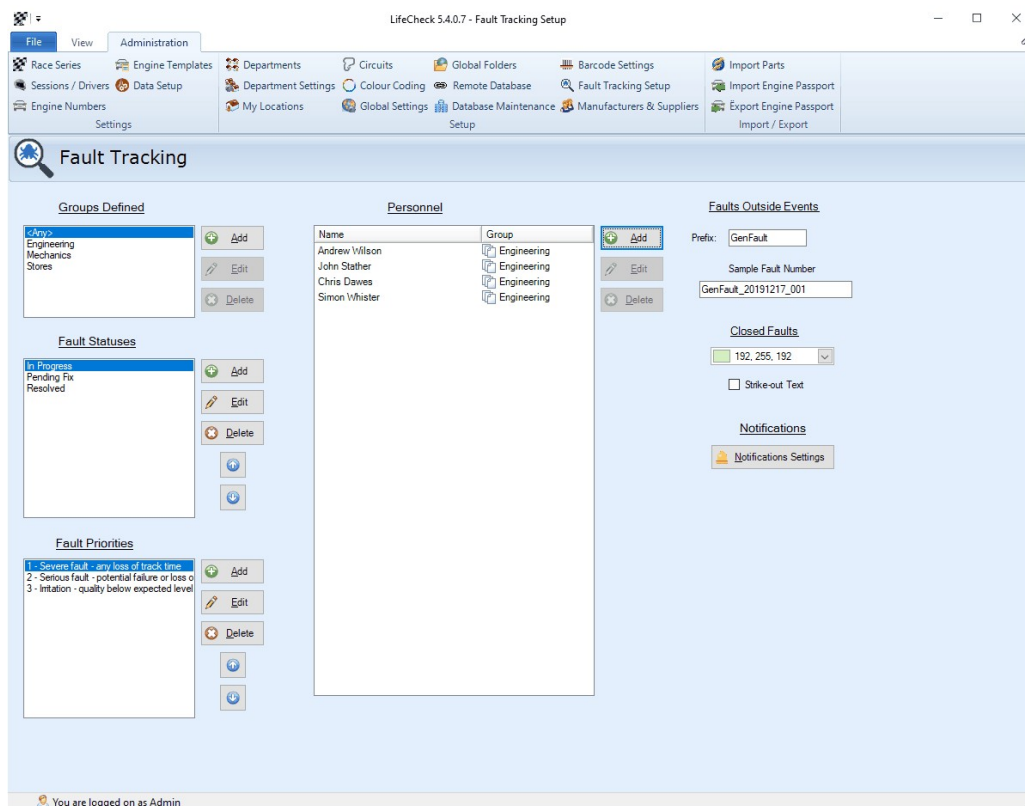
ID: TN007
Created: 19-August-2020
Updated: -
By: Chris Drew
Description: LifeCheck Fault Tracking Module

Introduction

The Fault Tracking module is an optional, separately licensed bolt-on for LifeCheck which implements a fully featured system by which faults relating to assemblies and components may be tracked. Faults may be assigned to different staff members, given a user definable priority and status and notifications sent to nominated users as faults are created, updated or closed.

Configuring the Fault Tracking System

Before you are able to make use of the Fault Tracking module it will be necessary to configure the system to suit your requirements. Configuration of Fault Tracking starts by selecting the **Administration>Fault Tracking Setup** from the main menu.



You may find that a number of default entries have been added to the Fault Status and Fault Priority lists. You can add, amend or delete entries in these lists as required by clicking on the appropriate button to the right of the list

The Basics

The Fault Tracking module allows faults to be recorded against components created within the LifeCheck database. Each fault has a brief overview title and a more detailed description as well as being set a specific status and priority from user definable lists. Faults may optionally be assigned to a nominated user and may have 0 or more components connected to the fault - these are typically the components for which the fault has been created or those directly affected by the fault.

As the Fault is progressed, it may be re-assigned to different users or edited to change various attributes such as its current status or priority. Faults may have a date stamped list of notes associated with them and may also have documents attached to them to provide a complete record of all data which needs to accompany the fault throughout the system.

All changes made to a fault are maintained within the fault history. This details when the fault was created, any changes made to the fault and by which whom and also when the fault is re-assigned and finally closed.

A fundamental aspect of the Fault Tracking system is that normally faults are linked to Events or more specifically to an **Event Name**. One of the main reasons for this is that all faults are allocated a unique **Fault Number** which you can subsequently use to search for or identify the fault in the **Faults View**. Fault Numbers are based on the **Event Name** with a numeric suffix so if your **Event Name** has been defined as **E1_2020_R1**, your fault numbers will start at **E1_2020_R1_00001** and increment from there for each fault recorded (for that event name). The advantage of this approach is that it allows faults to be grouped together and it is possible to easily identify which faults have occurred at each event.

It is always possible however that a fault needs to be logged at a time when it is not currently on the primary assembly and may not have even run in a session. It is possible to log faults without relating them to an event but where possible it is advisable to connect the fault with a primary assembly and perhaps a specific session. Where an event name is not available, LifeCheck will create a fault number based on a prefix, specified within Fault Tracking Setup, the date and a sequential 3 digit number which resets for each day.

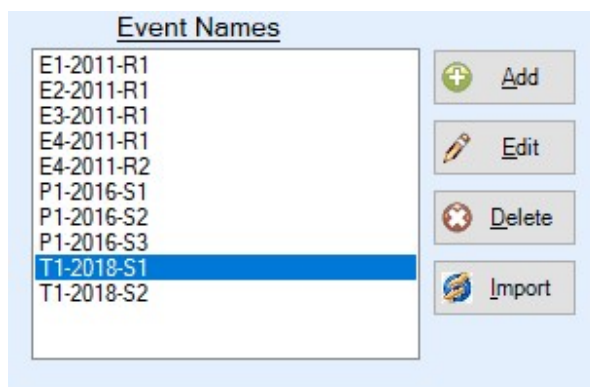
Event names are normally optional when recording sessions however where the Fault Tracking system is to be used they should be considered Mandatory. It is therefore important that, prior to recording your first fault within LifeCheck, certain initialization tasks are performed

Making Event Names Mandatory

Login to LifeCheck as the **Admin** user and selected **Administration>Global Settings** from the main menu. Within the **User Interface** section ensure that **Require Event Selection in Record Session** is checked. Exit from this screen to ensure that your changes are

saved. Now is a good time to actually define the event names which will be used going forward when recording sessions. To do this select **Administration>Data Setup** from the main menu.

In the above screen shot a number of event names have already been defined. These can be added to, edited or deleted as required. It is also possible to 'Import' Event Names which have been previously manually entered when recording sessions in older versions of LifeCheck - this allows faults to be recorded against historical events if needed. On clicking **Import**, LifeCheck will scan previous Chassis History records for any event names having been specified and will create entries in the new **Event Names** table for any which do not already exist.



Another advantage of linking faults to Event Names is that they are then implicitly linked both to a Chassis (or other top level assembly) and the sessions run by that chassis at the event. This means that LifeCheck is able to identify which possible components could be linked to that fault based on what was running in the session and also allows faults to be analysed based on attributes of the Chassis.

Chassis Attributes

As part of the changes to support Fault Tracking, LifeCheck has been enhanced to allow the attributes held for each Chassis to be customized. A total of 6 different attributes are linked to each chassis in the database. The first 4 attributes are simple text fields whereas attributes 5 and 6 are linked to user definable lists. By default, attribute 5 is labeled 'Team' and attribute 6 is labeled 'Type'. These attribute labels may be defined in **Administration>Global Settings>Terminology**.

The lists from which you can select for 'Team' and 'Type' are maintained using **Administration>Data Setup>Other Lists**. While it is not mandatory to specify these lists and select for each chassis, doing so does improve the reporting as it allows faults to be interrogated based on these attributes.

Personnel and Groups

Personnel and Groups are used both within the Fault Tracking and Purchasing Modules. Faults may be created by and assigned to people defined in this list as opposed to the 'Department' logged in to LifeCheck. This provides better granularity with to whom faults

can be assigned. Each person defined may have a group set for them. A such it is recommended to define the Groups first.

To create a new Group, click the **Add** button to the right of the Groups list and in the window displayed enter a new unique name for the group to be created. Note that the new Group cannot have the same name as an existing entry.

To edit a Group, double-click it in the list or select it and click the 'Edit' button. A window will be displayed where you can change the name of this group. Again note that the name entered must not duplicate an existing entry.

Once one or more Groups have been defined you can continue to define personnel - these are the people who will be flagged as the creator of a fault and to whom a fault may be assigned.

Personnel

To create a new Person, click the **Add** button to the right of the Personnel list to display the following window :-

New Person

Title :

Name : Group :

Position : Email :

Telephone : Mobile :

Fault Notification Flags (Notify me when...)

...Faults Assigned to me are...

☒ Created ☒ Updated ☒ Closed

...Faults Assigned to members of My Group are...

☐ Created ☐ Updated ☐ Closed

...Any Faults are...

☐ Created ☐ Updated ☐ Closed ☒ Assigned to Me

...Unassigned Faults are...

☐ Created ☐ Updated ☐ Closed

Notes

Enter the general attributes for the person and then continue to the **Fault Notification Flags**. These flags determine what notifications this person will be sent when faults are created, updated, assigned or closed.

Please note, it is important that the email address for the person is specified as this is the primary notification mechanism!

Fault Statuses

Faults defined within LifeCheck must be assigned a specific Status. If no statuses are defined, it will not be possible to create any new faults. It is not possible to delete a status where there are faults (either open or closed) which have that status although you can edit and change the displayed text.

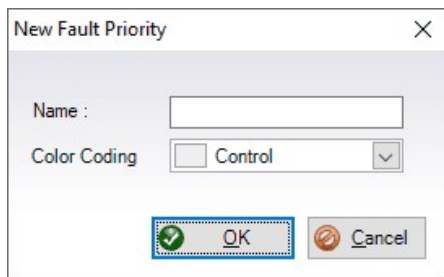
To add a new status, click on the 'Add' button to the right of the list and enter a name for the new status. Note that the new status cannot have the same name as an existing entry.

To edit a Fault Status, double-click it in the list or select it and click the 'Edit' button. A window will be displayed where you can set the text for this status. Again note that the name entered must not duplicate an existing entry.

Fault Priorities

Faults defined within LifeCheck must be assigned a specific Priority. If no fault priorities are defined, it will not be possible to create any new faults. It is not possible to delete a fault priority where there are faults (either open or closed) which have that priority although you can edit and change the displayed text.

To add a new Fault Priority, click on the 'Add' button to the right of the list and enter a name for the new priority. Note that the new priority cannot have the same name as an existing entry.

The image shows a dialog box titled "New Fault Priority" with a close button (X) in the top right corner. Inside the dialog, there is a "Name:" label followed by a text input field. Below that is a "Color Coding" label followed by a dropdown menu currently showing "Control". At the bottom of the dialog, there are two buttons: "OK" with a green checkmark icon and "Cancel" with a red X icon.

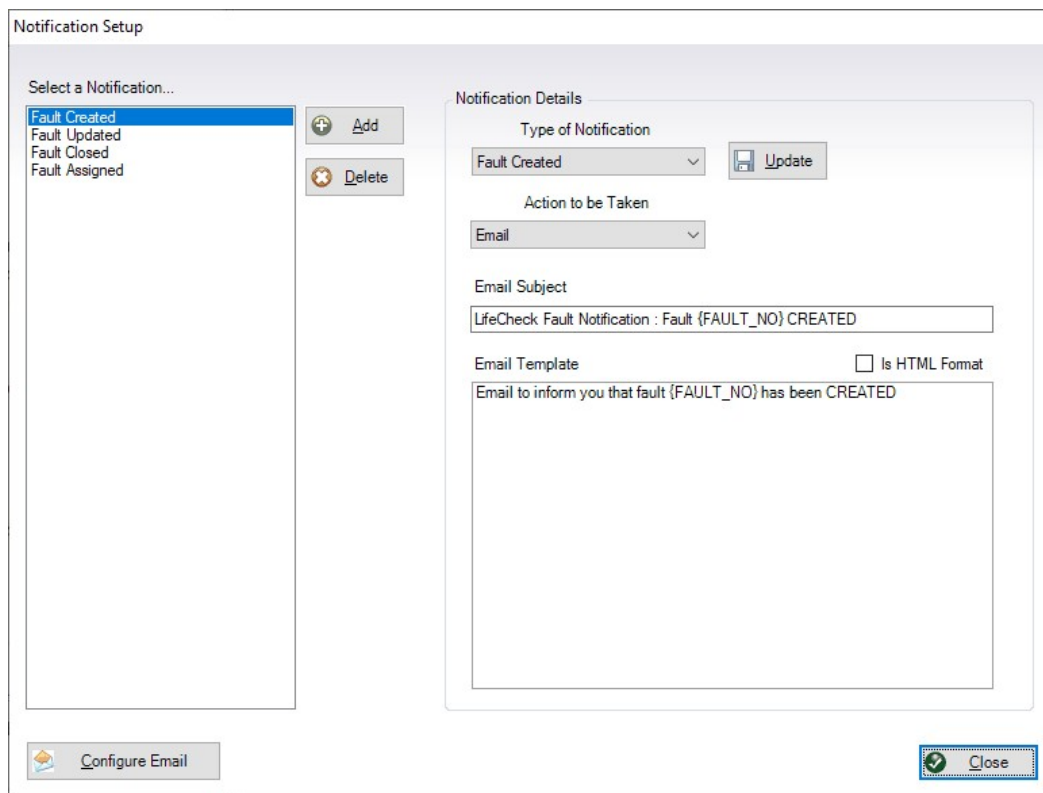
To edit a Fault Priority, double-click it in the list or select it and click the 'Edit' button. A window will be displayed where you can set the text and color coding for this priority. Again note that the name entered must not duplicate an existing entry.

It is also possible to change the ordering of the Fault Priorities by selecting a priority and then using the up and down arrows to move it up or down in the list respectively. This ordering will be reflected when the Priority is displayed for a fault.

Notifications

Notifications are currently specific to the Fault Tracking module however it is intended that this functionality will be gradually introduced into other areas within LifeCheck. To

configure notifications, click on the **Notification Settings** button at the base of the **Fault Tracking Setup** window. The following window will be displayed :-



The image shows a software window titled "Notification Setup". On the left, there is a list box labeled "Select a Notification..." containing four items: "Fault Created", "Fault Updated", "Fault Closed", and "Fault Assigned". "Fault Created" is selected and highlighted in blue. To the right of this list are two buttons: "Add" (with a plus icon) and "Delete" (with a minus icon). On the right side of the window is a "Notification Details" panel. It contains a "Type of Notification" dropdown menu set to "Fault Created", with an "Update" button (with a floppy disk icon) to its right. Below this is an "Action to be Taken" dropdown menu set to "Email". Underneath is an "Email Subject" text field containing the text "LifeCheck Fault Notification : Fault {FAULT_NO} CREATED". Below that is an "Email Template" text area containing the text "Email to inform you that fault {FAULT_NO} has been CREATED". To the right of the email template is a checkbox labeled "Is HTML Format" which is currently unchecked. At the bottom left of the window is a "Configure Email" button with an envelope icon. At the bottom right is a "Close" button with a green checkmark icon.

The list on the left of the screen displays the types of notification for which actions have already been defined. In most cases default settings for all fault actions will have been defined however these can be added to, modified or deleted. To display the settings for a specific notification select it in the list view. The settings for the selected notification will be displayed on the right.

Type of Notification

At this time notifications may be defined for

- Faults Created
- Faults Updated
- Faults Assigned
- Faults Closed

Action to be Taken

At this time the only supported Action is **Email**

Email Subject

This is the subject line which will be set for all emails generated for this notification. It is possible to specify a number of substitution parameters in the subject line. These are detailed below.

Email Template

This is the text which will be the body of all emails generated for this notification.. It is possible to specify a number of substitution parameters in the template. These are detailed below. The template may be either plain text or may contain html text. If the template contains html text, please check the **Is HTML Format** check box to indicate this.

Substitution Values

When generating the subject line and the body of the email, LifeCheck will perform some basis text substitutions to allow fault specific information to be included in the email. All substitutions are indicated by being surrounded by '{' and '}' characters.

{FAULT_NO}	Replace with the fault number
{FAULT_PRIORITY}	Replace with fault priority
{FAULT_STATUS}	Replace with fault status
{FAULT_ASSIGNEE}	Replace with the name of the person to whom the fault is assigned
{FAULT_TITLE}	Replace with the fault title
{FAULT_TEXT}	Replace with the text of the fault
{FAULT_CREATED}	Replace with the name of the person who created the fault
{FAULT_COMPONENTS}	Replace with the list of components associated with the fault
{FAULT_ASSEMBLY}	Replace with the name of the primary assembly associated with the fault
{FAULT_ATTRIBUTE5}	Replace with the value of 'Attribute5' for the primary assembly
{FAULT_ATTRIBUTE6}	Replace with the value of 'Attribute6' for the primary assembly

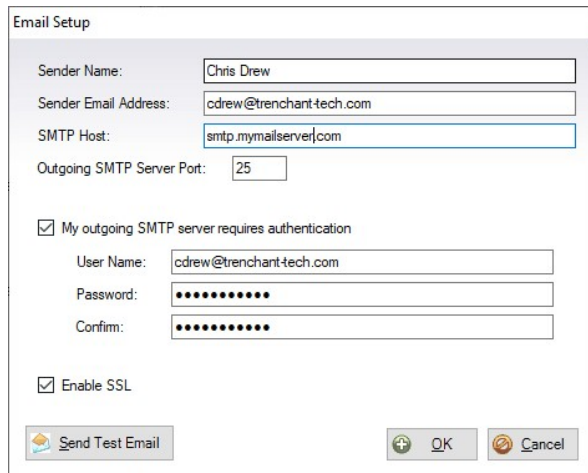
For example, the following text could be specified as the Email Subject for assigned fault notifications

LifeCheck Fault Notification : Fault {FAULT_NO} ASSIGNED TO {FAULT_ASSIGNEE}

If any changes are made to a notification, remember to click **Update** to save those changes before selecting another notification or closing the window.

Email Configuration

In order that LifeCheck may be able to send email notifications, it is first necessary to configure the email profile to be used. It is recommended that a dedicated email address is created for use by LifeCheck to avoid any potential issues when sending email. Email configuration can be tricky as different email servers require different settings and may function slightly differently! It is best to consult with your system administrator to get the email settings which will work in your environment and with your email provider.

A screenshot of an 'Email Setup' dialog box. It contains several input fields: 'Sender Name' with 'Chris Drew', 'Sender Email Address' with 'cdrew@trenchant-tech.com', 'SMTP Host' with 'smtp.mymailserver.com', and 'Outgoing SMTP Server Port' with '25'. There are two checkboxes: 'My outgoing SMTP server requires authentication' (checked) and 'Enable SSL' (checked). Below the first checkbox are fields for 'User Name' (cdrew@trenchant-tech.com), 'Password' (masked with dots), and 'Confirm' (masked with dots). At the bottom left is a 'Send Test Email' button, and at the bottom right are 'OK' and 'Cancel' buttons.

Sender Name

This is the actual name of the sender which will appear in the email

Sender Email Address

The email address of the above sender

SMTP Host

This is the name of the SMTP server which will be used to send the email. For example, if the sender email address above is a **gmail** account, this will typically be **smtp.gmail.com**. If the address above is an Office 365 email address, the SMTP Host will usually be **smtp.office365.com**.

Outgoing SMTP Server Port

This is the port number for the SMTP server defined above. For many SMTP servers this will be port 25 but this may be different for other servers. For example gmail may be 25, 587 or 465 whereas Office 365 typically uses port 587.

My Outgoing SMTP server requires authentication

In most cases to prevent email spamming and spoofing, the SMTP host specified above will require authentication to be specified in order for it to send email. Enter the user name and password provided for the LifeCheck email address by your system administrator.

Enable SSL

Check this box to enable Secure Sockets Layer for the email send. This is usually required for gmail and Office 365 hosts.

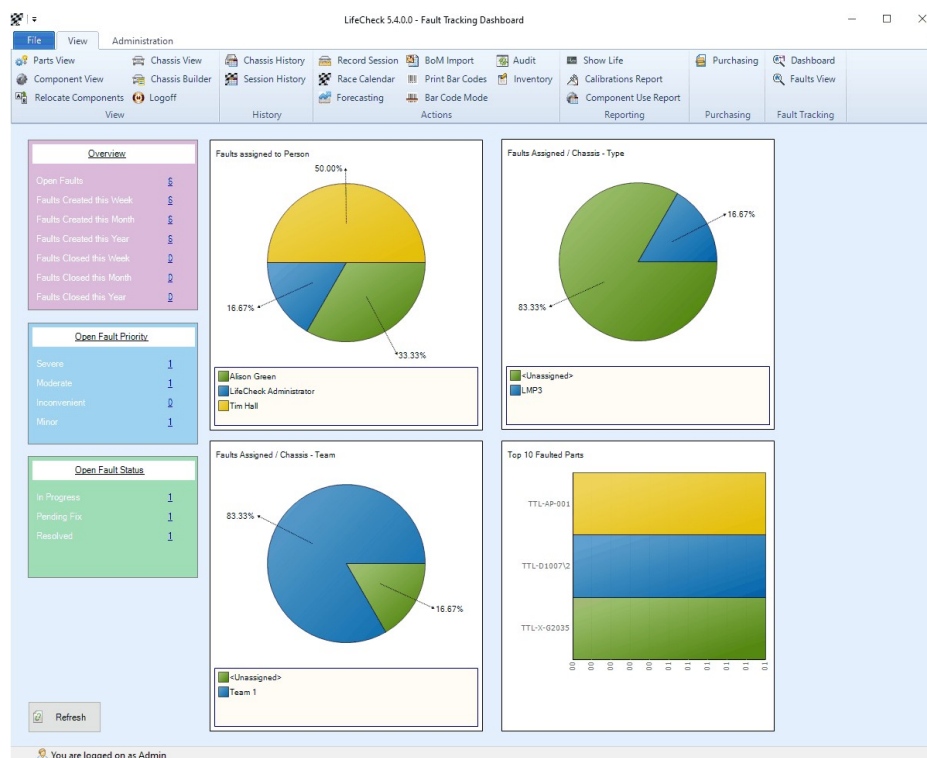
Send Test Email

Click this button to try to send a test email using the settings previously specified. Specify the email address to send to and If successful, LifeCheck will display an appropriate message. You should then check the email for the specified address to ensure safe delivery of the test email.

Click OK to ensure all settings are saved before proceeding.

Fault Tracking Dashboard

The Fault Tracking Dashboard provides an overview of all of the faults currently defined and allows you to see at a glance who has the most faults assigned to them, which components have the most faults and other such statistical information.



The **Counts** displayed in the left hand panels are also links to the **Faults View** detailed in the next section. Clicking any of these counts will jump to the **Faults View** to show details of the selected count. For example, clicking on **Faults Closed this Week** will jump to the faults view with the date file set for the current week and only closed faults selected.

Faults View

The Faults View is the main screen for both recording and viewing faults defined with the system. It provides a number of filters to zoom in on specific fault criteria.

The screenshot displays the 'LifeCheck 5.4.0.0 - Fault Tracking' application. The main window features a menu bar with options like File, View, and Administration. Below the menu is a toolbar with buttons for Refresh, New..., and a search icon. A search box is located below the toolbar. The main area shows a list of faults with the following columns: Fault Number, Created On, Created By, Current Owner, Event Name, and Title. The list contains several entries, including 'E1-2011-R2_0001', 'T1-2018-S2_0002', 'T1-2018-S2_0003', 'T1-2018-S2_0004', 'T1-2018-S2_0005', and 'E4-2011-R2_0001'. The left sidebar contains filter groups for Events, Team & People, Priority & Status, and Dates. The 'Priority & Status' group includes a checkbox for 'Show Open' and 'Show Closed'. The status bar at the bottom indicates 'You are logged on as Admin'.

Fault Number	Created On	Created By	Current Owner	Event Name	Title
E1-2011-R2_0001	27/11/2019 09:53:55	James Atkings	Tim Hall	T1-2018-S2	Crack found in UHF Cataper mounting bracket
T1-2018-S2_0002	27/11/2019 10:01:06	LifeCheck Administra...	LifeCheck Administra...	T1-2018-S2	Incorrect inner bearing size
T1-2018-S2_0003	27/11/2019 10:14:22	LifeCheck Administra...	Tim Hall	T1-2018-S2	Rotor worn unevenly
T1-2018-S2_0004	27/11/2019 10:18:35	Tim Hall	Tim Hall	T1-2018-S2	Wishbone snapped AT JOINT
T1-2018-S2_0005	27/11/2019 10:23:29	Alison Green	Alison Green	T1-2018-S2	Test Fault
E4-2011-R2_0001	27/11/2019 10:44:29	Alison Green	Alison Green	E4-2011-R2	Testing the fault tracking

Here we can see a number of faults which are currently open - closed faults are by default hidden on this screen but may be included by clicking the **Show Closed Faults** checkbox in the **Priority & Status** group. Changes to the filters are only applied when the **Refresh** button is clicked. Right clicking in the right hand pane will display a context menu from which the list of faults may be exported in a variety of formats including to a Microsoft Excel Workbook.

There is also a Search box to allow specific faults to be found in the database. This performs a search for the specified text anywhere in either the fault number or fault title and will display all matching faults. The search text will be ignored if **Refresh** is clicked but it is advisable to clear the search box once it has been used to avoid confusion.

It is also possible to customize the display to show more or less detail about the fault. To do this click the icon in the top left of the faults list to display the **Column Chooser**.

Field Chooser ✕

☐	Chassis
☒	Created By
☒	Created On
☒	Current Owner
☒	Event Name
☒	Fault Number
☐	Open
☒	Priority
☒	Status
☐	Team
☒	Title
☐	Type

The current layout of this screen will be remembered and restored when next displayed. This includes the columns being displayed and their width. Double-clicking a fault row will display the full attributes of the fault and allow many aspects of the fault to be modified.

Adding a New Fault

New faults can be created in a number of different ways including :-

- From any of the 'standard' views within LifeCheck, right-click on a component and select **Add Fault** from the menu displayed
- From the **Faults View** by clicking the **New** button in the left hand panel

In either case the **Record Fault** window shown below will be displayed. When invoked from the **Session History** window, LifeCheck will assume that the fault is being recorded for the selected session and will preset the details of the session into the **Add fault** window. In all other cases, LifeCheck will preselect the last session run by the selected component.

Record Fault(s) ✕

Event Name
T1-2018-S2

Chassis
TTL-2017-01

Fault Number
T1-2018-S2_00006

Session
Silverstone - Testing (2)

Title
This is a test fault

General History Notes Documents

Priority
Inconvenient

Status
In Progress

Created By
Tim Hall

On
27/11/2019 11:47:28

Currently Assigned To
<All> Tim Hall

Description
This is a description of a test fault

Associated Components

Part Number	Description	Life Code	Current Location	Distance Run	Life New (Race)	Life Left (Race)	
TTL-AP-...	FRONT...	L07	Admin \ TTL-2017-...	44.60	5000.00	4955.40	+ Add
TTL-AP-...	FRONT...	L02	Admin \ TTL-2017-...	1928.81	5000.00	3071.19	✕ Delete

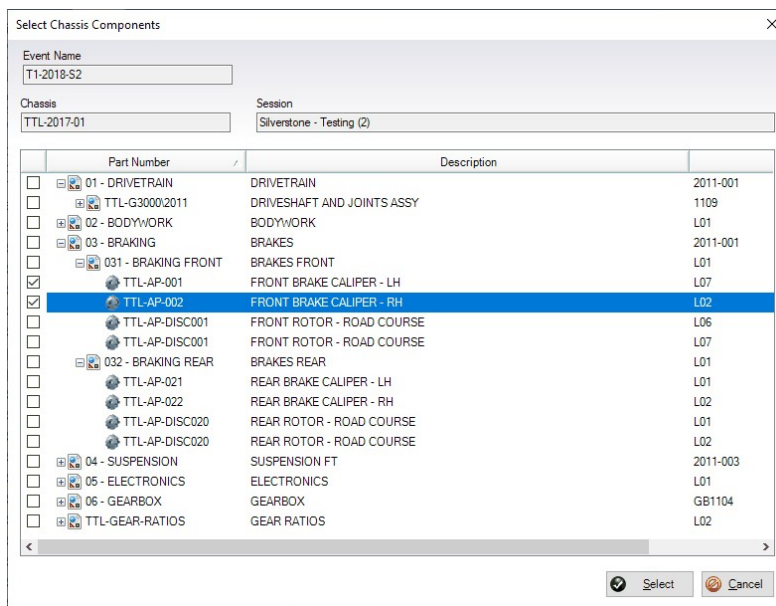
⌂ Close Fault

+ Create Fault

✕ Cancel

In the above example, a fault is being created for 2 components and has been assigned (and created by) Tim Hall. An initial status and priority has also been set. As this is a new fault you can change all fields including the Event Name, Chassis and Session dropdown lists but note that changes to these properties will cause the list of associated components to be cleared as they may not be applicable to the newly selected event/chassis/session.

To add a component to the list of associated components, click the **Add** button to the right of the list. The following window will be displayed which contains all of the components which were on the selected chassis at the selected event/session taken from the session history.



To select components, check the box to the left of the component(s) in question and click **Select**. Note that any previously selected components will be checked automatically.

Modifying details of a Fault

As the fault is worked upon, it may be necessary to update details of that fault, for example change the current status or perhaps assign it to a different user. To edit a fault, double-click it in the faults list to display the above window but this time showing the details of the fault selected. Note that once a fault has been created you cannot alter the **Event Name**, **Chassis** or **Session** fields as these are fundamental properties of the fault. Make changes as required and click **Update** to save those changes.

Faults and Notifications

Faults and Notifications are closely tied together in that adding, updating, deleting or closing a fault can result in 1 or more notifications being sent to users based on the operation performed and the individual notification settings defined for the users. At this time LifeCheck only supports notifications sent via email.

When creating, updating or closing a fault you may experience a slight delay as LifeCheck identifies those users to which an email is to be sent and actually sends them. [Notifications](#) are covered in more details earlier in this section.

Parts and Components

As well as the **Faults View** you can also see details of faults from both the Part Properties and Component Properties windows. In the case of **Part Properties** the faults listed are those for any component instances of that part whereas for Component Properties only those faults which include the component will be listed.

Disclaimer:

Please note that while every effort has been made to ensure the accuracy of this document, Trenchant Technology, Ltd may not be held responsible for any errors or omissions or any data loss which may occur through the use of this document. It is highly recommended that a backup of the LifeCheck database is made prior to making any changes such as importing parts.