

Fault Manager | User Guide

Fault Manager is an internal tool designed to create an organized system for fault storage, tracking, and management. It consists of a client that is installed on any number of computers and a single central database that they all access. The tool also supports the automatic export of several different fault related materials including a full CSV export, source code exports, and XML exports for the WCA Guidebook.

Installation and Setup

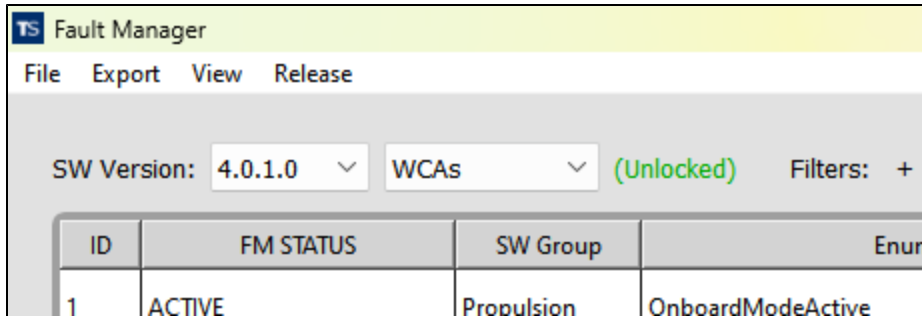
The Fault Manager application is installed by simply downloading, running, and following the instructions in the installer. On first startup, the application will ask for the hostname, username, and password for signing into the database. If these haven't been given to you already, please ask someone from software for these as they will need to create you a personal account in the system. Once entered once, these three pieces of information will be stored and entered automatically for future startups of the application.

If you need to change any of these pieces of information, click "File > Reset Database Info" and enter the new values. Like the first time, these new values will be stored for future sessions and automatically used on startup.

Features

Although not necessarily an exhaustive list, this section serves as a tutorial showing how to use the main features of the application

Select Data to View



To select what data to view, use the two dropdown boxes at the top left of the window. The left box shows all the software releases that are stored in the database. The right box shows all of the types of items stored in the database. Immediately after selecting an option the data will show on the main page table.

Note: The left dropdown that displays available releases is populated with the correct contents on application startup. If the application cannot connect to the database on startup, the dropdown may not have any options once loaded in. To fix this issue, make sure your database information is set correctly by resetting it with 'File > Reset Database Info' and restart the application.

Filter/Modify View

Filters

(Unlocked) Filters: "Enum Name" contains "pressure" "WCA Severity" contains "caution" +					
	Enum Name	Fault Code	Changee	Fault Group	Configura
	LCM_HydraulicCylinderPressureLow	B020		Line Capture Mechanism	

The Fault Manager supports adding up to 4 filters to the main page table at the same time. The filters are currently always a case insensitive. To create a new filter, simply click the "+" button next to the filters, select your desired column to filter by, and type in the value that you would like to filter for.

(Unlocked) Filters: Remove? "WCA S					
	Enum Name	Fault Code	Changee		
	CM_HydraulicCylinderPressureLow	B020		Line C	

To remove a filter, click on the filter you wish to remove and it will disappear. When hovering over it, the filter indicates that clicking will remove it by changing color and text.

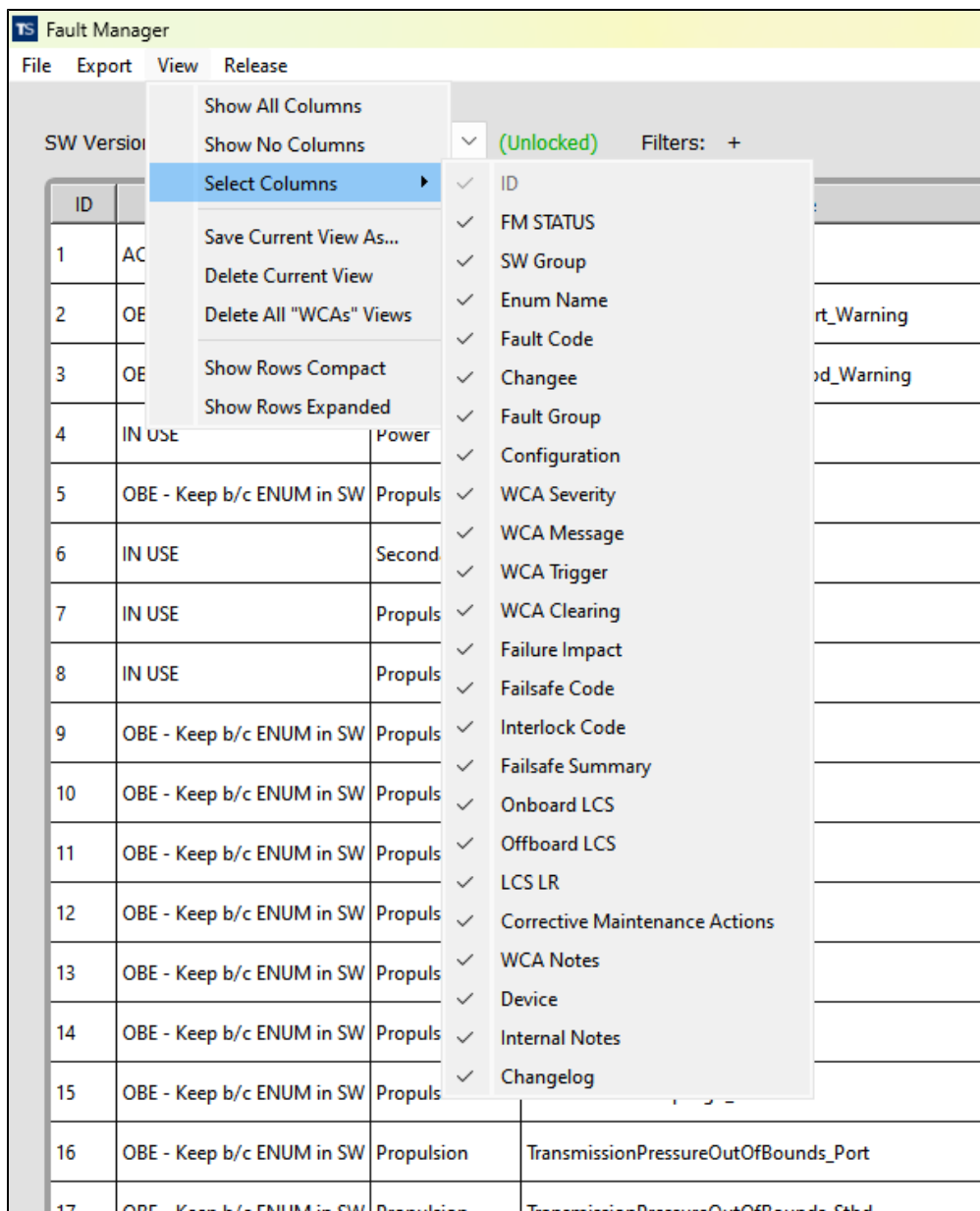
Search

<input type="checkbox"/> Show Deleted <input type="text" value="boa"/>		
CA Severity	WCA Message	
ARNING	Onboard Mode Active	The Onboard Mode is active while a
UTION	UNUSED LVPDU Isolation Fail	UNUSED When the LVPDU insulation
UTION	Electronics Room Hatch Open	Electronics Compartment Limit Swit
ARNING	UNUSED Stern Drive (Port) - Shear Pin Failed	UNUSED Spike in trim angle more th

The Fault Manager supports searching for a keyword in the entire table. The search is always a case insensitive lookup of whether each cell contains the search text. As you type, rows in the table that don't contain the text are filtered out so that only rows that contain the string are displayed. Additionally, the specific cells that contain the text change color to be yellow.

You are also able to toggle whether to show the deleted entries on the table. Disabling show deleted will hide the entries marked with a status of "DELETED" and **will prevent them from being searched through**. If you want to search through entries that may have been marked as deleted, make sure this is checked first.

Views



The Fault Manager supports changing the columns that are displayed on the screen. These options are all under the "View" menu bar option. You are able to show all or no columns with one button, or specifically toggle columns of your choice individually. You cannot change the order that the columns appear.

Note: Certain ID fields are grayed out because they cannot be hidden.

The application also supports saving views for use later with the tool. Because the set of available columns changes between types of entries being displayed (WCAs, Failsafes, Interlocks, or System Notes), the views are saved separately per type. To save a new view, first set up the table the way you desire using the "Select Columns >" options. Then, save the view with the "Save Current View As..." button and enter the name. All saved views for the currently displayed type will be added to the "View" menu bar options as selectable boxes. To delete a saved view, select the view so that it is applied to the main page table, then select the "Delete Current" option.

Lastly, the rows of the table can be resized to be either "Compact" (single lines) or "Expanded" (multi line - fit to contents) by selecting the corresponding menu bar options.

View/Modify Entries

17	OBE - Keep b/c ENUM in SW	Propulsion	TransmissionPres
18	IN USE	Propulsion	ShearPinFailed_P
19	IN USE	Propulsion	ShearPinFailed_S
20	IN USE	Propulsion	DriveShaftTorque
21	IN USE	Propulsion	DriveShaftTorque
22	IN USE	Propulsion	DriveShaftTorque

New Row
View/Edit Row
Erase Row

To view and/or edit the details of a specific entry in the table, the entry needs to be first selected. To view that entry in the detailed view, click the "View/Edit Row" button. This can also be accomplished by double clicking on a row in the table.

Fault Manager
File Export View Release

VIEW FAULT B005

General WCA Guidebook Failsafes/Interlocks Response Other Changelog

General Information

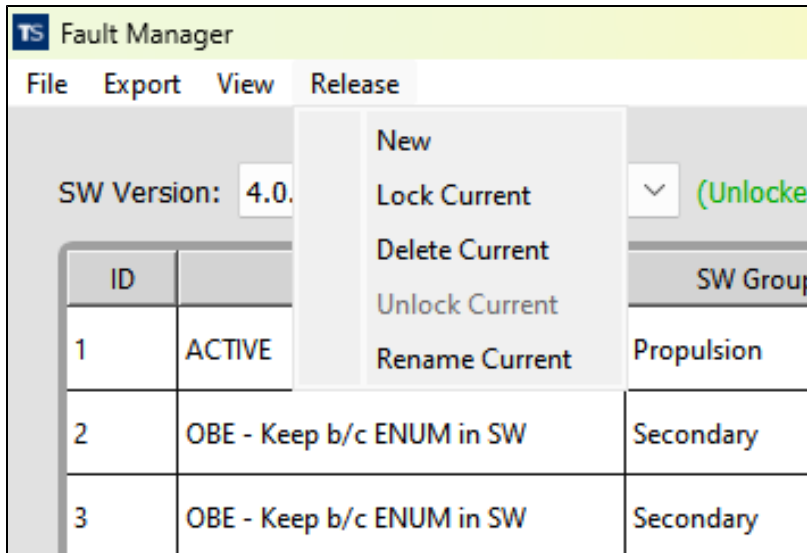
Fault Code: B005
Configuration:
Group [SW]: Propulsion
Changee:

From the detailed view page, all of the item's information can be seen by clicking through the tabs or using the arrows in the bottom left. If an edit is desired, clicking the "Edit" button in the bottom right will switch the page to edit mode and the fields will change to not be grayed out.

When finished, selecting the "Save" button in the bottom right will show a confirmation window that lists all of the changes made to the item. It also provides a space to type a reason for use in the changelog. After clicking "OK", the changes are sent to the database and saved. Additionally, the user's name, a timestamp, the change itself, and the user typed reason are all appended to the changelog field of that item.

Note: The changelogs for every item in the database are cleared out when being inherited by a newly created release. This means that the changelog will always only contain changes made in this specific software version.

Manage Releases



The Fault Manager supports distinct software releases/versions within the database. All actions related to management of releases are located under the "Release" menu bar option. You can create a new release by selecting the "New" option and filling in the name and parent release to inherit from. You can also delete a release by first selecting that release from the SW Version dropdown and then selecting the "Delete Current" option. Similarly, a release can be renamed by first selecting that release from the SW Version dropdown and then selecting the "Rename Current" option.

Releases as a whole can be locked and unlocked to restrict modifications to them. The status of whether a release is locked is displayed at the top of the screen with either a green "(Unlocked)" or a red "(Locked)". When viewing an unlocked release, it can be locked by selecting the "Lock Current" option and the "Unlock Current" option will be grayed. When viewing a locked release, it can be unlocked by selecting the "Unlock Current" option and typing in a password. Contact the software team for the password if you need it.

Exports

All exports will use the software version that is currently being viewed in the table at the time the export button is clicked.

WCA Guidebook XML

Exports plain text files containing the XML row entries for the WCA Guidebook. The tool will automatically generate and save 3 files for each export: One for WCA's with a severity of "Warning", one for WCA's with a severity of "Caution", and one for WCA's with a severity of "Advisory." The different exports available are for generating XML row entries that are used in different pages of the WCA Guidebook. Contact Randall Dibble for further information on the format.

Index

Generates XML entries for the index page. This page contains a table of links, one row per fault and one column for a link each of the other pages. The columns are as follows:

Fault Code	LEVEL	Message	Offboard	L&R	Onboard	Mine Warfare Evaluator (MIWE)
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Onboard LCS

Generates XML entries for the Onboard LCS page. This page contains a table of fault information, one row per fault and columns for valuable fields to sailors onboard the LCS. The columns are as follows:

Fault Code	Message	TRIGGER(S)	Failure Impacts	FOLLOW-ON/CORRECTIVE MAINTENANCE ACTIONS
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Mine Warfare Evaluator

Generates XML entries for the Mine Warfare Evaluator page. This page contains a table of fault information, one row per fault and columns for valuable fields to sailors. The columns are as follows:

Fault Code	Message	FAILURE IMPACTS	OPERATOR ACTIONS	FOLLOW-ON/CORRECTIVE MAINTENANCE ACTIONS
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Launch and Recovery

Generates XML entries for the Launch and Recovery page. This page contains a table of fault information, one row per fault and columns for valuable fields to sailors during L&R. The columns are as follows:

Fault Code	Message	Launch	Recovery	Notes	FAILURE IMPACT
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Offboard LCS

Generates XML entries for the Offboard LCS page. This page contains a table of fault information, one row per fault and columns for valuable fields to sailors offboard the LCS. The columns are as follows:

Fault Code	MESSAGE	RVO Offboard LCS	RSO Offboard LCS	FAILURE IMPACTS
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Format Assumptions

To parse the contents of cells for the DM export, the exporter is written with a few implicit assumptions about the format of certain fields. If the data in these fields isn't formatted correctly, it may lead to a broken or incorrect export. Below is a list of all fields that are parsed in this way along with the specific format to use.

Table	Column	Format	Example
WCAs	WCA Trigger	Plain sentences. One sentence will get turned into one bullet	First bullet point here. Second bullet point here. Third bullet point here.
WCAs	WCA Notes		
WCAs	Failure Impact		
WCAs	Corrective Maintenance Actions		
WCAs	Offboard LCS	"RVO:" comes first followed by instructions for RVO. "RSO:" comes second followed by instructions for RSO. Always include both parts; if no action is required for one or both, fill in with "No RSO action/No RVO Action"	RVO: Instructions for RVO RSO: Instructions for RSO
WCAs	LCS L&R	"Launch:" comes first followed by instructions for launch. "Recovery:" comes second followed by instructions for recovery. Use plain sentences besides labels. One sentence will get turned into one numbered step. Always include both parts; if no action is required for one or both, fill with "No Launch Action/No Recovery Action"	Launch: Instructions for launch. Each sentence turns to a numbered step Recovery: Instructions for recovery. Each sentence turns to a numbered step
Failsafes	Associated Fault Code(s)	Comma separated list of fault codes. No spaces	B001,B002,B003,B004
Failsafes	Operational State(s)	One state per line. No other text or punctuation	State 1 State 2
Failsafes	Effect + Functional Impact	Plain sentences. One sentence will get turned into one bullet	First effect. Second effect. Third effect.

Failsafes	Trigger(s)	Comma separated list of triggers	Trigger 1, Trigger 2, Trigger 3
Failsafes	First Automated Response	"Payload Deployed:" comes first followed by the response for payload deployed. "Payload Stowed:" comes second followed by the response for payload stowed. Always include both parts; if no action is required for one or both, fill with "No Stowed Response/No Deployed Response"	Payload Deployed: Response for payload deployed
Failsafes	Second Automated Response		Payload Stowed: Response for payload stowed.
Failsafes	Third Automated Response		
Interlocks	Associated Fault Code(s)	Comma separated list of fault codes. No spaces	B001,B002,B003,B004

Source Files

Exports source code files containing code generated based on the current faults in the database.

faultstringlib.cpp

Generates the faultstringlib.cpp source file for use in the DSD.

faultstringlib.h

Generates the faultstringlib.h source file for use in the DSD.

FaultConstants.h

Generates the FaultConstants.h source file for use in the VLC.

CSV

Saves the raw CSV file with all the data from the table in the database. Like other exports, the current software release being viewed will be the one used to get data for the export. The generated CSV files have a header as the first row containing all the column names.

Faults

Generates a CSV file with all columns saved in the faults table for the release currently being viewed. The 24 columns are as follows:

ID	FM STATUS	SW Group	Enum Name	Fault Code	Changee	Fault Group	Configuration	WCA Severity	WCA Message	WCA Trigger	WCA Clearing	Failure Impact
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Failsafe Code	Interlock Code	Failsafe Summary	Onboard LCS	Offboard LCS	LCS L&R	Corrective Maintenance Actions	WCA Notes	Device	Internal Notes	Changelog
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Failsafes

Generates a CSV file with all columns saved in the failsafes table for the release currently being viewed. The 21 columns are as follows:

FM STATUS	Failsafe Code	Configuration	Failsafe Name	Operational State(s)	Trigger(s)	Associated Fault Code(s)	Failsafe Clearing	Indication Method	Failsafe Notes	Effect + Functional Impact
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RAC	First Automated Response	Second Automated Response	Third Automated Response	Failsafe Summary	Applicable Safety Precept	Mitigated RAC	Internal Notes	Changee	Changelog
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Interlocks

Generates a CSV file with all columns saved in the interlocks table for the release currently being viewed. The 9 columns are as follows:

FM STATUS	Interlock Code	Configuration	Components	Interlock Description	Associated Fault Code(s)	Internal Notes	Changee	Changelog
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System Notes

Generates a CSV file with all the columns saved in the system notes table for the release currently being viewed. The 13 columns are as follows:

ID	Status	Configuration	Operator	Summary	Description	Workarounds + Actions	Notes (External)	Internal Notes	Fault Group	PCR Number	Changee	Changelog
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