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Chapter 1: Introduction

ReliaSoft XFRACAS is a web-based, closed-loop, incident (failure) reporting, analysis and corrective action system designed for the acquisition, management and analysis of product quality and reliability data from multiple sources.

XFRACAS is integrated into the Synthesis Platform®, which offers reliability practitioners the best of both worlds: analysis tools that are optimized to fully meet the individual user’s needs for a particular set of reliability engineering methodologies, plus integration into a shared repository (database) that is accessible by multiple users throughout the organization and facilitates integration between all Synthesis applications. This powerful new platform makes it feasible to more effectively leverage and integrate the information from different types of reliability activities throughout the organization.

Technical Support

If you have a question or experience a problem with XFRACAS, contact the system administrator or ReliaSoft technical support staff for help.

You can contact us directly via phone, e-mail or mail. To contact us, visit http://www.reliasoft.com/contact.htm.

Reliability Consulting

If your organization does not have sufficient time, expertise or objectivity in-house to accomplish specific reliability goals, turning to ReliaSoft expert reliability consultants can prove to be the most effective and economical solution. Whether you need a quick statistical analysis, a complete assessment of your reliability program plan or something in between, Reliability Consulting Services (RCS) is ready to help.

- Our reliability consulting services team has combined expertise in almost all areas of reliability and quality engineering with experience that spans a broad spectrum of product types, from micro-electronics and appliances to advanced weapons systems and off-shore oil well drilling equipment.

- Unlike engaging a consultant who works independently, RCS consultants have direct access to all of ReliaSoft global resources, expertise and contacts.

- Our team-based approach to consulting, combined with ReliaSoft global reliability engineering organization, allows us to provide you with reliability consultants who understand your culture and speak your language while ensuring that the appropriate reliability expertise can be applied to each and every project.
Chapter 1: Introduction

- RCS is structured to accommodate requests of any size or complexity, from short telephone consultations to multiple experts at a client's site for an extended time period.

Please visit http://consulting.reliasoft.com for a published list of commonly requested services, answers to frequently asked questions, and other useful information about this service.

**XFRACAS Overview**

ReliaSoft XFRACAS is a web-based, closed-loop, incident (failure) reporting, analysis and corrective action system designed for the acquisition, management and analysis of product quality and reliability data from multiple sources. With this system, you can:

- Report reliability-related issues for systems and components in the lab and in the field. Use the Incident page.
- Specify the details of a failure analysis and the remanufacturing activities for parts that were replaced during an incident and then analyzed/remanufactured. Use the Failure Analysis page.
- Track the failure analysis and resolution of the problems that have been identified. Use the Problem page.
- Manage the actions associated with resolving the problems that have been identified. Use the Create Action and Modify Action utilities.
- Create and manage your projects, including assigning team members to the project, updating the project status and associating problems and failure analysis reports with the project. Use the Project page.
- Report installation details when a unit is installed/commissioned. Manage information for particular serialized system units, including installation details, customer contact information and incident report history. Use the Customer Support Information page.
- Search the reported customer support, incident, problem, action, failure analysis and system configuration records based on specified criteria and generate reports and charts. Use the Reports page, the Charts page and the Dashboard page.

**The FRACAS Process and XFRACAS**

XFRACAS is designed around a flexible process that provides the framework for effective failure reporting, analysis and corrective action activities (often called "FRACAS" processes). The system also provides a host of related capabilities (including customer support, system configuration management and other functionality).
At a very high level, the FRACAS process can be described as follows:

During the product design/development phase and after products have been placed in the field, users will experience and report issues/incidents/failures related to the product.

In order to improve the reliability/quality of the product in the future, product design engineers and other design/development/manufacturing personnel must review the incidents to identify the problems that must be addressed, and then manage the resources and strategies to address the problems that are identified.

Responsible personnel implement solutions to the problems that have been identified via design revisions, documentation changes, modified QA procedures or other appropriate methods.

The process begins again to continue to gather data and improve product reliability, providing a closed-loop feedback process for product quality and reliability.

Features of XFRACAS

FRAC/FRACAS - Incident (Failure) Reporting, Analysis and Corrective Action

XFRACAS provides full support for incident reporting (FRAC/FRACAS) activities.

- Enables users at multiple locations (e.g., internal testing facilities, phone support, on-site repair etc.) to report failures, incidents, issues and/or suggestions and view information reported by other users.
Chapter 1: Introduction

- Captures incident description, run hours, fault codes, incident resolution, part repairs/replacements and other details of the incident occurrence and resolution.
- Provides sufficient detail to support troubleshooting activities, analysis and reporting requirements and the development of a "knowledge base" that can be used for future product designs and problem resolutions.
- E-mail notifications to alert responsible personnel of specific incidents.

Problem Resolution
XFRACAS provides problem identification, analysis and management resources that allow product design personnel to manage the failure analysis and corrective action process.

- Problem steps to define the problem, identify the root cause, manage and monitor corrective actions, etc.
- Support for the 8D problem management process, the Six Sigma process and other 4 to 8 step FRACAS processes such as IDOV, MDOV, etc.
- Ability to link individual incident records to a single problem report.
- Review and approval mechanisms to manage problem closures.

Actions Management
XFRACAS provides the ability to manage resources and problem resolution by assigning actions to specific personnel and tracking the progress of resolution activities. This includes:

- Detailed action definition, including the person responsible, due date/completion date, category, status updates, actions taken, etc.
- Automated e-mail notifications to alert responsible personnel of required actions and upcoming due dates.
- Ability to track the progress and completion of assigned actions.

Reports, Plots and Analyses
XFRACAS provides extensive and flexible reporting and plotting capabilities with the ability to export results/data to Microsoft Excel and to ReliaSoft reliability analysis tools for complete and in-depth reliability analyses.

- Generate reports based on predefined templates or custom queries.
- Generate detailed charts and graphs using the extensive and automated web-based graphical analysis and reporting functionality, including unlimited drill down capabilities.
Customer Support
XFRACAS provides a complete array of resources to facilitate customer support activities for incidents reported through customer care channels.

- Customer contact information.
- Installation and system configuration details.
- History of reported incidents.

System Configuration Management and Part Tracking
XFRACAS provides complete system configuration management and part tracking from the original Bill of Materials (BOM), through part repairs and replacements, to detailed failure analysis and remanufacturing of parts.

- Administrative utility to fully define the system configuration (with or without serial numbers) using a flexible hierarchical structure.
- Part repair/replacement management and system configuration tracking for individual serialized units.
- Failure analysis reporting and processing.

Other Features...
- Web-based user interfaces for easy access, collaboration and deployment for multiple sites, suppliers and dealers.
- Configurable, flexible and scalable to fit your organization's particular products and process and to grow with your needs. The system administrator can configure most aspects of the application, including authorized users, failure modes lists, system configurations, responsible personnel and other system preferences.
Chapter 2: Login and Settings

New User Introduction
Access to XFRACAS is limited to authorized users and the verification is conducted automatically. If you meet the access requirements and have configured your web browser to automatically provide your NT Domain\UserID and password to the XFRACAS server, you will not be prompted to log in to the system separately. If you are prompted to enter your Windows NT Domain\UserID and password, you may need to modify your browser settings. Optimum browser settings are presented in the next section.

*If the XFRACAS Update in Progress error message is displayed when you attempt to access the system and you have reason to believe that no system update is in progress (e.g., other users are able to access the system), please double-check that the “NT Domain\” part of your login is present. If your login is configured correctly and you continue to receive this error message, please contact your system administrator for assistance.*

In order to gain access, the following requirements must be met:

- You must obtain access to the XFRACAS web pages located on the intranet/extranet/Internet from a computer that has been logged in to the network using a valid Domain\UserID and password.

- You must have been granted access to XFRACAS. This access is established by the XFRACAS system administrator. You can request access via XFRACAS.

XFRACAS is compatible with any browser that supports the following doctype:

```html
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" 
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

For Microsoft Internet Explorer, version 8 or higher is required. Note, however, that version 9 or version 10 is recommended for a better experience.

Because this application is deployed via your web browser, the settings that you have established within your browser will impact your experience when using this application. If you have configured your browser to meet the optimum browser settings and continue to have difficulty gaining access to the system, contact the XFRACAS system administrator.

Requesting Access to the XFRACAS System
If you do not have permission to access XFRACAS, when you attempt to open a page, you will see a message stating that your user name is unknown. Click Request XFRACAS Account to open the New User page.
Chapter 2: Login and Settings

On this page, your network login will be pre-populated by the system, and you will be able to add further information. Note that fields shown with red borders are required. To request access to multiple entities (business units), hold down the CTRL key and click your selections. When you choose Options > Request Entity > Send, an e-mail notice will be sent to the administrator of each entity that you request access to. In addition, you will receive a confirmation e-mail.

Optimum Browser Settings
This topic presents instructions for configuring your web browser to allow you to use XFRACAS without encountering a number of security warnings and other message boxes.

Internet Explorer and Chrome

*Note:* These instructions were prepared using Internet Explorer 10.0. If you are using another version of the browser, the appearance of the windows may vary.

Your default browser settings may already be configured in a way that allows you to utilize all XFRACAS functionality without interruption. If they are not, the instructions provided here allow you to use Internet Explorer's "zone" configurations to set distinct properties for a subset of all of the websites you may visit with your browser without impacting the security settings for other sites.

Chrome inherits Internet Explorer's zone settings. Therefore, even if you never plan to log in with Internet Explorer, the following settings are required in order to ensure full access with Chrome.

- In Internet Explorer, choose **Tools > Internet Options** to open the Internet Options window.

- On the Security tab, add the XFRACAS website to your local intranet zone. To do this, click the **Local intranet** icon and then click **Sites** to open a Local intranet settings window. Click the **Advanced** button to open a window in which you can type the URL of the site(s) you would like to add to the local intranet zone.

- Type the URL for the XFRACAS website (e.g., http://XFRACAS.reliasoft.com) in the **Add this website to the zone** field. If SSL support has not been enabled for XFRACAS by the system administrator, clear the **Require server verification (https:) for all sites in this zone** check box. The window will look like the figure shown next.
Chapter 2: Login and Settings

Click **Add** to add the site to the list of websites displayed in the **Websites** field then click **Close**.

**Note:** If you are using Internet Explorer 8, compatibility mode must be disabled in order for XFRACAS to function correctly. If you are using version 11, compatibility mode must be disabled for the intranet in order for popups within XFRACAS to function. It is recommended to use version 9 or version 10 for a better experience.

**Firefox**

**Note:** These instructions were prepared using Firefox 20. If you are using another version of the browser, the appearance of the windows may vary.

- In Firefox, type **about:config** in the address bar and press **ENTER**.
- You may see a warning. Click to continue.
- In the **Search** field, type **ntlm-auth**.
- Double-click **network.automatic-ntlm-auth.trusted-uris**.
Chapter 2: Login and Settings

- Type the URL for the XFRACAS website (e.g., http://XFRACAS.reliasoft.com) then click OK.
- Close the about:config tab.
Chapter 3: Working in XFRACAS

Workflow and Record Types

XFRACAS is highly configurable to meet your organization's needs and fit with your processes and terminology.

This help file uses the following terms and assumes the following workflow. Some of the features and capabilities may be hidden or renamed in your particular implementation.

- An incident is a report of a reliability-related failure. Each incident report deals with a single instance of an issue and allows you to track how it is addressed.
  - You can create actions that must be performed to address the specific incident.
  - You can also create Failure Analysis reports to capture the details of failure analysis and remanufacturing activities for parts that were repaired or replaced during an incident.
- When multiple incidents are attributed to the same underlying issue, a problem (called "PRR" in prior versions of XFRACAS) allows you to manage the issue by associating the individual reported incidents with a single report that can be tracked and resolved.

XFRACAS supports the 8D problem management process, the Six Sigma process and other 4 to 8 step FRACAS processes such as IDOV, MDOV, etc.
In much the same way that problems are used to manage related incident reports, projects can be used to manage related problems. You can create actions to be performed at the project level, just as you can create actions for incidents and problems.

An entity is essentially a complete setup of XFRACAS. Entities may have similar or even identical features and workflows, or they may be completely different. Users can have access to one or more entities, depending on the needs of the user.

**Interface**

XFRACAS is highly customizable, so many elements of the interface may vary according to the settings chosen by the system administrator. Most pages will, however, contain the same basic elements, as shown next.

The ribbon at the top of the page provides access to XFRACAS pages and provides commands for working in those pages. This replaces the menus of previous versions of the software.

Quick Search allows you to open an existing record. Select the type of record (problem, incident, action, customer support by record number, failure analysis by record number, customer support by serial number, project or failure analysis by RMA number) from the drop-down list and type the number of the record, the serial number or the RMA number. The record number may include the prefix for the entity that it is associated with (e.g., E1-112) except in the case of actions, which do not include an entity prefix in their IDs. XFRACAS searches in the following order:

1. Searches for an exact match in the current entity. If no match is found, then:
2. Adds the prefix used by the current entity and searches for a match. (Note that this step is skipped when searching for an action.) If no match is found, then:
3. Searches for an exact match in all entities to which you have access.
For instance, if your current entity is Entity 1, using the prefix "E1-," and you search for an incident by entering the record number "1," the system would first search for "1." Because the incidents in the current entity have a prefix, no match would be found. The system would then add the current entity prefix and search for incident "E1-1". If there is no incident with that number, the system would search all of your entities for "1." If one of your entities does not use a prefix, this search would find incident 1 in that entity.

- **New Page** opens a new window or tab to the XFRACAS Portal page.
- **Help** opens the help for the current page.
- **Login Information** displays the name of the user who is currently logged in to the system.
- **Links** displays a list of private and system/company-wide links to web pages, templates or internal documents that may be useful to the user. The links will appear under their assigned link type (e.g., Internal), if any. Users can post a link by clicking the **Edit Links** icon, \[\text{Edit Links} \], in the upper right corner. Only users with specific permissions can add system/company-wide links. All other users can add only private links, which will be visible only to them in the Links area.

Users can update or remove a link that they created by clicking the square next to the link. Only authorized users can edit and/or remove a link created by another user. You can tell if you have permission to edit a link by looking at the square that appears beside it. If the square is solid, you can edit the link. If the square is an outline, you do not have permission to edit the link.

- **Page Name/Record Number** displays the name of the current page or, for record pages, the number of the record being viewed. (This number is also displayed in the title bar of the browser.) If changes have been made on the page and not yet saved, the status indicator will be red. If all changes have been saved, the status indicator will be green.

- The **Current Entity** shows the entity that you are currently working with and, unless you are working with an existing record, allows you to select the entity you want to work with. An entity is a complete setup of XFRACAS. For example, your company might have several different business units, each of which has different needs and/or different terminologies in place. Each business unit can have its own setup of XFRACAS, or entity, configured to meet the needs of that unit. Please note that the fields that appear in each type of interface will vary depending on the current entity. When you are creating a record (i.e., CSI, incident, FA, problem, project or action), it is important to remember that once you have created the record, you will not be able to change the entity that it is associated with.
Chapter 3: Working in XFRACAS

Ribbon

Home Tab
The Home tab contains commands related to reporting utilities and creating records (i.e., incidents, problems, projects and customer support records). In addition, it contains commands specific to the current page (e.g., if you are working with an incident, it will contain commands for saving the incident, e-mailing the incident URL, etc.).

Portal
- **XFRACAS** opens the [XFRACAS Portal page](http://xfracas.reliasoft.com).
- **SEP** opens the Synthesis Enterprise Portal, if it has been implemented. (See [http://www.reliasoft.com/synthesis/portal/index.htm](http://www.reliasoft.com/synthesis/portal/index.htm) for more information.)

View
- **Reports** opens the [Reports page](http://xfracas.reliasoft.com), which allows you to generate results for a variety of predefined reports. To configure your own reports, choose Options > Designers > Report Builder.
- **Charts** opens the [Charts page](http://xfracas.reliasoft.com), which allows you to generate results for a variety of predefined chart reports. To configure your own chart reports, choose Options > Designers > Report Builder.
- **Dashboard** opens the [XFRACAS Dashboard page](http://xfracas.reliasoft.com), which displays a predefined set of reports and charts. To configure your own Dashboard layout, choose Options > Designers > Dashboard Designer.

Create
- **Incident** opens the [Incident page](http://xfracas.reliasoft.com), which allows you to create an incident report.
- **Problem** opens the [Problem page](http://xfracas.reliasoft.com), which allows you to create a problem report to manage related incidents.
- **Project** opens the [Project page](http://xfracas.reliasoft.com), which allows you to create a project to manage related projects.
- **Customer Support** opens the [CSI page](http://xfracas.reliasoft.com), which allows you to create a Customer Support Information record to keep track of information for a particular serialized system unit.
The following groups appear only when you are working on the relevant pages.

**Record Groups**
When you are working with a record, the Home tab will contain a group of commands appropriate to the record type (i.e., an Incident, Problem, Project, CSI, Failure Analysis or Action group). The commands in this group will vary depending on whether you are creating a record or working with an existing record.

When you are creating a record, the following commands will appear.

- **Create** saves the new record once you have entered all required information. For incidents and CSIs, this command is available only when you are working with a single form, not when you are using the Wizard.
- **Use Incident Wizard** switches to the Incident Wizard to guide you through the steps of creating the incident report. This command is available depending on the settings chosen by the system administrator, and only when creating a new incident report.
- **Use CSI Wizard** switches to the CSI Wizard to guide you through the steps of creating the CSI record. This command is available depending on the settings chosen by the system administrator, and only when creating a new CSI record.
- **Use Single Form** switches to the single form view of the Incident page or the CSI page. This command is available only when creating a new incident report or CSI record.

When you are working with an existing record, the following commands will appear.

- **Save** saves the current record.
- **Completed** marks the current action as completed and saves it. This command is available only for actions.
- **Reopen** opens a currently closed record. This command is available for incidents, problems, projects and actions, depending upon your permissions.
- **Print Preview** allows you to view how the current record will appear on the printed page.
- **Duplicate** creates a copy of the current record. This command is available only for incidents and CSI records. Note that the copy is not automatically saved. You can make
the desired changes to the new record and then choose Home > [Incident/CSI] > Create to save the new record.

- **Export** exports the current record to a new *.xml file.

- **Create Linked Action** opens the Create Action utility, allowing you to create a new action associated with the current action. This command is available only for action records.

- **E-mail URL** opens the Send E-mail utility, allowing you to send an e-mail message including the URL of the current record to selected system users. This command is available for all record types except actions.

- **E-mail Team URL** opens the Send E-mail utility, allowing you to send an e-mail message including the URL of the current record to selected system users, with the team members for the record preselected in the utility. This command is available for incidents, problems, and projects that have team members specified.

- **Copy URL** displays the URL of the current record, allowing you to copy the URL to the Clipboard for use in other locations.

- **Delete** deletes the current record. This command is available for all record types, depending upon your permissions. *There is no undo for delete.*

### Portal Link

- **Save/Update** saves changes to a new or existing link.

- **Delete** deletes the current link. *There is no undo for delete.*

### Announcement

- **Save/Update** saves changes to a new or existing announcement.

- **Delete** deletes the current announcement. *There is no undo for delete.*

### Options Tab

The Options tab offers access to utilities that control reporting tools and contains commands related to your preferences and personal information. It also provides access to various online help resources.
Designers

Report Builder opens the Report Builder page, which allows you to create your own reports and chart reports with custom criteria and information.

Dashboard Designer opens the Dashboard Designer page, which allows you to change the content and arrangement of the reports and charts that appear on the Dashboard page.

Settings

Portal Preferences opens the Portal Preferences page, which allows you configure the information shown on the XFRACAS Portal page.

User Information opens the User Information page, which allows you to specify the information about you used in the system.

Request Entity Access opens the Request Entity Access page, which allows you to request access to any of the entities within XFRACAS.

Help

Help opens the online help topic for the current page.

Contents opens the online help file to its home page.

Admin Contents opens the administrative help file.

New User Intro opens a page for new users with basic information about accessing the system.

About opens the About XFRACAS page, which provides licensing and version information for XFRACAS.

The following groups appear only when you are working on the relevant pages.

Portal Preferences

Save saves the changes you have made to the Portal preferences.

Load Application Defaults returns to the default Portal preference settings.
Chapter 3: Working in XFRACAS

User Information

Save saves the changes you have made to the user information.

Request Entity

Send sends your request for entity access to the system administrator.

Report

Generate generates the results for the Report Builder without saving the settings.

Save saves the current Report Builder settings using the current report name.

Save As saves the current Report Builder settings using a name, description and icon that you specify.

Part Search allows you to search for a template part by part description.

Serialized Search allows you to search for a serialized part by system serial number or subsystem serial number and then opens the system configuration in the Serialized page.

Dashboard

Generate generates the reports specified in the Dashboard Designer without saving the layout settings.

Save saves the current settings using the current layout name.

Save As saves the current settings using a layout name that you specify.

XFRACAS Portal

When you first access XFRACAS, you will see the XFRACAS Portal page. Other pages may also be displayed if your company chooses:

- The What’s New page can be used to display announcements about changes in the system. If the page has been updated since the last time you logged in, it will be displayed in a separate browser window when you access the Portal. It will not be displayed again until it is next changed.
Chapter 3: Working in XFRACAS

• If your company maintains a Terms of Use agreement page for XFRACAS, this page will be displayed the first time you access XFRACAS each day. Click OK to agree to the terms of use and go to the Portal.

The XFRACAS Portal displays private and system/company-wide announcements as well as the current user’s tasks. This information may be based on the current entity or based on all of the entities that you have access to, depending on your Portal settings, which are specified on the Portal Preferences page.

The XFRACAS Portal can be accessed at any time by choosing Home > Portal > XFRACAS.

Announcements

For each announcement, an icon indicates whether it is public (发声) or private (沉默). The name of the user who created the announcement is displayed on the right side of the announcement title. Users can post an announcement by clicking the Edit Announcements icon, 修正，in the upper right corner of the Announcements area, and can update or remove an announcement that they created by clicking the public/private icon associated with the announcement. The Create/Update Announcement page will appear. Only users with specific permissions can create system/company-wide announcements. All other users can create only private announcements, which will be visible only to them in the Announcements area. Additionally, only authorized users can update and/or remove an announcement created by another user.

Users can click the Announcements History icon, 日期 , to display a historical list of all announcements that exist in the database via the Announcement History page.

Tasks

The task list for the current user may include the following items. For each category, the number of pending records will appear at the top of the section. You can click any record number to open the record. Dates for the records (e.g., due dates) will appear in red when the record is within a specified time of the date, depending on the settings chosen by the system administrator.

• The Open Synthesis Actions section displays the user's Synthesis actions that have not yet been completed. This section is available only if the user has permissions to access data in the Synthesis Desktop Elements (SDE) tables in the current database.

• The Uncompleted Actions section displays the user’s uncompleted action items.

• The Unclosed Incidents section displays the user’s incidents that have not yet been closed.
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- The Team Member Unclosed Incidents section displays the unclosed incidents for which the user is a team member.
- The Open Problems section displays the user’s open problems.
- The Team Member Open Problems section displays the open problems for which the user is a team member.
- The Problems to Review section displays the problems that need to be reviewed by the user (i.e., problems for which the user is a member of a Failure Review Board).
- The My Projects section displays the open projects that have been assigned to the user.
- The Team Member Projects section displays the open projects for which the user is a team member.

Note that the number of items displayed in each section is determined by your settings on the Portal Preferences page. The number in parentheses at the top of each section indicates the complete count and is a link that, when clicked, will run a search for all of the relevant records and bring up a list in the Reports page.

Customizing the Portal

To customize what is shown on the XFRACAS Portal page, choose Options > Settings > Portal Preferences.

The options available on this page allow you to specify how you want each element to be displayed in its respective area of the Portal.

Links, Announcements and Tasks Areas

For links, announcements and tasks shown in the Portal, the following options are available. Note that for incidents, problems and projects, you can choose separate display settings for records assigned to you and for records for which you are a team member.

- **Show All** if selected, all items of that type will be displayed.
- **None** if selected, no items of that type will be displayed, nor will the title and heading for that item type be displayed.
- **Show Only X, Newest/Oldest** if selected, allows you to specify the number of items to be displayed in the area (from 1-99), and whether those items should be the newest (i.e., most current) items or the oldest items.

For tasks, you also can specify the Display Order in which the various types of tasks will be shown.

http://xfracas.reliasoft.com
In the case of entities, you can specify whether the Portal should show information associated with all of the entities that you have access to or only information associated with the current entity.

**Portal Area**

**Display Empty Portal Sections** allows you to specify whether sections of the Portal that have no records will be shown or not.

**Display My Report On Load** allows you to select a report from your "My Reports" list to be run and displayed in a separate window when the Portal is loaded. You can also specify an interval controlling how often the report should be run. Entering 0 will run the report every time the page is loaded. Any other number specifies that the report should be run only that often, regardless of how often the page is loaded (e.g., entering 8 will cause the report to be run when the Portal is loaded, provided it is at least eight hours after the last time it was run. If the page is loaded again before that time, the report will not be run or displayed.)

Once you have made any desired changes, choose **Options > Portal Preferences > Save** to save your preferences.

Depending on your permissions, you may see a **Save as application default** check box. If this is selected, the preferences that you have specified in this interface will be saved as the default preferences for new user accounts.

To return to the default Portal preference settings, choose **Options > Portal Preferences > Load Application Defaults**.

**Entering User Information**

Your user information is initially based on the information that you provide when requesting access to XFRACAS, or the information entered by the system administrator when giving you access to the system. You can view or change this information by choosing **Options > Settings > User Information**.

Note that your user information is applied system-wide and is not entity-specific.

At minimum, you must supply a first name, last name and e-mail address. You must also specify a default entity, which is the entity that is selected by default as the current entity when you first access the system. The entity for subsequent screens is based on either the last screen or the entity of the record that you are viewing.
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If desired, you can click the Edit icon, to add an image that will be associated with your user account. This image will appear instead of the generic user icon in the system, such as beside private announcements in the Portal.

To save your changes, choose Options > User Information > Save.

**Requesting Entity Access**

An entity is essentially a complete setup of XFRACAS. Entities may have similar or even identical features and workflows, or they may be completely different. You can request access to any of the entities available in XFRACAS by choosing Options > Settings > Request Entity Access.

On the Request Entity Access page, your user information will be displayed in the corresponding fields at the top of the interface. The Entities field will display the available entities that you do not already have access to. Select the entities that you want to request access to; to select multiple entities, hold down the CTRL key and click your selections. Enter the reason why you want access to these entities in the Reason for this Request field.

To send your request to the system administrator, choose Options > Request Entity > Send.

**Announcements**

To create a new announcement or edit an existing announcement, click the Edit Announcements icon, in the upper right corner of the Announcements area on the Portal page.

On the Create/Update Announcement page, if you want to create a new announcement, leave the Select Announcement to Edit field blank. To edit an existing announcement, select the announcement from the drop-down list in this field. Note that you can also edit an existing announcement by clicking the public or private icon associated with the announcement on the Portal. If you have done this, the announcement will automatically be selected in the Select Announcement to Edit field. Only users with specific permissions can create/edit system/company-wide announcements. Additionally, only authorized users can edit and/or remove an announcement created by another user.

For each announcement that you create/edit, do the following:

- Enter a Title and Description (i.e., text) for the announcement.
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- Specify the **Display Order**, which is the order in which the announcement will appear in the list of announcements on the Portal. If you are posting a private announcement (i.e., the **Display to Public** check box is not selected), this will automatically be set to 3.

- Specify the date and time that the announcement will first be displayed and the date/time that it will be removed from the Portal using the **Start Displaying At/Stop Displaying After** fields. If these fields are left blank, the announcement will be displayed permanently (or until it is manually removed).

- If you want the announcement to be displayed to all users, select the **Display to Public** check box. If this check box is not selected, only you will be able to see the announcement.

- Determine when the announcement should be displayed (i.e., in which entities). This information is shown in the **Entities** field. Click the field name to change the entities.

To save your changes, choose **Home > Announcement > Save**.

**Announcements History**

On the Portal page, users can click the **Announcements History** icon, ☰, to display a historical list of all announcements that exist in the database via the Announcement History page.

For all announcements created in the database, this page displays the announcement title, the name of user who created the announcement, the date when the announcement was first displayed and the date when the announcement will be removed from the Announcements area of the Portal. If N/A appears in the Start and End columns, this indicates that the announcement is permanently displayed (or until the announcement is removed). You can sort by any of the columns by clicking the column header.

Announcements that have been removed will appear greyed out. You can double-click the title of an announcement to display the announcement in the Create/Edit Announcement interface, which allows you to update or remove the announcement. Please note that only authorized users can update and/or remove an announcement created by another user. You can tell if you have permission to edit an announcement by looking at the square that appears beside it. If the square is solid, you can edit the announcement. If the square is an outline, you do not have permission to edit the announcement.

**Links**

To create a new link or edit an existing link, click the **Edit Links** icon, ✏️, in the upper right corner of the Links panel.
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If you want to create a new link, leave the Select Link to Edit field blank. To edit an existing link, select the link from the drop-down list in this field. Note that you can also edit an existing link by clicking the square beside the link in the Links panel. If you have done this, the link will automatically be selected in the Select Link to Edit field.

For each link that you create/edit, do the following:

- Enter a Title for the link.
- Choose a Type for the link. You can link to URLs or to reports within XFRACAS.
- Specify either the URL or the Saved Report, depending on the link type.
- Choose the group in which the link will appear. The available groups are maintained by the XFRACAS system administrator.
- Specify the Display Order, which is the order in which the link will appear in the list of links. If you are posting a private link (i.e., the Display to Public check box is not selected), this will automatically be set to 3.
- Specify the date and time that the link will first be displayed and the date/time that it will be removed from the Links panel using the Start Displaying At/Stop Displaying After fields. If these fields are left blank, the link will be displayed permanently (or until it is manually removed).
- If you want the link to be displayed to all users, select the Display to Public check box. If this check box is not selected, only you will be able to see the link.
- Determine when the link should be displayed (i.e., in which entities). This information is shown in the Entities field. Click the field name to change the entities.

To save your changes, choose Home > Portal Link > Save.

A Note About Time Zones

Depending on the settings chosen by the system administrator, date fields may be displayed with associated time fields. If this is the case, the time fields include a time zone field. All times are saved in the database using Coordinated Universal Time (UTC), formerly known as Greenwich Mean Time (GMT), which is the current time at 0° longitude. This allows users in various time zones to log and view events accurately and easily.

For example, if an incident is created in Tucson, Arizona and later referenced in Kuala Lumpur, Malaysia, the 15 hour time difference could cause confusion. The incident is created at 2:38 PM on March 9, 2017 in Tucson, Arizona with an occurrence date of March 8, 2017 - 10:30 PM. These times are saved into the database as "2017-03-09 21:38" and "2017-03-09 05:30"
respectively. Since Tucson, Arizona is in time zone -7, seven hours have been added to each date/time to get the UTC time. You can see that this changed the date as well as the time of the occurrence date. When redisplayed in Tucson, Arizona, the date/times are adjusted by subtracting seven hours.

If someone in Tucson, Arizona ran a search to find this incident, they could search for an occurrence date of March 8, 2017 with times between 10:00 PM and 11:00 PM. However, if someone in Kuala Lumpur, Malaysia ran the same search, they would get results that do not include this incident because their local time is in time zone +8. They could get the desired result by simply setting the occurrence date time zone for the query to Tucson, Arizona’s -7 time zone.

If the user in Kuala Lumpur were then to edit the incident, because all information is saved as UTC, the information would be just as easy to find again in Tucson, Arizona.

Your default time zone is set by the system administrator. You can change your time zone by choosing Options > Settings > User Information.

Common Utilities

Attachments

Depending on the settings chosen by the system administrator, Associated Files areas can appear in numerous utilities throughout the system. The Associated Files area helps you to keep supporting documentation all together in the same place with the record.

When you click the Add icon, +, beside any Associated Files area, the Associated Files utility will be displayed. This utility will also appear when you select an existing attachment and click the Edit icon, .

When adding an attachment, you will first choose the attachment type from the Data Source Type drop-down list. You can attach:

- An uploaded file
- A URL link or a linked file
- An XFRACAS record
- Text

For all attachments, you will enter a Name and a Description for the attachment, to be displayed in the Associated Files area. If there is more than one Associated Files area on the page, you can specify which one to place the attachment in via the Section drop-down list.
The remaining fields in the utility will vary depending on the type of attachment you are adding. Each procedure is presented next.

**Attaching an Uploaded File**

To attach an uploaded file, select **Uploaded File** from the **Data Source Type** drop-down list in the Attachment Information utility.

Type the full pathname to the file in the **Associated File** field or click the **Browse** button to search for the file. Select the file that you want to associate with the record and click **Open**.

A copy of the file is uploaded to either the XFRACAS database or a specified location on the server, depending on the settings chosen by the system administrator. You can edit the information about the uploaded file at any time by selecting the file in the **Associated Files** area and clicking the **Edit** icon. You can open the uploaded file for viewing or editing by clicking the link in the File column of the **Associated Files** area. Any changes you make will be saved only to the copy of the file, not to the original source file. Note that the **Uploaded File** option may not be available, depending on the settings chosen by the system administrator.

**Attaching a URL or a Linked File**

To attach a URL or a linked file on a remote server, select **URL** from the **Data Source Type** drop-down list in the Attachment Information utility and type either the full URL or the full pathname to the file in the **URL** field.

If you have chosen to attach a linked file, XFRACAS will create a link to that file in its original location. You can edit the information about the linked file at any time by selecting the file in the **Associated Files** area and clicking the **Edit** icon. You can open the linked file for viewing or editing by clicking the link in the File column of the **Associated Files** area. Any changes you make will be saved as part of the original file.

You can edit a linked URL at any time by selecting it in the **Associated Files** area and clicking the **Edit** icon. You can open a linked URL by clicking the link in the File column of the **Associated Files** area.

**Attaching an XFRACAS Record**

To attach an XFRACAS record, select **XFRACAS ID** from the **Data Source Type** drop-down list in the Attachment Information utility.

Select the type of record you want to attach from the **XFRACAS Type** drop-down list and enter the record number in the **XFRACAS ID** field. You can click the **Find** icon to open a search utility. You can scroll through the list to find the record you want to link, or you can filter the results by entering text above one or more displayed columns and clicking the **Filter** button. You can also double-click any record in the list to see the full record. Note that, depending on the settings chosen by the system administrator, this list may initially contain no records. Records matching
your filter criteria will appear when you click Filter. All available records will appear if you click Filter without entering any criteria.

You can select the type of relationship between the XFRACAS records, if any, from the Relationship Type drop-down menu. The available relationship types are maintained by the XFRACAS system administrator.

Specifying a Reciprocal Section forces the creation of a second attachment, from the record being attached back to the current record, and indicates where in the attached record the reciprocal link should appear. This effectively creates a two-way link between the two records.

You can edit the information about the attached XFRACAS record at any time by selecting the file in the Associated Files area and clicking the Edit icon. You can open the attached XFRACAS record by clicking the attachment name shown in the File column of the Associated Files area.

**Attaching Text**

To attach text, select Text from the Data Source Type drop-down list in the Attachment Information utility and type the desired text in the Text field.

You can edit the attached text at any time by selecting the attachment in the Associated Files area and clicking the Edit icon.

**Send E-mail Utility**

The Send E-mail utility allows you to send an e-mail that includes a link to the current record. When you are working with an incident, failure analysis report, problem, project or CSI record, you can choose Home > [Record Type] > E-mail URL or, if team members have been added for the record, Home > [Record Type] > E-mail Team URL to open this utility.

Clicking a user name in the Team Members field of the Incident, Problem and Project pages will also open this utility.

Choose the source for available e-mail addresses from the E-mail Address Source drop-down list. This may be the XFRACAS user list or the team members for the record, or you may choose to enter the e-mail address(es) manually. You may also be able to select users from a global address list from an Exchange server, depending on how the Exchange preferences are set up. Note that if you opened the utility using the E-mail Team URL command, the team members option will be preselected. If you opened the utility by clicking a team member name, that name will be pre-selected.

When you are working with a user list, you can double-click a user in the list on the left to add them to the To: area on the right, which displays a list of the users who have been selected to receive the e-mail. At least one user is required in this recipient list in order to send the e-mail.
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You can also use the TO>, CC> and BCC> buttons to add the selected user(s) to the corresponding area on the right. Double-click a user in a recipient list to remove it from the list.

You can enter a message in the Message field at the bottom of the window. This message will appear in the body of the e-mail along with the link to the record and/or a printer-friendly view of the record, depending on your selection in the Include field.

Click Send to send the e-mail to the selected users.

Select Existing Utility

The Select Existing Utility allows you to find and reuse text from the same field in other existing records. This can help save time on data entry, ensure consistency and facilitate brainstorming.

This utility may be available a) if it has been enabled for a particular description or status field and b) you have permission to use this feature for a particular record type.

Searching for Existing Text

- Use the drop-down list in the Search area to specify how to match the specified keywords, then type the keywords into the input box.
  
  - \(=\) returns descriptions where the exact string entered matches the whole field.
  
  - Contains returns descriptions that contain the exact string entered.
  
  - Begins With returns descriptions where the exact string entered appears at the start of the field.
  
  - Ends With returns descriptions where the exact string entered appears at the end of the field.
  
- In the Entities area, select which entities that you want to look in for the text.
- Click the Search icon, \(\mathcal{P}\), to display the matching results in the Text area.
- Select the desired text, then click OK.
Assign Team Members Utility

The Assign Team Members Utility will be displayed when you click the Assign/Remove Members icon for the Team Members field on the Incident, Problem or Project page.

You can assign users to the team individually, or in user groups. (New in Version 11, user groups can be defined by the system administrator to provide a convenient way to add multiple users who commonly work together.)

- To add an individual user to the team:
  - Select a role that the user will fulfill from the Team Member Role drop-down list.
  - Select the user from the Users list, which displays those system users that are not already on the team.
  - Click Add Team Member.

- To add a predefined group of users to the team:
  - Select the user group from the User Groups drop-down list. The members of the group, and the roles that they fulfill in that group, will be displayed in the Group Members area.
  - Click Add Group Members.

To remove a team member, select the user in the Current Team Members list and click Remove Selected.

Click Save to save the changes in the window. Note that if the incident or problem displays the Audience Restriction field and the drop-down list is set to "Attorney/Client Privilege," you will not be able to save any changes to the team until a user is assigned to the legal role. To be eligible for this role, the user's account must be assigned to the "Legal Expert" category.

Part and Serial Number Selection Utilities

When you are creating an incident or a customer support information (CSI) record associated with a serialized system, XFRACAS provides part and serial number selection utilities to help you assign the correct system serial number and system part number to the record. The appearance of these utilities will vary depending on the specific activity. These utilities are described next.

There are several ways to select the system serial number and system part number on the Incident and CSI pages. They include:

- Leave the fields blank and click the Find button next to the Serial Number field. In the Available Parts utility that appears, the Available Parts drop-down list provides a list of
all system serial numbers that have been defined. Choose a serial number to view its information in the **Serial Number** and **Part Number** fields. Click **Select** to update the system serial number and system part number in the incident or CSI record.

- Leave the fields blank and click the **Find** button next to the **Part Number** field. In the Available Parts utility that appears, the **Available Parts** drop-down list provides a list of all system part numbers that have been defined. Choose a part number to view its information in the **Serial Number** and **Part Number** fields. If the selected part number is associated with more than one system serial number, you will be provided with a list of matching serialized systems to choose from. Click **Select** to update the system serial number and system part number in the incident or CSI record.

- Type the system serial number or a portion of the system serial number and click the **Find** button next to the **Serial Number** field. The system will search for system serial numbers that contain the information you typed. If only one match is found, the system serial number and system part number in the incident or CSI record will be updated. If multiple matches are found, you will be provided with a list of matching serialized systems to choose from.

- Type the system part number or a portion of the system part number and click the **Find** button next to the **Part Number** field. The system will search for system part numbers that contain the information you typed. If only one match is found, the system serial number and system part number in the incident or CSI record will be updated. If multiple matches are found, you will be provided with a list of matching serialized systems to choose from.

**Note:** Similar functionality is available when you search for parts in the Repair or Replace Parts utility. However, in this case, the available part numbers and serial numbers returned are not necessarily at the system level.

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**Serialized Page**

The Serialized page allows you to view serialized system configurations. You can open the Serialized page in several ways:

- By clicking the **System Configuration** link in the summary area at the top of the Incident page for a serialized incident.

- By clicking the **System Configuration** link in the summary area at the top of the CSI page.

- By choosing **Options > Report > Serialized Search** when working with the Report Builder and choosing the system that you want to view.

---

http://xfracas.reliasoft.com
The system configuration for the selected system is displayed on the left side of the interface. The part number, part description, version and serial number for each part in the configuration are displayed. Click the plus (+) or minus (-) to the left of a part number to hide or display the parts below this part in the hierarchy. To locate a specific part, click the **Find part on system** link at the top of the hierarchy to search by part number, part description or serial number. If a part in the system configuration has been replaced, it will appear at the bottom of the hierarchy and a retired date will appear next to it. Retired parts are indicated by 🐟.

To view another serialized system, choose **Home > Serialized > Serialized Search**. In the Find System utility that appears, you can search by the system serial number or subsystem serial number.
Chapter 4: Incidents

Use the Incident page to record and view information for a single occurrence of an issue (e.g., failure, planned downing event, customer request, etc.).

If you have permissions to create a new incident, choose Home > Create > Incident.

If the incident wizard is enabled for the current entity, the page will either display all fields in a single form or a wizard that prompts you to enter data one step at a time. To toggle the display, choose Use Incident Wizard, or Use Single Form.

After you have entered all required fields (highlighted with red boxes), choose Home > Create > Incident to save the new record.

Selecting or Identifying the Entity

If your XFRACAS website has more than one entity, the fields and options may be configured differently in each. When applicable, a drop-down list at the top of the page allows you to select which entity is currently active before you create a new record.

When you are viewing a record that already belongs to a particular entity, the name of the entity will be displayed at the top of the page and the entity will also be reflected in the prefix for the record ID.

Selecting the Incident Type

Depending on the settings for the current entity, you may choose from up to three incident types.

- **Serialized Incident** - an incident for a specific serialized system.
- **Part Incident** - an incident that is tied only to a part number, not a specific serialized system.
• **Simple Incident** - an incident that is not tied to any particular serialized system or part number.

### Areas and Fields

The fields in the page depend on the incident type and the configurable settings for the entity. The following topics discuss some types of fields that may be used in each area of the page.

- **Incident Summary area** - a summary of key details for an existing incident.

- **System/Component Information area** - in a serialized incident or part incident, information about the system or part that the incident applies to. (The area will also appear if there are custom details within this section.)

- **Incident Disposition area** - information about the incident that occurred or the issue that may need to be addressed.

- **Incident Repair Information area** - information about what was done to resolve the issue, including details for any parts that were repaired, replaced, removed and/or found to be failed.

If the system administrator has configured additional fields to meet your organization's specific needs, they may be integrated into the areas mentioned above or grouped together in a separate **Incident Details** area at the bottom of the page.

### Selecting the Serial Number and/or Part Number

In a serialized incident or part incident, there are multiple ways to specify the system or part that the incident pertains to. (See [Part and Serial Number Selection Utilities](http://xfracas.reliasoft.com).

If the incident is not related to a specific system or part, you can leave the fields blank. Alternatively, you can hide the "System/Component Information" area by selecting "Simple Incident" for the incident type.

If you choose to specify this info, it cannot be changed after the incident is saved.

### Assigning the Responsible Part(s)

The **Responsible Part** field identifies the part(s) that caused the incident to occur. If the settings for the current entity allow you to select multiple parts, click the **Edit** icon, 📊, to view the tree. If the settings for the current entity don't allow multiple parts then you will just see a drop-down list of parts that have a responsible engineer assigned to them.
This field uses the generic system Template(s) that have been defined for the entity. Each template part can be associated with an Owner who may receive an e-mail when the part is assigned as a responsible part for an incident. This user may also be assigned as the Owner for the incident, if applicable.

Click the History icon, to view a list of any change to the responsible part that have been saved for the incident. (This field is required and cannot be disabled or hidden.)

**Assigning the Owner and Creator**

If you create a new incident without selecting the incident owner and creator, they will be set automatically when the record is saved.

- The **Owner** will be set to the user who is responsible for the first responsible part.
- The **Creator** will be set to the user who created the incident.

You can use the drop-down lists to change this at any time.

**Assigning a Team**

If enabled for the current entity, the **Team Members** field identifies the users who will be working on the incident, and their roles on the team. This field is not displayed until the record is created.

Click the Assign/Remove icon, to select the users and their roles. (See Assign Team Members Utility.)

After users have been assigned to the team, you can click the link for any team member's name to send an e-mail regarding the incident. (See Send E-Mail Utility.)

Depending on the configurable settings for the entity, the team members may also receive e-mails when a status update is added or modified. (See Adding Status Updates.)

**Assigning Actions**

The **Actions** field contains a list of specific assignments (tasks) that need to be tracked and completed in order to address the incident. The field is not displayed until the record is created.

Click Create New Action, to add a new assignment for the current incident. (See Actions.)
Chapter 4: Incidents

The table displays the actions that have already been assigned. Click the action number link to open the action window, or click the expand icon, ▼, to show more of the details in the table. Click 🔍 to view the list of actions in a report grid that you can filter, sort, export to Excel, etc.

<table>
<thead>
<tr>
<th>Action Number</th>
<th>Short Description</th>
<th>Due Date</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>First action that needs to be perfo...</td>
<td>04/17/2017</td>
<td>TECHNICIAN, JILL</td>
</tr>
<tr>
<td>20</td>
<td>Second action that needs to be perf...</td>
<td>04/20/2017</td>
<td>ENGINEER, JOHN</td>
</tr>
</tbody>
</table>

Adding Status Updates
If enabled for the current entity, a Status detail field allows users to add notes about the progress made for the incident, and also send e-mail notifications if applicable. This type of field is not displayed until the record is created. (See Status Fields.)

<table>
<thead>
<tr>
<th>Status Date</th>
<th>Written by</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/21/2017, 10:29 AM</td>
<td>TECHNICIAN, BILL</td>
<td>Replaced PN 12345. System is back up and running.</td>
</tr>
<tr>
<td>03/27/2017, 10:29 AM</td>
<td>ENGINEER, JOHN</td>
<td>Need to replace PN12345. Waiting for part.</td>
</tr>
<tr>
<td>03/12/2017, 10:45 AM</td>
<td>TECHNICIAN, BILL</td>
<td>Added a temporary fix to stop the leak. Waiting for diagnostic to identify faulty part(s).</td>
</tr>
</tbody>
</table>

Associating Files or Links
If enabled for the current entity, an Associated Files detail field allows users to upload file attachments, links to files in another location (e.g., a document management website) or link to another record in XFRACAS. This type of field is not displayed until the record is created. (See Attachments.)

<table>
<thead>
<tr>
<th>Att. Type</th>
<th>Date</th>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uploaded File</td>
<td>04/12/2017, 10:27 AM</td>
<td>Part information</td>
<td>Information about the parts.</td>
</tr>
<tr>
<td>URL</td>
<td>04/12/2017, 10:28 AM</td>
<td>ACME Corp.</td>
<td>Distributor website.</td>
</tr>
<tr>
<td>Problem (Master)</td>
<td>04/12/2017, 10:29 AM</td>
<td>REL-3</td>
<td>Associated problem.</td>
</tr>
</tbody>
</table>

Repairing or Replacing Parts
The Repair or Replace Parts feature allows you to list all the parts that were repaired, replaced, removed or found to be failed due to the incident (if any). If you are extracting data to Weibull++ or RGA, this is used to obtain failure and suspension times based on part number. (See Repairing and Replacing Parts.)
Assigning an Incident to a Problem

The **Assigned to Problem #** field in the incident summary links to any problems that the incident is associated with.

![Image of incident management interface]

Click **Create New Problem**, +, to create a new problem record and automatically assign the incident at the same time.

Click **Assign/Remove Problem**, , to assign the incident to an existing problem or change the problem(s) that the incident is currently assigned to.

Closing an Incident

Depending on the settings for the current entity, the incident's **State** field may contain one or multiple options to indicate that an incident is closed (e.g., "Closed," "Closed - Insufficient Data," etc.).

You may not be able to close an incident until all associated actions are completed and/or all associated failure analysis reports are closed.

The incident may be "read-only" after it is closed. When that preference is enabled, only users with specific permissions will be able to re-open a closed incident.

**Tip:** If the incident pertains to a serialized system that you are also tracking via the Customer Support page, we recommend to update the **System Status** (e.g., "Running," "Down - Waiting on Part," etc.)
before you close the incident. The system status displayed in the CSI page will be based on all incidents reported for that serialized system.

### Incident Summary Area

The **Incident Summary** area of the Incident page provides a quick at-a-glance summary of key details for an existing incident. This area is not displayed until the record is created.

*Note:* The fields and features in this area depend on the incident type and the configurable settings for the entity. Your website may have different fields enabled, with different names, and/or used in a different way that fits the needs of your organization.

- **Assign to Problem #** - links to the problem(s), if any, that the incident is assigned to. (See Assigning an Incident to a Problem.)
- **State** - the current state of the incident (e.g., "Open," "Closed," etc.).
- **Occurrence Date** and **Reporting Date** - the date when the incident occurred and the date when the record was created.
- **Owner** - the user who has primary responsibility for the incident.
- **Creator, Reporting Org** - the user who created the incident and the organization specified in that person's user account (e.g., "Engineering," "Product Safety," etc.).
- **Category** - the category assigned to the incident.
- **Responsible Part** - the generic template part(s) that the incident pertains to.
- **Last Updated By** and **Last Updated** - the user who saved the last change for the incident, and the date/time (if the preference is enabled for the current entity).

If the incident was reported for a specific serialized system:

- **System Configuration** - links to the full record of assemblies and parts that may be tracked for the system. (See Serialized page.)
- **System Status** - the current operational status of the system (e.g., "Running," "Down - Waiting on Part," etc.)
- **Time Metrics** - (e.g., "Run Hrs / Starts / kW Hours") - up to three time/usage metrics that were reported for the system at the time of the incident. Click the link to view a history of all saved time/usage reports for that system.
- **Customer Support #** - links to the customer support information (CSI) for the system, if applicable.
• **Unit Location** - the location of the system at the time of the incident.

• **Distributor** and **ASP** - the distributor and authorized service provider that are currently assigned in the CSI record for the system, if applicable. Click the links to view the contact details.

• **ASP Field Service Tech** - the technician assigned to the incident. Click the link to view the contact details.

• **Downtime for Service** - the number of hours between the Service Response Date and the Completed Date.

• **Response Time** - the number of hours between the Occurrence Date and the Service Response Date.

**System/Component Information Area**

The **System/Component Information** area of the Incident page is displayed only if the incident type is "Serialized Incident" or "Part Incident" or if there are details within this section.

**Note:** The fields and features in this area depend on the configurable settings for the entity, and whether it is a new or existing record. Your website may have different fields enabled, with different names, and/or used in a different way that fits the needs of your organization.

• **Serial Number, Part Number** and **Version** - the specific serialized system or part that the incident pertains to. (See **Part and Serial Number Selection Utilities**.)

If you choose to specify this info, it cannot be changed after the incident is saved.

• **System Status** - the current operational status of the system (e.g., "Running," "Down - Waiting on Parts," etc.). This may change over time as you take steps to address the incident. Click the **History** icon, to view a list of all system statuses saved for the incident.

• **Time Metrics** - (e.g., "System Hours," "Number of Starts" and "kW Run Hours") - you can report up to three time/usage metrics for the system at the time of the incident. Depending on the settings for the current entity, these may be populated or calculated automatically based on other available information.

• **Unit Location** - the location of the system at the time of the incident.
  
  • If this field is enabled for the current entity and you have permission, you can select from a list of locations predefined by the system administrator.
  
  • If you don't specify a location and a customer support information (CSI) record is available for the system, the same location for the CSI will be assigned to the
incident upon save. In addition, the Incident Occurrence Date must be after the commission date on the CSI and before the decommission date.

- **Under Warranty** - if a CSI record is available for the system, this field specifies whether the system was under warranty at the time of the incident. If you have permission to override the automatic warranty determination, this will be a radio button that you can change if appropriate.

- **System Down Event** - whether the incident caused system downtime. If a CSI record is available for the system, this will be used to calculate the estimated hours (i.e., total possible usage minus the downtime).

**Incident Disposition Area**

The Incident Disposition area of the Incident page contains information about the incident that occurred or the issue that may need to be addressed.

*Note: The fields and features in this area depend on the configurable settings for the entity, and whether it is a new or existing record. Your website may have different fields enabled, with different names, and/or used in a different way that fits the needs of your organization.*

- **Title** and **Description** - a description of the incident is always required. If enabled for the current entity, you can also specify a short title.

- **Occurrence Date** - the date/time when the incident occurred. (This field is required and cannot be disabled or hidden.)

- **State** - the current state of the incident (e.g., "Open," "Under Review," "Closed," etc.). This may change over time as you proceed to review and address the incident. Click the **History** icon, to view a list of all states that have been saved for the incident. (This field is required and cannot be disabled or hidden.)

  Depending on the configurable settings for the entity, there may be special conditions for the state(s) that indicate the incident is closed. (See **Closing an Incident**.)

- **Report Type** - how the incident was observed or reported (e.g., "Internal Testing," "Planned Field Event," etc.). (This field is required and cannot be disabled or hidden.)

- **Incident Category** - for the purpose of reliability data analysis, some categories may be "chargeable" (e.g., "Component Failure," "Production Error," etc.) and others may be "non-chargeable" (e.g., "Customer Information Request"). (See **Repairing and Replacing Parts**.) (This field is required and cannot be disabled or hidden.)

- **Responsible Part** - generic template part(s) that the incident pertains to. (See **Assigning the Responsible Part(s)**.) (This field is required and cannot be disabled or hidden.)
Click the **History** icon, 📊, to view a list of any changes to the responsible part that have been saved for the incident.

- **Owner** and **Creator** - if you do not specify the owner and creator, they will be set automatically upon save. (See [Assigning the Owner and Creator](#).)

- **Team Members** - the users who will be working on the incident, and their roles on the team. (See [Assigning a Team](#).)

  _Tip:_ If the **Audience Restriction** field is enabled for the entity and you select "Attorney/Client Privilege," the incident will be visible only to the owner and team members. You will also be prompted to select a user for the "Legal" role on the team.

- **Actions** - the specific assignments that need to be tracked and completed in order to address the incident. (See [Assigning Actions](#).)

- **Failure Mode** - if enabled for the current entity, the failure mode and root cause responsible for the incident.

- **Potential Criticality** and **Actual Criticality** - if enabled for the current entity, criticality metrics are calculated based on the selections in the drop-down lists (e.g., schedule, cost, etc.) and the formulas specified by a system administrator. (See "Configuring the Criticality and Time Metrics" in the admin documentation.)

### Incident Repair Information Area

The **Incident Repair Information** area of the **Incident page** contains information about what was done to resolve the issue, including details for any parts that were repaired, replaced, removed and/or found to be failed.

  _Note:_ The fields and features in this area depend on the configurable settings for the entity, and whether it is a new or existing record. Your website may have different fields enabled, with different names, and/or used in a different way that fits the needs of your organization.

- **Service Response Date** - the date/time when someone first responded to the incident.

- **ASP Field Service Tech** - the technician who performed the repairs. If this field is enabled for the entity, you can select from a list of contacts predefined by the system administrator.

- **Status of Troubleshooting** - notes about the progress made to address the incident. (See Status Fields.)

- **Resolution** - describes how the incident was addressed.
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- **Completed Date** - the date/time when the incident was resolved.

- **Repair Duration** - the time (in hours) to complete the repair. If you are extracting data to Weibull++, this field will be extracted to the StateTimeRestore column and can be used to fit a distribution for the time-to-repair.

- **Repair or Replace Parts** - identifies the parts that were repaired, replaced, removed or found to be failed due to the incident (if any). If you are extracting data to Weibull++ or RGA, this is used to obtain failure and suspension times based on part number.
  
  - Click **Repair or Replace Parts** to add a part to the list. (See [Repairing and Replacing Parts](http://xfracas.reliasoft.com).)
  
  - For serialized incidents, and only if you have permission to edit serialized part information, click **Add/Modify Parts** to view or modify the full serialized configuration for the system. *Please consult the admin help for more information.*
  
  - Click the links in the table to edit the return type, part disposition, sales order number (SO number), etc.

  - If you want to add a detailed failure analysis report for the part, click the **New** link in the Failure Analysis Report column. If a report already exists, click the record ID to view or edit it.

  - If you have permission to delete a repair/replace part row, click **Delete**, to remove the row.

  - For simple incidents and part incidents, and only if you have permission to duplicate a repair/replace part row, click **Duplicate**, to create a new row in the table that is identical to the existing one.
• **Incident Failure Analysis** - describes any failure analysis that was performed.

• **Associated Files** - if enabled for the current entity, any links or file attachments associated with the incident. (See [Associating Files or Links](#).)

### Repairing and Replacing Parts

When you click the **Repair or Replace Parts** link on the Incident page, the Repair or Replace Parts utility allows you to record information about a part that was repaired, replaced, removed or found to be failed due to the incident.

#### Select a Part

If a system serial number has been entered for the incident, the left panel shows all parts currently on the system, as well as parts that have been removed in the past (these are identified with the removal date in brackets, e.g., "[04/11/2017]").

If a part number has been entered, it shows the generic part template.

If a serial or part number has not been entered, click the **Find Template** icon to select the generic part template that contains the part you want to record data for.

As an example, the following picture show a simple serialized configuration in which Part A (SN:555555) was replaced on April 11th with a new part of the same type (SN:888888). The right panel shows the details for the part that is currently selected (Part C, SN:777777).
Replace, Repair, Remove or Mark Part as Failed

After selecting a part in the left panel, click one of the icons at the top of the right panel. The required information depends on the action that was taken.

- **Replace Part** indicates that the part was removed from the system and replaced with a different one. You must enter details for both the "old" and the "new" part.

- **Repair Part** indicates that the part was restored and remains in the system. You only have to specify the failure type, but you can also record "Run Hours" if the part's age at the time of the incident was different than the system's.

- **Remove Part** indicates that the part was removed from the system, but does not record information about the replacement part. You can only specify the failure type. This is only used if the part was failed. If you need to remove a part that was not failed (e.g., because the configuration was entered incorrectly), use the admin System > Serialized page instead.

- **Mark Part As Failed** indicates that the part was found to be failed due to the incident, but you don't yet know how it should be recorded. When the information is available, you can select the part again and change it to Replace, Repair or Remove.

Select the Failure Type

The **Failure Type** is always required. Together with the incident category, it determines how the data are extracted for reliability data analysis.

Like the incident category, a failure type may be "chargeable" (e.g., "Primary Failure") or "non-chargeable" (e.g., "Primary Suspension" or "Collateral Failure").

If both the incident category and failure type are "chargeable," then the incident is considered to be a failure (F) for that part number. If either or both fields are set to "non-chargeable," then the incident is considered to be a suspension (S) for that part number.

<table>
<thead>
<tr>
<th>Incident Category</th>
<th>Failure Type</th>
<th>Data Classification for Reliability Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chargeable</td>
<td>Chargeable</td>
<td>Failure</td>
</tr>
<tr>
<td>Chargeable</td>
<td>Non-Chargeable</td>
<td>Suspension</td>
</tr>
<tr>
<td>Non-Chargeable</td>
<td>Chargeable</td>
<td>Suspension</td>
</tr>
<tr>
<td>Non-Chargeable</td>
<td>Non-Chargeable</td>
<td>Suspension</td>
</tr>
</tbody>
</table>
Specify the Run Hours
If you replace, repair or mark a part as failed, you can enter the Run Hours for that part if it is different that the time/usage metric(s) for the system.

If you don't enter a value, this will be set automatically based on Metric 1 (e.g., "System Hours") in the System/Component Information area.

Select the Part Disposition
If you replace or mark a part as failed, you can select the Part Disposition from a drop-down list. This indicates what you did with the part that was removed from the system (e.g., "Send to Engineering," "Scrap," "Return to Supplier," etc.).

Specify the Starting Age for the New Part
For serialized incidents only, you can enter the Starting Age of the replacement part if it had already accumulated age before being added to the system (e.g., replacement with a "used" part).

If you extract the data to Weibull++ or RGA for reliability, and you are using the system time/usage to calculate the time/usage for the part, the starting age will be added to the part's time on the system to determine the time-to-failure. For example, if the part had a starting age of 100 hours when it was added to the system and it runs for 200 hours before the next failure, the time-to-failure is 300 hours.

Copy Children of Replaced Part
For serialized incidents only, if you are replacing an assembly comprised of other parts, you can enter the replacement for each dependent ("child") part separately, or you can replace the assembly and select the Copy all children of replaced part check box.

Note that children that are copied will not have serial numbers; those can be entered manually via the administrative Serialized page or the Add/Modify Parts link.

Add or Edit a Failure Analysis Report (if Applicable)
You can use the Initial Failure Analysis field in the incident to record a summary of the analysis that was performed in the field to determine which parts to repair or replace. In addition, if you want to create a more detailed failure analysis report for a particular part after it is returned, click the New link in the table in the Incident page. If a report already exists for a part, the link will display the record ID instead.
Chapter 5: Failure Analysis Reports

A failure analysis report is associated with the parts that were replaced as a result of an incident. In it, you can specify the details of your failure analysis and remanufacturing activities for the parts that were replaced and then analyzed/remanufactured.

For specific information on selected fields within the Failure Analysis page, please refer to the topic specific to the area of the Failure Analysis page.

**Note:** The fields that appear in the interface can be configured by the system administrator. The area topics are not intended to be a comprehensive guide to all possible fields. Instead, they provide additional information on some commonly used fields in cases where the field's purpose and/or functionality may not be readily apparent. For this reason, not all areas are covered in depth.

- The **Failure Summary** area displays the details of the parts that were replaced as a result of the incident that the failure analysis report is associated with.
- The **Failure Analysis Information** area allows you to specify information about the failure analysis, including whether or not the failure analysis report was sent to the customer.
- The **Failed Component System Information** area allows you to specify information about the failed component system.
- The **Visual Inspection** area allows you to specify the details of the visual inspection portion of the failure analysis.
- The **Initial Repairs/Comments** area allows you to specify the details of the initial repairs portion of the failure analysis.
- The **Detailed Analysis** area allows you to specify the detailed analysis portion of the failure analysis.
- The **ATP/Burn-In** area allows you to specify the ATP/Burn-In portion of the failure analysis.
- The **SAP Items** area allows you to specify the SAP items of the failure analysis and whether or not a work order was requested.

Creating a Failure Analysis Report

To create a new failure analysis report, click the **New** link in the Replaced/Repaired Part(s) table in the **Incident Repair Information** area of the Incident page. The Failure Analysis page will be displayed with a new failure analysis report that you can define. Required fields are indicated
Chapter 5: Failure Analysis Reports

with red borders. Portions of the page may be hidden; simply click any bar that contains an up or down arrow to hide or display that portion of the page.

The current entity will appear at the top of the page. You cannot change the entity for the failure analysis report because it is associated with an existing incident. Please note that the fields that appear in the Failure Analysis page may vary depending on the current entity.

The **Failure Summary** area at the top of the page displays the details of the parts that were replaced as a result of the incident that the failure analysis report is associated with.

In each area of the page, make the appropriate selections to describe the details of the failure analysis. Once you are done, choose **Home > Failure Analysis > Save** to save the failure analysis report.

Upon saving, a unique failure analysis report number is automatically assigned by the system. This is displayed in the top left corner of the page and in the browser title bar. The record number will include the prefix for the entity that it is associated with (e.g., E1-112). The failure analysis report number will also appear in the Incident page for the corresponding incident in the Replaced/Repaired Part(s) table.

**Updating a Failure Analysis Report**

**Creating a Status**
As a failure analysis report is updated, you may wish to add statuses to record progress. To create a new status, click the **Add** icon, $+$, beside the **Failure Analysis Statuses** field in the **Failure Analysis Information** area. The Status utility will appear, allowing you to enter comments about the troubleshooting process.

**Adding an Action**
Authorized users can assign actions (tasks) to help resolve the failure analysis report and then track the progress on those actions. To create a new action, click the **Add** icon, $+$, beside the **Actions** field in the **Failure Analysis Information** area. The **Create Action utility** will appear.

Once you have created an action, you can click the action number in the **Actions** field to modify it.

Actions with attachments will be shown in the list with a paperclip icon.
Chapter 5: Failure Analysis Reports

Failure Summary Area

The Failure Summary area of the Failure Analysis page displays the details of the parts that were replaced as a result of the incident that the failure analysis report is associated with.

Note: The fields that appear in the interface are based on the currently selected entity, and can be configured (including names and any options available for selection) by the system administrator. This topic is not intended to be a comprehensive guide to all possible fields. Instead, it provides additional information on some commonly used fields in cases where the field's purpose and/or functionality may not be readily apparent.

- Incident Report # provides a link to the Incident page for the incident that is associated with the failure analysis report.
- System Part #, System Serial # and System Part Description display information for the system that is associated with the failure analysis report.
- Incoming Part #, Incoming Serial # and Incoming Part Description display information for the specific part that was repaired or replaced during the incident that is associated with the failure analysis report. ("Incoming" refers to coming in for failure analysis.)

Failure Analysis Information Area

The Failure Analysis Information area of the Failure Analysis page displays information about the failure analysis, including whether or not the failure analysis report was sent to the customer.

Note: The fields that appear in the interface are based on the currently selected entity, and can be configured (including names and any options available for selection) by the system administrator. This topic is not intended to be a comprehensive guide to all possible fields. Instead, it provides additional information on some commonly used fields in cases where the field's purpose and/or functionality may not be readily apparent.

- Failure Type allows you to select the failure type that was assigned to the part when it was repaired/replaced during the incident.
- Associated Problem allows you to choose a problem to associate with the failure analysis report. Available problems include any problems associated with the associated incident. Note that if you do not make a selection in this field, the failure analysis report will not be associated with any problems, regardless of the problem associations of the incident associated with the failure analysis report.
- Report Sent to Customer allows you to indicate whether the failure analysis report was reviewed by quality.
Chapter 5: Failure Analysis Reports

- **Failure Analysis Statuses** displays the status of the actions taken to resolve the issue. To create a new status, click the Add icon. The Status utility will appear, allowing you to enter comments about the troubleshooting process.

**Failed Component System Information Area**

The **Failed Component System Information** area of the [Failure Analysis page](http://xfracas.reliasoft.com) displays the details of the failed (i.e., incoming) component or system. If, in the course of failure analysis, the part is repaired, rebuilt, given updated software, etc., you can specify the part and serial number assigned to it after failure analysis (outgoing information).

**Note:** The fields that appear in the interface are based on the currently selected entity, and can be configured (including names and any options available for selection) by the system administrator. This topic is not intended to be a comprehensive guide to all possible fields. Instead, it provides additional information on some commonly used fields in cases where the field's purpose and/or functionality may not be readily apparent.

This area displays the system configuration for the failed component. For each part of the failed component, you can double-click the row to open the Outgoing Part and Serial Number utility, which allows you to specify the outgoing part number and outgoing serial number for the failed item.

**ATP/Burn-In Area**

The **ATP/Burn-In** area of the [Failure Analysis page](http://xfracas.reliasoft.com) displays the details for the ATP/Burn-In portion of the failure analysis. This area is divided into two sections, First Attempt and Second Attempt, which contain identical fields. Click the up or down arrow on the First Attempt or Second Attempt bar to hide or display the full details.

**Note:** The fields that appear in the interface are based on the currently selected entity, and can be configured (including names and any options available for selection) by the system administrator. This topic is not intended to be a comprehensive guide to all possible fields. Instead, it provides additional information on some commonly used fields in cases where the field's purpose and/or functionality may not be readily apparent.

- **Test Duration** allows you to type the duration of the test time, which can be entered as hours or portions of an hour (e.g., 1 indicates 1 hour and .25 indicates 15 minutes).
Chapter 6: Problems

A problem allows you to manage an issue by associating individual reported incidents with a single report that can be tracked and resolved. XFRACAS offers support for the 8D problem management process, the Six Sigma process and other four- to eight-step FRACAS processes such as IDOV, MDOV, etc. The number of steps involved in a problem will depend on the model used by your organization. For most steps, you can create actions to be performed to advance the process to the next step.

What's Changed? In previous versions, problems were called PRRs.

For specific information on selected fields within the Problem page, please refer to the topic specific to the area (or step) of the Problem page.

Note: The fields that appear in the interface can be configured by the system administrator. The area topics are not intended to be a comprehensive guide to all possible fields. Instead, they provide additional information on some commonly used fields in cases where the field’s purpose and/or functionality may not be readily apparent. For this reason, not all areas are covered in depth.

- The Establish the Team area allows you to define the elements that control how the problem is handled (e.g., define the team, set closure dates, specify priority, etc.).
- The Describe the Problem area allows you to specify information about the problem to be resolved (e.g., problem description, system information, etc.).
- The Implement and Verify Containment Actions area allows you to define the containment information (e.g., containment description, action items, etc.).
- The Identify and Verify Root Cause area allows you to define and verify the root cause.
- The Choose and Verify Permanent Corrective Actions area choose and verify the corrective actions.
- The Implement Permanent Corrective Actions area allows you to describe the steps taken to implement the corrective actions.
- The Prevent Recurrence area allows you to define the steps taken to prevent recurrence.
- The Congratulate the Team area allows you to recognize the team or add any additional comments.
Creating a Problem

To create a new problem report, choose **Home > Create > Problem**.

The Problem page will be displayed with a new problem record that you can define. Required fields are indicated with red borders. Portions of the page may be hidden; simply click any bar that contains an up or down arrow to hide or display that portion of the page.

The current entity will appear at the top of the page. You can select a different one from the drop-down list to create a problem report associated with that entity. Please note that the fields that appear in the Problem page may vary depending on the current entity.

The Problem page is made up of four to eight different areas, depending on the settings chosen by the system administrator, which take you through each step of the reporting process. When creating the problem report, you will enter the required information in the Establish the Team step, then choose **Home > Problem > Create**.

Upon creation, a unique problem number is automatically assigned by the system. This is displayed in the top left corner of the page and in the browser title bar. The record number will include the prefix for the entity that it is associated with (e.g., E1-37).

Assigning Responsibility for a Problem

Although a team of users may work on a problem, one user must have the primary responsibility for each problem.

- When you create the problem, you will be prompted to specify the owner of the problem in the **Establish the Team** area. The problem owner has primary responsibility for the problem.

- Once you have created the problem, you can assign team members to work on it by clicking the **Assign/Remove Members** icon beside the **Team Members** field in the **Establish the Team** area. This will open the **Assign Team Members utility**, which allows you to assign and remove users to the team and specify their roles. Once you have assigned team members, the **Team Members** field will display the team members and their roles. Note that the names displayed are e-mail links. Clicking a name will open the **Send E-mail utility**.

Associating an Incident with a Problem

You may find that multiple incidents are attributable to the same underlying issue. You can manage such issues by associating individual reported incidents with a problem that can be
tracked and resolved. To associate an incident with the current problem, click the **Assign/Remove Incidents** link in the **Associated Incident Reports** table in the **Describe the Problem** area. The Assign Incidents to Problem utility will be displayed.

- Depending on the settings chosen by the system administrator, the list may initially contain only currently associated incidents. To display all available incidents, click **Filter** without entering any criteria.
- To filter the available incidents, enter a complete or partial Incident #, Responsible Part, Incident Status and/or Incident Category in the input boxes that appear above the corresponding columns and click **Filter**.
- In the list of incidents, select the check box(es) next to the incident(s) that you want to associate with the current problem. To select all incidents in the list, select the check box in the header.
- To remove incidents from the current problem, clear the check box(es) next to the selected incident(s).
- Click **Save** to save the changes in the utility. Click **Cancel** to cancel any changes. Once you return to the Problem page, you will notice that the incident(s) associated with the current problem appear in the **Associated Incident Reports** table.

**Associating a Problem with a Project**

In much the same way that problems are used to manage related incident reports, **projects** can be used to manage related problems. To associate a project with the current problem, click the **Assign/Remove Projects** link in the **Associated Projects** table in the **Describe the Problem** area. The Assign Projects to Problem utility will be displayed. This utility works similarly to the Assign Incidents to Problem utility, described above.

**Updating a Problem**

In addition to entering more details, there are several tasks that are commonly performed in updating a problem.

**Creating a Status**

Statuses allow users to add information about progress made on the problem. Various steps of the problem may have status fields. To create a new status, click the **Add** icon, +, beside the **Problem Statuses** field. The Status utility will appear, allowing you to enter comments.

**Adding an Action**

Authorized users can assign actions (tasks) to help resolve the problem and then track the progress on those actions. Various steps of the problem may have associated actions. To create
a new action, click the Add icon, beside the Actions field. The Create Action utility will appear.

Once you have created an action, you can click the action number in the Actions field to modify it.

Actions with attachments will be shown in the list with a paperclip icon.

**Completing a Step/Failure Review Boards**

As mentioned earlier, the number of steps involved in a problem will depend on the FRACAS process used by your organization. The 8D reporting process involves all eight steps supported by XFRACAS:

1. Choose the team for the 8D report
2. Describe the problem
3. Contain the problem
4. Define the root cause of the problem
5. Choose the corrective action for the problem
6. Implement the corrective action for the problem
7. Prevent recurrence of the problem
8. Recognize the team

The border surrounding the current step of the reporting process is highlighted in red. The border surrounding the completed steps will appear in green. To complete a given step, at minimum, the Completed By field and the Completed Date must be filled out, and the problem record saved. In addition, any of the steps 2 through 8 may allow or require a Failure Review Board (FRB) approval. If the FRB is optional for the step, the field does not have to be used, but if the FRB is set up the members must sign off before the step is considered complete. If the FRB is required for the step, the FRB must be set up and the members must sign off before the step is considered complete.

If the step has an FRB associated with it, the FRB Approved By area displays the reviewers who have been assigned to the FRB, their “user category” (i.e., the reviewer role they fulfill in this case) and the date, if any, they signed off on the decision to close the problem step. "N/A" indicates that the reviewer has not yet signed off on the closure of the current step. If the reviewer has reviewed the step and rejected closure, "Rejected" will appear in red. You can point to the word "Rejected" to see any comments on the rejection, or click the word to see the comments in a separate window.
If your name is in the list, you can check the **Yes** or **No** option to the right of your name to indicate your approval or disapproval of the decision to close the current step. If you select **No**, the Problem Closure Rejection utility will appear, which allows you to type comments for why you are rejecting closure of the current step. If you select **Yes**, the date when you approved the step closure will be displayed in the Sign-off Date column when you save the problem record.

The **Edit Reviewer List** link opens the Problem Reviewer List Selection utility, which allows you to assign and remove the reviewers for the FRB.

### Using the Problem Reviewing List Selection Utility

The problem number/step to be reviewed is displayed at the top of the window. When you choose a user category from the drop-down list in the **Available Reviewers List** on the left, a list of all XFRACAS users who can fulfill that reviewer role is displayed. The **Selected Reviewers List** on the right displays a list of the users who have been selected to participate in this Failure Review Board. You can double-click a name in one list to move it to the other list or select one or more names and use the arrow buttons to move them. To select multiple items, hold down the **CTRL** key and click the names.

You can specify from one to five users to review the problem step. The Selected Reviewers List displays the reviewers in order of priority; the first reviewer should perform the review first, followed by the second reviewer and so on. Depending on the settings chosen by the system administrator, following this order may be optional or required. You can move a reviewer up or down in the list by selecting the name and clicking the (+) or (-) button.
Once you have made the desired changes and clicked **Save**, the Problem page will be refreshed to reflect the changes.

Note that when you use this utility to remove a saved member of a Failure Review Board, you must provide a reason for the removal in the FRB Reviewer Removal window that appears.

The **View Reviewer History** link opens the FRB Removed Reviewer History utility, which displays information on all removed reviewers, including their category, the date of removal, reason for removal and rejection comments.

## Closing a Problem

Once the required number of steps in the problem have been completed, the **Set Close Status** field will appear in the final step. Selecting a closed status for the problem marks it as closed. The options in this list are controlled by the system administrator.

Depending on the settings chosen by the system administrator, a problem may not be able to be closed until all incidents associated with the problem are closed and/or all actions for the problem completed.

## Establish the Team Area

The **Establish the Team** area of the Problem page allows you to define the elements that control how the problem is handled (e.g., define the team, set closure dates, specify priority, etc.). The appearance of this area will vary depending on whether you are creating a new problem or viewing an existing problem.

*Note:* The fields displayed in this page depend on the currently selected entity. They can be configured (including names and any options available for selection) by the system administrator. This topic discusses some fields in cases where the field's purpose and/or functionality may not be readily apparent.

- **Audience Restriction** provides a way to identify records that may need to be kept private in some way. If this field is enabled for the current entity, it will be displayed after the record has been created. The options in the drop-down list can be configured by the system administrator, and most are for informational purposes only. However, if you select the "Attorney/Client Privilege" option, the following conditions apply:
  - Only users assigned to the team for the record will be able to view it in any form. Before you save the record with this option selected, make sure you have added yourself and any other relevant users to the team.
The team must have at least one user assigned to the "Legal" team role. To be eligible for this role, the user's account must be assigned to the "Legal Expert" user category.

**Team Members** provides a way to specify users who will be involved with the progress for a particular incident, problem or project (e.g., to receive notifications, etc.). If this field is enabled for the current entity, it will be displayed after the record is created. To set or change the members of the team, click the **Assign/Remove** icon, ‏, to open the **Assign Team Members** utility. Note that the names displayed in this field are links that open the **Send E-mail** utility.

**Priority** allows you to select the priority of the problem. The available priorities are set by the XFRACAS system administrator.

**Requested Closure Date** and **Expected Closure Date** allow you to specify the date on which the problem is requested to be closed, and the date it is expected to be closed.

**Part Category Code** displays the part category code (i.e., part number) associated with the problem, if any. Click the link to open the Part Category Codes utility, which allows you to choose or change the part category code.

Depending on the settings chosen by the system administrator, the **FRB Approved By area** may also appear. This area may allow or require Failure Review Board approval in order to complete the Establish the Team step.

### Describe the Problem Area

The **Describe the Problem** area of the **Problem page** allows you to specify information about the problem to be resolved (e.g., problem description, system information, etc.). This area will be available after you have created the problem.

**Note:** The fields displayed in this page depend on the currently selected entity. They can be configured (including names and any options available for selection) by the system administrator. This topic discusses some fields in cases where the field’s purpose and/or functionality may not be readily apparent.

**Description Actions** displays the action items (if any) for the problem description. Click the up or down arrow on an action summary bar to hide or display the full details for the selected action. Note that if an action has an attachment, a paper clip icon will appear in its line. Placing the cursor over the icon will display the description of the attachment. You can click the magnifying glass icon to display all of the actions associated with the current problem as report results.

To create a new action, click the **Add** icon, ‏. The **Create Action window** will appear.
Chapter 6: Problems

- **References** allows you to associate references to other documents with the problem. The document references will appear in the print preview and print output of the problem, in the table that displays the associated incident reports. The references are displayed in one of three rows in the table, depending on the first three characters of the reference. References beginning with SDR are displayed in the Supplier Deviation Requests row, references beginning with QCR are displayed in the Quality Control Reports row and all other references are displayed in the Other Reports row.

- **Criticality** displays the two overall criticalities, Base CIN and Current CIN, once the problem has been saved. These criticalities will be automatically calculated by the system using your selections from the associated drop-down menus and using the criticality formulas configured by the system administrator.

- **Associated Incident Reports** displays a list of the incidents that have been associated with the current problem, if any, and provides a link to a list of each type of incident. Depending on the settings chosen by the system administrator, incidents may be categorized by status (open/closed), report type (chargeable/nonchargeable), both or neither. An incident’s chargeability is determined by the Incident Category field and any failure type assigned when repairing/replacing parts in the Incident page.

To associate and/or disassociate incidents with the current problem, click the **Assign/Remove Incidents** link to open the Assign Incidents to Problem utility.

- **Associated Projects** displays a table of the projects that have been associated with the current problem, if any, and provides a link to each project. By default, the list of projects is sorted by date; however, you can sort by any of the columns by clicking the header.

To associate and/or disassociate projects with the current problem, click the **Assign/Remove Projects** link to open the Assign Projects to Problem utility.

- Depending on the settings chosen by the system administrator, the **FRB Approved By area** may also appear. This area may allow or require Failure Review Board approval in order to complete the Describe the Problem step.

### Identify and Verify Root Cause Area

The **Identify and Verify Root Cause** area of the Problem page allows you to define and verify the root cause for the problem.

*Note: The fields displayed in this page depend on the currently selected entity. They can be configured (including names and any options available for selection) by the system administrator. This topic discusses some fields in cases where the field's purpose and/or functionality may not be readily apparent.*
• **Root Cause Actions** displays the action items (if any) for the root cause analysis. Click the up or down arrow on an action summary bar to hide or display the full details for the selected action. Note that if an action has an attachment, a paper clip icon will appear in its line. Placing the cursor over the icon will display the description of the attachment. You can click the magnifying glass icon to display all of the actions associated with the current problem as report results.

To create a new action, click the **Add** icon, . The [Create Action window](#) will appear.

• **Root Cause Status** displays the status of the actions taken to resolve the issue. To create a new status, click the **Add** icon, . The Status utility will appear, allowing you to enter comments about the troubleshooting process.

• **Root Cause Verification Actions** displays the action items (if any) for the root cause verification.

• Depending on the settings chosen by the system administrator, the **FRB Approved By area** may also appear. This area may allow or require Failure Review Board approval in order to complete the Identify and Verify Root Cause step.
Chapter 7: Projects

Projects allow you to manage related problems, in much the same way that problems are used to manage related incidents. You can create actions to be performed at the project level, just as you can create actions for incidents and problems.

For specific information on selected fields within the Project page, please refer to the topic specific to the area of the Project page.

Note: The fields that appear in the interface can be configured by the system administrator. The area topics are not intended to be a comprehensive guide to all possible fields. Instead, they provide additional information on some commonly used fields in cases where the field's purpose and/or functionality may not be readily apparent. For this reason, not all areas are covered in depth.

- The Project Summary area displays the information that has been defined for the current project. This area is not displayed while you are creating a new project.
- The Project Information area allows you to assign and remove the project team members and describe the scope of the project. You can also update the status of the project, describe the end result and define any other details of the project.
- The Associated Data area allows you to view the associated problems, incidents and failure analysis reports and associate records with the project.

Creating a Project

To create a new project, choose Home > Create > Project.

The Project page will be displayed with a new project record that you can define. Required fields are indicated with red borders.

The current entity will appear at the top of the page. You can select a different one from the drop-down list to create a project associated with that entity. Please note that the fields that appear in the Project page may vary depending on the current entity.

When creating the project, you will enter the required information in the Create New Project area. This area appears only while you are creating a new project. Once you have entered all information, choose Home > Project > Create.
Upon creation, a unique project number is automatically assigned by the system. This is displayed in the top left corner of the page and in the browser title bar. The record number will include the prefix for the entity that it is associated with (e.g., E1-1).

Assigning Responsibility for a Project
Although a team of users may work on a project, one user must have the primary responsibility for each project.

- When you create the project, you will be prompted to specify the owner of the problem in the Create New Project area. The project owner has primary responsibility for the project.

- Once you have created the project, you can assign team members to work on it by clicking the Assign/Remove icon, beside the Team Members field in the Project Information area. This will open the Assign Team Members utility, which allows you to assign and remove users to the team and specify their roles. Once you have assigned team members, the Team Members field will display the team members and their roles. Note that the names displayed are e-mail links. Clicking a name will open the Send E-mail utility.

Associating a Problem with a Project
To associate a problem with the current project, click the Assign/Remove Problems link by the Associated Problems table in the Associated Data area. The Assign Problems to Project utility will be displayed.

- Depending on the settings chosen by the system administrator, the list may initially contain only currently associated problems. To display all available problems, click Filter without entering any criteria.

- To filter the available problems, enter a complete or partial Problem #, Problem Title, Part Category, Problem Status and/or Problem Description in the input boxes that appear above the corresponding columns and click Filter.

- In the list of problems, select the check box(es) next to the problem(s) that you want to associate with the current project. To select all problems in the list, select the check box in the header.

- To remove problems from the current project, clear the check box(es) next to the selected problem(s).

- Click Save to save the changes in the window. Click Cancel to cancel any changes. Once you return to the Project page, you will notice that the problem(s) associated with the current problem appear in the Associated Problems table. Any incidents associated with
the problem(s) will, by extension, be associated with the project, and will be displayed or counted in the Associated Incident Reports table. Note, however, that a failure analysis report that is associated with an incident that is associated with one of the problems in the table above will not necessarily be displayed in the Associated FA Reports table. You must have selected that problem in the Associated Problem field on the Failure Analysis page to create an association between the failure analysis report and the problem (and, hence, the project).

**Updating a Project**
In addition to entering more details, there are certain tasks that are commonly performed in updating a project.

**Creating a Status**
Statuses allow users to add information about progress made on the project. To create a new status, click the Add icon, beside the Project Statuses field in the Project Information area. The Status utility will appear, allowing you to enter comments.

**Adding an Action**
Authorized users can assign actions (tasks) to help resolve the project and then track the progress on those actions. To create a new action, click the Add icon, beside the Actions field in the Project Information area. The Create Action utility will appear.

Once you have created an action, you can click the action number in the Actions field to modify it.

Actions with attachments will be shown in the list with a paperclip icon.

**Closing a Project**
A project is considered closed when the Actual Completion Date field in the Project Information area has been filled in. Depending on the settings chosen by the system administrator, a project may not be able to be closed until all problems associated with the project are closed and/or all actions for the project completed.

**Project Information Area**
The Project Information area of the Project page allows you to assign and remove the project team members and describe the scope of the project. This portion of the utility is not displayed while you are creating a new project.
Chapter 7: Projects

**Note:** The fields displayed in this page depend on the currently selected entity. They can be configured (including names and any options available for selection) by the system administrator. This topic discusses some fields in cases where the field's purpose and/or functionality may not be readily apparent.

- **Team Members** provides a way to specify users who will be involved with the progress for a particular incident, problem or project (e.g., to receive notifications, etc.). If this field is enabled for the current entity, it will be displayed after the record is created. To set or change the members of the team, click the **Assign/Remove** icon, to open the **Assign Team Members** utility. Note that the names displayed in this field are links that open the **Send E-mail** utility.

- **Priority** allows you to select the priority of the project. The available priorities are set by the XFRACAS system administrator.

- **Actual Completion Date** allows you to specify the actual completion date of the project. Once the actual completion date has been specified, the project is considered to be closed. It will no longer appear in the My Projects area of the project owner’s Portal. Depending on the settings chosen by the system administrator, a project may not be able to be closed until all problems associated with the project are closed and/or all actions for the project completed.

- **Actions** displays the actions, if any, for the project. Click the up or down arrow on an action summary bar to hide or display the full details for the selected action. Note that if an action has an attachment, a paper clip icon will appear in its line. Placing the cursor over the icon will display the description of the attachment. You can click the magnifying glass icon to display all of the actions associated with the current project as report results.

  To create a new action, click the **Add** icon, . The **Create Action window** will appear.

- **Project Statuses** displays the status of the actions taken to resolve the issue. To create a new status, click the **Add** icon, . The Status utility will appear, allowing you to enter comments about the project.

**Associated Data Area**

The **Associated Data** area of the **Project page** allows you to view the associated problems, incidents and failure analysis reports.

**Note:** The fields displayed in this page depend on the currently selected entity. They can be configured (including names and any options available for selection) by the system administrator. This topic...
discusses some fields in cases where the field's purpose and/or functionality may not be readily apparent.

- The **Associated Problems** table displays the [problems](#) associated with the current project, if any. Information displayed includes:
  - The problem number. You can click the link to open the problem in the Problem page.
  - The problem description.
  - The problem owner.
  - The status of the problem.
  - **# of IRs** displays the number of incidents for the problem. You can click the link to display all of the incidents associated with the problem as report results.
  - The date of the latest occurrence of the problem.
  - **Cpt. Date** displays the completed date for the problem.

You can click the [Create New Problem](#) link to open the Problem page and create a new problem to be associated with the current project. You can click the [Assign/Remove Problems](#) link to open the [Assign Problems to Project utility](#) in order to associate and/or disassociate problems with the current project.

- The **Associated Incident Reports** table displays the [incidents](#) associated with the current project (i.e., associated with the problems in the table above). The appearance of this table will vary depending on whether the associated incidents are displayed or hidden. When the incidents are hidden, the table will display the counts of open and closed incidents associated with the project. Note that these numbers may vary from the "# of IRs" count totals seen in the Associated Problems table because the same incident may be assigned to multiple problems that are assigned to the project. When the incidents are displayed, the table will show details for each associated incident, as shown next. You can click the incident number to open the incident in the Incident page.

The [Hide/Display Associated Incidents](#) link toggles the appearance of the Associated Incident Reports table between displaying and hiding the incident details. The default setting for this is controlled by the system administrator.

- The **Associated FA Reports** table displays the [failure analysis reports](#) associated with the current project (i.e., associated with the problems in the table above), if any. Note that a failure analysis report that is associated with an incident that is associated with one of the problems in the table above will not necessarily be displayed in this table. You must have selected that problem in the **Associated Problem** field in the Failure Analysis page.
to create an association between the failure analysis report and the problem (and, hence, the project). Information displayed includes:

- The problem that the failure analysis report is associated with. You can click the link to open the problem in the Problem page.
- FA Number displays the number of the failure analysis report. You can click the link to open the failure analysis report in the Failure Analysis page.
- The date the failure analysis report was created.
- The date the failure analysis report was closed.
- The RMA number associated with the failure analysis report, if any.
- The root cause associated with the failure analysis report, if any.
Chapter 8: Actions

In order to fully analyze and resolve an incident, problem, project, CSI or failure analysis report, authorized users may wish to assign personnel to perform a variety of activities and follow up on the progress on those activities. XFRACAS allows you to define, assign and monitor progress for actions associated with a particular record and allows the individual responsible for completing an action (the action owner) to manage the actions assigned to him/her and report on progress.

Creating an Action

To create an action associated with an incident, problem, project, CSI or failure analysis report, click the Create New Action Item icon, on the record page. To create an action associated with another action, choose Home > Action > Create Linked Action while viewing the Action page.

Note: Linked actions are associated with the same record that the original action was associated with.

In the Create Action utility, the action type (i.e., whether the action belongs to an incident, problem, project, CSI or failure analysis) will be displayed at the top of the utility, along with the number and owner of the associated record. Select the user to assign the action to. The action category, or type, is automatically selected, but you may be able to change the subcategory (e.g., for problem actions, you can change the section of the problem that the action applies to). Enter the due date and a description for the action. If you are creating an action associated with another action, select the type of relationship between the two actions. The associations between actions are reciprocal (i.e., they are two-way links).

Click Create to create the action. Note that depending on the settings chosen by the system administrator, the user to whom the action is assigned may receive an e-mail notification upon action creation.

Modifying an Action

To modify an existing action, click the action number. If you open an action from within the record that it is associated with, the Modify Action utility will appear. Other links, such as those in the Portal or in report results, may open the Action page. Both interfaces have identical fields and capabilities.

Summary information for the action is displayed at the top of the utility, including the associated record and its owner as well as the owner, creator, due date and category for the
action. If the action has been completed, the completion date will be displayed; otherwise, "In Progress" will be displayed in the Completed Date field.

The associated record and the action owner, category, due date, completion status, description and result can be changed by authorized users directly below the summary area.

- You can change the associated record by typing a new record number in the Associated [Incident/Problem/Project/CSI/Failure Analysis] field. Note that you must choose the same type of record-- you cannot associate an incident action with a project, for example.

- Assign To allows you to change the action owner. If the system administrator has set the system to send an e-mail notification of action creation to action owners, changing the owner will send an e-mail to the new owner and to the previous owner.

- Category shows the action type category for the action. You cannot change an action type (i.e., whether it belongs to an incident, a problem or a project), but you may be able to change the subcategory (e.g., for problem actions, you can change the section of the problem that the action applies to).

- Result displays a description of the results for the action that have been defined by the action owner, if any. You can also edit this information, if necessary. This field must be populated in order to mark the action as completed.

The Associated Files list displays the attachments associated with the current record, if any. By default, the list of attachments is sorted by the date; however, you can sort by any of the columns by clicking the header.

- The Att. Type column displays the type of attachment (i.e., XFRACAS record, text, URL or linked or uploaded file).

- The Date column displays the date that the attachment was last added to the list of associated files.

- The File column displays the name of the attachment. You can click the link to open the attachment. If the attachment is an XFRACAS record, the record will be opened in a new window in your browser. If the attachment is text, it will be opened in your default text editor (e.g., Notepad). If the attachment is a URL, the web page will open in a new window in your browser, as long as the link is valid. If the attachment is a linked or uploaded file, the document will open in its corresponding application, as long as that application is installed on your computer.

- Description displays a short description of the attachment.
• The Add icon, +, and the Edit icon,  , open the Attachment Information utility, which allows you to add an attachment to the Associated Files list or edit the selected attachment.

• For authorized users, the Delete icon, −, deletes the selected attachment from the Associated Files list. There is no undo for delete. In addition, this command will only delete an attached file from the database and not from the user’s computer. However, if the file is only stored on the database and there are no other copies of the document on the user’s computer, then the file will be permanently deleted.

Statuses allow users to add information about progress made on the action. To create a new status, click the Add icon, +, beside the Status field. The Status utility will appear.

Selecting the Completed check box marks the action as completed and closes it.
Chapter 9: Customer Support

Customer Support Information (CSI) records allow you to report installation details when a unit is installed/commissioned and manage information for particular serialized system units, including installation details, customer contact information and incident report history.

For specific information on selected fields within the CSI page, please refer to the topic specific to the area of the CSI page.

*Note:* The fields that appear in the interface can be configured by the system administrator. The area topics are not intended to be a comprehensive guide to all possible fields. Instead, they provide additional information on some commonly used fields in cases where the field's purpose and/or functionality may not be readily apparent. For this reason, not all areas are covered in depth.

- The **Customer Support Summary** area displays the unit commissioning information that has been defined for the current CSI. This area is not displayed while you are creating a new customer support record.

- The **Customer/Location Information** area allows you to view and maintain information about the customer who owns the unit and the location where it is installed.

- The **Warranty Information** area allows you to view and maintain the initial and extended warranty information for the unit. This area is not displayed while you are creating a new customer support record.

- The **Incident History** area displays a list of all incidents that have been created for the current serialized system and allows you to select an incident report to open. This area is not displayed while you are creating a new customer support record. When you are working with an existing customer support record, this area is displayed only if there are incidents that have been created for the current serialized system.

- The **Replaced Parts** area displays a list of all parts replaced in the last 90 days (or other time frame, depending on the settings chosen by the system administrator), including any parts that have been marked as failed, and allows you to select an incident report to open. This area is not displayed while you are creating a new customer support record.

- The **Installation Details** area allows you to maintain information about the specific installation of the serialized unit.

- The **Accessories** area allows you to view/maintain information about the additional accessory parts, if any, that were installed with the unit. Depending on the settings chosen by the system administrator, this area may not appear. To associate another accessory part with the current serialized system, select a part from the drop-down list, which displays a list of the possible accessory parts that have been identified in
Creating a CSI Record

To create a new CSI record, choose Home > Create > Customer Support.

The CSI page will be displayed with a new CSI record that you can define. You can enter information in this interface, or choose Home > CSI > Use CSI Wizard to be guided through the steps of creating the record.

If you choose to enter information on the CSI page, note that portions of the page may be hidden. Simply click any bar that contains an up or down arrow to hide or display that portion of the page.

If you choose to use the CSI Wizard, use the navigation buttons at the bottom of the window to navigate through each step in the wizard. You can also choose Home > CSI Wizard > Use Single Form to return to the CSI page.

The items that appear in each step of the CSI Wizard are the same as those on the CSI page. In both methods, required fields are indicated with red borders. The current entity will appear at the top of the page. You can select a different one from the drop-down list to create a CSI record associated with that entity. Please note that the fields that appear on the CSI page or in the CSI Wizard may vary depending on the current entity.

Once you are done entering all required information, click Create in the CSI Wizard or choose Home > CSI > Create from the CSI page to create the CSI record.

Upon creation, a unique incident number is automatically assigned by the system. This is displayed in the top left corner of the page and in the browser title bar. The record number will include the prefix for the entity that it is associated with (e.g., E1-3).
Chapter 9: Customer Support

Updating a CSI Record

Creating a Status
In addition to entering more details, you may wish to add statuses to the CSI record. Statuses allow users to add information about progress made on the CSI. To create a new status, click the Add icon, beside the Status field in the Installation Details area. The Status utility will appear, allowing you to enter comments.

Adding an Action
Authorized users can assign actions (tasks) to help resolve the CSI and then track the progress on those actions. To create a new action, click the Add icon, beside the Actions field in the Installation Details area. The Create Action utility will appear.

Once you have created an action, you can click the action number in the Actions field to modify it.

Actions with attachments will be shown in the list with a paperclip icon.

Customer Support Summary Area
The Customer Support Summary area of the CSI page displays the unit commissioning information that has been defined for the customer support record. This area is not displayed while you are creating a new customer support record.

Note: The fields that appear in the interface are based on the currently selected entity, and can be configured (including names and any options available for selection) by the system administrator. This topic is not intended to be a comprehensive guide to all possible fields. Instead, it provides additional information on some commonly used fields in cases where the field’s purpose and/or functionality may not be readily apparent.

- Time Metrics Field displays up to three types of time measurements that have been reported for the unit at the time of the incident. Note that the XFRACAS system administrator maintains the time metric field names. Therefore, the name of the Time Metrics field used in your system may be different and, depending on the settings chosen by the system administrator, this field may display one, two or three time metrics. The system default is Run Hrs/Starts, which displays the total system hours and the number of starts that have been reported for the unit at the time of the incident. You can click the Add icon, to add a report on system hours and/or starts. You can click the link to display the System Run Hours utility, which displays a summary of all system hours and number of starts reports that have been made for the unit. System
hours reports that were made manually (i.e., that are not from an incident) can be deleted from this table.

- **System Status** displays the current operational status of the unit based on the highest status code for all the incidents associated to the serialized system. The rankings of the status codes are determined by the system administrator. If there are multiple incident reports applying to the system, the overall system status is determined by the system status with the highest precedence. For example, let us say that the list of available statuses contains (in order of increasing precedence):
  - Available
  - Idle
  - Running - Needs Service
  - Down - Waiting on Service

If there are two incident reports applying to the system, one with a status of Running - Needs Service and one with a status of Down - Waiting on Service, the overall system status would be Down - Waiting on Service. Once the service is applied to that incident, the system status would change to Running - Needs Service.

- **System Configuration** provides a link to the [Serialized page](http://xfacas.reliasoft.com) for the unit.

- **MTBF/MTBFE** displays the mean time between failures (based on reported hours and based on estimated system hours) for the system, assuming a constant failure rate.

- **MTBCF/MTBCFE** displays the mean time between chargeable incidents, or failures (based on reported hours and based on estimated system hours), for the system, assuming a constant failure rate.

- **MTBNCF/MTBNCFE** displays the mean time between non-chargeable incidents, or suspensions (based on reported hours and based on estimated system hours), for the system, assuming a constant failure rate.

- **MTBI/MTBIE** displays the mean time between incidents (based on reported hours and based on estimated system hours) for the system, assuming a constant failure rate.

- **Chargeable Incidents** displays the total number of chargeable incidents (failures) for the system.

- **Non Chargeable Incidents** displays the total number of non-chargeable incidents (suspensions) for the system.

- **Under Warranty** displays an indication of whether or not the unit is currently under warranty and, if applicable, the expiration date of the warranty period.
• **Operational Availability** displays the percentage of total time during which the system was not down. Total time is the time from when the unit was commissioned, shipped or built. Downtime is the time between occurrence dates and repair dates for all incidents on the system. If the System Down Event incident detail is available in the current entity, only incidents for which that detail is checked count toward downtime; otherwise, all incidents are considered. Note that if no repair date is given for an incident, the system is considered to be down from the occurrence date on.

**Customer/Location Information Area**

The **Customer/Location Information** area of the CSI page allows you to view and maintain information about the customer who owns the unit and the location where it is installed.

*Note:* The fields that appear in the interface are based on the currently selected entity, and can be configured (including names and any options available for selection) by the system administrator. This topic is not intended to be a comprehensive guide to all possible fields. Instead, it provides additional information on some commonly used fields in cases where the field's purpose and/or functionality may not be readily apparent.

• **Unit Owner** displays the owner of the unit. You can choose an existing company from the drop-down list. Users with specific permissions can add a new unit owner to the list by clicking the **Add** icon, ![Add](add_icon). In the Company page that appears, type the name and information for the new unit owner and click **Save**. The Company page will close and the **Unit Owner** field will display the new unit owner. Authorized users can also click the **Edit** icon, ![Edit](edit_icon), to edit the selected unit owner in the Company page.

  • The available options for the **Category** field will vary and are maintained by the XFRACAS system administrator.

• **Location** displays the location of the unit. You can choose an existing location from the drop-down list; the available locations are based on the selected unit owner. The address, city, state, zip code and country associated with the location will be displayed in the corresponding fields. Users with specific permissions can add a new location to the list or edit the selected location in the Location page.

  • The **City**, **State** and **Country** fields are drop-down lists that you can choose from. You can also add, edit or delete cities, states or countries in these lists using the **Add**, **Edit** or **Delete** icons.

• **Contact Name** displays the name of the primary customer contact to communicate with regarding the unit. You can choose an existing contact from the drop-down list. The e-mail, phone and fax associated with the contact will be displayed in the corresponding fields. Users with specific permissions can add a new contact to the list or edit the selected contact in the Contact page.
• **Contact Area**
  
  • In the **Company** field, you can choose a company from the list or click the **Add** icon to add a new company to the list. The Company page will appear. Once you have entered the company information, click **Save** to save it and return to the Contact page.

  • In the **Location** field, you can choose a location from the list, click the **Add** icon or choose a location from the list and edit it by clicking the **Edit** icon. The Location page will appear. Once you have entered the location information, click **Save** to save it and return to the Contact page.

  • The available options for the **Category** field will vary and are maintained by the XFRACAS system administrator.

  • The **Associated Systems** link runs a report showing the CSI records associated with the currently selected contact. This link will appear only when you are editing an existing contact and if the contact is associated with commissioned serialized systems.

• **Contact Details Area**

  • **Active** indicates whether or not the contact is active. The active status is determined by comparing the **Renewal Date** to the current date. If the **Renewal Date** is earlier then the current date, then the contact is inactive. This status can be overridden in the **Overridden** field.

  • **Overridden** allows you to override the **Active** status for the contact from active to inactive or vice versa.

  
  **Note:** The XFRACAS system administrator maintains the fields that appear in the **Contact Details** area. Therefore, the fields that appear in your system may be different from the fields mentioned here.

The Company page and the Contact page are also available by double-clicking a company or contact record from within report results.

**Warranty Information Area**

The **Warranty Information** area of the CSI page allows you to view and maintain the initial and extended warranty information for the unit. This portion of the utility is not displayed while you are creating a new customer support record.
Note: The fields that appear in the interface are based on the currently selected entity, and can be configured (including names and any options available for selection) by the system administrator. This topic is not intended to be a comprehensive guide to all possible fields. Instead, it provides additional information on some commonly used fields in cases where the field's purpose and/or functionality may not be readily apparent.

- **Initial Warranty** allows you to enter the warranty period (in months) from the date of shipment or delivery (depending on your selection from the Warranty Type drop-down menu) and from the date of commission for the current serialized unit. Select a warranty type of To End User to specify the warranty period from the date of delivery or select To Distributor to specify the warranty period from the date of shipment.

- **Months from Shipment/Delivery** displays the default number of months for the warranty period from the date of shipment or date of delivery (depending on the selected initial warranty months) as specified in the administrative preferences. In cases of extended warranty or other non-typical situations, you can change these quantities as applicable.

- **Months from Commission** displays the default number of months for the warranty period from the date of commissioning, as specified in the administrative preferences. In cases of extended warranty or other non-typical situations, you can change these quantities as applicable.

- To save Extended Warranty information, you must provide a purchase date.

**Installation Details Area**

The Installation Details area of the CSI page allows you to maintain information about the specific installation of the serialized unit.

Note: The fields that appear in the interface are based on the currently selected entity, and can be configured (including names and any options available for selection) by the system administrator. This topic is not intended to be a comprehensive guide to all possible fields. Instead, it provides additional information on some commonly used fields in cases where the field's purpose and/or functionality may not be readily apparent.

- **Distributor** displays the name of the distributor for the unit. This field is available only when you are viewing an existing customer support record. Users with specific permissions can add a distributor to the list by clicking the Add icon, . In the Company page that appears, type the name and information for the new distributor and click Save. The Company page will close and the Distributor field will display the new distributor. Authorized users can also click the Edit icon, , to edit the selected distributor in the Company page.
Chapter 9: Customer Support

- **ASP** displays the company name of the authorized service provider who performed the installation/commissioning. Users with specific permissions can add an ASP company to the list or edit the selected ASP company in the Company page. Please note that if an ASP company is not selected, the **ASP Field Service Tech** drop-down list will be empty since the available ASP technicians are dependent upon the selected ASP company.

- **ASP Field Service Tech** displays the name of the authorized service provider's technician who performed the installation/commissioning. Users with specific permissions can edit the selected ASP technician in the Contacts page. Please note that this drop-down list may not display all ASP technicians, depending on the settings chosen by the system administrator. In addition, if an ASP company is not selected, this list will be empty since the available ASP technicians are dependent upon the selected ASP company.

- **Status** displays the status of the actions taken to resolve the issue. To create a new status, click the **Add** icon. The Status utility will appear, allowing you to enter comments about the troubleshooting process.
Chapter 10: Reporting Utilities

Reports
To access XFRACAS reports, choose Home > View > Reports.

- **Watched Reports** include reports of any type (standard, public, etc.) that you have selected to "watch." (See Watched Reports and Charts.)
- **Standard Reports** are included by default with XFRACAS.
- **My Reports** have been customized and saved via the Report Builder for your personal use. This may include reports that you saved for yourself or reports that another user saved for you personally or a security group that you belong to.
- **Public Reports** have been customized and saved via the Report Builder for all users to view.
- **Custom Reports** are created by ReliaSoft for use in the current entity.

Grouping Results
To group results, click the column name and drag it into the grouping bar at the top of the results table. You can drag multiple columns into the grouping bar; the order in which they appear determines the way the records are sorted. For example, this picture shows grouped by responsible part and then by state.
Chapter 10: Reporting Utilities

Filtering Results

There are two ways to filter the results. The current criteria will appear in the filtering bar at the bottom of the results table. Clear the check box to remove the filter.

- Type in the search field(s) directly below the column name(s).
- Click the Create Filter link at the bottom of the results to open the Filter Builder.

In this utility, each group is headed by a logical operator in red (and, or, not or, not and) that applies to the conditions under it. Click the red link to select the operator, add a sub-group, add a condition or remove the operator.

Each condition is made up of a property in blue, a relational operator in green (equals, contains, is not blank, etc.) and a value in gray. Click the blue or green link to select the property or operator. Click the gray link to type the value.
Report Results Toolbar
When you view a report:

- Show Field Chooser allows you to hide or display columns by dragging the column header into or out of the popup.
- Export sends the current report to the file format specified in the drop-down list (*.pdf, *.xls, *.xlsx, *.rtf or *.csv).
- Watch adds the report to the Watched Reports group.
- E-mail Report sends the results in an e-mail message. You must have the appropriate permission in the entity to use this feature.
- Show SQL Statement displays the SQL statement that was used to generate the results. You must have the appropriate permission in the entity to use this feature.

Charts
To access XFRACAS chart reports, choose Home > View > Charts.

Watched Charts include charts of any type (standard, public, etc.) that you have selected to "watch." (See Watched Reports and Charts.)

Chart Reports are included by default with XFRACAS.
My Chart Reports have been customized and saved via the Report Builder for your personal use. This may include reports that you saved for yourself or reports that another user saved for you personally or a security group that you belong to.

Public Chart Reports have been customized and saved via the Report Builder for all users to view.

Chart Results Toolbar
When you view a chart:

- **Report Builder** opens the Report Builder where you can define a new chart.
- **Data Table** displays a tabular report of the data.
- **Export** sends the current chart to the file format specified in the drop-down list (*.xls, *.xlsx, *.png, *.jpeg, *.bmp, *.tiff or *.gif).
- **Watch** adds the chart to the Watched Charts group.
- **Refresh** reloads the last saved settings.

Drilling Down
To drill down in the chart, simply double-click the bar, slice or point of interest. In the Chart Drilldown window, then select the qualifier to be used for drilldown. You can then choose to generate a chart, a trend analysis or a report based on the qualifier. For example, the pareto chart shown next displays a count of failure analysis reports broken down by failure type.
Double-clicking the Primary Failure bar opens the Custom Chart Drill Down utility.

Selecting an option opens a chart in a new window, such as the pareto chart shown next, that displays the number of FAs pertaining to the primary failures that are in each status,
Chapter 10: Reporting Utilities

Report Builder

Use the Report Builder to design the reports and charts that will be available in the Reports page and the Charts page. You can save your own reports/charts that are visible only to you (or shared with specific users or groups). If you have the required permissions, you can also modify the built-in "Standard" reports/charts or save new "Public" reports/charts that are visible to all XFRACAS users.

To access the Report Builder, choose Options > Designers > Report Builder.

Use the Select Report drop-down lists to specify which type of report/chart you want to create, or select one that you want to modify. For example:

- To create a new report, select an existing one that is similar (e.g., "Standard Reports" and "Incident"). Apply your changes and click Save As. You will be prompted to specify the name, description and other details. (See Save Report window.)

- To modify a report that already exists, select that report (e.g., "My Reports" and "Saved report name"). Apply your changes and click Save (or click Save As if you also want to be prompted to change the name, description or other details.)

If you want to preview the results based on the current settings, choose Options > Report > Generate.
Reloading Defaults and Deleting Saved Reports

For predefined report types (Standard Reports, Chart Reports, Administrator Reports), you can click \( \text{ reloading symbol } \) to reload the last saved settings. If the saved settings are different from when XFRACAS was installed, you can also click \( \text{ reset symbol } \) to reset the system defaults.

For reports that were created by users (My Reports, My Chart Reports, Public Reports, Public Chart Reports, Custom SQL Statements) you can click \( \text{ reloading symbol } \) to reload the last saved settings for the report or \( \text{ delete symbol } \) to delete the report.

Filter Criteria and Fields to Display

The table contains a row for each field that you have chosen to filter by and/or display in the results.

- To add a field, choose it from the **Additional Fields** drop-down list and click the \( \text{ plus symbol } \) icon.

  **Note:** The maximum number of optional columns that a report can include is determined by the system administrator. After you have reached that limit, you can no longer add additional fields.

- To remove a field, click the **Remove Field** icon, \( \text{ minus symbol } \), in that row.

- If you are building a report, use the check box in the **Show** column to show or hide the field in the results. If the column is shown, enter a value in the **Order** column to specify the location of the column in the results. Numbers that are skipped are ignored.
Chapter 10: Reporting Utilities

- In each Criterion column, the icon on the left shows the operator (e.g., equals, contains, is greater than, is not empty, etc.). If the operator requires one or more arguments, these are shown in the middle of the column. If no arguments are specified, the default is "All."
  - To specify the operator and argument(s), click the operator icon or the Add Filter Criteria icon, 📝.
  - To clear the criteria for a field, click the Clear Values icon, 🗑️, in the row.
  - If more than one criterion is specified for the same field, click inside the &/Or column to toggle between AND (●) and OR (⊙).
  - The Filter Group column allows you to specify how various criteria interact in the search.

Part Details
When applicable, report results can include information about the particular template part that each incident or problem pertains to:

- For incidents, the report can include fields from the "System/Component Information Area" as well as any configurable fields for the template part.
- For problems, the report can include the "Part Category" as well as any configurable fields for the specified part.

In the Report Builder's Additional Fields list, these fields are identified with the prefix "Part Detail".

Filter Criteria Groups
This area shows how Boolean operators will be applied for filter criteria specified in the table. If you have specified more than one Filter Group in the table, you can click the icon to toggle the operator that will be applied between the groups.

In the following example, the results will include records that match all of the criteria in the first group (AND operators for all fields in Group 1) or the single criterion in the second group (OR operator between Groups 1 and 2).
**Sorting**

If you are building a report, you can use this area to specify how the results will be sorted when they are generated. The results will be sorted by each field in the **Selected** list, successively.

Select a field and click ▲ or ▼ to move it from one list to the other. Double-click a field in the Selected list to toggle between ascending (ASC) and descending (DESC) order.

Users can also change the sort order after the report is generated. (See Reports.)

**Output**

If you are building a report, this area determines whether the results will be displayed in HTML or XSLT.

- **HTML** - the results will be displayed in a tabular format and you can specify the number of records shown per page.
- **XSLT** - you can specify the *.xslt style sheet (Extensible Stylesheet Language Transformation) that will be used to customize the presentation of the results.

**Chart Control and Chart Appearance**

If you are building a chart, these areas allow you to specify how the data will be presented.

- **Analysis Type** - In general, a **Pareto** analysis (e.g., bar charts, pie charts, scatter charts, etc.) allows you to look at quantitative factors, while a **Trend Analysis** (e.g. line charts) allow you to look at historical trends.

- **X-Axis** and **Y-Axis** specify the information that will be shown on the axes.

- **Number of Records to Display**
  - For pareto analyses, you can display the records that either have the most number of matches to the criteria or the least number of matches to the criteria.
  - For trend analyses, you can display the records that either have the most recent dates that match the criteria or the oldest dates that match the criteria.

- **Chart Options**
  - For pareto analyses, you can show the **Average Line**.
For trend analyses, you can show the **Average Line** or the **Trend Line**. The Trend Line shows a smoothed-out curve that follows the data. This an Exponentially Weighted Moving Average (EWMA) line, which is calculated using a Cubic B-spline (CBS) process to smooth out the line, with a correction factor of 0.5.

The appearance settings specified here will be applied when the chart is first generated. Users can also change these options after the chart is generated. (See [Charts](#).)

- **Chart Type** - for Pareto analysis, select bar, line, area, step, pie or scatter. Trend charts can only display as a line chart.
- **Kind** - 2-dimensional or 3-dimensional
- **Appearance** - the background color scheme
- **Palette** - the colors used for chart elements

In the following example, these settings will generate a horizontal bar chart that shows the 20 dates on which the greatest number of incidents were created along with a line showing the average number of incidents created daily.

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### Save Report Window

When applicable, you can use the Save Report window to enter or change the Report Name, Report Description and Report Icon.

Depending on your permissions, you may also be able to select:

- **Save report for another user** or **Save report for a security group** - makes the report available to a selected user or to all users in a selected security group. Only the specified user(s) will be able to view and edit the report, and it will show under "My Reports" or "My Charts."

- **Make Public** - makes the report available to all users in the current entity. Any user in the entity will be able to view and edit the report, and it will show under "Public Reports" or "Public Chart Reports."

- **Add SDW Data Source** - makes the report available to the Synthesis Data Warehouse (SDW) in Weibull++, ALTA or RGA.
• You can then use the SDW to create custom dashboards for the data that will be visible in Synthesis desktop applications or the Synthesis Enterprise Portal (SEP). (See "Connect to XFRACAS Report" in the Weibull++/ALTA or RGA documentation.)

• Within XFRACAS, these reports are not visible in the Reports page, but they can be accessed for subsequent editing under "SDW Data Sources" in the Report Builder.

### Text Search Tips

When searching for text, keep the following hints in mind to improve the effectiveness of your searches.

- Searches return items that contain any of the words that you type in the text search field. Search for a few words (keywords) specifically related to what you are trying to find. Avoid searching for common words like "and", "the", "with", etc.

- Search for more specific or less common words. For example, instead of searching for "vegetable", you might want to search for "tomato."

- Searches are not sensitive to case. If you search for "fuel processor", the utility will return items that contain either "Fuel" or "Processor" or any capitalized variant.

- Words with hyphens like "e-mail" or "e-commerce" are different from words without hyphens ("email" or "ecommerce") and must be searched separately.

- You can use the following "wildcard" characters to help you refine your text search:
  - You can use a space before and after a word if you only want the search to return that exact match. For example, if you enter " fault " (with a space before and after the word), the search will only return the word "fault" and not "faulty" or "faults", etc.
  - You can use an underscore "_" to search for words that contain any letter in addition to the entered letters. For example, if you enter "_ean", the search will return any words that contain four letters with the last letters being "ean", such as "Sean", "bean", etc. If you enter "r_n", the search will return words such as "run", ran", etc.
  - You can also use an underscore alone in any text field to search for records in which that field is not blank.
  - You can use brackets "[]" to search for words that contain any letters within a specified range or set. For example, if you enter a range of letters, such as "[a-p]ar", the search will return words that end with "ar" and begin with any single
letter between "a" and "p", such as "bar", "car", "far", "par", etc. You can also enter a set of letters, such as "[abcdef]ar" and the search will return "bar", "car", "far", etc.

- You can use brackets with a caret "[^]" to search for words that contain any letters except those within a specified range or set. For example, if you enter a range of letters, such as "[^a-p]ar", the search will return words that end with "ar" and do not begin with any single letter between "a" and "p". From the example above, the words "bar", "car", "far" and "par" would not be returned, but the words "tar", "war", etc., would be returned. You can also enter a set of letters, such as "[^abcdef]ar". Again, from the example above, the words "bar", "car" and "far" would not be returned, but the words "tar", "war", etc., would be returned.

Dashboard and Designer

Use the Dashboard to view multiple tabular and chart reports simultaneously in a side-by-side format. If you have the required permissions, you can also modify the built-in "Default" layout, or save new layouts that are visible to other XFRACAS users.

To access the Dashboard, choose Home > View > Dashboard.

Use the Select Layout list at the top of the page to select which layout to view.

- To view an individual report, click the Zoom icon, 🎨, at the upper right corner of the report.

  The report will open in a new window, with all capabilities of that report type (e.g., chart reports have drilldown functionality; text reports can be sorted, grouped, etc.).

- Click 🔄 to refresh the layout.

Using the Dashboard Designer

Use the Dashboard Designer to create layouts that meet your specific needs. You can define the number of rows and columns and select the specific reports and charts shown in the layout.

To access the Dashboard Designer, choose Options > Designers > Dashboard Designer.
Use the **Select a Dashboard Layout** list to specify which type of layout you want to create or modify. For example:

- To create a new layout, select an existing one that is similar. Apply your changes and click **Save As**. You will be prompted to specify the name and other details. (See **Save Dashboard Layout window**.)

- To modify a layout that already exists, select that layout. Apply your changes and **Save** (or click **Save As** if you also want to be prompted to change the name or other details).

- If you have made changes to the default layout, you can click ![arrow_left.png](https://example.com/arrow_left.png) to return the default layout to its original settings.

If you want to preview the results based on the current settings, choose **Options > Dashboard > Generate**.

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**Save Dashboard Layout Window**

When applicable, you can use the Save Dashboard Layout window to enter or change the **Dashboard Layout Name**.

Depending on your permissions, you may also be able to select:

- **Save report for another user** or **Save report for a security group** - makes the layout available to a selected user or to all users in a selected security group. Only the specified user(s) will be able to view and edit the layout.

- **Make Public** - makes the layout available to all users in the current entity. Any user in the entity will be able to view and edit the layout.
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12.5 Any clause in this License Agreement that is found to be invalid or unenforceable shall be deemed deleted and the remainder of this License Agreement shall not be affected by that deletion.

12.6 Failure or neglect by either party to exercise any of its rights or remedies under this License Agreement will not be construed as a waiver of that party’s rights nor in any way affect the validity of the whole or part of this License Agreement nor prejudice that party’s right to take subsequent action.

12.7 This License Agreement is personal to you and you may not assign, transfer, sub-contract or otherwise part with this License or any right or obligation under it without the Licensor’s prior written consent.